

**COLLEGE OF DuPAGE  
REGULAR BOARD MEETING**

**BOARD APPROVAL**

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1. **SUBJECT**

General Contractor for BIC 3401 Renovation.

2. **REASON FOR CONSIDERATION**

Contracts that exceed the statutory limit of \$25,000 must be approved by the Board of Trustees.

3. **BACKGROUND INFORMATION**

This project involves renovating the Learning Resources Suite BIC 3401 to accommodate a recording studio and (2) new study rooms. The existing cubicles and reception desk will be relocated to increase interaction functionality. One existing office will be expanded and one existing office will transform into a video recording studio for the program.

A legal notice for an Invitation for Bids was published on August 1, 2017 in the Daily Herald and posted to the College of DuPage Purchasing Website. Forty-eighty-six (48) vendors were solicited. Thirty-one (31) vendors downloaded the bid documents. Six (6) bids were received. No women/minority owned businesses submitted bids. A public opening and reading of the bids was held on August 15, 2017 at 2:00 p.m. in the College of DuPage Purchasing Department Conference Room (BIC1B03A). The following individuals were in attendance: Jacoby Radford (COD Purchasing Manager/Facilitator), Susan Elizondo (COD Buyer/Recorder), John McGarry (COD Buyer), Phil Gieschen (COD Risk Manager/Agent of the Board), Chris Wosachlo (COD Project Manager), and representatives from five (5) firms.

Following is a tabulation of the results:

The following is a recap of the bid tabulation.

<b>General Contractor for BIC 3401 Renovation</b>	
<b>Vendor</b>	<b>Total Bid</b>
<b>JMA Construction *</b>	<b>\$47,950.00</b>
Integral Construction	\$87,732.00
Rodgers Construction Corp	\$89,100.00
Plata Corporation	\$97,528.00
MC Building Inc.	\$118,850.00
Boller Construction	\$122,000.00

**Recommended award in bold.** No alternatives were requested in this bid package; therefore, none are offered in the bid responses.

Budget Status

<b>GL Account</b>	<b>FY2017</b>	<b>FY2018</b>		
	<b>Prior Year Spend</b>	<b>Annual Budget</b>	<b>YTD Spend</b>	<b>Available Balance</b>
02-90-20164-5804001	\$ -	\$ 50,000	\$ -	\$ 50,000
<i>BIC 3401-Learning Resources : Building Remodeling Exps</i>				
			<b>FY2018 Request</b>	<b>\$ 47,950</b>

*\*YTD Spend equals actuals plus committed as of 09/07/2017.*

This purchase complies with State Statute, Board Policy and Administrative Procedures.

4. RECOMMENDATION

That the Board of Trustees awards the contract for the General Contractor for the BIC 3401 Renovation to the lowest responsible bidder, JMA Construction, Inc., 1025 N. Harvard, Villa Park, IL, 60181 for the lump sum bid amount of \$47,950.00.

Staff Contact: Jim Ma – Director, Facilities Operations

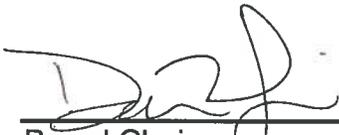
**BOARD APPROVAL**

**Signature Page**

**General Contractor for BIC 3401 Renovation**

**ITEM(S) ON REQUEST**

That the Board of Trustees awards the contract for the General Contractor for the BIC 3401 Renovation to the lowest responsible bidder, JMA Construction, Inc., 1025 N. Harvard, Villa Park, IL, 60181 for the lump sum bid amount of \$47,950.00.

  
Board Chairman

9/21/17  
Date

  
Board Secretary

9/21/17  
Date

**2018-B0009 BIC 3401 Renovations**  
**ADDENDUM # 1**

**August 10, 2017**

.....

This addendum is being issued to clarify the specifications and provide additional information.

This information becomes part of the Bid/RFP Documents upon receipt. Please review and incorporate into your Bid/Proposal accordingly.

**For which Bids are scheduled to be received on August 15, 2017 no later than 2:00 p.m., Central Time.**

Bids will be received by the College of DuPage, District 502, at the office of the Purchasing Manager, Berg Instructional Center (BIC) Building, **Room 1B03**, 425 Fawell Blvd., Glen Ellyn, IL 60137.

The signed Addendum acknowledgment is required to be returned with your Bid no later than the due date set forth for this Invitation to Bid.

Below are clarifications to this bid:

**Clarification Response**

1. General: Will the contractor be required to obtain and pay for a building permit?  
**Answer: College will pay for permit fee. Contractor required to obtain permit. To obtain permit with Village Glen Ellyn, contractor/subcontractor may be subject contractor registration fees and any associated documentation fees that will be required in order to obtain permit.**
  
2. Drawing sheet G002, specification section 081113, paragraph 1.2: Spec notes to match existing wood door species. Please provide the species of the existing wood doors.  
**Answer: Existing is equal to Oshkosh, Particleboard Core, Paint Grade Birch**
  
3. Drawing sheet G002, specification section 092900, paragraph 1.1.B: The partition type P1 detail on sheet G001 indicates 5/8" type X drywall, however, specification section 092900, paragraph 1.1.B indicates abuse-resistant drywall. Please clarify type of drywall to be provided for partition type P-1.  
**Answer: Partition drywall type per P1/G100**

4. Drawing Sheet G002, specification section 092900, paragraph 2.1.A: Spec notes that new ACT-1 tile is to match existing ceiling tile. Please provide the manufacturer and model number of the existing ceiling tile.

**Answer: Armstrong 1911 Series**

5. Drawing sheet A100, General Note 4: Note 4 states to "Paint all exposed items by all trades in ceilings black to match existing, include scope on first floor and lower floor". The existing ceilings are white and it does not appear that anything above the ceilings is painted black. Please clarify the scope of work required by this note. Also, please clarify what work is being referenced on the first floor and the lower floor.

**Answer: Disregard General Note 4 on A100**

**2018-B0009 BIC 3401 Renovations**

**ADDENDUM # 1**

**August 10, 2017**

.....

This signed Addendum is required to be returned with your Bid no later than the due date set forth for this Invitation to Bid. If you have already submitted your Bid, please submit this signed form via email to [purchasing@cod.edu](mailto:purchasing@cod.edu).

You can submit this completed addendum to the Purchasing Office by one of the means below:

*All issued addenda must be signed and returned to the College as per the instructions in the addenda or bid will not be accepted.*

**ACKNOWLEDGMENT**

You can submit this completed addendum to the Purchasing Office by one of the means below:

1. If you have not yet submitted your bid please sign this addendum and include with your sealed bid.
2. If you have already submitted your bid, please sign and return to the Purchasing office via email at [purchasing@cod.edu](mailto:purchasing@cod.edu) no later than the scheduled bid deadline. We will make sure it accompanies your bid.

You also have the option of withdrawing your proposal, if necessary.

**ACKNOWLEDGEMENT:**

I HAVE RECEIVED THIS ADDENDUM # \_\_\_\_\_

**Company Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Authorized Signature:** \_\_\_\_\_

**BIDDER:** \_\_\_\_\_



**COMMUNITY COLLEGE DISTRICT NO. 502**

**BID NUMBER: 2018-B0009**

**BIC 3401 RENOVATIONS**

**BIDS DUE: Tuesday, August 15, 2017 at 2:00 p.m. Central Time**

In the event of College closure due to inclement weather, bid deadline will be extended to the next business day at the same time.

**RETURN BIDS TO: COLLEGE OF DUPAGE  
PURCHASING DEPARTMENT  
BIC BUILDING, ROOM 1B03  
425 FAWELL BLVD.  
GLEN ELLYN, ILLINOIS 60137**

**ISSUED BY THE COLLEGE OF DUPAGE PURCHASING DEPARTMENT**

**Purchasing Department**

425 Fawell Boulevard  
Glen Ellyn, Illinois 60137-6599  
<http://www.cod.edu>

PHONE (630) 942-2217

August 1, 2017

**INVITATION TO BID**

Sealed bids for **BIC 3401 Renovations** will be received by the College of DuPage, District 502, at the office of the Purchasing Manager, Berg Instructional Center (BIC) Building, Room 1B03, 425 Fawell Blvd., Glen Ellyn, IL 60137, until **2:00 p.m. Central Time, Tuesday, August 15, 2017**, at which time they will be publicly opened. In the event of College closure due to inclement weather, bid deadline will be extended to the next business day at the same time.

A pre-bid conference is scheduled for Monday, August 7, 2017 at 10:00 a.m. in the Purchasing Office, BIC 1B03 at 425 Fawell Blvd, Glen Ellyn IL 60137. A site visit will immediately follow. The pre-bid conference is not mandatory, but highly recommended.

Any bid received after the date and time stated above will be returned unopened. College of DuPage shall not be responsible for bids that are not received at the specific office location indicated above by the stated deadline. It is solely, the bidder's responsibility, to ensure that adequate time is allowed for timely and accurate delivery.

Prices offered shall be F.O.B. Destination, College of DuPage, 425 Fawell Blvd., Glen Ellyn, IL 60137. Prices must be firm. No bids will be accepted on the basis of a price prevailing at the time of shipment.

The award(s) of the contract will be made to the lowest responsible and qualified bidder whose bid complies with all the requirements prescribed. Brand or trade names in bid specifications are used for identification purpose only.

No bid shall be withdrawn for a period of ninety (90) days after the bid opening date without the consent of the College.

## LEGAL NOTICE

### BID NOTICE

#### No. 2018-B0009

The College of DuPage is accepting sealed bids for **BIC 3401 Renovations**. Bid documents may be downloaded from the Purchasing Website at [www.cod.edu/about/purchasing/requests/](http://www.cod.edu/about/purchasing/requests/) by clicking on the link for this bid and following the instructions.

Bids are due to the College of DuPage Purchasing Department in the Berg Instructional Center (BIC) Building, Room 1B03, 425 Fawell Blvd., Glen Ellyn, IL 60137 up to and no later than **2:00 p.m. Central Time, Tuesday, August 15, 2017**, at which time they will publicly opened.

A pre-bid conference is scheduled for Monday, August 7, 2017 at 10:00 a.m. in the Purchasing Office, BIC 1B03 at 425 Fawell Blvd, Glen Ellyn IL 60137. A site visit will immediately follow. The pre-bid conference is not mandatory, but highly recommended.

College of DuPage Board of Trustees Reserves the right to reject any and all responses. This invitation is issued in the name of the Board of Trustees of College of DuPage, Community College District 502, Glen Ellyn, Illinois.

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## Bid Submission Checklist

### Things to Remember When Submitting a Response to an Invitation to Bid for the College of DuPage

1.  **Read the *entire* document.** In your review, note critical items such as: blackout period, required goods and services, submittal dates, submission requirements, etc.
2.  **Note the contact information provided.** The Purchasing Office Buyer at [purchasing@cod.edu](mailto:purchasing@cod.edu) is the single point of contact for this Invitation to Bid and is the only person with whom you are allowed to communicate regarding this bid. This person is an excellent source of information for any questions you may have.
3.  **Take advantage of the “question and answer” period.** Submit your questions to the Purchasing Department by the date in the Invitation to Bid and view the answers given in the formal addenda issued for the Invitation to Bid. All addenda issued for an Invitation to Bid will be emailed to each company that downloaded the bid documents and will include all questions asked and answered concerning the Invitation to Bid. Please ensure when downloading the bid documents, you use a valid email address.
4.  **Do not alter, add to, or delete and part of the Bid documents without prior approval.** Please refer to the section titled *Exceptions* for instruction on how to request a deviation to the original Invitation to Bid.
5.  **Ensure all Addenda are signed.** Before submitting your response, check the College Purchasing website at <http://www.cod.edu/about/purchasing/requests/index.aspx> to see whether any addenda were issued for this Bid request. If so, you must submit a signed copy of the addenda along with your bid response.
6.  **Review and read the bid document again to make sure you have addressed all requirements.**  
\*Your original response and the requested electronic copy (flash drive) must be identical and be complete.  
\*Bids will not be accepted if Sections 5, 6, and 7 are not completed. (Please note there are two (2) signature lines in Section 7 that must be signed.)  
\*If your company is a Certified Women-Owned, Minority-owned, or Persons with Disability-owned business, please include a copy of any and all certifications.
7.  **Submit your response on time.** Note the date and time listed on the front page of the Invitation to Bid and be sure to submit all required items on time. Late responses will not be accepted and will be returned, unopened. Ensure the box (s) containing your proposal is appropriately labeled. Please allow adequate time for delivery to the Purchasing Department.
8.  **Important dates to know:**
  - Bid Publication Date – 8/1 or 2/17
  - Pre-Bid Meeting – 8/7/17 at 10:00 am
  - Questions Due – on or before 11:00 a.m. on 8/8/17
  - Bids Due – 8/15/17 at 2:00 p.m.
  - Target Board Approval Date – 9/21/17
  - Purchase Order Issued once contract is finalized and all required documentation is on file.

## **1.0 GENERAL INFORMATION**

### **1.1 DEFINITIONS**

- A. BIDDER** shall mean the individual or business entity submitting a Bid to supply any or all of the services or goods required by the Bid Documents.
- B. BID** shall mean the Bid Documents as completed by the Bidder which constitutes the Bidder's offer.
- C. CONTRACT** shall mean the agreement between the College and Contractor as set forth in the Bid Documents and as awarded by the College of DuPage Board of Trustees.
- D. BID DOCUMENTS** shall mean collectively the Instructions to Bidders, General Conditions, Special Conditions, Specifications, Attachments, and Addenda, if any, Bid, Site Inspection Certificate, Contractor Certifications and Forms for Minority Participation. The above documents shall be considered as one integrated document setting forth the obligations of the parties.
- E. CONTRACTOR** shall mean the individual or business entity submitting a Bid and to whom the College of DuPage Board of Trustees awards the Contract.
- F. COLLEGE** shall mean the College of DuPage, Community College District No. 502, a body politic and corporate of the State of Illinois.
- G. DIRECTOR** shall mean the person or persons authorized by the College to act in connection with this Contract. Such authorization shall not include any power to change the scope of the Contract or to obligate the College to pay additional sums beyond the amount of the Contract awarded by the College of DuPage Board of Trustees.
- H. PURCHASING MANAGER** shall mean the Purchasing Manager of the College of DuPage.
- I. SPECIFICATIONS** shall mean the description of the required services, Contract Goods, equipment, personnel, volume and use statistics and all requirements for the scope of work set forth in the Bid Documents.

### **1.2 BIDS TO CONFORM TO REQUIREMENTS OF LEGAL ADVERTISING**

The College will not entertain or consider any Bid responses: (i) received after the exact time specified in the legal advertisements; (ii) not accompanied by the required bid deposit/bond, if required; or (iii) in any other way failing to comply fully with the conditions stated in the legal advertisement.

### **1.3 COMPLIANCE**

Submissions under this Invitation to Bid shall be for items at least equal to or better than the quality and performance characteristics stated herein. The burden of proof that product and services meet specifications shall be documented by the bidder and be provided as part of the submitted bid. Failure to provide complete documentation of the product compliance with specifications required may result in bid rejection.

### **1.4 COMPLIANCE WITH LAWS - PUBLIC CONTRACTS**

This Contract is a competitively bid public contract of the College of DuPage subject to laws and ordinances governing public contracts. The Bidder shall at all times observe and comply with all laws, ordinances, regulations and codes of the Federal, State and other local government agencies which may in any manner affect the preparation of the Bid or the performance of the Contract. If the Bidder observes that any of the Bid Documents are at variance therewith, it shall promptly notify the Purchasing Manager in writing and necessary changes shall be effected by appropriate modification.

## **1.5 REGULATIONS**

The Contractor or Subcontractor, warrants that they are familiar with and they shall comply with all Federal, State, and Local Laws, statutes, ordinances, rules and regulations and the orders and decrees of any courts or administrative bodies or tribunals in any manner affecting the performance of the Contract, including, without limitation, Workmen's Compensation Laws, minimum salary and wage statutes and regulations, laws with respect to permits and licenses and fees in connection therewith, laws regarding maximum working hours and regulations with respect to use of explosives. No plea of misunderstanding or ignorance thereof will be considered. Whenever required, the Contractor, or Subcontractor, shall furnish the college with satisfactory proof of compliance with said Federal, State and Local Laws, statutes, ordinances, rules, regulations, orders, and decrees.

## **1.6 BID MODIFICATIONS**

Unless indicated, it is understood that bids are in strict accordance with specification requirements. Bids shall be deemed final, conclusive, and irrevocable. No bid shall be subject to correction or amendment for any error or miscalculation. Bid prices shall include cost of materials as specified, any applicable discounts and shipping. Installation costs shall be included only when indicated on page one. Installation shall include, but is not limited to, all assembly required, setting in place, and mounting all materials at various campus locations.

## **1.7 PRICES FIRM**

All prices quoted in the Bid shall be firm and will not be subject to increase during the term of the Contract awarded to the Contractor, except as otherwise provided in the Bid Documents.

## **1.8 AWARD OF CONTRACT**

The award of the contract will be made within ninety (90) calendar days after the opening of bids to the lowest responsible and qualified bidder whose bid complies with all the requirements prescribed. The successful bidder will be notified by electronic mail that their bid has been accepted and that they have been awarded the contract. Notification will also be posted on the College's Purchasing website at <http://www.cod.edu/about/purchasing/>. Failure to execute performance as per accepted bid may result in legal action by the College of DuPage to recover damages.

If a contract is not awarded within ninety (90) days after the opening of bids, a bidder may file a written request with the Purchasing Manager on the withdrawal of their bid and the Purchasing Manager will permit such withdrawal.

The bid security (if required) of all except the three (3) low bidders will be returned promptly after the bids have been checked, tabulated, and the relation of the bids established. Bid security of the three (3) lowest bidders, if required in legal notice, will be returned as soon as the contract and the bond of the successful bidder have been promptly executed and approved. If contracts cannot be awarded promptly, the College may permit the three (3) lowest bidders to substitute bid bonds for bank cashier's checks, bank drafts or certified checks submitted with their bids. Bid bonds executed by corporate surety companies shall be satisfactory to the Owner, but such substitution shall not be made until a period of fifteen (15) days has elapsed after the date of opening of bids and bond forms furnished by the College shall be used.

## **1.9 CONSIDERATION OF BIDS**

The College reserves the right to reject or accept any or all Bid responses, to extend the bidding period, to waive technicalities in the documents and/or to direct that the project be abandoned or rebid prior to award of the Contract.

## **1.10 COMPETENCY OF BIDDER**

No Bid will be accepted from or Contract awarded to a Bidder that is in arrears or is in default to the College upon any debt or Contract, or that is a defaulter, as surety or otherwise upon any obligation to said College, or has failed to perform faithfully any previous contract with the College.

#### **1.11 BIDDER WARRANTIES**

The submission of a Bid shall constitute a warranty that: (i) Bidder has carefully and thoroughly reviewed the Bid Documents and has found them complete and free from ambiguities and sufficient to describe the Contract work; (ii) Bidder and all workmen and/or employees it intends to use in the performance of this Contract are skilled and experienced in the type of work or services called for by the Bid Documents; and (iii) neither the Bidder nor any of its employees, agents, suppliers or subcontractors have relied on any verbal representations from the College, or any of the College's employees, agents, or consultants, in preparing the Bid.

#### **1.12 PAYMENT REMITTANCE**

All College vendors are required to receive payment from the College via an Automated Clearing House (ACH) transfer. Instructions to register for ACH payments will be sent, upon request, to successful bidders. Failure to comply with the ACH requirements may result in termination of the contract or purchase order. College ACH transfers typically occur the third week of each month. Invoices must be received at least 3 weeks prior to each ACH payment release. You are strongly encouraged to set up your account upon notice of award to avoid a delay payment.

#### **1.13 CASH BILLING DISCOUNTS**

Cash billing or percentage discounts for payment will not be considered in evaluating Bids.

#### **1.14 LOCAL BUSINESS PREFERENCE**

When two (2) or more responsible bidders submit the same low bid, the contract award will be determined by drawing lots in a public meeting unless one bidder is a local bidder within the District boundaries and one is a non-local bidder, in which event the local bidder will be awarded the contract.

#### **1.15 EQUAL EMPLOYMENT OPPORTUNITY**

In the hiring of employees for the performance of work under the Contract and any subcontract thereunder, no Contractor or Subcontractor shall, by reason of race, color, sex, religion, national origin, ancestry, age, marital status, disability, unfavorable military discharge or sexual orientation discriminate against any citizen of the United States, in the employment of Labor or workers, who are qualified and available to perform work to which the employment is related. Neither shall any Contractor or Subcontractor, or any person on behalf of either, discriminate against or intimidate any employee hired for the performance of work under this Contract on account of race, color, sex, religion, national origin, ancestry, age, marital status, disability, unfavorable military discharge or sexual orientation.

#### **1.16 TAX EXEMPTION**

College of DuPage District #502 is exempt from Federal, State and Municipal taxes. Exemption certificates will be furnished upon request.

#### **1.17 HOLD HARMLESS CLAUSE**

The Respondent agrees to indemnify, hold harmless and defend College of DuPage, 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.

## 1.18 INSURANCE

When work is being performed on College property, the College of DuPage requires a Certificate of Insurance in compliance with the following:

I) Workmen's Compensation Insurance shall be carried for all employees employed in carrying out the work contemplated under this agreement. The insurance shall comply with all State of Illinois and Federal requirements as may relate to Worker's Compensation Insurance. Employer's Liability Insurance shall also be provided for both bodily injury and disease that may arise out of the employment of any person involved in work under this agreement. Limits: \$500,000 Each Accident \$500,000 Each Disease \$500,000 Policy limit on disease.

II) Automobile Liability Insurance shall be carried to cover any liability arising out of the use of any automobile. This insurance shall cover owned, non-owned, leased and hired automobiles to protect claims for bodily injury or property damage which may arise from the use of motor vehicles engaged in various operations under this Contract. Combined Single Limit of \$1,000,000 for both bodily injury and property damage.

III) General Liability Insurance shall include: Bodily Injury, Property Damage, Personal Injury, Explosion, Collapse and Underground Damage Liability Endorsements (commonly called X, C, and U hazards), Products and Completed Operations, Blanket Contractual and Broad Form Property Damage coverage, with: Limits: \$1,000,000 Per occurrence \$2,000,000 General Aggregate \$1,000,000 Personal and advertising injury liability \$2,000,000 Products and completed operations aggregate.

Include College of DuPage, its director's & officers, employees and agents as additional insured's on the policy. Stipulate that such insurance is primary and is not in addition to, or contributing with, any other insurance carried by, or for the benefit of College of DuPage. Waive any and all right of subrogation against College of DuPage. Contain separation of insured's endorsement. The aggregate limit must be written per Project or per location limit.

IV) Umbrella/Excess Liability Insurance shall be carried to cover any liability in excess of the limits of coverage already required and provided through the primary liability policies. Limits: \$2,000,000 per occurrence.

\$2,000,000 Aggregate Umbrella Excess Liability Insurance must be in excess of the Employer's Liability Insurance, Automobile Liability Insurance, and General Liability Insurance.

V) Property Insurance shall be carried to protect all owned property brought on the premises relative to this agreement.

VI) Terms and Conditions

Prior to the commencement of the agreement, a valid/original Certificate of Insurance evidencing that all required insurance is in force, executed by an authorized representative of the insurance company, must be sent to College of DuPage, Attn: Purchasing Manager. Such Certificates shall identify the specific project/contract and location.

All Insurance companies shall be rated A VI or better by the current Best's Rating Guide and approved by the College.

All policies of insurance must be endorsed to contain a provision giving College of DuPage a thirty-day (30) prior written notice by registered mail of any cancellation of that policy or material change in coverage.

Receipt and review by the College or the College's Representative of any copies of insurance policies or insurance certificates shall not relieve the party to this agreement of his obligation to comply with the insurance provisions of the Agreement.

The insurance provisions of this Agreement shall not be construed as a limitation of the responsibilities and liabilities pursuant to the terms and conditions of this Agreement, including but not limited to liability for claims in excess of the insurance limits and coverage's set forth herein.

All policies shall be written with insurance companies licensed to do business in the State of Illinois. The College reserves the right to verify any information with the carrier.

The College has the right to request a certified copy of any insurance policy. Certificates must be filed with the College at least 30 days before the scheduled date of performance. You are required to add the College to its General Liability insurance policy with the following wording: "College of DuPage, including its current and former trustees, officers, employees, volunteer workers, agents, assigns and students, is added to this policy as additional insured.

#### **1.19 PREVAILING WAGE ACT:**

When applicable, and as a condition of receiving payment, Contractor must pay its employees prevailing wages in the locality in which the work is to be performed as establish for Public Works (construction and maintenance of a public work) prevailing wage and other requirements under Contract for Public Workers 820 ILCS 130/4. When required by the College Contractor shall provide a copy of the certified payroll on request. Contractor is responsible for contacting the Illinois Department of Labor to ensure understanding of prevailing wage requirements.

The prevailing rates of wages are determined by the Illinois Department of Labor and are available on the Department's official website: <http://www.illinois.gov/idol/Laws- Rules/CONMED/Pages/prevaling-wage-rates.aspx>. The College of DuPage has adopted the resolution regarding the prevailing wage rates for DuPage County in accordance with Illinois Prevailing Wage Act and are available the College's website: [http://www.cod.edu/about/purchasing/illinois\\_prevailing\\_wage\\_act.aspx](http://www.cod.edu/about/purchasing/illinois_prevailing_wage_act.aspx).

#### **1.20 BUSINESS ENTERPRISE PROGRAM**

The College of DuPage encourages the participation of qualified minorities, females, and persons with disabilities owned businesses in public contracts. It is the practice of the College to ensure full and equitable economic opportunities to persons and businesses that compete for business with the College of DuPage, including minorities, females, and persons with disabilities owned business enterprises. The College is committed to the economic development of disadvantaged business enterprises and the award of contracts to businesses owned by minorities, females, and persons with disabilities for services to the extent provided by the Business Enterprise for Minorities, Females and Persons with Disabilities Act ("Act"), 30 ILCS 575.

**END OF SECTION**

## 2.0 INSTRUCTIONS TO BIDDERS

### 2.1 OUTSIDE DOCUMENT DISCLAIMER

The College of DuPage cannot warrant, represent, or guarantee the accuracy or completeness of documents which have not been obtained directly from the College. If you have obtained these documents from a third party source, the College is not responsible for any loss or damage including, but not limited to, time, money, or goodwill arising from errors, inaccuracies or omissions in any third party bid documents.

To obtain official documents, please visit: <https://www.cod.edu/about/purchasing/requests/index.aspx> . Click on the link for this project, and follow the prompts to enter your information onto our vendor list and download the original documents. This will ensure your contact information is registered on our vendor list, and we can send you any addenda that may be issued. This website is the only official website for prospective bidders to obtain digital copies of bid documents. It is the responsibility of each prospective bidder to verify the completeness of their printed bid documents before submitting a bid and accompanying executed addenda acknowledgement, and other required forms.

### 2.2 BLACKOUT PERIOD

Under no circumstances are respondents to contact or discuss this Invitation to Bid, or any of the information contained herein or about this project in general, with any College of DuPage trustee, employee, vendor, contractor or subcontractor, other than using the methods outlined in this bid. Respondents are strictly forbidden from visiting the College's locations or approaching any College trustee, employee, vendor, contractor or subcontractor for any information related to this Invitation to Bid or this project without the direct knowledge and authorization in writing in advance from the Purchasing Manager or Buyer. Violation of these provisions may subject the respondent to immediate disqualification.

### Initial your understanding of this requirement

### 2.3 REQUESTS FOR INFORMATION/CLARIFICATION

If any firm submitting a bid for this project is in doubt as to the true meaning of the specifications or other documents or any part thereof, bidder shall request clarification from the Purchasing Department. Questions must be submitted in writing and be directed via email to the Purchasing Department at [purchasing@cod.edu](mailto:purchasing@cod.edu) no later than **August 8, 2017 at 11:00 a.m. Central Time**. Questions for which answers are provided will be communicated to all registered recipients of bid documents via addendum. All issued addenda must be signed and returned to the College as per the instructions in the addenda or bid will not be accepted.

### 2.4 SUBMISSION OF BIDS

All Bidders shall submit:

- One (1) **sealed** original copy of the Bid;
- and one flash drive** containing all completed documents

Bids must be in a sealed envelope and delivered to:

Purchasing Manager  
**ATTN: Bid No. 2018-B0009**  
College of DuPage, Purchasing Department  
BIC Building - Room 1B03  
425 Fawell Blvd.  
Glen Ellyn, Illinois 60137

Bids must be received by the date and hour of the Bid Opening as shown in the legal advertisement. The sealed envelope submitted by the Bidder shall carry the following information on the face of the envelope: Bidder's name, address, Bid Notice Number, advertised date of Bid Opening and the hour designated for

Bid Opening as shown in the legal advertisement. Unless otherwise stated, all blank spaces on the bid forms shall be fully completed. Bidder bears all responsibility for error or omissions in the submission of the Bid.

## **2.5 EXCEPTIONS**

If any Respondent intends to take any deviations or exceptions from the Specifications or other bid Documents, Respondent shall submit to the Purchasing Manager/Buyer a written request for a deviation or exception at least 5 business days prior to the date and time of advertised bid opening date. If the Project Manager considers such deviation or exception acceptable, the Purchasing Manager/Buyer shall issue an Addendum setting forth such deviation or exception from the Specifications or other which shall be applicable to all Respondents submitting a response.

If no Addendum is issued by the Purchasing Manager/Buyer, then such deviation or exception shall be deemed rejected.

The College may reject any response containing deviations or exceptions not previously accepted through a written Addendum. A copy of such Addendum will be e-mailed or delivered to each Respondent receiving a set of such bid Documents. Respondent shall acknowledge receipt of each Addendum issued in the space provided on the bid form or via a signed addendum. Failure to acknowledge receipt of addenda may result in disqualification of the Bid. All written requests for deviations or exceptions shall be sent to [purchasing@cod.edu](mailto:purchasing@cod.edu).

