ENERGY SAVINGS PERFORMANCE CONTRACT AGREEMENT

Date: 10/26/2015

THIS AGREEMENT was made and entered into by and between

Company name: McKinstry Essention, LLC.
Address: 13465 Midway Rd
Suite 100
Dallas, TX 75244
Contact Name: Michael Grabham
Contact Title: Regional Director, South
Telephone: (972) 532-4277 Fax: (972) 239-8835
Email: michaelg@mckinstry.com

Hereinafter called MCKINSTRY, and

Customer name: Brown County
Address: 200 South Broadway Street, Room 109, Brownwood, TX 76801
Contact Name: Judge E. Ray West, III
Contact Title: County Judge
Telephone: 325-643-2828
Email: ray.west@browncountytx.org

Hereinafter called the CUSTOMER, WITNESSETH

In consideration therefore, the parties agree as follows:

1. **SCOPE OF THE AGREEMENT.** MCKINSTRY agrees to construct the project and install various utility improvement measures, utility conservation measures, facility improvement measures, and/or operational efficiency improvements, which will result in utility savings or allow the CUSTOMER to avoid future capital or operational costs as set forth in detail in the Energy Services Proposal dated **10/19/2015** ("ESP") (Exhibit A). After installation, MCKINSTRY agrees to provide the post construction services identified in the ESP that are necessary to monitor, measure, and achieve the identified Project Benefits (savings, cost avoidances, and mutually agreed upon billable usage increases), subject to the terms of the guarantees set forth in the ESP. The CUSTOMER agrees to take all actions identified in this AGREEMENT that are necessary to achieve the Project Benefits identified. As a result and as specifically set forth in the ESP, MCKINSTRY will provide all labor, materials, equipment, design services, and supervision necessary to install the equipment ("Work") as well as provide the post construction monitoring, measurement and verification services for a one year period ("Services") detailed in the ESP. Monitoring, measurement and verification services for any other years are not part of this AGREEMENT and shall be under a separate agreement if necessary. MCKINSTRY shall supervise and direct the Work and shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all

October 26, 2015
(Exhibit #8)

portions of the Work and Services under this AGREEMENT. MCKINSTRY shall be responsible to pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation, and other facilities and services necessary for the proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

2. INTENT OF AGREEMENT. The parties intend that this Agreement shall conform with and be interpreted to conform with Texas Local Government Code § 302.

3. **COMPENSATION.** CUSTOMER shall pay MCKINSTRY the Contract Sum of **One million two hundred fifty eight thousand six hundred and eighty five dollars ($1,258,685)** for MCKINSTRY's performance of the Work and Services. Additional project financial information including total compensation and payment terms is as set forth in Section 4 of the ESP.

4. **APPLICATIONS FOR PAYMENT**. Payment of the Contract Sum shall be made in monthly installments based upon MCKINSTRY's progress in completing the installation of the Work, except that MCKINSTRY shall be paid an advance in respect to the Contract Sum in the amount of 10% of the Contract Sum as the first payment, the request for which shall be submitted to Customer upon the execution and delivery of this Agreement. The amount of the initial payment will offset all succeeding applications for monthly payment until exhausted. With respect to monthly progress payments, MCKINSTRY shall submit to Customer each month, an application for payment on a form mutually agreeable to MCKINSTRY and Customer. Customer will hold 5% of each monthly payment as retainage and shall pay such retainage upon MCKINSTRY's Final Completion of the Work. Customer shall pay or cause to be paid each invoice according to the requirements of the law. For payments not timely made, interest shall accrue in accordance with applicable law.

5. **TERM.** The Term of this AGREEMENT shall begin on the Commencement Date, which shall be the date of last signature of this AGREEMENT. If the Work is divided into phases or individual projects for which individual prices have been negotiated, then separate Commencement Dates shall apply to each phase or individual project. The Work shall be completed by the Substantial Completion Date, which shall be the earlier of:

   a. the date on which the CUSTOMER executes a Certificate of Substantial Completion; or

   b. **175 days after Commencement Date**, subject to adjustments as set forth in Paragraph 4 below.

   c. Commencement date must be on or before 10/20/2015 to meet the anticipated turn over date.

   If the Work is divided into phases or individual projects for which individual prices have been negotiated, then Substantial Completion Dates shall apply to each phase or individual project. Substantial Completion means that MCKINSTRY has provided sufficient materials and services to permit the CUSTOMER to operate the Equipment for its intended purpose or to achieve the intended benefit from the Work. The utility cost savings shall commence on the Substantial Complete Date and shall continue for twelve (12) months. The term of all utility cost savings guarantees as set forth in the ESP shall coincide with the term of the Services. If for any reason, the CUSTOMER cancels or breaches this AGREEMENT, including but not limited to its obligations pursuant to the Services portion of the AGREEMENT or other separate agreement, the utility cost savings guarantees in the ESP shall automatically terminate.

6. **DELAYS.** If MCKINSTRY is delayed in the commencement or completion of the Work by causes beyond its control and without its fault or negligence, including but not limited to fire, flood, labor disputes, supplier delays, abnormal adverse weather conditions, acts of God, acts of the public enemy or unusual deliveries caused by any of the foregoing occurrences, or failure by the CUSTOMER to perform its obligations under the AGREEMENT or failure by the CUSTOMER to cooperate with MCKINSTRY in the timely completion of the Work, then MCKINSTRY shall provide

written notice to the CUSTOMER of the existence, extent of, and reason for such delays. An equitable adjustment in Substantial Completion Date shall be made as a result.

7. **CERTIFICATE OF SUBSTANTIAL COMPLETION.** The Certificate of Substantial Completion to be executed by the CUSTOMER shall include:

    a. An acknowledgement by the CUSTOMER of the Utility Improvement Measures (UIM) substantially completed and the Substantial Completion Date for each UIM.
    b. An acknowledgment by the CUSTOMER of receipt of manuals and training provided by MCKINSTRY under the AGREEMENT.
    c. An acknowledgement by the CUSTOMER of the warranty start date and warranty period.
    d. A punchlist of items remaining to be completed by MCKINSTRY.
    e. Certificate of Occupancy

8. **CUSTOMER USE.** Upon turnover at Substantial Completion, CUSTOMER acknowledges that:

    a. MCKINSTRY does not warrant against system malfunction caused by improper use and MCKINSTRY shall not be liable for situations or damages that are the direct result of this improper use.

9. **TAXES, PERMITS, AND FEES.** MCKINSTRY shall be responsible for obtaining all permits and related permit fees associated with the Work and Services. MCKINSTRY shall pay sales, consumer, use, and other similar taxes and shall secure and pay for the building permit and other permits and governmental fees, licenses, and inspections necessary for proper execution. The CUSTOMER shall be responsible for real estate and personal property taxes where applicable. The CUSTOMER shall be responsible for securing any necessary approvals, easements, assessments, or zoning changes. MCKINSTRY makes no representations regarding the tax implications or CUSTOMER's accounting treatment of this AGREEMENT.

10. **WARRANTY.** MCKINSTRY warrants that materials and equipment furnished by MCKINSTRY will be of good quality and new; that the Work will be free from defects not inherent in the quality required or permitted; and that the Work and Services will conform to the requirements of the ESP. MCKINSTRY warrants that the Work shall be free from defects in material and workmanship arising from normal usage for a period of one year from the Substantial Completion Date and that its Services will be free from defects in workmanship, design, and material until the end of the Term, or for one year, whichever is earlier. Upon written notice from the CUSTOMER, MCKINSTRY shall, upon the mutual agreement of the parties, repair or replace the defective Work or re-perform Services that are deemed defective. These warranties do not extend to any Work or Services that have been abused, altered, misused, or repaired by the CUSTOMER or third parties without the supervision of and prior written approval of MCKINSTRY; or if MCKINSTRY serial numbers or warranty date decals have been removed or altered. The CUSTOMER must promptly report any failure of the installed equipment to MCKINSTRY in writing. All replaced equipment or parts become MCKINSTRY's property.

    THESE WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE OF MERCHANTABILITY AND FITNESS FOR A SPECIFIC PURPOSE.

    CUSTOMER understands that MCKINSTRY is a provider of services under this AGREEMENT. MCKINSTRY shall not be considered a merchant or a vendor of goods. If MCKINSTRY installs or furnishes a piece of equipment under this AGREEMENT, and that equipment is covered by a warranty from the manufacturer, MCKINSTRY will transfer the benefits of that manufacturer's warranty to CUSTOMER if this AGREEMENT terminates before the equipment manufacturer's warranty expires.

11. **CLEANUP.** MCKINSTRY shall keep the premises and the surrounding area free from accumulation of waste materials or rubbish caused by the Work and, upon completion of the Work, MCKINSTRY shall remove all waste materials, rubbish, tools, construction equipment, machinery, and surplus materials.

12. **SAFETY.** MCKINSTRY shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work or Services. MCKINSTRY shall comply with all applicable laws, ordinances, rules, regulations, and lawful orders of public authorities related to safety of persons or property. CUSTOMER agrees that access to the construction site will be limited. Any site access will be scheduled and coordinated through the MCKINSTRY project staff and will require a MCKINSTRY escort.

13. **HAZARDOUS MATERIALS.** Unless specifically noted in the ESP, MCKINSTRY's obligations expressly exclude any Work or Services of any nature associated or connected with the identification, abatement, cleanup, control, removal, or disposal of hazardous materials or substances, including but not limited to asbestos, lead or PCBs, in or on the premises. The CUSTOMER represents that, to the best of the CUSTOMER's knowledge, there is no asbestos or hazardous material in the CUSTOMER's premises that will in any way affect MCKINSTRY's work. Should MCKINSTRY become aware of or suspect the presence of asbestos or hazardous materials, MCKINSTRY shall have the right to stop work in the affected area immediately and notify the CUSTOMER. The CUSTOMER will be responsible for correcting the condition in accordance with all applicable statutes and regulations. MCKINSTRY shall assume no responsibility for any claims arising out of or relating to the presence of asbestos or hazardous materials in the CUSTOMER's building. MCKINSTRY shall be entitled to an equitable adjustment to the Substantial Completion Date and/or Contract Sum caused by encountering asbestos or other hazardous materials or substances on the premises.

14. **INSURANCE.** Prior to commencing the Work, MCKINSTRY shall provide a certificate of insurance showing its insurance coverage, and MCKINSTRY shall maintain such insurance in full force and effect at all times until the Work and Services have been completed, in the following minimum amounts:

COVERAGE		LIMITS OF LIABILITY
Workmen's Compensation Insurance of self insurance, including Employer's Liability		Statutory
Comprehensive General Liability Insurance, including Contractual		$5,000,000 One Occurrence $5,000,000 Each Aggregate
Comprehensive Automobile Liability Insurance		$5,000,000 Combined Single Limit

MCKINSTRY shall be responsible for obtaining builder's risk insurance as required

15. McKinstry shall furnish performance and payment Bonds, each in an amount equal to the Construction Cost. The Bonds shall cover completion of the physical work per the approved design, and shall not guarantee or warranty efficiency or system performance. The Bonds shall not cover any obligation of the contractor to ensure that the work as constructed will result in any particular level of energy savings. Any suit on the Bonds must be brought within the period of one (1) year after substantial completion, as defined in the contract; provided, however, that if this suit limitation is void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable. ~~McKinstry shall also furnish a retention bond in lieu of retainage held on respective monthly invoices.~~ MF 10/22/2015
ERW 10/29/15

16. **INDEMNITY. MCKINSTRY SHALL INDEMNIFY AND HOLD HARMLESS THE CUSTOMER, ITS EMPLOYEES, AGENTS, AND ASSIGNS AGAINST ALL CLAIMS, ACTIONS, DAMAGES, LIABILITIES, AND EXPENSES, INCLUDING ATTORNEY'S FEES, ARISING OUT OF OR RELATED TO ANY CLAIMS FOR BODILY INJURY OR PROPERTY DAMAGE, PATENT INFRINGEMENT OR CLAIMS OF CONSTRUCTION OR MATERIALMAN'S LIEN MADE BY ANY SUBCONTRACTOR OR MATERIALMAN, BUT ONLY TO THE EXTENT CAUSED BY MCKINSTRY'S NEGLIGENCE.**

17. **LIABILITY AND FORCE MAJEURE.** MCKINSTRY shall not be liable under this AGREEMENT in an amount in excess of its primary general comprehensive policy limits. Neither MCKINSTRY nor the CUSTOMER will be responsible to the other for any special, indirect, or consequential damages arising in any manner from the Work or Services. Neither party will be responsible to the other for damages, loss, injury, or delay caused by conditions that are beyond the reasonable control, and without the intentional misconduct or negligence, of that party. Such conditions include, but are limited to: acts of God; acts of Government agencies; strikes; labor disputes; fire; explosions or other casualties; thefts; vandalism; riots or war; or unavailability of parts, materials or supplies. If this AGREEMENT covers fire safety or security equipment, the CUSTOMER understands that MCKINSTRY is not an insurer regarding those services. MCKINSTRY shall not be responsible for any damage or loss that may result from fire safety or security equipment that fails to perform properly or fails to prevent a casualty loss. MCKINSTRY is also not responsible for any injury, loss, or damage caused by equipment that is not part of the work set forth in the ESP.

18. **MCKINSTRY'S PROPERTY.** All materials furnished by and used by MCKINSTRY personnel at the installation site, including drawings, designs, documentation, schematics, test equipment, software, and associated media remain the exclusive property of MCKINSTRY. The CUSTOMER agrees not to use such materials for any purpose at any time. The CUSTOMER agrees to allow MCKINSTRY personnel to retrieve and to remove all such materials remaining after installation or maintenance operations have been completed. If applicable, the CUSTOMER acknowledges that all MCKINSTRY software included is proprietary and will be delivered only under the provisions of an appropriate licensing agreement that will limit its use to the system purchased under this AGREEMENT.

19. **MODIFICATIONS.** Additions, deletions, and modifications to this AGREEMENT may be made upon the mutual agreement of the parties. The parties contemplate that such modifications may include but are not limited to the installation of additional utility conservation measures, facility improvement measures, and operational efficiency improvements or the furnishing of additional services within the identified facilities, as well as other facilities owned or operated by the CUSTOMER. These modifications may take the form of additional phases of work or modifications to the original scope of Work or Services.

20. **CHANGE ORDERS**. A Change Order is a written instrument signed by the CUSTOMER and MCKINSTRY stating their agreement upon all of the following:

    a. Change in the Work;
    b. the amount of the adjustment, if any, in the Contract Sum; and
    c. the extent of the adjustment, if any, in the Contract Time.

    If the CUSTOMER requests a proposal for a change in the Work from MCKINSTRY and subsequently elects not to proceed with the change, a Change Order shall be issued to reimburse the MCKINSTRY for any costs incurred for estimating services, design services or preparation of proposed revisions to the Contract Documents.

    When the CUSTOMER and MCKINSTRY reach agreement concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and shall be recorded by preparation and execution of an appropriate Change Order.

The Owner shall have authority to order minor changes in the Work not involving adjustment in the Contract Sum or extension of the Contract Time and not inconsistent with the intent of the Construction Documents. Such changes shall be effected by written order. MCKINSTRY shall carry out such written orders promptly.

Pricing for changes orders will include:

a. additional costs of professional services;
b. costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers' compensation insurance;
c. costs of materials, supplies and equipment, including cost of transportation, whether incorporated or consumed;
d. rental costs of machinery and equipment, exclusive of hand tools, whether rented from the MCKINSTRY or others;
e. costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the Work; and
f. additional costs of supervision and field office personnel directly attributable to the change.
g. MCKINSTRY overhead and profit

21. NOTICES. All notices or communications related to this AGREEMENT shall be in writing and shall be deemed served if and when sent by facsimile or mailed by certified or registered mail to the contact person(s) and address(es) listed on page 1 of this Utility Savings Performance Contract.

22. INCLUSIONS & EXCLUSIONS. Refer to Exhibit A – ESP for detailed listing.

23. ADDITIONAL TERMS.

A. Any failure of MCKINSTRY to require strict performance by the CUSTOMER, or any waiver by MCKINSTRY of any requirement under this AGREEMENT, does not consent to or waive any subsequent failure or breach by the CUSTOMER.
B. If any provision of this AGREEMENT is invalid under any applicable law, that provision shall not apply, but the remaining provisions shall apply as written.
C. The captions and titles in this AGREEMENT are for convenience only and shall not affect the interpretation or meaning of this AGREEMENT.
D. This AGREEMENT is the full agreement between MCKINSTRY and the CUSTOMER as of the date it is signed. All previous conversations, correspondence, agreement, or representations related to this AGREEMENT (including any Project Development agreement) are not part of the agreement between MCKINSTRY and the CUSTOMER and are superceded by this AGREEMENT.
E. This AGREEMENT shall be construed in accordance with the laws of the State of Texas.

24. AGREEMENT DOCUMENTS. By this reference, the following exhibits are attached hereto and made a part of this AGREEMENT.

Exhibit "A": Energy Services Proposal, dated 10/26/2015 ("ESP")

Exhibit "B": Brown County Phase Two: Elections/Treasurer Building 50% Construction Drawings and Specifications dated 10/26/2015

Exhibit "C": Brown County Phase Two: Elections/Treasurer Building Project Schedule

IN WITNESS WHEREOF of MCKINSTRY and CUSTOMER have executed this AGREEMENT, effective the date of the last authorized signature unless a different Commencement Date is established in Paragraph 2.

MCKINSTRY ESSENTION, LLC

10/21/2015
Date

Authorized Signature

MICHAEL FLORES
Printed Name

VICE PRESIDENT
Title

Brown County

October 26, 2015
Date

E Ray West
Authorized Signature

Judge E. Ray West
Printed Name

County Judge

Brown County Phase II - Elections Building
Energy Services Proposal

BROWNWOOD, TEXAS
26 OCTOBER 2015

FOR THE LIFE OF YOUR BUILDING

Proprietary Information

McKinstry has invested time and resources in developing the information included in this document. We believe that our ideas, products and services are unique and are essential to our business success. We consider the information contained herein to constitute confidential trade information on loan to you. We therefore kindly request that you do not permit any of this material to be copied or distributed in any manner or form to persons outside the group directly responsible for evaluation of its contents without the expressed written permission of the parties named above. We understand that this proposal may be subject to the access to information legislation and acknowledge that recipients may be obliged to disclose non-competitive information. McKinstry requests that we be contacted prior to the release of any information pertaining to this offering.

We sincerely appreciate your compliance with this request.

Contents

Executive Summary

1.1 OVERVIEW

McKinstry Essention (herein after as McKinstry) is pleased to present this proposal for the implementation of a new construction Energy Savings Performance Contract at Brown County in Brownwood, Texas.

This proposal presents the contractual terms under which McKinstry and Brown County will work together over the term of the project. This Proposal describes the scope, costs, guarantees, and other aspects of the project.

The services included in this Proposal include design, construction, and system verification. Although Brown County will operate and maintain the new facility and equipment, McKinstry will provide an initial commissioning of the systems installed and will provide commissioning documentation of system operation and performance, proving the ability to realize the necessary savings.

1.2 PROJECT DESCRIPTION

This project consists of the re-use of County owned property and existing building footprint for the construction of a new Elections and Treasury Office Building.

1.3 SUMMARY OF BENEFITS

FINANCIAL BENEFITS

Section 4 of the Proposal provides information related to specific project financials related to this project. The lump sum project price is $1,258,685.00. This is exclusive of any utility incentives and grants that may be available to Brown County.

The improvements are projected to produce over 8,267 kWh and 35 kW of annual energy savings. This equates to savings of $715.00 per year.

EMISSIONS SUMMARY

The energy savings produced will directly reduce the amount of power produced by the utility. To compute the environmental impact, McKinstry uses factors from eGRID2007 Version 1.1. The Emissions & Generation Resource Integrated Database (eGRID) is a comprehensive source of data on the environmental characteristics of electric power generated in the United States. Factors for non-electric utility savings were obtained from the U.S. EPA.

On average, one car produces 11,470 pounds of CO2 annually and one acre of trees absorbs 8,066 pounds of CO2 annually. By implementing this building improvement, CO2 emissions will be reduced by 10,110 pounds annually, which is equivalent to removing 1 car from the road or planting 1 acre of trees.

1.4 LUMP SUM PROJECT PRICE

McKinstry guarantees that the lump sum project price, related specifically to the project scope defined herein, will be $1,258,685.00.

1.5 CONCLUSION

This project represents an excellent opportunity for Brown County to greatly improve its facilities and expand its ability to serve the local community while saving energy. McKinstry looks forward to working with Brown County in making this project a success.

Scope of Work

2.1 SCOPE OF WORK & FACILITY IMPROVEMENT MEASURE (FIM) SUMMARY

For detailed scope of work descriptions please refer to Exhibit B & Exhibit C of this ESPC.

2.2 MCKINSTRY SERVICES

McKinstry will include the following services related to this project:

1. ENERGY SAVINGS CALCULATIONS: The energy modeling is complete and is submitted under Exhibit 1 – "Directed Engineering Study" which is included in the ESP.
2. DESIGN SERVICES: McKinstry will provide a detailed engineering design as required to complete the work. In addition, McKinstry will also provide construction support services, start-up, testing, as-built drawings of systems installed, and provide relevant operations and maintenance manuals.
3. CONSTRUCTION: Provide, or cause to be provided, all material, labor, and equipment, including paying for permits, fees, bonds, and insurance, required for the complete and working installation of McKinstry's equipment.
    A. McKinstry shall provide a site superintendent who will be responsible for the onsite supervision and coordination of trades and subcontractors as required. This individual's responsibilities will also include regular work observations, quality control, site security, enforcement of the site specific safety plan, as well as coordinating any impact upon building tenants with the Owner.
    B. McKinstry may perform portions of the contraction work or may subcontract portions to qualified firms.
    C. When McKinstry has completed the installation of the Equipment, including start-up, operations verification, and training in accordance with the Proposal, McKinstry will provide to Owner a "Notice of Commencement of Energy Savings."
    D. At the conclusion of the project, McKinstry will submit a "Notice of Substantial Completion" to the Owner.
    E. Existing equipment deficiencies, unless specified for inclusion in scope of work, shall be the responsibility of the Owner. McKinstry will document any deficiencies uncovered during construction under the agreed upon scope of work.
    F. All existing equipment safeties are the responsibility of the Owner.
4. CONSTRUCTION MANAGEMENT: McKinstry will provide construction management services to coordinate and supervise the work. The Owner is expected to coordinate day-to-day communications with tenants and any scheduling of tenant relocations in and around occupied areas. McKinstry will provide on-site project management of the work and will coordinate any impact upon building tenants with the Owner.
5. OPERATION TRAINING: McKinstry will provide on-going training of building staff during construction if applicable.
6. PERFORMANCE MAINTENANCE: McKinstry will provide ongoing monitoring and support services to help ensure that predicted savings are achieved throughout the term of the agreement. Ongoing services provided in year one are included in the price of the proposal. Ongoing services proposed for the remaining years shall be included under a future services contract and shall be at the discretion of the Owner to terminate or modify after year one.

Scope of Work

7. EQUIPMENT MAINTENANCE: McKinstry will provide no equipment maintenance or repairs after the warranty period. Following the completion of the installation and Owner acceptance of the Equipment, the Owner shall provide all necessary service, repairs, and adjustments to the Equipment so that the Equipment will perform in the manner and to the extent set forth in the Proposal. McKinstry shall have no obligation to service or maintain the Equipment after the warranty period.
8. WARRANTY: McKinstry will warrant equipment for one year following Notice of Substantial Completion. Specific information regarding equipment warranty will be passed on to Owner.
9. HAZARDOUS WASTE OTHER THAN PCB LIGHTING BALLASTS: Should the project require removal or disposal of hazardous material, McKinstry may have the hazardous material or substances removed and disposed of at the request of the Owner. McKinstry will not assume ownership of the material but may act on behalf of the Owner to properly remove and dispose of the material. The Owner shall pay McKinstry for the cost of such work. The Owner agrees and acknowledges that it has not relied on or employed McKinstry to analyze or identify the presence of any hazardous substance on the Owner's premises. The cost of hazardous material abatement and disposal not specifically defined in this proposal is not included in this project.
10. HAZARDOUS WASTE ASSOCIATED WITH PCB LIGHTING BALLASTS: Where PCB ballasts are discovered as part of lighting retrofit work, McKinstry shall dispose of PCB ballasts through an approved hazardous waste vendor. The cost of hazardous material abatement and disposal associated with PCB ballasts is included in this proposal.
11. ASBESTOS: Limited asbestos abatement or removal shall **not** be included in scope of work. This work is not limited to the Asbestos identified in Exhibit D of the contract and only on areas where McKinstry will be performing work. The Asbestos abatement is required to be performed by a licensed and qualified contractor. McKinstry will not perform asbestos abatement or be liable for this work but will pay for and manage this contractor during construction. All other encounters or work-stoppage due to asbestos materials will be at Owner's expense or requested to be removed by the Owner.

2.3 EXTENT OF SUBCONTRACTING

McKinstry may subcontract the energy audit, design, construction management, start-up, and training portions of this Contract to qualified firms upon review and approval by Owner.

2.4 PROJECT SCHEDULE

The following information lists several milestone dates for the project. McKinstry will develop a detailed schedule outlining all of the various design, pre-construction, construction, and closeout tasks associated with the project and that interfaces with other construction work not under this proposal.

ESP Review and Approval Process	10/9/2015	10/26/2015
McKinstry Design and Pre-Construction	10/20/2015	12/21/2015
Final Construction Documents	12/5/2015	12/5/2015
Construction	12/21/2015	5/5/2016
Commissioning and Closeout	4/25/2016	5/30/2016

Energy Cost Savings Guarantee

3.1 GUARANTEE OVERVIEW

1. Philosophy: McKinstry is prepared to guarantee any portion of a project over which it has direct control. Where McKinstry does not have direct control (such as burn hours associated with lighting), we are prepared to work with the customer to devise a method of Measurement and Verification (M&V), which will provide the highest degree of assurance that the energy cost savings exist.
2. This Project: For this project, McKinstry is prepared to guarantee the performance of the installed initiatives to reduce energy consumption. For the target energy reductions for the initiatives that will be implemented, please refer to Table 3.1. Based upon the stipulated conditions as enumerated by the Brown County personnel and the utility rates as described below, the utility cost savings are shown in Table 3.1.
3. On-going Services: No on-going Performance Assurance is proposed or required for this project.

3.2 FIM SPECIFIC PERFORMANCE ASSURANCE METHODOLOGY

1. Guarantees: Table 3.1 provides the specific energy consumption savings for each FIM and the guarantee that McKinstry will provide associated with that measure. Savings calculations are based upon both baseline operating characteristics and proposed operation criteria:
   A. Baseline: "Baseline" refers to the existing operating characteristics that were used to calculate energy cost savings. The baseline operating characteristics, including system performance and operational expenditures, which were used for this project are provided in Exhibit A. In general, all parties acknowledge the baseline associated with any specific measure has been derived from the following sources:
      1) Operating information is determined through design drawings and the anticipated function of the facility.
      2) Stipulated factors such as burn hours, occupancy, or operational expenditures have been estimated.
   B. Proposed: The proposed operating criteria, including system performance and operational expenditures, which were used for savings calculations, are provided in the construction documents. Systems must be operated per the proposed criteria to ensure energy cost savings are realized. McKinstry will provide the initial start-up, commissioning, and programming of the system to ensure that the systems operate per the proposed operating criteria. Brown County acknowledges their responsibility to ensuring that these criteria are maintained and associated energy savings are realized. Energy Savings Guarantees are predicated on Brown County maintaining their responsibilities as provided below in "On-Going Owner Responsibilities."
2. Performance Assurance (PA): The construction documents identify the scope of work required to achieve the proposed energy savings. Once the construction of the facility is complete and the final commissioning report is delivered verifying the work to be in accordance with the proposed criteria, the savings due to the performance of the equipment or measure shall be deemed as met. McKinstry has not proposed measurement of these FIMs. The site specific Performance Assurance Program encompasses the following elements:
   A. Closeout Commissioning Report: McKinstry will provide a closeout commissioning report during the one month period starting three months after the Notice of Commencement of Energy Savings.

B. First Year On-going Reporting: No first year reporting is proposed or required by this project.

C. Years 2-15 On-going Reporting: No on-going reporting is proposed or required by this project.

3.3 UTILITY RATES

1. Utility Rate: For the purpose of calculating savings, the utility rates used will be the utility rates as paid by Brown County to the utility company during the pertinent period, adjusted for any rate schedule changes made by the utility company. The utility rate calculated is the same rate as the Extension Office because these buildings are of similar size and have the same mechanical equipment capacities. In the event that a building has multiple meters on different rate schedules, the per-unit cost of the utility will be the average of all the rate schedules in effect at that facility.
2. Base Utility Rate: Refer to the Energy Savings Performance Contract - Phase 1 ESP for the Base Utility Rates (including sales tax) for the Extension Office.
3. Rate Schedule Changes: When the utility company makes a change to the rate schedule, the new rate will be used for calculating savings realized during a given period. If a rate schedule change occurs partway through a period, an aggregate rate comprised of a weighted average between the old and the new rate will be used. The weighting will be based upon the portion of the period that each rate applied.

3.4 STANDARDS OF COMFORT SERVICE

The following section provides the standards of comfort, which Brown County must maintain to ensure the comfort of the occupants, and upon which all energy calculations were based.

HVAC COMFORT

Heating, ventilating and air conditioning (HVAC) systems provided by McKinstry will provide comfort and indoor air quality in accordance with the Standards of Comfort below. This standard will pertain only to buildings and areas of buildings in which McKinstry is installing HVAC equipment that has direct control over space comfort conditions. HVAC comfort conditions cannot be guaranteed when operable windows or doors are open.

Indoor Conditions:

Occupied:

Winter Heating Set Point – 70 degrees F

Summer Cooling Set Point – 74 degrees F (where mechanical cooling systems are employed)

Unoccupied:

Minimum - 60 degrees F

Maximum - 80 degrees F (where mechanical cooling systems are employed)

Minimum outside air per occupant:

In accordance with ASHRAE standards.

Energy Cost Savings Guarantee

LIGHTING

Illumination Levels Verification:

Illumination levels shall be as recommended by the Illuminating Engineering Society of North America (IESNA). Design calculations shall be made for each space, using an 80% lamp depreciation/maintenance factor.

Illumination Levels Design:

The lighting and illumination levels for lighting systems provided by the McKinstry Co. will meet or exceed current recommended practices by the Illuminating Engineering Society of North America for illumination levels for the various tasks that are conducted throughout Brown County.

3.5 ON-GOING OWNER RESPONSIBILITIES

Brown County shall provide the following services as part of this energy services project. In the event that these services are not provided, energy savings and associated guarantees will be modified to reflect the associated impact.

1. Maintain all equipment per manufacturer's recommendations and proposed maintenance schedule.
2. Maintain all sequence of operations and performance criteria related to installed systems as proposed and designed.
3. Provide other FIM specific on-going responsibilities as provided in closeout commissioning report.
4. Provide McKinstry with copies of actual monthly utility billing information on a quarterly basis for the duration of the ongoing service period as required and requested. This includes electric, natural gas, and fuel oil. For this project, the ongoing service period shall be one year. The associated facilities where utility information shall be provided include all meters providing direct or indirect service to all buildings included in this project.
5. Provide McKinstry all internal sub-meter data, including electric and condensate meters, providing direct or indirect service to all buildings included in this project.
6. Provide McKinstry access to energy management and control systems for the purpose of collecting and logging data over time as required for performance verification.
7. Brown County shall notify McKinstry in writing with regards to any changes or alterations to buildings that will affect energy usage. This notification must be provided within two weeks of the change. This includes occupancy or use changes, computer load or other load changes, scheduling changes, and sequence of operations changes.

3.6 NON-PERFORMANCE

In the event the equipment performance is not met, McKinstry accepts responsibility for additional electricity used by the equipment as a result of the reduced performance. McKinstry may, at its option, execute any of the following options:

1. Repair or replace equipment as required to meet required performance.
2. Make payments for the extra energy consumption to Brown County. In the event that McKinstry chooses

the payment option, McKinstry reserves the right to select either an annual payment for the duration of the finance term or a one-time lump-sum payment of the same amount. In either case, the payment will be calculated based upon the quantity of additional electricity used and the Base Utility Rate as described above.

3.7 CHANGE OF USE

In the event that Brown County chooses to make changes to the facilities that require set point adjustments, longer operating hours, or continuous equipment operation, Brown County agrees that:

1. Savings deemed as met described above will continue to be deemed as met.
2. Additional cost of extended equipment operation is a cost of the change, not due to a failure of McKinstry or its equipment.
3. McKinstry shall not be responsible for any increase in energy, maintenance, or any other costs incurred as a result of the extended equipment operation.
4. McKinstry at its option may make a baseline energy use adjustment to account for a change-of-use at any facility.

Table 3.1 - Energy Savings Summary

Project	Brown County Ph. II - Elections Bldg
Scenario	ESP (Final)
Date	10/7/2015

		Electricity				Total **
Facility Improvement Measures	Facility	kW	kW ($)	kWh	kWh ($)	($)
30.01 - Elections/Treasury Building	Brown County Elections/Treasury Office	35.0	$292	8,267	$423	$715

* The savings shown in this table are less than the calculated savings unless a guarantee multiplier of 100% is shown.

** The guarantee is based on Key Performance Indicators shown in Table 3.2. Refer to Section 3 of the ESP for the method of converting Key

*** The guarantee is based on the aggregate savings for all FIMs, not on individual FIM savings.

Table 3.2 - M&V Plan Outline

Project	Brown County Ph. II - Elections Bldg
Scenario	ESP (Final)
Date	10/8/2015

FIM Name	Facility	IPMVP Option	Key Performance Indicators	Baseline Values	Proposed Values	Audit Stage (Baselining) Tasks	Post Retrofit (Commissioning) Tasks	Annual Tasks	Ongoing Owner Responsibilities	Stipulated Factors
30.01 - Elections/Treasury Building	Brown County Elections/Treasury Office	Non-Measured	In accordance with 2009 IECC Wall Insulation R-Value Roof Insulation R-Value Mechanical Cooling Efficiency SEER Rating Mechanical Heating Efficiency COP Rating Lighting Efficiency Watts/Sq Ft Rating	Wall Insulation R-Value 11.9 Roof Insulation R-Value 18.2 Mechanical Cooling Efficiency 13 SEER Mechanical Heating Efficiency 2.93 COP Lighting Efficiency 1 Watts/Sq Ft	Wall Insulation R-Value 23.3 Roof Insulation R-Value 38.9 Mechanical Cooling Efficiency 18.13 SEER Mechanical Heating Efficiency 2.93 COP Lighting Efficiency 0.688 Watts/Sq Ft	None	Verify Proposed KPIs are installed.	None	Maintain building and equipment per manufacturer recommendations.	All other Energy Model Inputs

Project Financials

4.1 LUMP SUM PROJECT PRICE

McKinstry guarantees that the Lump Sum Project Price will be $1,258,685.00

4.2 ITEMS INCLUDED IN LUMP SUM PROJECT PRICE

Lump Sum project price <u>includes</u> the following:

1. Engineering audit, including the cost for preparation of this proposal.
2. Engineering design including architectural, civil/site, geotechnical, structural, mechanical, electrical, and plumbing.
3. Construction management services.
4. 3rd Party inspections including:
    a. Soils testing
    b. Concrete samples and compression test
    c. Structural steel and reinforcement inspections
    d. Masonry inspections
5. Owner agrees to all modified specifications listed throughout the construction drawing set and specifications per October 19th, 2015 Board Meeting as approved. For any submittals that are required and not covered by the construction drawing set or the specifications, McKinstry will provide submittals to the Owner and the Owner will provide written approval or disapproval to the submittals within five (5) business days following receipt by Owner. Submittals to ensure:
    a. That the design and installation of the material and equipment are adequately described and illustrated; and
    b. That the design and installation of the material and equipment are consistent with the current design.
    c. Any submittals approved by the Owner and then changed by the Owner will cause a change in cost to reflect all cost associated with returning ordered material and any additional material and labor charges.
6. Installation of McKinstry equipment including the following costs as specified in the scope of work:
    A. All costs paid by McKinstry for the installation of the equipment. This includes costs paid to subcontractors or directly to McKinstry personnel, when related to installation or system verification of McKinstry equipment.
    B. The portion of reasonable travel, lodging, and meal expenses of officers or employees incurred while traveling in discharge of duties connected with the Work.
    C. Cost of all equipment, materials, supplies, and equipment incorporated in the Work, including costs of transportation thereof.
    D. Cost or rental charges, including transportation and maintenance, of all materials, supplies, equipment, temporary facilities, and hand tools not owned by the workers, which are consumed in the performance of the Work and cost less salvage value on such items used but not consumed which

remain the property of McKinstry.

E. Cost of premiums for all bonds and insurance, which McKinstry is required to purchase and maintain.

F. Sales, use, or similar taxes related to the Work and for which McKinstry is liable imposed by a governmental authority.

G. Permit fees, royalties, and deposits lost for causes other than McKinstry's negligence.

H. Losses and expenses not compensated by insurance or otherwise, sustained by McKinstry in connection with the Work, provided they have resulted from causes other than the fault or neglect of McKinstry. Such losses shall include settlements made with the written consent and approval of the Owner. If, however, such loss requires reconstruction and McKinstry is placed in charge thereof, he shall be paid for his services a fee.

I. Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, express mail services, and similar petty cash items.

J. Demolition cost and cost of removal of all debris except hazardous material.

K. Costs incurred due to an emergency affecting the safety of persons and property.

L. Other costs incurred in the performance of the Work if and to the extent approved in advance in writing by the Owner.

M. Cost of equipment startup, training, system verification, and balancing performed by McKinstry.

7. Construction Bonds (including Performance & Payment and Retention bonds), Liability Insurance, and Builder's Risk Insurance.

8. McKinstry fee. This includes McKinstry's remuneration for compensation of personnel, expenses, risks related to the project, overhead, and profit.

Lump Sum project price <u>does not include</u> the following:

1. Engineering and design services not described above.

2. McKinstry specifically excludes property development fees such as utility use fees, traffic impact fees, and school tariffs. These are the responsibility of Brown County.

3. Limited asbestos abatement or removal shall not be included in scope of work. This work is limited to the asbestos identified in Exhibit D of the contract and only on areas where McKinstry will be performing work. The asbestos abatement will be required to be performed by a licensed and qualified contractor. McKinstry will not perform asbestos abatement or be liable for this work but will pay for and manage this contractor during construction. All other encounters or work-stoppage due to asbestos materials will be at Owner's expense or requested to be removed by the Owner.

4. Due to the existing building not being demoed during our preliminary design phase, we were unable to verify subsurface conditions. Therefore, we have included 8" of subgrade preparation for the building pad in the base bid. If additional subgrade preparation is required due to unknown subsurface conditions, this cost will be presented in the form of a change order.

5. The parking lot on the west side of the building will use the existing slab from the old building. This scope does not include resurfacing or repair, other than what listed in the drawings.

6. This scope of work does not include the moving or relocation of any existing furniture or property.

7. This scope of work does not include repair of replacement of any existing building systems and/or utilities that do not meet current code compliance and it will be the responsibility of the Owner to advise McKinstry to act on their behalf to address and remedy any/all non-code-compliant building systems at a cost to the Owner.
8. This scope of work does not include utility locates of existing water, gas, power, data, irrigation, underground storage tanks, medical gas infrastructure, and fire mains. Any unidentified utilities or underground structures encountered during construction will be repaired or removed at a cost to the Owner.
9. This scope of work does not include the repair or replacement to any pre-existing equipment, materials, or building systems that are currently damaged or un-operable.
10. This scope does not include any extended warranties on equipment/materials previously installed as a result of past projects.
11. If in the performance of the work McKinstry finds latent, concealed, or subsurface physical conditions which differ from the conditions McKinstry could have observed or reasonably should have discovered upon reasonable inspection, or if physical conditions are materially different from those normally encountered and generally recognized as inherent in the kind of work provided for in this contract, then the lump sum total price and/or date of substantial completion shall be equitably adjusted by a change order within a reasonable time after the conditions are first observed.

4.3 CONSTRUCTION CONTINGENCY

No Brown County controlled contingency has been established for this project. A McKinstry controlled construction contingency has been established for this project to cover McKinstry errors, omissions, and budget overruns occurring during design, development, and pricing of this project. McKinstry has included all required contingency funds in the lump sum project price. Any Brown County-directed changes will be covered under separate change orders and not by the McKinstry controlled contingency.

4.4 ALLOWANCES

Allowances are described and detailed in the construction documents, Executive Summary, and specifications.

4.5 ONGOING SERVICES

No ongoing services have been proposed as part of this contract.

4.6 ACCOUNTING RECORDS

McKinstry shall check all material, equipment, and labor entering into the Work and shall keep account as may be necessary for proper financial management under this Agreement.

4.7 MCKINSTRY COMPENSATION

1. Terms: Net 30 days from the date of invoice, monthly billing as the job progresses.
2. Payments: At a minimum, payments will be made in the amount of 100%, less retention of five percent per the contract, at the completion and implementation of any individual Facility Improvement Measure (FIM) in the amount of that FIM as delineated in the contract. If more than one FIM is completed in a

monthly period, all of those FIMs will be paid.

3. Finance Charges on Unpaid balances: Payments due and unpaid shall be subject to interest charges per applicable state law.

4.8 FINANCING

McKinstry enjoys over 50 years of experience within the engineering and contracting industry and its financial strength exceeds the industry average. This strength makes it possible to provide and assist with the financing needs of its customers.

4.9 TERMS AND CONDITIONS

TERMS OF AGREEMENT

The Contract shall be effective and binding upon the parties immediately upon its execution and the period from contract execution until the Commencement Date shall be known as the "Interim Period." All energy savings achieved during the interim period will be fully credited to Owner, and may be used to offset any loss of energy savings, as mutually agreed to by the Owner and McKinstry.

INSURANCE AND BONDING

McKinstry shall furnish performance and payment Bonds as required by state law, each in an amount equal to the Construction Cost. The Bonds shall cover completion of the physical work per the approved design, and shall not guarantee or warranty efficiency or system performance. The Bonds shall not cover any obligation of the contractor to ensure that the work as constructed will result in any particular level of energy savings. Any suit on the Bonds must be brought within the period of one (1) year after substantial completion, as defined in the contract; provided, however, that if this suit limitation is void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

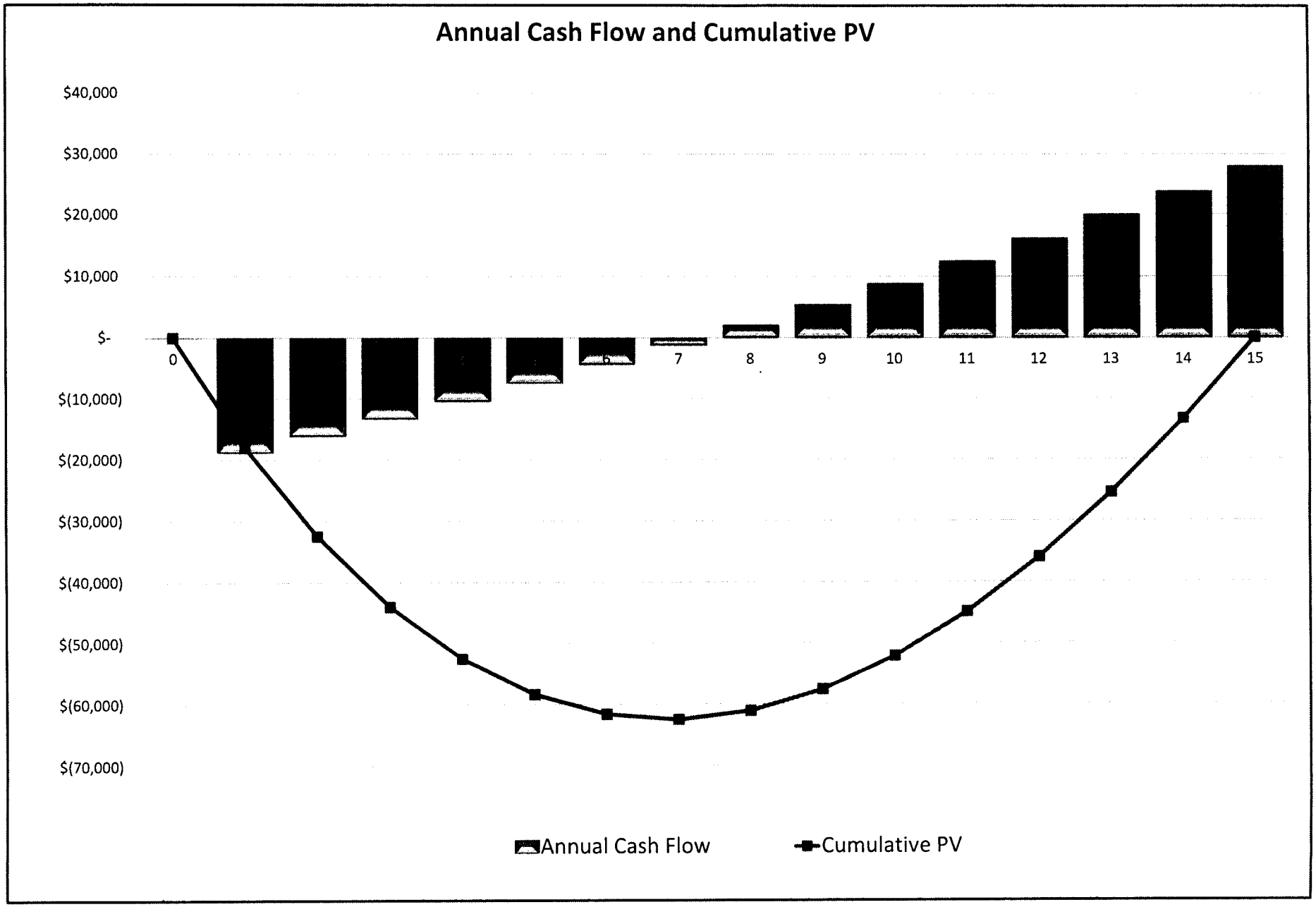
McKinstry may also furnish a retention bond in lieu of retainage held on respective monthly invoices.

Table 4.2 - Facility Improvement Measure (FIM) Summary

Project	Brown County Ph. II - Elections Bldg
Scenario	ESP (Final)
Date	October 26, 2015

Facility Improvement Measures	FIM Description	Facility	Budget *	Annual Utility Savings	Annual Operational Savings **	Simple Payback (SPB)	Potential Incentives ***	Net Customer Cost (with Incentives)	Simple Payback (SPB) (with Incentives)
30.01 - Elections/Treasury Building	Design and Construction of a new 4,000 sq. ft. Offcie building with the intended use as a Elections Hall and the new space for the County Treasury Department. This building will be constructed as a PEMB shell with a brick veneer utilizing a Split system, heat pump and traditional interior office construction	Brown County Elections/Treasury Office	$1,258,685	$715	$83,000	15.0	$0	$1,258,685	15.0
		Totals	**$1,258,685**	**$715**	**$83,000**	**15.0**	**$0**	**$1,258,685**	**15.0**

* Since design cost, audit cost, etc. are distributed among the FIMs, the total project cost will not go up or down by exactly the amounts shown here if a FIM or FIMs are dropped.
** For non recurring operational savings, the values are averaged over the 15 year length of this analysis.
*** Incentives are contingent on final approval and are not guaranteed. Funds are shown for reference only.


Annual Cash Flow and Cumulative PV
$40,000
$30,000
$20,000
$10,000
$-
$(10,000)
$(20,000)
$(30,000)
$(40,000)
$(50,000)
$(60,000)
$(70,000)
0
6
7
8
9
10
11
12
13
14
15
Annual Cash Flow
Cumulative PV

Brown County Ph. II
Election Building

26 OCTOBER 2015

Section 5
Exhibit A
Directed Engineering Study

McKinstry
For The Life Of Your Building

Directed Engineering Study

Table of Contents

Directed Engineering Study

5.1.1 PURPOSE AND ORGANIZATION

This exhibit documents the analysis performed to establish the utility and operational savings for the project.

The information is organized by FIM (Facility Improvement Measure) as follows:

- FIM Cover Page
- Savings calculation methodology and analysis

Additionally, relevant site survey data, measurement and verification data, utility information, and miscellaneous back-up information are provided in the sections following the various FIM sections.

Directed Engineering Study

5.1.2 Facility Improvement Measures – Calculations

McKinstry
For The Life Of Your Building

McK8760 - General Information

Project Information:

Project Name	Brownwood County Elections Facility	FIM Name	New High Performance Design Build Office Building
TCO Project ID		Tech Contact	Kyle Leonard
TCO Tool FIM ID		Date	10/7/2015

Weather Data:

Nearest Weather Station	TX, ABILENE DYESS AFB	Station ID	690190TY.xls

Description of FIM From TCO Tool:

The new Brown County Elections Facility has been modeled to calculate energy savings by increasing certain building and equipment parameters over what is required by code. The following items are the source of the energy savings:

1. Mechanical Cooling Efficiency
2. Mechanical Heating Efficiency
3. Lighting
4. Wall Insulation R-Values
5. Roof Insulation R-Values

The baseline is modeled using the 2009 IECC minimum requirements for the above items. See the inputs page for the baseline and proposed values for the savings parameters that will be highlighted in grey.

McK8760 - HVAC Schedules

New High Performance Design Build Office Building

Baseline HVAC Equipment Daily Schedules

0 = Unoccupied Mode 1 = Occupied Mode

Schedule A - Load Schedule A

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0
3	4	0	0	0	0	0	0	0
4	5	0	0	0	0	0	0	0
5	6	0	1	1	1	1	1	0
6	7	0	1	1	1	1	1	0
7	8	0	1	1	1	1	1	0
8	9	0	1	1	1	1	1	1
9	10	0	1	1	1	1	1	1
10	11	0	1	1	1	1	1	1
11	12	0	1	1	1	1	1	1
12	13	0	1	1	1	1	1	1
13	14	0	1	1	1	1	1	0
14	15	0	1	1	1	1	1	0
15	16	0	1	1	1	1	1	0
16	17	0	1	1	1	1	1	0
17	18	0	1	1	1	1	1	0
18	19	0	0	0	0	0	0	0
19	20	0	0	0	0	0	0	0
20	21	0	0	0	0	0	0	0
21	22	0	0	0	0	0	0	0
22	23	0	0	0	0	0	0	0
23	24	0	0	0	0	0	0	0
Daily Totals		0	13	13	13	13	13	5

Schedule B - Load Schedule B

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0
3	4	0	0	0	0	0	0	0
4	5	0	0	0	0	0	0	0
5	6	0	0	0	0	0	0	0
6	7	0	0	0	0	0	0	0
7	8	0	1	1	1	1	1	0
8	9	0	1	1	1	1	1	1
9	10	0	1	1	1	1	1	1
10	11	0	1	1	1	1	1	1
11	12	0	1	1	1	1	1	1
12	13	0	1	1	1	1	1	1
13	14	0	1	1	1	1	1	0
14	15	0	1	1	1	1	1	0
15	16	0	1	1	1	1	1	0
16	17	0	1	1	1	1	1	0
17	18	0	1	1	1	1	1	0
18	19	0	1	1	1	1	1	0
19	20	0	1	1	1	1	1	0
20	21	0	1	1	1	1	1	0
21	22	0	1	1	1	1	1	0
22	23	0	0	0	0	0	0	0
23	24	0	0	0	0	0	0	0
Daily Totals		0	15	15	15	15	15	5

Schedule C - Load Schedule C

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0
3	4	0	0	0	0	0	0	0
4	5	0	0	0	0	0	0	0
5	6	0	0	0	0	0	0	0
6	7	0	0	0	0	0	0	0
7	8	0	1	1	1	1	1	0
8	9	0	1	1	1	1	1	1
9	10	0	1	1	1	1	1	1
10	11	0	1	1	1	1	1	1
11	12	0	1	1	1	1	1	1
12	13	0	1	1	1	1	1	1
13	14	0	1	1	1	1	1	0
14	15	0	1	1	1	1	1	0
15	16	0	1	1	1	1	1	0
16	17	0	1	1	1	1	1	0
17	18	0	1	1	1	1	1	0
18	19	0	1	1	1	1	1	0
19	20	0	1	1	1	1	1	0
20	21	0	1	1	1	1	1	0
21	22	0	1	1	1	1	1	0
22	23	0	0	0	0	0	0	0
23	24	0	0	0	0	0	0	0
Daily Totals		0	15	15	15	15	15	5

Proposed HVAC Equipment Daily Schedules

0 = Unoccupied Mode 1 = Occupied Mode

Schedule A - Load Schedule A

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0
3	4	0	0	0	0	0	0	0
4	5	0	0	0	0	0	0	0
5	6	0	1	1	1	1	1	0
6	7	0	1	1	1	1	1	0
7	8	0	1	1	1	1	1	0
8	9	0	1	1	1	1	1	1
9	10	0	1	1	1	1	1	1
10	11	0	1	1	1	1	1	1
11	12	0	1	1	1	1	1	1
12	13	0	1	1	1	1	1	1
13	14	0	1	1	1	1	1	0
14	15	0	1	1	1	1	1	0
15	16	0	1	1	1	1	1	0
16	17	0	1	1	1	1	1	0
17	18	0	1	1	1	1	1	0
18	19	0	0	0	0	0	0	0
19	20	0	0	0	0	0	0	0
20	21	0	0	0	0	0	0	0
21	22	0	0	0	0	0	0	0
22	23	0	0	0	0	0	0	0
23	24	0	0	0	0	0	0	0
Daily Totals		0	13	13	13	13	13	5

Schedule B - Load Schedule B

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0
3	4	0	0	0	0	0	0	0
4	5	0	0	0	0	0	0	0
5	6	0	0	0	0	0	0	0
6	7	0	0	0	0	0	0	0
7	8	0	1	1	1	1	1	0
8	9	0	1	1	1	1	1	1
9	10	0	1	1	1	1	1	1
10	11	0	1	1	1	1	1	1
11	12	0	1	1	1	1	1	1
12	13	0	1	1	1	1	1	1
13	14	0	1	1	1	1	1	0
14	15	0	1	1	1	1	1	0
15	16	0	1	1	1	1	1	0
16	17	0	1	1	1	1	1	0
17	18	0	1	1	1	1	1	0
18	19	0	1	1	1	1	1	0
19	20	0	1	1	1	1	1	0
20	21	0	1	1	1	1	1	0
21	22	0	1	1	1	1	1	0
22	23	0	0	0	0	0	0	0
23	24	0	0	0	0	0	0	0
Daily Totals		0	15	15	15	15	15	5

Schedule C - Load Schedule C

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0	0	0	0	0	0	0
1	2	0	0	0	0	0	0	0
2	3	0	0	0	0	0	0	0
3	4	0	0	0	0	0	0	0
4	5	0	0	0	0	0	0	0
5	6	0	0	0	0	0	0	0
6	7	0	0	0	0	0	0	0
7	8	0	1	1	1	1	1	0
8	9	0	1	1	1	1	1	1
9	10	0	1	1	1	1	1	1
10	11	0	1	1	1	1	1	1
11	12	0	1	1	1	1	1	1
12	13	0	1	1	1	1	1	1
13	14	0	1	1	1	1	1	0
14	15	0	1	1	1	1	1	0
15	16	0	1	1	1	1	1	0
16	17	0	1	1	1	1	1	0
17	18	0	1	1	1	1	1	0
18	19	0	1	1	1	1	1	0
19	20	0	1	1	1	1	1	0
20	21	0	1	1	1	1	1	0
21	22	0	1	1	1	1	1	0
22	23	0	0	0	0	0	0	0
23	24	0	0	0	0	0	0	0
Daily Totals		0	15	15	15	15	15	5

McK8760 - Occupancy Schedules

New High Performance Design Build Office Building

Baseline Occupancy Load Profiles (Percent of Peak Occupancy)

Schedule A - Load Schedule A

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	5%	5%	5%	5%	5%	0%
8	9	0%	75%	75%	75%	75%	75%	10%
9	10	0%	90%	90%	90%	90%	90%	10%
10	11	0%	90%	90%	90%	90%	90%	10%
11	12	0%	80%	80%	80%	80%	80%	10%
12	13	0%	80%	80%	80%	80%	80%	10%
13	14	0%	80%	80%	80%	80%	80%	0%
14	15	0%	80%	80%	80%	80%	80%	0%
15	16	0%	45%	45%	45%	45%	45%	0%
16	17	0%	15%	15%	15%	15%	15%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Schedule B - Load Schedule B

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	5%	5%	5%	5%	5%	0%
8	9	0%	75%	75%	75%	75%	75%	10%
9	10	0%	90%	90%	90%	90%	90%	10%
10	11	0%	90%	90%	90%	90%	90%	10%
11	12	0%	80%	80%	80%	80%	80%	10%
12	13	0%	80%	80%	80%	80%	80%	10%
13	14	0%	80%	80%	80%	80%	80%	0%
14	15	0%	80%	80%	80%	80%	80%	0%
15	16	0%	45%	45%	45%	45%	45%	0%
16	17	0%	15%	15%	15%	15%	15%	0%
17	18	0%	5%	5%	5%	5%	5%	0%
18	19	0%	15%	15%	15%	15%	15%	0%
19	20	0%	20%	20%	20%	20%	20%	0%
20	21	0%	20%	20%	20%	20%	20%	0%
21	22	0%	10%	10%	10%	10%	10%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Schedule C - Load Schedule C

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	5%	5%	5%	5%	5%	0%
8	9	0%	75%	75%	75%	75%	75%	10%
9	10	0%	90%	90%	90%	90%	90%	10%
10	11	0%	90%	90%	90%	90%	90%	10%
11	12	0%	80%	80%	80%	80%	80%	10%
12	13	0%	80%	80%	80%	80%	80%	10%
13	14	0%	80%	80%	80%	80%	80%	0%
14	15	0%	80%	80%	80%	80%	80%	0%
15	16	0%	45%	45%	45%	45%	45%	0%
16	17	0%	15%	15%	15%	15%	15%	0%
17	18	0%	5%	5%	5%	5%	5%	0%
18	19	0%	15%	15%	15%	15%	15%	0%
19	20	0%	20%	20%	20%	20%	20%	0%
20	21	0%	20%	20%	20%	20%	20%	0%
21	22	0%	10%	10%	10%	10%	10%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Proposed Occupancy Load Profiles (Percent of Peak Occupancy)

Schedule A - Load Schedule A

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	5%	5%	5%	5%	5%	0%
8	9	0%	75%	75%	75%	75%	75%	10%
9	10	0%	90%	90%	90%	90%	90%	10%
10	11	0%	90%	90%	90%	90%	90%	10%
11	12	0%	80%	80%	80%	80%	80%	10%
12	13	0%	80%	80%	80%	80%	80%	10%
13	14	0%	80%	80%	80%	80%	80%	0%
14	15	0%	80%	80%	80%	80%	80%	0%
15	16	0%	45%	45%	45%	45%	45%	0%
16	17	0%	15%	15%	15%	15%	15%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Schedule B - Load Schedule B

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	5%	5%	5%	5%	5%	0%
8	9	0%	75%	75%	75%	75%	75%	10%
9	10	0%	90%	90%	90%	90%	90%	10%
10	11	0%	90%	90%	90%	90%	90%	10%
11	12	0%	80%	80%	80%	80%	80%	10%
12	13	0%	80%	80%	80%	80%	80%	10%
13	14	0%	80%	80%	80%	80%	80%	0%
14	15	0%	80%	80%	80%	80%	80%	0%
15	16	0%	45%	45%	45%	45%	45%	0%
16	17	0%	15%	15%	15%	15%	15%	0%
17	18	0%	5%	5%	5%	5%	5%	0%
18	19	0%	15%	15%	15%	15%	15%	0%
19	20	0%	20%	20%	20%	20%	20%	0%
20	21	0%	20%	20%	20%	20%	20%	0%
21	22	0%	10%	10%	10%	10%	10%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Schedule C - Load Schedule C

Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	5%	5%	5%	5%	5%	0%
8	9	0%	75%	75%	75%	75%	75%	10%
9	10	0%	90%	90%	90%	90%	90%	10%
10	11	0%	90%	90%	90%	90%	90%	10%
11	12	0%	80%	80%	80%	80%	80%	10%
12	13	0%	80%	80%	80%	80%	80%	10%
13	14	0%	80%	80%	80%	80%	80%	0%
14	15	0%	80%	80%	80%	80%	80%	0%
15	16	0%	45%	45%	45%	45%	45%	0%
16	17	0%	15%	15%	15%	15%	15%	0%
17	18	0%	5%	5%	5%	5%	5%	0%
18	19	0%	15%	15%	15%	15%	15%	0%
19	20	0%	20%	20%	20%	20%	20%	0%
20	21	0%	20%	20%	20%	20%	20%	0%
21	22	0%	10%	10%	10%	10%	10%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

McK8760 - Interior Lighting Schedules

[illegible]

Baseline Lighting Load Profiles (Percent of Peak Lighting Load)

Schedule A - Load Schedule A								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	5%	5%	5%	5%	5%	5%
19	20	5%	5%	5%	5%	5%	5%	5%
20	21	5%	5%	5%	5%	5%	5%	5%
21	22	5%	5%	5%	5%	5%	5%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule B - Load Schedule B								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule C - Load Schedule C								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Proposed Lighting Load Profiles (Percent of Peak Lighting Load)

Schedule A - Load Schedule A								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	5%	5%	5%	5%	5%	5%
19	20	5%	5%	5%	5%	5%	5%	5%
20	21	5%	5%	5%	5%	5%	5%	5%
21	22	5%	5%	5%	5%	5%	5%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule B - Load Schedule B								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule C - Load Schedule C								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

McK8760 - Exterior Lighting Load Schedules

Baseline Exterior Lighting Load Profiles (Percent of Peak Misc Load)

Schedule A - Load Schedule A								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	100%	100%	100%	100%	100%	100%	100%
1	2	100%	100%	100%	100%	100%	100%	100%
2	3	100%	100%	100%	100%	100%	100%	100%
3	4	100%	100%	100%	100%	100%	100%	100%
4	5	100%	100%	100%	100%	100%	100%	100%
5	6	100%	100%	100%	100%	100%	100%	100%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	100%	100%	100%	100%	100%	100%	100%
19	20	100%	100%	100%	100%	100%	100%	100%
20	21	100%	100%	100%	100%	100%	100%	100%
21	22	100%	100%	100%	100%	100%	100%	100%
22	23	100%	100%	100%	100%	100%	100%	100%
23	24	100%	100%	100%	100%	100%	100%	100%

Schedule B - Load Schedule B								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Schedule C - Load Schedule C								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Proposed Exterior Lighting Load Profiles (Percent of Peak Misc Load)

