COUNTY OF McHENRY
McHENRY COUNTY ADMINISTRATION BUILDING
PURCHASING DEPARTMENT – ROOM 200
2200 N. SEMINARY AVENUE
WOODSTOCK, IL 60098

Sealed bids will be accepted in the above office until

July 6, 2016 at 2:00 P.M. (CST)

For

BID #16-40

PROVIDE ETSB OFFICE RENOVATIONS at 500 RUSSEL COURT BUILDING

CONTACT PERSON – DONALD A. GRAY, CPPB
DIRECTOR OF PURCHASING
MCHENRY COUNTY ADMINISTRATION BUILDING
2200 N. SEMINARY AVENUE-- ROOM 200
WOODSTOCK, IL 60098
Phone - (815) 334-4818
Fax - (815) 334-4680

COMPANY	DATE
CONTACT PERSON	
ADDRESS	E-MAIL ADDRESS
CITY, STATE AND ZIP	
TELEPHONE NO	FAX NO.
TIN (FEIN, or Social Security) NUMBER	

The attention of bidders is directed to the McHenry County Purchasing Ordinance, approved August 1, 2014. This Ordinance is incorporated by reference into this bid as if it were contained herein. If you

have not received a copy of the above Ordinance and desire a copy, please contact the office of the Director of Purchasing.

SCOPE OF WORK

The County of McHenry is soliciting pricing to Provide ETSB Office Renovations at 500 Russel Court Building, subject to continuing need and availability of funds. Bid as per specifications contained herein.

A PREBID MEETING and TOUR will be held at the Administration Building, 667 Ware Road, Room 200, Woodstock IL at **9:00am** on **June 16, 2016**. If unable to attend, please call Facilities Management at 815-334-0259 to schedule a tour FOR JUNE 17TH, JUNE 20TH OR JUNE 21ST.

SCHEDULE OF EVENTS

June 9, 2016	Bid Available
June 16, 2016	Pre-Bid Meeting & Tour, McHenry County Administration Bldg., 667 Ware Rd., Room 200, Woodstock IL at **9:00 AM** (CST)
June 17-June 21, 2016	Additional Tour **by appointment only**; call 815-334-0259
June 24, 2016	Vendors Questions Submitted via fax to 815-334-4680 by 4:00 P.M.(CST)
June 30, 2016	Vendors Questions Answered via fax and Posted on Website by 4:00 P.M.(CST)
July 6, 2016	Bid due in Purchasing at 2:00 P.M.(CST)

PAYMENT

Payment will be processed after receipt of delivery invoice and appropriate affidavit.

NON-DISCRIMINATION

Contractor shall comply with the Illinois Human Rights Act, 775 ILCS 5/1-101 et seq., as amended and any rules and regulations promulgated in accordance therewith, including, but not limited to the Equal Employment Opportunity Clause, Illinois Administrative Code, Title 44, Part 750 (Appendix A), 775 ILCS 5/1-102, which is incorporated herein by reference, and constituting of a written EEO Policy and a workforce profile that demonstrates its EEO practices. Furthermore, the Contractor shall comply the Public Works Employment Discrimination Act, 775 ILCS 10/0.01 et seq., as amended. The Contractor must have a written sexual harassment policy which meets Illinois State Statutes, 775 ILCS, 15/3.

PREVAILING WAGE

The State of Illinois requires that all wages paid by the Contractor and each subcontractor shall be in compliance with The Prevailing Wage Act (820 ILCS 130), as amended. This requires payment of the general prevailing rate for each craft or type of worker, including payment of the general prevailing rate for legal holiday and overtime work. The Illinois Department of Labor publishes the prevailing wage rates on its website at www.state.il.us/agency/idol/rates.htm. The Contractor shall review the wage rates applicable to the work of the contract at regular intervals in order to ensure the timely payment of current wage rates. The Contractor agrees that no additional notice is required. The Contractor shall be responsible to notify each subcontractor of the wage rates set forth in this contract and any revisions thereto. A copy of the prevailing wage rates is posted on the McHenry County website at www.co.mchenry.il.us under BIDS and RFP's. If wage rates change during the course of the

project, the new rates will be available in the County of McHenry Purchasing Office. Vendors may access the Illinois Department of Labor website for updates www.state.il.us/agency/idol.

CERTIFIED PAYROLL REQUIREMENTS (Public Act 94-0515)

Effective August 10, 2005 contractors and subcontractors on public works projects must submit certified payroll records on a monthly basis to the public body in charge of the construction project, along with a statement affirming that such records are true and accurate, that the wages paid to each worker are not less than the required prevailing rate and that the contractor is aware that filing records he or she knows to be false is a Class B misdemeanor.

The certified payroll records must include for every worker employed on the public works project the name, address, telephone number, social security number, job classification, hourly wages paid in each pay period, number of hours worked each day, and starting and ending time of work each day. These certified payroll records are considered public records and public bodies must make these records available to the public under the Freedom of Information Act, with the exception of the employee's address, telephone number and social security number. Any contractor who fails to submit a certified payroll or knowingly files a false certified payroll is guilty of a Class B misdemeanor.

INCREASED PENALTIES FOR PREVAILING WAGE VIOLATIONS (Public Act 94-0488)

Effective January 1, 2006, penalties for violations of the Prevailing Wage Act will increase from 20% to 50% of the underpaid amounts for second or subsequent violations. An additional penalty of 5% of the underpayment penalty must be paid to workers for each month the wages remain unpaid (up from the current 2% penalty).

For violations that occur after January 1, 2006, the debarment period --during which contractors are ineligible for public works contracts -increases from 2 years to 4 years if two notices of violation are issued/serious violations occur within a 5-year period. In addition, a new monetary penalty of $5,000 may be assessed against contractors who retaliate against employees who report violations or file complaints under the Prevailing Wage Act.

SUBSTANCE ABUSE PREVENTION ON PUBLIC WORKS PROJECTS ACT

The successful bidder must be in compliance with State of Illinois HB-1855 (Public Act095-0635), which amends the Prevailing Wage Act. Before an employer commences work on a public works project, the employer shall have in place a written program which meets or exceeds the program requirements in this Act, to be filed with the public body engaged in the construction of the public works and made available to the general public, for the prevention of substance abuse among its employees. The testing must be performed by a laboratory that is certified for Federal Workplace Drug Testing Programs by the Substance Abuse and Mental Health Service Administration of the U.S. Department of Health and Human Services.

PROCUREMENT OF GREEN PRODUCTS AND TECHNOLOGIES

As approved by the McHenry County Board in April 2008, it is in the interest of public health, safety and welfare and the conservation of energy and natural resources to use and promote environmentally responsible products. The County should strive to influence private purchases through the example of using government specifications and standards that are green or environmentally friendly when making its purchases.

Whenever available and cost-justified, the County should purchase those materials including the purchase of recycled products containing post-consumer materials rather than residual materials resulting from the processing or manufacturing from another product. To the extent practicable, all

products standards shall emphasize functional or performance criteria which do not discriminate against the use of recycled materials.

McHenry County should cooperate to the greatest extent feasible with other governments and organizations to develop a comprehensive, consistent and effective procurement effort intended to stimulate the market for recycled products, reusable products, products designed to be recycled, and other environmentally responsible products.

McHenry County shall continue to participate in and shall encourage other public jurisdictions to participate with the County in the purchase of products containing recycled content. Participation in such cooperative systems shall be aimed at obtaining maximum practical recycled content in County purchases, to obtain best available price for products with recycled content, to facilitate or encourage lower prices industry-wide and to encourage development of industries and markets dealing with recycled content products.

PROCUREMENT OF PRODUCTS THAT ARE ENERGY STAR QUALIFIED

McHenry County shall select, where life cycle and cost-effective, ENERGY STAR and other energy efficient products, when acquiring energy-using products. This information will be required by the bidder in their bid submittal.

SECURITY

The contractor represents and warrants to the County of McHenry that neither it nor any of its principals, shareholders, members, partners or affiliates, as applicable, is a person or entity named as a Specially Designated National and Blocked Person (as defined in Presidential Executive Order 13224) and that it is not acting, directly or indirectly, for or on behalf of a Specially Designated National and Blocked Person. The Contractor further represents and warrants to the County of McHenry that the Contractor and its principals, shareholders, members, partners, or affiliates, as applicable, are not directly or indirectly, engaged in, and are not facilitating, the transactions contemplated by this Agreement on behalf of any person or entity named as Specially Designated National and Blocked Person. The Contractor hereby agrees to defend, indemnify and hold harmless the County of McHenry, the Corporate Authorities, and all County of McHenry elected or appointed officials, officers, employees, agents, representatives, engineers and attorneys, from and against any and all claims, damages, losses, risks, liabilities, and expenses (including reasonable attorneys' fees and costs) arising from or related to any breach of the foregoing representation and warranties.

PURCHASE EXTENSION

This contract shall be offered for purchases to be made by other counties and governmental units within the State of Illinois as authorized by the Government Joint Purchasing Act. All purchases and payments made under this authority shall be made directly by the governmental unit to the Vendor. The County of McHenry shall not be responsible in any way for such purchase orders or payments. All terms and conditions of this contract shall apply to all orders placed by another governmental unit.

ADDENDUM

Should the Vendor require any additional information about this Bid, please fax to Purchasing (815-334-4680) any questions by the deadline as outlined in the schedule of events. ANY AND ALL changes to these specifications are valid only if they are included by Written Addendum to All Bidders. NO interpretation of the meaning of the plans, specifications, or other contract documents will be made orally. If required, all addenda will be faxed to bidder if a Notice of Intent to Bid has been completed and faxed to the Purchasing Office. In addition, all addenda are posted on the County of McHenry's website. Failure of the bidder to receive any such addendum or interpretation shall not relieve the bidder from obligation under this Bid as submitted. All addenda so issued shall

become part of the bid documents. Failure to request an interpretation constitutes a waiver to later claim that ambiguities or misunderstandings caused by a bidder to improperly submit a bid.

Response to these questions will be made by means of an addendum. Only the Director of Purchasing has the authority to issue an addendum.

Addenda are written instruments issued by the County prior to the date for receipt of proposals, which modify or interpret the Bid by addition, deletions, clarifications or corrections.

Prior to the receipt of bids, addenda will be faxed or delivered to all who are known to have received a Notice to Bid. Each vendor shall ascertain prior to submitting a bid that all addenda issued have been received and, by submission of a bid, such act shall be taken to mean that such vendor has received all addenda and that the vendor is familiar with the terms thereof and understands fully the contents of the addenda.

TAXES

The County of McHenry is exempt from paying Illinois Use Tax, Illinois Retailers Occupation Tax and Federal Excise Tax. The bidder's attention is directed to the McHenry County Purchasing Ordinance {S3-10, (9), (10), and (11)}.

INSURANCE

(1) GENERAL

The successful bidder shall maintain for the duration of the contract and any extensions thereof, at bidder's expense, insurance that includes "Occurrence" basis wording and is issued by a company or companies qualified to do business in the State of Illinois that are acceptable to the County, which generally requires that the company(ies) be assigned a Best's Rating of A or higher with a Best's financial size category of Class XIV or higher, in the following types and amounts:

(a) Commercial General Liability in a broad form, to include, but not limited to, coverage for the following where exposure exists: Bodily Injury and Property Damage, Premises/Operations, Independent contractors, Products/Completed Operations, Personal Injury and Contractual Liability; limits of liability not less than:

$1,000,000 per occurrence and $2,000,000 in the aggregate;

(b) Business Auto Liability to include, but not be limited to, coverage for the following where exposure exists: Owned Vehicles, Hired and Non-Owned Vehicles and Employee Non-Ownership; limits of liability not less than:

$1,000,000 per occurrence, combined single limit for:
Bodily Injury Liability and Property Damage Liability;

(c) Workers' Compensation Insurance to cover all employees and meet statutory limits in compliance with applicable state and federal laws. The coverage must also include Employer's Liability with minimum limits of $100,000 for each incident.

(2) EVIDENCE OF INSURANCE

The successful bidder agrees that with respect to the above required insurance that:

(a) The County of McHenry shall be provided with Certificates of Insurance evidencing the above required insurance, prior to commencement of the contract and thereafter with certificates evidencing renewals or replacements of said policies of insurance at least fifteen (15) days prior to the expiration or cancellation of any such policies;

(b) The contractual liability arising out of the contract shall be acknowledged on the Certificate of Insurance by the insurance company;

(c) The County of McHenry shall be provided with thirty (30) days prior notice, in writing, of Notice of Cancellation or material change and said notification requirement shall be stated on the Certificate of Insurance;

(d) Subcontractors, if any, comply with the same insurance requirements. In addition to being named as an additional insured on the Certificate of Insurance, each liability policy shall contain an endorsement naming the County of McHenry as an additional insured. A copy of the endorsement shall be provided to McHenry County along with the Certificate of Insurance; and

(e) have McHenry County named as an additional insured and the address for certificate holder must read exactly as:

County of McHenry, **a body politic**
2200 N. Seminary Avenue
Woodstock, IL 60098

(e) Insurance Notices and Certificates of Insurance shall be provided to:

McHenry County, Purchasing Department
2200 N. Seminary Avenue, Room 200
Woodstock, Illinois 60098

HOLD HARMLESS CLAUSE

The successful bidder will agree to indemnify, save harmless and defend the County of McHenry, its agents, servants, and employees, and each of them against and hold it and them harmless from any and all lawsuits, claims, demands, liabilities, losses and expenses, including court costs and attorney's fees, for or on account of any injury to any person, or any death at any time resulting from such injury, or any damage to property, which may arise or which may be alleged to have arisen out of or in connection with the work covered by this contract upon award. The foregoing indemnity shall apply except if such injury, death or damage is caused directly by the willful and wanton conduct of the County of McHenry, its agents, servants, or employees or any other person indemnified hereunder.

BID RESPONSE

It is highly recommended that the vendor completely read the bid prior to filling out to become acquainted with terms and conditions of the bid document and merchandise requirements. No relief will be allowed from the bid conditions unless you take written exception to that condition on your bid. **BIDS MUST BE SUBMITTED IN DUPLICATE FORM, (One Original, and One Copy). BIDS ARE DUE BACK BY 2:00 P.M. (CST) ON JULY 6, 2016.**

Bidders are urged to respond to this bid request in every case to insure being maintained on current bid lists. Explanations of the reasons for not bidding will assist in maintaining the bidder on the correct bid list(s).

SUBMITTAL

Submit one (1) bid, multiple bids will not be accepted.

GENERAL CONDITIONS

This bid shall be firm for at least 120 days after the latest time specified for submission for bids and thereafter until written notice is received from the bidder.

AWARD OF ORDER

The County will award a purchase order to the lowest responsive, responsible bidder meeting the County's requirements as listed in this document. The County will be the sole judge of acceptability of any products offered.

WORKMANSHIP

Items shall be manufactured according to the highest traditions of the industry and shall meet all commercial standards of quality. The County shall be the sole judge of acceptable products. Unacceptable products will be rejected and suitable price adjustments made.

MISCELLANEOUS

It is the bidder's task to be familiar with the referenced items and to offer only products of equal or greater quality. Any questions on specifications should be directed to the Purchasing Department.

EXCEPTIONS

The bid speaks for itself. Bidders taking exception to any terms, conditions or specifications of this bid must clearly state in writing such exception(s) either on or with their bid. The County will be the sole judge of the acceptability of any exception noted, and is not bound to consider any bid submitted with exceptions.

ALTERNATES

Trade names are used solely for the purpose of setting minimum standards of quality and performance and are not to be construed as exclusionary. Bidders are encouraged to contact the Purchasing Department prior to the bid opening for the purpose of clarifying specifications.

FULL PRICING AND CONTINGENCIES

The County shall hold the successful bidder to bid pricing. Additional charges for contingencies discovered by the vendor at any time after the date of opening of this bid will not be considered for payment by the County.

RECOURSE FOR UNSATISFACTORY MATERIALS

Payment shall be contingent upon the County's inspection of and satisfaction with completed work. Any defective work or materials, non-conformance to bid specifications, damaged materials, or unsatisfactory installation shall be corrected to the County's satisfaction by the successful bidder at no additional charge.

TERMINATION

Failure to comply with the terms and conditions as herein stated shall be cause for cancellation of the contract. The County will give written notice of unsatisfactory performance and the contractor will be allowed thirty (30) days to take corrective action and accomplish satisfactory control. If at the end of the thirty days, the County deems the contractor's performance still unsatisfactory, the contract shall be canceled. The exercise of its right of cancellations shall not limit the County's right to seek any other remedies allowed by law.

The successful bidder will agree that the resulting contract is made subject to available budgetary appropriations and shall not create any obligation on behalf of the County in excess of such appropriations. In the event that no funds or insufficient funds are appropriated and budgeted, this Contract shall terminate without penalty or expense to the County thirty (30) days after written notification of termination from the County.

The successful bidder will agree that pursuant to requirements imposed under Illinois law, the County shall have 120 days after each election of county board members to terminate this Agreement, without cause and without penalty.

CHOICE OF LAW AND VENUE

The bidder agrees that this bid has been executed and delivered in Illinois and that their relationship and any and all disputes, controversies or claims arising under this bid or any resulting contract shall be governed by the laws of the State of Illinois, without regard to conflicts of laws principles. The bidder further agrees that the exclusive venue for all such disputes shall be the Circuit Court of the 22nd Judicial Circuit of McHenry County, Illinois, and the bidder hereby consent to the personal jurisdiction thereof.

COMPLIANCE WITH LAWS

The bidder hereto covenants and agrees to comply with all applicable federal, state, and local laws, codes, ordinances, rules and regulations. Failure to comply with the terms of this provision shall constitute a breach of contract and permit the County to terminate this (Request for Sealed Proposal/Bid) in accordance with the termination provisions stated herein.

REJECTION OF BIDS, WAIVER OF IRREGULARITIES

McHenry County reserves the right to reject any or all bids, to waive irregularities, and to accept that bid which is considered to be in the best interest of the County. Any such decision shall be considered final.

PROTEST PROCEDURES

Any Bidder who believes contractual terms or specifications are unnecessarily restrictive or limit competition may submit a protest, in writing, to the Director of Purchasing. To be considered, the protest must be received by McHenry County five (5) days prior to the stated bid opening. Any adversely affected or aggrieved Bidder shall have ten (10) days from the date of the bid opening to file a written protest regarding the intent to award the bid. Protests submitted after that date will not be

accepted. Protests must specify the grounds upon which the protest is based (refer to appropriate statute, rule, code, or ordinance which defines the protest process).

BIDDER'S ATTACHMENT TO THE BID

Any attachment to this bid, as required by the bid conditions, or made at the bidder's option, must reference on their face the bid title, opening date, and time.

DELIVERY

Delivery will be considered in making the award and the bidders shall state, in the spaces provided, expected delivery after receipt of Purchase Order. Failure to meet said delivery promises without prior consent of the Director of Purchasing will be considered a breach of faith.

PERFORMANCE AND PAYMENT BOND:

A Performance and Payment Bond will be required by the accepted bidder as described below if the bid amount exceeds $50,000.00.

- Payment and Performance Bond shall be in the amount of 110% of the bid value. Any additional scope value during the project must be covered by the bonds.
- Obligee is County of McHenry, project owner for the Payment and Performance Bonds.
- Payment and Performance Bonds must be signed by an official of the bonding company and accompanied by the bonding agent's written Power of Attorney.
- Provide three (3) copies of each of the bonds and the Power of Attorney in order that one copy of each may be attached to each copy of the contract agreement. Bonds must be submitted to McHenry County within two (2) weeks of the notice of award, if start of construction is sooner, then bonds must be submitted a minimum of two (2) days prior.
- Date of Agreement and Payment and Performance Bonds shall be the same.
- Such Payment and Performance Bonds shall be issued by a surety listed on the Department of Treasury's listing as approved sureties (Department Circular 570) with an A.M. Best Rating of "A" or better which is licensed in the state of the location of the project and must be acceptable to the design-builder.

BID BOND:

Each separate bid shall be accompanied by a bid bond, certified check, or a cashier's check, drawn on a bank authorized to do business in Illinois, in a dollar amount of not less than five percent (5%) of the sum of the computed total amount of the bid or five hundred dollars ($500), whichever is greater.

FREIGHT

Freight is all inclusive unless otherwise stated.

FUEL SURCHARGE

The County of McHenry does NOT accept any fuel surcharges.

***** NOTE THIS BID REQUIRES PREVAILING WAGES. PLEASE VISIT THE IDOL WEBSITE FOR INSTRUCTIONS. IT IS THE RESPONSIBILITY OF THE AWARDED VENDOR TO SUBMIT CERTIFIED PAYROLLS TO THE COUNTY *****

SPECIFICATIONS

Please refer to the following Project Manual and Drawings:

Note: This Bid REQUIRES A BID and PERFORMANCE BOND.

PROJECT MANUAL

May 20, 2016

McHenry County Government

ETSB Office Relocation

at the
500 Russel Court Building
Woodstock, IL 60098

ARCHITECT

CBJ Architects P.C.

3521 Wintergreen Ter.
Algonquin, IL 60102

CONSULTING ENGINEER

RTM Engineering Consultants

3 Executive Ct., Unit 4
South Barrington, IL 60010

INDEX OF SECTIONS

DIVISION 2 - SITE CONSTRUCTION

DIVISION 3 - CONCRETE

DIVISION 6 - WOOD AND PLASTICS

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

DIVISION 8 - DOORS AND WINDOWS

DIVISION 9 - FINISHES

DIVISION 10 - SPECIALTIES

SECTION 00 4100 - BID FORM

NAME & ADDRESS OF COMPANY SUBMITTING BIDS:

Company: _____

Street Address: _____

P.O. Box: _____

City, State, Zip: _____

Contact Person: _____

Phone No.: _____

Fax No.: _____

Email Address: _____

For: McHenry County Government Center
500 Russel Court Projects

TO: McHenry County Purchasing Department- Suite 200
Woodstock , Illinois

SEALED BIDS DUE: ***Refer to McHenry Bid Document***
Public Bid Opening

Pursuant to and in compliance with the Invitation to Bid and the proposed contract documents entitled McHenry County Government 500 Russel Court Projects including Addenda _____, the undersigned, having become thoroughly familiar with the terms and conditions of the proposed contract documents and with local conditions affecting the performance and costs of the work at the place where the work is to be completed, having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the work within the period as described in the Preliminary Project Construction Schedule and in strict accordance with the proposed contract documents, including furnishing of any and all labor and materials, and to do all of the work required to construct and complete said work in accordance with the contract documents, for the following dollar amounts:

BID AND PERFORMANCE BOND: REQUIREMENTS AS PER THE MC HENRY COUNTY BID DOCUMENT

Provide an Itemized Bid Breakdown.

The total Bid Amount should equal the breakdown for the projects listed.

PROJECT #15-023: MCETSB Relocation

DEMOLITION: _____

METAL STUDS, DRYWALL AND INSULATION: _____

MILLWORK: _____

DOORS AND HARDWARE: _____

ACOUSTICAL CEILINGS: _____

FLOORING: _____

PAINTING: _____

HVAC: _____

PLUMBING: _____

ELECTRICAL/FIRE ALARM: _____

MISC. TRADES, LIST: _____

_____

_____

_____

OVERHEAD AND PROFIT: _____

GENERAL CONDITIONS: _____

TOTAL BID AMOUNT FOR PROJECT #15-023: _____

Note: The total itemized bid amounts shoul equal the Total Bid. Use an attached sheet if necessary.

ALTERNATES:

Voluntary Alternate No. 1: Sections_____ Add / Deduct_____

Description

_____

_____

_____

Voluntary Alternate No. 2: Sections_____ Add / Deduct_____

Description

_____

_____

_____

Voluntary Alternate No. 3: Sections_____ Add / Deduct_____

Description

_____

_____

_____

Voluntary Alternate No. 4: Sections_____ Add / Deduct_____

Description

_____

_____

_____

SUGGESTIONS FOR COST REDUCTIONS:

_____

_____

_____

_____

_____

SCHEDULE OF UNIT PRICES: (Refer to Section 01 2200 and applicable specification sections)

All "Unit Costs" must be filled out. No split cost will be accepted for adds vs. deducts. The same number will be used for both for any changes during the project.

SECTION		UNIT DESCRIPTION	UNIT PRICE
079005	Joint Sealers	Per L.F. of interior caulking	$_____
092116	Gypsum Board	Per S.F. of gypsum board finish taped	$_____
092116	Gypsum Board	Per S.F. of interior steel stud wall and gypsum board, taped two sides	$_____
092116	Gypsum Board	Per S.F. of Acoustical gypsum wallboard, no studs	$ _____
093000	Tile	Per S.F. of porcelain ceramic tile flooring installed	$_____
095100	Acoustical Ceilings	Per S.F. of Acoustical Ceiling Tile only (install new and remove old).	$ _____
096500	Resilient Flooring	Per S.F. of VCT installed	$_____
096500	Resilient Flooring	Per L.F. of vinyl base installed	$_____
096800	Carpet Tiles	Per S.Y. installed	$_____
099000	Paint and Coatings	Per S.F. of gypsum board painted as specified	$_____
16000	Electrical	Per 1" conduit drop w/ rough-in box, masonry or drywall wall for phone/data rough-in.	$_____

The bidder has reviewed the project insurance requirements set forth in these documents (section 002113). If awarded a subcontract for this Work, insurance will be provided as specified herein.

INITIAL HERE:_____

Incidental items not specifically mentioned in the project description shall be included in the schedule of unit prices and the lump sum bid price to ensure a complete project in accordance with and meeting the intent of the plans and specifications.

By signing, the Contractor understands that the Owner reserves the right to wave or reject any informalities or irregularities regarding received bids, but that the bid shall remain open and shall not be withdrawn for a period of ninety days from the date prescribed for its opening. If written notice of the acceptance of this bid is mailed or delivered to the undersigned within ninety days after the date set for the opening of this bid, or at any other time thereafter before it is withdrawn, the undersigned will execute and deliver the contract documents to Prime Hoffman LLC in accordance with this bid as accepted, and will also furnish and deliver to Prime Hoffman LLC proofs of insurance coverage, and bonds as indicated, all within five days after personal delivery or after deposit in the mails of the notification of acceptance of this bid.

Notice of acceptance, or request for additional information, will be addressed to the undersigned at the address set forth on page one of this bid form.

Signature: _____

Printed Name & Title: _____

Proposal Date: _____

Contact Person: _____

SECTION 01 1000

SUMMARY

PART 1 GENERAL

1.01 PROJECT

A. Project Name: McHenry County Government ETSB Office Renovations.

B. Owner's Name: McHenry County Government.

C. Architect's Name: CBJ Architects P.C..

D. The Project consists of the alteration of first floor interior spaces for the McHenry County Government ETSB department as it pertains to the design and remodeling of office and work spaces.

1.02 CONTRACT DESCRIPTION

A. Contract Type: A single prime contract based on a Stipulated Price as described on the Bid Form.

1.03 OWNER OCCUPANCY

A. McHenry County ETSB intends to occupy the Project upon Substantial Completion.

B. McHenry County Workforce Network Board intends to occupy adjacent areas during the construction of the project.

C. Cooperate with McHenry County to minimize conflict and to facilitate McHenry County's operations.

D. Schedule the Work to accommodate McHenry County ETSB and Workforce Network Board occupancy.

1.04 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: All use of site and Owner premises must be coordinated and approved the Owner.

B. Arrange use of site and premises to allow:
   1. McHenry County Workforce Network Board occupancy.
   2. Work by Others.

C. Provide access to and from site as required by law and by McHenry County: workers must enter from east door and park in the south east portion of the parking lot only unless directed differently by the Owner.

D. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.

E. Existing building spaces may not be used for storage. Follow security measures enforced by the Sheriff's Department.

F. Limit disruption of utility services to hours the building is unoccupied.

1.05 WORK SEQUENCE

A. Coordinate construction schedule and operations with CBJ Architects P.C.

1.06 SPECIFICATION SECTIONS APPLICABLE TO ALL CONTRACTS

A. This document identifies proposed Bid Categories. It is intended to clarify the scope of work to be included in each proposed Bid Category and is a part of the Contract Documents.

B. Unless otherwise noted, all provisions of the sections listed below apply to all subcontracts. Specific items of work listed under individual Bid Category descriptions constitute exceptions.
   1. Section 01 2000 (01200) - Price and Payment Procedures.

C. Bid Categories shall include all provisions of work indicated in the specifications sections listed within the Bid Section and shall apply to said category unless otherwise noted on the following pages.

D. Bid Categories shall include all keyed notes and items of work indicated on the drawings that are associated with the specification sections included in the bid category unless otherwise noted on the following pages.

1.07 PROPOSED BID CATEGORIES WITH INCLUDED ADDITIONAL ITEMS AND EXCLUSIONS ARE INDICATED ON THE FOLLOWING PAGES. Section 00410.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2000

PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Schedule of values.

B. Applications for Progress Payments

C. Modification procedures.

D. Application for final payment.

1.02 RELATED REQUIREMENTS

1.03 SCHEDULE OF VALUES

A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to CBJ Architects P.C. for approval.

B. Forms filled out by hand will not be accepted.

C. Submit a printed schedule on AIA G703 or equivalent. Contractor's standard form or electronic media printout will be considered.

D. Submit Schedule of Values at least 15 days before the first Application for Payment request.

E. Format and Content: Use AIA G703 or equivalent as the format for the Schedule of Values. Arrange the Schedule in the columns to indicate the following for each item:
   1. Column A: Chronological line numbering
   2. Column B: Description of Contract Work, broken down on each line for labor, materials, or phases of work (i.e. - Carpentry, Vinyl Base, Resilient Flooring).
   3. Column C: Schedule of Value, dollar amount of cost associated with description of work.
      a. Break down Contract Sum in enough detail to facilitate evaluation of Application for Payment.
      b. Break Contract amounts down into several line items.

F. Include within each line item, the amount of Allowances specified in this section.

G. Include within each line item, a direct proportional amount of Contractor's overhead and profit.

H. Revise schedule to list approved Change Orders, with each Application For Payment.

1.04 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Application Times: On or before the 30th day of each month the Contractor shall submit to CBJ Architects P.C., one copy of a payment request covering work completed during the preceding one-month period. Payment applications received after the cut-off date will be held until the following month. Each Application for Payment shall be consistent with previous applications and payments as certified by CBJ Architects P.C.

B. The following month, CBJ Architects P.C. will review the payment request, certify acceptable amounts, and submit an Application for Payment to the Owner on or about the 10th. Prior to release of monthly progress payments, all lien waivers, outstanding change orders, closeout materials and insurance must be in place.

C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to CBJ Architects P.C. for approval.

D. Forms filled out by hand will not be accepted.

E. Present required information in typewritten form.

F. Form: AIA G702, G703 Application and Certificate for Payment documents.

G. Execute certification by signature of authorized officer.

H. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored Products.

I. List each fully executed Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Contract Work.

J. Submit one copy of each Application for Payment.

1.05 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or Contractors of changes to the Contract Work.

B. For minor changes not involving an adjustment to the Contract Price or Contract Time, CBJ Architects P.C. will issue instructions directly to Contractor.

C. All contract adjustments must be executed in writing. Change order requests will only be processed for the following:
   1. It relates to a Construction Bulletin (CB) issued by CBJ Architects P.C.
   2. It relates to a Request for Pricing (RFP) issued by CBJ Architects P.C.
   3. It relates to an Extra Work Authorization (EWA) issued by CBJ Architects P.C.
   4. Prior to actual work being implemented, Contractor follows item F below.

D. Construction Bulletins: CBJ Architects P.C. may issue a document, instructing the Contractor to proceed with a change in the Contract Work, for subsequent inclusion in a Change Order.
   1. The document will describe changes in the Contract Work, and will designate method of determining any change in Contract Sum.
   2. Promptly execute the change in Work. Contractor to respond by the date indicated with a fixed price quotation. CBJ Architects P.C. will review the price quotation and notify Contractor accordingly.

E. Extra Work Authorizations: CBJ Architects P.C. may issue an Extra Work Authorization document, signed by the Field Project Manager or the McHenry County, instructing Contractor to proceed with a change in the Work, for subsequent review and approval for inclusion in a Change Order.
   1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
   2. Promptly execute the change.

F. Request for Pricing: CBJ Architects P.C. may issue a document which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation by date indicated.

G. The Contractor may propose a change by submitting a request for change to CBJ Architects P.C., describing the proposed change and its full effect on the Contract Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000 (01600).

H. Computation of Change in Contract Amount:
   1. For change requested by CBJ Architects P.C. for work falling under a fixed price contract, the amount will be based on Contractor's price quotation as approved by CBJ Architects P.C.
   2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by CBJ Architects P.C.
   3. For pre-determined unit prices and quantities, the amount will based on the fixed unit prices.

4. For change ordered by CBJ Architects P.C. without a quotation from the Contractor, the amount will be determined by CBJ Architects P.C. based on the Contractor's substantiation of costs as specified for Time and Material work. All work must be documented on CBJ Architects P.C. EWA form and signed by a representative of the General Contractor and CBJ Architects P.C.

I. Substantiation of Costs: Provide full information required for evaluation.
   1. On request, Contractor/Supplier shall provide following data:
      a. Quantities of products, labor, and equipment.
      b. Taxes, insurance, and bonds.
      c. Overhead and profit not to exceed 10% for work performed by Contractor, and 5% for Contracted work.
      d. Justification for any change in Contract Time.
      e. Credit for deletions from Contract, similarly documented.
   2. Support each claim for additional costs with additional information:
      a. Origin and date of claim.
      b. Dates and times work was performed, and by whom.
      c. Time records and wage rates paid.
      d. Invoices and receipts for products, equipment, and Contracts, similarly documented.
   3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Contract.

J. Execution of Change Orders: The General Contractor will issue Change Orders for signatures of parties as provided in the Contract on.

K. After execution of Change Order, Contractor shall promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.

L. Contractor shall promptly revise progress schedules with the Owner and CBJ Architects P.C. Field Project Manager to reflect any change in Contract Time, to allow for other items of work affected by the change.

M. Contractor shall promptly enter changes in Project Record Documents.

1.06 APPLICATION FOR FINAL PAYMENT

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

B. Application for Final Payment will not be considered until the following have been accomplished:
   1. All closeout procedures specified in Sections 017000 and 017800.
   2. Contractor compliance with Wage Determination Rates, if applicable.
   3. Consent of Surety to Final Payment, if applicable.
   4. Satisfaction of Contract Requirements for final payment.

END OF SECTION

Prime
SECTION 01 2200

UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section specifies administrative and procedural requirements for unit prices.

B. Measurement and payment criteria applicable to Contract Work performed under a unit price payment method.

C. Defect assessment and non-payment for rejected work.

1.02 COSTS INCLUDED

A. A unit price is an amount proposed by Bidders and stated on the Bid Form as a price per unit of measurement for materials or services, in place, that will be added to or deducted from the Contract Amount by Change Order if estimated quantities of Work required by Contract Documents are increased or decreased.

B. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Contract Work; overhead and profit.

1.03 UNIT QUANTITIES SPECIFIED

A. Quantities indicated in the Bid Form are for bidding and Contract purposes only. Quantities and measurements of actual Contract Work will determine the payment amount.

1.04 MEASUREMENT OF QUANTITIES

A. Take all measurements and compute quantities. Measurements and quantities will be verified by CBJ Architects P.C.

B. The Owner and CBJ Architects P.C. reserve the right to reject the Contractor's measurement of Work-in place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

C. Assist by providing necessary equipment, workers, and survey personnel as required.

D. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.

E. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.

F. Measurement by Area: Measured by square dimension using mean length and width or radius.

G. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.

H. Stipulated Sum/Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work in place.

1.05 PAYMENT

A. Payment for Contract Work governed by unit prices will be made on the basis of the actual measurements and quantities of Contract Work which is incorporated in or made necessary by the Contract Work and accepted by the CBJ Architects P.C., multiplied by the unit sum/price.

B. Payment will not be made for any of the following:
   1. Products wasted or disposed of in a manner that is not acceptable.
   2. Products determined as unacceptable before or after placement.
   3. Products not completely unloaded from the transporting vehicle.

4. Products placed beyond the lines and levels of the required Contract Work.
5. Products remaining on hand after completion of the Contract Work.
6. Loading, hauling, and disposing of rejected Products.

1.06 DEFECT ASSESSMENT

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

B. If, in the opinion of CBJ Architects P.C., it is not practical to remove and replace the Contract Work, CBJ Architects P.C. will direct one of the following remedies:
   1. The defective Contract Work may remain, but the unit sum/price will be adjusted to a new unit price at the discretion of CBJ Architects P.C.
   2. The defective Contract Work will be partially repaired to the instructions of CBJ Architects P.C., and the unit sum/price will be adjusted to a new unit price at the discretion of CBJ Architects P.C..

C. The authority of CBJ Architects P.C. to assess the defect and identify payment adjustment is final.

END OF SECTION

SECTION 01 2300

ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Alternate submission procedures.

B. Documentation of changes to Contract Price and Contract Time.

1.02 RELATED REQUIREMENTS

A. McHenry County Purchasing Document, Bid form, qualifications of bidder.

1.03 ACCEPTANCE OF ALTERNATES

A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at the Owner's option. Accepted alternates will be identified in the Agreement.

B. Coordinate related work and modify surrounding work to integrate the Work of each alternate.

C. Immediately following Contract award, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for consideration at a later date. Include a complete description of negotiated modifications to alternates.

D. A schedule of Alternates follows. Affected contracts or purchase orders, referenced in the listing contain requirements for materials and methods necessary to achieve the Work described under each alternate.

E. Alternates may be used to calculate total bid for the project. Based on discussions and direction with McHenry County the final bid total may be cumulative of the base bid and any selected alternates.

F. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the alternate.

END OF SECTION

SECTION 01 3000

ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preconstruction meeting.

B. Progress meetings.

C. Construction progress schedule.

D. Submittals for review, information, and project closeout.

E. Number of copies of submittals.

F. Submittal procedures.

G. Action Approval

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary.

B. Section 01 3216 - Construction Progress Schedule: Includes phasing of construction.

C. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.

D. Section 01 7800 - Closeout Submittals: Project record documents.

1.03 PROJECT COORDINATION

A. General Contractor: Office Procedures: Project Manager: Field Superintendent: Field Project Manager.

B. Cooperate with McHenry County in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.

C. During construction, coordinate use of site and facilities through McHenry County.

D. Comply with CBJ Architects P.C. and McHenry County's procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

E. Comply with instructions of McHenry County for use of temporary utilities and construction facilities.

F. The General Contractor shall coordinate field engineering and layout work.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

1. NOT USED

3.02 PROGRESS MEETINGS

A. The General Contractor will schedule and administer meetings throughout progress of the Work at bi-weekly intervals.

B. The General Contractor will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.

C. Attendance Required: Field Project Manager, major on site Contractors and suppliers, McHenry County, MCETSB, CBJ Architects P.C., as appropriate to agenda topics for each meeting.

D. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress during succeeding work period.
   10. Maintenance of quality and work standards.
   11. Effect of proposed changes on progress schedule and coordination.
   12. Security Issues/Concerns
   13. Other business relating to Work.

E. Representative of each firm attending must have authority to bind company for decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE - See Section 01 3216

3.04 SUBMITTALS FOR REVIEW

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

B. Submit to CBJ Architects P.C. for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed only for aesthetics, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES per section 01 6000. Article below and for record documents purposes described in Section 01 7800 - CLOSEOUT SUBMITTALS.

3.05 SUBMITTALS FOR INFORMATION

A. When the following are specified in individual sections, submit them for information:
   1. Design data.
   2. Certificates.

3. Test reports.

4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types indicated.

B. Submit for CBJ Architects P.C.'s knowledge as contract administrator or for McHenry County. No action will be taken.

3.06 SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:
   1. Project record documents.
   2. Operation and maintenance data.
   3. Warranties.
   4. Other documents as may be required by the Contract documents.

B. Submit to CBJ Architects P.C. for the McHenry County's benefit during and after project completion.

3.07 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review:
   1. Small Size Sheets, Not Larger than 8-1/2 x 11 inches: Submit in PDF electronic format.
   2. Larger Sheets, Not Larger than 30 x 42 inches: Submit in PDF electronic format.

B. Documents for Information: Submit in PDF electronic format.

C. Documents for Project Closeout: Submit in PDF electronic format..

D. Samples: Submit the number specified in individual specification sections; one of which will be retained by CBJ Architects P.C.
   1. Clearly label each sample stating; material, type, color, thickness, size, specification section number, and CBJ Architects P.C. project number.
   2. Retained samples will not be returned to Contractor unless specifically stated.

3.08 SUBMITTAL PROCEDURES

A. Transmit each submittal with Contractors cover letter of transmittal.

B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.

C. Identify CBJ Architects P.C. Project Number, Contractor, Contractor or supplier; and specification section number, as appropriate on each copy.

D. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Contract Work and Contract Documents.

E. Deliver submittals to CBJ Architects P.C. at business address.

F. Deliver submittals to CBJ Architects P.C. no later than fifteen (15) working days after Contract award, if not required earlier.

G. Schedule submittals to expedite the Project, and coordinate submission of related items.

H. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.

I. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Contract Work.

J. Provide space for Contractor review stamp.

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

L. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

M. Submittals not requested will not be recognized or processed.

3.09 APPROVAL ACTION

A. Action of any kind by Design-Builder is only for conformance with the design concept of the work and with the information given in the Contract Documents. This action shall not relieve the Contract or of responsibility for errors, omissions or any deviation from the requirements of the Contract Documents. The Contractor shall be responsible for verifying and correlating all quantities and dimensions, selecting fabrication process or techniques of assembly and performing his work in a safe and satisfactory manner.

B. APPROVED; indicates that the shop drawings were reviewed and found to be in conformance with the design concept and the Contract Documents, and that the Contractor may proceed with fabrication and/or installation of the work detailed on the drawing. No shop drawing or work shown thereon will be considered released for construction until it has CBJ Architects P.C. approval.

C. APPROVED AS NOTED; indicates that the shop drawings were reviewed and found not in conformance with design concept and the Contract Documents; required corrections have been so noted on the drawing. Shop drawings marked "Approved as Noted" give authority to proceed in accordance with notes; corrected copies may be requested by CBJ Architects P.C. for final approval only if the mark-up was extensive.

D. NOT APPROVED - RESUBMIT; indicates that the shop drawings were reviewed and found to be in substantial disagreement with the design concept and the Contract Documents; drawings so stamped shall be resubmitted for CBJ Architects P.C. approval before any work shown thereon may be started.

E. SUPPLEMENTAL REFERENCE; indicates that shop drawings provide information that is incidental to design concept and the Contract Documents; Contractor may proceed at his discretion.

END OF SECTION

SECTION 01 3216

CONSTRUCTION PROGRESS SCHEDULE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Review and Evaluation of Schedule.

B. Distribution of Schedule.

1.02 RELATED SECTIONS

A. Section 01100 - Summary

1.03 SUBMITTALS

1.04 SCHEDULE FORMAT

A. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.

B. Diagram Sheet Size: 30 x 42 inches or width required. Submit in PDF electronic format.

C. Sheet Size: Multiples of 8-1/2 x 11 inches. Submit in PDF electronic format.

PART 2 PRODUCTS

2.01 SCHEDULE SOFTWARE COMPATABILITY

A. Required; Microsoft Project

PART 3 EXECUTION

3.01 PRELIMINARY MILESTONE SCHEDULE

A. REFER TO MC HENRY COUNTY BID DOCUMENT

3.02 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Identify each item by specification section number.

C. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.

D. Provide legend for symbols and abbreviations used.

3.03 BAR CHARTS

A. Identify the first work day of each week.

3.04 UPDATING SCHEDULE

A. Maintain schedules to record actual start and finish dates of completed activities.

B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

C. Update diagrams to graphically depict current status of Contract Work.

D. Identify activities modified since previous submittal, major changes in Contract Work, and other identifiable changes.

E. Indicate changes required to maintain Date of Substantial Completion.

F. Submit reports required to support recommended changes.

3.05 DISTRIBUTION OF SCHEDULE

A. The General Contractor shall distribute updated project schedules at bi-weekly project meetings.

B. Recipients shall promptly report, in writing, problems anticipated by projections shown in schedules.

END OF SECTION

SECTION 01 3553

SECURITY PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Security measures including formal security program, entry control, and personnel identification.

B. All contractor's personnel will be subject to a back ground check by McHenry County Sheriff's Department. Any individuals identified as not acceptable to the Sheriff's Department will not be allowed as part of this project.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: use of premises and occupancy.

1.03 SECURITY PROGRAM

A. No watchmen will be provided by Owner.

B. All personnel that passes the back ground check will be required to wear a County Issued badge while working on premises.

C. All personnel, vehicles and storage trailers in or around the facility must be identified, reviewed and recorded as needed by the governing security detail according to location of the building being occupied.

D. Each contractor shall be responsible for its work, materials, tools, equipment, or other items stored at the site and its forces.

E. If damage occurs to any of the foregoing during construction, each contractor shall repair or replace the same without cost to the Owner.

F. Each contractor is responsible for securing offices and storage trailers.

G. Coordination of required security measures strongly recommended to be reviewed as early in the project as possible as not to delay the start of construction.

1.04 ENTRY CONTROL

A. Restrict entrance of persons and vehicles into Project site and existing facilities.

B. Entry only to authorized persons with proper identification.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 3600

SAFETY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General Contractor responsibilities.

B. Subcontractor responsibilities.

C. Owner responsibilities.

1.02 RELATED DOCUMENTS

A. AIA A401 - Standard Form of Agreement Between Contractor and Subcontractor.

1.03 GENERAL CONTRACTOR RESPONSIBILITIES

A. General Contractor responsibilities are listed in:
   1. AIA A401 - Standard Form of Agreement Between Contractor and Subcontractor.

B. General Contractor will also:
   1. Remind subcontractors, suppliers and owners of safety regulations associated with any activity, with the activity participants, and others working on the site.
   2. Observe project activities of the subcontractors, suppliers, or Owners, and make them aware of safety violations. Follow-up on immediate corrective actions needed by those parties.
   3. Require designation of proper competent person(s) for activities requiring such designation, prior to commencement of the activity. This includes but is not limited to; excavation, scaffold erection, steel erection, stairways and ladders.
   4. Require a copy of written certification of equipment operators on site, from the subcontractor or supplier, prior to equipment operation on the site. This includes but is not limited to; lift trucks, forklifts and man lifts (platform or boom).
   5. Have the authority to stop the unsafe activity of anyone on the site.

1.04 SUBCONTRACTOR RESPONSIBILITIES

A. The subcontractors responsibilities are listed in:
   1. AIA A401 - Standard Form of Agreement Between Contractor and Subcontractor.

B. The subcontractor will also:
   1. Provide the listed responsibilities to their on-site supervisory staff including but not limited to Foremen, superintendents, etc.
   2. Provide a designated competent person for required activities, including but not limited to: excavation, scaffold erection, steel erection, stairways and ladders.
   3. Provide written certification for all persons operating equipment, that require certification, prior to operation of that equipment at the site.
   4. Attend and participate at weekly site coordination meetings scheduled by the General Contractor Field Project Manager, communicate any project related safety issues for resolution.
   5. Will make timely efforts to resolve safety issues raised by the General Contractor, the Owner, and other Subcontractors.

1.05 OWNER RESPONSIBILITIES

A. The Owner's responsibilities are listed in:
   1. AIA A401 - Standard Form of Agreement Between Contractor and Subcontractor.
   2. AIA B141 Part 1 & 2 Standard Form of Agreement Between Owner and Architect.
   3. AIA A101 Standard Form of Agreement Between Owner and Contractor.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 4000

QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. References and standards.

B. Quality assurance submittals.

C. Mock-ups.

D. Control of installation.

E. Tolerances.

F. Testing and inspection services.

G. Manufacturers' field services.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittal procedures.

B. Section 01 6000 - Product Requirements: Requirements for material and product quality.

1.03 REFERENCE STANDARDS

A. ASTM C 1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation.

B. ASTM E 329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing.

1.04 SUBMITTALS

A. Testing Agency Qualifications:
   1. Prior to start of Contract Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.

B. Design Data: Submit for CBJ Architects P.C.'s knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for McHenry County's information.

C. Test Reports: After each test/inspection, promptly submit two copies of report to CBJ Architects P.C. and to the Owner.
   1. Include as a minimum the following:
      a. CBJ Architects P.C. project number.
      b. Date issued.
      c. Project title and number.
      d. Name of inspector.
      e. Date and time of sampling or inspection.
      f. Identification of product and specifications section.
      g. Location in the Project.
      h. Type of test/inspection.
      i. Date of test/inspection.
      j. Results of test/inspection.
      k. Conformance with Contract Documents.
      l. When requested by CBJ Architects P.C., provide interpretation of results.

D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to CBJ Architects P.C., in quantities specified for Product Data.

1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
2. Certificates may be recent or previous test results on material or product, but must be acceptable to CBJ Architects P.C..

E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the McHenry County's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

F. Manufacturer's Field Reports: Submit reports for CBJ Architects P.C.'s benefit as contract administrator or for McHenry County.
1. Submit report in duplicate within 20 days of observation to CBJ Architects P.C. for information.
2. Submit information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

G. Erection Drawings: Submit drawings for CBJ Architects P.C.'s benefit as contract administrator or for McHenry County.
1. Submit information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

1.05 DEFINITIONS

A. Specifications are in 3-part CSI Master Format

B. Contractor shall be defined as contractor, Subcontractor, sub-Subcontractor, or material supplier.

C. Contract shall be defined as contract, subcontract or purchase order.

D. Omitted phrases such as **The Contractor Shall**, **In Conformity With**, **As Noted On The Drawings, In Accordance With The Plans, An, And, The, All** are intentional for clarification and shall be included by inference with same.

1.06 TESTING AND INSPECTION AGENCIES

A. General Contractor will employ and pay for services of an independent testing agency to perform specified testing where noted in individual sections.

B. As indicated in individual specification sections, McHenry County or Contractor shall employ and pay for services of an independent testing agency to perform specified testing.

C. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

D. General Contractor Employed Agency:
1. Contractor Employed Agency:
2. Laboratory: Authorized to operate in State in which Project is located.
3. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
4. Testing Equipment: Calibrated at reasonable intervals either by NIST or using an NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

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

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

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

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

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

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

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

3.02 MOCK-UPS

A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Accepted mock-ups shall be a comparison standard for the remaining Work.

D. Where mock-up has been accepted by CBJ Architects P.C. and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.03 TOLERANCES

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

B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from CBJ Architects P.C. before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

A. See individual specification sections for testing required.

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

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

D. Contractor Responsibilities:
   1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.

2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
3. Provide incidental labor and facilities:
   a. To provide access to Work to be tested/inspected.
   b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
   c. To facilitate tests/inspections.
   d. To provide storage and curing of test samples.
4. Notify CBJ Architects P.C. and laboratory 24-48 hours prior to expected time for operations requiring testing/inspection services.
5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
6. Arrange with McHenry County's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by CBJ Architects P.C..

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

G. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by CBJ Architects P.C.. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Price, plus the time spent by CBJ Architects P.C. representatives. $120 per hour will be charged.

3.05 MANUFACTURERS' FIELD SERVICES

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

B. Submit qualifications of observer to CBJ Architects P.C. 30 days in advance of required observations.
   1. Observer subject to approval of CBJ Architects P.C..

C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

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

B. If, in the opinion of CBJ Architects P.C., it is not practical to remove and replace the Work, CBJ Architects P.C. will direct an appropriate remedy or negotiate/ adjust payment.

END OF SECTION

SECTION 01 5000

TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary telecommunications services.

B. Temporary telephone service.

C. Temporary sanitary facilities.

D. Temporary Controls: Barriers, enclosures, and fencing.

E. Security requirements.

F. Waste removal facilities and services.

G. Fire Protection.

H. Project identification sign.

I. Field offices.

1.02 RELATED REQUIREMENTS

A. Section 01 5100 - Temporary Utilities.

B. Section 01 5500 - Vehicular Access and Parking.

C. Section 01 3553 - Security Procedures.

1.03 TELECOMMUNICATIONS SERVICES

A. Each Contractor shall provide, maintain, and pay for telephone service to contractor's field office at time of project mobilization if required.

B. Long distance calls charged to General Contractor monthly billing will be charged to appropriate Contractor at the minimum rate of $1.00 per phone call plus long distance charges.

1.04 TEMPORARY SANITARY FACILITIES

A. General Contractor to provide and maintain on site chemical toilet facilities and enclosures in compliance with OSHA regulations. This shall be provided at time of project mobilization.

B. Use of existing facilities is not permitted.

C. New permanent facilities may not be used during construction operations.

D. All Contractors shall maintain the temporary facilities in a clean and sanitary condition.

E. At end of construction, return facilities to same or better condition as originally found.

1.05 PROTECTION

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

B. Each Contractor shall comply with all Applicable Standards, including but not limited to the following:
   1. Provide barricades separating work areas from occupied areas within the existing building.
   2. General Orders and Regulations on Safety in Construction (State of Illinois Department of Industry, Labor and Human Relations Commission).
   3. OSHA Regulations
   4. Other applicable, city, state, and federal ordinances.

5. Provide as required by the Owner, and Safety Compliance Agencies fences, planking, guard lights, barricades, warning signs, and guard for protection, and such other devices, equipment, or material as is necessary to comply with applicable regulations.
6. Protection of sidewalks, curbs, streets, drives and existing construction.

C. Provide protection for plants designated to remain. Replace damaged plantings and grass.

D. Contractors Performing Excavation Work:
1. Provide proper bracing and shoring for utilities, sewers, etc.
2. Protect same from collapse or other damage until removed, incorporated into Work, or properly backfilled.

E. Landscaping and walks:
1. Protect trees, shrubs, lawns, landscape areas from damage.
2. Provide planking over walks and drives to prevent damage.
3. Such protection includes entire site.

F. Weather Protection:
1. Each Contractor shall protect against rain, wind, snow, ice, storms, or heat.
2. Maintain work, materials, apparatus, and fixtures free from damage.
3. Cover work at days and weeks end that may sustain damage.
4. Remove snow and ice as necessary for safe and proper execution of work.

G. Water Protection; protect at all times from:
1. Rainwater.
2. Groundwater.
3. Backed up drains and sewers.
4. Other water.

H. Dust Protection:
1. Each Contractor will be responsible for all costs associated with building clean-up due to omission of appropriate dust protection for their work.

I. Each Contractor to Protect:
1. Own work.
2. Previously completed work of other trades.
3. Responsibility for compliance with all applicable statutes, regulations, orders, or standards remains with the Contractor provided that if General Contractor LLC directs Contractor to remedy or correct a hazardous condition, Contractor will immediately undertake appropriate remedial or corrective action and General Contractor LLC shall have no liability therefore, as a result of such discovery, such directive, or otherwise.

J. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.06 FENCING

A. Construction: Commercial grade chain link fence.

1.07 EXTERIOR ENCLOSURES

A. Contractor is responsible to provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.08 INTERIOR ENCLOSURES

A. The General contractor shall provide temporary partitions and ceilings as required to separate work areas from McHenry County occupied areas, to prevent penetration of dust and moisture into McHenry County-occupied areas, and to prevent damage to existing materials and equipment.
a. A temporary wall shall be erected between the new office space for MCETSB and the existing office space for the Workforce Network group.

B. Temporary Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:
   1. Maximum flame spread rating of 75 in accordance with ASTM E 84.

C. The General Contractor will be responsible for all costs associated with building clean-up due to omission of appropriate dust protection for their work.

1.09 SECURITY

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

1.10 CLEANING AND WASTE REMOVAL

A. General Contractor Responsibilities:
   1. Will provide waste removal facilities required to maintain the site in clean and orderly condition for general clean up only.
   2. Excess or unusual disposal of debris in dumpsters including excess concrete, masonry brick or block, wooden pallets, or hazardous materials is not allowed and must be removed by contractor.
   3. Final cleaning of building including final sweeping, vacuuming and washing of glass.

B. Contractor Responsibilities:
   1. Must follow requirements of McHenry County Sheriff's Department and Department of Corrections.
   2. Compact or flatten all bulk material prior to placement in dumpsters. Contractors are responsible for disposing recyclable materials appropriately in the dumpsters provided.
   3. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids. Closed chutes and containers shall be provided by Contractor requiring such usage.
   4. Keep all areas of site and around dumpsters clear of rubbish material.
   5. Cleanup of all scraps, debris, and rubbish on a daily basis and place in a dumpster located at grade level.
   6. Prevent accumulation of debris or other materials which could cause a hazard.
   7. Cleanup every afternoon.
   8. Final cleaning of all fixtures and equipment by installing contractor prior to final acceptance and final payment. See note number 2.
   9. Rubble or demolition debris shall be disposed in separate dumpsters provided by contractor at contractor’s expense.
   10. Burning of debris is not permitted.
   11. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction

1.11 FIRE PROTECTION

A. No smoking will be allowed within new construction.

B. General Contractor will provide the following:
   1. One (1) - 10# A,B,C dry chemical fire extinguisher in each area of building as required.

C. Each contractor shall provide the following:
   1. One (1) - 10# A,B,C dry chemical fire extinguisher in each trailer or shed.
   2. Suitable fire protection for open flame sources of construction work.
   3. Fire watch as necessary.

1.12 PROJECT SIGNS

A. None required.

1.13 FIELD OFFICES

A. General Contractor will not have an office within the building.

B. Contractors to provide own as required and approved by the Owner.

C. Locate office and storage trailers where directed by Owner; relocate as necessary.

1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

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

B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.

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

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

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5100

TEMPORARY UTILITIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary Utilities: Electricity, lighting, heat, ventilation, and water.

B. Removal of Utilities, Facilities, and Controls.

1.02 RELATED REQUIREMENTS

A. Section 01 5000 - Temporary Facilities and Controls: Telephone service for administrative purposes

1.03 TEMPORARY ELECTRICITY

A. General Contractor will arrange for temporary electrical service connection on site.

B. Electrical Connections:
   1. Electrical Contractor to provide new or good distribution centers.
   2. Electrical Contractor shall provide main service disconnect and over-current protection at convenient location and meter.
   3. Electrical Contractor shall extend temporary electrical lines from the temporary service connection to a conveniently located distribution center within the new construction as directed by General Contractor. Remove same when required.
   4. Electrical contractor to provide power centers of not less than (4) 20 amp, 120 volt circuits located so any desired point power usage is accessible with a 100" extension cord. Complete with necessary ground fault protection and system grounding.
   5. Each contractor to provide own extension cords.

C. Larger Power Requirements:
   1. Contractors with equipment over 1hp, welders, or 3-phase equipment shall provide own power or connections (contractor responsibility).

D. Special Requirements:
   1. All temporary installations shall meet current applicable codes and OSHA standards.
   2. Electrical contractor's insurance to cover liability for temporary service connections.
   3. All contractors shall conform to OSHA Ground Fault Protection on Construction Sites Guidelines and the Assured Equipment Grounding Program.

E. Energy Conservation:
   1. Waste of electrical power will be noted to contractors. After first warning, all electrical service costs will be charged to contractors wasting electrical power.

1.04 PERMANENT ELECTRICITY

A. Electrical contractor shall check all motors for rotation, voltages, etc, and shall be responsible for proper connections when permanent power is operational.

B. Electrical contractor shall maintain same in proper operation until final completion of the project.

C. After substantial completion:
   1. Permanent receptacles and lighting may be used to complete construction.
   2. Electrical contractor shall maintain all lighting and replace lamps.
   3. Use of system does not shorten length of warranty/guarantee period.

1.05 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

A. Electrical Contractor will provide and maintain incandescent lighting for construction operations in all portions of the building under construction.
   1. Provide lighting to achieve a minimum 10 foot candles in work areas of construction.
   2. Maintain lighting and provide routine repairs.

B. Electrical Contractor shall provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

C. Permanent building lighting may be utilized during construction as noted.

1.06 TEMPORARY HEATING

A. All temporary heat required for cold weather protection and temporary enclosures before the building or portions thereof are properly or permanently enclosed, shall be provided and paid for by the Contractor or Subcontractor requiring heat.

B. Minimum ambient temperature of 50 degrees F in areas where construction is in progress will be maintained, unless indicated otherwise in specifications.

C. Permanent equipment will be used for temporary heat and ventilation during construction, when available.

D. Prior to operation of permanent equipment for temporary heating purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Installing contractor is to provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts. The warranty of the work and permanent equipment will not start until General Contractor determines the project to be substantially complete.

E. Utility costs will be paid by McHenry County. Wasteful practices will be noted by General Contractor, and appropriate contractor(s) will be charged for excessive energy usage.

1.07 TEMPORARY COOLING

A. Cost of Energy: By McHenry County.

B. General Contractor to provide cooling devices and cooling as needed to maintain specified conditions for construction operations, if the new or existing facilities are not equipped with or do not allow use of existing cooling equipment.

C. Maximum ambient temperature of 80 degrees F in areas where construction is in progress will be maintained, unless indicated otherwise in specifications.

D. Prior to operation of permanent equipment for temporary cooling purposes, verify that installation is approved for operation, equipment is lubricated and filters are in place. Installing contractor is to provide and pay for operation, maintenance, and regular replacement of filters and worn or consumed parts. The warranty of the work and permanent equipment will not start until General Contractor determines the project to be substantially complete.

1.08 TEMPORARY VENTILATION

A. Existing ventilation equipment may be used under conditions described for heating/cooling above.

1.09 TEMPORARY WATER SERVICE

A. Cost of Water Used: By McHenry County.

B. Connections:
   1. Plumbing contractor will provide and maintain suitable quality water service for construction operations at time of project mobilization.
   2. Connect to existing water source or new service when available.
   3. Plumbing Contractor to provide temporary gate valve and 3/4" hose bib at main located conveniently for all Contractors or as directed by General Contractor.
   4. Each Contractor to provide hoses and connections as necessary.
   5. Exercise measures to conserve water. Any wasteful practices will be charged against Contractors at discretion of the Owner.
   6. Plumbing Contractor shall remove temporary service upon completion of project.
   7. Each Contractor shall provide own water prior to installation of temporary water source.

. Drinking Water:
   1. Contractors shall provide adequate drinking water for own personnel.

1.10 REMOVAL OF UTILITIES, FACILITIES, AND CONTROL

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

B. Remove underground installation to a minimum depth of 2 feet. Grade site as indicated.

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

D. Restore existing and permanent facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5300

TEMPORARY CONSTRUCTION AND AIDS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Temporary ladders and ramps.

B. Hoists and cranes.

C. Scaffolding and platforms.

1.02 RELATED SECTIONS

A. Section 01 5000 - Temporary Facilities and Controls.

1.03 TEMPORARY CONSTRUCTION

A. Each contractor shall provide and maintain, as required for their Work and in compliance with applicable safety codes and regulations the following:
   1. Ladders, secured as required. No aluminum ladders are allowed.
   2. Ramps.
   3. Chutes and runways.
   4. Barricades and fencing.
   5. Security.
   6. Other items as required for proper installation of Work.

1.04 HOISTING

A. The Owner will not provide material or personnel hoisting equipment.

B. Each contractor to provide cranes, lifts, pumps, etc. as required to perform work.

C. Passenger elevator will not be used for material or personnel hoisting at any time during construction.

1.05 SCAFFOLDING AND PLATFORMS

A. The Owner will not provide any scaffolding or work platforms.

B. Each contractor shall provide and maintain, as required for their Work and in compliance with applicable safety codes and regulations the following:
   1. Scaffolding or scaffolding towers.
   2. Work platforms of any kind.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5500

VEHICULAR ACCESS AND PARKING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Access roads.

B. Parking.

C. Existing pavements and parking areas.

D. Permanent pavements and parking facilities.

E. Construction parking controls.

F. Flag persons.

G. Flares and lights.

H. Haul routes.

I. Maintenance.

J. Removal, repair.

K. Mud from site vehicles.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: access to site and occupancy.

PART 2 PRODUCTS

2.01 SIGNS, SIGNALS, AND DEVICES

A. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.

B. Flag Person Equipment: As required by local jurisdictions.

PART 3 EXECUTION

3.01 PREPARATION

A. Excavation Contractor to clear areas, provide surface and storm drainage of road, parking, area premises, and adjacent areas.

3.02 ACCESS ROADS

A. Maintain access to fire hydrants and control valves free of obstructions.

3.03 PARKING

A. Use of designated areas of existing parking facilities by construction personnel is permitted.

B. Do not allow heavy vehicles or construction equipment in parking areas.

C. If during construction it becomes necessary to move materials, trailers, or sheds, it will be the responsibility of the contractor affected at no cost to the Owner.

3.04 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Owner's operations.

B. Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.

C. Prevent parking on or adjacent to access roads or in non-designated areas.

3.05 FLAG PERSONS

A. Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

3.06 FLARES AND LIGHTS

A. Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

3.07 HAUL ROUTES

A. Consult with authority having jurisdiction, establish public thoroughfares to be used for haul routes and site access.

B. Confine construction traffic to designated haul routes.

C. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.

3.08 TRAFFIC SIGNS AND SIGNALS

A. At approaches to site and on site, install at crossroads, detours, parking areas, and elsewhere as needed to direct construction and affected public traffic.

B. Relocate as Work progresses, to maintain effective traffic control.

3.09 MAINTENANCE

A. Each contractor shall maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, Products, mud, snow, and ice.

B. Each contractor shall maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

C. If responsibility cannot be fixed, costs will be pro-rated to all contractors on site.

D. The Owner will not be responsible for payment of damaged items.

3.10 REMOVAL, REPAIR

A. Repair existing facilities damaged by use, to original condition.

B. Remove equipment and devices when no longer required.

C. Repair damage caused by installation.

D. Remove post settings to a depth of 2 feet.

3.11 MUD FROM SITE VEHICLES

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

B. Clean up public streets of excess mud and debris by the contractor shall be completed to the satisfaction of the local governing authority.

C. Lack of cleaning will result in back charges to the appropriate contractor for the men and machinery deemed necessary by the Owner to clean the debris.

END OF SECTION

SECTION 01 5721

INDOOR AIR QUALITY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Construction procedures to promote adequate indoor air quality after construction.

1.02 PROJECT GOALS

A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
   1. Cleaning of ductwork is not contemplated under this Contract.
   2. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.

B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
   1. Furnish products meeting the specifications.
   2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

1.03 DEFINITIONS

A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.

B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as specified.

C. Particulates: Dust, dirt, and other airborne solid matter.

D. Wet Work: Concrete, plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

PART 3 EXECUTION

2.01 CONSTRUCTION PROCEDURES

A. Prevent the absorption of moisture and humidity by adsorptive materials by:
   1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
   2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
   3. Provide sufficient ventilation for drying within reasonable time frame.

B. Begin construction ventilation when building is substantially enclosed.

C. Do not store construction materials or waste in mechanical or electrical rooms.

D. Prior to use of return air ductwork without intake filters clean up and remove dust and debris generated by construction activities.
   1. Inspect duct intakes, return air grilles, and terminal units for dust.
   2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduit.
   3. Clean tops of doors and frames.
   4. Clean mechanical and electrical rooms, including tops of pipes, ducts, and conduit, equipment, and supports.
   5. Clean return plenums of air handling units.
   6. Remove intake filters last, after cleaning is complete.

E. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.

F. Use other relevant recommendations of SMACNA IAQ Guideline for Occupied Buildings Under Construction for avoiding unnecessary contamination due to construction procedures.

END OF SECTION

SECTION 01 6000

PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General product requirements.

B. Transportation, handling, storage and protection.

C. Product option requirements.

D. Substitution limitations and procedures.

E. Procedures for McHenry County-supplied products.

F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

A. Document – McHenry County Purchasing Document

B. Section 01 4000 - Quality Requirements: Product quality monitoring.

1.03 SUBMITTALS

A. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
   1. Submit within 15 days after date of Contract Agreement or sooner if needed.
   2. For products specified only by reference standards, list applicable reference standards.

B. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

C. Shop Drawing Submittals: Submit as specified in Section 01 3000 - Administrative Requirements.

D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

E. Indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

F. Additional data: Architect may request additional samples or data if necessary to determine quality of product even though not called for in specifications sections.

PART 2 PRODUCTS

2.01 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description unless specifically called out in the specifications.

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

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

2.02 MAINTENANCE MATERIALS

A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION PROCEDURES

A. Instructions to Bidders specify time restrictions for submitting requests for substitutions during the bidding period. Comply with requirements specified in this section.

B. CBJ Architects P.C. will consider requests for substitutions only if received within 15 days after date of Agreement.

C. Substitutions will not be considered when a product becomes unavailable through no fault of the Contractor.

D. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

E. A request for substitution constitutes a representation that the submitter:
   1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
   2. Will provide the same warranty for the substitution as for the specified product.
   3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to McHenry County.
   4. Waives claims for additional costs or time extension that may subsequently become apparent.
   5. Will reimburse McHenry County and CBJ Architects P.C. for review or redesign services associated with re-approval by authorities. rate of $150 per hour will apply.

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

G. Substitution Submittal Procedure:
   1. Submit three copies of request for substitution for consideration. Limit each request to one proposed substitution.
   2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
   3. The CBJ Architects P.C. will notify Contractor in writing of decision to accept or reject request.

3.02 OWNER-SUPPLIED PRODUCTS

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

B. Contractor's Responsibilities:
   1. Review McHenry County reviewed shop drawings, product data, and samples.
   2. Receive and unload products at site; inspect for completeness or damage jointly with McHenry County.
   3. Handle, store, install and finish products.
   4. Repair or replace items damaged after receipt.
   5. Contractor responsible for installation of owner-supplied products, within their respective specification sections or as noted in Section 01100 - Summary of Work, per the manufacturer's instructions.

3.03 PRODUCT/ASSEMBLIES/SYSTEM SUBSTITUTIONS

A. Where the Bid Documents stipulate a particular Product, substitutions will be considered by the Architect up to 7 days before receipt of bids.

B. The submission shall provide sufficient information to determine acceptability of such bids.

C. When a request to substitute a Product is made, the Architect may approve the submission and will issue an Addendum to known bidders.

D. In submission of substitutions to products specified, bidders shall include in their bid, any changes required in the Work and changes to Contract Time and Contract Price to accommodate such substitutions. A later claim by the bidder for an addition to the Contract Time or Contract Price because of changes in work necessitated by use of substitutions shall not be considered.

E. Substitute Products will be considered if submitted as an attachment to the Bid Form

F. The submission shall provide sufficient information to determine acceptability of such products.

G. Provide complete information on required revisions to other Work to accommodate each substitution, the value of additions to or reductions from the Bid Amount, including revisions to other Work.

H. Provide Products as specified unless substitutions are submitted in this manner and subsequently accepted.

I. Approval to submit substitutions prior to submission of Bids is not required.

3.04 TRANSPORTATION AND HANDLING

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

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

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

D. General Contractor will not provide a means to unload, or hoist products at site. Contractors are responsible for receiving, unloading, and hoisting of all products. If contractor fails to receive, unload, or hoist any of their products, the Owner will charge the contractor a rate of $150.00 per hour plus equipment rental for said handling.