**Initial understanding of this requirement:** \_\_\_\_\_

## **2.6 ERROR IN BID**

Where a bidder claims to have made a mistake, such mistake must be called to the attention of the Purchasing Manager within twenty-four (24) hours after the opening of bids. Within forty-eight (48) hours of the bid opening, bidder shall submit to the College's designated contracting officer original documentary evidence and a detailed explanation of how the mistake was made. Failure to conform to this requirement precludes the bidder from withdrawing its bid based upon a bid mistake. If such notice, proof and explanations have been tendered, and the contracting officer is convinced that a bona fide mistake has been made, the contracting officer may recommend to the Board of Trustees that the bidder be allowed to withdraw its bid and recommend that the bid be awarded to the next lowest responsible, responsive bidder. If the Board determines by majority vote, that the bidder has made a bona fide error, no award will be made upon such bid and the bid security will be returned.

## **2.7 WITHDRAWAL OF BIDS**

Bidders may withdraw their Bids at any time prior to the time specified in the legal advertisement as the date and hour set for the Bid Opening. However, no Bidder shall withdraw, cancel or modify its Bid response for a period of ninety (90) calendar days after said advertised Bid Opening.

## **2.8 NOTICES**

All communications and notices between the College and Bidders regarding the Bid Documents shall be in writing and hand delivered or delivered via United States mail, postage prepaid, or via email. Notices to the Bidders shall be addressed to the name and address or email address provided by the Bidders; notices to the Purchasing Manager shall be addressed to Purchasing Department, College of DuPage, BIC Building - Room 1B03, 425 Fawell Blvd., Glen Ellyn, Illinois 60137, or [purchasing@cod.edu](mailto:purchasing@cod.edu).

## **2.9 BID DEPOSIT**

When required in the legal advertisement, the Bid shall be accompanied by cashier's check, certified check or surety bond in the amount shown in the legal advertisement or as may be prescribed in these Bid Documents. A certified or cashier's check shall be drawn on a responsible bank doing business in the United States and shall be made payable to the order of the College of DuPage. The Surety issuing the bond must have a general rating of "A", and shall be a Class V or higher in the financial size category as

defined by Best's Key Rating Guide - Property and Casualty. Failure to submit the bid deposit shall constitute an informal Bid and such Bid shall be rejected.

The Bidder hereby agrees that the bid deposit shall be forfeited to the College as liquidated damages and not as penalty in the event Bidder fails to comply with the terms of this invitation to bid, or otherwise fails or refuses to honor the Bid upon award of the Contract by the College.

The bid deposit of all bidders will be returned, with the exception of the winning Contractor, after the College has awarded the Contract. The bid deposit of the Contractor will be returned after the Contract has been awarded and the Contractor has submitted all insurance documentation and the Performance and Payment Bond, as required by the Bid Documents.

**\* This project does not require a bid deposit.**

## **2.10 PERFORMANCE AND PAYMENT BOND**

The successful Bidder shall furnish a Performance and Payment Bond in the full amount of the Contract. The Surety issuing the Performance and Payment Bond must have a general rating of "A" and shall be a Class V or higher in the financial size category as defined by Best's Key Rating Guide-Property and Casualty.

In the event that the Bidder fails to furnish the Performance and Payment Bond within fourteen (14) calendar days after service of the Notice of Award, the College may elect to retain Bidder's bid deposit as liquidated damages and not as a penalty and the Contract may be terminated. The parties agree that the sum of the bid deposit is a fair estimate of the amount of damages that the College will sustain due to the Bidder's failure to furnish the Performance and Payment Bond and the termination of the Contract.

**END OF SECTION**

### **3.0 SPECIFICATIONS**

#### **3.1 Scope of Work**

Scope of Work shall include but not limited to:

This contractor and /or his subcontractor (s) shall provide all labor, material, equipment and supervision necessary, incidental or reasonably inferred to complete all items for this scope of work and related work in accordance with this Exhibit "A" Scope of Work and Conceptual Drawings.

It is understood that the drawings and specification are documents which indicate the general scope of the project and as such, the drawings and specifications do not necessarily indicate or describe all "Work" required for the full performance and completion of the work. Contractor/subcontractor is to furnish and install all items required for the proper completion of his work without adjustment to the Contract and / or his subcontractor's price.

This project includes carpentry, electrical, and mechanical work required to renovate space per drawings. The contractor is responsible for providing all required new equipment and related parts, including all freight, labor, equipment, materials and supplies, coordination of all work, construction management, and supervision required for a complete turnkey installation for the Owner. This includes all purchasing, delivery, and installation. Also, any related parts, equipment, tools, materials, removal and disposal, project management and coordination of general, electrical and mechanical construction.

All work shall be completed in a professional manner by a knowledgeable contractor who is familiar with this type of work and installation.

1. The work consists of providing all materials and labor to fully execute the project per plans and specifications. Also provide any related parts, labor, materials, lifts, tools, equipment, and supervision required to complete work. The contractor will be responsible for the removal and disposal of construction waste/debris.
2. This contractor is responsible for any temporary plastic work curtains, floor protection, and scaffolding required during the construction phase.
3. The contractor is responsible for the performance and overseeing of all work required as outlined within the contract documents. This includes, but is not limited to mechanical construction, electrical construction, general construction, and all other work required for this project.
4. This contractor is responsible to verify all site conditions, existing equipment supports and field measurements in connection with the work, notifying the College Project Manager in writing of any discrepancies prior to the fabrication or commencement of installation of any work.
5. This contractor will have attended site walk through to understand the scope of work and acknowledges the work needed to complete the installation of work.
6. This contractor shall coordinate with onsite manager for all work to be completed.
7. This contractor shall keep the site area clear of any debris during the installation of their work.
8. A punch list walk through will be completed with the Colleges Project Manager after the contractor indicated he is substantially complete. The contractor will have 10 business days to complete his punch list.
9. All materials shall be new and in manufacture's original, unopened containers.

#### **3.2 Supplemental General Conditions**

1. All Work is to be performed during normal project working hours. Days / Hours of operation are as follows: Monday through Friday, 7:00 am –3:30 pm. Request for Overtime or Weekend or Holiday work hours is to be reviewed / approved by College of DuPage project manager.
2. This contractor shall also provide on separate cover all suppliers and subcontractors with contact information and approximate values before the first pay application. Subcontractor and supplier lien waivers will be required for each payment application.
3. This contractor shall perform all work, per local union agreements, or per Illinois Prevailing wage. This contractor shall provide appropriate labor forces necessary for performing its work and clean-up of its work.
4. This contractor shall prohibit any of their employees to work on campus who have been convicted of violent crimes or have outstanding criminal warrants.
5. This contractor shall comply with all parking regulations and shall park their vehicles in authorized areas only. This contractor shall advise the College Project Manager if certain parking areas are to be blocked off to perform their work 72 hrs. Prior to installation.
6. College of DuPage students, faculty, and staff are not to be disturbed or in any way disrupted in their responsibilities. Contraction personnel are to refrain from any unsavory or unwanted comments toward students, faculty, staff and visitors to campus.
7. College of DuPage is a non-smoking campus. The use of tobacco products is prohibited on campus.

### **3.3 Close-Out & Warranty Requirements**

Provide (3) Copies of Warranty Documentation for BIC Suite 3401 Renovation

**END OF SECTION**

**4.0 BID FORM**

**BIC 3401 Renovations**

***Schedule of Prices***

For the faithful performance of the Work, Contractor will pay to Subcontractor the Contract Price amount identified herein. The unit prices and alternates identified below will be utilized in determining increases or decreases in the Contract Price.

Bidder to furnish all labor, materials, equipment and services as required to satisfactorily complete all work described herein as required for the work and completion of the project.

<b>Item</b>	<b>Item Description</b>	<b>Qty</b>	<b>Unit of Measure</b>	<b>Total Price</b>
1	All materials and labor to fully execute project per plans and specifications	1	Ea.	
2	Furniture Reconfiguration Allowance	1	Ea.	\$ 4,500
<b><u>TOTAL BID PRICE</u></b>				
Bidder received <u>Exhibits A</u>				Yes / No

Submitted by: \_\_\_\_\_(printed)

Submitted by: \_\_\_\_\_(signed)

**END OF SECTION**

**5.0 CERTIFICATIONS \*\*Required\*\***

**IMPORTANT:** All bidders are required to complete and sign this form. Completed form must be returned with bid no later than the advertised bid deadline. Failure to return this completed form may result in disqualification of bid.

THE UNDERSIGNED IS CAUTIONED TO CAREFULLY READ THESE CERTIFICATIONS PRIOR TO SIGNING THE SIGNATURE PAGE. SIGNING THE SIGNATURE PAGE SHALL CONSTITUTE A WARRANTY BY THE UNDERSIGNED THAT ALL THE STATEMENTS, CERTIFICATIONS AND INFORMATION SET FORTH WITHIN THESE CERTIFICATIONS ARE TRUE, COMPLETE AND CORRECT AS OF THE DATE THE SIGNATURE PAGE IS SIGNED. THE UNDERSIGNED IS NOTIFIED THAT IF THE COLLEGE LEARNS THAT ANY OF THE FOLLOWING CERTIFICATIONS WERE FALSELY MADE, THAT ANY CONTRACT ENTERED INTO WITH THE UNDERSIGNED SHALL BE SUBJECT TO TERMINATION.

- A. Prevailing Wage Act. To the extent required by law, Contractor shall not pay less than the prevailing wage as established pursuant to an Act Regulating the Wages of Laborers, Mechanics, and Other Workman employed under Contract for Public Workers 820 ILCS 130/1 *et seq.* Our company certifies that it is eligible for bidding on public contracts and has complied with section 11a of the Prevailing Wage Act, 820 ILCS 130.01-12. **Yes** \_\_\_\_\_ **No** \_\_\_\_\_
- B. Human Rights Act. To the extent required by law, Contractor shall abide by the Illinois Human Rights Act, 775 ILCS 10/0.01 *et seq.*
- C. Drug Free Workplace. To the extent required by law, Contractor shall abide with the requirements of the Drug Free Workplace Act 30 ILCS 580.1 *et seq.*
- D. Sexual Harassment Policy. Contractor represents by the signing of this agreement that it has a written sexual harassment policy that is in accordance with 775 ILCS 5/2-105 (A) (4).
- E. Non-debarment. By executing this agreement Contractor certifies that it has not been debarred from public contracts in the State of Illinois for violating either 33E-3 or 33E-4 of the Public Contracts Act, 720 ILCS 5/33E-1 *et seq.*
- F. Fair Employment Practice: Company is in compliance with all State and Federal laws regarding Fair Employment Practice as well as all rules and regulations. **Yes** \_\_\_\_\_ **No** \_\_\_\_\_
- G. Our company has an Equal Employment Opportunity and Affirmative Action Program which complies with Executive Order 11246, the Vietnam Era Veterans' Readjustment Assistance Act of 1974, and the Rehabilitation Act of 1973.  
**Yes** \_\_\_\_\_ **No** \_\_\_\_\_
- H. Our company certifies that it is eligible for bidding on public contracts and is not in violation of either paragraph 33E-3 or 33-E-4 of Public Act 86-150, 720ICLS 5 with regards to bid rigging/bid rotating.  
**Yes** \_\_\_\_\_ **No** \_\_\_\_\_
- I. When required by law, the bidder and all bidder's subcontractors must participate in applicable apprenticeship and training programs approved by and registered with the United States Department of Labor's Bureau of Apprenticeship and Training as required by Illinois Public Act 093-0642.

**ADVICE**

- A. MINORITY/WOMAN-OWNED, DISADVANTAGED BUSINESS? YES \_\_\_\_\_ NO \_\_\_\_\_. If yes, please attach copy of certification and advise certification number and expiration date below:

Name of Certifying Entity: \_\_\_\_\_

Certification #: \_\_\_\_\_ Expiration Date: \_\_\_\_\_

- B. STATE NEGOTIATED COOPERATIVE AGREEMENT: YES \_\_\_\_\_ NO \_\_\_\_\_ Contract No. \_\_\_\_\_

Signature

Respondent/Company Official: \_\_\_\_\_ Date: \_\_\_\_\_

**6.0 SIGNATURE PAGE \*\*Required\*\***

**IMPORTANT:** All bidders are required to complete and sign this form. Completed form must be returned with bid to [purchasing@cod.edu](mailto:purchasing@cod.edu) no later than the advertised bid deadline. Failure to return this completed form may result in disqualification of bid.

Check One:

**SOLE PROPRIETOR**     **PARTNERSHIP** (and/or JOINT VENTURE)     **LIMITED LIABILITY COMPANY**

**CORPORATION**

The undersigned acknowledges receipt of a full set of Bid Documents and Addenda Numbers \_\_\_\_\_ (None unless indicated here). **All issued addenda must be signed and returned to the College as per the instructions in the addenda or bid will not be accepted.**

The undersigned makes the foregoing Bid subject to all of the terms and conditions of the Bid Documents. The undersigned certifies that all of the foregoing statements of the Vendor Certifications are true and correct. The undersigned warrants that all of the facts and information submitted by the undersigned in connection with this Bid are true and correct. Upon award and execution of this Contract by the College of DuPage Board of Trustees, the undersigned agrees that execution of this Bid shall stand as the undersigned's execution of this Contract.

BUSINESS NAME: \_\_\_\_\_

BUSINESS ADDRESS: \_\_\_\_\_

BUSINESS TELEPHONE: \_\_\_\_\_ FAX NUMBER: \_\_\_\_\_

EMAIL ADDRESS: \_\_\_\_\_

CELLULAR TELEPHONE NUMBER: \_\_\_\_\_

FEIN/SSN: \_\_\_\_\_

AUTHORIZED SIGNATURE: \_\_\_\_\_

PRINT NAME: \_\_\_\_\_

TITLE: \_\_\_\_\_

DATE: \_\_\_\_\_

Subscribed to and sworn before me this

\_\_\_\_\_ Day of \_\_\_\_\_, 2016.                      My commission expires: \_\_\_\_\_

X \_\_\_\_\_

Notary Public Signature

Notary Seal

\* **Attach hereto a partnership resolution or other document authorizing the individual signing this Signature Page to so sign on behalf of the Partnership.**

\*\* **If the LLC is not registered in the State of Illinois, a copy of a current Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.**

\*\*\* **Attach either a certified copy of the by-laws, articles, resolution or other authorization demonstrating such persons to sign the Signature Page on behalf of the LLC.**

\*\*\* **If the corporation is not registered in the State of Illinois, a copy of the Certificate of Good Standing from the state of incorporation must be submitted with this Signature Page.**

\*\*\*\*\* **In the event that this Signature Page is signed by any persons other than the President and Secretary, attach either a certified copy of the corporate by-laws, a resolution or other authorization by the corporation, authorizing such persons to sign the Signature Page on behalf of the corporation.**

**7.0 CONFLICT OF INTEREST DISCLOSURE AND NON-COLLUSION FORM **\*\*Required\*\*****

**IMPORTANT:** All bidders are required to complete and sign this form. Completed form must be returned with bid no later than the advertised bid deadline. Failure to return this completed form may result in disqualification of bid.

BID #: \_\_\_\_\_ DATE: \_\_\_\_\_

**CONFLICT OF INTEREST DISCLOSURE**

College of DuPage (COD) reserves the right, at its sole discretion, to reject any and all bids, revise the submission timeline as described in the solicitation, and to discontinue at any time the submission process as described in the solicitation. College of DuPage is requiring that any and all relationships with the College, its Administrators, Trustees, Committee members, COD Foundation Trustees, or any other Employee of the College be disclosed in writing as a part of any bid submitted. Contact with any employee of the College of DuPage during the pre-award period, except as noted in the solicitation, is strictly forbidden and is considered sufficient grounds for dismissal from the Bid/RFP process.

**VENDOR CONFLICT OF INTEREST DISCLOSURE**

Define the relationship with any College of DuPage Administrator, Trustee, Employee, COD Foundation Board member, Committee member, or their immediate family member, with which your company or any of its owners, officers, Trustees, employees, or their immediate family, does business or is likely to do business with, or for which there is an opportunity to influence a related College decision; include the name and relationship to any immediate family member.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Vendor certifies that there is no known conflict of interest with any COD Administrator, Employee, Trustee, Committee member, or COD Foundation Trustee, or their immediate family.

Vendor Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**NON-COLLUSION STATEMENT**

The undersigned affirms that he/she is duly authorized to execute this contract and that this company, corporation, firm, partnership or individual has not prepared this bid in collusion with any other bidder, and that the contents of this bid as to prices, terms or conditions of said bid have not been Communicated by the undersigned nor by any employee or agent to any other person engaged in this type of business prior to the official opening of this bid.

Company Name: \_\_\_\_\_ Owners/Principal(s)  
Name(s)/Title(s): \_\_\_\_\_

Vendor Address: \_\_\_\_\_ City, State, Zip: \_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

Email Address: \_\_\_\_\_

Signature

Bidder/Company Official: \_\_\_\_\_ Date: \_\_\_\_\_

**Exhibit A – Scope of Work and Drawings**





# SPECIFICATIONS

## 02 41 19 - SELECTIVE DEMOLITION

- 1.1 FIELD CONDITIONS
  - A. OWNER WILL OCCUPY PORTIONS OF BUILDING IMMEDIATELY ADJACENT TO SELECTIVE DEMOLITION AREA. CONDUCT SELECTIVE DEMOLITION SO OWNER'S OPERATIONS WILL NOT BE DISRUPTED.
  - B. NOTIFY ARCHITECT OF DISCREPANCIES BETWEEN EXISTING CONDITIONS AND DRAWINGS BEFORE PROCEEDING WITH SELECTIVE DEMOLITION.
  - C. HAZARDOUS MATERIALS: IT IS NOT EXPECTED THAT HAZARDOUS MATERIALS WILL BE ENCOUNTERED IN THE WORK. 1. IF SUSPECTED HAZARDOUS MATERIALS ARE ENCOUNTERED, DO NOT DISTURB; IMMEDIATELY NOTIFY ARCHITECT AND OWNER. HAZARDOUS MATERIALS WILL BE REMOVED BY OWNER UNDER A SEPARATE CONTRACT.
  - D. UTILITY SERVICES: MAINTAIN EXISTING UTILITIES INDICATED TO REMAIN IN SERVICE AND PROTECT THEM AGAINST DAMAGE DURING SELECTIVE DEMOLITION OPERATIONS.
  - E. ARRANGE SELECTIVE DEMOLITION SCHEDULE SO AS NOT TO INTERFERE WITH OWNER'S OPERATIONS.
- 1.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS
  - A. EXISTING SERVICES/SYSTEMS TO BE REMOVED, RELOCATED, OR ABANDONED: LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF UTILITY SERVICES AND ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED.
    1. OWNER WILL ARRANGE TO SHUT OFF INDICATED SERVICES/SYSTEMS WHEN REQUESTED BY CONTRACTOR.
    2. IF SERVICES/SYSTEMS ARE REQUIRED TO BE REMOVED, RELOCATED, OR ABANDONED, PROVIDE TEMPORARY SERVICES/SYSTEMS THAT BYPASS AREA OF SELECTIVE DEMOLITION AND THAT MAINTAIN CONTINUITY OF SERVICES/SYSTEMS TO OTHER PARTS OF BUILDING.
- 1.3 PROTECTION
  - A. TEMPORARY PROTECTION: PROVIDE TEMPORARY DUST PROOF BARRICADES AND OTHER PROTECTION REQUIRED TO PREVENT INJURY TO PEOPLE OR DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN.
- 1.4 SELECTIVE DEMOLITION
  - A. GENERAL: DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS OF GOVERNING REGULATIONS AND AS FOLLOWS:
    1. NEATLY CUT OPENINGS AND HOLES PLUMB, SQUARE, AND TRUE TO DIMENSIONS REQUIRED. USE CUTTING METHODS LEAST LIKELY TO DAMAGE CONSTRUCTION TO REMAIN OR ADJOINING CONSTRUCTION. USE HAND TOOLS OR SMALL POWER TOOLS DESIGNED FOR SAWING OR GRINDING, NOT HAMMERING AND CHOPPING. TEMPORARILY COVER OPENINGS TO REMAIN.
    2. CUT OR DRILL FROM THE EXPOSED OR FINISHED SIDE INTO CONCEALED SURFACES TO AVOID MARRING EXISTING FINISHED SURFACES.
    3. DISPOSE OF DEMOLISHED ITEMS AND MATERIALS PROMPTLY.
  - B. REMOVED AND REINSTALLED ITEMS:
    1. CLEAN AND REPAIR ITEMS TO FUNCTIONAL CONDITION ADEQUATE FOR INTENDED REUSE.
    2. PACK OR CRATE ITEMS AFTER CLEANING AND REPAIRING.
    3. PROTECT ITEMS FROM DAMAGE DURING TRANSPORT AND STORAGE.
    4. REINSTALL ITEMS IN LOCATIONS INDICATED, COMPLY WITH INSTALLATION REQUIREMENTS FOR NEW MATERIALS AND EQUIPMENT. PROVIDE CONNECTIONS, SUPPORTS, AND MISCELLANEOUS MATERIALS NECESSARY TO MAKE ITEM FUNCTIONAL FOR USE INDICATED.
  - C. EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING SELECTIVE DEMOLITION.
- 1.5 CLEANING
  - A. CLEAN ADJACENT STRUCTURES AND IMPROVEMENTS OF DUST, DIRT, AND DEBRIS CAUSED BY SELECTIVE DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE SELECTIVE DEMOLITION OPERATIONS BEGAN.

## 08 11 13 - DOOR, FRAME AND HARDWARE

- 1.1 WORK INCLUDES
- 1.2 DOOR, FRAME, AND HARDWARE TO MATCH EXISTING WITHIN SPACE.
  1. NEW 1-3/4" SOLID CORE FLUSH WOOD DOOR WITH WOOD VENEER WITH CLEAR FINISH. MEET THE FOLLOWING REQUIREMENTS:
    - GRADE: PREMIUM, GRADE A, TR-6
    - CONSTRUCTION: 5-PLY
    - CORE: STRUCTURAL COMPOSITE LUMBER CORE (SCL)
    - VENEER: MATCH VENEER IN EXISTING SPACE
- 1.3 PROVIDE BY ONE OF THE FOLLOWING MANUFACTURERS:
  - ALGOMA HARDWOODS, INC
  - EGGERS INDUSTRIES, ARCHITECTURAL DOOR DIV.
  - MARSHFIELD DOOR SYSTEMS, INC
  - OSHKOSH
- 1.4 PROVIDE LIFETIME WARRANTY FOR WOOD DOOR
- 1.5 PROVIDE VENEER SAMPLE FOR MATCHING PRIOR TO CONSTRUCTION.
- 1.6 DOOR HARDWARE TO MATCH EXISTING HARDWARE OF DOORS IN SPACE. FINISH TO MATCH HARDWARE IN EXISTING SPACE. PROVIDE THE FOLLOWING:
  - HARDWARE SET 1 CONSISTING OF:
    - 3 PAIR HINGES, BB1279; HAGER
    - 1 LATCHSET, L9080 (OFFICE); SCHLAGE
    - 1 CYLINDER, MEDECO KEYMARK 7-PIN SFC
    - 1 STOP, WALL; IVES
    - 1 SET SILENCERS
- 1.7 DOOR FRAME
  1. DOOR FRAME TO MATCH EXISTING FRAMES WITHIN SPACE.
  2. FABRICATE FRAMES OF FULL-WELDED UNIT CONSTRUCTION WITH CORNERS MITERED, REINFORCED AND CONTINUOUSLY WELDED AND GROUND SMOOTH. KNOCK DOWN FRAMES ARE NOT PERMITTED.
  3. FORM FRAMES FROM COLD OR HOT-ROLLED STEEL SHEET OF MINIMUM 16 GAGE THICKNESS.

## 09 22 16 - NON-STRUCTURAL METAL FRAMING

- 1.1 WORK INCLUDES
  1. GENERAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, TOOLS, AND EQUIPMENT NECESSARY TO PROVIDE THE FOLLOWING, AS SHOWN ON THE DRAWINGS, HEREIN SPECIFIED, OR OTHERWISE REQUIRED:
    - a. NON-STRUCTURAL FRAMING FOR GYPSUM BOARD.
- 1.2 RELATED WORK
  - A. SECTION 09 29 00 - GYPSUM BOARD ASSEMBLIES
- 1.3 SUBMITTALS
  - A. PRODUCT DATA: FOR EACH TYPE OF PRODUCT INDICATED.
- 1.4 QUALITY ASSURANCE
  - A. FIRE-TEST-RESPONSE CHARACTERISTICS: FOR FIRE-RESISTANCE-RATED ASSEMBLIES THAT INCORPORATE NON-LOAD-BEARING STEEL FRAMING, PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLY INDICATED ACCORDING TO ASTM E 119 BY AN INDEPENDENT TESTING AGENCY.
  - B. STC-RATED ASSEMBLIES: FOR STC-RATED ASSEMBLIES, PROVIDE MATERIALS AND CONSTRUCTION IDENTICAL TO THOSE TESTED IN ASSEMBLY INDICATED ACCORDING TO ASTM E 90 AND CLASSIFIED ACCORDING TO ASTM E 413 BY AN INDEPENDENT TESTING AGENCY.
- 2.1 NON-LOAD-BEARING STEEL FRAMING, GENERAL
  - A. RECYCLED CONTENT OF STEEL PRODUCTS: PROVIDE PRODUCTS WITH AVERAGE RECYCLED CONTENT OF STEEL PRODUCTS SUCH THAT POSTCONSUMER RECYCLED CONTENT PLUS ONE-HALF OF PRECONSUMER RECYCLED CONTENT IS NOT LESS THAN 25 PERCENT.
  - B. FRAMING MEMBERS, GENERAL: COMPLY WITH ASTM C 754 FOR CONDITIONS INDICATED.
    1. STEEL SHEET COMPONENTS: COMPLY WITH ASTM C 645 REQUIREMENTS FOR METAL, UNLESS OTHERWISE INDICATED.
    2. PROTECTIVE COATING: ASTM A 653/A 653M, G40, HOT-DIP GALVANIZED, UNLESS OTHERWISE INDICATED.
- 2.2 STEEL FRAMING FOR FRAMED ASSEMBLIES
  - A. STEEL STUDS AND RUNNERS: ASTM C 645.
    1. MINIMUM BASE-METAL THICKNESS: 20 GAUGE.
    2. DEPTH: AS INDICATED ON DRAWINGS.
  - B. SLIP-TYPE HEAD JOINTS: WHERE INDICATED, PROVIDE THE FOLLOWING:
    1. DEFLECTION TRACK: STEEL SHEET TOP-RUNNER MANUFACTURED TO PREVENT CRACKING OF FINISHES APPLIED TO INTERIOR PARTITION FRAMING RESULTING FROM DEFLECTION OF STRUCTURE ABOVE; IN THICKNESS NOT LESS THAN INDICATED FOR STUDS AND IN WIDTH TO ACCOMMODATE DEPTH OF STUDS.
  - C. HAT-SHAPED, RIGID FURRING CHANNELS: ASTM C 645.
    1. MINIMUM BASE-METAL THICKNESS: 22 GAUGE.
    2. DEPTH: AS INDICATED ON DRAWINGS.
- 2.3 AUXILIARY MATERIALS
  - A. GENERAL: PROVIDE AUXILIARY MATERIALS THAT COMPLY WITH REFERENCED INSTALLATION STANDARDS.
    1. FASTENERS FOR METAL FRAMING: OF TYPE, MATERIAL, SIZE, CORROSION RESISTANCE, HOLDING POWER, AND OTHER PROPERTIES REQUIRED TO FASTEN STEEL MEMBERS TO SUBSTRATES.
- 3.1 EXAMINATION
  - A. EXAMINE AREAS AND SUBSTRATES, WITH INSTALLER PRESENT, AND INCLUDING WELDED HOLLOW-METAL FRAMES, CAST-IN ANCHORS, AND STRUCTURAL FRAMING, FOR COMPLIANCE WITH REQUIREMENTS AND OTHER CONDITIONS AFFECTING PERFORMANCE.
    1. PROCEED WITH INSTALLATION ONLY AFTER UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.
- 3.2 INSTALLATION, GENERAL
  - A. INSTALLATION STANDARD: ASTM C 754, EXCEPT COMPLY WITH FRAMING SIZES AND SPACING INDICATED.
    1. GYPSUM BOARD ASSEMBLIES: ALSO COMPLY WITH REQUIREMENTS IN ASTM C 840 THAT APPLY TO FRAMING INSTALLATION.
  - B. INSTALL SUPPLEMENTARY FRAMING, AND BLOCKING TO SUPPORT FIXTURES, EQUIPMENT SERVICES, HEAVY TRIM, GRAB BARS, TOILET ACCESSORIES, FURNISHINGS, OR SIMILAR CONSTRUCTION.
- 3.3 INSTALLING FRAMED ASSEMBLIES
  - A. WHERE STUDS ARE INSTALLED DIRECTLY AGAINST EXTERIOR MASONRY WALLS OR DISSIMILAR METALS AT EXTERIOR WALLS, INSTALL ISOLATION STRIP BETWEEN STUDS AND EXTERIOR WALL.