Schedule A - Load Schedule A								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	100%	100%	100%	100%	100%	100%	100%
1	2	100%	100%	100%	100%	100%	100%	100%
2	3	100%	100%	100%	100%	100%	100%	100%
3	4	100%	100%	100%	100%	100%	100%	100%
4	5	100%	100%	100%	100%	100%	100%	100%
5	6	100%	100%	100%	100%	100%	100%	100%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	100%	100%	100%	100%	100%	100%	100%
19	20	100%	100%	100%	100%	100%	100%	100%
20	21	100%	100%	100%	100%	100%	100%	100%
21	22	100%	100%	100%	100%	100%	100%	100%
22	23	100%	100%	100%	100%	100%	100%	100%
23	24	100%	100%	100%	100%	100%	100%	100%

Schedule B - Load Schedule B								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Schedule C - Load Schedule C								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

McK8760 - Plug Load Schedules

New High Performance Design Build Office Building

McKinstry

Baseline Plug Load Profiles (Percent of Peak Plug Load)

Schedule A - Load Schedule A								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	5%	5%	5%	5%	5%	5%
19	20	5%	5%	5%	5%	5%	5%	5%
20	21	5%	5%	5%	5%	5%	5%	5%
21	22	5%	5%	5%	5%	5%	5%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule B - Load Schedule B								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule C - Load Schedule C								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Proposed Plug Load Profiles (Percent of Peak Plug Load)

Schedule A - Load Schedule A								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	5%	5%	5%	5%	5%	5%
19	20	5%	5%	5%	5%	5%	5%	5%
20	21	5%	5%	5%	5%	5%	5%	5%
21	22	5%	5%	5%	5%	5%	5%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule B - Load Schedule B								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

Schedule C - Load Schedule C								
Hour		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	5%	5%	5%	5%	5%	5%	5%
1	2	5%	5%	5%	5%	5%	5%	5%
2	3	5%	5%	5%	5%	5%	5%	5%
3	4	5%	5%	5%	5%	5%	5%	5%
4	5	5%	5%	5%	5%	5%	5%	5%
5	6	5%	5%	5%	5%	5%	5%	5%
6	7	5%	5%	5%	5%	5%	5%	5%
7	8	5%	30%	30%	30%	30%	30%	5%
8	9	5%	85%	85%	85%	85%	85%	15%
9	10	5%	95%	95%	95%	95%	95%	15%
10	11	5%	95%	95%	95%	95%	95%	15%
11	12	5%	95%	95%	95%	95%	95%	15%
12	13	5%	80%	80%	80%	80%	80%	15%
13	14	5%	80%	80%	80%	80%	80%	5%
14	15	5%	80%	80%	80%	80%	80%	5%
15	16	5%	70%	70%	70%	70%	70%	5%
16	17	5%	50%	50%	50%	50%	50%	5%
17	18	5%	50%	50%	50%	50%	50%	5%
18	19	5%	35%	35%	35%	35%	35%	5%
19	20	5%	35%	35%	35%	35%	35%	5%
20	21	5%	35%	35%	35%	35%	35%	5%
21	22	5%	30%	30%	30%	30%	30%	5%
22	23	5%	5%	5%	5%	5%	5%	5%
23	24	5%	5%	5%	5%	5%	5%	5%

McK8760 - Miscellaneous Load Schedules

New High Performance Design Build Office Building

Baseline Miscellaneous Load Profiles (Percent of Peak Misc Load)

Sl hedu eA- A/Boad/Sl hedu eA-								
c our		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	30%	30%	30%	30%	30%	30%	30%
1	2	30%	30%	30%	30%	30%	30%	30%
2	3	30%	30%	30%	30%	30%	30%	30%
3	4	30%	30%	30%	30%	30%	30%	30%
4	5	30%	30%	30%	30%	30%	30%	30%
5	6	30%	30%	30%	30%	30%	30%	30%
6	7	30%	30%	30%	30%	30%	30%	30%
7	8	30%	30%	30%	30%	30%	30%	30%
8	9	30%	85%	85%	85%	85%	85%	30%
9	10	30%	95%	95%	95%	95%	95%	30%
10	11	30%	95%	95%	95%	95%	95%	30%
11	12	30%	95%	95%	95%	95%	95%	30%
12	13	30%	80%	80%	80%	80%	80%	30%
13	14	30%	80%	80%	80%	80%	80%	30%
14	15	30%	80%	80%	80%	80%	80%	30%
15	16	30%	70%	70%	70%	70%	70%	30%
16	17	30%	50%	50%	50%	50%	50%	30%
17	18	30%	50%	50%	50%	50%	50%	30%
18	19	30%	30%	30%	30%	30%	30%	30%
19	20	30%	30%	30%	30%	30%	30%	30%
20	21	30%	30%	30%	30%	30%	30%	30%
21	22	30%	30%	30%	30%	30%	30%	30%
22	23	30%	30%	30%	30%	30%	30%	30%
23	24	30%	30%	30%	30%	30%	30%	30%

Sl hedu eAC A/Boad/Sl hedu eAC								
c our		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Sl hedu eAH A/Boad/Sl hedu eAH								
c our		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Proposed Miscellaneous Load Profiles (Percent of Peak Misc Load)

Sl hedu eA- A/Boad/Sl hedu eA-								
c our		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	30%	30%	30%	30%	30%	30%	30%
1	2	30%	30%	30%	30%	30%	30%	30%
2	3	30%	30%	30%	30%	30%	30%	30%
3	4	30%	30%	30%	30%	30%	30%	30%
4	5	30%	30%	30%	30%	30%	30%	30%
5	6	30%	30%	30%	30%	30%	30%	30%
6	7	30%	30%	30%	30%	30%	30%	30%
7	8	30%	30%	30%	30%	30%	30%	30%
8	9	30%	85%	85%	85%	85%	85%	30%
9	10	30%	95%	95%	95%	95%	95%	30%
10	11	30%	95%	95%	95%	95%	95%	30%
11	12	30%	95%	95%	95%	95%	95%	30%
12	13	30%	80%	80%	80%	80%	80%	30%
13	14	30%	80%	80%	80%	80%	80%	30%
14	15	30%	80%	80%	80%	80%	80%	30%
15	16	30%	70%	70%	70%	70%	70%	30%
16	17	30%	50%	50%	50%	50%	50%	30%
17	18	30%	50%	50%	50%	50%	50%	30%
18	19	30%	30%	30%	30%	30%	30%	30%
19	20	30%	30%	30%	30%	30%	30%	30%
20	21	30%	30%	30%	30%	30%	30%	30%
21	22	30%	30%	30%	30%	30%	30%	30%
22	23	30%	30%	30%	30%	30%	30%	30%
23	24	30%	30%	30%	30%	30%	30%	30%

Sl hedu eAC A/Boad/Sl hedu eAC								
c our		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

Sl hedu eAH A/Boad/Sl hedu eAH								
c our		Sun	Mon	Tue	Wed	Thu	Fri	Sat
From	To	1	2	3	4	5	6	7
0	1	0%	0%	0%	0%	0%	0%	0%
1	2	0%	0%	0%	0%	0%	0%	0%
2	3	0%	0%	0%	0%	0%	0%	0%
3	4	0%	0%	0%	0%	0%	0%	0%
4	5	0%	0%	0%	0%	0%	0%	0%
5	6	0%	0%	0%	0%	0%	0%	0%
6	7	0%	0%	0%	0%	0%	0%	0%
7	8	0%	0%	0%	0%	0%	0%	0%
8	9	0%	0%	0%	0%	0%	0%	0%
9	10	0%	0%	0%	0%	0%	0%	0%
10	11	0%	0%	0%	0%	0%	0%	0%
11	12	0%	0%	0%	0%	0%	0%	0%
12	13	0%	0%	0%	0%	0%	0%	0%
13	14	0%	0%	0%	0%	0%	0%	0%
14	15	0%	0%	0%	0%	0%	0%	0%
15	16	0%	0%	0%	0%	0%	0%	0%
16	17	0%	0%	0%	0%	0%	0%	0%
17	18	0%	0%	0%	0%	0%	0%	0%
18	19	0%	0%	0%	0%	0%	0%	0%
19	20	0%	0%	0%	0%	0%	0%	0%
20	21	0%	0%	0%	0%	0%	0%	0%
21	22	0%	0%	0%	0%	0%	0%	0%
22	23	0%	0%	0%	0%	0%	0%	0%
23	24	0%	0%	0%	0%	0%	0%	0%

McK8760 - Calendar

New High Performance Design Build Office Building

Calendar

Weekends Highlighted Yellow For Reference Year 1989

Month	1	2	3	4	5	6	7	8	9	10	11	12
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	A	A	A	A	A	A	A	A	A	A	A	A
2	A	A	A	A	A	A	A	A	A	A	A	A
3	A	A	A	A	A	A	A	A	A	A	A	A
4	A	A	A	A	A	A	A	A	A	A	A	A
5	A	A	A	A	A	A	A	A	A	A	A	A
6	A	A	A	A	A	A	A	A	A	A	A	A
7	A	A	A	A	A	A	A	A	A	A	A	A
8	A	A	A	A	A	A	A	A	A	A	A	A
9	A	A	A	A	A	A	A	A	A	A	A	A
10	A	A	A	A	A	A	A	A	A	A	A	A
11	A	A	A	A	A	A	A	A	A	A	A	A
12	A	A	A	A	A	A	A	A	A	A	A	A
13	A	A	A	A	A	A	A	A	A	A	A	A
14	A	A	A	A	A	A	A	A	A	A	A	A
15	A	A	A	A	A	A	A	A	A	A	A	A
16	A	A	A	A	A	A	A	A	A	A	A	A
17	A	A	A	A	A	A	A	A	A	A	A	A
18	A	A	A	A	A	A	A	A	A	A	A	A
19	A	A	A	A	A	A	A	A	A	A	A	A
20	A	A	A	A	A	A	A	A	A	A	A	A
21	A	A	A	A	A	A	A	A	A	A	A	A
22	A	A	A	A	A	A	A	A	A	A	A	A
23	A	A	A	A	A	A	A	A	A	A	A	A
24	A	A	A	A	A	A	A	A	A	A	A	A
25	A	A	A	A	A	A	A	A	A	A	A	A
26	A	A	A	A	A	A	A	A	A	A	A	A
27	A	A	A	A	A	A	A	A	A	A	A	A
28	A	A	A	A	A	A	A	A	A	A	A	A
29	A		A	A	A	A	A	A	A	A	A	A
30	A		A	A	A	A	A	A	A	A	A	A
31	A		A		A		A	A		A		A

Holidays and Observances: (Reference Year 1989)

Jan 1	New Year's Day	May 29	Memorial Day	Oct 31	Halloween
Jan 16	MLK Day	Jul 4	Independence Day	Nov 11	Veterans Day
Feb 20	Presidents' Day	Sep 4	Labor Day	Nov 23	Thanksgiving Day
Mar 26	Easter Sunday	Oct 9	Columbus Day	Dec 25	Christmas Day

Schedules Summary

Schedule	Schedule Description	Total Days/Yr	Total Hrs/Yr	Baseline HVAC On Hrs/Yr	Proposed HVAC On Hrs/Yr
Schedule A	Load Schedule A	365	8,760	3,640	3,640
Schedule B	Load Schedule B	0	0	0	0
Schedule C	Load Schedule C	0	0	0	0
	Totals	**365**	**8,760**	**3,640**	**3,640**

McK8760 - Inputs

New High Performance Design Build Office Building

McKinstry

Zone Inputs:

Tag	Variable Description		Units	Baseline	Proposed	Basis
I7	Floor Area		ft^2	3,993	3,993	From Drawings
I8	Roof Area		ft^2	3,993	3,993	From Drawings
I9	Opaque Wall Area		ft^2	1,964	1,964	From Drawings
I10	Glazing Area	*Glazing*	ft^2	376	376	From Drawings
I12	Roof U-Factor	*Roof*	$BTU/ft^2/°F$	0.055	0.026	2009 IECC Base / From Drawings
I13	Opaque Wall U-Factor	*Walls*	$BTU/ft^2/°F$	0.084	0.083	2009 IECC Base / From Drawings
I14	Glazing U-Factor	*Glazing*	$BTU/ft^2/°F$	0.663	0.663	2009 IECC
I15	Glazing Solar Heat Gain Coefficient (SHGC)	*Glazing*	-	0.250	0.250	2009 IECC
I16	Glazing Solar Gain Bldg Shape Factor		-	0.300	0.300	
I17	Average Space Height (Floor to Ceiling)		ft	9.0	9.0	From Drawings
I18	Infiltration		ach	0.250	0.250	
I19	Peak Number of Occupants		Qty	10	10	Estimate
I20	Sensible Heat Gain Per Person		Btu/h	250	250	
I21	Latent Heat Gain Per Person		Btu/h	200	200	
I22	Peak Lighting Load Power Density		W/ft^2	1.000	0.700	2009 IECC Base / From Drawings
I23	Peak Plug Load Power Density		W/ft^2	0.300	0.300	5 Computer Stations plus Printer / Copier
I24	Peak Exterior Lighting Load		kW	0.291	0.291	From Drawings
I25	Peak Miscellaneous Load (Electrical)		Watt	1,000	1,000	Computer Server Estimated Energy
I26	Miscellaneous Load Located in Conditioned Space		Yes/No	Yes	Yes	
I27	HVAC On Cooling Space Temperature Set Point		°F	74.0	74.0	
I28	HVAC Off Cooling Space Temperature Set Point		°F	80.0	80.0	
I29	HVAC On Heating Space Temperature Set Point		°F	70.0	70.0	
I30	HVAC Off Heating Space Temperature Set Point		°F	60.0	60.0	

AHU & Plant Inputs:

Tag	Variable Description		Units	Baseline	Proposed	Basis
I34	AHU Fan Power based on Control Type		Type	CV	CV	
I35	Occupied Fan Operation		Type	Cycles	Cycles	
I36	Occupied Fan Operation Percent Per Hour (CV + Cycles Only)		%	50%	50%	Estimate
I37	Maximum AHU CFM		CFM	6,000	6,000	400 CFM * 15 Tons
I38	Minimum AHU CFM (% of Maximum CFM)		%	100.0%	100.0%	
I39	Maximum % Outside Air (Economizer % OSA)		%	8.0%	8.0%	480 CFM, Per Mech Engineer
I40	Minimum % Outside Air (Occupied)		%	8.0%	8.0%	480 CFM, Per Mech Engineer
I41	Minimum % Outside Air (Unoccupied)		%	8.0%	8.0%	480 CFM, Per Mech Engineer
I42	Economizer High Limit Set Point		°F	65.0	65.0	
I43	Demand Controlled Ventilation (For Outside Air Control)		Yes/No	No	No	
I44	DCV Airflow Per Person (Based on Space Type)	*DCV Tab*	CFM/Per	~~10.00~~	~~10.00~~	
I45	DCV Airflow Per Area (Based on Space Type)	*DCV Tab*	CFM/ft^2	~~0.06~~	~~0.06~~	
I46	AHU Fan TSP (At Max CFM)		in w.c.	1.000	1.000	
I47	Fan Efficiency		%	60.0%	60.0%	
I48	Supply Air Temperature @ OAT ---------->	85.0	°F	Single Zone	Single Zone	
I49	Supply Air Temperature @ OAT ---------->	65.0	°F	~~65~~	~~65~~	
I50	AHU Cooling Efficiency (EER)		BTU/Watt	11.2	13.0	2009 IECC SEER 13 Base vs SEER 18.13
I51	Evaporative Cooling Effectiveness (Air side)		%	0.0%	0.0%	
I52	AHU Cooling Lockout Below		°F	50.0	50.0	
I53	AHU Heating Efficiency or COP @ OAT ---------->	11.0	COP	2.26	2.26	2009 IECC Base / Proposed COP
I54	AHU Heating Efficiency or COP @ OAT ---------->	10.0	COP	1.00	1.00	
I55	AHU Heating Energy Source		Type	Electric	Electric	
I56	AHU Heating Lockout Above		°F	70.0	70.0	
I57	Evaporative Pre-Cooling on Condenser		Yes/No	No	No	
I58	Heat Recovery % Effectiveness		%	0.0%	0.0%	

Terminal Devices Inputs (Reheat Coils, VAV Boxes, Baseboard Heaters, etc)

Tag	Variable Description		Units	Baseline	Proposed	Basis
I62	Terminal Devices		Yes/No	No	No	
I63	Zone Heating Lockout Above		°F	~~70.0~~	~~70.0~~	
I64	Zone Heating Efficiency or COP @ OAT ---------->	60.0	COP	~~0.75~~	~~0.75~~	
I65	Zone Heating Efficiency or COP @ OAT ---------->	50.0	COP	~~0.75~~	~~0.75~~	
I66	Heating Energy Source Zone		Type	~~Natural Gas~~	~~Natural Gas~~	
I67	Unoccupied Heating Done By		Zone, AHU	~~AHU Coil~~	~~AHU Coil~~	
I68	SFPMB Terminal Unit Power		W/CFM	~~0.20~~	~~0.20~~	

Domestic Hot Water Inputs:

Tag	Variable Description	Units	Baseline	Proposed	Basis
I72	DHW Fuel Type	Type	Electric	Electric	
I73	Energy Factor	-	0.97	0.97	2009 IECC
I74	Working Days Per Year (Used Only For DHW Calc)	Qty	240	240	
I75	Average Daily Hot Water Consumption Per Person	Gallons	1.0	1.0	
I76	Average Entering Cold Water Temperature	°F	50.0	50.0	
I77	Supply Hot Water Temperature	°F	110.0	110.0	2009 IECC

McK8760 - Outputs

[illegible]

Electric Demand

Tag	Description	Units	Baseline	EUI	Proposed	EUI	Savings	EUI
O7	Cooling Peak kW	kW	7	-	5	-	2	-
O8	AHU Heating Peak kW	kW	13	-	9	-	3	-
O9	Zone Heating Peak kW	kW	0	-	0	-	0	-
O10	Fan Peak kW	kW	1	-	1	-	0	-
O11	Interior Lighting Peak kW	kW	4	-	3	-	1	-
O12	Exterior Lighting Peak kW	kW	0	-	0	-	0	-
O13	Plug Load Peak kW	kW	1	-	1	-	0	-
O14	Miscellaneous Load Peak kW	kW	1		1	-	0	-
O15	Other Peak kW	kW	0	-	0	-	0	-
O16	**Peak kW**	**kW**	**14**	**-**	**11**	**-**	**3**	**-**
O17	**Peak kW (Sum 12 Monthly Peaks)**	**kW**	**150**	**-**	**116**	**-**	**35**	**-**

Electricity

Tag	Description	Units	Baseline	EUI	Proposed	EUI	Savings	EUI
O21	Cooling	kWh/Yr	11,071	9.46	7,947	6.79	3,123	2.67
O22	AHU Heating	kWh/Yr	5,133	4.39	3,013	2.58	2,120	1.81
O23	Zone Heating	kWh/Yr	0	0.00	0	0.00	0	0.00
O24	AHU Fans	kWh/Yr	2,140	1.83	2,140	1.83	0	0.00
O25	Zone Fans	kWh/Yr	0	0.00	0	0.00	0	0.00
O26	Interior Lighting	kWh/Yr	9,691	8.28	6,667	5.70	3,024	2.58
O27	Exterior Lighting	kWh/Yr	1,275	1.09	1,275	1.09	0	0.00
O28	Plug Loads	kWh/Yr	2,907	2.49	2,907	2.49	0	0.00
O29	Miscellaneous Loads	kWh/Yr	3,876	3.31	3,876	3.31	0	0.00
O30	Domestic Hot Water	kWh/Yr	361	0.31	361	0.31	0	0.00
O31	Other Electricity	kWh/Yr	0	0.00	0	0.00	0	0.00
O32	**Total**	**kWh/Yr**	**36,454**	**31.16**	**28,187**	**24.09**	**8,267**	**7.07**

Natural Gas

Tag	Description	Units	Baseline	EUI	Proposed	EUI	Savings	EUI
O36	AHU Heating	Therm/Yr	0	0.00	0	0.00	0	0.00
O37	Zone Heating	Therm/Yr	0	0.00	0	0.00	0	0.00
O38	Domestic Hot Water	Therm/Yr	0	0.00	0	0.00	0	0.00
O39	Other Natural Gas	Therm/Yr	0	0.00	0	0.00	0	0.00
O40	**Total**	**Therm/Yr**	**0**	**0.00**	**0**	**0.00**	**0**	**0.00**

Steam

Tag	Description	Units	Baseline	EUI	Proposed	EUI	Savings	EUI
O44	AHU Heating	kLB/Yr	0	0.00	0	0.00	0	0.00
O45	Zone Heating	kLB/Yr	0	0.00	0	0.00	0	0.00
O46	Domestic Hot Water	kLB/Yr	0	0.00	0	0.00	0	0.00
O47	Other Steam	kLB/Yr	0	0.00	0	0.00	0	0.00
O48	**Total Steam**	**kLB/Yr**	**0**	**0.00**	**0**	**0.00**	**0**	**0.00**

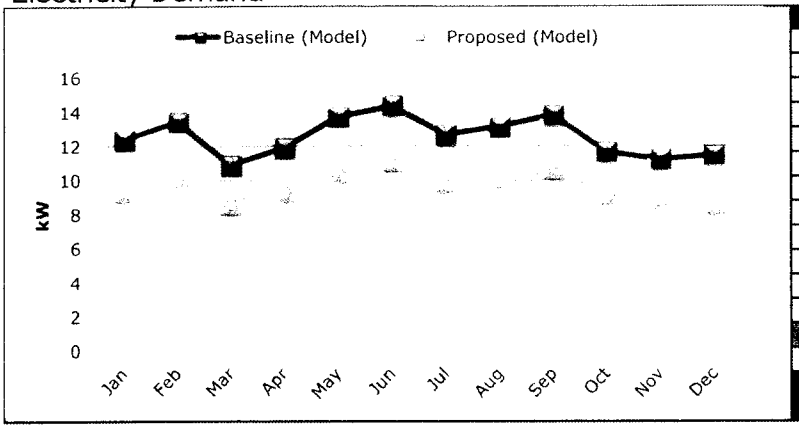
Total Energy

Tag	Description	Units	Baseline	EUI	Proposed	EUI	Savings	EUI
O52	**Total Energy**	**kBtu/Yr**	**124,419**	**31.16**	**96,203**	**24.09**	**28,216**	**7.07**

McK8760 - Model Tuning Charts

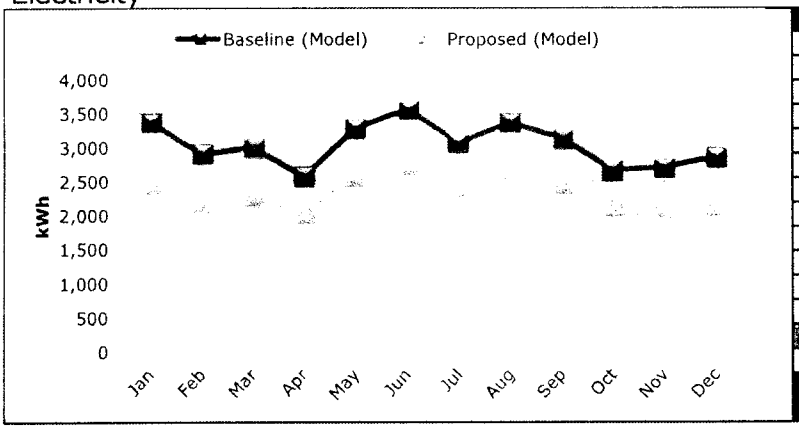
New High Performance Design Build Office Building

Electricity Demand



Month	Baseline (Model)	Proposed (Model)
Jan	12	9
Feb	13	10
Mar	11	9
Apr	12	9
May	14	10
Jun	14	11
Jul	13	10
Aug	13	10
Sep	14	11
Oct	12	9
Nov	11	9
Dec	11	9
Total	**150**	**116**

Electricity



Month	Baseline (Model)	Proposed (Model)
Jan	3,370	2,471
Feb	2,895	2,196
Mar	2,994	2,285
Apr	2,574	2,029
May	3,277	2,571
Jun	3,559	2,757
Jul	3,068	2,417
Aug	3,363	2,631
Sep	3,126	2,448
Oct	2,667	2,126
Nov	2,704	2,102
Dec	2,858	2,154
Total	**36,454**	**28,187**

Project Information

Baseline Is based on 2009 IECC
http://publicecodes.cyberregs.com/icod/iecc/2009/index.htm

Brown County IECC Admendments
https://www.municode.com/library/tx/brownwood/codes/code_of_ordinances?nodeId=PTIICOOR_CH7BUBURE_ARTVIIICIBRENCOCO

Section 501.1. Add the following after the final sentence: "No construction or component in a commercial structure subject to the International Existing Building Code shall be required to possess a thermal efficiency greater than that existing at the time of original construction."

Brown County Climate Zone Per IECC: 3A

Project Description Per Drawings:
CLIENT DIRECTION IS TO DESIGN AND BUILD A COST EFFECTIVE 4000 SQ FT PRE-ENGINEERED METAL BUILDING TO HOUSE THE TREASURER'S OFFICE AND ELECTIONS DEPARTMENT REQUIREMENTS. THE BUILDING SHALL BE LOCATED ON COUNTY OWNED PROPERTY WITH THE EXISTING BUILDING DEMOLISHEDTO SLAB. THE NEW BUILDING IS TO BE BRICK VENEER WITH A FLAT PARAPET TO INTEGRATE WITH OTHER DOWNTOWN BUILDINGS. THE TREASURER'S OFFICE HAS ONE OFFICE AND OPEN WORKSTATIONS FOR TWO SUPPORT STAFF AS WELL AS FUTURE EXPANSION. IT WILL HAVE ITS OWN DEDICATED UNISEX RESTROOM AND STORAGE. THE ELECTIONS DEPARTMENT HAS ONE OFFICE AND A ROOM FOR VOTE COUNTING. THE VOTING ROOM IS LARGE ENOUGH FOR 12 VOTING MACHINES AND SUPPORTING STAFF. THERE IS A SECURE STORAGE ROOM FOR VOTING MACHINES IN 6 STORAGE RACKS. THE VOTING ROOM IS TO BE USED FOR ELECTIONS TRAINING AND OTHER MEETING FUNCTIONS. IT WILL HAVE INTEGRATED A/V ON ONE WALL. THERE ARE CODE REQUIRED RESTROOMS, BREAK/COPY ROOM AND STORAGE ROOMS. SITE IS TO ACCOMMODATE AS MUCH PARKING AS POSSIBLE UTILIZING THE EXISTING CONCRETE SLAB WHEREVER POSSIBLE. THE SITE AND BUILDING ARE TO BE ADA ACCESSIBLE.

Building Construction:
New Building
Metal Building

Utility Rate

Using the Extension office rates from the ESPC since this building of similar size and equipment capacities.
8.356046 $/kW
0.051115 $/kWh

Wall and Roof U-Values

Baseline Wall U-Value
2009 IECC
U- 0.084 = R- 11.9

Proposed Wall U-Value
U- 0.043 = R- 23.3

Roof U-Value Per Code:
U- 0.055 = R- 18.2

Proposed Roof R-Value
U- 0.026 = R- 38.9

Slab, Unheated
F-0.730
This is not an input for McK8760

Domestic Hot Water

Domestic Water Heating per 2009 IECC Max Water Temp at Fixture
110 deg F

Mechanical Equipment Efficiency

Cooling 13 Seer
Proposed 18.13 Seer

Heating 7.7 HSPF 2.256741 COP

HSPF / 3.412 = COP
Proposed 10 HSPF 2.930832 COP

Unit	Tonnage	SEER
1	3	18
2	3	18
3	4	18
4	4	18
5	1	20

Avg SEER 18.1333333

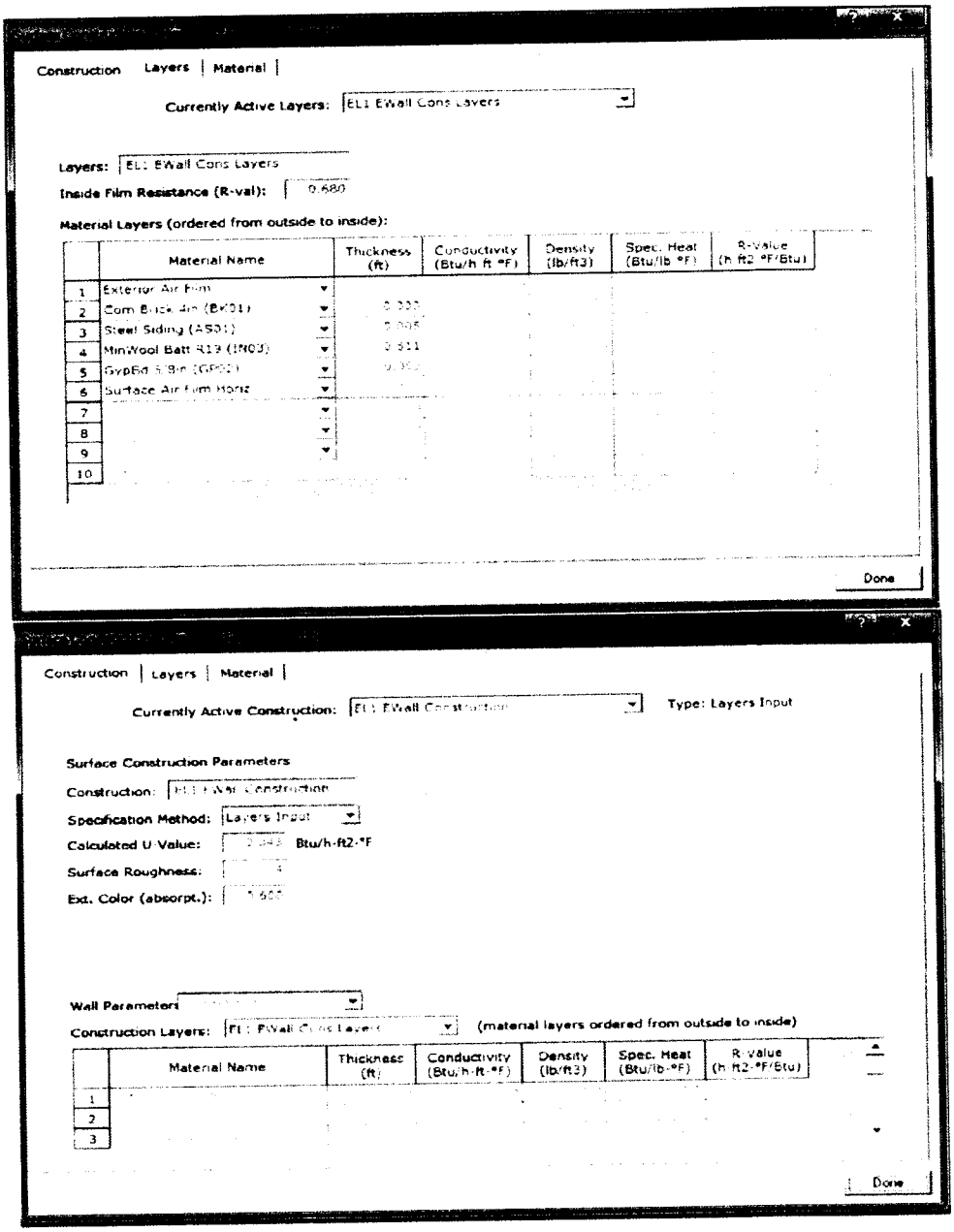
EER = -0.02 × SEER² + 1.12 × SEER

SEER 18.1333333
EER 13.7329778

Building OA CFM

480 CFM PER Mech Engineer

Proposed Wall U-Value



Construction | Layers | Material

Currently Active Layers: EL1 EWall Cons Layers

Layers: EL1 EWall Cons Layers

Inside Film Resistance (R-val): 0.680

Material Layers (ordered from outside to inside):

	Material Name	Thickness (ft)	Conductivity (Btu/h ft °F)	Density (lb/ft3)	Spec. Heat (Btu/lb °F)	R-Value (h ft2 °F/Btu)
1	Exterior Air Film					
2	Com Brick 4in (BK01)	0.333				
3	Steel Siding (AS01)	0.005				
4	MinWool Batt R19 (IN03)	0.511				
5	GypBd 5/8in (GP02)	0.052				
6	Surface Air Film Horiz					
7						
8						
9						
10						

Done

Construction | Layers | Material

Currently Active Construction: EL1 EWall Construction Type: Layers Input

Surface Construction Parameters

Construction: EL1 EWall Construction

Specification Method: Layers Input

Calculated U-Value: 0.048 Btu/h-ft2-°F

Surface Roughness: 4

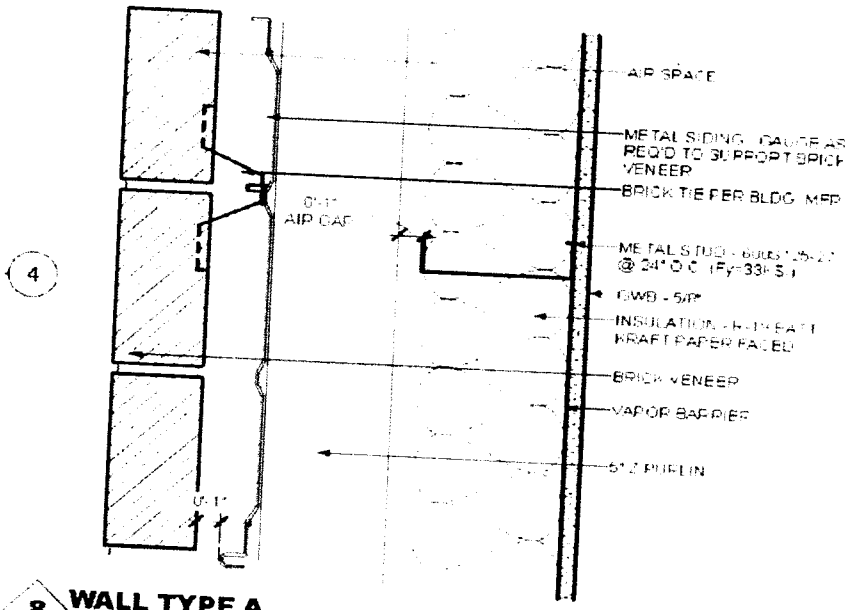
Ext. Color (absorpt.): 0.850

Wall Parameters

Construction Layers: EL1 EWall Cons Layers (material layers ordered from outside to inside)

	Material Name	Thickness (ft)	Conductivity (Btu/h-ft-°F)	Density (lb/ft3)	Spec. Heat (Btu/lb-°F)	R-Value (h-ft2-°F/Btu)
1						
2						
3						

Done



8 **WALL TYPE A**
3" = 1'-0"

Roof U-Value

Material	Section R-Values				
Section Description		% Other	% Other	% Other	% Other
Percent of Total Area	100%	0%	0%	0%	0%
Exterior Roof Air Film	0.170				
Roof Membrane	0.000				
Steel Deck	0.000				
.75" Air Space	0.000				
R-38 Batt Insulation	38.000				
Interior Roof Air Film	0.680				
Square Footage of Area	4,000	0	0	0	0
R-Value of Section	38.850	0.000	0.000	0.000	0.000
Total R-Value of Roof	38.850	Notes:			
Overall U-Factor	0.026				

Lighting

Baseline
1 Watt / sq ft per 2009 IECC

Proposed				
	Total Watts	Watt / sq ft	Exterior Watts	
Base Lighting	[redacted]	[redacted]	[redacted]	Modeled Savings On Base Lighting Bid
Alternate Lighting	1965	0.492	315	

All Fixture Wattage From Online Cutsheets

LIGHTING FIXTURE SCHEDULE

TAG	COUNT	DESCRIPTION	MOUNTING	MANUFACTURER	MODEL NUMBER	LAMP	VOLTAGE	FIXTURE WATTAGE	TOTAL WATTAGE
A	29	2' X 4' FLUORESCENT TROFFER	RECESSED	METALUX	2ALNG-232-UNV-L8841-A3/8-2/18G-EB81-U	(2) 32W T8	120 V	60	1740
AE	3	2' X 4' FLUORESCENT TROFFER W/ EMERG BATTERY BACK-UP	RECESSED	METALUX	2ALNG-232-120-ELI320-L8841-A3/8-2/18G-EB81-U	(2) 32W T8	120 V	60	180
B	1	6" RECESSED CAN FLUORESCENT FIXTURE	RECESSED	HALO COMMERCIAL	PD6V142E 60VH	(1) 26W CFL	120 V	26	26
BE	1	6" RECESSED CAN FLUORESCENT FIXTURE W/ EMERG BATTERY BACK-UP	RECESSED	HALO COMMERCIAL	PD6V142IEM 60VH	(1) 26W CFL	120 V	26	26
C	3	2' WALL-MOUNTED FLUORESCENT STRIP FIXTURE	WALL	METALUX	BC-217-UNV-ER81-U	(2) 17W T8	120 V	31	93
D	2	4' FLUORESCENT STRIP FIXTURE	CEILING SURFACE	METALUX	SSF-232-UNV-ER81-U	(2) 32W T8	120 V	60	120
EXIT	6	LED EXIT SIGN	UNIVERSAL	COOPER INDUSTRIES, INC	APX7G	LED	120 V	3	18
F	6	EXTERIOR CFL WALL PACK	WALL	COOPER INDUSTRIES, INC	FW26PC	(1) 26W CFL	120 V	26	156
G	3	EXTERIOR LED CANOPY FIXTURE W/ BATTERY BACK-UP	SURFACE	MCGRAW-EDISON	TT-83-LED-E1-WO-AP-IBP	LED	120 V	45	135
H	1	DECORATIVE CLF BOWL FIXTURE	SURFACE	SHAPER LIGHTING	210-18-S-CFL/2-120-MV-SFTR	(2) 32W CFL	120 V	64	64
J	6	4' LENSED FLUORESCENT STRIP FIXTURE	CEILING SURFACE	METALUX	BC-232-UNV-ER81-U	(2) 32W T8	120 V	60	360
JE	2	4' LENSED FLUORESCENT STRIP FIXTURE W/ EMERG BATTERY BACK-UP	CEILING SURFACE	METALUX	BC-232-120V-EL-I320-EB81-U	(2) 32W T8	120 V	60	120

LIGHTING FIXTURE SCHEDULE - LED (ALTERNATE)

TTA AGG	COUNT	DESCRIPTION	MOUNTING	MANUFACTURER	MODEL NUMBER	LAMP	VOLTAGE	FIXTURE WATTAGE	TOTAL WATTAGE
A	29	2' X 4' LED TROFFER	RECESSED	METALUX	24ALNG-LD4-45-UNV-L840-A3/8-2/18G-CD1-U ALN 2X4 FRACLN,4500LM,4000K,UNV0-10VDD	LED	120 V	41.8	1212.2
AE	3	2' X 4' LED TROFFER W/ EMERG BATTERY BACK-UP	RECESSED	METALUX	24ALNG-LD4-45-UNV-EL10W-L840-CD1-U	LED	120 V	41.8	125.4
B	1	6" RECESSED CAN LED FIXTURE	RECESSED	HALO COMMERCIAL	PD615ED010 PDM6A840 61VH	LED	120 V	17.1	17.1
BE	1	6" RECESSED CAN LED FIXTURE W/ EMERG BATTERY BACK-UP	RECESSED	HALO COMMERCIAL	PD615ED010IEM PDM6A840 61VEMH	LED	120 V	17.1	17.1
C	3	2' WALL-MOUNTED LED STRIP FIXTURE	WALL	PRUDENTIAL LIGHTING	S1-LED4-H0-2-SAL-YGW-UNV-SUR-X3-DM10	LED	120 V	43	129
D	2	4' LED STRIP FIXTURE	CEILING SURFACE	METALUX	4SNLED-LD4-41SL-LN-UNV-L840-CD1-U	LED	120 V	36.6	73.2
EXIT	6	LED EXIT SIGN	UNIVERSAL	COOPER INDUSTRIES, INC	APX7G	LED	120 V	3	18
F	6	EXTERIOR LED WALL PACK	WALL	LUMARK	XTOR3A-N (XTOR3A, CBN BZ, 30W, 35000K, 120-277V)	LED	120 V	30	180
G	3	EXTERIOR LED CANOPY FIXTURE W/ BATTERY BACK-UP	SURFACE	MCGRAW-EDISON	TT-83-LED-E1-WO-AP-IBP	LED	120 V	45	135
H	1	DECORATIVE ROUND LED FIXTURE	SURFACE	SHAPER LIGHTING	825-18-S-L4/840-UNV-SAL	LED	120 V	29	29
J	6	4' LED STRIP FIXTURE	CEILING SURFACE	PRUDENTIAL LIGHTING	S1-LED-SO-4-SAL-YGW-UNV-SUR-X1-DM10	LED	120 V	43	258
JE	2	4' LED STRIP FIXTURE W/ EMERG BATTERY BACK-UP	CEILING SURFACE	PRUDENTIAL LIGHTING	S1-LED-SO-4-SAL-YGW-UNV-SUR-X1-DM10-EMH	LED	120 V	43	86

2009 IECC Baseline Modeling Information

TABLE 506.5.1(1) SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT CHARACTERISTICS	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Space use classification	Same as proposed	The space use classification shall be chosen in accordance with Table 505.5.2 for all areas of the building covered by this permit. Where the space use classification for a building is not known, the building shall be categorized as an office building.
Roofs	Type: Insulation entirely above deck Gross area: same as proposed *U*-factor: from Table 502.1.2 Solar absorptance: 0.75	As proposed As proposed As proposed As proposed As proposed
Walls, above-grade	Type: Mass wall if proposed wall is mass; otherwise steel-framed wall Gross area: same as proposed *U*-factor: from Table 502.1.2 Solar absorptance: 0.75 Emittance: 0.90	As proposed As proposed As proposed As proposed As proposed
Walls, below-grade	Type: Mass wall Gross area: same as proposed *U*-Factor: from Table 502.1.2 with insulation layer on interior side of walls	As proposed As proposed As proposed
Floors, above-grade	Type: joist/framed floor Gross area: same as proposed *U*-factor: from Table 502.1.2	As proposed As proposed As proposed
Floors, slab-on-grade	Type: Unheated *F*-factor: from Table 502.1.2	As proposed As proposed
Doors	Type: Swinging Area: Same as proposed *U*-factor: from Table 502.2(1)	As proposed As proposed As proposed
Glazing	Area: (a) The proposed glazing area; where the proposed glazing area is less than 40 percent of above-grade wall area. (b) 40 percent of above-grade wall area; where the proposed glazing area is 40 percent or more of the above-grade wall area. *U*-factor: from Table 502.3 SHGC: from Table 502.3 except that for climates with no requirement (NR) SHGC = 0.40 shall be used External shading and PF: None	As proposed As proposed As proposed As proposed
Skylights	Area: (a) The proposed skylight area; where the proposed skylight area is less than 3 percent of gross area of roof assembly. (b) 3 percent of gross area of roof assembly; where the proposed skylight area is 3 percent or more of gross area of roof assembly. *U*-factor: from Table 502.3 SHGC: from Table 502.3 except that for climates with no requirement (NR) SHGC = 0.40 shall be used	As proposed As proposed As proposed

Lighting, interior	The interior lighting power shall be determined in accordance with Table 505.5.2. Where the occupancy of the building is not known, the lighting power density shall be 1.0 Watt per square foot (10.73 W/m2) based on the categorization of buildings with unknown space classification as offices.	As proposed
Lighting, exterior	The lighting power shall be determined in accordance with Table 505.6.2(2). Areas and dimensions of tradable and nontradable surfaces shall be the same as proposed.	As proposed

(continued)

TABLE 506.5.1(1)-continued SPECIFICATIONS FOR THE STANDARD REFERENCE AND PROPOSED DESIGNS

BUILDING COMPONENT CHARACTERISTICS	STANDARD REFERENCE DESIGN	PROPOSED DESIGN
Internal gains	Same as propose	Receptacle, motor and process loads shall be modeled and estimated based on the space use classification. All end-use load components within and associated with the building shall be modeled to include, but not be limited to, the following: exhaust fans, parking garage ventilation fans, exterior building lighting, swimming pool heaters and pumps, elevators, escalators, refrigeration equipment and cooking equipment.
Schedules	Same as proposed	Operating schedules shall include hourly profiles for daily operation and shall account for variations between weekdays, weekends, holidays and any seasonal operation. Schedules shall model the time- dependent variations in occupancy, illumination, receptacle loads, thermostat settings, mechanical ventilation, HVAC equipment availability, service hot water usage and any process loads. The schedules shall be typical of the proposed building type as determined by the designer and approved by the jurisdiction.
Mechanical ventilation	Same as proposed	As proposed, in accordance with Section 503.2.5.
Heating systems	Fuel type: same as proposed design Equipment typea: from Tables 506.5.1(2) and 506.5.1(3) Efficiency: from Tables 503.2.3(4) and 503.2.3(5) Capacityb: sized proportionally to the capacities in the proposed design based on sizing runs, and shall be established such that no smaller number of unmet heating load hours and no larger heating capacity safety factors are provided than in the	As proposed As proposed As proposed As proposed
Cooling systems	Fuel type: same as proposed design Equipment typec: from Tables 506.5.1(2) and 506.5.1(3) Efficiency: from Tables 503.2.3(1), 503.2.3(2) and 503.2.3(3) Capacityb: sized proportionally to the capacities in the proposed design based on sizing runs, and shall be established such that no smaller number of unmet cooling load hours and no larger cooling capacity safety factors are provided than in the proposed design. Economizerd: same as proposed, in accordance with Section	As proposed As proposed As proposed As proposed As proposed
Service water heating	Fuel type: same as proposed Efficiency: from Table 504.2 Capacity: same as proposed Where no service water hot water system exists or is specified	As proposed As proposed

in the proposed design, no service hot water heating shall be modeled.

As proposed

a. Where no heating system exists or has been specified, the heating system shall be modeled as fossil fuel. The system characteristics shall be identical in both the standard reference design and proposed design.

b. The ratio between the capacities used in the annual simulations and the capacities determined by sizing runs shall be the same for both the standard reference design and proposed design.

c. Where no cooling system exists or no cooling system has been specified, the cooling system shall be modeled as an air-cooled single-zone system, one unit per thermal zone. The system characteristics shall be identical in both the standard reference design and proposed design.

d. If an economizer is required in accordance with Table 503.3.1 (1), and if no economizer exists or is specified in the proposed design, then a supply air economizer shall be provided in accordance with Section 503.4.1.

TABLE 502.1.2 BUILDING ENVELOPE REQUIREMENTS OPAQUE ELEMENT, MAXIMUM *U*-FACTORS

CLIMATE ZONE	1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
Roofs																
Insulation entirely above deck	U-0.063	U-0.048	U-0.048	U-0.048	U-0.048	U-0.048	U-0.048	U-0.048	U-0.048	U-0.048	U-0.048	U-0.048	U-0.039	U-0.039	U-0.039	U-0.039
Metal buildings	U-0.065	U-0.065	U-0.055	U-0.055	U-0.055	U-0.055	U-0.055	U-0.055	U-0.055	U-0.055	U-0.049	U-0.049	U-0.049	U-0.049	U-0.035	U-0.035
Attic and other	U-0.034	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027	U-0.027
Walls, Above Grade																
Mass	U-0.58	U-0.151	U-0.151	U-0.123	U-0.123	U-0.104	U-0.104	U-0.090	U-0.090	U-0.080	U-0.080	U-0.071	U-0.071	U-0.071	U-0.071	U-0.052
Metal building	U-0.093	U-0.093	U-0.093	U-0.093	U-0.084	U-0.084	U-0.084	U-0.084	U-0.069	U-0.069	U-0.069	U-0.069	U-0.057	U-0.057	U-0.057	U-0.057
Metal framed	U-0.124	U-0.124	U-0.124	U-0.064	U-0.084	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.064	U-0.057	U-0.064	U-0.052	U-0.064	U-0.037
Wood framed and other	U-0.089	U-0.089	U-0.089	U-0.089	U-0.089	U-0.089	U-0.089	U-0.064	U-0.064	U-0.051	U-0.051	U-0.051	U-0.051	U-0.051	U-0.036	U-0.036
Walls, Below Grade																
Below-grade walls	C-1.140	C-1.140	C-1.140	C-1.140	C-1.140	C-1.140	C-1.140	C-0.119	C-0.119	C-0.119	C-0.119	C-0.119	C-0.119	C-0.092	C-0.119	C-0.075
Floors																
Mass	U-0.322	U-0.322	U-0.107	U-0.087	U-0.107	U-0.087	U-0.087	U-0.074	U-0.074	U-0.064	U-0.064	U-0.057	U-0.064	U-0.051	U-0.057	U-0.051
Joist/Framing	U-0.282	U-0.282	U-0.052	U-0.052	---	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033	U-0.033
Slab-on-Grade Floors																
Unheated slabs	F-0.730	F-0.730	F-0.730	F-0.730	F-0.730	F-0.730	F-0.730	F-0.540	F-0.730	F-0.540	F-0.540	F-0.520	F-0.520	F-0.520	F-0.520	F-0.510
Heated slabs	F-1.020	F-1.020	F-1.020	F-1.020	F-0.900	F-0.900	F-0.860	F-0.860	F-0.860	F-0.860	F-0.860	F-0.688	F-0.830	F-0.688	F-0.688	F-0.688

a. When heated slabs are placed below-grade, below grade walls must meet the *F*-factor requirements for perimeter insulation according to the heated slab-on-grade construction

502.2 Specific insulation requirements (Prescriptive). Opaque assemblies shall comply with Table 502.2(1)

TABLE 502.2(1) BUILDING ENVELOPE REQUIREMENTS - OPAQUE ASSEMBLIES

CLIMATE ZONE	1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
Roofs																
Insulation entirely above deck	R-15ci	R-20ci	R-20ci	R-20ci	R-20ci	R-20ci	R-20ci	R-20ci	R-20ci	R-20ci	R-20ci	R-20ci	R-25ci	R-25ci	R-25ci	R-25ci
Metal buildings (with R-5 thermal blocks[a, b])	R-19	R-19	R-13 + R-13	R-13 + R-13	R-13 + R-13	R-19	R-13 + R-13	R-19	R-13 + R-13	R-19	R-13 + R-19	R-19	R-13 + R-19	R-19 + R-10	R-11 + R-19	R-19 + R-10
Attic and other	R-30	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-38	R-49	R-49
Walls, Above Grade																
Mass	NR	R-5.7ci[c]	R-5.7ci[c]	R-7.6ci	R-7.6ci	R-9.5ci	R-9.5ci	R-11.4ci	R-11.4ci	R-13.3 ci	R-13.3ci	R-15.2ci	R-15.2ci	R-15.2ci	R-25ci	R-25ci
Metal buildings	R-16	R-16	R-16	R-16	R-19	R-19	R-19	R-19	R-13 + R-5.6ci	R-13 + R-5.6ci	R-13 + R-5.6ci	R-13 + R-5.6ci	R-19 + R-5.6ci	R-19 + R-5.6ci	R-19 + R-5.6ci	R-19 + R-5.6ci
Metal framed	R-13	R-13	R-13	R-13+ 7.5ci	R-13 + R-3.8ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5 ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13 + R-15.6ci	R-13 + R-7.5 ci	R-13 + R-18.8ci
Wood framed and other	R-13	R-13	R-13	R-13	R-13	R-13	R-13	R-13+ R-3.8ci	R-13 + R-3.8ci	R-13 + R-3.8ci	R-13 + R-7.5ci	R-13 + R-7.5ci	R-13+ R-7.5ci	R-13 + 7.5ci	R-13 + R-15.6ci	R-13 + 15.6ci
Walls, Below Grade																
Below grade wall[d]	NR	NR	NR	NR	NR	NR	NR	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-7.5ci	R-10ci	R-7.5ci	R-12.5ci
Floors																
Mass	NR	NR	R-6.3ci	R-8.3ci	R-6.3ci	R-8.3ci	R-10ci	R-10.4ci	R-10ci	R-12.5ci	R-12.5ci	R-14.6ci	R-15ci	R-16.7ci	R-15ci	R-16.7ci
Joist/Framing (steel/wood)	NR	NR	R-19	R-30	R-19	R-30	R-30	R-30	R-30	R-30	R-30	R-30e	R-30	R-30e	R-30e	R-30e
Slab-on-Grade Floors																
Unheated slabs	NR	NR	NR	NR	NR	NR	NR	R-10 for 24 in. below	NR	R-10 for 24 in. below	R-10 for 24 in. below	R-15 for 24 in. below	R-15 for 24 in. below	R-15 for 24 in. below	R-15 for 24 in. below	R-20 for 24 in. below
Heated slabs	R-7.5 for 12 in. below	R-7.5 for 12 in. below	R-7.5 for 12 in. below	R-7.5 for 12 in. below	R-10 for 24 in. below	R-10 for 24 in. below	R-15 for 24 in. below	R-15 for 24 in. below	R-15 for 24 in. below	R-15 for 24 in. below	R-15 for 24 in. below	R-20 for 48 in. below	R-20 for 24 in. below	R-20 for 48 in. below	R-20 for 48 in. below	R-20 for 48 in. below
Opaque doors																
Swinging	U-0.70	U-0.70	U-0.70	U-0.70	U-0.70	U-0.70	U-0.70	U-0.70	U-0.70	U-0.70	U-0.70	U-0.50	U-0.50	U-0.50	U-0.50	U-0.50
Roll-up or sliding	U-1.45	U-1.45	U-1.45	U-1.45	U-1.45	U-1.45	U-0.50	U-0.50	U-0.50	U-0.50	U-0.50	U-0.50	U-0.50	U-0.50	U-0.50	U-0.50

For SI: 1 inch = 25.4 mm.

ci = Continuous insulation. NR = No requirement.

a. When using *R*-value compliance method, a thermal spacer block is required, otherwise use the *U*-factor compliance method. [see Tables 502.1.2 and 502.2(2)].

b. Assembly descriptions can be found in Table 502.2(2).

c. R-5.7 ci is allowed to be substituted with concrete block walls complying with ASTM C 90, ungrouted or partially grouted at 32 inches or less on center vertically and 48 inches or less on center horizontally, with ungrouted cores filled with material having a maximum thermal conductivity of 0.44 Btu-in./hr · ft2 · °F.

d. When heated slabs are placed below grade, below-grade walls must meet the exterior insulation requirements for perimeter insulation according to the heated slab-on-grade construction.

e. Steel floor joist systems shall to be R-38.

TABLE 502.3 BUILDING ENVELOPE REQUIREMENTS: FENESTRATION

CLIMATE ZONE	1	2	3	4 EXCEPT MARINE	5 AND MARINE 4	6	7	8
Vertical fenestration (40% maximum of above-grade wall)								
U-factor								
Framing materials other than metal with or without metal reinforcement or cladding								
U-factor	1.20	0.75	0.65	0.40	0.35	0.35	0.35	
Metal framing with or without thermal break								
Curtain wall/storefront *U*-factor	1.20	0.70	0.60	0.50	0.45	0.45	0.40	0.40
Entrance door *U*-factor	1.20	1.10	0.90	0.85	0.80	0.80	0.80	0.80
All other *U*-factors	1.20	0.75	0.65	0.55	0.55	0.55	0.45	0.45
SHGC-all frame types								
SHGC: PF < 0.25	0.25	0.25	0.25	0.40	0.40	0.40	0.45	0.45
SHGC: 0.25 < PF < 0.5	0.33	0.33	0.33	NR	NR	NR	NR	NR
SHGC: PF > 0.5	0.40	0.40	0.40	NR	NR	NR	NR	NR
Skylights (3% maximum)								
U-factor	0.75	0.75	0.65	0.60	0.60	0.60	0.60	0.60
SHGC	0.35	0.35	0.35	0.40	0.40	0.40	NR	NR

NR = No requirement

PF = Projection factor (see Section 502.3.2)

a. All others includes operable windows, fixed windows and nonentrance door.

502.3.1 Maximum area. The vertical fenestration area (not including opaque doors) shall not exceed the percentage of the gross wall area specified in Table 502.3. The skylight area shall not exceed the percentage of the gross roof area specified in Table 502.3.

502.3.2 Maximum *U*-factor and SHGC. For vertical fenestration, the maximum *U*-factor and solar heat gain coefficient (SHGC) shall be as specified in Table 502.3, based on the window projection factor. For skylights, the maximum *U*-factor and solar heat gain coefficient (SHGC) shall be as specified in Table 502.3.

The window projection factor shall be determined in accordance with Equation 5-1

$PF = A/B$ **(Equation 5-1)**

where

PF = Projection factor (decimal)

A = Distance measured horizontally from the furthest continuous extremity of any overhang, eave, or permanently attached shading device to the vertical surface of the glazing.

B = Distance measured vertically from the bottom of the glazing to the underside of the overhang, eave, or permanently attached shading device.

TABLE 503.2.3(2) UNITARY AIR CONDITIONERS AND CONDENSING UNITS, ELECTRICALLY OPERATED, MINIMUM EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	SIZE CATEGORY	SUBCATEGOR	MINIMUM	TEST PROCEDURE[a]
Air cooled, (Cooling mode)	< 65,000 Btu/hd	Split system	13.0 SEER	AHRI 210/240
		Single package	13.0 SEER	
	≥ 65,000 Btu/h and	Split system and	10.1 EERc	
	≥ 135,000 Btu/h and	Split system and	9.3 EERc	AHRI 340/360
	≥ 240,000 Btu/h	Split system and	9.0 EERc	
Through-the-Wall (Air cooled, cooling mode)	< 30,000 Btu/hd	Split system	10.9 SEER (before Jan	AHRI 210/240
		Single package	10.6 SEER (before Jan	
Water Source	< 17,000 Btu/h	86°F entering	11.2 EER	AHRI/ASHRAE 13256-1
	≥ 17,000 Btu/h and	86°F entering	12.0 EER	AHRIASHRAE 13256-1
Groundwater Source	< 135,000 Btu/h	59°F entering	16.2 EER	AHRI/ASHRAE 13256-1
Ground source	< 135,000 Btu/h	77°F entering	13.4 EER	AHRI/ASHRAE 13256-1
Air cooled (Heating mode)	< 65,000 Btu/hd (Cooling capacity)	Split system	7.7 HSPF	AHRI 210/240
		Single package	7.7 HSPF	
	≥ 65,000 Btu/h and	47°F db/43°F wb	3.2 COP (before Jan 1,	
	≥ 135,000 Btu/h	47°F db/43°F wb	3.1 COP (before Jan 1,	AHRI 340/360

TABLE 503.2.3(2)-continued UNITARY AIR CONDITIONERS AND CONDENSING UNITS, ELECTRICALLY OPERATED, MINIMUM EFFICIENCY REQUIREMENTS

EQUIPMENT TYPE	SIZE CATEGORY	SUBCATEGO	MINIMUM	TEST PROCEDURE[a]
Through-the-wall (Air cooled, heating mode)	< 30,000 Btu/h	Split System	7.1 HSPE (before Jan	AHRI 210/240
		Single package	7.0 HSPF (before Jan 23,	
Water source	< 135,000 Btu/h	68°F entering	4.2 COP	AHRI/ASHRAE 13256-1
Groundwater source	< 135,000 Btu/h	50°F entering	3.6 COP	AHRI/ASHRAE 13256-1
Ground source	< 135,000 Btu/h	32°F entering	3.1 COP	AHRI/ASHRAE 13256-1

SECTION 504 SERVICE WATER HEATING (Mandatory)

504.1 General. This section covers the minimum efficiency of, and controls for, service water-heating equipment and insulation of service hot water piping.

504.2 Service water-heating equipment performance efficiency. Water-heating equipment and hot water storage tanks shall meet the requirements of Table 504.2. The efficiency shall be verified through data furnished by the manufacturer or through certification under an *approved* certification program.

504.3 Temperature controls. Service water-heating equipment shall be provided with controls to allow a setpoint of 110°F (43°C) for equipment serving dwelling units and 90°F (32°C) for equipment serving other occupancies. The outlet temperature of lavatories in public facility rest rooms shall be limited to 110°F (43°C).

COMMERCIAL ENERGY EFFICIENCY, TABLE 504.2, MINIMUM PERFORMANCE OF WATER-HEATING EQUIPMENT

EQUIPMENT TYPE	SIZE CATEGORY (input)	SUBCATEGORY OR RATING CONDITION	PERFORMANCE REQUIREDa, b	TEST PROCEDURE
Water heaters, Electric		Resistance	0.97 - 0.00132 EF	DOE 10 CFR Part 430
	>12kW	Resistance	*1.73 V* + 155 SL , Btu/h	ANSI Z21.10.3
	24 amps and 250 volts	Heat pump	0 93 - 0.00132 EF	DOE 10 CFR Part 430
Storage water heaters, Gas	75,000 Btu/h	20 gal	0.67 - 0.0019 EF	DOE 10 CFR Part 430
	> 75,000 Btu/h and 155,000 Btu/h	< 4,000 Btu/h/gal	*80%Et* (Q/ 800 + Btu/h	ANSI Z21.10.3
	> 155,000 Btu/h	< 4,000 Btu/h/gal	*80%E* (Q/ 800 + SL, Btulh	
Instantaneous water heaters, Gas	~ 50,000 Btu/h and < 200,000 Btu/he	4,000 (Btu/h)/gal and < 2 gal	0 62 - 0.0019 EF	DOE 10 CFR Part 430
	200,000 Btu/h	4,000 Btu/h/gal and ~ 10 gal	*80%Et*	ANSI Z21.10 .3
	200,000 Btu/h	4,000 Btu/h/gal and 10 gal	*80%E* (Q/ 800 + SL, Btulh	
Storage water heaters, Oil	105,000 Btu/h	20 gal	0.59 - 0.0019 EF	DOE 10 CFR Part 430
	> 105 ,000 Btu/h	< 4,000 Btu/h/gal	*78%E* (Q/ 800 + SL, Btulh	ANSI Z21 .10 3
Instantaneous water heaters, Oil	210,000 Btu/h	4,000 Btu/h/gal and < 2 gal	0.59 - 0.0019 EF	DOE 10 CFR Part 430
	> 210,000 Btu/h	4,000 Btu/h/gal and < 10 gal	*80%Et*	ANSI Z21.10.3
	> 210,000 Btu/h	4,000 Btu/h/gal and 10 gal	*78%E* (Q/ 800 + SL, Btulh	
Hot water supply boilers, Gas and Oil	300,000 Btu/h and <12,500,000 Btu/h	4,000 Btu/h/gal and < 10 gal	*80%Et*	ANSI Z21.10 .3
Hot water supply boilers, Gas	300,000 Btu/h and <12,500,000 Btu/h	4,000 Btu/h/gal and 10 gal	*80%E* (Q/ 800 + SL, Btulh	
Hot water supply boilers, Oil	> 300,000 Btu/h and <12,500,000 Btu/h	> 4,000 Btu/h/gal and > 10 gal	*78%E* (Q/ 800 + SL, Btulh	
Pool heaters, Gas and Oil	All	-	*78%Et*	ASHRAE 146
Heat pump pool heaters	All	-	4.0 COP	AHRI1160
Unfired storage tanks	All	-	Minimum insulation requirement R-12.5 (h . ft2 . °F)/Btu	(none)

For SI: °C = [(OF) - 32]/1 8, 1 British thermal unit per hour = 0.2931 W, 1 gallon = 3.785 L , 1 British thermal unit per hour per gallon = 0 078 W/L

a. Energy factor (EF) and thermal efficiency *(Et)* are minimum requirements. In the EF equation, *Vis* the rated volume in gallons .