3.05 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturers' instructions in locations approved by the Owner. Pre-arrangements with the Owner must be made.

B. Store with seals and labels intact and legible.

C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.

D. For exterior storage of fabricated products, place on sloped supports above ground.

E. Provide off-site storage and protection when site does not permit on-site storage or protection. Insurance for off-site storage will be required prior to submitting application for payment. Include Insurance Statement with payment request.

F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.

H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

J. Neither Architect nor the Owner assumes any responsibility for materials stored on site.

END OF SECTION

SECTION 01 7000

EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Requirements for alterations work, including selective demolition, except removal, disposal, and/or remediation of hazardous materials and toxic substances.

C. Pre-installation meetings.

D. Cutting and patching.

E. Surveying for laying out the work.

F. Cleaning and protection.

G. Starting of systems and equipment.

H. Demonstration and instruction of McHenry County personnel.

I. Closeout procedures, except payment procedures.

1.02 RELATED REQUIREMENTS

A. Section 01 3000 - Administrative Requirements: Submittals procedures.

B. Section 01 4000 - Quality Requirements: Testing and inspection procedures.

C. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.

D. Section 01 5100 - Temporary Utilities: Temporary heating, cooling, and ventilating facilities.

E. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties and bonds.

F. Section 07 8400 - Firestopping.

G. Individual Product Specification Sections:
   1. Advance notification to other sections of openings required in work of those sections.
   2. Limitations on cutting structural members.

1.03 SUBMITTALS

A. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.
   5. Departments effected: Below, side and above effected area
   6. Work of McHenry County or separate Contractor.
   7. Include in request:
      a. Identification of Project.
      b. Location and description of affected work.
      c. Necessity for cutting or alteration.
      d. Description of proposed work and products to be used.
      e. Alternatives to cutting and patching.
      f. Adjacent areas affected by work.
      g. Effect on work of McHenry County or separate Contractor.
      h. Written permission of affected separate Contractor.
      i. Date and time work will be executed.

1.04 PROJECT CONDITIONS

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

B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion. Per the requirements of the City of Woodstock or governing body.

C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases. Create a negative pressure at interior areas to exterior.

D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and / or unwanted areas.

E. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.05 COORDINATION

A. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate occupancy requirements.

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

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

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

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

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

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

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

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

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

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000.

PART 3 EXECUTION

3.01 EXAMINATION

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

B. Existing Conditions:
   1. Are not warranted or guaranteed to be accurate.
   2. Contractors must interpret existing conditions indicated as to their accuracy.
   3. Existing and underground conditions based on available information at time of bidding.
   4. Existing information is given for contractor's assistance in location only.

C. Responsibility of measurement and inspection.
   1. Each contractor to obtain complete data as required for his/her job.
   2. Obtain same prior to submitting shop drawings or fabrication.
   3. Contractors shall be responsible for errors in same.

D. Verify that demolition is complete in alteration areas and areas are ready for installation of new work.

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

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

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

H. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions. Submit written request if applicable under 1.03B.

3.02 PREPARATION

A. Cut, move, or remove items as necessary for access to alterations and renovation work. Replace and restore at completion.

B. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete. Replace materials as specified for finished work.

C. Remove debris and abandoned items from area and from concealed spaces.

D. Close openings in exterior surfaces to protect existing work and salvage items from weather and extremes of temperature and humidity. Insulate ducts and piping to prevent condensation in exposed areas.

E. Prepare surfaces and remove surface finishes to provide for proper installation of new work and finishes.

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

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

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

3.03 PREINSTALLATION MEETINGS

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

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

C. Notify CBJ Architects P.C. five working days in advance of meeting date.

D. The General Contractor will prepare an agenda and preside at meeting:
   1. Review conditions of examination, preparation and installation procedures.
   2. Review coordination with related work.

E. Record minutes and distribute copies within four days after meeting to participants, with one copy each to CBJ Architects P.C., McHenry County, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

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

B. Promptly notify CBJ Architects P.C. of any discrepancies discovered.

C. General Contractor responsibilities:
   1. Benchmark and working point reference lines.
   2. Below grade storm, sanitary, water and utilities, one time for plan location.
   3. Parking/drive area curbs and limits.
      a. First time for corners and elevations prior to placing base course.
      b. Second time for final boundary and elevations prior to final grading and placement of curbs.
   4. Rough locations of corners of work.
   5. Location of construction limit lines.

D. Contractor(s):
   1. Final layout of all work including elevations.
   2. Verification of lines, levels, locations and dimensions.
   3. Corrections due to errors in layout work.
   4. Beginning of work implies acceptance of layout of previous work and existing conditions.

E. Contractor(s) shall locate and protect survey control and reference points at start of project construction.

F. Control datum for survey is that established by McHenry County provided survey.

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

H. Promptly report to CBJ Architects P.C. the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

3.05 GENERAL INSTALLATION REQUIREMENTS

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

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

3.06 ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as shown.
   2. Report discrepancies to CBJ Architects P.C. before disturbing existing installation.
   3. Beginning of alterations work constitutes acceptance of existing conditions.

B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
   1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.

C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
   1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
   2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alteration work.

D. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.
   2. Relocate items indicated on drawings.
   3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
   4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.

E. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): Remove, relocate, and extend existing systems to accommodate new construction.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
   2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
   3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
      a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
      b. Provide temporary connections as required to maintain existing systems in service.
   4. Verify that abandoned services serve only abandoned facilities.
   5. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.

F. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

G. Adapt existing work to fit new work: Make as neat and smooth transition as possible.

H. When existing finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to CBJ Architects P.C.

I. Where removal of partitions or walls results in adjacent spaces becoming one, rework floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

J. Where a change of plane of 1/4 inch or more occurs in existing work, submit recommendation for providing a smooth transition for CBJ Architects P.C. review and request instructions.

K. Trim existing wood doors as necessary to clear new floor finish. Refinish trim as required.

L. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

M. Refinish existing surfaces as indicated:

N. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.

O. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
   1. Patch as specified for patching new work.

P. Clean existing systems and equipment.

Q. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.

R. Do not begin new construction in alteration areas before demolition is complete.

S. Comply with all other applicable requirements of this section.

3.07 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. See Alterations article above for additional requirements.

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

D. Execute cutting and patching including excavation and fill to complete the work, to uncover work in order to install improperly sequenced work, to remove and replace defective or non-conforming work, to remove samples of installed work for testing when requested, to provide openings in the work for penetration of mechanical and electrical work, to execute patching to complement adjacent work, and to fit products together to integrate with other work.

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

F. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

G. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

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

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

J. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.

K. Patching:
   1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
   2. Match color, texture, and appearance.

3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

L. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

M. Patch or replace surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. Repair substrate prior to patching finish. Finish patches to produce uniform finish and texture over entire area. When finish cannot be matched, refinish entire surface to nearest intersections.

3.08 PROGRESS CLEANING

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

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

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

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

E. Lack of cleaning will result in a back charge of $50.00 per hour to the appropriate contractor.

3.09 PROTECTION OF INSTALLED WORK

A. Protect installed work and provide special protection.

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

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

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

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

F. Prohibit traffic from landscaped areas.

3.10 SYSTEM STARTUP

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

B. Notify the Owner in writing seven days prior to start-up of each item. Official warranty to start at substantial completion only.

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

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

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

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

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.11 DEMONSTRATION AND INSTRUCTION

A. See Section 01 7900 (01820) - Demonstration and Training.

B. Demonstrate operation and maintenance of products to McHenry County's personnel two weeks prior to date of Substantial Completion.

C. Perform instruction in a classroom environment located where directed by the Owner.

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

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

F. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.

3.12 ADJUSTING

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

B. Testing, adjusting, and balancing HVAC systems.

3.13 FINAL CLEANING

A. The General Contractor will provide interior final cleaning prior to Owner Occupancy.

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

C. Replace filters of operating equipment by Mechanical Subcontractor installing the equipment.

D. Clean debris from roofs, gutters, downspouts, and drainage systems is responsibility of the responsible contractor.

E. Clean site; sweep paved areas, rake clean landscaped surfaces is the responsibility of the installing contractor.

F. Each contractor is responsible for removing waste and surplus materials, rubbish, and construction facilities from the site. See section 01565 for security requirements

3.14 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.
   1. Provide copies to CBJ Architects P.C.

B. Accompany Project Architect on preliminary inspection to determine items to be listed for completion or correction in Contractor's Certificate of Substantial Completion.

C. Notify CBJ Architects P.C. when work is Substantially Complete and ready for inspection.

D. McHenry County will occupy all of the building.

E. Correct items of work noted in completion / punch list Certificates of Substantial Completion and comply with requirements for access to McHenry County-occupied areas.

F. Accompany Field Project Manager on preliminary final inspection.

G. Notify the Owner and Architect when work is considered finally complete.

H. Complete items of work determined by CBJ Architects P.C.'s final inspection.

END OF SECTION

SECTION 01 7419

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.

E. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.

F. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

A. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

B. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.

C. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.

D. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Pre-bid meeting.
   2. Pre-construction meeting.
   3. Regular job-site meetings.

E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. Provide containers as required.
   2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
   3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 01 7800

CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Submittals.

B. Project Record Documents.

C. Operation and Maintenance Data for Equipment and Systems.

D. Operation and Maintenance Data for Materials and Finishes.

E. Warranties and Guarantees.

1.02 RELATED REQUIREMENTS

A. Section 00 2113 Instructions To Bidders: Performance bond and labor and material payment bonds, warranty, and correction of work.

B. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.

C. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.

D. Individual Product Sections: Specific requirements for operation and maintenance data.

E. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

A. Project Record Documents (As-Built Drawings): Submit three (3) printed copies and one (1) digital copy of these documents within ten days after Date of Substantial Completion, prior to final Application for Payment to the Owner.

B. Operation and Maintenance Data:
   1. Submit three (3) copies within ten days after receipt of close out request from the Owner or 30 days prior to substantial completion. Final payment will not be made until receipt of this documentation. If revisions are to be made, Subcontractor to submit three (3) sets of revised final documents within 10 days after inspection.
   2. For equipment, or component parts of equipment put into service during construction and operated by McHenry County, submit completed documents within ten days after acceptance.

C. Warranties and Guarantees:
   1. For equipment or component parts of equipment put into service during construction with McHenry County's permission, submit documents within 10 days after acceptance.
   2. Make other submittals within 10 days after receipt of close out request from CBJ Architects P.C. or 30 days prior to substantial completion. Final payment will not be made until receipt of this documentation.
   3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

A. The General Contractor will maintain on site one set of the following record documents.
   1. Drawings.
   2. Specifications.
   3. Addenda.

4. Construction Bulletins and other modifications to the Project.
5. Reviewed shop drawings, product data, and samples.

B. Each Subcontractor will provide the General Contractor with a record of actual revisions to the work.

C. Ensure entries are complete and accurate, enabling future reference by McHenry County.

D. These record documents shall be stored separate from documents used for construction.

E. Record information concurrent with construction progress.

F. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
1. Manufacturer's name and product model and number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

G. Legibly mark each item on the record drawings to record actual construction including:
1. Measured depths of foundations in relation to finish first floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract drawings.

H. Each Subcontractor will also be responsible for maintaining their own set of record drawings in order to submit three (3) copies prior to final Application for Payment.

3.02 GENERAL REQUIREMENTS OF OPERATION AND MAINTENANCE DATA

A. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

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

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

D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:
1. Product data, with catalog number, size, composition, and color and texture designations.
2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sections.

E. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

A. For Each Item of Equipment and Each System:
   1. Description of unit or system, and component parts.
   2. Identify function, normal operating characteristics, and limiting conditions.
   3. Include performance curves, with engineering data and tests.
   4. Complete nomenclature and model number of replaceable parts.

B. Panel board Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.

C. Include color coded wiring diagrams as installed.

D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

E. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

F. Provide servicing and lubrication schedule, and list of lubricants required.

G. Include manufacturer's printed operation and maintenance instructions.

H. Include sequence of operation by controls manufacturer.

I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

J. Provide control diagrams by controls manufacturer as installed.

K. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.

M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

N. Include test and balancing reports.

O. Additional Requirements: As specified in individual product specification sections.

3.05 OPERATION AND MAINTENANCE MANUAL

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

B. Prepare data in the form of an instructional manual.

C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.

D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.

E. Provide tabbed dividers for each separate product and system, with typed description of product and major component parts of equipment.

F. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

G. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.

H. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
   1. Part 1: Directory, listing names, addresses, and telephone numbers of CBJ Architects P.C., Contractor, Subcontractors, and major equipment suppliers.
   2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
      a. Significant design criteria.
      b. List of equipment.
      c. Parts list for each component.
      d. Operating instructions.
      e. Maintenance instructions for equipment and systems.
      f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
   3. Part 3: Project documents and certificates, including the following:
      a. Shop drawings and product data.
      b. Air and water balance reports.
      c. Certificates.
      d. Photocopies of warranties and bonds.

I. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.

J. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of CBJ Architects P.C., Consultants, and Contractors with name of responsible parties; schedule of products and systems, indexed to content of the volume.

3.06 WARRANTIES AND GUARANTEES

A. Obtain warranties and guarantees, executed in triplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with McHenry County 's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute warranties/guarantees.

D. Retain warranties and guarantees until time specified for submittal.

E. Subcontractor to submit original warranty and two (2) copies to the General Contractor. Warranty shall clearly state the name of the Project, Owner's name; Subcontractor's name(s) and date of origin.

F. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

SECTION 01 7900

DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

A. Demonstration of products and systems where indicated in specific specification sections.

B. Training of McHenry County personnel in operation and maintenance is required for:
   1. Items specified in individual product Sections.

C. Training of McHenry County personnel in care, cleaning, maintenance, and repair is required for:
   1. Items specified in individual product Sections.

1.02 RELATED REQUIREMENTS

A. Section 01 7800 - Closeout Submittals: Operation and maintenance manuals.

1.03 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Training Plan: McHenry County will designate personnel to be trained; tailor training to needs and skill-level of attendees.
   1. Submit to McHenry County.
   2. Submit not less than four weeks prior to start of training.
   3. Revise and resubmit until acceptable.
   4. Provide an overall schedule showing all training sessions.
   5. Include at least the following for each training session:
      a. Identification, date, time, and duration.
      b. Description of products and/or systems to be covered.
      c. Name of firm and person conducting training; include qualifications.
      d. Intended audience, such as job description.
      e. Objectives of training and suggested methods of ensuring adequate training.
      f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
      g. Media to be used, such a slides, hand-outs, etc.
      h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.

C. Training Manuals: Provide training manual for each attendee; allow for minimum of four attendees per training session.
   1. Include applicable portion of O&M manuals.
   2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
   3. Provide one extra copy of each training manual to be included with operation and maintenance data.

D. Training Reports:
   1. Identification of each training session, date, time, and duration.
   2. Sign-in sheet showing names and job titles of attendees.
   3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.

1.04 QUALITY ASSURANCE

A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
   1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
   2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by McHenry County.

B. Demonstration may be combined with McHenry County personnel training if applicable.

C. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.
   2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

D. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
   1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

A. Conduct training on-site unless otherwise indicated.

B. McHenry County will provide classroom and seating at no cost to Contractor.

C. Provide training in minimum two hour segments.

D. Training schedule will be subject to availability of McHenry County's personnel to be trained; re-schedule training sessions as required by McHenry County; once schedule has been approved by McHenry County failure to conduct sessions according to schedule will be cause for McHenry County to charge Contractor for personnel "show-up" time.

E. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
   1. The location of the O&M manuals and procedures for use and preservation; backup copies.
   2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
   3. Typical uses of the O&M manuals.

F. Product- and System-Specific Training:
   1. Review the applicable O&M manuals.
   2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
   3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
   4. Provide hands-on training on all operational modes possible and preventive maintenance.
   5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
   6. Discuss common troubleshooting problems and solutions.
   7. Discuss any peculiarities of equipment installation or operation.
   8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
   9. Review recommended tools and spare parts inventory suggestions of manufacturers.
   10. Review spare parts and tools required to be furnished by Contractor.
   11. Review spare parts suppliers and sources and procurement procedures.

G. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION

SECTION 07 2120

THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Batt insulation for filling interior walls for sound attenuation.

1.02 RELATED REQUIREMENTS

A. Section 05 4000 - Cold-Formed Metal Framing: Supporting construction for batt insulation.

B. Section 06 1000 - Rough Carpentry: Supporting construction for batt insulation.

C. Section 07 8400 - Firestopping.

D. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation.

1.03 REFERENCE STANDARDS

A. ASTM C 552 - Standard Specification for Cellular Glass Thermal Insulation.

B. ASTM C 612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation.

C. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.05 SEQUENCING

A. Sequence work to ensure firestop materials are in place before beginning work of this section.

PART 2 PRODUCTS

2.01 BATT INSULATION MATERIALS

A. Batt Insulation: ASTM C 665; preformed glass fiber batt; friction fit, conforming to the following:
   1. Combustibility: Non-combustible, when tested in accordance with ASTM E 136, except for facing, if any.
   2. Thermal Resistance: R of 15, or as noted.
   3. Surface Burning Characteristics: Flame spread index of 25 or less; smoke developed index of 50 or less, when tested in accordance with ASTM E 84.
   4. Manufacturers:
      a. CertainTeed Corporation: www.certainteed.com.
      b. Johns Manville Corporation: www.jm.com.
      c. Owens Corning Corp: www.owenscorning.com.
   5. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

A. Tape: Polyethylene self-adhering type, 2 inch wide.

B. Nails or Staples: Steel wire; electroplated, or galvanized; type and size to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, or irregularities.

3.02 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

3.04 CLEANING

A. Remove loose insulation residue.

B. Remove and legally dispose of all materials related to work of this section**.**

3.05 SCHEDULES

A. Metal Framed Wall Insulation: 3-1/2 inch-inch fiberglass batts, taped to metal studs.

END OF SECTION

SECTION 07 8400

FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of all joints and penetrations in fire-resistance rated and smoke-resistant assemblies, whether indicated on drawings or not.

1.02 RELATED REQUIREMENTS

A. Section 01 7000 - Execution and Closeout Requirements: Cutting and patching.

B. Section 09 2666 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

1.03 REFERENCE STANDARDS

A. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

B. ASTM E 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

C. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc..

D. FM P7825 - Approval Guide; Factory Mutual Research Corporation.

E. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc..

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Schedule of Firestopping: List each type of penetration.

C. Product Data: Provide data on product characteristics.

D. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Certificate from authority having jurisdiction indicating approval of materials used.

G. Material safety data sheets (MSDS): Submit MSDS for each firestop product.

H. Shop Drawings: Show typical installation details for methods of installation. Indicate which firestop materials will be used where.

1.05 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the specified fire ratings when tested in accordance with methods indicated.
   1. Listing in the current-year classification or certification books of UL, FM, or ITS (Warnock Hersey) will be considered as constituting an acceptable test report.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:
   1. With minimum 3 years documented experience installing work of this type.
   2. Able to show at least 5 satisfactorily completed projects of comparable size and type.
   3. Approved by firestopping manufacturer.

1.06 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed.

C. Provide firestopping products containing no detectable asbestos, as determined by the method specified in 40 CFR Par 763, Subpart F, Appendix A, Section 1, "Polarized Light Microscopy."

1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver material in the manufacturer's original, unopened containers or packages with manufacturers name, product identification, lot numbers, UL-Labels, and mixing and installation instructions, as applicable.

B. Store materials in the original, unopened containers or packages, and under conditions recommended by manufacturers.

C. Fire Ratings: Use any system that has F Rating equal to fire rating of penetrated assembly and a T Rating when required by local code authority and that meets all other specified requirements.

1.08 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

B. Review preparation and installation procedures and coordinating and scheduling required with related work.

PART 2 PRODUCTS

2.01 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use any system listed by UL, that has F Ratings equal to fire rating of penetrated assembly and minimum T as required by local code authority and that meets all other specified requirements.

2.02 MATERIALS

A. Mortar: Lightweight, Non-expanding, cementitious, fire-rated compound; conforming to the following:
   1. Density: 40.5 lb/cu ft.
   2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 0 and 5, as determined per ASTM E 84.
   3. Durability and Longevity: Permanent.
   4. Color: Manufacturer's standard color.
   5. Manufacturers:
      a. Bio Fireshield, Inc. Product K-2 Firestop Mortar.
      b. RectorSeal Metacaulk Mortar.
      c. International Protective Coatings Corp. Product KBS-Mortar Seal.

B. Latex Based Intumescent Sealant: Single component, intumescent, latex formulation, conforming to the following:
   1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 0 and 10, as determined per ASTM E 84.
   2. Durability and Longevity: Permanent.
   3. Color: Manufacturer's standard color.
   4. Manufacturers:
      a. 3M Fire Protection Products, Product Fire Barrier CP 25 WB, N/S, or S/L.
      b. RectorSeal Corporation, Product Metacaulk 950.
      c. Bio Fireshield Biotherm 100 and 200 Firestop Sealants.

C. Latex Based Endothermic Sealant: Single component, intumescent, latex formulation, conforming to the following:
   1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 0 and 5, as determined per ASTM E 84.
   2. Durability and Longevity: Permanent.
   3. Color: Manufacturer's standard color.

4. Manufacturers:
    a. 3M Fire Protection Products, Product Interam FireDam 150 Caulk
    b. Tremco Inc., Product Fyre Shield.

D. Intumescent Wrap Strip: Single component, elastomeric sheet with foil one side, conforming to the following:
1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 17 and 190, as determined per ASTM E 84.
2. Durability and Longevity: Permanent.
3. Color: Manufacturer's standard color.
4. Manufacturers:
    a. 3M Fire Protection Products, Product Fire Barrier FS-195 Wrap/Strip.
    b. Bio Fireshield, Product BioStop Intumescent Wrap Strips.
    c. RectorSeal, Product Metacaulk Intumescent Wrap Strip.
    d. Hilti Construction Chemicals, Inc., Product CS2420 Intumescent Wrap.

E. Elastomeric Silicone Firestopping: Single component silicone elastomeric compound and compatible silicone sealant; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Selected from Manufacturer's standard colors.
3. Manufacturers:
    a. Tremco Inc. Product Fyre-Sil S/L.
    b. The RectorSeal Corporation Product Metacaulk 835.
    c. The RectorSeal Corporation Product Metacaulk 880.
    d. Hilti Construction Chemicals, Inc. Product CS 240 Firestop Sealant.
    e. Substitutions: See Section 01 6000 (01600) - Product Requirements.

F. Foam Firestoppping: Multiple component silicone foam compound; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Selected from manufacturer's standard colors.
3. Manufacturers:
    a. Dow Corning Corp. Product Dow Corning Fire Stop 2001.
    b. General Electric Company Product Pensil 200 Foam.
    c. Substitutions: See Section 01 6000 (01600) - Product Requirements.

G. Intumescent Putty: Compound that expands on exposure to surface heat gain; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Manufacturer's standard.
3. Manufacturers:
    a. 3M Fire Protection Products, Product Fire Barrier Moldable Putty.
    b. General Electric Company, Product Pensil 500 Intumescent Putty.
    c. RectorSeal, Product Metacaulk Putty and Putty Pads.
    d. Bio Fireshield, Product BioStop Moldable Putty and Putty Pads.
    e. Substitutions: See Section 01 6000 (01600) - Product Requirements.

H. Reusable Firestopping: Removable intumescent compressible shapes, pillows, or blocks specifically tested in removable configuration; conforming to the following:
1. Durability and Longevity: Permanent.
2. Manufacturers:
    a. Bio Fireshield, Product Firestop Pillows.
    b. RectorSeal, Product Metacaulk Pillow.
    c. Substitutions: See Section 01 6000 - Product Requirements.

I. Solvent-Release-Curing Intumescent Sealant: Single component, solvent-release-curing, synthetic-polymer based sealant of grade indicated below:
1. Durability and Longevity: Permanent.
2. Color: Selected from Manufacturer's standard colors.

3. Manufacturer's:
    a. Bio Fireshield, Product Biostop 500 Intumescent Firestop Caulk.
    b. 3M Fire Protection Products, Product Fire Barrier CP 25N/S Caulk.
    c. 3M Fire Protection Products, Product Fire Barrier CP 25S/L Caulk.

J. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to arrest liquid material leakage.

3.03 INSTALLING THROUGH-PENETRATION FIRESTOPS

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by authority having jurisdiction.

C. Install labelling required by code.

3.04 INSTALLING FIRE-RESISTIVE JOINT SEALANTS

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by authority having jurisdiction.

C. Install joint fillers to provide support of sealants during application and at a position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability and develop fire-resistance rating required.

D. Install sealants using techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint.

E. Tool nonsag sealants immediately after sealant application and prior to the time skinning or curing begins. Form smooth, uniform beads of configurations indicated or required to produce fire-resistance rating.

3.05 PROTECTION

A. Clean adjacent surfaces of firestopping materials.

B. Protect adjacent surfaces from damage by material installation.

C. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations.

D. Repair or replace any deteriorated or damaged firestopping as required to produce firestopping complying with specified requirements.

END OF SECTION

SECTION 08 7100

DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for wood and hollow steel doors.

B. Hardware for fire-rated doors.

C. Lock cylinders for doors for which hardware is specified in other sections.

1.02 RELATED REQUIREMENTS

A. Section 07 9005 - Sealants.

B. Section 08 1113 - Hollow Metal Doors and Frames.

C. Section 08 1416 - Flush Wood Doors.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council.

B. BHMA A156.1 - American National Standard for Butts and Hinges; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.1).

C. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; Builders Hardware Manufacturers Association (ANSI/BHMA A156.2).

D. BHMA A156.3 - American National Standard for Exit Devices; Builders Hardware Manufacturers Association (ANSI/BHMA A156.3).

E. BHMA A156.4 - American National Standard for Door Controls - Closers; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.4).

F. BHMA A156.5 - American National Standard for Auxiliary Locks & Associated Products; Builders Hardware Manufacturers Association (ANSI/BHMA A156.5).

G. BHMA A156.6 - American National Standard for Architectural Door Trim; Builders Hardware Manufacturers Association (ANSI/BHMA A156.6).

H. BHMA A156.7 - American National Standard for Template Hinge Dimensions; Builders Hardware Manufacturers Association (ANSI/BHMA A156.7).

I. BHMA A156.8 - American National Standard for Door Controls - Overhead Stops and Holders; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.8).

J. BHMA A156.13 - American National Standard for Mortise Locks & Latches; Builders Hardware Manufacturers Association (ANSI/BHMA A156.13).

K. BHMA A156.14 - American National Standard for Sliding & Folding Door Hardware; Builders Hardware Manufacturers Association (ANSI/BHMA A156.14).

L. BHMA A156.15 - American National Standard for Release Devices - Closer Holder, Electromagnetic and Electromechanical; Builders Hardware Manufacturers Association (ANSI/BHMA A156.15).

M. BHMA A156.16 - American National Standard for Auxiliary Hardware; Builders Hardware Manufacturers Association (ANSI/BHMA A156.16).

N. BHMA A156.17 - American National Standard for Self Closing Hinges & Pivots; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.17).

O. BHMA A156.18 - American National Standard for Materials and Finishes; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.18).

P. BHMA A156.20 - American National Standard for Strap and Tee Hinges and Hasps; Builders Hardware Manufacturers Association (ANSI/BHMA A156.20).

Q. BHMA A156.21 - American National Standard for Thresholds; Builders Hardware Manufacturers Association (ANSI/BHMA A156.21).

R. BHMA A156.23 - American National Standard for Electromagnetic Locks; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.23).

S. BHMA A156.24 - American National Standard for Delayed Egress Locks; Builders Hardware Manufacturers Association (ANSI/BHMA A156.24).

T. DHI A115 Series - Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute.

U. DHI A115W Series - Specifications for Wood Door and Frame Preparation for Hardware; Door and Hardware Institute.

V. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; Door and Hardware Institute.

W. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; Door and Hardware Institute.

X. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

Y. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; National Fire Protection Association.

Z. UBC Std 7-2, Part II - Test Standard for Smoke- and Draft-control Assemblies; International Conference of Building Officials.

AA. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.

AB. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc..

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products onto which door hardware will be installed.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:
   1. Indicate locations and mounting heights of each type of hardware, vertical schedules, catalog cuts, electrical characteristics and connection requirements, and point to point custom wiring diagrams.
   2. Submit manufacturer's parts lists and templates.

C. Samples: Prior to preparation of hardware schedule:
   1. Submit 1 sample of hinge, latch set, lockset, and closer illustrating style, color, and finish.
   2. Samples will be returned to supplier.

D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

E. Project Record Documents:
   1. Record actual locations of concealed equipment, services, and conduit.
   2. Record actual locations of installed cylinders and their master key code.

F. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

G. Keys: Deliver with identifying tags to McHenry County by security shipment direct from hardware

supplier.

H. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in McHenry County's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Perform work in accordance with the following requirements:
   1. NFPA 101.
   2. NFPA 80.
   3. NFPA 252.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

C. Hardware Supplier Qualifications: Company specializing in supplying commercial door hardware with three years of documented experience.

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for requirements applicable to fire rated doors and frames.

B. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.

C. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

1.08 PRE-INSTALLATION MEETING

A. Convene one week prior to commencing work of this section.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.10 COORDINATION

A. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware.

B. Furnish templates for door and frame preparation.

C. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

D. Schedule and attend meeting to coordinate McHenry County's keying requirements during the course of the Work.

1.11 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide ten year warranty for door closers.

C. Provide five year warranty for door locks and latches.

1.12 MAINTENANCE PRODUCTS

A. Provide special wrenches and tools applicable to each different or special hardware component.

B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

1.13 PERSONNEL INSTRUCTION

A. Upon completion of installation, instruct owner's designated personnel in the proper operation and maintenance of all operating hardware. Train owner's personnel in procedures to follow in identifying sources of operational failures or malfunctions.

1. Coordinate date and time of instruction with construction manager.
2. Instruction to include recommended maintenance intervals and procedures on all hardware with moving parts.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 DOOR HARDWARE - GENERAL

A. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.

B. Provide all items of a single type of the same model by the same manufacturer.

C. Provide products that comply with the following:
1. Applicable provisions of federal, state, and local codes.
2. Fire-Rated Doors: NFPA 80.
3. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
4. Hardware for Smoke and Draft Control Doors (Indicated as "S" on Drawings): Provide hardware that enables door assembly to comply with air leakage requirements of the applicable code.

2.03 HINGES

A. Hinges:

B. Hinges: Provide hinges on every swinging door.
1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
2. Provide ball-bearing hinges at all doors having closers.
3. Provide hinges in the quantities indicated.
4. Where electrified hardware is mounted in door leaf, provide power transfer hinges.

2.04 LOCKS AND LATCHES

A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
1. Hardware Sets indicate locking functions required for each door.
2. If no hardware set is indicated for a swinging door provide an office lockset.
3. Trim: Provide lever handle or pull trim on outside of all locks unless specifically stated to have no outside trim.
4. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.

B. Lock Cylinders: Provided by Owner and installed by the General Contractor.

C. Keying: By Owner

D. Latches: Provide a latch for every door that is not required to lock, unless specifically indicated "push/pull" or "not required to latch".

2.05 GENERAL REQUIREMENTS FOR DOOR HARDWARE PRODUCTS

A. Provide products that comply with the following:
1. Applicable provisions of Federal, State, and local codes.
2. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
3. Applicable provisions of NFPA 101, Life Safety Code.
4. Fire-Rated Doors: NFPA 80.
5. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
6. Hardware for Smoke and Draft Control Doors (Indicated as "S" on Drawings): Provide hardware that enables door assembly to comply with air leakage requirements of the applicable code.
7. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the

purpose specified and indicated.

B. Finishes: Identified in schedule at the end of section.

2.06 CYLINDERS

A. By Owner

2.07 KEYING

A. By Owner

2.08 KEY CABINET

Not required.

2.09 FINISHES (verify with and match existing)

A. In general, finish shall be Satin Chrome US26D and Satin Stainless Steel US23D; materials shall be as follows:
   1. Locks and latches; 626.
   2. Dead locks; 626.
   3. Exit devices; 626.
   4. Push, Pulls; 630.
   5. Kick plates; 630.
   6. Door Closers: Powder coat to match.
   7. Door Butts: Nonferrous for exterior, toilet, bath, locker, and other wet areas; 630. Ferrous for other doors; 626.
   8. Door Stops and Holders: Stainless Steel 630 or 626.
   9. Miscellaneous Items: 626.
   10. Stainless Steel: ASTM A 302, 18-8.

2.10 LOCK, LATCHES, AND BOLTS

A. Strikes: Manufacturer's standard wrought box strike with curved lip to protect frame; finish to match hardware set.
   1. Recess type top strike for bolts locking into head frames.
   2. Dust-proof strikes for foot bolts except where threshold provides non-recessed bolt strike.

B. Lock Throws: Provide the following:
   1. 1/2 inch minimum throw for bored and preassembled lock types.
   2. 5/8 inch minimum throw for pairs of doors.
   3. 3/4 inch minimum throw for mortise locks.
   4. 1 inch minimum throw for dead bolts.
   5. Comply with UL requirements for rated assemblies.

C. Lock Functions Legend (Unless Otherwise Specified):
   1. Passage Latch: For interior doors entering; stairways, Passage Closets
      a. both levers always unlocked.
   2. Exit Lock: At exterior doors from; individual rooms for exit only.
      a. Blank plate outside. Inside lever always unlocked.
   3. Bath Privacy Lock: For interior doors entering; single fixture Public and Staff Toilets.
      a. Push button locking. Can opened from outside with small screwdriver. Turning inside lever or closing door releases button.
   4. Entrance Lock: For interior doors entering; Offices
      a. Latchbolt retracted by lever from either unless outside is made inoperative by key outside. When outside is locked, latchbolt is retracted by jey outside or lever inside.
   5. Storeroom Lock: For interior and exterior doors entering; Store Rooms, Mechanical Equipment Rooms, and Janitor's Closets.
      a. Outside lever fixed. Entrance by key only. Inside lever always unlocked.

D. Additional Lock requirements:
   1. Vandal resistant breakaway lever.

E. Mortise Locks; Trim Style:
   1. Schlage: 6 pin Primus Everest with removeable core.

F. Provide rabbeted front on lock/latch units and bolts where door stiles are rabbeted.

G. Verify all functions with Owner at key meeting prior to ordering locks.

2.11 BUTT HINGES

A. Ball bearing, non-rising loose pin, flat button tip, unless otherwise specified.

B. Provide three butts per door (four for dutch doors and for door 7-6 up to 10-0 high).

C. Butt Size Requirements:
   1. Interior doors up to 37 inches wide: 4-1/2 x 4-1/2.
   2. Interior doors over 37 inches wide: 5 x 4-1/2.
   3. Exterior doors: 5 x 4-1/2.
   4. 2" thick doors: 5 x 5.

D. Door butt legend: (unless noted otherwise in Schedule):
   1. Exterior doors: BB1199 NRP.
   2. Interior Doors up to 37 inches wide: BB1279 TBB.
   3. Interior doors 37 inches wide and over: BB1168.

E. Furnish UL approved butts on labeled doors.

2.12 STOPS AND BUMPERS

A. Wall Stops:
   1. GJ 60C at locksets with thumb turn and interior cylinders.
   2. GJ50C at other locksets and latches.

B. Coordination: Verify that wall stop locations have proper blocking in partition at wall attachment location.

C. Roller Type: Provide roller bumper RB4 as required where two door swings interfere with each other.

D. Application: Use wood screws for attachment into wood blocking behind wall finish.

2.13 PUSH/PULL UNITS AND PLATES

A. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installations, thru bolted only for matched pairs.

B. Plates: Provide 16 gauge (0.050 inch) plates, with beveled sides and countersunk screw holes at intervals of not over 6 inches on all four sides. Provide stainless steel oval head screws.

C. Plate Legend: Provide Push / Pull plates and Pull bars in the following sizes:
   1. Push Plates: As noted in Hardware schedule.
   2. Pull Plates: As noted in Hardware schedule.
   3. Pull Bars: As noted in Hardware schedule.

D. Provide concealed fasteners and back-to-back mountings at all bar-type pushes and pulls.

E. Factory drill all push and pull plates as required for locks and cylinders.

2.14 CLOSURES AND DOOR CONTROL DEVICES

A. Unit Size: Unless otherwise indicated, comply with the manufacturer's recommendations for size of door control unit depending on the size of the door, exposure to weather, and anticipated frequency of use:
   1. Where parallel arms are indicated for closers, provide closer unit one size larger than recommended for use with standard arms.

B. Door Closers with Hold opens: Provide units to the following:
   1. Designed to hold door in open position under normal usage when door is moved to 87

degrees open.
2. Hold open to release without undue effort to close door.

C. Combination Door Closers and Holders: Provide units to the following:
1. Designed to hold door in open position under normal usage when door is moved to 87 degrees open.
2. Hold open to release without undue effort to close door and to release and close door automatically under fire conditions.
3. Provide an integral electromagnetic holder mechanism designed for use with UL listed fire detectors, provided with normally closed switching contacts.

D. Adjustments: Provide key adjusting device on closers; provide six adjusting keys to owner.

E. Mounting: Mount to provide maximum door swing opening permitted by building construction and equipment. Note on submittal schedule the maximum swing per location for other trades involved in reinforcement and installation.

F. Exterior Doors: Provide the following:
1. Cast iron closers of full rack and pinion construction, including two speed closing adjustment, adjustable hydraulic backcheck, and fully adjustable spring power plus reversible shoe feature. Of type and function listed in the Hardware Schedule.
2. ALL WEATHER type fluid not subject to normal temperature changes.
3. Solid forged-type parallel arms.

G. Uniformity: Provide all door closers similar in design and appearance to those listed in Hardware Schedule and, of one manufacturer. Furnish special arms and applications as indicated in Hardware Schedule, as indicated by structural considerations, and as required by local code requirements.

H. Labeling: Provide UL approved door closers at labeled fire doors. Provide thru-bolts to mineral core doors.

I. Multiple Units: Provide each door leaf with closers, unless noted otherwise.

2.15 DOOR SILENCERS

A. Provide 3 for single door; 2 for each leaf of double doors.

2.16 MISCELLANEOUS

A. Sealant: As specified in Section 07 9005.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as indicated on shop drawings.

B. Verify that electric power is available to power operated devices and of the correct characteristics.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

C. Install hardware on fire-rated doors and frames in accordance with code and NFPA 80.

D. Mounting heights for hardware from finished floor to center line of hardware item:
1. Locksets: 40-5/16 inch.
2. Push/Pulls: 42 inch.
3. Dead Locks: 47 inch.
4. Exit Devices: 40-5/16 inch.

3.03 HARDWARE GROUPS

A. General: Schedule of hardware included at the end of this section shall be considered as a guide only. Hardware supplier is responsible to furnish required hardware, including UL listed hardware required to meet door and frame manufacturer's labeling requirements for labeled doors.

B. Conflicts: Doors indicated by number on drawings but not included in the hardware schedule shall be provided with hardware Group 5 for that location, function, size, and labelling as indicated on drawings.

3.04 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 4000 (01400).

3.05 ADJUSTING

A. Adjust work under provisions of Section 01 7000 (01700).

B. Adjust hardware for smooth operation.

3.06 PROTECTION

A. Protect finished Work under provisions of Section 01 7000 (01700).

B. Do not permit adjacent work to damage hardware or finish.

3.07 SCHEDULE

A. As identified in the drawings.

END OF SECTION

SECTION 09 2600

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal stud wall framing.

B. Metal channel ceiling framing.

C. Shaft wall system.

D. Fire rated area separation walls.

E. Acoustic insulation.

F. Cementitious backing board.

G. Gypsum wallboard.

H. Joint treatment and accessories.

I. Installation of acoustic sealant.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Concealed wood blocking for support of wall supported components.

B. Section 06 1000 - Rough Carpentry: Building framing and sheathing.

C. Section 07 2120 - Insulation: Thermal Insulation.

D. Section 07 9005 - Joint Sealers: Acoustic sealant.

E. Section 07 8400 - Firestopping: Firestopping and fire-rated joints sealants.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units.

C. ASTM C 36/C 36M - Standard Specification for Gypsum Wallboard.

D. ASTM C 475/C 475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

E. ASTM C 557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.

F. ASTM C 630/C 630M - Standard Specification for Water-Resistant Gypsum Backing Board.

G. ASTM C 645 - Standard Specification for Nonstructural Steel Framing Members.

H. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

I. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

J. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board.

K. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.

L. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

M. ASTM C 1396/C 1396M - Standard Specification for Gypsum Board.

N. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

O. ASTM E 413 - Classification for Rating Sound Insulation.

P. GA-214 - Recommended Levels of Gypsum Board Finish; Gypsum Association.

Q. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association.

R. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association.

S. GA-600 - Fire Resistance Design Manual; Gypsum Association.

T. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc..

1.04 SYSTEM DESCRIPTION

A. Acoustic Attenuation for Interior Partitions Indicated as Acoustic: STC of 50-54 calculated in accordance with ASTM E 413, based on tests conducted in accordance with ASTM E 90.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data and Sample: Provide data and sample on metal framing, gypsum board, accessories, joint finishing system, and acoustic attenuation.

C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.06 QUALITY ASSURANCE

A. Perform in accordance with ASTM C 840. Comply with requirements of GA-600 for fire-rated assemblies.

B. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum five years of documented experience.

C. Single-Source Responsibility: Obtain finishing products from same manufacturer of gypsum board or panel products, or from a manufacturer acceptable to gypsum board manufacturer.

1.07 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

1.08 DELIVERY, STORAGE, AND PROTECTION

A. Deliver materials in original packages, containers, or bundles bearing the brand name and product identification of manufacturer.

B. Store materials inside under cover and keep dry. Neatly stack gypsum panels flat to prevent sagging off the ground of slab.

C. Stack gypsum board were directed by Hoffman Corporation representative. Space stacks across floor. Do not exceed live load capacity of floor system.

D. Handle gypsum board to prevent damage to edges, ends, and surfaces. do not bend or otherwise damage metal corner beads and trim.

1.09 PROJECT CONDITIONS

A. Do not install or finish gypsum board unless environmental conditions comply with ASTM C 840 or with gypsum board manufacturer's recommendations.

B. Ventilate spaces as required for drying joint and finish materials. Avoid drafts to prevent finishing materials from drying too rapidly.

1.10 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire rated assemblies as indicated on drawings.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C 840 and GA-216.

2.02 MANUFACTURERS

A. Gypsum Board:
   1. G-P Gypsum Corporation.
   2. National Gypsum Co.
   3. United States Gypsum Co.
   4. PABCO Gypsum. (QuietRock). www.quietrock.com

B. Metal Furring:
   1. Clark.
   2. Dale Industries, Inc.
   3. Dietrich Industries, Inc.
   4. Marino Industries Corporation.
   5. Unimast Inc.

C. Substitutions: See Section 01 6000 - Product Requirements.

2.03 METAL FRAMING MATERIALS

A. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, size and gage to comply with ASTM C 754 at spacing indicated; maximum deflection of wall framing of L/240 at 5 psf.
   1. Studs: "C" shaped with flat or formed webs with knurled faces.
   2. Runners: U shaped, sized to match studs.
   3. Ceiling Channels: C shaped.
   4. Furring: Hat-shaped sections, minimum depth of 7/8 inch or as noted on drawings.

B. Load bearing Studs for Application of Gypsum Board: As specified in Section 05 4000 (05400).

C. Shaft Wall Studs and Accessories: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754.

D. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.

2.04 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Thickness:
      a. Vertical Surfaces: 5/8 inch.

B. Sound Dampening Gypsum Board: QuietRock 527.

   1. Application: Use at vertical surfaces and ceilings.

   2. Thickness, 5/8 inch.

C. Gypsum Board - All Types: Complying with applicable requirements of ASTM C 1396/C 1396M.

D. Gypsum Wallboard: ASTM C 1396/C 1396M. Sizes to minimize joints in place; ends square cut.
   1. Thickness: 5/8 inch or as indicated.
   2. Edges: Tapered edges.

E. Type X: Fire resistant, UL or WH rated.
   1. Application: Where required for fire-rated assemblies, unless otherwise indicated.
   2. Thickness: As indicated.
   3. Ceiling Board: Special sag-resistant type.
      a. Application: Ceilings, unless otherwise indicated.
      b. Thickness: 5/8 inch.
      c. Edges: Tapered.
   4. Edges: Tapered.

F. Abuse Resistant Gypsum Wallboard: ASTM C 1278; sizes to minimize joints in place; ends square cut.
   1. Thickness: 5/8 inch or as indicated.
   2. Edges: Tapered.

G. Water-Resistant Gypsum Backing Board: ASTM C 1396/C 1396M; ends square cut.
   1. Application: Vertical surfaces behind thinset tile, except in wet areas.
   2. Edges: Tapered.
   3. Thickness: As indicated.
   4. Edges: Tapered.

2.05 FIBERGLASS FACED BOARD MATERIALS

A. Cementitious Backer Board: ANSI A118.9, aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces, 1/2 inch thick. To be used on wet walls of Toilet Rooms where plumbing fixtures and a tile finish occur.

2.06 ACCESSORIES

A. Acoustic Insulation: ASTM C 665; preformed mineral fiber, friction fit type, unfaced. Thickness: 3-1/2 inch.

B. Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   1. Applications: Use for concealed locations only:
      a. Sealant bead between top stud runner and structure and between bottom stud track and floor.

C. Laminating Adhesive: Adhesive recommended by board manufacturer.

D. Joint Tape:
   1. Wallboard Tape: 2-1/16 inch wide paper reinforcing tape.
   2. Cementitious Backer Board Tape: 2 inch wide, coated glass fiber tape for joints and corners.

E. Trim Accessories: Paper faced metal bead and trim unless otherwise noted.
   1. Corner Beads: Paper faced, similar to B1 series by USG.
   2. Corner Reinforcement: Galvanized steel, similar to Dur-A-Bead manufactured by USG.
   3. Control Joint: Prefinished zinc with tape protected opening, width as required or detailed.

F. Edge Trim: Bead type(s) as detailed.

G. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.

H. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.

I. Screws for Attachment to Steel Members From 0.033 to 0.112 inch in Thickness: ASTM C 954; steel drill screws for application of gypsum board to load bearing steel studs.

J. Screws: ASTM C 1002; self-drilling type, corrosion resistant coating for high-humidity locations.

K. Screws: ASTM C 954; steel drill screws for application of gypsum board to loadbearing steel studs.

L. Hanger Wire: 8 gauge, galvanized wire.

M. Tie Wire: 18 gauge, galvanized wire.

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

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:
   1. Prepared spaces are sized and located in accordance with drawings.
   2. Framing, reinforcement, and anchoring devices are correct type and are located in accordance with shop drawings.

B. Installer's Examination:
   1. Examine conditions under which installation is to be performed; submit written notification if such conditions are unacceptable.
   2. Installation activities before unacceptable conditions have been corrected is prohibited.
   3. Installation indicates installer's acceptance of conditions.

3.02 SHAFT WALL INSTALLATION

A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.

B. Shaft Wall Liner: Cut panels to accurate dimension and install sequentially between special friction studs.

3.03 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C 754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   1. Level ceiling system to a tolerance of 1/1200.
   2. Laterally brace entire suspension system.

C. Studs: Space studs as indicated.
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Extend stud framing to ceiling where indicated. Attach ceiling runner securely to acoustic ceiling track in accordance with manufacturer's instructions.
   4. Extend stud framing through ceiling to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.

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

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

F. Acoustic Furring: Install resilient channels at maximum 24 inches on center. Locate joints over framing members.

G. Furring for Fire Ratings: Install as required for fire resistance ratings indicated and to GA-600 requirements.

H. Blocking: Install blocking for support of plumbing fixtures. Bolt or screw steel channels to studs.

3.04 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
   1. Place one bead continuously on substrate before installation of perimeter framing members.
   2. Place continuous bead at perimeter of each layer of gypsum board.
   3. In non-fire-rated construction, seal around all penetrations by conduit, pipe, ducts, and rough-in boxes.

3.05 BOARD AND GLASS MAT FACED BOARD INSTALLATION

A. Comply with ASTM C 840. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Single-Layer Fire-Rated: Install gypsum board vertically, with edges and ends occurring over firm bearing.

D. Double-Layer Non-Rated: Use gypsum board for first layer, placed perpendicular to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

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

F. Installation on Metal Framing: Use screws for attachment of all gypsum board except face layer of non-rated double-layer assemblies, which may be installed by means of adhesive lamination.

G. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

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

3.06 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints where noted on drawings or as follows:
   1. Where partitions, furring, or column fireproofing abuts a structural element or dissimilar wall or ceiling (except floors).
   2. Ceiling or soffit abuts a structural element, dissimilar wall or partition, or other vertical penetration.
   3. Not more than 30 feet for walls and partitions.
   4. Not more than 50 feet in either direction for ceilings with perimeter relief, 30 feet without relief.
   5. At locations of control joints that occur in the building.
   6. Wings of "L", "U", and "T" shaped ceilings areas that are common or joined.
   7. Construction changes within the plane of a partition or ceiling.

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

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

3.07 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C 840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

B. Finish gypsum board in accordance with levels defined in ASTM C 840 as scheduled below:
   1. Level 1: Ceiling plenum areas, concealed areas, and as indicated, unless a higher level of finish is required for fire-resistive-rated or sound-rated assemblies.

2. Level 3: Utility areas and areas behind cabinetry.
3. Level 4: Areas to receive light-textured finishes, wallcoverings, and flat paints over light textures.
4. Level 5: Walls and ceilings scheduled to receive semi-gloss or gloss paint finish.

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

D. Tape and finish wallboard for a minimum of 6" above finish ceiling elevation.

E. Apply joint tape over gypsum board joints except those with trim or accessories having concealed face flanges not requiring taping to prevent cracks from occuring..

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

3.08 CLEANUP

A. Cleanup, remove from the site, and legally dispose of all materials related to work in this section.

3.09 TOLERANCES

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

END OF SECTION

SECTION 09 5110

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 RELATED REQUIREMENTS

A. Section 07 9000 - Joint Sealers: Acoustical sealant.

B. Fire Alarm System: Fire alarm components in ceiling system.

C. Fire-Suppression Sprinkler Systems: Sprinkler heads in ceiling system.

D. HVAC.

E. Interior Lighting: Light fixtures in ceiling system.

F. Public Address Systems: Speakers in ceiling system.

G. Fire Alarm Systems:

H. Phone and Data Distribution System.

1.03 REFERENCE STANDARDS

A. ASTM C 635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM E 1264 - Standard Classification for Acoustical Ceiling Products.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

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

C. Manufacturer's Installation Instructions: Indicate special procedures.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

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

1.07 PROJECT CONDITIONS

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

B. Install acoustical units after interior wet work is dry.

1.08 EXTRA MATERIALS

A. See Section 01 6000 - Product Requirements, for additional provisions.

B. Provide 5 percent of total acoustical unit area of each type of acoustical unit for McHenry County's use in maintenance of project.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. Manufacturers:
   1. Armstrong World Industries, Inc.
   2. Celotex Corp.
   3. USG Interiors, Inc.

B. Acoustical Units - General: ASTM E 1264, Class A.

C. Acoustical Panels Type ACT1: ASTM E 1264 Type III, Class A, Cast ceiling Tile, conforming to the following:
   1. Product:)match existing)
   2. Thickness: 3/4 inches.
   3. Composition: Nodular, cast or molded.
   4. Light Reflectance: 0.90 percent, determined as specified in ASTM E 1264.
   5. NRC Range: 0.70, determined as specified in ASTM E 1264.
   6. Sag Resistance: Provide 15-year warranty.
   7. Ceiling Attenuation Class (CAC): 35, determined as specified in ASTM E 1264.
   8. Edge: SLB.
   9. Surface Color: White.
   10. Surface Pattern: non-directional textures.
   11. Suspension System: Exposed grid, 15/16 inches.
   12. Size: 24 x 24, 24 x 48 (match existing).

2.02 SUSPENSION SYSTEM

A. Manufacturers:
   1. Armstrong World Industries, Inc..
   2. Chicago Metallic Corp..
   3. USG Interiors, Inc.
   4. Substitutions: See Section 01 6000 - Product Requirements.

B. Suspension Systems - General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

C. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; Intermediate-duty.
   1. Profile: Tee; 15/16 inch wide face. 9/16 for ACT3 only.
   2. Finish: White painted.

2.03 ACCESSORIES

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

B. Perimeter Moldings: Same material and finish as grid or the ceiling system specified.
   1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.

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

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

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

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C 636, ASTM E 580, and manufacturer's instructions and as supplemented in this section.

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

C. Locate system on room axis according to reflected plan, with a minimum 2" tile width at edges.

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

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

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

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

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

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

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

3.03 INSTALLATION - ACOUSTICAL UNITS

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

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

C. Fit border trim neatly against abutting surfaces.

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

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

F. Cutting Acoustical Units:
   1. Cut to fit irregular grid and perimeter edge trim.
   2. Make field cut edges of same profile as factory edges.
   3. Double cut and field paint exposed reveal edges.

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

H. Install hold-down clips on each panel to retain panels tight to grid system; comply with fire rating requirements.

I. Install hold-down clips on panels within 20 ft of an exterior door.

3.04 TOLERANCES

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

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

3.05 CLEAN UP

A. Remove cut-offs and carton waste to dumpster or as designated. Leave rooms clean. Remove marks, rough edges, and damaged tile.

B. Deliver extra stock to Owner at close-out.

END OF SECTION

SECTION 09 6500

RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Static Dissipative Tile.

B. Resilient base.

C. Installation accessories.

1.02 RELATED REQUIREMENTS

Not Used

1.03 REFERENCE STANDARDS

A. ASTM F 1066 - Standard Specification for Vinyl Composition Floor Tile.

B. ASTM F 1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing.

C. ASTM F 1861 - Standard Specification for Resilient Wall Base.

1.04 PERFORMANCE REQUIREMENTS

A. Conform to applicable code for fire performance ratings as follows:
   1. Flame spread: Maximum 75, per ASTM E 84.
   2. Smoke developed: Maximum 450, per ASTM E 84.
   3. Smoke density: Maximum 450, per ASTM E 662.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

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

C. Selection Samples: Submit manufacturer's complete set of color samples for CBJ Architects P.C.'s initial selection.

D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect roll materials from damage by storing on end.

1.07 FIELD CONDITIONS

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

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

1.08 EXTRA MATERIALS

A. See Section 01 6000 - Product Requirements, for additional provisions.

B. Provide 100 sq ft of flooring, 50 lineal feet of base, and 5 percent of installed stair materials of each type and color specified.

PART 2 PRODUCTS

2.01 SHEET FLOORING-Not used

2.02 TILE FLOORING

A. Static Dissipative Tile: Homogeneous, with color extending throughout thickness, and:
   1. Minimum Requirements: Comply with ASTM F 1066, of Class corresponding to type specified.
   2. Size: 12 x 12 inch.
   3. Thickness: 0.125 inch.
   4. Pattern: Marbleized.
   5. Manufacturers:
      a. Armstrong World Industries, Inc: www.armstrong.com.
      b. Mannington Mills, Inc; Product Essentials: www.mannington.com. Design Basis
      c. Tarkett Inc: www.tarkett.com.
      d. Substitutions: See Section 01 6000 (01600) - Product Requirements.

B. Feature Strips: Of same material as tile.

2.03 RESILIENT BASE

A. Resilient Base: ASTM F 1861, Type TV, vinyl, thermoplastic; top set Style A, Straight, and as follows:
   1. Height: 4 inch.
   2. Thickness: 0.080 inch thick.
   3. Finish: Satin.
   4. Length: 4 foot sections.
   5. Color: Color as selected from manufacturer's standards.
   6. Accessories: Premolded external corners, internal corners, and end stops.
   7. Manufacturers:
      a. Armstrong.
      b. Johnsonite, Inc: www.johnsonite.com. Design Basis.
      c. VPI.
      d. Substitutions: See Section 01 6000 (01600) - Product Requirements.

2.04 ACCESSORIES

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

B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.

C. Filler for Coved Base: Plastic.

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

PART 3 EXECUTION

3.01 EXAMINATION

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

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

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

D. Verify that sub-floor surfaces are dust-free and free of substances which would impair bonding of adhesive materials to sub-floor surfaces.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare sub-floor surfaces as recommended by flooring and adhesive manufacturers.

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

C. Prohibit traffic until filler is cured.

D. Clean substrate.

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

3.03 INSTALLATION

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

B. Install in accordance with manufacturer's instructions.

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

D. Fit joints tightly.

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

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

G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

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

3.04 SHEET FLOORING

3.05 TILE FLOORING

A. Install in accordance with manufacturer's instructions.

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

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

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

E. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.

F. Install tile to ashlar pattern. Allow minimum 1/2 full size tile width at room or area perimeter.

G. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.

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

I. Install flooring in recessed floor access covers. Maintain floor pattern.

J. At movable partitions, install flooring under partitions without interrupting floor pattern.

K. Install feature strips and floor markings where indicated. Fit joints tightly.

3.06 RESILIENT BASE

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

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

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

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

E. Install coved base at tile floors.

F. Install straight base at carpeted floors.

3.07 CLEANING

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

B. Clean in accordance with manufacturer's instructions.

C. Clean, seal, and wax resilient flooring products in accordance with manufacturer's instructions.

3.08 PROTECTION

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

END OF SECTION

SECTION 09 9000

PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

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

C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:

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

E. Installation of sealants at hollow metal frames.

F. Painting materials and methods for conduit identification specified in Section 26 0553 (16075).

G. See Schedule - Surfaces to be Finished, refer to drawings.

1.02 RELATED REQUIREMENTS

A. Section 05 5000 - Metal Fabrications: Shop-primed items.

B. Section 07 9005 - Joint Sealers.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.

B. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.

C. ASTM D 4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.

D. SSPC (PM1) - Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for Protective Coatings.

E. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications; Society for Protective Coatings.

1.04 DEFINITIONS

A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.05 SUBMITTALS

A. See Section 01000 - For submittal procedures.

B. Product Data: Provide data on all finishing products, including VOC content.

C. Samples: Submit two paper chip samples, 6 x 6 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.

D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

F. VOC Limits:
   1. Paint - provide documentation/product information maintaining product VOC limits of 150g/L for non-flat and 50g/L flat.
   2. Adhesives (interior only) - provide documentation/product information maintaining product adhesive VOC limits: Total VOC limit 10.0 mg/m2/hr, Formaldehyde 0.05 mg/m2/hr, 2-Ethyl-1-Hexanol 3.0 mg/m2/hr.
   3. Sealant (interior only) - provide documentation/product information maintaining product sealant VOC limits: 250g/L.

1.06 QUALITY ASSURANCE

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

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

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

B. Products supplied as a part of the work of this section shall be V.O.C. compliant with local, state, and federal regulations.

1.08 MOCK-UP

A. See Section 01 4000 - Quality Requirements, for general requirements for mock-up.

B. Provide panel, 8 feet long by 8 feet wide, illustrating special coating color, texture, and finish.

C. Provide door and frame assembly illustrating paint coating color, texture, and finish.

D. Locate where directed.

E. Mock-up may remain as part of the work.

1.09 DELIVERY, STORAGE, AND HANDLING

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

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

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

1.10 FIELD CONDITIONS

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

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

C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.

F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.11 EXTRA MATERIALS

A. See Section 01 6000 - Product Requirements, for additional provisions.

B. Provide 1 set of properly labeled draw downs to the owner for each type of paint, stain, or finish used.

C. Supply 1 gallon of each color; store where directed.

D. Label each container with color in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

B. Paints:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.
4. Pratt and Lambert.

C. Transparent Finishes:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.

D. Stains:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.

E. Primer Sealers:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.
4. Pratt and Lambert.

F. Block Fillers:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.
4. Pratt and Lambert.

G. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
2. Supply each coating material in quantity required to complete entire project's work from a single production run.
3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

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

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

2.03 PAINT SYSTEMS - EXTERIOR

A. Ferrous Metals, Primed, Alkyd, 2 Coat:
   1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
   2. Gloss: Two coats of alkyd gloss enamel.

B. Paint MgE-OP-3A - Galvanized Metals, Alkyd, 3 Coat:
   1. One coat galvanize primer.

2.04 PAINT SYSTEMS - INTERIOR

A. Wood, Transparent, Varnish, Stain:
   1. One coat of stain.
   2. One coat sealer; .
   3. Satin: One coat of varnish; 5 coats at wearing surfaces w/i the courtrooms.

B. Paint CI-OP-3L - Concrete/Masonry, Opaque, Latex, 3 Coat:
   1. One coat of block filler.
   2. Semi-gloss: Two coats of latex enamel.

C. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
   1. One coat of alkyd primer.
   2. Semi-gloss: Two coats of alkyd enamel; .

D. Paint MI-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
   1. Touch-up with rust inhibitive metal primer.
   2. Semi-gloss: Two coats of alkyd enamel; .

E. Paint CI-OP-3E - Concrete/Masonry, Epoxy Enamel, 3 Coat:
   1. One coat of catalyzed epoxy primer.
   2. Gloss: Two coats of catalyzed epoxy enamel.

F. Gypsum Board/Plaster, Epoxy Enamel, 3 Coat:
   1. One coat of catalyzed epoxy primer.
   2. Gloss: Two coats of catalyzed epoxy enamel.

G. Paint GI-OP-3L - Gypsum Board/Plaster, Latex, 3 Coat:
   1. One coat of latex primer sealer.
   2. Eggshell: Two coats of latex enamel.

H. Paint GI-OP-3LA - Gypsum Board/Plaster, Latex-Acrylic, 3 Coat:
   1. One coat of alkyd primer sealer.
   2. Eggshell: Two coats of latex-acrylic enamel.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Plaster and Stucco: 12 percent.
   3. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
   4. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.
   5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to coating application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.

I. Plaster Surfaces to be Painted: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

J. Concrete Floors and Traffic Surfaces to be Painted: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

K. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

L. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

M. Interior Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

N. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

O. Fill nail holes on all trim components for glass lites in doors and windows.

P. Fill nail holes on all pre-finished items.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance.

E. Sand wood and metal surfaces lightly between coats to achieve required finish.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

I. Spray paint door frames. Brush applied coatings is not acceptable.

3.04 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Refer to Section 22 0553 and Section 26 0553 for schedule of color coding of equipment, duct work, piping, and conduit.

B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

C. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.05 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection.

3.06 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.07 SCHEDULE - SURFACES TO BE FINISHED

A. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted.
   2. Fire rating labels, equipment serial number and capacity labels.

B. Paint the surfaces described below under Schedule - Paint Systems.

C. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
   1. Paint all insulated and exposed pipes occurring in finished areas to match background surfaces, unless otherwise indicated.
   2. Paint shop-primed items occurring in finished areas.
   3. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
   4. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

3.08 SCHEDULE - PAINT SYSTEMS

A. Gypsum Board: Finish all surfaces exposed to view.

B. Steel Door Frames: Match existing finish on all surfaces exposed to view.

C. Steel Fabrications: Finish all surfaces exposed to view.

D. Shop-Primed Metal Items: Finish all surfaces exposed to view.

3.09 SCHEDULE - COLORS

A. To be selected by interior Architect.

END OF SECTION

SECTION 02225

DEMOLITION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selective demolition of built site elements.

B. Selective demolition of building elements for alterations purposes.

C. Abandonment and removal of existing utilities and utility structures.

1.02 RELATED SECTIONS

A. Section 01100 - Summary: Limitations on Prime Hoffman's use of site and premises.

B. Section 01100 - Summary: Description of items to be salvaged or removed for re-use by Prime Hoffman.

C. Section 01500 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.

D. Section 01600 - Product Requirements: Handling and storage of items removed for salvage and relocation.

E. Section 01700 - Execution Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.

1.03 REFERENCES

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2004.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Site Plan: Showing:
   1. Areas for temporary construction and field offices.

C. Demolition Plan: Submit demolition plan as specified by OSHA and local authorities.
   1. Indicate extent of demolition, removal sequence, bracing and shoring, and location and construction of barricades and fences.
   2. Identify demolition firm and submit qualifications.
   3. Include a summary of safety procedures.

D. Project Record Documents: Accurately record actual locations of capped and active utilities and subsurface construction.

1.05 QUALITY ASSURANCE

A. Demolition Firm: Company specializing in the type of work required.
   1. Minimum of 5 years of documented experience.

1.06 PROJECT CONDITIONS

A. Comply with other requirements specified in Section 01700.

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 SCOPE

A. Remove paving and curbs as required to accomplish new work.

B. Remove other items indicated, for salvage, relocation, and recycling.

C. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as required so that required rough grade elevations do not subside within one year after completion.

3.02 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.
   1. Obtain required permits.
   2. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
   3. Provide, erect, and maintain temporary barriers and security devices.
   4. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
   5. Do not close or obstruct roadways or sidewalks without permit.
   6. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.
   7. Obtain written permission from owners of adjacent properties when demolition equipment will traverse, infringe upon or limit access to their property.

B. Do not begin removal until receipt of notification to proceed from The County of McHenry.

C. Protect existing structures and other elements that are not to be removed.
   1. Provide bracing and shoring.
   2. Prevent movement or settlement of adjacent structures.
   3. Stop work immediately if adjacent structures appear to be in danger.

D. If hazardous materials are discovered during removal operations, stop work and notify CBJ Architects and The County of McHenry; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

E. Perform demolition in a manner that maximizes salvage and recycling of materials.
   1. Dismantle existing construction and separate materials.
   2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

F. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.03 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to The County of McHenry.

E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to The County of McHenry.

F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

3.04 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
   1. Verify that construction and utility arrangements are as shown.
   2. Report discrepancies to CBJ Architects before disturbing existing installation.
   3. Beginning of demolition work constitutes acceptance of existing conditions.

B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.

C. Remove existing work as indicated and as required to accomplish new work.
   1. Remove items indicated on drawings.

D. Services (Including but not limited to HVAC, Plumbing, Fire Protection, Electrical, Telecommunications, and data lines): Remove existing systems and equipment as indicated.
   1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
   2. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
   3. Verify that abandoned services serve only abandoned facilities before removal.
   4. Remove abandoned pipe, ducts, conduits, and equipment, including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification.

E. Protect existing work to remain.
   1. Prevent movement of structure; provide shoring and bracing if necessary.
   2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
   3. Repair adjacent construction and finishes damaged during removal work.
   4. Patch as specified for patching new work.

3.05 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

SECTION 03932

CONCRETE REPAIR

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preparation of concrete and application of repair materials.

B. Rehabilitation of concrete surfaces.

C. Repair of concrete internal reinforcement.

1.02 UNIT PRICES - MEASUREMENT AND PAYMENT

A. Repair Surface: By the cubice foot (meter). Includes surface preparation, repair, finishing.

1.03 REFERENCES

A. ASTM A 996/A 996M - Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement; 2004.

B. AWS D1.4/D1.4M - Structural Welding Code - Reinforcing Steel; American Welding Society; 2005.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Indicate product standards, physical and chemical characteristics, technical specifications, limitations, maintenance instructions, and general recommendations regarding each material.

C. Manufacturer's Certificate: Certify that specified products meet or exceed specified requirements.

D. Project Record Documents: Accurately record actual locations of structural reinforcement repairs, type of repair.

1.05 QUALITY ASSURANCE

A. Perform welding work in accordance with AWS D1.4.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.

C. Applicator Qualifications: Company specializing in performing the work of this section with minimum five years of experience.

D. Design reinforcement splices under direct supervision of a Professional Structural Engineer experienced in design of this type of work and licensed in Illinois.

1.06 DELIVERY, STORAGE, AND PROTECTION

A. Comply with manufacturers' instructions for storage, shelf life limitations, and handling.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Cementitious Mortars:
   1. W.R. Bonsal Co.; Product Sakrete, cement patcher: www.bonsal.com.
   2. W.R. Bonsal Co.; Product Sakrete, concrete resurfacer: www.bonsal.com.
   3. Substitutions: See Section 01600 - Product Requirements.

B. Bonding Agents:

1. Degussa Building Systems.; Product Thoro Acryl 60: www.chemrex.com.
2. Substitutions: See Section 01600 - Product Requirements.

2.02 FORMWORK

A. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
   1. Plywood: Douglas Fir species; solid one side grade; sound undamaged sheets with clean, true edges.
   2. Preformed Steel Forms: Minimum 16 gage (1.5 mm) matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.

2.03 FORMWORK ACCESSORIES

A. Form Ties: Snap-off type, galvanized metal, fixed length, cone type, 1-1/2 inch back break dimension, free of defects that could leave holes larger than 1 inch (25 mm) in concrete surface.

B. Form Release Agent: Colorless mineral oil that will not stain concrete or adversely affect concrete or coatings.

C. Corners: Filleted, wood strip type; 1/2 x 1/2 inch size; maximum possible lengths.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.

2.04 PATCHING MATERIALS

A. Normal Patch Materials: For repairs less than 3" deep use

B. Deep Patch Materials: For repairs more than 3" deep use

C. Epoxy Bonding Agent:

D. Reinforcing Bar Coating:

E. Concrete Hi-Build Epoxy Coating:

F. Bonding Agent: Polyvinyl acetate emulsion, dispersed in water while mixing, non-coagulant in mix, water resistant when cured.

2.05 REINFORCEMENT MATERIALS

A. Reinforcing Steel: Deformed bars, ASTM A 996/A 996M Grade 40 (280), Type A.

B. Chairs, Bolsters, Bar Supports: Use plastic or stainless steel chairs, bolsters, and bar supports that are sized and shaped for support of reinforcement.

2.06 MIXING EPOXY MORTARS

A. Mix epoxy mortars in accordance with manufacturer's instructions for purpose intended.

B. Mix components in clean equipment or containers. Conform to pot life and workability limits.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work.

B. Beginning of installation means acceptance of substrate.

3.02 PREPARATION

A. Saw-cut the perimeters of all repair areas, as shown on drawings, to a depth of 1" for epoxy bonded concrete repairs and to a depth of 1/2" for epoxy mortar repairs.

B. Remove all unsound concrete within the areas defined by the saw-cuts to the approximate depths noted on the drawings, or deeper if required to expose sound concrete throughout the entire repair area. Use medium to lightweight air hammers equipped with appropriate cutting tools.

C. Clean existing concrete surfaces of dirt, laitance, corrosion, or other contamination; wire brush using water; rinse surface and allow to dry.

D. Sand blast the exposed concrete and reinforcement steel surfaces. Mechanically cut away damaged portions of bar.

E. Where more than half the diameter of a reinforcing bar is exposed, excavate around the bar to provide a minimum 1" clearance.

F. After sandblasting, all exposed surfaces should be cleaned with a high pressure water jet then allowed to dry. The resulting surface should be free of all surface contaminants that could be detrimental to the epoxy bond.