- B. INSTALL STUDS SO FLANGES WITHIN FRAMING SYSTEM POINT IN SAME DIRECTION.
  1. SPACE STUDS AS FOLLOWS:
    - a. SINGLE-LAYER APPLICATION: 16 INCHES O.C. MAX.
- C. INSTALL TRACKS (RUNNERS) AT FLOORS AND OVERHEAD SUPPORTS. EXTEND FRAMING FULL HEIGHT TO STRUCTURAL SUPPORTS OR SUBSTRATES ABOVE SUSPENDED CEILINGS, EXCEPT WHERE PARTITIONS ARE INDICATED TO TERMINATE AT SUSPENDED CEILINGS. CONTINUE FRAMING AROUND DUCTS PENETRATING PARTITIONS ABOVE CEILING.
  1. SLIP-TYPE HEAD JOINTS: WHERE FRAMING EXTENDS TO OVERHEAD STRUCTURAL SUPPORTS, INSTALL TO PRODUCE JOINTS AT TOPS OF FRAMING SYSTEMS THAT PREVENT AXIAL LOADING OF FINISHED ASSEMBLIES.
- D. DIRECT FURRING:
  1. ATTACH TO CONCRETE OR MASONRY WITH STUB NAILS, SCREWS DESIGNED FOR MASONRY ATTACHMENT, OR POWDER-DRIVEN FASTENERS SPACED 24 INCHES O.C.
- E. INSTALLATION TOLERANCE: INSTALL EACH FRAMING MEMBER SO FASTENING SURFACES VARY NOT MORE THAN 1/8 INCH FROM THE PLANE FORMED BY FACES OF ADJACENT FRAMING.

## 09 29 00 - GYPSUM BOARD

- 1.1 INTERIOR GYPSUM BOARD
  - A. GYPSUM CEILING BOARD: ASTM C 1396/C 1396M.
    1. THICKNESS: 5/8 INCH (12.7 MM).
    2. LONG EDGES: TAPERED.
  - B. ABUSE-RESISTANT GYPSUM BOARD: ASTM C 1396/C 1396M GYPSUM BOARD, TESTED ACCORDING TO ASTM C 1629/C 1629M.
    1. CORE: 5/8 INCH (15.9 MM), TYPE X.
    2. SURFACE ABRASION: ASTM C 1629/C 1629M, MEETS OR EXCEEDS LEVEL 1 REQUIREMENTS.
    3. INDENTATION: ASTM C 1629/C 1629M, MEETS OR EXCEEDS LEVEL 1 REQUIREMENTS.
    4. SOFT-BODY IMPACT: ASTM C 1629/C 1629M, MEETS OR EXCEEDS LEVEL 1 REQUIREMENTS.
    5. LONG EDGES: TAPERED.
    6. MOLD RESISTANCE: ASTM D 3273, SCORE OF 10 AS RATED ACCORDING TO ASTM D 3274.
- 1.2 TRIM ACCESSORIES
  - A. INTERIOR TRIM: ASTM C 1047.
    1. MATERIAL: GALVANIZED OR ALUMINUM-COATED STEEL SHEET, ROLLED ZINC, PLASTIC, OR PAPER-FACED GALVANIZED-STEEL SHEET.
- 1.3 JOINT TREATMENT MATERIALS
  - A. GENERAL: COMPLY WITH ASTM C 475/C 475M.
  - B. JOINT COMPOUND FOR INTERIOR GYPSUM BOARD: FOR EACH COAT, USE FORMULATION THAT IS COMPATIBLE WITH OTHER COMPOUNDS APPLIED ON PREVIOUS OR FOR SUCCESSIVE COATS.
    1. PREFILLING: AT OPEN JOINTS AND DAMAGED SURFACE AREAS, USE SETTING-TYPE TAPING COMPOUND.
    2. EMBEDDING AND FIRST COAT: FOR EMBEDDING TAPE AND FIRST COAT ON JOINTS, FASTENERS, AND TRIM FLANGES, USE SETTING-TYPE TAPING COMPOUND.
    3. FILL COAT: FOR SECOND COAT, USE SETTING-TYPE, SANDABLE TOPPING COMPOUND.
    4. FINISH COAT: FOR THIRD COAT, USE SETTING-TYPE, SANDABLE TOPPING COMPOUND.
- 1.4 AUXILIARY MATERIALS
  - A. GENERAL: PROVIDE AUXILIARY MATERIALS THAT COMPLY WITH REFERENCED INSTALLATION STANDARDS AND MANUFACTURER'S WRITTEN INSTRUCTIONS.
- 1.5 APPLYING AND FINISHING PANELS
  - A. EXAMINE PANELS BEFORE INSTALLATION. REJECT PANELS THAT ARE WET, MOISTURE DAMAGED, AND MOLD DAMAGED.
  - B. COMPLY WITH ASTM C 840.
  - C. PREFILL OPEN JOINTS AND DAMAGED SURFACE AREAS.
  - D. APPLY JOINT TAPE OVER GYPSUM BOARD JOINTS, EXCEPT FOR TRIM PRODUCTS SPECIFICALLY INDICATED AS NOT INTENDED TO RECEIVE TAPE.
  - E. GYPSUM BOARD FINISH LEVELS: FINISH PANELS TO LEVELS INDICATED BELOW AND ACCORDING TO ASTM C 840:
    1. LEVEL 4: AT ALL LOCATIONS.

## 09 91 23 - INTERIOR PAINT

- 2.1 APPLICATION
  - A. APPLY PAINTS ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS IN "MPI ARCHITECTURAL PAINTING SPECIFICATION MANUAL."
  - B. APPLY PAINTS TO PRODUCE SURFACE FILMS WITHOUT CLOUDINESS, SPOTTING, HOLIDAYS, LAPS, BRUSH MARKS, ROLLER TRACKING, RUNS, SAGS, ROPINESS, OR OTHER SURFACE IMPERFECTIONS. CUT IN SHARP LINES AND COLOR BREAKS.
- 2.2 INTERIOR PAINTING SCHEDULE
  - A. GYPSUM BOARD SUBSTRATES:
    1. INTERIOR LATEX EGGSHELL FINISH: APPLY TO ALL GYPSUM WALLBOARD SURFACES CALLED FOR TO BE PAINTED, WHERE INDICATED.
    2. FIRST COAT: INTERIOR LATEX BASE PRIMER COAT (FS TT P 650).
      - a. SHERWIN WILLIAMS, HARMONY INTERIOR LATEX PRIMER OR APPROVED EQUAL
    3. SECOND COAT: INTERIOR EGGSHELL FINISH LATEX BASE PAINT
      - a. SHERWIN WILLIAMS, HARMONY INTERIOR EGGSHELL OR APPROVED EQUAL

## 09 51 00 - ACOUSTICAL LAY-IN CEILING

- 2.1 LAY-IN ACOUSTICAL CEILING PANELS
  - A. ACT-1 MATCH EXISTING
- 2.2 METAL SUSPENSION SYSTEM STANDARD SHALL MATCH EXISTING
- 2.3 RUNNERS AND CROSS RUNNERS SHALL MATCH EXISTING



4 EXISTING EXPANSION JOINT  
NTS



3 EXISTING EXPANSION JOINT  
NTS



2 EXISTING EXPANSION JOINT  
NTS



1 EXISTING EXPANSION JOINT ABOVE CEILING  
NTS



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BIC 3401 RENOVATIONS**

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GLEN ELLYN, IL 60137

Drawing Title

**SPECIFICATIONS**

Expiration Date of Seal: 11/30/2018 BE Project No. 15044-1706



Drawn By: PK

Drawing No. G002

**DEMOLITION KEYNOTES**

- |                                                                                                                                                                                                                                         |                                                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.01 DEMO CEILING GRID AND TILE SYSTEM AND ALL RELATED COMPONENTS, HANGERS, SUPPORTS, RETURN AND SUPPLY GRILLES, LIGHTING, ETC. PATCH AND REFINISH AS REQUIRED TO RECEIVE NEW WORK. REFERENCE OTHER TRADES FOR ADDITIONAL REQUIREMENTS. | 2.08 EXISTING CEILING SYSTEM TO REMAIN, PROTECT.                                                                                                    |
| 2.02 DEMO EXISTING PARTITION, BASE AND OTHER ASSOCIATED SUPPORT, PATCH AND REFINISH TO MATCH ADJACENT FINISHES AND TO PROPERLY RECEIVE NEW WORK.                                                                                        | 2.09 EXISTING COLUMN TO REMAIN, PROTECT.                                                                                                            |
| 2.03 SALVAGE DOOR, FRAME AND SIDELIGHT TO RE-INSTALL AS NEW SCOPE.                                                                                                                                                                      | 2.10 REMOVE SECTION OF PENDANT LIGHT FIXTURE, INSTALL NEW SUPPORT AS REQUIRED, SALVAGE AND RELOCATE END TRIM PIECE OR REPLACE WITH NEW AS REQUIRED. |
| 2.04 DEMO CARPET AND BASE, RETURN CARPET TO OWNER.                                                                                                                                                                                      | 2.11 REMOVE DISPLAY MONITOR AND SALVAGE FOR RE-USE, PATCH AND REFINISH PARTITION AS REQUIRED.                                                       |
| 2.05 EXISTING CARPET TO REMAIN, PROTECT.                                                                                                                                                                                                | 2.12 EXISTING DOOR TO REMAIN.                                                                                                                       |
| 2.06 EXISTING CASEWORK REMAIN, PROTECT.                                                                                                                                                                                                 | 2.13 EXISTING PENDANT LIGHT FIXTURE TO REMAIN, PROTECT.                                                                                             |
| 2.07 EXISTING EXPANSION JOINT AND COVER TO REMAIN, PROTECT.                                                                                                                                                                             | 2.14 EXISTING FURNITURE, CLIENT WILL REMOVE, STORE AND REINSTALL.                                                                                   |

**DEMOLITION GENERAL NOTES**

- ALL DIMENSIONS INDICATED ARE EXISTING UNLESS NOTED OTHERWISE. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF ANY WORK.
- ALL BUILDING ELEMENTS AFFECTED BY WORK SHALL BE REMOVED AND SALVAGED FOR REINSTALLATION UNLESS NOTED OTHERWISE.
- ALL BUILDING ELEMENTS NOT IN SCOPE OF WORK ARE EXISTING TO REMAIN AND SHALL BE PROTECTED FROM DAMAGE DURING ALL DEMOLITION ACTIVITIES.
- REFER TO ENGINEERING DRAWINGS FOR ADDITIONAL DEMOLITION INFORMATION.
- SEE G001 FOR PENETRATION FIRE STOPPING NOTES
- SEAL ALL PENETRATIONS TO PREVENT SMOKE INFILTRATION
- ALL EXISTING MOVABLE FURNITURE TO BE RELOCATED BY OWNER AS REQUIRED.

**DEMOLITION LEGEND**

- |  |                                                     |  |                        |
|--|-----------------------------------------------------|--|------------------------|
|  | EXISTING - TO BE DEMOLISHED                         |  | AREA N.I.C             |
|  | EXISTING - TO REMAIN                                |  | SPRINKLER              |
|  | EXISTING DOOR, FRAME, AND HARDWARE TO BE DEMOLISHED |  | MECH. SUPPLY           |
|  | EXISTING DOOR, FRAME AND HARDWARE TO REMAIN         |  | MECH. RETURN           |
|  | AREA OF SCOPE FOR KEYNOTE                           |  | CEILING LIGHT FIXTURES |
|  |                                                     |  | LIGHT FIXTURE          |



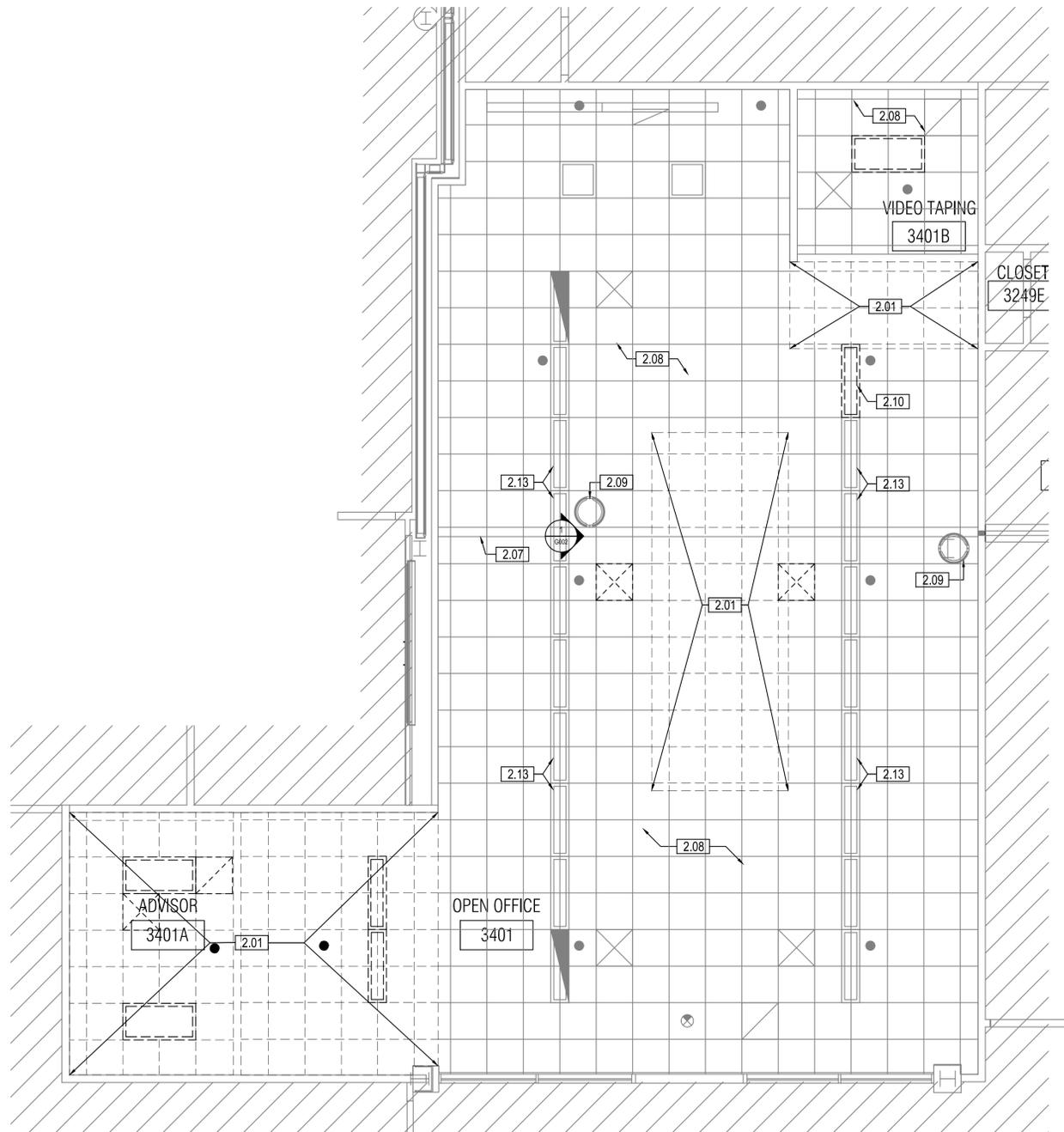
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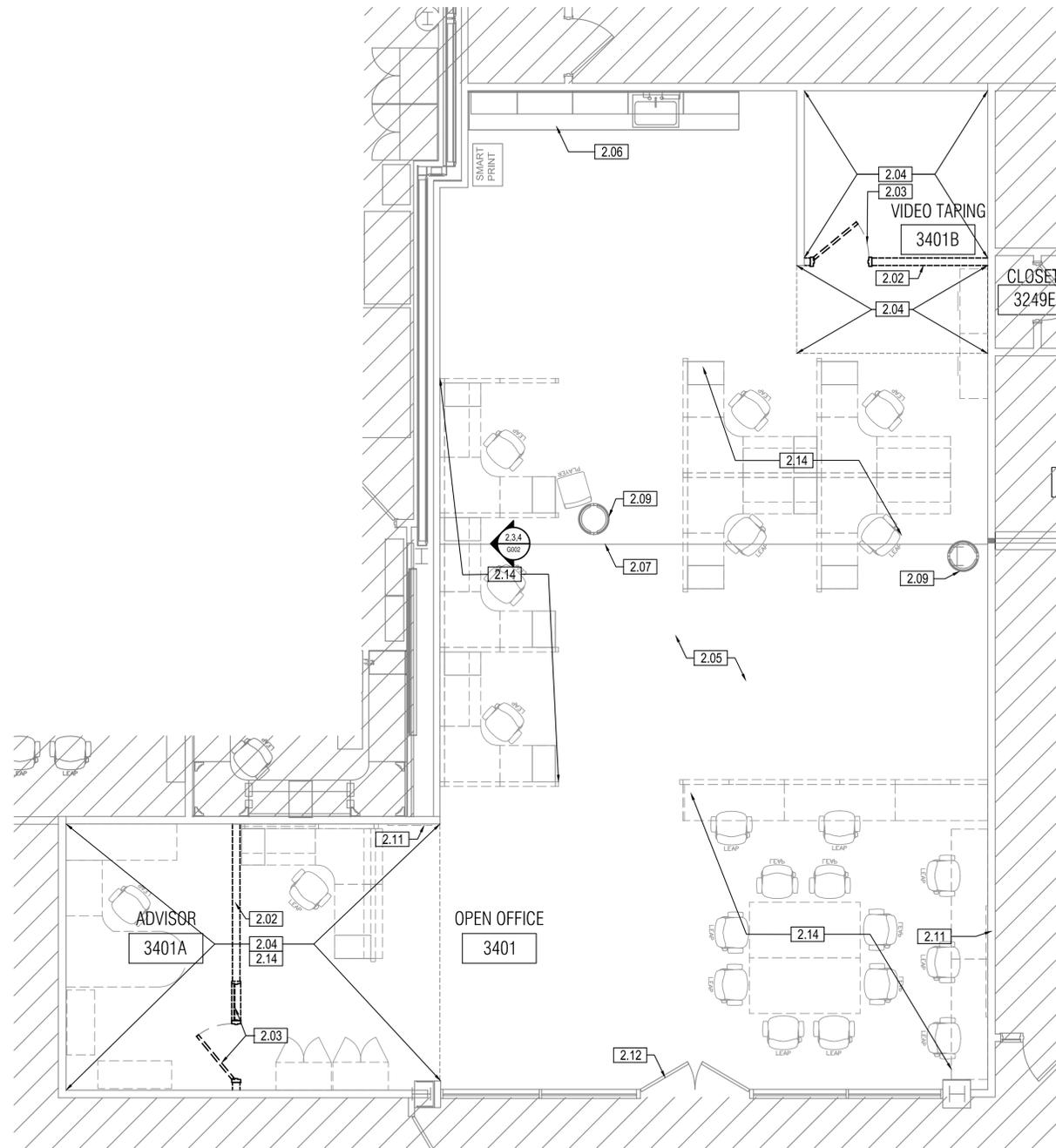
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2 DEMO - PARTIAL RCP  
SCALE: 1/4" = 1'  
NORTH



1 DEMO - PARTIAL PLAN  
SCALE: 1/4" = 1'  
NORTH

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BIC 3401 RENOVATIONS**

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**DEMO FLOOR PLAN  
AND RCP**

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Drawing No.: D100

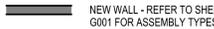
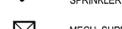
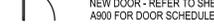
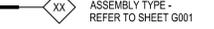
**NEW WORK KEYNOTES**

- 2.07** EXISTING EXPANSION JOINT AND COVER TO REMAIN, PROTECT.
- 2.08** EXISTING CEILING SYSTEM TO REMAIN, PROTECT.
- 7.01** EXPANSION JOINT AT WALL MATCH EXISTING.
- 7.02** EXPANSION JOINT AT CEILING MATCH EXISTING.
- 9.01** COORDINATE EXACT LOCATION OF PARTITION WITH EXISTING PIPING ABOVE CEILING (TO AVOID CONFLICT WITH PIPING).
- 9.02** TIE NEW ACT CEILING INTO EXISTING CEILING SYSTEM, REPLACE GRID AND TILE COMPONENTS AS REQUIRED.
- 9.03** PATCH, REPAIR, MAKE GOOD.
- 12.01** INSTALL SALVAGED DISPLAY MONITOR ON WALL, PROVIDE BLOCKING IN WALL AS REQUIRED, PATCH AND REFINISH WALL AS REQUIRED, COORDINATE WITH OWNER FOR EXACT LOCATION.
- 12.02** OWNER WILL INSTALL FURNITURE.

**GENERAL NOTES**

1. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO COMMENCEMENT OF ANY WORK.
2. ALL SURFACES AFFECTED BY WORK SHALL BE PATCHED AND/OR REPAIRED AS REQUIRED TO CREATE A COMPLETE CONSTRUCTION ASSEMBLY.
3. ALL BUILDING ELEMENTS NOT IN SCOPE OF WORK ARE EXISTING TO REMAIN AND SHALL BE PROTECTED FROM DAMAGE DURING ALL DEMOLITION ACTIVITIES.
4. PAINT ALL EXPOSED ITEMS BY ALL TRADES IN CEILINGS BLACK TO MATCH EXISTING, INCLUDE SCOPE ON FIRST FLOOR AND LOWER FLOOR.
5. NEW PARTITIONS TO BE SET ON EXISTING CARPET.
6. ALL MOVABLE FURNITURE BY OWNER.

**PLAN LEGEND**

-  AREA N.I.C.
-  DOOR TAG
-  NEW WALL - REFER TO SHEET G001 FOR ASSEMBLY TYPES
-  SPRINKLER
-  EXISTING WALL TO REMAIN
-  MECH. SUPPLY
-  NEW DOOR - REFER TO SHEET A900 FOR DOOR SCHEDULE
-  MECH. RETURN
-  EXISTING DOOR TO REMAIN
-  CEILING LIGHT FIXTURES
-  ASSEMBLY TYPE - REFER TO SHEET G001
-  LIGHT FIXTURE



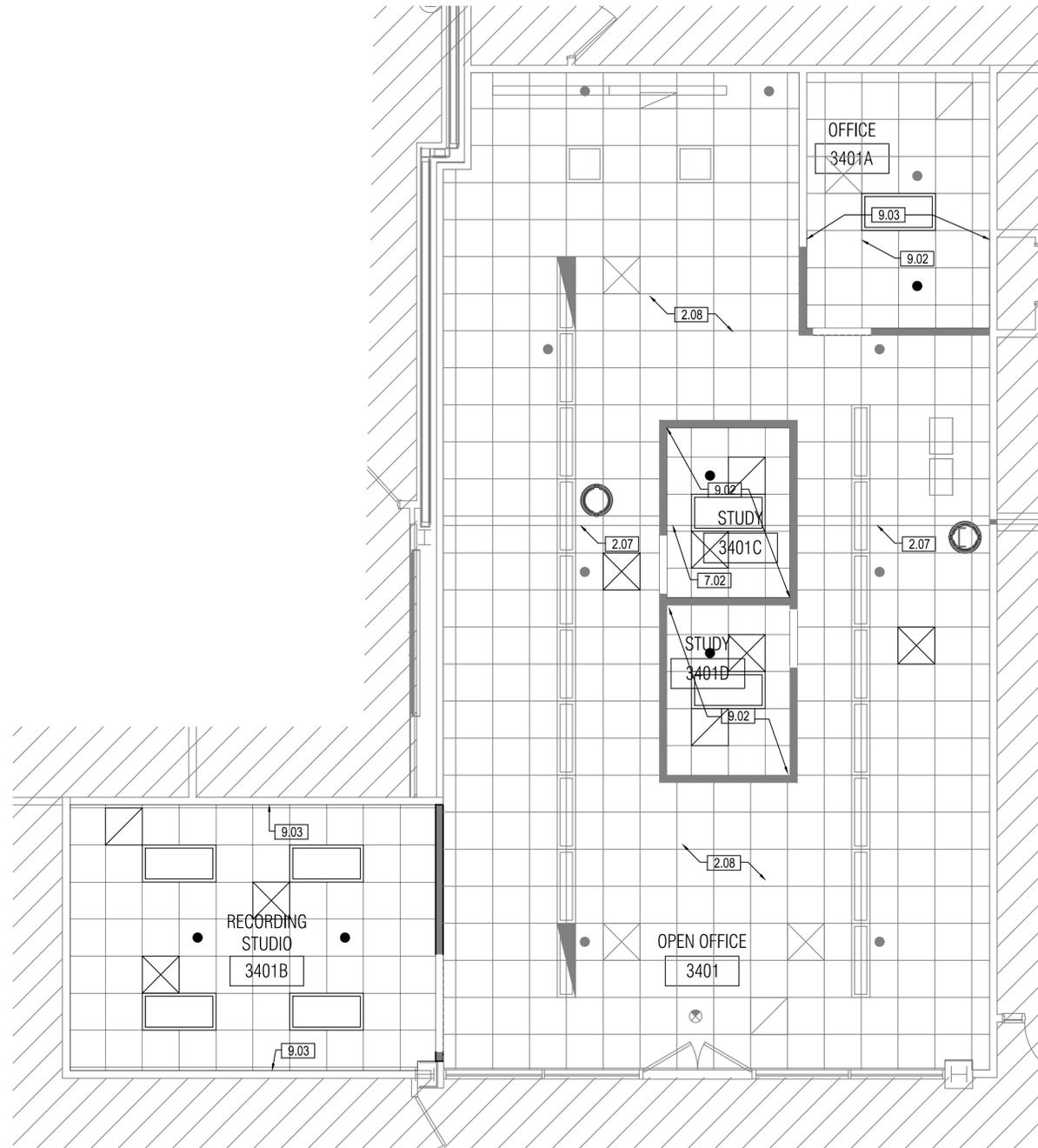
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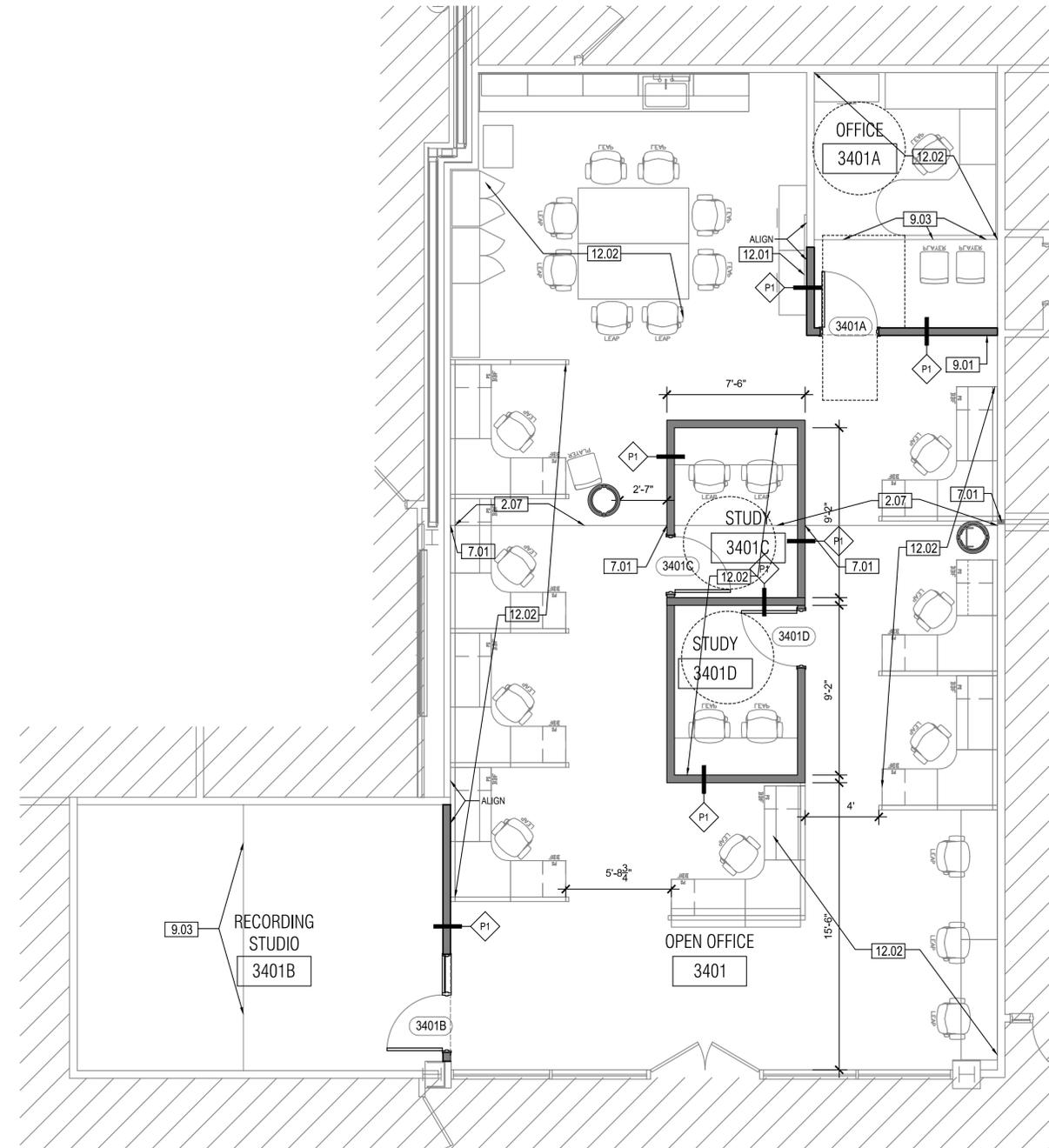
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**2 NEW WORK- PARTIAL RCP**  
SCALE: 1/4" = 1'  
NORTH



**1 NEW WORK- PARTIAL PLAN**  
SCALE: 1/4" = 1'  
NORTH

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BIC 3401 RENOVATIONS**

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**NEW WORK FLOOR  
PLAN AND RCP**