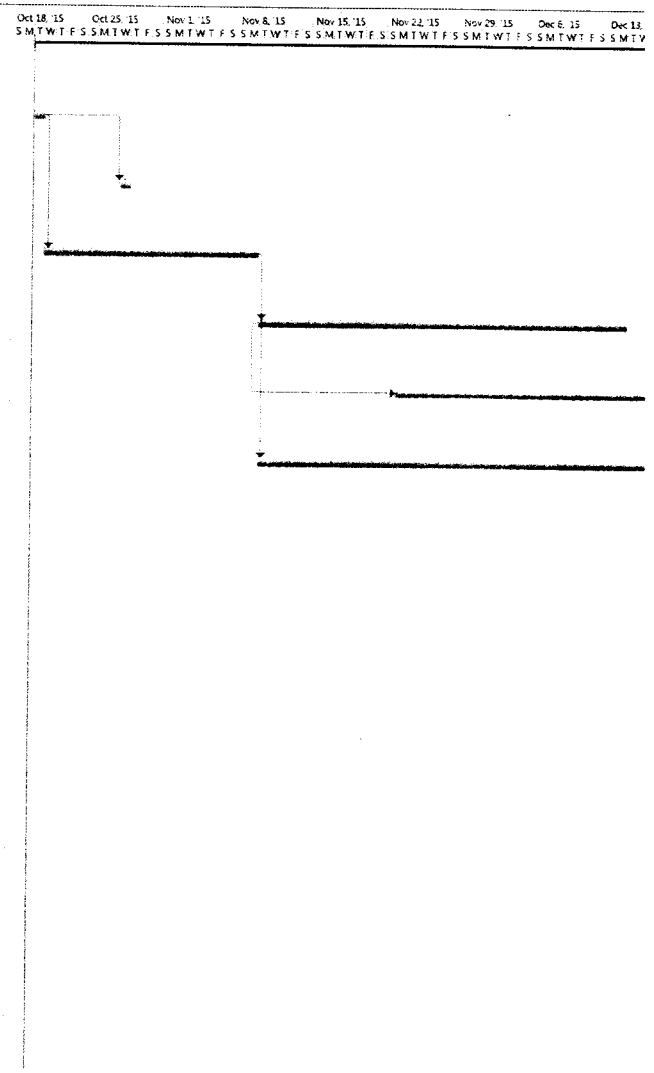
b. Standby loss (SL) is the maximum Btu/h based on a nominal 70°F temperature difference between stored water and ambient requirements. In the SL equation, *Qis the nameplate* input rate in Btu/h. In the SL equation for electric water heaters, *Vis* the rated volume in gallons In the SL equation for oil and gas water heaters and boilers. *Vis* the rated volume in gallons

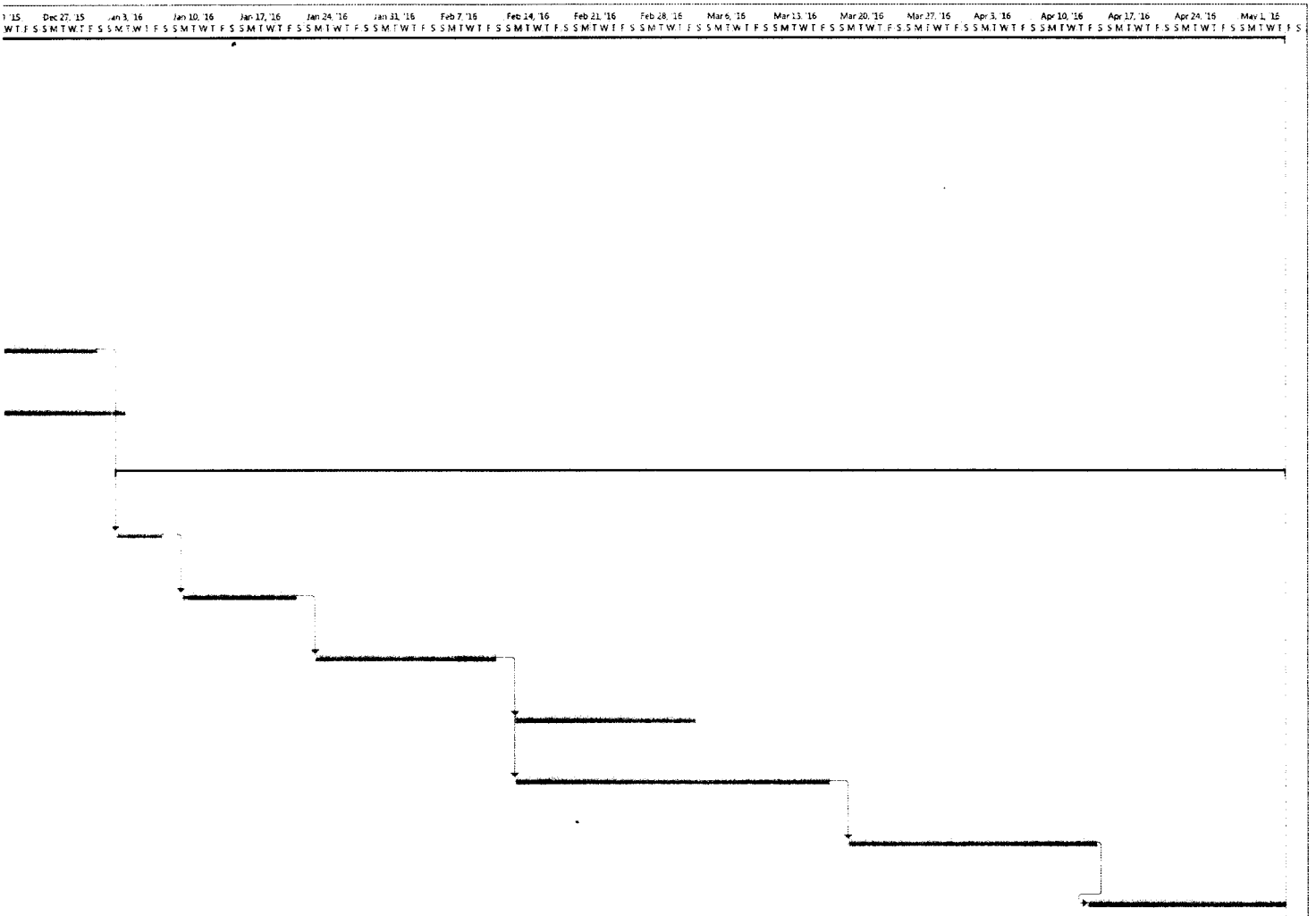
c Instantaneous water heaters with input rates below 200,000 Btu/h must comply with these requirements if the water heater is designed to heat water to temperatures 180°F or higher.

Directed Engineering Study

5.1.3 Preliminary Construction Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1		**Brown County Elections Hall Construction**	**143 days**	**Tue 10/20/15**	**Thu 5/5/16**		
2		Contract Executed	1 day	Tue 10/20/15	Tue 10/20/15		
3		Customer Kickoff	1 day	Wed 10/28/15	Wed 10/28/15	2FS+1 wk	
4		75% Construction Documents	14 days	Wed 10/21/15	Mon 11/9/15	2	
5		100% Construction Documents	25 days	Tue 11/10/15	Mon 12/14/15	4	
6		Pre Construction (Smartsheet Schedule)	30 days	Mon 11/23/15	Fri 1/1/16	5SS	
7		Order Metal Building	2 mons	Tue 11/10/15	Mon 1/4/16	4	
8		**Construction**	**89 days**	**Mon 1/4/16**	**Thu 5/5/16**		
9		Mobilization, Locates and Fencing	1 wk	Mon 1/4/16	Fri 1/8/16	6	
10		Site Prep and Utilities	2 wks	Mon 1/11/16	Fri 1/22/16	9	
11		Structural steel erection	3 wks	Mon 1/25/16	Fri 2/12/16	10	
12		Masonry	3 wks	Mon 2/15/16	Fri 3/4/16	11	
13		MEP	5 wks	Mon 2/15/16	Fri 3/18/16	11	
14		Interior Finishes	4 wks	Mon 3/21/16	Fri 4/15/16	13	
15		Final and Closeout	3 wks	Fri 4/15/16	Thu 5/5/16	14	





External Tasks
External Milestone
Deadline
Progress
Manual Progress

Brown County Ph. II
Election Building

26 OCTOBER 2015

Section 5
Exhibit B
50% Design Drawings

McKinstry
For The Life Of Your Building

ELEVATION MARKER

SECTION MARKER

DETAIL CALLOUT

GLASS TYPE

COLUMN GRID MARKER

LEVEL MARKER

WALL TAG

NORTH ARROW

KEY NOTES

DOOR TAGS

PROJECT DIRECTORY

PRIMARY CONTACT:
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5005 3RD AVENUE SOUTH
SEATTLE, WA. 98134
OFFICE: 206.768.7744

CLIENT:
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200S. BROADWAY ST., ROOM 109
BROWNWOOD, TX 76801
CONTACT: JUDGE E. RAY WEST III
OFFICE: 325.643.2828

ARCHITECT:
MCKINSTRY ESSENTION
JOHN LANG, AIA, PROJECT DIRECTOR
PETER GOODALL AIA, PROJECT ARCHITECT
5005 3RD AVENUE SOUTH
SEATTLE, WA, 98134
OFFICE: 206.762.3311
FAX: 206.832.8764

STRUCTURAL ENGINEER:
MCKINSTRY COMPANY
JEFF GOODWIN, SENIOR ENGINEER
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MECHANICAL ENGINEER:
MCKINSTRY ESSENTION
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SEATTLE, WA, 98134
OFFICE: 206.832.8445

ELECTRICAL ENGINEER:
MCKINSTRY COMPANY
DENNIS EMERSON, DIRECTOR OF ENGINEERING
ANNE GOERLICH, PROJECT ENGINEER
1670 NE MASON , SUITE 100
PORTLAND, OR 97230
OFFICE: 503.278.3952

METAL BUILDING PROVIDER:
NAME
INFORMATION

CODES

BUILDING	I.B.C.	2009
ACCESSIBILITY	ANSI A117.1	2009
ENERGY	I.E.C.C.	2009
MECHANICAL	I.M.C	2009
PLUMBING	I.P.C.	2009
FIRE	I.F.C.	2009
ELECTRICAL	N.E.C.	2011

CODE COMPLIANCE

PARKING PER ZONING CODE SECTION 98-561.L
GOVERNMENT ADMINISTRATION OFFICES--1/5 EMPLOYEES

ASSUME MAX. 10 EMPLOYEES = 2 SPACES REQUIRED.
9 PROVIDED INCLUDING (1) VAN ACCESSIBLE

OCCUPANT LOAD 1004.1.1
ASSEMBLY WITHOUT FIXED SEATS-UNCONCENTRATED
(TABLES AND CHAIRS) 15 NET
4,000 SF / 15 = 266.67 = 267

EGRESS WIDTH 1005.1
267 * 0.2 = 53.3" / 2 MEANS OF EGRESS = 26.67" < 36" DOOR PROVIDED = O.K.

PROJECT INFORMATION

BUILDING DEPARTMENT PROJECT NUMBER: XXXX

SITE ADDRESS:
613 N. FISK AVE.
BROWNWOOD, TEXAS 76801

PROPERTY I.D.: R51515

GEOGRAPHIC I.D.: 11200-0091-00

LEGAL DESCRIPTION:
BROWNWOOD PROPER, BLOCK 15B, LOT 100X128

BASE FLOOD ELEVATION:
+1 336.3

SITE AREA 12 800 SF.

ZONING C2 A DOWNTOWN BUSINESS DISTRICT

BUILDING AREA: PROPOSED 4,000 SF

BUILDING USE: OFFICE

CONSTRUCTION TYPE: V-B

SPRINKLER SYSTEM: NO

OCCUPANCY: A-3

MODEL CODE: 2009 I.B.C.

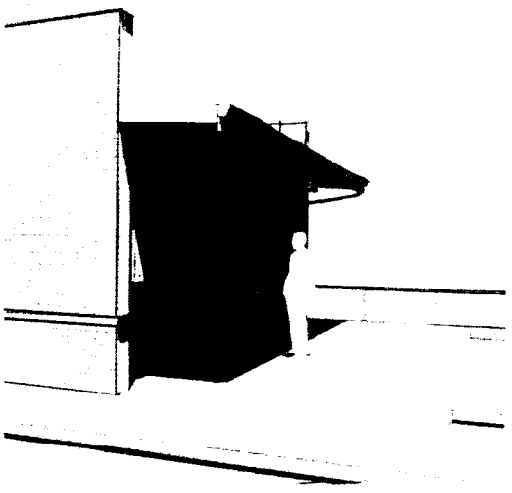
PROJECT DESCRIPTION

DEMOLISH (E) ABANDONED BUILDING. CONSTRUCT PREFABRICATED METAL BUILDING WITH FULLY FINISHED INTERIOR FOR USE BY COUNTRY TREASURER AND COUNTY ELECTIONS. ASSUME A OCCUPANCY FOR ENTIRE BASED ON POLLING LOCATION.

BASIS OF DESIGN

CLIENT DIRECTION IS TO DESIGN AND BUILD A COST-EFFECTIVE 4000 SQ FT PRE-ENGINEERED METAL BUILDING TO HOUSE THE TREASURER'S OFFICE AND ELECTIONS DEPARTMENT REQUIREMENTS. THE BUILDING SHALL BE LOCATED ON COUNTY OWNED PROPERTY WITH THE EXISTING BUILDING DEMOLISHED TO SLAB. THE NEW BUILDING IS TO BE BRICK VENEER WITH A FLAT PARAPET TO INTEGRATE WITH OTHER DOWNTOWN BUILDINGS.
THE TREASURER'S OFFICE HAS ONE OFFICE AND OPEN WORKSTATIONS FOR TWO SUPPORT STAFF AS WELL AS FUTURE EXPANSION. IT WILL HAVE ITS OWN DEDICATED UNISEX RESTROOM AND STORAGE. THE ELECTIONS DEPARTMENT HAS ONE OFFICE AND A ROOM FOR VOTE COUNTING. THE VOTING ROOM IS LARGE ENOUGH FOR 12 VOTING MACHINES AND SUPPORTING STAFF. THERE IS A SECURE STORAGE ROOM FOR VOTING MACHINES IN 6 STORAGE RACKS. THE VOTING ROOM IS TO BE USED FOR ELECTIONS TRAINING AND OTHER MEETING FUNCTIONS. IT WILL HAVE INTEGRATED A/V ON ONE WALL. THERE ARE CODE REQUIRED RESTROOMS, BREAK/COPY ROOM AND STORAGE ROOMS. SITE IS TO ACCOMMODATE AS MUCH PARKING AS POSSIBLE UTILIZING THE EXISTING CONCRETE SLAB WHEREVER POSSIBLE. THE SITE AND BUILDING ARE TO BE ADA ACCESSIBLE.

DRAWING INDEX



McKinstry
For The Life Of Your Building
McKINSTRY ESSENTION LLC
SEATTLE
5005 3RD AVENUE S.
PO BOX 24567
SEATTLE, WA 98124
1-800-685-9225
www.mckinstry.com

PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT WILLIAM LANG 23480 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO.	DATE	DESCRIPTION
1	07/28/2015	PATIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/19/2015	INTERNAL COORDINATION SET
	08/26/2015	PRICING SET

DESIGNED BY	JWL/PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	200612

SHEET TITLE

PROJECT INFORMATION, DRAWING INDEX, PROJECT DIRECTORY, GENERAL NOTES

SHEET NUMBER

A0.0

PRELIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY

ABBREVIATIONS

A
AB Anchor bolt
ACC Accessory
ACOUST Acoustical
ADJ Adjustable/Adjacent
ADH Adhesive
AFF Above Finish Floor
ALUM Aluminum
ALT Alternate
APPROX Approximate(ly)
APPD Approved
ASSY Assembly

B
BEY Beyond
BD Board
BLDG Building
BLK Block
BLKG Blocking
BO By Others
BOT Bottom (of)
BRG Bearing
BRKT Bracket
BTWN Between

C
CABT Cabinet
CC Center to Center
CEM Cement (ritious)
CI Cast Iron
CJ Control Joint
CLG Ceiling
CLR Clear
COL Column
COMB Combination
CONC Concrete
CONT Continuous
CONTR Construction
CORR Corridor
CPT Carpet Tile
CSK Countersunk
CT Ceramic Tile
CTG Coating
CTR Center
CY Cubic Yard(s)

D
DIA Diameter
DIAG Diagonal
DIM Dimension (s)
DN Down
DR Door
DS Downspout
DWG Drawing

E
E East
(E) Existing
EA Each
EF Each Face
EJ Expansion Joint
ELEC Electric (al)
ELEV Elevation (view or datum)
EQ Equal or =
EQUIP Equipment
EW Each Way
EXP Expansion
EXT Exterior

F
FA Fire Alarm
FCP Fiber Cement Panel
FD Floor Drain
FDN Foundation
FE Fire Extinguisher
FEC Fire Extinguisher Cabinet
FF Finish Floor
FH Fire Hose
FIN Finish
FIXT Fixture
FLR Floor
FLASH Flashing
FLEX Flexible
FOM Face of Masonry
FOPC Face of Precast
FOS Face of Stud
FRP Fiberglass Reinforced Polyestar
FT (or ') Foot
FTG Footing

G
GA Gauge
GALV Galvanized
GC General Contractor
GEN General
GFRC Glass fiber reinforced concrete
GL Glass
GLZ TL Glazed Tile
GR Grade
GYP Gypsum
GWB Gypsum Wall Board

H
HC Handicap(ped)
HD Head
HDBD Headboard
HDF High Density Fiberboard
HDWD Hardwood
HDWR Hardware
HM Hollow Metal
HORIZ Horizontal
HSS Hollow structral section
HR Hour
HT Height
HTG Heating
HTR Heater
HYD Hydrant

I
ID Inside diameter
IN (or ") Inch (es)
INSUL Insulation
INT Interior

J
JS Joist
JT Joint

K
KIT Kitchen

L
LAM Laminate
LGTH Length
LT Light

M
MAS Masonry
MATL Material
MAX Maximum
MECH Mechanical
MFR Manufacturer
MIN Minimum
MO Masonry opening
MTD Mounted
MTG HT Mounting height
MTL Metal
MULL Mullion

N
N North
NIC Not in contract
NO Number
NOM Nominal
NTS Not to scale

O
OA Overall
OC On center
OD Outside diameter
OPNG Opening
OPP Opposite
OTS Open To Structure

P
PAR Parallel
PARTN Partition
PERP Perpendicular
PLAM Plastic laminate
PLAS Plaster
PLBG Plumbing
PLYWD Plywood
PNL Panel
PNLG Paneling
PR Pair
PREFAB Prefabricated
PT Paint
PTD Paper Towel Dispenser

R
R Radius (or riser)
RA Return Air
RB Rubber Base
RCP Reinforced concrete pipe
RD Roof Drain
RECP Receptacle
REF Refrigerator
REINF Reinforcing (or reinforced)
REV Reversed
REQD Required
RFG Roofing
RM Room
RS Rough Sawn

S
S South
SBJ Silicone Butt Joint
SC Sealed Concrete
SCHED Schedule
SECT Section
SHT Sheet
SF Store Front
SIM Similar
SM Sheet Metal
SMLS Seamless
SP CTG Special coating
SPEC Specification
SQ Square
SS Stainless Steel
SSC Stained Sealed Concrete
ST Stain
STD Standard
STL Steel
STO Storage
STRUCT Structure (al)
SUSP Suspend (ed)
SYM Symmetrical

T
T Tread
T&B Top & bottom
T&G Tongue & Groove
TERM Terminate
TOM Top of masonry
TOW Top of wall
TS Tube steel (or towel strip)
TYP Typical

U
U Urinal
UNO Unless noted otherwise
US Utility shelf

V
VERT Vertical
VCT Vinyl composition tile
VIF Verify in field
VTR Vent thru roof
VWC Vinyl wall covering

W
W West
WD Wood
WDO Window
WF Wide Flange
WH Wall hydrant
WT Structural T section
WWF Welded wire fabric
W/ With
W/O Without

X
X By (as 6'x8')

Y
YD Yard

SYMBOLS
/ Per (or by)
& And
@ At
[Channel
+/- Plus / minus

SYMBOL LEGEND

GYPSUM BOARD
RIGID INSULATION
CONCRETE
EARTH
GRAVEL
STEEL
WOOD
CARPET
BATT INSULATION

GENERAL NOTES

1. STUD WALLS ARE DIMENSIONED TO FACE OF STUD EXCEPT THOSE WHICH ARE LOCATED BY CENTERING ON COLUMN GRIDLINES.

2. CONTRACTOR SHALL EXERCISE PROPER PRECAUTIONS TO VERIFY INFORMATION SHOWN ON DRAWINGS BEFORE LAYING OUT WORK. NOTIFY ARCHITECT FOR CLARIFICATION OF ANY DISCREPANCIES BEFORE PROCEEDING WITH WORK.

3. PROVIDE BLOCKING AT ALL WALL MOUNTED EQUIPMENT, INCLUDING BUT NOT LIMITED TO, TOILET ROOM ACCESSORIES, SHELVING RACKS AND WALL-MOUNTED FIXTURES. MILLWORK AND OTHER WORK REQUIRING BLOCKING.

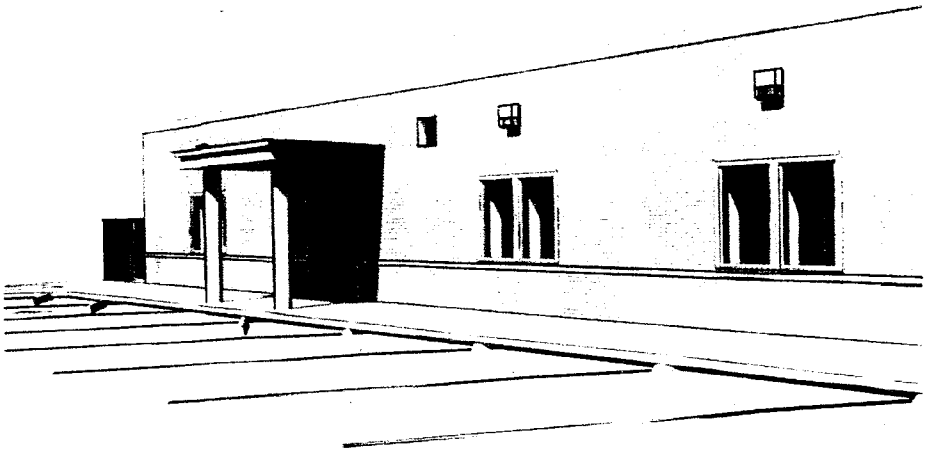
5. COMPLY WITH EPA REGULATIONS AND DISPOSAL REGULATIONS OF AUTHORITIES HAVING JURISDICTION.

6. IT IS NOT EXPECTED THAT HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE WORK. IF MATERIALS SUSPECTED OF CONTAINING HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY CONTACT ARCHITECT AND OWNER. HAZARDOUS MATERIALS WILL BE REMOVED BY THE OWNER.

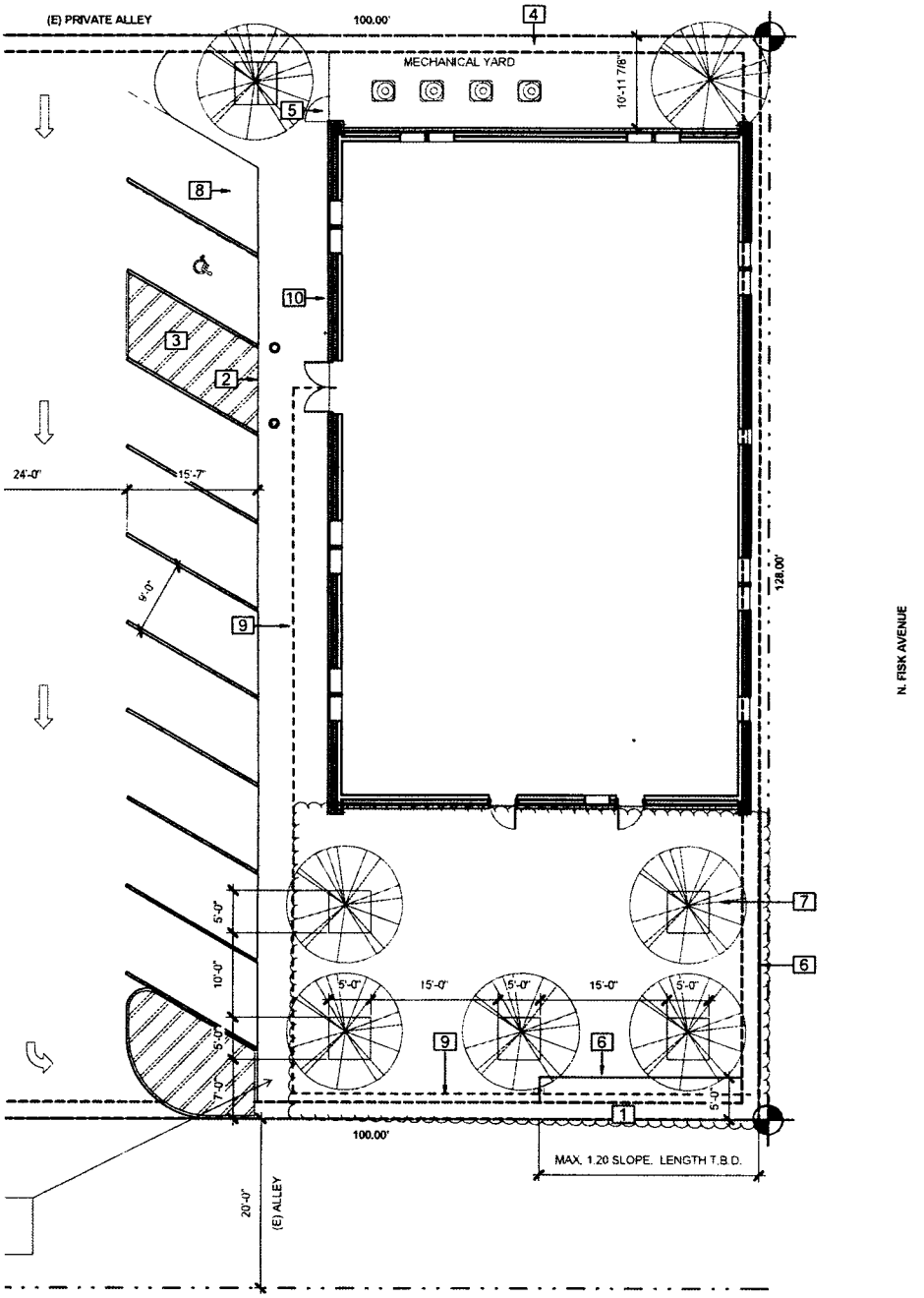
7. PROTECT BUILDING STRUCTURE AND INTERIOR FROM WEATHER AND WATER LEAKAGE AND DAMAGE.

8. TRAFFIC: MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING CONSTRUCTION

9. CONTRACTOR TO BE RESPONSIBLE FOR THE ERECTION AND REMOVAL OF ANY TEMPORARY FACILITIES.



② VIEW FROM PARKING



NOTES
RAMP

LOADING AREA
N LINK FENCE W/ PRIVACY SLATS
ITH LOCKING HARDWARE

WITH IRRIGATION, PEA GRAVEL TOPPING (ADD ALTERNATE)
NC. WHEEL STOPS, PIN WITH REBAR AND ADHESIVE
ROUTE FROM PUBLIC WAY
PARKING SIGN

SITE PLAN NOTES:
1. PROPERTY LINES ARE ASSUMED TO BE AT PERIMETER OF EXISTING BUILDING UNTIL SURVEY IS RECIEVED

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT JAMES WILLIAM LANG 23460 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO	DATE	DESCRIPTION
1	07/23/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

DESIGNED BY	JWL / PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	20613

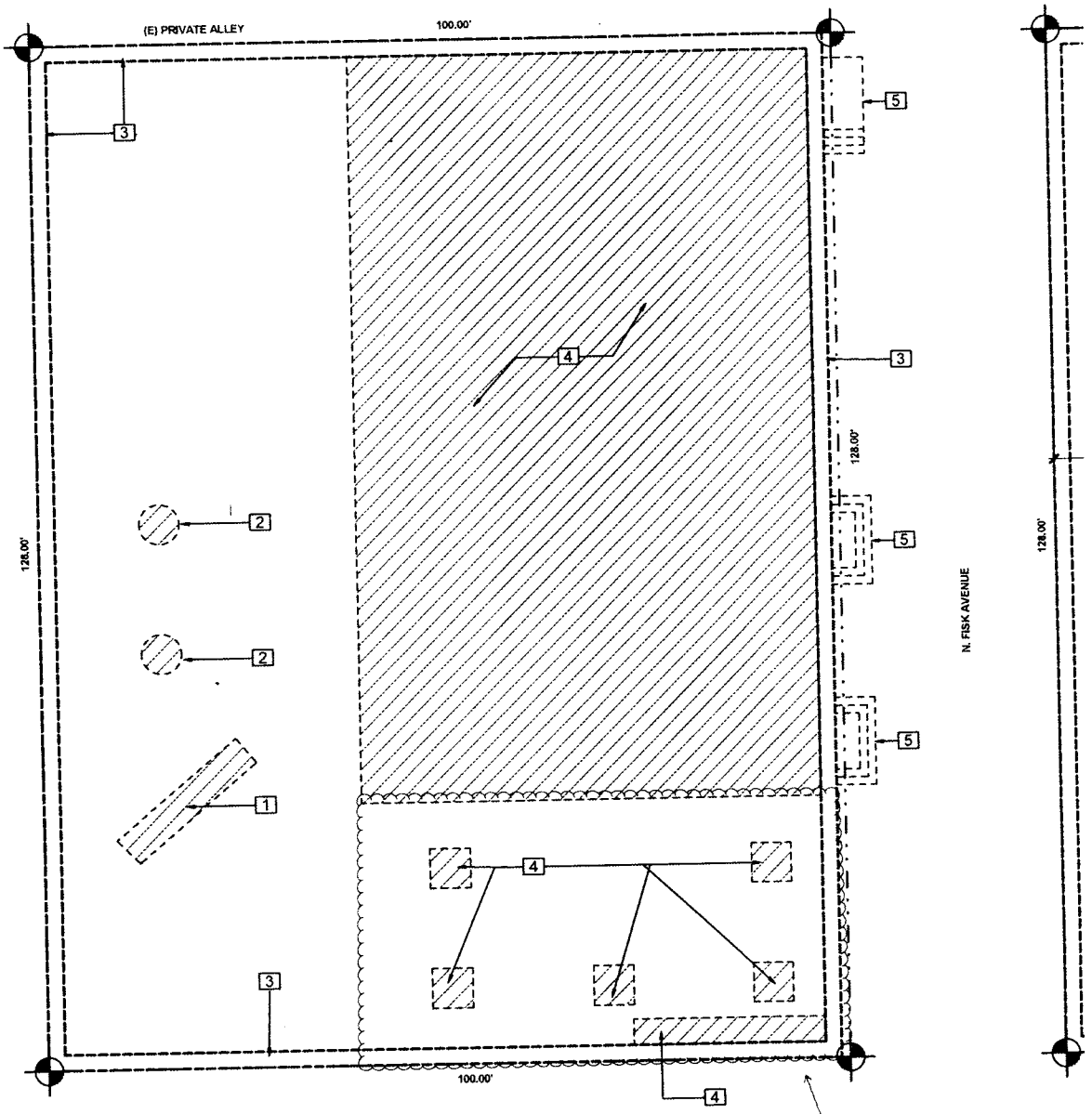
SHEET TITLE

SITE PLAN AND DEMOLITION PLAN

SHEET NUMBER

A1.0

LIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY



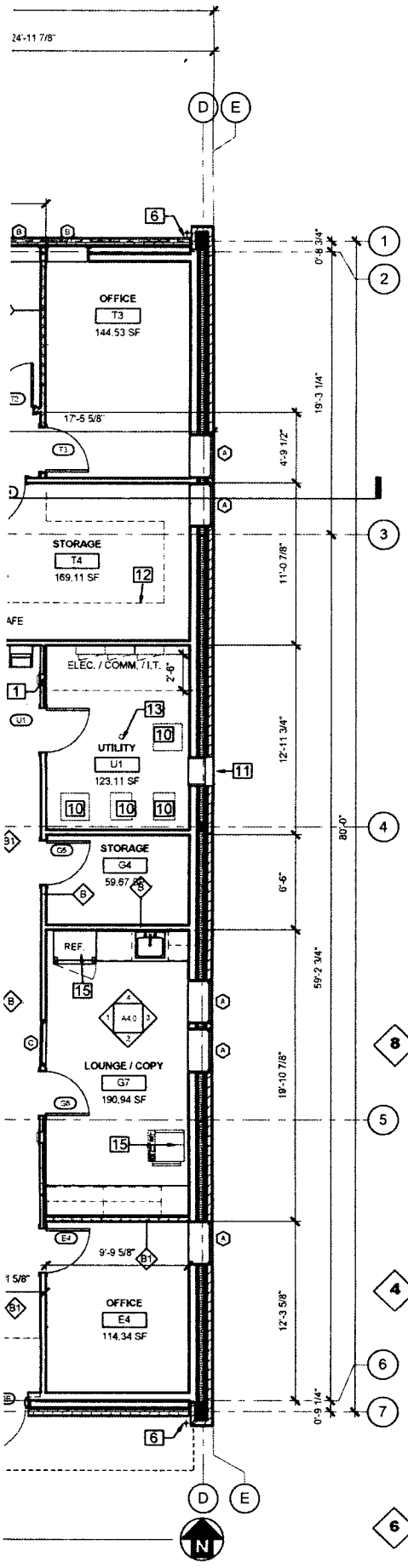
② DEMOLITION PLAN
1/8" = 1'-0"

DEMOLITION PLAN KEY NOTES
1. FILL PIT
2. FILL LIFT JACK HOLES
3. REMOVE (E) WALLS
4. REMOVE (E) CONCRETE FLOOR FOR TREE WALLS (ADD ALTERNATE)
5. REMOVE (E) CONCRETE STEPS AND PATCH SIDEWALK

① SIT
1/8"

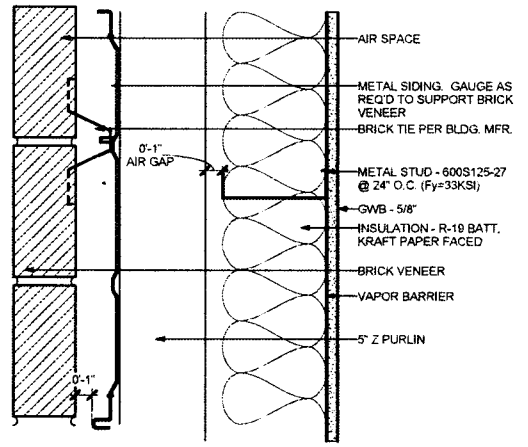
SITE
1. A
2. C
3. A
4. G
5. S
6. C
7. T
8. F
9. A
10. A

F

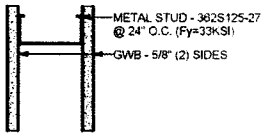


FLOOR PLAN KEY NOTES

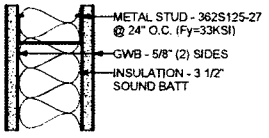
1. F.E.C.
2. DRINKING FOUNTAIN (1-ACCESIBLE)
3. SLOP SINK
4. WALK-OFF MATT
5. 6' HIGH CHAIN LINK FENCE W/ PRIVACY SLATS
6. RAIN LEADER
7. ~~CONCRETE COLUMN~~ [illegible]
8. ROOF OVERHANG ABOVE
9. OUTSIDE MECHANICAL UNITS
10. INSIDE MECHANICAL UNITS
11. LOUVER
12. SHELVING, N.I.C.
13. FLOOR DRAIN
14. PLYWOOD WAINSCOT ON WALL TO 8' A.F.F.
15. F.F.E. N.I.C.
16. VOTING MACHINE CARTS. N.I.C. FOR SCALE ONLY
17. ROD AND SHELF.



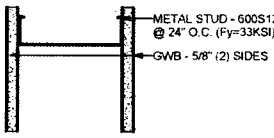
8 WALL TYPE A 3" = 1'-0"



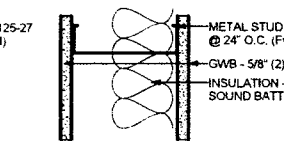
4 WALL TYPE B 3" = 1'-0"



5 WALL TYPE B1 3" = 1'-0"



6 WALL TYPE C 3" = 1'-0"



7 WALL TYPE C1 3" = 1'-0"

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT WILLIAM JOHN MOORE 23480 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO	DATE	DESCRIPTION
1	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

DESIGNED BY	JWL / PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	20612

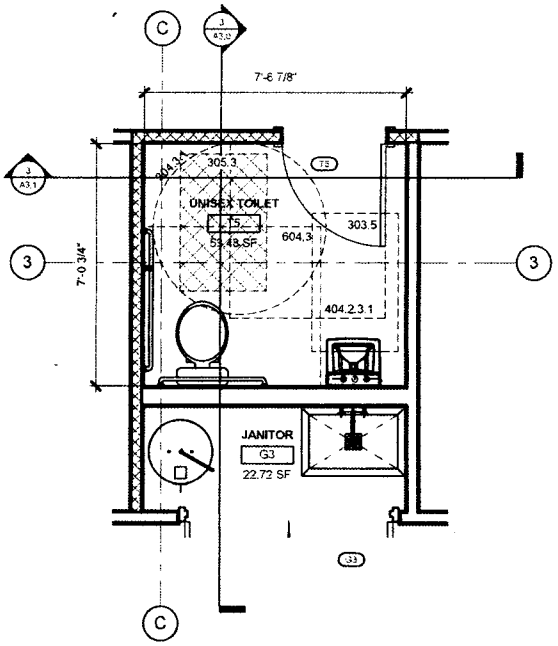
SHEET TITLE

FLOOR PLAN

SHEET NUMBER

A2.1

PRELIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY



2 PRIVATE BATH DETAIL PLAN
1/2" = 1'-0"

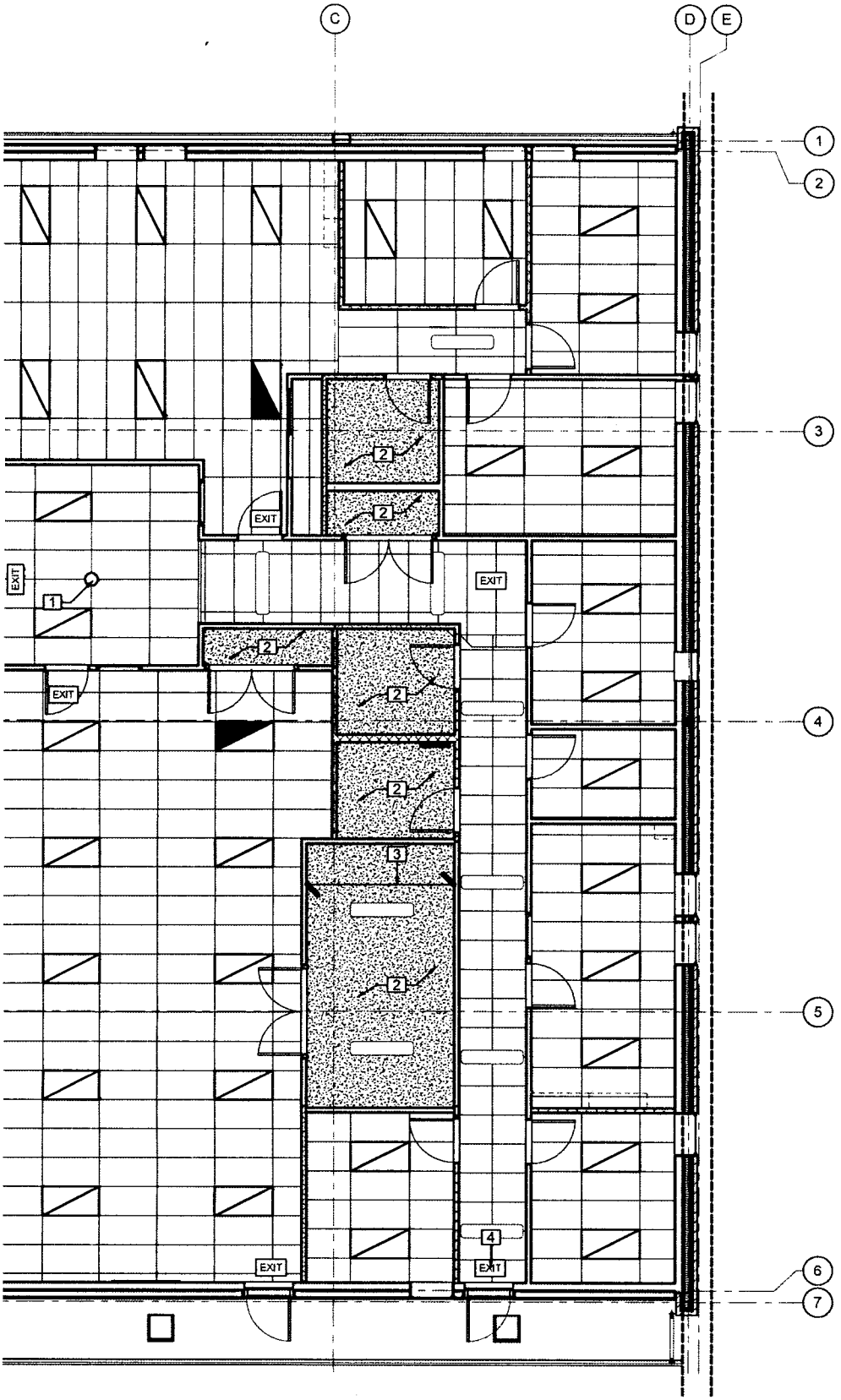
Replace 12" round concrete columns with tube steel columns and 12" x12" brick veneer columns

3 BATHROOM DETAIL PLAN
1/2" = 1'-0"

NOTE: BATHROOMS ARE MIRROR IMAGES

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

PRE



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

REFLECTED CEILING PLAN KEY NOTES
1. DECORATIVE LIGHTING FIXTURE (ADD ALT.)
2. GWB. GLG @ 9'-0" A.F.F. (1) 5/8" LAYER
3. CLG. FRAMING: 600S125-27 @ 24" O.C.
4. ILLUMINATED EXIT SIGN WITH BATTERY BACK-UP
5. SEE ELECTRICAL LIGHTING PLAN FOR CONTOLLING INFORMATION
6. SEE MECHANICAL PLAN FOR ADDITIONAL INFORMATION

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

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76801

CONSULTANTS

REGISTRATION

WILLIAM JOHN LANE
REGISTERED ARCHITECT
23450
STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO	DATE	DESCRIPTION
1	07/29/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

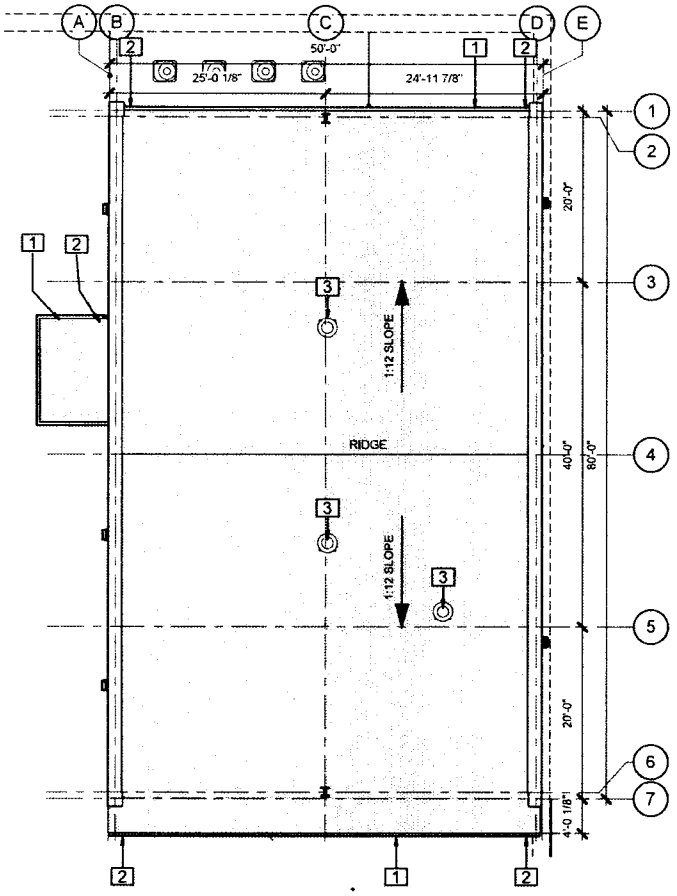
DESIGNED BY	JWL / PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	200812

SHEET TITLE

RELECTED CEILING PLAN AND ROOF PLAN

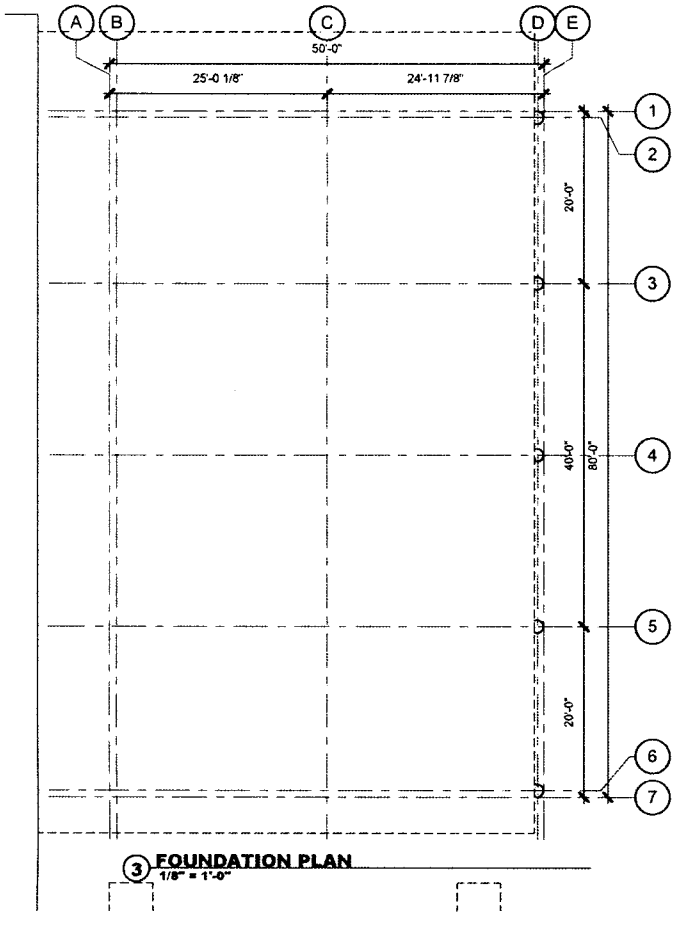
SHEET NUMBER

A2.2

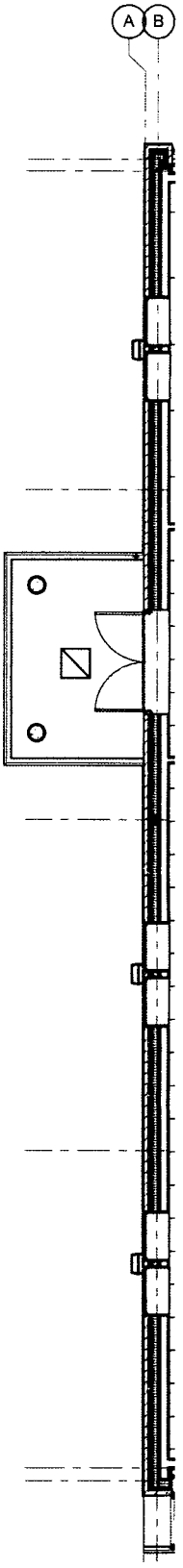


ROOF PLAN KEY NOTES
1. GUTTER
2. RAIN LEADER
3. MECHANICAL EQUIPMENT ON CURB

2 ROOF PLAN
1/8" = 1'-0"



3 FOUNDATION PLAN
1/8" = 1'-0"



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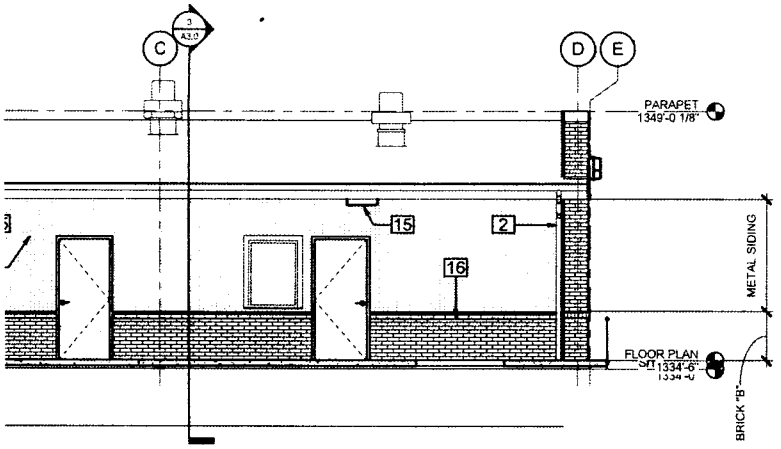
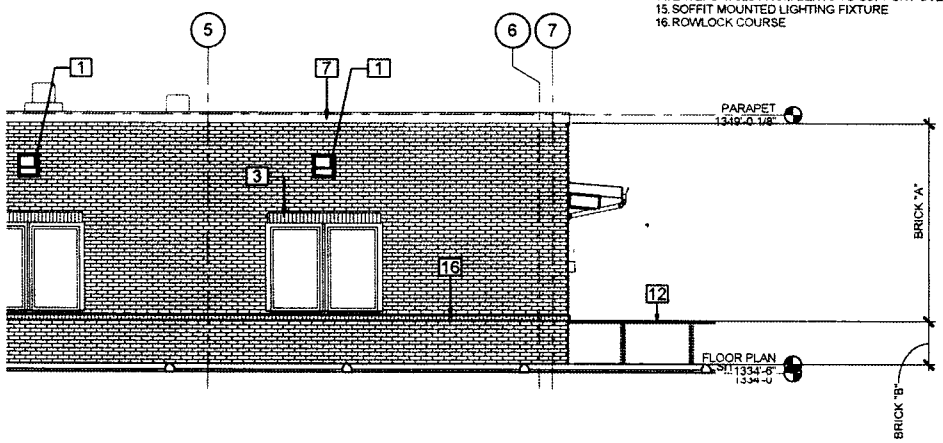
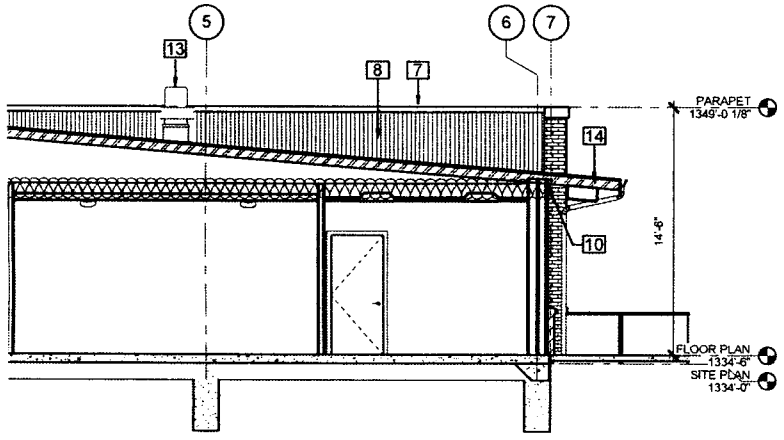


ELEVATION KEY NOTES

1. WALL-PACK LIGHT FIXTURE
2. RAIN LEADER, 18 GA. MTL.
3. SOLDIER COURSE
4. METER BASE AND TEMPORARY POWER CONNECTION
5. FENCE WITH PRIVACY SLATS. COLOR T.B.D. BY ARCHITECT
6. SONOTUBE COLUMNS
7. METAL COPING--20 GA.
8. METAL SIDING
9. ATTIC VENT-HIGH. PROVIDE 1/4" NON-CORROSIVE MESH
10. EAVE VENT--PROVIDE 1/4" NON-CORROSIVE MESH
11. R-38 BATT INSULATION
12. GUARD
13. EXHAUST FANS PER MECHANICAL
14. EXTEND TAILS FROM BENTS TO SUPPORT OVERHANG
15. SOFFIT MOUNTED LIGHTING FIXTURE
16. ROWLOCK COURSE





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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT
WILLIAM MICHAEL LAMB
23480
STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO.	DATE	DESCRIPTION
1	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/19/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

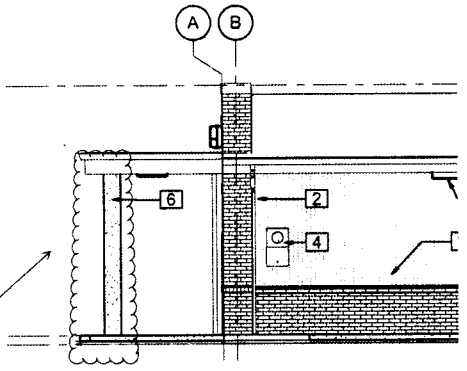
DESIGNED BY	JML / PAG
DRAWN BY	PAG
CHECKED BY	JML
JOB NO.	250612

SHEET TITLE

BUILDING SOUTH AND WEST ELEVATIONS. SECTION

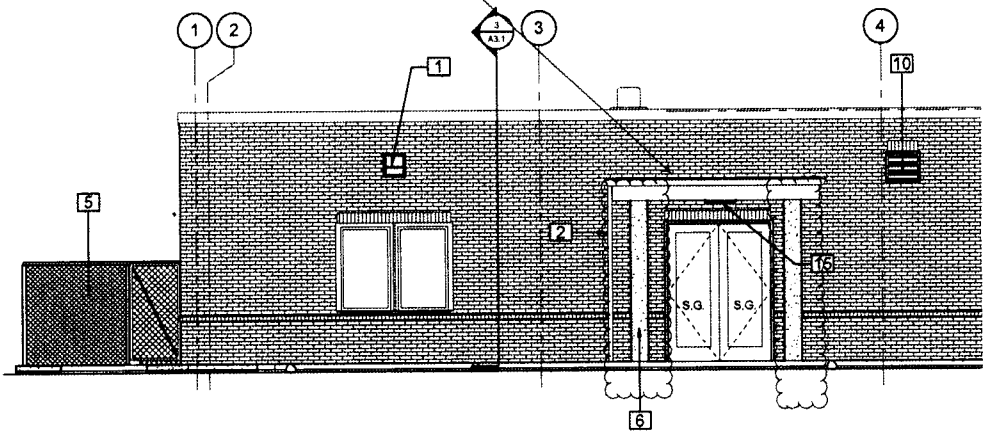
SHEET NUMBER

A3.0

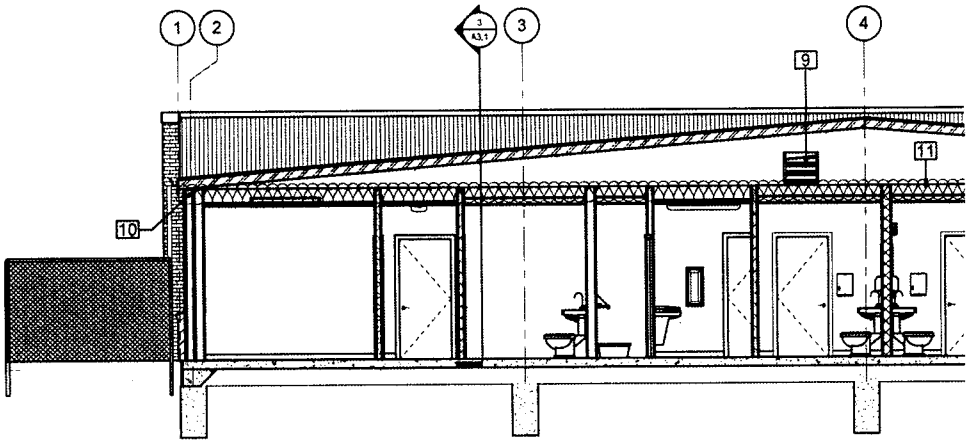


1 SOUTH ELEVATION
1/4" = 1'-0"

Remove 12" concrete columns and replace with tube steel columns and provide 12"x12" brick veneer wraps

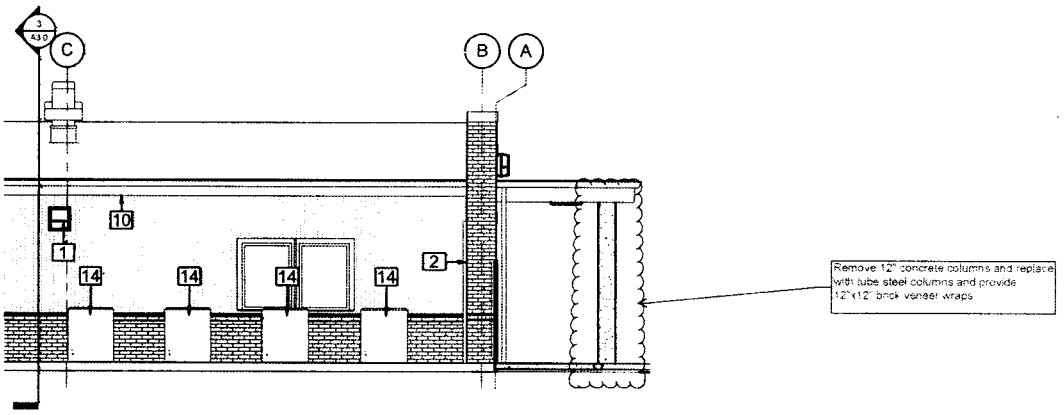


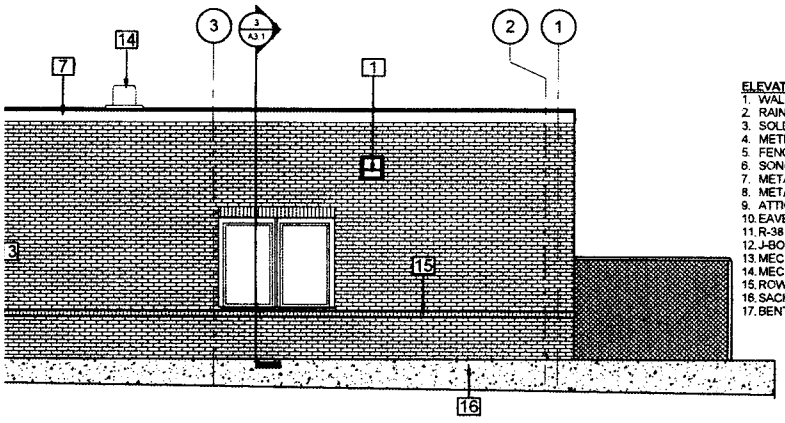
2 WEST ELEVATION
1/4" = 1'-0"



3 SECTION NORTH TO SOUTH
1/4" = 1'-0"

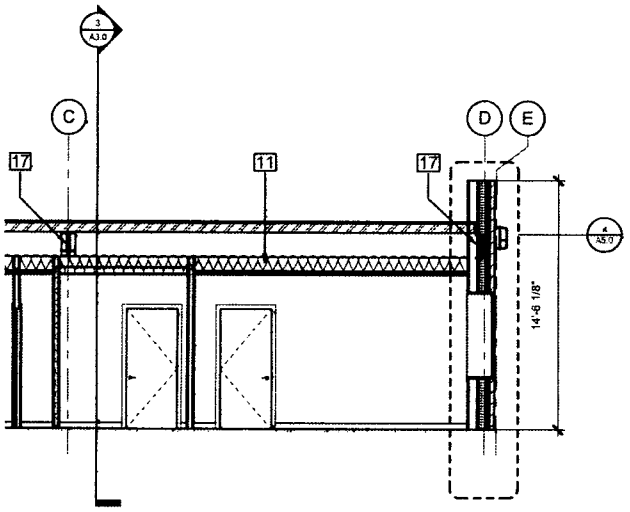
PF





ELEVATION KEY NOTES

1. WALL-PACK LIGHT FIXTURE
2. RAIN LEADER. 18 GA. MTL.
3. SOLDIER COURSE
4. METER BASE AND TEMPORARY POWER CONNECTION
5. FENCE WITH PRIVACY SLATS. COLOR T.B.D. BY ARCHITECT
6. SONOTUBE COLUMNS
7. METAL COPING--20 GA.
8. METAL SIDING
9. ATTIC VENT-HIGH. PROVIDE 1/4" NON-CORROSIVE MESH
10. EAVE VENT--PROVIDE 1/4" NON-CORROSIVE MESH
11. R-38 BATT INULATION
12. J-BOX FOR FUTURE SIGNAGE. SEE ELECTRICAL..SIGNAGE N.I.C.
13. MECHANICAL LOUVER
14. MECHANICAL UNITS
15. ROWLOCK COURSE
16. SACK, PATCH AND PAINT EXISTING CONCRETE WALL
17. BENT



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76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT JOHN WILLIAM LANE 23480 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO	DATE	DESCRIPTION
1	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