3.03 REINFORCEMENT AND ANCHOR PLACEMENT

A. At locations at which existing reinforcement bars have been damaged by concrete removal operations or corrosion, such that more than half the effective bar diameter has been lost, replace the damaged bar with similar sections lapped in accordance with ACI 318 guidelines.

B. Install stirrups, tie bars, and anchors with the specified anchoring compound, at the spacings noted on drawings. Drill holes approximately 1/8" larger than the diameter of the bar to a depth of 1/2" deeper than the minimum embedment length.

C. Mix the anchoring compound in strict accordance with the manufacturer's recommendations, fill the holes with the compound, install the anchors centered in the holes, and allow the compound to cure.

D. After sandblasting, coat existing exposed reinforcement with specified coating and allow to cure as required by manufacturer.

3.04 FORMED CONCRETE REPAIRS

A. Erect formwork, shoring, and bracing so that the column profiles will match the existing construction. Fabricate forms in such a manner that forms can be assembled and sealed within the time limits of the epoxy bond coat.

B. Provide formwork bracing to ensure the stability of the formwork during repair material placement and vibration.

C. Prior to installing forms, apply form release agents in strict accordance with the manufacturer's recommendations. Do not apply form release agents to existing reinforcement.

D. Seal the formwork to the existing concrete using sealants or other materials as required to prevent leakage.

E. Install forms and place repair materials continuously to the extents of the repair areas. Vibrate the materials according to ACI 301 guidelines.

F. Do not remove forms or bracing until the repair materials have gained sufficient strength to support its own weight and the imposed loads.

G. Maintain the concrete or grout with minimal moisture loss at a relatively constant temperature for the period of time required for hydration of the cement and bonding of the concrete to take place.

3.05 ISOLATED CONCRETE REPAIRS

A. Prepare the surfaces as previously specified. Surfaces should be sound and free of contaminants which would affect the repair bond.

B. Prepare existing concrete surfaces to receive repair materials as recommended by the manufacturer.

C. Mix and install the repair materials in accordance with the manufacturer's recommendations. Fill the spall areas in layers so the final surface of the repair material is flush with the adjacent surfaces.

D. The material used for the spall repairs will depend on the depth of each spall. Use the appropriate material as specified above.

3.06 FIELD QUALITY CONTROL

A. An independent testing agency, as specified in Section 01400, will perform field inspection and testing as follows:
   1. Observe all surfaces after final preparation to verify that all unsound concrete has been removed.
   2. Verify reinforcing bar clearances prior to placement of repair materials and forms.
   3. Check all proprietary materials delivered to the site for the project. Sample tags should be retrieved for each material specific.

3.07 DEFECTIVE MATERIALS

A. Test Results: The testing agency shall report test results in writing to CBJ Architects within 24 hours of test.

B. Defective Materials: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

C. Repair or replacement of defective materials will be determined by the CBJ Architects. The cost of additional testing shall be borne by when defective concrete is identified.

D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of CBJ Architects for each individual area.

3.08 CLEANUP

A. Cleanup, remove from the site, and legally dispose of all debris and excess material related to the work in this section.

END OF SECTION

SECTION 06067

HIGH PRESSURE DECORATIVE LAMINATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. High pressure decorative laminate for vertical, horizontal, post-formed, chemical resistant, and fire-rated surfaces of cabinets, countertops, paneling, and windowsills.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Nevamar Decorative Surfaces; 8339 Telegraph Road, Odenton, MD 2 1113-1397. ASD. Tel: (410) 551-5000 or (800) 638-4380. www.nevamar.com.
   1. Provide all high pressure decorative laminates from a single manufacturer.

2.02 MATERIALS

A. High Pressure Decorative Laminates: Complying with NEMA LD 3, of grades and thicknesses as indicated.

B. High-Pressure Decorative Laminate for Vertical Surfaces: NEVAMAR(R) Armored Protection(tm) Laminated Plastic Vertical Forming Grade VF-3 (VGP):
   1. Thickness: 0.028 plus/minus 0.004 inch (0.7 plus/minus 0.10 mm).
   2. Color/Pattern: As indicated on drawings.

C. High-Pressure Decorative Laminate for Other Horizontal Surfaces: NEVAMAR(R) Armored Protection(tm) Laminated Plastic Horizontal Grade H-5 (HGS):
   1. Thickness: 0.048 plus/minus 0.005 inch (1.2 plus/minus 0.12 mm).
   2. Color/Pattern: As indicated on drawings.

2.03 FABRICATION

A. Bond plastic laminate to core material using adhesives and techniques recommended by adhesive manufacturer and ANSI A161.2.

B. Take care that moisture imbalance does not exist between plastic laminate and substrate before fabrication.

C. Provide minimum radius of 1/8 inch (3.2 mm) at inside corners of cut-outs; file edges smooth to prevent stress cracking.

D. Saw, drill, edge file, sand, and rout plastic laminate with decorative side up to prevent cracking or chipping of laminate surface.
   1. Use carbide tipped cutting edges on saws, drills, and routers.
   2. Drill plastic laminate with a wood backing to prevent "breakout" at bottom of drilled holes.
   3. Cut curved edges slightly oversize and finish by sanding, filing, or routing for smooth edges.

PART 3 EXECUTION

3.01 INSTALLATION OF FABRICATED UNITS

END OF SECTION

SECTION 06068

STATIC DISSIPATIVE LAMINATES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Static dissipative laminate for vertical, horizontal, post-formed surfaces of cabinets, countertops, paneling, and windowsills.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Acceptable Manufacturer: Nevamar Decorative Surfaces; 8339 Telegraph Road, Odenton, MD 2 1113-1397. ASD. Tel: (410) 551-5000 or (800) 638-4380. www.nevamar.com.
   1. Provide all static dissipative laminates from a single manufacturer.

2.02 MATERIALS

A. Static Dissipative Laminates: Complying with NEMA LD 3, of grades and thicknesses as indicated.

   1. A28 Vertical Postforming
   2. A38 Horizontal Postforming
   3. A60 General Purpose

2.03 FABRICATION

A. Bond plastic laminate to core material using adhesives and techniques recommended by adhesive manufacturer and ANSI A161.2.

B. Take care that moisture imbalance does not exist between plastic laminate and substrate before fabrication.

C. Provide minimum radius of 1/8 inch (3.2 mm) at inside corners of cut-outs; file edges smooth to prevent stress cracking.

D. Saw, drill, edge file, sand, and rout plastic laminate with decorative side up to prevent cracking or chipping of laminate surface.
   1. Use carbide tipped cutting edges on saws, drills, and routers.
   2. Drill plastic laminate with a wood backing to prevent "breakout" at bottom of drilled holes.
   3. Cut curved edges slightly oversize and finish by sanding, filing, or routing for smooth edges.

PART 3 EXECUTION

3.01 INSTALLATION OF FABRICATED UNITS

END OF SECTION

SECTION 06100

ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Roof sheathing.

B. Fire retardant treatment of wood.

C. Miscellaneous framing and sheathing.

D. Telephone and electrical panel boards.

E. Concealed wood blocking for support of wall cabinets and wood trim.

F. Miscellaneous wood nailers and furring strips.

G. Framing anchors and fasteners.

1.02 RELATED SECTIONS

A. Section 04800 - Unit Masonry Assemblies.

B. Section 05090 - Post Installed Anchors.

C. Section 05500 - Metal Fabrications: Miscellaneous steel connectors and support angles for wood framing.

D. Section 07210 - Insulation.

E. Section 09260 - Gypsum Board Assemblies.

1.03 REFERENCES

A. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2004.

B. ASTM D 2898 - Standard Test Methods for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing; 1994 (Reapproved 2004).

C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.

D. AWPA C20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes; American Wood-Preservers' Association; 2002.

E. AWPA C27 - Plywood -- Fire-Retardant Treatment by Pressure Processes; American Wood-Preservers' Association; 2002.

F. AWPA U1 - Use Category System: User Specification for Treated Wood; American Wood-Preservers' Association; 2005.

G. AWPB LP-2 - American Wood Preservers Bureau Quality Control and Inspection Procedures for Softwood Lumber, Timber and Plywood Pressure Treated with Waterborne Preservatives for Above Ground Use; American Wood Preservers Bureau; 1988.

H. AWPB LP-22 - American Wood Preservers Bureau Quality Control and Inspection Procedures for Softwood Lumber, Timber and Plywood Pressure Treated with Waterborne Preservatives for Ground Contact Use; American Wood Preservers Bureau; 1988.

I. FM Global - Property Loss Prevention Data Sheets 1-49, Perimeter Flashings.

J. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2005.

K. SPIB (GR) - Grading Rules; Southern Pine Inspection Bureau, Inc.; 2002.

L. WCLB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau; 2004.

M. WWPA G-5 - Western Lumber Grading Rules; Western Wood Products Association; 2005.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide technical data on the following products.
   1. Metal framing anchors.
   2. Construction adhesives.

C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.05 QUALITY ASSURANCE

A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.
   1. Acceptable Lumber Inspection Agencies: SPIB, WCLB, and WWPA.
   2. Lumber of other species or grades, or graded by other agencies, is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

B. Exposed-to-View Rough Carpentry: Submit manufacturer's certificate that products meet or exceed specified requirements, in lieu of grade stamping.

C. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

D. Single-Source Responsibility: Obtain each type of wood product from one source and by a single manufacturer.

E. Attachment of wood nailers for roofing shall be in accordance with Factory Mutual Systems recommendations listed in the current edition of Loss Prevention Data Sheet 1-49.

1.06 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

1.07 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

A. Lumber fabricated from old growth timber is not permitted.

B. Provide sustainably harvested wood; see Section 01600 for requirements.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: West Coast Lumber Inspection Bureau (WCLB).

B. Sizes: Nominal sizes as indicated on drawings, S4S.

C. Moisture Content: S-dry or MC19.

D. Miscellaneous Blocking and Nailers:

1. Lumber: Spruce-Pine-Fir, No. 2 or Standard Grade.
2. Boards: No. 2.

2.03 ACCESSORIES

A. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
   1. Nails: FS FF-N-105.
   2. Wood Screws: ANSI B18.6.1.

B. Bolts:
   1. Lag Bolts: ANSI B18.2.1.
   2. Anchor Bolts: Steel bolts, galvanized, complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and flat washers where indicated.

C. Expansion and Adhesive Anchors: Section 05090 - Post Installed Anchors.

D. Wind Tie down Anchor: Similar to Simpson H-3, standard 18 gauge galvanized steel, 320 pound wind uplift capacity, 105 pound maximum horizontal load.

E. Plywood Roof Clips: "H" type extruded aluminum or 20 gauge galvanized steel, sized for sheathing thickness.

2.04 FACTORY WOOD TREATMENT

A. Treated Lumber and Plywood: Comply with requirements of AWPA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.

B. Fire Retardant Treatment:
   1. Manufacturers:
      a. Arch Wood Protection, Inc: www.wolmanizedwood.com.
      b. Hoover Treated Wood Products, Inc: www.frtw.com.
      c. _____; Product ____.
   2. Exterior Type: AWPA Use Category UCFB, Commodity Specification H (Treatment C20 for lumber and C27 for plywood), chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E 84, with no evidence of significant combustion when test is extended for an additional 20 minutes both before and after accelerated weathering test performed in accordance with ASTM D 2898.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Do not use treated wood in direct contact with the ground.
   3. Interior Type A: AWPA Use Category UCFA, Commodity Specification H (Treatment C20 for lumber and C27 for plywood), low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread rating of 25 when tested in accordance with ASTM E 84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
      a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
      b. Treat rough carpentry items as indicated.
      c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

C. Pressure Treatment of Lumber Above Grade:
   1. Treatment: Non-arsenic, non-chromium treatment in accordance with AWPA C1 and P5.
   2. Retention: 0.25 lb/cu ft in accordance with AWPA C2 or C9 standards.
   3. Kiln dry lumber after treatment to maximum moisture content of 19 percent, and 18 percent for plywood.
   4. Treat wood in the following locations:

a. Treat lumber in contact with roofing, flashing, or waterproofing.
b. Treat lumber in contact with masonry or concrete.
c. Treat lumber less than 18 inches (450 mm) above grade.
d. Treat lumber exposed to weather.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate and adjacent materials are ready to receive work of this section.

B. Verify substrate surfaces are flat and free of irregularities that would affect work of this section.

3.02 INSTALLATION-GENERAL

A. Discard units of material with defects that impair quality of rough carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.

B. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.

C. Use hot-dip galvanized or stainless steel nails where rough carpentry is exposed to weather, in ground contact, or in areas of high humidity.

D. Use coated, common wire nails, unless otherwise noted. Use finishing nails for finish work.

E. Select fasteners of size and length that will not fully penetrate members where opposite side will be exposed to view, or that will receive finish materials.

F. Install fasteners without splitting wood; predrill as required.

3.03 INSTALLATION - CONCEALED BLOCKING

A. Except as otherwise noted, blocking and backing in walls and ceilings shall be nominal 2-inch thick material of a depth as needed to support finishes, fixtures, specialty items, and trim.

B. Blocking shall fit snugly and shall be spiked or screwed into the supporting members.

C. Blocking (backing) shall be accurately located and installed for all building specialties, toilet accessories, and finish hardware items.

D. Coordinate locations and installation with other trades.

E. Attach blocking to substrates to support applied loading. Bolts and nuts shall be recessed flush with surfaces, unless otherwise indicated.

3.04 TOLERANCES

A. Framing Members: 1/4 inch (6 mm) from true position, maximum.

B. Surface Flatness of Floor: 1/8 inch in 10 feet (1 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

C. Variation from Plumb: Maximum 1/8 inch in 10 feet.

D. Variation from Level: Maximum 1/8 inch in 10 feet.

E. Variation from Plane (Other than Floors): 1/8 inch in 10 feet maximum.

END OF SECTION

SECTION 06410

CUSTOM CABINETS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Specially fabricated cabinet units.

B. Cabinet hardware.

C. Preparation for installing utilities.

1.02 RELATED SECTIONS

A. Section 06 0670 – High Pressure Laminates

B. Section 06 4150 - Countertops.

1.03 REFERENCES

A. ANSI A135.4 - American National Standard for Basic Hardboard; 2004.

B. ANSI A208.1 - American National Standard for Particleboard; 1999.

C. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2006, 8th Ed., Version 2.0.

D. BHMA A156.9 - American National Standard for Cabinet Hardware; Builders Hardware Manufacturers Association; 2003 (ANSI/BHMA A156.9).

E. GSA CID A-A-1936 - Adhesive, Contact, Neoprene Rubber; Federal Specifications and Standards; Revision A, 1996.

F. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; Hardwood Plywood & Veneer Association; 2004 (ANSI/HPVA HP-1).

G. NEMA LD 3 - High-Pressure Decorative Laminates; National Electrical Manufacturers Association; 2005.

H. PS 1 - Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce); 1995.

I. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce); 2005.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Shop Drawings: Submit 5 sets of shop drawings for laminate clad casework and countertops showing layout, elevations, ends, cross-sections, service run spaces, and location of services. Show details and location of anchorage's.
   1. Include layout of units with relation to surrounding walls, doors, windows, and other building components.
   2. Coordinate shop drawings with other work involved.

C. Product Data: Provide data for hardware accessories.

D. Laminate Samples: Submit two 2 x 3 inch samples of casework manufacturer's standard decorative laminate colors, patterns and textures of exposed and semi-exposed materials for architect's selection. Samples will be reviewed by architect for color, texture, and pattern only.

E. Samples: Submit sample of pulls and hinges, illustrating hardware finish.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Custom quality, unless other quality is indicated for specific items.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section with a minimum of five year's experience.

1.06 DEFINITIONS

A. Unit Body Open Interiors: Any storage unit surface without solid door or drawer fronts and units with glass sliding or glass framed doors.

B. Unit Body Closed Interiors: Any storage unit surface behind solid door or drawer fronts.

C. Unit Body Exposed Side: Any storage unit exterior side surface that is visible.

D. Concealed Surfaces: Any surface not normally visible after installation.

1.07 PRE-INSTALLATION MEETING

A. Convene not less than one week before starting work of this section.

1.08 DELIVERY, STORAGE, AND PROTECTION

A. Protect units from moisture damage.

B. Deliver laminate clad casework and countertops only after wet operations in building are completed.

C. Store completed laminate clad casework and countertops in a ventilated place, protected from the weather, with relative humidity range of 20% to 50%.

D. Protect finished surfaces from soiling and damage during handling and installation. Keep covered with a protective covering.

1.09 ENVIRONMENTAL REQUIREMENTS

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

1.10 WARRANTY

A. All materials and workmanship covered by work in this section shall carry a three (3) year warranty from date of substantial completion.

2.01 MANUFACTURERS

A. Hinges:
   1. Blum.
   2. Salice.

B. Adjustable Cabinet Shelf Supports:
   1. Bainbridge.

C. Adjustable Wall-Mounted Shelf Supports:
   1. Knape and Vogt Mfg. Co.

D. Locks:
   1. National Cabinet Lock.
   2. Timberline.

E. Substitutions: See Section 01600 - Product Requirements.

2.02 WOOD-BASED COMPONENTS

A. Wood fabricated from old growth timber is not permitted.

B. Provide sustainably harvested wood, certified or labeled as specified in Section 01600.

2.03 PANEL MATERIALS

A. Hardwood Faced Plywood: HPVA HP-1; graded in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, core of veneer; type of glue recommended for specific application; thickness as required; face veneer as follows:
   1. Exposed Surfaces: Grade A, Red Oak, quarter cut, pleasing-matched.
   2. Semi-Exposed Surfaces: Grade A, Red Oak, quarter cut, pleasing-matched.
   3. Concealed Surfaces: Grade B, Red Oak, rotary cut, random-matched.
   4. Door and Drawer Fronts: Species Red Oak, Grade A.

B. Particleboard: ANSI A208.1; medium density industrial type as specified in AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, composed of wood chips bonded with moisture resistant adhesive under heat and pressure; sanded faces; thickness as required; use for components indicated on drawings.

C. Hardboard: AHA A135.4; Pressed wood fiber with resin binder, Class 1 - Tempered, 1/4 inch (6 mm) thick, smooth two sides (S2S); use for drawer bottoms, dust panels, and other components indicated on drawings.

2.04 LAMINATE MATERIALS

A. Manufacturers:
   1. Formica Corporation: www.formica.com.
   2. Nevamar Company: www.nevamar.com.
   3. Wilsonart International, Inc: www.wilsonart.com.
   4. Substitutions: See Section 01600 - Product Requirements.

B. Plastic Laminate: NEMA LD 3, PF 42 Post Forming type; through color, noted pattern, and gloss surface texture as selected.
   1. GP50: 0.050, NEMA Test LD-3, 1985.
   2. GP38: 0.038, NEMA Test LD-3, 1985.
   3. GP28: 0.028, NEMA Test LD-3, 1985.
   4. PF42: 0.042, NEMA Test LD-3, 1985.
   5. PF30: 0.030, NEMA Test LD-3, 1985.
   6. CL20: 0.020, NEMA Test LD-3, 1985.
   7. Melamine Laminate: NEMA Test LD-3, 1985.
   8. High Pressure Backer: BK20, 0.020.
   9. Color: Selected from Manufacturers standard and custom color range.

C. Plastic Edging:
   1. 2 mm PVC Banding: Machine applied with waterproof hot melt adhesive, edges machine profiled to 1/8" radius for safety.
   2. PVC Colors: Selected from Manufacturers standard and custom color range.

2.05 ACCESSORIES

A. Adhesive: Type recommended by AWI/AWMAC to suit application.

B. Fasteners: Size and type to suit application.

C. Countertop Supports: Brackets, legs and miscellaneous metal parts shall be furniture steel, welded, degreased, cleaned, treated and powder painted in color as selected.

D. Rubber Bumpers: Provide resilient rubber bumpers on all doors and drawers to prevent laminate to laminate contact.

E. Concealed Joint Fasteners: Threaded steel.

F. Grommets: Standard plastic grommets for cut-outs, in color to match adjacent surface.

G. Resins: No added urea-formaldehyde resins.

2.06 HARDWARE

A. Hinges: Blum, full overlay type with mounting plate for clip-on style hinge with 125 degree swing and self-closing. The number of hinges per door shall be as follows:
   1. Door Height 0"-36": 2 hinges per door.
   2. Door Height 37"-62": 3 hinges per door.
   3. Door Height 63"-80": 4 hinges per door.

B. Pulls: 4 inch wire pull, satin chrome finish.

C. Slides: Blum style No. BS 430E, full extension.
   1. Finish: Epoxy finish.
   2. Rating: Rated at 100 pound load rating at full extension and built-in positive stop both directions.
   3. Warranty: Life time warranty as offered by slide manufacturer.
   4. Pencil drawers shall be equipped with K.V. No. 8250 for under counter or support frame mounting.

D. Adjustable Cabinet Shelf Supports:
   1. Injection molded polycarbonate, clear color to blend with selected interior finish, friction fit into cabinet end panels and vertical dividers, readily adjustable on 32mm centers.
   2. Each shelf support shall have two (2) integral support pins, 5mm diameter, to interface predrilled holes, and to prevent accidental rotation of support.
   3. The supports shall be automatically adaptable to 3/4 inch or 1 inch thick shelving and shall provide non-tip feature for shelving.
   4. Design supports that readily permit field fixing of shelf if desired.

E. Adjustable Wall-Mounted Shelf Supports:
   1. Shelves 12" - 14" deep:
      a. Standards: KV0080.
      b. Brackets: KV0180.
   2. Shelves over 14" deep:
      a. Standards: KV0087.
      b. Brackets: KV0186.

F. Locks: Shall be disc tumbler cylinder cam type for overlay cabinet construction. Key removable in both locked and unlocked positions.
   1. Furnish two keys per lock.
   2. All keys to be on a Master key system. Verify with owner key schedule and cylinder designations.

G. Catches: Magnetic.

H. Drawer Slides:
   1. Type: Standard extension.
   2. Static Load Capacity: Commercial grade.
   3. Mounting: Side mounted.
   4. Stops: Integral type.
   5. Features: Provide self-closing/stay closed type.

6. Manufacturers:
   a. Accuride International, Inc: www.accuride.com.
   b. Grass America Inc: www.grassusa.com.
   c. Knape & Vogt Manufacturing Company: www.kv.com.

2.07 SITE FINISHING MATERIALS

A. Stain, Shellac, Varnish and Finishing Materials: As specified in Section 09900.

2.08 FABRICATION - GENERAL

A. Cabinet Style: As indicated for each location.

B. Cabinet Doors and Drawer Fronts: As indicated.

C. Drawer Construction Technique: Dovetail joints.

D. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.

E. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.

F. Cap exposed plastic laminate finish edges with material of same finish and pattern.

G. Fitting: When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide matching trim for scribing and site cutting.

H. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners. Slightly bevel arises. Locate counter butt joints minimum 2 feet (600 mm) from sink cut-outs.
   1. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
   2. Cap exposed plastic laminate finish edges with material of same finish and pattern.

I. Matching Wood Grain: Comply with requirements of quality standard for specified Grade and as follows:
   1. Provide center matched panels at each elevation.
   2. Provide sequence matching across each elevation.
   3. Carry figure of cabinet fronts to toe kicks.

J. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.

K. Provide cutouts for plumbing fixtures, inserts, outlet boxes, and fixtures and fittings. Verify locations of cutouts from on-site dimensions. Seal cut edges.

2.09 FABRICATION - CABINETS

A. General:
   1. Fabricate laminate clad casework to dimensions, profiles, and details shown.

B. Cabinet Joinery:
   1. Tops and bottoms shall be joined to cabinet ends using a minimum of six (6) dowels at each joint for twenty-four (24) inch deep cabinets, and a minimum of four (4) dowels at each joint for twelve (12) inch deep cabinets.

2. Dowels are to be industrial grade hardwood, laterally fluted, with chamfered ends and minimum diameter of ten (10) millimeters.
3. Internal cabinet components such as fixed horizontals, rails and verticals are to be doweled in place.
4. Dowels are to be securely glued and cabinets clamped under pressure during assembly to assure secure joints and cabinet squareness.

C. Unit Door and Drawer Fronts:
1. Fabricate using 3/4 inch thick particleboard.
2. Laminate exposed surface with high pressure decorative laminate GP28.
3. Laminate interior surfaces with cabinet liner CL20.
4. All edges shall be finished with 3mm PVC.
5. Double doors shall be used on all cabinets in excess of 24 inches in width.
6. Clearance between doors and drawers shall be 1/8" maximum.

D. Unit Body Open Interiors:
1. Exposed Cabinet Sides: Meeting the following:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate both sides with high pressure decorative laminate GP28.
   c. The front edge shall be edge-banded with 1 mm PVC to match the door and drawer front edge color.
2. Unexposed Cabinet Sides: Meeting the following:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate the interior with high pressure decorative laminate GP28 and balanced with high pressure backer BK20.
   c. The front edge shall be edge-banded with 1 mm PVC to match the door and drawer front edge color.
3. Unit Top or Sub-Top: Meeting the following:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate with high pressure decorative laminate GP28 and balanced with high pressure backer BK20.
   c. Front edge with 1mm PVC to match the door and drawer front edge color.
   d. All sub-tops shall be full depth.
4. Bottom of Base: Meeting the following:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate the interior with high pressure decorative laminate GP28, and balanced with high pressure backer BK20.
   c. Front edge with 1 mm PVC to match the door and drawer front edge color.
5. Fixed Intermediates: Meeting the following:
   a. Fixed intermediates shall be 3/4 inch thick particleboard.
   b. Laminate both sides with high pressure decorative laminate GP28.
   c. Front edge with 1 mm PVC to match the door and drawer front edge color.
   d. An intermediate will be provided on all units over 36 inches wide.
6. Exposed Back on Fixed or Movable Cabinets:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate with GP28 on the interior and GP28 on the exterior.
7. Adjustable Shelves: Meeting the following:
   a. Fabricate from 3/4 inch thick particleboard up to 27 inches wide and 1 inch thick particleboard over 27 inches wide.
   b. Laminate both sides with high pressure decorative laminate GP28.
   c. Shelves shall be front edged only with 1 mm PVC to match the shelf color.

E. Unit Body Closed Interiors:
1. Exposed Cabinet Sides:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate the exterior with high pressure decorative laminate GP28.
   c. Balance with high pressure cabinet liner CL20.

d. The front edge shall be edge-banded with 1 mm PVC to match the door and drawer front edge.

2. Unexposed Cabinet Sides:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate both sides with thermofused melamine in neutral color.
   c. The front edge shall be edge-banded with 1 mm PVC to match the door and drawer front edge color.
3. Unit Top or Sub top:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate both sides with thermofused melamine.
   c. Front edge with 1 mm PVC to match the door and drawer front edge color.
   d. Sink base units shall have a 3/4" front and rear stretcher in lieu of full sub top. Depth of stretcher varies with sink size and location.
4. Bottom of Base and Wardrobe Units:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate both sides with thermofused melamine.
   c. Front edge with 1 mm PVC to match the door and drawer front edge color.
   d. Sink cabinet bottoms shall be laminated both sides with CL20.
5. Fixed Intermediates:
   a. Fabricate from 3/4 inch thick particleboard.
   b. Laminate both sides with melamine.
   c. Front edge with 1 mm PVC to match the door and drawer front edge color.
   d. Provide an intermediate on all units over 36 inches wide.
6. Cabinet Unit Backs:
   a. Fabricate with 3/8 inch thick particleboard.
   b. Laminate with thermofused melamine on both sides in neutral color.
   c. Exposed back on cabinet shall be 3/4 inch thick particleboard laminated with CL20 on the interior to match melamine color and GP28 on the exterior.
   d. Cabinet backs shall be fully housed into sides, top and bottom and recessed 7/8 inch from cabinet rear.
   e. Attach cabinet backs with waterproof hot melt adhesive.
7. Adjustable Shelves: Meeting the following:
   a. Fabricate from 3/4 inch thick particleboard up to 27 inches wide and 1 inch thick particleboard over 27 inches wide.
   b. Laminate both sides with high pressure decorative laminate GP28.
   c. Shelves shall be front edged only with 2 mm PVC to match the shelf color.

F. Wall Unit Bottom:
1. Open Interiors:
   a. Units with open interiors shall be 3/4 inch thick particleboard.
   b. Laminate with high pressure decorative laminate GP28 on the inside.
   c. Laminate the outside with CL20, neutral color to match adjacent unit bottom.
2. Closed Interiors:
   a. Units with closed interiors shall be 3/4 inch thick particleboard.
   b. Laminate both sides with thermofused melamine laminate in neutral color.
3. Front Edges: Edge-banded with 1 mm PVC to match the door and drawer front edge color.
4. Exposed Bottom Edge: Edge band each cabinet side with 1 mm PVC.

G. Wall and Tall Unit Tops:
1. The top edge of all wall and tall unit end panels shall be factory edged with 1 mm PVC in neutral color.
2. Raw edges at top of wall and tall end panels shall not be permitted.
3. Top shall be laminated with thermofused melamine in neutral color to match interior.

H. Drawers:
1. Sides, Back and Sub-Front:

a. Fabricate from 1/2 inch thick particleboard.
b. Laminate with thermofused melamine in neutral color.
c. Back and sub-front are to be butt jointed, glued with melamine glue, and pinned.

2. Drawer bottoms shall be 3/8 inch thick particleboard, laminated with thermofused melamine both sides in neutral color.
3. Drawer bottom shall be fully housed in back, sub front and sides, recessed 1/2 inch, and attached with waterproof hot melt adhesive.
4. Reinforce drawer bottoms with intermediate spreaders.
5. Paper storage drawers constructed the same as noted above with retaining hood at the rear of each drawer.
6. Painted finish on drawer sides and/or bottom will not be permitted.

I. Bases:
1. Shall be of ladder type construction at front, back and sides with intermediates to form secure and level top and side surfaces to attach units.

2.10 DECORATIVE LAMINATE COUNTERTOPS

A. Standard: ANSI A161.2

B. Countertops:
1. High-pressure decorative laminate PF42 on 3/4 inch particleboard with BK20 on unexposed side for balanced construction, with 1 1/2 inch built-up edges and 4 inch integral back-splash.
2. Provide continuous sheet construction with waterfall and cove back-splash where indicated with half round front edge.
3. Colors as selected from manufacturer's standard color range or as indicated.
4. Attach counter tops securely to base units. Spline and glue joints in counter tops; provide concealed mechanical clamping of joint. Mechanically fasten wall brackets.
5. Provide cut-outs for fixtures; smooth cut edges and coat with waterproof coating or adhesive.

C. Sills:
1. High-pressure decorative laminate GP50 on 3/4 inch particleboard with 1 1/2 inch built-up edge.
2. Cover unexposed surfaces with a balancing backer sheet.
3. All exposed surfaces shall be covered with plastic laminate.

D. Support Brackets:
1. Countertop Supports: Brackets, legs and miscellaneous metal parts shall be furniture steel, welded, degreased, cleaned, treated and powder painted in color as selected.
2. Mechanically fasten to wall at stud locations (where applicable) and to countertop.

2.11 FACTORY FINISHING

A. Sand work smooth and set exposed nails and screws.

B. For opaque finishes, apply wood filler in exposed nail and screw indentations and sand smooth.

C. On items to receive transparent finishes, use wood filler matching or blending with surrounding surfaces and of types recommended for applied finishes.

D. Finish work in accordance with AWI P-200 - Section 1500 System #1.

E. Seal, stain and varnish exposed to view surfaces. Spray apply only.

F. Seal stain and varnish internal exposed to view and semi-concealed surfaces. Brush apply only.

G. Seal internal surfaces of cabinets with one coat of shellac. Brush apply only.

H. Prime paint surfaces in contact with cementitious materials.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify adequacy of backing and support framing.

B. Verify location and sizes of utility rough-in associated with work of this section.

C. Do not proceed with installation if unsatisfactory conditions exist at project site and notify contractor in writing of conditions.

3.02 PREPARATION

A. Condition laminate clad casework to average prevailing humidity conditions in installation areas prior to installing.

3.03 INSTALLATION - CABINETS

A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

B. Use fixture attachments in concealed locations for wall mounted components.

C. Use concealed joint fasteners to align and secure adjoining cabinet units.

D. Carefully scribe casework abutting other components, with maximum gaps of 1/32 inch (1 mm). Do not use additional overlay trim for this purpose.

E. Secure cabinets to floor using appropriate angles and anchorages.

F. Countersink anchorage devices at exposed locations. Conceal with solid wood plugs of species to match surrounding wood; finish flush with surrounding surfaces.

3.04 INSTALLATION - COUNTER TOPS

A. Attach counter tops securely to base units. Spline and glue joints in all counter tops.

B. Provide concealed mechanical clamping of joints.

C. Mechanically fasten wall brackets as required.

D. Provide cut-outs for fixtures; smooth cut edges and coat with waterproof coating or adhesive.

3.05 ADJUSTING

A. Adjust installed work.

B. Adjust moving or operating parts to function smoothly and correctly.

3.06 CLEANING

A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

B. Protect installed work from subsequent construction operations.

END OF SECTION

SECTION 06415

COUNTERTOPS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Countertops for architectural cabinetwork.

1.02 RELATED SECTIONS

A. Section 06410 - Custom Cabinets.

1.03 REFERENCES

A. ANSI Z124.3 - American National Standard for Plastic Lavatories; 2005.

B. ISSFA-2 - Classification and Standards for Solid Surfacing Material; International Solid Surface Fabricators Association; 2001 (2002)

C. NEMA LD 3 – Static Dissipative Laminates.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Specimen warranty.

C. Shop Drawings: Complete details of materials and installation; combine with shop drawings of cabinets and casework specified in other sections.

D. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.

E. Maintenance Data: Manufacturer's instructions and recommendations for maintenance and repair of countertop surfaces.

1.05 QUALITY ASSURANCE

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

PART 2 PRODUCTS

2.01 COUNTERTOP ASSEMBLIES

A. Static Dissipative Laminate Countertops: High pressure decorative laminate sheet bonded to substrate.
   1. Static Dissipative Laminate Sheet, Unless Otherwise Indicated: NEMA LD 3 Grade HGS, 0.048 inch (HGS, 1.2 mm) nominal thickness.
      a. Finish: to be selected.
      b. Surface Color and Pattern: To be selected from manufacturer's full line.

c. Manufacturers:
    1) Nevamar Ddecorative Surfaces: www.nevamar.com
    2) Formica Corporation: www.formica.com.
    3) Wilsonart International, Inc: www.wilsonart.com.
    4) Substitutions: See Section 01600 - Product Requirements.

2. Back and End Splashes: Same material, same construction.

2.02 FABRICATION

A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
    1. Join lengths of tops using best method recommended by manufacturer.
    2. Fabricate to overhang fronts and ends of cabinets 1 inch (25 mm) except where top butts against cabinet or wall.
    3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.

B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
    1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
    2. Height: 4 inches (102 mm), unless otherwise indicated.

C. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

PART 3 EXECUTION

3.01 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. If substrate preparation is the responsibility of another installer, notify CBJ Architects of unsatisfactory preparation before proceeding.

C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

B. Attach laminate countertops using screws with minimum penetration into substrate board of 5/8 inch (16 mm).

C. Seal joint between back/end splashes and vertical surfaces.

3.04 CLEANING AND PROTECTION

A. Clean countertops surfaces thoroughly.

B. Protect installed products until completion of project.

C. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 2120

THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Batt insulation for filling interior walls for sound attenuation.

1.02 RELATED REQUIREMENTS

A. Section 05 4000 - Cold-Formed Metal Framing: Supporting construction for batt insulation.

B. Section 06 1000 - Rough Carpentry: Supporting construction for batt insulation.

C. Section 07 8400 - Firestopping.

D. Section 09 2116 - Gypsum Board Assemblies: Acoustic insulation.

1.03 REFERENCE STANDARDS

A. ASTM C 552 - Standard Specification for Cellular Glass Thermal Insulation.

B. ASTM C 612 - Standard Specification for Mineral Fiber Block and Board Thermal Insulation.

C. ASTM E 136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

1.05 SEQUENCING

A. Sequence work to ensure firestop materials are in place before beginning work of this section.

PART 2 PRODUCTS

2.01 BATT INSULATION MATERIALS

A. Batt Insulation: ASTM C 665; preformed glass fiber batt; friction fit, conforming to the following:
   1. Combustibility: Non-combustible, when tested in accordance with ASTM E 136, except for facing, if any.
   2. Thermal Resistance: R of 15, or as noted.
   3. Surface Burning Characteristics: Flame spread index of 25 or less; smoke developed index of 50 or less, when tested in accordance with ASTM E 84.
   4. Manufacturers:
      a. CertainTeed Corporation: www.certainteed.com.
      b. Johns Manville Corporation: www.jm.com.
      c. Owens Corning Corp: www.owenscorning.com.
   5. Substitutions: See Section 01 6000 - Product Requirements.

2.02 ACCESSORIES

A. Tape: Polyethylene self-adhering type, 2 inch wide.

B. Nails or Staples: Steel wire; electroplated, or galvanized; type and size to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

B. Verify substrate surfaces are flat, free of honeycomb, fins, or irregularities.

3.02 BATT INSTALLATION

A. Install insulation in accordance with manufacturer's instructions.

B. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

C. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

3.03 PROTECTION

A. Do not permit installed insulation to be damaged prior to its concealment.

3.04 CLEANING

A. Remove loose insulation residue.

B. Remove and legally dispose of all materials related to work of this section**.**

3.05 SCHEDULES

A. Metal Framed Wall Insulation: 3-1/2 inch-inch fiberglass batts, taped to metal studs.

END OF SECTION

SECTION 07 8400

FIRESTOPPING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Firestopping systems.

B. Firestopping of all joints and penetrations in fire-resistance rated and smoke-resistant assemblies, whether indicated on drawings or not.

1.02 RELATED REQUIREMENTS

A. Section 01 7000 - Execution and Closeout Requirements: Cutting and patching.

B. Section 09 2666 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.

1.03 REFERENCE STANDARDS

A. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials.

B. ASTM E 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.

C. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc..

D. FM P7825 - Approval Guide; Factory Mutual Research Corporation.

E. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc..

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Schedule of Firestopping: List each type of penetration.

C. Product Data: Provide data on product characteristics.

D. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Certificate from authority having jurisdiction indicating approval of materials used.

G. Material safety data sheets (MSDS): Submit MSDS for each firestop product.

H. Shop Drawings: Show typical installation details for methods of installation. Indicate which firestop materials will be used where.

1.05 QUALITY ASSURANCE

A. Fire Testing: Provide firestopping assemblies of designs that provide the specified fire ratings when tested in accordance with methods indicated.
   1. Listing in the current-year classification or certification books of UL, FM, or ITS (Warnock Hersey) will be considered as constituting an acceptable test report.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section and:
   1. With minimum 3 years documented experience installing work of this type.
   2. Able to show at least 5 satisfactorily completed projects of comparable size and type.
   3. Approved by firestopping manufacturer.

1.06 FIELD CONDITIONS

A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.

B. Provide ventilation in areas where solvent-cured materials are being installed.

C. Provide firestopping products containing no detectable asbestos, as determined by the method specified in 40 CFR Par 763, Subpart F, Appendix A, Section 1, "Polarized Light Microscopy."

1.07 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver material in the manufacturer's original, unopened containers or packages with manufacturers name, product identification, lot numbers, UL-Labels, and mixing and installation instructions, as applicable.

B. Store materials in the original, unopened containers or packages, and under conditions recommended by manufacturers.

C. Fire Ratings: Use any system that has F Rating equal to fire rating of penetrated assembly and a T Rating when required by local code authority and that meets all other specified requirements.

1.08 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

B. Review preparation and installation procedures and coordinating and scheduling required with related work.

PART 2 PRODUCTS

2.01 FIRESTOPPING SYSTEMS

A. Firestopping: Any material meeting requirements.
   1. Fire Ratings: Use any system listed by UL, that has F Ratings equal to fire rating of penetrated assembly and minimum T as required by local code authority and that meets all other specified requirements.

2.02 MATERIALS

A. Mortar: Lightweight, Non-expanding, cementitious, fire-rated compound; conforming to the following:
   1. Density: 40.5 lb/cu ft.
   2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 0 and 5, as determined per ASTM E 84.
   3. Durability and Longevity: Permanent.
   4. Color: Manufacturer's standard color.
   5. Manufacturers:
      a. Bio Fireshield, Inc. Product K-2 Firestop Mortar.
      b. RectorSeal Metacaulk Mortar.
      c. International Protective Coatings Corp. Product KBS-Mortar Seal.

B. Latex Based Intumescent Sealant: Single component, intumescent, latex formulation, conforming to the following:
   1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 0 and 10, as determined per ASTM E 84.
   2. Durability and Longevity: Permanent.
   3. Color: Manufacturer's standard color.
   4. Manufacturers:
      a. 3M Fire Protection Products, Product Fire Barrier CP 25 WB, N/S, or S/L.
      b. RectorSeal Corporation, Product Metacaulk 950.
      c. Bio Fireshield Biotherm 100 and 200 Firestop Sealants.

C. Latex Based Endothermic Sealant: Single component, intumescent, latex formulation, conforming to the following:
   1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 0 and 5, as determined per ASTM E 84.
   2. Durability and Longevity: Permanent.
   3. Color: Manufacturer's standard color.

4. Manufacturers:
    a. 3M Fire Protection Products, Product Interam FireDam 150 Caulk
    b. Tremco Inc., Product Fyre Shield.

D. Intumescent Wrap Strip: Single component, elastomeric sheet with foil one side, conforming to the following:
1. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 17 and 190, as determined per ASTM E 84.
2. Durability and Longevity: Permanent.
3. Color: Manufacturer's standard color.
4. Manufacturers:
    a. 3M Fire Protection Products, Product Fire Barrier FS-195 Wrap/Strip.
    b. Bio Fireshield, Product BioStop Intumescent Wrap Strips.
    c. RectorSeal, Product Metacaulk Intumescent Wrap Strip.
    d. Hilti Construction Chemicals, Inc., Product CS2420 Intumescent Wrap.

E. Elastomeric Silicone Firestopping: Single component silicone elastomeric compound and compatible silicone sealant; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Selected from Manufacturer's standard colors.
3. Manufacturers:
    a. Tremco Inc. Product Fyre-Sil S/L.
    b. The RectorSeal Corporation Product Metacaulk 835.
    c. The RectorSeal Corporation Product Metacaulk 880.
    d. Hilti Construction Chemicals, Inc. Product CS 240 Firestop Sealant.
    e. Substitutions: See Section 01 6000 (01600) - Product Requirements.

F. Foam Firestoppping: Multiple component silicone foam compound; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Selected from manufacturer's standard colors.
3. Manufacturers:
    a. Dow Corning Corp. Product Dow Corning Fire Stop 2001.
    b. General Electric Company Product Pensil 200 Foam.
    c. Substitutions: See Section 01 6000 (01600) - Product Requirements.

G. Intumescent Putty: Compound that expands on exposure to surface heat gain; conforming to the following:
1. Durability and Longevity: Permanent.
2. Color: Manufacturer's standard.
3. Manufacturers:
    a. 3M Fire Protection Products, Product Fire Barrier Moldable Putty.
    b. General Electric Company, Product Pensil 500 Intumescent Putty.
    c. RectorSeal, Product Metacaulk Putty and Putty Pads.
    d. Bio Fireshield, Product BioStop Moldable Putty and Putty Pads.
    e. Substitutions: See Section 01 6000 (01600) - Product Requirements.

H. Reusable Firestopping: Removable intumescent compressible shapes, pillows, or blocks specifically tested in removable configuration; conforming to the following:
1. Durability and Longevity: Permanent.
2. Manufacturers:
    a. Bio Fireshield, Product Firestop Pillows.
    b. RectorSeal, Product Metacaulk Pillow.
    c. Substitutions: See Section 01 6000 - Product Requirements.

I. Solvent-Release-Curing Intumescent Sealant: Single component, solvent-release-curing, synthetic-polymer based sealant of grade indicated below:
1. Durability and Longevity: Permanent.
2. Color: Selected from Manufacturer's standard colors.

3. Manufacturer's:
    a. Bio Fireshield, Product Biostop 500 Intumescent Firestop Caulk.
    b. 3M Fire Protection Products, Product Fire Barrier CP 25N/S Caulk.
    c. 3M Fire Protection Products, Product Fire Barrier CP 25S/L Caulk.

J. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Type required for tested assembly design.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify openings are ready to receive the work of this section.

3.02 PREPARATION

A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.

B. Remove incompatible materials that could adversely affect bond.

C. Install backing materials to arrest liquid material leakage.

3.03 INSTALLING THROUGH-PENETRATION FIRESTOPS

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by authority having jurisdiction.

C. Install labelling required by code.

3.04 INSTALLING FIRE-RESISTIVE JOINT SEALANTS

A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.

B. Do not cover installed firestopping until inspected by authority having jurisdiction.

C. Install joint fillers to provide support of sealants during application and at a position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability and develop fire-resistance rating required.

D. Install sealants using techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint.

E. Tool nonsag sealants immediately after sealant application and prior to the time skinning or curing begins. Form smooth, uniform beads of configurations indicated or required to produce fire-resistance rating.

3.05 PROTECTION

A. Clean adjacent surfaces of firestopping materials.

B. Protect adjacent surfaces from damage by material installation.

C. Protect firestopping during and after curing period from contact with contaminating substances or from damage resulting from construction operations.

D. Repair or replace any deteriorated or damaged firestopping as required to produce firestopping complying with specified requirements.

END OF SECTION

SECTION 07900

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Sealants and joint backing.

B. Pre-compressed foam sealers.

1.02 RELATED SECTIONS

A. Section 07840 - Firestopping: Firestopping sealants.

B. Section 08800 - Glazing: Glazing sealants and accessories.

C. Section 09260 - Gypsum Board Assemblies: Acoustic sealant.

D. Section 09300 - Tile: Sealant used as tile grout.

1.03 REFERENCES

A. ASTM C 834 - Standard Specification for Latex Sealants; 2000.

B. ASTM C 919 - Standard Practice for Use of Sealants in Acoustical Applications; 2002.

C. ASTM C 920 - Standard Specification for Elastomeric Joint Sealants; 2002.

D. ASTM C 1193 - Standard Guide for Use of Joint Sealants; 2005.

E. ASTM D 1056 - Standard Specification for Flexible Cellular Materials--Sponge or Expanded Rubber; 2000.

F. ASTM D 1667 - Standard Specification for Flexible Cellular Materials--Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam); 1997.

G. BAAQMD 8-51 - Bay Area Air Quality Management District Regulation 8, Rule 51, Adhesive and Sealant Products; www.baaqmd.gov; current edition.

H. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition; www.aqmd.gov.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide data indicating sealant chemical characteristics.

C. Samples: Submit two samples, 3/8 x 4 inch in size illustrating sealant colors for selection.

D. LEED Report: Submit VOC content documentation for all non-preformed sealants and primers.

E. Manufacturer's Installation Instructions: Indicate special procedures.

1.05 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years experience.

1.06 MOCK-UP

A. Provide mock-up of sealant joints in conjunction with wall under provisions of Section 01400.

B. Construct mock-up with specified sealant types and with other components noted.

C. Locate where directed by Architect.

D. Mock-up may not remain as part of the Work.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.08 COORDINATION

A. Coordinate the work with all sections referencing this section.

1.09 WARRANTY

A. See Section 01780 - Closeout Submittals, for additional warranty requirements.

B. Correct defective work within a five year period after Date of Substantial Completion.

C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Silicone Sealants:
   1. Dow Corning Corp: www.dowcorning.com.
   2. GE Plastics: www.geplastics.com.
   3. Pecora Corporation: www.pecora.com.
   4. Degussa Building Systems/Sonneborn: www.chemrex.com.
   5. Tremco, Inc: www.tremcosealants.com.
   6. Substitutions: See Section 01600 - Product Requirements.

B. Polyurethane Sealants:
   1. Bostik, Inc: www.bostik-us.com.
   2. ChemRex (Master Builders).
   3. Pecora Corporation: www.pecora.com.
   4. Degussa Building Systems/Sonneborn: www.chemrex.com.
   5. Sika.
   6. Tremco, Inc: www.tremcosealants.com.
   7. Substitutions: See Section 01600 - Product Requirements.

C. Acrylic Sealants:
   1. Tremco, Inc: www.tremcosealants.com.
   2. Substitutions: See Section 01600 - Product Requirements.

D. Butyl Sealants:
   1. Bostik, Inc: www.bostik-us.com.
   2. Tremco, Inc: www.tremcosealants.com.
   3. Substitutions: See Section 01600 - Product Requirements.

E. Acrylic Emulsion Latex Sealants:
   1. Bostik, Inc: www.bostik-us.com.
   2. Pecora Corporation: www.pecora.com.
   3. Sonneborn Building Products.
   4. Tremco, Inc: www.tremcosealants.com.
   5. Substitutions: See Section 01600 - Product Requirements.

F. Security Sealant:
   1. Sika Corporation: www.sikausa.com

2.02 SEALANTS

A. Sealants and Primers - General: Provide only products having lower volatile organic compound (VOC) content than required by the more stringent of the South Coast Air Quality Management District Rule No.1168.

B. General Purpose Exterior Sealant: Polyurethane; ASTM C 920, Grade NS, Class 25, Uses M, G, and A; single or multi-component.
   1. Applications: Use for:
      a. Control, expansion, and soft joints in masonry.
      b. Joints between concrete and other materials.
      c. Joints between metal frames and other materials.
      d. Other exterior joints for which no other sealant is indicated.
   2. Color: As selected by Architect.

C. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, nonskinning, noncuring.
   1. Applications: Use for:
      a. Concealed sealant bead in sheet metal work.
      b. Concealed sealant bead in siding overlaps.
      c. Color: Colors as selected by Architect.

D. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C 834, Type OP, Grade NF single component, paintable.
   1. Applications: Use for:
      a. Interior wall and ceiling control joints within security areas.
      b. Joints between door and window frames and wall surfaces within security areas.
      c. Other interior joints for which no other type of sealant is indicated.
   2. Color: Colors as selected by Architect.

E. Bathtub/Tile Sealant: White silicone; ASTM C 920, Uses I, M and A; single component, mildew resistant.
   1. Applications: Use for:
      a. Joints between plumbing fixtures and floor and wall surfaces.
      b. Joints between kitchen and bath countertops and wall surfaces.

F. Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.

G. Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C 920, Grade P, Class 25, Uses T, M and A; single component.
   1. Approved by manufacturer for wide joints up to 1-1/2 inches.
   2. Color: Colors as selected by Architect.
   3. Applications: Use for:
      a. Expansion joints in floors.

H. Interior Floor Joint Filler: Semi-rigid, two-part epoxy, for joints up to 3/8 inches in width.
   1. Applications: Use for construction and control joints in exposed concrete slabs.
   2. Color: Colors as selected by Architect.
   3. Product: Similar to Euco 700 as manufactured by the Euclid Chemical Company.

I. Sealant Joints at Security Doors and Enclosures: Epoxy resin.
   1. Applications: Use for:
      a. Interior wall and ceiling control joints within security areas.
      b. Joints between door and window frames and wall surfaces within security areas.
   2. Color: Colors as selected by Architect.
   3. Product: Sikadur 12. Low Mod Gel.

2.03 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that substrate surfaces are ready to receive work.

B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

A. Remove loose materials and foreign matter which might impair adhesion of sealant.

B. Clean and prime joints in accordance with manufacturer's instructions.

C. Perform preparation in accordance with manufacturer's instructions and ASTM C 1193.

D. Protect elements surrounding the work of this section from damage or disfigurement.

3.03 INSTALLATION

A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.

B. Perform installation in accordance with ASTM C 1193.

C. Perform acoustical sealant application work in accordance with ASTM C 919.

D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer.

E. Install bond breaker where joint backing is not used.

F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

H. Tool joints concave.

3.04 CLEANING

A. Clean adjacent soiled surfaces.

3.05 PROTECTION OF FINISHED WORK

A. Protect sealants until cured.

END OF SECTION

SECTION 08211

FLUSH WOOD DOORS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Flush wood doors; flush and flush glazed configuration; fire rated, non-rated, and acoustical.

1.02 RELATED SECTIONS

A. Section 06200 - Finish Carpentry.

B. Section 08110 - Steel Doors and Frames.

C. Section 08710 - Door Hardware.

D. Section 08800 - Glazing.

1.03 REFERENCES

A. ANSI A135.4 - American National Standard for Basic Hardboard; 2004.

B. ASTM E 1408 - Standard Test Method for Laboratory Measurement of the Sound Transmission Loss of Door Panels and Door Systems; 1991 (Reapproved 2000).

C. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2006, 8th Ed., Version 2.0.

D. ICC (IBC) - International Building Code; 2006.

E. HPVA HP-1 - American National Standard for Hardwood and Decorative Plywood; Hardwood Plywood & Veneer Association; 1994.

F. ITS (DIR) - Directory of Listed Products; Intertek Testing Services NA, Inc.; current edition.

G. NFPA 80 - Standard for Fire Doors and Fire Windows; National Fire Protection Association; 1999.

H. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association; 1999.

I. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc.; current edition.

J. UL 10B - Standard for Fire Tests of Door Assemblies; 1997.

K. WDMA NWWDA I.S.1-A - Architectural Wood Flush Doors; Window and Door Manufacturers Association (formerly NWWDA); 2004.

1.04 SUBMITTALS

A. See Section 01300 - Administrative Requirements for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics, styles and edge banding.

C. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, undercuts required, special blocking for hardware, factory machining criteria, factory finishing criteria, identify cutouts for glazing and louvers.

D. Selection samples: Submit samples of door veneer, 6 x 6 inch in size illustrating available wood grain, stain color, and sheen.

E. Manufacturer's Installation Instructions: Indicate special installation instructions.

F. Warranty: Submit manufacturer's warranty and ensure forms have been completed in Owner's name and registered with manufacturer's.

1.05 QUALITY ASSURANCE

A. Perform work in accordance with AWI Architectural Woodwork Quality Standards Illustrated, Section 1300, Premium Grade.

B. Finish doors in accordance with AWI Quality Standards, Section 1500.

C. Manufacturer: Company specializing in manufacturing the products specified in this section with minimum ten years of documented experience.

D. Obtain doors from a single manufacturer.

1.06 REGULATORY REQUIREMENTS

A. Fire Door Construction: Conform to NFPA 252.
   1. Listed and classified by UL as suitable for the purpose specified and indicated.

B. Installed Fire Rated Door Assembly: Conform to NFPA 80 for fire rated class as scheduled.

C. Sound Retardant Doors: Provide test reports showing that door and frame assembly meets requirements; sealed panel tests not acceptable.

1.07 DELIVERY, STORAGE, AND PROTECTION

A. Package, deliver and store doors in accordance with specified quality standard.

B. Protect doors during transit, storage and handling to prevent damage, soiling and deterioration. Comply with recommendations of WDMA - NWWDA pamphlet "How to Store, Handle, Finish, Install, and Maintain Wood Doors", as well as manufacturer's instructions.

C. Accept doors on site in manufacturer's packaging. Inspect for damage.

D. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

E. Identify each door with individual opening numbers which correlate with designation system used on shop drawings for doors, frames, and hardware, using temporary, removable markings.

1.08 PROJECT CONDITIONS

A. Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during remainder of construction period to comply with AWI quality standard including Section 100-S-3 "Moisture Content".

B. Coordinate the work with door opening construction, door frame and door hardware installation.

1.09 WARRANTY

A. See Section 01780 - Closeout Submittals for additional warranty requirements.

B. Provide warranty for the following term:
   1. Interior Doors: Life of installation.

C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

D. Warranty shall include all doors provided by manufacturer for referenced project.

E. Warranty shall include reinstallation labor which may be required due to repair or replacement of defective doors where defect was not apparent prior to hanging.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Wood Veneer Faced Doors:
   1. Algoma Hardwoods, Inc.
   2. Eggers Industries: www.eggersindustries.com.
   3. VT Industries.
   4. Substitutions: See Section 01600 - Product Requirements.

2.02 DOORS

A. All Doors: See drawings for locations and additional requirements.
   1. Quality Standard: AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1300, Premium Grade.
   2. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.

B. Interior Doors: 1-3/4 inches (44 mm) thick unless otherwise indicated; flush construction.
   1. Provide solid core doors at all locations.
   2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with International Building Code ("positive pressure"); UL or WH (ITS) labeled without any visible seals when door is open.
   3. Wood veneer facing with factory transparent finish.

2.03 DOOR AND PANEL CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated above.

B. Fire Rated Doors: Mineral core, Type FD, plies and faces as indicated above.

C. Sound Retardant Doors: Equivalent to Type PC construction with core as required to achieve rating specified; plies and faces as indicated above.

2.04 DOOR FACINGS

A. Wood Veneer Facing for Transparent Finish: Red Oak, match existing species, veneer grade as specified by quality standard, plain sliced, book veneer match, center balance assembly match; unless otherwise indicated.
   1. Vertical Edges: Same species as face veneer.
   2. Pairs: Pair match each pair; set match pairs within 10 feet (3 m) of each other when doors are closed.

B. Facing Adhesive: Type I - waterproof.

2.05 ACCESSORIES

A. Glazing Stops: Wood with metal clips for rated doors, mitered corners; prepared for countersink style tamper proof screws.
   1. Wood, of same species as door veneer

2.06 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with Stiles and Rails:

C. Fabricate fire rated doors in accordance with UL requirements. Attach fire rating label to door.

D. Astragals for Non-Rated Double Doors: Steel, T shaped, overlapping and recessed at mid-door thickness.

E. Sound Rating For Single Door Leaf and Frame Assembly: Minimum STC of 36, calculated in accordance with ASTM E 413, tested in accordance with ASTM E 1408.

F. Provide solid blocks at lock edge and top of door for closer for hardware reinforcement.
   1. Provide solid blocking for other throughbolted hardware.

G. Fit door edge trim to edge of stiles after applying veneer facing.

H. Vertical Exposed Edge of Stiles - Veneer Faces: Of same species as veneer facing. Minimum 5/16" thick

I. Fit door edge trim to edge of stiles after applying veneer facing.

J. Bond edge banding to cores.

K. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

L. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
   1. Exception: Doors to be field finished.

M. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

N. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

2.07 FACTORY FINISHING - WOOD VENEER DOORS

A. Factory finish doors in accordance with approved sample.

B. Seal door top edge with color sealer to match door facing.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

3.02 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard.

B. Install fire-rated doors in accordance with NFPA 80 requirements.

C. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.

D. Adjust width of non-rated doors by cutting equally on both jamb edges.
   1. Trim fire-rated doors in strict compliance with fire rating limitations.

E. Trim door height by cutting bottom edges to a maximum of 3/4 inch (19 mm).

F. Trim fire door height at bottom edge only, in accordance with fire rating requirements.

G. Use machine tools to cut or drill for hardware.

H. Coordinate installation of doors with installation of frames and hardware.

I. Coordinate installation of glazing.

J. Install door louvers plumb and level.

3.03 INSTALLATION TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.

B. Conform to specified quality standard for maximum diagonal distortion.

C. Maximum Diagonal Distortion (Warp): 1/8 inch (3 mm) measured with straight edge or taut string, corner to corner, over an imaginary 36 by 84 inches (915 by 2130 mm) surface area.

D. Maximum Vertical Distortion (Bow): 1/8 inch (3 mm) measured with straight edge or taut string, top to bottom, over an imaginary 36 by 84 inches (915 by 2130 mm) surface area.

E. Maximum Width Distortion (Cup): 1/8 inch (3 mm) measured with straight edge or taut string, edge to edge, over an imaginary 36 by 84 inches (915 by 2130 mm) surface area.

3.04 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

3.05 SCHEDULE - See Drawings

END OF SECTION

SECTION 08 7100

DOOR HARDWARE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Hardware for wood and hollow steel doors.

B. Hardware for fire-rated doors.

C. Lock cylinders for doors for which hardware is specified in other sections.

1.02 RELATED REQUIREMENTS

A. Section 07 9005 - Sealants.

B. Section 08 1113 - Hollow Metal Doors and Frames.

C. Section 08 1416 - Flush Wood Doors.

1.03 REFERENCE STANDARDS

A. ANSI/ICC A117.1 - American National Standard for Accessible and Usable Buildings and Facilities; International Code Council.

B. BHMA A156.1 - American National Standard for Butts and Hinges; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.1).

C. BHMA A156.2 - American National Standard for Bored and Preassembled Locks & Latches; Builders Hardware Manufacturers Association (ANSI/BHMA A156.2).

D. BHMA A156.3 - American National Standard for Exit Devices; Builders Hardware Manufacturers Association (ANSI/BHMA A156.3).

E. BHMA A156.4 - American National Standard for Door Controls - Closers; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.4).

F. BHMA A156.5 - American National Standard for Auxiliary Locks & Associated Products; Builders Hardware Manufacturers Association (ANSI/BHMA A156.5).

G. BHMA A156.6 - American National Standard for Architectural Door Trim; Builders Hardware Manufacturers Association (ANSI/BHMA A156.6).

H. BHMA A156.7 - American National Standard for Template Hinge Dimensions; Builders Hardware Manufacturers Association (ANSI/BHMA A156.7).

I. BHMA A156.8 - American National Standard for Door Controls - Overhead Stops and Holders; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.8).

J. BHMA A156.13 - American National Standard for Mortise Locks & Latches; Builders Hardware Manufacturers Association (ANSI/BHMA A156.13).

K. BHMA A156.14 - American National Standard for Sliding & Folding Door Hardware; Builders Hardware Manufacturers Association (ANSI/BHMA A156.14).

L. BHMA A156.15 - American National Standard for Release Devices - Closer Holder, Electromagnetic and Electromechanical; Builders Hardware Manufacturers Association (ANSI/BHMA A156.15).

M. BHMA A156.16 - American National Standard for Auxiliary Hardware; Builders Hardware Manufacturers Association (ANSI/BHMA A156.16).

N. BHMA A156.17 - American National Standard for Self Closing Hinges & Pivots; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.17).

O. BHMA A156.18 - American National Standard for Materials and Finishes; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.18).

P. BHMA A156.20 - American National Standard for Strap and Tee Hinges and Hasps; Builders Hardware Manufacturers Association (ANSI/BHMA A156.20).

Q. BHMA A156.21 - American National Standard for Thresholds; Builders Hardware Manufacturers Association (ANSI/BHMA A156.21).

R. BHMA A156.23 - American National Standard for Electromagnetic Locks; Builders Hardware Manufacturers Association, Inc. (ANSI/BHMA A156.23).

S. BHMA A156.24 - American National Standard for Delayed Egress Locks; Builders Hardware Manufacturers Association (ANSI/BHMA A156.24).

T. DHI A115 Series - Specifications for Steel Doors and Frame Preparation for Hardware; Door and Hardware Institute.

U. DHI A115W Series - Specifications for Wood Door and Frame Preparation for Hardware; Door and Hardware Institute.

V. DHI (LOCS) - Recommended Locations for Architectural Hardware for Standard Steel Doors and Frames; Door and Hardware Institute.

W. DHI WDHS.3 - Recommended Locations for Architectural Hardware for Flush Wood Doors; Door and Hardware Institute.

X. NFPA 80 - Standard for Fire Doors and Other Opening Protectives.

Y. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures; National Fire Protection Association.

Z. UBC Std 7-2, Part II - Test Standard for Smoke- and Draft-control Assemblies; International Conference of Building Officials.

AA. NFPA 252 - Standard Methods of Fire Tests of Door Assemblies; National Fire Protection Association.

AB. UL (BMD) - Building Materials Directory; Underwriters Laboratories Inc..

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordinate the manufacture, fabrication, and installation of products onto which door hardware will be installed.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:
   1. Indicate locations and mounting heights of each type of hardware, vertical schedules, catalog cuts, electrical characteristics and connection requirements, and point to point custom wiring diagrams.
   2. Submit manufacturer's parts lists and templates.

C. Samples: Prior to preparation of hardware schedule:
   1. Submit 1 sample of hinge, latch set, lockset, and closer illustrating style, color, and finish.
   2. Samples will be returned to supplier.

D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention.

E. Project Record Documents:
   1. Record actual locations of concealed equipment, services, and conduit.
   2. Record actual locations of installed cylinders and their master key code.

F. Maintenance Data: Include data on operating hardware, lubrication requirements, and inspection procedures related to preventative maintenance.

G. Keys: Deliver with identifying tags to McHenry County by security shipment direct from hardware

supplier.

H. Warranty: Submit manufacturer's warranty and ensure that forms have been completed in McHenry County's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Perform work in accordance with the following requirements:
   1. NFPA 101.
   2. NFPA 80.
   3. NFPA 252.

B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

C. Hardware Supplier Qualifications: Company specializing in supplying commercial door hardware with three years of documented experience.

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for requirements applicable to fire rated doors and frames.

B. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.

C. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

1.08 PRE-INSTALLATION MEETING

A. Convene one week prior to commencing work of this section.

1.09 DELIVERY, STORAGE, AND HANDLING

A. Package hardware items individually; label and identify each package with door opening code to match hardware schedule.

1.10 COORDINATION

A. Coordinate the work with other directly affected sections involving manufacture or fabrication of internal reinforcement for door hardware.

B. Furnish templates for door and frame preparation.

C. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

D. Schedule and attend meeting to coordinate McHenry County's keying requirements during the course of the Work.

1.11 WARRANTY

A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

B. Provide ten year warranty for door closers.

C. Provide five year warranty for door locks and latches.

1.12 MAINTENANCE PRODUCTS

A. Provide special wrenches and tools applicable to each different or special hardware component.

B. Provide maintenance tools and accessories supplied by hardware component manufacturer.

1.13 PERSONNEL INSTRUCTION

A. Upon completion of installation, instruct owner's designated personnel in the proper operation and maintenance of all operating hardware. Train owner's personnel in procedures to follow in identifying sources of operational failures or malfunctions.

1. Coordinate date and time of instruction with construction manager.
2. Instruction to include recommended maintenance intervals and procedures on all hardware with moving parts.

PART 2 PRODUCTS

2.01 MANUFACTURERS

2.02 DOOR HARDWARE - GENERAL

A. Provide all hardware specified or required to make doors fully functional, compliant with applicable codes, and secure to the extent indicated.

B. Provide all items of a single type of the same model by the same manufacturer.

C. Provide products that comply with the following:
1. Applicable provisions of federal, state, and local codes.
2. Fire-Rated Doors: NFPA 80.
3. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
4. Hardware for Smoke and Draft Control Doors (Indicated as "S" on Drawings): Provide hardware that enables door assembly to comply with air leakage requirements of the applicable code.

2.03 HINGES

A. Hinges:

B. Hinges: Provide hinges on every swinging door.
1. Provide five-knuckle full mortise butt hinges unless otherwise indicated.
2. Provide ball-bearing hinges at all doors having closers.
3. Provide hinges in the quantities indicated.
4. Where electrified hardware is mounted in door leaf, provide power transfer hinges.

2.04 LOCKS AND LATCHES

A. Locks: Provide a lock for every door, unless specifically indicated as not requiring locking.
1. Hardware Sets indicate locking functions required for each door.
2. If no hardware set is indicated for a swinging door provide an office lockset.
3. Trim: Provide lever handle or pull trim on outside of all locks unless specifically stated to have no outside trim.
4. Lock Cylinders: Provide key access on outside of all locks unless specifically stated to have no locking or no outside trim.

B. Lock Cylinders: Provided by Owner and installed by the General Contractor.

C. Keying: By Owner

D. Latches: Provide a latch for every door that is not required to lock, unless specifically indicated "push/pull" or "not required to latch".

2.05 GENERAL REQUIREMENTS FOR DOOR HARDWARE PRODUCTS

A. Provide products that comply with the following:
1. Applicable provisions of Federal, State, and local codes.
2. ANSI/ICC A117.1, American National Standard for Accessible and Usable Buildings and Facilities.
3. Applicable provisions of NFPA 101, Life Safety Code.
4. Fire-Rated Doors: NFPA 80.
5. All Hardware on Fire-Rated Doors: Listed and classified by UL as suitable for the purpose specified and indicated.
6. Hardware for Smoke and Draft Control Doors (Indicated as "S" on Drawings): Provide hardware that enables door assembly to comply with air leakage requirements of the applicable code.
7. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the

purpose specified and indicated.

B. Finishes: Identified in schedule at the end of section.

2.06 CYLINDERS

A. By Owner

2.07 KEYING

A. By Owner

2.08 KEY CABINET

Not required.

2.09 FINISHES (verify with and match existing)

A. In general, finish shall be Satin Chrome US26D and Satin Stainless Steel US23D; materials shall be as follows:
   1. Locks and latches; 626.
   2. Dead locks; 626.
   3. Exit devices; 626.
   4. Push, Pulls; 630.
   5. Kick plates; 630.
   6. Door Closers: Powder coat to match.
   7. Door Butts: Nonferrous for exterior, toilet, bath, locker, and other wet areas; 630. Ferrous for other doors; 626.
   8. Door Stops and Holders: Stainless Steel 630 or 626.
   9. Miscellaneous Items: 626.
   10. Stainless Steel: ASTM A 302, 18-8.

2.10 LOCK, LATCHES, AND BOLTS

A. Strikes: Manufacturer's standard wrought box strike with curved lip to protect frame; finish to match hardware set.
   1. Recess type top strike for bolts locking into head frames.
   2. Dust-proof strikes for foot bolts except where threshold provides non-recessed bolt strike.

B. Lock Throws: Provide the following:
   1. 1/2 inch minimum throw for bored and preassembled lock types.
   2. 5/8 inch minimum throw for pairs of doors.
   3. 3/4 inch minimum throw for mortise locks.
   4. 1 inch minimum throw for dead bolts.
   5. Comply with UL requirements for rated assemblies.

C. Lock Functions Legend (Unless Otherwise Specified):
   1. Passage Latch: For interior doors entering; stairways, Passage Closets
      a. both levers always unlocked.
   2. Exit Lock: At exterior doors from; individual rooms for exit only.
      a. Blank plate outside. Inside lever always unlocked.
   3. Bath Privacy Lock: For interior doors entering; single fixture Public and Staff Toilets.
      a. Push button locking. Can opened from outside with small screwdriver. Turning inside lever or closing door releases button.
   4. Entrance Lock: For interior doors entering; Offices
      a. Latchbolt retracted by lever from either unless outside is made inoperative by key outside. When outside is locked, latchbolt is retracted by jey outside or lever inside.
   5. Storeroom Lock: For interior and exterior doors entering; Store Rooms, Mechanical Equipment Rooms, and Janitor's Closets.
      a. Outside lever fixed. Entrance by key only. Inside lever always unlocked.