Expiration Date of Seal: 11-30-2018  
BE Project No: 15044-1706

ROBIN E. WITTEKORST  
401-616588  
LICENSED ARCHITECT

Drawn By: PK  
Drawing No: A100









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VENTILATION  
SYMBOLS, SCHEDULES,  
AND DETAILS

Expiration Date of Seal: 11-30-2018 BE Project No. 15044-1706

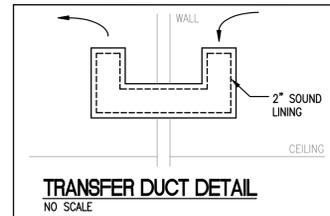
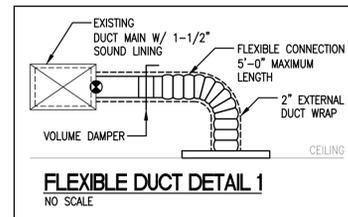
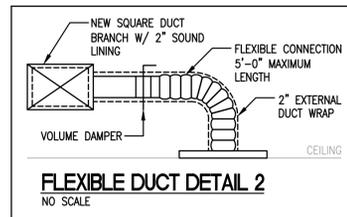
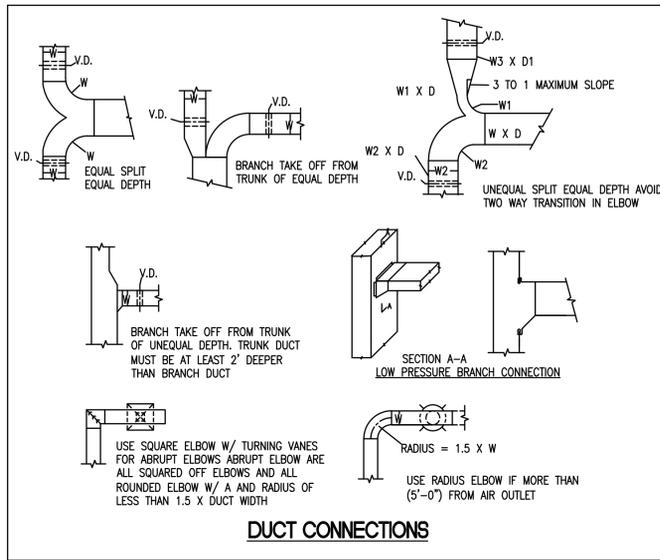
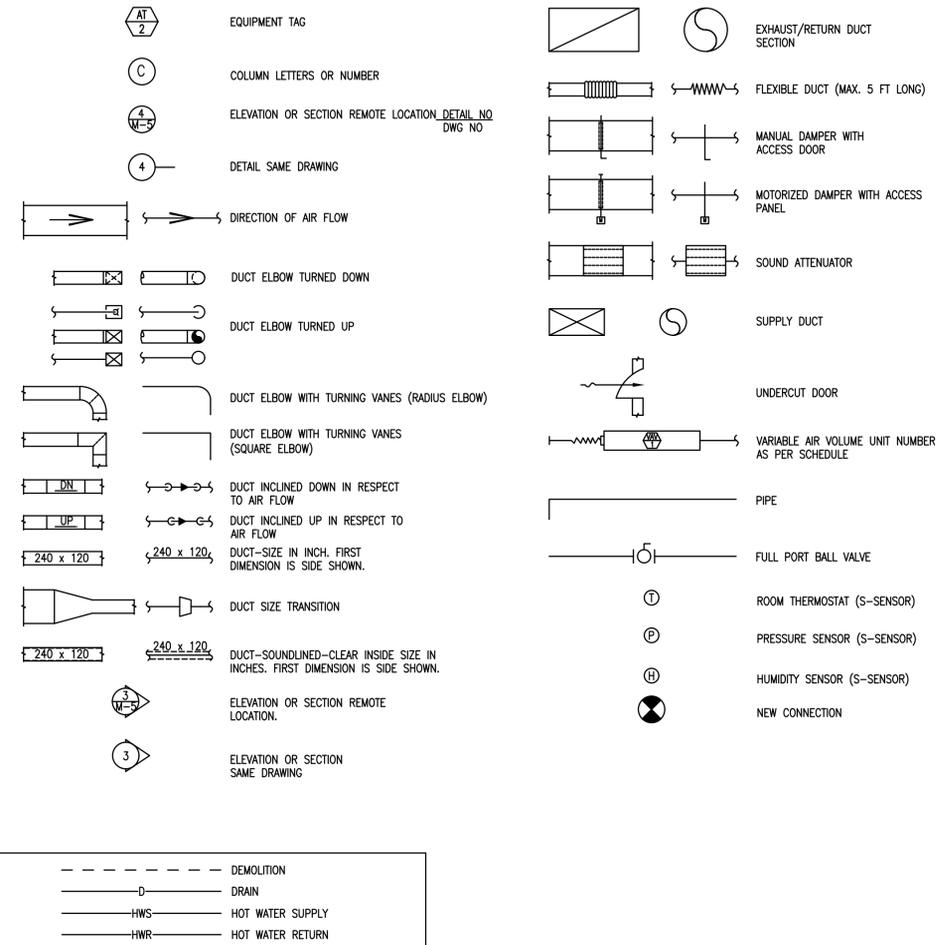
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SYMBOLS + ABBREVIATIONS

AD	ACCESS DOOR	MAT	MIXED AIR TEMPERATURE
AH	AIR HANDLING SYSTEM	MBH	THOUSANDS BRITISH THERMAL UNITS PER HOUR
AMP	AMPERE	MD	MOTORIZED DAMPER
BDD	BACK DRAFT DAMPER	MAN.	MANUAL
BHP	BRAKE HORSEPOWER	MAX.	MAXIMUM
BOD	BOTTOM OF DUCT	MIN.	MINIMUM
BTU	BRITISH THERMAL UNIT	NC	NOISE CRITERIA
BTUH	BRITISH THERMAL UNITS PER HOUR	N.C.	NORMALLY CLOSED
CFM	CUBIC FEET PER MINUTE	NIC	NOT IN CONTRACT
CG	CEILING GRILLE	NK	NECK
CI	CAST IRON	NO	NUMBER
CL	CENTER LINE	N.O.	NORMALLY OPEN
CLG	CEILING	NTS	NOT TO SCALE
C.O.	CLEAN OUT	OA	OUTSIDE AIR
CONC	CONCRETE	OAI	OUTSIDE AIR INTAKE
CR	CEILING REGISTER	OD	OUTSIDE DIAMETER
DB	DECIBEL	P.Δ	PRESSURE DIFFERENCE
DBT	DRY BULB TEMPERATURE	1 PH	SINGLE PHASE
DFL	DEFLECTION	3 PH	THREE PHASE
DG	DOOR GRILLE	PNU	PNEUMATIC
DIA	DIAMETER	PRESS	PRESSURE
DIFF	DIFFUSER	PSIA	POUNDS PER SQUARE INCH ABSOLUTE
DWG	DRAWING	PSIG	POUNDS PER SQUARE INCH GAUGE
E	EXHAUST FAN	RA	RETURN AIR
EAT	ENTERING AIR TEMPERATURE	REG	REGISTER
EFF	EFFICIENCY	REQD	REQUIRED
EL	ELEVATION	RET	RETURN
ER	EXHAUST/RECIRCULATION FAN	RH	RELATIVE HUMIDITY
ETR	EXISTING TO REMAIN	RPM	REVOLUTIONS PER MINUTE
EWT	ENTERING WATER TEMPERATURE	RM	ROOM
EXH	EXHAUST	RT	ROOFTOP UNIT
F	FILTER	RV	PRESSURE RELIEF VALVE
'F	DEGREES FAHRENHEIT	S	SUPPLY FAN
FC	FAN COIL UNIT	SD	SMOKE DAMPER
FD	FIRE DAMPER	SP	STATIC PRESSURE
FL	FLOOR	SPEC	SPECIFICATION
FLGD	FLANGED	ST	SOUND ATTENUATOR
FLEX	FLEXIBLE	STD	STANDARD
FMD	FLOW MEASURING DEVICE	TD	TRANSFER DUCT
FPM	FEET PER MINUTE	TSP	TOTAL STATIC PRESSURE
FT	FOOT	TYP	TYPICAL
GA	GAGE OR GAUGE	UCD	UNDERCUT DOOR
GPM	GALLONS PER MINUTE	UG	UNDERGROUND
GR	GRILLE	UG	UNDERGROUND
HZ	HERTZ	V	VENTILATION FAN
HP	HORSEPOWER	VA	VALVE
HTG	HEATING	VAV	VARIABLE AIR VOLUME
HU	HUMIDIFIER	VD	VOLUME DAMPER
ID	INSIDE DIAMETER	VEL	VELOCITY
IN	INCH	VIB ISOL	VIBRATION ISOLATOR
INSUL	INSULATION	VPT	VELOCITY PRESSURE TRANS
KW	KILOWATT	W	WATT
KWH	KILOWATT HOUR	W/	WITH
LAT	LEAVING AIR TEMPERATURE	WB	WET BULB TEMPERATURE
LD	LINED DUCT	WC	WATER COLUMN
LWT	LEAVING WATER TEMPERATURE	Z	ZONE

HVAC CONTROL SYMBOLS



VAV TERMINAL UNIT SCHEDULE

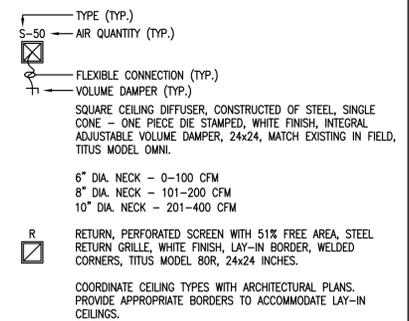
UNIT NO.	VARIABLE VOLUME PRIMARY AIR CFM		AIR PRESSURE DROP INCHES			OVERALL TERM UNIT SIZE INCHES L X W X D	AIR INLET SIZE INCHES DIA.	NOISE CRITERIA	HEATING COIL DATA					TITUS (1, 2, 3)
	MAX.	MIN.	MAX. INLET PRESS.	MIN. INLET PRESS.	MAX. DISCH. PRESS.				MBH	GPM	PD	SIZE INCHES W X D	STAGES	
1-31018C	350	150	0.06	0.01	-	8 x 12 x 6	5	15	11	1	0.64	12 x 5	1	DES

- PROVIDE INTEGRAL SOUND ATTENUATOR, RIGHT HAND 1-ROW HOT WATER HEATING COIL, AIRFLOW SWITCH, DISCONNECT SWITCH, DUST TIGHT CONSTRUCTION. CONNECT TO EXISTING DDC SYSTEM.
- FIELD VERIFY SIZE OF HOT WATER SUPPLY & RETURN PIPING.
- COORDINATE CONTROLS WITH BUILDING CONTROL MANUFACTURER HONEYWELL. MATCH EXISTING CONTROLS.

VENTILATION DATA

ROOM NUMBER	ROOM USE	VENTILATION AREA (SQ. FT.)	OCCUPANT DENSITY PEOPLE PER 1,000 SQ. FT.	NUMBER OF PEOPLE	OUTSIDE AIR CFM PER PERSON	PEOPLE OUTSIDE AIR CFM (A)	AREA OUTDOOR AIR CFM (B)	AREA OUTDOOR AIR CFM (A+B)	TOTAL OUTSIDE AIR CFM (A+B)	EXHAUST AIRFLOW RATE CFM/SQ. FT.	TOTAL EXHAUST AIRFLOW CFM	ACTUAL SUPPLY AIR CFM	ACTUAL RETURN AIR CFM	ACTUAL EXHAUST AIR CFM	EQUIPMENT
3401	OFFICE	1180	5	6	5	30	0.06	71	101	-	-	650	525	125	VAV-1-31018
3401A	STORAGE	137	-	-	-	-	0.12	17	17	-	-	100	100	-	VAV-1-31018
3401B	OFFICE	285	5	2	5	10	0.06	18	28	-	-	170	170	-	VAV-1-31018C
3401C	OFFICE	61	5	1	5	5	0.06	4	9	-	-	75	75	-	VAV-1-31018
3401D	OFFICE	61	5	1	5	5	0.06	4	9	-	-	75	75	-	VAV-1-31018

DIFFUSERS, GRILLES, AND REGISTERS







LIGHTING FIXTURE SCHEDULE						
TYPE	LAMP QTY.	LAMP TYPE	MOUNTING	VOLTAGE	WATTS	MANUFACTURER AND MODEL
F1	N/A	LED	RECESSED	UNV	41	FOCAL POINT: LUNA 2X4 SERIES HUBBELL/COLUMBIA LTG. LTR24 SERIES HE WILLIAMS: DI SERIES LITHONIA LTG. 2BLT4 SERIES
						RECESSED 2X4 LED LUMINAIRE WITH PERFORATED CENTER BASKET, POLYESTER POWDER COAT FINISH, 3500K, 0-10V DIMMING CAPABILITY, 5000 LUMENS

\* VERIFY VOLTAGE IN FIELD PRIOR TO ORDERING LIGHT FIXTURES.

### SYMBOLS

- ⊕ DUPLEX 20A RECEPTACLE, MOUNTED AT 18" AFF U.N.O.
- ⊕ DUPLEX 20A RECEPTACLE, MOUNTED 6" ABOVE COUNTER
- ⊕ DUPLEX 20A GFI RECEPTACLE, MOUNTED 18" AFF U.N.O.
- ⊕ DUPLEX 20A GFI RECEPTACLE, MOUNTED 6" ABOVE COUNTER
- ⊕ QUADPLEX 20A RECEPTACLE, MOUNTED 18" AFF U.N.O.
- ⊕ SPECIAL USE RECEPTACLE, 208V, 1ϕ, 3W SIZED AS INDICATED OR AS REQUIRED
- ⊕ SPECIAL USE RECEPTACLE, 208V, 3ϕ, 4W SIZED AS INDICATED OR AS REQUIRED
- ⊕ FLUSH MOUNTED FLOOR BOX, WITH DEVICES AS INDICATED
- ⊕ DUPLEX 20A RECEPTACLE, CEILING-MOUNTED
- ⊕ DUPLEX 20A SWITCHED RECEPTACLE, MOUNTED AT 18" AFF U.N.O.
- ⊕ WALL MOUNTED JUNCTION BOX, SIZED AS REQUIRED (4"x4" MIN.)
- ⊕ JUNCTION BOX, SIZED AS REQUIRED
- ⊕ FLEXIBLE METAL CONDUIT CONNECTION (WHIP)
- ⊕ MOTOR CONNECTION, 1ϕ OR 3ϕ AS INDICATED
- ⊕ PANEL BOARD, SIZED AS INDICATED
- ⊕ NON-FUSED DISCONNECT SWITCH, SIZED AS INDICATED OR AS REQUIRED
- ⊕ FUSED DISCONNECT SWITCH, SIZED AS INDICATED OR AS REQUIRED
- ⊕ VOICE/DATA OUTLET, MOUNTED AT 18" AFF U.N.O. PROVIDE 4x4 JUNCTION BOX WITH 3/4" STUBBED INTO ACCESSIBLE CEILING SPACE. DEVICES AND WIRING BY OTHERS.
- ⊕ VOICE OUTLET, MOUNTED AT 18" AFF U.N.O. PROVIDE 4x4 JUNCTION BOX WITH 3/4" STUBBED INTO ACCESSIBLE CEILING SPACE. DEVICES AND WIRING BY OTHERS.
- ⊕ DATA OUTLET, MOUNTED AT 18" AFF U.N.O. PROVIDE 4x4 JUNCTION BOX WITH 3/4" STUBBED INTO ACCESSIBLE CEILING SPACE. DEVICES AND WIRING BY OTHERS.
- ⊕ TOGGLE SWITCH, MOUNTED AT 44" AFF, U.N.O.
- ⊕ KEY OPERATED TOGGLE SWITCH, MOUNTED AT 44" AFF, U.N.O.
- ⊕ THERMAL OVERLOAD TOGGLE SWITCH
- ⊕ TOGGLE SWITCH, DIMMABLE, MOUNTED AT 44" AFF, U.N.O. (3W DENOTES 3-WAY)
- ⊕ TOGGLE SWITCH, ILLUMINATED TOGGLE OR WITH PILOT LIGHT WHEN IN "ON" POSITION
- ⊕ TOGGLE SWITCH WITH INTEGRAL INFRARED OCCUPANCY SENSOR, MOUNTED AT 44" AFF, U.N.O. HUBBELL #LHIR SERIES
- ⊕ TOGGLE SWITCH WITH INTEGRAL DUAL-TECHNOLOGY OCCUPANCY SENSOR, MOUNTED AT 44" AFF, U.N.O. HUBBELL #LHDT SERIES
- ⊕ TOGGLE SWITCH WITH INTEGRAL ULTRASONIC OCCUPANCY SENSOR, MOUNTED AT 44" AFF, U.N.O. HUBBELL #LHUS SERIES
- ⊕ 3-WAY TOGGLE SWITCH, MOUNTED AT 44" AFF, U.N.O.
- ⊕ TOGGLE SWITCH, DIMMABLE, MOUNTED AT 44" AFF, U.N.O.
- ⊕ 360° CEILING MOUNTED INFRARED OCCUPANCY SENSOR HUBBELL #OMNI-IR SERIES WITH UV-PP POWER PACK
- ⊕ 360° CEILING MOUNTED DUAL-TECHNOLOGY OCCUPANCY SENSOR HUBBELL #OMNI-DT SERIES WITH UV-PP POWER PACK
- ⊕ 360° CEILING MOUNTED ULTRASONIC OCCUPANCY SENSOR HUBBELL #OMNI-US SERIES WITH UV-PP POWER PACK
- ⊕ RELAY POWER PACK
- ⊕ LOW VOLTAGE THERMOSTAT (BY OTHERS), 4x4 BOX JUNCTION BOX WITH 3/4" CONDUIT STUBBED INTO ACCESSIBLE CEILING SPACE. COORDINATE LOCATIONS & BOX SIZE WITH MECHANICAL CONTRACTOR.
- ⊕ DUAL-ACTION MANUAL PULL STATION, MOUNTED AT 44" AFF
- ⊕ CEILING MOUNTED PHOTO-ELECTRIC SMOKE DETECTOR
- ⊕ CEILING MOUNTED HEAT DETECTOR
- ⊕ DUCT MOUNTED SMOKE DETECTOR, INSTALLED PER NFPA REQUIREMENTS
- ⊕ FAN SHUTDOWN RELAY
- ⊕ AUDIO-VISUAL DEVICE, MOUNTED AT 80" AFF, CANDELA RATING AS REQUIRED
- ⊕ VISUAL DEVICE, MOUNTED AT 80" AFF, CANDELA RATING AS REQUIRED
- ⊕ FIRE ALARM ANNUNCIATOR PANEL
- ⊕ FLOW SWITCH
- ⊕ TAMPER SWITCH
- INDICATES COMPONENT TO BE REMOVED
- INDICATES EXISTING TO REMAIN
- INDICATES NEW
- ⊕ WALL MOUNTED BELL, MOUNTED AS REQUIRED
- ⊕ WALL MOUNTED CCTV DOME CAMERA, MOUNTED AS REQUIRED
- ⊕ WALL MOUNTED INTERCOM STATION, MOUNTED AS REQUIRED
- ⊕ WALL MOUNTED CLOCK, MOUNTED AS REQUIRED
- ⊕ DOOR CONTACT - FLUSH TYPE
- ⊕ ELECTRIC DOOR STRIKE
- ⊕ VIDEO MONITOR
- ⊕ WIRELESS ACCESS PORT
- ⊕ CEILING MOUNTED SPEAKER
- ⊕ DESK MOUNTED INTERCOM MASTER STATION
- ⊕ EXIT SIGN

### GENERAL DEMOLITION NOTES:

- EXISTING ELECTRICAL SYSTEMS SHOWN ON THE DRAWINGS BASED ON VISUAL INSPECTION AND EXISTING DRAWINGS. BUT THEY MAY NOT REFLECT THE EXTERNAL CONDITION IN EVERY CASE. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID AND VERIFY EXISTING CONDITIONS.
- THE BUILDING WHERE THE WORK TO BE DONE IS IN USE. SCHEDULE ANY DISCONNECTION & RECONNECTIONS WITH THE CONTRACTING OFFICER, AT LEAST SEVENTY TWO(72) HOURS NOTICE IS REQUIRED. ARRANGE WORK SO AS NOT TO INTERRUPT ANY ELECTRICAL POWER, TELEPHONE, FIRE, COMMUNICATION, AND OTHER SYSTEMS DURING NORMAL WORKING HOURS.
  - USE GREAT DILIGENCE AND CARE IN DISCONNECTING VARIOUS SYSTEMS. RECONNECT SYSTEMS THAT SERVE ADJACENT AREAS IS SUCH SYSTEMS HAVE BEEN DISRUPTED DURING DEMOLITION WORK. EXTEND CONDUIT & WIRING AS REQUIRED TO MAINTAIN OPERATION OF REMOVING EQUIPMENT OR DEVICES.
  - COORDINATE ALL DEMOLITION WORK WITH OTHER TRADES AS REQUIRED.
- ELECTRICAL ITEMS REMOVED AND NOT RELOCATED SUCH AS LIGHTING FIXTURES, SWITCHES, RECEPTACLES, BREAKERS, WIRE, ETC. REMAIN THE PROPERTY OF THE OWNER AND SHALL BE STORED OR DISPOSED OF AS DIRECTED BY OWNER.
- ALL CONDUITS WHERE ELECTRICAL ITEMS ARE BEING REMOVED SHALL HAVE ALL WIRING REMOVED BACK TO THE SOURCE OR FEEDER JUNCTION BOX SERVING THE DEVICE AND STUBS SHALL BE PLUGGED FLUSH WITH FLOOR, CEILING SLABS, OR WALLS. ALL EXPOSED CONDUITS AND FITTINGS, INCLUDING ABOVE DROP CEILINGS, WHICH ARE NOT GOING TO BE REUSED SHALL BE REMOVED UNLESS OTHERWISE NOTED.
- WHERE EXISTING EQUIPMENT, DEVICES AND FIXTURES ARE TO REMAIN BUT ARE AFFECTED BY NEW WORK SUCH AS REMOVAL OF WALLS, RECONDITIONING OF WALLS AND CEILINGS. DISCONNECT THESE ITEMS AND ADD EXTENSION RINGS, CLEAN AND REINSTALL SAME IN LINE WITH NEW WALLS AND CEILINGS. PROVIDE ALL NECESSARY MATERIALS AND LABOR AND REWIRE IN ACCORDANCE WITH PRESENT CODE REQUIREMENTS. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR THE USE OF GREAT DILIGENCE AND CARE IN DISCONNECTING VARIOUS SYSTEMS. RECONNECT SYSTEMS THAT SERVE ADJACENT AREAS OR FLOOR ABOVE OR BELOW IF SUCH SYSTEMS HAVE BEEN DISRUPTED DURING DEMOLITION WORK.
- LAMPS THAT CONTAIN MERCURY AND BALLASTS MANUFACTURED PRIOR TO 1980 THAT CONTAINS PCBs SHALL BE DISPOSED OF BY FEDERAL OR STATED E.P.A. APPROVED METHOD AND IN ACCORDANCE WITH SPECIFICATIONS.

### GENERAL NOTES:

- PAY FOR & OBTAIN ALL REQUIRED LICENSES, INSURANCES, PERMITS & SATISFY NECESSARY ORDINANCES TO UNDERTAKE & EXECUTE THE WORK UNDER THIS CONTRACT.
- CONTRACTOR TO FAMILIARIZE HIMSELF WITH THE EXISTING SITE CONDITIONS, CONDITIONS OF CONTRACT, THE SCOPE OF WORK & THE INTENT OF DESIGN BEFORE SUBMITTING YOUR BID. REQUESTS FOR EXTRA PAYMENTS WILL NOT BE APPROVED AFTER CONTRACT AWARD.
- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL CODE AUTHORITY & OTHER CODES, STANDARDS & REGULATIONS REFERENCED BY SUCH AUTHORITY. IN CASE OF CONFLICT BETWEEN TWO CODES, THE REQUIREMENT OF THE LOCAL AUTHORITY SHALL BE FINAL.
- COORDINATE ELECTRICAL INSTALLATION WITH WORK BY OTHER TRADES BEFORE STARTING WORK. PERFORM ALL WORK IN COOPERATION WITH LANDLORD, G.C. & OTHER TRADES.
- ALL NEW MATERIAL/EQUIPMENT SHALL BE, U.L. LISTED, WITHOUT DEFECT OR DAMAGE AND SHALL BE A STANDARD PRODUCT OF A MANUFACTURER WITH A WELL KNOWN BRAND NAME, U.N.O. WIRING DEVICES SHALL BE SPECIFICATION GRADE. FINISH OF ALL ITEMS INSTALLED IN FINISHED AREAS SHALL BE PER ARCHITECT.
- ELECTRICAL DWGS. ARE SCHEMATIC IN NATURE. THEY DO NOT INTEND TO SHOW EVERY DETAIL, LOCATION, SIZE, ROUTE ETC. FURNISH ALL MATERIAL, EQUIPMENT, INCIDENTALS & SERVICES TO PROVIDE A SATISFACTORY, COMPLETE & OPERATIONAL INSTALLATION IN CONFORMANCE WITH THE INTENT OF THE DESIGN. REFER TO ARCHITECTURAL DWGS. FOR DIMENSIONAL ACCURACY.
- PROVIDE TEMPORARY ELECTRICAL SERVICE, IF NECESSARY, PER G.C. TO PROVIDE LIGHTING & POWER FOR USE BY ALL TRADES DURING CONSTRUCTION.
- ARCHITECT MAY REVIEW SUBMITTAL OF AN ALTERNATE PRODUCT PROVIDED IT HIGHLIGHTS ALL THE FEATURES & DATA TO CLEARLY ILLUSTRATE THAT IT IS A BONAFIDE EQUIVALENT PRODUCT IN MAKE & PERFORMANCE BEFORE BIDS ARE SCHEDULED TO BE OPENED. ALTERNATES CANNOT BE ACCEPTED AFTER BIDS ARE OPENED.
- ALL ENCLOSURES SHALL BE NEMA-1, IN GENERAL, U.N.O. GFI RECEPTACLES SHALL BE USED IF SPECIFIED OR CODE REQUIRED. WIRING DEVICES SHALL BE SPECIFICATION GRADE. NAME PLATES SHALL BE PHENOLIC, WHITE LETTERS ON BLACK BACKGROUND, SECURED WITH SCREWS ON THE ENCLOSURES.
- USE MINIMUM 3/4" EMT. USE COMPRESSION FITTINGS. USE TYPE THWN, COPPER WIRE IN MINIMUM #12 AWG FOR BRANCH CCTS & #14 FOR CONTROLS. FLEXIBLE CONDUIT SHALL BE LIQUID-TIGHT.
- SEAL PENETRATIONS THROUGH VAPOR & FIRE BARRIERS CAUSED BY THE ELECTRICAL WORK WITH U.L. LISTED SEALS TO RETAIN THE INTEGRITY OF THE RESPECTIVE BARRIERS.
- INSTALLATION IN CEILING SPACE SHALL BE SUPPORTED FROM THE STRUCTURAL STEEL & NOT BY THE DROPPED CEILING MEMBERS. CONDUITS SHALL RUN SNUG UNDER STRUCTURAL CEILING EITHER PARALLEL OR PERPENDICULAR TO THE CEILING, COLUMNS & STRAIGHT WALLS. INSTALL PULL BOXES PER CODE. INSTALL PULL-LINES IN EMPTY RACEWAYS & CAP THEM.
- INSTALLATION SHALL BE PERFORMED IN A MANNER CONSISTENT WITH INDUSTRY STANDARD FOR GOOD WORKMANSHIP. PROVIDE NECESSARY CUTTING, PATCHING, & CLEANING FOR ELECTRICAL WORK TO LEAVE THE AREA READY FOR FINAL FINISH BY OTHERS.
- PROGRESS YOUR WORK IN TIMELY MANNER TO ENABLE THE OWNER TO FINISH THE WORK PER SCHEDULE. SAFEGUARD YOUR WORK & SUPPLIES. MAINTAIN ORDERLY & NEAT OPERATION. REMOVE DEBRIS GENERATED FROM YOUR WORK PER G.C. & OWNER. LEAVE THE SITE IN CLEAN, MOVE-IN CONDITION AT ACCEPTANCE.
- ORGANIZE ALL WARRANTIES, GUARANTEES & PRODUCT LITERATURE IN A FILE AND HAND OVER THESE TO THE OWNER AT THE TIME OF ACCEPTANCE. PROVIDE FULL & UNCONDITIONAL GUARANTEE OF YOUR WORK (MATERIAL PLUS LABOR) FOR A PERIOD OF 12 MONTHS FROM ACCEPTANCE. REFER TO ARCHITECT'S REQUIREMENTS FOR "WARRANTIES & GUARANTEES" AND "PROJECT CLOSE-OUT".

### ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	NIC	NOT IN CONTRACT
AMP OR A	AMPERE	NL	NIGHT LIGHT
BDF	BUILDING DISTRIBUTION FACILITY	NTS	NOT TO SCALE
CCT	CIRCUIT	PH OR ϕ	PHASE
CLG	CEILING	RECEP	RECEPTACLE
COO	COLLEGE OF DUPAGE	XFMR	TRANSFORMER
D	DIMMER	TC	TELECOMMUNICATIONS CLOSET
DISC	DISCONNECT	TYP	TYPICAL
DWG	DRAWING	U.N.O.	UNLESS NOTED OTHERWISE
EC	ELECTRICAL CONTRACTOR	V	VOLT
ELECT	ELECTRICAL	W	WATT OR WIRE
EM	EMERGENCY	WP	WEATHERPROOF
EXIST	EXISTING	X	DENOTES EXISTING COMPONENT TO REMAIN, NO CHANGES
FA	FIRE ALARM		
FLA	FULL LOAD AMPERE	XRN	DENOTES EXISTING COMPONENT TO BE REPLACED WITH NEW
GFI OR GFCI	GROUND FAULT CIRCUIT INTERRUPTER		
GRD	GROUND, GROUNDING	XR	DENOTES EXISTING COMPONENTS TO BE REMOVED
HP	HORSEPOWER		
JB	JUNCTION BOX	XRI	DENOTES EXISTING COMPONENTS TO BE REMOVED & REINSTALL IN SAME LOCATION
KVA	KILOVOLT AMPERE	XRR	DENOTES EXISTING TO BE REMOVED AND RELOCATED
KW	KILOWATT		
MC	MECHANICAL CONTRACTOR	N	DENOTES NEW COMPONENTS TO REPLACE EXISTING
MEP	MECHANICAL, ELECTRICAL, PLUMBING	XN	DENOTES EXISTING COMPONENT SHOWN IN NEW LOCATION
MFR	MANUFACTURER		
MIN	MINIMUM		



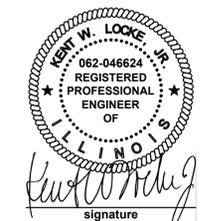
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NOTES  
ABBREVIATIONS  
AND SYMBOL LISTS

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ELECTRICAL SPECIFICATIONS

PRIOR TO SUBMITTING HIS BID, THE CONTRACTOR SHALL VISIT THE PROJECT SITE AND THOROUGHLY ACQUANT HIMSELF WITH ALL EXISTING CONDITIONS AND DETERMINE HOW THEY EFFECTIVELY WORK. HE SHALL INCLUDE IN HIS BID ANY ALTERATIONS, RELOCATION, REROUTING, ETC. OF EXISTING FACILITIES, WIRING, CONDUIT, PANELBOARDS REQUIRED FOR INSTALLATION OF NEW WORK. UNDER NO CIRCUMSTANCES WILL THE CONTRACTOR BE GIVEN CONSIDERATION FOR ADDITIONAL COMPENSATION DUE TO HIS NEGLIGENCE TO COMPLY WITH THE FOREGOING REQUIREMENTS.