DESIGNED BY	JWL / PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	20612

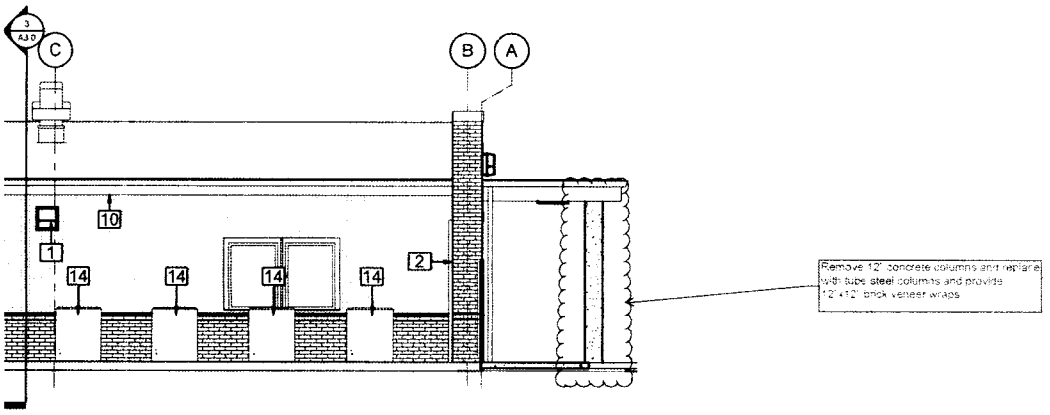
SHEET TITLE

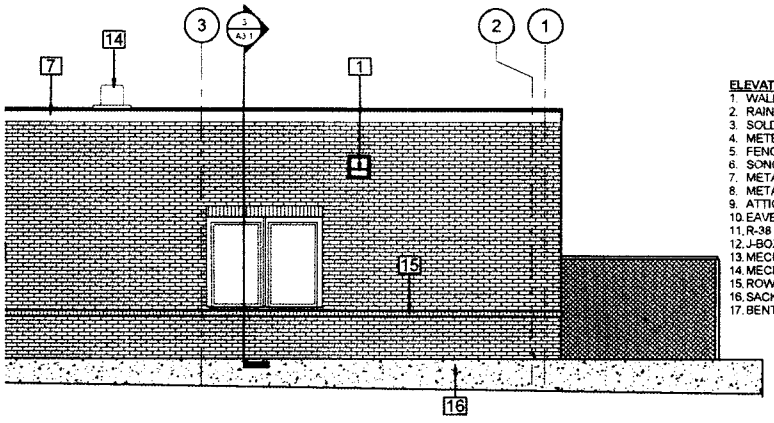
BUILDING NORTH AND EAST ELEVATIONS AND SECTIONS

SHEET NUMBER

A3.1

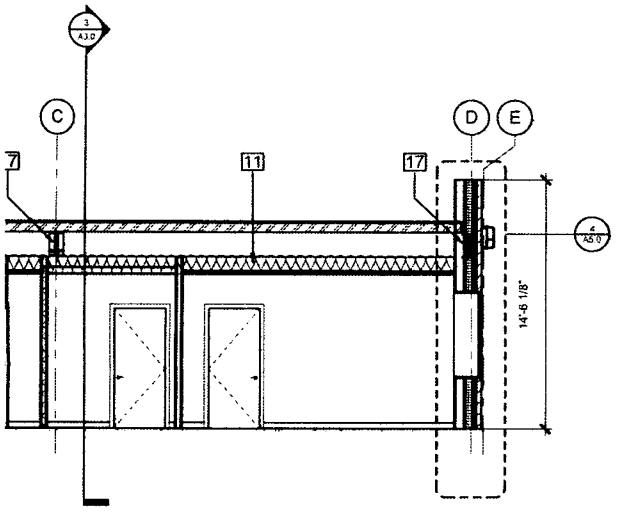
_IMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY





ELEVATION KEY NOTES

1. WALL-PACK LIGHT FIXTURE
2. RAIN LEADER. 18 GA. MTL.
3. SOLDIER COURSE
4. METER BASE AND TEMPORARY POWER CONNECTION
5. FENCE WITH PRIVACY SLATS. COLOR T.B.D. BY ARCHITECT
6. SONOTUBE COLUMNS
7. METAL COPING--20 GA.
8. METAL SIDING
9. ATTIC VENT-HIGH. PROVIDE 1/4" NON-CORROSIVE MESH
10. EAVE VENT--PROVIDE 1/4" NON-CORROSIVE MESH
11. R-38 BATT INULATION
12. J-BOX FOR FUTURE SIGNAGE. SEE ELECTRICAL..SIGNAGE N.I.C.
13. MECHANICAL LOUVER
14. MECHANICAL UNITS
15. ROWLOCK COURSE
16. SACK, PATCH AND PAINT EXISTING CONCRETE WALL
17. BENT



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PROJECT

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76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT WILLIAM MICHAEL LAMB 23480 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO.	DATE	DESCRIPTION
1	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/29/2015	PRICING SET

DESIGNED BY	JWL / PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	70g612

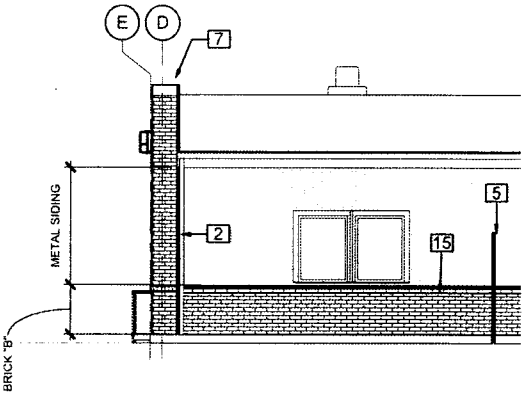
SHEET TITLE

BUILDING NORTH AND EAST ELEVATIONS AND SECTIONS

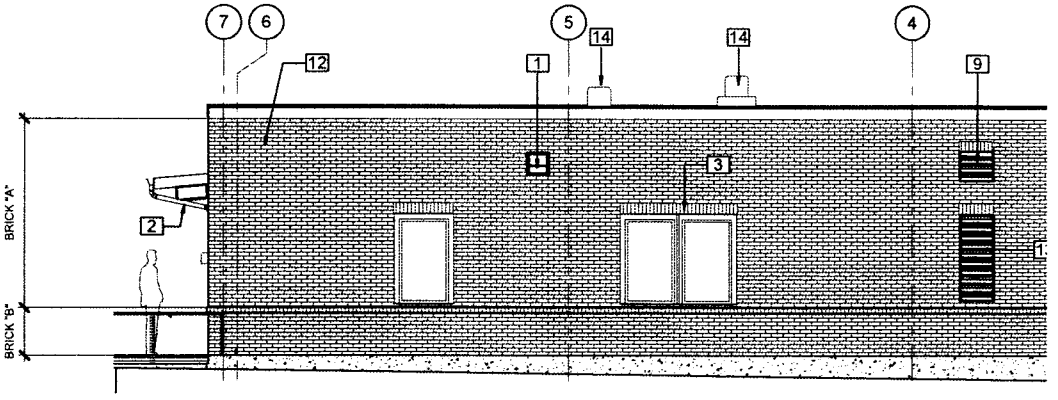
SHEET NUMBER

A3.1

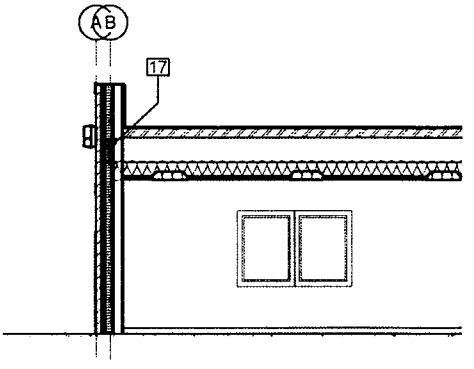
IMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY



1 NORTH ELEVATION
1/4" = 1'-0"

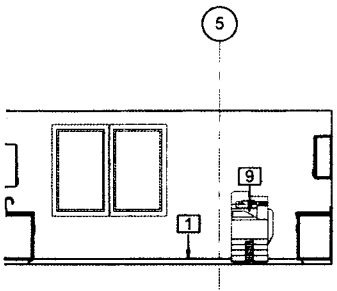


2 EAST ELEVATION
1/4" = 1'-0"

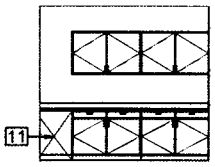


3 SECTION EAST TO WEST
1/4" = 1'-0"

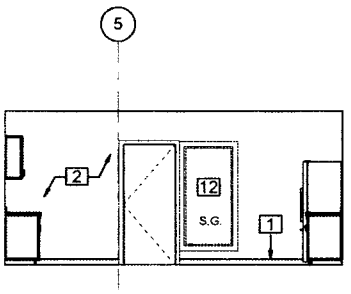
PREI



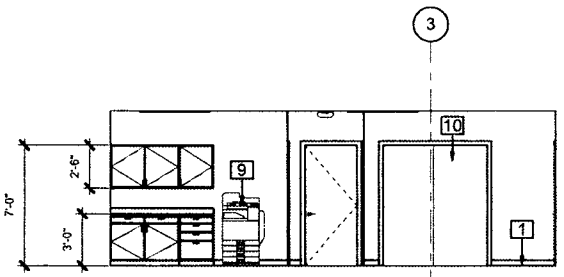
3 COPY / BREAK EAST
1/4" = 1'-0"



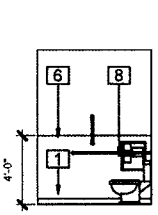
2 C / B SOUTH
1/4" = 1'-0"



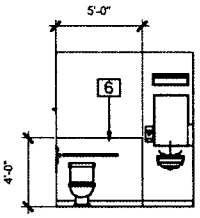
1 COPY / BREAK WEST
1/4" = 1'-0"



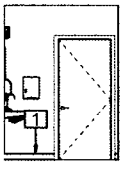
5 TREASURER OPEN OFF. EAST
1/4" = 1'-0"



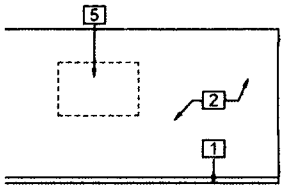
8 REST. W.
1/4" = 1'-0"



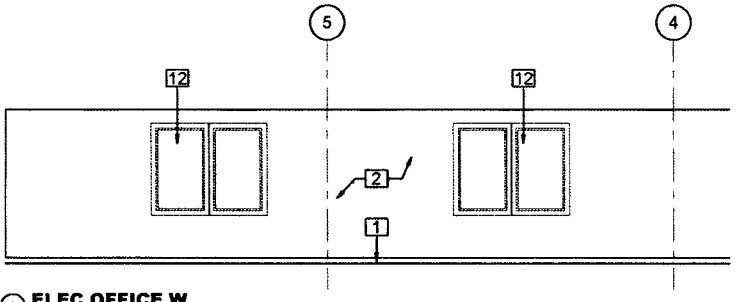
7 REST. N.
1/4" = 1'-0"



6 REST. E.
1/4" = 1'-0"



OFFICE S
-0"



9 ELEC OFFICE W
1/4" = 1'-0"

INTERIOR ELEVATION KEY NOTES

1. RUBBER BASE
2. G.W.B.
3. REFRIGERATOR--N.I.C.
4. NOT USED
5. T.V. N.I.C.
6. FRP WAINSCOTT.E.C.
7. GRAB BARS, ETC. PER SPECIFICATIONS. MOUNT PER ELEVATIONS SHEET A-7.1
8. EQUIPMENT, N.I.C.
9. CLOSET AND DOORS ADD ALT--N.I.C.
10. TRASH / RECYCLING BIN SPACE UNDER COUNTER
11. RELITE
12. MINI-BLINDS. TYP.

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5005 3RD AVENUE S
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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT WILLIAM J. LOW 29480 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO	DATE	DESCRIPTION
1	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/29/2015	PRICING SET

DESIGNED BY	JWL / PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	20612

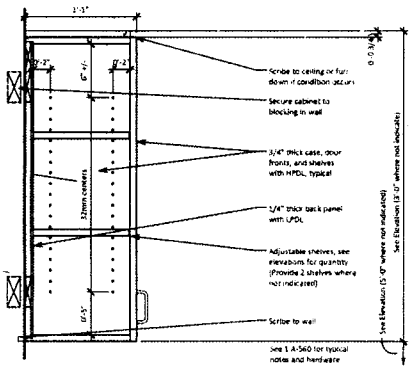
SHEET TITLE

INTERIOR ELEVATIONS

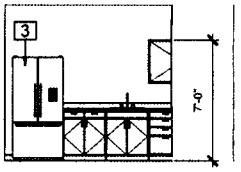
SHEET NUMBER

A4.0

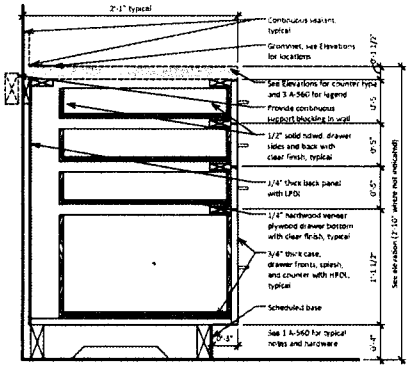
ELIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY



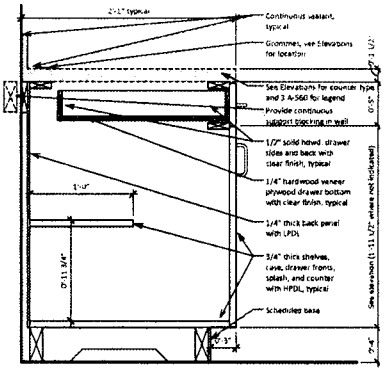
15 **UPPER CABINET DETAIL**
1 1/2" = 1'-0"



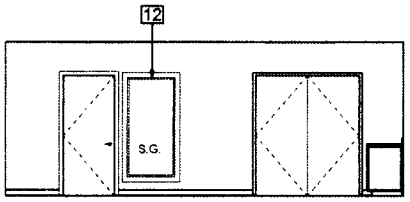
4 **C / B NORTH**
1/4" = 1'-0"



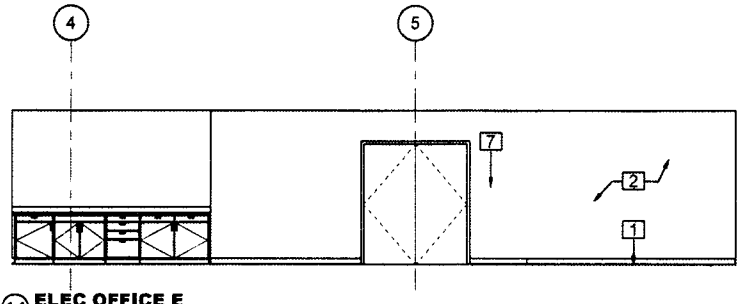
14 **BASE CABINET WITH DRAWERS**
1 1/2" = 1'-0"



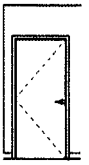
13 **BASE CABINET DETAIL**
1 1/2" = 1'-0"



12 **ELEC OFFICE N**
1/4" = 1'-0"

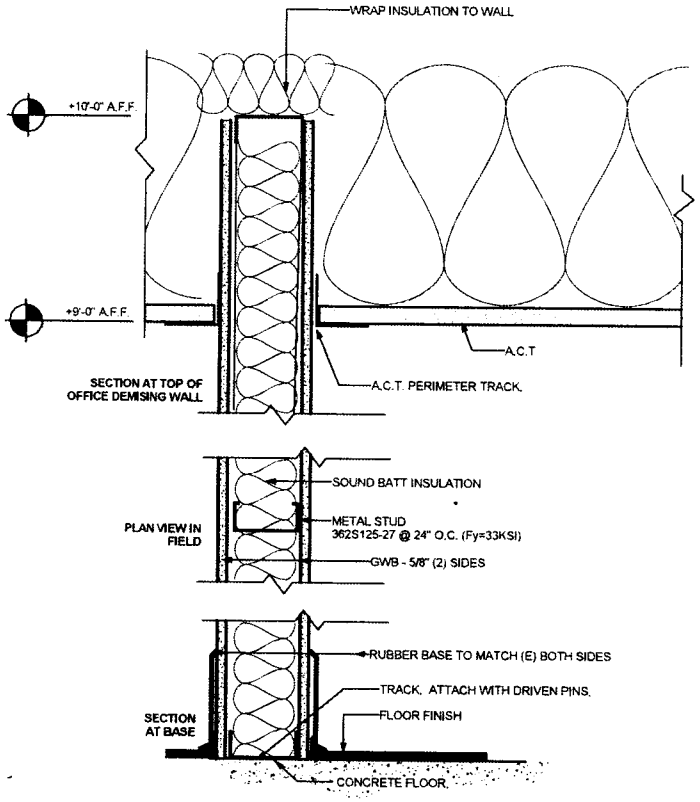


11 **ELEC OFFICE E**
1/4" = 1'-0"

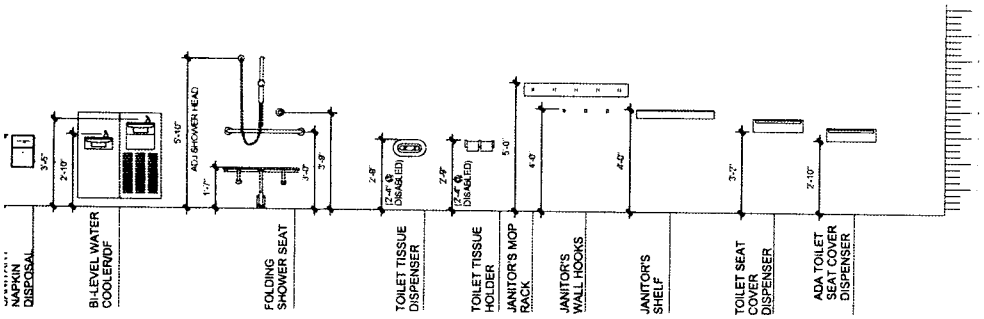


10 **ELE**
1/4" =

PF



1 WALL DETAIL
3" = 1'-0"



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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

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BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT
JOHN WILLIAM KING
23489
STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO.	DATE	DESCRIPTION
2	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

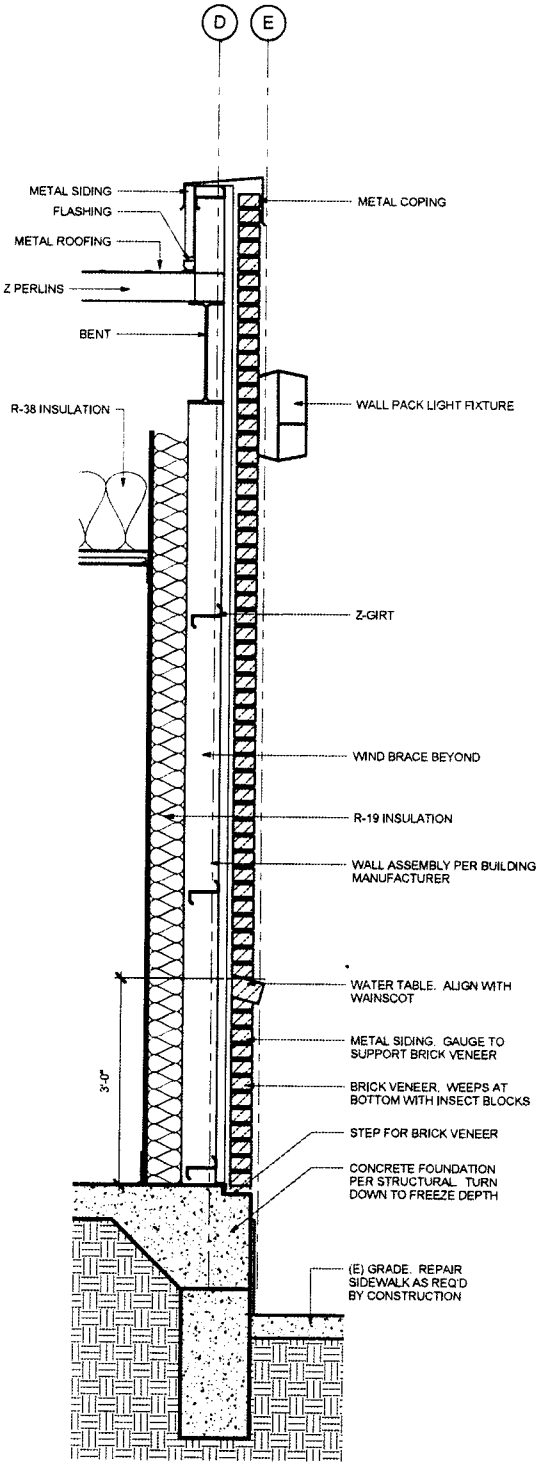
DESIGNED BY	JWL / PAG
DRAWN BY	PAG
CHECKED BY	JWL
JOB NO.	20M12

SHEET TITLE

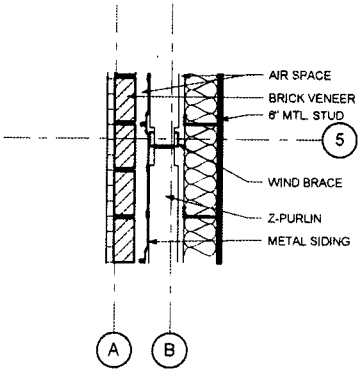
DETAILS

SHEET NUMBER

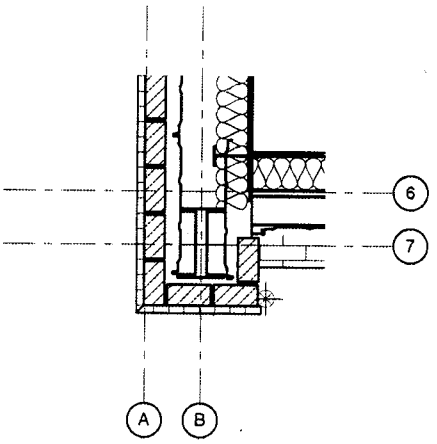
A5.0



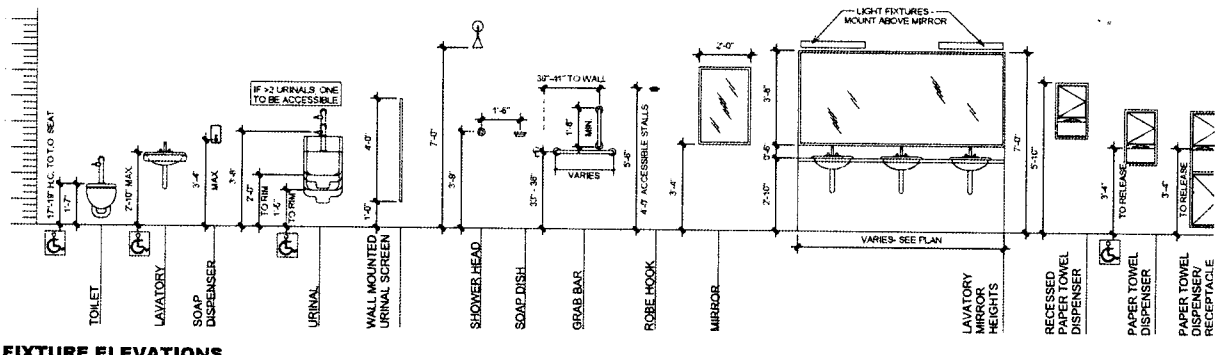
4 WALL SECTION
1" = 1'-0"



2 WIND BRACE
1" = 1'-0"



3 BENT AT END WALL CONDITION
1" = 1'-0"

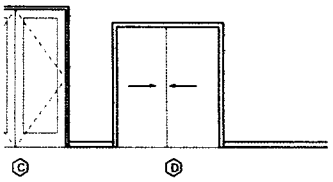


1 FIXTURE ELEVATIONS
3/8" = 1'-0"

PR

DOOR SCHEDULE

DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	HEAD DETAIL	JAMB DETAIL	HARDWARE SET	HARDWARE FINISH	COMMENTS
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
G	MTL	PAINT	TIMELY	K.D. METAL	PRE-FIN.			3	626	
B	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			4	626	
B	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
C	ALUM.	CLEAR ANOD.	U.S. ALUM.	ALUM.	CLEAR ANOD.			1	630	
G	MTL	PAINT	TIMELY	K.D. METAL	PRE-FIN.			3	626	
B	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			6	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			6	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			4	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
D	S.C. WOOD	PRE-FIN	TIMELY	WOOD	PRE-FIN.			5	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
A	ALUM.	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			4	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			6	626	
A	S.C. WOOD	PRE-FIN	TIMELY	K.D. METAL	PRE-FIN.			3	626	



HARDWARE SET FUNCTIONS:
1. ENTRY / PANIC
2. LOCK / PANIC
3. LOCK
4. LATCH
5. BY-PASS
6. PRICACY

FINISH SCHEDULE

CEILING FINISH	CEILING HGT	NORTH WALL MATERIAL	NORTH WALL FINISH	EAST WALL MATERIAL	EAST WALL FINISH	SOUTH WALL MATERIAL	SOUTH WALL FINISH	WEST WALL MATERIAL	WEST WALL FINISH	COMMENTS
			P-1		P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
GWB	9'-0"	GWB / PLYWD	P-1	GWB / PLYWD	P-1	GWB / PLYWD	P-1	GWB / PLYWD	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
GWB	9'-0"	GWB / FRP	P-2	GWB / FRP	P-2	GWB	P-2	GWB / FRP	P-2	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
GWB	9'-0"	GWB	P-1	GWB / FRP	P-1	GWB / FRP	P-2	GWB / FRP	P-2	
GWB	9'-0"	GWB / FRP	P-2	GWB / FRP	P-2	GWB / FRP	P-2	GWB	P-1	
ACT-1	9'-0"	GWB	P-2	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
ACT-1	9'-0"	GWB	P-1	GWB	P-1	GWB	P-1	GWB	P-1	
GWB	9'-0"	GWB / FRP	P-2	GWB / FRP	P-2	GWB / FRP	P-2	GWB / FRP	P-2	
ACT-1	9'-0"	PLYWD	NONE	GWB	P-1	GWB	P-1	GWB	P-1	

CHEDULE

COUNT	COMMENTS

"COUNT"

WALL SCHEDULE

TYPE	TYPE MARK	AREA	U-VALUE	TOTAL LENGTH
		6,155.84 SF		609'-9 1/8"
EXTERIOR METAL BUILDING	A	841.67 SF		96'-8 1/2"
362 W/ 5/8 GWB	B	2,165.78 SF		262'-0 1/8"
362 W/ 5/8" GWB SOUND BATT	B1	1,155.08 SF		132'-3 1/8"
600 W/ 5/8 GWB	C	75.73 SF		7'-11 3/4"
600 W/ 5/8 GWB SOUND BATT	C1	79.37 SF		8'-4 1/8"
R1_M-362-32-24-G_RAA_Y	R1	727.89 SF		106'-0"

NOTE: WALL AREA INCLUDES WINDOW AREA. TO CALCULATE PERCENTAGE OF WINDOWS, DIVIDE WINDOW AREA BY WALL AREA IN TABLE WITH NO ADDITIONAL WORK.

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT WILLIAM A. MAY 23480 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES

NO	DATE	DESCRIPTION
1	07/28/2015	INITIAL BACKGROUND
	09/12/2015	PRELIMINARY COORDINATION SET
	09/18/2015	INTERNAL COORDINATION SET
	09/25/2015	PRICING SET

DESIGNED BY JWL / PAG
DRAWN BY PAG
CHECKED BY JWL
JOB NO. 200612

SHEET TITLE

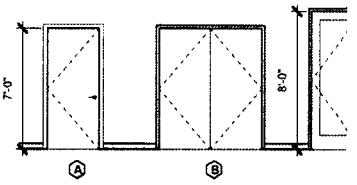
SCHEDULES

SHEET NUMBER

A6.0

PRELIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY

#	WIDTH	HEIGHT	THICKNESS	FIRE RATING
E1	3'-0"	7'-0"	0'-1 3/4"	N.R.
E1E	3'-0"	7'-0"	0'-1 3/4"	N.R.
E2	6'-0"	7'-0"	0'-1 3/4"	N.R.
E3	6'-0"	7'-0"	0'-1 3/4"	N.R.
E4	3'-0"	7'-0"	0'-1 3/4"	N.R.
E5	3'-0"	7'-0"	0'-1 3/4"	N.R.
G1E	6'-0"	8'-0"	0'-1 3/4"	N.R.
G2E	3'-0"	7'-0"	0'-1 3/4"	N.R.
G3	6'-0"	7'-0"	0'-1 3/4"	N.R.
G5	3'-0"	7'-0"	0'-1 3/4"	N.R.
G6	3'-0"	7'-0"	0'-1 3/4"	N.R.
G7	3'-0"	7'-0"	0'-1 3/4"	N.R.
G8	3'-0"	7'-0"	0'-1 3/4"	N.R.
T1	3'-0"	7'-0"	0'-1 3/4"	N.R.
T1A	6'-0"	7'-0"	0'-1 3/8"	N.R.
T2	3'-0"	7'-0"	0'-1 3/4"	N.R.
T3	3'-0"	7'-0"	0'-1 3/4"	N.R.
T4	3'-0"	7'-0"	0'-1 3/4"	N.R.
T5	3'-0"	7'-0"	0'-1 3/4"	N.R.
U1	3'-0"	7'-0"	0'-1 3/4"	N.R.



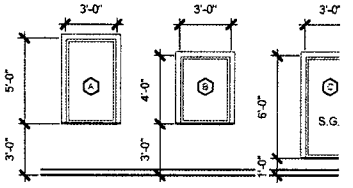
② DOOR TYPES
1/4" = 1'-0"

#	ROOM	FLOOR FINISH	BASE FINISH
E1	ELECTION OFFICE	CPT-1	RB-1
E2	CLOSET	CPT-1	RB-1
E3	SECURE STORAGE	CPT-1	RB-1
E4	OFFICE	CPT-1	RB-1
E5	RESULTS ROOM	CPT-1	RB-1
G1	LOBBY	W.O.M. / CPT-1	RB-1
G2	HALL	CPT-1	RB-1
G3	JANITOR	VINYL	RB-1
G4	STORAGE	VCT	RB-1
G5	WOMEN	VINYL	RB-1
G6	MEN	VINYL	RB-1
G7	LOUNGE / COPY	CPT-1	RB-1
T1	TREASURER OPEN OFFICE	CPT-1	RB-1
T2	STORAGE	VCT	RB-1
T3	OFFICE	CPT-1	RB-1
T4	STORAGE	VCT	RB-1
T4	STORAGE	VCT	RB-1
T5	UNISEX TOILET	VINYL	RB-1
U1	UTILITY	SEAL	RB-1

WINDOW SC

TYPE MARK	HEIGHT	WIDTH	OPERATION	
A	5'-0"	3'-0"	FIXED	1
B	4'-0"	3'-0"	FIXED	6
C	6'-0"	3'-0"	FIXED	4

NOTE: SUBTRACT ONE WINDOW FROM EACH TYPE I
GLAZING AREA IS 279 S.F.



① WINDOW TYPES
1/4" = 1'-0"

NOTE.
1. S.G. = SAFETY GLASS

P

8 CONT

WARE
ARDWARE GROUPS DRAWING A6.0.
OCKS SHALL BE PROVIDED WITH INTERCHANGEABLE CORES. COORDINATE WITH BROWN COUNTY MASTER KEY SYSTEM. LEVEL 2 SECURITY.
IDE BLOCKING IN PARTITION FOR ALL WALL MOUNTED DOORSTOPS.
WARE SCHEDULE: CAL ROYAL, GRADE 2, CYLINDRICAL PIONEER SL SERIES, STYLE TO BE SELECTED. APPROVED EQUAL TO HARDWARE LISTED BELOW.
TS AND LATCHSET. CORES TO BE DETERMINED BY BROWN COUNTY.
S: NORTON SERIES 8580 PARALLEL ARMS WHENEVER POSSIBLE
STANLEY 4-1/2" X 4-1/2"
GASKETS: PEMKO OR APPROVED EQUAL
CIPCO, QUALITY, OR BUILDERS BRASS
1. ALL HARDWARE TO BE US26D, DULL CHROME.
WARE SUPPLIER TO SUBMIT DETAILED SCHEDULE FOR EACH OPENING AND PRODUCT CUT SHEETS FOR APPROVAL.

OWS
LUMINUM, SERIES 8100 FIXED WINDOW, CLEAR ANODIZED

REFRONT DOORS
ALUMINUM, SERIES 400 MEDIUM STILE, 1" IGU, ADA BOTTOM RAIL, WEATHERSTRIPPING, #11 CLEAR ANAODIC COATING. EXPOSED PARALLEL ARM OH CLOSERS. VON DUPRIN 33A EXIT DEVICE.

9 FINISHES

ERAL FINISH NOTES
IES MEETING SUSTAINABILITY REQUIREMENTS OUTLINED BY MCKINSTRY, REF: DIVISION 1 SECTION 12.
IDE GALVANIC INSULATION BETWEEN DISSIMILAR METALS.
HEET A6.0 FOR FINISH SCHEDULE.
IT SAMPLES OF ALL FINISHES WITHIN DIVISION 9 FOR APPROVAL.

FINISH NOTES
AINT SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER SPECIFICATIONS FOR THE PARTICULAR SURFACE APPLIED UPON.
LES OF ALL FINISH COLORS SPECIFIED SHALL BE SUBMITTED PER DIVISION 1, SECTION 10.0, FOR APPROVAL BY ARCHITECT PRIOR TO THE COMMENCEMENT OF WORK.
ALL FINISH TO BE LEVEL 4.

OR FINISH NOTES
ARE FLOOR SURFACES PER FLOORING MANUFACTURER RECOMMENDATIONS INCLUDING MOISTURE CONTENT. MOISTURE TEST FLOOR SLAB PRIOR TO INSTALLATION.

UM BOARD ASSEMBLIES
R TO PARTITION SCHEDULE A2.1.
UM WALLBOARD TO BE 5/8" TYPE 'X' GYPSUM WALLBOARD EXCEPT WHERE NOTED. PROVIDE 5/8" WATER RESISTANT BACKING BOARD AT ALL WET WALL LOCATIONS.
IDE METAL CORNER BEADS, CASING BEADS AND DRY WALL TRIM ACCESSORIES WHERE REQUIRED.
D ATTENUATION - REFERENCE SECTION 7.1.B.

OFF MAT (WOM)
WK GT066, 24" X 24" TILE. 1/12 GUAGE, GLUE-DOWN. QUARTER TURN INSTALLATION. COLOR: TO BE SELECTED.

L COMPOSITION TILE
TRONG STANDARD EXCELON IMPERIAL TEXTURE. 12" X 12" X 1/8". DIRECT INSTALL PER MANUFACTURER'S RECOMMENDATIONS. COLOR: TO BE SELECTED.

LIENT BASE
ER BASE: ARMSTRONG RUBBER, 4" COVE STRIP, COLOR: TO BE SELECTED. PREFORMED AT OUTSIDE CORNERS

USTICAL CEILING
LL TILE PATTERN, LIGHTS, MECHANICAL DEVICES, ETC., SHALL BE LOCATED AS SHOWN ON REFLECTED CEILING PLAN A2.1.
L SUSPENSION SYSTEM: ARMSTRONG, 15/16", 24" X 48" GRID, WHITE.
STICAL TILE: ARMSTRONG CORTEGA SECOND LOOK, 24" X 48"

TING
ORM TO THE RECOMMENDATIONS OF THE CURRENT EDITION OF ARCHITECTURAL SPECIFICATIONS MANUAL - PAINTING.
IDE FOUR (4) SAMPLES OF EACH PAINT COLOR AND GLOSS ON 12" X 12" ART BOARD FOR APPROVAL. COLOR SPEC BASED UPON SHERWIN WILLIAMS EMERALD INTERIIOR ACRYLIC OR APPROVED EQUAL.

TING SCHEDULE.
2 COAT PROCESS, TINT PRIMER TO MATCH FINAL COAT – EGGSHELL OR SEMIGLOSS ENAMEL
ILINGS: 2 COAT PROCESS, TINT PRIMER TO MATCH FINAL COAT –EGGSHELL OR SEMIGLOSS ENAMEL
2 COAT PROCESS, TINT PRIMER TO MATCH FINAL COAT, GLOSS ENAMEL
H-UP PAINT WITH THE SAME APPLICATION SYSTEM USED FOR THE LAST FINISH COAT.
COLOR SCHEDULE: REFERENCE DRAWINGS A6.0. SHERWIN WILLIAMS PRO-MAR 200 OR EQUAL.
WALLS (EGGSHELL FINISH)
WALLS IN HIGH-MOISTURE AREAS (SEMIGLOSS FINISH)
OOR/WINDOW TRIM
ACCENT WALL

AMIC TILE
ILE OR EQUAL. ALL TILE TO BE SEALED WITH SILICONE BASED CLEAR SEALER. ALLOWANCE $8/ SQ FT INSTALLED.
WALL TILE – 4 ¼" X 4 ¼"
FLOOR TILE – 2" X 2"
IT – LATICRETE PERMACOLOR GROUT, COLOR TO MATCH EXISTING. CHOOSE FROM MFTR STD COLORS.
-SET MASTIC: LATICRETE 15 PREMIUM MASTIC, LATEX BASED

PET
WANCE, $24/ SQ YD, BROADLOOM DIRECT GLUED.

10 SPECIALTIES

NAGE
GE: RESTROOM SIGNAGE AND ACCESSIBLE PARKING SPACE BY CONTRACTOR. OTHER SIGNAGE BY OWNER.

E EXTINGUISHERS / CABINETS
ON OR EQUAL. 2A10BC, SEMI-RECESSED CABINET.

LET ACCESSORIES
ORM TO ALL APPLICABLE CODES AND ADOPTED ORDINANCES FOR MOUNTING HEIGHTS AND RELATED REQUIREMENTS FOR ACCESSIBLE DESIGN. REFERENCE DRAWING A4.0.
T ACCESSORIES SHALL BE MANUFACTURER'S STANDARD STAINLESS STEEL FINISH, EXCEPT WHERE NOTED OTHERWISE.
OILET ACCESSORIES TO BE AS SCHEDULED ON DRAWING A8.1 ARE BOBRICK OR APPROVED EQUAL. MATCH EXISTING WHERE POSSIBLE.
ARS TOILET: DIMENSIONED PER PLANS
PAPER HOLDER: PER PLAN
SPENSER: PER PLAN
: 18" X 30"
OWEL DISPENSER: PER PLAN
OWEL DISPOSAL: PER PLAN

11 EQUIPMENT
URITY SYSTEM: OWNER'S SECURITY SYSTEM WITH CARD READER ON MAIN ENTRY DOOR.

12 FURNISHINGS
BLINDS
TAL BLINDS, LEVELOR OR EQUAL. COLOR: TO BE SELECTED.
OTHER FFE BY OWNER.

13 SPECIAL CONSTRUCTION

22 PLUMBING
NCE MECHANICAL DRAWINGS AND SPECIFICATIONS

23 HVAC
NCE MECHANICAL DRAWINGS AND SPECIFICATIONS

26 ELECTRICAL
NCE ELECTRICAL DRAWINGS AND SPECIFICATIONS

27 COMMUNICATIONS
E SYSTEM BY OWNER
TA SYSTEMS BY OWNER
OW VOLTAGE BY OWNER

McKinstry
For The Life Of Your Building
McKINSTRY ESSENTION LLC
SEATTLE
5005 3RD AVENUE S
PO BOX 24567
SEATTLE, WA 98124
1-800-589-8023
www.mckinstry.com

PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

REGISTERED ARCHITECT JOHN WILLIAM MCINTYRE 23460 STATE OF TEXAS

EXPIRES 08/31/2015

ISSUES.

NO.	DATE	DESCRIPTION
1	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/28/2015	PRICING SET

DESIGNED BY	JM, / PAG
DRAWN BY:	PAG
CHECKED BY:	JM,
JOB NO.	200812

SHEET TITLE

SPECIFICATIONS

SHEET NUMBER

A7.0

RELIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY

BROWN COUNTY ELECTIONS BUILDING

DIVISION 1 GENERAL REQUIREMENTS

1.1 GENERAL CONDITIONS
MCKINSTRY STANDARD CONSTRUCTION CONTRACT "ENERGY SAVINGS PERFORMANCE CONTRACT", INCLUDING ARTICLES 1 THROUGH 21 INCLUSIVE, AS APPLIED TO THE CONTRACT FOR THE CONSTRUCTION OF TENANT IMPROVEMENTS FOR THIS BUILDING, ARE FULLY BINDING TO THIS WORK. ALL SUB-CONTRACTORS SHALL READ AND BE GOVERNED BY THEM.

1.2 CODES
ALL WORK SHALL CONFORM TO THE APPLICABLE BUILDING CODES AND ORDINANCES IN FORCE FOR THE JURISDICTION WORK IS COMMENCED. REFER TO A.01. IN CASE OF ANY CONFLICT WHERE THE METHODS OR STANDARDS OF INSTALLATION OR THE MATERIALS SPECIFIED DO NOT EQUAL OR EXCEED THE REQUIREMENTS OF THE LAWS OR ORDINANCES, THE LAWS OR ORDINANCES SHALL GOVERN. NOTIFY THE MCKINSTRY OF ALL CONFLICTS.

1.3 DRAWINGS AND SPECIFICATIONS
THE SUB-CONTRACTOR SHALL THOROUGHLY REVIEW ALL DRAWINGS SPECIFICATIONS AND SHALL NOTIFY MCKINSTRY OF ALL DISCREPANCIES WITH A WRITTEN REQUEST FOR INFORMATION. ANY WORK INSTALLED IN CONFLICT WITH THESE DRAWINGS OR SPECIFICATIONS SHALL BE CORRECTED BY THE SUB-CONTRACTOR AT NO EXPENSE TO THE OWNER, MCKINSTRY OR THE ARCHITECT.

1.4 DIMENSIONS
A. DIMENSIONS ON THE PLANS ARE TYPICALLY TO THE FINISH FACE OF PARTITIONS OR FACE OF CONCRETE.
B. DOOR AND CASED OPENINGS WITHOUT LOCATION DIMENSIONS ARE TO BE 4-1/2" FROM THE FACES OF ADJACENT PARTITION OR CENTERED BETWEEN PARTITIONS.

1.5 DO NOT SCALE DRAWINGS
THE SUB-CONTRACTOR SHALL USE DIMENSIONS SHOWN ON THE DRAWINGS AND ACTUAL FIELD CONDITIONS AND MEASUREMENTS. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES FOUND.

1.6 ABBREVIATIONS
THROUGHOUT THE DRAWINGS ARE ABBREVIATIONS WHICH ARE IN COMMON USE. THE LIST OF ABBREVIATIONS ON DRAWING A.01 IS NOT INTENDED TO BE COMPLETE OR REPRESENTATIVE OF EVERY CONDITION OR MATERIAL ACTUALLY USED ON THE PROJECT. THE ARCHITECT WILL DEFINE THE INTENT OF ANY IN QUESTION.

1.7 COORDINATION
MCKINSTRY SHALL BE RESPONSIBLE FOR THE COORDINATION AND VERIFICATION OF THE WORK OF ALL TRADES TO ASSURE COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.

1.8 FIRE PROTECTION
NOT REQUIRED FOR THIS BUILDING.

1.9 GENERAL CONSTRUCTION
A. THE CONTRACTOR SHALL INVESTIGATE AND VERIFY LOCATIONS OF STRUCTURAL, MECHANICAL AND ELECTRICAL ELEMENTS PRIOR TO DRILLING OF SLABS OR STRUCTURAL MEMBERS. NOTIFY MCKINSTRY MANAGER OF ANY CONFLICTS PRIOR TO BEGINNING WORK.
B. THE PARTITION SUB-CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL WALL BLOCKING AS REQUIRED FOR ALL WALL AND CEILING MOUNTED ITEMS.
C. ALL CONSTRUCTION SHALL BE STABILIZED AGAINST LATERAL MOVEMENT IN ACCORDANCE WITH THE REQUIREMENTS OF THE LATEST ADOPTED EDITION OF THE IBC IN THE LOCAL JURISDICTION.
D. CEILING HEIGHTS, WHERE INDICATED, ARE FROM SUB-FLOOR TO BOTTOM OF CEILING GRID OR OTHER FINISHED SURFACE.
E. MECHANICAL AND ELECTRICAL SHALL BE CONDUCTED UNDER SEPARATE PERMIT.

1.10 SUBMITTALS
A. PROVIDE FOUR (4) COPIES OF ALL SUBMITTALS TO MCKINSTRY FOR DISTRIBUTION AND APPROVAL. REFERENCE INDIVIDUAL SPECIFICATION SECTIONS FOR SHOP DRAWING OR SAMPLE SUBMITTALS.

1.11 PERMITS
THIS PROJECT IS SUBMITTED, REVIEWED AND APPROVED UNDER SEVERAL PERMITS. THE FOLLOWING LIST MAY NOT BE TOTALLY INCLUSIVE OF ALL PERMITS. PERMITS ARE REVIEWED/ISSUED BY CITY OF BROWNWOOD – REFER TO DRAWING A0.1.
A. BUILDING CONSTRUCTION PERMIT
B. DEMOLITION PERMIT (UNDER PRIOR CONTRACT)
C. MECHANICAL PERMIT
D. ELECTRICAL PERMIT
E. FLOOD PLAIN DEVELOPMENT PERMIT
F. SIGN PERMIT – BY OWNER

1.12 SUSTAINABILITY
MCKINSTRY IS COMMITED TO SUSTAINABILITY PRACTICES ON ALL THEIR CONSTRUCTION PROJECTS. THIS PROJECT WILL NOT BE PURSUING LEED CERTIFICATION YET WILL BE REFERING TO THESE STANDARDS AND GUIDELINES FOR CONSTRUCTION OF THE SPACE. MCKINSTRY TO MANAGE THIS PROCESS. STANDARDS INCLUDE: NO FORMELDAHYDE IN PARTICLE BOARD CONSTRUCTION, LOW VOC FINISHES. RECYCLE WHEN AVAILABLE.

1.13 ALTERNATES
BROWN COUNTY ELECTIONS BUILDING HAS SEVERAL ALTERNATES TO SPECIFIED DESIGN OR SPECIFICATIONS. THEY INCLUDE.
A. LANDSCAPING: ALLOWANCE OF $400/TREE FOR SUPPLY/INSTALL PER DRAWING AX.X. PROVIDE DRIP IRRIGATION AND CONTROLLER.
B. STONE FACING ON SITE PLINTH WALL. THINSET LOCAL AUSTIN LIMESTONE. MORTARED.
C. LED LIGHT FIXTURES. REPLACE SPECIFIED FIXTURES.
D. HIGH EFFICIENCY HEAT PUMPS. REPLACE SPECIFIED EQUIPMENT.
E. UPGRADED LOBBY LIGHT FIXTURE. REPLACE SPECIFIED FIXTURES.
F. ADD COAT CLOSET IN TREASURER'S OFFICE PER DRAWING A2.1.
G. BRICK: MASONRY WAINSCOT ONLY, TYPE "A" ON 4 ELEVATIONS.
H. SECURE STORAGE: DELETE PYWOOD ON 4 WALLS.

DIVISION 2 EXISTING CONDITIONS

2.1 DEMOLITION
A. REFERENCE DRAWING A1.1 FOR DEMOLITION NOTES.
B. ALL DISPOSAL OF DEMOLITION WILL BE LEGALLY DISPOSED, RETURNED TO OWNER AS NOTED OR RECYCLED WHERE FEASIBLE.
C. HAZORDOUS MATERIALS DISCOVERED DURING DEMOLITION TO BE DISPOSED LEGALLY PER TCEQ STANDARDS.

DIVISION 3 CONCRETE

3.1 CONCRETE
A. REFERENCE STRUCTURAL DRAWING S0.1

DIVISION 4 MASONRY

A. MASONRY VENEER: INSTALL PER MASONRY INSITUTE STANDARDS.
B. BRICK TYPES: 3 5/8" x 2 ½" x 7 5/8"
a. TYPE A: NON-CUSTOM, COLOR A
b. TYPE B: NON-CUSTOM, COLOR B
c. COURSING: RUNNING BOND BOTH BRICK TYPES. GEOMETRIC HEADER COURSE WITH ½" PROTRUSION IN TYPE B RUNNING BOND. ROWLOCK COURSE AT TOP OF TYPE A. SOLDIER COURSE ABOVE OPENINGS.
C. MORTAR: TYPE "M" ORDIANRY PORTLAND CEMENT, CONCAVE JOINT
D. MISC: PROVIDE MORTAR NET IN CAVITY, WALL WEEPS AT BASE, GALVENIZED METAL TIES FOR ATTACHMENT TO METAL PANELS

DIVISION 5 METALS

A. REFERENCE STRUCTURAL DRAWING S0.1
B. PRE-ENGINEERED METAL BUILDING BY WHIRLWIND (PG INSERT SPEC INCLUDING METAL PROFILES)

DIVISION 6 WOOD, PLASTICS AND COMPOSITES

6.1 GENERAL REQUIREMENTS
A. SUBMIT SHOP DRAWINGS FOR ALL CASEWORK ITEMS PER DIVISION 1.10.
B. WOOD BLOCKING IN WALLS TO BE FIRE TREATED.

6.2 CASEWORK
A. ALL CASEWORK SHALL MEET AWI STANDARDS FOR CUSTOM GRADE CONSTRUCTION, OVERLAY DETAILING.
B. CASEWORK TO BE 1/16" HIGH PRESSURE SPECIFIED LAMINATE AT ALL EXPOSED AND SEMI-EXPOSED SURFACES. REF. ARCHITECTURAL DRAWING xxxx.
C. INTERIOR NON-EXPOSED SURFACES TO BE WHITE POLYESTER SHEET OVER UREA-FREE FORMELDAHYDE PARTICLE BOARD.
D. EXPOSED CASEWORK HARDWARE SHALL BE US26D FINISH TO MATCH EXISTING HARDWARE. PROVIDE THE FOLLOWING.
HARDWARE ITEMS OR APPROVED EQUAL:
HINGES: EUROHINGE BY AMEROCK; 175-DEGREE SWING; #3762
PULLS: 4" WIRE
DRAWER GUIDES: KNAPE & VOGT #1428
ADJ. SHELF BRACKETS: KNAPE & VOGT #346 ANO

DIVISION 7 THERMAL AND MOISTURE PROTECTION

7.1 BATT INSULATION
A. KRAFT FACED INSULATION BATTS, REFERENCE DRAWING A5.0 FOR THICKNESS.
B. SOUND ATTENTUATION BATTS. UNFACED. REFERENCE A2.1 FOR PARTITION TYPES.

7.2 SEALANTS
A. PREPARE SURFACES PER MANUFACTURER'S RECOMMENDATIONS INCLUDING REMOVAL OF ALL EXISTING SEALANTS WITH BONDING FAILURE OR NON-REPAIRABLE CRACKS. PROVIDE CLOSED CELL BROKEN ROD WHERE GAPS EXCEED 3/8".
B. INTERIOR: ONE PART LATEX ACRYLIC. PAINTABLE. LOW VOC.
C. CERAMIC TILE SEALANT: LATASIL SEALANT. COLOR TO MATCH GROUT, CHOOSE FROM MFTR STD COLORS

DIVISION 8 OPENINGS

8.1 GENERAL REQUIREMENTS
A. SUBMIT DOOR, FRAME AND HARDWARE SCHEDULES PER DRAWING A6.0 AND DIVISION 1. SECTION 1.10. INCLUDE DOOR AND FRAME CONSTRUCTION AND INSTALLATION DETAILS.
B. PROVIDE SHOP DRAWINGS FOR ALL DOORS AND WINDOWS FOR APPROVAL.

8.2 HOLLOW METAL FRAMES
A. HOLLOW METAL FRAMES SHALL MEET THE REQUIREMENTS OF ANSI/SDI 100. EXTERIOR DOOR FRAMES SHALL BE 16 GAUGE STEEL, FULLY WELDED CONSTRUCTION, FACTORY PRIMED. FOR FIELD APPLIED FINISH COAT. INTERIOR FRAMES TO BE TIMELY KD OR EQUAL.

8.3 HARDWOOD DOORS
A. DOORS SHALL BE AWI CUSTOM GRADE SOLID CORE WOOD, 1-3/4" THICK CORE WITH NO ADDED FORMALDEHYDE. VENEER TO BE PREFINISHED PLAIN SLICED LARCH OR BIRCH VENEER. MOHAWK OR EQUAL.
B. PROVIDE SAMPLE FOR APPROVAL. SEE DOOR SCHEDULE A6.0.

8.4 GLAZING
A. MEET ASTM Z97.1 IMPACT REQUIREMENTS.
a. GL-1: 1" INSULATED (IGU), PPG SOLAR GRAY OR APPROVED EQUAL. VLT=42%, SHGC .48, SC 67. TEMPERED WHERE REQUIRED BY CODE
b. GL-2: ¼" CLEAR FLOAT, TEMPERED WHERE REQUIRED BY CODE
c. GL-3: MIRRORED GLASS, SEE DIV. 10.5

DIVISIO

8.5 HAR
A. SEE
B. ALL
C. PROV
D. HARD
LOCKSE
CLOSER
BUTTS:
SMOKE
STOPS.
E. FINIS
F. HARD

8.6 WIN
A. U.S.

8.7 STO
A. U. S.
SERIES

DIVISIO

9.1 GEN
A. FINIS
B. PROV
C. SEE
D. SUBM

9.2 WAL
A. ALL P
B. SAMF
C. DRYV

9.3 FLO
A. PREP

9.4 GYP
A. REFE
B. GYPS
C. PROV
D. SOUN

9.5 WAL
A. MOH

9.6 VINY
A. ARNI

9.7 RES
A. RUBE

9.8 ACO
A. INST
B. META
C. ACOU

9.9 PAIN
A. CONF
B. PROV
LATEX (
C.
D. PAINT
WALLS.
GWB CE
METAL.
D. TOUC
E. PAINT
a. P-1:
b. P-2:
c. P-3:
d. P-4:

9.10 CEI
A. DALT
A. CT-1
B. CT-2
C. GROU
D. THIN

9.11 CA
A. ALLO

DIVISIO

10.1 SIG
A. SIGN

10.2 FIR
A. LARS

10.5 TOI
A. CONF
B. TOILE
C. ALL T
GRAB B
TOILET
SOAP D
MIRROR
PAPER
PAPER

DIVISIO
A. SECI

DIVISIO
12.1 MI
A. 1" MI
B. ALL

DIVISIO
NA

DIVISIO
REFERE

DIVISIO
REFERE

DIVISIO
REFERE

DIVISIO
A. PHO
B. IT/DA
C. ALL

PR

ABBREVIATIONS

AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
AESS	ARCHITECTURAL EXPOSED STRUCTURAL STEEL
ADJ	ADJACENT
ALUM	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APA	AMERICAN PLYWOOD ASSOCIATION
APPROX	APPROXIMATE
AR	ANCHOR RODS
ARCH	ARCHITECTURAL; ARCHITECT
ASTM	AMERICAN SOCIETY FOR TESTING
AWS	AMERICAN WELDING SOCIETY
BAL	BALANCE
BLDG	BUILDING
BLK	BLOCK; BLOCKING
BM	BEAM
BF	BRACED FRAME
BOS	BOTTOM OF STEEL
BOT	BOTTOM
BRLG	BRACING
BRG	BEARING
BRKT	BRACKET
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	STANDARD CHANNEL
C	CHAMBER
CANT	CANTILEVER
CC	CENTER OF CENTER
CG	CENTER OF GRAVITY
CIP	CAST-IN PLACE
CJ	CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLR	CLEARANCE; CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
COMP	COMPRESSION
CONC	CONCRETE
CONFIG	CONFIGURATION
CONN	CONNECTION; CONNECT
CONST	CONSTRUCTION
CONT	CONTINUE; CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE; COORDINATION
CP	COMPLETE PENETRATION WELD; ULTRASONIC TEST
CTR	CENTER
CTSK	COUNTERSINK; COUNTERSUNK
D	PENNY (NAIL)
DBL	DOUBLE
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DEPT	DEPARTMENT
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DIAPH	DIAPHRAGM
DICA	DRILLED-IN CONCRETE ANCHOR
DIM	DIMENSION
DISC	DISCONTINUED; DISCONTINUOUS
DL	DEAD LOAD
DN	DOWN
DO	DITTO
DWG	DRAWING
DWL	DOWEL
(E)	EXISTING
E	EAST
E-W	EAST-WEST
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
ELEV	ELEVATOR
EMBED	EMBEDDED
ENGR	ENGINEER
EQ	EQUAL; EARTHQUAKE
EQUIP	EQUIPMENT
ES	EACH SIDE
ETC	ET CETERA
EW	EACH WAY
EXP	EXPANSION
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
FDN	FOUNDATION
FF	FAR FACE
FIN	FINISH
FL	FLOOR; FLOOR LINE
FLG	FLANGE
FOS	FACE OF STUD
FP	FIREPROOF; FULL PENETRATION
FRMG	FRAMING
FS	FULL SIZE; FAR SIDE
FT	FOOT; FEET
FTG	FOOTING
GA	GAGE
GALV	GALVANIZED
GB	GRADE BEAM
GLB	GLUE LAMINATED (BEAM)
GRND	GROUND
H	HORIZONTAL
HEF	HORIZONTAL EACH FACE
HGR	HANGER
HIF	HORIZONTAL INSIDE FACE
HOF	HORIZONTAL OUTSIDE FACE
HORIZ	HORIZONTAL
HS	HIGH STRENGTH
HSS	HOLLOW STEEL SHAPE
HT	HEIGHT
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
ID	INSIDE DIAMETER
IN	INCH
INCL	INCLUDE
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
JST	JOIST
JT	JOINT
KSI	KIPS PER SQUARE INCH
L	ANGLE
LB	POUND
LF	LINEAL FOOT
LIN	LINEAL; LINEAR
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LLBB	LONG LEGS BACK-TO-BACK
LOC	LOCATION; LOCATE
LONGIT	LONGITUDINAL
LP	LOW POINT
LSL	LONG SLOTTED (HOLES)
LTWT	LIGHTWEIGHT
LVL	LEVEL
LWC	LIGHT WEIGHT CONCRETE
MAS	MASONRY
MATL	MATERIAL
MAX	MAXIMUM
MB	MACHINE BOLT
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MEMB	MEMBRANE
MEP	MECHANICAL/ELECTRICAL/PLUMBING
MEZZ	MEZZANINE
MF	MOMENT FRAME
MFB	MOMENT FRAME BEAM
MFC	MOMENT FRAME COLUMN
MFR	MANUFACTURE; MANUFACTURER
MIN	MINIMUM; MINUTE
MISC	MISCELLANEOUS
ML	MATCH LINE
#	NUMBER
N	NORTH
N-S	NORTH-SOUTH
NF	NEAR FACE
NFPA	NATIONAL FIRE PROTECTION AGENCY
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
NWC	NORMAL WEIGHT CONCRETE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OPP	OPPOSITE (HAND)
OPT	OPTION; OPTIONAL
OVS	OVERSIZED (HOLES)
OWJ	OPEN WEB JOIST
OWSJ	OPEN WEB STEEL JOIST
P	PIPE
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PCP	PRECAST CONCRETE PANEL
PEN	PENETRATION
PERP	PERPENDICULAR
PH	PENTHOUSE
PIP	PARTIAL JOINT PENETRATION
PL	PLATE
PLC	PLACE
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PP	PARTIAL PENETRATION
PREFAB	PREFABRICATION
PS	PRESTRESSED
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST-TENSIONED
PVC	POLYVINYL CHLORIDE
R	RADIUS
RB	RISE BAR
REF	REFERENCE
REINF	REINFORCE; REINFORCING
REINF	REINFORCEMENT
REQD	REQUIRED
REQT	REQUIREMENT
S	AMERICAN STANDARD SHAPES; SOUTH
SB	SPACER BAR; SUPPORT BAR
SC	SLIP CRITICAL
SCHED	SCHEDULE; SCHEDULED
SDQ	SPECIAL DUCTILE QUALITY
SECT	SECTION
SEOR	STRUCTURAL ENGINEER OF RECORD
SHT	SHEET
SHTG	SHEETING; SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK-TO-BACK
SOG	SLAB ON GRADE
SP	SPIRAL
SPC	SPACE
SPCG	SPACING
SPEC	SPECIFICATION
SQ	SQUARE
SSL	SHORT SLOTTED (HOLES)
STD	STANDARD
STIFF	STIFFENER
STIRR	STIRRUP
STL	STEEL
STR	STRAIGHT
STRUC	STRUCTURAL
SUPT	SUPPORT
SW	SHEAR WALL
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
TEMP	TEMPERATURE; TEMPORARY
THK	THICK
TOC	TOP OF CURB; TOP OF CONCRETE
TOF	TOP OF FOOTING
TOS	TOP OF STEELE
TOW	TOP OF WALL
TRANS	TRANSVERSE
TYP	TYPICAL
UBC	UNIFORM BUILDING CODE
UL	UNDERWRITERS' LABORATORY, INC
UNO	UNLESS NOTED OTHERWISE
UT	ULTRASONIC TEST
V. VERT	VERTICAL
VEF	VERTICAL EACH FACE
VG	VERTICAL GRAIN
VIF	VERTICAL INSIDE FACE
VOF	VERTICAL OUTSIDE FACE
W/	WITH
W	WEST
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WH	WEEP HOLE
WL	WORK LINE
WP	WORK POINT
WPJ	WEAKENED PLANE JOINT
WT	WEIGHT; STRUCTURAL TEE CUT FROM W SHAPE
WWF	WELDED WIRE FABRIC
WWR	WELDED WIRE REINFORCING
YD	YARD

SHEET INDEX

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

ISSUES

NO	DATE	DESCRIPTION
	8/18/2015	INTERNAL COORDINATION

DESIGNED BY:	JG
DRAWN BY:	JEP
CHECKED BY:	JWL
JOB NO:	100948

SHEET TITLE

ABBREVIATIONS & GENERAL NOTES

SHEET NUMBER

S0.1

IARY--NOT FOR CONSTRUCTION -- PRICING ONLY

GENERAL NOTES

THE GENERAL NOTES EQUIPMENT THE REQUIREMENTS OF THE PROJECT SPECIFICATIONS. IN CASE OF CONFLICT CONTACT THE ENGINEER FOR CLARIFICATION.

REFERENCE TO CODES, REGULATIONS, STANDARDS OR REQUIREMENTS OF REGULATORY AGENCIES SHALL BE THE LATEST PRINTED EDITION OF EACH AS OF THE DATE OF SUBMISSION.

THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE WORK IN THE FIELD AND FOR VERIFYING DIMENSIONS. NOTIFY THE OWNER OF ANY DISCREPANCY AND RESOLVE CONFLICTS PRIOR TO CONSTRUCTION.

DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, USE SIMILAR DETAIL OF CONSTRUCTION. SUBMIT TO THE ENGINEER ANY PROPOSED DEVIATIONS.

THE DRAWINGS INDICATE THE STRUCTURE IN ITS FINAL CONDITION. THE CONTRACTOR IS TO PROVIDE MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES INCLUDE, BUT MAY NOT BE LIMITED TO, BRACING, SHORING AND SEQUENCING TO MAINTAIN STABILITY OF BRACING DURING CONSTRUCTION.

INFORMATION SHOWN ON THE DRAWINGS RELATED TO EXISTING CONDITIONS REPRESENTS THE PRESENT KNOWLEDGE BUT, WITHOUT CERTAINTY OF ACCURACY. CONTRACTOR IS TO REPORT ANY DISCREPANCY TO THE OWNER AND ENGINEER OF RECORD. THE CONTRACTOR SHALL NOT DEVIATE FROM THE CONTRACT DOCUMENTS WITHOUT WRITTEN DIRECTION FROM THE ENGINEER.

THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EQUIPMENT, SUPPORTS AND SLEEVES. REVIEW SHOP DRAWINGS OF FABRICATION, IDENTIFICATION OF EXISTING UTILITIES THAT INTERFERE WITH EQUIPMENT INSTALLATION IS ALSO THE RESPONSIBILITY OF THE CONTRACTOR. IF CONFLICTS EXIST, NOTIFY THE ENGINEER BEFORE PROCEEDING. FIELD CONDITIONS AFFECTING THE INSTALLATION OF COMPONENTS OR SYSTEMS SHALL BE NOTED ON THE DRAWINGS.