D. Additional Lock requirements:
   1. Vandal resistant breakaway lever.

E. Mortise Locks; Trim Style:
   1. Schlage: 6 pin Primus Everest with removeable core.

F. Provide rabbeted front on lock/latch units and bolts where door stiles are rabbeted.

G. Verify all functions with Owner at key meeting prior to ordering locks.

2.11 BUTT HINGES

A. Ball bearing, non-rising loose pin, flat button tip, unless otherwise specified.

B. Provide three butts per door (four for dutch doors and for door 7-6 up to 10-0 high).

C. Butt Size Requirements:
   1. Interior doors up to 37 inches wide: 4-1/2 x 4-1/2.
   2. Interior doors over 37 inches wide: 5 x 4-1/2.
   3. Exterior doors: 5 x 4-1/2.
   4. 2" thick doors: 5 x 5.

D. Door butt legend: (unless noted otherwise in Schedule):
   1. Exterior doors: BB1199 NRP.
   2. Interior Doors up to 37 inches wide: BB1279 TBB.
   3. Interior doors 37 inches wide and over: BB1168.

E. Furnish UL approved butts on labeled doors.

2.12 STOPS AND BUMPERS

A. Wall Stops:
   1. GJ 60C at locksets with thumb turn and interior cylinders.
   2. GJ50C at other locksets and latches.

B. Coordination: Verify that wall stop locations have proper blocking in partition at wall attachment location.

C. Roller Type: Provide roller bumper RB4 as required where two door swings interfere with each other.

D. Application: Use wood screws for attachment into wood blocking behind wall finish.

2.13 PUSH/PULL UNITS AND PLATES

A. Exposed Fasteners: Provide manufacturer's standard exposed fasteners for installations, thru bolted only for matched pairs.

B. Plates: Provide 16 gauge (0.050 inch) plates, with beveled sides and countersunk screw holes at intervals of not over 6 inches on all four sides. Provide stainless steel oval head screws.

C. Plate Legend: Provide Push / Pull plates and Pull bars in the following sizes:
   1. Push Plates: As noted in Hardware schedule.
   2. Pull Plates: As noted in Hardware schedule.
   3. Pull Bars: As noted in Hardware schedule.

D. Provide concealed fasteners and back-to-back mountings at all bar-type pushes and pulls.

E. Factory drill all push and pull plates as required for locks and cylinders.

2.14 CLOSURES AND DOOR CONTROL DEVICES

A. Unit Size: Unless otherwise indicated, comply with the manufacturer's recommendations for size of door control unit depending on the size of the door, exposure to weather, and anticipated frequency of use:
   1. Where parallel arms are indicated for closers, provide closer unit one size larger than recommended for use with standard arms.

B. Door Closers with Hold opens: Provide units to the following:
   1. Designed to hold door in open position under normal usage when door is moved to 87

degrees open.
2. Hold open to release without undue effort to close door.

C. Combination Door Closers and Holders: Provide units to the following:
1. Designed to hold door in open position under normal usage when door is moved to 87 degrees open.
2. Hold open to release without undue effort to close door and to release and close door automatically under fire conditions.
3. Provide an integral electromagnetic holder mechanism designed for use with UL listed fire detectors, provided with normally closed switching contacts.

D. Adjustments: Provide key adjusting device on closers; provide six adjusting keys to owner.

E. Mounting: Mount to provide maximum door swing opening permitted by building construction and equipment. Note on submittal schedule the maximum swing per location for other trades involved in reinforcement and installation.

F. Exterior Doors: Provide the following:
1. Cast iron closers of full rack and pinion construction, including two speed closing adjustment, adjustable hydraulic backcheck, and fully adjustable spring power plus reversible shoe feature. Of type and function listed in the Hardware Schedule.
2. ALL WEATHER type fluid not subject to normal temperature changes.
3. Solid forged-type parallel arms.

G. Uniformity: Provide all door closers similar in design and appearance to those listed in Hardware Schedule and, of one manufacturer. Furnish special arms and applications as indicated in Hardware Schedule, as indicated by structural considerations, and as required by local code requirements.

H. Labeling: Provide UL approved door closers at labeled fire doors. Provide thru-bolts to mineral core doors.

I. Multiple Units: Provide each door leaf with closers, unless noted otherwise.

2.15 DOOR SILENCERS

A. Provide 3 for single door; 2 for each leaf of double doors.

2.16 MISCELLANEOUS

A. Sealant: As specified in Section 07 9005.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that doors and frames are ready to receive work; labeled, fire-rated doors and frames are present and properly installed, and dimensions are as indicated on shop drawings.

B. Verify that electric power is available to power operated devices and of the correct characteristics.

3.02 INSTALLATION

A. Install hardware in accordance with manufacturer's instructions and applicable codes.

B. Use templates provided by hardware item manufacturer.

C. Install hardware on fire-rated doors and frames in accordance with code and NFPA 80.

D. Mounting heights for hardware from finished floor to center line of hardware item:
1. Locksets: 40-5/16 inch.
2. Push/Pulls: 42 inch.
3. Dead Locks: 47 inch.
4. Exit Devices: 40-5/16 inch.

3.03 HARDWARE GROUPS

A. General: Schedule of hardware included at the end of this section shall be considered as a guide only. Hardware supplier is responsible to furnish required hardware, including UL listed hardware required to meet door and frame manufacturer's labeling requirements for labeled doors.

B. Conflicts: Doors indicated by number on drawings but not included in the hardware schedule shall be provided with hardware Group 5 for that location, function, size, and labelling as indicated on drawings.

3.04 FIELD QUALITY CONTROL

A. Field inspection and testing will be performed under provisions of Section 01 4000 (01400).

3.05 ADJUSTING

A. Adjust work under provisions of Section 01 7000 (01700).

B. Adjust hardware for smooth operation.

3.06 PROTECTION

A. Protect finished Work under provisions of Section 01 7000 (01700).

B. Do not permit adjacent work to damage hardware or finish.

3.07 SCHEDULE

A. As identified in the drawings.

END OF SECTION

SECTION 09 2600

GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Metal stud wall framing.

B. Metal channel ceiling framing.

C. Shaft wall system.

D. Fire rated area separation walls.

E. Acoustic insulation.

F. Cementitious backing board.

G. Gypsum wallboard.

H. Joint treatment and accessories.

I. Installation of acoustic sealant.

1.02 RELATED REQUIREMENTS

A. Section 06 1000 - Rough Carpentry: Concealed wood blocking for support of wall supported components.

B. Section 06 1000 - Rough Carpentry: Building framing and sheathing.

C. Section 07 2120 - Insulation: Thermal Insulation.

D. Section 07 9005 - Joint Sealers: Acoustic sealant.

E. Section 07 8400 - Firestopping: Firestopping and fire-rated joints sealants.

1.03 REFERENCE STANDARDS

A. ANSI A108.11 - American National Standard for Interior Installation of Cementitious Backer Units.

B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units.

C. ASTM C 36/C 36M - Standard Specification for Gypsum Wallboard.

D. ASTM C 475/C 475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.

E. ASTM C 557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing.

F. ASTM C 630/C 630M - Standard Specification for Water-Resistant Gypsum Backing Board.

G. ASTM C 645 - Standard Specification for Nonstructural Steel Framing Members.

H. ASTM C 665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.

I. ASTM C 754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.

J. ASTM C 840 - Standard Specification for Application and Finishing of Gypsum Board.

K. ASTM C 954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness.

L. ASTM C 1002 - Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs.

M. ASTM C 1396/C 1396M - Standard Specification for Gypsum Board.

N. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.

O. ASTM E 413 - Classification for Rating Sound Insulation.

P. GA-214 - Recommended Levels of Gypsum Board Finish; Gypsum Association.

Q. GA-216 - Application and Finishing of Gypsum Board; Gypsum Association.

R. GA-226 - Application of Gypsum Board to Form Curved Surfaces; Gypsum Association.

S. GA-600 - Fire Resistance Design Manual; Gypsum Association.

T. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc..

1.04 SYSTEM DESCRIPTION

A. Acoustic Attenuation for Interior Partitions Indicated as Acoustic: STC of 50-54 calculated in accordance with ASTM E 413, based on tests conducted in accordance with ASTM E 90.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Product Data and Sample: Provide data and sample on metal framing, gypsum board, accessories, joint finishing system, and acoustic attenuation.

C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

1.06 QUALITY ASSURANCE

A. Perform in accordance with ASTM C 840. Comply with requirements of GA-600 for fire-rated assemblies.

B. Installer Qualifications: Company specializing in performing gypsum board application and finishing, with minimum five years of documented experience.

C. Single-Source Responsibility: Obtain finishing products from same manufacturer of gypsum board or panel products, or from a manufacturer acceptable to gypsum board manufacturer.

1.07 PRE-INSTALLATION MEETING

A. Convene one week before starting work of this section.

1.08 DELIVERY, STORAGE, AND PROTECTION

A. Deliver materials in original packages, containers, or bundles bearing the brand name and product identification of manufacturer.

B. Store materials inside under cover and keep dry. Neatly stack gypsum panels flat to prevent sagging off the ground of slab.

C. Stack gypsum board were directed by Hoffman Corporation representative. Space stacks across floor. Do not exceed live load capacity of floor system.

D. Handle gypsum board to prevent damage to edges, ends, and surfaces. do not bend or otherwise damage metal corner beads and trim.

1.09 PROJECT CONDITIONS

A. Do not install or finish gypsum board unless environmental conditions comply with ASTM C 840 or with gypsum board manufacturer's recommendations.

B. Ventilate spaces as required for drying joint and finish materials. Avoid drafts to prevent finishing materials from drying too rapidly.

1.10 REGULATORY REQUIREMENTS

A. Conform to applicable code for fire rated assemblies as indicated on drawings.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

A. Provide completed assemblies complying with ASTM C 840 and GA-216.

2.02 MANUFACTURERS

A. Gypsum Board:
   1. G-P Gypsum Corporation.
   2. National Gypsum Co.
   3. United States Gypsum Co.
   4. PABCO Gypsum. (QuietRock). www.quietrock.com

B. Metal Furring:
   1. Clark.
   2. Dale Industries, Inc.
   3. Dietrich Industries, Inc.
   4. Marino Industries Corporation.
   5. Unimast Inc.

C. Substitutions: See Section 01 6000 - Product Requirements.

2.03 METAL FRAMING MATERIALS

A. Non-Loadbearing Framing System Components: ASTM C 645; galvanized sheet steel, size and gage to comply with ASTM C 754 at spacing indicated; maximum deflection of wall framing of L/240 at 5 psf.
   1. Studs: "C" shaped with flat or formed webs with knurled faces.
   2. Runners: U shaped, sized to match studs.
   3. Ceiling Channels: C shaped.
   4. Furring: Hat-shaped sections, minimum depth of 7/8 inch or as noted on drawings.

B. Load bearing Studs for Application of Gypsum Board: As specified in Section 05 4000 (05400).

C. Shaft Wall Studs and Accessories: ASTM C 645; galvanized sheet steel, of size and properties necessary to comply with ASTM C 754.

D. Ceiling Hangers: Type and size as specified in ASTM C 754 for spacing required.

2.04 BOARD MATERIALS

A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C 1396/C 1396M; sizes to minimize joints in place; ends square cut.
   1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
   2. Thickness:
      a. Vertical Surfaces: 5/8 inch.

B. Sound Dampening Gypsum Board: QuietRock 527.

   1. Application: Use at vertical surfaces and ceilings.

   2. Thickness, 5/8 inch.

C. Gypsum Board - All Types: Complying with applicable requirements of ASTM C 1396/C 1396M.

D. Gypsum Wallboard: ASTM C 1396/C 1396M. Sizes to minimize joints in place; ends square cut.
   1. Thickness: 5/8 inch or as indicated.
   2. Edges: Tapered edges.

E. Type X: Fire resistant, UL or WH rated.
   1. Application: Where required for fire-rated assemblies, unless otherwise indicated.
   2. Thickness: As indicated.
   3. Ceiling Board: Special sag-resistant type.
      a. Application: Ceilings, unless otherwise indicated.
      b. Thickness: 5/8 inch.
      c. Edges: Tapered.
   4. Edges: Tapered.

F. Abuse Resistant Gypsum Wallboard: ASTM C 1278; sizes to minimize joints in place; ends square cut.
   1. Thickness: 5/8 inch or as indicated.
   2. Edges: Tapered.

G. Water-Resistant Gypsum Backing Board: ASTM C 1396/C 1396M; ends square cut.
   1. Application: Vertical surfaces behind thinset tile, except in wet areas.
   2. Edges: Tapered.
   3. Thickness: As indicated.
   4. Edges: Tapered.

2.05 FIBERGLASS FACED BOARD MATERIALS

A. Cementitious Backer Board: ANSI A118.9, aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces, 1/2 inch thick. To be used on wet walls of Toilet Rooms where plumbing fixtures and a tile finish occur.

2.06 ACCESSORIES

A. Acoustic Insulation: ASTM C 665; preformed mineral fiber, friction fit type, unfaced. Thickness: 3-1/2 inch.

B. Acoustical Sealant: Butyl or acrylic sealant; ASTM C 920, Grade NS, Class 12-1/2, Uses M and A; single component, solvent release curing, non-skinning.
   1. Applications: Use for concealed locations only:
      a. Sealant bead between top stud runner and structure and between bottom stud track and floor.

C. Laminating Adhesive: Adhesive recommended by board manufacturer.

D. Joint Tape:
   1. Wallboard Tape: 2-1/16 inch wide paper reinforcing tape.
   2. Cementitious Backer Board Tape: 2 inch wide, coated glass fiber tape for joints and corners.

E. Trim Accessories: Paper faced metal bead and trim unless otherwise noted.
   1. Corner Beads: Paper faced, similar to B1 series by USG.
   2. Corner Reinforcement: Galvanized steel, similar to Dur-A-Bead manufactured by USG.
   3. Control Joint: Prefinished zinc with tape protected opening, width as required or detailed.

F. Edge Trim: Bead type(s) as detailed.

G. Joint Materials: ASTM C 475 and as recommended by gypsum board manufacturer for project conditions.

H. Screws for Attachment to Steel Members Less Than 0.03 inch In Thickness, to Wood Members, and to Gypsum Board: ASTM C 1002; self-piercing tapping type; cadmium-plated for exterior locations.

I. Screws for Attachment to Steel Members From 0.033 to 0.112 inch in Thickness: ASTM C 954; steel drill screws for application of gypsum board to load bearing steel studs.

J. Screws: ASTM C 1002; self-drilling type, corrosion resistant coating for high-humidity locations.

K. Screws: ASTM C 954; steel drill screws for application of gypsum board to loadbearing steel studs.

L. Hanger Wire: 8 gauge, galvanized wire.

M. Tie Wire: 18 gauge, galvanized wire.

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

PART 3 EXECUTION

3.01 EXAMINATION

A. Verification of Conditions:
   1. Prepared spaces are sized and located in accordance with drawings.
   2. Framing, reinforcement, and anchoring devices are correct type and are located in accordance with shop drawings.

B. Installer's Examination:
   1. Examine conditions under which installation is to be performed; submit written notification if such conditions are unacceptable.
   2. Installation activities before unacceptable conditions have been corrected is prohibited.
   3. Installation indicates installer's acceptance of conditions.

3.02 SHAFT WALL INSTALLATION

A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.

B. Shaft Wall Liner: Cut panels to accurate dimension and install sequentially between special friction studs.

3.03 FRAMING INSTALLATION

A. Metal Framing: Install in accordance with ASTM C 754 and manufacturer's instructions.

B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
   1. Level ceiling system to a tolerance of 1/1200.
   2. Laterally brace entire suspension system.

C. Studs: Space studs as indicated.
   1. Extend partition framing to structure where indicated and to ceiling in other locations.
   2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
   3. Extend stud framing to ceiling where indicated. Attach ceiling runner securely to acoustic ceiling track in accordance with manufacturer's instructions.
   4. Extend stud framing through ceiling to structure above. Maintain clearance under structural building members to avoid deflection transfer to studs. Provide extended leg ceiling runners.

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

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

F. Acoustic Furring: Install resilient channels at maximum 24 inches on center. Locate joints over framing members.

G. Furring for Fire Ratings: Install as required for fire resistance ratings indicated and to GA-600 requirements.

H. Blocking: Install blocking for support of plumbing fixtures. Bolt or screw steel channels to studs.

3.04 ACOUSTIC ACCESSORIES INSTALLATION

A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
   1. Place one bead continuously on substrate before installation of perimeter framing members.
   2. Place continuous bead at perimeter of each layer of gypsum board.
   3. In non-fire-rated construction, seal around all penetrations by conduit, pipe, ducts, and rough-in boxes.

3.05 BOARD AND GLASS MAT FACED BOARD INSTALLATION

A. Comply with ASTM C 840. Install to minimize butt end joints, especially in highly visible locations.

B. Single-Layer Non-Rated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.

C. Single-Layer Fire-Rated: Install gypsum board vertically, with edges and ends occurring over firm bearing.

D. Double-Layer Non-Rated: Use gypsum board for first layer, placed perpendicular to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.

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

F. Installation on Metal Framing: Use screws for attachment of all gypsum board except face layer of non-rated double-layer assemblies, which may be installed by means of adhesive lamination.

G. Curved Surfaces: Apply gypsum board to curved substrates in accordance with GA-226.

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

3.06 INSTALLATION OF TRIM AND ACCESSORIES

A. Control Joints: Place control joints where noted on drawings or as follows:
   1. Where partitions, furring, or column fireproofing abuts a structural element or dissimilar wall or ceiling (except floors).
   2. Ceiling or soffit abuts a structural element, dissimilar wall or partition, or other vertical penetration.
   3. Not more than 30 feet for walls and partitions.
   4. Not more than 50 feet in either direction for ceilings with perimeter relief, 30 feet without relief.
   5. At locations of control joints that occur in the building.
   6. Wings of "L", "U", and "T" shaped ceilings areas that are common or joined.
   7. Construction changes within the plane of a partition or ceiling.

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

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

3.07 JOINT TREATMENT

A. Finish gypsum board in accordance with levels defined in ASTM C 840, as follows:
   1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
   2. Level 1: Fire rated wall areas above finished ceilings, whether or not accessible in the completed construction.

B. Finish gypsum board in accordance with levels defined in ASTM C 840 as scheduled below:
   1. Level 1: Ceiling plenum areas, concealed areas, and as indicated, unless a higher level of finish is required for fire-resistive-rated or sound-rated assemblies.

2. Level 3: Utility areas and areas behind cabinetry.
3. Level 4: Areas to receive light-textured finishes, wallcoverings, and flat paints over light textures.
4. Level 5: Walls and ceilings scheduled to receive semi-gloss or gloss paint finish.

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

D. Tape and finish wallboard for a minimum of 6" above finish ceiling elevation.

E. Apply joint tape over gypsum board joints except those with trim or accessories having concealed face flanges not requiring taping to prevent cracks from occuring..

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

3.08 CLEANUP

A. Cleanup, remove from the site, and legally dispose of all materials related to work in this section.

3.09 TOLERANCES

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

END OF SECTION

SECTION 09 5110

ACOUSTICAL CEILINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Suspended metal grid ceiling system.

B. Acoustical units.

1.02 RELATED REQUIREMENTS

A. Section 07 9000 - Joint Sealers: Acoustical sealant.

B. Fire Alarm System: Fire alarm components in ceiling system.

C. Fire-Suppression Sprinkler Systems: Sprinkler heads in ceiling system.

D. HVAC.

E. Interior Lighting: Light fixtures in ceiling system.

F. Public Address Systems: Speakers in ceiling system.

G. Fire Alarm Systems:

H. Phone and Data Distribution System.

1.03 REFERENCE STANDARDS

A. ASTM C 635 - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.

B. ASTM E 1264 - Standard Classification for Acoustical Ceiling Products.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

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

C. Manufacturer's Installation Instructions: Indicate special procedures.

1.05 QUALITY ASSURANCE

A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

B. Acoustical Unit Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

1.06 FIELD CONDITIONS

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

1.07 PROJECT CONDITIONS

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

B. Install acoustical units after interior wet work is dry.

1.08 EXTRA MATERIALS

A. See Section 01 6000 - Product Requirements, for additional provisions.

B. Provide 5 percent of total acoustical unit area of each type of acoustical unit for McHenry County's use in maintenance of project.

PART 2 PRODUCTS

2.01 ACOUSTICAL UNITS

A. Manufacturers:
   1. Armstrong World Industries, Inc.
   2. Celotex Corp.
   3. USG Interiors, Inc.

B. Acoustical Units - General: ASTM E 1264, Class A.

C. Acoustical Panels Type ACT1: ASTM E 1264 Type III, Class A, Cast ceiling Tile, conforming to the following:
   1. Product:)match existing)
   2. Thickness: 3/4 inches.
   3. Composition: Nodular, cast or molded.
   4. Light Reflectance: 0.90 percent, determined as specified in ASTM E 1264.
   5. NRC Range: 0.70, determined as specified in ASTM E 1264.
   6. Sag Resistance: Provide 15-year warranty.
   7. Ceiling Attenuation Class (CAC): 35, determined as specified in ASTM E 1264.
   8. Edge: SLB.
   9. Surface Color: White.
   10. Surface Pattern: non-directional textures.
   11. Suspension System: Exposed grid, 15/16 inches.
   12. Size: 24 x 24, 24 x 48 (match existing).

2.02 SUSPENSION SYSTEM

A. Manufacturers:
   1. Armstrong World Industries, Inc..
   2. Chicago Metallic Corp..
   3. USG Interiors, Inc.
   4. Substitutions: See Section 01 6000 - Product Requirements.

B. Suspension Systems - General: ASTM C 635; die cut and interlocking components, with stabilizer bars, clips, splices, perimeter moldings, and hold down clips as required.

C. Exposed Steel Suspension System: Formed steel, commercial quality cold rolled; Intermediate-duty.
   1. Profile: Tee; 15/16 inch wide face. 9/16 for ACT3 only.
   2. Finish: White painted.

2.03 ACCESSORIES

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

B. Perimeter Moldings: Same material and finish as grid or the ceiling system specified.
   1. At Exposed Grid: Provide L-shaped molding for mounting at same elevation as face of grid.

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

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

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

3.02 INSTALLATION - SUSPENSION SYSTEM

A. Install suspension system in accordance with ASTM C 636, ASTM E 580, and manufacturer's instructions and as supplemented in this section.

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

C. Locate system on room axis according to reflected plan, with a minimum 2" tile width at edges.

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

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

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

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

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

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

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

3.03 INSTALLATION - ACOUSTICAL UNITS

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

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

C. Fit border trim neatly against abutting surfaces.

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

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

F. Cutting Acoustical Units:
   1. Cut to fit irregular grid and perimeter edge trim.
   2. Make field cut edges of same profile as factory edges.
   3. Double cut and field paint exposed reveal edges.

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

H. Install hold-down clips on each panel to retain panels tight to grid system; comply with fire rating requirements.

I. Install hold-down clips on panels within 20 ft of an exterior door.

3.04 TOLERANCES

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

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

3.05 CLEAN UP

A. Remove cut-offs and carton waste to dumpster or as designated. Leave rooms clean. Remove marks, rough edges, and damaged tile.

B. Deliver extra stock to Owner at close-out.

END OF SECTION

SECTION 09 6500

RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Static Dissipative Tile.

B. Resilient base.

C. Installation accessories.

1.02 RELATED REQUIREMENTS

Not Used

1.03 REFERENCE STANDARDS

A. ASTM F 1066 - Standard Specification for Vinyl Composition Floor Tile.

B. ASTM F 1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing.

C. ASTM F 1861 - Standard Specification for Resilient Wall Base.

1.04 PERFORMANCE REQUIREMENTS

A. Conform to applicable code for fire performance ratings as follows:
   1. Flame spread: Maximum 75, per ASTM E 84.
   2. Smoke developed: Maximum 450, per ASTM E 84.
   3. Smoke density: Maximum 450, per ASTM E 662.

1.05 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

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

C. Selection Samples: Submit manufacturer's complete set of color samples for CBJ Architects P.C.'s initial selection.

D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Protect roll materials from damage by storing on end.

1.07 FIELD CONDITIONS

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

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

1.08 EXTRA MATERIALS

A. See Section 01 6000 - Product Requirements, for additional provisions.

B. Provide 100 sq ft of flooring, 50 lineal feet of base, and 5 percent of installed stair materials of each type and color specified.

PART 2 PRODUCTS

2.01 SHEET FLOORING-Not used

2.02 TILE FLOORING

A. Static Dissipative Tile: Homogeneous, with color extending throughout thickness, and:
   1. Minimum Requirements: Comply with ASTM F 1066, of Class corresponding to type specified.
   2. Size: 12 x 12 inch.
   3. Thickness: 0.125 inch.
   4. Pattern: Marbleized.
   5. Manufacturers:
      a. Armstrong World Industries, Inc: www.armstrong.com.
      b. Mannington Mills, Inc; Product Essentials: www.mannington.com. Design Basis
      c. Tarkett Inc: www.tarkett.com.
      d. Substitutions: See Section 01 6000 (01600) - Product Requirements.

B. Feature Strips: Of same material as tile.

2.03 RESILIENT BASE

A. Resilient Base: ASTM F 1861, Type TV, vinyl, thermoplastic; top set Style A, Straight, and as follows:
   1. Height: 4 inch.
   2. Thickness: 0.080 inch thick.
   3. Finish: Satin.
   4. Length: 4 foot sections.
   5. Color: Color as selected from manufacturer's standards.
   6. Accessories: Premolded external corners, internal corners, and end stops.
   7. Manufacturers:
      a. Armstrong.
      b. Johnsonite, Inc: www.johnsonite.com. Design Basis.
      c. VPI.
      d. Substitutions: See Section 01 6000 (01600) - Product Requirements.

2.04 ACCESSORIES

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

B. Primers, Adhesives, and Seaming Materials: Waterproof; types recommended by flooring manufacturer.

C. Filler for Coved Base: Plastic.

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

PART 3 EXECUTION

3.01 EXAMINATION

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

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

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

D. Verify that sub-floor surfaces are dust-free and free of substances which would impair bonding of adhesive materials to sub-floor surfaces.

E. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare sub-floor surfaces as recommended by flooring and adhesive manufacturers.

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

C. Prohibit traffic until filler is cured.

D. Clean substrate.

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

3.03 INSTALLATION

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

B. Install in accordance with manufacturer's instructions.

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

D. Fit joints tightly.

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

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

G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

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

3.04 SHEET FLOORING

3.05 TILE FLOORING

A. Install in accordance with manufacturer's instructions.

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

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

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

E. Lay flooring with joints and seams parallel to building lines to produce symmetrical tile pattern.

F. Install tile to ashlar pattern. Allow minimum 1/2 full size tile width at room or area perimeter.

G. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.

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

I. Install flooring in recessed floor access covers. Maintain floor pattern.

J. At movable partitions, install flooring under partitions without interrupting floor pattern.

K. Install feature strips and floor markings where indicated. Fit joints tightly.

3.06 RESILIENT BASE

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

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

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

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

E. Install coved base at tile floors.

F. Install straight base at carpeted floors.

3.07 CLEANING

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

B. Clean in accordance with manufacturer's instructions.

C. Clean, seal, and wax resilient flooring products in accordance with manufacturer's instructions.

3.08 PROTECTION

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

END OF SECTION

SECTION 09690

CARPET TILE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Carpet removal, new carpet and accessories for direct glue down installation.

B. Alternates or Substitutions: Approval of alternate or substitute products will be considered only under the terms and conditions as outlined below:

Whenever a particular make of material or trade name is specified herein, it shall be regarded as being indicative of the standards required. Regardless of format of specifications, any product other than those named in Part 2 -Products, item number 2.01, must proceed as an alternate or substitute. A bidder who proposes to quote on the basis of an alternate or substitute material or system shall submit to the architect, at least 14 days prior to the scheduled bid date, the following information:

1. Written application for approval of alternate or substitute to include specifications of alternate or substitute carpet on company letterhead and signed by company officer.
2. “24” x “24” sample of the proposed alternate or substitute with recommended backing technology.
3. A complete sample representation of colors available.
4. Copies of warranties for proposed alternate or substitute.
5. List of a minimum of three (3) jobs, one of which must be in use for at least ten (10) years, where alternate or substitute is/was used under similar conditions. These jobs shall be located within one hundred (100) miles of the owner's office. Each job shall be available for inspection by the owner's representatives.
6. Consideration will be given to only those alternates or substitutes that are approved prior to scheduled bid opening date.
7. List of approved alternates or substitutes will be issued to all bidders prior to bid opening.

C. General: The following publications of the issues listed below, but referred to hereinafter by basic designation, form a part of this specification to the extent as if bound herein:

American Society for Testing and Materials (ASTM):

1. E648 – Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
2. E662 – Test Method for Smoke Density
3. AATCC 16E- Color Fastness to Light
4. AATCC 129- Color Fastness to Ozone and Gas
5. AATCC 134- Static Generation of Fiber
6. AATCC 175- Red 40 Stain Test
7. DOC-FF-1-70- Pill Test
8. Moisture Penetration by Impact

1.02 SUBMITTALS

A. Layout Drawings: Show layout of each carpet type installation, at 1/8" scale.

B. Samples: Submit for verification purposes, 9" x 9" samples of each carpet required. Samples shall be accompanied by manufacturer's technical specification for each carpet required using terminology characteristics as listed in this specification. Also include a complete representation in sample form of all available colorations.

C. Maintenance Data: Submit manufacturer's printed maintenance recommendations for the care, cleaning, and maintenance of the carpet, including detailed instructions pertaining to hot water extraction methods.

1.03 QUALITY ASSURANCE

A. Flooring Contractor's Qualifications: Firm with not less than 5 consecutive years of experience in installation of commercial carpeting of type, quantity and installation methods similar to work of this section. FLOORING CONTRACTOR SHALL SUBMIT WITH BID PROPOSAL WRITTEN CERTIFICATION FROM CARPET MANUFACTURER THAT CERTIFIES FIRM AS AN APPROVED INSTALLER FOR THIS PROJECT.

B. Manufacturer's Qualifications: Firm (carpet mill) with not less than 5 consecutive years of production experience with carpet similar to type specified in this section; whose published product literature clearly indicates general compliance of products with requirements of this section. Manufacturer must be ISO 14001 certified.

C. Measurement Verification: Dimensions shown on drawings are approximate. It is the Flooring Contractor's responsibility to verify all dimensions and job site conditions; order sufficient yardage to fully carpet areas as indicated and to fill overage requirements as specified. No substitutions shall be permitted to make up for any shortage of material in overage or in carpet to be installed.

D. Flooring Contractor shall be totally responsible for the accuracy of his measurements of total yardage, individual floor yardage, and dye lot yardage requirements; no additional compensation shall be allowed for shortage of materials.

E. Dye Lots: All carpet of the same type in continuous areas shall be from the same dye lots. Carpets that are piece dyed and are limited to dye batch sizes must be approved by the owner. Transition from one dye lot to another shall be detailed on shop drawings and approved by owner.

F. Owner reserves the right to test carpet at their expense to verify that the delivered carpet is as specified. If carpet does not meet specifications, manufacturer will reimburse owner the testing expense and the carpet may be rejected.

1.04 PRODUCT DELIVERY, STORAGE & HANDLING

A. Deliver carpeting materials in original mill protective wrapping with mill register numbers and tags attached. Maintain wrappers and protective covers in place until carpet is ready for installation. Store inside, in well-ventilated area, protected from weather, moisture and soiling.

B. Deliver all required overages and maintenance stock to owner's specified location prior to beginning installation.

1.05 JOB CONDITIONS

A. Environmental Conditions: Maintain temperatures in space in accordance with carpet or adhesive manufacturer's recommendations, but in no case less than 65 degrees F for 24 hours prior to, during and after installation. Subfloor temperature should be a minimum 65 degrees F for 24 hours prior to and after installation.

B. Precondition: All of the carpet shall be spread in a room on site 24 hours prior to actual installation with the room preconditioned at a minimum of 65 degrees F with humidity between 10% to 65%.

C. Moisture: A calcium chloride test should be performed on the concrete to detect the presence of moisture. Acceptable results require that moisture content does not exceed 8 lbs. per 1,000 square feet per 24 hours. One calcium chloride test should be performed for every 300 yards of carpet. Relative Humidity ASTM-F-2170 test method maybe be used in place of calcium chloride test.

Acceptable moisture levels are 85% maximum relative humidity. Alkalinity tests must also be performed. PH should register between 5 and 9. All test should be documented and results saved.

1.06 EXTRA STOCK

A. General: Furnish 10% additional yardage of each carpet type required; extra yardage is over and above any overage provided by manufacturer. Normal manufacturing overage not to exceed 10% for under 1000 yards, not to exceed 5% for over 1000 yards. Deliver to the Owner uncut in clearly marked dust-proof packages **prior to commencement of work**; store where directed.

PART 2 - PRODUCTS

2.01 CARPET

* All substitutions of equal products must be approved 14 days prior to bid.

A. Carpet Type CPT-1: Carthage IV Infinity Modular
Carpet shall meet the following minimum requirements:

Construction:	Graphic Loop
Face Fiber:	Invista Antron Legacy Type 6,6 Four Hole, Hollow Filament Nylon, with Permanent Stain and Bleach Protection, Static Control, and a Fiber Modification Ratio of < 1.5
Dye Method:	Solution / Yarn
Gauge:	1/10
Tufted Yarn Weight:	20 oz/sy
Soil Retardant	DuraTech by Invista
Stain Resistance	XGuard with 15 Year Limited Warranty against Staining
Bleach Resistance	ColorSafe with 15 Year Limited Warranty against Color Loss from Bleach Spills
Primary Backing:	100% Woven Synthetic
Secondary Backing:	Infinity™ Modular Reinforced Vinyl Composite Closed Cell Polymer
Recycled Content:	Approximately 15% Pre-Consumer
Size:	24 x 24
Fiber Modification Ratio:	< 1.5; To estimate the Modification Ratio of a fiber shape, the size of the outer circle's circumference of the fiber is compared to the size of the inner circle's circumference. The smaller the number, the less likely the fiber shape will trap and hold soil and be subject to premature crushing and matting.
Static Control:	< 3.0 KV when tested under AATCC 134
Flammability:	
a. DOC-FF-1-70 Pill Test:	Passes.
b. Floor Radiant Panel:	Meets NFPA Class 1 when tested per ASTM-E-648 glue down.
c. NBS Smoke Chamber	Less than 450 Flaming Mode. Per ASTM-E-662
Color Fastness:	
a.	Lightfastness - AATCC 16E-1982 - Dark color: Gray scale rating of 4 or better after 160 standard fading hours as compared to AATCC Gray Scale for evaluation change in color.
b.	Ozone and Gas - AATCC 129-1981 - Rating 3 or better per color AATCC transference scale.
Moisture Barrier:	Passes Moisture Impact at 10,000 cycles.
	Passes British Spill Test
Indoor Air Quality:	Manufacturer must demonstrate that carpet is certified under the CRI Green Label Plus Program.
NSF 140 Certification:	SCS Sustainable Choice Gold
Carpet Manufacturers:	Subject to compliance with specifications, the following manufacturer is approved.
	Mannington Commercial, Contact: Customer Service 800-241-2262
Pattern and Color:	Understanding the importance of pattern and color for aesthetics, as well as appearance retention and maintainability, owner reserves the

right to reject any product or manufacturer based solely on pattern and color considerations.

B. WARRANTIES

1. Definition of Lifetime: Lifetime is defined as the period from which materials are installed until the date in which the owner removes them from service.
2. Manufacturer's Lifetime Warranty, non-prorated, against product failure covering all costs including freight, labor, and material for the following:
    - Edge Ravel
    - Back delamination
    - Superior tuft bind in high traffic environments, wet or dry
    - Static protection as stated above
    - Moisture Barrier-Pre-Coat and Backing
    - Wear - No more than 10% Face Yarn Loss
    - Adhesive failure

C. CATIONIC STAIN RESISTANCE

1. Stain resistant properties must be permanent and not removable by commercial cleanings or abrasive wear, i.e., XGuard stain resistant treatment. Under GSA requirements stain resistant carpets must score no less than 8.0 (10.0 is the best) on the AATCC Red 40 Stain Scale. Test sample must first be exposed to 100 revolutions on the Taber Abrader (1,000-gram weight per H-18 wheel) and then abraded area must be stain tested using AATCC test method 175. Topical stain resistant treatments will not be acceptable. Stain resistant properties must be inherent and warranted for 15 years.

D. BLEACH RESISTANT

1. Will resist color loss from diluted bleach applications for a period of fifteen years from the date of original installation, as with ColorSafe bleach resistance treatment. Diluted bleach applications means spills or splashes on the carpet of diluted bleach solutions (10% or less) of the type normally used for cleaning or disinfecting purposes.

E. ENVIRONMENTAL ATTRIBUTES – LEED Criteria

1. Carpet tile must be 100% recyclable
2. Carpet tile must meet the NSF 140 standard SCS Sustainable Choice-Gold/EPP, California Gold.
3. Recycled Content: Carpet tile must contain 15% pre-consumer recycled content based on total weight.
4. Carpet mill must be ISO 14001 certified.
5. Carpet Face Yarn: In accordance with Executive Order 13101, carpet face yarn must be third party certified as an Environmentally Preferred Product (EPP).
6. Low Emitting Materials: Carpet and adhesives, must meet the *Low Emitting Materials* standards as outlined in U.S. Green Building Council LEED criteria. Adhesives must meet VOC emissions standards per South Coast Air Quality Management District Rule #1168, and CRI's Green Label Plus
7. End of Life Reclamation: Carpet tile must have an existing methodology actively in place to achieve landfill diversion. Refer to Section 3.03 of this section for specific requirements for reclamation of material.

2.02 ACCESSORIES

A. Adhesives: Waterproof, non-flammable carpet adhesive recommended and approved by carpet manufacturer in writing for compatibility with carpet backing; have no calculated VOC's, be non-flammable, and meet the criteria of the CRI Green Label Plus Certification Program, SCAQMD Rule 1168 and CHPS 1350. MSDS and samples required on product used. Adhesive must have

Lifetime Bond Warranty from manufacturer

B. Miscellaneous Materials: As recommended and approved in writing by manufacturer of carpet, and selected by Flooring Contractor to meet project circumstance and requirements.

C. Protection Paper: Fortifiber Corporation "Seekure 892", or approved heavy, reinforced, non-staining kraft laminated paper.

PART 3 - EXECUTION

3.01 CARPET REMOVAL

A. Remove and dispose of all existing carpet and materials to make subfloor acceptable for installation if applicable.

3.02 INSPECTION

A. General: Do not start work until works of other trades are substantially completed. Inspect surfaces to receive carpet and verify that all such work is complete to the point where this installation may properly commence. In the event of discrepancy, notify Construction Manager. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved. Start of carpet installation indicates acceptance of subfloor conditions and full responsibility for completed work.

3.03 CARPET RECLAMATION – Carpet Reclamation program shall be through carpet manufacturer's recycling program: LOOP by Mannington.

A. SUBMITTALS
1. Proposed dust-control measures.
2. Proposed packing and transportation measures.
3. Schedule of carpet reclamation activities indicating the following:
    a. Detailed sequence of removal work.
    b. Inventory of items to be removed and recycled.
4. Reclamation agency records indicating receipt and disposition of used carpet.

B. QUALITY ASSURANCE
1. Reclamation Agency: Mannington LOOP program providing used carpet recycling program.
2. Carpet Remover: Firm [or designated agent firm] providing carpet removal services through carpet manufacturer's recycling program.
3. Regulatory Requirements: Comply with governing regulations. Comply with hauling and disposal regulations of authorities having jurisdiction.
4. Record off-site removal of debris and materials and provide the following information regarding the removed materials. Time and Date of Removal; Type of Material; Weight and Quantity of Materials; Final Destination of Materials.
5. Certification: Reclamation Agency and Carpet Remover shall certify in writing that used carpet was removed and recycled to assure carpet is not landfilled.
6. Removed carpet and associated materials shall not be removed and placed in a landfill.

C. PREPARATION
1. Vacuum used carpet before removal.

D. CARPET REMOVAL
1. Remove used carpet in large pieces, roll tightly, and pack neatly in container. [Include carpet scrap and waste from new installation.] For used carpet tile remove and stack face to face and back to back. Immediately remove from Site and place in container or trailer.
2. Deposit only clean, dry used carpets in containers. Clean shall be defined as carpet free

from demolition debris or asbestos contamination, garbage, and tack strips.

E. CONTAINER DISPOSAL

1. Place corrugated sleeve around 40" x 48" pallet. Containers will hold up to 150-200 yards / 800-1,000 lbs.
2. Carpet removal: Cut carpet in 4-foot strips using National #581 Just Push Cutter.
3. Roll carpet up and place standing up in containers. Place lid on containers when full. Place plastic sleeve over containers and stack two high.
4. Store containers until project is complete of you have a full trailer load. A typical trailer can hold 50-52 containers of 40,000 lbs.

3.04 INSTALLATION, GENERAL

A. General: Comply with manufacturer's instructions and recommendations for installation of this type of carpet by the full glue down method.

B. Prepare the subfloor to insure a successful installation.

C. Carpeting shall be installed with pile lying in the same direction (monolithic), unless another specified method is recommended by the manufacture or at owner’s approval. Cut carpet tile evenly and accurately to fit neatly at walls, columns, and projections. Extend carpet under open-bottomed and raised-bottom obstructions, and under removable flanges of obstructions.

D. Installed carpet tiles shall be free from ripples, ravels, frays, and puckers. All loop pile carpets will demonstrate some fuzzy edges due to normal manufacturing conditions.

E. Expansion Joints: Do not bridge building expansion joints with continuous carpeting, provide for movement.

3.05 CLEANING AND PROTECTION

A. Remove and dispose of debris and unusable scraps.

B. Vacuum carpet using two motor, top loading, upright commercial machine with brush-only element, utilizing a high filtration dust bag. Remove spots in accordance with carpet manufacturer’s guidelines and replace carpet where spots cannot be removed. Remove any protruding face yarn using sharp scissors. Be certain to trim any loose yarns or fibers at all seams.

C. Following cleaning and vacuum carefully protect the carpeting from soiling and damage until final acceptance. Protection shall be accomplished by using approved protection paper. Edges shall be lapped 6 inches and secured with non-asphaltic tape. Covering shall be kept in repair and damaged portions replaced during the construction and move-in period.

D. Maintenance Materials: Deliver usable scraps to Owner's designated storage space, properly packaged and identified. Dispose of smaller pieces as construction waste.

End of Section 09690

SECTION 09 9000

PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Surface preparation.

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

C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:

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

E. Installation of sealants at hollow metal frames.

F. Painting materials and methods for conduit identification specified in Section 26 0553 (16075).

G. See Schedule - Surfaces to be Finished, refer to drawings.

1.02 RELATED REQUIREMENTS

A. Section 05 5000 - Metal Fabrications: Shop-primed items.

B. Section 07 9005 - Joint Sealers.

1.03 REFERENCE STANDARDS

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency.

B. ASTM D 16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications.

C. ASTM D 4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials.

D. SSPC (PM1) - Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for Protective Coatings.

E. SSPC (PM2) - Steel Structures Painting Manual, Vol. 2, Systems and Specifications; Society for Protective Coatings.

1.04 DEFINITIONS

A. Conform to ASTM D 16 for interpretation of terms used in this section.

1.05 SUBMITTALS

A. See Section 01000 - For submittal procedures.

B. Product Data: Provide data on all finishing products, including VOC content.

C. Samples: Submit two paper chip samples, 6 x 6 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.

D. Manufacturer's Instructions: Indicate special surface preparation procedures.

E. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

F. VOC Limits:
   1. Paint - provide documentation/product information maintaining product VOC limits of 150g/L for non-flat and 50g/L flat.
   2. Adhesives (interior only) - provide documentation/product information maintaining product adhesive VOC limits: Total VOC limit 10.0 mg/m2/hr, Formaldehyde 0.05 mg/m2/hr, 2-Ethyl-1-Hexanol 3.0 mg/m2/hr.
   3. Sealant (interior only) - provide documentation/product information maintaining product sealant VOC limits: 250g/L.

1.06 QUALITY ASSURANCE

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

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

1.07 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

B. Products supplied as a part of the work of this section shall be V.O.C. compliant with local, state, and federal regulations.

1.08 MOCK-UP

A. See Section 01 4000 - Quality Requirements, for general requirements for mock-up.

B. Provide panel, 8 feet long by 8 feet wide, illustrating special coating color, texture, and finish.

C. Provide door and frame assembly illustrating paint coating color, texture, and finish.

D. Locate where directed.

E. Mock-up may remain as part of the work.

1.09 DELIVERY, STORAGE, AND HANDLING

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

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

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

1.10 FIELD CONDITIONS

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

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

C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.

F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

1.11 EXTRA MATERIALS

A. See Section 01 6000 - Product Requirements, for additional provisions.

B. Provide 1 set of properly labeled draw downs to the owner for each type of paint, stain, or finish used.

C. Supply 1 gallon of each color; store where directed.

D. Label each container with color in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

B. Paints:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.
4. Pratt and Lambert.

C. Transparent Finishes:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.

D. Stains:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.

E. Primer Sealers:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.
4. Pratt and Lambert.

F. Block Fillers:
1. Sherwin Williams.
2. ICI Paint Stores.
3. Diamond Vogel.
4. Pratt and Lambert.

G. Substitutions: See Section 01 6000 - Product Requirements.

2.02 PAINTS AND COATINGS - GENERAL

A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
2. Supply each coating material in quantity required to complete entire project's work from a single production run.
3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

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

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

2.03 PAINT SYSTEMS - EXTERIOR

A. Ferrous Metals, Primed, Alkyd, 2 Coat:
   1. Touch-up with rust-inhibitive primer recommended by top coat manufacturer.
   2. Gloss: Two coats of alkyd gloss enamel.

B. Paint MgE-OP-3A - Galvanized Metals, Alkyd, 3 Coat:
   1. One coat galvanize primer.

2.04 PAINT SYSTEMS - INTERIOR

A. Wood, Transparent, Varnish, Stain:
   1. One coat of stain.
   2. One coat sealer; .
   3. Satin: One coat of varnish; 5 coats at wearing surfaces w/i the courtrooms.

B. Paint CI-OP-3L - Concrete/Masonry, Opaque, Latex, 3 Coat:
   1. One coat of block filler.
   2. Semi-gloss: Two coats of latex enamel.

C. Paint MI-OP-3A - Ferrous Metals, Unprimed, Alkyd, 3 Coat:
   1. One coat of alkyd primer.
   2. Semi-gloss: Two coats of alkyd enamel; .

D. Paint MI-OP-2A - Ferrous Metals, Primed, Alkyd, 2 Coat:
   1. Touch-up with rust inhibitive metal primer.
   2. Semi-gloss: Two coats of alkyd enamel; .

E. Paint CI-OP-3E - Concrete/Masonry, Epoxy Enamel, 3 Coat:
   1. One coat of catalyzed epoxy primer.
   2. Gloss: Two coats of catalyzed epoxy enamel.

F. Gypsum Board/Plaster, Epoxy Enamel, 3 Coat:
   1. One coat of catalyzed epoxy primer.
   2. Gloss: Two coats of catalyzed epoxy enamel.

G. Paint GI-OP-3L - Gypsum Board/Plaster, Latex, 3 Coat:
   1. One coat of latex primer sealer.
   2. Eggshell: Two coats of latex enamel.

H. Paint GI-OP-3LA - Gypsum Board/Plaster, Latex-Acrylic, 3 Coat:
   1. One coat of alkyd primer sealer.
   2. Eggshell: Two coats of latex-acrylic enamel.

2.05 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
   1. Gypsum Wallboard: 12 percent.
   2. Plaster and Stucco: 12 percent.
   3. Masonry, Concrete, and Concrete Unit Masonry: 12 percent.
   4. Interior Wood: 15 percent, measured in accordance with ASTM D 4442.
   5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to coating application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.

I. Plaster Surfaces to be Painted: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

J. Concrete Floors and Traffic Surfaces to be Painted: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

K. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

L. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

M. Interior Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

N. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

O. Fill nail holes on all trim components for glass lites in doors and windows.

P. Fill nail holes on all pre-finished items.

3.03 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

C. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

D. Apply each coat to uniform appearance.

E. Sand wood and metal surfaces lightly between coats to achieve required finish.

F. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

G. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

I. Spray paint door frames. Brush applied coatings is not acceptable.

3.04 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Refer to Section 22 0553 and Section 26 0553 for schedule of color coding of equipment, duct work, piping, and conduit.

B. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

C. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.05 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection.

3.06 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.07 SCHEDULE - SURFACES TO BE FINISHED

A. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically noted.
   2. Fire rating labels, equipment serial number and capacity labels.

B. Paint the surfaces described below under Schedule - Paint Systems.

C. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
   1. Paint all insulated and exposed pipes occurring in finished areas to match background surfaces, unless otherwise indicated.
   2. Paint shop-primed items occurring in finished areas.
   3. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
   4. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

3.08 SCHEDULE - PAINT SYSTEMS

A. Gypsum Board: Finish all surfaces exposed to view.

B. Steel Door Frames: Match existing finish on all surfaces exposed to view.

C. Steel Fabrications: Finish all surfaces exposed to view.

D. Shop-Primed Metal Items: Finish all surfaces exposed to view.

3.09 SCHEDULE - COLORS

A. To be selected by interior Architect.

END OF SECTION

SECTION 10523

FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Fire extinguishers.

B. Fire extinguisher cabinets, rated where required.

C. Accessories.

1.02 RELATED SECTIONS

A. Section 06100 - Rough Carpentry: Wood blocking and shims.

1.03 REFERENCES

A. NFPA 10 - Standard for Portable Fire Extinguishers; National Fire Protection Association; 2002.

B. UL (FPED) - Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

1.04 PERFORMANCE REQUIREMENTS

A. Conform to NFPA 10.

B. Provide extinguishers classified and labeled by Underwriters Laboratories Inc. for the purpose specified and indicated.

C. Provide fire rated cabinets at all fire rated walls.

1.05 SUBMITTALS

A. See Section 01300 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide extinguisher operational features, color and finish, and anchorage details.

C. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

E. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

1.06 ENVIRONMENTAL REQUIREMENTS

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

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fire Extinguishers, Cabinets and Accessories:
   1. Ansul Fire Protection.
   2. JL Industries, Inc: www.jlindustries.com.
   3. Larsen's Manufacturing Co: www.larsensmfg.com.
   4. Potter-Roemer: www.potterroemer.com.
   5. Walter Kidde, Division of Kidde, Inc..
   6. Substitutions: See Section 01600 - Product Requirements.

2.02 FIRE EXTINGUISHERS

A. Multi-Purpose Dry Chemical Type: Stainless steel tank, with pressure gage.
   1. Class B:C.
   2. Size 10.
   3. UL rating: 4A-60B:C
   4. Finish: Baked enamel, color as selected.

2.03 FIRE EXTINGUISHER CABINETS

A. Metal: Formed primed steel sheet; 0.036 inch (0.9 mm) thick base metal.

B. Cabinet Configuration: Semi-recessed type.
   1. Sized to accommodate accessories.
   2. Trim: Rolled Edge 2 1/2" Projection

C. Door: Manufacturer's standard thickness, reinforced for flatness and rigidity; latch. Hinge doors for 180 degree opening with continuous piano hinge. Provide roller type catch.

D. Door Glazing: Glass, clear, 1/8 inch (3 mm) thick tempered. Set in resilient channel gasket glazing.

E. Cabinet Mounting Hardware: Appropriate to cabinet. Pre-drill for anchors.

F. Weld, fill, and grind components smooth.

G. Finish of Cabinet Exterior Trim and Door: Baked enamel, color as selected.

H. Finish of Cabinet Interior: White enamel.

2.04 ACCESSORIES

A. Extinguisher Brackets: Formed steel, chrome-plated.

B. Graphic Identification: Silk Screen or Thermal Die Cut.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify rough openings for cabinet are correctly sized and located.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install cabinets plumb and level in wall openings, 30 inches from finished floor to inside bottom of cabinet.

C. Secure rigidly in place.

D. Place extinguishers and accessories in cabinets.

3.03 SCHEDULES

A. See Plans for locations

END OF SECTION

Remodeling For:

OFFICE RELOCATION
FOR THE:

McHENRY COUNTY ETSB

500 RUSSEL COURT, WOODSTOCK, IL 60098

OWNER

COUNTY OF McHENRY
2200 N. Seminary Avenue
Woodstock, IL. 60098

ARCHITECT

CBJ ARCHITETS P.C.
3521 Wintergreen Ter.
Algonquin, IL 60102
O: 847-997-9838
F: 847-658-0095

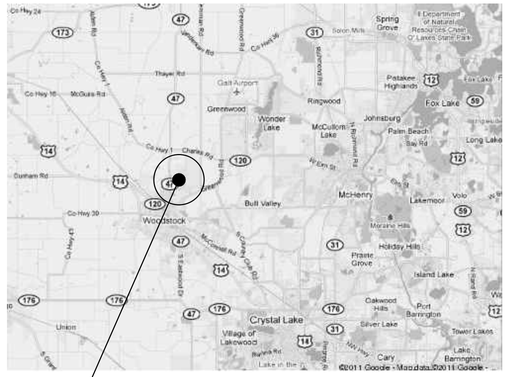
CBJ ARCHITECTS
PROFESSIONAL CORPORATION

MEP ENGINEER

RTM ASSOCIATES
3 Executive Court, Unit 4
South Barrington, IL60010
O: 847-756-4180
F: 847-756-4186

SITE LOCATIONS

STATE LOCATION



PROJECT SITE

LOCATION MAP

NORTH

DRAWING INDEX

EXISTING FINISHES NOTES:

IT WILL BE NECESSARY FOR THE MECHANICAL COMTRACTOR AND ANY OF HIS SUB-CONTRACTORS TO ACCESS ABOVE FINISH CEILING SPACES. IT IS THE SOLE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR AND ANY OF HIS SUB-CONTRACTORS TO ENSURE THAT AFTER THEIR PORTION OF THE WORK IS COMPLETE THAT ANY FINISHED AREAS OF THE BUILDING ACCESSED OR ADJACENT TO ANY WORK AREAS ARE LEFT IN A FINISHED CONDITION EQUAL TO OR BETTER THAN PRIOR TO THE WORK. THE OWNER WILL DOCUMENT EXISTING CONDITIONS (AND PROVIDE ACCESS TO SUCH DOCUMENTATION) PRIOR TO THE START OF WORK BY THE CONTRACTORS. FAILURE TO COMPLY WITH THESE REQUIREMENTS MAY RESULT IN THE LOSS OF BOND DOLLARS. AREASTHAT ARE INCLUDED BUT NOT LIMITED TO INCLUDE, CEILINGS, CEILING GRIDS, LIGHT FIXTURES, SPRINKLER SYSTEMS, FIRE ALARM SYSTEMS, FINISHED WALLS, CARPETING, DESKS, OFFICE PARTITIONS, DOORS, WINDOWS, ETC...

PROJECT MANUAL IS PART OF THESE CONSTRUCTION DOCUMENTS.

ABBREVIATIONS:

A.B.	ANCHOR BOLT
ACT	ACOUSTICAL TILE
ADJ.	ADJACENT
A.F.F.	ABOVE FINISHED FLOOR
AL.	ALUMINUM
AVE.	AVENUE
BLKG.	BLOCKING
BM.	BEAM
B.O.	BOTTOM OF
BRG.	BEARING
BSMT.	BASEMENT
CA.	CARPET
C.B.	CATCH BASIN
CHFR.	CHAMFER
C.J.	CONSTRUCTION JOINT
C.L.	CENTERLINE
CJ.	CONTROL JOINT
CLR.	CLEAR(ANCE)
C.M.U.	CONCRETE MASONRY UNIT
COL.	COLUMN
CONTR.	CONTRACT(OR)
CPRS.	COMPRESSIBLE
CSMT.	CASEMENT
CT.	CERAMIC TILE
D.H.	DOUBLE HUNG
D.L.	DEAD LOAD
D.S.	DOWNSPOUT
D.T.	DRAIN TILE
EL.	ELEVATION
ENGR.	ENGINEER
EP.	EPOXY
ESMT.	EASEMENT
EST.	ESTIMATE
E.W.C.	ELECTRIC WATER COOLER
EXC.	EXCAVATE
EXIST.	EXISTING
EXP.	EXPANSION
EXP. BT.	EXPANSION BOLT
EXP. JT.	EXPANSION JOINT
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
FGL	FIBERGLASS
FIN. FLR.	FINISHED FLOOR
FR.	FRAME
G	GAS
G.B.	GRAB BAR
GALV.	GALVANI□ED
GFI.	GROUND FAULT INTERRUPTER
GND.	GROUND
GR.	GRADE(ING)
H.B.	HOSE BIB
HC.	HOLLOW CORE
HDR.	HEADER
HDWR.	HARDWARE
HT	HEIGHT.
HM.	HOLLOW METAL
H.PT.	HIGH POINT
HTR.	HEATER
INSTL.	INSTALLATION
JST.	JOIST
JT.	JOINT
K.D.	KNOCK DOWN
LBR.	LUMBER
L.F.	LINEAR FOOT
LG.	LONG
L.L.	LIVE LOAD
LONG.	LONGITUDINAL
LP.	LIGHT POLE
LRG.	LARGE
LT.	LIGHT
LTG.	LIGHTING
LT. WT.	LIGHTWEIGHT
LVR.	LOUVER
M.	METER
MAN.	MANUAL
MAS.	MASONRY
MAT.	MATERIAL
MAX.	MAXIMUM
MH.	MANHOLE
MK.	MARK
MLDG.	MOLDING
M.O.	MASONRY OPENING
M.R.	MOISTURE RESISTANT
MTD.	MOUNTED
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
O.H.	OPPOSITE HAND
OPNG.	OPENING
OPT.	OPTIONAL
P.	PAINT
PART.	PARTITION
PC.	PIECE
PKT.	POCKET
PL.	PLATE
P.L.	PROPERTY LINE
P. LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
POLY.	POLYETHYLENE
PR.	PAIR
P.□S.	POLE AND SHELF
PVMT.	PAVEMENT
□T.	□UARRY TILE
R.	RISER
RAD.	RADIUS
R.D.	ROOF DRAIN
REC.	RECESSED
REC'D	RECEIVED
REF.	REFERENCE
R.O.	ROUGH OPENING
R.S.	ROUGH SAWN
S.C.	SOLID CORE
SD.	STORM DRAIN
SGL.	SINGLE
SHTHG.	SHEATHING
S.S.	SANITARY SEWER
S.STL.	STAINLESS STEEL
S.T.C.	SOUND TRANSMISSION CLASS
SUSP.	SUSPENDED
SYMM.	SYMMETRICAL
T.B.	TEST BORING
T.□B.	TOP AND BOTTOM
TEL.	TELEPHONE
T.□G.	TONGUE □ GROOVE
THK.	THICKNESS
T.O.	TOP OF
TYP.	TYPICAL
UNEX.	UNEXCAVATED
U.O.N.	UNLESS OTHERWISE NOTED
V.B.	VINYL BASE
V.C.T.	VINYL COMPOSITION TILE
V.C.W.	VINYL COATED WIRE
V.T.R.	VENT THROUGH ROOF
W.C.	WATER CLOSET
W.F.	WIDE FLANGE
W.L.	WIND LOAD
W. PT.	WORKING POINT
WTR.	WATER
W.W.F.	WELDED WIRE FABRIC
X.L.	EXIT LIGHT

DRAWING SYMBOLS KEY

- 100 — DOOR NUMBERS - REFER TO DOOR SCHEDULE
- 3 — WINDOW NUMBER
- C — WALL TYPE - REFER TO WALL TYPES
- 2 — REVISION MARK - REFER TO TITLE BLOCK FOR REVISION DATE
- ELEVATION REFERENCE
- ROOM / XXX — ROOM NAME AND NUMBER AS NOTED - REFER TO ROOM FINISH SCHEDULE
- X / XX.X — INTERIOR ELEVATION REFERENCE - REFER TO SHEET NUMBER INDICATED NEXT TO REFERENCE SYMBOL
- X / AX.X — DETAIL REFERENCE - REFER TO SHEET NUMBER INDICATED IN BOTTOM OF SYMBOL
- X / X — BUILDING/WALL SECTION REFERENCE - REFER TO SHEET NUMBER INDICATED IN BOTTOM OF SYMBOL

GENERAL NOTES:

1. ALL WORK OF ALL TRADES SHALL BE COMPLETED IN ACCORDANCE WITH ALL GOVERNING CODES AND ORDINANCES.
2. EACH CONTRACTOR IS TO OBTAIN AND PAY FOR PERMITS, LICENSES, FEES, ETC. AS MAY BE REQUIRED FOR COMPLETION OF HIS OWN PORTION OF THE PROJECT.
3. EACH CONTRACTOR SHALL COORDINATE HIS WORK WITH THE OWNER, THE OWNER'S OTHER CONTRACTORS, AND ALL OTHERS AT THE SITE.
4. EACH CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS AT THE SITE. NEITHER THE OWNER NOR THE ARCHITECT ASSUMES RESPONSIBILITY FOR CONDITIONS OR DIMENSIONS SHOWN AS EXISTING.
5. IF ANY CONTRACTOR OBSERVES THAT ANY OF THE CONTRACT DOCUMENTS ARE AT VARIANCE WITH APPLICABLE LAWS, STATUTES, BUILDING CODES, OR ORDINANCES, HE SHALL PROMPTLY NOTIFY THE ARCHITECT.
6. ALL HOLES FOR PLUMBING, ELECTRICAL, HVAC, OR FIRE PROTECTION CONDUIT, PIPING, OR DUCTWORK ARE TO BE REPAIRED BY THE ASSOCIATED TRADE.
   ALL TRADES SHALL TAKE CARE TO MAKE HOLES ONLY AS LARGE AS NECESSARY. ALL HOLES SHALL BE NEATLY CUT. DO NOT PUNCH OR POUND HOLES IN WALLS OR ROOF DECK.

   ASSOCIATED TRADE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY HOLES LEFT UNREPAIRED AND WILL BE BACK CHARGED ACCORDINGLY FOR SUCH REPAIRS.

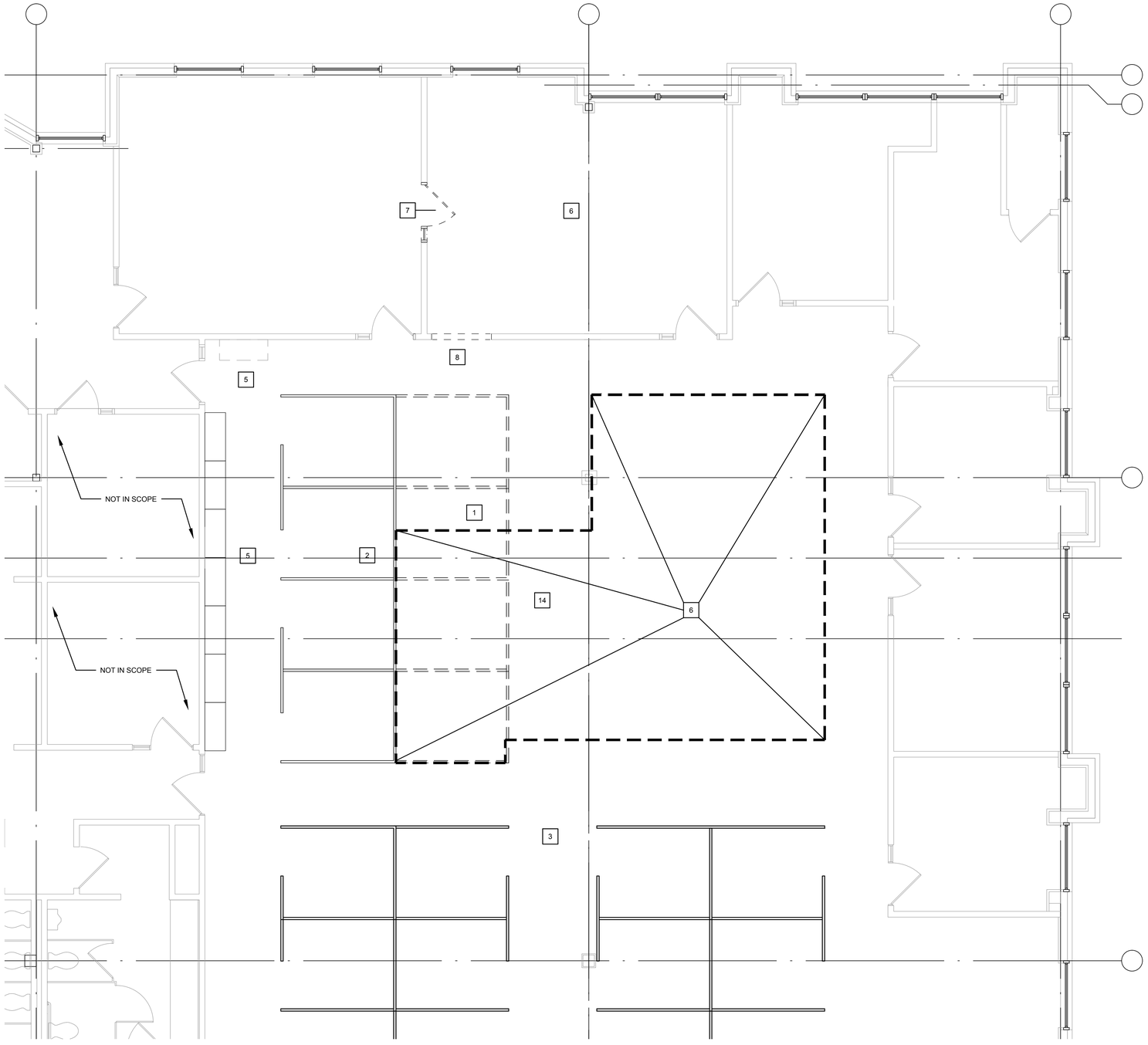
   ANY HOLES OR PENETRATIONS THROUGH FIRE RATED CONSTRUCTION SHALL BE APPROPRIATELY FIRESTOPPED, DAMPERED, OR SEALED AS REQUIRED BY CODE.
7. EACH CONTRACTOR SHALL INCLUDE NECESSARY DEMOLITION AND REMOVAL OF ALL MATERIAL AS REQUIRED TO PERFORM HIS WORK.
8. ANY HAZARDOUS MATERIALS ENCOUNTERED DURING DEMOLITION, REMODELING, OR EXCAVATION SHALL BE REMOVED AND/OR CONTAINED IN ACCORDANCE WITH ALL GOVERNING LOCAL, STATE, AND FEDERAL REGULATIONS.
9. DO NOT SCALE DRAWINGS.

CERTIFICATIONS:

ARCHITECT: **ENGINEER:**

BID / PERMIT SUBMITTAL
MAY 20, 2016
PROJECT #15-023

G1



1 DEMOLITIOM FLOOR PLAN
1/4"□1'-0"

LEGEND:

— — — EXISTING CONSTRUCTION TO BE REMOVED. COORDINATE WITH NEW WORK.

EXISTING CONSTRUCTION TO REMAIN.

PLAN NOTES:

1. REMOVE EXISTING CUBICLES. COORDINATE STORAGE WITH OWNER ON SITE. PULL ALL POWER, DATA □ PHONE BACK TO NEAREST JUNCTION BOX
2. REMOVE EXISTING CUBICLES. PROTECT □ STORE ON SITE FOR REUSE. PULL ALL POWER, DATA □ PHONE BACK TO NEAREST JUNCTION BOX
3. EXISTING CUBICLES TO REMAIN. PROTECT AREA FROM ADJACENT WORK.
4. REMOVE EXISTING CEILING PADS, GRID, LIGHTING, DIFFUSERS, ETC... STORE EXIT LIGHTS, DIFFUSERS, SPEAKERS FOR RE-USE.
5. RELOCATE EXISTING WFN FILE CABINETS (3). COORDINATE LOCATION WITH OWNER ON SITE.
6. EXISTING CARPETING TO BE REMOVED. VERIFY DIM'S ON A2. REMOVAL AND FLOOR PREP TO BE PROVIDED BY FLOORING CONTRACTOR.
7. REMOVE EXISTING DOOR, FRAME AND SIDE LITE. SEE DETAILS ON A1. STORE FOR RE-USE AT 8.
8. REMOVE EXISTING WALL TO ACCEPT RELOCATED DOOR, FRAME AND SIDE LITE. REINFORCE AS NEEDED. SEE DETAILS ON A1.
9. REMOVE EXISTING DOOR, FRAME AND SIDE LITE. SEE DETAILS ON A1. STORE FOR RE-USE AT 10.
10. NOT USED
11. REMOVE EXISTING WALL AS SHOWN. SOFFIT ABOVE TO REMAIN. REINFORCE AS NEEDED.
12. REMOVE EXISTING FIRE EXTINGUISHER AND CABINET AND STORE FOR RE-USE.
13. PREVIOUSLY REMOVED CUBICLES. PULL ALL POWER, DATA □ PHONE BACK TO NEAREST JUNCTION BOX
14. EXISTING CEILING GRID AND TILES TO BE REMOVED FOR NEW WALLS. COORDINATE WITH REFLECTED CEILING PLANS.
15. NOT USED
16. NOT USED

DEMOLITION NOTES:

1.) CONTRACTOR TO COORDINATE ALL DIMENSIONS SHOWN ON DEMOLITION PLANS WITH NEW WORK PRIOR TO DEMOLITION.

2.) IN AREA/SPACES WHERE A WALL OR WALLS ARE BEING REMOVED, THE EXISTING FLOORING AND CEILING FINISHES SHALL BE REMOVED AS NEEDED.

3.) ALL DIMENSIONS □ CONDITIONS TO BE FIELD VERIFIED BEFORE START OF WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES.

4.) PATCH/REPAIR ALL WALLS/FLOORS/CEILINGS AS RE□UIRED TO MATCH EXISTING ADJACENT SURFACES FOR APPLICATION OF NEW FINISHES IN AREAS OF DEMOLITION.

5.) ANY ITEM NOT SPECIFICALLY NOTED TO BE STORED FOR REUSE SHALL BE DISPOSED OF ACCORDINGLY.

6.) COORDINATE WITH OWNER ON SITE FOR STORAGE OF ITEMS AS NOTED.

7.) SIMILAR NOTES/CONDITIONS APPLY TO ALL AREAS OF WORK. COORDINATE WORK WITH ALL CONSTRUCTION DOCUMENT DRAWINGS.

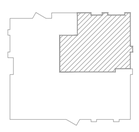
8.) COVER □ PROTECT EXISTING FIRE ALARM SYSTEM.

9.) COVER □ PROTECT OR REMOVE AND STORE FOR REINSTALLATION ALL EXISTING FIRE EXTINGUISHERS IN AREAS OF DEMOLITION AND CONSTRUCTION.

10.) SEAL ALL DOORS AND OPENINGS, ETC. TO ENSURE THAT NO DEBRIS, WATER, ETC., SHALL INFILTRATE INTO HABITABLE SPACES ABOVE, BELOW OR ADJACENT TO THE WORK AREA.