ALL WORK SHALL BE DONE IN ACCORDANCE WITH LATEST NATIONAL ELECTRICAL CODE, FIRE PREVENTION CODES, LOCAL CODES AND ANY OTHER REQUIREMENTS APPLICABLE TO THIS JOB. ELECTRICAL CONTRACTOR SHALL SUBMIT ANY REQUIRED DRAWINGS FOR APPROVAL TO ANY AGENCIES REQUIRING THEM, AND OBTAIN NECESSARY PERMITS AT NO ADDITIONAL BID COSTS. ALL EQUIPMENT FURNISHED SHALL BE NEMA STANDARDS AND SHALL BE U.L. LISTED.

THESE DRAWINGS ARE DIAGRAMMATIC AND DO NOT NECESSARILY INDICATE EVERY JUNCTION BOX, FITTING, ETC. REQUIRED.

THE ELECTRICAL CONTRACTOR SHALL INCLUDE IN HIS BID ANY VARIANCES REQUIRED BY APPLICABLE CODES.

PROTECT EXISTING BUILDING STRUCTURE AND GROUNDS FROM ANY DAMAGE WHICH MAY OCCUR DURING INSTALLATION OF NEW WORK. ANY DAMAGE TO EXISTING FACILITIES WILL BE REPLACED OR RESTORED TO THE ORIGINAL CONDITION AND SATISFACTION OF THE WORK BY THE OWNER.

ALL CONDUCTORS SHALL BE COPPER TYPE THHN/THWN 600 VOLT, MINIMUM SIZE #12 AWG, AS MANUFACTURED BY HATFIELD, COLLIER OR AMCONDA.

PROVIDE ALL LABOR AND MATERIAL REQUIRED FOR COMPLETION OF ELECTRICAL WORK. THIS INCLUDES WORK NOT SPECIFICALLY INDICATED BUT REASONABLY INFERRED FOR PROPER COMPLETION OF THE WORK.

ALL LOCAL, STATE, AND FEDERAL TAXES APPLICABLE TO THIS PROJECT SHALL BE INCLUDED.

REMOVE RUBBISH AS FAST AS IT ACCUMULATES.

ALL CUTTING, DRILLING, AND PATCHING SHALL BE DONE BY THIS CONTRACTOR. UNDER NO CIRCUMSTANCES SHALL STRUCTURAL WORK BE CUT WITHOUT THE APPROVAL OF THE OWNER.

UNLESS OTHERWISE SPECIFIED, THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL CONDUIT, WIRING, ELECTRICAL AND DISCONNECTS FOR ALL ELECTRICALLY OPERATED EQUIPMENT, INCLUDING FINAL CONNECTIONS TO SAME.

CONTRACTOR SHALL INSTALL ALL EQUIPMENT, WIRE AND CABLE. 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 SPECIFICATION AND RECOMMENDATIONS. CONTRACTOR SHALL MAKE FINAL CONNECTIONS AND TERMINATIONS.

PROTECT CONDUIT AND WIRE WAY OPENINGS AGAINST THE ENTRANCE OF FOREIGN WATER BY MEANS OF PLUGS OR CAPS. COVER MATERIALS, EQUIPMENT AND DEVICES FURNISHED OR INSTALLED UNDER THIS SECTION OR OTHERWISE PROTECT AGAINST DAMAGE FROM ANY CAUSE, BOTH BEFORE AND AFTER INSTALLATION. MATERIALS, EQUIPMENT, OR DEVICE DAMAGED PRIOR TO FINAL ACCEPTANCE OF THE WORK SHALL BE RESTORED TO THEIR ORIGINAL CONDITION OR REPLACED.

CONTRACTOR SHALL INSTALL ENTIRE SYSTEMS, INCLUDING CONDUITS, BOXES, WIRING, ETC. SO AS TO INSURE PROPER GROUND CONTINUITY THROUGHOUT THE SYSTEM.

CONTRACTOR SHALL TEST ALL CIRCUITS, EQUIPMENT, ETC. FOR POLARITY, GROUND CONTINUITY, GROUND FAULTS, SHORTS, ETC. PRIOR TO OPERATING ANY ELECTRICAL ITEM OR EQUIPMENT. UPON INSTALLATION IN OPERATION, TEST FOR EACH PROPER FUNCTION, AND SHOW SYSTEMS AND EQUIPMENT TO BE FREE OF DEFECTS. RECORD AND DOCUMENT LOAD AMPERAGE AND TERMINAL VOLTAGE OF EACH PANEL BOARD, ETC., WHERE APPLICABLE. FURNISH COPIES TO OWNER.

UPON CONNECTING ALL CIRCUITS TO PANELS, THE CONTRACTOR SHALL BALANCE THE LOAD IN SPHERES TO +5% BETWEEN PHASES FOR EACH PANEL.

THE BASE BID SHALL NOT CONTAIN ANY SUBSTITUTIONS. WHERE AN ITEM OF MATERIAL OR EQUIPMENT IS SPECIFIED TO BE OF A CERTAIN MANUFACTURER MAKE, THE BASE BID SHALL INCLUDE SUCH MATERIAL OR EQUIPMENT AS SPECIFIED.

NO SUBSTITUTIONS SUBSEQUENT TO THE ACCEPTANCE OF THE CONTRACTOR SHALL BE MADE, EXCEPT BY THE WRITTEN CONSENT OF THE OWNER. SHOULD THE CONTRACTOR DESIRE TO SUBSTITUTE ANOTHER MATERIAL OR ARTICLE FOR A MATERIAL OR ARTICLE SPECIFIED, HE SHALL APPLY FOR SUCH PERMISSION AND STATE THE CREDIT OR EXTRA INVOLVED BY THE USE OF SUCH MATERIAL OR ARTICLE. HE SHALL ALSO PROVIDE SAMPLES AND DATA FOR THE OWNER'S ENGINEERS UPON REQUEST.

ANY VARIATION, MODIFICATIONS OR SUBSTITUTIONS FROM THE CONTRACT DOCUMENTS BECAUSE OF SHOP PRACTICES STANDARD WITH THE SUPPLIER MUST BE SPECIFICALLY MENTIONED BY THE CONTRACTOR WHEN SUBMITTING DRAWINGS OR DATA FOR REVIEW IN ORDER THAT, IF ACCEPTABLE, SUITABLE ACTION MAY BE TAKEN FOR PROPER ADJUSTMENT OF ENGAGING MATERIALS; OTHERWISE, THE CONTRACTOR WILL NOT BE RELIEVED OF THE RESPONSIBILITY FOR EXECUTING THE WORK IN ACCORDANCE WITH THE CONTRACT, EVEN THOUGH THE SHOP DRAWINGS, SCHEDULES OR DATA HAVE BEEN REVIEWED BY THE ENGINEER. APPROVAL OF ANY MODIFICATIONS WILL BE MADE IN THE INTEREST OF THE OWNER AND TO EFFECT AN IMPROVEMENT IN THE WORK WITH THE UNDERSTANDING THAT IT DOES NOT INVOLVE ANY INCREASE IN THE CONTRACT PRICE EITHER DIRECTLY OR INDIRECTLY DOES NOT INVOLVE ANY INCREASE IN THE COMPLETION TIME; THAT IT IS SUBJECT TO ALL CONTRACT STIPULATIONS AND COVENANTS, AND THAT IF IT IS WITHOUT PREJUDICE TO ANY AND ALL RIGHTS OF THE OWNER UNDER THE CONTRACT BOND OR BONDS. THE CONTRACTOR SUBMITTING CHANGES OR MODIFICATIONS SHALL REVIEW SHALL ASSUME ALL RESPONSIBILITY IN CONNECTION WITH THE ENGAGEMENT OF THE WORK IN QUESTION WITH THAT OF THE CONTRACTOR OR SUBCONTRACTORS AND SHALL REIMBURSE THEM FOR THE COST OF ANY CHANGE TO THEIR WORK WHICH MAY ARISE THEREFROM.

THE REVIEW OF DRAWINGS, SCHEDULES, OR DATA WILL BE GENERAL AND WILL NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR ADHERENCE TO THE CONTRACT, NOR SHALL IT RELIEVE HIM OF THE RESPONSIBILITY FOR ERRORS IN DIMENSIONS OR ERRORS OF ANY OTHER SORT IN SHOP DRAWINGS OR SCHEDULES. CONTRACTOR SHALL TAKE ACTUAL FIELD MEASUREMENTS WHERE POSSIBLE BEFORE SUBMITTING SHOP DRAWINGS FOR WORK ENGAGING THAT ALREADY IS IN PLACE BEFORE SUBMITTING SHOP DRAWINGS FOR REVIEW. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT SHOP DRAWINGS SUFFICIENTLY IN ADVANCE OF SHOP OR FIELD REQUIREMENT TO INSURE ENGINEER'S AMPLE TIME FOR CHECKING SAME, INCLUDING TIME FOR CORRECTING, RESUBMISSION, AND RECHECK IF NECESSARY, SO AS NOT TO DELAY THE PROGRESS OF WORK. NO CLAIM FOR EXTENSION OF TIME WILL BE GRANTED THE CONTRACTOR BY REASON OF HIS OR HIS SUBCONTRACTORS OR VENDORS FAILURE IN THE RESPECT.

THE CONTRACTOR SHALL MAINTAIN ONE MASTER DRAWING SET, ON THE JOB SITE, TAGGED "CONTRACT RECORD DRAWINGS". THE CONTRACTOR SHALL DAILY (MINIMUM) REVIEW THE DRAWINGS AND MARK FIELD REQUIRED CHANGES OR REVISIONS IN RED, INITIAL AND DATE. ALL DELETIONS ARE TO BE MARKED IN GREEN, INITIALED AND DATED. FINAL PAYMENT WILL NOT BE MADE OF ANY RETAINMENT, UNTIL THE OWNER RECEIVES AND APPROVES THE FIELD RECORD DRAWING SET. THE CONTRACTOR SHALL HAVE RESPONSIBILITY TO ACCURATELY RECORD DRAWING DEVIATIONS DUE TO FIELD CONDITIONS, AND APPROVED DEVIATION FROM THE DRAWING.

PRIOR TO SUBMITTAL OR PROPOSAL, CONTRACTOR SHALL HAVE FULFILLED THE FOLLOWING REQUIREMENTS:

- A. ALL CONTRACTORS AND BIDDERS SHALL CAREFULLY EXAMINE THE SITE OF THE WORK AND THE ADJACENT PREMISES, AND EACH SHALL CONDUCT THE NECESSARY EXAMINATIONS TO THOROUGHLY ACQUANT HIMSELF WITH THE FACILITIES FOR HANDLING OF EQUIPMENT AND FOR THE RECEIVING AND STORAGE OF MATERIALS. THE OWNER SHALL DESIGNATE A SECURE SITE WITHIN THE FACILITY FOR THE CONTRACTORS TOOLS AND MATERIALS.
B. PLEASES OF IGNORANCE OF EXISTING CONDITIONS AND FORESEEABLE CONDITIONS WHICH WOULD CREATE DIFFICULTIES IN THE EXECUTION OF THE WORK WILL NOT BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE ON THE PART OF THE CONTRACTOR TO FULFILL IN EVERY DETAIL ALL OF THE REQUIREMENTS OF THE SPECIFICATIONS AND/OR DRAWINGS. FURTHERMORE, PLEASES OF IGNORANCE WILL NOT BE ACCEPTABLE AS A BASIS FOR ANY CLAIM WHATSOEVER FOR ADDITIONAL COMPENSATION.

THE CONTRACTOR AGREES TO INDEMNIFY AND SAVE HARMLESS THE OWNER, THE ENGINEER, THEIR AGENTS AND EMPLOYEES, FROM AND AGAINST ALL LOSS OR EXPENSE NOT OTHERWISE INSURED AGAINST (INCLUDING COSTS AND ATTORNEY'S FEES) BY REASON OF LIABILITY IMPOSED BY LAW UPON THE OWNER OR ENGINEER IN CONNECTION WITH THE CONTRACT WORK FOR DAMAGES BECAUSE OF BODILY INJURY, INCLUDING DEATH AT ANY TIME RESULTING THEREFROM, SUSTAINED BY ANY PERSON OR PERSONS OR ON ACCOUNT TO DAMAGE OF PROPERTY, INCLUDING LOSS OF USE THEREOF, WEATHER SAID LIABILITY CAUSED BY OR CONTRIBUTED TO (I) BY SAID OWNER, ENGINEER, THEIR AGENTS OR EMPLOYEES. (II) BY SAID CONTRACTOR OR A SUBCONTRACTOR OR THEIR AGENTS OR EMPLOYEES OR (III) BY OTHERS.

THIS INDEMNITY AGREEMENT SHALL IMPOSE LIABILITY ON CONTRACTOR ONLY TO THE EXTENT PERMITTED BY THE LAWS OF THE STATE GOVERNING PERFORMANCE THEREOF, AND ANY PROVISION HEREOF NOT PERMITTED BY SUCH LAWS IS EXPRESSLY DELETED FROM SAID CONTRACT.

SAID INDEMNIFICATION SHALL BE INSURED BY THE CONTRACTOR'S CARRIER OR CARRIERS, PRIMARY AND EXCESS, IF APPLICABLE. CERTIFICATES OF INSURANCE SHALL IDENTIFY SPECIFICALLY THE AGREEMENTS COVERED. LIMITS OF LIABILITY FOR THIS COVERAGE SHALL BE NO LESS THAN THOSE REQUIRED FOR THE COMPREHENSIVE GENERAL LIABILITY POLICY. HOWEVER, ANY SUCH LIMITS ON LIABILITY FOR THIS COVERAGE SHALL NOT LIMIT THE CONTRACTOR'S INDEMNIFICATION OBLIGATION UNDER THE SUBPARAGRAPH ABOVE.

THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A DETAILED REPORT ON EACH AND EVERY ACCIDENT TO EITHER HIS WORKMEN OR TO OTHERS, IN ORDER THAT INFORMATION MAY BE AVAILABLE TO THE OWNER IN CASE OF A THIRD PARTY SUIT FILED AT A LATER DATE.

COSTS OF SERVICE AND FACILITIES: THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, LICENSES, ETC. AND SHALL PAY ALL COSTS INCIDENT TO THE FURNISHING, INSTALLATION, AND MAINTENANCE OF SERVICES AND FACILITIES REQUIRED FOR THE DURATION OF THE WORK. OWNER SHALL OBTAIN THE GENERAL BUILDING PERMIT, IF REQUIRED.

ALL POWER CONDUCTORS ARE TO BE TERMINATED, SPLICED, OR CONNECTED UTILIZING "HY-PRESS" OR EQUAL MECHANICALLY COMPRESSED LUGS, SPLICES OR TAPS. ONLY THE CORRECT DIE IS TO BE USED FOR THE COMPRESSION.

- A. EXCEPTION - NO.6 AWG AND SMALLER TERMINATED ON CIRCUIT BREAKERS, SWITCHES, DEVICES OR CABLE TERMINATED DIRECTLY ON CIRCUIT BREAKER LUGS PROVIDED, LIGHTING AND RECEPTACLE BRANCH CIRCUITS MAY USE "WING NUTS" OR "WIRE NUTS" INSTALLED IN AN APPROVED MANNER.

ALL CIRCUIT BREAKERS SHALL BE PROVIDED TO MATCH EXISTING PANEL BOARD AS REQUIRED.

ALL DIRECTORIES SHALL BE TYPED WITH PROPER DESIGNATION OF EQUIPMENT SERVED.

CIRCUIT BREAKER SIZES AND QUANTITIES ARE FOR THE CONVENIENCE OF THE BIDDERS ONLY. THE E.C. SHALL BE RESPONSIBLE FOR VERIFYING AND SUPPLYING ALL REQUIRED BRANCH CIRCUITS.

E.C. SHALL REFER TO ALL MECHANICAL, PLUMBING AND ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND CHARACTERISTICS OF ALL EQUIPMENT. ANY MODIFICATION AND/OR ADDITIONAL WORK NECESSARY SHALL BE INCLUDED IN THE BASE BID.

ALL TEMPERATURE CONTROL AND INTERLOCK WIRING SHALL BE BY H.V.A.C CONTRACTOR UNLESS NOTED OTHERWISE. E.C. SHALL FURNISH AND INSTALL FLUSH JUNCTION BOX AND CONDUIT RACEWAY FROM THERMOSTAT TO RESPECTIVE UNIT FOR WIRING BY H.V.A.C CONTRACTOR. VERIFY ADDITIONAL CONDUITS FURNISHED BY E.C. REQUIRED FOR INTERLOCK WIRING FURNISHED BY H.V.A.C CONTRACTOR.

THIS CONTRACTOR SHALL REVIEW ENTIRE SET OF CONTRACT DOCUMENTS: INCLUDING BUT NOT NECESSARILY LIMITED TO ALL ARCHITECTURAL, ALL STRUCTURAL, ALL MECHANICAL, ALL ELECTRICAL, ALL PLUMBING, ALL POOL DRAWINGS AND ENTIRE PROJECT MANUAL. THIS CONTRACTOR SHALL ACKNOWLEDGE AND INCLUDE IN HIS SCOPE OF WORK (CONTRACT) ALL CONDITIONS PERTINENT TO THE COMPLETION OF HIS WORK. HE SHALL FULLY COORDINATE HIS WORK WITH THE INSTALLATION OF WORK BY OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE HIS WORK. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL CHARGE TO OWNER.

THIS CONTRACTOR SHALL CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS, VISIT THE SITE OF WORK, AND FULLY INFORM HIMSELF AS TO THE CONDITIONS AND MATTERS THAT CAN IN ANY WAY AFFECT THE WORK OR THE COST THEREOF. SHOULD THIS CONTRACTOR FIND DISCREPANCIES IN, OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS, OR OTHER DOCUMENTS, OR SHOULD HE BE IN DOUBT AS TO THEIR MEANING, HE SHOULD NOTIFY THE ARCHITECT AT ONCE AND OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID.

THIS CONTRACTOR SHALL RECEIVE TAILGATE DELIVERY, STORE, PROVIDE PROTECTION FROM WEATHER AND VANDALISM AND INSTALL ALL ITEMS FURNISHED BY OWNER AS INDICATED ON THE DRAWINGS AND SPECIFICATIONS.

REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ELECTRICAL EQUIPMENT.

PROVIDE "AS-BUILT" CADD FILES AND HARD COPY REPRODUCIBLE DRAWINGS AND SUBMIT TO ARCHITECT AND ENGINEER. AS-BUILT SHOULD INDICATE EXACT: CIRCUIT NUMBERS, LOCATIONS OF ALL DEVICES, CEILING FIXTURES, CONDUIT RACEWAY FOR TELECOMMUNICATIONS AND POWER DISTRIBUTION SYSTEMS AS INSTALLED.

ELECTRICAL METALLIC TUBING (EMT) SHALL BE USED FOR ALL WALL OUTLETS RUNNING IN PARTITIONS, OR ABOVE CEILINGS. EMT FITTINGS SHALL BE OF THE STEEL COMPRESSION TYPE.

MINIMUM CONDUIT SIZE SHALL BE 3/4" FOR GENERAL LIGHTING AND POWER CIRCUITRY UNLESS OTHERWISE INDICATED AND/OR REQUIRED BY CODE.

FLEXIBLE CONDUIT CONNECTIONS TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH FLEXIBLE STEEL CONDUIT, 3/8" INCH MINIMUM. APPROVED FOR PLENUM CONDITIONS PER LOCAL CODE.

BRANCH CIRCUIT HOMERUN WIRING:

- A. GENERAL PURPOSE BRANCH CIRCUIT HOMERUNS CONSISTING OF TWO NETWORKS SHALL HAVE PHASE, NEUTRAL AND GROUND CONDUCTORS INCREASED TO #10 AWG., THHN MINIMUM, WHERE HOMERUN (ONE OR TWO NETWORKS) EXCEEDS 100 LINEAR FEET. CONDUCTOR SIZE SHALL BE INCREASED ONE WIRE GAUGE.

THE CONTRACTOR SHALL VERIFY THE CEILING CONSTRUCTION TYPE BEFORE ORDERING LIGHTING FIXTURES WITH ARCHITECTURAL DETAILS TO CONFIRM PROPER MOUNTING.

ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SPECIAL OUTLET BOXES THAT MAY BE REQUIRED TO ENCLOSE RECEPTACLES.

IN SUSPENDED CEILINGS, SUPPORT CONDUIT AND JUNCTION BOXES DIRECT FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PURPOSE. LIGHTING BRANCH CIRCUIT CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLINE, UNLESS THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE AND APPROVAL GRANTED BY LANDLORD AND ARCHITECT.

WHERE FLOOR FITTINGS REQUIRE PENETRATION OF THE FLOOR SLAB, THERE SHALL BE A STANDARD DEVICE LISTED BY UL FOR THE PURPOSE AND HAVE A UL FIRE RATING EQUAL TO THE FLOOR RATING. ALL CORE SIZES AND LOCATIONS SHALL BE SUBMITTED TO LANDLORD FOR APPROVAL AND SUBMISSION TO STRUCTURAL ENGINEER PRIOR TO CORING.

E.C. SHALL PROVIDE "3M" FIRESEAL SYSTEMS FOR ALL CORES AND RACEWAY PENETRATIONS IN FIRE RATED WALLS AND FLOORS. FIRE RATE WALL AND CEILING PENETRATIONS, ETC. USING "CP-25" CAULK, "303" PUTTY AND/OR "FLAMESEAL" PUTTY AS PER MANUFACTURER INSTRUCTIONS TO MAINTAIN EXISTING AND NEW FIRE RATINGS. VERIFY FIRE RATING CONDITIONS AND LOCATIONS PRIOR TO FINAL BIDS. ALL OPEN CONDUIT SLEEVE PENETRATIONS SHALL BE FIRESEALED INSIDE BY E.C. AFTER CABLE(S) ARE COMPLETELY INSTALLED. SEALING METHODS SHALL BE PROVIDED BY E.C. SUBJECT TO APPROVAL OF CABLE CONTRACTOR.

NUMBERED CIRCUITS SHOWN ON PLAN ARE FOR THE CONVEYANCE OF DESIGN ONLY. ACTUAL FIELD CONDITIONS WILL AFFECT CIRCUITRY. INDICATE THE ACTUAL CIRCUIT NUMBERS INSTALLED ON THE "AS-BUILT" DRAWINGS.

BUILDING STANDARDS

- A. ALL NEW CONDUIT RACEWAYS AND BOXES FOR ALL SYSTEMS SHALL BE INSTALLED WHERE REQUIRED. TIGHT-UP TO BOTTOM OF STRUCTURAL BEAMS AND SUPPORTED FROM CONCRETE FLOOR DECK ABOVE.
B. NEW CONDUIT RUNS OR PULLBOXES SHALL NOT BLOCK OR PREVENT FULL COMPLETE ACCESS AND/OR OPERATION OF NEW OR EXISTING HVAC EQUIPMENT, ACCESS DOORS, PIPING VALVES, JUNCTION BOXES, FAN POWER/NAV BOXES, MAIN RETURN AIR DUCTS, PULLBOXES, CLEANOUTS, ETC.
C. NEW CONDUIT AND PULLBOXES TO BE INSTALLED BELOW NEW DUCTWORK SHALL BE MOUNTED TIGHT UP TO BOTTOM OF DUCT WITH 90 DEG. BENDS UP SIDEWALL OF DUCT. SUPPORTS SHALL NOT PENETRATE DUCTWORK, AND SHALL BE INDEPENDENT OF DUCTWORK SUPPORTS. DIRECT CONTACT OF CONDUIT RACEWAY SYSTEMS WITH DUCTWORK OR PIPING SHALL BE PROVIDED WITH VIBRATION SEPARATION METHOD APPROVED BY ENGINEER.
D. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL BE HELD TO HAVE EXAMINED THE CONSTRUCTION SITE WITH RESPECT TO CONSTRUCTION DRAWINGS, ACTUAL FIELD CONDITIONS, DOOR FRAME HEIGHTS, PIPING OBSTRUCTIONS, DUCTWORK HEIGHTS AND LEVELS, FLOOR LEVELS, CEILING HEIGHTS, ETC. PRIOR TO FINAL BIDS.

ALL HANGER AND/OR ROD SUPPORT SYSTEMS SHALL BE SUPPORTED TO THE BOTTOM RIB OF THE METAL DECK, WHERE APPLICABLE. PROVIDE A WRITTEN GUARANTEE THAT THE ELECTRICAL INSTALLATION IS FREE FROM MECHANICAL AND ELECTRICAL DEFECTS. CONTRACTOR AT HIS COST SHALL REPLACE AND/OR REPAIR TO THE SATISFACTION OF THE TENANT AND/OR MANUFACTURER INSTALLATION INSTRUCTIONS ANY PARTS OF THE INSTALLATION WHICH MAY FAIL WITHIN A

PERIOD OF 12 MONTHS FROM CONSTRUCTION ACCEPTANCE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, PROVIDED THAT SUCH FAILURE IS DUE TO DEFECTS IN MATERIAL, WORKMANSHIP OR FAILURE TO FOLLOW THE SPECIFICATIONS AND DRAWINGS.

CONTRACTOR SHALL PROVIDE ALL NECESSARY PROPERLY SIZED WALL OR MILLWORK MOUNTED BOXES, RINGS, SUPPORTS AND DEVICES AS REQUIRED VIA COORDINATION WITH ARCHITECTURAL WALL SECTIONS, AND MILLWORK DETAILS.

DIVISION 27 -- COMMUNICATIONS

SECTION 27 0001 -- COMMUNICATIONS -- GENERAL

SYSTEM DESCRIPTION

THE OWNER HAS IN PLACE A STATE OF THE ART CABLING SYSTEM THAT IS SUPPORTIVE OF THE MISSION TO PROVIDE VOICE, HIGH SPEED DATA, VIDEO AND MULTIMEDIA SERVICES TO THE COLLEGE OF DUPAGE MAIN CAMPUS AND SATELLITE SITES WELL INTO THE FUTURE. THE REQUIREMENTS FOR THIS CABLING, ITS INSTALLATION AND TERMINATION EQUIPMENT ARE VERY STRINGENT TO SUPPORT THESE GOALS.

THIS DOCUMENT DESCRIBES THE PRODUCT AND EXECUTION REQUIREMENTS RELATING TO NEW TELECOMMUNICATIONS CABLING SYSTEM FOR THE COLLEGE OF DUPAGE AND REGIONAL CAMPUS LOCATIONS. IF EXCEPTIONS OR CHANGES TO THESE REQUIREMENTS ARE DESIRED BY A/E, A/E SHALL DISCUSS PROPOSED CHANGES AND EXCEPTIONS WITH OWNER'S INFORMATION DEPARTMENT.

QUALIFICATIONS/PERSONNEL

A/E SHALL SPECIFY THE FOLLOWING:

- THE COMMUNICATIONS CABLING SYSTEM INSTALLATION WORK DETAILED IN THESE STANDARDS SHALL BE CARRIED OUT BY A SPECIALIST INSTALLER, TRAINED AND CERTIFIED BY PANDUIT AND CAPABLE OF PROVIDING A SYSTEM WARRANTY AS DESCRIBED HEREIN.
• THE CABLING CONTRACTOR SHALL HAVE A REGISTERED COMMUNICATIONS DISTRIBUTION DESIGNER (RCD) OR EQUAL AS A PERMANENT MEMBER OF STAFF. THE RCD SHALL BE IN GOOD STANDING WITH THE BUILDING INDUSTRY CONSULTING SERVICE INTERNATIONAL (BICSI) AND SHALL HAVE A CURRENT REGISTRATION.
• THE CONTRACTOR SHALL HOLD A VALID STATE CONTRACTORS LICENSE FOR THE DURATION OF THE PROJECT. THE INSTALLER SHALL BE RESPONSIBLE FOR OBTAINING PERMITS AND OTHER REQUIREMENTS FOR PERFORMING WORK ON THIS PROJECT.
• THE CABLING CONTRACTOR SHALL PROVIDE AN ON-SITE MANAGER RESPONSIBLE FOR ALL COMMUNICATION WORK. THIS INDIVIDUAL SHALL BE THE SINGLE POINT OF CONTACT FOR THE DURATION OF THE PROJECT.
• THE CONTRACTOR SHALL FURNISH AND INSTALL ALL TUBE CABLES, TUBE COUPLINGS, TUBE DISTRIBUTION UNITS (TDUS), FIBER BUNDLES, CONNECTORS, AND EQUIPMENT AS SHOWN ON THE DRAWINGS AND PER SUMITOMO RECOMMENDED PROCEDURES (SRP'S).