SUBMITTALS

SUBMITTAL SCHEDULE
SUBMITTALS OF SHOP DRAWINGS, PRODUCT DATA AND MILL TESTS ARE REQUIRED FOR ITEMS NOTED IN THE INDIVIDUAL MATERIALS SECTION AND FOR BIDDER DESIGNED ELEMENTS.

SUBMITTAL REVIEW PERIOD
SUBMITTALS ARE TO BE MADE IN TIME TO PROVIDE A MINIMUM OF TWO WEEKS FOR REVIEW BY THE ARCHITECT/ENGINEER PRIOR TO THE ONSET OF FABRICATION.

GENERAL CONTRACTOR'S REVIEW
PRIOR TO SUBMISSION TO THE ARCHITECT/ENGINEER, THE CONTRACTOR MUST REVIEW THE SUBMITTAL FOR COMPLETENESS. DIMENSIONS AND QUANTITIES ARE NOT REVIEWED BY THE SEOR, THEREFORE THEY MUST BE REVIEWED BY THE GENERAL CONTRACTOR. CONTRACTOR MUST PROVIDE ANY NECESSARY DIMENSIONAL DETAILS REQUESTED BY THE DETAILER AND PROVIDE THE CONTRACTOR'S REVIEW STAMP AND SIGNATURE BEFORE FORWARDING TO THE ARCHITECT/ENGINEER.

SHOP DRAWING REVIEW
ONCE THE CONTRACTOR HAS COMPLETED HIS REVIEW, THE SEOR WILL REVIEW THE SUBMITTAL FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT AND THE CONTRACT DOCUMENTS. THE REVIEW AND SUBMITTAL WILL BE DONE ACCORDINGLY. MARKINGS OR COMMENTS ARE NOT TO BE CONSTRUED AS RELIEVING THE CONTRACTOR FROM COMPLIANCE WITH THE PROJECT PLANS AND SPECIFICATIONS NOR DEPARTURES THEREFROM.

SHOP DRAWING DEVIATIONS
WHEN SHOP DRAWINGS, COMPONENT DESIGN DRAWINGS, DIFFER FROM OR ADD TO THE REQUIREMENTS OF THE STRUCTURAL DRAWINGS THEY ARE TO BE DESIGNED AND STAMPED BY THE RESPONSIBLE SEOR.

DEFERRED SUBMITTALS

BIDDER DESIGNED ELEMENTS
SUBMIT BIDDER DESIGNED DEFERRED SUBMITTALS TO THE ARCHITECT AND SEOR FOR REVIEW PRIOR TO INSTALLATION OF THE ITEM(S) INVOLVED.
DESIGN OF PREFABRICATED, BIDDER OR SIGNED, MANUFACTURED, PRE ENGINEERED OR OTHER FABRICATED PRODUCTS WILL COMPLY WITH THE FOLLOWING REQUIREMENTS:

1. DESIGN CRITERIA PER THE BUILDING DEAD, LIVE, WIND AND EARTHQUAKE LOADS IN COMBINATIONS REQUIRED BY IBC.
2. DESIGN WITHIN THE DEFLECTION LIMITS NOTED AND AS SPECIFIED OR REFERENCED IN ASTM IBC.
3. DESIGN CONFORMS TO THE SPECIFICATIONS AND REFERENCE STANDARDS ON THE GOVERNING CODE.
- SUBMITTED ONLY BY:
- CALCULATIONS PREPARED, STAMPED AND SIGNED BY THE STRUCTURAL ENGINEER OF RECORD DEMONSTRATING CODE CONFORMANCE.
- ENGINEERED COMPONENT DESIGN DRAWINGS ARE PREPARED, STAMPED AND SIGNED BY THE STRUCTURAL ENGINEER OF RECORD.
- PRODUCT DATA, TECHNICAL INFORMATION AND MANUFACTURER'S WRITTEN REQUIREMENTS AND AGENCY APPROVALS AS APPLICABLE.
- SPECIALTY STRUCTURAL ENGINEER MAY SUBMIT TO THE ARCHITECT/ENGINEER A REQUEST TO UTILIZE ALTERNATE DESIGN CRITERIA OF SIMILAR NATURE AND GENERAL EQUIVALENCY WHICH IS RECOGNIZED BY THE CODE AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION. SUBMIT ADEQUATE DOCUMENTATION OF DESIGN.

GENERAL CONFORMANCE REVIEW
ONCE THE CONTRACTOR HAS COMPLETED HIS REVIEW OF THE SSE COMPONENT DRAWINGS, THE SEOR WILL REVIEW THE SUBMITTAL FOR GENERAL CONFORMANCE WITH THE DESIGN OF THE BUILDING AND WILL STAMP THE SUBMITTAL ACCORDINGLY. REVIEW OF THE SPECIALTY STRUCTURAL ENGINEER'S SHOP DRAWINGS IS FOR COMPLIANCE WITH DESIGN CRITERIA AND COMPATIBILITY WITH THE DESIGN OF THE PRIMARY STRUCTURE AND DOES NOT RELIEVE THE SSE OF RESPONSIBILITY FOR THAT DESIGN. ALL NECESSARY BRACING, TIES, ANCHORAGE, PRIMARY OR TERTIARY PRODUCTS WILL BE FURNISHED AND INSTALLED PER MANUFACTURER'S INSTRUCTIONS OR THE SEOR'S DESIGN DRAWINGS AND CALCULATIONS. THESE ELEMENTS INCLUDE BUT ARE NOT LIMITED TO:

- HANDRAILS, GUARDRAILS AND BALCONY RAIL ANCHORAGES
- EXTERIOR CLADDING SYSTEMS (CURTAIN WALL SYSTEMS, PRE ENGINEERED PANELS)
- METAL BUILDINGS
- WINDOW WASHING SYSTEM TIE DOWN ANCHORAGE
- MECHANICAL, ELECTRICAL, PLUMBING & SPRINKLER HANGER PLANS
- CANVAS AWNINGS
- MISCELLANEOUS METALS
- STORAGE TANKS & COOLING TOWERS
- FIBER REINFORCED CONCRETE STRENGTHENING AS NOTED ON PLANS

DESIGN CRITERIA

CODES: IBC 2009 EDITION, ASCE 7-05, ACI 318-08, AISC 14TH EDITION

LOADING,

1 ROOF
- DEAD LOAD — SELF WT OF STRUCTURE
- SUPERIMPOSED DEAD — 15 PSF (MIN)
- LIVE LOAD — 20 PSF

2 FLOOR
- DEAD LOAD — SELF WT OF STRUCTURE
- LIVE LOAD — 100 PSF

3 SNOW
- GROUND SNOW LOAD, Pg — 25 PSF
- IMPORTANCE FRACTION Is — 1.0

4 WIND LOADS
- BASIC WIND SPEED (3-SECOND GUST) — 90 MILES PER HOUR
- WIND IMPORTANCE FACTOR — 1.0
- EXPOSURE — C
- OCCUPANCY CATEGORY — II

5 SEISMIC LOADS
- SEISMIC IMPORTANCE FACTOR — 1.0
- OCCUPANCY CATEGORY — II
- SITE CLASS — D
- SEISMIC DESIGN CATEGORY — D
- SPECTRAL RESPONSE ACCELERATIONS
  - SS — 0.073
  - S1 — 0.054
  - SDS — 0.078
  - SD1 — 0.055
- BASIC SEISMIC FORCE RESISTING SYSTEM — PER METAL BUILDING PRODUCER

DEFLECTION LIMITS	VERTICAL	LIMIT
	ROOF MEMBERS: DEAD + LIVE OR SNOW OR WIND TOTAL LOAD (TL) DEFLECTION	L/240 (WHERE L IS SPAN LENGTH IN INCHES)
	ROOF LIVE OR SNOW LOAD (RLL)	L/360
	FLOOR MEMBERS: TOTAL LOAD (TL) UNO	L/240
	FLOOR LIVE LOAD (LL) UNO	L/360
	MEMBERS SUPPORTING MASONRY	L/1200 OR ½" MAX MASONRY DL ONLY
	OPERABLE PARTITION SUPPORT MEMBERS	L/600 OR ¼" MAXIMUM
	HORIZONTAL	**LIMIT AND FOOTNOTE**
	MEMBERS SUPPORTING BRITTLE FINISHES	L/240 (1)
	MEMBERS SUPPORTING FLEXIBLE FINISHES	L/180 (1)

FOUNDATIONS

ENGINEERING VALUES FOR THE FOUNDATION ARE BASED ON GEOTECHNICAL REPORT BY (TBD)
- NET ALLOWABLE BEARING XX
- PASSIVE PRESSURE XX
- COEFFICIENT OF SLIDING FRICTION XX
- SUBGRADE MODULUS XX

FOOTINGS SHALL BE EMBEDED A MINIMUM OF -1'-8" BELOW FINISH GRADE (FROST)

CONTRACTOR TO LOCATE AND PROTECT EXISTING UTILITIES TO REMAIN INTACT DURING AND/OR AFTER CONSTRUCTION. NOTIFY THE OWNER OF THE PRESENCE OF ANY BURIED STRUCTURES SUCH AS: CESSPOOLS, CISTERNS, FOUNDATIONS AND UTILITIES.

COMPACT ALL SUBGRADE AND STRUCTURAL FILL TO 95% - 100% MAXIMUM DENSITY PAR ASTM D 698 (STANDARD PROCTOR TEST).

SEE GEOTECHINCAL REPORTS FOR ADDED INFORMATION REGARDING STRUCTURAL FILL AND COMPATION INFO.

CONCRETE

FORMWORK: SHORING AND RESHORING TO BE CONSTRUCTED IN ACCORDANCE WITH ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" AND ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORMWORK"

CONTRACTOR TO BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF FORMWORK, SHORING AND RESHORING

CONCRETE PLACEMENT DURING PERIODS OF INCLEMENT WEATHER

ITEM	F'C (PSI)	MAX WATER TO CEMENT RATIO (NON AIR-ENT)	Min AIR-ENT	CEMENT (SAC/CY)	REMARKS
FOOTINGS AND FOUNDATION WALLS	4,000	.44	5%	5 1/2	MAX AGGREGATE SIZE 1"
CONCRETE OR METAL DECK	4,000	.44		5	MAX AGGREGATE SIZE 1"

1 AIR ENTRAINING AGENT IS TO BE USED IN ALL CONCRETE ELEVATION EXPOSED TO THE WEATHER
2 PER LEED AP USE FLY ASH TO THE MAXIMUM EXTENT POSSIBLE IN ALL CONCRETE
3 SUBMIT CONCRETE MIX DESIGNS TO STRUCTURAL ENGINEER OF RECORD FOR APPROVAL

SELECTIONS OF CONCRETE MIX PROPORTIONS ARE TO BE IN ACCORDANCE WITH ACI 301. MIX PROPORTIONS ARE TO MEET OR EXCEED THE REQUIREMENTS LISTED ABOVE FOR THE LOCATIONS NOTED. THE MORE STRINGENT OF THE REQUIREMENTS LISTED WILL GOVERN.

SEE MAXIMUM SIZE OF AGGREGATE IN RE INCLUDE (ABOVE). MAXIMUM FLY ASH AS PERCENTAGE OF TOTAL WEIGHT OF CEMENTITIOUS MATERIAL IS TO BE 30 PERCENT. FLY ASH IS TO BE CLASS C OR CLASS F, MEETING ASTM C618 REQUIREMENTS. WATER CEMENT RATIO IS TO BE BASED ON TOTAL CEMENTITIOUS MATERIAL INCLUDING FLY ASH AND OTHER POZZOLANIC MATERIALS.

THE CONTRACTOR IS TO DETERMINE SLUMP FOR EACH CONCRETE MIX SUBMITTED. IS TO HAVE THE SLUMP SPECIFIED. SLUMP IS TO BE MEASURED AT THE DISCHARGE OF THE TRUCK. IF CONCRETE IS PUMPED, SLUMP IS TO BE MEASURED AT THE DISCHARGE END OF THE PUMP LINE. SUPPLEMENTARY ADMIXTURES MAY BE USED TO ACHIEVE THE SPECIFIED SLUMP.

REINFORCING STEEL
ASTM A615 GRADE 60 DEFORMED BARS, #4 STIRRUPS, TIES AND ELBOW BARS CAN BE GRADE 40. REINFORCING STEEL DETAILS SHALL BE PREPARED BY A QUALIFIED DETAILER TO CONFORM TO STANDARD PRACTICE PER ACI REPORT 315.

ACCURATELY POSITION, SUPPORT AND SECURE REINFORCEMENT FROM DISPLACEMENT DUE TO FORMWORK CONSTRUCTION AND CONCRETE PLACEMENT OPERATIONS. LOCATE AND SUPPORT REINFORCING BY METAL CHAIRS, RUNNERS, BOLSTERS, SPACERS AND HANGERS AT A MAXIMUM OF 10'-0" SPACING.

SHOP DRAWINGS (SHOWING PLACING PLANS, PLANS AND ELEVATIONS) ARE TO BE SUBMITTED TO AND REVIEWED BY THE ARCHITECT/ENGINEER BEFORE STARTING FABRICATION.

WELD REINFORCING STEEL IN ACCORDANCE WITH AWS D1.4 USING QUALIFIED WELDERS.

WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR TO PLATES, ANGLES, ETC. IS PROHIBITED, EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. WHERE WELDING IS APPROVED, IT IS TO BE DONE BY AWS/WABO (WASHINGTON ASSOCIATION OF BUILDING OFFICIALS) CERTIFIED WELDERS USING E90T8 OR APPROVED ELECTRODES. WELDING PROCEDURES ARE TO CONFORM TO THE REQUIREMENTS OF AWS D1.4.

CONCRETE COVER
3" CONCRETE POURED AGAINST EARTH
2" FORMED CONCRETE WITH EARTH BACKFILL
1 1/2" BEAMS AND GIRDERS (STIRRUPS TIES OR SPIRALS TO EXTERIOR FACE OF WALLS EXPOSED TO WEATHER OR EARTH OR IN MOISTURE BARRIER)
1" WALLS ALONG INSIDE FACE
3/4" FORMED SLABS

LAP SPLICES
CONFORM TO ACI 301, SECTION 5.1.2.7. SPLICES: REFER TO TYPICAL LAP SPLICE AND DEVELOPMENT LENGTH SCHEDULE. FOR TYPICAL REINFORCEMENT SPLICES. SPLICES ARE INDICATED ON INDIVIDUAL SHEETS ARE TO CONTROL OVER THE SCHEDULE. MECHANICAL CONNECTIONS MAY BE USED WHEN APPROVED BY THE SEOR.

FIELD BENDING
CONFORM TO ACI 301, SECTION 5.3.2.2. FIELD BENDING OR STRAIGHTENING BAR PARTIALLY EMBEDDED IN HARDENED CONCRETE IS NOT PERMITTED UNLESS REQUIRED OR PERMITTED BY THE ENGINEER. REQUIRE PREHEATING. DO NOT TWIST BARS. BARS ARE NOT TO BE BENT PAST 45 DEGREES.

TYPICAL CONCRETE REINFORCEMENT
UNLESS OTHERWISE NOTED ON THE PLANS, CONCRETE WALLS ARE TO HAVE THE FOLLOWING MINIMUM REINFORCEMENT. CONTRACTOR IS TO CONFIRM MINIMUM REINFORCEMENT OF THE WALLS WITH SER PRIOR TO REBAR FABRICATION.

TABLE OF MINIMUM CONCRETE WALL REINFORCING

WALL THICKNESS	HORIZONTAL BARS	VERTICAL BARS	LOCATION
6"	#4 @ 12" OC	#4 @ 12" OC	CENTER IN WALL
8"	#5 @ 12" OC	#5 @ 12" OC	CENTER IN WALL
10"	#4 @ 16" OC EF	#4 @ 16" OC EF	EF+EACH FACE
12"	#4 @ 12" OC EF	#4 @12" OC EF	EF+EACH FACE

CONSTRUCTION JOINTS
CONFORM TO ACI 301 SECTIONS 4.2.2.5, 5.2.2.1 AND 5.3.2.6. CONSTRUCTION JOINTS ARE TO BE LOCATED AND DETAILED AS ON THE CONSTRUCTION DRAWINGS. SUBMIT ALTERNATE LOCATIONS PER ACI 301 SECTION 4.1.2.3A FOR REVIEW AND APPROVAL BY THE SEOR TWO WEEKS MINIMUM PRIOR TO FORMING. USE OF AN ACCEPTABLE ADHESIVE SURFACE RETARDANT, PORTLAND CEMENT GROUT OR ROUGHENING THE SURFACE IS NOT REQUIRED UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.

SPLICES AT TENSION REGIONS SHALL NOT BE PERMITTED EXCEPT AS INDICATED ON THE DRAWINGS.

WELDED WIRE FABRIC
WELDED WIRE FABRIC (WWF) IS TO BE ELECTRICALLY WELDED AND CONFORM TO ASTM A185. AN 8 INCH MINIMUM LAP SHALL BE PROVIDED FOR SIDE AND END LAPS. WELDED WIRE FABRIC SHALL BE SUPPORTED ON APPROVED CHAIRS.

ELECTRICAL CONDUIT
ELECTRICAL CONDUIT IS TO BE 40% (I) STEEL CONDUIT OR FLEXIBLE PLASTIC CONDUIT. ALUMINUM CONDUIT IS PROHIBITED.

FOR CONDUIT PLACED IN CONCRETE FLAT SLABS OR SLABS THAT ARE PART OF A CONCRETE SLAB AND BEAM SYSTEM, CONDUIT IS TO HAVE A MAXIMUM OUTSIDE DIAMETER OF 1/3 TIMES THE SLAB THICKNESS AND IS NOT TO BE EMBEDDED WITHIN THE MIDDLE THIRD OF THE SLAB DEPTH. MINIMUM CLEAR DISTANCE BETWEEN CONDUITS IS 40" TIMES THREE TIMES THE CONDUIT DIAMETER.

FOR CONDUIT PLACED IN SLABS ON STEEL DECKING, CONDUIT IS ONLY TO RUN IN THE STEEL DECK FLUTES PER THE TYPICAL CONDUIT IN SLAB ON STEEL DECK DETAIL. CONDUIT IS NOT TO BE PLACED ABOVE DECK FLUTES IN EITHER DIRECTION. THIS

[illegible] LAYOUT IS TO NOTE UNDER THE SLAB ON METAL DECK LOCATION WHICH IS TO BE COORDINATED BY THE CONTRACTOR WITH MEP AND OTHER TRADES.

CONDUIT IS TO BE FIRMLY CHAIRED AND TIED TO REBAR. WHERE CONDUIT PASSES AT 12" INCHES ADDITIONAL REINFORCING IS TO BE PLACED IN CONCRETE SLABS, PERPENDICULAR TO THE CONDUIT RUN. REINFORCEMENT IS TO EXTEND 12" PAST THE CONDUIT.

NON-SHRINK GROUT
GROUT SHALL BE AN APPROVED NONSHRINK CEMENT GROUT USING NATURAL AGGREGATES DELIVERED TO THE JOB SITE IN FACTORY CONTAINERS REQUIRING ONLY THE ADDITION OF WATER. MINIMUM COMPRESSIVE STRENGTH SHALL BE AT LEAST 1,000 PSI GREATER THAN THE SUPPORTING CONCRETE STRENGTH. THE UNDERSIDE OF BASE PLATES SHALL BE GROUT SHALL BE MIXED, APPLIED AND CURED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS FOR GROUTING UNDER BASE PLATES. GROUT SHALL BE PROPORTIONED AS A FLOWABLE MIX. WHEN A FLOWABLE MIX IS USED THE MINIMUM COMPRESSIVE STRENGTH FOR NON-SHRINK GROUT SHALL BE 5,000 PSI. AN EPOXY GROUT SHALL BE USED.

ANCHOR RODS
ANCHOR RODS ARE TO BE ASTM F1554 GRADE 36 WITH CLASS 2A THREADS UNLESS NOTED OTHERWISE. FURNISH ANCHOR RODS WITH TWO HEAVY HEX NUTS AND MATCHING DOUBLE HEAVY HEX NUTS JAMMED AT THE END. FURNISH HARDENED PLATE WASHERS. LOCK WASHERS ARE NOT TO BE USED. NUTS FOR SECURING THE BASE PLATE TO THE ANCHOR RODS ARE NOT TO BE USED EXCEPT WHERE NOTED. A RIGID NUT IS TO BE USED TO LOCATE ANCHOR RODS WHILE PLACING CONCRETE. ANCHOR RODS TO HAVE SUFFICIENT LENGTH TO PROVIDE THE MINIMUM EMBEDMENT SHOWN ON THE DRAWINGS, MEASURED FROM THE FACE OF THE CONCRETE TO THE UNDERSIDE OF THE DOUBLE NUT. WITH ADEQUATE EXTENSION BEYOND THE TOP OF THE PLATE WITH FULL THREAD PROJECTION FOR NUT INSTALLATION. IF ANCHOR RODS INSTALLATION IS TO BE COORDINATED WITH REINFORCING AND ADJUSTING NUTS SHALL NOT BE USED EXCEPT AFTER EVALUATION BY CONTRACTOR'S ERECTION ENGINEER. AFTER BASE INSTALLATION, NUTS ARE TO BE INSTALLED TO A SNUG-TIGHT CONDITION. MINOR FIELD BENDING OF THE ANCHOR RODS IS PERMITTED. HOLES IN THE BASE PLATE ARE NOT TO BE ENLARGED BY BURNING.

FOR ANCHOR RODS EXPOSED TO WEATHER OR ANCHOR RODS IN CONTACT WITH ALKALI, ANCHOR ROD SHALL BE GALVANIZED PER ASTM A153. NUTS ARE TO BE FINISHED WITH MATCHING GALVANIZED HEAVY HEX NUTS AND WASHERS.

ANCHORAGE TO HARDENED CONCRETE
ANCHORAGE TO HARDENED CONRETE IS TO INCLUDE MEANS AND METHODS OF ANCHORS OF SIZE, NUMBER AND SPACING AS SHOWN ON THE DRAWINGS. HOLES ARE TO BE DRILLED AND CLEANED AND ANCHORS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTALLATION INSTRUCTIONS AND APPROVED ICC-ES REPORT. INSPECTION AND TESTING IS TO BE PERFORMED IN ACCORDANCE WITH THE GENERAL NOTES AND THE FOLLOWING:

WHERE A SPECIFIC TYPE OF ANCHORAGE IS SPECIFIED, NO SUBSTITUTION FOR A DIFFERENT TYPE OF ANCHORAGE IS PERMITTED WITHOUT APPROVAL.

FOR CAST IN PLACE ANCHORAGE, IS NOT PERMITTED WITHOUT APPROVAL.

ANCHORS ARE TO BE INSTALLED AND INSPECTED IN STRICT ACCORDANCE WITH APPLICABLE ICC-EVALUATION SERVICE REPORT, ESR-[illegible] AND AS PER THE TEST'S AND INSPECTIONS SECTION.

MECHANICAL ANCHORS
PROVIDE ANCHORS SPECIFIED ON THE DRAWINGS. AT LOCATIONS WHERE ANCHORAGE IS NOT SPECIFIED, PROVIDE HILTI KWIK BOLT TZ EXPANSION ANCHORS INSTALLED PER CRITERIA DEFINED IN ICC-ESR-1917. PROVIDE STAINLESS STEEL ANCHORS WHEN EXPOSED TO WEATHER OR IN A CLEAN ENVIRONMENT. USE GALVANIZED CARBON STEEL ANCHORS FOR OTHER LOCATIONS. REVIEW REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS WITH SHOP DRAWINGS FOR PLATES, MEMBERS AND OTHER ATTACHED STEEL ASSEMBLIES.

ADHESIVE ANCHORS
PROVIDE ANCHORS SPECIFIED ON THE DRAWINGS. AT LOCATIONS WHERE ANCHORAGE ARE NOT SPECIFIED, PROVIDE HILTI TYPE HY 200 EPOXY ANCHORS AS PER ICC-ESR-3322.

REMOVE GREASE, OIL, RUST AND OTHER FOREIGN MATERIALS FROM RODS AND DRILLED HOLES PRIOR TO INSTALLATION. PLACE ADHESIVE ANCHORS PER THE MANUFACTURER'S INSTRUCTIONS. IF REINFORCING IS ENCOUNTERED DURING DRILLING OF HOLE LOCATION AND SHIFT THE HOLE TO AVOID REINFORCING. PROVIDE MINIMUM EDGE DISTANCE AND ANCHOR DIAMETERS OR 1" WHICHEVER IS LARGER. IF SOUND CONCRETE IS NOT ENCOUNTERED, THE ABANDONED HOLE SHALL BE FILLED WITH NON-SHRINK GROUT. IF THE ANCHOR OR DOWEL MAY NOT BE SHIFTED, CONSULT WITH THE ENGINEER. LOCATE REINFORCEMENT AND CONFIRM FINAL ANCHOR LOCATIONS WITH SHOP DRAWINGS FOR PLATES, MEMBERS AND OTHER ATTACHED STEEL ASSEMBLIES.

MASONRY

CONSTRUCTION IS TO MEET THE REQUIREMENTS OF THE BUILDING CODE. HOLLOW CONCRETE MASONRY UNITS ARE TO CONFORM TO ASTM C90, NORMAL WEIGHT. MINIMUM REQUIRED BLOCK COMPRESSIVE STRENGTH IS [illegible] PSI. CELLS CONTAINING REINFORCEMENT SHALL BE FILLED SOLID WITH GROUT. GROUT MIX IS TO CONTAIN PORTLAND CEMENT ONLY. AGGREGATES FOR ENHANCING SHRINKAGE COMPENSATING ADDITIVE MAXIMUM AGGREGATE SIZE TO BE 3/8 INCH. SLUMP IS TO BE A TO 11 INCHES. WATER REDUCING ADMIXTURES MAY BE USED. MINIMUM GROUT COMPRESSIVE STRENGTH FOR MASONRY IS TO BE 2,000 PSI AND GREATER THAN OR EQUAL TO THE SPECIFIED MASONRY STRENGTH. GROUT IS TO BE VIBRATED WHILE PLACING TO ENSURE COMPLETELY FILLED. SUBMIT GROUT MIXES TO BE USED IN REINFORCED MASONRY WITH HEAD JOINTS. MASONRY MINIMUM DESIGN STRENGTH PSI.

REQUIRED MORTAR PORTIONS BY VOLUME

	PORTLAND CEMENT	HYDRATED LIME	AG
TYPE	CEMENT	LIME	AG
S	1	OVER 1/4 TO 1/2	NO

GROUTED BRICK MASONRY

ALL BRICK IS TO CONFORM TO ASTM C62 WITH A MINIMUM AVERAGE COMPRESSIVE STRENGTH OF 2,500 PSI. ALL MORTAR IS TO BE TYPE M. ALL GROUT IS TO HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS GREATER THAN OR EQUAL TO THE SPECIFIED MINIMUM DESIGN STRENGTH. CONSTRUCT ALL GROUTED BRICK MASONRY IN ACCORDANCE WITH THE BUILDING CODE. MINIMUM MASONRY STRENGTH F'M=1,500 PSI.

MISCELLANEOUS

REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL, CIVIL DRAWINGS FOR DIMENSIONS NOT SHOWN, INCLUDING INFORMATION SUCH AS LOCATION OF CURBS, EQUIPMENT HOUSEKEEPING PADS, WALL OPENINGS, BLOCKOUTS, FLOOR DEPRESSIONS, SUMPS, DRAINS, EMBEDDED ITEMS, ARCHITECTURAL TREATMENT, ETC. THESE DRAWINGS COORDINATE DIMENSIONS AND RESPONSIBILITIES FOR CONSTRUCTION.

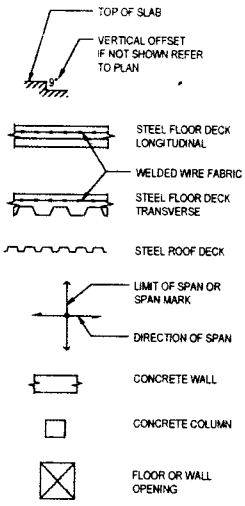
SPECIAL INSPECTION

THE FOLLOWING ITEMS REQUIRE SPECIAL INSPECTION AND TESTING PER IBC SECTION 1704. THIS WORK SHALL BE PERFORMED BY A SPECIAL INSPECTOR CERTIFIED BY THE APPROPRIATE JURISDICTION TO PERFORM THE REQUIRED INSPECTIONS AND TESTS SPECIFIED. THE FREQUENCY OF INSPECTION AND TESTING SHALL BE AS OUTLINED IN THE IBC TABLE. DEFICIENCIES SHALL BE REPORTED DAILY TO THE CONTRACTOR. SUMMARY REPORTS SHALL BE DISTRIBUTED WEEKLY TO THE OWNER, ARCHITECT, CONTRACTOR, BUILDING OFFICIAL AND STRUCTURAL ENGINEER. SEE THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SPECIAL INSPECTIONS AND TESTING. SEE BELOW FOR ADDITIONAL INFORMATION.

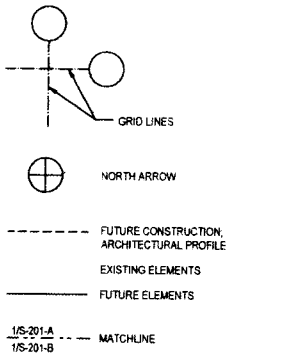
ITEM	INSPECTION
CONCRETE	TABLE 17[illegible]
BOLTS IN CONCRETE	TABLE 17[illegible]
STRUCTURAL STEEL	TABLE 17[illegible]
STRUCTURAL STEEL WELDING	TABLE 17[illegible]
HIGH STRENGTH BOLTING	TABLE 17[illegible]
SOILS	TABLE 17[illegible]
SPECIAL CASES	
1 DRILLED-IN CONCRETE ANCHORS	SPECIAL [illegible]
2 EPOXY CONCRETE ANCHORS	SPECIAL [illegible]

SEE SPECIAL INSPECTIONS ON SO.02 FOR ADDITIONAL INFO.

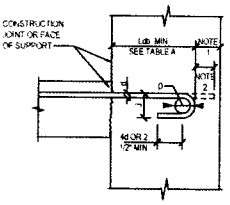
PRELIMIN



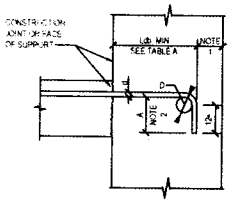
CONCRETE SYMBOLS



)RAWING SYMBOLS



180 DEGREE HOOK



90 DEGREE HOOK

END HOOK ALL GRADES (D) FINISHED BEND DIAMETER				
BAR SIZE	D	180° HOOKS		90° HOOKS
		E	J	A
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	12"
#7	5 1/4"	10"	7"	14"
#8	6"	11"	8"	16"
#9	9 1/2"	15"	11 3/4"	19"
#10	10 3/4"	17"	13 1/4"	22"
#11	12"	19"	14 3/4"	24"
#14	18 1/4"	27"	21 3/4"	31"
#18	24"	36"	28 1/2"	41"

TABLE A MINIMUM TENSION EMBEDMENT LENGTHS, (Ldh) FOR STANDARD END HOOKS ON GRADE 60 BARS			
BAR SIZE	NORMAL WEIGHT CONCRETE, f'c psi		
	3,000-4,000	5,000-5,500	
#3	6"	6"	
#4	7"	7"	
#5	9"	8"	
#6	10"	9"	
#7	12"	11"	
#8	14"	12"	
#9	15"	14"	
#10	17"	15"	
#11	19"	17"	
#14	32"	29"	
#18	43"	39"	

NOTES:

1. ABOVE VALUES VALID FOR ALL CASE IF SIDE COVER ≥ 2 1/2 AND END COVER ≥ 2
2. BAR DIMENSION REQUIRED TO MANUFACTURE HOOK
3. FOR EPOXY COATED HOOKS, INCREASE THE ABOVE EMBEDMENT LENGTHS BY 20%
4. FOR GRADE 80 BARS, INCREASE THE ABOVE EMBEDMENT LENGTHS BY 33%

STANDARD HOOKS AND EMBEDMENT

ITIONS:

r: NOMINAL BAR DIAMETER (INCHES)

ℓ: TENSION DEVELOPMENT LENGTH (INCHES) FOR REINFORCEMENT SATISFYING THE FOLLOWING REQUIREMENTS:

SLABS AND WALLS: CLEAR SPACING > 2db, AND CONCRETE CLEAR COVER > db
BEAMS AND COLUMNS: CLEAR SPACING > db, AND CONCRETE CLEAR COVER > db

: DEVELOPMENT LENGTH OF TOP BARS IN TENSION = 1.3 X Ld (INCHES)

: DEVELOPMENT LENGTH OF BARS OR DOWELS IN COMPRESSION = 19 X db (INCHES)

: TIED COLUMN LAP SPLICE IN COMPRESSION = 30 X db (INCHES)

s: SPIRAL COLUMN LAP SPLICE IN COMPRESSION = 22.5 X db (INCHES)

b: TENSION LAP SPLICE LENGTH FOR OTHER THAN TOP BARS = 1.3 X Ld (INCHES)

bt: TENSION LAP SPLICE LENGTH OF TOP BARS = 1.69 X Ld (INCHES)

PLY VALUES IN THE TABLE BY 1.5 IF CLEAR SPACING OR CONCRETE COVER DO NOT MEET THE REQUIREMENTS d IN NOTE 1.

BARS: HORIZONTAL BEAM REINFORCING WITH MORE THAN 12 INCHES OF CONCRETE CAST BELOW.

DEVELOPMENT AND SPLICE LENGTHS ARE BASED ON REINFORCEMENT STRENGTH FY = 60KSI FY=80KSI, MULTIPLY VALUES BY 1.33

ND #18 BARS SHALL NOT BE LAP SPLICED. SEE "GENERAL NOTES"

IPLY VALUES IN THE TABLE BY 1.3 FOR USE WITH LIGHTWEIGHT AGGREGATE CONCRETE

f'c = 3,000 psi				
BAR SIZE	Ld	Lt	Lsb	Lsbt
#3	17	23	23	30
#4	22	29	29	38
#5	28	37	37	49
#6	33	43	43	56
#7	48	63	63	82
#8	55	72	72	94
#9	62	81	81	106
#10	70	91	91	119
#11	78	102	102	133
#14	93	121	-	-
#18	124	162	-	-

f'c = 4,000 psi				
BAR SIZE	Ld	Lt	Lsb	Lsbt
#3	15	20	20	26
#4	19	25	25	33
#5	24	32	32	42
#6	29	38	38	50
#7	42	55	55	72
#8	48	63	63	82
#9	54	71	71	93
#10	61	80	80	104
#11	67	88	88	115
#14	81	106	-	-
#18	108	141	-	-

EINFORCING BAR DEVELOPMENT AND SPLICE LENGTH TABLES

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS:

REGISTRATION:

ISSUES:

NO	DATE	DESCRIPTION
	8-10-15	INTERNAL COORDINATION

DESIGNED BY: JG
DRAWN BY: JEP
CHECKED BY: JML
JOB NO: 105948

SHEET TITLE:

SYMBOLS & SPECIAL INSPECTIONS

SHEET NUMBER:

S0.2

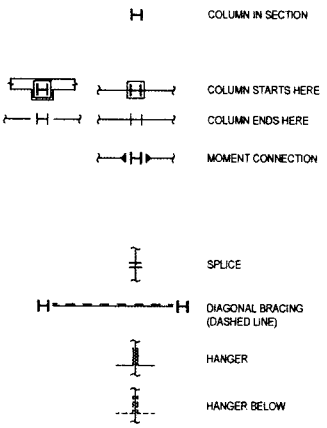
SPECIAL INSPECTIONS

VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION (IBC TABLE 1705.3)					
SPECIAL INSPECTION REQUIRED:	VERIFICATION AND INSPECTION:	INSPECTION FREQUENCY:		REF STANDARD: (1)	IBC REF:
		CONTINUOUS:	PERIODIC: (2)		
REQ'D	1. INSPECTION OF REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS AND PLACEMENT	--	X	ACI 318: 3.5, 7.1 - 7.7	1910.4
REQ'D	2. INSPECTION OF REINFORCING STEEL WELDING PER TABLE 1705.2.2, ITEM 2B	--		AWS: D1.4, ACI 318: 3.5.2	--
REQ'D	3. INSPECTION OF ANCHORS IN HARDENED CONCRETE	--	X	ACI 318: D.9.2	--
REQ'D	4. INSPECTION OF ANCHORS IN (POST-INSTALLED) IN HARDENED CONCRETE MEMBERS	--	X	ACI 318: 8.1.3, 21.2.8	1909.1
REQ'D	4A. ADHESIVE ANCHORS INSTALLED HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS (2)	X	--	ACI 318: D.9.2.4	--
REQ'D	4B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4A		X	ACI 318: D.9.2	--
REQ'D	5. VERIFYING USE OF REQUIRED DESIGN MIX	--	X	ACI 318: CHAPT. 4, 5.2 - 5.4	1904.2, 1910.2, 1910.3
REQ'D	6. AT TIME OF FRESH CONCRETE IS SAMPLED TO FABRICATE SPECIMENS FOR STRENGTH TEST, PERFORM SLUMP AND AIR CONTENT TESTS AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	--	ASTM C172, ASTM C31, ACI 318: 5.6, 5.8	1910.1
REQ'D	7. INSPECTION OF CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	--	ACI 318: 5.9, 5.10	--
REQ'D	8. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	--	X	ACI 318: 5.11 - 5.13	1910.9
REQ'D	9. INSPECT FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE BEING FORMED	--	X	ACI 318: 6.1.1	--

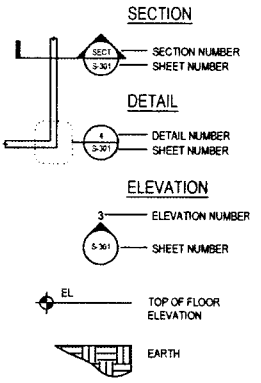
NOTES:
1. WHERE APPLICABLE, SEE SECTION 1705.11, SPECIAL INSPECTIONS FOR SEISMIC RESISTANCE.

VERIFICATION AND INSPECTION OF SOIL CONSTRUCTION (IBC TABLE 1704.7)				
SPECIAL INSPECTION	VERIFICATION AND INSPECTION:	INSPECTION FREQUENCY:		REPORTS REQUIRED
		CONTINUOUS:	PERIODIC:	
REQ'D	1. VERIFICATION OF MATERIALS BELOW FOOTINGS OF DESIRED BEARING CAPACITY	--	X	PERIODIC AND FINAL
REQ'D	2. VERIFICATION OF EXCAVATIONS	--	X	PERIODIC AND FINAL
REQ'D	3. VERIFICATION OF MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL	X	--	DAILY AND FINAL
REQ'D	4. VERIFICATION OF SUBGRADE PREPARATION	--	X	PERIODIC AND FINAL

NOTES:
OBSERVATION REPORT TO BE PROVIDED BY THE GEOTECHNICAL ENGINEER OF RECORD



STEEL SYMBOLS



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SHEET NOTES:

1. FOR GENERAL NOTES, SPECIAL INSPECTIONS AND TYPICAL DETAILS SEE S0.1 AND S0.2 FOR SHEET INDEX.
2. REFERENCE FLOOR ELEVATION IS 0'-00". TOP OF CONCRETE AT SLAB ON GRADE IS AT REFERENCE ELEVATION TYP UNO. FOR ACTUAL TOP OF CONCRETE ELEVATION SEE CIVIL AND ARCHITECTURAL DRAWINGS.
3. AT 5" SLAB ON GRADE LOCATIONS, PROVIDE #4 AT 16 OC CNTRD; SEE TYPICAL DETAILS FOR ADDITIONAL INFO.
4. BOF = [1'-8"] MIN FROM TOC ELEVATION; SEE GENERAL NOTES FOR GEOTECHNICAL INFORMATION INCLUDING: MINIMUM ALLOWABLE BEARING AND STRUCTURAL FILL INFO.
5. MOISTURE-PROOF ALL CONCRETE STEM WALL AND SLAB LOCATIONS PER ARCHITECTURAL DRAWINGS; SEE ARCHITECTURAL DRAWINGS FOR ALL SLOPES AND SLAB DEPRESSIONS
6. ARCH METALS AND METAL BUILDING DESIGN TO BE BIDDER DESIGNED TYP UNO. SEE GENERAL NOTES FOR ADDITIONAL INFO.
7. CONTRACTOR TO VERIFY TOP OF CONCRETE AT SLAB, FOUNDATION AND WALL ELEVATIONS AT A MINIMUM OF 6" ABOVE FINISHED GRADE ELEVATION PER CIVIL DRAWINGS; CONTRACTOR TO VERIFY ALL DIMENSIONS AND ELEVATIONS WITH THE ARCHITECTURAL DRAWINGS. ALL EXISTING DIMENSIONS SHALL BE FIELD VERIFIED; CONTRACTOR SHALL LOCATE AND VERIFY THE FOLLOWING WITH OTHERS PRIOR TO POURING CONCRTE. ALL DOOR OPENINGS IN FOUNDATION WALLS; DRAINS AND SLOPES; BLOCKOUTS FOR PLUMBING, SPINKLER AND HVAC; ALL DUCTS, CHASES AND PIPES PER MECHANICAL, PLUMBING, ELECTRICAL AND FIRE PROTECTION DRAWINGS; SEE ARCHITECTURAL DRAWINGS FOR GUARDRAILS AND STAIRS

FOOTING SCHEDULE			
MARK:	SIZE:	REINFORCEMENT:	COMMENTS:
F2.0	2'-0"x2'-0"x1'-0"	(3) #4 EA WAY	
F3.0	3'-0"x3'-0"x1'-0"	(4) #5 EA WAY	
F4.0	4'-0"x4'-0"x1'-2"	(5) #5 EA WAY	
F5.0	5'-0"x5'-0"x1'-2"	(6) #5 EA WAY BOT (4) #4 EA WAY TOP	

REGISTRATION

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NO	DATE	DESCRIPTION
	8-18-15	INTERNAL COORDINATION

DESIGNED BY JG
DRAWN BY JEP
CHECKED BY JWL
JOB NO 109949

SHEET TITLE

STRUCTURAL FOUNDATION PLAN

SHEET NUMBER

S1.0

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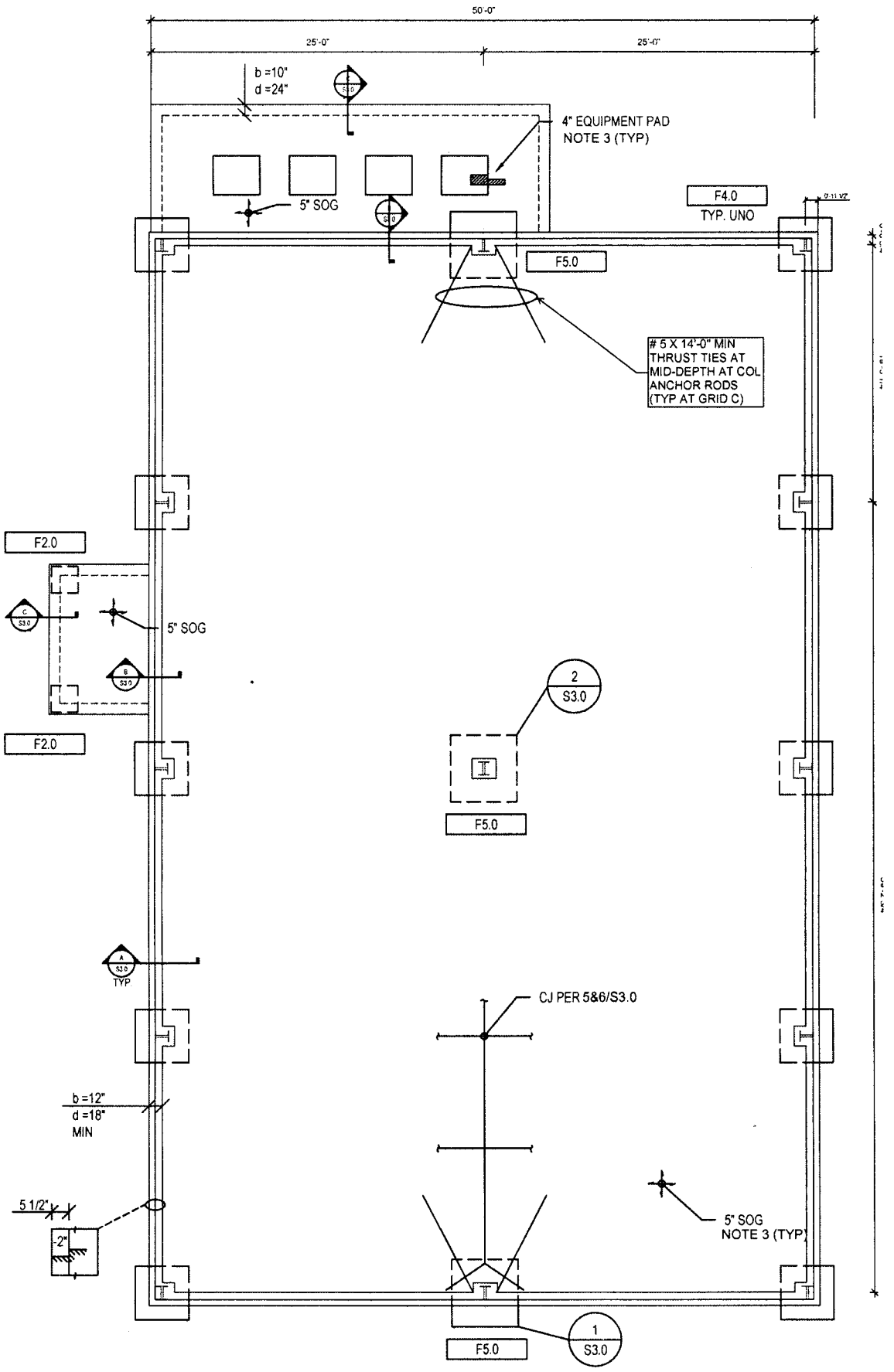
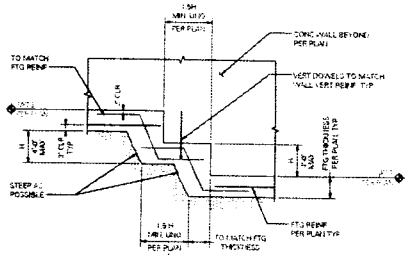
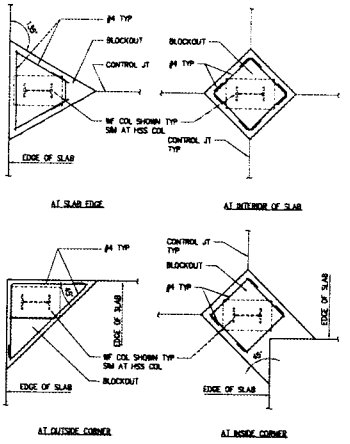


STRUCTURAL FOUNDATION PLAN

PRELIMIN

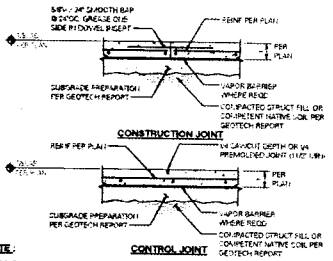


4 TYPICAL STEP FOOTING
SCALE: 3/4" = 1'-0"



NOTES:
1. VERIFY/COORDINATE SIZE OF BLOCKOUT WITH STEEL BASE PLATE DIMENSIONS.
2. REINFORCING BARS SHOWN IN BLOCKOUT SHALL BE LOCATED 1" CLEAR FROM TOP OF SLAB.
3. INCREASE SIZE OF BLOCKOUT AS REQD TO ACCOMMODATE DIAGONAL BRACING WHERE OCCURS.
4. FILL BLOCKOUT WITH CONCRETE NO SOONER THAN 28 DAYS AFTER PLACING SLAB ON GRADE.
5. WHERE TYPICAL SLAB REINFORCING IS INTERRUPTED BY BLOCKOUT, PLACE ADDITIONAL BARS EQUAL TO SIZE AND NUMBER OF INTERRUPTED SLAB REINFORCEMENT, SPLIT EQUALLY TO EACH SIDE OF COLUMN, ONE MINIMUM EACH SIDE.
6. CONTRACTOR OPTION TO USE ROUND BLOCKOUTS FORMED WITH SPECIAL PAPER BOARD TUBES (i.e. SONOTUBE).

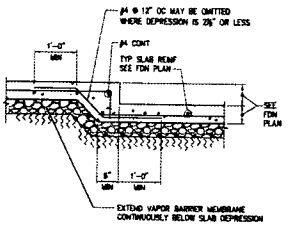
5 TYP COL BLOCKOUT IN SLAB ON GRADE
NTS



NOTE:

1. USE TIMELY ENTRY CRY-CUT SAW AS SOON AS POSSIBLE WITHOUT CAUSING RAVELING OF CONCRETE EDGES. SAWCUT ALONG SHORT DIRECTION OF POUR FIRST.
2. ALIGN ALL CONSTRUCTION OR CONTROL JOINT WITH INTERIOR SLAB CORNERS, EACH WAY, TYPICAL.
3. CONSTRUCTION/CONTROL JOINT TO ENCLOSE APPROXIMATE SQUARE AREAS 225 SQUARE FEET MAXIMUM, WITH MAXIMUM PANEL ASPECT RATIO OF 1.3 TO 1.0.
4. CONTRACTOR TO SUBMIT CONSTRUCTION/CONTROL JOINT PLAN TO STRUCTURAL ENGINEER OF RECORD FOR REVIEW/APPROVAL.

7 TYPICAL SLAB ON GRADE JOINT DETAILS WITH REINFORCING
SCALE: 3/4" = 1'-0"



11 DEPRESSED SLAB ON GRADE
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DESIGNED
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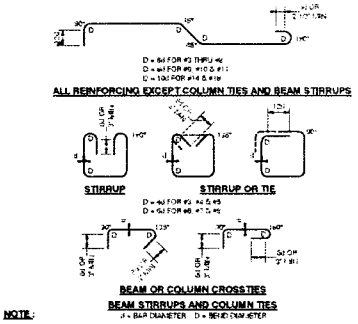
JOB NO

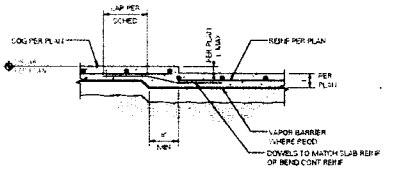
SHEET TITLE
FOUNDATION TYPICAL DETAILS

SHEET NUMBER
S2.0



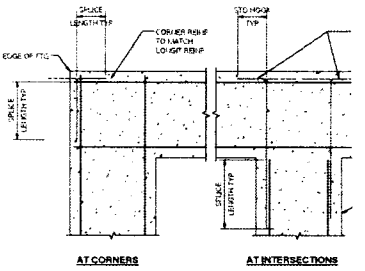
STANDARD HOOKS AND BENDS - BEAM STIRRUPS AND COLUMN TIES

1 SCALE: NOT TO SCALE



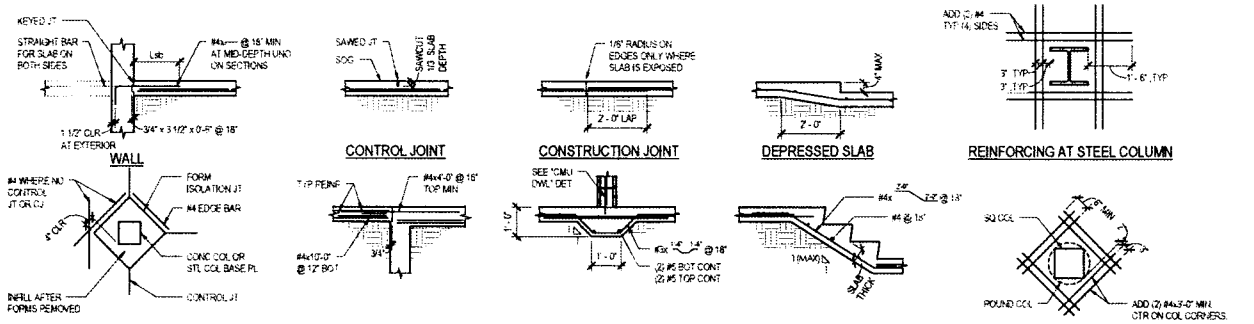
TYPICAL DEPRESSED SLAB DETAIL

2 SCALE: 3/4" = 1'-0"



PLAN - TYPICAL CORNER REINFORCING AT CONC FOOTINGS

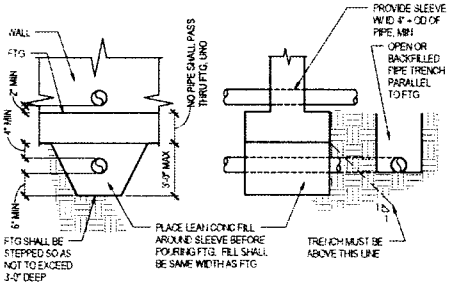
3 SCALE: 3/4" = 1'-0"



1. SLAB ON GRADE IS 4 INCHES THICK UNLESS NOTED OTHERWISE.
2. LOCATE CONSTRUCTION JOINTS UNDER PARTITIONS OR ON COLUMN LINES. PROVIDE CONTROL JOINTS ON ALL COLUMN LINES AND AT A MAXIMUM SPACING OF 30 x SLAB THICKNESS EACH WAY IN BETWEEN. PROVIDE CONTROL JOINTS AT ALL RE-ENTRANT CORNERS. CONTRACTOR SHALL SUBMIT A JOINTING PLAN TO ARCHITECT FOR REVIEW.
3. SAWED JOINTS SHALL BE MADE AS SOON AS THE JOINT CAN BE CUT WITHOUT EDGES RAVELING AND WITHIN 24 HOURS OF SLAB PLACEMENT. SAWED JOINTS SHALL BE FILLED WITH SEALANT AS COORDINATED WITH THE ARCHITECT.
4. LOCATE REINFORCING AT ONE-THIRD OF DEPTH FROM TOP OF SLAB.
5. TYPICAL SLAB REINFORCING
   #4 @ 24" EACH WAY FOR 4" SLAB
   #4 @ 24" EACH WAY FOR 5" SLAB

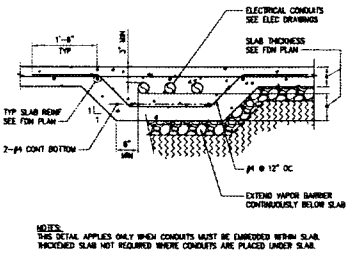
TYPICAL SLAB ON GRADE

4



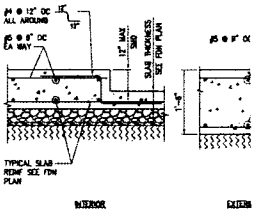
TYPICAL PIPE ENCASEMENT UNDER FOOTING

5



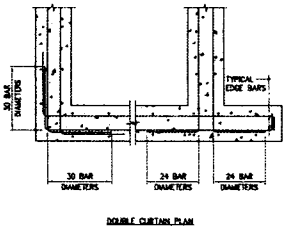
CONDUIT PENETRATION IN SLAB ON GRADE

9 NTS



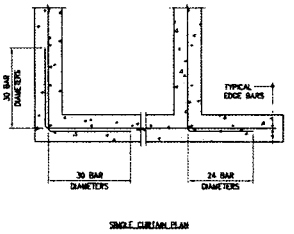
TYPICAL EQUIPMENT PAD ON GRADE

10



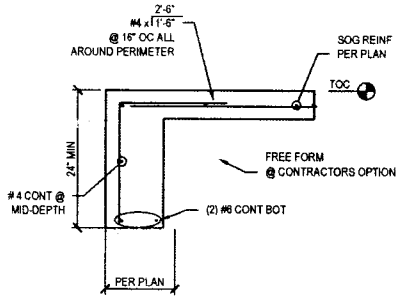
TYPICAL REINFORCING AT WALLS & FOOTING CORNERS

12 NTS



TYPICAL REINFORCING AT WALL & FOOTING CORNERS

13 NTS



C / S3.0 SECTION C

1" = 1'-0"

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NTRACTORS OPTION

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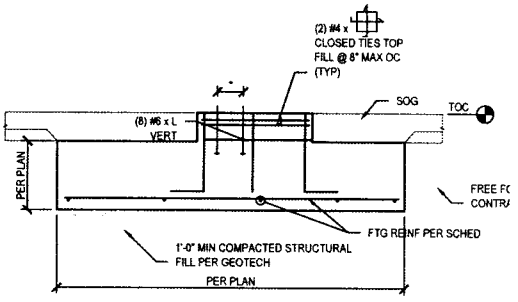

S3.0 / 2 PLAN DETAIL

1" = 1'-0"

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BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

ISSUES

NO	DATE	DESCRIPTION
	8-18-15	INTERNAL COORDINATION

DESIGNED BY JG
DRAWN BY JEP
CHECKED BY JWL
JOB NO 100949

SHEET TITLE

STRUCTURAL DETAILS AND SECTIONS

SHEET NUMBER

S3.0

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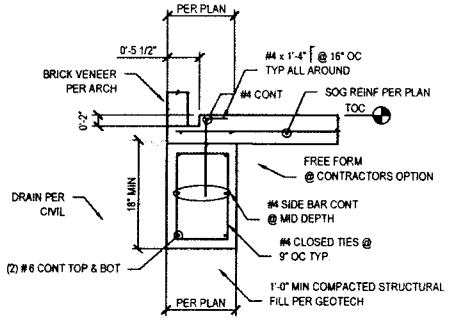
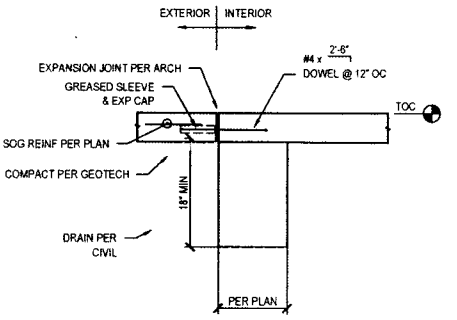
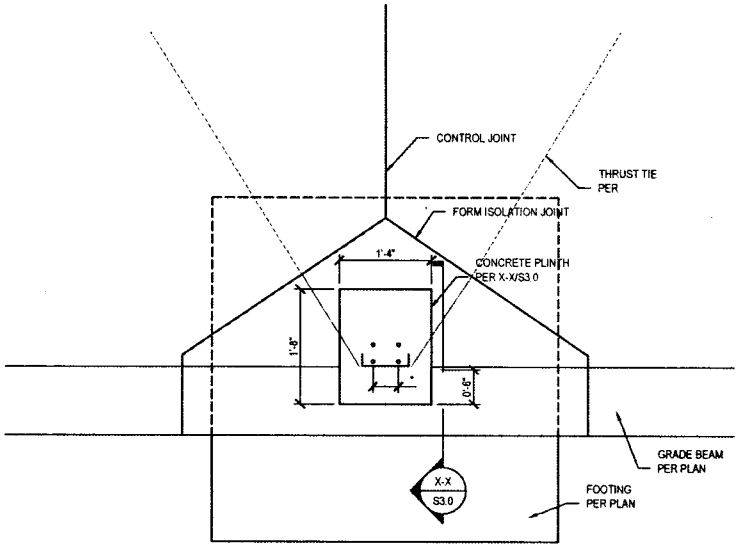


NOTES:
1. SEE ARCH FOR WATERPROOF INFO

A / S3.0 SECTION A
1" = 1'-0"

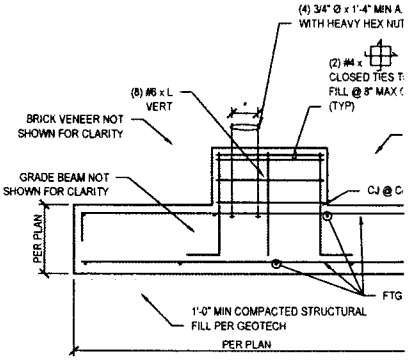


B / S3.0 SECTION B
1" = 1'-0"



NOTES:
1. * DIM TO BE COORDINATED WITH METAL BUILDING PROVIDER
2. SEE _____ FOR SOG DETAILS

S3.0 / 1 PLAN DETAIL
1" = 1'-0"



X-X / 1/S3.0 SECTION X-X
1" = 1'-0"

PRELIM

ounty Texas HVAC Basis of Design

de (1) Trane XV18 series 3-Ton Heat Pump Unit to provide heating, ventilating, and air conditioning to the Storage, Lounge/Copy, Hallway, Results Room, and Office space in the South portion ilding.
pump package shall include air handling unit, outside unit, filters, refrigerant piping (sized per manufacturer's instructions)
damage to any component shall be repaired to factory condition prior to owner turn over. If any piece of equipment is not repairable to factory condition, a new unit shall be provided at the of the installing contractor.
orator coil shall be mounted on the top of the air handling unit. Provide 1" plastic piping between drain on evaporator coil and floor drain provided in the Utility Room.
andling unit shall be matched to the outside heat pump unit in capacity and efficiency.
id air handling unit be used during construction, filters shall be maintained and changed on a weekly basis.
filters shall be provided at substantial completion/owner turn over.
(1) extra set of filters shall be provided for the owner at substantial completion.
andling unit shall be mounted on the top of a return air plenum.
y duct work shall be provided as a part of this scope. Duct work shall be connected to the top of the air handling unit and shall be installed in the space between the ceiling and the bottom ure.
ble duct shall be permitted to make the final connection between supply duct branch take offs and the supply air diffuser. Flexible duct shall be kept as straight as possible, shall not be round structural members or supports for lighting, ceiling grid, or any other support. Flexible duct lengths shall be limited to a maximum of 7'-0".
de manual balancing dampers in the branch run out for each diffuser.
re balancing dampers are located above a hard ceiling, provide dampers with remote access.
n air shall be ducted directly back to the unit.
n air grilles in the Office, Results Room, and Hallway shall be mounted approximately 1'-6" above the finished floor in the wall in the Hallway, Results Room, and Office. Line a stud cavity the wall to connect the grille to the return air duct main. Return air in the Lounge/Copy room shall be ceiling mounted. See drawing for return air duct sizes.
n duct main shall be located in the ceiling space between the lighting and the bottom of structure.
event of a conflict between return air duct and supply air duct, the supply air duct shall rise into the open space between structural members and pass over the return air duct. Return air ll be kept as straight as possible.
ble duct is not permitted for use on the return duct system.
de a Ruskin ELF375DX louver for outside air.
de air shall be ducted to the main return air duct for each air handling unit.
de air duct size shall be 8" round for each run out to the return air duct.
de gravity backdraft damper on outside air duct at each connection to the return air duct.
de gravity backdraft damper at return air duct connection. See Air Handling Unit Detail for more information.
perant piping shall be either ACR copper or pre-insulated line sets. Refrigerant lines shall be provided with any necessary oil traps, fittings, and appurtenances to connect the outside heat the evaporator coil located on top of the air handling unit.
de leak testing and refrigerant to insure a fully functioning system.
perant charge and fill shall be performed by a licensed refrigerant technician.
ment shall use R-410a refrigerant.
erature control shall be by an EcoBee programmable thermostat.
nostat shall be compatible with the installed HVAC equipment.

de (1) Trane XV18 series 4-Ton Heat Pump Unit to provide heating, ventilating, and air conditioning to the Treasurer Open Office, Storage rooms, Office Hallway, and Lobby on the North f the building
pump package shall include air handling unit, outside unit, filters, refrigerant piping (sized per manufacturer's instructions)
damage to any component shall be repaired to factory condition prior to owner turn over. If any piece of equipment is not repairable to factory condition, a new unit shall be provided at the of the installing contractor.
orator coil shall be mounted on the top of the air handling unit. Provide 1" plastic piping between drain on evaporator coil and floor drain provided in the Utility Room.
ndling unit shall be matched to the outside heat pump unit in capacity and efficiency.
'd air handling unit be used during construction, filters shall be maintained and changed on a weekly basis.
ilters shall be provided at substantial completion/owner turn over.
1) extra set of filters shall be provided for the owner at substantial completion.
ndling unit shall be mounted on the top of a return air plenum.
y duct work shall be provided as a part of this scope. Duct work shall be connected to the top of the air handling unit and shall be installed in the space between the ceiling and the bottom ure.
ble duct shall be permitted to make the final connection between supply duct branch take offs and the supply air diffuser. Flexible duct shall be kept as straight as possible, shall not be round structural members or supports for lighting, ceiling grid, or any other support. Flexible duct lengths shall be limited to a maximum of 7'-0".
de manual balancing dampers in the branch run out for each diffuser.
e balancing dampers are located above a hard ceiling, provide dampers with remote access.
n air shall be ducted directly back to the unit.
n air grilles in the Office and Lobby/Hallway shall be mounted in the wall, approximately 1'-6" above the finished floor in the wall. Line a stud cavity space in the wall to connect the grille to n air duct main. Return air in the Treasurer Open Office room shall be ceiling mounted. See drawing for return air duct sizes.
n duct main shall be located in the ceiling space between the lighting and the bottom of structure.
event of a conflict between return air duct and supply air duct, the supply air duct shall rise into the open space between structural members and pass over the return air duct. Return air l be kept as straight as possible.
le duct is not permitted for use on the return duct system.
perant piping shall be either ACR copper or pre-insulated line sets. Refrigerant lines shall be provided with any necessary oil traps, fittings, and appurtenances to connect the outside heat the evaporator coil located on top of the air handling unit.
de leak testing and refrigerant to insure a fully functioning system.
perant charge and fill shall be performed by a licensed refrigerant technician.
ment shall use R-410a refrigerant.
erature control shall be by an EcoBee programmable thermostat.
nostat shall be compatible with the installed HVAC equipment.

de (1) Trane XV18 series 4-Ton and (1) 3-Ton Heat Pump Unit to provide heating, ventilating, and air conditioning to the Election Office and Secure Storage in the central portion of the

pump package shall include air handling unit, outside unit, filters, refrigerant piping (sized per manufacturer's instructions)
amage to any component shall be repaired to factory condition prior to owner turn over. If any piece of equipment is not repairable to factory condition, a new unit shall be provided at the of the installing contractor.
rator coil shall be mounted on the top of the air handling unit. Provide 1" plastic piping between drain on evaporator coil and floor drain provided in the Utility Room.
le a toggle switch to switch between a high occupancy and low occupancy for the election space.
ccupancy times are defined as during elections, public or private events held in the Elections Office.
ndling unit shall be matched to the outside heat pump unit in capacity and efficiency.
d air handling unit be used during construction, filters shall be maintained and changed on a weekly basis.
lters shall be provided at substantial completion/owner turn over.
1) extra set of filters shall be provided for the owner at substantial completion.
ndling unit shall be mounted on the top of a return air plenum.
y duct work shall be provided as a part of this scope. Duct work shall be connected to the top of the air handling unit and shall be installed in the space between the ceiling and the bottom re.
le duct shall be permitted to make the final connection between supply duct branch take offs and the supply air diffuser. Flexible duct shall be kept as straight as possible, shall not be ound structural members or supports for lighting, ceiling grid, or any other support. Flexible duct lengths shall be limited to a maximum of 7'-0".
le manual balancing dampers in the branch run out for each diffuser.
balancing dampers are located above a hard ceiling, provide dampers with remote access.
air shall be ducted directly back to the unit.
air in the Election Office and Secure Storage rooms shall be ceiling mounted. See drawing for return air duct sizes.
duct main shall be located in the ceiling space between the lighting and the bottom of structure.
event of a conflict between return air duct and supply air duct, the supply air duct shall rise into the open space between structural members and pass over the return air duct. Return air be kept as straight as possible.
le duct is not permitted for use on the return duct system.
erant piping shall be either ACR copper or pre-insulated line sets. Refrigerant lines shall be provided with any necessary oil traps, fittings, and appurtenances to connect the outside heat he evaporator coil located on top of the air handling unit.
le leak testing and refrigerant to insure a fully functioning system.
erant charge and fill shall be performed by a licensed refrigerant technician.
ment shall use R-410a refrigerant.
erature control shall be by an EcoBee programmable thermostat.
ostat shall be compatible with the installed HVAC equipment.
ostat shall be wired to both air handling units.

le (1) Mitsubishi 2-Ton Ductless Mini-split Heat Pump Unit to provide air conditioning to the Utility space in the North portion of the building.
ump package shall include the inside unit, outside unit, filters, refrigerant piping (sized per manufacturer's instructions)
amage to any component shall be repaired to factory condition prior to owner turn over. If any piece of equipment is not repairable to factory condition, a new unit shall be provided at the of the installing contractor.
rator coil shall be mounted on the wall of the Utility Room. Provide 1" plastic piping between drain on evaporator coil and floor drain provided in the Utility Room.
ment size is estimated to accommodate information technology equipment located in the Utility Room.
unit shall be matched to the outside heat pump unit in capacity and efficiency. Inside unit shall be model number MSZ-A24NA. Outside unit shall be MUZ-A24NA.
d inside unit be used during construction, filters shall be maintained and changed on a weekly basis.
lters shall be provided at substantial completion/owner turn over.
1) extra set of filters shall be provided for the owner at substantial completion.
erant piping shall be either ACR copper or pre-insulated line sets. Refrigerant lines shall be provided with any necessary oil traps, fittings, and appurtenances to connect the outside heat he evaporator coil located the wall of the Utility room.
le leak testing and refrigerant to insure a fully functioning system.
erant charge and fill shall be performed by a licensed refrigerant technician.
ment shall use R-410a refrigerant.
erature control shall be by a Mitsubishi programmable thermostat.

le Greenheck model G-085-VG exhaust fan for the Lounge/Copy area.
st fan shall be mounted on the roof, more than 10'-0" away from the edge of the roof line.
st fan shall come with the following options. Vari-Green ECM motor with speed dial, roof curb, NEMA-3R disconnect switch, gravity backdraft damper, and bird screen.
le ductwork between a ceiling mounted grille and exhaust fan. See drawings for duct work size.
le a 0-10V time clock to turn the exhaust fan off or on based on an owner supplied schedule. Exhaust fan shall run continuously during occupied hours to help maintain building ation.

le Greenheck model G-070-VG exhaust fan for the Men's and Women's area. One exhaust fan shall serve both restrooms.
st fan shall be mounted on the roof, more than 10'-0" away from the edge of the roof line.
st fan shall come with the following options: Vari-Green ECM motor with speed dial, roof curb, NEMA-3R disconnect switch, gravity backdraft damper, and bird screen.
e ductwork between a ceiling mounted grilles and exhaust fan. See drawings for duct work size.
e a 0-10V time clock to turn the exhaust fan off or on based on an owner supplied schedule. Exhaust fan shall run continuously during occupied hours to help maintain building ation.

e Greenheck model G-070-VG exhaust fan for the Unisex toilet and Janitor Closet area. One exhaust fan shall serve both rooms.
st fan shall be mounted on the roof, more than 10'-0" away from the edge of the roof line.
st fan shall come with the following options: Vari-Green ECM motor with speed dial, roof curb, NEMA-3R disconnect switch, gravity backdraft damper, and bird screen.
e ductwork between a ceiling mounted grilles and exhaust fan. See drawings for duct work size.
e a 0-10V time clock to turn the exhaust fan off or on based on an owner supplied schedule. Exhaust fan shall run continuously during occupied hours to help maintain building ation.