11.) CONTRACTOR IS FULLY RESPONSIBLE FOR PROVIDING ALL TEMPORARY SHORING AND BRACING OF EXISTING STRUCTURAL ELEMENTS DURING CONSTRUCTION. TEMPORARY SHORING USE AT A MINIMUM DOUGLAS FIR SELECT STRUCTURAL NO. 2.

12.) ALL FLOORING DEMOLITION WORK SHALL BE PERFORMED BY THE FLOORING CONTRACTOR. THIS WORK SHALL ALSO INCLUDE ANY FLOOR PREP WORK RE□UIRED FOR THE INSTALLATION OF THE NEW SPECIFIED FLOORING MATERIAL.



KEY PLAN

REVISION		BY
BID/PERMIT ISSUE	7-22-15	CBJ
BID/PERMIT ISSUE	4-20-16	CBJ
REVIEW ISSUE	5-20-16	CBJ

DRAWINGS:
Demolition Floor Plan

McHenry County Government
911 ETSB Relocation
500 Russel Court
Woodstock, IL 60098

CBJ
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c□arc□itect□ comcast.net

JOB:	15-023
DATE:	7/22/15
SCALE:	as noted
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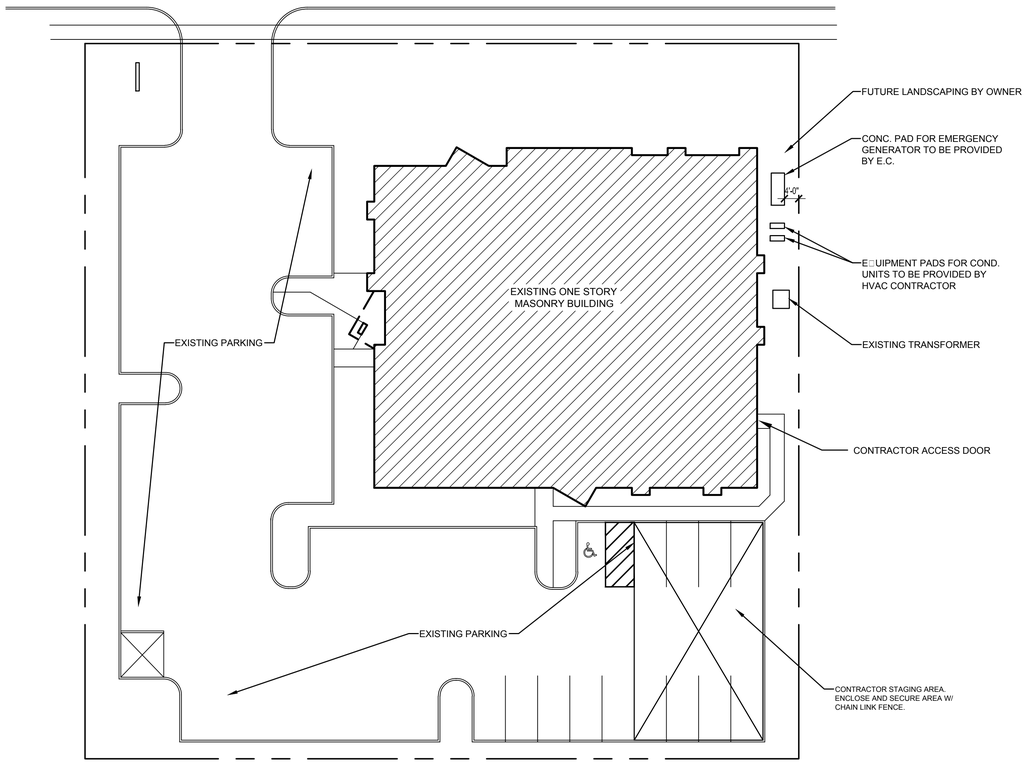
CHECKED:	CB

N
NORTH

SHEET
D1
CD'S

RUSSEL COURT



1 SITE PLAN
1"□20'-0"

REVISION		BY
BID/PERMIT ISSUE	7-22-15	CBJ
BID/PERMIT ISSUE	4-20-16	CBJ
REVIEW ISSUE	5-20-16	CBJ

DRAWINGS:
SITE PLAN

McHenry County Government
911 ETSB Relocation
500 Russel Court
Woodstock, IL 60098

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A0
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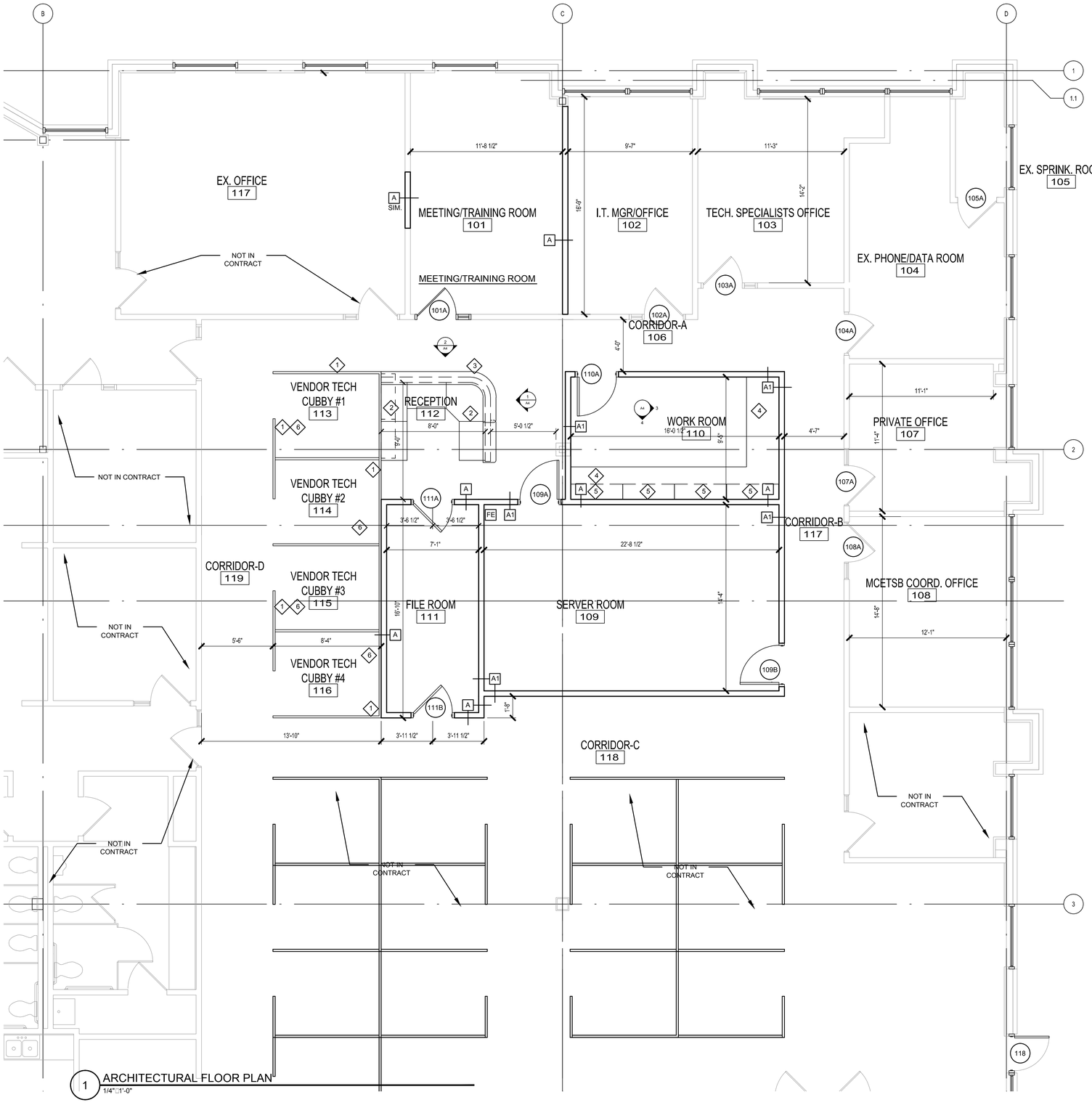
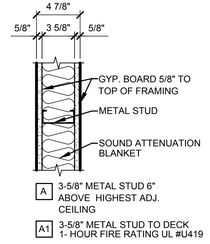


1 ARCHITECTURAL FLOOR PLAN
1/4"□1'-0"

PLAN NOTES:

1. EXISTING PANEL WALL WORK STATION TO REMAIN. MODIFY AS RE□UIRED FOR A COMPLETE FINISHED SYSTEM. EXISTING FURNITURE DESK AND FILES TO REMAIN.
2. RE-USE ON SITE WORK STATION FURNITURE FOR COUNTERTOPS, FILE CABINETS AND WALL CABINETS.
3. NEW RECEPTION COUNTER, SEE ELEVATIONS AND DETAILS.
4. NEW WORK TOPS REFER TO ELEVATIONS AND DETAILS.
5. NEW WALL CABINETS, REFER TO ELEVATIONS AND DETAILS.
6. EXISTING WORK STATIONS TO REMAIN.



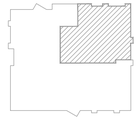
A 3-5/8" METAL STUD 6" ABOVE HIGHEST ADJ. CEILING

A1 3-5/8" METAL STUD TO DECK 1- HOUR FIRE RATING UL #U419

WALL TYPES NOTES:

1. PROVIDE 5/8" FIRE CODE "□UIET ROCK" AT THE INTERIOR PERIMETER WALLS OF THE NEW SERVER AND WORK ROOM ILO STANDARD 5/8" FIRE CODE GYP. BD. PROVIDE MFG. RECOMMENDED SEALANT AS RE□'D.
2. BRACE ALL METAL STUD WALLS AS RE□UIRED TO STRUCTURE ABOVE.

1 WALL TYPES
1-1/2"□1'-0"



KEY PLAN

REVISION		BY
BID/PERMIT ISSUE	7-22-15	CBJ
BID/PERMIT ISSUE	4-20-16	CBJ
REVIEW ISSUE	5-20-16	CBJ

DRAWINGS:
Arc□itectural Floor Plan

McHenry County Government
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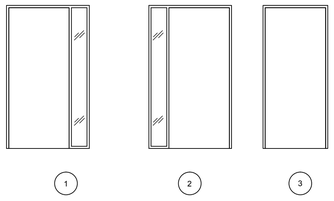
SHEET
A1
Desi□n

DOOR AND FRAME SCHEDULE

DOOR							FRAME					FIRE RATING LABEL	HARDWARE		NOTES
MARK	SIZE			MATL	GLAZING	ELEV	MATL	EL	DETAIL				SET NO	KEYSIDE RM NO	
	WD	HGT	THK						HEAD	JAMB	SILL				
101A	3'-0"	7'-0"	1-3/4"	SC WD	EX S.L.	1	EX HM					-	ETR	106	2, 5
102A	3'-0"	7'-0"	1-3/4"	SC WD	EX S.L.	2	EX HM					-	ETR	EX	1, 4
103A	3'-0"	7'-0"	1-3/4"	SC WD	EX S.L.	1	EX HM					-	ETR	EX	1, 4
104A	3'-0"	7'-0"	1-3/4"	SC WD	-	3	EX HM					-	ETR	EX	1
105A	3'-0"	7'-0"	1-3/4"	SC WD	-	3	EX HM					-	ETR	EX	1
107A	3'-0"	7'-0"	1-3/4"	SC WD	EX S.L.	2	EX HM					-	ETR	EX	1, 4
108A	3'-0"	7'-0"	1-3/4"	SC WD	EX S.L.	1	EX HM					-	ETR	EX	1, 4
109A	3'-0"	7'-0"	1-3/4"	SC WD	-	3	HM					-	1	112	3
109B	3'-0"	7'-0"	1-3/4"	SC WD	-	3	HM					-	1	117	3
110A	3'-0"	7'-0"	1-3/4"	SC WD	-	3	HM					-	1	106	3
111A	3'-0"	7'-0"	1-3/4"	SC WD	-	3	HM					-	2	112	3
111B	3'-0"	7'-0"	1-3/4"	SC WD	-	3	HM					-	3	118	3
118	→													→	6

DOOR TYPES:



DOOR SCHEDULE NOTES

1. EXISTING DOOR TO REMAIN
2. EXISTING DOOR , RELOCATED
3. MATCH EXISTING DOORS
4. RE-KEY EXISTING
5. PROVIDE NEW WALL STOP
6. REPLACE EXISTING DEAD BOLT LOCK WITH ADA ACCESSIBLE PADDLE.

GENERAL DOOR NOTES

1. ALL DOORS WITH LOCKSET'S SHALL HAVE ADA/IAC APPROVED LEVER HANDLES.
2. DOOR HARDWARE SHALL BE CAPABLE OF OPERATION WITH THE USE OF ONE HAND AND SHALL NOT RE□UIRE TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST TO OPERATE. THUMB-TURN DEADBOLTS ARE PROHIBITED, LEVEL OR PADDLE DEADBOLT RELEASES ARE ACCEPTABLE.
3. ALL NEW LEVERS TO MATCH EXISTING.

DOOR HARDWARE INFORMATION:

ABBREVIATIONS:

EX EXISTING
ETR EXISTING TO REMAIN
H 1½ PR. BUTTS
LS LOCKSET (FUNCTION CODE-CYLINDER CORE)
C CLOSER
CR CARD READER
CS CLOSER WITH STOP ARM AND DROP PLATE
FS FLOOR STOP
WS WALL STOP

ABBREVIATIONS CONT'D:

LOCKSET FUNCTION CODE:

O OFFICE
S STORAGE

LOCKSET CYLINDER CODE:

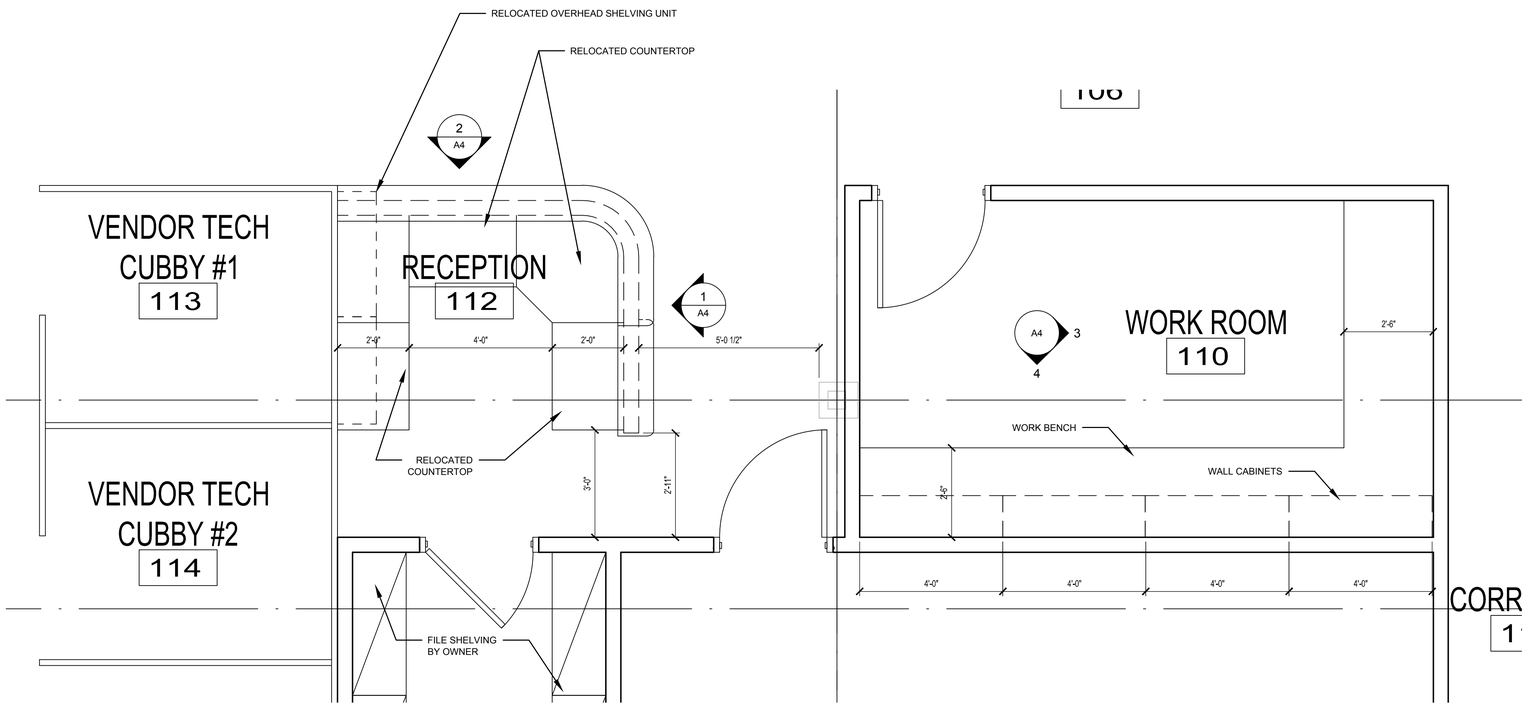
CY CYLINDRICAL

HARDWARE GROUPS:

SET 1: H, CS, LS(S), CR, WS

SET 2: H, CS, LS(O), WS,

SET 3: H, CS, LS(S), WS



1 DETAILED FLOOR PLAN
1/4"□1'-0"

KEY PLAN

REVISION		BY
BID/PERMIT ISSUE	7-22-15	CBJ
BID/PERMIT ISSUE	4-20-16	CBJ
REVIEW ISSUE	5-20-16	CBJ

DRAWINGS:
ENLARGED FLOOR PLAN
DOOR SCHEDULE/NOTES

McHenry County Government
911 ETSB Relocation
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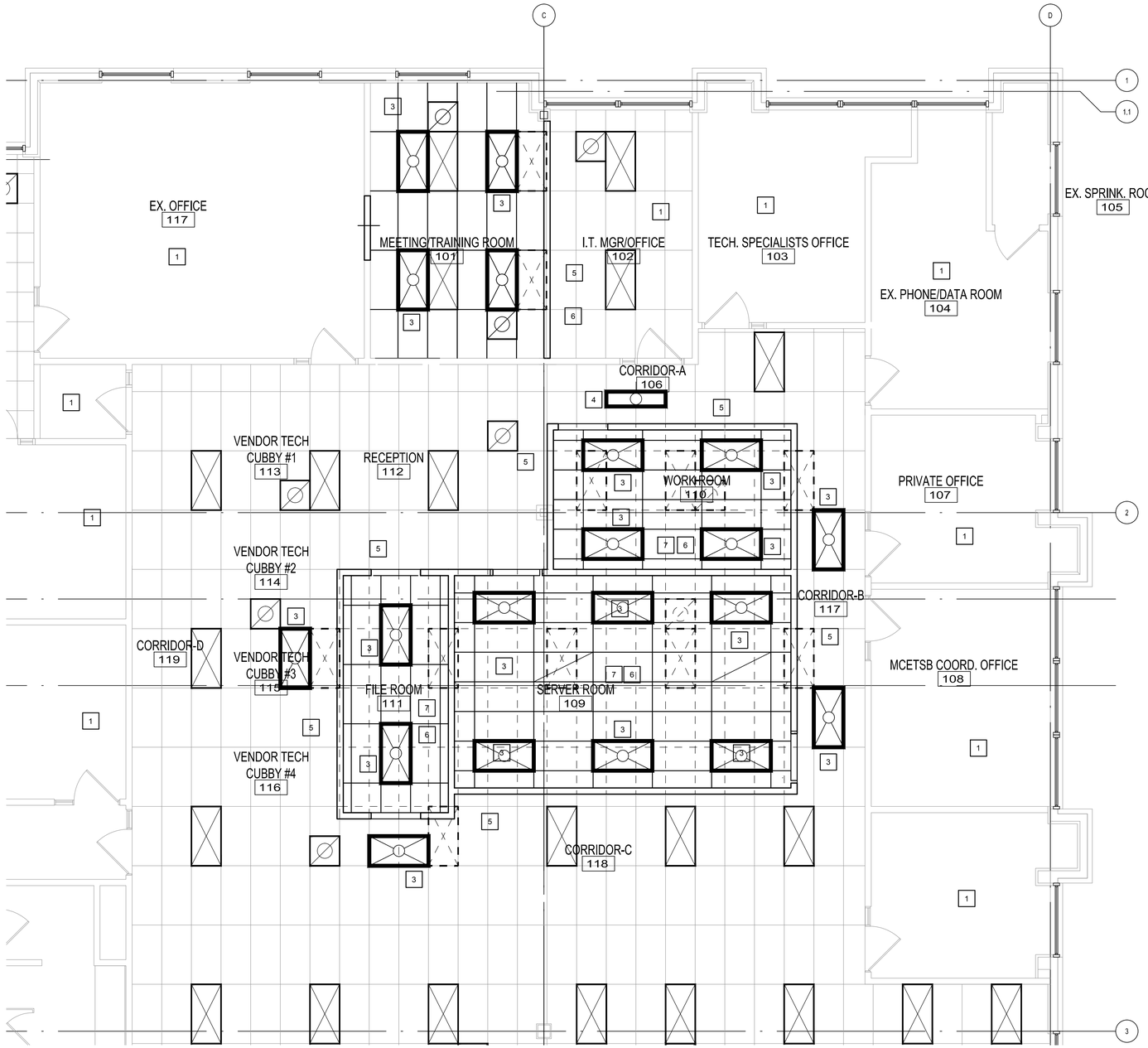
NORTH

SHEET
A2

Desi□n



1 REFLECTED CEILING PLAN
1/4" □1'-0"

REFLECTED CEILING KEY

- 1 □4 SUSPENDED LIGHT FIXTURE
- NEW OR RELOCATED 2 □4 RECESSED FLUORESCENT LIGHT FIXT.
- EXISTING 2 □4 RECESSED FLUORESCENT LIGHT FIXT.
- 2 □4 RECESSED FLUORESCENT LIGHT FIXT. TO BE RELOCATED
- NEW OR RELOCATED CEILING MOUNTED FIXT. (HVAC, SPEAKER, ETC.)
- EXISTING CEILING MOUNTED FIXTURE (HVAC, SPEAKER, ETC.)
- CEILING MOUNTED FIXT. (HVAC, SPEAKER, ETC.) TO BE RELOCATED
- E□ E□UAL TILE
- FT FULL TILE
- EXISTING CEILING GRID
- CEILING GRID TO BE REMOVED
- NEW CEILING GRID

GENERAL NOTES:

1.) ALL NEW CEILINGS ARE 9'-0" A.F.F. UNLESS OTHERWISE NOTED
2.) SERVER ROOM WALLS TO BE RUN UP TO DECK
3.) ALL CEILING FINISHES SHALL BE ACOUSTICAL CEILING TILE AND GRID, UNLESS OTHERWISE NOTED.
4.) ALL CEILING GRID TO BE CENTERED IN ROOM TO ACCOMIDATE THE LIGHTING LAYOUT UNLESS OTHERWISE NOTED.
5.) ALL FIXTURES, SPRINKLER HEADS AND DEVICES SHALL BE CENTERED WITHIN THE CEILING GRID UNLESS NOTED OTHERWISE.
6.) REFER TO ENGINEERS DRAWINGS FOR SPECIFIC TYPES AND LOCATIONS OF ALL CEILING MOUNTED FIXTURES.
7.) CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY ALL INFORMATION AND REPORT ANY DESCREPENCIES.

PLAN NOTES:

1. EXISTING CEILING TO REMAIN
2. CEILING □ 9'-11" A.F.F. +/- COORDINATE W/EXISTING SPRINKLER HEADS AND LOCATIONS
3. NEW 2□4 LAY-IN LIGHT FIXTURE, REFER TO "E" DRAWINGS
4. NEW 1□4 LAY-IN LIGHT FIXTURE, REFER TO "E" DRAWINGS
5. REPLACE GRID AND CEILING TILE AS NEEDED AT NEW WALL
6. COORDINATE W/EXISTING CEILING/SPRINKLER HEIGHT
7. NEW 2□4 LAY-IN ACT, MATCH EXISTING
8. NOT USED
9. NOT USED
10. NOT USED
11. NOT USED
12. NOT USED
13. NOT USED

KEY PLAN

REVISION		BY
BID/PERMIT ISSUE	7-22-15	CBJ
BID/PERMIT ISSUE	4-20-16	CBJ
REVIEW ISSUE	5-20-16	CBJ

DRAWINGS:
Re□lected Ceilin□ Plan

McHenry County Government
911 ETSB Relocation
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SCALE:	as noted
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NORTH

SHEET
A3
CD'S

ROOM FINISH SCHEDULE

ROOM NO	ROOM NAME	FLOOR	BASE	WALLS	CEILING	CEILING HT.
101	MEETING/TRAINING ROOM	EX CPT S□	VB	PTD GWB	EX ACT	EX 9'-10"
102	I.T. MGR OFFICE	EX CPT S□	VB	PTD GWB	EX ACT	EX 9'-10"
103	TECH SPECIALISTS OFFICE	EX CPT S□	EX VB	PTD GWB	EX ACT	EX 9'-10"
104	EX. PHONE/DATA ROOM	EX CPT S□	EX VB	EX PTD GWB	EX ACT	EX 9'-10"
105	EX. SPRINKLER ROOM	EX CONC	-	EX	EX	EX
106	CORRIDOR-A	EX CPT S□	EX VB	PTD GWB	EX ACT	EX 9'-10"
107	PRIVATE OFFICE	EX CPT S□	EX VB	PTD GWB	EX ACT	EX 9'-10"
108	MCETSB COORD. OFFICE	EX CPT S□	EX VB	PTD GWB	EX ACT	EX 9'-10"
109	SERVER ROOM	SF VCT	VB	PTD GWB	ACT	9'-0"
110	WORK ROOM	SF VCT	VB	PTD GWB	ACT	9'-6"
111	FILE ROOM	EX CPT S□	VB	PTD GWB	ACT	9'-10
112	RECEPTION	EX CPT S□	VB	PTD GWB	ACT	9'-10"
113	VENDOR CUBBY #1	EX CPT S□	-	-	EX ACT	EX 9'-10"
114	VENDOR CUBBY #2	EX CPT S□	-	-	EX ACT	EX 9'-10"
115	VENDOR CUBBY #3	EX CPT S□	-	-	EX ACT	EX 9'-10"
116	VENDOR CUBBY #4	EX CPT S□	-	-	EX ACT	EX 9'-10"
117	CORRIDOR-B	EX CPT S□	EX VB	PTD GWB	EX ACT	EX 9'-10"
118	CORRIDOR-C	EX CPT S□	EX VB	PTD GWB	EX ACT	EX 9'-10"
119	CORRIDOR-D	EX CPT S□	EX VB	PTD GWB	EX ACT	EX 9'-10"

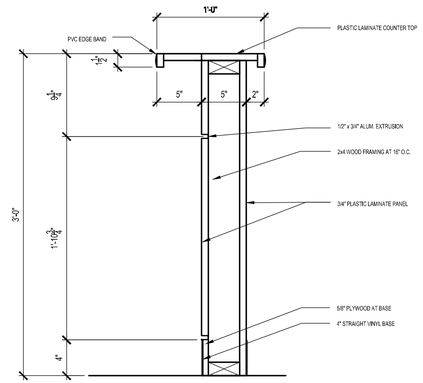
MATCH EXISTING HEIGHT

ROOM FINISH SCHEDULE ABBREVIATIONS:

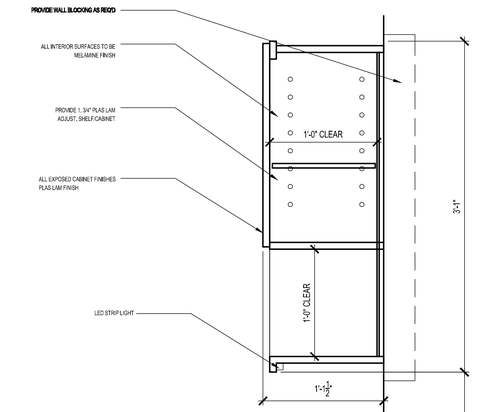
ACT	ACOUSTICAL CEILING TILE
CPT S□	CARPET S□UARES
CONC	CONCRETE
EX	EXISTING
PTD GWB	PAINTED GYPSUM WALLBOARD
SF VCT	STATIC FREE VINYL COMPOSITION TILE
VB	VINYL BASE

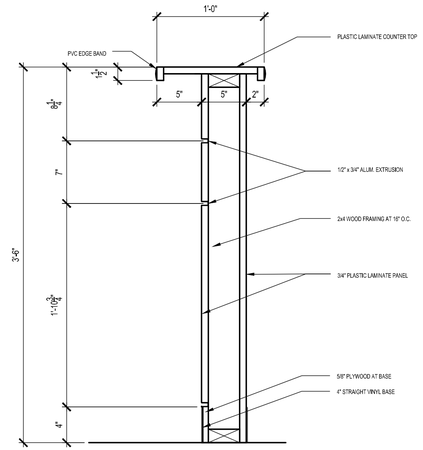
FINISH NOTES:

1. USE 4" STRAIGHT VINYL BASE AT ALL CARPETED AREAS.
2. USE 4" COVED VINYL BASE AT ALL TILE AREAS.

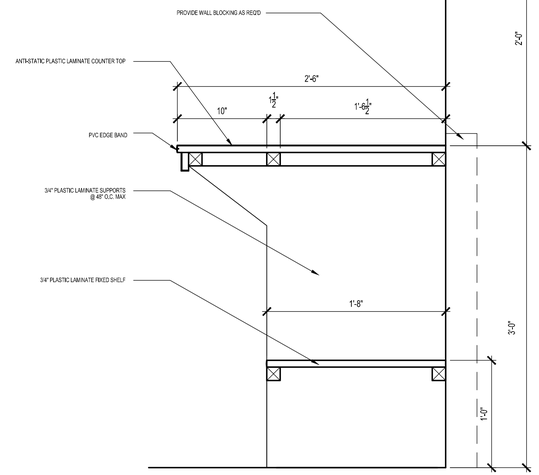


7 ADA TRANSACTION COUNTER DETAIL
1-1/2"□1'-0"

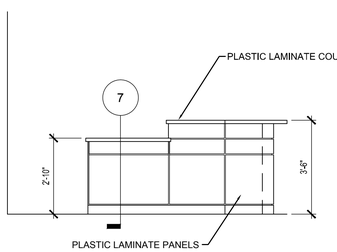




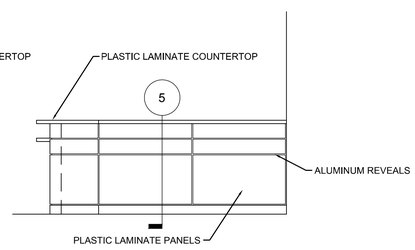
5 TRANSACTION COUNTER DETAIL
1-1/2"□1'-0"



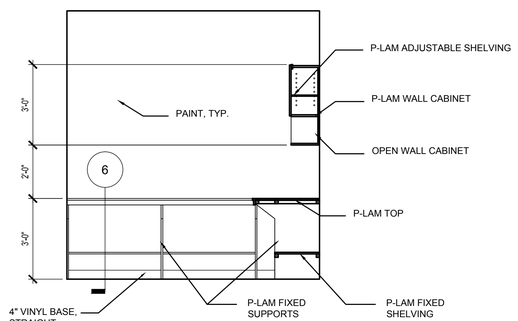
6 COUNTER/CABINET DETAIL
1-1/2"□1'-0"



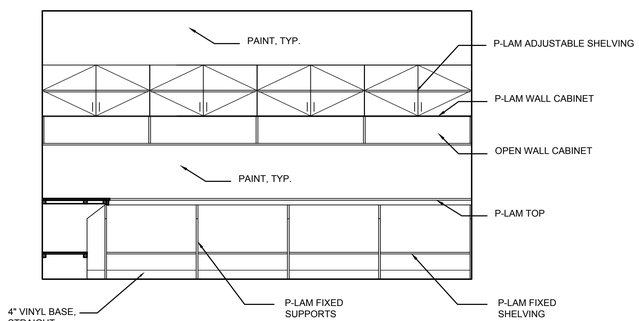
1 RECEPTION COUNTER ELEVATION
3/8"□1'-0"



2 RECEPTION COUNTER ELEVATION
3/8"□1'-0"



3 WORK ROOM ELEVATION
3/8"□1'-0"



4 WORK ROOM ELEVATION
3/8"□1'-0"

REVISION		BY
BID/PERMIT ISSUE	7-22-15	CBJ
BID/PERMIT ISSUE	4-20-16	CBJ
REVIEW ISSUE	5-20-16	CBJ

DRAWINGS:
INTERIOR ELEVATIONS
DETAILS

McHenry County Government
911 ETSB Relocation
500 Russel Court
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DATE:	7/22/15
SCALE:	as noted
DRAWN:	CB
CHECKED:	CB

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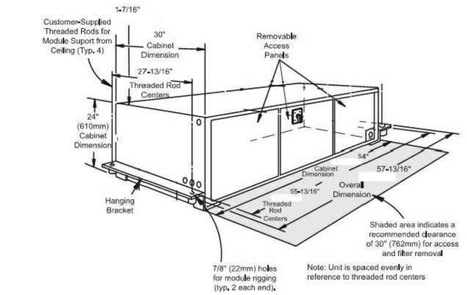
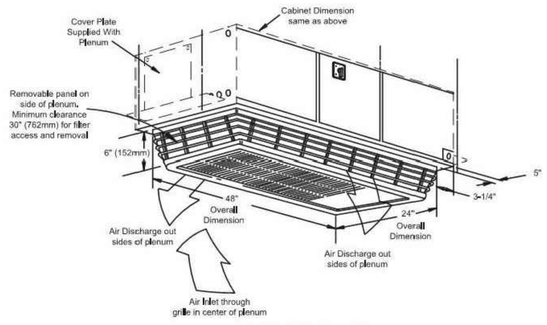


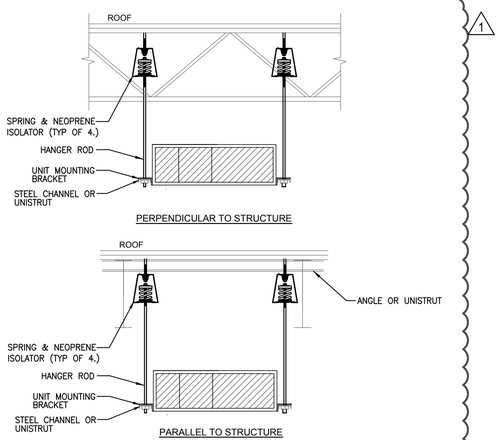
1 AC UNIT DIMENSIONAL DETAIL

SCALE: NTS — MECHANICAL



2 AC UNIT WITH AIR DISTRIBUTION PLENUM DETAIL

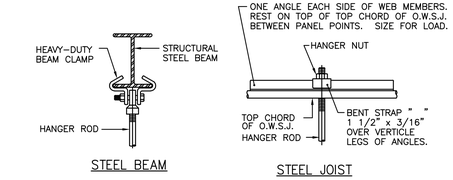
SCALE: NTS — MECHANICAL



NOTES:
1. PROVIDE MISCELLANEOUS GALVANIZED SUPPORT ANGLE OR CHANNEL AS REQUIRED TO BRIDGE STRUCTURE
2. SUSPEND WITH SUPPORT RODS WHEN ATTACHED TO BUILDING STRUCTURE.
3. PROVIDE VIBRATION ISOLATION.

3 EQUIPMENT HANGING DETAIL

SCALE: NTS



4 SECURING ROD TO STRUCTURE DETAIL

SCALE: NTS

AIR CONDITIONING UNIT SCHEDULE

TAG	MAKE/ MODEL	TONS	BLOWER SECTION			COOLING CAPACITY		ELECTRICAL DATA			TOTAL UNIT WEIGHT □LBS.□	REMARKS
			CFM	ESP □IN. W.C.□	HP	SEN. □MBH□	TOTAL □MBH□	V / PH / H□	M.C.A. □AMPS□	M.O.C.P. □AMPS□		
AC-1	LEIBERT MMD24E-P00DA	2.0	800	0.3	1/2	22.8	24.0	208/1/60	3.5	15	225	1,2
AC-2	LEIBERT MMD36E7-Y00DA	3.0	1,200	0.3	1/2	35.2	37.0	208/1/60	3.5	15	225	1,2

FACTORY & FIELD INSTALLED OPTIONS:

WALL MOUNTED SMALL SYSTEMS CONTROLLER, FILTER CLOG ALARM, MERV 8 FILTER W/ FILTER BOX, DUAL FLOAT CONENSATE PUMP, AIR DISTRIBUTION PLENUM

REMARKS:

1. INSTALL PER MANUFACTURERS RECOMMENDATIONS
2. UNIT TO HAVE BOTH BOTTOM DISCHARGE □ RETURN. PROVIDE WITH AIR DISTRIBUTION PLENUM PACKAGE WITH COMBINATION SUPPLY/RETURN GRILLE.
3. FURNISH AND INSTALL AC-8 AUTO-CHANGEOVER PANEL WITH THERMISTOR FOR LEAD/LAG AND CAPACITY CASCADING OF THE TWO UNITS

CONTACT JOE MAGGIO □ □ONATHERM PRODUCTS - (847)353-5603

CONDENSING UNIT SCHEDULE

TAG	MAKE/ MODEL	TONS	REFRIG. TYPE	GROSS □MBH□	ELECTRICAL DATA			TOTAL UNIT WEIGHT □LBS.□	REMARKS
					V / PH / H□	M.C.A. □AMPS□	M.O.C.P. □AMPS□		
CU-1	LIEBERT PFH027A-PL7	2.0	R407C	24.0	208/3/60	16.4	25	200	1-3
CU-2	LIEBERT PFH037A-PL7	3.0	R407C	36.0	208/3/60	16.4	25	241	1-3

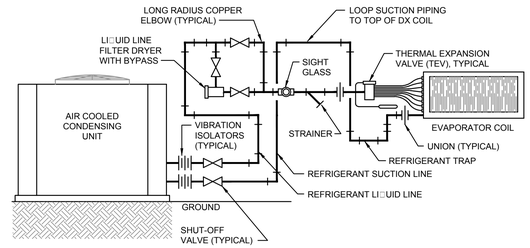
REMARKS:

1. PROVIDE ELECTRICAL DISCONNECT, -30 LEE-TEMP LOW AMBIENT KIT, SCROLL COMPRESSOR, □ HOT GAS BYPASS.
2. MAINTAIN RE□UIRED CLEARANCES FOR PROPER AIR FLOW AND MAINTENANCE. INSTALL AS PER MANUF. RECOMMENDATIONS.
3. FINAL ROUTING REFIGERANT LINES TO BE COORDINATEDED BASED ON ACTUAL SITE CONDITIONS.

AIR DEVICE SCHEDULE

ITEM TAG	TYPE	MAKE/MODEL	FRAME	SIZE	OPPOSED BLADE DAMPER	FINISH	REMARKS
A	4-WAY LAY-IN SUPPLY DIFFUSER	TITUS/ TMS	LAY-IN	24"x24"	NO	PER ARCHITECT	
B	RETURN GRILLE	TITUS/ 350RS	LAY-IN	24"x24"	NO	PER ARCHITECT	

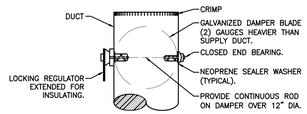
REMARKS:
1. PROVIDE OPPOSED BLADE DAMPERS.
2. PROVIDE ADAPTOR BOOTS AS REQUIRED.
3. PROVIDE MATTE WHITE FINISH IN LAY-IN AND DRYWALL AREAS.



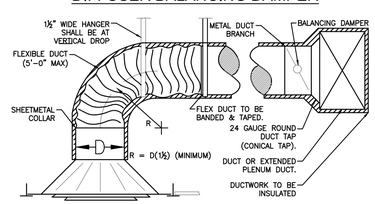
NOTES:
1. SUCTION LINE TRAP TO BE EXTENDED ABOVE EVAPORATOR COIL.
2. CONTRACTOR TO VERIFY PIPE SIZES REQUIRED WITH EQUIPMENT SUPPLIER.
3. PITCH SUCTION LINE TOWARDS CONDENSING UNIT.
4. SIGHT GLASS TO BE FULL LINE SIZE AND INSTALLED IN THE MAIN LIQUID LINE.
5. LOCATE TEV BULB 45° ABOVE BOTTOM OF PIPE.

5 REFRIGERANT PIPING DETAIL

SCALE: NTS — MECHANICAL



DIFFUSER BALANCING DAMPER



NOTES:
1. CEILING DIFFUSER SHALL BE SQUARE FACE, ROUND NECK & SIMILAR TO; TITUS TMS, CARNES SFTA, OR KRUEGAR 1400.
2. DIFFUSER FRAME WITH EXTENDED PANELS NOT ACCEPTED.
3. PROVIDE LAY-IN TYPE DIFFUSER FRAMES FOR INVERTED T-BAR CEILING.
4. PROVIDE SURFACE MOUNTING FLANGE FOR GYP BOARD CEILING AND OTHER SPECIAL CEILING.
5. FLEX DUCT SHALL BE BANDED AND TAPED. PROVIDE BEAD ON METAL COLLAR IF DUCT SIZE EX□EEDS 12" DIAMETER.
6. LOW PRESSURE DUCTWORK ONLY.
7. OMIT VOLUME DAMPER ABOVE GYP BOARD CEILING AND USE DAMPER BEHIND CEILING DIFFUSER FOR BALANCED.
8. THE HANGERS SUPPORTING FLEX DUCT SHALL BE NOT LESS THAN 1-1/2" WIDE IN DIRECT CONTACT WITH DUCT.

MINIMUM CONICAL TAP METAL GAUGE		
TAP DIA. (IN.)	GAUGE – GALV. STOCK	DAMPER GAUGE
8 AND BELOW	24	22
9 – 14	24	22
15 – 16	22	20
27 – 36	20	18
37 – 50	18	16

6 CEILING DIFFUSERS AND BRANCH DUCTS

SCALE: NTS — MECHANICAL

MECHANICAL SYMBOLS

ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS. SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION
	DUCT
	SUPPLY DIFFUSER
	RETURN OR EXHAUST GRILLE
	SLOT DIFFUSER
	FLEXIBLE DUCT
CO2	CO2 SENSOR
T	THERMOSTAT
S	EMS SENSOR
H	HUMIDISTAT
SP	STATIC PRESSURE SENSOR
SD	SMOKE DETECTOR
	45° PRESSURE TAP WITH VOLUME DAMPER
	CONICAL TAP WITH VOLUME DAMPER
	CONICAL TAP WITHOUT VOLUME DAMPER
	MANUAL VOLUME DAMPER
M	MOTORIZED DAMPER
B	BAROMETRIC DAMPER
FS	FIRE/SMOKE DAMPER
F	FIRE DAMPER
S	SMOKE DAMPER
CD	CONDENSATE DRAIN

DESIGN CRITERIA

BASED ON ASHRAE HANDBOOK – 2009 FUNDAMENTALS
WOODSTOCK, ILLINOIS

OUTDOOR DESIGN CONDITION

1% COOLING: 89.0°/73.4°F DB/WB

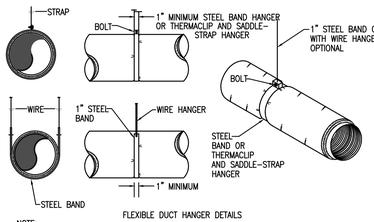
99.0% HEATING: −10°F DB

INDOOR DESIGN CONDITION

SUMMER: 75°F DB/50% RH

WINTER: 70°F DB

FLEXIBLE TO RIGID DUCT CONNECTION DETAILS

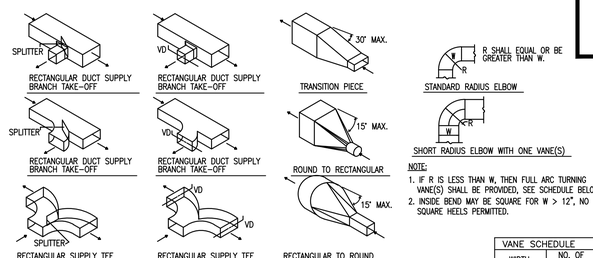


FLEXIBLE DUCT HANGER DETAILS

NOTE:
MAXIMUM PERMISSIBLE SAG PER FOOT 1/2" BETWEEN SUPPORTS.

7 FLEXIBLE DUCT HANGER + CONNECTION DETAILS

SCALE: NTS — MECHANICAL



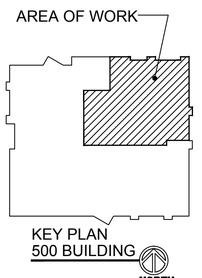
NOTES:
1. PROVIDE STANDARD RADIUS ELBOWS WHEN POSSIBLE – SHORT RADIUS WHERE REQUIRED.
2. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED & FASTENED AS RECOMMENDED BY SMACNA.
3. NO SQUARE OR RECTANGULAR HEEL ELBOWS SHALL BE ALLOWED.

VANE SCHEDULE	
WIDTH	NO. OF VANES
≤ 12"	1
12"–24"	2
24"–36"	3
36"–60"	4
60"–84"	5
> 84"	6

NOTE:
1. IF R IS LESS THAN W, THEN FULL ARC TURNING VANE(S) SHALL BE PROVIDED, SEE SCHEDULE BELOW.
2. INSIDE BEND MAY BE SQUARE FOR W > 12", NO SQUARE HEELS PERMITTED.

8 TYPICAL DUCT DETAILS

SCALE: NTS — MECHANICAL



MECHANICAL GENERAL NOTES

1. ALL WORK PERFORMED SHALL CONFORM TO ALL APPLICABLE STATE AND LOCAL CODES
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS AND COORDINATE ALL NEW WORK WITH ALL TRADES PRIOR TO ANY WORK BEING DONE TO INSURE CONFLICTS DO NOT OCCUR.
3. DISRUPTION OF ANY EXISTING SERVICE SHALL BE CLEARED WITH THE OWNER AND SHALL BE PERFORMED AT A TIME AND IN A MANNER SO AS TO CAUSE THE OWNER A MINIMUM OF INCONVENIENCE.
4. PROVIDE 1" ACOUSTICAL INTERNAL LINING IN LOW-PRESSURE DUCTWORK FROM SUPPLY AIR VAV BOX, AND ELSEWHERE AS INDICATED.
5. ALL DUCT SIZES INDICATED ON PLANS AND RISERS ARE CLEAR INTERNAL DIMENSIONS. DUCT SIZES NOT SHOWN SHALL BE SIZED TO VELOCITIES NO GREATER THAN UPSTREAM SECTIONS USING SIMILAR ASPECT RATIOS.
6. ALL SUPPLY AIR TAKEOFFS FROM MAIN TRUNK DUCTS ARE TO BE INSTALLED WITH BELLMOUTH FITTINGS OR 45 DEGREE ENTRY TO PROVIDE THE SMOOTHEST AIR FLOW POSSIBLE.
7. FOR EXACT LOCATIONS OF CEILING-MOUNTED AIR DIFFUSERS, GRILLES, AND REGISTERS, SEE ARCHITECTURAL REFLECTED CEILING PLANS.
8. PROVIDE TURNING VALVES IN ALL LOW-PRESSURE 90-DEGREE DUCT TURNS.
9. FINAL THERMOSTAT LOCATIONS SHALL BE APPROVED BY THE ARCHITECT AND BUILDING ENGINEER.
10. ALL DUCTS LOCATED ABOVE INACCESSIBLE CEILINGS ARE TO BE BALANCED PRIOR TO CEILING INSTALLATIONS.
11. CONTRACTOR SHALL PROVIDE ACCESS DOORS FOR SERVICE AND MAINTENANCE OF ALL EQUIPMENT LOCATED ABOVE INACCESSIBLE CEILINGS.
12. ALL DUCTWORK DOWNSTREAM OF FAN-POWERED BOXES SHALL BE LOW PRESSURE.
13. ANY CORE PENETRATIONS SHOULD BE FIRE STOPPED.
14. VIBRATION ELIMINATORS SHOULD BE INSTALLED ON ALL CEILING HUNG EQUIPMENT.
15. CONTRACTOR SHALL NOT MAKE ANY PENETRATIONS IN ANY COLUMNS OR MULLIONS.
16. ADEQUATE CLEARANCE FOR ACCESSIBILITY AND MAINTENANCE FOR ALL FAN POWERED BOXES, VAV BOXES, AC UNITS AND EXHAUST FANS ARE REQUIRED. IF EXISTING PLACEMENT DOESN'T PERMIT THIS, CONTRACTOR TO NOTIFY ARCHITECT AND ENGINEER IMMEDIATELY.

MECHANICAL ABBREVIATIONS

AC	ABOVE CEILING	EUH	ELECTRIC UNIT HEATER
AFF	ABOVE FINISHED FLOOR	FPB	FAN POWERED BOX
AI	ANALOG INPUT	FPI	FINS PER INCH
AO	ANALOG OUTPUT	FPM	FEET PER MINUTE
BF	BELOW FLOOR	GC	GENERAL CONTRACTOR
BFC	BELOW FINISHED CEILING	GUH	GAS UNIT HEATER
BG	BELOW GRADE	LAT	LEAVING AIR TEMPERATURE
CFPB	CONSTANT VOLUME FAN POWERED BOX	MVD	MANUAL VOLUME DAMPER
		N	NEW
DB	DRY BULB	NTS	NOT TO SCALE
DI	DIGITAL INPUT	OBD	OPPOSED BLADE DAMPER
DO	DIGITAL OUTPUT	RA	RETURN AIR
DS	DISCONNECT SWITCH	SA	SUPPLY AIR
EAT	ENTERING AIR TEMPERATURE	U.N.O.	UNLESS NOTED OTHERWISE
EDH	ELECTRIC DUCT HEATER	VAV	VARIABLE AIR VOLUME
EF	EXHAUST FAN	WH	WATER HEATER

LEGEND

T	THERMOSTAT
1	KEYED NOTE
RTU #	EQUIPMENT MARK / EQUIPMENT NUMBER

MECHANICAL DRAWING LIST

REVISION		BY
BID/PERMIT ISSUE	7-22-15	
BID/PERMIT ISSUE	4-20-16	
REVIEW ISSUE	5-20-16	

DRAWINGS: MECHANICAL SCHEDULES, DETAILS, & NOTES

McHenry County Government
911 ETSB Relocation
500 Russel Court
Woodstock, IL 60098

CBJ ARCHITECTS
PROFESSIONAL CORPORATION

rtm engineering consultants
3 Executive Court, Unit 4,
South Barrington, Illinois 60010
rtmassociates.com | 847.756.4180

JOB:	15-023
DATE:	7/22/15
SCALE:	as noted
DRAWN:	MH/JD
CHECKED:	MH/JD/JW

NORTH

SHEET M0

CD'S

LICENSED PROFESSIONAL ENGINEER — MANUEL GERARDO HERNANDEZ — 062-064529 — STATE OF ILLINOIS

SPECIFICATION

1.0 GENERAL REQUIREMENTS

1.01 SCOPE OF WORK

A. THE GENERAL REQUIREMENTS OF THE ARCHITECTURAL SPECIFICATIONS ARE PART OF THESE SPECIFICATIONS. WHERE AN INCONSISTENCY EXISTS BETWEEN THE WORDING OR INTENT, THIS DIVISION SHALL TAKE PRECEDENCE.

B. THE STANDARD FORM OF GENERAL CONDITIONS ISSUED BY THE AMERICAN INSTITUTE OF ARCHITECTS DOCUMENT A201, LATEST EDITION, SHALL FORM A PART OF THIS CONTRACT.

C. ALL CONTRACTORS FOR THIS WORK SHALL VERIFY EQUIPMENT LOCATIONS, WEIGHTS AND CLEARANCES IN THE FIELD PRIOR TO SUBMITTING BIDS TO VERIFY CONDITIONS, INTERFERENCES WITH OTHER TRADES, AND DIMENSIONS. NO ALLOWANCES WILL BE MADE AFTER ACCEPTANCE OF BIDS FOR FAILURE TO COMPLY.

D. PROVIDE ALL LABOR AND MATERIALS, EQUIPMENT, FACILITIES, TRANSPORTATION AND SERVICES NECESSARY TO FURNISH, INSTALL AND COMPLETE THE HEATING, VENTILATING AND AIR CONDITIONING WORK AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN. THE WORKMANSHIP SHALL BE COMPLETE IN EVERY RESPECT, BE TESTED AND APPROVED, AND BE SATISFACTORY TO THE ARCHITECT/ENGINEER AND IN ACCORDANCE WITH THE LOCAL, COUNTY AND STATE LAWS GOVERNING THIS INSTALLATION, INCLUDING THE FIRE MARSHAL.

E. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE EXTENT AND LOCATION OF THE WORK INCLUDED. WORK INDICATED, BUT HAVING MINOR DETAILS OBVIOUSLY OMITTED, SHALL BE PROVIDED, INCLUDING THESE DETAILS, WITHOUT EXTRA COST.

F. IT IS THE DECLARED AND ACKNOWLEDGED INTENT OF THESE SPECIFICATIONS TO PROVIDE THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEMS, INCLUSIVE OF ALL REQUIRED PARTS, ACCESSORIES AND CONTROLS COMPLETE AND READY FOR USE AS INDICATED ON THE ACCOMPANYING DRAWINGS. WORK INDICATED ON THE DRAWINGS, BUT NOT NECESSARILY INDICATED IN THESE SPECIFICATIONS SHALL BE PROVIDED AS REQUIRED.

1.02 RELATED WORK

POWER WIRING (IE FEEDERS) TO MOTORS, INCLUDING FINAL CONNECTIONS TO EQUIPMENT, SHALL BE PROVIDED BY THE DIVISION 16 – ELECTRICAL CONTRACTOR.

1.03 VISITING THE SITE

THE CONTRACTOR SHALL, PRIOR TO SUBMITTING HIS BID FOR DOING WORK AS DESCRIBED IN THIS SPECIFICATION AND ON THE ACCOMPANYING DRAWINGS, VISIT THE SITE AND COMPLETELY FAMILIARIZE HIMSELF WITH THE DIFFICULTIES AND FACILITIES THAT WILL BE INVOLVED FOR THE PROPER EXECUTION OF THE CONTRACT. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR THE CONTRACTOR FAILING TO DO SO OR NOT TO FULLY APPRECIATE THE DIFFICULTIES AT HAND.

1.04 FEES AND INSPECTIONS

THE FEES FOR ALL PERMITS AND INSPECTIONS HAVE BEEN WAIVED BY THE COUNTY

1.05 LAWS AND ORDINANCES

THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF WORK AS DRAWN AND SPECIFIED. IF THE CONTRACTOR OBSERVES THAT THE DRAWINGS AND SPECIFICATIONS ARE AT VARIANCE THEREWITH, HE SHALL PROMPTLY NOTIFY THE ENGINEER IN WRITING WHEN SUBMITTING HIS BID AND ANY NECESSARY CHANGES SHALL BE ADJUSTED AS PROVIDED IN THE CONTRACT FOR SUCH CHANGES IN WORK. IF THE CONTRACTOR PERFORMS ANY WORK CONTRARY TO SUCH LAWS, ORDINANCES, RULES AND REGULATIONS, HE SHALL BEAR ALL COSTS FOR CORRECTING THE WORK.

1.06 TRADE JURISDICTION

WHEN IT BECOMES NECESSARY FOR THE COMPLETE FULFILLMENT OF THIS WORK, FOR THE CONTRACTOR TO FURNISH LABOR OR MATERIALS OTHER THAN WHICH IS GENERALLY ACCEPTED BY HIS TRADE OR BRANCH OF WORK, THE CONTRACTOR SHALL SUBLET SAME TO A CONTRACTOR NORMALLY ENGAGED IN THE TRADE OR BRANCH OF WORK, INVOLVED TO THE END, SO THAT THERE IS NO DELAY TO OR STOPPAGE OF WORK DUE TO THE INFRINGEMENT OR ALLEGED INFRINGEMENT TO TRADE AGREEMENTS AS TO THE JURISDICTION.

1.07 SUBMITTALS

THIS CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL, COMPLETE LISTS INCLUDING CATALOG CUTS, ETC., AND WHERE APPLICABLE DIMENSIONED SHOP DRAWINGS OF ALL MATERIALS, FIXTURES AND EQUIPMENT TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT. INCLUDE SHEETMETAL DUCT LAYOUTS AND PIPING PLAN LAYOUTS. REFER TO THE ARCHITECT'S GENERAL CONDITIONS FOR NUMBER OF COPIES TO BE SUBMITTED. DO NOT ORDER EQUIPMENT, FABRICATE DUCTWORK, OR INSTALL EQUIPMENT, DUCTWORK OR PIPING BEFORE RECEIVING SHOP DRAWINGS WHICH HAVE BEEN REVIEWED AND APPROVED BY THE ENGINEER.

REQUIRED ITEMS TO BE SUBMITTED SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

HVAC EQUIPMENT
ROOF CURBS
INSULATION
CONTROLS
SPECIALTIES

1.08 RECORD DRAWING SUBMITTAL

AT PROJECT CLOSEOUT, THE CONTRACTOR SHALL SUBMIT RECORD 'AS-BUILT' DRAWINGS OF INSTALLED DUCTWORK, PIPING AND EQUIPMENT AS IT WAS ACTUALLY INSTALLED SO AS TO MAKE A PERMANENT RECORD. REFER TO THE ARCHITECTS GENERAL CONDITIONS FOR NUMBER OF COPIES TO BE SUBMITTED.

1.09 WORKMANSHIP AND MATERIALS

ALL MATERIALS SHALL BE NEW AND OF FIRST QUALITY. ALL LABOR SHALL BE EXECUTED IN A NEAT WORKMANLIKE MANNER AND SHALL BE PERFORMED BY MECHANICS SKILLED IN THEIR RESPECTIVE TRADES. THE ENGINEER SHALL DECIDE ALL MATTERS PERTAINING TO THE QUALITY OF WORKMANSHIP AND MATERIALS.

ALL DUCTWORK BEING STORED ON SITE AWAITING INSTALLATION AND ALL INSTALLED DUCTWORK WITH OPEN ENDS SHALL BE COVERED TO REDUCE THE CLEANING EFFORT ONCE THE SYSTEM IS PUT INTO OPERATION.

1.10 SPECIFICATIONS AND DRAWINGS

SPECIFICATIONS AND DRAWINGS ARE INTENDED TO BE COOPERATIVE. WHAT IS CALLED FOR BY EITHER SHALL BE AS BINDING AS IF CALLED FOR BY BOTH. ANY WORK OR MATERIALS NOT SPECIFICALLY MENTIONED, THOUGH REQUIRED TO MAKE THE JOB COMPLETE, SHALL BE FURNISHED BY THE CONTRACTOR AT HIS EXPENSE.

1.11 OPERATING INSTRUCTIONS

THIS CONTRACTOR SHALL PREPARE A TYPEWRITTEN LIST OF OPERATING INSTRUCTIONS FOR ALL THE EQUIPMENT INSTALLED UNDER THIS CONTRACT, AND SHALL INSTRUCT THE OWNER IN ITS OPERATION. INDIVIDUAL MANUALS PROVIDED BY THE EQUIPMENT MANUFACTURERS SHALL BE INCLUDED.

1.12 EQUIPMENT SCHEDULE

THIS CONTRACTOR SHALL PREPARE AND FURNISH TO THE OWNER, TWO (2) BOUND BOOKLETS, EACH CONTAINING A COMPLETE LIST OF ALL EQUIPMENT AND VALVES INSTALLED UNDER THIS CONTRACT. EACH PIECE OF EQUIPMENT AND VALVE LISTED SHALL INCLUDE ITS TAG NUMBER, MANUFACTURERS MODEL NUMBER AND COMPONENTS THEREIN WHICH MAKE UP THE SPARE PARTS LIST.

1.13 GUARANTEE

THIS CONTRACTOR SHALL GUARANTEE HIS WORK TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL CERTIFICATE. ANY REPAIRS OR REPLACEMENT DURING THE PERIOD SHALL BE MADE WITHOUT COST TO THE OWNER, UPON HIS OR HER REQUEST.

1.14 COORDINATION OF WORK

THE CONTRACTOR SHALL CONFER WITH OTHER TRADES WHOSE WORK MAY AFFECT HIS INSTALLATION TO AVOID INTERFERENCE BEFORE STARTING THE INSTALLATION. ALL CHANGES IN THE WORK OF THIS CONTRACTOR CAUSED BY HIS NEGLECT TO COMPARE AND CONFER WITH OTHER TRADES SHALL BE MADE BY HIM AT HIS OWN EXPENSE.

1.15 CUTTING AND PATCHING

EACH CONTRACTOR SHALL DO HIS OWN CUTTING AND PATCHING. IF STRUCTURALLY REQUIRED, HE SHALL PROVIDE AND INSTALL THE NECESSARY STEEL WHEN GOING THROUGH A LOAD BEARING WALL. THIS CONTRACTOR SHALL NOT ENDANGER ANY WORK BY CUTTING, DIGGING OR OTHERWISE AND SHALL NOT CUT OR ALTER THE WORK OF OTHER TRADES WITHOUT CONSENT OF THE ARCHITECT/ENGINEER.

1.16 MECHANICAL IDENTIFICATION

A. GENERAL: PROVIDE MECHANICAL IDENTIFICATION FOR ALL MECHANICAL EQUIPMENT, PIPING AND DUCT SYSTEMS. COMPLY WITH ANSI A13.1 FOR LETTERING SIZE, LENGTH OF COLOR FIELD, COLORS AND VIEWING ANGLES OF IDENTIFICATION DEVICES.

B. EQUIPMENT: PROVIDE EQUIPMENT SYSTEM NUMBER, CAPACITY, FLOW RATE, STATIC PRESSURE, PUMP HEAD, HORSEPOWER AND VOLTAGE. PROVIDE SETON MODEL 'VENTMARK' MARKERS.

C. PIPING: PROVIDE SYSTEM DESIGNATION NAME AND DIRECTION OF FLOW. PROVIDE SETON MODEL 'SETMARK' PIPE MARKERS.

D. DUCTS: PROVIDE SYSTEM DESIGNATION NAME AND DIRECTION OF FLOW. PROVIDE SETON MODEL 'VENTMARK' MARKERS.

E. VALVES: PROVIDE BRASS VALVE TAGS AND BRASS 'S' HOOK FASTENERS WITH VALVE NUMBER AND TYPE OF SERVICE NOTED ON THE TAG. PROVIDE DUPLICATE VALVE CHARTS. THE CHART SHALL BE FOR ALL VALVES AND SHALL INDICATE VALVE IDENTIFICATION NUMBER, LOCATION AND PURPOSE. PROVIDE SETON BRASS VALVE TAGS AND VALVE CHARTS.

2.0 PRODUCTS, MATERIALS AND CONTROLS

2.01 HANGERS AND SUPPORTS

A. PIPING HANGERS AND SUPPORTS SHALL COMPLY WITH MSS SP-58. PROVIDE ONLY ONE TYPE OF HANGER/SUPPORT, BY ONE MANUFACTURER, FOR EACH PIPING SERVICE.

B. DUCT HANGERS AND SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DUCT CONSTRUCTION STANDARDS.

C. EQUIPMENT HANGERS AND SUPPORTS SHALL BE PROVIDED AND INSTALLED PER THE EQUIPMENT MANUFACTURER'S REQUIREMENTS.

2.02 ACCESS DOORS

ACCESS DOORS SHALL BE INSTALLED FOR ALL NON-ACCESSIBLE EQUIPMENT, VALVES, OPERATIONS, CONTROLS, OR OTHER WORKING PARTS REQUIRING MAINTENANCE OR ADJUSTMENT. THIS CONTRACTOR SHALL FURNISH ALL SUCH ACCESS DOORS AND ADVISE GENERAL CONTRACTOR OF THE LOCATION OF ALL ACCESS DOORS REQUIRED THROUGHOUT THE PROJECT. ACCESS DOOR MANUFACTURER'S DATA SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ARCHITECT AND ENGINEER. COLOR OF ACCESS DOORS SHALL BE APPROVED BY THE ARCHITECT.

2.03 EQUIPMENT

A. PROVIDE AND INSTALL ALL EQUIPMENT AS SHOWN IN THE EQUIPMENT SCHEDULES.

B. ALL EQUIPMENT DATA SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ARCHITECT AND ENGINEER.

C. COLOR OF ALL DIFFUSERS, GRILLES AND REGISTERS SHALL BE APPROVED BY THE ARCHITECT.

D. COORDINATE FINAL LOCATION OF ALL THERMOSTATS, DIFFUSERS, GRILLES AND REGISTERS WITH THE ARCHITECT'S REFLECTED CEILING PLAN.

2.04 DUCTWORK AND ACCESSORIES

A. ALL DUCTWORK SHALL BE PRIME GALVANIZED SHEET STEEL, LOCK FORMING, FIRST QUALITY, FABRICATED IN ACCORDANCE WITH THE LATEST EDITION OF THE ASHRAE GUIDE, EXCEPT AS NOTED OTHERWISE.

B. ROUND SPIRAL DUCTWORK SHALL BE LINDAB GASKETED SPIRAL DUCTWORK TYPE DUCT FITTINGS, OR APPROVED EQUAL, INSTALLED AND SUSPENDED AS PER MANUFACTURER'S RECOMMENDATIONS.

C. ALL DUCTS ARE TO HAVE GALVANIZED STIFFENERS IN THE FORM OF SEAMS INVOLVING AT LEAST THREE FOLDS OF SHEET METAL (POCKET LOCKS, STANDING SEAMS, STANDING S-SLIPS, ETC.).

D. VENTILATION CONSTRUCTION NOT COVERED BY THE ASHRAE GUIDE AND/OR GOVERNING AUTHORITIES SHALL BE IN ACCORDANCE WITH THE MAXIMUM STANDARDS AND TRADE PRACTICES AS SET FORTH BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) INCLUDING THEIR MOST CURRENT DUCT MANUAL.

E. DUCT DIMENSIONS SHOWN ON THE DRAWINGS INDICATE INSIDE DIMENSIONS. INCREASE DUCT SIZE WHEN LINING IS UTILIZED.

F. LOW PRESSURE DUCTWORK SHALL BE CONSIDERED AS ALL DUCTWORK NOT DEFINED AS MEDIUM PRESSURE DUCTWORK, UNLESS NOTED OTHERWISE. PROVIDE 2" SP DUCT CONSTRUCTION FOR SUPPLY AIR DUCTS AND 1" SP CONSTRUCTION FOR RETURN AND EXHAUST AIR DUCTS, UNLESS OTHERWISE NOTED.

G. MEDIUM PRESSURE DUCTWORK SHALL BE CONSIDERED AS ALL DUCTWORK UPSTREAM OF VAV BOXES AND FAN-POWERED BOXES. PROVIDE 3" SP DUCT CONSTRUCTION UNLESS NOTED OTHERWISE. ROUND SINGLE WALL MEDIUM PRESSURE DUCTWORK IN SOUND-LINED SYSTEMS WILL NOT BE PERMITTED IN LENGTHS GREATER THAN FIVE FEET.

H. ALL LOW AND MEDIUM PRESSURE DUCTWORK SHALL BE SEALED WITH AN APPROVED MASTIC.

I. ALL DUCT SYSTEMS ARE TO BE TESTED FOR LEAKAGE. MAXIMUM ALLOWABLE LEAKAGE FOR ANY SYSTEM WILL BE 5% OF TOTAL AIR QUANTITY. SUBMIT TEST DATA SHEET(S) TO ARCHITECT/ENGINEER FOR APPROVAL.

2.05 PIPING

A. ALL PIPING FOR WORK CONTAINED IN THIS SPECIFICATION AND ACCOMPANYING DRAWINGS SHALL BE IN CONFORMANCE WITH ASTM STANDARDS. ALL CHANGES IN DIRECTION WILL BE MADE WITH FITTINGS. REAM ALL PIPING AND CLEAN OUT SAME BEFORE ASSEMBLY. PROVIDE VALVES OF SIMILAR MATERIAL AS THE PIPING MATERIAL THEY ARE INSTALLED IN. FERROUS BODY VALVES WITH STEEL PIPING. BRASS AND BRONZE VALVES WITH COPPER PIPING. PROVIDE DIELECTRIC FITTINGS, UNIONS, ETC. WHERE PIPING, VALVES, FITTINGS, EQUIPMENT, ETC. OF DISSIMILAR METALS ARE JOINED. COVER OPEN PIPING DURING CONSTRUCTION. FLUSH OUT AND CLEAN PIPING IN A MANNER THAT IS APPROVED BY THE ENGINEER. FOR EACH BRANCH TAKE-OFF, PROVIDE A 3-ELBOW "Z" SHAPE CONNECTION TO PROVIDE PIPING FLEXIBILITY FOR EXPANSION. PROVIDE GUIDES, ANCHORS, EXPANSION LOOPS, SUPPORTS, VENTS, DRAINS, MAKE-UP WATER, ETC., AS REQUIRED.

B. COPPER PIPING SHALL HAVE SOCKET FITTINGS FOR SOLDER OR BRAZING CONNECTIONS.

C. STEEL PIPING SHALL BE SCHEDULE 40, ASTM A120 OR A53, UNLESS OTHERWISE NOTED. THE FITTINGS IN PIPE 2" AND SMALLER SHALL BE CAST IRON OR MALLEABLE, UNLESS OTHERWISE NOTED. ALL PIPING 2-1/2" AND LARGER SHALL BE BUTT WELDED. WELDING SHALL BE DONE ONLY BY WELDERS CERTIFIED FOR THIS TYPE OF WORK. ALL FITTINGS SHALL BE AS MANUFACTURED BY STOCKHOLM, BONNEY FORGE, WALWORTH, GRINNEL OR TUBE TURNS. PAINT ALL EXPOSED THREADS AFTER ASSEMBLY. FOR ALL PIPING EXPOSED TO THE OUTSIDE AIR, PAINT PIPING WITH ONE COAT OF RUST INHIBITING PRIMER AND ONE COAT OF BLACK FINISH PAINT.

D. PIPING SYSTEMS AND MATERIALS

1. HVAC DRAIN PIPING: TYPE L DRAWN COPPER FOR INDOOR DRAINS FROM COPPER PIPING SYSTEM. SCHEDULE 40, ASTM A120 OR A53 STEEL FOR INDOOR DRAINS FROM STEEL PIPING SYSTEMS. SCHEDULE 40 PVC PLASTIC FOR BELOW SLAB ON GRADE. INSTALL A TRAP IN THE DRAIN PIPE. PROVIDE A CONCRETE SPLASH BLOCK FOR DRAIN TERMINATIONS FROM ROOFTOP HVAC UNITS.