DEFINITIONS

- TELECOMMUNICATIONS CLOSET (TC): IN THE GENERIC TERM, THIS REFERS TO THE EQUIPMENT ROOMS IN WHICH TELECOMMUNICATIONS CABLING TERMINATES. THESE ROOMS ALSO HOUSE NETWORK, VIDEO AND TELEPHONE ELECTRONICS.
• BUILDING DISTRIBUTION FACILITY (BDF): THE MAIN WIRING SWITCHING FOR THE BUILDING.
• INTERMEDIATE DISTRIBUTION FACILITY (IDF): A SECONDARY WIRING SWITCHING ROOM.
• HORIZONTAL CABLING: CABLING RUNS FROM WORK STATION TO IDF OR BDF.
• BACKBONE: LINKAGE FROM BDF TO IDF.
• HOUSE COUNT: THE CONTRACTOR SHALL CROSS-CONNECT THE FIRST (BLUE) PAIR OF EACH NEW WORKSTATION CABLE TO THE RISER BACKBONE TO LINK THE TELECOMMUNICATIONS CLOSET TO THE NEXT CLOSET IN THE HIERARCHY. THE CROSS CONNECTS WIRE OF COLORS MATCHING THE COLOR OF THE STATION CABLING CONDUCTORS (BLUE) SHALL BE USED FOR EACH CROSS CONNECT.
• BACKBONE TRANSMISSION MEDIA MAY BE:
1. TRADITIONAL AND AIR BLOWN OPTICAL FIBER
2. TWISTED-PAIR COPPER
3. COAXIAL COPPER
4. A COMBINATION OF THE ABOVE
5. MISCELLANEOUS SUPPORT FACILITIES
• MATERIAL NEEDED FOR THE PROPER TERMINATION AND INSTALLATION OF THE BACKBONE CABLES:
1. CABLE SUPPORT HARDWARE
2. FIRESTOPPING EQUIPMENT AND SUPPLIES
3. GROUNDING HARDWARE (1A/EA-607)
4. PROTECTION AND SECURITY
• INTER-BUILDING CABLING - FIRST LEVEL BACKBONE: PROVIDES THE TRANSMISSION PATH BETWEEN ADJACENT BUILDINGS. INCLUDES FIBER OPTIC AND COPPER CABLING.
• INTRA-BUILDING CABLING - SECOND LEVEL BACKBONE: PROVIDES THE TRANSMISSION PATH TO JOIN THE MAIN TELECOMMUNICATIONS CLOSET (OR BDF) WITH OTHER TC'S (OR IDF) LOCATED WITHIN THE BUILDING. INCLUDES FIBER OPTIC AND COPPER CABLING.
• HORIZONTAL CABLING AND WORK STATION CABLING: PROVIDES THE LINK FROM OFFICES, CLASSROOMS AND COMMON AREAS TO THE TELECOMMUNICATIONS CLOSET (TC) SERVING THE AREA AND INCLUDES THE FOLLOWING TRANSMISSION MEDIA:
1. 4-PAIR 100 OHM UNSHIELDED TWISTED PAIR (UTP) CATEGORY 6
2. FIBER OPTIC CABLE (MULTI-MODE AND SINGLE-MODE)
3. RG-6 COAX

SUBMITTALS

- THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS
• AT A/E OPTION, CONTRACTOR SHALL SUBMIT A TWO-FOOT SECTION OF CABLE(S) OF THE TYPE(S) TO BE SENT TO THE SITE FOR FINAL APPROVAL BY THE COLLEGE. THIS TWO-FOOT SECTION SHALL HAVE THE MANUFACTURER'S CABLE MARKINGS VISIBLE. UPON REQUEST, SAMPLES FROM EVERY REEL SENT TO THE SITE SHALL BE PROVIDED.
• AT A/E OPTION, CONTRACTOR SHALL SUBMIT IF REQUESTED, A FULL MOCKUP OF THE PROPOSED INFORMATION OUTLET AND JACK CONFIGURATION WITH APPROPRIATE CABLING FOR EACH OF THE INSTALLATION ENVIRONMENTS DESCRIBED BELOW. A/E SHALL DISCUSS FULL MOCKUP REQUIREMENTS WITH OWNER PRIOR TO SPECIFYING.
• CONTRACTOR SHALL SUBMIT HOUSE COUNT TABLE IN SPREADSHEET/TABLE FORMAT WITH SHOP DRAWING SUBMITTALS. HOUSE COUNT TABLE SHALL INCLUDE HOUSE COUNT AND LOCATION ID'S.

DELIVERY, STORAGE AND HANDLING

- THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:
• THE CABLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DELIVERIES OF MATERIAL CONSTRUCTION SITE. THE OWNER WILL NOT ACCEPT DELIVERIES.
• FOR PURPOSES OF BIDDING, IT IS TO BE ASSUMED THAT THE OWNER WILL NOT PROVIDE STORAGE FACILITIES FOR MATERIAL. PENDING AVAILABILITY, HOWEVER, THIS MAY BE ARRANGED SUBSEQUENT TO AWARD.
• CABLE SHALL BE STORED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AT A MINIMUM. CABLE MUST BE STORED IN A LOCATION PROTECTED FROM VANDALISM AND WEATHER. IF CABLE IS STORED OUTSIDE, IT MUST BE COVERED WITH OPAQUE PLASTIC OR CANVAS WITH PROVISION FOR VENTILATION TO PREVENT CONDENSATION AND FOR PROTECTION FROM WEATHER. MANUFACTURER'S STORAGE SPECIFICATIONS - IN PARTICULAR, THOSE RELATING TO TEMPERATURE - SHALL BE FOLLOWED. ALL STORAGE COSTS SHALL BE INCLUDED IN CONTRACT PRICE.

QUALITY ASSURANCE

- A/E SHALL SPECIFY WORK IN ACCORDANCE WITH THE FOLLOWING:
• EQUIPMENT AND MATERIAL SHALL BE UNDERWRITERS LABORATORIES LISTED AND LABELED. THE LATEST EDITIONS OF THE FOLLOWING CODES, STANDARDS AND GUIDELINES ARE MINIMUM REQUIREMENTS:
1. CITY, STATE, AND FEDERAL CODES.
2. NFPA 70 NATIONAL FIRE PROTECTION AGENCY
3. NATIONAL ELECTRIC CODE (NEC 1999)

- 4. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)
5. 1A/EA-568-B-1 COMMERCIAL BUILDING TELECOMMUNICATION CABLING STANDARD.
6. 1A/EA-568-B-2 COMMERCIAL BUILDING TELECOMMUNICATION CABLING STANDARD.
7. 1A/EA-568-B-2.1 COMMERCIAL BUILDING TELECOMMUNICATION CABLING STANDARD CATEGORY 6.
8. 1A/EA-569 COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.
9. 1A/EA-606 THE ADMINISTRATION STANDARD FOR TELECOMMUNICATIONS INFRASTRUCTURE OF COMMERCIAL BUILDINGS.
10. 1A/EA-607 COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS.
11. 1A/EA TSB-67 TRANSMISSION PERFORMANCE SPECIFICATIONS FOR FIELD TESTING OF UNSHIELDED TWISTED PAIR CABLING SYSTEMS
12. 1A/EA TSB-72 CENTRALIZED OPTICAL FIBER CABLING GUIDELINES.
13. 1A/EA TSB-75 ADDITIONAL HORIZONTAL CABLING PRACTICES FOR OPEN OFFICES.
14. TELECOMMUNICATIONS DISTRIBUTION METHODS MANUAL, (BICSI).
15. MANUFACTURE'S RECOMMENDATIONS AND INSTALLATION GUIDELINES.

WORK RESTRICTIONS AND PROCEDURES

GENERAL REQUIREMENTS

THE A/E SHALL SPECIFY THE FOLLOWING:

- THE CABLING CONTRACTOR SHALL EXAMINE ALL DRAWINGS AND SPECIFICATIONS TO FAMILIARIZE THEMSELVES WITH THE TYPE OF CONSTRUCTION TO BE USED, AND THE NATURE AND EXTENT OF WORK PROVIDED BY OTHER TRADES.
• BEGINNING INSTALLATION MEANS CONTRACTOR ACCEPTS EXISTING CONDITIONS.
• CONTRACTOR SHALL VERIFY DIMENSIONS AND THE CORRECT LOCATIONS OF HARDWARE BEFORE PROCEEDING WITH THE INSTALLATION OF HARDWARE, CABLING AND/OR CONNECTIONS.
• THE CABLING CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND REPORTING TO THE OWNER ANY EXISTING DAMAGE TO WALLS, FLOORING, TILES AND FURNISHINGS IN THE WORK AREA PRIOR TO START OF WORK. ALL DAMAGE CAUSED BY THE CABLE, RACEWAY, OR MISCELLANEOUS MATERIAL TO THE INTERIOR SURFACES DURING THE COMMUNICATION INSTALLATION SHALL BE REPAIRED BY THE CONTRACTOR. THE REPAIRS MUST MATCH PREEXISTING COLOR AND FINISH OF WALLS, FLOORS AND CEILINGS. ANY CONTRACTOR DAMAGED CEILING TILES ARE TO BE REPLACED TO MATCH COLOR, SIZE, STYLE AND TEXTURE AND SHALL NOT BE TAKEN FROM OWNER'S ATTIC STOCK.
• THE CABLING CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL TELECOMMUNICATIONS ROOMS AND OFFICES WHEN NOT IN USE. AT NO TIME SHALL THE TELECOMMUNICATIONS ROOM BE UNATTENDED IF UNSECURED.
• CONTRACTOR SHOULD ASSUME THAT ALL INSTALLATION WORK INCLUDING CABLE PLACEMENT, TERMINATION AND TESTING SHALL BE PERFORMED BETWEEN THE HOURS OF 7:00 A.M. TO 5:00 P.M. MONDAY THROUGH FRIDAY UNLESS STATED OTHERWISE IN THE BID.
• QUALIFIED PERSONNEL UTILIZING STATE-OF-THE-ART EQUIPMENT AND TECHNIQUES SHALL COMPLETE ALL INSTALLATION WORK.
• THE CABLE SYSTEMS WILL BE TESTED AND DOCUMENTED UPON COMPLETION OF THE INSTALLATION AS DEFINED IN THE SECTION BELOW.
• PRODUCTS SELECTION, INSTALLATION PLANS AND TERMINATION LAYOUTS MUST BE REVIEWED AND APPROVED BY THE OWNER PRIOR TO CONSTRUCTION. THE REVIEW DOES NOT EXEMPT THE CONTRACTOR FROM MEETING ANY OF THE REQUIREMENTS STATED IN THIS DOCUMENT.

SUBMITTALS

- THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS
• AT A/E OPTION, CONTRACTOR SHALL SUBMIT A TWO-FOOT SECTION OF CABLE(S) OF THE TYPE(S) TO BE SENT TO THE SITE FOR FINAL APPROVAL BY THE COLLEGE. THIS TWO-FOOT SECTION SHALL HAVE THE MANUFACTURER'S CABLE MARKINGS VISIBLE. UPON REQUEST, SAMPLES FROM EVERY REEL SENT TO THE SITE SHALL BE PROVIDED.
• AT A/E OPTION, CONTRACTOR SHALL SUBMIT IF REQUESTED, A FULL MOCKUP OF THE PROPOSED INFORMATION OUTLET AND JACK CONFIGURATION WITH APPROPRIATE CABLING FOR EACH OF THE INSTALLATION ENVIRONMENTS DESCRIBED BELOW. A/E SHALL DISCUSS FULL MOCKUP REQUIREMENTS WITH OWNER PRIOR TO SPECIFYING.
• CONTRACTOR SHALL SUBMIT HOUSE COUNT TABLE IN SPREADSHEET/TABLE FORMAT WITH SHOP DRAWING SUBMITTALS. HOUSE COUNT TABLE SHALL INCLUDE HOUSE COUNT AND LOCATION ID'S.

DELIVERY, STORAGE AND HANDLING

- THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:
• THE CABLING CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DELIVERIES OF MATERIAL CONSTRUCTION SITE. THE OWNER WILL NOT ACCEPT DELIVERIES.
• FOR PURPOSES OF BIDDING, IT IS TO BE ASSUMED THAT THE OWNER WILL NOT PROVIDE STORAGE FACILITIES FOR MATERIAL. PENDING AVAILABILITY, HOWEVER, THIS MAY BE ARRANGED SUBSEQUENT TO AWARD.
• CABLE SHALL BE STORED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AT A MINIMUM. CABLE MUST BE STORED IN A LOCATION PROTECTED FROM VANDALISM AND WEATHER. IF CABLE IS STORED OUTSIDE, IT MUST BE COVERED WITH OPAQUE PLASTIC OR CANVAS WITH PROVISION FOR VENTILATION TO PREVENT CONDENSATION AND FOR PROTECTION FROM WEATHER. MANUFACTURER'S STORAGE SPECIFICATIONS - IN PARTICULAR, THOSE RELATING TO TEMPERATURE - SHALL BE FOLLOWED. ALL STORAGE COSTS SHALL BE INCLUDED IN CONTRACT PRICE.

- TOOLS, MATERIALS AND EQUIPMENT SHALL BE CONFINED TO AREA DESIGNATED BY THE OWNER. THE CONTRACTOR SHALL CLEAN UP AND DISPOSE OF ALL DEBRIS AND RUBBISH RESULTING FROM WORK ON A DAILY BASIS.
• THE CONTRACTOR IS RESPONSIBLE FOR THE CLEANUP OF THE DUST, DEBRIS, SHIPPING AND PACKAGING MATERIAL ASSOCIATED WITH THEIR INSTALLATION. THE OWNER'S DISPOSAL CONTAINERS, SHALL NOT TO BE UTILIZED WITHOUT WRITTEN AUTHORIZATION.

SECTION 27 0002 -- COMMUNICATIONS -- MATERIALS

DATA/VOICE UTP STATION CABLE

- THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:
• TRANSMISSION CHARACTERISTICS OF THE CABLE SHALL MEET FULL CATEGORY 6 PERFORMANCE AS DEFINED BY 1A/EA-568-B-2.1. CABLE SHALL BE UL AND/OR ETL VERIFIED CATEGORY 6.
• CABLES SHALL BE UNDERWRITERS LABORATORY (UL) LISTED, COMPLY WITH ARTICLE 800 (COMMUNICATIONS CIRCUITS) OF THE NATIONAL ELECTRICAL CODE AND SHALL MEET THE SPECIFICATIONS OF NEMA (LOW LOSS), UL 444, AND ICEA.
• THE JACKET COLOR FOR DATA STATION CABLES SHALL BE BLUE.
• DATA STATION CABLES SHALL MEET A CMR (RISER) OR CMP (PLENUM) RATING DEPENDING ON THE PARTICULARS OF THE INSTALLATION AND BE SUITABLE FOR INSTALLATION IN THE ENVIRONMENTS DEFINED INCLUDING FREE-AIR, IN CONDUIT, IN CABLE TRAY AND IN MODULAR FURNITURE.
• CABLE SHALL BE PACKAGED IN A WAY THAT MINIMIZES TANGLING AND KINKING OF THE CABLE DURING INSTALLATION. EXAMPLES ARE OPEN REELS OR PACKAGES, WHICH INCORPORATE A ROTATING REEL.
• DATA UTP STATION CABLES SHALL BE PANDUIT PUP60048U-UY HIGH PERFORMANCE CATEGORY 6 PLENUM (CMP) TWISTED 4-PAIR UTP CATEGORY 6 OR PANDUIT PUR60048U-UY HIGH PERFORMANCE CATEGORY 6 RISER (CMR) TWISTED 4-PAIR UTP COPPER CABLE.

TELECOMMUNICATIONS OUTLET

- THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:
• AT THE WORKSTATION LOCATION, STATION CABLES SHALL EACH BE SECURED IN A HOUSING, WHICH SHALL ALSO ACCOMMODATE THE TERMINATION ASSEMBLY FOR THOSE CABLES. THE COMBINED ASSEMBLY, REFERRED TO AS THE TELECOMMUNICATIONS OUTLET (TO), SHALL BE MODULAR IN DESIGN AND ALLOW FOR FLEXIBILITY IN INTEGRATING THE DIFFERENT CONFIGURATIONS REQUIRED AT THE SITE.
• THERE SHALL BE ONE (1) BASIC TELECOMMUNICATIONS OUTLET CONFIGURATION:
1. THE "COPPER-ONLY" COMMUNICATION OUTLET THAT IS CAPABLE OF SUPPORTING ONLY UTP AND COAXIAL CABLING.
• IN ADDITION, PROVISION OF A SEPARATE, "VOICE ONLY" OUTLET THAT IS INSTALLED TO ACCOMMODATE A WALL-MOUNTED TELEPHONE SET SHALL BE CONSIDERED. THIS CONFIGURATION, REFERRED TO AS "SPLIT VOICE", CAN BE USED IN CONCERT WITH EITHER OF THE ABOVE CONFIGURATIONS.
• THE COLOR AND MATERIAL OF THE FRAME COVER AND INSERTS (IF APPLICABLE) SHALL BE ELECTRIC IVORY PLASTIC.
• THE COVER OF THE TELECOMMUNICATIONS OUTLET SHALL BE SECURED TO THE BASE WITH A SCREW. THE SCREW(S) SHALL, IN TURN, BE HIDDEN FROM VIEW BY A LABEL OR OTHER COVERING TO DISCOURAGE CASUAL ACCESS.

Table with 2 columns: Issue Date, Title. Row 1: JUL 28, 2017, ISSUED FOR PERMIT

COLLEGE OF DUPAGE
BIC 3401

425 FAWELL BLVD
GLEN ELLYN, IL 60137

Table with 2 columns: Description, Project No. Row 1: Electrical Specifications, 15044-1706. Row 2: Drawing No. E001.



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COLLEGE OF DUPAGE
BIC 3401

425 FAWELL BLVD
GLEN ELLYN, IL 60137

Drawing Title

ELECTRICAL
SPECIFICATIONS

Expiration Date of Issue: 11-30-2018 BE Project No. 15044-1706

Drawn By: MM/CP

Drawing No. E002

COPPER ONLY OUTLET

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:
• THE COPPER-ONLY OUTLET SHALL COMPLY WITH THE GENERAL REQUIREMENTS DEFINED ABOVE AND WITH THE FOLLOWING ADDITIONAL REQUIREMENTS:

- 1. THE COPPER-ONLY OUTLET SHALL PROVIDE ADEQUATE CAPACITY TO ACCOMMODATE THE FOLLOWING MAXIMUM CONFIGURATIONS:
• TWO (2), FOUR (4), OR SIX (6) MODULAR JACKS (VOICE OR DATA)
• THE SAME AS ABOVE BUT ONE (1) "T" CONNECTOR SUBSTITUTED FOR ONE (1) MODULAR JACK.
2. ALL JACKS AND COUPLINGS SHALL MOUNT ON EITHER THE BASE OF THE UNIT OR THE COVER.
3. THE COPPER-ONLY OUTLET SHALL BE AVAILABLE IN BOTH "FLUSH" AND SURFACE MOUNT DESIGNS AND SHALL BE ADAPTABLE TO MOUNTING ON CELLULAR FLOOR PRESETS OR POSTTESTS POKE THRU OR UNDER FLOOR WIRING.
4. WHERE FLUSH MOUNTING IS NOT POSSIBLE, A SURFACE BOX SHALL BE USED. SURFACE BOX SHALL BE PANDUIT SINGLE GANG ONE-PIECE DEEP BOX.

• WALL-MOUNTED COPPER-ONLY OUTLETS

- 1. WALL MOUNTED COPPER-ONLY TELECOMMUNICATIONS OUTLETS SHALL BE PANDUIT OFP2 2 PORT OFPL4 4 PORT AND OFPL6 6 PORT.
• WALL MOUNTED VOICE ONLY OUTLET
1. WALL-MOUNTED "VOICE ONLY" OUTLETS SHALL CONSIST OF A MOUNTING PLATE ON WHICH A TELEPHONE SET MAY BE MOUNTED.
2. THE WALL PLATE SHALL BE OF STAINLESS STEEL CONSTRUCTION, MOUNT ON A STANDARD SINGLE GANG OUTLET BOX OR BRACKET AND INCLUDE MATING LUGS FOR WALL PHONE MOUNTING.
3. THE WALL PLATE SHALL BE PANDUIT KNPSFY OR EQUIVALENT AND BE FITTED WITH ONE (1) VOICE JACK MEETING THE CRITERIA DEFINED BELOW.
• STATION VOICE COPPER TERMINATION AT MEDIA OUTLET
1. STATION VOICE COPPER CABLES SHALL EACH BE TERMINATED AT THE MEDIA OUTLET IN AN EIGHT-PIN MODULAR JACK, PANDUIT CJE8BT.
2. JACKS ARE TO BE PINNED PER TIA/EIA-568B WITH THE PAIRING AS FOLLOWS:
• PAIR 1 - PINS 5&4
• PAIR 2 - PINS 1&2
• PAIR 3 - PINS 3&6
• PAIR 4 - PINS 7&8

- 3. THE INTERFACE BETWEEN THE JACK AND THE STATION CABLE SHALL BE A 110-STYCLE BLOCK. BLOCKS SHALL BE DESIGNED TO MAINTAIN THE CABLE'S PAIR TWISTS AS CLOSELY AS POSSIBLE TO THE POINT OF MECHANICAL TERMINATION.
4. VOICE TERMINATION HARDWARE SHALL MEET CATEGORY 6 PERFORMANCE SPECIFICATIONS AS DEFINED BY TIA/EIA-A-5 AND TSB40 SPECIFICATIONS FOR CONNECTING HARDWARE.
• STATION DATA COPPER TERMINATION AT OUTLET
1. STATION DATA COPPER CABLES SHALL EACH BE TERMINATED AT THE MEDIA OUTLET IN AN EIGHT-PIN MODULAR JACK. JACK CONTACTS SHALL HAVE A MINIMUM OF 50-MICRO-INCHES OF GOLD PLATING, PANDUIT C688T3.
2. JACKS ARE TO BE PINNED PER EIA 568B WITH THE PAIRING AS FOLLOWS:
• PAIR 1 - PINS 5&4
• PAIR 2 - PINS 1&2
• PAIR 3 - PINS 3&6
• PAIR 4 - PINS 7&8

- 3. THE INTERFACE BETWEEN THE JACK AND THE STATION CABLE SHALL BE A 110-STYCLE BLOCK. BLOCKS SHALL BE DESIGNED TO MAINTAIN THE CABLE'S PAIR TWISTS AS CLOSELY AS POSSIBLE TO THE POINT OF MECHANICAL TERMINATION
4. DATA TERMINATION HARDWARE SHALL MEET FULL CATEGORY 6 PERFORMANCE SPECIFICATIONS AS DEFINED BY TIA/EIA-568-B-21 AND TSB-40A SPECIFICATIONS FOR CONNECTING HARDWARE. ALL PAIR COMBINATIONS MUST BE CONSIDERED, WITH THE WORST-CASE MEASUREMENT BEING THE BASIS FOR COMPLIANCE. THE JACK MUST BE UL VERIFIED AND LISTED. ALL PAIR COMBINATIONS MUST BE CONSIDERED WITH THE WORSE CASE MEASUREMENT BEING THE BASIS FOR COMPLIANCE.
5. THE COLOR OF THE DATA JACK SHALL BE BLACK.
6. DATA JACK SHALL BE PANDUIT C688T3.

INTRA-BUILDING VOICE COPPER CABLE

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- WHERE INSTALLED IN CONDUIT, CABLE TRAY AND/OR IN BUILDING RISER SHAFTS, CABLES SHALL BE SUITABLE FOR SUCH INSTALLATION AND COMPLY WITH THE FOLLOWING ADDITIONAL REQUIREMENTS
• CABLES SHALL MEET NEC ARTICLE 800 TYPE CMR.
• CABLES SHALL BE AIR CORE WITH AN 8-MIL ALVYN SHEATH
• CABLES SHALL BE "ARM" SERIES

MISCELLANEOUS MATERIALS

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- SURFACE RACEWAY
1. THE INSTALLATION OF SURFACE MOUNTED OUTLETS AND SURFACE MOUNTED STATION CABLE IS ANTICIPATED AT SOME LOCATIONS WHERE SOLID WALLS INHIBIT THE INSTALLATION OF CABLE BEHIND THE WALL. NONMETALLIC SURFACE RACEWAY SHALL BE USED - NO EXPOSED CABLE SHALL BE PERMITTED.
2. THE SURFACE RACEWAY SHALL HAVE A SCREW-APPLIED BASE AND HAVE A SNAP ON COVER. THE USE OF DOUBLE-SIDED TAPE TO ANCHOR THE RACEWAYS WILL NOT BE PERMITTED. BOTH THE BASE AND COVER SHALL BE MANUFACTURED OF RIGID PVC COMPOUNDS AND BE SUITABLE FOR PAINTING.

- 4. THE RACEWAY SHALL BE OF A COLOR FITTING THE DECOR OF THE AREA AND BE PAINTABLE (BY OTHERS). APPROVAL OF SAMPLES BY THE ENGINEER PRIOR TO INSTALLATION IS REQUIRED (UPON REQUEST BY OWNER). ALL FITTINGS INCLUDING, BUT NOT LIMITED TO, EXTENSION BOXES, ELBOWS, TEES, FIXTURE BOXES AND FITTINGS SHALL MATCH THE COLOR OF THE RACEWAY.
5. FITTINGS AND COUPLINGS SHALL BE SIZED TO INSURE THAT CATEGORY 6 AND FIBER OPTIC CABLES THAT ARE ROUTED THROUGH THEM DO NOT EXCEED THEIR RECOMMENDED MINIMUM BEND RADIUS REQUIREMENTS.
6. THE RACEWAY AND ALL SYSTEM DEVICES MUST BE UL LISTED AND EXHIBIT NONFLAMMABLE SELF-EXTINGUISHING CHARACTERISTICS, TESTED TO SPECIFICATIONS OF THE UL94V-0.
7. RACEWAY SHALL BE SIZED TO ACCOMMODATE A 50% INCREASE IN THE NUMBER OF CABLES INITIALLY INSTALLED WHILE MAINTAINING A FILL (RATIO OF CABLE AREA VS. RACEWAY AREA) NO GREATER THAN 60%. A NOMINAL CABLE DIAMETER OF 0.2" (VOICE AND DATA CABLES) SHOULD BE ASSUMED.
8. THE NON-METALLIC RACEWAY SHALL BE PANDUIT PAN-WAY L SERIES.

SECTION 27 0003 - COMMUNICATIONS - TERMINATIONS

COPPER TERMINATION HARDWARE AT TELECOMMUNICATIONS CLOSETS

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- AT THE TELECOMMUNICATIONS CLOSET(S), ALL COPPER CABLES SHALL BE ORGANIZED IN A FASHION COMPLIANT WITH ESTABLISHED CABLING STANDARDS AT THE COLLEGE. WHERE ADDING TO AN EXISTING INSTALLATION, TERMINATION COMPONENTS SHALL BE INTEGRATED INTO THE EXISTING PLAN AND CONSIDER EQUIPMENT POSITIONING AND LABELING.
• THE CONTRACTOR SHALL CROSS-CONNECT THE FIRST 1ST (BLUE) PAIR OF EACH NEW WORKSTATION CABLE TO THE RISER BACKBONE TO LINK THE TELECOMMUNICATIONS CLOSET TO THE NEXT CLOSET IN THE HIERARCHY. THE CROSS-CONNECTS WIRE OF COLORS MATCHING THE COLOR OF THE STATION CABLING CONDUCTORS (BLUE) SHALL BE USED FOR EACH CROSS-CONNECT.
• EACH 4- OR 5-PAIR GROUP SHALL BE POSITIONED ON THE TERMINATING HARDWARE IN NUMERICAL ORDER BASED ON PAIR COUNT OR TELECOMMUNICATIONS OUTLET I.D. WITH THE LOWEST I.D. NUMBER OR PAIR FIRST.
• TERMINATION HARDWARE SHALL BE SUITABLE FOR MOUNTING ON WALLS, IN RACKS, OR IN DISTRIBUTION FRAMES. WALL MOUNTED CROSS-CONNECT FIELDS AND FRAMES SHALL BE ARRANGED TO ALLOW FOR EASY EXPANSION.
• THE CONTRACTOR SHALL PROVIDE HOUSE COUNT TO OWNER.