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

ISSUES

NO	DATE	DESCRIPTION
1	07/29/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/18/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

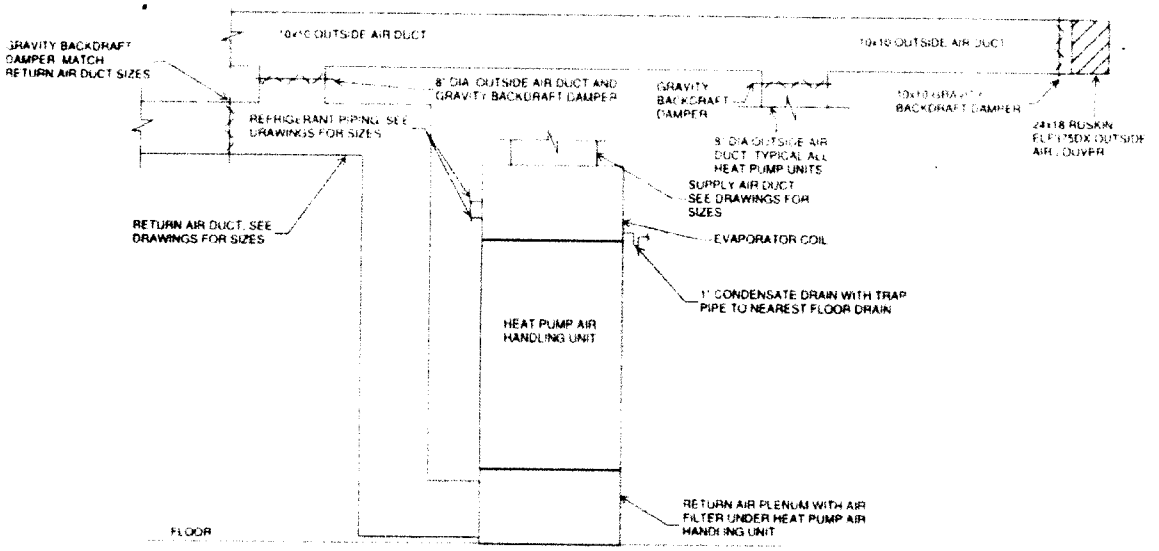
DESIGNED BY	Designer
DRAWN BY	Author
CHECKED BY	Checker
JOB NO.	200612

SHEET TITLE

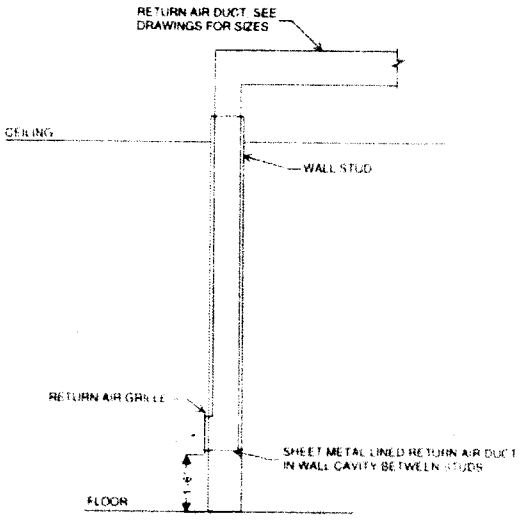
MECHANICAL SPECIFICATIONS

SHEET NUMBER

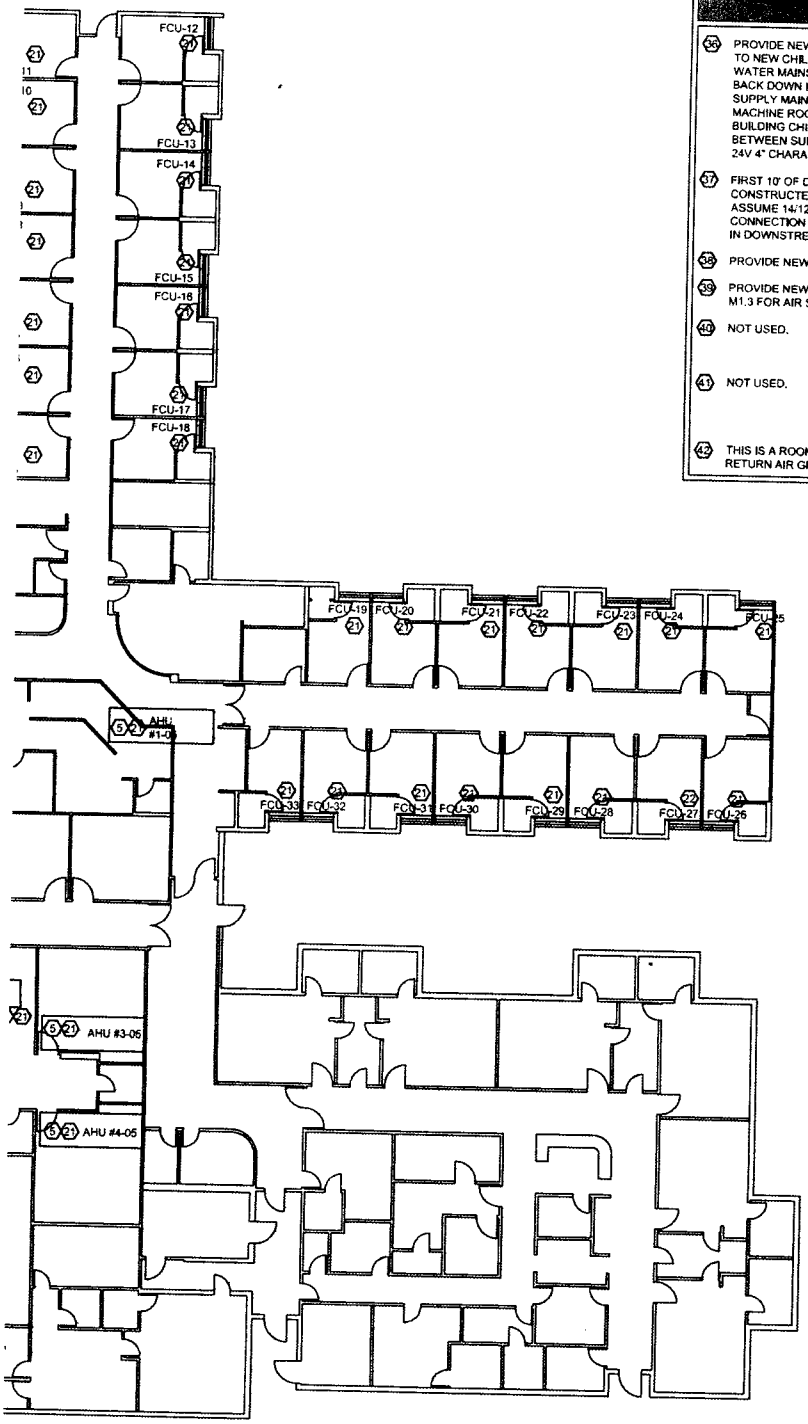
M0.1



TYPICAL HEAT PUMP AIR HANDLING UNIT DETAIL



RETURN AIR DUCT IN WALL STUD DETAIL



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

NOTES BY SYMBOL

(36) PROVIDE NEW CHILLED WATER PIPING FROM NEW AIR COOLED CHILLER ON ROOF TO NEW CHILLED WATER PUMPS THROUGH A ROOF PIPE PORTAL. CHILLED WATER MAINS SHALL BE 5". PUMPS SHALL SUPPLY UP TO CHILLER ON ROOF, THEN BACK DOWN INTO MACHINE ROOM AND CONNECT INTO EXISTING BUILDING SUPPLY MAIN. CONTRACTOR SHALL CONNECT TO EXISTING BUILDING RETURN IN MACHINE ROOM AND EXTEND TO SUCTION SIDE OF CHILLED WATER PUMPS. ON BUILDING CHILLED WATER SUPPLY SIDE, PROVIDE A 4" LOW FLOW BYPASS BETWEEN SUPPLY AND RETURN MAINS. PROVIDE MANUAL BUTTERFLY VALVE AND 24V 4" CHARACTERIZED BALL VALVE IN BYPASS.

(37) FIRST 10' OF DUCTWORK DOWNSTREAM OF STEAM DISTRIBUTOR SHALL BE CONSTRUCTED OF STAINLESS STEEL OR ALUMINUM. FOR BIDDING PURPOSES, ASSUME 14/12. SLOPE DUCT TO DRAIN POINTS AND PROVIDE 1" OUTLET FOR CONNECTION OF DRAIN LINE. EXISTING BRANCH MAINS SHALL BE MODIFIED TO TIE IN DOWNSTREAM OF THIS 10' SECTION.

(38) PROVIDE NEW POT FEEDER FOR HEATING HOT WATER SYSTEM.

(39) PROVIDE NEW AIR SEPARATOR FOR HEATING HOT WATER SYSTEM. REFER TO M1.3 FOR AIR SEPARATOR SCHEDULE.

(40) NOT USED.

(41) NOT USED.

(42) THIS IS A ROOM WITH AN EXISTING HARD CEILING. IN THESE ROOMS, REPLACE RETURN AIR GRILLE WITH NEW GRILLE WITH INTEGRAL BALANCING DAMPER.

(23) DEMO EXISTING CONDENSER WATER PUMP.

(24) DEMO EXISTING PLATE FRAME HEAT EXCHANGER.

(25) PROPERLY DRAIN EXIST. CAPPED STEAM PIPING ABOVE CHILLER IN MECH. ROOM.

(26) PROPERLY DRAIN EXISTING CAPPED OFF STEAM PIPING ABOVE AHU-7 IN MECHANICAL ROOM 503.

(27) PROVIDE NEW POT FEEDER AND AIR SEPARATOR FOR CHILLED WATER SYSTEM. REFER TO M1.3 FOR AIR SEPARATOR SCHEDULE.

(28) PROVIDE AND INSTALL NEW 4-PASS U-TUBE STEAM TO WATER HEAT EXCHANGER (HX-1 & HX-2) WITH SS BAFFLES. THRUSH MODEL S12120. FOR HX-1, RECONNECT TO EXISTING PIPING. FOR HX-2, EXTEND NEW INSULATED BRANCH STEAM LINE FROM ADJACENT MAIN AND EXTEND TO HX-2. PROVIDE STEAM CONDENSATE TRAP DOWNSTREAM OF HX-2 AND ASSOCIATED PIPING BACK INTO EXISTING STEAM CONDENSATE MAIN IN THIS VICINITY. PROVIDE NEW INSULATED SUPPLY AND RETURN PIPING FROM ADJACENT HEATING HOT WATER MAIN. PROVIDE NEW MANUAL BUTTERFLY SHUTOFF VALVES ON HEATING HOT WATER SUPPLY AND RETURN FEEDING HX-1 AND HX-2. MCKINSTRY TO PROVIDE HEAT EXCHANGERS, CONTRACTOR INSTALLED. CONTRACTOR TO FURNISH AND INSTALL TRAPS, PIPING AND VALVING.

(29) PROVIDE AND INSTALL NEW STEAM HUMIDIFIER AS SCHEDULE. EXTEND NEW 15' INSULATED SS STEAM MAIN FROM GENERATOR TO DUCT MOUNTED DISTRIBUTOR. REFER TO M1.3 FOR UNIT SCHEDULE. EXTEND DOMESTIC WATER AND DRAIN TO/FROM STEAM HUMIDIFIER - FOR PURPOSES OF BIDDING, ASSUME 65' NEW DOMESTIC WATER PIPING.

(30) DEMO ABANDONED EXISTING VAV BOX. CAP EXISTING DUCTWORK OFF AT EXISTING VAV BOX TAPS.

(31) PROVIDE NEW SINGLE DAMPER VAV BOX. VAV BOX TO PROVIDE AIR TO CEILING PLENUM FOR EXISTING VRF CASSETTES IN ADMINISTRATION AREA.

(32) DEMO EXISTING 2-TON FAN COIL UNIT.

(33) BID AS ADD ALTERNATE - REPLACE EXISTING 3-WAY CHILLED WATER AND HOT WATER CONTROL VALVE WITH NEW 2-WAY DDC CONTROL VALVE.

(34) DEMO ALL EXISTING CONDENSING WATER PIPING AND ASSOCIATED ACCESSORIES FROM COOLING TOWER ON ROOF TO WATER COOLED CHILLER IN MECHANICAL ROOM.

(35) DEMO EXISTING CHILLED WATER PIPING AND ASSOCIATED ACCESSORIES FROM WATER COOLED CHILLER TO CHILLED WATER PUMPS.

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SUMMIT CONSULTANTS, INC.

ENGINEER: RENE CULROSS
LICENSED#:71739
DATE: 10/12/2015

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DESIGN DOCUMENTS

McKinstry
For The Life Of Your Building

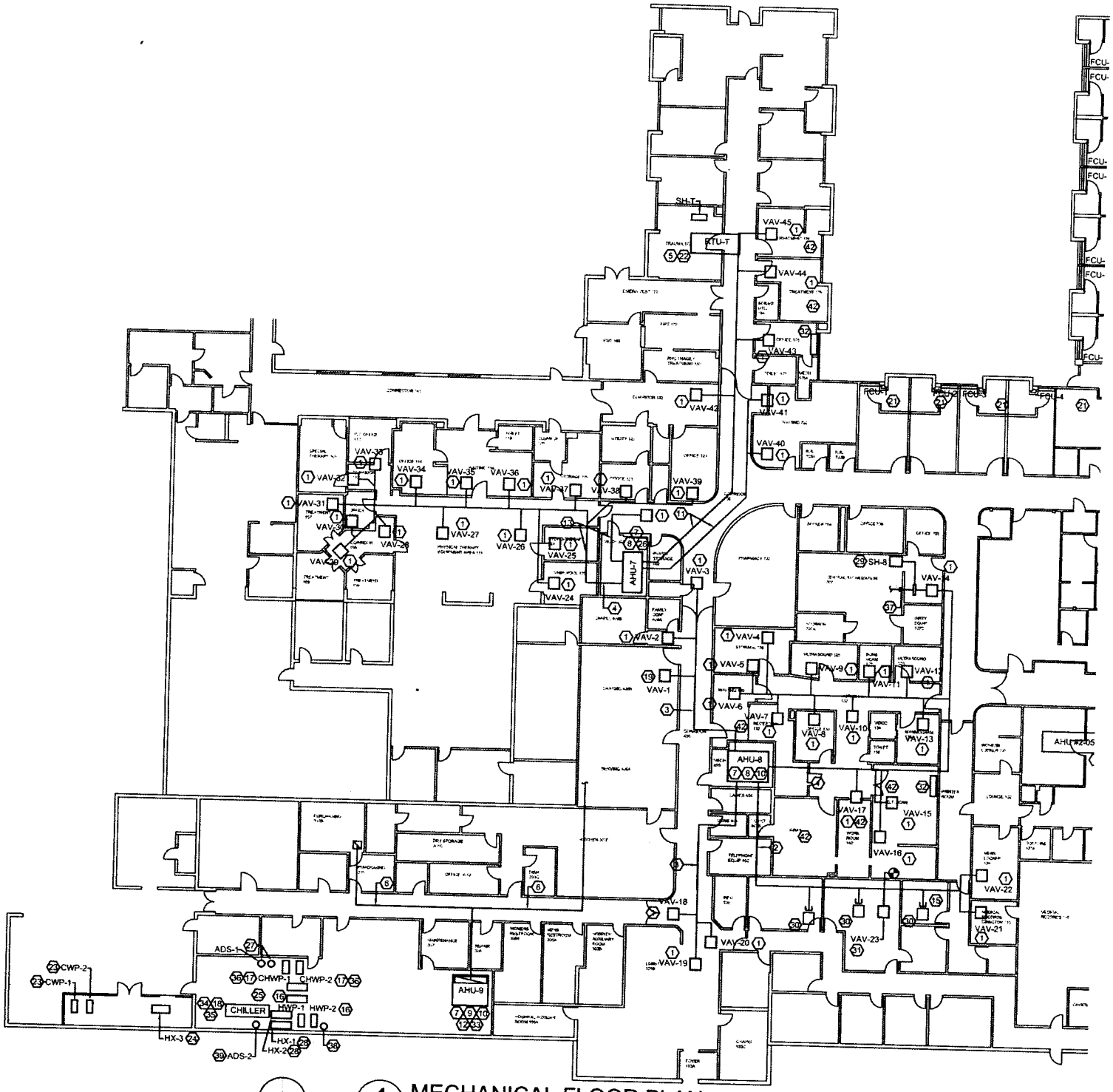
Project No. 15168
Date: 10/12/2015

NOT FOR CONSTRUCTION

NO.	REVISION	DATE

CHILDRESS REGIONAL MEDICAL CENTER
HVAC Renovations
Interiors Package
901 US-83, CHILDRESS, TX 79201

M1.1

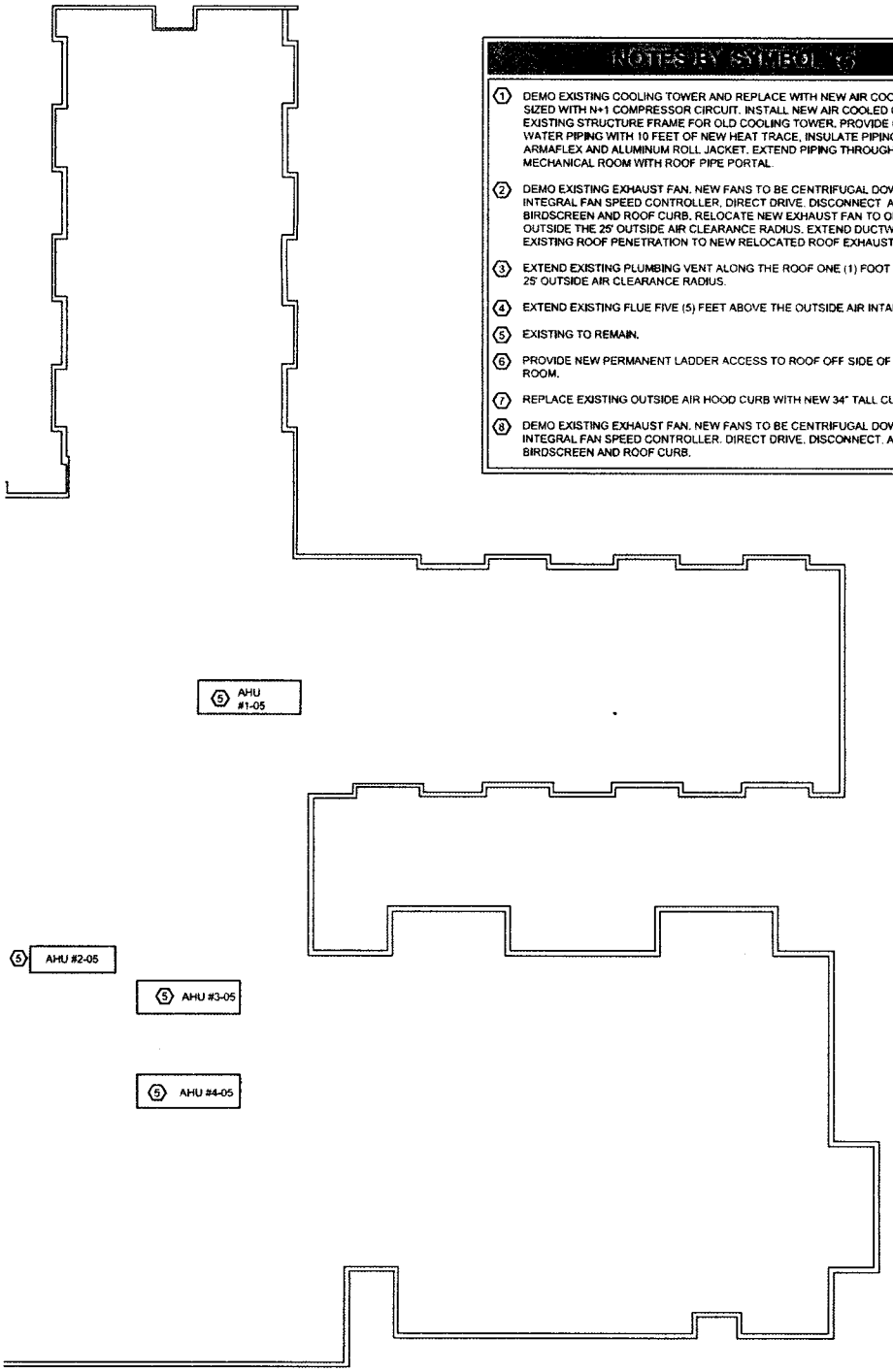


N

1 MECHANICAL FLOOR PLAN

NOTES BY SYMBOL

1. DEMO AND REPLACE WITH NEW VAV BOX WITH HOT WATER RE-HEAT COIL. FOR THE PURPOSES OF BIDDING, PROVIDE 12" SINGLE DUCT DOUBLE WALL VAV BOX WITH 3-ROW HOT WATER COIL, TOGGLE SWITCH, LOW VOLTAGE ACTUATOR AND LOW VOLTAGE 2-WAY HOT WATER CONTROL VALVE. CONTROLS CONTRACTOR SHALL PROVIDE CONTROLLER AND SHIP TO MANUFACTURER FOR FACTORY INSTALLATION.
2. DEMO EXISTING 20 FEET OF DUCT WITH SOUND ATTENUATION LINER AND REPLACE WITH NEW MEDIUM PRESSURE DUCTWORK OF EQUAL SIZE.
3. DEMO EXISTING 12 FEET OF DUCT WITH SOUND ATTENUATION LINER AND REPLACE WITH NEW MEDIUM PRESSURE DUCTWORK OF EQUAL SIZE.
4. DEMO EXISTING 8 FEET OF DUCT WITH SOUND ATTENUATION LINER AND REPLACE WITH NEW MEDIUM PRESSURE DUCTWORK OF EQUAL SIZE.
5. REPLACE EXISTING 3-WAY CHILLED WATER AND HOT WATER CONTROL VALVE WITH NEW 2-WAY DDC CONTROL VALVE.
6. EXTEND NEW 44/14 RETURN AIR DUCT CONNECTING EXISTING RETURN AIR DUCT FROM KITCHEN AND PURCHASING TO EXISTING RETURN AIR DUCT ABOVE MAINTENANCE ROOM.
7. DEMO EXISTING AIR HANDLER UNIT, STEAM PRE-HEAT COIL AND ASSOCIATED ACCESSORIES. PROVIDE NEW VARIABLE AIR VOLUME AIR HANDLER. PROVIDE NEW AIR HANDLER WITH NEW VFD, 2-WAY DDC CHILLED WATER CONTROL VALVE AND ACCESSORIES. REFER TO M1.3 FOR UNIT SCHEDULE.
8. PROVIDE AND EXTEND NEW RETURN AIR DUCTWORK FROM WALL OF MECHANICAL ROOM TO NEW AIR HANDLER. PROVIDE NEW OUTDOOR AIR DUCTWORK FROM INTAKE HOOD TO RETURN AIR DUCT. PROVIDE OPPOSED BLADE MOTORIZED DAMPERS FOR RETURN AIR AND OUTDOOR AIR DUCTS.
9. DEMO HOT WATER PIPING BACK TO MAINS AND CAP.
10. DRAIN STEAM PIPING TO CONDENSATE AS REQUIRED.
11. DEMO EXISTING 16 FEET OF DUCT WITH SOUND ATTENUATION LINER AND REPLACE WITH NEW MEDIUM PRESSURE DUCTWORK OF EQUAL SIZE.
12. PROVIDE NEW OPPOSED BLADE MOTORIZED DAMPERS FOR OUTSIDE AIR AND RETURN AIR DUCTWORK.
13. DEMO EXISTING 10 FEET OF DUCT WITH SOUND ATTENUATION LINER AND REPLACE WITH NEW MEDIUM PRESSURE DUCTWORK OF EQUAL SIZE.
14. NOT USED.
15. NOT USED.
16. PROVIDE AND INSTALL NEW HOT WATER PUMP WITH VFD. REFER TO M1 PUMP SCHEDULE.
17. PROVIDE NEW CHILLED WATER PUMP WITH VFD.
18. DEMO EXISTING WATER COOLED 200-TON CHILLER IN MECHANICAL RO
19. DEMO EXISTING VAV BOX. HOT WATER PIPING BACK TO MAINS, AND AS DUCTWORK AND DIFFUSERS.
20. NOT USED.
21. EXISTING EQUIPMENT TO REMAIN.
22. BID AS ADD ALTERNATE #1 - DEMO AND REPLACE EXISTING ROOF TOP U SERVING TRAUMA ROOM WITH NEW CHILLED/HOT WATER ROOF TOP U STEAM HUMIDIFIER AT UNIT AS SCHEDULE. STEAM HUMIDIFIER WILL BE AT THE ROOF. EXTEND 15' SS INSULATED STEAM MAIN FROM HUMIDIFIE DRAIN EXISTING STEAM PIPING TO STEAM CONDENSATE AS REQUIRED. NEW HOT WATER PIPING TO ROOF TOP UNIT FROM EXISTING MAINS. RE M1.3 FOR UNIT SCHEDULE. FOR PURPOSES OF BIDDING, ASSUME 65' NE DOMESTIC WATER PIPING.



NOTES BY SYMBOL

1. DEMO EXISTING COOLING TOWER AND REPLACE WITH NEW AIR COOLED CHILLER. SIZED WITH N+1 COMPRESSOR CIRCUIT. INSTALL NEW AIR COOLED CHILLER ON EXISTING STRUCTURE FRAME FOR OLD COOLING TOWER. PROVIDE CHILLED WATER PIPING WITH 10 FEET OF NEW HEAT TRACE, INSULATE PIPING WITH ARMAFLEX AND ALUMINUM ROLL JACKET. EXTEND PIPING THROUGH ROOF INTO MECHANICAL ROOM WITH ROOF PIPE PORTAL.
2. DEMO EXISTING EXHAUST FAN. NEW FANS TO BE CENTRIFUGAL DOWNBLAST WITH INTEGRAL FAN SPEED CONTROLLER, DIRECT DRIVE. DISCONNECT ALUMINUM BIRDSCREEN AND ROOF CURB. RELOCATE NEW EXHAUST FAN TO ONE (1) FOOT OUTSIDE THE 25' OUTSIDE AIR CLEARANCE RADIUS. EXTEND DUCTWORK FROM EXISTING ROOF PENETRATION TO NEW RELOCATED ROOF EXHAUST FAN.
3. EXTEND EXISTING PLUMBING VENT ALONG THE ROOF ONE (1) FOOT OUTSIDE THE 25' OUTSIDE AIR CLEARANCE RADIUS.
4. EXTEND EXISTING FLUE FIVE (5) FEET ABOVE THE OUTSIDE AIR INTAKE.
5. EXISTING TO REMAIN.
6. PROVIDE NEW PERMANENT LADDER ACCESS TO ROOF OFF SIDE OF MECHANICAL ROOM.
7. REPLACE EXISTING OUTSIDE AIR HOOD CURB WITH NEW 34" TALL CURB.
8. DEMO EXISTING EXHAUST FAN. NEW FANS TO BE CENTRIFUGAL DOWNBLAST WITH INTEGRAL FAN SPEED CONTROLLER. DIRECT DRIVE. DISCONNECT. ALUMINUM BIRDSCREEN AND ROOF CURB.

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

DESIGN DOCUMENTS

McKinstry
For The Life Of Your Building

Project No. 15168
Date: 10/12/2015

NOT FOR CONSTRUCTION

NO.	REVISION	DATE

CHILDRESS REGIONAL MEDICAL CENTER

HVAC Renovations

Interiors Package

901 US-83, CHILDRESS, TX 79201

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SUMMIT CONSULTANTS, INC.

ENGINEER: RENE CULROSS
LICENSED#:71739
DATE: 10/12/2015

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Suite 635
Dallas, Texas 75204
Office 214 420 9111
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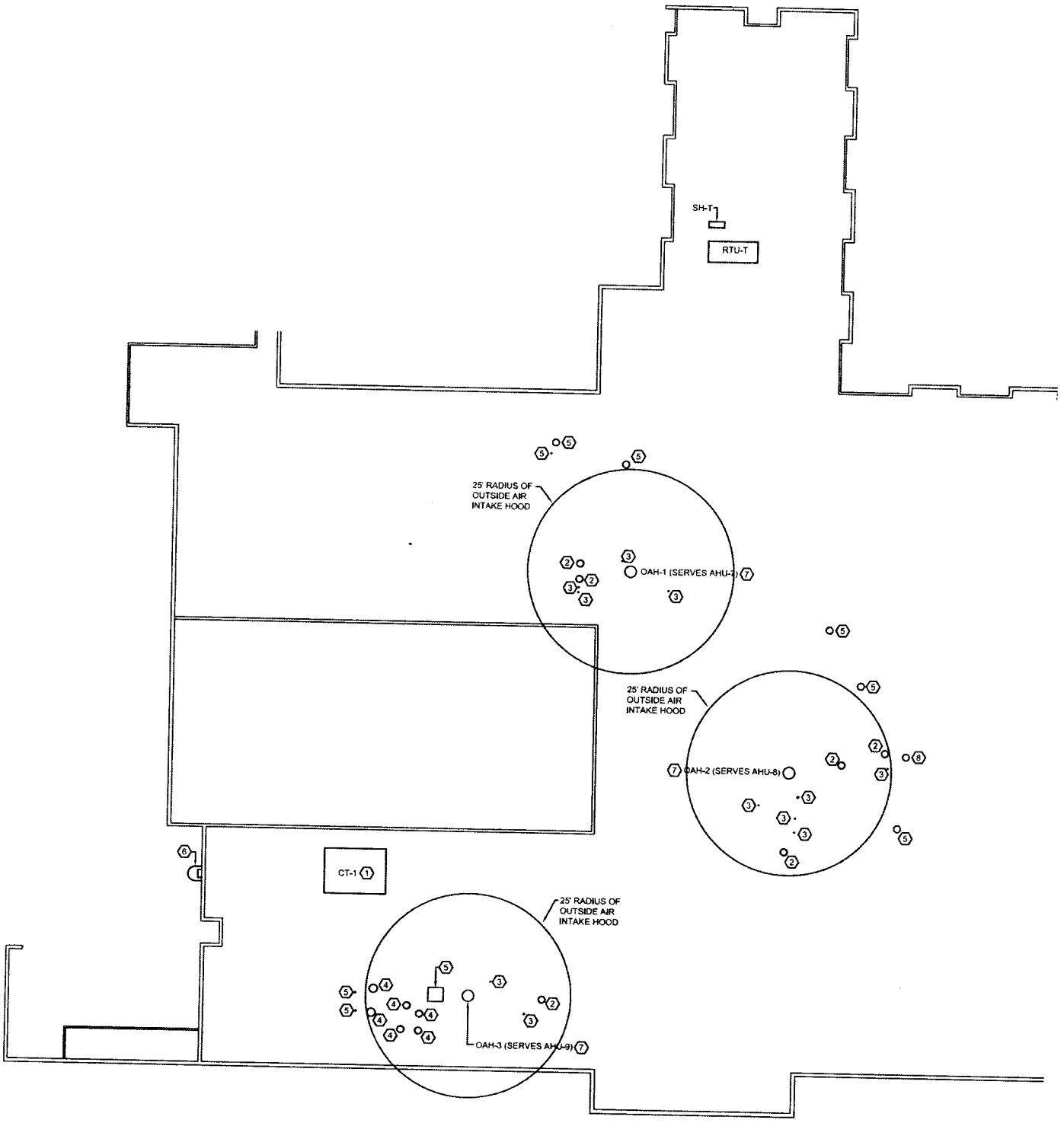
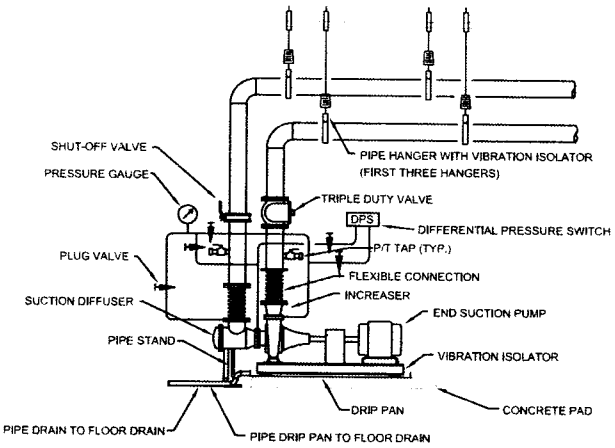
M1.2



N

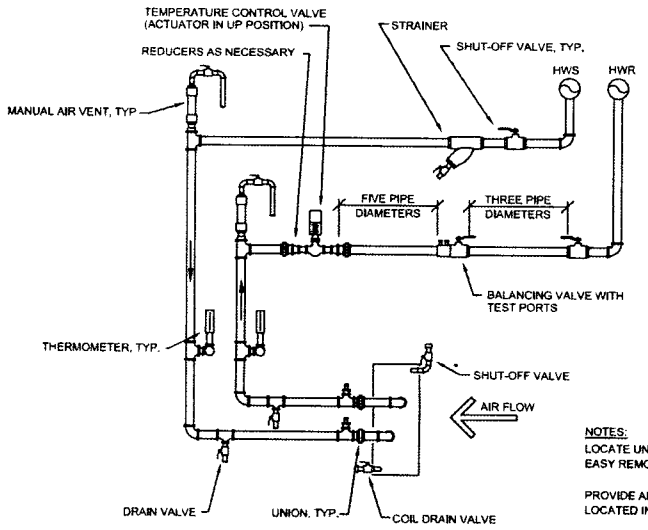
1 MECHANICAL ROOF PLAN



DESIGNERS NOTES:

SHUT-OFF VALVES:
THROUGH 2 1/2": BALL VALVE
ABOVE 2 1/2": BUTTERFLY VALVE

1 END SUCTION PUMP
SCALE: NO SCALE



NOTES:
LOCATE UNIONS TO PROVIDE EASY REMOVAL OF COILS

PROVIDE ALL DRAIN VALVES AND AIR VENTS LOCATED INSIDE UNIT WITH HOSE END AND CAP

PIPE ALL DRAIN VALVES AND AIR VENTS LOCATED OUTSIDE UNIT TO FLOOR DRAIN

2 HEATING/COOLING COIL PIPING WITH TWO WAY VALVE
SCALE: NO SCALE

DESIGN DOCUMENTS

Project No. 15168
Date: 10/12/2015

NOT FOR CONSTRUCTION

NO.	REVISION	DATE

CHILDRESS REGIONAL MEDICAL CENTER
HVAC Renovations
Interiors Package
901 US-83, CHILDRESS, TX 79201

NOT FOR CONSTRUCTION
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SUMMIT CONSULTANTS, INC.

ENGINEER: RENE CULROSS
LICENSED#:71739
DATE: 10/12/2015

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M1.3

CHILLED WATER AND ELECTRIC PRE-HEAT AIR HANDLING UNIT SCHEDULE

MARK	ARRANGEMENT	SERVES	FAN DATA				COOLING PERFORMANCE DATA											ELECTRIC PRE-HEAT COIL					POWER CONN.				UNIT WEIGHT (LBS)
			S/A CFM	O/A CFM	EXT. S.P.	MOTOR HP EACH (TOTAL)	ENTERING AIR D.B.	ENTERING AIR W.B.	LEAVING AIR D.B.	LEAVING AIR W.B.	CAPACITY (MBH) SENS	CAPACITY (MBH) LAT	CAPACITY (MBH) TOTAL	GPM	MAX P.D. FT. W.G.	EWT	LWT	MAX ROWS	MAX FINS PER INCH	EAT	LAT	HEATING CFM	MIN CAP (MBH)	KW	STAGES	V.	Ph.	MCA	MOCP	
AHU-7	UPFLOW	PHYSICAL THERAPY/ADMIN	5,350	890	2.3	3 (6)	81.5	64.3	54.0	52.9	145.7	15.6	161.3	32.1	8.0	45.0	55.0	5.0	9.0	35.6	50.0	1,605	24.5	8	2	460	3	19.7	25.0	4,077
AHU-8	UPFLOW	IMAGING SUITE	8,010	1,280	2.3	3.5 (10.5)	80.8	64.1	53.5	52.6	245.9	30.2	276.1	55.0	6.3	45.0	55.0	6.0	8.0	37.6	50.0	2,403	32.2	10	2	460	3	14.4	35.0	5,632
AHU-9	UPFLOW	KITCHEN AND CAFETERIA	3,000	605	2.3	1.5 (3)	77.9	59.6	55.0	50.5	73.2	5.5	78.7	14.6	9.3	45.0	55.0	5.0	7.0	40.0	50.0	900	9.7	3	2	460	3	12.8	20.0	3,563

1. EXTERNAL STATIC PRESSURE ("WG") INCLUDES DUCTWORK, BALANCING DAMPERS AND AIR DEVICES ONLY
2. CAPACITIES LISTED ARE NET FROM UNIT DISCHARGE. UNITS SHALL PERFORM TO LISTED CAPACITIES. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS
3. AAON IS THE BASIS FOR DESIGN
4. TEMTROL IS THE BASIS FOR DESIGN
5. PROVIDE SMOKE DETECTOR INTERLOCKED TO SUPPLY FAN AS REQUIRED BY CODE
6. PROVIDE 4" MERV 7 PREFILTER
7. PROVIDE 4" MERV 14 FINAL FILTER. PROVIDE WITH MAGNEHELIC GAUGE
8. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS
9. PROVIDE INTEGRAL DISCONNECT
9. PROVIDE ECONOMIZER DAMPERS
10. PROVIDE NEMA MG1 PART 31 INVERTER DUTY RATED MOTOR AND VARIABLE FREQUENCY DRIVE
11. PROVIDE NEMA MG1 PART 31 INVERTER DUTY RATED MOTOR AND VARIABLE FREQUENCY DRIVE FOR TAB.

AIR COOLED CHILLER SCHEDULE

MCKINSTRY PROV CONTRACTOR INSTA

MARK	DESIGN TONS	AMBIENT TEMP DEG. F.	TYPE	EWT DEG. F.	LWT DEG. F.	FLOW (GPM) MIN	FLOW (GPM) DES	FLOW (GPM) MAX	WPD FT. WG.	FOULING FACTOR	EER	NPLV EER	REF. TYPE	CIRCUIT 1 COMPRESSOR QTY	CIRCUIT 1 COMPRESSOR RLA EA.	CIRCUIT 1 CONDENSER # OF FANS	CIRCUIT 1 CONDENSER FLA EA.	CIRCUIT 2 COMPRESSOR QTY	CIRCUIT 2 COMPRESSOR RLA EA.	CIRCUIT 2 CONDENSER # OF FANS	CIRCUIT 2 CONDENSER FLA EA.	UNIT ELECTRICAL VOLTS	UNIT ELECTRICAL PH.	UNIT ELECTRICAL HZ	UNIT ELECTRICAL MCA	UNIT ELECTRICAL MOCP	WEIGHT LBS.	MANUFACUTRER AND MODEL NUMBER	REMARKS
CH-1	132	105	SCROLL	58	44	180	318	650	9.7	0.0001	8.1	15.9	R-410A	3	53	5	4	3	53	5	4	460	3	60	376	400	8640	YORK YLAA	1,2,3,4,5,6,7,8,9

1. ALL PIPING (AND CHILLER WATER-SIDE COMPONENTS) EXPOSED TO AMBIENT CONDITIONS SHALL BE HEAT TRACED AND INSULATED TO PREVENT FREEZING DOWN TO 0 DEG F. MINIMUM
2. PROVIDE LOW AMBIENT CONTROLS TO ALLOW OPERATION DOWN TO 0 DEG F. AMBIENT
3. PROVIDE UNIT MOUNTED NON-FUSED DISCONNECT SWITCH
4. PROVIDE CONTROL POWER TRANSFORMER
5. PROVIDE A MINIMUM OF 4 COMPRESSORS
6. PROVIDE WITH SINGLE POINT ELECTRICAL CONNECTION
7. PROVIDE WITH FLOW SWITCH
8. PROVIDE WITH SOUND DAMPENING ON COMPRESSORS
9. PROVIDE WITH N+1 COMPRESSOR CIRCUIT

CHILLED WATER AND HEATING HOT WATER ROOFTOP UNIT SCHEDULE

MCKINSTRY PROVIDED, CONTRACTOR INSTALLED

MARK	ARRANGEMENT	FAN DATA S/A CFM	FAN DATA O/A CFM	FAN DATA EXT. S.P.	FAN DATA MOTOR HP	COOLING PERFORMANCE DATA ENTERING AIR D.B.	ENTERING AIR W.B.	LEAVING AIR D.B.	LEAVING AIR W.B.	O.D. D.B.	CAPACITY (MBH) SENS	CAPACITY (MBH) LAT	CAPACITY (MBH) TOTAL	GPM	MAX P.D. FT. W.G.	EWT	LWT	MAX ROWS	MAX FINS PER INCH	PRE-HEAT COIL EAT	LAT	HEAT CFM	MIN CAP (MBH)	HEATING WATER GPM	HEATING WATER EWT	HEATING WATER LVG	MAX PD FT W.G.	POWER CONN. V.	Ph.	MCA	MOCP	UNIT WEIGHT (LBS)	REMARKS
RTU-T	DOWNFLOW	750	150	1.7	1	82.4	64.5	53.2	52.8	100.0	22.7	2.1	24.7	8.0	0.4	45.0	55.0	4.0	12.0	39.0	99.1	300.0	36.5	6.0	160.0	153.1	0.4	208	3	9.0	15.0	447	1-13

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3. AAON IS THE BASIS FOR DESIGN
4. PROVIDE GALVANIZED INSULATED FACTORY ROOF CURB TO MATCH ROOF SLOPE
5. PROVIDE WITH SMOKE DETECTOR INTERLOCKED TO SUPPLY FAN AS REQUIRED BY CODE
6. PROVIDE 4" MERV 7 PREFILTER. PREFILTER MUST BE UPSTREAM OF THE FOLLOWING MECHANICAL COMPONENTS: DX COIL, GAS FURNACE, SUPPLY DUCT WORK, RETURN FAN AND SUPPLY FAN
7. PROVIDE 4" MERV 14 FILTER DOWNSTREAM OF ALL MECHANICAL EQUIPMENT COMPONENTS INCLUDING BUT NO LIMITED TO DX COIL, GAS FURNACE, RETURN FAN AND SUPPLY FAN. PROVIDE WITH MAGNEHELIC GAUGE
8. UNIT PERFORMANCE MUST SATISFY BOTH SENSIBLE AND LATENT CAPACITY REQUIREMENTS
9. PROVIDE WITH INTEGRAL DISCONNECT
10. PROVIDE WITH ECONOMIZER DAMPERS
11. PROVIDE NEMA MG1 PART 31 INVERTER DUTY RATED MOTOR AND VARIABLE FREQUENCY DRIVE
12. PROVIDE WITH INSULATED DOGHOUSE WITH ACCESS DOOR FOR PIPING. ROOF CURB SHALL ACCOMMODATE DOGHOUSE SO PIPING CAN EXTEND UP THRU ROOF CURB AND INTO DOGHOUSE
13. BID AS ADD ALTERNATE #1

STEAM HUMIDIFIER SCHEDULE

MCKINSTRY PROVIDED, CONTRACTOR INSTALLED

MARK	SERVES	DISTRIBUTOR LOCATION	HUMIDIFICATION KW	HUMIDIFICATION CAPACITY LBS/HR	CONDITIONS AIRFLOW (CFM)	CONDITIONS TEMP (F) BEFORE	CONDITIONS RH (GR/LB.) BEFORE	UNIT ELECTRICAL VOLTS	PH.	MCA	MOCP	STEAM DISTRIBUTOR TYPE	STEAM DISTRIBUTOR QTY	STEAM DISTRIBUTOR MODEL	STEAM GENERATOR TYPE	STEAM GENERATOR MANUFACTURER/MODEL NAME	REMARKS
SH-8	AHU-8	AHU-8	1.87	4.6	1,150	63.8	39.4	120	1	15.9	20.0	ABSORP. MANIFOLD	1	NORTEC MINI SAM-E	ELECTRODE	NORTEC/NH-EL	1-7, 9
SH-T	RTU-T	RTU-T	4.10	5.2	750	59.2	36.2	208	1	19.9	25.0	ABSORP. MANIFOLD	1	NORTEC MINI SAM-E	ELECTRODE	NORTEC NHTC	1-9

1. PROVIDE UNIT WITH HUMIDISTAT AND AIRFLOW SENSOR DOWNSTREAM OF STEAM ELEMENTS
2. PROVIDE UNIT WITH INTEGRAL DISCONNECT SWITCH
3. INSTALL PER MANUFACTURER RECOMMENDATIONS
4. COORDINATE DISTRIBUTOR SIZE WITH DUCTWORK WHERE DISTRIBUTOR IS TO BE PLACED
5. PROVIDE WITH SHORT ABSORPTION 304 STAINLESS STEEL STEAM DISTRIBUTOR
6. OR APPROVED EQUAL
7. REFER TO PLUMBING SHEETS FOR WATER CONNECTION AND DRAIN DETAILS
8. STEAM GENERATOR WILL BE MOUNTED OUTDOORS AND DISTRIBUTOR WILL BE MOUNTED IN RTU. PROVIDE NEMA 3R ENCLOSURE FOR GENERATOR W FREEZE PROTECTION PACKAGE. COORDINATE DISTRIBUTOR SIZE WITH RTU SUBMITTAL.
9. PROVIDE WITH DRAIN WATER COOLER

PUMP SCHEDULE

MCKINSTRY PROVIDED, CONTRACTOR INSTALLED

MARK	LOCATION	SERVES	TYPE	GPM	TOTAL HEAD FT. WG	MOTOR DATA HP	MOTOR DATA RPM	MOTOR DATA V	MOTOR DATA PH	MOTOR DATA HZ	MANUFACTURER AND MODEL NUMBER	REMARKS
CHWP-1	MECH ROOM	CH-1	END SUCTION	318	85	10	1750	460	3	60	PACO 4012A	1,2
CHWP-2	MECH ROOM	CH-1	END SUCTION	318	85	10	1750	460	3	60	PACO 4012A	1,2
HWP-1	MECH ROOM	HX-1 / HX-2	END SUCTION	320	85	15	1750	460	3	60	PACO 4012A	1,2
HWP-2	MECH ROOM	HX-1 / HX-2	END SUCTION	320	85	15	1750	460	3	60	PACO 4012A	1,2

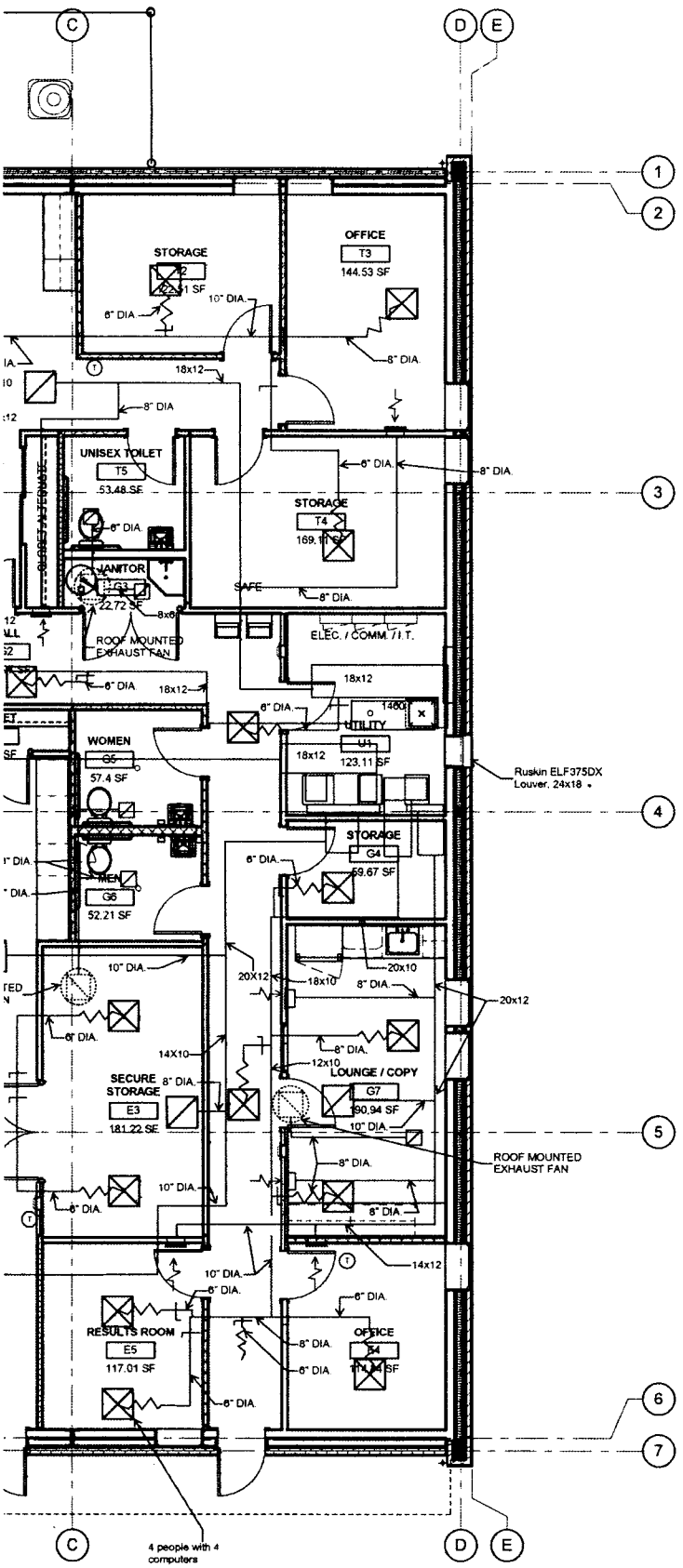
1. OR APPROVED EQUAL
2. SPLIT CASE PUMP

AIR DIRT SEPARATOR SCHEDULE

MCKINSTRY PROVIDED, CONTRACTOR INSTALLED

MARK ADS-	SERVES	DESIGN GPM	RATED GPM	WEIGHT (LBS.)	MANUFACTURER AND MODEL	REMARKS
1	CHILLED WATER	318	500	429	SPIROVENT V-HN	1-4
2	HEATING WATER	320	500	429	SPIROVENT V-HN	1-4

1. WITH REMOVABLE LOWER HEAD FOR CLEANING AND INSPECTION AND AUTOMATIC AIR VENT
2. HIGH VELOCITY AIR/DIRT SEPARATOR
3. DRY WEIGHT LISTED
4. OR APPROVED EQUAL



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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
BROWNWOOD, TX.
76801

CONSULTANTS

REGISTRATION

ISSUES

NO	DATE	DESCRIPTION
1	07/29/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	09/18/2015	INTERNAL COORDINATION SET

DESIGNED BY	BEH
DRAWN BY	ZC
CHECKED BY	BEH
JOB NO.	20612

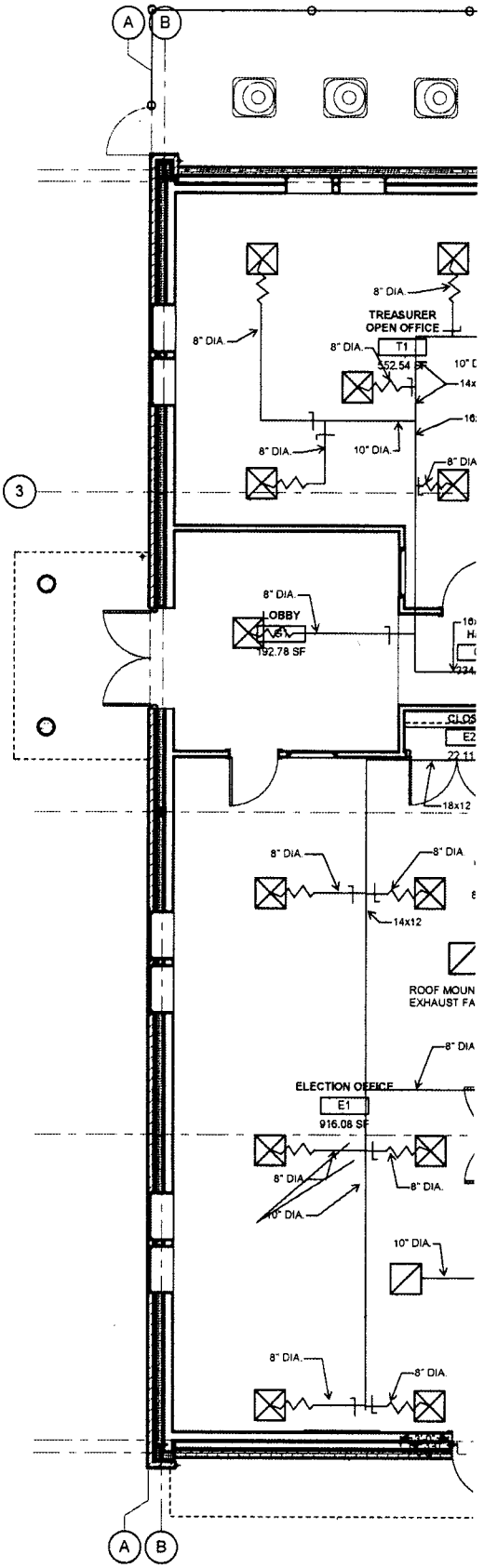
SHEET TITLE

MECHANICAL DUCT WORK

SHEET NUMBER

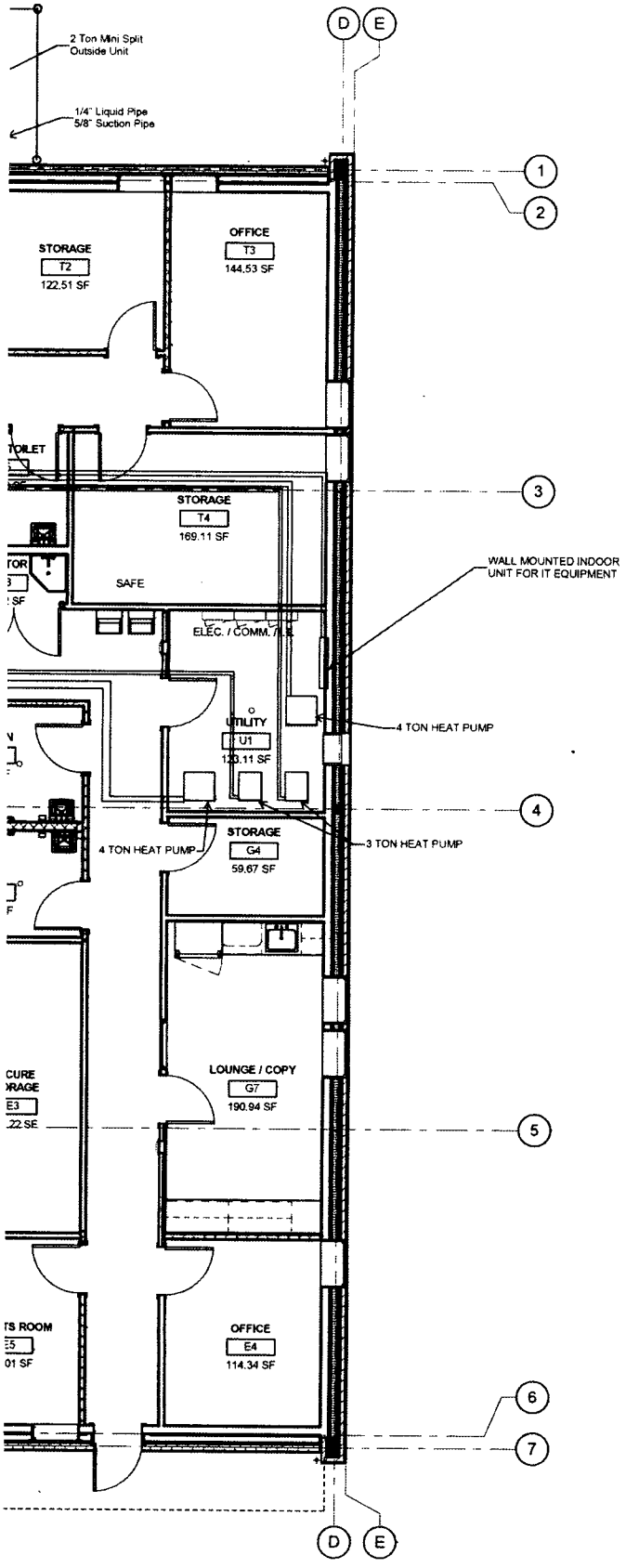
M2.0

PRELIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY



1 **MECHANICAL DUCT WORK PLAN**
1/4" = 1'-0"

PF



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DESIGNED BY	BEH
DRAWN BY	ZC
CHECKED BY	BEH
JOB NO.	20612

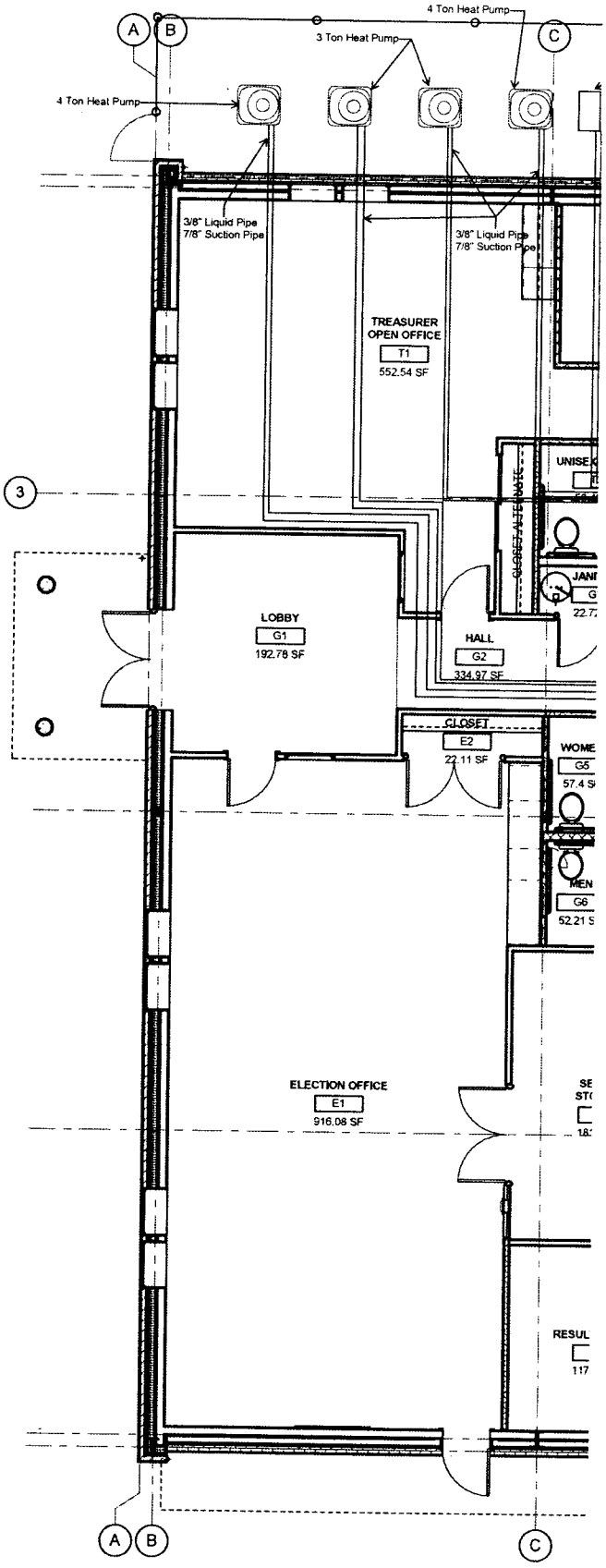
SHEET TITLE

MECHANICAL REFRIGERANT PIPE

SHEET NUMBER

M2.1

ELIMINARY--NOT FOR CONSTRUCTION -- PRICING ONLY



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

PR

...Unisex Toilet and Men's and
...ter piping, vent and drain piping and
...See drawings for pipe size
...to Kohler Artifacts sink overflow capability.
...liant
...d drain pipes.
...restrooms shall be connected to form
...cription above for more information on
...nnect to vent piping for Janitor's
...information.
...nd Women's restrooms shall connect
...rawings for waste pipe size.
...el, drop-in sink in the Lounge
...ain piping and appurtenances to make
...ping
...is
...the roof. See drawings for vent pipe
...ding drain piping. See drawings for
...om
...of the room, with the floors sloping
...is
...the roof. See drawings for vent pipes
...building drain piping. See drawings
...Unisex Toilet, Janitor's closet, and
...en's restrooms shall be connected to
...e description on water closet vent on
...itor's Closet shall connect to vent
...on in water closet section for more
...ct to new main building drain pipe, as
...tor's closet. Mop sink shall be floor
...m piping, faucets, handles and
...nal. See drawings for pipe sizing and
...vent piping for the Unisex Toilet and
...tion in water closet section for more
...main building drain piping. See

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Brown County, Texas Plumbing Basis of Design

- Provide Rheem ELDS40 electric water heater. Water heater shall have all safeties required by Plumbing Code and shall have a 38 gallon storage tank. Water heater will be located in the Janitor's Closet.
  Domestic hot water system shall be provided with an Amtrol ST-5 C expansion tank.
  Hot water piping shall be installed in the ceiling from water heater to sinks in the Unisex Toilet, Women's and Men's restrooms, and Lounge/Copy room and to the mop sink in the Janitor's Closet. See drawing for pipe size.
  Do not install any domestic hot water piping in or above the Utility Room.