2.06 INSULATION

A. FURNISH AND INSTALL INSULATION AS SPECIFIED.

B. DUCT INSULATION

1. ALL SUPPLY, RETURN, AND EXHAUST AIR DUCTWORK IN UNCONDITIONED SPACES: 1-1/2" FLEXIBLE GLASS FIBER WITH FACTORY APPLIED ALUMINUM FOIL VAPOR BARRIER. 3/4 LBS. PER CUBIC FOOT DENSITY. FLAME SPREAD RATING OF NOT GREATER THAN 25 AND A SMOKE DEVELOPED RATING OF NOT GREATER THAN 50

2.07 CONTROLS

A. THE NEW TEMPERATURE CONTROL SYSTEM SHALL BE INSTALLED AND CONTROLLED AS NOTED ON THE EQUIPMENT SCHEDULE.

B. TYPICAL EXHAUST FAN CONTROL: THE FANS SHALL BE CONTROLLED AS NOTED ON THE EQUIPMENT SCHEDULE.

3.0 EXECUTION

3.01 INSPECTION

PRIOR TO BEGINNING ANY WORK, CAREFULLY COORDINATE WITH THE WORK OF OTHER TRADES AND AT TIMES CONFIRM THAT THE WORK OF OTHERS IS COMPLETE TO THE POINT WHERE THIS INSTALLATION CAN PROPERLY COMMENCE.

3.02 GENERAL INSTALLATION REQUIREMENTS

VERIFY QUANTITIES, CAPACITIES, PERFORMANCE CHARACTERISTICS, OPERATING REQUIREMENTS AND CURRENT CHARACTERISTICS OF ALL EQUIPMENT PRIOR TO ITS INSTALLATION. VERIFY THAT SPACE ALLOTTED FOR EQUIPMENT IS SUFFICIENT FOR ENTRANCE AND INSTALLATION, MAINTENANCE AND SERVICE, AND REMOVAL AND REPLACEMENT.

3.03 COORDINATION OF INSTALLATION

C. INSTALL WORK IN SUCH A MANNER THAT IT WILL CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, MAINTAIN HEADROOM AND KEEP OPENINGS AND PASSAGEWAYS CLEAR. GENERALLY, KEEP HORIZONTAL LINES AS HIGH AS POSSIBLE. MAKE LOCAL PROVISIONS FOR THE SERVICING AND REMOVAL OF EQUIPMENT.

D. ANY INTERFERENCE WITH WORK OF OTHER TRADES ARISING FROM FAILURE TO COORDINATE THE WORK AND LACK OF COOPERATION HEREUNDER, SHALL REQUIRE THE REMOVAL AND REINSTALLATION OF ALL INTERFERING WORK WITHOUT ADDITIONAL COST TO THE OWNER.

3.04 IDENTIFICATION OF EQUIPMENT

EACH PIECE OF EQUIPMENT SHALL DISPLAY A PERMANENT METAL OR PLASTIC NAMEPLATE WHICH SHALL BE LOCATED SO AS TO BE FULLY VISIBLE AFTER THE EQUIPMENT HAS BEEN INSTALLED. THE NAMEPLATE SHALL SHOW THE EQUIPMENT NUMBER AND OTHER PERTINENT INFORMATION.

3.05 CLEAN UP

A. UPON COMPLETION OF THE INSTALLATION OF DUCTWORK, CLEAN THE ENTIRE SYSTEM OF RUBBISH, PLASTER, DIRT, ETC., BEFORE INSTALLING THE DIFFUSERS, REGISTERS AND GRILLES.

B. REMOVE TEMPORARY FILTERS FROM RETURN INLETS.

C. OPERATE AND MAKE ANY REQUIRED ADJUSTMENT TO EQUIPMENT, DUCTWORK, PIPING, ETC., AS MAY BE NECESSARY TO PUT THE SYSTEMS IN PROPER OPERATING CONDITION.

D. REMOVE ALL LABELS, TAGS, ETC., FROM ANY SPECIALTIES, EQUIPMENT, ETC., AND REMOVE ALL GREASE OR OTHER PROTECTIVE COATING FROM ALL EQUIPMENT, PIPING, ETC., AND LEAVE WORK IN A MANNER THAT IS ACCEPTABLE TO THE ARCHITECT/ENGINEER.

3.06 OPERATING AND MAINTENANCE INSTRUCTIONS

AFTER HAVING COMPLETELY INSTALLED ALL SYSTEMS AND ALL NECESSARY TESTS ARE COMPLETED, THIS CONTRACTOR SHALL MAKE ARRANGEMENTS TO OPERATE ALL THE SYSTEMS FOR A PERIOD OF NOT LESS THAN FIVE (5) DAYS AT NO EXPENSE TO THE OWNER. A WRITTEN NOTIFICATION OF THIS TRIAL OPERATING PERIOD SHALL BE PRESENTED TO THE ARCHITECT/ENGINEER, TEN (10) DAYS IN ADVANCE, FOR APPROVAL. DURING THIS TRIAL OPERATING PERIOD, THE CONTRACTOR MAY MAKE NECESSARY MINOR, BUT NON-INTERUPTIVE ADJUSTMENTS, AND ALSO SHALL GIVE INSTRUCTIONS TO THE OWNER'S OPERATING PERSONNEL OR REPRESENTATIVES, ON THE OPERATION AND MAINTENANCE OF THE VARIOUS ITEMS OF EQUIPMENT AND SYSTEMS.

3.07 INSPECTION

A. VISUALLY INSPECT ALL EQUIPMENT FOR COMPLETENESS AND FUNCTIONAL READINESS.

B. LUBRICATE ALL FAN AND MOTOR BEARINGS.

C. CHECK ALL FANS FOR ALIGNMENT AND CLEARANCE.

D. INSPECT ALL DAMPERS FOR PROPER LINKAGE AND SETTING FOR OPERATION.

E. CONFIRM THAT THE CONTROL SYSTEM HAS BEEN COMPLETED, CALIBRATED AND IS IN OPERATION.

3.08 ELECTRICAL

A. INSPECT THE MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, OVERLOAD PROTECTION AND WIRING FOR THE HVAC EQUIPMENT PRIOR TO STARTUP OF THE EQUIPMENT.

B. COORDINATE THE STARTUP OF EQUIPMENT WITH THE ELECTRICAL CONTRACTOR.

3.09 CLOSING IN WORK

WORK SHALL BE INSPECTED AND THEN APPROVED BY THE ARCHITECT/ENGINEER AND/OR AUTHORITIES HAVING JURISDICTION. ANY WORK COVERED PRIOR TO SUCH INSPECTION, TEST AND APPROVAL SHALL BE UNCOVERED, IF SO REQUESTED, AND AFTER APPROVAL, COVERED AGAIN WITHOUT COST TO THE OWNER.

3.10 TESTING, ADJUSTING AND BALANCING

A. THE HVAC CONTRACTOR SHALL HIRE AN INDEPENDENT, QUALIFIED AND CERTIFIED MEMBER OF NEBB OR AABC TO COMPLETELY BALANCE THE AIR AND HYDRONIC SYSTEMS, AS REQUIRED. THE TEST AND BALANCE CONTRACTOR SHALL SUBMIT A PROJECT CERTIFICATION GUARANTEE AND CERTIFIED BALANCE REPORT TO THE ENGINEER FOR APPROVAL BEFORE FINAL ACCEPTANCE.

B. ADJUST ALL SUPPLY, RETURN AND EXHAUST DEVICES TO PLUS OR MINUS 5 PERCENT OF THE DESIGN AIRFLOW QUANTITIES.

C. ADJUST HYDRONIC FLOW QUANTITIES TO PLUS OR MINUS 10 PERCENT OF INDICATED DESIGN FLOWS.

D. THE BALANCING CONTRACTOR SHALL REPORT ANY DEFICIENCIES TO THE ENGINEER AND MECHANICAL CONTRACTOR. THE BALANCING CONTRACTOR SHALL ALSO RECOMMEND POSSIBLE ACTIONS TO REMEDY THE DEFICIENCIES.

E. IN GENERAL, THE MECHANICAL CONTRACTOR SHALL CHANGE FAN SHIEVES, PUMP IMPELLERS, DRIVES, ETC., TO REMEDY THE DEFICIENCIES AT NO ADDITIONAL COST TO THE OWNER.

SPRINKLER NOTES

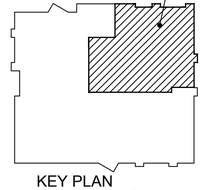
1. THE GENERAL CONDITIONS AND SUPPLEMENTAL GENERAL CONDITIONS ISSUED BY THE ARCHITECT SHALL GOVERN WHERE APPLICABLE.
2. ENTIRE INSTALLATION SHALL BE PERFORMED IN A FIRST-CLASS WORKMANLIKE MANNER. THE COMPLETED SYSTEMS SHALL BE FULLY OPERATIONAL; ACCEPTANCE BY THE OWNER SHALL BE A CONDITION WITH OTHER TRADES IN ORDER TO AVOID INTERFERENCES, PRESERVE MAXIMUM HEADROOM AND AVOID OMISSIONS.
3. CONTRACTOR TO MAKE ALL NECESSARY TAPS, AS CALLED FOR ON THE DRAWINGS.
4. THIS CONTRACTOR SHALL REMOVE ALL DEBRIS ON COMPLETION OF THE JOB AND CLEAN ALL FIXTURES.
5. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO START-UP, ADJUST AND CHECK FOR PROPER OPERATION, ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.
6. THIS CONTRACTOR SHALL ALLOW IN HIS INITIAL BID THE COST OF SERVICE ON ALL EQUIPMENT INSTALLED UNDER HIS CONTRACT FOR A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL INSPECTION OF THE WORK.
7. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT, ENGINEER, OWNERS INSURANCE UNDERWRITER, AND LOCAL FIRE DEPARTMENT FOR APPROVAL COMPLETE INSTALLATION AND DESIGN DRAWINGS SHOWING THE SPRINKLER SYSTEM LAYOUTS. THE LAYOUT SHALL INDICATE ALL OF THE SPRINKLER PIPING, SPRINKLER HEAD LOCATIONS, EQUIPMENT AND DETAILS OF ANCHORS AND SUPPORTS AS REQUIRED.
8. THE SPRINKLER SYSTEM SHALL BE LAID OUT TO ELIMINATE ALL CONFLICTS BETWEEN THE SPRINKLER SYSTEM AND THE STRUCTURE INCLUDING THE MECHANICAL AND ELECTRICAL SYSTEMS AS THEY ARE SHOWN ON THE CONTRACT DRAWINGS.
9. THE LAYOUT SHALL INDICATE COORDINATION BETWEEN SUCH ITEMS AS DUCTWORK, LIGHTS, STRUCTURAL MEMBERS, ETC. PIPE FOR ABOVE GRADE SHALL BE NEW SCHEDULE 40 FOR BRANCHES AND SCHEDULE 10 FOR MAINS, STANDARD WEIGHT STEEL DESIGNED FOR 175 LB. WORKING PRESSURE, CONFORMING TO A.S.A. B36.10 MANUFACTURED IN THE U.S.
10. FITTINGS SHALL BE NEW 125 LB. CAST IRON SCREWED OR FLANGED CONFORMING TO A.S.A. B16.4, MANUFACTURED IN THE U.S. AND APPROVED FOR FIRE PROTECTION SPRINKLER SYSTEMS.
11. THE SPRINKLER RISERS, MAINS AND BRANCH PIPING SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, USING APPROVED TYPE STEEL HANGERS, BRACKETS, ANCHORS AND STUDS, OF SIZE AND NUMBER IN ACCORDANCE WITH N.F.P.A. #13.
12. THE SPRINKLER SYSTEM SHALL BE INSTALLED IN CONFORMANCE WITH PAMPHLET 13 OF THE NATIONAL FIRE PROTECTION ASSOCIATION AND ALL REQUIREMENTS OF THE LOCAL FIRE DEPARTMENT AND OWNER'S INSURANCE UNDERWRITER.
13. ALL PIPING ABOVE GRADE SHALL BE HYDROSTATICALLY TESTED AT 200 PSIG FOR A TWO-HOUR PERIOD IN ACCORDANCE WITH N.F.P.A. #24.
14. CONTRACTOR IS RESPONSIBLE FOR SPACING, PIPE SIZE, OFFSETS, CLEARANCES, VALVES, ELBOWS, HANGERS, ALL ACCESSORIES AND QUANTITIES FOR ALL.
15. ALL MECHANICAL ROOMS AND STORAGE ROOMS SHALL BE DESIGNED FOR ORDINARY HAZARD, GROUP I OCCUPANCY.
16. SPRINKLER SYSTEM TO BE DESIGNED AND INSTALLED PER NFPA AND LOCAL CODES

MECHANICAL NOTES

1

1. TRASH/POLLUTION: DURING THE ENTIRE COURSE OF THE PROJECT AND THROUGH ITS COMPLETION, DISCARDED MATERIALS, REFUSE, DEBRIS, ETC., SHALL BE CLEANED AND REMOVED FROM THE JOBSITE ON A DAILY BASIS AND DISPOSED OF IN A CONTAINER ARRANGED FOR SOLELY FOR THIS PURPOSE. UNDER NO CIRCUMSTANCES SHALL CONTRACTOR DISCARD REFUSE IN BUILDING'S TRASH RECEPTACLES.
2. STORAGE: CONTRACTOR SHALL HAVE NO RIGHT TO STORE ANY MATERIALS IN THE BUILDING AT ANYTIME WHICH OWNER OR OWNER'S AGENTS BELIEVE WOULD CAUSE A POTENTIAL HEALTH OR ENVIRONMENTAL HAZARD OR SAFETY RISK.
3. CLEANLINESS: CONTRACTOR SHALL MAINTAIN A CLEAN WORK AREA AT ALL TIMES DURING THE PROJECT. CONTRACTOR SHALL AGREE TO PROVIDE PROTECTIVE COVERING APPROVED BY THE BUILDING FOR CARPET, WALLS, DESK, ETC... IN AREAS UNDER CONSTRUCTION. THE BUILDING MANAGEMENT REQUIRES ALL WORK AREAS TO BE KEPT IN A CLEAN AND NEAT CONDITION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY REPAIRS AND MAINTENANCE ITEMS REQUIRED.
4. DAMAGE AND RESTORATION: CONTRACTOR SHALL NOT DEMOLISH OR REMOVE ANY STRUCTURAL ELEMENT OF THE BUILDING WITHOUT PRIOR WRITTEN APPROVAL FROM THE BUILDING OFFICE.
5. CONTRACTOR SHALL, UNDER THE SUPERVISION OF THE BUILDING, NEATLY REPLACE, PATCH, AND FINISH ALL BUILDING SURFACES THAT HAVE BEEN DISPLACED OR DISTURBED IN THE PERFORMANCE OF ALTERATION WORK, SUCH AS, BUT NOT LIMITED TO, ACOUSTICAL TILE, FLOOR COVERING, PAINT, ETC...
6. INTERFERENCE OF BUILDING ACTIVITIES: CONTRACTOR SHALL NOT PROCEED WITH DRILLING, HANGER SHOOTING, ANCHORING, EXTENSIVE DEMOLITION AND PAINTING WITH OIL BASE PAINTS, OR OTHER SUBSTANCES/MATERIALS WHICH EMIT NOXIOUS FUMES DURING THE BUILDING HOURS LISTED BELOW OR AT ANY TIME UNLESS WITH PRIOR WRITTEN APPROVAL BY THE BUILDING OFFICE.

AREA OF WORK



KEY PLAN
500 BUILDING
NORTH

LICENSED PROFESSIONAL ENGINEER
MANUEL GERARDO HERNANDEZ
062-064529
STATE OF ILLINOIS

REVISION		BY
BID/PERMIT ISSUE	7-22-15	
BID/PERMIT ISSUE	4-20-16	
REVIEW ISSUE	5-20-16	

DRAWINGS:
MECHANICAL
SPECIFICATION

McHenry County Government
911 ETSB Relocation
500 Russel Court
Woodstock, IL 60098

CBJ
ARCHITECTS
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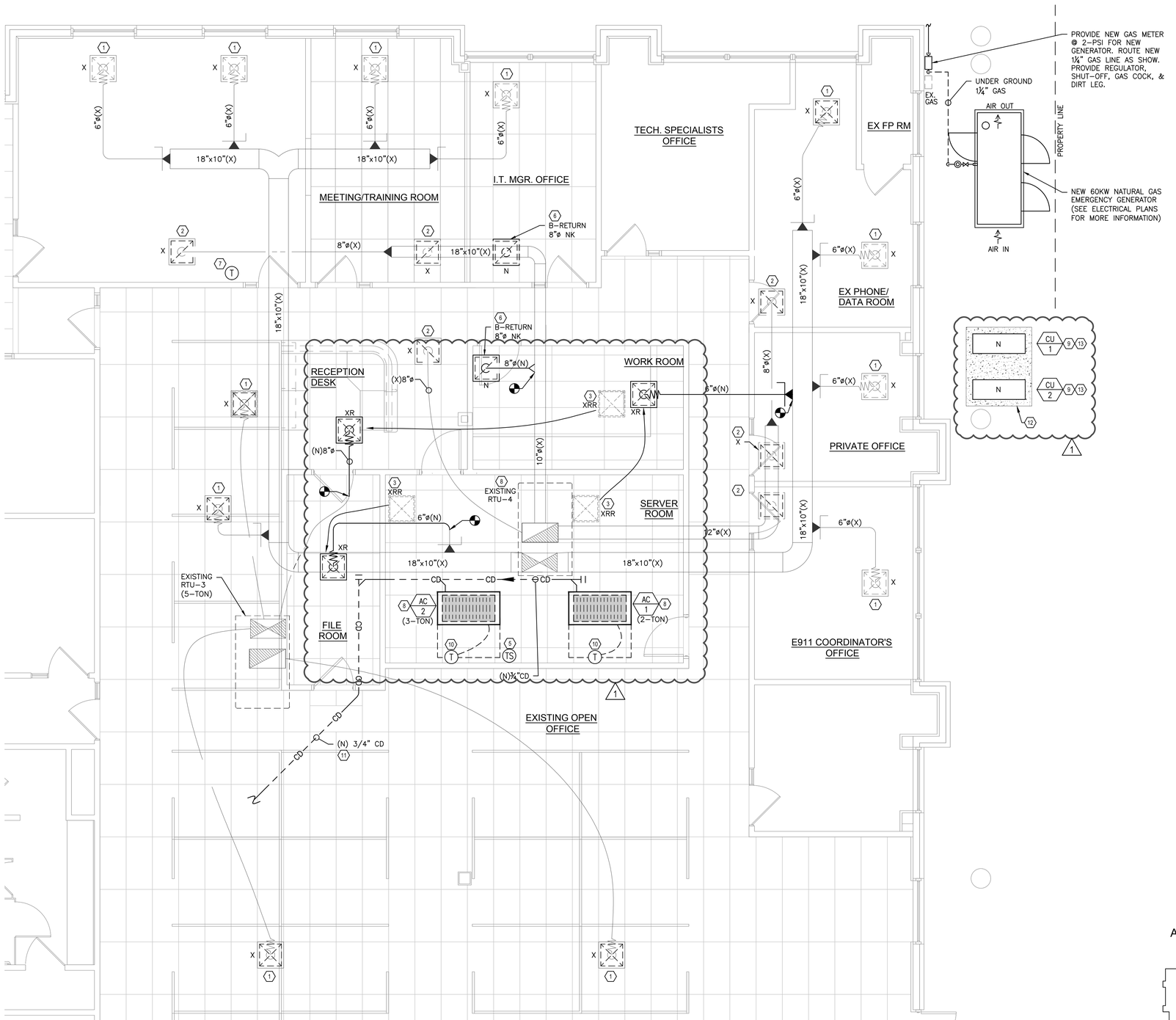
JOB:	15-023
DATE:	7/22/15
SCALE:	as noted
DRAWN:	MH/JD
CHECKED:	MH/JD/JW

N
NORTH

SHEET
M1
CD'S



1 MECHANICAL FLOOR PLAN

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

NORTH

NOTE:

1. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING EXACT LOCATION AND SIZE OF ALL EXISTING EQUIPMENT AND COMPONENTS PRIOR TO THE COMMENCEMENT OF WORK.
2. REBALANCE SYSTEM TO LISTED CFM.
3. CONTRACTOR SHALL PROVIDE A CONDENSATE PUMP IF AC UNIT CANNOT BE DRAINED BY GRAVITY.

KEY NOTES

1. EXISTING SUPPLY DIFFUSER TO REMAIN.
2. EXISTING RETURN GRILLE TO REMAIN.
3. REMOVE AND RELOCATE EXISTING SUPPLY DIFFUSER TO LOCATION SHOWN ON PLAN. EXTEND BRANCH DUCT TO REACH NEW LOCATION.
4. REMOVE AND RELOCATE EXISTING RETURN GRILLE TO LOCATION SHOWN ON PLAN. EXTEND BRANCH DUCT TO REACH NEW LOCATION.
5. CONTRACTOR TO PROVIDE A STUB FOR FUTURE TEMPERATURE SENSOR BEING INSTALLED BY "ALPHA CONTROLS".
6. FURNISH AND INSTALL RETURN GRILLE AS SCHEDULED, NECK SIZE LISTED ON PLAN. ROUTE DUCT OVER AND CONNECT TO NEW AC UNIT.
7. NEW THERMOSTATS TO BE PROVIDED "ALPHA CONTROLS" AT LOCATION SHOWN. PROVIDE STUB IN WALL WITH CONDUIT FOR FUTURE THERMOSTAT INSTALLATION. (TYP OF ALL EXISTING RTU-T-STATS)
8. FURNISH AND INSTALL NEW SUPPLEMENTAL AIR CONDITIONING UNIT. MOUNT FROM JOIST STRUCTURE ABOVE CEILING ACCORDING TO MANUFACTURERS RECOMMENDATIONS. UNIT IS TO BE PROVIDED WITH "AIR DISTRIBUTION PLENUM" OPTION WITH A COMBINATION RETURN & SUPPLY GRILLE IN THE SPACE. PROVIDE WITH ELECTRICAL DISCONNECT, THERMOSTAT, & CONDENSATE PUMP. DISCHARGE CONDENSATE TO APPROVED OPEN SITE DRAIN. INSULATE CONDENSATE AND REFRIGERANT PIPING AS REQUIRED BY CODE.
9. FURNISH AND INSTALL CONDENSING UNIT. PROVIDE WITH ELECTRICAL DISCONNECT REFRIGERANT LINES, AND MOUNTING STAND. ROUTE INSULATED REFRIGERANT LINES TO INDOOR A/C UNIT. FIELD VERIFY EXACT LOCATION OF CONDENSER IN FIELD.
10. FURNISH AND INSTALL A/C UNIT THEMOSTATS AND CONTROLLER AT LOCATION SHOWN ON PLAN. UNITS TO WORK IN A LEAD/LAG OPERATION
11. ROUTE NEW 3/4" CONDENSATE LINE @ 1/8" SLOPE TO OPEN SITE DRAIN IN JANITORS CLOSET. INDIRECTLY DISCHARGE CONDENSATE. PROVIDE PROPER AIR GAP.
12. PROVIDE 6'0"x5'0" CONCRETE PAD FOR CONDENSING UNIT MOUNTING.
13. PROVIDE ADJUSTABLE SLAB MOUNTED CONDENSER STAND. RECTORSEAL PCG63 OR SIMILAR. MOUNT UNIT PER MANUFACTURERS RECOMMENDATIONS. INSURE UNIT IS RATED FOR OUTDOOR WEATHER CONDITIONS.

LEGEND

X	EXISTING TO REMAIN
N	NEW
XR	EXISTING RELOCATED
XRR	EXISTING TO BE RELOCATED
XO	EXISTING TO BE DEMOED
◑	POINT OF DEMOLITION
◕	POINT OF NEW CONNECTION

SPRINKLER NOTES

1. THE FIRE PROTECTION INSTALLING CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE FIRE PROTECTION SYSTEM. ALL NOTES SHOWN ON THIS PLAN FARE FOR COORDINATION PURPOSES ONLY. A MINIMUM OF THREE SETS OF FIRE PROTECTION PLANS MUST BE SUBMITTED TO THE FIRE PREVENTION BUREAU FOR REVIEW AND APPROVAL. A PERMIT SHALL BE REQUIRED FOR ALL WORK.
2. THE FIRE PROTECTION CONTRACTOR IS TO REMOVE ALL WET SPRINKLER HEADS WITHIN THE SERVER ROOM.
3. THE FIRE PROTECTION CONTRACTOR DESIGN AND INSTALL A DRY SPRINKLER SYSTEM FOR THE SERVER ROOM. COORDINATE LOCATION OF FIRE PROTECTION DEVICES WITH ALL OTHER TRADES.
4. IN ALL OTHER AREA'S THE FIRE PROTECTION CONTRACTOR IS TO RECONFIGURE EXISTING SYSTEM AS NECESSARY TO PROVIDE COVERAGE IN ACCORDANCE WITH ALL NFPA AND CODE APPLICABLE REQUIREMENTS. FIELD VERIFY EXACT CONFIGURATION AND SIZES OF EXISTING SYSTEM.

AREA OF WORK

KEY PLAN
500 BUILDING

NORTH

LICENSED PROFESSIONAL ENGINEER
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DRAWINGS:
MECHANICAL
FLOOR PLAN

McHenry County Government
911 ETSB Relocation
500 Russel Court
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NORTH

SHEET M2

CD'S

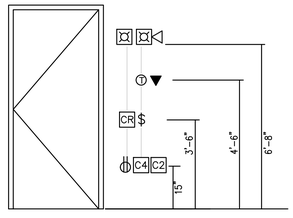
GENERAL NOTES

1. THIS INSTALLATION SHALL BE IN COMPLIANCE WITH NEC, IBC, IFC, IECC2012, NFPA72, AND VILLAGE OF WOODSTOCK, IL LOCAL AMENDMENTS.
2. BEFORE COMMENCING WORK THE CONTRACTOR SHALL VISIT THE JOB SITE AND FULLY INFORM HIMSELF OF ALL CONDITIONS THAT AFFECT THE WORK, EXAMINE THE DRAWINGS AND SPECIFICATIONS, AND SUBMIT ANY QUESTIONS IN WRITING TO THE ENGINEER.
3. ALL ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS AND ALL OTHER DRAWINGS RELATED TO THE PERFORMANCE OF THE WORK.
4. THE CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THIS WORK SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT SPECIFICATIONS BEFORE COMMENCING ANY WORK. THE PROJECT SPECIFICATIONS AND DRAWINGS FORM THE BASIS OF THIS CONTRACT REQUIREMENTS AND INCLUDE THE TYPE AND GRADE OF MATERIALS TO BE INSTALLED, EQUIPMENT TO BE FURNISHED, THE MANNER BY WHICH TO BE INSTALLED AND WHERE TO BE LOCATED. IN THE EVENT OF A CONFLICT BETWEEN THE PROJECT SPECIFICATIONS AND DRAWINGS, SPECIFICATIONS GOVERN UNLESS THE ARCHITECT/ENGINEER DIRECTS OTHERWISE.
5. THE ELECTRICAL CONTRACTOR SHALL CHECK CAREFULLY ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS THAT ARE PART OF THIS PROJECT TO ENSURE THAT NO FIXTURE, OUTLET, ALARM STATION OR CONTROL AND POWER WIRING IS OMITTED. HE SHALL CONSULT ALL TRADES FURNISHING EQUIPMENT AND OBTAIN FROM THEM ALL DATA. IN SOME CASES EQUIPMENT, FIXTURES AND DEVICES ARE SHOWN ONLY. ASCERTAIN AND PROVIDE THE WIRING AND CONTROL STATIONS REQUIRED FOR THE PROPER FUNCTION OF BUILDING EQUIPMENT. NO EXTRA CHARGES SHALL BE ACCEPTED BY OWNER AFTER BIDDING FOR SUCH EQUIPMENT AND LABOR.
6. EQUIPMENT LABELS AND INSTRUCTIONS REGARDING THE APPLICATION AND INSTALLATION OF THE LISTED EQUIPMENT SHALL BE FOLLOWED TO INSURE THAT THE EQUIPMENT IS BEING INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LISTING INSTRUCTIONS. THE TEMPERATURE RATING OF THE EQUIPMENT TERMINATIONS MUST BE CAREFULLY CORRELATED WITH THE CONDUCTOR AMPACITY TO PREVENT OVERHEATING AND PREMATURE FAILURE.
7. INSTALL ELECTRICAL DEVICES AS INDICATED IN THIS SET OF DRAWINGS. ADJUST FINAL DEVICE LOCATIONS AS REQUIRED TO ACCOMMODATE WORK. COORDINATE WITH ALL TRADES INVOLVED AND WITH ARCHITECTURAL CASEWORK AND ELEVATIONS DRAWINGS. NOTIFY THE ENGINEER AND/OR THE ARCHITECT IF ANY CONFLICTS ARE FOUND PRIOR TO BIDDING PROJECT. INSTALL CONDUIT AND BOXES TO CLEAR EMBEDDED DUCTS, OPENINGS AND OTHER STRUCTURAL FEATURES.
8. ALL LIGHTING FIXTURES ARE TO BE LOCATED AS REQUIRED ON THE JOB TO CLEAR DUCTS, PIPING, EQUIPMENT, AND/OR MECHANICAL UNITS.
9. CONDUIT RUNS SHOWN ON DRAWINGS ARE DIAGRAMMATIC. ALL CONDUITS SHALL RUN CONCEALED, EXCEPT IN EQUIPMENT ROOMS AND WHERE APPROVED BY ARCHITECT.
10. FURNISH AND INSTALL EQUIPMENT DISCONNECT SWITCHES IN STRICT COMPLIANCE WITH CODE REQUIREMENTS.
11. ADJACENT POWER AND DATA DEVICES SHALL BE SPACED NO MORE THAN 4" APART. PROVIDE JUNCTION BOX MOUNTING BRACKET BETWEEN STUDS AS NEEDED.
12. ALL RECEPTACLES, VOICE AND DATA OUTLETS SHALL BE MOUNTED PER MOUNTING HEIGHT LEGEND OR TO MATCH BUILDING STANDARD, UNLESS OTHERWISE NOTED. ALL DEVICES SHALL BE NEW.
13. ALL WALL MOUNTED FIRE ALARM NOTIFICATION DEVICES SHALL BE MOUNTED AT 80" AFF IN ACCORDANCE WITH ADA. SEE FIRE ALARM SHEET FOR ADDITIONAL INFORMATION.
14. DETERMINE, IN ADVANCE OF PURCHASE, THAT ALL ELECTRICAL MATERIALS AND EQUIPMENT TO BE INSTALLED SHALL FIT INTO THE ROOM OR SPACE ALLOCATED, AS INDICATED ON THE DRAWINGS, ALLOWING SUFFICIENT CLEARANCE FOR THE SAFE SERVICE AND/OR MAINTENANCE OF RELATED EQUIPMENT, INCLUDING THAT OF OTHER TRADES.
15. TELEPHONE AND DATA SYSTEM CABLING AND EQUIPMENT SHALL BE PROVIDED BY OTHERS. EC SHALL PROVIDE REQUIRED JUNCTION BOXES, CONDUIT, AND PULL STRING FOR ALL VOICE AND DATA LOCATIONS.
16. ALL OPEN LOW VOLTAGE CABLING INSTALLED ABOVE THE CEILING SHALL BE PLENUM RATED.
17. ALL CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR INSTALLED. COLOR OF GROUNDING CONDUCTOR SHALL BE GREEN. SIZE OF GROUNDING CONDUCTOR SHALL BE AS REQUIRED PER NEC ARTICLE 250.122.
18. ALL BRANCH CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR INSTALLED UNLESS OTHERWISE INDICATED. COLOR OF NEUTRAL CONDUCTOR SHALL BE WHITE.
19. ALL CONDUCTOR SHALL BE MADE OF COPPER. MINIMUM WIRE SIZE SHALL BE #12AWG UNLESS OTHERWISE INDICATED. UTILIZE SOLID CONDUCTORS FOR WIRE GAGES UP TO #12AWG AND STRANDED CONDUCTOR FOR GAGES #10AWG AND LARGER.
20. SPECIAL RECEPTACLES PLUG CONFIGURATION REQUIREMENTS SHALL BE COORDINATED WITH EQUIPMENT PLUG REQUIREMENTS PRIOR TO INSTALLATION.
21. ALL FEEDER AND BRANCH CIRCUIT WIRING INSTALLED INDOORS SHALL USE THHN INSULATION. ALL WIRING INSTALLED OUTDOORS SHALL USE THWN INSULATION. REFER TO SPECIFICATION DOCUMENTS FOR COLOR CODED REQUIREMENTS.
22. ALL POWER WIRING SHALL BE INSTALLED IN A DEDICATED RACEWAY SYSTEM. MINIMUM RACEWAY SIZE SHALL BE 3/4"C UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL SIZE ALL CONDUITS SO AS TO NOT EXCEED 40% OF CONDUIT FILLING CAPACITY PER NEC. WHEN MORE THAN THREE CURRENT CARRYING CONDUCTORS ARE INSTALLED IN THE SAME CONDUIT AND AMBIENT TEMPERATURES ADJUSTMENT FACTORS PER NEC TABLES 310.15(B)(2)(A), 310.15(B)(3)(A) SHALL BE APPLIED.
23. ALL PULL BOXES AND JUNCTION BOXES SHALL BE SIZED PER NEC ARTICLE 314, TABLES 314.16 BASED IN THE AMOUNT OF CABLE AND CONDUITS ENTERING/LEAVING THE BOX.
24. ALL BREAKERS SERVING FIRE ALARM EQUIPMENT, SHUNT TRIP POWER AND EXIT SIGNS SHALL HAVE LOCK-OUT DEVICE INSTALLED UNLESS OTHERWISE INDICATED.
25. EXISTING AND NEW PANELS SHALL HAVE A PANEL DIRECTORY INSTALLED. UTILIZE TYPE WRITER AS A MINIMUM FOR COMPLIANCE. HAND WRITTEN CARD DIRECTORIES ARE NOT ACCEPTABLE.
26. ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT SHALL BE DONE WITH LIQUID TIGHT FLEXIBLE METAL CONDUIT. INSTALL GREEN GROUNDING CONDUCTOR.
27. ALL FINAL BREAKERS AND CONDUCTORS SIZES SERVING MECHANICAL EQUIPMENT SHALL BE COORDINATED WITH MECHANICAL SHOP DRAWINGS PRIOR TO INSTALLATION. E.C. SHALL COORDINATE WITH HVAC CONTRACTOR EXACT POINT OF CONNECTION TO MECHANICAL UNITS PRIOR TO ROUGH-IN.

GENERAL NOTES (CONTINUE)

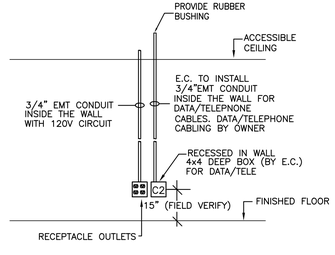
27. PANELS, TRANSFER SWITCHES, ETC SHALL BE LABEL WITH A READILY VISIBLE LABEL PER NFPA 70E-2009 STANDARD FOR SAFETY IN THE WORKPLACE, LABEL SHALL BE CLEARLY VISIBLE TO PERSONNEL AND SHALL READ "CAUTION ARC FLASH HAZARD" ALSO LABELS SHALL INDICATE THE "PPE" LABEL AT EQUIPMENT. SIZE AND COLOR OF TEXT SHALL BE PER STANDARD.
28. ALL RECEPTACLES CONNECTED FROM EMERGENCY PANEL SYSTEM SHALL HAVE BE RED AND HAVE RED COVER PLATES INSTALLED. COVER PLATES SHALL BE LABELED WITH CIRCUIT INFORMATION.
29. ALL EQUIPMENT INSTALLED OUTSIDE SHALL BE WEATHER PROOF RATED. REFER TO DRAWINGS FOR ADDITIONAL INFORMATION.
30. INSTALL CONDUIT FROM THE TOP OF THE BAR JOIST.
31. LABEL ALL J-BOXES COVER PLATES, RECEPTACLES COVER PLATES WITH CIRCUIT INFORMATION.
32. SERVICE EQUIPMENT, DISTRIBUTION & BRANCH CIRCUIT PANELBOARDS, SHALL HAVE A PANEL DIRECTORY INSTALLED. UTILIZE TYPE WRITER AS A MINIMUM FOR COMPLIANCE. HAND WRITTEN CARD DIRECTORIES ARE NOT ACCEPTABLE.
33. ALL MOUNTING HEIGHTS OF DEVICES SHALL BE COORDINATED WITH ARCHITECTURAL ELEVATIONS OR ARCHITECT PRIOR TO ROUGH-IN.
34. DO NOT INSTALL DEVICES IN DIFFERENT ROOMS BACK TO BACK. PROVIDE 6" SIDE BY SIDE IN BETWEEN.
35. CORDINATE EXACT FURNITURE POWER AND DATA/PHONE FEEDING CONNECTIONS AT EACH LOCATION PRIOR TO ORDERING AND ROUGH-IN FOR FLOOR BOXES OR POKE THRUS.
36. REER TO ARCHITECTURAL CASEWORK DRAWINGS AND ARCHITECTURAL ELEVATIONS FOR EXACT DEVICES MOUNTING HEIGHTS.
37. GENERAL USE (NON-EMERGENCY OR UPS CONNECTED RECEPTACLES) SHALL BE WHITE IN COLOR WITH STAINLESS STEEL COVER PLATES, UNLESS OTHERWISE INDICATED BY THE ARCHITECTURAL DRAWINGS.
38. E.C. SHALL INSTALL J-BOX, CONDUIT FOR MECHANICAL THERMOSTATS. COORDINATE EXACT LOCATIONS WITH M.C.
39. PROVIDE MULTI-GANG J-BOX FOR INSTALLATION OF WIRING DEVICES LOCATED AT THE SAME LOCATION UNLESS OTHERWISE INDICATED ON THE FLOOR PLANS.
40. FOR THE AREA OF WORK WITH DAMAGED, DETERIORATED, COMPROMISED OR MISSING FIREPROOFING CREATED OR EXPOSED DURING CONSTRUCTION SHALL BE RESTORED TO FULL PROTECTIVE CAPACITY.
41. FIRE PROOF/PATCH ALL PENETRATIONS THRU WALLS AND FLOORS TO RE-STABLISH THE FIRE RATING OF PARTITION.

MOUNTING HEIGHTS



NOTES:
1. ALL HEIGHTS FOR OUTLETS ARE AS INDICATED. COORDINATE WITH ARCHITECTURAL DRAWINGS. WHERE DIFFERENCES EXIST, USE ARCHITECTURAL MOUNTING HEIGHTS.

ELECTRIC AND TELE/DATA OUTLETS



NOTE:
1-ADJACENT POWER AND DATA/PHONE DEVICES SHALL BE SPACED NO MORE THAN 4" APART. PROVIDE JUNCTION BOX MOUNTING BRACKET BETWEEN STUDS AS NEEDED.

2-ALL RECEPTACLE OUTLETS SHALL BE PROVIDED W/ P-TOUCH LABEL WITH CIRCUIT # AND SOURCE PANEL TAGS

ELECTRICAL SYMBOL LIST

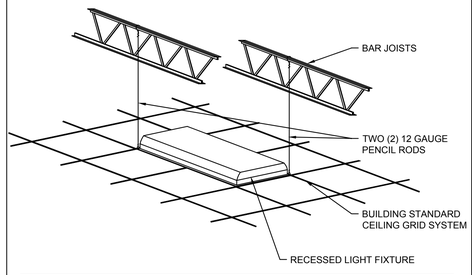
#	DUPLEX RECEPTACLE, # INDICATES CIRCUIT
GFI	DUPLEX RECEPTACLE, GROUND FAULT CIRCUIT INTERRUPTER
#	QUADPLEX RECEPTACLE (# INDICATES CIRCUIT)
	QUAD RECPT CONNECTED TO EMERGENCY GENERATOR SYSTEM (RED IN COLOR)
	SPECIAL RECEPTACLE SEE REQUIREMENTS IN DRAWINGS
	HEAVY DUTY DISCONNECT SWITCH
C4	VOICE/DATA OUTLET (4-PORTS) (4-STANDS FOR 4 PORTS) (4x4 DEEP BOX WITH ONE (1) 3/4"C. STUB UP TO ACC WITH END BUSHING)
54"AFF	WALL TELEPHONE OUTLET MOUNTED AT 54"AFF. (4x4 DEEP BOX WITH ONE (1) 3/4"C. STUB UP TO ACC)
AV	AUDIO/VISUAL OUTLET (4x4 DEEP BOX W/ ONE (2) 1 1/4"C. STUB UP TO ACC WITH END BUSHING)
J	JUNCTION BOX
$	TOGGLE SWITCH SPECIFICATION GRADE
$OS	WALL SWITCH OCCUPANCY SENSOR
$D	TOGGLE SWITCH WITH DIMMER
$3	3-WAY TOGGLE SWITCH
OS	CEILING MOUNTED OCCUPANCY SENSOR (SEE SCHEDULE FOR ADDITIONAL)
	HOT, NEUTRAL, GROUND CONDUCTOR
	3/4"C STUB UP TO ABOVE ACCESSIBLE CEILING WITH END BUSHING (UNLESS OTHERWISE INDICATED)
	CONDUIT CONCEALED IN WALL/ABOVE THE CEILING
	CONDUIT IN CONCRETE SLAB/UNDERGROUND
	EXPOSED CONDUIT
	UNIVERSAL MOUNTED (CEILING/WALL) EXIT SIGN WITH CHEVRONS
	2 x 4 LIGHT FIXTURE (SEE LIGHT FIXTURE SCHEDULE)
	FLEXIBLE METAL CONDUIT
	EMERGENCY LIGHT WITH BATTTERY BACK UP
	SINGLE POLE DISCONNECT SWITCH TOGGLE STYLE
	MOTOR WITH MOTOR RATED DISCONNECT SWITCH.
T	CONTROL TRANSFORMER WITH DISCONNECT SWITCH
	SLEEVE WITH END BUSHINGS ACC SIZE AS INDICATED IN DWGS
WAP	WIRELESS ACCESS POINT (4x4 DEEP BOX WITH ONE (1) 3/4"C. STUB UP TO ACC WITH END BUSHING)
K	KNOX BOX
FACP	FIRE ALARM CONTROL PANEL
FAAP	FIRE REMOTE ANNUNCIATOR
BPS	FIRE ALARM REMOTE BOOSTER POWER SUPPLY
	FIRE ALARM PULL STATION
	WALL MOUNTED FIRE ALARM STROBE
	WALL MOUNTED FIRE ALARM HORN/STROBE
SD	FIRE ALARM PHOTOELECTRIC SMOKE DETECTOR
MM	FIRE ALARM MONITOR MODULE
TS	FIRE PROTECTION VALVE SUPERVISORY SWITCH (BY OTHERS)
WF	FIRE PROTECTION WATER FLOW SWITCH (BY OTHERS)
SCP	SECURITY CONTROL PANEL
CR	SECURITY CARD READER WITH 1/2"C STUB TO ACC
DC	SECURITY DOOR CONTACT WITH 1/2"C STUB TO ACC
ES	ELECTRIC DOOR HARDWARE
REX	REQUEST TO EXIT
ES	ELECTRIC DOOR HARDWARE
KP	SECURITY KEY PAD
MD	MOTION DETECTOR
ATS	AUTOMATIC TRANSFER SWITCH

ABBREVIATIONS

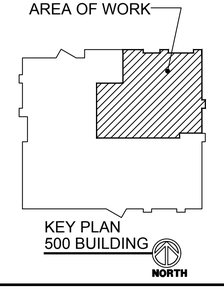
WP	WEATHER PROOF
AC	ABOVE THE COUNTER
C	CEILING MOUNTED DEVICE
NL	NIGHT LIGHT
CLG	CEILING
(R)	RETURN DUCTWORK
(S)	SUPPLY DUCTWORK
ACC	ABOVE ACCESSIBLE CEILING
VEL	VERIFY EXACT LOCATION PRIOR TO ROUGH-IN
+42	DEVICE MOUNTED AT 42 INCHES AFF
AFF	ABOVE FINISH FLOOR
TR	TAMPER RESISTANT
TG	TAMPER GUARD
WG	WIRE GUARD
EWC	ELECTRICAL WATER COOLER
WP/ IN USE	METAL WHILE-IN-USE COVER WEATHER PROOF SIMILAR TO EATON WIUMH-1 SERIES
E.C.	ELECTRICAL CONTRACTOR
M.C.	MECHANICAL CONTRACTOR
ATS	AUTOMATIC TRANFER SWITCH
X	EXISTING DEVICE TO REMAIN
XL	PREVIOUSLY DEVICE LOCATION (EXISTING J-BOX)
XRR	EXISTING DEVICE TO BE REMOVED AND RELOCATED
XR	EXISTING DEVICE RELOCATED
FO	FIBER OPTIC

DRAWING LIST

LIGHT FIXTURE MOUNTING DETAIL



ALL LAY-IN LIGHT FIXTURES SHALL BE SUPPORTED INDEPENDENTLY OF CEILING GRID SUPPORTS. SUPPORT LIGHT FIXTURES WITH (2) 12 GAUGE PENCIL RODS LOCATED AT OPPOSITE CORNERS FROM TOP OF BAR JOISTS. SEE DETAIL ABOVE.



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BID/PERMIT ISSUE	7-22-15	
BID/PERMIT ISSUE	4-20-16	
REVIEW ISSUE	5-20-16	

DRAWINGS:
SYMBOL LIST AND GENERAL ELECTRICAL NOTES

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STATE OF ILLINOIS

JOB:	15-023
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DRAWN:	MH/JD
CHECKED:	MH/JD/JW

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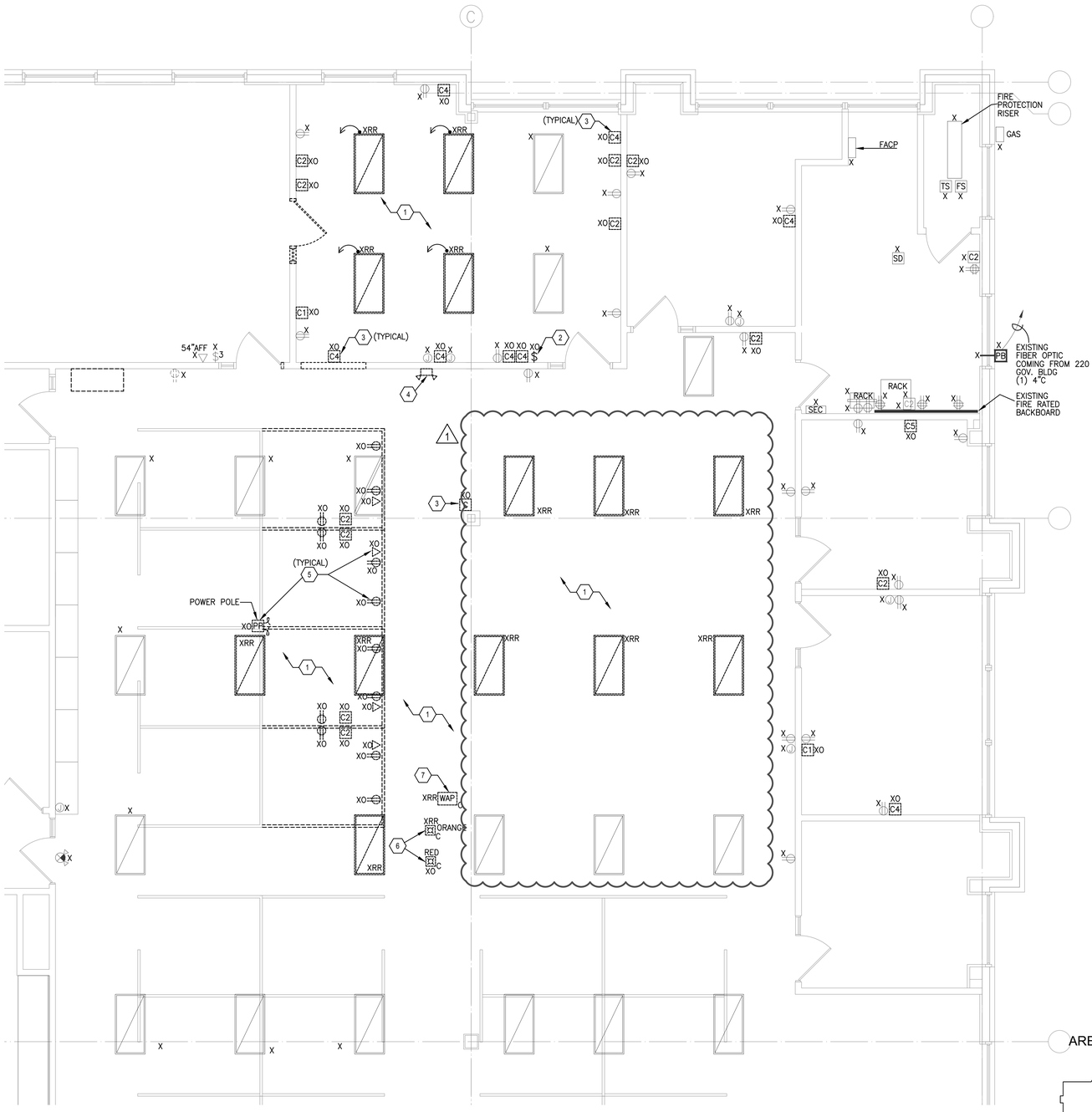
GENERAL DEMOLITION NOTES

1. EACH CONTRACTOR SHALL REVIEW THE EXISTING SYSTEMS IN THE FIELD ALONG WITH BID DOCUMENTS AND DETERMINE SELECTIVE DEMO AND ADDITION OF TEMPORARY SYSTEMS (IF REQUIRED) TO MAKE PHASED DEMO AND PROPOSED REMODELING. IT SHALL ASSURE UNINTERRUPTED SAFE OPERATION OF AREAS THAT ARE AFFECTED BY DEMO AND ADDITION OF PROPOSED SYSTEMS AT ALL TIMES. INCLUDE THE NECESSARY WORK TO ACCOMPLISH THIS AND COORDINATE PHASING ACCORDINGLY.
2. CONFIRM WITH THE MANUFACTURERS OF EXISTING EQUIPMENT THAT IS TO BE REUSED OR EXTENDED.
3. WHERE EXISTING ELECTRICAL WORK PREVENTS PROPER CONSTRUCTION OF NEW WORK AS INDICATED, REMOVE, REROUTE, RELOCATE, OR IN OTHER WAYS ALTER EXISTING WORK IN ORDER TO ACCOMMODATE.
4. WHERE EXISTING CONDUIT, WIRE, SUPPORTS, HANGERS AND OTHER ELECTRICAL WORK MUST BE REMOVED AS A RESULT OF THE ALTERATIONS, THEY SHALL BE COMPLETELY REMOVED, BACK TO THE FIRST OUTLET WHICH IS LEFT UNAFFECTED BY THE DEMOLITION. CONDUIT WHICH IS BURIED IN CONCRETE OR OTHERWISE INACCESSIBLY POSITIONED MAY BE ABANDONED. IN SUCH CASES, WIRE SHALL BE PULLED OUT AND THE CONDUIT SHALL BE PLUGGED AT EACH END.
5. EXISTING ELECTRICAL MATERIALS AND EQUIPMENT, INCLUDING LIGHTING FIXTURES, SWITCHES, RECEPTACLES, SIGNAL LIGHTS, SPEAKERS, INTERCOM EQUIPMENT, CONTROLS, CONDUIT OUTLETS, FITTINGS, AND OTHER DEVICES REMOVED AS A RESULT OF THE ALTERATIONS SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE REUSED WHERE INDICATED UNLESS OTHERWISE INDICATED.
6. EXAMINE THE CONDITION OF ANY SUCH MATERIALS AND EQUIPMENT TO MAKE A PRIOR DETERMINATION OF WHETHER IT IS SUITABLE FOR REUSE. PRESENT FINDINGS TO THE ENGINEER WHO WILL IN TURN MAKE THE FINAL DECISION REGARDING REUSABILITY. ALL WIRE AND CABLE FOR REUSED AND RELOCATED EQUIPMENT SHALL BE NEW.
7. IN ORDER TO COORDINATE THE WORK OF THE MECHANICAL AND ELECTRICAL TRADES, REMOVE EXISTING ELECTRICAL WORK IN AND ABOVE CEILING OF THESE AREAS (AS REQUIRED), AFTER WHICH INSTALL NEW WORK AND REINSTALL EXISTING WORK TO REMAIN, AS SHOWN ON THE DRAWINGS. EXISTING MATERIALS AND EQUIPMENT SHALL BE REUSED ONLY WHERE INDICATED.
8. SOME EXCEPTIONS MAY ARISE WHEREIN EQUIPMENT, EITHER IN ALTERED AREAS OR OTHER AREAS, MUST BE KEPT IN SERVICE, REQUIRING THAT FEEDERS, SIGNAL CONDUCTORS, CONDUITS, BOXES, ETC. SERVING SAME ALSO BE KEPT IN SERVICE. IN SUCH CASES, THOSE ELECTRICAL FEEDERS, SIGNAL CONDUCTORS, CONDUITS, ETC. SHALL BE REROUTED AND RECONNECTED BEFORE PRESENT WORK IS REMOVED. IF THIS IS NOT POSSIBLE, TEMPORARY WIRING SHALL BE PROVIDED, AFTER WHICH NEW WORK SHALL BE INSTALLED AND TEMPORARY WIRING REMOVED.
9. ANY ELECTRICAL EQUIPMENT THAT IS TAGGED TO BE DISPOSED OF SHALL BE DONE PER APPROVED METHOD IN ACCORDANCE WITH THE CONSTRUCTION PLAN AND LOCAL AUTHORITIES.
10. THIS DRAWING INDICATES AREAS THAT ARE BEING AFFECTED BY THE DEMOLITION. DASHED LINES SHOW EXISTING MATERIALS AND EQUIPMENT TO BE REMOVED. SOLID LINES SHOW EXISTING MATERIALS AND EQUIPMENT TO REMAIN. ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT AFFECTED BY THE DEMOLITION AND WILL KEEP REMAINING EQUIPMENT CONNECTED, POWERED TO THE EXISTING CIRCUITS AS REQUIRED.
11. THIS DRAWING SHOWS A REPRESENTATIVE SAMPLE OF DEMOLITION WORK THAT IS TO TAKE PLACE. NOTE THAT NOT EVERY DEVICE, LIGHTING FIXTURE, CONDUIT ETC. REQUIRED TO BE DEMOLISHED IS NECESSARILY INDICATED ON THIS PLAN. THE CONTRACTOR SHALL VISIT THE JOB SITE TO FAMILIARIZE HIMSELF WITH THE EXTENT OF EXISTING WORK TO BE DEMOLISHED.
12. ALL PROPOSED DEMOLITION WORK SHALL BE THOROUGHLY COORDINATED WITH ALL OTHER TRADES.
13. MAINTAIN AND RESTORE, IF INTERRUPTED, ALL CONDUITS, FEEDERS AND BRANCH CIRCUITS PASSING THROUGH RENOVATED AREA AND SERVING UNDISTURBED AREAS.
14. ANY PORTION OF THE EXISTING CONDUIT SYSTEM THAT IS TO BE REUSED FOR THE NEW INSTALLATION SHALL BE CHECKED TO ENSURE THAT IT IS CLEAN, FREE OF DAMAGE, FREE OF CORROSION, AND ADEQUATELY SUPPORTED.
15. DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT, DEVICES AND CONDUITS IN WALLS, FLOORS AND CEILING SCHEDULED FOR DEMOLITION.
16. EXISTING ELECTRICAL SYSTEM IS DESCRIBED BASED ON SURVEYS OF EXISTING CONDITIONS THAT ARE VISIBLE DURING THE DESIGN PHASE. CONTRACTOR SHALL CONFIRM ALL SERVICES PRIOR TO PROCEEDING WITH DEMOLITION.
17. PATCH ALL HOLES IN SLABS, WALLS AND CEILING WHERE ELECTRICAL DEVICES AND/OR CONDUIT ARE REMOVED. IF THE REMOVAL OF CONDUIT, BOXES, EQUIPMENT, ETC. COMPROMISES THE FIRE RATING OF THESE ITEMS, THE CONTRACTOR SHALL SEAL OPENINGS WITH CODE APPROVED FIRE STOPPING MATERIAL.
18. WHERE FEEDERS OR BRANCH CIRCUITS ARE DISCONNECTED AND REMOVED FROM EXISTING PANEL BOARDS, CONTRACTOR SHALL MARK THE AFFECTED BREAKERS IN THOSE PANEL BOARDS AS "SPARE". INSTALL NEW KNOCK-OUT BLANK INSERT IN PANEL BOX.
19. CONTRACTOR IS TO PERFORM DEMOLITION WORK IN A NEAT, SKILLFUL, AND CAREFUL MANNER SO AS NOT TO DAMAGE OR DEFACE EXISTING CONSTRUCTION THAT IS TO REMAIN.
20. VERIFY THAT REMOVAL OF DEVICES IN RENOVATED AREA DOES NOT AFFECT DEVICES IN OTHER AREAS THAT MAY BE FED FROM THE CIRCUIT BEING DISCONNECTED. BYPASS RACEWAY AND WIRING AS REQUIRED TO KEEP REMAINING DEVICES OPERATIONAL.
21. ALL ABANDONED AND/OR UNUSED COMPONENTS CREATED OR EXPOSED DURING CONSTRUCTION, INCLUDING BUT NOT LIMITED TO CABLES, WIRING, RACEWAY, J-BOXES AND ASSOCIATED SUPPORTS AND OR ATTACHMENTS SHALL BE REMOVED.
21. RETAIN EXISTING CONDUIT, JUNCTION BOXES, AND CIRCUITING AS APPLICABLE. ALL EXISTING CONDUITS NOT BEING USED IN NEW BUILD OUT ARE TO BE REMOVED BACK TO ELECTRICAL/TELEPHONE CLOSETS/SOURCE ENTIRELY AND WALLS REPAIRED TO LOOK NEW – SEE BUILDING ENGINEER.
22. REMOVE ALL LOW VOLTAGE CABLING BACK TO THE SOURCE. ALL CABLING, HANGERS, TIES AND CONDUIT ARE TO BE REMOVED ENTIRELY BACK TO TELEPHONE BOARD. PROVIDE NEW CABLING, JACKS & COVER PLATES FOR ALL TEL/DATA OUTLETS. CONFIRM CABLING REQUIREMENTS WITH TENANT.

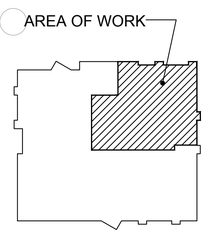


1 **PARTIAL FLOOR PLAN - ELECTRICAL DEMOLITION**
SCALE: 1/4"=1'-0"

NORTH

ELECTRICAL DEMOLITION PLAN

1. LIGHT FIXTURES TO BE DISCONNECTED, REMOVED AND RETAINED FOR REINSTALLATION AT NEW LOCATION. REMOVE RACEWAY AND WIRING BACK TO UNAFFECTED DEVICES. BYPASS RACEWAY AND WIRING AS REQUIRED TO KEEP REMAINING DEVICES OPERATIONAL. DISPOSED OF LAMPS PER E.P.A. REQUIREMENTS.
2. CONTROL SWITCH TO BE DISCONNECTED AND REMOVED. REFER TO NEW WORK FOR ADDITIONAL INFORMATION.
3. VOICE/DATA OUTLET(S) TO BE DISCONNECTED AND REMOVED. REMOVE RACEWAY AND CABLING BACK TO SOURCE. IF WALL IS TO REMAIN, FURNISH AND INSTALL FINISHED BLANK COVER PLATE TO MATCH SURROUNDING AREA.
4. EMERGENCY LIGHT TO BE DISCONNECTED AND REMOVED. DISPOSE OF BATTERIES PER E.P.A. REQUIREMENTS. REFER TO NEW WORK FOR REQUIREMENTS.
5. FURNITURE PARTITION DEVICES AND ASSOCIATED FEEDS TO BE DISCONNECTED AND REMOVED. REMOVE POWER BACK TO PANEL AND LABEL BREAKER SPARE IF NOT LONGER SERVING OTHER LOADS. REMOVE VOICE AND DATA CABLING BACK TO MDF RACK.
6. CEILING MOUNTED SECURITY AND FIRE ALARM STROBE DEVICES TO BE DISCONNECTED AND REMOVED. RETAIN ORANGE STROBE ASSOCIATED WITH SECURITY SYSTEM FOR REINSTALLATION AT NEW LOCATION. DISPOSED OF RED STROBE ASSOCIATED WITH FIRE ALARM AS REQUIRED.
7. WIRELESS ACCESS POINT TO BE DISCONNECTED AND REMOVED. SAVE UNIT FOR REINSTALLATION AT NEW LOCATION. REMOVE POWER BACK TO UNAFFECTED AREA. REMOVE DATA CABLING BACK TO MDF RACK.



KEY PLAN
500 BUILDING

NORTH

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REVIEW ISSUE	5-20-16	

DRAWINGS:
PARTIAL FLOOR PLAN -
ELECTRICAL DEMOLITION

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N
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SHEET
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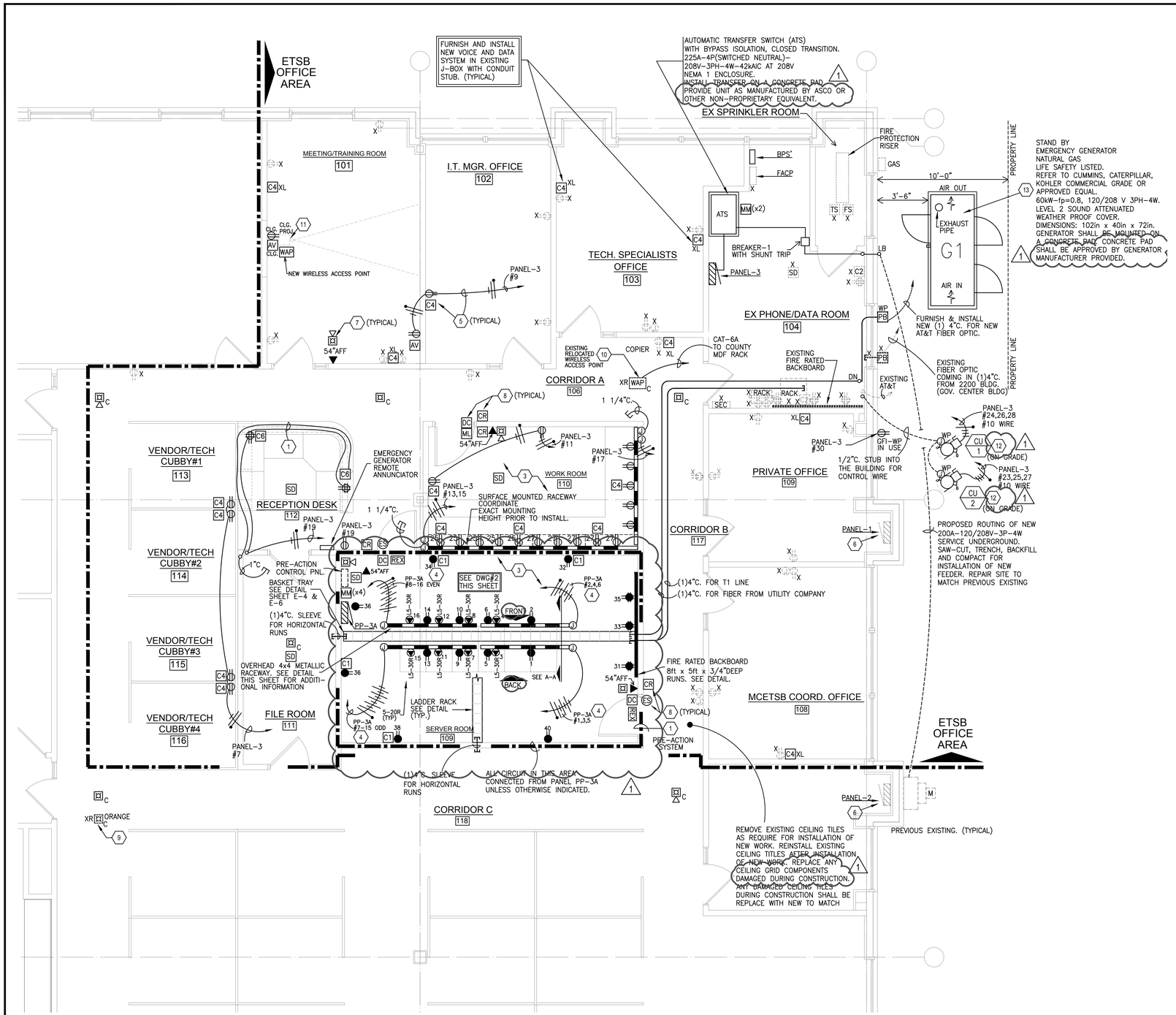
CD'S



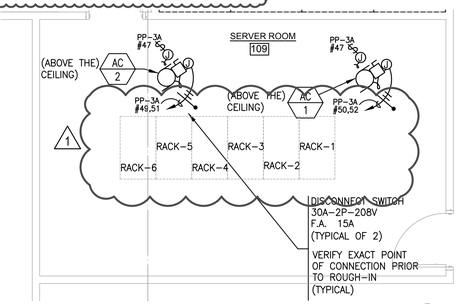
1 PARTIAL FLOOR PLAN - ELECTRICAL

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

NORTH

PLAN NOTES

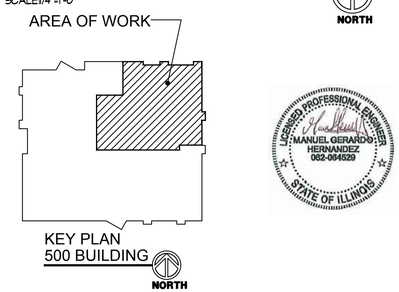
1. RACEWAYS SHALL BE INSTALLED CONCEALED IN WALL.
2. SERVER ROOM WILL BE PROTECTED BY A PRE-ACTION SYSTEM. PRE-ACTION SYSTEM CONTRACTOR SHALL PROVIDE A COMPLETE OPERATING AND INSTALLATION SYSTEM INCLUDING BUT NOT LIMITED TO SMOKE DETECTORS, MANUAL PULL STATIONS (AT EACH DOOR), CONTROL PANEL, ETC. FIRE ALARM CONTRACTOR SHALL FURNISH AND INSTALL MONITOR MODULES FOR MONITORING PRE-ALARM, ALARM, SUPERVISORY, AND TROUBLE CONDITIONS IN PRE-ACTION SYSTEM. FIRE ALARM CONTRACTOR SHALL FURNISH AND INSTALL A SMOKE DETECTOR ABOVE THE PRE-ACTION CONTROL PANEL FOR SUPERVISORY CONDITION.
3. EVERY CIRCUIT SHALL BE PROVIDE WITH DEDICATED NEUTRAL (TYPICAL).
4. CIRCUITS SERVING SPECIAL RECEPTACLES NEMA L5-30R SHALL BE WIRED WITH #8AWG-THHN WIRE. CIRCUITS SERVING ALL OTHER RECEPTACLES SHALL BE WIRED WITH #10AWG-THHN WIRE. GROUNDING CONDUCTOR SHALL BE #10 GREEN WIRE.
5. FURNISH AND INSTALL NEW RECEPTACLE(S), RACEWAY, WIRING, 1P-20A BREAKER AND CONNECT TO EXISTING PANEL. ALL NEW RACEWAYS AND WIRING SHALL BE INSTALLED CONCEALED/FLUSHED IN WALLS AND ABOVE THE CEILING. CONTRACTOR SHALL SAW-CUT EXISTING WALLS, PATCH AND PAINT TO MATCH SURROUNDING AREAS AS REQUIRED FOR INSTALLATION OF NEW RACEWAY.
6. FURNISH AND INSTALL NEW 200A MAIN BREAKER WITH SHUNT TRIP IN PLACE OF EXISTING AND CONNECT TO NEW SHUNT TRIP SWITCH LOCATED BY THE MAIN ENTRANCE. NEW MAIN BREAKER SHALL HAVE INTERRUPTING CAPACITY (AIC) TO MATCH PREVIOUS EXISTING. REFER TO SHEET EL-1 FOR SHUNT TRIP SWITCH LOCATION.
7. FURNISH AND INSTALL NEW FIRE ALARM DEVICE COMPATIBLE WITH THE EXISTING SYSTEM. CONNECT TO THE EXISTING SYSTEM IN THE BUILDING. FURNISH AND INSTALL NEW RACEWAY AND WIRING AS REQUIRED. ALL INSTALLATIONS SHALL BE CONCEALED IN WALL AND ABOVE THE CEILING. SAW CUT AND PATCH AS REQUIRED TO ACCOMMODATE NEW INSTALLATION TO MATCH SURROUNDING AREA REFER TO FIRE ALARM SHEET FOR ADDITIONAL INFORMATION
8. ROUGH-IN FOR SECURITY DEVICES UP TO ABOVE ACCESSIBLE CEILING. INSTALL END BUSHING IN CONDUIT. FURNISH AND INSTALL NEW ACCESS CONTROL DEVICES COMPATIBLE WITH THE EXISTING ACCESS CONTROL SYSTEM IN THE BUILDING. CONNECT NEW DEVICES TO THE EXISTING SYSTEM. FURNISH AND INSTALL NEW HARDWARE AS REQUIRED FOR CONNECTION OF NEW DEVICES FOR A COMPLETE INSTALLATION AND OPERATING SYSTEM. REFER TO PARTIAL RISER DIAGRAM IN SHEET E-_ FOR ADDITIONAL INFORMATION. SECURITY CONTRACTOR SHALL INSTALL DEVICES IN EXISTING J-BOX(ES).
9. REINSTALL EXISTING ORANGE IN COLOR CEILING MOUNTED STROBE ASSOCIATED WITH THE SECURITY SYSTEM AND RECONNECT TO EXISTING CIRCUIT PREVIOUSLY ON. FURNISH AND INSTALL NEW RACEWAY AND WIRING AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
10. REINSTALL EXISTING WAP AND RECONNECT TO EXISTING POWER CIRCUIT PREVIOUSLY ON. IF POWER WAS PROVIDED THRU PoE THEM CONNECT AS INDICATED BY THE OWNER'S IT DEPARTMENT.
11. CEILING PROJECTOR PROVIDED AND INSTALLED BY OTHERS. THIS CONTRACTOR SHALL FURNISH AND INSTALL CABLING AND CONNECTORS FOR CONNECTION INTO EQUIPMENT.
12. FOR CONDENSING UNIT CONCRETE PAD REQUIREMENTS REFER TO MECHANICAL DRAWINGS FOR INFORMATION.
13. THE GENERATOR CONCRETE PAD SHOULD BE 6 INCHES DEEP AND EXTEND AT LEAST 6 INCHES BEYOND THE SKID ON ALL SIDES. THE PAD SHOULD BE CONSTRUCTED OF REINFORCED CONCRETE WITH 28-DAY COMPRESSIVE STRENGTH OF AT LEAST 2500-psi. CONCRETE PAD SHALL BE LEVEL AND FLAT TO ALLOW FOR PROPER MOUNTING AND ADJUSTMENT. VERIFY THAT THE MOUNTING PAD IS LEVEL LENGTHWISE, WIDTHWISE, AND DIAGONALLY. PAD SHALL BE INSTALLED SO THAT 4 INCHES ARE ABOVE THE GRADE LEVEL.