VOICE COPPER TERMINATION AT TC (BACKBONE & STATION)

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- AT THE TELECOMMUNICATIONS CLOSET(S), EACH VOICE "BACKBONE" CABLE AND 4-PAIR "VOICE" STATION CABLE AND SHALL BE TERMINATED ON HIGH-DENSITY HORIZONTAL BLOCKS. EACH HORIZONTAL ROW OF THE CROSS-CONNECT BLOCK MUST BE CAPABLE OF TERMINATING ONE (1) TWENTY-FIVE PAIR BINDER GROUP (TIE CABLES) OR SIX (6) FOUR PAIR GROUPS (STATION CABLES). WHERE STATION CABLES ARE INSTALLED ON 110 BLOCKS, THE 25TH POSITION OF EACH HORIZONTAL VOICE BLOCK SHALL REMAIN OPEN. BACKBONE AND STATION BLOCKS SHALL BE SEGREGATED CLEARLY IDENTIFYING THEIR FUNCTION. THE BLOCKS SHALL BE DESIGNED TO MAINTAIN THE CABLE'S PAIR TWISTS AS CLOSELY AS POSSIBLE TO THE POINT OF MECHANICAL TERMINATION. THE INSTALLER SHALL INSURE THAT THE TWISTS ARE PRESERVED TO WITHIN 1-INCH IF THE TERMINATION.
• BLOCKS SHALL IDENTIFY PAIR POSITION BY A COLOR DESIGNATION - BLUE, ORANGE, GREEN, BROWN AND SLATE (IF APPLICABLE).
• THE MECHANICAL TERMINATIONS SHALL:
1. HAVE THE ABILITY OF TERMINATING 22 - 26 AWG PLASTIC INSULATED, SOLID AND STRANDED COPPER CONDUCTORS.
2. PROVIDE A DIRECT CONNECTION BETWEEN THE CABLE AND JUMPER WIRES.
3. INSERT LESS THAN 0.02 DB OF ATTENUATION @ 100 MHZ
• BLOCKS SHALL BE DESIGNED AS TO ALLOW FOR CABLES TO BE FED FROM ABOVE OR BELOW.
• THE VOICE TERMINATION HARDWARE SHALL BE PANDUIT PAN-PUNCH 110 CROSS CONNECT SYSTEM. WALL MOUNTED HARDWARE SHALL BE EQUIPPED WITH LESS AND SHALL CONSIST OF 300- (P110BWK00-X) WIRING BLOCKS
• JACKS ARE TO BE PINNED PER TIA/EIA 568B WITH THE PAIRING AS FOLLOWS:
1. PAIR 1 - PINS 5&4
2. PAIR 2 - PINS 1&2

DATA PATCH PANEL

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- COPPER DATA STATION CABLES SHALL EACH BE TERMINATED AT THEIR DESIGNATED TC TO A PANDUIT PATCH PANEL, CATEGORY 6 PERFORMANCE PER TIA/EIA 568B-2.1 MUST BE MAINTAINED BY THE PANEL AS A SYSTEM AND INCLUDE THIS INTERFACE. ALL PAIR COMBINATIONS MUST BE CONSIDERED, WITH THE WORST-CASE MEASUREMENT BEING THE BASIS FOR COMPLIANCE.
• JACKS ARE TO BE PINNED PER TIA/EIA 568B WITH THE PAIRING AS FOLLOWS:
1. PAIR 1 - PINS 5&4
2. PAIR 2 - PINS 1&2

- 3. PAIR 3 - PINS 3&6
4. PAIR 4 - PINS 7&8

- PANELS SHALL INCORPORATE CABLE SUPPORT AND/OR STRAIN RELIEF MECHANISMS TO SECURE THE HORIZONTAL CABLES AT THE TERMINATION BLOCK AND TO INSURE THAT ALL MANUFACTURERS MINIMUM BEND RADIUS SPECIFICATIONS ARE ADHERED TO.
• WHEN MULTIPLE FLOORS ARE BEING SERVICED IN A CLOSET, EACH FLOOR SHOULD HAVE SEPARATE PATCH PANELS. EACH PATCH PANEL SHOULD START WITH LOWEST SEQUENTIAL NUMBER STARTING WITH ONE PER EACH FLOOR, PER EACH CLOSET AND THEN INCREMENT BY ONE UNTIL EACH PANEL IS FULL OR NO MORE DROPS AVAILABLE ON THAT FLOOR WITH ITS CLOSEST CLOSET. IF POSSIBLE THE PATCH PANEL FOR EACH FLOOR SHOULD BE INSTALLED ON A SEPARATE RACK.
• CONTRACTOR SHALL DISCUSS THE USE OF 24 PORT PATCH PANEL WITH THE OWNER BEFORE USAGE. USE OF 24 PORT PATCH PANEL IS DISCOURAGED.

SECTION 27 0004 - COMMUNICATIONS - INSTALLATION

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- THE INSTALLATION SHALL FOLLOW RECOGNIZED INDUSTRY RECOMMENDATIONS INCLUDING THOSE DEFINED BY THE:
1. TIA/EIA-568-B.1 COMMERCIAL BUILDING WIRING STANDARD
2. TIA/EIA-568-B.2 COMMERCIAL BUILDING WIRING STANDARD
3. TIA/EIA-568-B.2.1 COMMERCIAL BUILDING WIRING STANDARD
4. TIA/EIA-569 COMMERCIAL BUILDING STANDARD FOR PATHWAYS AND SPACES
5. TIA/EIA-606 LABELING GUIDELINES
6. TIA/EIA-607 GROUNDING
7. NATIONAL ELECTRICAL CODE (NEC; 1999)
8. BICSI TDM MANUAL
9. APPLICABLE STATE AND LOCAL CODES
• CABLE PATHWAYS (RENOVATION PROJECTS)
1. RENOVATION PROJECTS: THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THE AVAILABILITY OF RISER ACCESS BETWEEN FLOORS, WHERE REQUIRED, THE CONTRACTOR SHALL CORE NEW RISERS.
2. ALL PROJECTS: ALL NEW RISER HOLES SHALL BE FITTED WITH SLEEVES. ALL RISER HOLES USED FOR THE INSTALLATION, BOTH NEW AND EXISTING, SHALL BE FIRESTOPPED UPON COMPLETION OF CABLE INSTALLATION.
• CABLE INSTALLATION
1. ALL CABLES, TERMINATION COMPONENTS AND SUPPORT HARDWARE SHALL BE FURNISHED, TESTED, INSTALLED AND WIRED BY THE CONTRACTOR.
2. DURING PULLING OPERATION AN ADEQUATE NUMBER OF WORKERS SHALL BE PRESENT TO ALLOW CABLE OBSERVATION AT ALL POINTS OF DUCT ENTRY AND EXIT AS WELL AS THE FEED CABLE AND OPERATE PULLING MACHINERY.
3. CABLE PULLING SHALL BE DONE IN ACCORDANCE WITH CABLE MANUFACTURER'S RECOMMENDATIONS AND ANSI/IEEE C2 STANDARDS. RECOMMENDED PULLING TENSIONS SHALL NOT BE EXCEEDED.
4. MANUFACTURER'S MINIMUM BEND RADIUS SPECIFICATIONS SHALL FOLLOWED IN HANDLING, INSTALLATION AND SECURING OF ALL CABLES. ANY CABLE BENT OR KINKED TO RADIUS LESS THAN RECOMMENDED DIMENSION SHALL NOT BE INSTALLED.
5. ALL CABLES SHALL BE INSTALLED SPICE-FREE.
6. CABLE SHEATHS SHALL BE PROTECTED FROM DAMAGE FROM SHARP EDGES DURING AND AFTER INSTALLATION.
7. WHERE A CABLE PASSES OVER A SHARP EDGE, A BUSHING OR GROMMET SHALL BE USED TO PROTECT THE CABLE.
8. ALL CABLE SHALL BE FREE OF TENSION AT BOTH ENDS. IN CASES WHERE THE CABLE MUST BEAR SOME STRESS, KELLEN GRIPS MAY BE USED TO SPREAD THE STRAIN OVER A LONGER LENGTH OF CABLE.
9. VENTILATION OF BUILDINGS ON THE GLEN ELLEN CAMPUS INCLUDES BOTH DUCTED AND CEILING-PLENUM AIR RETURN DESIGNS AS FOLLOWS:
• PLENUM RETURN SITES:
• DUCTED RETURN SITES:
• M, K & L BUILDINGS, OCC, AND ARTS CENTER
• COD SATELLITE SITES VARY BY LOCATION.
11. ALL OPENINGS MADE TO ACCOMMODATE THE INSTALLATION OF ANY CABLE SHALL BE SLEEVED AND FIRE STOPPED PER PREVAILING CODE REQUIREMENTS UPON COMPLETION OF CABLE INSTALLATION.
12. AT NO TIME SHALL HORIZONTAL CABLING SHARE THE SAME RACEWAY OR PATH WITH BACKBONE CABLING.

TELECOMMUNICATIONS OUTLET

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- TELECOMMUNICATIONS OUTLETS SHALL BE POSITIONED AT A HEIGHT MATCHING EXISTING SERVICES, WHERE NO GUIDE IS AVAILABLE. OUTLETS SHALL BE MOUNTED WITH THE CENTER OF THE OUTLET 18-INCHES ABOVE FLOOR HEIGHT UNLESS INSTRUCTED OTHERWISE BY THE COLLEGE.
• POSITIONING OF WALL-MOUNTED TELEPHONE OUTLETS SHOULD BE IN COMPLIANCE WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA).
• OUTLETS SHALL BE SECURELY MOUNTED AND LEVEL.
• ALL UNUSED SLOTS OR POSITIONS IN THE TELECOMMUNICATIONS OUTLET SHALL BE COVERED WITH BLANK INSERTS.
• AT THE OUTLET LOCATION, SUBSURFACE ROUTING OF CABLES INSIDE "FISHABLE" WALLS IS PREFERRED, WHERE THIS CANNOT BE ACCOMMODATED, HOWEVER, STATION CABLE SHALL BE ROUTED VIA SURFACE RACEWAY. RACEWAY SHOULD BE OF ADEQUATE DIMENSIONS TO ALLOW FOR INSTALLATION OF THE CABLE IN COMPLIANCE WITH THE MANUFACTURERS SPECIFICATION INCLUDING BEND RADIUS, CRUSH AND TENSILE LIMITS. EXPOSED SURFACE RACEWAY SHOULD BE PAINTABLE AND FIT THE DECOR OF THE SPACE. TELECOMMUNICATION OUTLET INSTALLATION ON SHEETROCK WALLS SHALL BE PRECEDED BY THE INSTALLATION OF A BRACKET WHICH MOUNTS SECURELY TO THE SHEETROCK (E.G. "CADDY" OR "MPLS" BRACKET). THE OUTLET FRAME SHALL, IN TURN, BE SECURED TO THE BRACKET. TELECOMMUNICATIONS OUTLETS SHALL NOT BE SCREWED DIRECTLY TO THE SHEETROCK.

COPPER TERMINATION HARDWARE

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- COPPER TERMINATION HARDWARE AT TC
1. AT THE TELECOMMUNICATIONS CLOSETS, ALL DATA AND VOICE CABLES SHALL BE POSITIONED ON TERMINATION HARDWARE IN SEQUENCE OF THE OUTLET I.D. STARTING WITH THE LOWEST NUMBER. ALL FOUR PAIRS TERMINATING ON EACH VOICE MODULAR JACK SHALL APPEAR ON THE TELECOMMUNICATIONS CLOSET 110 BLOCKS. TERMINATION HARDWARE (BLOCKS AND PATCH PANELS) POSITIONING AND LAYOUT MUST BE REVIEWED AND APPROVED BY THE COLLEGE PRIOR TO CONSTRUCTION. THE REVIEW DOES NOT EXEMPT THE CONTRACTOR FROM MEETING ANY OF THE REQUIREMENTS STATED IN THIS DOCUMENT.
2. EXCEPT IN THE IC PBX ROOM, VOICE TERMINATION HARDWARE SHALL BE WALL MOUNTED ON PLYWOOD BOARD. THE CONTRACTOR SHALL NEATLY ROUTE AND SECURE NEW CABLES VIA CABLE MANAGEMENT HARDWARE (E.G. D RINGS AND CABLE GUIDES) FROM CABLE

THE MAXIMUM CABLE LIMIT OF THE CABLE SUPPORTS, CABLES SHALL NOT BE ATTACHED TO EXISTING CABLING, PLUMBING OR STEAM PIPING, DUCTWORK, CEILING SUPPORTS OR ELECTRICAL OR COMMUNICATIONS CONDUIT. SUPPORTS SHOULD BE SPACED AT A MAXIMUM 5-FOOT INTERVAL UNLESS LIMITED BY BUILDING CONSTRUCTION. CABLE SHALL NEVER BE LAID DIRECTLY ON THE CEILING GRID.

• THE MAXIMUM STATION CABLE LENGTH SHALL NOT EXCEED 295-FEET (90-METERS) IN ORDER TO MEET DATA COMMUNICATIONS PERFORMANCE SPECIFICATIONS. THIS LENGTH IS MEASURED FROM THE TERMINATION PANEL IN THE TELECOMMUNICATIONS CLOSET TO THE OUTLET AND MUST INCLUDE ANY SLACK REQUIRED FOR THE INSTALLATION AND TERMINATION. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING STATION CABLING IN A FASHION AS TO AVOID UNNECESSARILY LONG RUNS. ANY AREA THAT CANNOT BE REACHED WITHIN THE ABOVE CONSTRAINTS SHOULD BE IDENTIFIED AND REPORTED TO THE COLLEGE PRIOR TO INSTALLATION. THE COLLEGE MUST APPROVE ANY PLAN CHANGES.

- SLACK CABLE SHALL BE LEFT ABOVE EACH WORK STATION TO ALLOW FOR REPAIR AND/OR FUTURE OFFICE REARRANGEMENTS WITHOUT RE-CABLING. THESE "SERVICE LOOPS" SHALL BE SECURED AT THE LAST CABLE SUPPORT (E.G. CADDY TYPE J-HOOK) BEFORE THE CABLE LEAVES THE CEILING AND SHALL BE COILED FROM 100% TO 200% OF THE CABLE RECOMMENDED MINIMUM BEND RADIUS. SLACK LENGTHS ARE AS FOLLOWS:
1. AT ANY LOCATION WHERE CABLES ARE INSTALLED INTO MOVABLE PARTITION WALLS OR MODULAR FURNITURE VIA A SERVICE POLE, APPROXIMATELY 6 FEET OF SLACK SHALL BE LEFT FOR EACH STATION CABLE UNDER 250-FEET IN LENGTH.
2. TO REDUCE OR ELIMINATE EMI, THE FOLLOWING MINIMUM DISTANCES SHALL BE ADHERED TO. IN WORKSTATION CABLES, SLACK MUST BE PAID TO THE ROUTING OF CABLE AND AVOIDANCE OF POTENTIALLY DISRUPTIVE SOURCES OF ELECTRICAL NOISE SUCH AS MOTORS AND FLUORESCENT LIGHTING. THE CONTRACTOR SHALL NOTIFY THE COLLEGE IF INSTALLATION CONDITIONS INHIBIT THESE GUIDELINES.
1. NO LESS THAN (5) FIVE INCHES FROM POWER LINES OF 2KV.
2. NO LESS THAN (30) THIRTY INCHES FROM HIGH VOLTAGE LIGHTING (INCLUDING FLUORESCENT LIGHTING).
3. NO LESS THAN (39) THIRTY-NINE INCHES FROM POWER LINES OF 5KVA OR GREATER.
4. NO LESS THAN (39) THIRTY-NINE INCHES FROM TRANSFORMERS AND MOTORS.
• CARE SHOULD BE TAKEN IN THE USE OF CABLE TIES TO SECURE AND ANCHOR THE STATION CABLING. TIES SHOULD NOT BE OVER TIGHTENED AS TO COMPRESS THE CABLE JACKET. NO SHARP BURRS SHOULD REMAIN WHERE EXCESS LENGTH OF THE CABLE TIE HAS BEEN CUT.

TELECOMMUNICATIONS OUTLET

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- TELECOMMUNICATIONS OUTLETS SHALL BE POSITIONED AT A HEIGHT MATCHING EXISTING SERVICES, WHERE NO GUIDE IS AVAILABLE. OUTLETS SHALL BE MOUNTED WITH THE CENTER OF THE OUTLET 18-INCHES ABOVE FLOOR HEIGHT UNLESS INSTRUCTED OTHERWISE BY THE COLLEGE.
• POSITIONING OF WALL-MOUNTED TELEPHONE OUTLETS SHOULD BE IN COMPLIANCE WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA).
• OUTLETS SHALL BE SECURELY MOUNTED AND LEVEL.
• ALL UNUSED SLOTS OR POSITIONS IN THE TELECOMMUNICATIONS OUTLET SHALL BE COVERED WITH BLANK INSERTS.
• AT THE OUTLET LOCATION, SUBSURFACE ROUTING OF CABLES INSIDE "FISHABLE" WALLS IS PREFERRED, WHERE THIS CANNOT BE ACCOMMODATED, HOWEVER, STATION CABLE SHALL BE ROUTED VIA SURFACE RACEWAY. RACEWAY SHOULD BE OF ADEQUATE DIMENSIONS TO ALLOW FOR INSTALLATION OF THE CABLE IN COMPLIANCE WITH THE MANUFACTURERS SPECIFICATION INCLUDING BEND RADIUS, CRUSH AND TENSILE LIMITS. EXPOSED SURFACE RACEWAY SHOULD BE PAINTABLE AND FIT THE DECOR OF THE SPACE. TELECOMMUNICATION OUTLET INSTALLATION ON SHEETROCK WALLS SHALL BE PRECEDED BY THE INSTALLATION OF A BRACKET WHICH MOUNTS SECURELY TO THE SHEETROCK (E.G. "CADDY" OR "MPLS" BRACKET). THE OUTLET FRAME SHALL, IN TURN, BE SECURED TO THE BRACKET. TELECOMMUNICATIONS OUTLETS SHALL NOT BE SCREWED DIRECTLY TO THE SHEETROCK.

COPPER TERMINATION HARDWARE

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- COPPER TERMINATION HARDWARE AT TC
1. AT THE TELECOMMUNICATIONS CLOSETS, ALL DATA AND VOICE CABLES SHALL BE POSITIONED ON TERMINATION HARDWARE IN SEQUENCE OF THE OUTLET I.D. STARTING WITH THE LOWEST NUMBER. ALL FOUR PAIRS TERMINATING ON EACH VOICE MODULAR JACK SHALL APPEAR ON THE TELECOMMUNICATIONS CLOSET 110 BLOCKS. TERMINATION HARDWARE (BLOCKS AND PATCH PANELS) POSITIONING AND LAYOUT MUST BE REVIEWED AND APPROVED BY THE COLLEGE PRIOR TO CONSTRUCTION. THE REVIEW DOES NOT EXEMPT THE CONTRACTOR FROM MEETING ANY OF THE REQUIREMENTS STATED IN THIS DOCUMENT.
2. EXCEPT IN THE IC PBX ROOM, VOICE TERMINATION HARDWARE SHALL BE WALL MOUNTED ON PLYWOOD BOARD. THE CONTRACTOR SHALL NEATLY ROUTE AND SECURE NEW CABLES VIA CABLE MANAGEMENT HARDWARE (E.G. D RINGS AND CABLE GUIDES) FROM CABLE

TRAY TO THE CABLE TERMINATION HARDWARE. OLD CABLE TIES SHALL BE REMOVED AND REPLACED WITH VELCRO STYLE CABLE WRAPS TO MAINTAIN A TIDY APPEARANCE. CABLES SHALL BE FED FROM BELOW THE TERMINATION HARDWARE IN A MANNER THAT WILL FACILITATE GROWTH.

3. THE HEIGHT OF THE VOICE TERMINATION FIELD SHALL NOT EXCEED 6- FEET (72-INCHES) ABOVE FLOOR LEVEL TO FACILITATE CABLE MAINTENANCE. BACKBONE CABLING SHOULD BE POSITIONED TO THE LEFT, SURFACE CABLING TO THE RIGHT.

4. WHERE MULTIPLE FLOORS ARE SERVED FROM A SINGLE TC, THE TERMINATION FIELD FOR EACH FLOOR SHALL BE SEGREGATED FROM EACH OF THE OTHERS. FOLLOWING THE STANDARD ESTABLISHED AT THE SITE, EACH CROSS CONNECT FIELD FOR A GIVEN FLOOR IS POSITIONED IN A SEPARATE VERTICAL COLUMN (VOICE). SPARE CAPACITY SHOULD BE CONSIDERED IN THE DESIGN AND BE PROVIDED FOR EACH GROUPING.

5. AT THE VOICE TERMINATION BLOCKS (ALL 110-TYPE INTERFACE), THE INSTALLER SHALL INSURE THAT THE TWISTS IN EACH VOICE CABLE PAIR ARE PRESERVED TO WITHIN 1.0-INCH OF THE TERMINATION. THE CABLE JACKET SHALL BE REMOVED ONLY TO THE EXTENT REQUIRED TO MAKE THE TERMINATION.

6. WHERE VOICE TERMINATION HARDWARE IS WALL MOUNTED, HORIZONTAL TROUGHS INCORPORATING SPLIT PLASTIC DISTRIBUTION RINGS SHALL BE PROVIDED BY THE CONTRACTOR TO ACCOMMODATE ROUTING OF JUMPERS. TROUGHS SHALL BE POSITIONED AT THE TOP OF EACH COLUMN OF TERMINATION BLOCKS AND BETWEEN EACH 300-PAIR WIRING BLOCK. TROUGHS SHALL BE PANDUIT P110JTW.

7. THE CONTRACTOR SHALL CROSS-CONNECT THE FIRST 1ST (BLUE) PAIR OF EACH NEW WORKSTATION CABLE TO THE RISER BACKBONE TO LINK THE TELECOMMUNICATIONS CLOSET TO THE NEXT CLOSET IN THE HIERARCHY. THE CROSS-CONNECTS WIRE OF COLORS MATCHING THE COLOR OF THE STATION CABLING CONDUCTORS (BLUE) SHALL BE USED FOR EACH CROSS-CONNECT.

8. IN NEW INSTALLATIONS, A JUMPER WIRE SPOOL HOLDER SHALL BE INSTALLED AT THE TELECOMMUNICATIONS CLOSET(S). ONE FULL (1000-FOOT) SPOOL OF 24-AWG ONE-PAIR JUMPER WIRES, ONE SPOOL EACH WHITE-BLUE/BLUE SHALL BE SUPPLIED WITH THE HOLDER. THE HOLDER SHALL BE DESIGNED FOR USE AS A SPOOL HOLDER AND SHALL MOUNT SECURELY TO THE PLYWOOD OR LADDER RACK (ABOVE THE VOICE FIELD).

MISCELLANEOUS MATERIALS INSTALLATION

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- JUMPER MANAGEMENT HARDWARE
1. HORIZONTAL CABLE MANAGEMENT HARDWARE SHALL BE POSITIONED ON THE EQUIPMENT RACKS TO ALLOW FOR AN ORDERLY ROUTING OF COPPER AND FIBER OPTIC JUMPERS. AT MINIMUM, THESE JUMPER MANAGEMENT PANELS SHALL BE POSITIONED:
• HORIZONTAL MANAGEMENT SHALL BE PLACED ABOVE AND BELOW EACH FORTY-EIGHT (48) PORT DATA PATCH PANELS.
• HORIZONTAL MANAGEMENT SHALL BE PLACED ABOVE AND BELOW EACH FIBER OPTIC HDC (STATION FIBER).
• HORIZONTAL MANAGEMENT SHALL BE PLACED ABOVE AND BELOW EACH PAIR (2) OF FIBER OPTIC TERMINATION PANELS (BACKBONE).
• SURFACE RACEWAY
1. WHERE OUTLETS ARE INSTALLED IN AREAS WHERE THE WALLS CANNOT BE FISHED, THE STATION CABLING SERVING THESE OUTLETS SHALL BE COVERED WITH RACEWAYS. NO EXPOSED WIRE SHALL BE PERMITTED WITHIN OFFICES, LABORATORIES, CONFERENCE ROOMS, CLASSROOMS, ETC.
2. THE BASE AND COVER OF THE RACEWAY SHALL BE OF PVC HAVE A SCREW APPLIED BASE AND HAVE A SNAP ON COVER. BOTH THE BASE AND COVER SHALL BE MANUFACTURED OF RIGID NATURAL PVC COMPOUNDS. THE RACEWAY MUST BE UL LISTED AND EXHIBIT NONFLAMMABLE SELF-EXTINGUISHING CHARACTERISTICS.
3. THE RACEWAY SHALL ORIGINATE FROM A SURFACE MOUNTED OUTLET BOX, HAVE A SCREW-APPLIED BASE AND TERMINATE ABOVE THE CEILING. A FITTING DESIGNED FOR THE RACEWAY SHALL BE USED TO CONCEAL THE CEILING PENETRATION.
4. SURFACE MOUNTING OF AN OUTLET INTENDED FOR FLUSH-MOUNT INSTALLATION SHALL BE PRECEDED BY THE INSTALLATION OF A SURFACE BOX ("BACK-BOX") ONTO WHICH THE OUTLET FRAME IS MOUNTED.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PENETRATIONS REQUIRED TO ACCOMMODATE THE RACEWAY IN MAKING ANY TRANSITIONS BETWEEN OFFICE AREAS AND HALLWAYS OR OTHER COMMON AREAS THROUGH WHICH THE RACEWAY MAY BE ROUTED. ALL CUT MOLDING SECTIONS SHALL BE PATCHED AND PAINTED UPON COMPLETION OF THE RACEWAY INSTALLATION.
6. ALL CUTS AND PENETRATIONS MUST BE PATCHED AND PAINTED. UPON COMPLETION OF INSTALLATION, RACEWAYS MUST BE CLEANED OF ALL FINGERPRINTS, SOIL, ETC.

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Drawing Title

ELECTRICAL
SPECIFICATIONS

Table with 2 columns: Expiration Date of Seal, BE Project No. Row 1: 11/30/2018, 15044-1706

Drawn By: MM/CP

Drawing No. E003

SECTION 27 0005 - COMMUNICATIONS - LABELING

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- THE TELECOMMUNICATIONS ADMINISTRATION SYSTEM SHALL MEET OR EXCEED TIA/EIA-606-A STANDARDS.
ALL TELECOMMUNICATIONS OUTLETS, DATA PATCH PANEL, VOICE TERMINATION BLOCKS AND CABLES SHALL BE CLEARLY LABELED USING A CODE IDENTIFYING EACH INFORMATION OUTLET LOCATION AS UNIQUE THROUGHOUT THE COD CAMPUS. THE FONT TYPE SHALL BE SIMILAR TO ARIAL BOLD FACED WITH FONT SIZE OF 14. ALL ALTERNATE FONT TYPE AND SIZE MUST BE APPROVED BY THE OWNER. THIS CODE WHICH WILL IDENTIFY CABLING AND TERMINATIONS AT BOTH IDF AND MEDIA OUTLET LOCATIONS, SHALL BE AS FOLLOWS:

- 1. BB-XCC-F-###
BB= THE DESIGNATION TO IDENTIFY THE SPECIFIC BUILDING
XCC = THE TELECOMMUNICATIONS CLOSET (TC) SERVING THAT JACK. THE TC IS DESIGNATED BY FLOOR (XX) AND THEIR GEOGRAPHIC LOCATION ON THAT FLOOR (CC) (E.G. NORTHWEST, SOUTHEAST, ETC.).
F = THE FLOOR ON WHICH THE JACK IS LOCATED.
### = A SEQUENTIAL NUMBER ASSIGNED TO THAT JACK.
A = ALPHA DESIGNATION USED ONLY IF MULTIPLE JACKS OF A GIVEN TYPE (E.G. VOICE OR DATA) ARE HOUSED IN THE SAME OUTLET ASSEMBLY.
FOR EXAMPLE, "1C-2NW-3-123" DESIGNATES THE 123RD JACK ON THE 3RD FLOOR SERVED FROM THE IDF IN THE NORTHWEST AREA OF THE 2ND FLOOR OF THE 1C BUILDING. IF MULTIPLE DATA CABLES WOULD BE CONTAINED IN THE OUTLET, THEY WOULD BE IDENTIFIED AS "A", "B", "C", AND SO ON.
THIS NUMBERING SEQUENCE PLUS A TWO (2) CHARACTER BUILDING DESIGNATOR SHALL BE UTILIZED IN THE CABLE MANAGEMENT SYSTEM FOR IDENTIFICATION OF STATION CABLING. BUILDING DESIGNATIONS ARE AS FOLLOWS:
1. ARTS CENTER (MAC) = AR
2. INSTRUCTIONAL CENTER (BIC) = IC
3. PHYSICAL EDUCATION(PEC) = PE
4. SEATON COMPUTING CENTER(SCC) = SC
5. STUDENT RESOURCE CENTER (SRC) = SR
6. STUDENT SERVICES CENTER (SSC) = SS
7. WDCB TOWER = WJ
8. WESTMONT CENTER = WC
9. NAPERVILLE CENTER = NC
10. ADDISON = AD
11. LISLE CENTER = LC
12. CAROL STREAM COMMUNITY EDUCATION CENTER = CC
13. EARLY CHILDHOOD EDUCATION CENTER(ECC) = EC
14. TECHNICAL EDUCATION CENTER(TEC) = TE
15. HEALTH AND SCIENCE CENTER(HSC) = HS
16. CULINARY AND HOSPITALITY CENTER (CHC) = CH
17. HOMELAND SECURITY EDUCATION CENTER (HEC) = HE
18. HOMELAND TRAINING CENTER (HTC) = HT

- WHERE ADDING TO AN EXISTING INSTALLATION, CABLE IDENTIFICATION NUMBERING MUST BE INTEGRATED INTO THE ESTABLISHED PLAN AND MUST BE APPROVED BY THE OWNER.
WHERE ADDING TO AN INSTALLATION, BOTH VOICE AND DATA NUMBERING MUST REMAIN IN A MATCHED SEQUENCE THROUGHOUT THE SCHOOL. AT EACH LOCATION HAS THE SAME NUMBERING ON THE FACEPLATE ID FOR BOTH VOICE AND DATA. EXAMPLE: IF THE 4TH LOCATION IN A SERIES IS A VOICE ONLY LOCATION, THEN THE DATA PATCH PANEL WOULD BE SKIPPING NUMBER 4 IN ITS SEQUENCE. THEREFORE, IF THE NUMBERS ARE CONTINUING, (ASSUMING THE NEXT LOCATION IS BOTH VOICE AND DATA) THE DATA PATCH PANEL'S NEXT NUMBER WOULD BE 5 (SKIPPING # 4) WITH NO BLANK DATA JACKS OPEN ON THE DATA PATCH PANEL BY THE SAME DESCRIPTION, IF A LOCATION IN A SERIES IS A DATA ONLY, THE VOICE DESIGNATION STRIP WOULD REPRESENT A SKIP IN ITS SEQUENCE. AGAIN THE ARRANGEMENT OF THE ADDED CABLES WOULD LEAVE NO BLANKS ON THE 110-VOICE FRAME.
ALL LABELING SHALL BE MACHINE GENERATED (PANDUIT) IN BLACK INK ON WHITE BACKGROUND TAGS AND BE PERMANENT. NO HAND WRITTEN LABELS SHALL BE ALLOWED.
CABLES
1. ALL CABLES SHALL BE IDENTIFIED AT BOTH ENDS USING A SELF-LAMINATING TAG WRAPPED AROUND THE CABLE (E.G. NOT A "FLAG"). THE CONTRACTOR SHALL USE LABELER. CABLE LABELS SHALL INDICATE CABLE DESIGNATION AND DESTINATION. IN STATION CABLES, FOR EXAMPLE, THIS DESIGNATION SHALL BE THE TELECOMMUNICATIONS OUTLET IDENTIFICATION.
TELECOMMUNICATIONS OUTLETS
1. TELECOMMUNICATIONS OUTLETS ARE TO BE LABELED (1) ON THE COVER OF THE ASSEMBLY, (2) ON THE BASE OF THE ASSEMBLY (IF APPLICABLE) AND (3) ON EACH CABLE TERMINATED AT THAT LOCATION.
2. WHERE MULTIPLE CABLES OF A GIVEN TYPE (E.G. "DATA") ARE CONTAINED IN A SINGLE OUTLET, THE ALPHA-DESIGNATOR ("A", "B", "C", AND SO ON) THOSE JACK POSITIONS SHALL BE SO LABELED.
DATA PATCH PANELS
1. DATA PATCH PANELS SHALL BE CLEARLY LABELED AS TO THE DESTINATION AND POSITION OF EACH CABLE TERMINATED ON THAT PANEL. CABLES SHALL BE POSITIONED IN SEQUENCE OF OUTLET I.D.
2. THE TC DESIGNATOR MAY BE OMITTED ON EACH JACK POSITION PROVIDED THAT THE PANEL ITSELF INCLUDES THE TC DESIGNATOR.
3. STATION CABLES SHALL BE LABELED WITHIN 4-INCHES OF THE CABLE CHOKE AT DATA PATCH PANELS.
VOICE TERMINATION BLOCK
1. EACH HORIZONTAL ROW (IN PAIRS) OF THE VOICE TERMINATION BLOCK SHALL BE LABELED WITH

- "DESIGNATION STRIPS" WHICH IDENTIFY THE DESTINATION AND POSITION OF EACH CABLE TERMINATED ON THAT BLOCK.
2. DESIGNATION STRIPS SHALL BE COLOR CODED TO INDICATE THE BLOCK'S APPLICATION. COLOR-CODING SHALL BE AS FOLLOWS:
INTER-BUILDING CABLE (E.G. 1C-PE OR OCC-"X") = BROWN
INTRA-BUILDING CABLE (MDF-IDF) = WHITE
STATION CABLE = BLUE
3. BLOCKS ON WHICH "STATION" CABLING IS TERMINATED WILL BE LABELED AS TO IDENTIFY TELECOMMUNICATIONS OUTLET I.D.S. VOICE TERMINATION BLOCKS ON WHICH "BACKBONE" OR "TRUNK" CABLING IS TERMINATED WILL BE LABELED TO IDENTIFY PAIR COUNT ARE IDENTIFIED (E.G. 1-25, 26-50, ETC.). ASSIGNMENT OF PAIR COUNT(S) SHALL CONSIDER THE EXISTING COUNT AND MUST BE APPROVED BY OWNER.