- Provide 1" Watts LF007 Lead free double check valve back flow preventer in Janitor's Closet.
  Backflow preventer shall be lead free to comply with current Plumbing Code.
  Domestic water shall connect to existing water service line to the building site. Verify water service pipe size and location prior to providing an estimate.
  Provide strainer upstream of backflow preventer.

- Provide Badger Model 55 water meter.
  Water meter shall be lead free to comply with current Plumbing Code.
  Water meter shall be installed in Janitor's Closet, downstream of back flow preventer.

- Provide domestic cold water piping to serve the sinks and water closets in the Unisex Toilet and Men's and Women's restroom, mop sink in the Janitor's Closet, sink in the Lounge/Copy room, and the water cooler located in the Hallway.
  Domestic cold water piping shall be installed in the ceiling from the Janitor's Closet, downstream of the backflow preventer and water meter assembly. See drawing for pipe size.
  Do not install any domestic cold water piping in or above the Utility Room.
  Air handling unit shall be matched to the outside heat pump unit in capacity and efficiency.

- Provide American Standard Cadet PRO Elongated water closet in Unisex Toilet and Men's and Women's restrooms.
  Water closet shall be ADA compliant - 1.28 gallons per flush.
  Water closet shall be floor mounted.
  Provide cold water piping and appurtenances to make water closet functional. See drawings for possible pipe routing and size.
  Provide drain and vent piping for water closets.
  Vent piping for water closets in the Men's and Women's restrooms shall be combined together to form one vent through roof. One vent through roof shall serve the water closets, sinks, and floor drains in each restroom. See drawings for vent pipe and vent through roof sizes and possible locations.
  Vent piping for water closet in Unisex Toilet shall be connected to vent piping for Janitor's closet. One vent through roof shall serve the water closet, hand sink, mop sink, and floor drains in each room. See drawings for vent pipe and vent through roof sizing and possible location.

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PROJECT

BROWNWOOD COUNTY ELECTIONS FACILITY

613 N. FISK AVE.,
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76801

CONSULTANTS

REGISTRATION

ISSUES

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1	07/28/2015	INITIAL BACKGROUND
	08/12/2015	PRELIMINARY COORDINATION SET
	08/19/2015	INTERNAL COORDINATION SET
	08/25/2015	PRICING SET

DESIGNED BY:	Designer
DRAWN BY:	Author
CHECKED BY:	Checker
JOB NO.	200812

SHEET TITLE

PLUMBING SPECIFICATIONS

SHEET NUMBER

P0.1

- Provide Elkay LZSTL8WS water cooler with EZH2O bottle filling station.
  Water cooler shall be connected to domestic cold water piping, see drawings for pipe size.
  Vent piping for water coolers shall connect to vent piping for Janitor's Closet. See description in water closet section for more information.
  Waste pipe for water coolers shall connect to new main building drain piping. See drawings for waste pipe size.

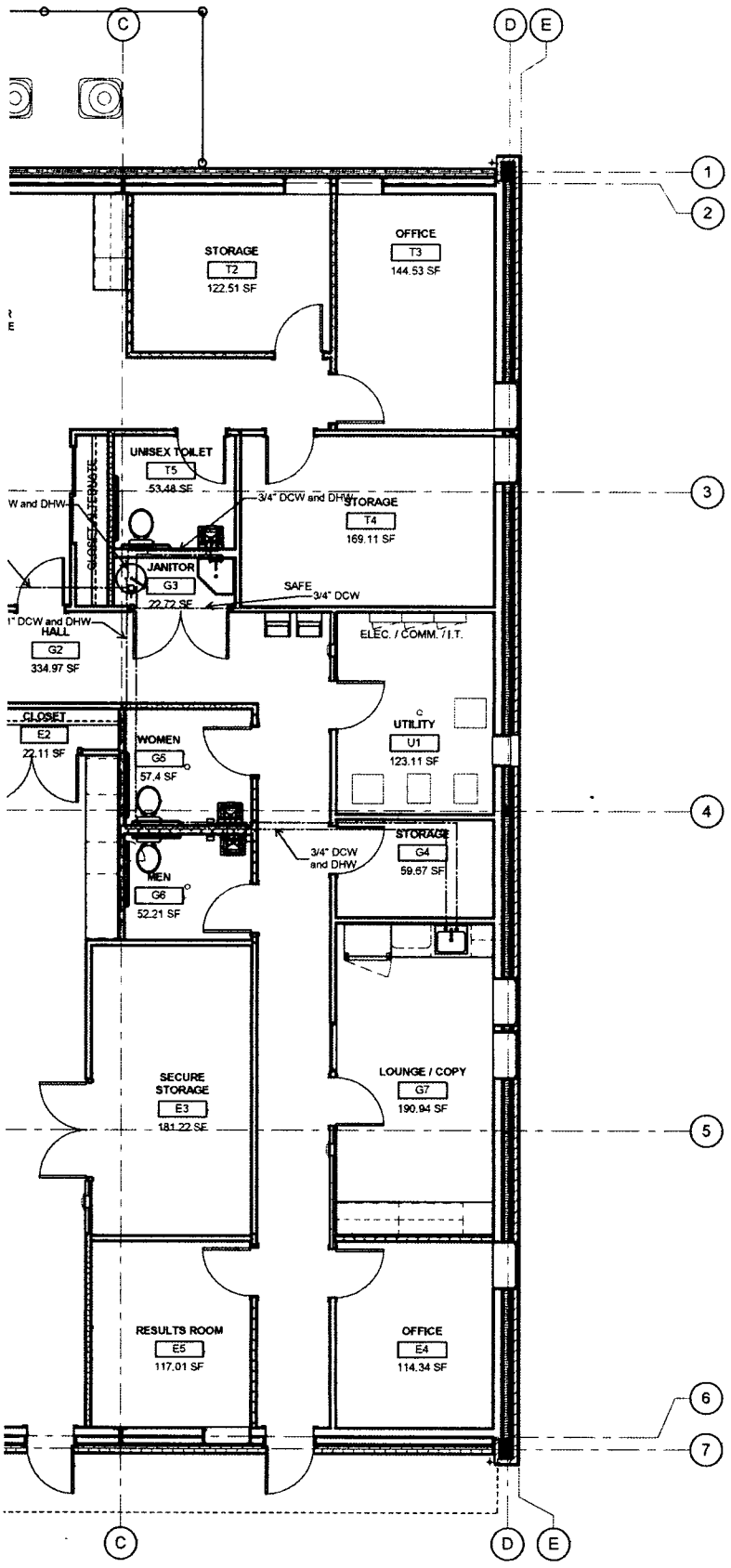
- Provide Kohler Pinoir wall mounted porcelain u
  Women's restrooms.
  Provide faucet, handles, hot and cold w
  appurtenances to make sink functiona
  Handles shall be ADA compliant, similar
  Faucet shall be ADA compliant.
  Wall mounting height shall be ADA comp
  Provide ADA insulation on water pipes a
  Provide waste and vent piping for sinks.
  Vent piping for sinks Men's and Women'
  one vent pipe through the roof. See dw
  Vent piping for sink Unisex Toilet shall c
  Closet. See description above for more
  Waste pipe for Unisex Toilet and Men's
  to new main building drain piping. See

- Provide Kohler Toccata single bowl, stainless ste
  Provide hot and cold water, vent, and dr
  sink functional. See drawings for pipe s
  Provide ADA complaint faucet and handl
  Provide waste and vent piping for sink.
  Vent piping shall be installed up through
  size and location.
  Waste pipe shall connect to new main b
  waste pipe size.

- Provide Zurn Z1900-RL floor sink in the Utility R
  Floor sink shall be located in the middle
  towards the sink.
  Provide waste and vent piping to floor s
  Vent piping shall be installed up through
  sizing.
  Waste piping shall connect to new main
  for waste pipe size.

- Provide Zurn Z4008 Type B round floor drain in
  Men's and Women's restrooms.
  Vent piping for floor drain Men's and Wo
  form one vent pipe through the roof. Se
  for more information.
  Vent piping for sink Unisex Toilet and Ja
  piping for Janitor's Closet. See descript
  information.
  Waste pipe for all floor drains shall conn
  See drawings for waste pipe size.

- Provide Acorn model TNC-24 mop sink in the Jar
  mounted, corner style.
  Provide hot and cold water, vent, and dr
  appurtenances to make sink fully functio
  possible location.
  Vent piping for mop shall be a part of th
  Janitor's closet vent system. See descri
  information.
  Waste pipe for mop shall connect to new
  drawings for waste pipe size.



TER PIPING PLAN

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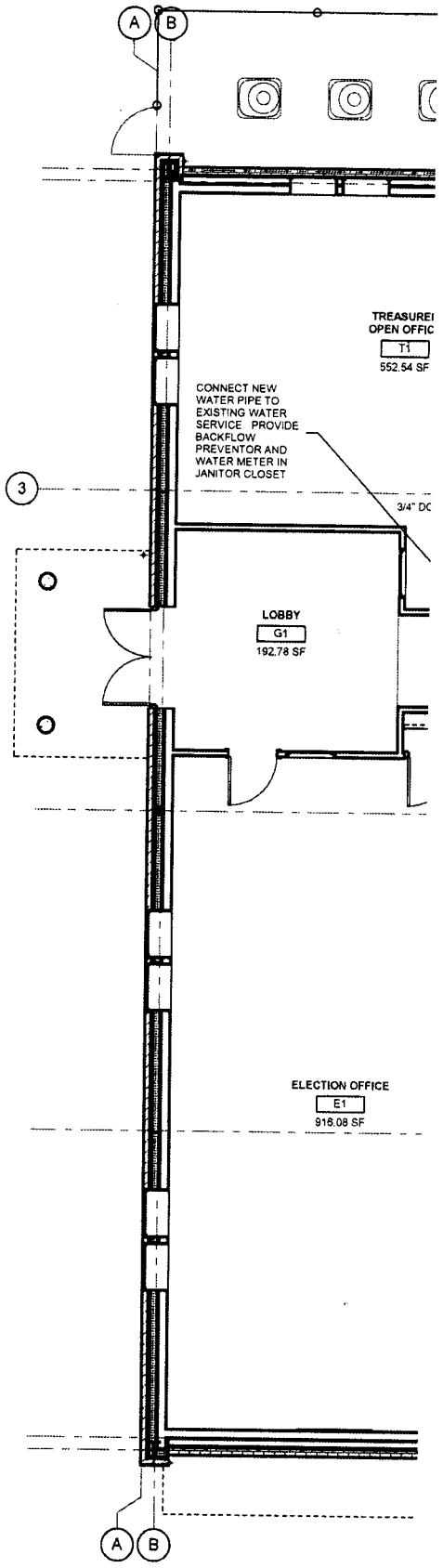
DESIGNED BY	BEH
DRAWN BY	ZC
CHECKED BY	BEH
JOB NO.	230612

SHEET TITLE

PLUMBING COLD AND HOT WATER PIPING

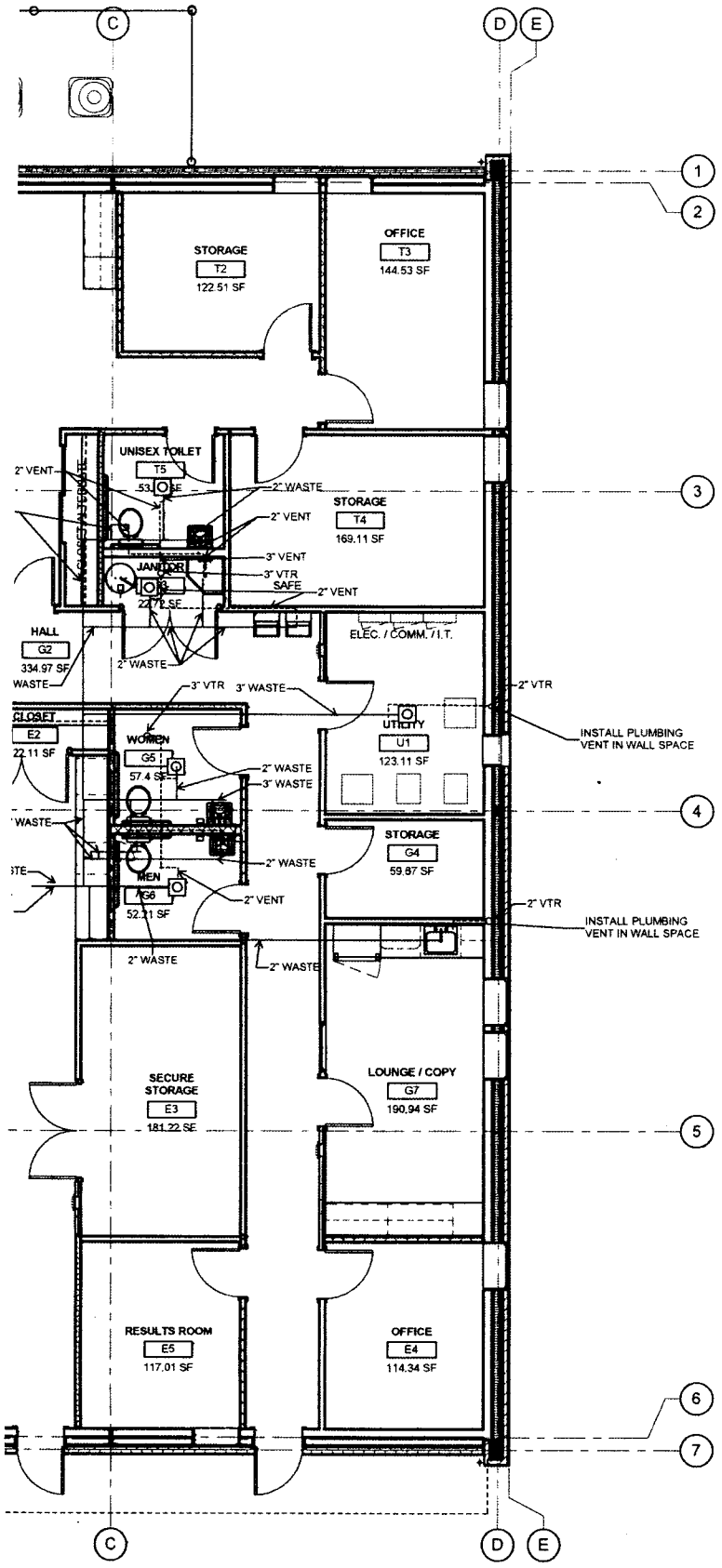
SHEET NUMBER

P2.0



1 PLUMBING COLD AND HOT WA
1/4" = 1'-0"

PR



) VENT PLAN

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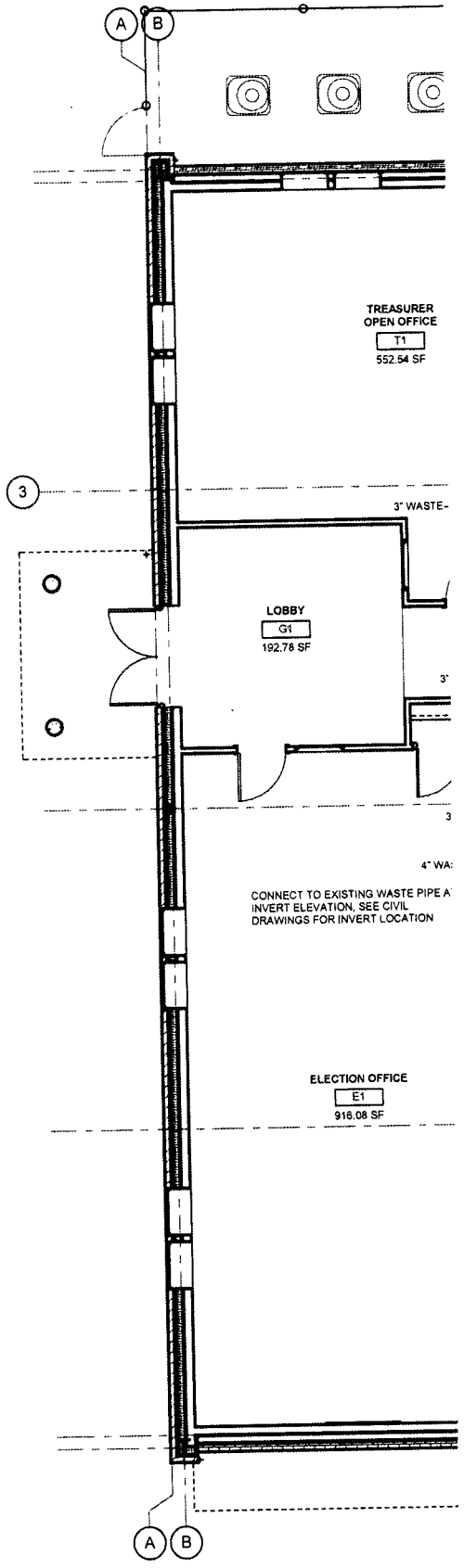
DRAWN BY	ZC
CHECKED BY	BEH
JOB NO.	200412

SHEET TITLE

PLUMBING DRAIN, WASTE AND VENT

SHEET NUMBER

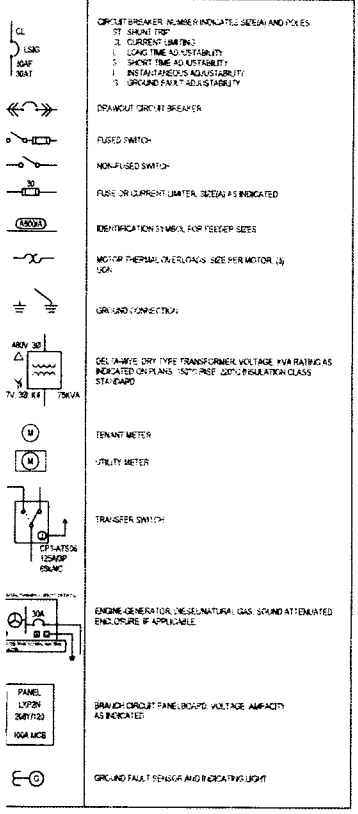
P2.1



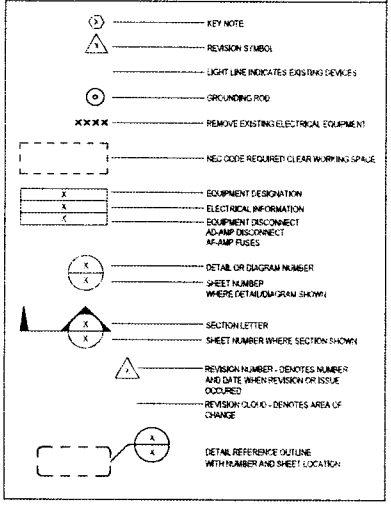
1 **PLUMBING DRAIN, WASTE AN**
1/4" = 1'-0"

PF

ECTRICAL RISER



GENERAL INFORMATION SYMBOLS



DRAWING INDEX

JTLET MOUNTING HEIGHT (TYPICAL)

AL OUTLET HEIGHTS ARE SHOWN ON THE ELECTRICAL DRAWINGS OR ON THE TECTURAL DRAWINGS. IF SPECIAL OUTLET HEIGHTS ARE NOT SHOWN OR REQUIRED, THEN E OUTLETS AS NOTED BELOW. OUTLET HEIGHTS ARE MEASURED FROM THE FINISHED L TO THE UPPER OR LOWER EDGE OF THE BOX AS NOTED BELOW.

PTACLES	15" AFF TO BOTTOM OF BOX
SWITCHES	48" AFF TO TOP OF BOX
BOARDS	72" AFF TO TOP OF PANELBOARD
HONE OUTLET - DESK	15" AFF TO BOTTOM OF BOX
HONE OUTLET - WALL	48" AFF TO TOP OF BOX
JTER OUTLET - DESK	15" AFF TO BOTTOM OF BOX

DESCRIPTION	ABBRV	DESCRIPTION
R FACTOR	TD	TIME DELAY
	TC	TELECOMMUNICATIONS OUTLET (PHONE/DATA)
	TEMP	TEMPERATURE or TEMPORARY
RY	TERM	TERMINAL
SOUND ENERGY	THHN	HEAT-RESISTANT THERMOPLASTIC
RMAL TRANSFORMER	THWN	MOISTURE AND HEAT RESISTANT THERMOPLASTIC
NYL CHLORIDE	TOS	TOP OF SUPPORT or STEEL or SLAB
	TS	TAMPER SWITCH
RTY	TSP	TWISTED SHIELDED PAIR
TANCE or RADIUS	TTB	TELEPHONE TERMINAL BOARD
SHENCE RECEPTACLE	TTC	TELEPHONE TERMINAL CABINET
RED	TYP	TYPICAL
DW	UC	UNDER-COUNTER
UTIONS PER MINUTE	UF	UNDER-FLOOR
START	UG	UNDERGROUND
ED VOLTAGE AUTOTRANSFORMER	UH	UNIT HEATER
LE CITY LIGHT	UL	UNDERWRITER LABORATORIES
IDARY	UON	UNLESS OTHERWISE NOTED
ON	UPS	UNINTERRUPTABLE POWER SUPPLY
Y FAN or SQUARE FEET	UTP	UNSHIELDED TWISTED PAIR
d or SHIELDED	V	VOLTS
	VM	VOLTMETER
H	W	WATTS or WIRE
TICATIONS	W	WITH
E	WH	WATT-HOUR
ESS STEEL	WHSE	WAREHOUSE
TRIP or STREET	WM	WIREMOLD
ARD	WO	WITHOUT
	WP	WEATHERPROOF/NEMA 3R MINIMUM
TURAL	X	REACTANCE
ITUTE	XFMR	TRANSFORMER
OID VALVE	XHHW	MOISTURE AND HEAT RESISTANT CROSS-LINKED SYNTHETIC POLYMER
E	XLP	CROSS-LINKED POLYETHYLENE
H	XP	EXPLOSION-PROOF
HBOARD	Z	IMPEDANCE
ETRICAL		
RONDUS		
M		
AL BLOCK		

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PROJECT:

BROWN COUNTY
ELECTIONS FACILITY

611 N. FISK AVENUE
BROWNWOOD, TX 76801

REGISTRATION:

REVISIONS:

REV	DATE	DESCRIPTION
	9/17/2015	PRELIMINARY COORDINATION SET
	9/18/2015	INTERNAL COORDINATION SET
	9/24/2015	50% REVIEW SET

McKINSTRY DIVISION:

ENGINEERING

DESIGNED BY:	AG
DRAWN BY:	AG
CHECKED BY:	DE
PROJ. NO.	250812-001
DATE	07/30/2015
SCALE	AS SHOWN

SHEET TITLE:

ELECTRICAL COVER SHEET

SHEET NUMBER:

E0.0

LIGHTING

SYMBOL	DESCRIPTION
(NOTE 1)	REFERENCE LUMINAIRE SCHEDULE FOR DETAILS ON LUMINAIRES INCLUDING MOUNTING TYPE, HEIGHT, LAMPING, VOLTAGE, MANUFACTURER, ETC.
(NOTE 2)	VARIOUS LIGHTING SYMBOLS ARE USED TO GENERALIZE SHAPE/STYLE OF LUMINAIRE. REFERENCE LUMINAIRE SCHEDULE FOR DETAILS.
	SOLID LINE TYPE INDICATES SURFACE, CEILING OR WALL MOUNTING
	DOUBLE LINE TYPE INDICATES RECESSED OR PARTIALLY RECESSED MOUNTING
	LUMINAIRE ON EMERGENCY SOURCE (TYPICAL)
	EXIT SIGN ON EMERGENCY SOURCE ARROW INDICATES DIRECTION OF EGRESS SHADING INDICATES FACE (SINGLE OR DOUBLE)
	POLE MOUNTED AREA LUMINAIRE
	BATTERY POWERED EMERGENCY LIGHT
	COMBINATION BATTERY POWERED EGRESS LIGHT AND EXIT
	LIGHTING FIXTURE, WALL WASHER
	TRACK LIGHT
LCP	LIGHTING CONTROL PANEL
	LIGHTING CONTACTOR IN NEMA 1 ENCLOSURE, 120V COIL ELECTRICALLY HELD, NO/NC AUXILIARY CONTACTS (AP A INDICATES CONTACT AMP RATING P INDICATES NUMBER OF POLES (NO)
	SWITCH, TYPE AS INDICATED, MOUNT +46" AFF UON 2 2-POLE D DIMMER 3 3-WAY LV LOW VOLTAGE 4 4-WAY P PILOT LIGHT K KEY SWITCH OC OCCUPANCY SENSOR M MOTER RATED, SIZE OL PER MOTOR SIZE T DIGITAL TIME SWITCH - INTERMATIC E1400 SERIES OR EQUAL SWITCHES TO BE SUBMITTED AS PART OF LIGHTING CONTROL PACKAGE
	DUAL LEVEL SWITCHING, INSIDE AND OUTSIDE LAMPS OF LUMINAIRE, TO BE SWITCHED SEPARATELY
	SWITCHBANK
	LOW VOLTAGE TRANSFORMER
TC	TIME CLOCK
OS IR	OCCUPANCY SENSOR - INFRARED
OS DT	OCCUPANCY SENSOR - DUAL TECHNOLOGY
PC	PHOTO CELL
LS	INTERIOR LIGHT SENSOR

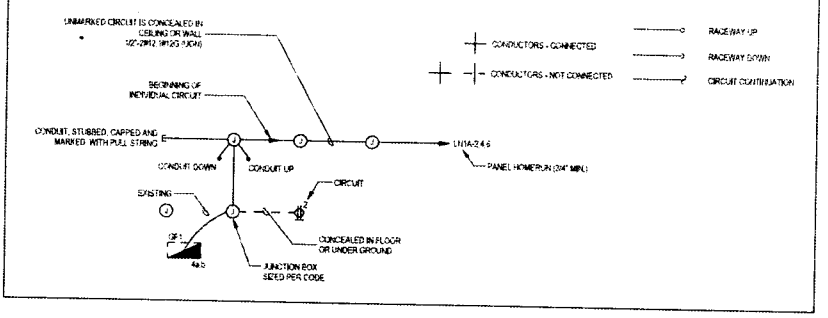
EQUIPMENT

	BRANCH CIRCUIT PANELBOARD, VOLTAGE, AMPACITY AS INDICATED
	TRANSFORMER
	MOTOR CONNECTION, MOTOR BY OTHERS, SIZE AS INDICATED BY MECHANICAL CALLOUT SYMBOL
FSD	SMOKE DAMPER
SPD	SURGE PROTECTION DEVICE
	EQUIPMENT CONNECTION
M	MOTOR DISCONNECT SWITCH
X/Y/Z	FUSED DISCONNECT, TYPE AS INDICATED, 3-POLE UON X DISCONNECT RATING Y NEMA RATING Z FUSE SIZE
X/Y	NON-FUSED DISCONNECT, TYPE AS INDICATED, 3-POLE UON X DISCONNECT RATING Y NEMA RATING
X	MOTOR STARTER IN NEMA 1 ENCLOSURE, SIZE AS INDICATED, 3-POLE UON
W/X/Y/Z	COMBINATION MOTOR STARTER AND DISCONNECT, TYPE AS INDICATED, 3-POLE UON W STARTER SIZE X DISCONNECT RATING Y NEMA RATING Z FUSE SIZE
VFD	VARIABLE FREQUENCY DRIVE
	ENCLOSED CIRCUIT BREAKER
T (HVAC)	THERMOSTAT - PROVIDE 120V INTERCONNECTION TO HVAC EQUIPMENT INDICATED
R	RELAY - CONTROL TYPE
EPO	EMERGENCY POWER OFF SWITCH, type, detail
PB	PULLBOX

RECEPTACLES

(NOTE 3)	ALL RECEPTACLES TO BE GROUNDING TYPE UON, MOUNTED AT +18" AFF UON TYPE AS INDICATED: WP WEATHERPROOF GFCI GROUND FAULT CIRCUIT INTERRUPTER XP EXPLOSION PROOF T TAMPER-RESISTANT IG ISOLATED GROUND
	SIMPLEX RECEPTACLE, 120V
	DUPLEX RECEPTACLE, 120V
	DOUBLE DUPLEX RECEPTACLE, 120V
	DUPLEX RECEPTACLE, 120V, EMERGENCY CIRCUIT
	DOUBLE DUPLEX RECEPTACLE, 120V, EMERGENCY CIRCUIT
	SPLIT WIRED RECEPTACLE, 120V
	DUPLEX RECEPTACLE - GROUND FAULT CIRCUIT INTERRUPTER TYPE
	SPECIAL RECEPTACLE, SEE PLANS FOR ADDITIONAL INFORMATION
	FLUSH FLOOR OUTLET (DEVICES AS INDICATED)
	FLOOR OUTLET - POKE THROUGH (DEVICES AS INDICATED)
	DEDICATED CIRCUIT RECEPTACLE
	TELEPHONE / POWER POLE
	MULTI-OUTLET ASSEMBLY - LENGTH PER PLAN, DEVICE(S) AS INDICATED
	COMBINATION OUTLET (DEVICES AS INDICATED)
WP	WALL PHONE
	DATA OUTLET (# INDICATES NUMBER OF PORTS)
	VOICE ONLY OUTLET

CIRCUIT SYMBOLS



ELECTRICAL ABBREVIATIONS

ABBRV	DESCRIPTION
A	AMP, AMPERES
AC	8" ABOVE COUNTER OR 3" ABOVE BACKSPLASH
AF	AMP FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPS INTERRUPTING CURRENT
AL	ALUMINUM
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BATT	BATTERY
BFC	BELOW FINISHED CEILING
C	CONDUIT or CENTIGRADE
CAT	CATALOG
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLG	CEILING
CO	CONDUIT ONLY - PROVIDE PULL STRING
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DIA	DIAMETER
DISC	DISCONNECT
DN	DOWN
DSB	DISTRIBUTION SWITCHBOARD
DWG	DRAWING
E	EMERGENCY DESIGNATION
EF	EXHAUST FAN
EL	ELEVATION (HEIGHT)
EMT	ELECTRICAL METALLIC TUBING
EOL	END-OF-LINE DEVICE
EPR	ETHYLENE PROPYLENE RUBBER
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EXIST OR (E)	EXISTING
F	FUSE OR FAHRENHEIT
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FBO	FURNISHED BY OTHERS
FC	FOOTCANDLE
FLA	FULL LOAD AMPERES
FLEX	FLEXIBLE CONDUIT
FS	FLOW SWITCH
FT	FOOT or FEET
FV	FULL VOLTAGE
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
G or GND	GROUND
GA	GAGE
GEN	GENERATOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRS	GALVANIZED RIGID STEEL
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO SELECTOR SWITCH
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HTR	HEATER
IBE	INSTALLED/CONNECTED BY ELECTRICAL
IBO	INSTALLED BY OTHERS
IC	INTERRUPTING CURRENT
ID	INSIDE DIAMETER
IN	INCH or INCHES
INST	INSTANTANEOUS
JB or J-BOX	JUNCTION BOX
K	THOUSAND
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT-AMPERES
KVAR	KILOVOLT-AMPERES REACTIVE
KW	KILOWATTS
KWH	KILOWATT-HOURS
KWHD	KILOWATT-HOUR DEMAND
LED	LIGHT EMITTING DIODE
LS	LIMIT SWITCH
LTG	LIGHTING
LV	LOW VOLTAGE
M or MTR	MOTOR
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MSB	MAIN SWITCHBOARD - SERVICE ENTRANCE RATED
MTD	MOUNTED
MTG	MOUNTING
MVA	MILLION VOLT AMPERES
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE - JURISDICTION CURRENT
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NL	NIGHT LIGHT
NO.	NUMBER
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON-CENTER
OCPD	OVERCURRENT PROTECTIVE DEVICE
OD	OUTSIDE DIAMETER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
OL	OVERLOADS
OS	OCCUPANCY SENSOR - ADJUSTABLE
PA	PUBLIC ADDRESS
PB	PULLBOX
PC	PHOTOCELL - MOUNT FACING NORTH
PF	POWE
PH OR Ø	PHAS
PNL	PANE
PRI	PRIM
PSE	PUSE
PT	POTE
PVC	POLY
PWR	POWE
QTY	QUAN
R	RESI
REC	CONN
REQD	REQU
REV	REVE
RPM	REVO
RS	RAPE
RVAT	REDU
SCL	SEAT
SEC	SECO
SECT	SECTI
SF	SUPP
SHLD	SHIEL
SHT	SHEE
SK	SKET
SPEC	SPECI
SQ	SQUA
SS	STAIN
ST	SHUN
STD	STAN
STL	STEEL
STRUCT	STRU
SUB	SUBS
SV	SOLE
SVC	SERV
SW	SWITC
SWBD	SWITC
SYM	SYMM
SYNC	SYNC
SYS	SYST
TB	TERM

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PROJECT:

BROWN COUNTY ELECTIONS FACILITY

611 N. FISK AVENUE
BROWNWOOD, TX 76801

REGISTRATION:

REVISIONS:

REV	DATE	DESCRIPTION
	6/12/2015	PRELIMINARY COORDINATION SET
	6/18/2015	INTERNAL COORDINATION SET
	6/24/2015	50% REVIEW SET

McKINSTRY DIVISION:

ENGINEERING

DESIGNED BY:	AG
DRAWN BY:	AG
CHECKED BY:	DE
PROJ. NO.	200812-001
DATE	07/30/2015
SCALE:	AS SHOWN

SHEET TITLE:

ELECTRICAL SPECIFICATIONS

SHEET NUMBER:

E0.1

MINARY--NOT FOR CONSTRUCTION--PRICING ONLY

DIVISION 26 – ELECTRICAL

Submittal Required	Yes	No
LOW VOLTAGE WIRES AND CABLES	x	
GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS		x
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS		x
RACEWAY AND BOXES		x
IDENTIFICATION ELECTRICAL SYSTEMS		x
PANELBOARDS	x	
WIRING DEVICES		x
LOW VOLTAGE CIRCUIT PROTECTIVE DEVICES	x	

SECTION 26 00 00 - ELECTRICAL WORK

1. ALL PROVISIONS OF THE CONTRACT APPLY TO THIS WORK. THIS DIVISION CONSISTS OF THE ELECTRICAL WORK FOR THIS PROJECT. COORDINATE ALL WORK WITH OTHER TRADES AND CRAFTS FOR PROPER INSTALLATION AND TIMELY EXECUTION OF CONSTRUCTION.
2. BEFORE THE SUBMITTING A PROPOSAL OR BID FOR THIS WORK, CONTRACTOR SHALL EXAMINE THE COMPLETE SET OF PROJECT DOCUMENTATION FOR ALL TRADES AND SHALL VISIT THE JOB SITE TO DETERMINE EXISTING CONDITIONS.
3. SUBMITTING A PROPOSAL OR BID ACKNOWLEDGES THE CONTRACTOR IS FULLY AWARE OF THE SCOPE, THE EXISTING CONDITIONS AND IS ABLE TO COMPLETE ALL WORK IDENTIFIED. CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION FOR FAILURE TO ALLOW FOR ALL EXISTING CONDITIONS PRESENT AT INSPECTION.
4. ALL MATERIALS, APPLIANCES, EQUIPMENT, TOOLS AND APPARATUS NECESSARY TO CONSTRUCT A COMPLETE WORKING SYSTEM SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR.
5. EQUIPMENT AND DEVICES FURNISHED AND INSTALLED BY OTHER DIVISIONS (OR BY OWNER) THAT REQUIRE ELECTRIC POWER (60V OR GREATER) SHALL BE CONNECTED BY THIS DIVISION. OBTAIN AND REVIEW ALL SUBMITTALS AND SHOP DRAWINGS OF THIS EQUIPMENT.
6. ALL WORK SHALL COMPLY WITH THE LATEST ADOPTED ELECTRICAL CODE. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF PROJECT DOCUMENTATION OR EXISTING CONDITIONS IMPLIES OR REQUIRES DEVIATION FROM APPLICABLE BUILDING CODES.
7. UNLESS INSTRUCTED OTHERWISE, CONTRACTOR SHALL OBTAIN AND PAY FOR ALL NECESSARY LICENSES, PERMITS AND FEES REQUIRED. COORDINATE INSPECTIONS AS REQUIRED WITH THE AUTHORITY HAVING JURISDICTION (AHJ). PROVIDE WRITTEN EVIDENCE OF FINAL ACCEPTANCE BY THE AHJ UPON PROJECT COMPLETION.
8. RECORD DRAWINGS SHALL BE CONTINUOUSLY MAINTAINED IN THE FIELD, SUBJECT TO REVIEW BY THE OWNER AND THE ENGINEER ON A REGULAR BASIS. AT COMPLETION OF WORK, CLEAN, CLEARLY MARKED, REPRODUCIBLE COPIES OF CONSTRUCTION DRAWINGS WILL BE PROVIDED TO THE ENGINEER.

SECTION 26 00 10 - BASIC ELECTRICAL REQUIREMENTS

1. DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL FEATURES OF WORK. INSTALL AS NECESSARY TO AVOID INTERFERENCES. EASE INSTALLATION AND PROVIDE MAINTENANCE ACCESS AS REQUIRED AND IN ACCORDANCE WITH CODE.
2. VERIFY LOCATION OF ALL EQUIPMENT PRIOR TO ROUGH-IN. LOCATION OF ELECTRICAL DEVICES SHOWN ON MECHANICAL DRAWINGS TAKE PRECEDENCE OVER LOCATIONS SHOWN ON ELECTRICAL DRAWINGS.
3. DRAWINGS AND SPECIFICATIONS ARE COMPLIMENTARY AND WHAT IS REQUIRED IN EITHER IS REQUIRED AS IF CALLED FOR IN BOTH. DRAWING SYMBOLS AND/OR SPECIFICATION SECTIONS INCLUDED IN THE CONTRACT DOCUMENTS MAY INCLUDE ITEMS NOT REQUIRED IN THE SCOPE OF WORK.
4. CIRCUITING IS DIAGRAMMATIC AND DOES NOT REPRESENT RACEWAY ROUTING. EXPOSED RACEWAY SHALL BE RUN PARALLEL OR AT RIGHT ANGLES TO WALLS. CONTRACTOR IS RESPONSIBLE FOR CIRCUITING AND CONNECTIONS PER INDUSTRY BEST PRACTICES.
5. LOAD HORSEPOWER AND/OR WATTAGES INDICATED ON THE PLANS ARE ESTIMATED REQUIREMENTS. VERIFY WITH MECHANICAL SUBMITTAL DRAWINGS BEFORE ROUGH-IN. ADVISE ENGINEER OF EQUIPMENT CIRCUIT REQUIREMENTS THAT DEVIATE FROM SUBMITTALS.
6. NOTIFY ENGINEER OF ANY CONFLICTS OR ISSUES IN THE DRAWINGS OR SPECIFICATIONS.

SECTION 26 00 40 - EXISTING SYSTEMS

1. DEMOLISH EXISTING ELECTRICAL AS REQUIRED. PROTECT EXISTING SYSTEMS TO REMAIN OR BE REUSED.
2. NO ELECTRIC SYSTEM OPERATION SHALL BE INTERRUPTED UNLESS SCHEDULED WITH THE OWNER IN ADVANCE. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR UNSCHEDULED INTERRUPTIONS AND EXPEDITE REPAIR.
3. MATERIALS REMOVED AS REQUIRED BY THIS CONTRACT SHALL REMAIN THE PROPERTY OF THE OWNER. MATERIALS SUITABLE FOR REUSE SHALL BE MADE AVAILABLE FOR OWNER'S INSPECTION. MATERIAL NOT SELECTED FOR RETENTION BY THE OWNER AND ALL DEBRIS SHALL BE DISPOSED OF BY THE GENERAL CONTRACTOR.

SECTION 26 00 50 - BASIC ELECTRICAL MATERIALS AND METHODS

1. PROVIDE ALL ELECTRICAL COMPONENTS, PARTS AND MATERIALS SHOWN AND REQUIRED BY CODE FOR EQUIPMENT FURNISHED UNDER THIS AND OTHER DIVISIONS OF THESE SPECIFICATIONS TO FORM A COMPLETE AND OPERABLE SYSTEM.
2. MATERIALS SHALL BE NEW, OF THE BEST QUALITY AND FREE FROM DEFECTS AND DESIGNED TO ENSURE SATISFACTORY OPERATION IN ENVIRONMENTAL CONDITIONS WHICH PREVAIL. ALL ELECTRICAL COMPONENTS SHALL BE LISTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY.
3. SUBMITTALS REQUIRED ONLY WHERE SPECIFIED BELOW. WHERE SUBMITTALS ARE REQUIRED, THE PARTICULAR COMPONENT BEING SUBMITTED SHALL BE CLEARLY IDENTIFIED. GENERIC CATALOG PAGES WILL NOT BE ACCEPTABLE. ENGINEER TO REVIEW.
4. WHERE EXISTING COMPONENTS ARE IDENTIFIED FOR REUSE, VERIFY SUITABILITY AND CONDITION. ENSURE COMPONENTS ARE SIZED APPROPRIATELY FOR THE LOAD TO BE SERVED AND TEST TO VERIFY CONDITION. CONTRACTOR TO PROVIDE AND REPLACE ALL COMPONENTS THAT CANNOT BE REUSED.
5. INSTALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, INSTRUCTIONS AND INSTALLATION DRAWINGS. WORKMANSHIP SHALL COMPLY WITH THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA) NATIONAL ELECTRICAL INSTALLATION STANDARDS.
6. PROVIDE FIREPROOFING FOR ALL PENETRATIONS OF FIRE RATED ASSEMBLIES MADE UNDER THIS CONTRACT. FIREPROOFING TO BE REVIEWED AND APPROVED BY MONUMENTRY.
7. ALL NEW OR REUSED ELECTRICAL EQUIPMENT MOUNTED OUTDOORS, INCLUDING VARIABLE FREQUENCY DRIVES, SHALL BE INSTALLED IN SUITABLE WEATHERPROOF ENCLOSURES AND PROTECTED AGAINST TEMPERATURE EXTREMES OUTSIDE MANUFACTURER'S RECOMMENDATIONS.

SECTION 26 05 19 – LOW VOLTAGE WIRES AND CABLES

1. SUBMITTAL REQUIRED
2. PRODUCTS
   A. COPPER, INSULATED FOR 90ºV. CONDUCTORS SMALLER THAN #12 SHALL NOT BE USED.
   B. CONDUCTOR INSULATION TO BE TYPE THWN/THHN 90ºC.
   C. TYPE NM OR "ROMEX" CONDUCTORS SHALL NOT BE USED.
   D. DESIGN ASSUMES THAT CONDUCTOR INSULATION IN RACEWAYS EXPOSED TO HEATING BY THE SUN SHALL BE XHHW-2 90ºC. CONTACTOR MAY USE THWN/THHN ONLY WHERE PROPER TEMPERATURE ADJUSTMENT FOR SOLAR HEATING HAS BEEN MADE PER NEC 310.15(B)(3)(c).
   E. ALUMINUM CONDUCTORS NOT PERMITTED FOR ANY BRANCH CIRCUIT. ALUMINUM MAY BE CONSIDERED FOR LARGE FEEDERS WITH ENGINEERING APPROVAL.
3. EXECUTION
   A. INSTALL WIRING IN RACEWAY UNLESS SPECIFICALLY AUTHORIZED OTHERWISE.
   B. CONDUCTORS FROM #12 TO #1 OR USED IN CIRCUITS RATED 100A OR LESS SHALL BE SIZED AS 60ºC UNLESS TERMINATIONS AT BOTH ENDS OF THE CONDUCTOR ARE RATED AT 75ºC.
   C. CONDUCTORS LARGER THAN #1 OR FOR CIRCUITS RATED OVER 100A SHALL BE SIZED AS 75ºC CONDUCTORS.
   D. 90ºC AMPACITY MAY BE USED FOR AMPACITY CORRECTION AND/OR ADJUSTMENT PER NEC 310.14(C)(1).
   E. UNLESS OTHERWISE NOTED, BRANCH CIRCUITS SHALL BE (2) #12 WITH (1) #12 EGC IN ¾" CONDUIT.
   F. EGC MAY BE SHARED BY THE UNGROUNDED CONDUCTORS IN A MULTI-WIRE BRANCH CIRCUIT BUT EACH PHASE CONDUCTOR MUST HAVE A DEDICATED NEUTRAL. WHEN APPROVED BY THE OWNER, SHARED NEUTRALS ARE ALLOWED WHEN PROTECTED BY A MULTI-POLE OVERCURRENT PROTECTION DEVICE. DISCONNECTING MEANS MUST COMPLY WITH NEC 210.4(B).
   G. LONGER BRANCH CIRCUITS. BRANCH CIRCUITS INDICATED TO BE #12 AWG (BY DESIGNATION OR STANDARD SYMBOL) ON PLANS AND WHICH ARE GREATER IN CONDUCTOR LENGTH (MEASURED FROM PANEL BOARD TO BEGINNING OF THE LAST TAP) THAN THE FOLLOWING SCHEDULE SHALL BE CHANGED TO #10 AWG.
      i. 120 VOLT: 75 FT.
      ii. 277 VOLT: 150 FT.

SECTION 26 05 26 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. SUBMITTAL NOT REQUIRED
2. GROUNDING ELECTRODE SYSTEM
   A. SOLIDLY-GROUNDED ELECTRODE SYSTEM SHALL BE PROVIDED TO GROUND THE SERVICE ENTRANCE EQUIPMENT. GROUNDING ELECTRODE SYSTEM SHALL BE PROVIDED AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THE NEC.
   B. ALL MATERIALS LISTED OR LABELED BY NRTL. EXOTHERMIC OR NON-REVERSIBLE COMPRESSION FITTINGS.
   C. GROUND CONDUCTORS BROUGHT THROUGH THE FLOOR OR WALLS SHALL BE IN PVC CONDUIT SLEEVES. GROUND CONDUCTORS SHALL NOT BE LOCATED IN TRAFFIC AREAS OR WHERE SUBJECT TO DAMAGE.
   D. TEST USING THE THREE-POINT FALL OF POTENTIAL METHOD. INSTALL ADDITIONAL GROUNDING ELECTRODES AS REQUIRED TO REACH A RESISTANCE OF 10 OHMS OR LESS TO GROUND.
3. EQUIPMENT GROUNDING CONDUCTOR
   A. EQUIPMENT GROUND CONDUCTOR (EGC) FOR EACH NEW FEEDER AND BRANCH CIRCUIT SHALL BE A SEPARATE WIRE IN THE RACEWAY AND SIZED IN ACCORDANCE WITH NEC.
   B. USE OF METALLIC RACEWAY AS EQUIPMENT GROUNDING CONDUCTOR SHALL BE PERMITTED ONLY BY PRIOR WRITTEN APPROVAL OF ENGINEER AND OWNER.
   C. WHERE NEW CONDUCTORS ARE BEING RE-PULLED IN EXISTING METALLIC CONDUIT SERVING AS EGC, PROVIDE A SEPARATE WIRE EGC WITH THE NEW CONDUCTORS UNLESS PRECLUDED BY CONDUIT SIZE.

SECTION 26 05 29 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

1. SUBMITTAL NOT REQUIRED
2. PRODUCTS: BRACKETS, FRAMES, AND HANGERS FABRICATED FROM STANDARD ROLLED STRUCTURAL STEEL SHAPES OR PREFABRICATED STRUCTURAL SYSTEMS.
3. EXECUTION
   A. INSTALL SO THAT SUPPORT INSTALLATION DOES NOT WEAKEN OR OVERLOAD BUILDING STRUCTURE.
   B. ELECTRICAL SYSTEM HANGERS AND SUPPORTS SHALL BE INDEPENDENT OF PARTITION AND CEILING SYSTEM SUPPORTS.
   C. NO OTHER TRADES SHALL HANG OR SUPPORT HVAC EQUIPMENT, DUCTWORK, OR PIPING FROM ELECTRICAL SYSTEM HANGERS AND SUPPORTS.
   D. CONTRACTOR SHALL COMPLY WITH ALL SEISMIC ANCHORAGE AND BRACING REQUIREMENTS IN COMPLIANCE WITH BUILDING CODES. PROVIDE DOCUMENTATION OF CALCULATIONS AND DETAILS TO ENGINEER AND/OR AHJ FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
   E. ANY MOUNTING BRACKETS THROUGH THE EXTERIOR WALLS OR THROUGH HISTORIC MATERIALS SHALL BE PLANNED AND EXECUTED TO PROTECT HISTORIC ELEMENTS.

SECTION 26 05 33 – RACEWAY AND BOXES

1. SUBMITTAL NOT REQUIRED, EXCEPT FOR SURFACE METAL RACEWAY AS NOTED BELOW
2. PRODUCTS
   A. FLEXIBLE CONDUIT: INDUSTRY STANDARD (ALUMINUM OR THIN WALL FLEX NOT PERMITTED). PROVIDE TO EQUIPMENT SUBJECT TO VIBRATION, MOVEMENT OR LIGHTING FIXTURES.
   B. LIQUID TIGHT FLEXIBLE CONDUIT: USE FOR MOTORS, TRANSFORMERS, PUMPS OR EQUIPMENT REGULARLY WASHED DOWN OR IN DAMP LOCATIONS.
   C. RIGID METAL CONDUIT (RMC): USE GALVANIZED STEEL UNLESS OTHERWISE INDICATED. ALUMINUM RMC WHERE INDICATED OR IN SIZES 4" AND LARGER WHERE APPROVED BY ENGINEER.
   D. RIGID NONMETALLIC CONDUIT (RNC): PVC-40 PERMITTED IN UNDERGROUND APPLICATIONS AND IN CONCRETE DUCT BANKS. UNDERGROUND TURNS OF 90 DEGREES OR GREATER SHALL BE MADE USING LONG RADIUS WITH A MINIMUM TURN RADIUS OF TEN TIMES THE CONDUIT DIAMETER.
   E. SURFACE METAL RACEWAY: PLASTIC RACEWAY NOT PERMITTED. WIREMOLD OR EQUAL, SUBMITTAL REQUIRED.
   F. CONDULETS
      1. CBROUND TYPE FOR ¾" AND 1" SIZES
      2. FORM 7 FOR 1¼" THROUGH 2" SIZES
      3. LB TYPE FOR 2" AND LARGER SIZES
   G. ELECTRICAL OUTLETS AND PULL BOXES: CODE-GAUGE GALVANIZED OR PAINTED SHEET STEEL, FLUSH OR SURFACE MOUNTED AS INDICATED.
3. EXECUTION
   A. DEVICE MOUNTING HEIGHTS TO THE TOP OF THE BOX

OUTLET MOUNTING HEIGHT (TYPICAL)	
[illegible]	
RECEPTACLES	18" AFF TO BOTTOM OF BOX
LIGHT SWITCHES	48" AFF TO TOP OF BOX
PANELBOARDS	72" AFF TO TOP OF PANELBOARD
TELEPHONE OUTLET - DESK	15" AFF TO BOTTOM OF BOX
TELEPHONE OUTLET - WALL	48" AFF TO TOP OF BOX
COMPUTER OUTLET - DESK	15" AFF TO BOTTOM OF BOX

   B. COORDINATE LOCATIONS WITH WORK OF OTHER TRADES TO AVOID CONFLICTS. MAINTAIN FIRE RATINGS AND MAINTAIN ACCESS.

SECTION 26 05 53 – IDENTIFICATION ELECTRICAL SYSTEMS

1. SUBMITTAL NOT REQUIRED
2. SCOPE: LABEL RECEPTACLES, JUNCTION BOXES, DISCONNECTS, MCC CUBICLES AND OTHER EQUIPMENT. (MATCH EXISTING LABELS ON ASSOCIATED EQUIPMENT)
3. PRODUCTS
   A. PROVIDE NEATLY TYPED PANEL SCHEDULES INSIDE EACH EXISTING PANEL BOARD AFFECTED BY THIS CONTRACT. LETTERS SHALL BE BLACK AND A MINIMUM OF 1/2" HIGH ON A WHITE BACKGROUND.
   B. NAMEPLATES TO BE ENGRAVED AND CONSTRUCTED OF 1/260 INCH THICK PHENOLIC LAMINATED MATERIAL. LETTERS SHALL BE A MINIMUM OF 1/4" HIGH.
4. EXECUTION: SECURELY ATTACH PHENOLIC LABELS AND NAMEPLATES WITH SCREWS OR RIVETS.

SECTION 26 24 16 – PANELBOARDS

1. SUBMITTALS REQUIRED.
2. MANUFACTURERS: GE, EATON (SQUARE-D), OR SIEMENS
3. PRODUCTS
   A. CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE ONLY.
   B. SERIES RATED EQUIPMENT IS NOT ACCEPTABLE.
   C. 100% NEUTRAL BUS UNLESS OTHERWISE NOTED IN THE DRAWINGS.
4. EXECUTION
   A. PANEL BOARDS SHALL BE INSTALLED IN STRICT ACCORDANCE TO THE NEC.