2 PARTIAL FLOOR PLAN - ELECTRICAL

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

NORTH



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DRAWINGS:
PARTIAL FLOOR PLAN - ELECTRICAL

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500 Russel Court
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CBJ ARCHITECTS PROFESSIONAL CORPORATION

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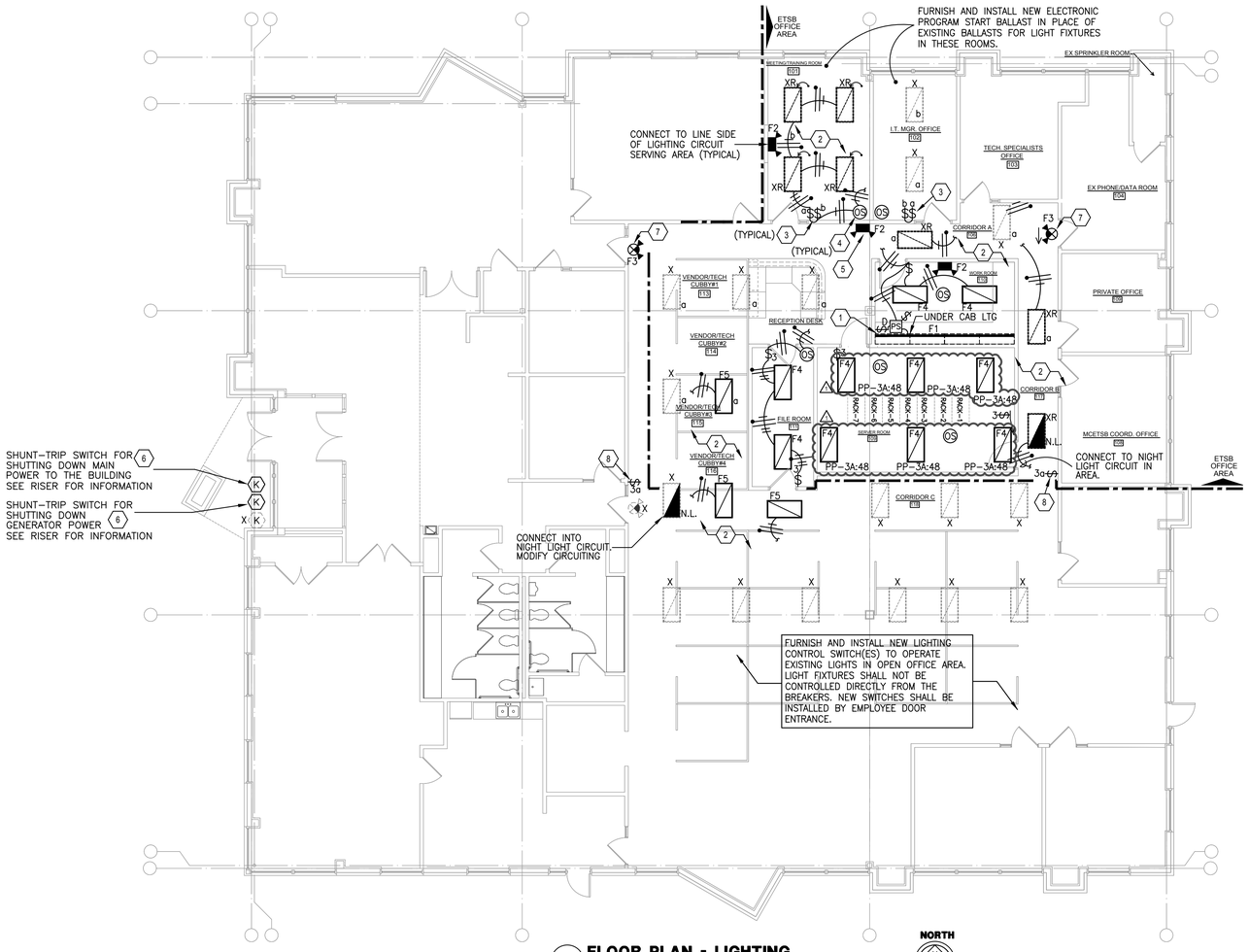
NORTH

SHEET E-1

CD'S

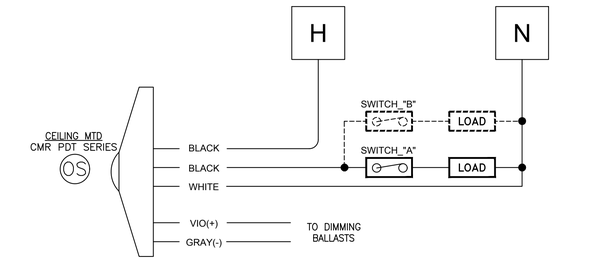
LICENSED PROFESSIONAL ENGINEER
MANUEL GERARDO HERNANDEZ
062-064529
STATE OF ILLINOIS



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

PLAN NOTES

1. UNDER CABINET LED STRIP LIGHTING. FURNISH AND INSTALL A WALL MOUNTED J-BOX WITH TOGGLE SWITCH DISCONNECT ABOVE OVERHEAD CABINETRY. PROVIDE CONNECTION TO LED STRIP POWER SUPPLY AND TO LED STRIP TAPE. FURNISH AND INSTALL ON-OFF SWITCH WITH 0-10V DIMMING SLIDE ON THE SIDE ABOVE THE COUNTER IN THE PROXIMITY OF UNDER CABINET LIGHTS FOR CONTROLLING UNDER CABINET LIGHTING. FURNISH AND INSTALL ALL REQUIRED HARDWARE FOR A COMPLETE INSTALLATION AND OPERATING SYSTEM. LIGHTING UNDER CABINET AND POWER FEED SHALL BE CONCEALED AS MUCH AS POSSIBLE.
2. REINSTALL EXISTING LIGHT FIXTURES AND RECONNECT TO EXISTING LIGHTING CIRCUIT PREVIOUSLY ON/SERVING AREA. MODIFY EXISTING WIRING PER NEW SWITCHING PATTERN (WHEN INDICATED). E.C. CONTRACTOR SHALL FURNISH AND INSTALL NEW PROGRAM START BALLAST IN PLACE OF EXISTING (WHEN FIXTURES ARE CONTROLLED BY OCCUPANCY SENSORS). FURNISH AND INSTALL NEW RACEWAY AND WIRING AS REQUIRED. ALL INSTALLATIONS SHALL BE CONCEALED IN WALL AND ABOVE THE CEILING. SAW CUT AND PATCH AS REQUIRED TO ACCOMMODATE NEW INSTALLATION TO MATCH SURROUNDING AREA. LIGHT FIXTURES SHALL BE CLEAN AND RE-LAMP.
3. FURNISH AND INSTALL NEW SPECIFICATION GRADE CONTROL SWITCH(ES). COLOR TO MATCH EXISTING WIRING DEVICES. CONNECT TO OPERATE LIGHT FIXTURES IN ROOM AS INDICATED. FURNISH AND INSTALL NEW RACEWAY AND WIRING AS REQUIRED. ALL INSTALLATIONS SHALL BE CONCEALED IN WALL AND ABOVE THE CEILING. SAW CUT AND PATCH AS REQUIRED TO MATCH SURROUNDING AREA. LIGHT FIXTURES SHALL BE CLEAN AND RE-LAMP.
4. FURNISH AND INSTALL NEW OCCUPANCY SENSOR AND CONNECT TO LIGHT FIXTURES IN ROOM FOR A COMPLETE OPERATING SYSTEM. REFER TO OCCUPANCY SENSOR SCHEDULE FOR PRODUCT INFORMATION.
5. FURNISH AND INSTALL NEW EMERGENCY LIGHT IN PLACE OF EXISTING AND CONNECT TO LINE SIDE OF EXISTING LIGHTING CIRCUIT SERVING AREA. MODIFY EXISTING WIRING AS REQUIRED FOR A COMPLETE OPERATING SYSTEM.
6. KNOX BOX FROM KNOX BOX COMPANY 4500 SERIES. COORDINATE EXACT LOCATION WITH AHJ PRIOR TO INSTALL.
7. FURNISH AND INSTALL NEW EXIT SIGN AND CONNECT TO EXISTING EXIT SIGN CIRCUIT SERVING BUILDING. FURNISH AND INSTALL NEW RACEWAY AND WIRING AS REQUIRED.
8. FURNISH AND INSTALL NEW LIGHTING CONTROL SWITCH AND CONNECT TO OPERATE LIGHT FIXTURES AS INDICATED. MODIFY EXISTING WIRING AS REQUIRED TO ACHIEVE PURPOSE.



1 **CEILING MTD. LINE VOLTAGE OCC. SENSORS**
SCALE: NTS

LIGHTING FIXTURE SCHEDULE

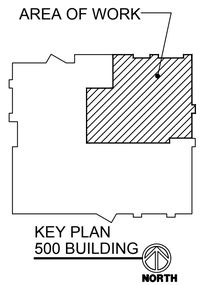
FIXTURE TAG	SYMBOL	MANUFACTURER	MODEL NUMBER	LAMPS	VOLTAGE	WATTAGE	MOUNTING	NOTES
F1▲	LED STRIP	LLUMINI	LED STRIP:LL30WET-S-2700K-SL-NC CASE CHANNEL: RECESSED SLIM WIDE. PROVIDE END CAP SERIES.	LED 2700K 30 LEDS/FT	120V	2.7W/FT	CONCEAL	PROVIDE CONCEALED DIMMABLE POWER SUPPLY/TRANSFORMER AND ALL REQUIRED HARDWARE FOR A COMPLETE INSTALLATION SYSTEM. PROVIDE MULTIPLE POWER SUPPLIES IF REQUIRED FOR A COMPLETE OPERATING SYSTEM.
F2		SURE-LITES	CC7NCSD	(2) 12W INC	UNIVERSAL 120V/277V	10W	SURFACE WALL	EMERGENCY LIGHT. 90MIN BATTERY BACK-UP
F3		SURE-LITES	LPX7DHSD EXIT SIGN WITH 2-EMERGENCY LAMPS	EXIT SIGN: LED EM LIGHTS: INC	UNIVERSAL 120V/277V	10W	WALL/CEILING	COMBO LED EXIT SIGN AND EMERGENCY LIGHTS. RED LETTERS IN A WHITE BODY. 90MIN BATTERY BACK-UP
F4		METALUX	2GC8-232A-UNV-ER81-U	(2) T8 32W, 3100Lm 4100K, 85CRI	120V-277V	59W	RECESSED	2x4 RECESSED MOUNTED TROFFER WITH PRISMATIC LENS, PROGRAM START ELECTRONIC BALLASTS WITH STANDARD BALLASTS FACTOR.
F5		METALUX	2GC8-432A-UNV-ER81-U	(4) T8 32W, 3100Lm 4100K, 85CRI	120V-277V	112W	RECESSED	2x4 RECESSED MOUNTED TROFFER WITH PRISMATIC LENS, PROGRAM START ELECTRONIC BALLASTS WITH STANDARD BALLASTS FACTOR.

▲ LENGTHS AS REQUIRED TO COVER SPACE INDICATED IN DRAWINGS.

OCCUPANCY SENSOR SCHEDULE

SYMBOL	MANUFACTURER	MODEL NUMBER	VOLTAGE	WATTAGE	MOUNTING	DESCRIPTION
OS	SENSOR SWITCH	CMR PDT 10	120V/277V	800W @ 120V	CEILING	(56FT DI., 360DEG) CEILING MTD. LINE VOLTAGE OCC. SENSOR. LIGHTS OFF ON VACANCY AFTER 15MIN OR AS DIRECTED BY OWNER.

ALTERNATE MANUFACTURER: WATT STOPPER



LICENSED PROFESSIONAL ENGINEER MANUEL GERARDO HERNANDEZ 062-064529 STATE OF ILLINOIS

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EL-1
CD'S

FIRE ALARM SCHEDULE

SYMBOL	DESCRIPTION	MANUFACTURER	PART#
FACP	EXISTING FIRE ALARM CONTROL PANEL.	FIRE LITE	MS-9200 ADDRESSABLE FACP
FAAP	REMOTE ANNUNCIATOR PANEL		
BPS	BOOSTER POWER SUPPLY		
	MULTI-CANDELA WALL STROBE RED IN COLOR WITH FIRE.		
	MULTI-CANDELA WALL HORN/STROBE RED IN COLOR WITH FIRE.		
C	MULTI-CANDELA CEILING STROBE WHITE IN COLOR WITH FIRE.		
C	MULTI-CANDELA CEILING HORN/STROBE WHITE IN COLOR WITH FIRE.		
SD	PHOTOELECTRIC SMOKE DETECTOR.		
MM	SINGLE INPUT ADDRESSABLE MODULE		
2MM	DUAL INPUT ADDRESSABLE MODULE		
TS	FIRE PROTECTION VALVE SUPERVISORY SWITCH (BY OTHERS)		
WF	FIRE PROTECTION WATER FLOW SWITCH (BY OTHERS)		
EOL	END OF LINE RESISTOR (VALUE AS REQUIRED PER SYSTEM)		
K	KNOX BOX		

FIRE ALARM MATRIX

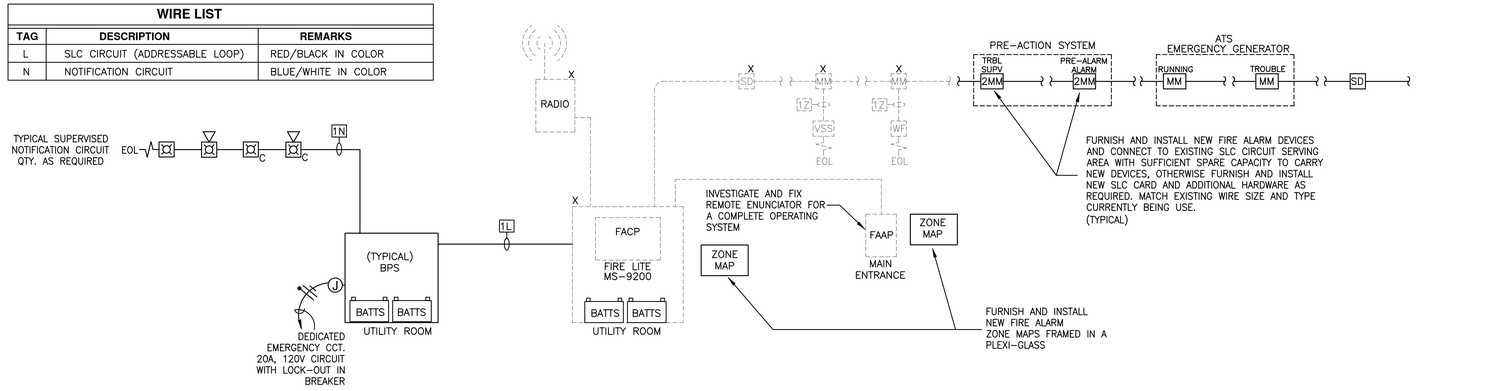
GENERAL ALARM SYSTEM OPERATION / INITIATING DEVICE	ACTUATE MAIN FACP CABINET COMMON ALARM SIGNAL INDICATOR	ACTUATE MAIN FACP CABINET AUDIBLE ALARM SIGNAL	ACTUATE MAIN FACP CABINET AUDIBLE SUPERVISORY SIGNAL INDICATORS	ACTUATE MAIN FACP CABINET COMMON SUPERVISORY SIGNAL	ACTUATE MAIN FACP CABINET AUDIBLE SUPERVISORY SIGNAL	ACTUATE MAIN FACP CABINET COMMON TROUBLE SIGNAL INDICATOR	ACTUATE MAIN FACP CABINET AUDIBLE TROUBLE SIGNAL	ACTUATE AUDIBLE ALARM NOTIFICATION DEVICES	ACTUATE VISUAL ALARM NOTIFICATION DEVICES	DISPLAY CONDITION & LOCATION/ZONE ON FACP AND FAAP	TRANSMIT ALARM SIGNAL	TRANSMIT SUPERVISORY SIGNAL	TRANSMIT TROUBLE SIGNAL
FACP ANNUNCIATION/CONTROL FEATURES													
INPUTS TO FIRE ALARM SYSTEM: SMOKE DETECTOR *	X	X						X	X	X	X		
FIRE PROTECTION VALVE SUPERVISORY SWITCH			X	X						X		X	
FIRE PROTECTION WATER FLOW SWITCH	X	X						X	X	X	X		
ABNORMAL SWITCH OR CONTROL POSITION					X	X				X			X
OPEN CIRCUIT, SHORT CIRCUIT, GROUND FAULT					X	X				X			X
FACP AC POWER FAILURE					X	X				X			X
FACP LOW BATTERY					X	X				X			X
KNOX BOX					X	X				X			X

* UTILIZE ALARM VERIFICATION FEATURE WHEN PROGRAMMING PANEL UNLESS OTHERWISE INDICATED BY THE AUTHORITY HAVING JURISDICTION (AHJ)

FIRE ALARM GENERAL NOTES - EXISTING SYSTEM

1. CERTIFY EXISTING FIRE ALARM SYSTEM PRIOR TO TOUGHING. PROVIDE PAPER WORK TO THE OWNER AND ARCHITECT/ENGINEER INDICATING THE EXISTING CONDITIONS. BRING TO THE OWNER'S ATTENTION AND TO THE ARCHITECT/ENGINEER ANY EXISTING COMPONENTS/PART OF THE SYSTEM CURRENTLY NOT WORKING. IF THIS PAPERWORK IS NOT PRESENTED PRIOR TO TOUGHING THE SYSTEM, THE CONTRACTOR IS ACKNOWLEDGING THAT THE SYSTEM IS 100% OPERATIONAL AND WILL BE HELD RESPONSIBLE FOR ANY NOT WORKING DEVICES LATER ON.
2. CONTRACTOR IS RESPONSIBLE FOR CORING, FIRESTOPPING, DRYWALL CUTTING AND PATCHING, PAINTING, CEILING REPAIR, CLEANING, RESTORATION OF ALL FINISHES IN ALL AREAS AFFECTED BY WORK ETC. IF PAINTING IS NEEDED, CONTRACTOR TO PAINT ENTIRE WALL AFFECTED BY PATCHING, NOT JUST PATCHED AREA, IN COLOR AND FINISH TO MATCH EXISTING.
3. CONTRACTOR SHALL PATCH FIRE PROOF ALL PENETRATIONS MADE THRU WALLS AND FLOORS FOR THE INSTALLATION OF HIS/HER WORK TO RE-ESTABLISHED THE ORIGINAL FIRE RATINGS OF COMPARTMENTS.
4. FURNISH AND INSTALL NEW FIRE ALARM DEVICES AS INDICATED IN THIS SET OF DRAWINGS. NEW FIRE ALARM DEVICES SHALL BE COMPATIBLE WITH THE EXISTING SYSTEM. CONNECT NEW DEVICES TO THE EXISTING FIRE ALARM SYSTEM SERVING THE BUILDING. FURNISH AND INSTALL ADDITIONAL HARDWARE AS REQUIRED TO ACCOMMODATE THE EXPANSION OF THE SYSTEM.
5. EXISTING FIRE ALARM SYSTEM SHALL REMAIN OPERATIONAL AT ALL TIMES DURING THE INSTALLATION OF THE NEW DEVICES. AT NO TIME SHALL THE BUILDING BE LEFT UNPROTECTED. IF EXISTING FIRE ALARM SYSTEM NEEDS TO BE TEMPORARILY DOWN OBTAIN WRITING AND SIGNED AUTHORIZATION PAPER WORK FROM THE OWNER OR THE OWNER'S REPRESENTATIVE OF THE BUILDING AND COORDINATE WITH THE FIRE DEPARTMENT FOR ARRANGEMENTS SO AS TO HAVE A FIRE WATCH PERSON IN THE BUILDING. DOWN TIME SHALL BE LIMITED TO A MAXIMUM OF 8 HOURS DURING REGULAR BUSINESS HOURS 7:30AM-4:30PM MON-FRI (UNLESS OTHERWISE INDICATED).
6. FURNISH AND INSTALL NEW FIRE ALARM NOTIFICATION DEVICE(S) AND CONNECT TO NEW BOOSTER POWER SUPPLY (QUANTITY AS REQUIRED). PROVIDE NOTIFICATION DEVICES ARE ALL SYNCHRONIZED. FURNISH AND INSTALL NEW SMOKE DETECTOR(S) IN ROOM(S) HOUSING NEW BOOSTER(S) IF THERE IS NOT AN EXISTING SMOKE DETECTOR.
7. SET THE CANDELA RATING IN THE VISUAL NOTIFICATION DEVICES AS REQUIRED BY CODE OR AS REQUIRED TO COVER THE SPACE IN WHICH THE DEVICE ARE INSTALLED.
8. CONTRACTOR SHALL REPLACE EXISTING BATTERIES AS REQUIRED TO CONTINUE PROVIDING CURRENTLY STANDBY AND ALARM TIME AFTER THE ADDITION OF THE NEW FIRE ALARM DEVICES AND HARDWARE.
9. ALL BATTERIES INSTALLED SHALL BE NEW. FIELD LABELED ALL BATTERIES WITH DATE OF MANUFACTURING.
10. BATTERY BACK-UP SHALL BE SIZED TO COMPLY WITH CODE REQUIREMENT AND LOCAL AMENDMENTS. PROVIDE BATTERY BACK UP CAPACITY TO MATCH EXISTING SYSTEM REQUIREMENTS, UNLESS OTHERWISE REQUIRED BY THE AHJ.
11. FIRE ALARM CABLE SHALL BE PLENUM RATED AND SHALL BE INSTALLED OPEN ONLY ABOVE LAY-IN CEILINGS. STUB CONDUIT UP TO ABOVE LAY-IN CEILINGS AND UTILIZE J-HOOKS 5'-0" O.C. FOR LOCATIONS OTHER THAN ACCESSIBLE LAY-IN CEILINGS, WIRING SHALL BE INSTALLED IN A DEDICATED RACEWAY SYSTEM. CABLE IN UNFINISHED ROOMS (i.e. MECHANICAL ROOMS, HEAD END PHONE ROOM, LOCKER ROOMS, ETC) SHALL BE INSTALLED IN CONDUIT AND PAINT WITH COLOR TO MATCH SURROUNDING AREA AS REQUIRED.
12. ALL JUNCTION BOXES HOUSING FIRE ALARM CABLE SHALL HAVE A RED COVER PLATE. COVER PLATE SHALL HAVE CIRCUIT INFORMATION.
13. FIRE ALARM CONTROL RELAYS SHALL BE INSTALLED WITHIN 3'-0" OF EQUIPMENT SERVING.
14. NAC FIRE ALARM CIRCUITS SHALL BE CLASS "B". REFER TO RISER DIAGRAM FOR ADDITIONAL INFORMATION.
15. FIRE ALARM AUDIBLE NOTIFICATION SHALL PRODUCED A SOUND LEVEL OF 15dB OVER THE AVERAGE AMBIENT LEVEL.
16. SUBMIT SHOP DRAWINGS AND EQUIPMENT BOOKS FOR ENGINEER AND AUTHORITIES HAVING JURISDICTION (AHJ) APPROVAL. SHOP DRAWINGS SHALL INCLUDE BUT NOT BE LIMITED TO: FLOOR PLANS, FIRE ALARM INITIATING DEVICE LIST SHOWING FOR EACH ADDRESSABLE DEVICE IN THE SYSTEM: DEVICE TYPE, LOCATION AND ADDRESSABLE CODE, DETAILS, CIRCUITS AND BATTERIES CALCULATIONS. INFORMATION IN THE LIST SHALL CONCORD WITH FLOOR PLANS, REFER TO SPECIFICATION DOCUMENTS FOR ADDITIONAL INFORMATION.
17. ALL NEW FIRE ALARM INITIATING DEVICES AND NOTIFICATION DEVICES SHALL BE LABELED WITH CIRCUIT INFORMATION AND ADDRESSABLE SERIAL CODE AS APPLICABLE.
18. UTILIZE WIRING SIZES AND TYPES AS REQUIRED AND RECOMMENDED BY MANUFACTURER. WIRING SHALL BE COLOR CODED. SUBMIT IN SHOP DRAWINGS CABLE LIST INDICATING COLOR CODING CABLE FOR EACH PART OF THE SYSTEM (i.e. RED/BLACK FOR SLC, BLUE/WHITE FOR NOTIFICATIONS CIRCUITS, GRAY/WHITE FOR DOOR HOLDERS, ETC.).
19. NOTIFICATION CIRCUITS VOLTAGE DROP SHALL NOT EXCEED 5% UNLESS OTHERWISE APPROVED BY THE MANUFACTURER OR AHJ.

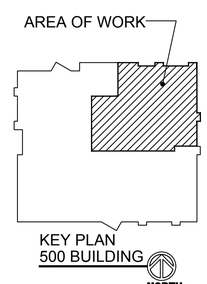
WIRE LIST		
TAG	DESCRIPTION	REMARKS
L	SLC CIRCUIT (ADDRESSABLE LOOP)	RED/BLACK IN COLOR
N	NOTIFICATION CIRCUIT	BLUE/WHITE IN COLOR



FIRE ALARM RISER

FIRE ALARM GENERAL NOTES - EXISTING SYSTEM (CONTINUE)

20. SLC CIRCUITS SHALL HAVE 20% SPARE CAPACITY FOR FUTURE EXPANSION.
21. FURNISH AND INSTALL 20A, 120V DEDICATED CIRCUITS AS REQUIRED FOR CONNECTING NEW FIRE ALARM EQUIPMENT. FURNISH AND INSTALL LOCK-OUT DEVICE IN BREAKER.
22. INSTALL WALL MOUNTED NOTIFICATION DEVICES AT 80 INCHES ABOVE THE FINISH FLOOR TO THE LENS, UNLESS OTHERWISE INDICATED.
23. SYSTEM PROGRAM SHALL UTILIZE FINAL OWNER APPROVED ROOM NAMES AND NUMBERS. FAILURE TO DO IT SHALL BE THE CONTRACTOR RESPONSIBILITY.
24. PROVIDE ZONE MAPS FRAMED IN A PLEXI-GLASS NEXT TO FACP AND FAAP. ZONE MAPS SHALL INDICATE EXISTING AND NEW DEVICES. INCLUDE A DEVICE LIST SHOWING DEVICE CODE AND LOCATION. PROVIDE TWO EXTRA COPIES TO THE OWNER.
25. UNDER FIRE ALARM ACTIVATION HVAC EQUIPMENT SHALL SWITCH INTO FIRE ALARM MODE.
26. WALL MOUNTED NOTIFICATION DEVICES SHALL BE RED OR WHITE IN COLOR WITH FIRE LETTERING SO AS TO MATCH EXISTING.
27. CEILING MOUNTED NOTIFICATION DEVICES SHALL BE WHITE OR RED IN COLOR WITH RED FIRE LETTERING, SO AS TO MATCH EXISTING.
28. PROVIDE ALL CLOSE-OUT DOCUMENTATION AS REQUIRED BY SPECIFICATIONS AND NFPA72 IN ORDER TO GRANT OCCUPANCY PERMIT.
29. DO NOT REMOVE THE SMOKE CAPS UNTIL CONSTRUCTION HAS FINISHED AND THE BUILDING IS CLEAN. TURN CAPS BACK TO THE OWNER.
30. INSTALL FIRE ALARM SMOKE DETECTORS A MINIMUM OF 3 FEET AWAY FROM SUPPLY AIR DIFFUSERS.
31. SHUNT TRIP POWER SHALL BE SUPERVISED.
32. CONTRACTOR SHALL INCLUDE IN HIS/HER BID THE FOLLOWING ADDITIONAL DEVICES AND INCLUDE 50 FEET OF WIRING AND RACEWAY FOR EACH DEVICE, TURN DEVICES TO OWNER AS OWNER STOCK IF DEVICES ARE NOT REQUIRED DURING THE CONSTRUCTION PROCESS:
    a. (2) SMOKE DETECTORS.
    b. (2) NOTIFICATION DEVICES.
33. PROVIDE ALL CLOSE-OUT DOCUMENTATION AS REQUIRED BY SPECIFICATIONS AND NFPA72 IN ORDER TO GRANT OCCUPANCY PERMIT.
34. TAPPING OF WIRING WILL BE ONLY ALLOWED AT DEVICE(S) LOCATION, TAPPING AT JUNCTIONS BOXES IS NOT PERMITTED.
35. KNOX BOX SHALL BE MOUNTED PER VILLAGE REQUIREMENTS.
34. ALL FIRE ALARM BOXES ABOVE THE CEILING SHALL HAVE THEIR COVER PLATES PAINTED RED



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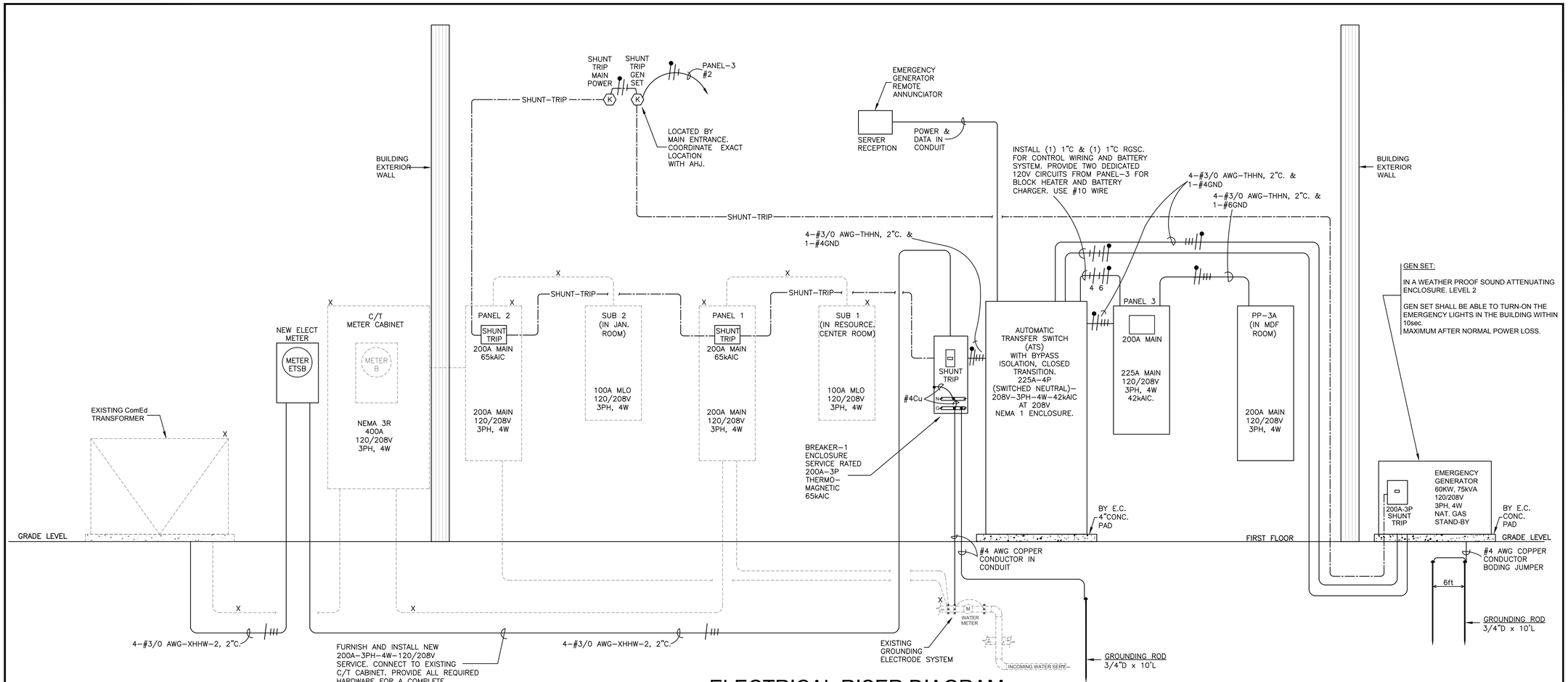


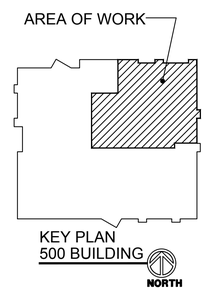
ELECTRICAL RISER DIAGRAM

NEW SERVICE PANEL (MDP):

- PROVIDE SQUARE-D, SIEMENS, GE EQUIPMENT, EATON
- PROVIDE ALL COPPER BUSSING 1000A/SQ-IN SILVER PLATED.
- PROVIDE BUSSING FOR FULL DISTRIBUTION BOARD.
- PROVIDE FLASH ARC WARNING LABEL.
- PROVIDE GRAY ENAMEL IN COLOR.
- PROVIDE SELF ADHESIVE VINIL LABELS.
- APPLY 120/208 ORANGE/BLACK VOLTAGE WARNING LABELS AND ARC FLASH WARNING LABELS TO THE TOP FRONT OF PANELBOARDS, DISCONNECT SWITCHES, ATS .

PANELBOARDS:

- PROVIDE SQUARE-D, SIEMENS, GE EQUIPMENT, EATON.
- PROVIDE ALL COPPER BUSSING.
- PROVIDE BOLT-ON BREAKERS.
- PROVIDE DOOR-WITHIN-DOOR DEAD END COVER.
- PROVIDE PANEL CARD DIRECTORY.
- PROVIDE GRAY ENAMEL IN COLOR PANELS.
- PROVIDE SELF ADHESIVE VINIL LABELS.
- APPLY 120/208 ORANGE/BLACK VOLTAGE WARNING LABELS AND ARC FLASH WARNING LABELS TO THE TOP FRONT OF PANELBOARDS, DISCONNECT SWITCHES.



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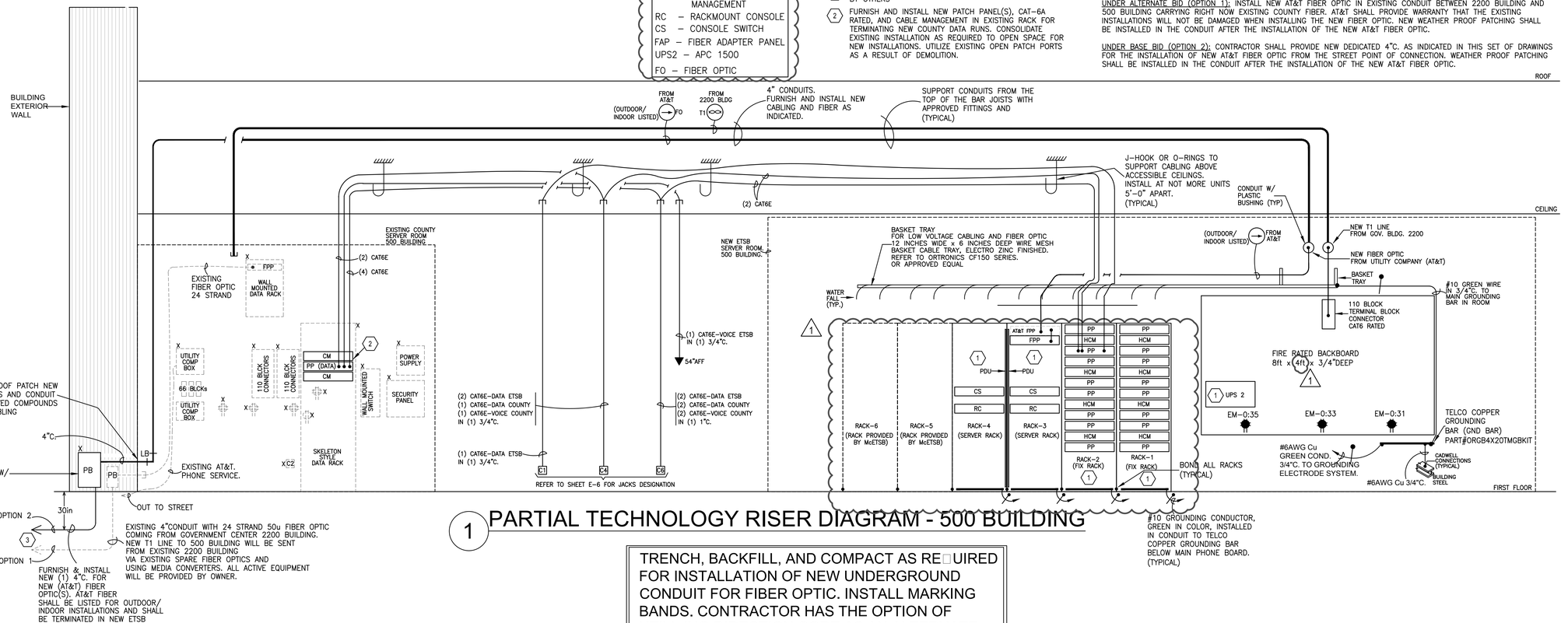
PP – PATCH PANEL
HCM – HORIZONTAL CABLE MANAGEMENT
VCM – VERTICAL CABLE MANAGEMENT
RC – RACKMOUNT CONSOLE
CS – CONSOLE SWITCH
FAP – FIBER ADAPTER PANEL
UPS2 – APC 1500
FO – FIBER OPTIC

PLAN NOTES

1. ALL ACTIVE EQUIPMENT AND CROSS CONNECTS PROVIDED BY OTHERS
2. FURNISH AND INSTALL NEW PATCH PANEL(S), CAT–6A RATED, AND CABLE MANAGEMENT IN EXISTING RACK FOR TERMINATING NEW COUNTY DATA RUNS. CONSOLIDATE EXISTING INSTALLATION AS REQUIRED TO OPEN SPACE FOR NEW INSTALLATIONS. UTILIZE EXISTING OPEN PATCH PORTS AS A RESULT OF DEMOLITION.
3. NEW AT&T FIBER OPTIC INSTALLATION

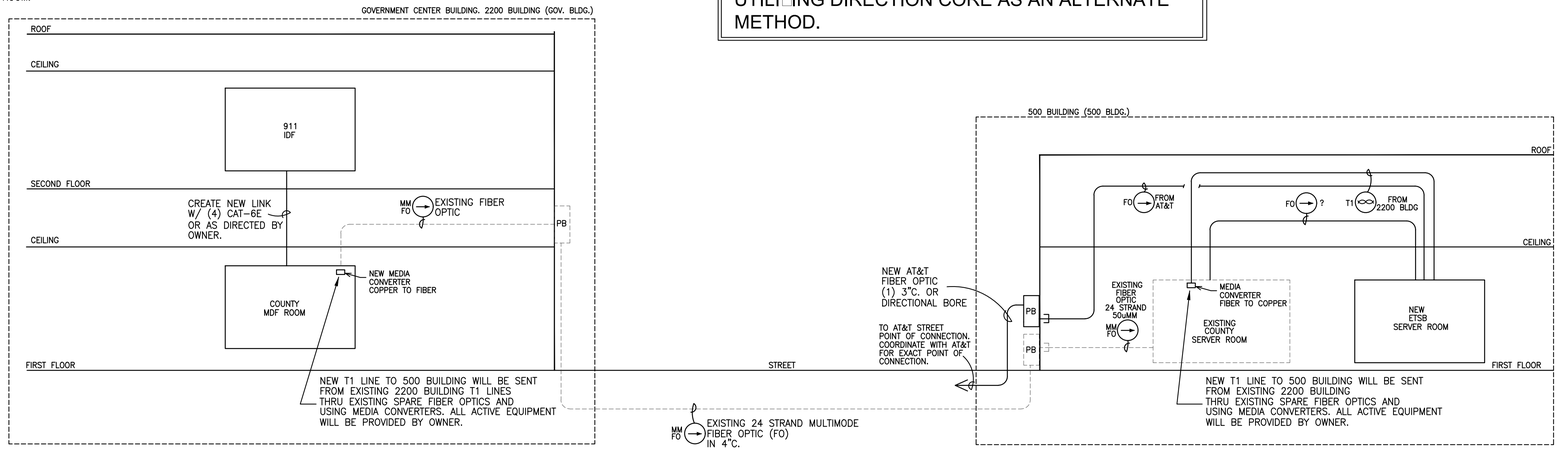
UNDER ALTERNATE BID (OPTION 1): INSTALL NEW AT&T FIBER OPTIC IN EXISTING CONDUIT BETWEEN 2200 BUILDING AND 500 BUILDING CARRYING RIGHT NOW EXISTING COUNTY FIBER. AT&T SHALL PROVIDE WARRANTY THAT THE EXISTING INSTALLATIONS WILL NOT BE DAMAGED WHEN INSTALLING THE NEW FIBER OPTIC. NEW WEATHER PROOF PATCHING SHALL BE INSTALLED IN THE CONDUIT AFTER THE INSTALLATION OF THE NEW AT&T FIBER OPTIC.

UNDER BASE BID (OPTION 2): CONTRACTOR SHALL PROVIDE NEW DEDICATED 4"C. AS INDICATED IN THIS SET OF DRAWINGS FOR THE INSTALLATION OF NEW AT&T FIBER OPTIC FROM THE STREET POINT OF CONNECTION. WEATHER PROOF PATCHING SHALL BE INSTALLED IN THE CONDUIT AFTER THE INSTALLATION OF THE NEW AT&T FIBER OPTIC.

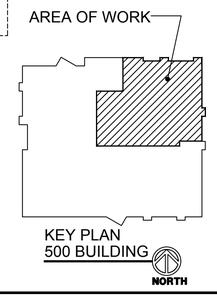


1 PARTIAL TECHNOLOGY RISER DIAGRAM - 500 BUILDING

TRENCH, BACKFILL, AND COMPACT AS RE□UIRED FOR INSTALLATION OF NEW UNDERGROUND CONDUIT FOR FIBER OPTIC. INSTALL MARKING BANDS. CONTRACTOR HAS THE OPTION OF UTILI□ING DIRECTION CORE AS AN ALTERNATE METHOD.



2 PARTIAL TECHNOLOGY RISER DIAGRAM - INTERBUILDING BACK BONE



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BID/PERMIT ISSUE	7-22-15	
BID/PERMIT ISSUE	4-20-16	
REVIEW ISSUE	5-20-16	

DRAWINGS:
TECHNOLOGY ROUGH-IN DIAGRAM

McHenry County Government
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MANUEL GERARDO HERNANDEZ
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STATE OF ILLINOIS

VOICE AND DATA GENERAL NOTES

1. ALL LOW VOLTAGE ROUGH-IN WORK (CONDUIT, J-BOXES, MUD RINGS, CONDUITS, PLASTIC BUSHINGS, ETC.) SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNDER A DIFFERENT PROJECT. ALL VOICE/DATA CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. ALL AUDIO VISUAL "AV" CONDUIT SHALL BE 1 1/4" UNLESS OTHERWISE INDICATED.

2. ALL VOICE AND DATA CABLING SHALL BE CAT6E PLENUM RATED. REFER TO BERK-TEK PART#LANmark 1000 ENHANCED CATEGORY 6 PLENUM OR APPROVED EQUAL FROM SUPERIOR ESSEX. CABLE SHALL BE COLOR CODED AS FOLLOW:
   a- BLUE: VOICE/DATA.
   b- GREEN: WIRELESS ACCESS POINT.

3. FIBER OPTIC SHALL BE MULTI-MODE, 50um, OM4. INSTALL FIBER CABLING IN AN INNER DUCT ORANGE IN COLOR.

4. ALL VOICE AND DATA JACKS SHALL BE RJ45, CAT6A RATED. REFER TO OTHER PART OF THIS SHEET FOR INFORMATION REGARDING COLOR CODING, ICONS/LABELS, AND ADDITIONAL INFORMATION.

5. ALL PATCH PANELS SHALL BE CAT6A RATED. FURNISH AND INSTALL PATCH PANELS AS REQUIRED TO COVER ALL CABLING INSTALLED AND HAVE A MINIMUM OF 20% SPARE CAPACITY. REFER TO OTHER PART OF THIS SHEET FOR ADDITIONAL INFORMATION.

6. PROVIDE CABLE MANAGEMENT PANELS ABOVE AND BELOW EACH PATCH PANEL.

7. PULL 18" OF CABLE LENGTH THROUGH EACH J-BOX FOR TERMINATION UNLESS OTHERWISE NOTED.

8. ALL CABLING SHALL BE TERMINATED AT BOTH ENDS (PATCH PANEL AND WORKING STATION). PROVIDE PATCH PANEL AS REQUIRED TO TERMINATE ALL HORIZONTAL RUNS PROVIDE AND HAVE 20% SPARE CAPACITY. EACH CABLE SHALL BE HOME RUN TO ASSOCIATED SERVER ROOM PATCH PANEL. CABLE SPLITTING/CONSOLIDATION POINT IS NOT ALLOWED.

9. JACK TERMINATION SHALL BE CONFIGURED AS T568B UNLESS OTHERWISE INDICATED BY THE OWNER.

10. PROVIDE PATCH CORDS FOR EACH JACK INSTALLED AT WORK STATION AND PORT AT PATCH PANEL. PATCH CORDS FOR WORKING STATIONS SHALL BE CAT-6A RATED, 5ft LONG, BLUE IN COLOR. PATCH CORDS AT RACK LOCATION SHALL BE CAT-6E RATED, LENGTH AS REQUIRED TO CONNECT TO ASSOCIATED SWITCH AND PATCH PANEL PORT IN AN ORGANIZED MANNER. PATCH CORDS SHALL BE BLUE IN COLOR. FURNISH TO THE OWNER AN EXTRA 20% OF PATCH CORDS FOR FUTURE USE. REFER TO OTHER PART OF THIS SHEET FOR ADDITIONAL INFORMATION.

11. PROVIDE FIBER PATCH CORDS FOR EACH FIBER TERMINATED. FIBER CONNECTORS SHALL BE "LC" STYLE. REFER TO OTHER PART OF THIS SHEET FOR ADDITIONAL INFORMATION.

12. PROVIDE CABLE MANAGEMENT STRAPS WITH VELCRO TO MANAGE CABLING IN AN ORGANIZED MANNER.

13. TEST ALL NEW FIBER OPTIC AND COPPER CABLING FOR PERFORMANCE TO COMPLY ANSI/TIA 568-C STANDARD. SUBMIT REPORT TO THE OWNER FOR APPROVAL. ALL DEFECTIVE RUNS SHALL BE REPLACED AND RE-TEST TO COMPLY WITH REQUIREMENTS.

14. PROPERLY LABEL ALL NEW CABLING AND FIBER OPTIC AT EACH END WITH OWNER'S EIGHT (8) DIGITS LABELING SYSTEM FORMAT (i.e. 0000-3287). EACH CABLE SHALL HAVE A UNIQUE IDENTIFYING CABLE NUMBER. CREATE AND KEEP RECORD OF CABLING AND PORT LABELING AND SUBMIT TO OWNER FOR THEIR RECORDS AND APPROVAL. CONTACT TOM SULLIVAN, COUNTY IT DIRECTOR AT THE FOLLOWING E-MAIL: TMSulliv@co.mchenry.il.us; PHONE: (815)-334-4474 AND PETER SIBILSKI, NETWORK ENGINEER AT E-MAIL: PJSibilski@co.mchenry.il.us. OWNER WILL PROVIDE PRE-PRINTED LABELS FOR CONTRACTOR USE. THIS ARE THE COUNTS OF COPPER CABLING, CONTRACTOR TO VERIFY EXACT QUANTITIES PRIOR TO PRICE: NEW ETSB AREA: 82 NEW DROPS. NETWORKFORCE: 26 NEW DROPS AND ONE (1) EXISTING. REST OF THE BUILDING OUTSIDE OF ETSB AND NETWORK FORCE SCOPE OF WORK 118 EXISTING DROPS. TOTAL NUMBER OF DROPS 227. TECHNOLOGY CONTRACTOR SHALL INCLUDE UNDER A SEPARATE BID TESTING AND LABELING OF 119 EXISTING DROPS. INCLUDE UNITARY PRICE PER DROP.

15. EXERCISE PROPER CARE WHEN PULLING AND TERMINATING CABLING TO ENSURE NO KINKS OR BREAKS OCCUR. DO NOT EXCEED MAXIMUM MANUFACTURER RECOMMENDATION BENDING RADIUS AND MAXIMUM INSTALLATION TENSION. FOLLOW ANSI/TIA-568-C INSTALLATION GUIDELINES AND CABLE SPECIFICATIONS.

16. ALL PENETRATIONS THRU WALL AND FLOORS SHALL BE DONE WITH CONDUIT SLEEVES WITH END BUSHINGS. AFTER CABLING INSTALLATION FIRE PATCH ALL PENETRATIONS TO RE-STABLISH THE ORIGINAL FIRE RATING OF COMPARTMENT.

17. ALL CROSS CONNECTS AND ACTIVE EQUIPMENT PROVIDED AND INSTALLED BY OWNER.

18. ALL PREMISES WIRING SYSTEM INCLUDING COPPER CABLING, FIBER OPTIC, WORKING STATIONS, JACKS, RACKS, PATCH PANELS, ETC. SHALL BE FROM APPROVED OWNERS MANUFACTURER. PROVIDE EQUIPMENT FROM BERK-TEK AND ORTRONICS. COPPER CABLING AND FIBER OPTIC SHALL BE PROVIDED FROM ORTRONICS PARTNER (SUPPERIOR ESSEX) IN ORDER TO OBTAIN 25 YEAR SYSTEM INSTALLATION WARRANTY.

19. UTILIZED APPROVED MANUFACTURER INSTALLATION TOOLS FOR PROPERLY STRIPPING, PUNCHING, CUTTING, TERMINATING COPPER AND FIBER.

20. OWNER WILL COORDINATE WITH AT&T FOR INSTALLATION OF NEW FIBER OPTIC AND T1 LINES INTO THE 500 BUILDING. CONTRACTOR SHALL FURNISH AND INSTALL ALL ASSOCIATED RACEWAY SYSTEM AND REQUIRED PULL BOXES FOR A COMPLETE INSTALLATION AND OPERATING SYSTEM.

21. CABLING SHALL BE INSTALLED OPEN ONLY ABOVE ACCESSIBLE CEILING. CABLING SHALL BE SUPPORTED WITH J-HOOKS OR O-HOOKS SPACED AT NOT MORE THAN 5ft ON CENTER. UTILIZE CABLE STRAPS FOR ORGANIZING CABLING.

OUTDOOR / INDOOR FIBER OPTIC SCHEDULE

FROM	TO	TYPE	PART#	COLOR	REMARKS
AT&T STREET SITE	BUILDING 500 - ETSB SERVER ROOM	-	-	-	PROVIDED AND INSTALLED BY UTILITY COMPANY AT&T. INSTALLED FIBER IN DEDICATED (1)4"C. PROVIDED FOR THIS PURPOSE. FIBER SHALL BE TERMINATED IN THE NEW ETSB SERVER ROOM RACK DESIGNATED.

HORIZONTAL RUNS CABLE SCHEDULE - CAT-6E RATED ✳

SYSTEM SERVING	CABLE COLOR JACKET	PART#
VOICE/DATA - COUNTY	BLUE	Superior Essex CAT6A Plenum Part Number 6H-272-2B
WIRELESS ACCESS POINT - COUNTY	GREEN	N/A
IP CAMERAS - COUNTY	YELLOW	N/A
VOICE/DATA - ETSB	BLUE	Superior Essex CAT6A Plenum Part Number 6H-272-2B
WIRELESS ACCESS POINT - ETSB	GREEN	Superior Essex CAT6A Plenum Part Number 6H-272-2B
IP CAMERAS - ETSB	YELLOW	N/A

✳ ALL CABLING SHALL BE LABELED AT BOTH ENDS WITH OWNER'S PROVIDED LABELS.

PATCH CORDS SCHEDULE ALL CAT-6E RATED ✳

SYSTEM SERVING	CABLE COLOR JACKET	PART#	AT WORK STATION	AT RACKS STATION
VOICE/DATA - COUNTY	BLUE	ORTRONICS OR-MC6A__-09	5FT	10FT ✳
WIRELESS ACCESS POINT - COUNTY	N/A	N/A	N/A	
IP CAMERAS - COUNTY	N/A	N/A	N/A	
VOICE/DATA - ETSB	BLUE	ORTRONICS OR-MC6A__-09	5FT	15FT ✳
WIRELESS ACCESS POINT - ETSB	BLUE	ORTRONICS OR-MC6A__-09	2FT	15FT ✳
IP CAMERAS - ETSB	N/A	N/A	N/A	

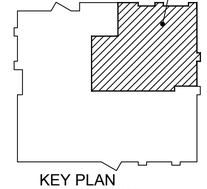
✳ FINAL PATCH CORD LENGTH(S) AT RACK LOCATION SHALL BE LONG ENOUGH FOR CROSS CONNECTIONS. (REFER TO GENERAL NOTES FOR QUANTITIES)

RACKS SCHEDULE (PROVIDE ORTRONICS EQUIPMENT)

1

SERVERS	TOTAL QUANTITY	ITEM	DESCRIPTION	PART NUMBER	DIMENSIONS
RACK 1 & 2	2	FLOOR MOUNTED RACK	CHATSWORTH PRODUCTS	50053-x03	
	2	GROUNDING BAR KIT	COMPATIBLE		
	2	PATCH PANEL	48 PORT CAT-6A RATED PATCH PANEL PRELOADED (QUANTITY PER GENERAL NOTES)	OR-PHD6A48 OR COMPARABLE *	
	4 PER=8	HORIZONTAL CABLE MANAGEMENT	CHATSWORTH PRODUCTS	30531-X19 *	
	3	VERTICAL CABLE MANAGEMENT	CHATSWORTH PRODUCTS	30065-X03	
RACK 3 & 4	2	SERVER RACK ENCLOSURE	HP 42U 600mm X 1075mm ADVANCED SHOCK RACK	H6J66A *	23.54 x 44.3 x 78.97 in
	2	KVM CONSOLE SWITCH	HP 2x1Ex16 KVM IP CONSOLE SWITCH G2 WITH VIRTUAL MEDIA CAC SOFTWARE	AF621A *	
	2	RACKMOUNT CONSOLE	HP LCD8500 1U US RACKMOUNT CONSOLE KIT	AF630A *	
	2	PDU'S	ASSOCIATED MOUNTING BRACKETS	ORTRONICS PW-7212-20-2-1 OR COMPARABLE *	
	1	FIBER PATCH PANEL		OR-FC02U-C OR COMPARABLE *	
	4	FIBER ADAPTER PANEL	PANELS WITH 6-LC DUPLEX (12-FIBER) ADAPTER PANEL, SINGLE MODE. (TOTAL OF 48 FIBERS)	COMPARABLE TO ORTRONICS OR-OFP-LCD12 *	
	2	FIBER ADAPTER PANELS	BLANK INSERT	COMPARABLE TO ORTRONICS OR-OFP-BLANK *	
	24	DUPLEX FIBER PATCH CORDS	2 METERS LONG LC TO LC		
RACK 5 + 6 PROVIDED BY McETSB					

AREA OF WORK



KEY PLAN
500 BUILDING
NORTH

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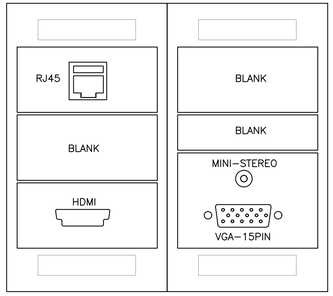
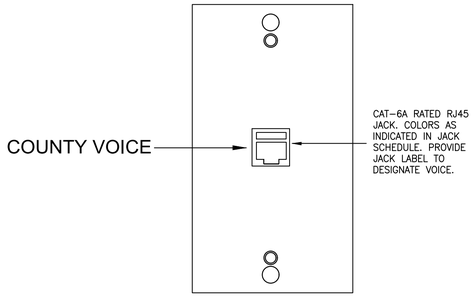


AV

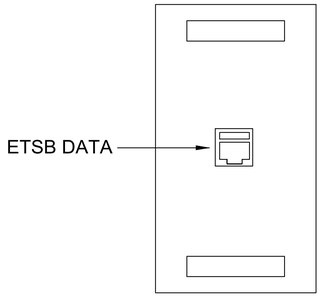
ORTRONICS AV SERIES COVER PLATE

RJ45 JACK SCHEDULE - ALL CAT6A RATED		
SYSTEM SERVING	COLOR	PART#
VOICE/DATA – COUNTY	OFFICE WHITE	TJ6A–xx ✳
WIRELESS ACCESS POINT – COUNTY	N/A	N/A
IP CAMERAS – COUNTY	N/A	N/A
VOICE/DATA – ETSB	GREEN	TJ6A–xx ✳
WIRELESS ACCESS POINT – ETSB	GREEN	TJ6A–xx ✳
IP CAMERAS – ETSB	N/A	N/A

✳ FURNISH AND INSTALL VOICE AND DATA ICONS TO DESIGNATE VOICE AND DATA IN EACH JACK. REFER TO OR–403 SERIES (QUANTITY AS REQUIRED TO COVER ALL WORK STATIONS JACKS INSTALLED AND TO HAVE 20% FOR FUTURE USE)

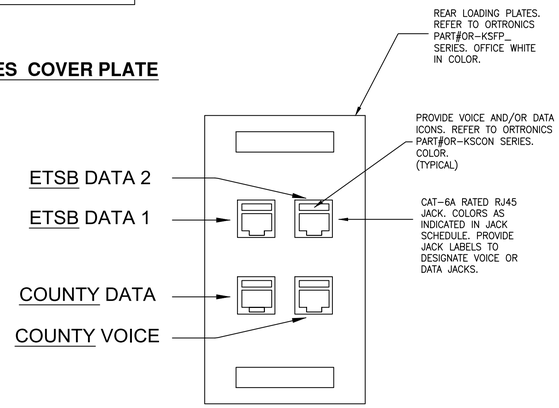


OR–403STJ1WP



C1

OR–40300549



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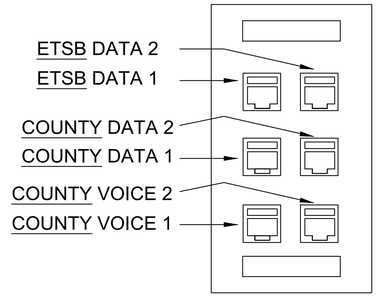
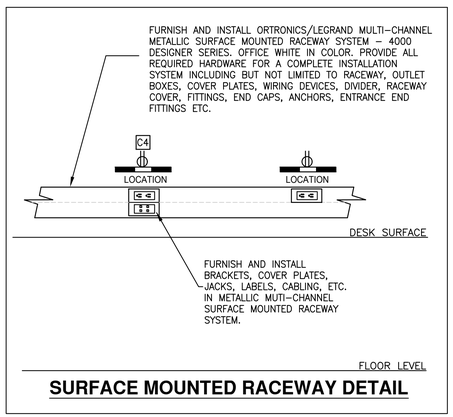


C6

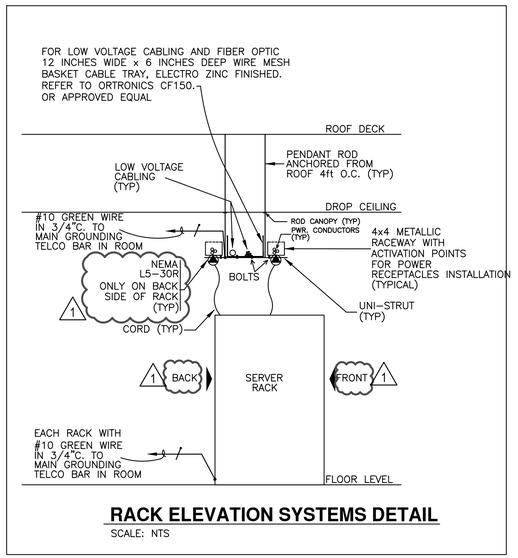
OR–40300545

TRACKJACK WALL PHONE PLATE, STAINLESS STEEL SINGLE GANG, ONE-PORT

TRACKJACK FACEPLATES - WORK STATION COVER PLATES

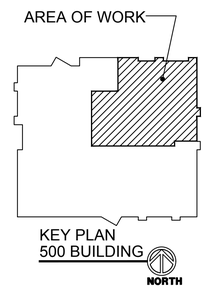


SURFACE MOUNTED RACEWAY DETAIL



RACK ELEVATION SYSTEMS DETAIL

SCALE: NTS



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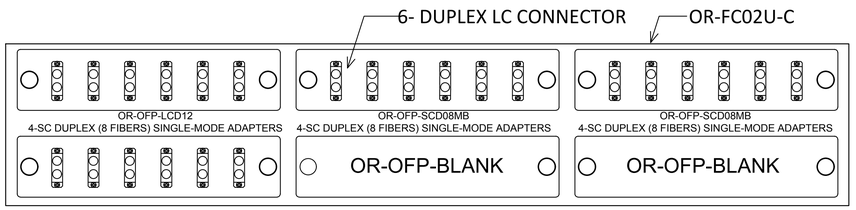
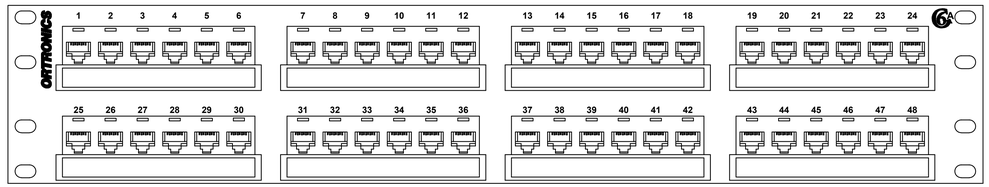
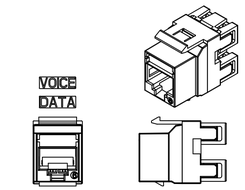


FIBER PATCH PANEL

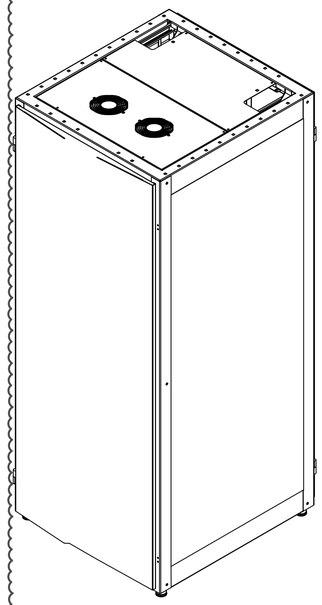


FRONT VIEW

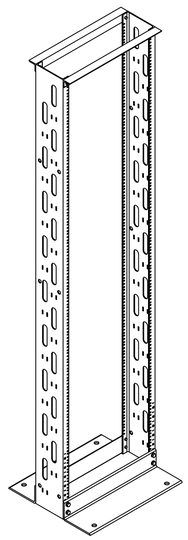
PATCH PANEL
OR-PHD6AU48
"CLARITY" 6A, MODULAR TO 110
PATCH PANEL, W/6 PORT MODULES,
48 PORTS, HIGH DENSITY, T568 A/B, 2 RU.