SECTION 27 0006 - COMMUNICATIONS - TESTING

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- UPON COMPLETION OF INSTALLATION WORK, THE CONTRACTOR SHALL VISUALLY INSPECT ALL CABLING AND TERMINATIONS TO INSURE THAT THEY ARE COMPLETE AND CONFORM TO THE REQUIREMENTS DEFINED HEREIN.
THE CONTRACTOR SHALL PROVIDE TO THE COLLEGE A WRITTEN CERTIFICATION THAT THIS INSPECTION HAS BEEN MADE.
ALL CABLE SUB-SYSTEMS (INTRA-BUILDING AND STATION) MUST BE TESTED INDEPENDENTLY. TESTING OF THESE SUB-SYSTEMS CANNOT BE COMBINED (E.G. THROUGH INTERCONNECTION).
CONTRACTOR SHALL CONDUCT ACCEPTANCE TESTING ACCORDING TO A SCHEDULE COORDINATED WITH THE COLLEGE. REPRESENTATIVES OF THE COLLEGE MAY BE IN ATTENDANCE TO WITNESS THE TEST PROCEDURES. THE CONTRACTOR SHALL OFFER ADEQUATE ADVANCE NOTICE TO THE COLLEGE AS TO ALLOW FOR SUCH PARTICIPATION.
THE CONTRACTOR IS RESPONSIBLE FOR SUPPLYING ALL TEST EQUIPMENT AND PERSONNEL TO CONDUCT ACCEPTANCE TEST.
IF ANY LINK IS FOUND TO BE OUTSIDE THE SPECIFICATION DEFINED HEREIN, THAT CABLE AND THE ASSOCIATED TERMINATIONS (IF APPLICABLE) SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR. THE APPLICABLE TESTS SHALL THEN BE REPEATED.
DATA/VOICE UTP STATION CABLE TESTING
1. CAT 6 INSTALLATION: FIELD TEST REQUIREMENTS UPON COMPLETION OF THE INSTALLATION.
EVERY CABLING LINK IN THE INSTALLATION SHALL BE TESTED IN ACCORDANCE WITH THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) STANDARD ANS/TIA/EIA-568-B.1 (MOST CURRENT VERSION) LENGTH OF THE RUN MUST BE GIVEN ON TEST RESULTS.
2. OPTIONAL REQUIREMENTS:
A REPRESENTATIVE OF THE END-USER MAY SELECT A RANDOM SAMPLE OF 5% OF THE INSTALLED LINKS. THE OWNER SHALL TEST THESE RANDOMLY SELECTED LINKS AND THE RESULTS SHALL BE STORED.
3. FIELD TEST SPECIFICATIONS TO THE DATA PROVIDED BY THE INSTALLATION CONTRACTOR. IF MORE THAN 2% OF THE SAMPLE RESULTS DIFFER IN TERMS OF THE PASS/FAIL DETERMINATION, THE INSTALLATION CONTRACTOR UNDER SUPERVISION OF THE END-USER REPRESENTATIVE SHALL REPEAT 100% TESTING AND THE COST SHALL BE BORNE BY THE INSTALLATION CONTRACTOR.
TEST RESULT DOCUMENTATION AND FOLLOW UP

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- IN SYSTEM DOCUMENTATION, CONTRACTOR SHALL PROVIDE TEST RESULTS AND DESCRIBE THE CONDUCT OF THE TESTS. TEST DOCUMENTATION SHALL INCLUDE A RECORD OF TEST FREQUENCIES OR WAVELENGTHS, CABLE TYPE, CONDUCTOR PAIR AND CABLE I.D. (E.G. OUTLET I.D.), MEASUREMENT DIRECTION, TEST EQUIPMENT TYPE, MODEL AND SERIAL NUMBER, DATE, REFERENCE SETUP, AND CREWMEMBER NAME(S) AND THE LENGTH OF THE RUN. WHERE APPLICABLE, PRINTOUTS GENERATED FOR EACH CABLE BY THE WIRE TEST INSTRUMENT (E.G. FLUKE DSP4300) SHALL BE SUBMITTED AS PART OF THE DOCUMENTATION PACKAGE.
AT THE REQUEST OF THE OWNER, THE CONTRACTOR SHALL PROVIDE COPIES OF ORIGINAL TEST RESULTS.
THE OWNER MAY REQUEST THAT A 10% RANDOM FIELD RE-TEST BE CONDUCTED ON THE CABLE SYSTEM - AT NO ADDITIONAL COST - TO VERIFY DOCUMENTED FINDINGS. IF FINDINGS CONTRADICT THE DOCUMENTATION SUBMITTED BY THE CONTRACTOR, ADDITIONAL TESTING CAN BE REQUESTED TO THE EXTENT DETERMINED NECESSARY BY THE OWNER, INCLUDING A 100% RE-TEST. THIS RE-TEST SHALL BE AT NO ADDITIONAL COST TO THE OWNER.
SHOULD IT BE DETERMINED BY THE OWNER OR A/E THAT THE MATERIALS OR ANY PORTION THEREOF FURNISHED AND INSTALLED FAIL TO COMPLY WITH THE SPECIFICATIONS DEFINED HEREIN, THESE MATERIALS AND THE RELATED INSTALLATION SHALL BE REJECTED AND REPLACED BY THE CONTRACTOR. ALL WORK DISTURBED BY CHANGES NECESSITATED IN CONSEQUENCE OF SAID DEFECTS OR IMPERFECTIONS SHALL BE MADE GOOD AT THE CONTRACTOR'S EXPENSE. ALL REPLACED COMPONENTS SHALL BE RE-TESTED.

SECTION 27 0007 - COMMUNICATIONS DOCUMENTATION AND CLOSEOUT

THE A/E SHALL SPECIFY THE FOLLOWING REQUIREMENTS:

- UPON COMPLETION OF CABLE PLANT INSTALLATION, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF CABLE RECORDS DOCUMENTATION INCLUDING:
1. TEST DATA AS DEFINED ABOVE
2. AS-BUILT DRAWINGS (WHERE APPLICABLE)
3. INPUT DATA FOR FACILITIES MANAGEMENT SYSTEM
AS BUILT DRAWINGS
1. SEE ALSO DIVISION 01 OF THE DESIGN AND ENGINEERING CRITERIA
2. CONTRACTOR SHALL PROVIDE ACCURATE AS-BUILT CONSTRUCTION DRAWINGS.

- 3. THE DRAWING PACKAGE SHALL INCLUDE ONE OR MORE OF THE FOLLOWING:
FLOOR PLANS SHOWING (1) THE LOCATION OF ALL TELECOMMUNICATIONS OUTLETS AS INSTALLED AND (2) PATHS BY WHICH ALL CABLES ARE ROUTED.
CABLE LENGTHS AS OBTAINED THROUGH REVIEW OF SHEATH FOOTAGE MARKINGS.
TERMINATION FIELD, EQUIPMENT RACK AND FRAME LAYOUTS.
4. NUMBERING AND DRAWING CONVENTIONS USED SHALL BE CONSISTENT THROUGHOUT ALL DOCUMENTATION PROVIDED AND COMPLY WITH ESTABLISHED STANDARDS AT THE COLLEGE. TELECOMMUNICATIONS OUTLET LOCATIONS SHALL BE IDENTIFIED BY THEIR SEQUENTIAL NUMBER AS DEFINED ELSEWHERE IN THIS DOCUMENT AND INCLUDE THE BUILDING DESIGNATOR.
5. ALL DOCUMENTATION, INCLUDING HARD COPY AND ELECTRONIC FORMS (IF APPLICABLE) SHALL BECOME THE PROPERTY OF THE OWNER.
6. DOCUMENTATION SHALL BE SUBMITTED WITHIN TEN (10) WORKING DAYS OF THE COMPLETION OF TESTING.

Section 27 0008 - Communications - Acceptable Material List

The following products are acceptable to the Owner. Any variation shall be subject to review and acceptance by Owner.

Table with 3 columns: Mfgr, Mfgr PN, Description. Lists various Panduit products like PUP004BUUY, CFP2E2I, CFP4E1, etc.

Table with 3 columns: Mfgr, Mfgr PN, Description. Lists various Panduit products like DPLF, DPLT, FRME1, FRME2, FRME3, FAPB, FAP6WBUDSCZ, CFP2E2I, CFP4E1, CFP4E3, CFFP12E1-2G, JB1E1-A, KWSP9Y, CFFP4B, CMBE1-X.

**DEMOLITION KEY NOTES:**

- D-1** DISCONNECT, REMOVE AND RELOCATE EXISTING MANUAL OVERRIDE SWITCH FOR LIGHTING. SEE LIGHTING NEW WORK PLAN SHEET E100 FOR NEW LOCATION OF SWITCH.
- D-2** DISCONNECT & REMOVE EXISTING LIGHTING FIXTURE, ALL ASSOCIATED CONDUITS AND WIRING BACK TO SOURCE OR SERVING FEEDER JUNCTION BOX NOT AFFECTED BY DEMOLITION. SECURE AND REUSE CONDUITS WHERE FEASIBLE. REFER TO GENERAL DEMOLITION NOTES ON SHEET E000.
- D-3** DISCONNECT & REMOVE EXISTING CEILING-MOUNTED OCCUPANCY SENSOR SWITCH, ALL ASSOCIATED CONDUITS AND WIRING BACK TO SOURCE OR SERVING FEEDER JUNCTION BOX NOT AFFECTED BY DEMOLITION. SECURE AND REUSE CONDUITS WHERE FEASIBLE. REFER TO GENERAL DEMOLITION NOTES ON SHEET E000.
- D-4** DISCONNECT, REMOVE AND RELOCATE EXISTING CEILING-MOUNTED OCCUPANCY SENSOR. SEE LIGHTING NEW WORK PLAN SHEET E100 FOR NEW LOCATION OF OCCUPANCY SENSOR.
- D-5** DISCONNECT, REMOVE AND RELOCATE EXISTING WALL-MOUNTED OCCUPANCY SENSOR SWITCH. SEE SHEET E100 FOR NEW LOCATION.
- D-6** DISCONNECT, REMOVE AND RELOCATE EXISTING CEILING-MOUNTED LIGHTING FIXTURE. SECURE BRANCH CIRCUIT FOR THE INSTALLATION OF NEW LIGHTING FIXTURES IN THIS AREA. THIS EXISTING FIXTURE WILL BE RELOCATED TO ONE OF THE NEW STUDY ROOMS, SEE SHEET E100 FOR NEW LOCATIONS OF RELOCATED AND OF NEW LIGHTING FIXTURES.



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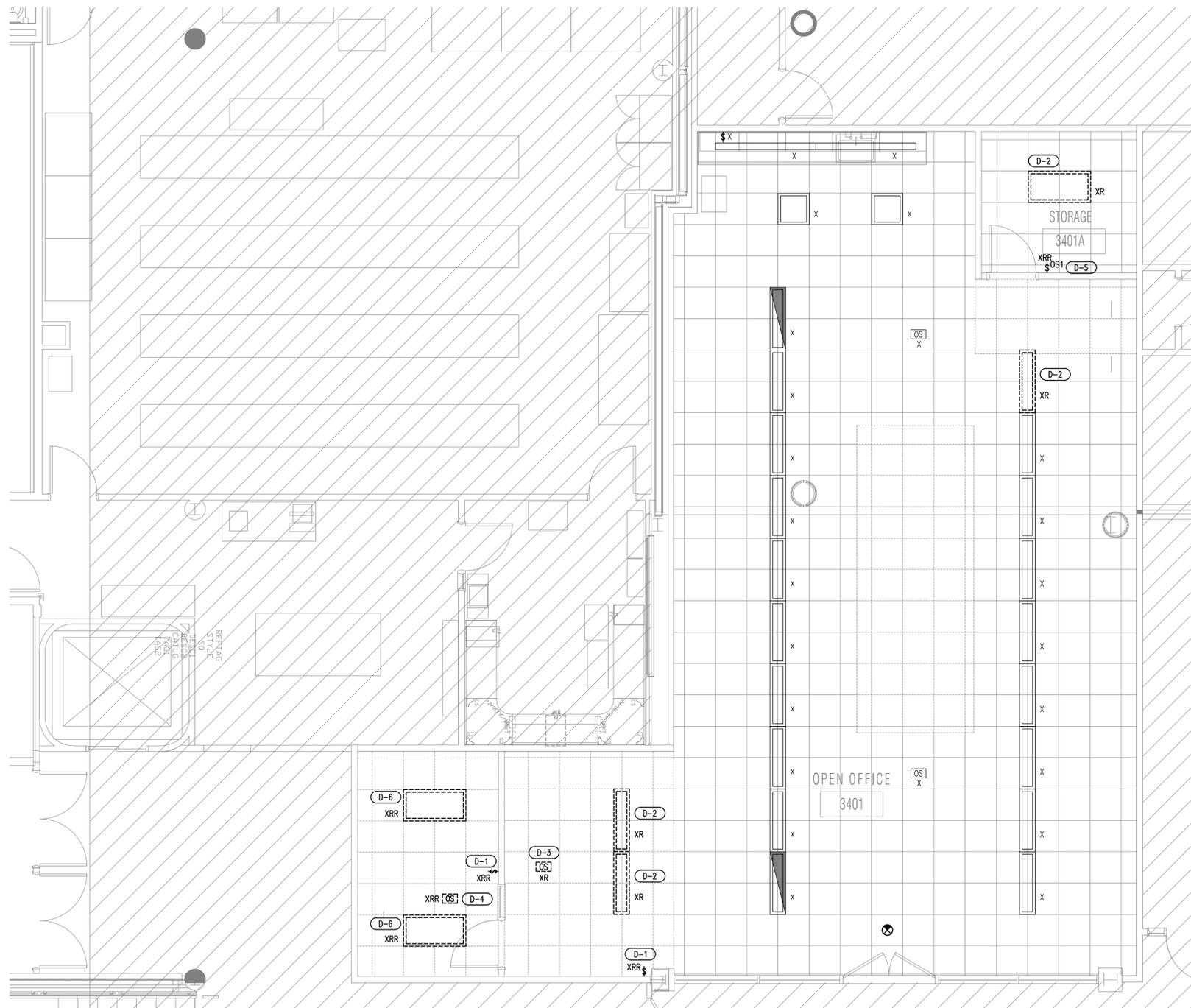
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**LIGHTING  
DEMOLITION  
PLAN**

Expiration Date of Seal: 11-30-2018 BE Project No. 15044-1706

Drawn By: MM/CP

Drawing No. ED100



**1 LIGHTING DEMOLITION PLAN**  
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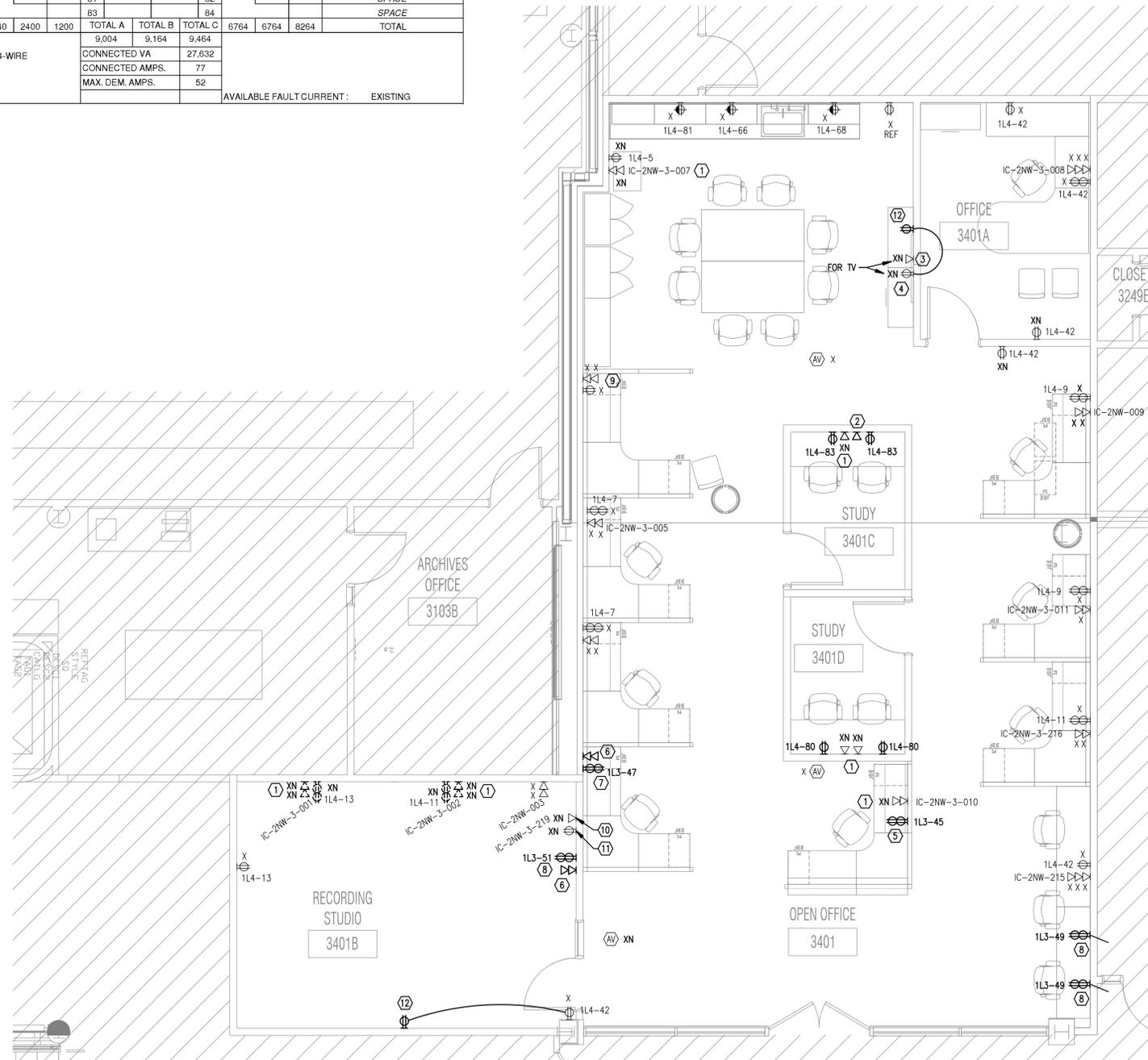
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EXISTING PANEL "1L3, SECTION 2"										
DESCRIPTION	LOAD (VA)			PROTECTIVE DEVICES		LOAD (VA)			DESCRIPTION	
	A	B	C	C.B.	C.B.	A	B	C		
CLERK P.P. (EXISTING LOAD)	1440			43	20A/1P	20A/1P	44			SPARE
FURN. RECEPT. RM 3401		1200		45	20A/1P	20A/1P	46	1000		VONDUPRIN #2
FURN. RECEPT. RM 3401			1200	47	20A/1P	20A/1P	48		1000	VONDUPRIN #3
RECEPTACLES RM 3401	800			49	20A/1P	20A/1P	50			SPARE
RECEPTACLES RM 3401B		1200		51	20A/1P	20A/1P	52			SPARE
SPARE				53	20A/1P	20A/1P	54			SPARE
SPARE				55	20A/1P	20A/1P	56	1000		VONDUPRIN #1
SPARE				57	20A/1P	20A/1P	58			SPARE
SPARE				59	20A/1P	20A/1P	60		1500	HAND DRYER RM 2529
SPARE				61	20A/1P		62	5764		
SPARE				63	20A/1P	60A/3P	64	5764		US BANK PANEL
SPACE				65			66		5764	
SPACE				67			68			SPACE
SPACE				69			70			SPACE
SPACE				71			72			SPACE
SPACE				73			74			SPACE
SPACE				75			76			SPACE
SPACE				77			78			SPACE
SPACE				79			80			SPACE
SPACE				81			82			SPACE
SPACE				83			84			SPACE
TOTAL	2240	2400	1200		TOTAL A	TOTAL B	TOTAL C	6764	6764	8264
PANEL TYPE: EXISTING				9,004	9,164	9,464				
VOLTAGE: 120 / 208 3Ø, 4-WIRE				CONNECTED VA	27,632					
MAINS: 225A M.L.O.				CONNECTED AMPS.	77					
MOUNTING: SURFACE				MAX. DEM. AMPS.	52					
A.I.C. SYM.: EXISTING								AVAILABLE FAULT CURRENT: EXISTING		

NOTE: ITALIC MEANS EXISTING ITEM



1 POWER NEW WORK PLAN

GENERAL NOTES

- VERIFY EXACT LOCATION AND MOUNTING HEIGHT OF ALL ELECTRICAL DEVICES WITH ARCHITECTURAL DRAWINGS AND ELEVATIONS. FIELD COORDINATE EXACT CONNECTION TYPE.
- PROVIDE SEPARATE NEUTRAL CONDUCTOR FOR EACH CIRCUIT. SHARED NEUTRALS ON BRANCH CIRCUITS IS NOT PERMITTED.
- ALL WORKS RELATED TO COMMUNICATIONS SHALL BE DONE IN ACCORDANCE WITH DIVISION 27000 OF THE COD DESIGN GUIDELINES AND MUST BE COORDINATED WITH OWNER IT. SEE SHEETS E001, E002 AND E003.
- PROVIDE LABEL ON ALL POWER AND DATA OUTLETS PER COD DESIGN GUIDELINES.
- DO NOT EXTEND DATA WIRING USING CONNECTORS. IF EXISTING DATA DROP TO BE RELOCATED DOES NOT REACH THE NEW LOCATION AND/OR IF EXISTING LENGTH DOES NOT ALLOW FOR IT TO BE RELOCATED TO A SUITABLE LOCATION E.C. SHALL NOT CUT THE DATA WIRING BUT COIL IT AND SECURE IT IN THE CEILING. E.C. SHALL THEN ROUTE NEW DATA WIRING FROM THE SERVING IDF TO THE NEW DATA OUTLET LOCATION (SEE GEN. NOTE #3 ABOVE).
- BASED ON THE LABELS (IC-2NW-XX-XX) ON THE EXISTING DATA OUTLETS IN THE AREA OF WORK THE SERVING IDF IS LOCATED IN THE NORTHWEST AREA OF THE 2ND FLOOR OF THE IC (INSTRUCTIONAL CENTER) BUILDING. COORDINATE WITH OWNER IT AND FIELD VERIFY EXACT LOCATION OF THE IDF AND SPARES IN THE EXISTING PATCH PANEL(S). PROVIDE PATCH PANEL AND OTHER DEVICES AS REQUIRED.
- FEED ALL NEW POWER CIRCUIT REQUIREMENTS FROM EXISTING PANEL "1L3" SECTION 2 IN THE ELECTRICAL ROOM 2402 LOCATED ON THE SECOND LEVEL, U.N.O.

ELECTRICAL KEY NOTES

- RELOCATE EXISTING DATA OUTLET(S) AS SHOWN, REROUTE WIRING AND CONDUIT AND PROVIDE ACCESSORIES AS REQUIRED. SEE GENERAL NOTE #5 ABOVE.
- PROVIDE NEW DATA OUTLET (BLACK DATA JACK) NEXT TO THE LOCATION OF DUPLEX RECEPTACLE OUTLET, FIELD COORDINATE EXACT LOCATION. ROUTE ONE (1) PANDUIT CAT 6 BLUE CABLE FROM DATA OUTLET TO A DATA PATCH PANEL IN TC/BDF SERVING THE AREA. PROVIDE CONDUIT, WIRING AND OTHER ACCESSORIES AS REQUIRED. COORDINATE WORK WITH OWNER IT, SEE GENERAL NOTES #3.
- RELOCATE EXISTING DATA OUTLET FOR TV AS SHOWN, REROUTE WIRING AND CONDUIT AS REQUIRED. VERIFY WITH ARCHITECT/OWNER EXACT MOUNTING HEIGHT. REFER ALSO TO GENERAL NOTES #5 ON THIS SHEET.
- RELOCATE EXISTING RECEPTACLE OUTLET FOR TV AS SHOWN, EXTEND WIRING AND CONDUIT AS REQUIRED. VERIFY WITH ARCHITECT/OWNER EXACT MOUNTING HEIGHT.
- VERIFY WITH OWNER/ARCHITECT IF FURNITURE IS PRE-INSTALLED WITH POWER RECEPTACLES, OTHERWISE PROVIDE NEW QUAD OUTLET. ROUTE NEW CONDUIT AND WIRING FROM OUTLET LOCATION(S) TO EXISTING PANEL 1L3 OCT 45 (SEE GEN. NOTE #7 ABOVE).
- PROVIDE TWO (2) NEW DATA OUTLETS (BLACK DATA JACKS) NEXT TO THE LOCATION OF DUPLEX RECEPTACLE OUTLET, FIELD COORDINATE EXACT LOCATION. ROUTE ONE (1) PANDUIT CAT 6 BLUE CABLE FROM EACH DATA OUTLET TO A DATA PATCH PANEL IN TC/BDF SERVING THE AREA. PROVIDE CONDUIT, WIRING AND OTHER ACCESSORIES AS REQUIRED. COORDINATE WORK WITH OWNER IT, SEE GENERAL NOTES #3.
- VERIFY WITH OWNER/ARCHITECT IF FURNITURE IS PRE-INSTALLED WITH POWER RECEPTACLES, OTHERWISE PROVIDE NEW QUAD OUTLET USING EXISTING BACKBOX. ROUTE NEW CONDUIT AND WIRING FROM OUTLET LOCATION(S) TO EXISTING PANEL 1L3 OCT 47 (SEE GEN. NOTE #7 ABOVE).
- PROVIDE NEW RECEPTACLE OUTLET AS SHOWN (SEE GEN. NOTE #7 ABOVE).
- VERIFY WITH ARCHITECT/OWNER EXACT LOCATION OF FURNITURE IN RELATION TO EXISTING DATA AND RECEPTACLE OUTLETS. MOVE/RELOCATE DATA AND RECEPTACLE OUTLETS AS REQUIRED TO CLEAR FURNITURE WALL/DIVIDER.
- RELOCATE EXISTING TV DATA OUTLET TO THE GENERAL AREA SHOWN AT A TYPICAL A.F.F. HEIGHT. FIELD COORDINATE EXACT LOCATION AS THE LENGTH OF THE EXISTING DATA WIRE ALLOWS, PROVIDE ACCESSORIES AS REQUIRED. REFER TO GENERAL NOTE #5 ABOVE.
- RELOCATE EXISTING DUPLEX OUTLET (TV) TO THE GENERAL AREA SHOWN NEXT TO THE RELOCATED TV DATA OUTLET AT A TYPICAL A.F.F. HEIGHT. FIELD COORDINATE EXACT LOCATION (SEE KEYNOTE #10 ABOVE).
- PROVIDE NEW CONVENIENCE DUPLEX RECEPTACLE OUTLET, EXTEND CONDUIT AND WIRING AS SHOWN TO POWER FEED NEW RECEPTACLE OUTLET.



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POWER  
NEW WORK  
PLAN

Expiration Date of Seal: 11-30-2018	BE Project No. 15044-1706
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