SECTION 26 27 26 - WIRING DEVICES

1. SCOPE: PROVIDE WIRING DEVICES AS INDICATED
2. SUBMITTALS: NOT REQUIRED.
3. PRODUCTS
   B. ALL DEVICES TO BE 20 AMP SPECIFICATION GRADE, UNLESS OTHERWISE NOTED.
   C. ALL ELECTRICAL ENCLOSURES AND CABINETS TO BE NEMA RATED FOR APPROPRIATE APPLICATION.
   D. ALL WIRING DEVICES SHALL BE NEW AND RATED FOR THE SERVICE IN WHICH THEY ARE TO BE USED.
4. EXECUTION: REFER TO SECTION 26 05 33 FOR BOX MOUNTING HEIGHTS

SECTION 26 28 00 – LOW VOLTAGE CIRCUIT PROTECTIVE DEVICES

1. SCOPE: PROVIDE DISCONNECTS, FUSED AND UNFUSED, SHOWN AND REQUIRED BY CODE FOR EQUIPMENT FURNISHED UNDER THIS AND OTHER DIVISIONS OF THESE SPECIFICATIONS.
2. SUBMITTALS: REQUIRED FOR STANDALONE (IE, OUTSIDE OF PANEL BOARDS AND SWITCHBOARDS) OVERCURRENT PROTECTION DEVICES RATED 100A AND LARGER.
3. PRODUCTS
   A. SUITABLY HORSEPOWER RATED FOR MOTOR LOADS.
   B. MANUFACTURERS
      1. FUSES: BUSSMANN, LITTELFUSE, OR MERSEN
      2. BREAKERS: GE, EATON, SQUARE D, OR SIEMENS
   C. FUSES
      1. CLASS R REJECTION TYPE.
      2. CLASS K1 FOR ALL EXCEPT MOTOR CIRCUITS
      3. CLASS RK5 MOTOR LOAD TYPE FOR MOTORS.
   D. MOLDED CASE CIRCUIT BREAKERS OF THERMAL-MAGNETIC OR MAGNETIC ONLY TYPE WHERE INDICATED. BOLT-IN TYPE ONLY.
   E. EACH BREAKER TO BE FULLY RATED FOR THE FAULT CURRENT AVAILABLE AT ITS LINE-SIDE TERMINAL (SERIES RATINGS NOT ACCEPTABLE).
4. EXECUTION
   A. INSTALL IN APPROPRIATE EQUIPMENT WITH TRIP RATINGS AS SHOWN.
   B. SECURE SOLELY TO WALL OR APPROVED MOUNTING FRAME.
   C. PROVIDE ENGRAVED PHENOLIC NAMEPLATES WITH THE FOLLOWING INFORMATION: LOAD AND AREA SERVED, VOLTAGE, PHASE, AND FUSE SIZE AND TYPE

	07/30/2015
	CKT
SS LIGHTING	2
	4
	6
	8
	10
	12
	14
	16
	18
	20
	22
	24
	26
ON OFFICE	28
	30
	32
	34
	36
	38
	40
	42

MD:	10.4 kVA
MD:	10.7 kVA
NT:	43.3 A
NT:	44.7 A

NOTE
NEW UNIT. ROVIDE NEMA 3R DISCONNECT SWITCH.
NEW UNIT ROVIDE NEMA 3R DISCONNECT SWITCH.
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NEW UNIT. ROVIDE NEMA 3R DISCONNECT SWITCH.
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KEYNOTES

1 CONFIRM THAT EXISTING GENERATOR CORD SET IS COMPATIBLE WITH BUILDING DISTRIBUTION SYSTEM, 240/120VAC, 1PH, 3W, IF NECESSARY, PROVIDE A COMPATIBLE 30A GENERATOR CORD SET

McKinstry
For The Life Of Your Building

SEATTLE
5005 3RD AVENUE S
PO BOX 24667
SEATTLE, WA 98124
1-800-859-5279

PORTLAND
16790 NE MASON ST
PORTLAND, OR 97230
503-331-0224

www.mckinstry.com

PROJECT:

BROWN COUNTY
ELECTIONS FACILITY

611 N. FISK AVENUE
BROWNWOOD, TX 76801

REGISTRATION:

REVISIONS:

REV.	DATE	DESCRIPTION
	8/12/2015	PRELIMINARY COORDINATION SET
	9/16/2015	INTERNAL COORDINATION SET
	9/24/2015	50% REVIEW SET

McKINSTRY DIVISION:

ENGINEERING

DESIGNED BY:	AG
DRAWN BY:	AG
CHECKED BY:	DE
PROJ. NO.	266812-001
DATE	07/30/2015
SCALE:	AS SHOWN

SHEET TITLE:

ELECTRICAL SCHEDULES &
ELECTRICAL ONE-LINE
DIAGRAM

SHEET NUMBER:

E0.2

MINARY--NOT FOR CONSTRUCTION--PRICING ONLY

PNL: PNL A

PROJECT: BROWN COUNTY ELECTIONS FACILITY

LOCATION: UTILITY U1 — VOLTS: 120/240V, 1Ø, 3W — A.I.C. RATING: 10kAIC
SUPPLY FROM: UTILITY TRANSFORMER — PHASES: 1 — MAINS TYPE: MCB
MOUNTING: SURFACE — WIRES: 3 — MAINS RATING: 200 A
ENCLOSURE: NEMA 1 — FEED THRU LUGS: No — MCB RATING: 200 A

07/30/2015

CKT	Circuit Description	Load Type	Trip Rating	C.B. Pole	A		B		C.B. Pole	Trip Rating	Load Type	Circuit Description	CKT
1	TREASURER OPEN OFC COMPUTERS	R	20	1	0.36	0.75			1	20	L	LIGHTS - E4, G1, G2, G7, U1	2
3	TREASURER OPEN OFC COMPUTERS	R	20	1			0.36	0.18	1	20	L	LIGHTS - EXTERIOR WALL PACKS	4
5	TREASURER OPEN OFC COPIER	R	20	1	0.5	0.73			1	20	L	LIGHTS - G3, T1, T2, T3, T4, T5	6
7	RECEPTS - G1, G2, T1, T2, T4 U1	R	20	1			1.44	0.1	1	20	L	EXTERIOR BLDG SIGNAGE	8
9	OFFICE T3 & RM T5 RECEPTS	R	20	1	0.54	0.18			1	20	R	DRINKING FOUNTAINS	10
11	RECEPTS - G2, G4, G7	R	20	1			1.08	0.36	1	15	M	EXHAUST FAN - LOUNGE/COPY RM	12
13	OFFICE E4 & RM G7 RECEPTS	R	20	1	0.54	0.36			1	15	M	EXHAUST FAN - UNISEX RR & JANITOR RM	14
15	LOUNGE / COPY RM REFRIGERATOR	R	20	1			0.18						16
17	LOUNGE / COPY RM MICROWAVE	R	20	1	0.18								18
19	LOUNGE / COPY RM COFFEE MAKER	R	20	1			0.18						20
21	LOUNGE / COPY RM GARBAGE DISPOSAL	R	20	1	0.3								22
23	LOUNGE / COPY RM COPIER	R	20	1			0.5	1.08	2	20	M	UTILITY RM MINI SPLIT SYSTEM	24
25	EXTERIOR BLDG RECEPTS - GFCI	R	20	1	0.54	1.56							26
27	4-TON AIR HANDLER - ELECTION OFFICE	M	15	2			0	0.36	2	15	M	4-TON AIR HANDLER - TREASURER OFFICES/LOBBY	28
29					0	0.36							30
31	3-TON HEAT PUMP - SOUTH OFFICES/HALLWAY/LOUNGE	M	35	2			2.03	0.28	2	15	M	3-TON AIR HANDLER - SOUTH OFFICES/HALLWAY/LOUNGE	32
33					2.03	0.28							34
35	4-TON HEAT PUMP - TREASURER OFFICES/LOBBY	LM	50	2			2.61	0	2	35	M	3-TON HEAT PUMP - ELECTION OFFICE	36
37					2.61	0							38
39	PNL E	L, R, G, M	50	2			4.99	3	2	35	WH	ELECTRIC WATER HEATER	40
41					3.27	3							42

	Total Amps:	171 A	164 A
Total Connected Load: Phase A	26.5 kVA	170.7 A	
Total Connected Load: Phase B	19.8 kVA	163.5 A	
Total Connected Load: Phase C	0 kVA	0.0 A	

Load Classification		Connected Load	Demand Factor	Estimated Demand	Panel Totals
G	General (Non-Continuous)	0.2	125.00%	0.25	
L	Lighting	2.99	125.00%	3.74	TOTAL CONN. LOAD: 49.3 kVA
R	Receptacles	9.58	100.00%	9.58	TOTAL EST. DEMAND LOAD: 43.9 kVA
K	Kitchen	0	0.00%	0	TOTAL CONN. CURRENT: 158.0 A
H	Heating	0	0.00%	0	TOTAL EST. DEMAND CURRENT: 133.5 A
M	Motors	18.33	100.00%	16.13	
LM	Largest Motor	5.71	125.00%	6.51	
WH	Water Heater	6	125.00%	7.5	
C	Continuous General Load	0	0.00%	0	

Notes:

PNL: PNL E

PROJECT: BROWN COUNTY ELECTIONS FACILITY

LOCATION: UTILITY U1 — VOLTS: 120/240V, 1Ø, 3W — A.I.C. RATING: 10kAIC
SUPPLY FROM: PNL A — PHASES: 1 — MAINS TYPE: MCB
MOUNTING: SURFACE — WIRES: 3 — MAINS RATING: 60 A
ENCLOSURE: NEMA 1 — FEED THRU LUGS: No — MCB RATING: 50 A

CKT	Circuit Description	Load Type	Trip Rating	C.B. Pole	A		B		C.B. Pole	Trip Rating	Load Type	Circuit Description	CKT
1	ELECTION OFFICE RECEPTS	R	20	1	0.9	0.74			1	20	L	LIGHTS - E1, E3, E5, G5, G6	2
3	RECEPTS - E1, E3, G5, G6	R	20	1			0.72	0.31	1	20	L	LIGHTS - EXIT SIGNS & EGR	4
5	EXHAUST FAN - WOMEN & MEN RRs	M	15	1	0.36	0.14			1	20	L	LIGHTS - EXTERIOR CANOP	6
7	ELECTION OFFICE COFFEE MAKER	R	20	1			0.18	0.2	1	20	G	SECURITY PANELS	8
9													10
11	ELECTION OFFICE TV RECEPT	R	20	1			0.18						12
13													14
15	RESULTS ROOM COMPUTERS	R	20	1			0.36						16
17													18
19	RESULTS ROOM COMPUTERS	R	20	1			0.36						20
21													22
23													24
25													26
27													28
29	4-TON HEAT PUMP - ELECTION OFFICE	M	60	2			2.61	0.36					30
					2.61	0.36			2	15	M	4-TON AIR HANDLER - ELEC	
31													32
33													34
35													36
37													38
39													40
41													42

	Total Amps:	43 A	44 A
Total Connected Load: Phase A	5.1 kVA	42.7 A	
Total Connected Load: Phase B	5.3 kVA	43.9 A	
Total Connected Load: Phase C	0 kVA	0.0 A	

Load Classification		Connected Load	Demand Factor	Estimated Demand	Panel Totals
G	General (Non-Continuous)	0.2	125.00%	0.25	
L	Lighting	1.18	125.00%	1.48	TOTAL CONN. LI
R	Receptacles	2.7	100.00%	2.7	TOTAL EST. DEMAND LI
K	Kitchen	0	0.00%	0	TOTAL CONN. CURR
H	Heating	0	0.00%	0	TOTAL EST. DEMAND CURR
M	Motors	6.31	100.00%	6.31	
LM	Largest Motor	0	0.00%	0	
WH	Water Heater	0	0.00%	0	
C	Continuous General Load	0	0.00%	0	

Notes:

MECHANICAL EQUIPMENT CONNECTION SCHEDULE

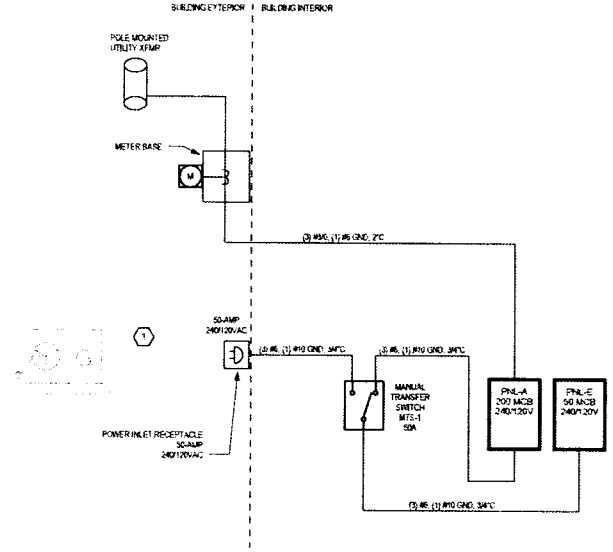
EQUIPMENT NUMBER	DESCRIPTION	ELECTRICAL CHARACTERISTICS HP	kW	FLA	MCA	VOLTAGE	PHASE	CONNECTION TYPE	SIZE	FUSE	PROVIDED BY	ELECTRICAL FEEDER CONDUIT SIZE	PH	N	GND	EMERG. POWER	PANEL & POSITIONS
	4-TON SPLIT SYSTEM, HEAT PUMP, NORTH BLDG AREA				28.0	230	1	DS	60		ELECTRICAL	1/2"	2 - #10 CU		1 - #10 CU	NO	PNL-A, CIRC#36,37
	4-TON SPLIT SYSTEM, HEAT PUMP, ELECTION OFC AREA				28.0	230	1	DS	60		ELECTRICAL	1/2"	2 - #10 CU		1 - #10 CU	YES	PNL-E, CIRC#27,29
	4-TON SPLIT SYSTEM, HEAT PUMP, ELECTION OFC AREA				22.0	230	1	DS	60		ELECTRICAL	1/2"	2 - #10 CU		1 - #10 CU	NO	PNL-A, CIRC#38,38
	3-TON SPLIT SYSTEM, HEAT PUMP, SE BLDG AREA				22.0	230	1	DS	60		ELECTRICAL	1/2"	2 - #10 CU		1 - #10 CU	NO	PNL-A, CIRC#31,33
	4-TON SPLIT SYSTEM, AIR HANDLER, NORTH BLDG AREA			3.1	3.9	230	1	DS	30		ELECTRICAL	1/2"	2 - #12 CU		1 - #12 CU	NO	PNL-A, CIRC#28,30
	4-TON SPLIT SYSTEM, AIR HANDLER, ELECTION OFC AREA			3.1	3.9	230	1	DS	30		ELECTRICAL	1/2"	2 - #12 CU		1 - #12 CU	YES	PNL-E, CIRC#25,30
	3-TON SPLIT SYSTEM, AIR HANDLER, ELECTION OFC AREA					230	1	DS	30		ELECTRICAL	1/2"	2 - #12 CU		1 - #12 CU	NO	PNL-A, CIRC#27,29
	3-TON SPLIT SYSTEM, AIR HANDLER, SE BLDG AREA					230	1	DS	30		ELECTRICAL	1/2"	2 - #12 CU		1 - #12 CU	NO	PNL-A, CIRC#32,34
	MINI SPLIT SYSTEM, OUTDOOR - UTILITY ROOM				17.0	230	1	DS	30		ELECTRICAL	1/2"	2 - #12 CU		1 - #12 CU	NO	PNL-A, CIRC#24,26
	MINI SPLIT SYSTEM, INDOOR - UTILITY ROOM				1.0	230	1	T	30		ELECTRICAL	1/2"	2 - #12 CU		1 - #12 CU	NO	POWERED FROM OUTDOOR UNIT
	EXHAUST FAN - UNISEX RESTROOM & JANITOR CLOSET	1/6		3.4	4.3	115	1	T			MANUFACTURER	1/2"	1 - #12 CU	1 - #12 CU	1 - #12 CU	NO	PNL-A, CIRC#16
	EXHAUST FAN - WOMEN RR & MEN RR	1/6		3.4	4.3	115	1	T			MANUFACTURER	1/2"	1 - #12 CU	1 - #12 CU	1 - #12 CU	YES	PNL-E, CIRC#4
	EXHAUST FAN - LOUNGE/COPY ROOM	1/6		3.4	4.3	115	1	T			MANUFACTURER	1/2"	1 - #12 CU	1 - #12 CU	1 - #12 CU	NO	PNL-A, CIRC#14
	ELECTRIC WATER HEATER		6	25.0	31.3	240	1	DS	60		ELECTRICAL	1/2"	2 - #10 CU		1 - #10 CU	NO	PNL-A, CIRC#40,42

SCHEDULE GENERAL NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE LABEL ON INSIDE OF DISCONNECT SWITCH WHICH READS "REPLACEMENT FUSES ARE TO BE DUAL ELEMENT CURRENT LIMITING AND ARE TO BE PROVIDED WITH THE AIC RATING ABOVE THE AVAILABLE AT THAT POINT IN THE SYSTEM."
2. THE AIC RATINGS AT THAT CONNECTION POINT IN THE SYSTEM AND CONFIRMING THAT ALL DEVICES IN/AFFIRMING THE SYSTEM MEET OR EXCEED THE AVAILABLE AIC FAULT CURRENT. CALCULATIONS SHALL BE TAKEN DOWN TO 4,000 AIC.

LEGEND:

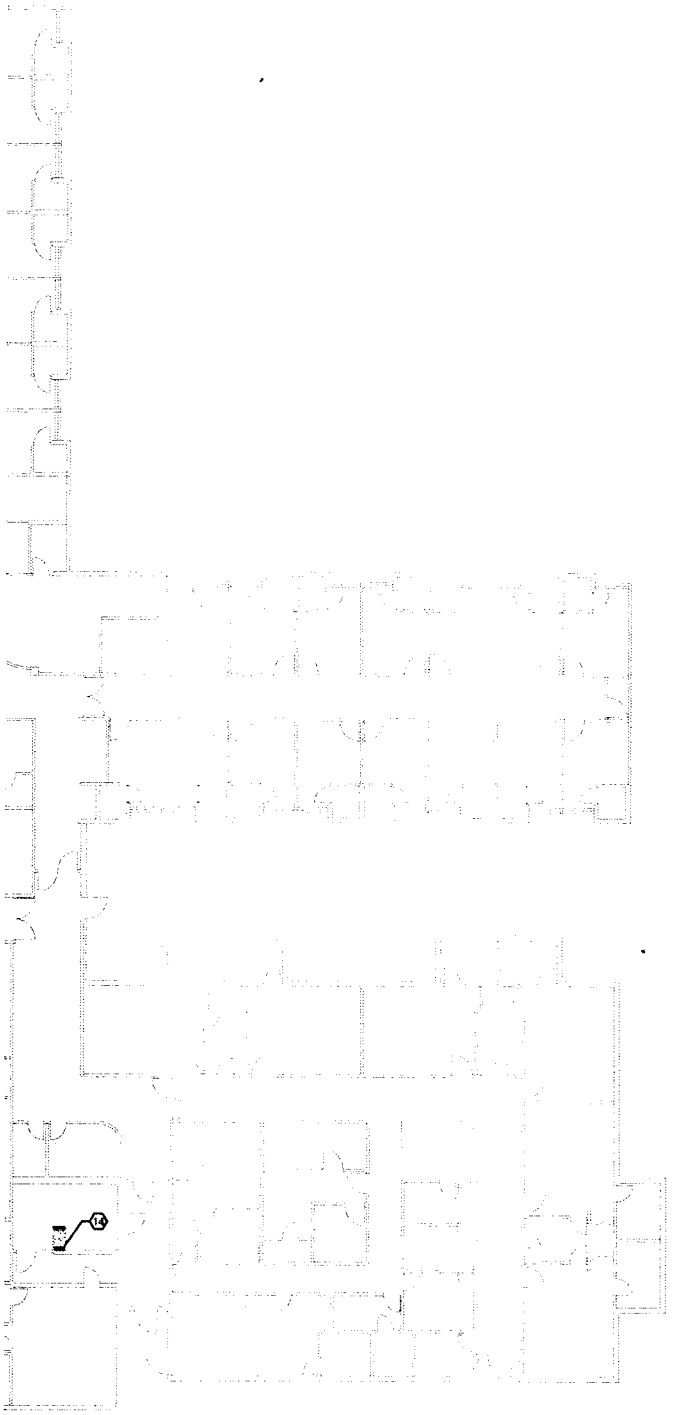
FDS - FUSED DISCONNECT SWITCH
VFD - VARIABLE FREQUENCY DRIVE (FURNISHED BY DIV. 26 AND INSTALLED BY DIV. 26)
DS - DISCONNECT SWITCH
MRS - MOTOR RATED SWITCH (20 AMP RATING UNLESS NOTED OTHERWISE)
DC - DIRECT SINGLE POINT CONNECTION TO UNIT POWER BOX
CMS - COMBINATION MAGNETIC MOTOR STARTER WITH FUSED DISCONNECT SWITCH
T - TOGGLE SWITCH
MANUAL - MANUAL MOTOR STARTER W/ MELTING ALLOY TYPE THERMAL OVERLOAD RELAY



1 / E0.2 ELECTRICAL ONE-LINE DIAGRAM

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

PRELI



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

ISE EXISTING WIRE
ER LOCATION WITH
T WITH 40AMP FUSE.

DER FROM EXISTING
LOCATION WITH
T WITH 40AMP FUSE.

L LENGTH BACK TO

GENERAL NOTES

1. NEW WIRING TO MATCH EXISTING COLOR CODE.
2. ALL NEW BREAKERS IN EXISTING PANELS SHALL MATCH EXISTING MODEL / MAKE AND AIC RATING.

DESIGN DOCUMENTS

NOT FOR CONSTRUCTION
THIS DOCUMENT IS FOR REVIEW ONLY AND IS NOT FOR BIDDING, PERMIT OR CONSTRUCTION PURPOSES.
SUMMIT CONSULTANTS, INC.

ENGINEER: MARK W. TINER
LICENSED#:75476
DATE: 10 / 12 / 2015

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McKinstry
For The Life Of Your Building

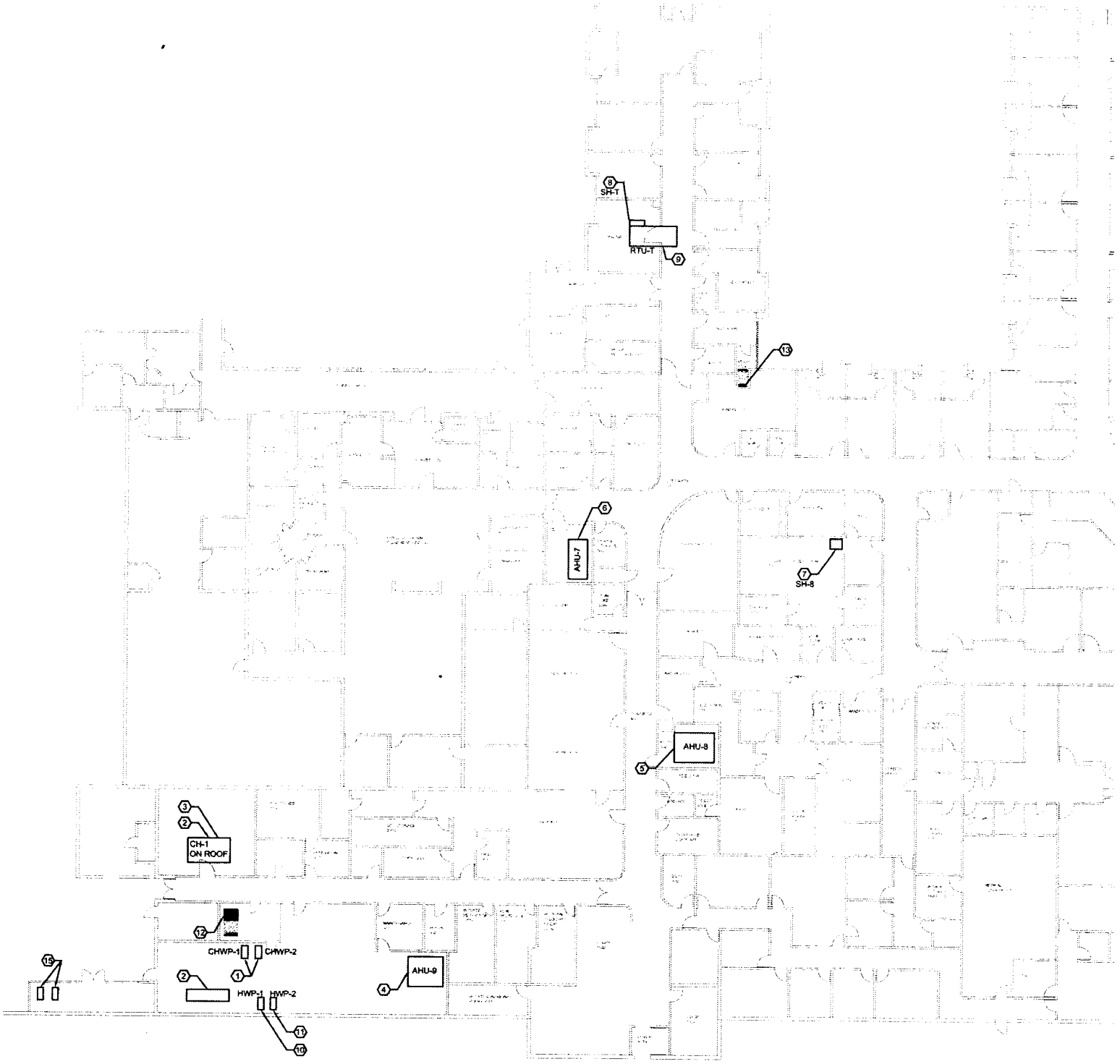
Project No. 15168
Date: 10/12/2015

NOT FOR CONSTRUCTION

NO.	REVISION	DATE

CHILDRESS REGIONAL MEDICAL CENTER
HVAC Renovations
Interiors Package
901 US-83, CHILDRESS, TX 79201

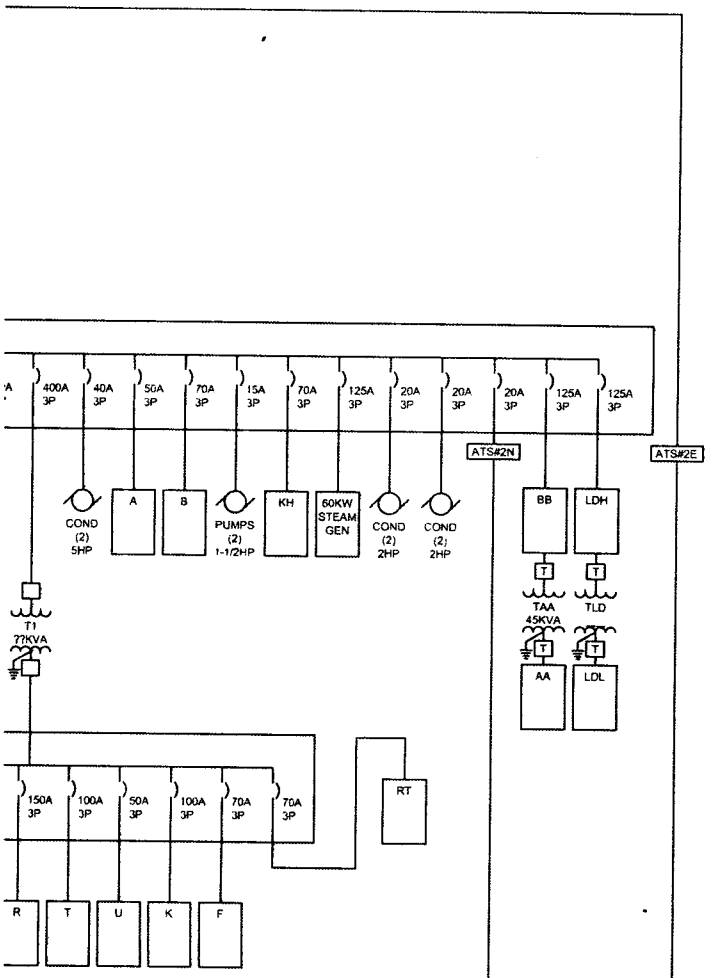
E1.1

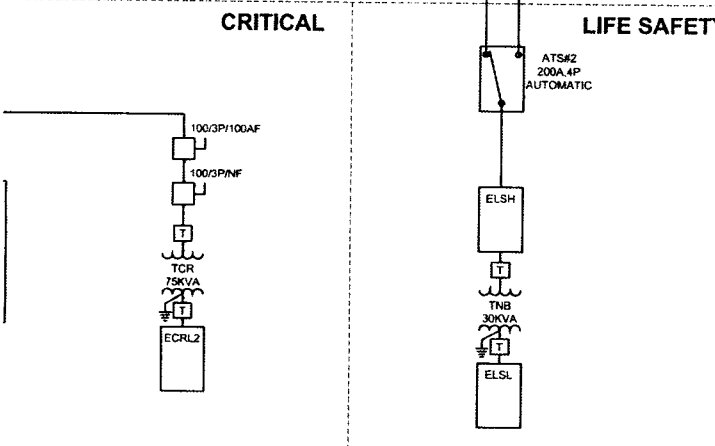


N

1 ELECTRICAL FLOOR PLAN

1. EXISTING PUMP TO BE REPLACE. ELECTRICAL TO REMOVE EXISTING WIRE AND STARTER AND RECONNECT NEW STARTER AND PUMP WITH EXISTING WIRE.
2. EXISTING WATER COOLED CHILLER AND ASSOCIATED COOLING TOWER ON ROOF TO BE REMOVED AND REPLACES WITH AIR COOLED CHILLER ON ROOF. ELECTRICAL TO REMOVE CIRCUITS ASSOCIATED WITH WATER COOLED CHILLER AND ASSOCIATED EQUIPMENT. REMOVE WIRE FULL LENGTH TO BREAKER AND ABANDON CONDUIT IN PLACE.
3. NEW AIR COOLED CHILLER REPLACING EXISTING AT SAME LOCATION AS COOLING TOWER. PROVIDE NEW 400/3P BREAKER IN MAIN SERVICE PANEL MDP IN PLACE OF REMOVED CIRCUIT BREAKER FOR EXISTING WATER COOLED CHILLER AND COOLING TOWER. PROVIDE 3#500,#2G,4"C FROM NEW BREAKER TO NEW STARTER AND FROM STARTER TO UNIT. COORDINATE EXACT LOCATION OF NEW STARTER WITH INSTAL;LER OF CHILLER.
4. AHU-9 UNIT BEING REPLACED WITH NEW UNIT. ELECTRICAL TO REUSE EXISTING CIRCUIT BREAKER AND FEEDER WIRE. PROVIDE NEW 30/3/20AF DISCONNECT AND WIRE 3#10,#10G,3/4"C FROM DISCONNECT TO STARTER AND FROM STARTER TO UNIT. COORDINATE EXACT LOCATION OF STARTER WITH INSTALLER OF UNIT. STARTER WILL BE PROVIDED WITH AHU UNIT.
5. AHU-8 UNIT BEING REPLACED WITH NEW UNIT. ELECTRICAL TO REUSE EXISTING CIRCUIT BREAKER AND FEEDER WIRE. PROVIDE NEW 60/3/35AF DISCONNECT AND WIRE 3#8,#10G,1"C FROM DISCONNECT TO STARTER AND FROM STARTER TO UNIT. COORDINATE EXACT LOCATION OF STARTER WITH INSTALLER OF UNIT. STARTER WILL BE PROVIDED WITH AHU UNIT.
6. AHU-7 UNIT BEING REPLACED WITH NEW UNIT. ELECTRICAL TO REUSE EXISTING CIRCUIT BREAKER AND FEEDER WIRE. PROVIDE NEW 30/3/25AF DISCONNECT AND WIRE 3#10,#10G,3/4"C FROM DISCONNECT TO STARTER AND FROM STARTER TO UNIT. COORDINATE EXACT LOCATION OF STARTER WITH INSTALLER OF UNIT. STARTER WILL BE PROVIDED WITH AHU UNIT.
7. NEW 120V/1P STEAM HUMIDIFIER UNIT SH-8. COORDINATE EXACT LOCATION OF STARTER WITH INSTALLER OF UNIT. STARTER WILL BE PROVIDED WITH UNIT. PROVIDE 2#12,#12G,1/2"C TO PANEL RT-7 AND 20A/1P BREAKER IN PANEL RT.
8. NEW 208V/2P STEAM HUMIDIFIER UNIT SH-T. COORDINATE EXACT LOCATION OF STARTER WITH INSTALLER OF UNIT. STARTER WILL BE PROVIDED WITH UNIT. PROVIDE 2#12,#12G,1/2"C TO PANEL RT-7 AND 20A/2P BREAKER IN PANEL RT.
9. REPLACE ROOF TOP UNIT RTU-T . ELECTRICAL TO PROVIDE NEW CIRCUIT TO PANEL RT-1,3,5 WITH 3#12,#12G,1/2"C. PROVIDE 15/3P BREAKER IN PANEL RT MATCHING EXISTING MAKE / MODEL / AIC RATING. COORDINATE EXACT LOCATION OF STARTER WITH INSTALLER OF UNIT. STARTER WILL BE PROVIDED WITH RTU UNIT.
10. EXISTING HWP-1 TO BE REPLACED WITH SMALLER PUMP. I AND BREAKER AND RECONNECT. COORDINATE EXACT ST. INSTALLER OF PUMP. REPLACE EXISTING FUSE IN DISCON
11. NEW LOCATION FOR REPLACE HWP-2. REPLACE EXISTING BREAKER USING 3#8,#10G,1"C. COORDINATE EXACT STAR INSTALLER OF PUMP. REPLACE EXISTING FUSE IN DISCON
12. LOCATION OF "MSB" PANEL.
13. LOCATION OF "RT" PANEL.
14. LOCATION OF "1" PANEL.
15. EXISTING CWP PUMPS TO BE REMOVED. REMOVE WIRING BREAKER. ABANDON CONDUIT IN PLACE.





ONE-LINE IS FOR REFERENCE ONLY.
CONTRACTOR TO NOTE ANY DISCREPANCIES FOUND AND UPDATE ON AS-BUILD DOCUMENTS.

FEEDER SCHEDULE BY SYMBOL:

AMPS POLES	WIRE AND CONDUIT
SER1	?
SER2	4#4/0,2"C
SER3	4#2,#6G,1-1/4"C
ATS#1N	4#4/0,#2G,2-1/2"C
ATS#1E	4#4/0,#2G,2-1/2"C
ATS#2N	?
ATS#2E	4#6,#10G,1"C
ATS#3N	4#2,#6G,1-1/4C
ATS#3E	4#2,#6G,1-1/4C

DESIGN DOCUMENTS

McKinstry
For The Life Of Your Building

Project No. 15168
Date: 10/12/2015

NOT FOR CONSTRUCTION

NO.	REVISION	DATE

CHILDRESS REGIONAL MEDICAL CENTER
HVAC Renovations
Interiors Package
901 US-83, CHILDRESS, TX 79201

E1.2

NOT FOR CONSTRUCTION
THIS DOCUMENT IS FOR REVIEW ONLY AND IS NOT FOR BIDDING, PERMIT OR CONSTRUCTION PURPOSES.
SUMMIT CONSULTANTS, INC.

ENGINEER: MARK W. TINER
LICENSED#:75476
DATE: 10 / 12 / 2015

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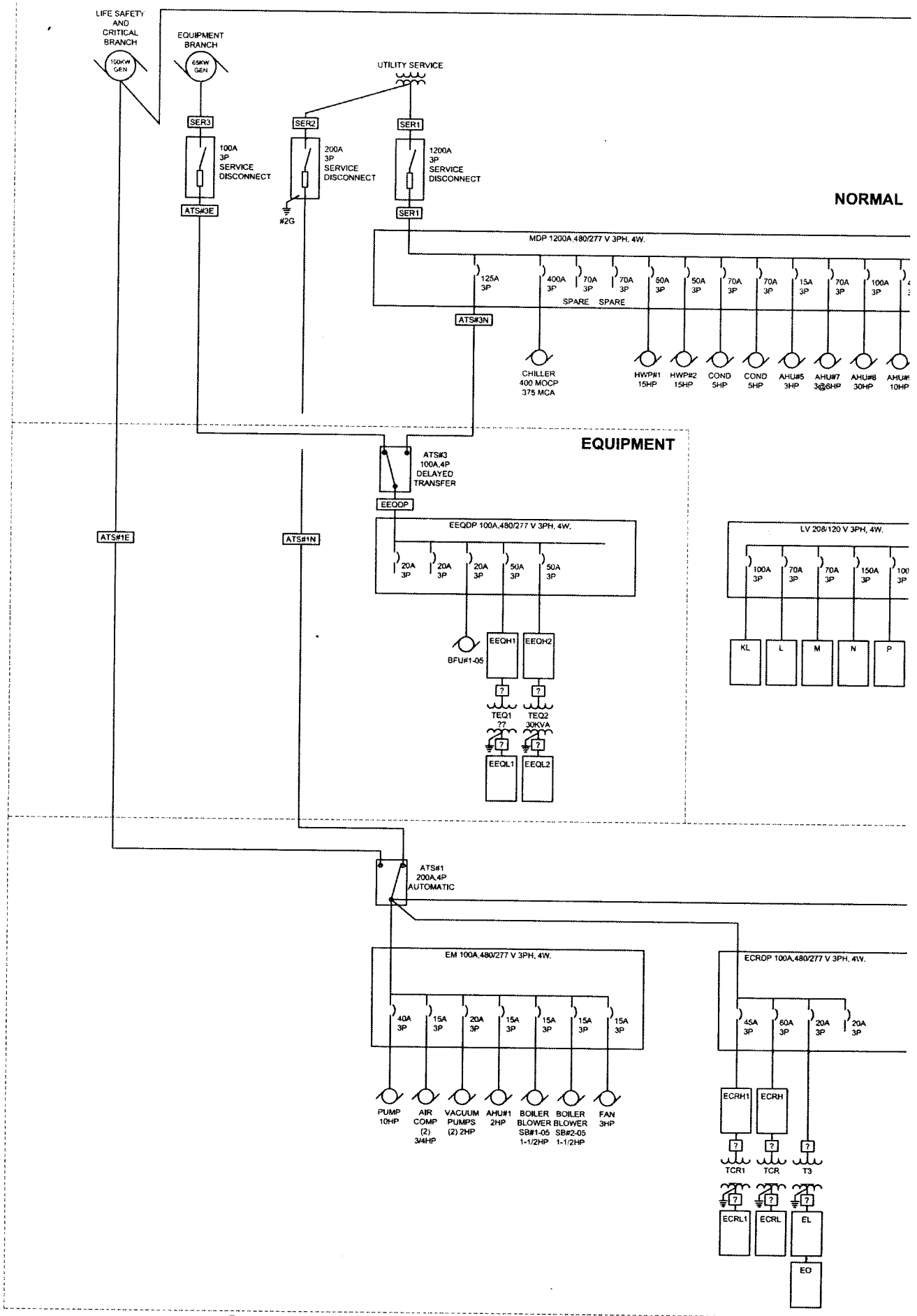

1 NEW REVISED ONE-LINE DIAGRAM

KEYNOTES

1. PROVIDE (1) 120V/1PH CIRCUIT TO SECURITY PANEL.
2. PROVIDE RECESSED BOX FOR DRINKING FOUNTAIN DUPLEX RECEPTACLE.
3. PROVIDE (1) 120V/1PH CIRCUIT TO EXTERIOR SIGNAGE. SEE ARCHITECTUAL ELEVATION 2/A3.1 FOR APPROXIMATE J-BOX LOCATION.
4. PROVIDE CONDUIT STUB-OUT FOR CARD ACCESS READER.
5. OUTDOOR MECHANICAL UNIT.
6. INDOOR MECHANICAL UNIT.
7. MINI SPLIT SYSTEM OUTDOOR UNIT.
8. MINI SPLIT SYSTEM INDOOR UNIT. WIRE INDOOR UNIT TO OUTDOOR UNIT PER MANUFACTURER'S DIRECTIONS. FOR CONDUIT ROUTING, FOLLOW THE MINI SPLIT REFRIGERATE PIPING ROUTING.
9. ROOF MOUNTED EXHAUST FAN.
10. EXHAUST FAN ACTIVATED BY A PROGRAMMABLE TIME CLOCK WITH 0-10V OUTPUT. TIME CLOCK PROVIDED BY MECHANICAL CONTRACTOR.
11. SUPPLY AND INSTALL WEATHER HEAD AND RISER RACEWAY TO METER BASE FOR SECONDARY FEEDER FROM UTILITY POLE-MOUNTED TRANSFORMER.
12. PROVIDE AND INSTALL A MANUAL SWITCHING MECHANISM THAT WILL SWITCH BETWEEN THE 3-TON SPLIT SYSTEM SERVING THE ELECTION OFFICE AREA AND THE 4-TON UNIT SERVING THE SAME AREA. THE SWITCHING IS BASED ON HIGH-OCCUPANCY VS. LOW-OCCUPANCY. SEE M5.0 FOR SWITCHING MECHANISM DETAIL.
13. PROVIDE RECESSED BOX FOR TV DUPLEX RECEPTACLE AND HDMI RECEPTACLE.

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SEATTLE, WA 98124
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www.mckinstry.com

PROJECT:

BROWN COUNTY ELECTIONS FACILITY

611 N. FISK AVENUE
BROWNWOOD, TX 76801

REGISTRATION:

REVISIONS:

REV	DATE	DESCRIPTION
	06/12/2015	PRELIMINARY COORDINATION SET
	06/18/2015	INTERNAL COORDINATION SET
	07/24/2015	50% REVIEW SET

McKINSTRY DIVISION:

ENGINEERING

DESIGNED BY:	AG
DRAWN BY:	AG
CHECKED BY:	DE
PROJ. NO.	20612-001
DATE	07/30/2015
SCALE:	AS SHOWN

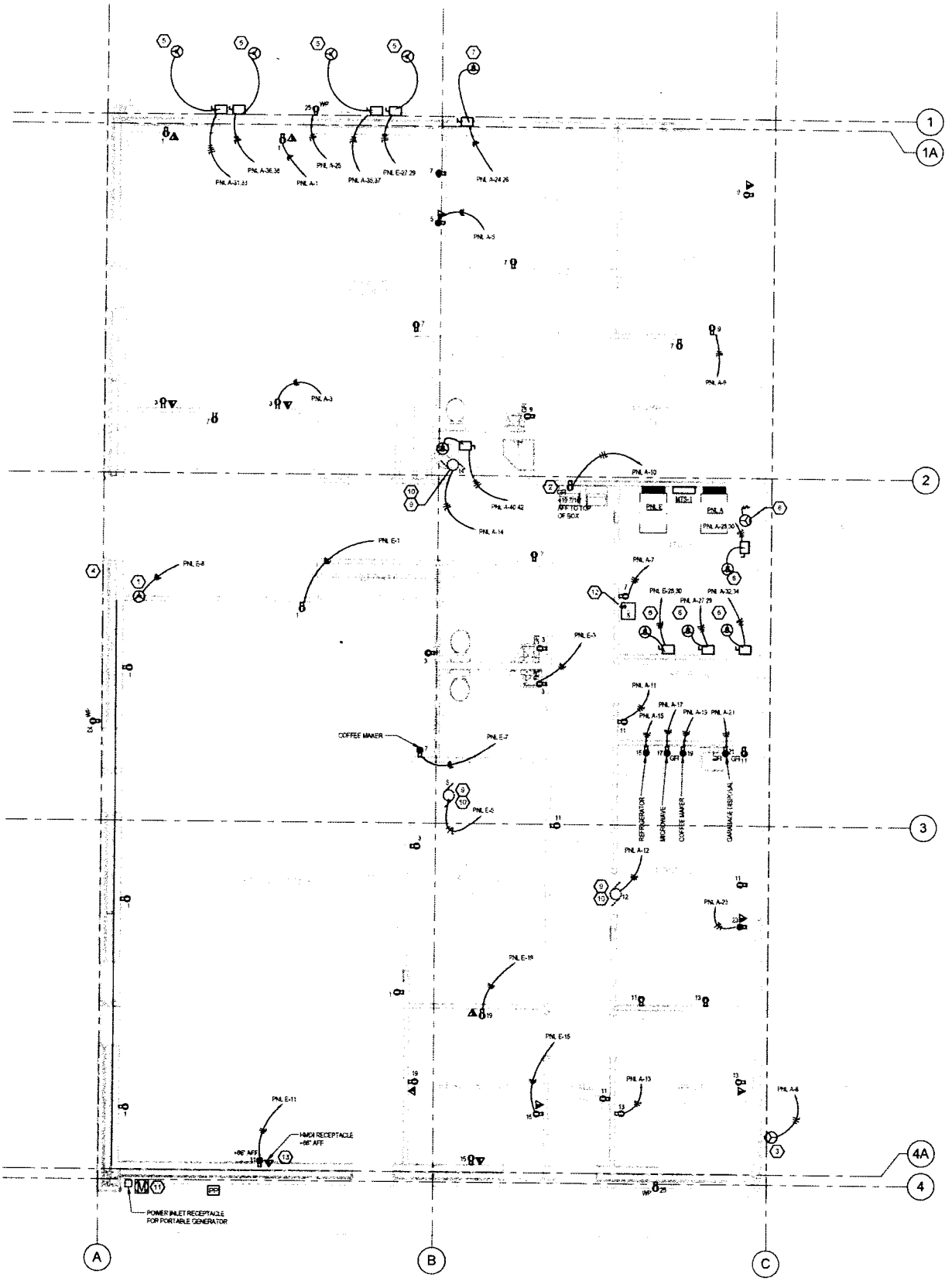
SHEET TITLE:

ELECTRICAL FLOOR PLAN - POWER

SHEET NUMBER:

E2.0

MINARY--NOT FOR CONSTRUCTION--PRICING ONLY



1 / E2.0 LVL 1 - FLOOR PLAN - POWER

SCALE 1/4" = 1'-0"

PRELI

LIGHTING FIXTURE SCHEDULE

TAG	COUNT	DESCRIPTION	MOUNTING	MANUFACTURER	MODEL NUMBER	LAMP	VOLTAGE
A	29	2' X 4' FLUORESCENT TROFFER	RECESSED	METALUX	2ALNG-232-UNV-L8841-A3/3-2/18G-EB81-U	(2) 32W T8	120 V
AE	3	2' X 4' FLUORESCENT TROFFER W/ EMERG BATTERY BACK-UP	RECESSED	METALUX	2ALNG-232-120-ELI320-L8841-A3/8-2/18G-EB81-U	(2) 32W T8	120 V
B	1	6" RECESSED CAN FLUORESCENT FIXTURE	RECESSED	HALO COMMERCIAL	PD6V142E 60VH	(1) 26W CFL	120 V
BE	1	6" RECESSED CAN FLUORESCENT FIXTURE W/ EMERG BATTERY BACK-UP	RECESSED	HALO COMMERCIAL	PD6V142EM 60VH	(1) 26W CFL	120 V
C	3	2' WALL-MOUNTED FLUORESCENT STRIP FIXTURE	WALL	METALUX	BC-217-UNV-ER81-U	(2) 17W T8	120 V
D	2	4' FLUORESCENT STRIP FIXTURE	CEILING SURFACE	METALUX	SSF-232-UNV-ER81-U	(2) 32W T8	120 V
EXIT	6	LED EXIT SIGN	UNIVERSAL	COOPER INDUSTRIES, INC	APX7G	LED	120 V
F	5	EXTERIOR CFL WALL PACK	WALL	COOPER INDUSTRIES, INC	PW26PC	(1) 26W CFL	120 V
G	3	EXTERIOR LED CANOPY FIXTURE W/ BATTERY BACK-UP	SURFACE	MCGRAW-EDISON	TT-83-LED-E1-WG-AP-IBP	LED	120 V
H	1	DECORATIVE CLF BOWL FIXTURE	SURFACE	SHAPER LIGHTING	210-18-S-CFL2-120-MVA-SFTR	(2) 32W CFL	120 V
J	6	4' LENSED FLUORESCENT STRIP FIXTURE	CEILING SURFACE	METALUX	BC-232-UNV-ER81-U	(2) 32W T8	120 V
JE	2	4' LENSED FLUORESCENT STRIP FIXTURE W/ EMERG BATTERY BACK-UP	CEILING SURFACE	METALUX	BC-232-120V-ELI320-EB81-U	(2) 32W T8	120 V

LIGHTING FIXTURE SCHEDULE - LED (ALTERNATE)

TAG	COUNT	DESCRIPTION	MOUNTING	MANUFACTURER	MODEL NUMBER	LAMP	VOLTAGE
A	29	2' X 4' LED TROFFER	RECESSED	METALUX	24ALNG-LD4-45-UNV-L840-A3/8-2/18G-CD1-U ALN 2X4 FRACLN,4500LM,4000K,UNVD-10VDD	LED	120 V
AE	3	2' X 4' LED TROFFER W/ EMERG BATTERY BACK-UP	RECESSED	METALUX	24ALNG-LD4-45-UNV-EL10W-L840-CD1-U	LED	120 V
B	1	6" RECESSED CAN LED FIXTURE	RECESSED	HALO COMMERCIAL	PD615ED010 PDMBA840 61VH	LED	120 V
BE	1	6" RECESSED CAN LED FIXTURE W/ EMERG BATTERY BACK-UP	RECESSED	HALO COMMERCIAL	PD615ED010EM PDMBAS40 61VEMH	LED	120 V
C	3	2' WALL-MOUNTED LED STRIP FIXTURE	WALL	PRUDENTIAL LIGHTING	S1-LED4-HO-2-SAL-YGW-UNV-SUR-X5-DM10	LED	120 V
D	2	4' LED STRIP FIXTURE	CEILING SURFACE	METALUX	4SNLED-LD4-41SL-UH-UNV-L840-CD1-U	LED	120 V
EXIT	6	LED EXIT SIGN	UNIVERSAL	COOPER INDUSTRIES, INC	APX7G	LED	120 V
F	5	EXTERIOR LED WALL PACK	WALL	LUMARK	XTOR3A-N (XTOR3A, CRN BZ, 30W, 3500K, 120-277V)	LED	120 V
G	3	EXTERIOR LED CANOPY FIXTURE W/ BATTERY BACK-UP	SURFACE	MCGRAW-EDISON	TT-83-LED-E1-WG-AP-IBP	LED	120 V
H	1	DECORATIVE ROUND LED FIXTURE	SURFACE	SHAPER LIGHTING	825-18-S-L4-840-UNV-SAL	LED	120 V
J	6	4' LED STRIP FIXTURE	CEILING SURFACE	PRUDENTIAL LIGHTING	S1-LED-SO-4-SAL-YGW-UNV-SUR-X1-DM10	LED	120 V
JE	2	4' LED STRIP FIXTURE W/ EMERG BATTERY BACK-UP	CEILING SURFACE	PRUDENTIAL LIGHTING	S1-LED-SO-4-SAL-YGW-UNV-SUR-X1-DM10-EMH	LED	120 V

LIGHTING CONTROL SCHEDULE

TAG	COUNT	DESCRIPTION	MANUFACTURER	MODEL NUMBER
RC3D	4	ROOM CONTROLLER 3 ZONE DIMMING	GREENGATE	RC3D
RC3DE	3	ROOM CONTROLLER 3 ZONE DIMMING W/ EM SWITCHING	GREENGATE	RC3DE
	1	ROOM CONTROLLER HANDHELD REMOTE	GREENGATE	HHPRG-RC
PC-1	2	INDOOR ANALOG PHOTOCELL	GREENGATE	PC-1
	7	PRESET WALLSTATION, 3 LARGE BUTTONS, WHITE	GREENGATE	RC-3TLB-P1-W
	10	CAT5 COUPLER TO SENSOR	GREENGATE	OCC-RJ45
OC-2000	2	CEILING MOUNTED US OCC SENSOR - 2000 SQ FT	GREENGATE	OAC-U-2000
OC-1000	4	CEILING MOUNTED DT OCC SENSOR - 1000 SQ FT	GREENGATE	OAC-DT-1000
OC-500	4	CEILING MOUNTED DT OCC SENSOR - 500 SQ FT	GREENGATE	OAC-DT-0501
	9	WALL MOUNTED PIR OCC SENSOR	GREENGATE	ONW-P-1001-MV-W
PP-1	2	SWITCHPACK, HEAVY DUTY, 120/277V	GREENGATE	SP20-MV
PC-2	1	OUTDOOR CONTACT INPUT PHOTOCELL	GREENGATE	PPS-5

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PROJECT:

BROWN COUNTY
ELECTIONS FACILITY

611 N. FISK AVENUE
BROWNWOOD, TX 76801

REGISTRATION:

REVISIONS:

REV	DATE	DESCRIPTION
	6/12/2015	PRELIMINARY COORDINATION SET
	6/16/2015	INTERNAL COORDINATION SET
	6/24/2015	50% REVIEW SET

McKINSTRY DIVISION:

ENGINEERING

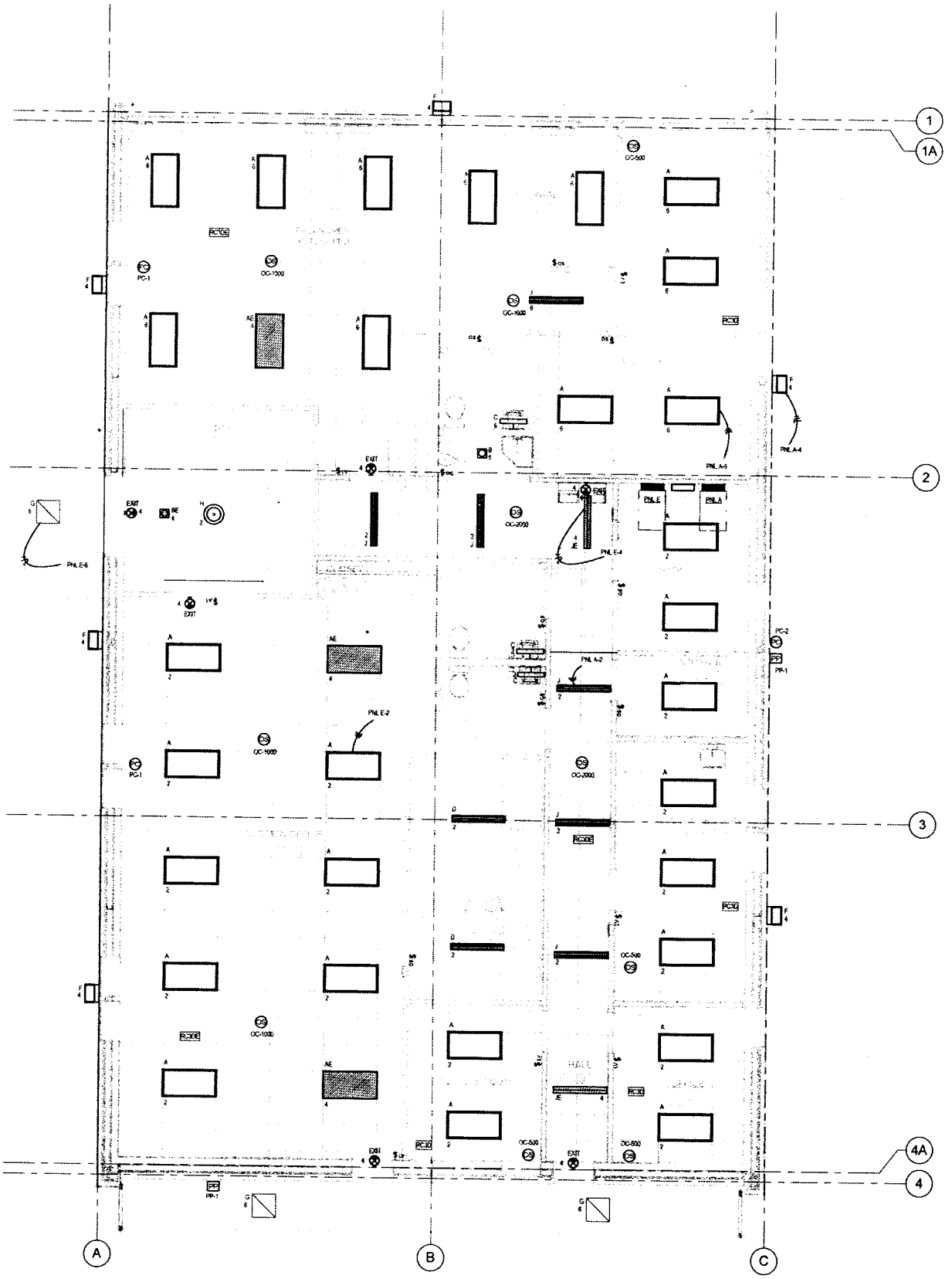
DESIGNED BY:	AG
DRAWN BY:	AG
CHECKED BY:	DE
PROJ. NO.	200812-001
DATE	07/30/2015
SCALE:	AS SHOWN

SHEET TITLE:

ELECTRICAL FLOOR PLAN - LIGHTING

SHEET NUMBER:

E3.0



2 E3.0 LVL 1 - FLOOR PLAN - LIGHTING

SCALE 1/4" = 1'-0"

PRELI

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PROJECT:

BROWN COUNTY
ELECTIONS FACILITY

611 N. FISK AVENUE
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REGISTRATION:

REVISIONS:

REV	DATE	DESCRIPTION
	9/12/2015	PRELIMINARY COORDINATION SET
	9/18/2015	INTERNAL COORDINATION SET
	9/24/2015	50% REVIEW SET

McKINSTRY DIVISION:

ENGINEERING

DESIGNED BY:	AG
DRAWN BY:	AG
CHECKED BY:	DE
PROJ. NO.	265812-001
DATE	07/30/2015
SCALE:	AS SHOWN

SHEET TITLE:

ELECTRICAL DETAILS

SHEET NUMBER:

E8.0

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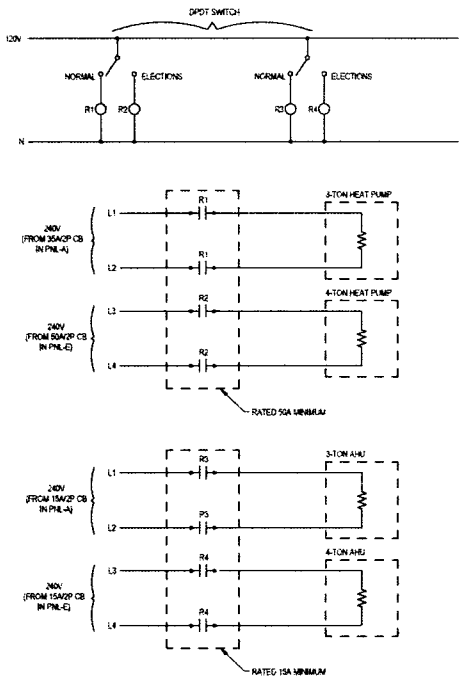


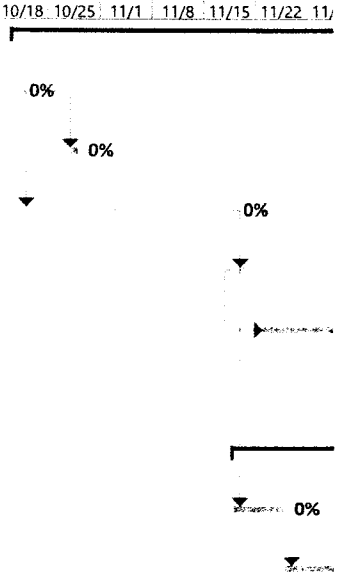
SWITCHING DETAIL FOR SPLIT SYSTEMS
SERVING ELECTION OFFICE & SECURE STORAGE

1
E8.0

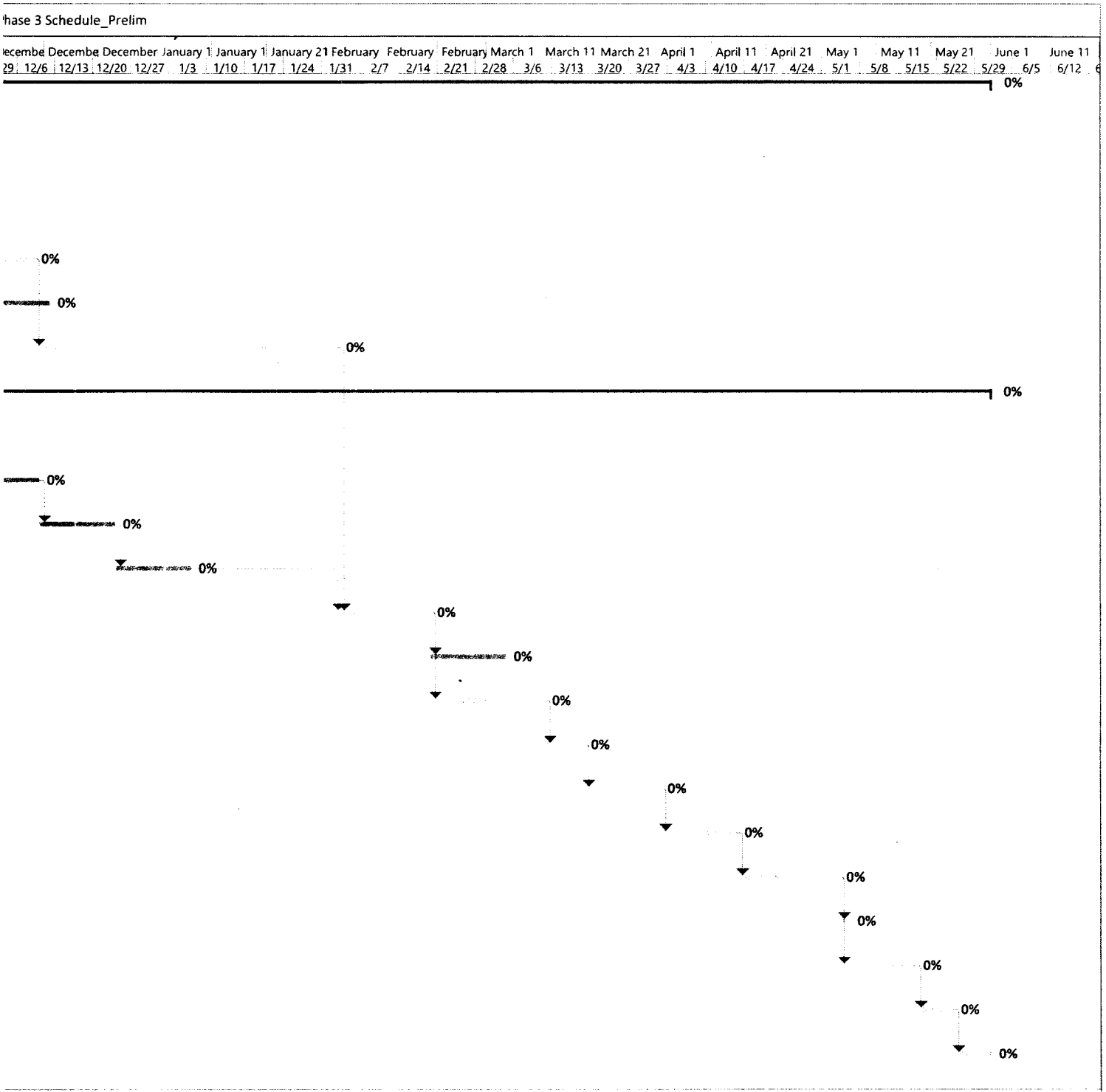
SCALE: NTS

PRE

ID	Task Mode	Task Name	Duration	Start	Finish
1		**Brown County Elections Hall Construction**	**161 days**	**Tue 10/20/15**	**Tue 5/31/16**
2		Contract Executed	1 day	Tue 10/20/15	Tue 10/20/15
3		Customer Kickoff	1 day	Wed 10/28/15	Wed 10/28/15
4		75% Construction Documents	21 days	Wed 10/21/15	Wed 11/18/15
5		100% Construction Documents	14 days	Thu 11/19/15	Tue 12/8/15
6		Pre Construction (Smartsheet Schedule)	15 days	Mon 11/23/15	Fri 12/11/15
7		Order Metal Building	2 mons	Wed 12/9/15	Tue 2/2/16
8		**Construction**	**139 days**	**Thu 11/19/15**	**Tue 5/31/16**
9		Mobilization, Locates and Fencing	1 wk	Thu 11/19/15	Wed 11/25/15
10		Site Prep and Utilities	2 wks	Thu 11/26/15	Wed 12/9/15
11		Demo slab and soil prep	2 wks	Thu 12/10/15	Wed 12/23/15
12		Slab	2 wks	Thu 12/24/15	Wed 1/6/16
13		Structural steel erection	2.5 wks	Wed 2/3/16	Fri 2/19/16
14		MEP Rough in	2 wks	Fri 2/19/16	Fri 3/4/16
15		Framing / 1 side	3 wks	Fri 2/19/16	Fri 3/11/16
16		MEP top out	1 wk	Fri 3/11/16	Fri 3/18/16
17		2 side walls	2 wks	Fri 3/18/16	Fri 4/1/16
18		T/B/T	2 wks	Fri 4/1/16	Fri 4/15/16
19		Finsihes	2.5 wks	Fri 4/15/16	Tue 5/3/16
20		Millwork	0.5 wks	Tue 5/3/16	Thu 5/5/16
21		MEP Trim out	2 wks	Wed 5/4/16	Tue 5/17/16
22		Paint	1 wk	Wed 5/18/16	Tue 5/24/16
23		Final clean	1 wk	Wed 5/25/16	Tue 5/31/16



Critical		Split		Finish-only		Baseline Milesto
Critical Split		Task Progress		Duration-only		Milestone
Critical Progress		Manual Task		Baseline		Summary Progre
Task		Start-only		Baseline Split		Summary



ıe ◇	Manual Summary		Inactive Task
◆	Project Summary		Inactive Milestone
ss	External Tasks		Inactive Summary
	External Milestone	◇	Deadline