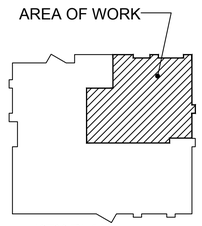
RJ45 JACKS CAT6A RATED
OR-KS6A
KEYSTONE JACK
CATEGORY 6A, 8 POSITION
T568A/B WIRING, VOICE DATA AND ICONS



SERVER RACK
SEE CATALOG FOR FULL DETAILS



TWO POST STANDARD RACK



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EXISTING PANEL PANELBOARD (SURFACE MOUNTED)

PANEL: PANEL 1 — FRAME SIZE: 225A — VOLTAGE: 120 / 208
LOCATION: PRIVATE OFFICE — MAIN CIRCUIT BREAKER 200A — NEW MAIN WITH SHUNT TRIP — PHASE: 3φ
FEEDER: SEE RISER FOR INFORMATION — AIC: 65K AIC — FULL RATED — WIRE: 4W

CKT NO.	BR	P	TYPE C.B.	CIRCUIT DESCRIPTION	PHASE A	PHASE B	PHASE C	CIRCUIT DESCRIPTION	TYPE C.B.	BR	P	CKT NO.
1					0			SPACE	-	20	1	2
3	100	3	-	SUB PANEL IN RESOURCE CENTER CLOSET		0		SPACE	-	1		4
5							0	SPACE	-	1		6
7	20	1	LO.	FIRE ALARM PANEL	0							8
9	20	1	-	ALARM BELLS				ROOFTOP UNIT N.W.	-	40	3	10
11	20	1	-	TELEPHONE RECEPTACLES								12
13	20	1	-	UTILITY RECEPTACLES E. WALL								14
15	20	1	-	PHONE E□UIP.				ROOFTOP UNIT N.E.	-	40	3	16
17	20	1	-	PHONE E□UIP								18
19	20	1	-	PHONE E□UIP				UTILITY ROOM RECEPTACLES W. WALL	-	20	1	20
21	20	1	-	UPS 1				OFFICE 2 □ 3 LIGHTS □ RECEPTACLES	-	20	1	22
23	20	1	-	EXISTING CIRCUIT □				OFFICE 1 □ UTILITY RM. LIGHTS □ RECEPTACLES □	-	20	1	24
25	1		-	SPACE				UPS 2	-	20	1	26
27	1		-	SPACE				SPACE	-	1		28
29	1		-	SPACE				SPACE	-	1		30
31	20	1	-	WORK STATION FLOOR FEED				SPACE	-	1		32
33	20	1	-	WORK STATION FLOOR FEED				SPACE	-	1		34
35	20	1	-	WORK STATION FLOOR FEED				SPACE	-	1		36
37	20	1	-	WORK STATION FLOOR FEED	0	0		SPACE	-	20	1	38
39	20	1	-	WORK STATION FLOOR FEED		0	0	MAIN LIGHTS ROW 5	-	20	1	40
41	20	1	-	WORK STATION FLOOR FEED (OFF)			0	MAIN LIGHTS ROW 6	-	20	1	42
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL AMPERAGE					0.00			-L.O. LOCK OUT				

EXISTING PANELBOARD (SURFACE MOUNTED)

PANEL: PANEL 2 — FRAME SIZE: 225A — VOLTAGE: 120 / 208
LOCATION: PRIVATE OFFICE — MAIN CIRCUIT BREAKER 200A — NEW MAIN WITH SHUNT TRIP — PHASE: 3φ
FEEDER: SEE RISER FOR INFORMATION — AIC: 65K AIC — WIRE: 4W

CKT NO.	BR	P	TYPE C.B.	CIRCUIT DESCRIPTION	PHASE A	PHASE B	PHASE C	CIRCUIT DESCRIPTION	TYPE C.B.	BR	P	CKT NO.
1					0			EXITS □ EM. LIGHTS	-	20	1	2
3	100	3	-	SUB PANEL IN JANITORS ROOM		0		ROOFTOP OUTLETS	-	20	1	4
5									-	1		6
7	20	1	-	OFFICE PART 7-2-604	0							8
9	20	1	-	OFFICE PART 7-2-604				ROOFTOP UNIT S.E.	-	40	3	10
11	20	1	-	OFFICE PART 7-2-604								12
13	20	1	-	OFFICE PART 7-2-604	0							14
15	1			SPACE				ROOFTOP UNIT S.W.	-	40	3	16
17												18
19	40	3	-	ROOF TOP #5								20
21								PARKING LOT POLES □ TIMER	-	30	2	22
23	20	1	-	OFFICE 4				SPACE	-	1		24
25	20	1	-	CLERICAL RECEPT. N.W.				SPACE	-	1		26
27	20	1	-	CLERICAL RECEPT. N.E.				WORK STATION FLOOR FEED	-	20	1	28
29	20	1	-	OFFICE 5 □ 6 RECEPTACLES				WORK STATION FLOOR FEED	-	20	1	30
31	20	1	-	OFFICE 5 □ 6 LIGHTS				WORK STATION FLOOR FEED	-	20	1	32
33	20	1	-	CLERICAL □ OFFICE 5 RECEPTACLES E. WALL				WORK STATION FLOOR FEED	-	20	1	34
35	20	1	-	LIGHTS ROW 4				WORK STATION FLOOR FEED	-	20	1	36
37	20	1	-	LIGHTS ROW 3	0	0		WORK STATION FLOOR FEED	-	20	1	38
39	20	1	-	LIGHTS ROW 1		0	0	WORK STATION FLOOR FEED	-	20	1	40
41	20	1	-	LIGHTS ROW 2			0	WORK STATION FLOOR FEED	-	20	1	42
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL AMPERAGE					0.00			-L.O. LOCK OUT				

NEW SERVICE PANELBOARD (SURFACE MOUNTED)

PANEL: PANEL-3 — FRAME SIZE: 225A — VOLTAGE: 120/208
LOCATION: UTILITY ROOM — MAIN CIRCUIT BREAKER 200A — MAIN WITH SHUNT TRIP — PHASE: 3φ
FEEDER: SEE RISER — AIC: 42K AIC — SERIES RATED — WIRE: 4W

CKT NO.	BR	P	TYPE C.B.	CIRCUIT DESCRIPTION	PHASE A		PHASE B		PHASE C		CIRCUIT DESCRIPTION	TYPE C.B.	BR	P	CKT NO.
1					19760	100					SHUT TRIP POWER	LO.	20	1	2
3	200	3	-	PP-3A			16400	2000			GENERATOR BLOCK HEATER	-	30	1	4
5									20792	1500	GENERATOR BATTERY CHARGER	-	20	1	6
7	20	1	-	(4) VENDOR/TECH CUBBY RECEPTACLES	1600	500					FIRE ALARM BPS	LO.	20	1	8
9	20	1	-	TRAINNING RM, IT MGR. OFFICE RECPTS			360				SPARE	-	20	1	10
11	20	1	-	WORK ROOM GEN. RECPTS					360			-	20	1	12
13	20	1	-	WORK ROOM SURF. MTD. RACEWAY RECPTS	1000						↓	-	20	1	14
15	20	1	-	WORK ROOM SURF. MTD. RACEWAY RECPTS			1000				↓	-	20	1	16
17		1	-	WORK ROOM SURF. MTD. RACEWAY RECPTS					1000		SPACE	-		1	18
19	20	1	-	ETSB RECEPTION DESK BY MDF RECEPTS	800						↓	-			20
21	20	1	-	SPARE							↓	-		1	22
23									1576	1576					24
25	30	3	-	SERVER ROOM CU-2	1576	1576					SERVER ROOM CU-1	-	30	3	26
27							1576	1576							28
29	20	1	-	SPARE						200	EXTERIOR SERVICE RECEPTACLE N/E WALL	20		1	30
TOTAL CONNECTED LOADS (VA)					24736	2176	19336	3576	23728	3276					
TOTAL CONNECTED LOADS (VA)					26912		22912		27004						
TOTAL AMPERAGE					213.25						-L.O. LOCK OUT				

NEW NQ PANELBOARD (SURFACE MOUNTED)

PANEL: PP-3A — FRAME SIZE: 225A — VOLTAGE: 120/208
LOCATION: UTILITY ROOM EXISTING PHONE DATA ROOM — MAIN CIRCUIT BREAKER 200A — PHASE: 3φ
FEEDER: SEE RISER FOR INFORMATION — AIC: 42K AIC — FULL RATED — WIRE: 4W

CKT NO.	BR	P		CIRCUIT DESCRIPTION	PHASE A		PHASE B		PHASE C		CIRCUIT DESCRIPTION		BR	P	CKT NO.
1	20	1		DUPLEX SERVER RACK (RACK-1 □ 2)	1200	1200					DUPLEX SERVER RACK (RACK-1 □ 2)	-	20	1	2
3	30	1		SERVER RACK (RACK -3) SPEC. RECPT. UPS			2880	2880			SERVER RACK (RACK -3) SPEC. RECPT. UPS	-	30	1	4
5	20	1		DUPLEX SERVER RACK (RACK-3)					1200	1200	DUPLEX SERVER RACK (RACK-3)	-	20	1	6
7	30	1	-	SERVER RACK (RACK -4) SPEC. RECPT. UPS	2880	2880					SERVER RACK (RACK -4) SPEC. RECPT. UPS	-	30	1	8
9	20	1	-	DUPLEX SERVER RACK (RACK-4)			1200	1200			DUPLEX SERVER RACK (RACK-4)	-	20	1	10
11	30	1	-	SERVER RACK (RACK -5) SPEC. RECPT. UPS					2880	2880	SERVER RACK (RACK -5) SPEC. RECPT. UPS	-	30	1	12
13	20	1	-	DUPLEX SERVER RACK (RACK-5)	1200	1200					DUPLEX SERVER RACK (RACK-5)	-	20	1	14
15	30	1		SERVER RACK (RACK -6) SPEC. RECPT. UPS			2880	2880			SERVER RACK (RACK -6) SPEC. RECPT. UPS	-	30	1	16
17	20	1	-	SPARE							SPARE	-	20	1	18
19	20	1	-									-	20	1	20
21	20	1	-									-	20	1	22
23	20	1	-									-	20	1	24
25	20	1	-									-	20	1	26
27	20	1	-									-	20	1	28
29	20	1	-									-	20	1	30
31	20	1	-		1000	400					SERVER RM RECEPTACLE NORTH WALL	-	20	1	32
33	20	1	-	PHONE BOARD □UAD			1000	400			RECEPTACLE NORTH WALL	-	20	1	34
35	20	1	-	PHONE BOARD □UAD					1000	200	SERVER RM RECPT W. WALL BELOW PANEL	-	20	1	36
37	20	1	-	SPARE	0						SERVER RM RECEPTACLE SOUTH WALL	-	20	1	38
39	20	1	-				0				SERVER RM RECEPTACLE SOUTH WALL	-	20	1	40
41	20	1	-						0	0	SPARE	-	20	1	42
43	20	1	-		0						SPARE	-	20	1	44
45	20	1	-				0				SPARE	-	20	1	46
47	20	1	-	AC-1 □ AC-2 CONDENSATE PUMP					200	672	SERVER RM LIGHTS	-	20	1	48
49	15	2	-	SERVER ROOM AC-2	300	300					SERVER ROOM AC-1	-	15	2	50
51							300	300							52
53	20	1	-	SPARE					0	0	SPARE	-	20	1	54
TOTAL CONNECTED LOADS (VA)					6580	5980	8260	7660	5280	4952					
TOTAL CONNECTED LOADS (VA)					12560		15920		10232						
TOTAL AMPERAGE					107.45						-L.O. LOCK OUT				

EXISTING PANELBOARD (FLUSH MOUNTED)

PANEL: SUB 1 — FRAME SIZE: 100A — VOLTAGE: 120 / 208
LOCATION: STORAGE — MLO X — PHASE: 3φ
FEEDER: SEE RISER FOR INFORMATION — AIC: 10K AIC — FULL RATED — WIRE: 4W

CKT NO.	BR	P	TYPE C.B.	CIRCUIT DESCRIPTION	PHASE A	PHASE B	PHASE C	CIRCUIT DESCRIPTION	TYPE C.B.	BR	P	CKT NO.
1	20	1	-	RECEPTION COUNTER RECEPTACLES	0			RESOURCE CENTER LIGHTS	-	20	1	2
3	20	1	-	RECEPTION LIGHTS		0	0	CONF. RM. 1 LIGHTS	-	20	1	4
5	20	1	-	RECEPTION COUNTER RECEPTACLES			0	CONF. RM. 1 □ RESOURCE CENTER RECEPTACLES COMMON WALLS	-	20	1	6
7	20	1	-	RESOURCE CENTER RECEPTACLE IN FLOOR	0			CONF. RM 1 □ 2 RECEPTACLES (N. WALL □ COMMON)	-	20	1	8
9	20	1	-	RESOURCE CENTER RECEPTACLE N. WALL				CONF. ROOM 2 LIGHTS	-	20	1	10
11	20	1	-	RESOURCE CENTER RECEPTACLE IN FLOOR				CONF. RM. 2 RECEPTACLES E. □ S. WALL	-	20	1	12
13	20	1		HEARING OFFICER LIGHTS □ RECEPTS. S. □ W.	0			U.I. PROFILING □ RESOURCE CENTER RECEPTS. W. WALL		20	1	14
15	20	1		HEARING OFFICER □ OFFICE 7 RECEPTACLES ON COMMON WALL				U.I. PROFILING RECEPTACLES	-	20	1	16
17	20	1	-	OFFICE 7 LIGHTS □ RECEPTS. N. □ E.				SPARE	-	20	1	18
19	20	1	-	RECEPTION RECEPTACLE N. WALL				N.W. LOBBY OUTLETS	-	20	1	20
21	1		-	SPACE				CONF. ROOM OUTLET	-	20	1	22
23	1		-					FRONT □ RESOURCE AUTO DOORS	-	30	1	24
25	1		-					SPACE	-	1		26
27	1		-						-	1		28
29	1		-						-	1		30
31	1		-						-	1		32
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL AMPERAGE					0.00			-L.O. LOCK OUT				

EXISTING PANELBOARD (FLUSH MOUNTED)

PANEL: SUB 2 — FRAME SIZE: 100A — VOLTAGE: 120 / 208
LOCATION: JANITOR'S CLOSET — MLO X — PHASE: 3φ
FEEDER: FED FROM S.E. PANEL — AIC: 10K AIC — FULL RATED — WIRE: 4W

CKT NO.	BR	P	TYPE C.B.	CIRCUIT DESCRIPTION	PHASE A	PHASE B	PHASE C	CIRCUIT DESCRIPTION	TYPE C.B.	BR	P	CKT NO.
1	20	1	-	EXITS □ EM. LIGHTS	0			FOYER □ HALL LIGHTS	-	20	1	2
3	20	1	-	CONF. ROOM 3 LIGHTS		0	0	BATHROOM LIGHTS	-	20	1	4
5	20	1	-	SCAN ROOM □ BREAK ROOM LIGHTS			0	VESTIBULE RECEPTACLE	-	20	1	6
7	20	1	-	SCAN RM RECEPTACLES W. WALL □ S. WALL	0			MEN'S GFI RECEPTACLE	-	20	1	8
9	20	1	-	SCAN RM. RECEPTACLES S. WALL				ENTRY LIGHTS □ TIMER	-	20	1	10
11	20	1	-	SCAN RM. RECEPTACLES N. WALL □ W. WALL				BREAK ROOM REFRIG. RECEPTACLE	-	20	1	12
13					0			BREAK ROOM COUNTER RECEPTACLE	-	20	1	14
15	30	2	-	WATER HEATER				CONF. RM. 3 RECEPTACLES W. □ S. WALLS	-	20	1	16
17	20	1	-	COFFEE BAR				WOMEN'S GFI RECEPTACLE	-	20	1	18
19	20	1	-	COFFEE BAR				CONF. RM. 3 RECEPTACLES E. WALL	-	20	1	20
21	20	1	-	BATHROOMS □ EMPLOYEE DOORS				WATER COOLER	-	20	1	22
23	1			SPACE				SPACE				24
25	1											26
27	1											28
29	1											30
31	1											32
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL CONNECTED LOADS (VA)					0	0	0					
TOTAL AMPERAGE					0.00			-L.O. LOCK OUT				

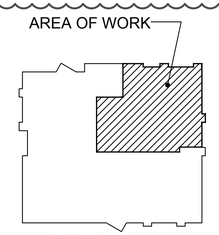
EXISTING PANEL NOTES:

1. ELECTRICAL CONTRACTOR SHALL FIELD VERIFY EXACT CIRCUIT NUMBER INFORMATION PRIOR TO CONNECT CIRCUITS TO THE PANEL. CIRCUIT NUMBER INFORMATION HAVE BEEN GIVEN ONLY FOR INFORMATION PURPOSES BASED ON EXISTING PANEL CARD DIRECTORY. MODIFY CIRCUIT PANEL CONNECTIONS AND INFORMATION AS REQUIRED TO ACHIEVE THE PURPOSE.
2. ELECTRICAL CONTRACTOR SHALL PROVIDE NEW UPDATED PANEL CARD DIRECTORY IN EACH PANEL AFTER ALL CONNECTIONS HAVE BEEN COMPLETED. INSIDE PANEL EXISTING MARKER WRITING SHALL BE CLEANED SO THAT NOT BLACK MARKER IS VISIBLE. ALL NOT VALID INFORMATION SHALL BE DELETED.
3. UTILIZE EXISTING EMPTY CIRCUITS/MODIFY CIRCUIT INFORMATION GIVEN AS REQUIRED FOR CONNECTION OF LOADS.
4. PROVIDE UPDATED RECORD DOCUMENTS AFTER CONSTRUCTION IS DONE FOR FUTURE USE.
5. FURNISH AND INSTALL NEW BREAKERS COMPATIBLE WITH THE EXISTING PANEL AS REQUIRED.

PLAN NOTES

1. FURNISH AND INSTALL NEW LOCK–OUT IN EXISTING BREAKER.

AREA OF WORK



KEY PLAN
500 BUILDING
NORTH

REVISION		BY
BID/PERMIT ISSUE	7-22-15	
BID/PERMIT ISSUE	4-20-16	
REVIEW ISSUE	5-20-16	

DRAWINGS:
PANEL BOARD
SCHEDULES

McHenry County Government
911 ETSB Relocation
500 Russel Court
Woodstock, IL 60098

CBJ ARCHITECTS
PROFESSIONAL CORPORATION

rtm engineering consultants
3 Executive Court, Unit 4,
South Barrington, Illinois 60010
rtmassociates.com | 847.756.4180

JOB:	15-023
DATE:	7/22/15
SCALE:	as noted
DRAWN:	MH/JD
CHECKED:	MH/JD/JW

LICENSED PROFESSIONAL ENGINEER — MANUEL GERARDO HERNANDEZ — 062-064529 — STATE OF ILLINOIS

NORTH

SHEET E-8 CD'S

A. <u>GENERAL RE□UIREMENTS</u>

1. SCOPE OF WORK

a. FURNISH AND INSTALL A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE CONTRACT DRAWINGS. THE INSTALLATION SHALL BE COMPLETE IN EVERY DETAIL ESSENTIAL TO PROPER AND SATISFACTORY OPERATION, READY FOR USE AND IN CONDITION FOR SERVICE WHEN DELIVERED TO THE OWNER. ALL MANUFACTURED ITEMS SHALL BE ERECTED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS AND RECOMMENDATIONS EXCEPT AS OTHERWISE SPECIFIED HEREIN.

b. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING/FIRE PROTECTION DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.

2. APPROVALS

OBTAIN APPROVALS FROM INSPECTION AUTHORITIES FOR ELECTRICAL INSTALLATIONS REQUIRING SPECIFIC APPROVAL. PRINTS OF THE ELECTRICAL DRAWINGS, FOR THIS PURPOSE, WILL BE FURNISHED UPON REQUEST. REQUIRED WIRING DIAGRAMS SHALL BE PROVIDED AND SUBMITTED FOR APPROVAL BY THE CONTRACTOR. COPIES OF THE FINAL APPROVALS SHALL BE OBTAINED BEFORE COMMENCEMENT OF RELATED WORK.

3. CODES AND STANDARDS

a. THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.

b. MATERIALS, EQUIPMENT AND INSTALLATION SHALL CONFORM TO LOCAL CODE AND STANDARDS, THE NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA), UNDERWRITER'S LABORATORIES (UL), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND ALL LAWS AND ORDINANCES OF LOCAL, STATE AND FEDERAL GOVERNING AGENCIES.

4. FEES

CONTRACTOR SHALL PAY ALL FEES AND OTHER CHARGES INCIDENTAL TO THE ELECTRICAL WORK. IN ADDITION CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING REQUIRED INSURANCE, INSPECTIONS, APPLICATIONS, PERMITS, LICENSES, ETC. RELATING TO THE ELECTRICAL WORK.

5. CONTRACTOR'S LIABILITY

a. THE CONTRACTOR SHALL AGREE THAT THE OWNER, THE ARCHITECT AND THE ENGINEER SHALL NOT IN ANY FORM OR MANNER BE ANSWERABLE OR ACCOUNTABLE FOR ANY VIOLATION OF ORDINANCES, CODES OR REGULATIONS OF ANY AUTHORITIES, UTILITIES, INSURANCE COMPANIES AND GOVERNMENT AGENCIES HAVING JURISDICTION, OR FOR ANY ACCIDENTS, INJURY, LOSS OR DAMAGE TO ANY PERSON OR PERSONS AND THEIR PROPERTIES ARISING FROM NEGLIGENCE OR CARELESSNESS ON THE PART OF THE CONTRACTOR (NOR ANYONE IN HIS EMPLOY), ANY OF HIS SUBCONTRACTORS, OR ANY OTHER PARTIES OR AGENTS TO THIS CONTRACT.

b. THE CONTRACTOR SHALL AGREE TO MAKE GOOD TO SAID OWNER, ARCHITECT, AND ENGINEER ANY LOSS, DAMAGE OR EXPENSE SO INCURRED, TOGETHER WITH REASONABLE ATTORNEY'S FEES.

c. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SHOP DRAWING SUBMITTALS WHICH SHALL INCLUDE, BUT NOT BE LIMITED TO: PRODUCT DATA AND EQUIPMENT SPECIFICATIONS SHEETS, SCHEMATIC DIAGRAMS, WIRING DIAGRAMS, SIZES, MOUNTING DETAILS (WITH REQUIRED ELEVATIONS), TECHNICAL DESCRIPTIONS OF COMPONENTS, TEST REPORTS, CERTIFICATES, OPERATING AND MAINTENANCE MANUALS, AND PROPER CALCULATIONS TO ENSURE SPECIFIED PERFORMANCE OF THE SYSTEMS. NO EQUIPMENT SHALL BE ORDERED, PURCHASED, OR INSTALLED PRIOR TO APPROVAL OF THE SUBMITTALS AND SHOP DRAWINGS.

d. THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

e. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED TO THEM IMMEDIATELY UPON THEIR RECEIPT AND SHALL PROMPTLY NOTIFY THE OWNER OF ANY DISCREPANCIES. FIGURES MARKED ON DRAWINGS SHALL IN GENERAL BE FOLLOWED IN PREFERENCE TO SCALE MEASUREMENTS. LARGE SCALE DRAWINGS SHALL IN GENERAL GOVERN SMALL SCALE DRAWINGS. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY THE FIGURES BEFORE LAYING OUT THE WORK AND WILL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY.

6. EXAMINATION OF DRAWINGS AND SITE

a. THE ELECTRICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH MECHANICAL, PLUMBING, ARCHITECTURAL, AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, ROUGH-IN LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE ELECTRICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE POWER TO OTHER TRADES EQUIPMENT AND HARDWARE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROLS, FIRE AND SECURITY SYSTEMS, MOTORIZED DOORS, DAMPERS, LIFTS, AND OTHER SYSTEMS. UNLESS SPECIFICALLY NOTED OTHERWISE ON THE ELECTRICAL PLANS, THE ELECTRICAL CONTRACTOR SHALL FURNISH ALL SAFETY DISCONNECT SWITCHES TO MECHANICAL EQUIPMENT.

b. BY THE ACT OF HAVING SUBMITTED A BID, THE CONTRACTOR SHALL DEEM TO HAVE MADE SUCH AN EXAMINATION AND SHALL HAVE ACCEPTED THE PREVAILING CONDITIONS. NO SUBSEQUENT ALLOWANCE WILL BE MADE TO CONTRACTOR BECAUSE OF HIS NEGLECT IN COMPLYING WITH THE FOREGOING.

7. GUARANTEE

a. THE CONTRACTOR SHALL FURNISH THE OWNER WITH A WRITTEN GUARANTEE COVERING ALL OF THE EQUIPMENT AND INSTALLATION FURNISHED UNDER THE CONTRACT AGAINST FAILURE FOR A MINIMUM PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE ENTIRE PROJECT. THE CONTRACTOR SHALL ASSUME THE LIABILITY OF ALL EQUIPMENT AND INSTALLATION COVERED IN THIS CONTRACT, INCLUDING ALL COSTS OF LABOR, MATERIALS AND EQUIPMENT RENTALS REQUIRED.

b. ANY ADDITIONAL COSTS INCURRED IN THE REPAIR AND RECONSTRUCTION OF ALL OTHER INSTALLATIONS NOT PART OF THIS CONTRACT BUT WHICH MIGHT BE DAMAGED BY THE EQUIPMENT GUARANTEED OR AFFECTED BY THE REPAIR WORK COVERED UNDER THE GUARANTEE, SHALL BE PART OF THIS GUARANTEE.

8. INTERPRETATION OF THE DOCUMENTS

a. CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.

b. NOT ALL EXISTING CONVENIENCE RECEPTACLES, WALL SWITCHES, LIGHTS, ETC., AND OTHER ELECTRICAL EQUIPMENT ARE SHOWN ON THE PLANS. A SURVEY OF THE JOB SITE MUST BE MADE TO DETERMINE THE EXTENT OF EXISTING ELECTRICAL EQUIPMENT.

c. OMISSIONS FROM THE DRAWINGS, SPECIFICATION NOTES, OR DETAILS OF WORK WHICH ARE NECESSARY TO CARRY OUT THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, OR WHICH ARE CUSTOMARILY PERFORMED, SHALL NOT RELIEVE THE CONTRACTOR FROM PERFORMING SUCH OMITTED DETAILS OF THE WORK BUT THEY SHALL BE PERFORMED AS IF FULLY AND CORRECTLY SET FORTH AND DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS.

9. ELECTRICAL DRAWINGS

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC. THE LOCATION OF RACEWAY SYSTEM COMPONENTS IS SCHEMATIC. THE EXACT LOCATION OF RACEWAY SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE DIMENSIONS OF THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, AND VERIFY CLEARANCES AND ROUGH-INS PRIOR TO STARTING WORK.

10. SHOP DRAWINGS AND SUBMITTALS:

a. SUBMIT COMPLETE SHOP DRAWINGS FOR MANUFACTURED EQUIPMENT: CLEARLY MARK SUBMISSIONS FOR LIGHTING FIXTURES WITH THE TYPE LETTER OR LETTERS ASSIGNED TO EACH FIXTURE IN THE FIXTURES SCHEDULE AND INCLUDE A GRAPH SHOWING TYPICAL LIGHT DISTRIBUTION AND A TABLE OF CERTIFIED UTILIZATION FACTORS. ALL FIXTURE SUBMITTALS SHALL BE IN BROCHURE FORM.

b. PROVIDE SUFFICIENT INFORMATION AND DATA REQUIRED FOR THE ARCHITECT TO REASONABLY DETERMINE PROPER COMPLIANCE WITH THE SPECIFICATIONS.

c. IN ADDITION, THE CONTRACTOR SHALL SUBMIT A COMPLETE LIST OF MATERIALS PROPOSED, GIVING THE MANUFACTURER'S NAME, CATALOG NUMBER, OR OTHER MEANS OF IDENTIFICATION TO SHOW COMPLIANCE WITH THESE SPECIFICATIONS.

d. REVIEW OF SHOP DRAWINGS IS RENDERED AS A SERVICE ONLY, AND SHALL NOT BE CONSIDERED AS A GUARANTEE OF MEASUREMENTS OR BUILDING CONDITIONS, NOR SHALL IT BE CONSTRUED AS RELIEVING THE CONTRACTOR OF BASIC RESPONSIBILITY UNDER THE CONTRACT. SHOP DRAWINGS SHALL BE SUBMITTED ON, BUT NOT BE LIMITED TO THE FOLLOWING SYSTEMS: LIGHT FIXTURE BALLASTS AND ALL ASSOCIATED LIGHT FIXTURES HARDWARE, WIRING DEVICES, COVER PLATES, PANELS, BEAKERS, DATA/VOICE JACKS, CABLE, FIRE ALARM DEVICES, ETC.

B. <u>MATERIAL AND E□UIPMENT</u>

1. PROPOSALS SHALL BE BASED UPON THE FURNISHING OF ALL MATERIALS AND EQUIPMENT AS SPECIFIED, WHICH IN EVERY CASE SHALL BE NEW AND OF THE BEST GRADE AND QUALITY AVAILABLE. EQUIPMENT AND MATERIALS SHALL BE WITHOUT BLEMISH OR DEFECT AND SHALL NOT BE USED FOR TEMPORARY POWER PURPOSES, WITHOUT THE ENGINEER'S PRIOR WRITTEN AUTHORIZATION.

2. ALL ITEMS OF EQUIPMENT OF ONE TYPE, EXCEPT CONDUIT, CONDUIT FITTINGS, OUTLET BOXES, WIRE, AND CABLE, SHALL BE THE PRODUCT OF ONE MANUFACTURER THROUGHOUT UNLESS OTHERWISE INDICATED OR ACCEPTED BY THE ENGINEER.

3. RACEWAYS

a. THE CONTRACTOR SHALL PROVIDE ALL CONDUITS SERVING ALL EQUIPMENT, INCLUDING BUT NOT LIMITED TO LIGHTING, RECEPTACLES, HEATING, AIR CONDITIONS, PLUMBING EQUIPMENT, TELEPHONE AND ELECTRICAL EQUIPMENT.

b. ALL PANEL AND SERVICE FEEDERS SHALL BE IN RIGID GALVANIZED STEEL CONDUIT (RGSC). ALL CONDUIT SHALL BE UL LABELED. EMT SHALL BE ACCEPTABLE FOR BRANCH CIRCUITS RUN ABOVE SUSPENDED CEILINGS OR CONCEALED IN INTERIOR PARTITIONS. EMT CONNECTORS SHALL BE COMPRESSION TYPE. CONDUIT UNDER SLAB ON GRADE SHALL BE GALVANIZED RIGID STEEL.

c. MINIMUM SIZES OF CONDUIT SHALL BE 3/4" FOR INDIVIDUAL LIGHTING FIXTURE CONNECTION OR TO INDIVIDUAL LIGHT SWITCHES AND FOR ALL OTHER LOCATIONS. IF HVAC CONTROL WIRING IS REQUIRED TO BE RUN IN CONDUIT, IT SHALL BE MINIMUM OF 1/2" SIZE, UNLESS NOTED OTHERWISE ON DRAWINGS. ALL IN/UNDER FLOOR SLAB CONDUIT SHALL BE OF MINIMUM 1"C SIZE.

d. SUPPORT ALL CONDUIT, INCLUDING SEISMIC AND SWAY BRACING.

e. GENERALLY, ALL CONDUIT SHALL BE CONCEALED EXCEPT FOR UNFINISHED AREAS, SUCH AS EQUIPMENT ROOMS. EXPOSED CONDUIT SHALL BE ALLOWED ONLY AS NOTED ON PLAN AND AS APPROVED BY THE OWNER'S CONSTRUCTION MANAGER. PAINTING OF CONDUITS WILL BE BY GENERAL CONTRACTOR.

f. FLEXIBLE METAL CONDUIT

1. FLEXIBLE METAL CONDUIT AND THEIR ASSOCIATED FITTINGS ARE TO BE LISTED FOR GROUNDING. A GREEN GROUNDING CONDUCTOR SHALL BE PROVIDED. ALL CONNECTORS ARE TO BE OF A NEMA APPROVED TYPE.

2. FLEXIBLE CONDUIT SHALL BE ACCEPTABLE FOR THE FOLLOWING APPLICATIONS AND SHALL NOT EXCEED 6 FEET IN LENGTH.

A. FINAL CONNECTIONS TO OUTLETS ON VIBRATING EQUIPMENT.
B. FINAL INTER-CONNECTIONS BETWEEN LIGHT FIXTURES.
C. FINAL CONNECTIONS WHERE RIGID CONDUIT IS NOT PRACTICAL.

g. PROVIDE POLY PULL-STRING IN ALL EMPTY CONDUITS.

h. HOME RUNS AND MAIN CONDUIT RUNS ARE TO BE HELD TIGHT TO STRUCTURE ABOVE OR AS REQUIRED TO ALLOW PROPER CLEARANCE OF CEILING AND OTHER TRADES WORK.

i. ALL CONDUITS SHALL BE RUN PARALLEL OR PERPENDICULAR TO COLUMN LINES.

j. ALL CONDUITS MUST BE SIZED PER THE CODE.

k. COMPLETE CONDUIT WORK ABOVE SUSPENDED CEILING SHALL BE PLENUM RATED.CONDUIT AND FITTINGS INSTALLED FOR MOTOR CIRCUITS, FEEDER CIRCUITS, IN CONCRETE SLABS ON GRADE, EXPOSED TO WEATHER, BURIED UNDERGROUND OR EXPOSED WHERE SUBJECT TO MECHANICAL INJURY SHALL BE RIGID STEEL (RGS) OR INTERMEDIATE METAL CONDUIT (IMC) COMPLYING ANSI C80.1. FITTINGS SHALL BE THREADED.

l. CONDUIT AND FITTINGS INSTALLED FOR CONCEALED INTERIOR WORK FOR LIGHTING/ RECEPTACLES/ BRANCH CIRCUITS, FIRE ALARM, PAGING, SIGNAL, AND LOW VOLTAGE CIRCUITS SHALL BE

m. ELECTRICAL METAL TUBING (EMT) COMPLYING WITH NEMA FB C80.3. EMT FITTINGS SHALL BE THE DIE CAST COMPRESSION TYPE. SET SCREW FITTINGS ARE NOT PERMITTED.

n. FINAL CONNECTIONS TO MOTORS, TRANSFORMERS, AND VIBRATING EQUIPMENT SHALL BE MADE WITH LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC).

o. RACEWAYS SHALL BE SECURELY SUPPORTED BY APPROVED METHODS AT FIVE FOOT (5') INTERVALS.

p. PULL BOXES ARE REQUIRED IN RUNS OVER 100 FEET, WHEN MORE THAN THE EQUIVALENT OF THREE (3) 90° BENDS ARE USED, AND AS SHOWN ON DRAWINGS.

5. OUTLET BOXES

a. UNLESS OTHERWISE NOTED, OUTLET BOXES SHALL BE GALVANIZED PRESSED STEEL, KNOCKOUT TYPE, WITH SUITABLE PLASTER RINGS AND COVERS OR PLATES.

b. UNUSED KNOCKOUT HOLES SHALL REMAIN CLOSED AND THOSE OPENED BY ERROR SHALL BE CLOSED WITH SNAP-IN BLANKS.

c. OUTLET BOXES SHALL NOT BE SMALLER THAN REQUIRED BY CODE FOR THE NUMBER AND SIZE OF WIRES TO BE INSTALLED.

d. OUTLET BOX AND COVE LOCATED ABOVE SUSPENDED CEILING SHALL BE PLENUM RATED.

e. OUTLET BOX MANUFACTURERS SHALL BE APPLETON, GARVIN, RACO (HUBBELL) & STEEL CITY.

f. FLOOR BOXES: PROVIDE SYSTEMS PER DRAWINGS.

6. WIRING

a. CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS SHALL BE COPPER AND THE AWG SIZE AND TYPE AS SHOWN ON DRAWINGS MINIMUM WIRE SIZE SHALL BE #12. THE CONDUCTORS SHALL HAVE 600 VOLT INSULATION, TYPE THWN OR THHN.

b. MINIMUM WIRE SIZE – 20 AMP. BRANCH CIRCUIT SHALL BE AWG LISTED SIZE PER DISTANCE SHOWN BELOW. DISTANCE SHALL BE MEASURED FROM THE PANELBOARD CIRCUIT BREAKER TO THE FURTHEST OUTLET.

1. #12 LESS THAN 80 FEET. (AT 120V)
2. #10 OVER 80 FEET. (AT 120V)

c. CONDUCTORS SHALL BE STRANDED FOR SIZES #10AWG AND LARGER.

d. ALUMINUM CONDUCTORS ARE NOT PERMITTED.

e. ALL WIRING SHALL BE IN CONDUIT.

f. WIRE CONNECTORS SHALL BE EQUAL TO "SCOTCH LOCK" FOR #10 AWG WIRE AND SMALLER AND EQUAL TO T & B "LOCKTIGHT" FOR #6 AWG AND LARGER. EQUALS BY BUCHANAN OR IDEAL ARE ACCEPTABLE.

g. ALL WIRING TO BE COLOR-CODED AS FOLLOWS:

120/208 VOLT SYSTEM

NEUTRAL - WHITE
PHASE A OR L1 - BLACK
PHASE B OR L2 - RED
PHASE C OR L3 - BLUE
GROUND - GREEN

6. JUNCTION AND PULL BOXES

a. PROVIDE JUNCTION BOXES, PULL BOXES, CABLE SUPPORTS, AND WIREWAYS AS REQUIRED FOR PROPER INSTALLATION OF THE ELECTRICAL WORK, WHETHER OR NOT SPECIFICALLY SHOWN ON THE DRAWINGS. COVERS SHALL BE ACCESSIBLE. SMALL JUNCTION BOXES SHALL BE SIMILAR TO OUTLET BOXES.

b. PULL BOXES, CABLE SUPPORT BOXES, AND LARGE JUNCTION BOXES FOR INDOOR USE SHALL BE MADE OF CODE GAUGE STEEL. COVERS SHALL BE HELD IN PLACE WITH STAINLESS STEEL SCREWS. PAINT INTERIOR AND EXTERIOR SURFACES WITH RUST-INHIBITIVE PAINT.

c. JUNCTION BOX AND PULL BOX LOCATED ABOVE SUSPENDED CEILING SHALL BE PLENUM RATED.

d. PULL AND JUNCTION BOXES AND COVERS SHALL BE FABRICATED FROM GALVANIZED NEC GAGE SHEET STEEL. OUTLET BOXES TO BE OF THE HOT-DIPPED GALVANIZED, PRESSED STEEL, KNOCKOUT TYPE. BOXES SHALL GENERALLY BE 4 INCHES SQUARE EXCEPT WHERE NOTED OTHERWISE.

e. UNUSED KNOCKOUT HOLES SHALL REMAIN CLOSED AND THOSE OPENED BY ERROR SHALL BE CLOSEDWITH SNAP-IN BLANKS.

7. SLEEVES

a. THE CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH IT'S RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR.

b. UNLESS OTHERWISE NOTED, ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, "3M" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THE FIRE RATING OF THE FLOOR OR WALL. CONFORM TO UL ASSEMBLY RATING OF FLOOR OR WALL.

c. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS AND PARTITIONS SHALL BE STANDARD WEIGHT BLACK STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL CONDUIT. SLEEVES SHALL BE NO. 22.

8. TESTING AND INSPECTION

a. THE ELECTRICAL CONTRACTOR SHALL THOROUGHLY TEST THE ENTIRE ELECTRICAL SYSTEM FOR GROUNDS, SHORTS AND PROPER GROUNDING RESISTANCE. A MAXIMUM OF 25 OHMS RESISTANCE FROM NEUTRAL CONDUCTOR AND CONDUIT TO EARTH GROUND SHALL BE PERMITTED. ONLY A GROUND RESISTANCE MEASURING METER OF APPROVED TYPE SHALL BE USED. A COMMON OHM METER IS NOT ACCEPTABLE.

b. THE ELECTRICAL CONTRACTOR SHALL SEE THAT LOCAL INSPECTION AUTHORITIES ARE NOTIFIED WHEN INSPECTIONS ARE REQUIRED BY CODE AND SHALL GIVE ALL NECESSARY ASSISTANCE TO THE INSPECTOR WHEN HE IS MAKING AN INSPECTION.

c. THE ELECTRICAL CONTRACTOR WILL SATISFY ALL REGULATIONS HAVING JURISDICTION ON THIS PROJECT.

9. WIRING DEVICES

a. THIS CONTRACTOR SHALL FURNISH AND INSTALL SWITCHES AND RECEPTACLES AS SHOWN ON THE DRAWINGS AND NECESSARY FOR A COMPLETE INSTALLATION. COLOR OF DEVICES AND PLATES SHALL BE AS DIRECTED BY ARCHITECT. THE DEVICES SHALL BE OF THE TYPES AND RATINGS LISTED, OR EQUALS BY PASS & SEYMOUR, HUBBELL OR LEVITON. WEATHERPROOF GFI RECEPTACLES SHALL BE INSTALLED WHERE SHOWN ON DRAWINGS OR AS REQUIRED BY CODE.

1. TOGGLE SWITCHES: 20A-120V COMMERCIAL SPECIFICATION GRADE
2. DUPLEX RECEPTACLES: 20A-125V COMMERCIAL SPECIFICATION GRADE
3. GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE: 20A-125V, 5mA. COMMERCIAL SPECIFICATION GRADE

b. 120 WALL SWITCHES SHALL BE MOUNTED IN SUITABLE OUTLET BOXES IN THE WALL OR PARTITIONS. THEY SHALL BE OF THE AC QUIET DESIGN, TOGGLE HANDLE, 20 AMP RATED. THEY SHALL BE SPECIFICATION GRADE.

c. CONVENIENCE OUTLETS SHALL EACH BE SPECIFICATION GRADE, GROUNDING TYPE, THREE WIRE (HOT, NEUTRAL WIRES PLUS EQUIPMENT GROUND) SINGLE OR DUPLEX AS INDICATED ON THE DRAWINGS, RATED FOR 125 VOLTS, 20 AMPS, FOR REGULAR OUTLET MOUNTING, AND WITH FACE SLOT CONFIGURATION MATCHING THE NEMA STANDARD FOR THE RATING AND WIRES.

d. SPECIAL PURPOSE NEMA OUTLETS OTHER THAN 20 AMP CONVENIENCE OUTLETS SHALL BE SHOWN ON PLANS. FINAL PLUG CONFIGURATION SHALL BE COORDINATED WITH EQUIPMENT SELECTION.

e. COLOR OF WIRING DEVICES AND COVER PLATES SHALL BE SELECTED BY ARCHITECT.

f. WHERE STANDARD COVER PLATES WILL NOT FIT WALL FINISH, USE SPECIAL SIZE PLATE TO SUIT CONDUCTORS.

10. WALL PLATES

a. WALL PLATES SHALL BE AS SPECIFIED BY OWNER. WHERE STANDARD PLATES WILL NOT FIT WALL FINISH, UNPLASTERED BRICK OR SPECIAL FINISH WALLS, USE SPECIAL SIZE PLATES TO SUIT CONDITIONS. ALL WALL PLATES LINE UP AND FLUSH WITH MOUNTING SURFACE AND SECURELY ATTACHED IN PLACE.

b. WHERE SWITCHES, RECEPTACLES OR COMBINATIONS THEREOF ARE GROUNDED, USE GANG PLATES AND OUTLET BOXES TO SUIT THE SPECIFIC ARRANGEMENTS.

c. VERIFY MOUNTING HEIGHTS OF WIRING DEVICES WITH ARCHITECT/OWNER: IN GENERAL, RECEPTACLES 15" ABOVE FLOOR OR 4.5" ABOVE COUNTER TOP WHERE COUNTERS OCCUR, AND SWITCHES 4'-0" ABOVE FLOOR, EXCEPT WHERE SPECIFIC HEIGHTS ARE INDICATED. SPECIAL RECEPTACLE LOCATED AS DIRECTED BY ARCHITECT AND ENGINEER.

d. WALL PLATES SHALL BE OF THE SAME MANUFACTURER AS WIRING DEVICE.

11. POKE-THROUGHS (WHEN INDICATED IN DRAWINGS)

a. PROVIDE HUBBELL SYSTEM, FIRE RATED POKE THROUGH PER DRAWINGS.

b. ACCEPTED MANUFACTURERS: HUBBELL, WIREMOLD, OR APPROVED EQUAL.

12. LIGHTING FIXTURES □ LAMPS (REFER TO LIGHT FIXTURE SCHEDULE FOR INFORMATION):

a. GENERAL

1. FIXTURES SHALL BE PROVIDED COMPLETE WITH ACCESSORIES SUCH AS PLASTER FRAMES, AND OTHER SUPPORTING DEVICES FOR RECESSED, SURFACE, OR PENDANT MOUNT AS REQUIRED. ALL FIXTURES SHALL BE SPECIFICATION GRADE UNLESS NOTED OTHERWISE.

2. SPLICES IN INTERNAL WIRING SHALL BE MADE WITH APPROVED INSULATED "WIRE NUT" TYPE MECHANICAL CONNECTORS, SUITABLE FOR THE TEMPERATURE AND VOLTAGE CONDITIONS TO WHICH THEY ARE SUBJECTED.

3. EACH LIGHTING FIXTURE SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE BY MEANS OF (2) 12 GAGE STEEL WIRE.

b. FLUORESCENT FIXTURES

1. MANUFACTURER MODEL TYPES SHALL BE AS NOTED OR SCHEDULED ON THE DRAWINGS.

2. UNLESS NOTED OTHERWISE ON DRAWINGS, LAMPS FOR FIXTURES SHALL BE PROGRAM RAPID START, ENERGY SAVING, T8, 3500K, 85 CRI. ACCEPTABLE MANUFACTURERS: SYLVANIA, GENERAL ELECTRIC, OR PHILLIPS.

3. BALLASTS SHALL BE T8 PROGRAM RAPID START OR INSTANT START AS INDICATED IN LIGHT FIXTURE SCHEDULE, ELECTRONIC BALLASTS WITH A POWER FACTOR OF NOT LESS THAN 98 PERCENT, TOTAL HARMONIC DISTORTION OF NOT MORE THAT 10%, AND A LAMP FLICKER OF LESS THAT 2 PERCENT. ACCEPTABLE MANUFACTURERS: GE, ADVANCE, OSRAM/SYLVANIA OR APPROVED EQUAL.

c. THIS CONTRACTOR SHALL FURNISH ADDITIONAL AUXILIARY SUPPORTING STEEL HANGER WIRES ADEQUATELY SIZED TO SUPPORT THE WEIGHT OF THE FIXTURE AND FASTENED TO BUILDING STRUCTURE (MINIMUM TWO PER FIXTURE) FOR FIXTURES NOT MOUNTED ON BUILDING FRAMEWORK. FIXTURES SHALL NOT BE SUPPORTED SOLELY BY THE CEILING STRUCTURE.

d. PROVIDE APPLICABLE FIRE RATED DRYWALL BOXES OVER RECESSED FIXTURES IN FIRE RATED CEILINGS AS REQUIRED BY CODES. FIELD COORDINATE AS REQUIRED TO AVOID CONFLICT.

e. THIS CONTRACTOR SHALL PROVIDE ANY NECESSARY FITTINGS, ACCESSORIES, ETC. AS NECESSARY TO MAKE A COMPLETE INSTALLATION.

f. REMOVE ALL DIRT, OIL OR GREASE FROM LIGHT FIXTURES. CLEAN ALL GLASS, LENSES, ETC. AND POLISH FIXTURES AND TRIM.

13. PANEL BOARDS (USE EXISTING, FURNISH AND INSTALL NEW BREAKERS AS RE□UIRED)

a. PANEL BOARDS TO BE REUSED SHALL BE PROVIDED WITH UPDATED TYPE WRITTEN DIRECTORIES AFTER NEW WORK IS COMPLETED. CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS TO MATCH EXISTING PANEL BOARDS AS INDICATED ON DRAWINGS.

b. NEW BRANCH CIRCUIT AND LIGHTING PANEL BOARDS SHALL BE OF THE DEAD-FRONT, SAFETY TYPE, WITH BOLTED-TYPE UL LISTED MOLDED CASE CIRCUIT BREAKERS. CIRCUIT BREAKERS SHALL BE LISTED AS HID FOR LIGHTING CIRCUITS. VOLTAGE RATINGS, NUMBER OF POLES, FRAME SIZES, TRIP RATINGS, MAIN BREAKER, NEUTRAL BUS, AND EQUIPMENT GROUND BARS ARE AS SHOWN ON THE DRAWINGS. PANEL BOARDS ARE TO BE FULLY RATED FOR THE SHORT CIRCUIT RATING SHOWN ON THE DRAWINGS BUT NOT LESS THAN 10,000 AMPS. BUS BARS SHALL BE RECTANGULAR, SOLID COPPER, 1000 AMPS PER SQUARE INCH, SECURELY MOUNTED AND BRACED. ALL CONNECTIONS TO BUS BARS SHALL BE SECURELY BOLTED. CABINETS BOXES SHALL BE CONSTRUCTED OF CODE GRADE GALVANIZED STEEL, SIZED TO PROVIDE MINIMUM 4-INCH WIDE WIRING GUTTERS ON SIDES, TOPS AND BOTTOM. FRONTS SHALL BE CONSTRUCTED OF CODE GRADE STEEL, ADJUSTABLE INDICATING TRIM CLAMPS AND WITH DOOR PROVIDED WITH CONCEALED HINGES AND CYLINDER TYPE LOCK AND CATCH, PROVIDE DOOR WITHIN DOOR. TWO KEYS PER PANEL SHALL BE FURNISHED, AND ALL LOCKS KEYED ALIKE. FINISH SHALL BE ANSI 61 GRAY. ACCEPTABLE MANUFACTURERS: SQUARE D, CUTLER-HAMMER, AND GENERAL ELECTRIC.

c. IDENTIFICATION OF NEW PANEL BOARDS. PANEL BOARD SHALL HAVE A TYPEWRITTEN CIRCUIT DIRECTORY, MOUNTED UNDER TRANSPARENT PLASTIC ON INSIDE OF DOOR TO IDENTIFY EACH CIRCUIT LOAD AND LOCATION. EACH PANEL BOARD SHALL HAVE A LAMINATED BAKELITE NAMEPLATE ATTACHED TO THE OUTSIDE OF THE PANEL BOARD. THE NAMEPLATE SHALL INCLUDE PANEL BOARD DESIGNATION, LOCATION, VOLTAGE, AND PHASE. NAMEPLATES SHALL HAVE BLACK 1/4 INCH (6 MM) LETTERS MINIMUM ON A WHITE BACKGROUND. ATTACH THE NAMEPLATE BY SCREWS OR RIVETS.

14. DISCONNECT SWITCHES (WHEN INDICATED IN DRAWINGS)

a. PROVIDE HEAVY DUTY SURFACE-MOUNTED SAFETY SWITCHES FOR MOTORS UNLESS OTHERWISE INDICATED, OF TYPES, SIZES, AND ELECTRICAL CHARACTERISTICS AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS. THE SWITCHES SHALL BE FUSED OR NON-FUSED AS INDICATED ON THE DRAWINGS OR AS REQUIRED AND SHALL BE MANUFACTURED BY SQUARE D, CUTLER HAMMER, OR GENERAL ELECTRIC.

b. SWITCHES SHALL HAVE SWITCH BLADES WHICH SHALL BE FULLY VISIBLE IN THE OFF POSITION WHEN THE ENCLOSURE DOOR IS OPEN. CURRENT CARRYING PARTS SHALL BE PLATED COPPER AND SWITCH CONTACTS SHALL BE SILVER-TUNGSTEN. SWITCHES SHALL BE QUICK-MADE, QUICK-BREAK TYPE. THE OPERATING HANDLE SHALL BE AN INTEGRAL PART OF THE ENCLOSURE BASE AND SHALL BE PADLOCKABLE IN THE OFF POSITION. THE HANDLE POSITION SHALL INDICATE WHETHER THE SWITCH IS ON OR OFF. SWITCHES SHALL BE HORSE POWER RATED FOR 250 AC OR DC OR 600 VOLTS AC AS REQUIRED.

15. FIRE ALARM SYSTEM (EXISTING SYSTEM)

a. WIRING SHALL BE SOLID-COPPER CONDUCTORS WITH 600V RATED, 90 DEG C, COLOR-CODED INSULATION PER NEC 760 FPLP TYPE CABLE. CABLE SHALL BE INSTALLED OPEND ABOVE THE CEILINGS AND IN CONDUIT ABOVE NOT ACCESSBLE CEILING AND IN WALLS,. VERIFIED WITH AHJ OTHERWISE.

b. PULL STATIONS SHALL BE DOUBLE-ACTION TYPE, FABRICATED OF METAL OR PLASTIC, AND FINISHED IN RED WITH FIRE LETTERING WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS OF CONTRASTING COLOR.

c. AUDIBLE/VISUAL ALARM DEVICES SHALL BE COMBINATION HORN/STROBE UNITS XENON STROBE LIGHTS WITH CLEAR POLYCARBONATE LENS. MOUNT LENSES ON AN ALUMINUM FACEPLATE. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1-INCH (25-MM) HIGH LETTERS ON THE LENS. DEVICES HAVE A MINIMUM LIGHT OUTPUT TO BE ADA COMPLIANT. HORNS SHALL BE CAPABLE OF PRODUCING A NOISE PRESSURE NOT LESS THAN 94dBA AT 10 FEET. COMBINATION DEVICES CONSIST OF FACTORY-COMBINED, AUDIBLE AND VISUAL ALARM UNITS IN A SINGLE MOUNTING ASSEMBLY.

16. IDENTIFICATION

a. PROVIDE TYPED DIRECTORIES IN PANELBOARDS TO DEPICT ACTUAL E□UIPMENT CONNECTED TO INDIVIDUAL BREAKERS/SWITCHES.

17. OCCUPANCY SENSORS (ONLY WHEN INDICATED IN DRAWINGS)

a. CONTRACTOR'S WORK TO INCLUDE ALL LABOR, MATERIALS, TOOLS, APPLIANCES, CONTROL HARDWARE, SENSOR, WIRE, JUNCTION BOXES AND EQUIPMENT NECESSARY FOR AND INCIDENTAL TO THE DELIVERY, INSTALLATION AND FURNISHING OF A COMPLETELY OPERATIONAL OCCUPANCY SENSOR LIGHTING CONTROL SYSTEM, AS DESCRIBED HEREIN.

b. WALL SWITCH PRODUCTS MUST BE CAPABLE OF WITHSTANDING THE EFFECTS OF INRUSH CURRENT.

c. WALL SWITCH SENSORS SHALL BE CAPABLE OF DETECTION OF OCCUPANCY AT DESKTOP LEVEL UP TO 300 SQUARE FEET, AND GROSS MOTION UP TO 1000 SQUARE FEET.

d. WALL SWITCH SENSORS SHALL ACCOMMODATE LOADS FROM 0 TO 800 WATTS AT 120 VOLTS; 0 TO 1200 WATTS AT 277 VOLTS.

e. ALL SENSORS SHALL BE CAPABLE OF OPERATING NORMALLY WITH ELECTRONIC BALLASTS, PL LAMP SYSTEMS AND RATED MOTOR LOADS.

f. OCCUPANCY SENSORS SHALL BE AS LISTED IN THE DRAWINGS.

C. <u>INSTALLATION</u>

1. CUTTING AND PATCHING

a. ALL CUTTING, DRILLING, PATCHING, ETC. NECESSARY FOR INSTALLATION OF EQUIPMENT UNDER THIS CONTRACT SHALL BE DONE BY THIS CONTRACTOR.

b. ALL DISTURBED CONSTRUCTION AND FINISHED SHALL BE RETURNED TO ITS ORIGINAL STATE. HOLES IN CONCRETE WALLS AND FLOORS SHALL BE CORE DRILLED AND SLEEVED. NO CUTTING OF STRUCTURAL MEMBERS WILL BE ALLOWED.

2. INSTALLATION OF WIRING

WIRE SHALL BE INSTALLED CONTINUOUS BETWEEN DEVICES, WITH SPLICES LOCATED ONLY IN JUNCTION BOXES, PULL BOXES, OUTLET BOXES OR IN CABINETS. CONDUCTORS SHALL BE OF SUFFICIENT LENGTH TO REACH THE FARTHEST TERMINAL IN PANELS. A MINIMUM OF 6" LOOPS SHALL REMAIN WHERE CONNECTIONS OR TAPS ARE TO BE MADE IN BRANCH CIRCUIT WIRING.

3. INSTALLATION OF WORK

a. CONTRACTOR SHALL BE RESPONSIBLE FOR EXACT LOCATION OF ALL EQUIPMENT AND IN CASE ANY OUTLETS DO NOT COME IN CORRECT LOCATION, HE SHALL MOVE SAME, DO NECESSARY CUTTING AND PATCHING.

b. OWNER RESERVES THE RIGHT TO CHANGE LOCATION OF OUTLETS WITHIN 10'-0" RADIUS BEFORE WORK IS INSTALLED WITHOUT EXTRA COST.

c. CHECK WITH HVAC CONTRACTOR AS TO LOCATION OF UNITS, DUCTS AND GRILLES AND PLUMBING CONTRACTOR AS TO LOCATION OF PIPING BEFORE INSTALLING THE WORK.

d. CONTRACTOR SHALL CONSULT WITH THE ARCHITECT AND REVIEW THE PLANS TO VERIFY THE EXACT LOCATIONS OF ALL OUTLETS ARE ABOVE COUNTERS WHERE CABINET WORK OCCURS, AND VERIFY THAT SWITCHES ARE AT THE CORRECT SIDE OF DOOR SWINGS.

e. THE CONTRACTOR SHALL CONSULT WITH THE EQUIPMENT SUPPLIERS FOR THE CORRECT SIZES OF ALL OUTLETS IN SUFFICIENT TIME BEFORE WALL CONSTRUCTION.

f. FAILURE OF THE CONTRACTOR TO COMPLY WITH ALL OF THE ABOVE SHALL MAKE HIM RESPONSIBLE FOR ANY RELOCATIONS AT HIS EXPENSE DUE TO CONFLICT WITH OTHER EQUIPMENT.

4. GROUNDING

CONTRACTOR SHALL INSTALL ENTIRE CONDUIT SYSTEM, INCLUDING BOXES, CABINETS, PANELS, ETC. SO AS TO INSURE PROPER GROUND CONTINUITY THROUGHOUT THE SYSTEM WHICH INCLUDES BUT IS NOT LIMITED TO: PROVIDE COMPLETE WIRE GROUNDING CONDUCTOR SYSTEM, #12 AWG MINIMUM, SIZED AND INSTALLED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE CODE.

a. ALL DEVICES SHALL BE BONDED TO THE CONDUIT SYSTEM. USE A BONDING JUMPER BETWEEN THE OUTLET BOX AND THE DEVICE GROUNDING TERMINAL. METAL-TO-METAL CONTACT BETWEEN THE DEVICES YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE MOUNTED BOXES OR FLUSH TYPE BOXES. ALL JUNCTION BOXES, OUTLET BOXES AND PULL BOXES SHALL BE BONDED TO THE CONDUIT SYSTEM. ALL CONDUIT, INCLUDING FLEXIBLE CONDUIT, SHALL BE GROUNDED WITH GREEN GROUNDING CONDUCTOR.

b. ALL ENCLOSURES AND NON-CURRENT CARRYING METAL PARTS ARE TO BE GROUNDED. CONDUIT SYSTEM IS TO BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS MUST CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METAL PARTS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS. ALL GROUND CLAMPS SHALL BE "PENN-UNION" OR EQUAL, SIMILAR TO "GPL" TYPE.

c. NO OTHER CIRCUITS ARE TO BE RUN IN SAME CONDUIT FEEDING ISOLATED GROUND RECEPTACLES.

d. THE COMPLETE ELECTRICAL INSTALLATION SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODE. EQUIPMENT GROUNDING SYSTEM CABLE SHALL BE COPPER.

e. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL RACEWAYS AND ENCLOSURES WITHIN THE BUILDING.

f. ACCESSIBLE GROUNDING CONNECTIONS SHALL BE BOLTED OR CLAMP TYPE UNLESS OTHERWISE INDICATED. SOLDERED CONNECTIONS WILL NOT BE PERMITTED IN THE GROUNDING SYSTEM.

5. BALANCING OF LOADS

UPON CONNECTING ALL CIRCUITS TO PANELS, THE CONTRACTOR SHALL BALANCE THE LOAD IN AMPERES TO +/- 5% BETWEEN PHASES FOR EACH PANEL OR PER OWNERS SATISFACTION.

6. FIRE STOPPING

ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO.

7. ELECTRICAL CONNECTIONS

ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.

a. ALL WIRE CONNECTIONS SHALL BE MADE BY MEANS OF SOLDERLESS CONNECTORS.

b. BRANCH CIRCUIT JOINTS OF SPLICES FOR WIRES #10 AND SMALLER SHALL BE MADE WITH 3M BRAND SCOTCHLOK ELECTRICAL SPRING CONNECTORS.

c. SPLICES AND JOINTS FOR CONDUCTORS NO. 8 AND LARGER SHALL BE BY MEANS OF HIGH PRESS, LONG BARREL, CAST COPPER, COMPRESSION CONNECTORS.

d. JOINT AND SPLICES SHALL BE COVERED WITH 3M ELECTRICAL TAPE TO 150% OF INSULATION VALUE.

e.

f. NO SPLICES SHALL BE MADE IN THE CONDUCTOR EXCEPT AT OUTLET BOXES, JUNCTION BOXES, OR IN SPLICE BOXES.

8. MISCELLANEOUS SUPPORTING MEMBERS

THE INSTALLATION OF ANGLES CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC. REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE COORDINATED WITH THE G.C.

9. SAFETY

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNERS EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

10. EQUIPMENT CONNECTIONS

a. PROVIDE FINAL CONNECTIONS FOR ALL EQUIPMENT FURNISHED UNDER OTHER DIVISIONS AND FOR ALL OWNER FURNISHED EQUIPMENT. PROVIDE A FLEXIBLE LIQUID TIGHT CONNECTIO TO ALL VIBRATION PRODUCING EQUIPMENT.

b. THE CONTRACTOR SHALL MAKE POWER CONNECTIONS TO ALL MOTORS AND EQUIPMENT FURNISHED BY OTHERS. SEE ARCHITECTURAL AND MECHANICAL DRAWINGS, SPECIFICATIONS AND NOTES FOR ADDITIONAL INFORMATION

c. ALL CIRCUIT BREAKERS, FUSES AND ELECTRICAL EQUIPMENT SHALL HAVE AN INTERRUPTING RATING NOT LESS THAN THE MAXIMUM SHORT CIRCUIT CURRENT TO WHICH THEY MAY BE SUBJECTED.

d. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL BEAR THE UNDERWRITERS' LABEL (UL) AND SHALL BE INSTALLED IN THE MANNER FOR WHICH THEY ARE DESIGNED AND APPROVED.

e. ALL DEVICES INSTALLED OUTSIDE OR IN DAMP LOCATIONS SHALL BE APPROVED WEATHERPROOF.

f. THE CONTRACTOR SHALL INSTALL ALL CONDUITS AND WIRES WITH A MINIMUM NUMBER OF BENDS AND IN SUCH A MANNER AS TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEAD ROOM, KEEP OPENINGS AND PASSAGEWAYS CLEAR AND MEET ALL STRUCTURAL CODE REQUIREMENTS

11. TEMPORARY LIGHTING, POWER, FIRE, AND SAFETY

a. PROVIDE TEMPORARY LIGHTING AND POWER AS REQUIRED IN AREAS UNDERGOING WORK DURING CONSTRUCTION.

b. COMPLY WITH NFPA 241 FOR SAFEGUARDING DURING CONSTRUCTION AND ALTERATION OPERATIONS.

12. BRANCH CIRCUITS

BRANCH CIRCUITS TO RECEPTACLES, LIGHTING AND MISC. SMALL LOADS (20 AMP CIRCUITS), UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE 2-#12, 1-#12G, 3/4" C.

13. GENERAL INSTALLATION NOTES

a. THE CONTRACTOR SHALL INSTALL ALL CONDUITS AND WIRES WITH A MINIMUM NUMBER OF BENDS AND IN SUCH A MANNER AS TO CONFORM TO THE STRUCTURE, AVOID OBSTRUCTIONS, PRESERVE HEAD ROOM, KEEP OPENINGS AND PASSAGEWAYS CLEAR AND MEET ALL STRUCTURAL CODE REQUIREMENTS.

b. THE CONTRACTOR SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO ANY STRUCTURAL MEMBER WITHOUT WRITTEN APPROVAL FROM THE ARCHITECT OR STRUCTURAL ENGINEER.

c. THE CONTRACTOR SHALL PROVIDE SUPPORT FOR ALL FIXTURES AND ELECTRICAL EQUIPMENT TO COMPLY WITH THE SEISMIC REQUIREMENTS OF THE UNIFORM BUILDING CODE AND ALL LOCAL ORDINANCES.

d. ALL CONDUIT CONNECTIONS TO MACHINES, MOTORS, AND EQUIPMENT SUBJECT TO VIBRATION (INCLUDING TRANSFORMERS) SHALL BE MADE WITH LIQUID TIGHT FLEX CONDUIT. FLEXIBLE CONNECTION SHALL BE BETWEEN 18 AND 36 INCHES IN LENGTH. ARRANGE CONNECTIONS TO PREVENT THE ENTRANCE OF MOISTURE. PROVIDE CONTINUOUS EQUIPMENT GROUND WIRE THROUGH ALL FLEXIBLE CONDUITS TO ASSURE GROUND CONTINUITY.

e. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE GROUNDED AS REQUIRED BY ALL APPLICABLE CODES AND THE SERVING UTILITY.

f. THE ENTIRE WIRING SYSTEM SHALL BE TESTED FOR SHORT CIRCUITS, GROUNDS AND INSULATION RESISTANCE BETWEEN CONDUCTORS AND TO GROUND.

g. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS, WIRES, BOXES, SWITCHES, LIGHT FIXTURES (WITH LAMPS), RECEPTACLES, SERVICE DEVICES, SWITCHBOARDS AND PANELBOARDS REQUIRED FOR A COMPLETE AND OPERATIONAL ELECTRICAL SYSTEM.

h. PROVIDE A EXTERNAL MANUAL DISCONNECTING MEANS AT ALL MOTORS OR PACKAGED MECHANICAL EQUIPMENT UNLESS NOTED OTHERWISE. SOME UNITS ARE PROVIDED BY MECHANICAL CONTRACTOR A PART OF A MECHANICAL PACKAGE.

i. PROVIDE AN ENCLOSURE OF EQUAL FIRE RESISTANT RATING AROUND ALL FIXTURES AND EQUIPMENT INSTALLED IN OR PENETRATING THROUGH FIRE RATED SEPARATIONS. THROUGH STOP FIRE SEALING OF CONDUITS SHALL BE MADE WITH 3M CP25WP+ CAULK ACCORDING TO UL APPLICATION.

j. LOCATIONS SHOWN ON THE ARCHITECTURAL AND MECHANICAL DRAWINGS TAKE PRECEDENCE OVER THOSE SHOWN ON THE ELECTRICAL DRAWINGS. REFER TO THE MECHANICAL, PLUMBING AND HEAT/VENT/AC DRAWINGS FOR THE EXACT LOCATIONS, RATINGS, TYPE CONNECTIONS, WIRING DIAGRAMS AND AUXILIARY DEVICES.

k. THE CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT, WIRE AND CONNECTIONS FOR LINE VOLTAGE LIGHTING CONTROLS AND LOW VOLTAGE LIGHTING CONTROL UNLESS NOTED OTHERWISE ON DRAWINGS. THE CONTRACTOR SHALL MAKE ALL POWER CONNECTIONS ALL TO A/C EQUIPMENT INCLUDING 120 VOLT POWER CONTROL, MONITORING, AND SIGNALING EQUIPMENT FURNISHED BY OTHER DISCIPLINES. COORDINATE WITH OTHER DISCIPLINES FOR REQUIREMENTS.

l. THE CONTRACTOR SHALL RECEIVE, STORE AND INSTALL ALL ELECTRICAL ITEMS FURNISHED BY THE OWNER.

m. REFER TO THE REFLECTED CEILING PLAN AND THE ARCHITECTURAL FLOOR PLANS FOR THE EXACT LOCATIONS OF ALL LIGHTING FIXTURES AND DEVICES.

n. PROVIDE TYPEWRITTEN DIRECTORY CARD IN ALL NEW AND MODIFIED PANELS. IDENTIFY LOAD SERVED BY EACH CIRCUIT BREAKER.

o. PROVIDE ENGRAVED NAMEPLATES ON ALL PANEL(S), TRANSFORMERS, DISCONNECT SWITCHES, SWITCHBOARDS, ATS, ETC.

p. RECEPTACLES SHALL HAVE PRINTED LABELS WITH THE PANEL AND CIRCUIT NUMBER PLACED ON THE COVER. THE LABEL SHALL BE RED WITH WHITE LETTERS FOR EMERGENCY RECEPTACLES, ORANGE WITH WHITE LETTERS FOR UPS CONNECTED RECEPOTACLES AND BLACK WITH WHITE LETTERS FOR NORMAL RECEPTACLES.

q. THE CONTRACTOR SHALL PROVIDE A SET OF AS-BUILT DRAWINGS SHOWING THE LOCATIONS OF ALL UNDERGROUND CONDUITS, INDICATE ALL CHANGES MADE DURING CONSTRUCTION, AND ANY DEVIATIONS FROM THE ELECTRICAL DRAWINGS.

r. PROVIDE PULL WIRE IN ALL EMPTY CONDUITS.

s. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, THE ELECTRICAL DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC. THE SIZE AND LOCATION OF EQUIPMENT IS SHOWN TO SCALE WHEREVER POSSIBLE. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS AND INFORMATION AS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATION SECTIONS WHERE ELECTRICAL WORK INTERFACES WITH OTHER TRADES.

t. DISCONNECT AND REMOVE ALL EXISTING INTERIOR AND EXTERIOR ELECTRICAL DEVICES, EQUIPMENT, WIRING, EXPOSED ABANDONED CONDUIT, ETC., NO LONGER REQUIRED UNLESS OTHERWISE NOTED.

u. THIS CONTRACTOR SHALL VISIT THE EXISTING BUILDINGS AND GROUNDS AND FAMILIARIZE HIMSELF WITH EXISTING CONDITIONS. NO ALLOWANCE WILL BE MADE SUBSEQUENTLY, ON THIS CONDITION, IN BEHALF OF THE CONTRACTOR FOR ANY ERROR OR NEGLIGENCE ON HIS PART.

v. WHERE EXISTING EQUIPMENT OR CONDUIT IS REMOVED OR CHANGED, ALL CONDUIT AND WIRE NO LONGER IN SERVICE SHALL BE REMOVED AS DIRECTED BY THE ARCHITECT. ALL BUILDING SURFACES DAMAGED AND OPENINGS LEFT BY THE REMOVAL OR RELOCATION OF EQUIPMENT, CONDUIT, ETC., SHALL BE REPAIRED BY THIS CONTRACTOR.

w. EXISTING CONDUIT AND WIRE SHALL NOT BE REUSED IF MOVED FROM ITS PRESENT LOCATION OR IF IT IS OF INADEQUATE CAPACITY FOR THE NEW LOAD.

x. ALL CONDUIT SHALL BE CONCEALED WHEREVER POSSIBLE. THE CONTRACTOR SHALL REVIEW THE PLANS AND SPECIFICATIONS TO DETERMINE WHERE NEW WALLS AND CEILINGS ARE TO BE INSTALLED AND SHALL MAKE USE OF THESE AREAS TO CONCEAL CONDUIT. THE CONTRACTOR SHALL USE SURFACE RACEWAYS SUCH AS WIREMOLD WHERE NECESSARY (ONLY WHERE INDICATED OR AS DIRECTED).

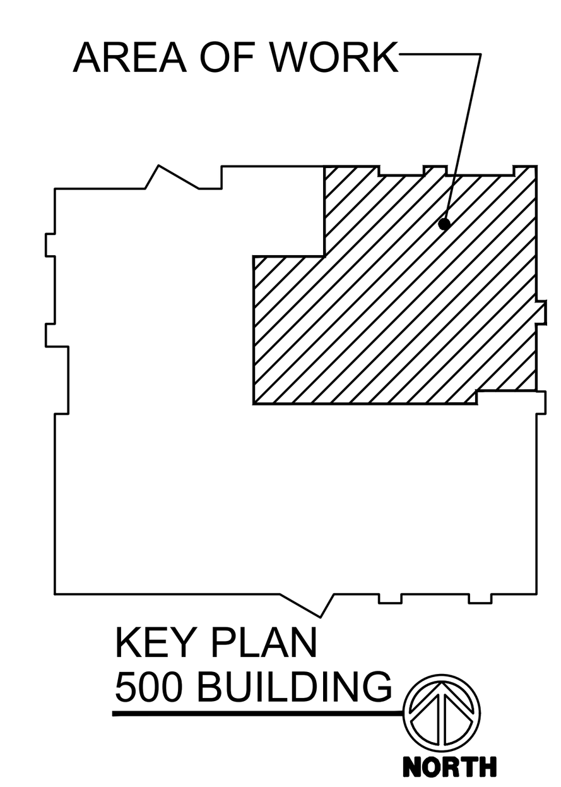
14. INSTALLATION OF E□UIPMENT FURNISHED BY OTHERS

a. CONTRACTOR SHALL INSTALL ALL EQUIPMENT, WIRE AND CABLE FURNISHED TO HIM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL INSTALLATION DRAWINGS AND WIRING DIAGRAMS FROM THE EQUIPMENT MANUFACTURER. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

b. CONTRACTOR SHALL MAKE FINAL CONNECTIONS AND TERMINATIONS TO THE OWNER, MECHANICAL, AND PLUMBING CONTRACTOR'S FURNISHED EQUIPMENT.

15. SPECIAL SYSTEMS

TELEPHONE/DATA SYSTEM: ELECTRICAL CONTRACTOR SHALL INSTALL CONDUITS AND OUTLET BOXES. G.C. IS RESPONSIBLE FOR COORDINATION BETWEEN ALL SUB CONTRACTORS AND IS ULTIMATELY RESPONSIBLE FOR ACCURATELY DICTATING THE SCOPE BETWEEN SUB CONTRACTS.



KEY PLAN
500 BUILDING

REVISION		BY
BID/PERMIT ISSUE	7-22-15	
BID/PERMIT ISSUE	4-20-16	
REVIEW ISSUE	5-20-16	

DRAWINGS:
ELECTRICAL SPECIFICATION SHEET

McHenry County Government
911 ETSB Relocation
500 Russel Court
Woodstock, IL 60098

CBJ ARCHITECTS
PROFESSIONAL CORPORATION

rtm engineering consultants
3 Executive Court, Unit 4,
South Barrington, Illinois 60010
rtmassociates.com | 847.756.4180

JOB:	15-023
DATE:	7/22/15
SCALE:	as noted
DRAWN:	MH/JD
CHECKED:	MH/JD/JW

NORTH

SHEET
E-9
CD'S

THIS PAGE IS MANDATORY

BID ON

TOTAL LUMP SUM BID AMOUNT: $_____

*NOTE: All documents, included in the specifications, MUST ALSO BE FILLED OUT AND INCLUDED WITH SUBMISSION TO BE CONSIDERED RESPONSIVE & RESPONSIBLE.

Estimated start date after receipt of purchase order: #_____days

Estimated time of completion: # _____days

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REFERENCES

List three (3) references that you have done similar work, service or supplied similar products to within the last twelve (12) months (Only correct contact names and phone numbers will be acceptable).

Entity:

Address:

City, State, Zip Code:

Telephone Number:

Contact Person:

Entity:

Address:

City, State, Zip Code:

Telephone Number:

Contact Person:

Entity:

Address:

City, State, Zip Code:

Telephone Number:

Contact Person:

THIS PAGE IS MANDATORY.

RUBBER STAMPED, FAXED, COPIED, OR TYPED SIGNATURE WILL DISQUALIFY YOUR BID MUST BE AN ORIGINAL SIGNATURE

CERTIFICATIONS

Vendor certifies that it has not been barred from contracting with a unit of State or local government as a result of a violation of Section 33E-3 or 33E-4 of the Criminal Code of 1961, as amended. _____ Yes _____ No

Vendor certifies that it is aware that all contracts for the Construction of Public Works are subject to the Illinois Prevailing Wage Act (820 ILCS 130/1-12) _____ Yes
No

Under penalties of perjury, I certify that _____ is my correct Federal Taxpayer Identification Number. I am doing business as a (please check one):

___Individual
___Sole Proprietorship
___*Partnership
___**Corporation
___Not-for-Profit Corporation
___Medical and Health Care
Services Provider Corporation
___Real Estate Agent
___Government Entity
___Tax Exempt Organization
(IRC 501(a) only)
___Trust or Estate

*State full names, titles and addresses of all responsible principles and/or partners below;

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

If needed please submit any additional sheets.

PROPOSER'S CERTIFICATION

I have carefully examined the Bid, Scope of Work, Specifications, and any other documents accompanying or made a part of this Bid.

I hereby propose to furnish the goods or services specified in the Bid. I agree that my proposal will remain firm for a period of up to 120 days in order to allow the County adequate time to evaluate the qualifications submitted.

I verify that all information contained in this proposal is truthful to the best of my knowledge and belief. I further certify that I am duly authorized to submit this Bid on behalf of the firm as its act and deed, and that the firm is ready, willing, and able to perform if awarded the contract.

I further certify, under oath, that this proposal is made without prior understanding, agreement, connection, discussion, or collusion with any other person, firm or corporation submitting a proposal for the same product or service. No officer, employee or agent of the County of McHenry or any other proposer is interested in said proposal and that the undersigned executed this Proposer's Certification with full knowledge and understanding of the matters therein contained and was duly authorized to do so.

**State of Incorporation _____

_____

(Individual - Partnership - Company - Corporation)

_____

(Business Address)

_____

(City, State and Zip Code)

_____

(By Printed Name and Signature) (Title)

_____

(Witness Signature) (Title)

_____

(Telephone No) (Fax No.)

_____

(Date)

End of Document