PART VI

CONTRACT AGREEMENT

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PART VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the 17th day of March , 2025 , by and between Lexington-Fayette Urban County Government, acting herein called "OWNER" and BMI Builds dba BMI LLC, doing business as a corporation located in the City of Georgetown, County of Scott, and State of Kentucky, hereinafter called "CONTRACTOR."

WITNESSETH: That the CONTRACTOR and the OWNER in consideration of <u>one hundred eighty-six thousand eight hundred eighty-eight</u> Dollars and <u>No Cents (\$186,888.00)</u> quoted in the proposal by the CONTRACTOR, dated <u>Undated</u>, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, General Conditions, Special Conditions of the Contract, the Specifications, Contract Documents, and IonWave Q&A and Addenda, therefore as prepared by Johnson Early Architects for the LFD Community Paramedicine Renovation Project.

2. TIME OF COMPLETION

The time estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as one hundred (100) calendar days to substantial completion and an additional fourteen (14) calendar days to final completion date. The time shall begin in accordance with the Notice to Proceed provided by OWNER.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined after consultation between the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

5. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, less the aggregate of previous payments.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

If, after the Work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, the OWNER shall without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

7. THE CONTRACT DOCUMENTS

The Advertisement for Bids, Information for Bidders, the General Conditions, Performance and Payment Bonds, Contract Agreement, Special Conditions, Technical Specifications, any and all Addenda, and Proposal, Ion Wave Q&A, and Plan Drawings form the Contract, and they are fully a part of the Contract as if hereto attached or herein repeated.

8. EXTRA WORK

The OWNER, without invalidating the Contract, may order extra work or make changes by altering, adding to or deducting from the Work, the Contract Sum being adjusted accordingly. All such Work shall be executed and paid for in accordance with the General Conditions, which is a part of this Contract.

9. THE FOLLOWING IS AN ENUMERATION OF THE SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

SPECIFICATIONS

SECTION NO.	TITLE	
I	Advertisement for Bids	
Π	Information for Bidders	
Ш	Form of Proposal	
IV	General Conditions	
V	Special Conditions	
VI	Contract Agreement	
VII	Performance and Payment Bonds	
VIII	Addenda	
IX	Technical Specifications and Drawings	

IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)	Lexington-Fayette Urban County Government. Lexington, Kentucky (Owner)
ATTEST: Clerk of the Urban County Council	BY:
landen Sock	Mayor (Title)
(Seal)	BMI LLC (Contractor)
(Secretary)*	BY:
	Managing Member
(Witness)	(Title)

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing Contract.

156 Rocky Waters Way, Georgetown KY 40324

(Address and Zip Code)

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WITNESSETH: That the CONTRACTOR and the OWNER in consideration of <u>one hundred eighty-six thousand eight hundred eighty-eight</u> Dollars and <u>No</u> Cents (\$186,888.00) quoted in the proposal by the CONTRACTOR, dated <u>Undated</u>, hereby agree to commence and complete the construction described as follows:

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, General Conditions, Special Conditions of the Contract, the Specifications, Contract Documents, and IonWave Q&A and Addenda, therefore as prepared by Johnson Early Architects for the LFD Community Paramedicine Renovation Project.

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4. THE CONTRACT SUM

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5. PROGRESS PAYMENTS

The OWNER shall make payments on account of the Contract, as provided in accordance with the General Conditions, less the aggregate of previous payments.

6. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due within ninety (90) days after completion of the Work, provided the Work be then fully completed and the Contract fully accepted.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the Owner that all payrolls, material bills, and other indebtedness connected with the Work has been paid.

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IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)	Lexington-Fayette Urban County Government. Lexington, Kentucky (Owner)		
ATTEST:	• "		
Clerk of the Urban County Council	BY:		
(Witness)	(Title)		
(Seal)	BMI LLC (Contractor)		
(Secretary)*	BY:		
(Witness)	Managing Member (Title)		

156 Rocky Waters Way, Georgetown KY 40324 (Address and Zip Code)

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing Contract.

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SPECIFICATIONS

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IX	Technical Specifications and Drawings	

IN WITNESSETH WHEREOF, the parties hereto have executed this Contract as of the date and year above written.

(Seal)	Lexington-Fayette Urban County Government.		
	Lexington, Kentucky		
	(Owner)		
ATTEST:			
	BY:		
Clerk of the Urban County Council	MAYOR		
(Witness)	(Title)		
(Seal)	BMI LLC (Contractor)		
(Secretary)*	BY:		
(Witness)	Managing Member (Title)		

156 Rocky Waters Way, Georgetown KY 40324 (Address and Zip Code)

IMPORTANT: *Strike out any non-applicable terms.

Secretary of the Owner should attest. If the CONTRACTOR is corporation, Secretary should attest. Give proper title of each person-executing Contract.



Performance Bond

Bond No. 2202789

CONTRACTOR:

(Name, legal status and address) BMI LLC 156 Rocky Waters Way Georgetown, KY 40324

OWNER:

(Name, legal status and address)

Lexington - Fayette Urban County Government 200 East Main Street Lexington, KY 40507

CONSTRUCTION CONTRACT

Date:

Amount: \$186,888.00

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00) Description:

(Name and location)

LFD Community Paramedicine Renovation Project

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$186,888.00

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00)

Modifications to this Bond: X None ☐ See Section 16

SURETY:

(Name, legal status and principal place of business)

FCCI Insurance Company 6300 University Parkway Sarasota, FL 34240

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

CONTRACTOR AS PRINCIPAL

Company: BMI LLC

(Corporate Seal)

SURETY

Signature

Company: (Corporate Seal)

FCCI Insurance Company

Name Edin R. Zukanovic

Signature: Name

and Title:

and Title: Attorney-in-Fact (Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER**:

District Bonding, LLC 525K E. Market St. #308 Leesburg, VA 20176 703-639-4007

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

- § 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
- § 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.
- § 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after
 - the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
 - .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
- § 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
- § 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
- § 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
- § 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
- § 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
- § 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
 - .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- § 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- § 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.
- § 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.
- § 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
- § 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
- § 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
- § 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

- § 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
- § 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
- § 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
- § 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- § 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.
- § 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as fol	lows:			
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(Space is provided below for additional CONTRACTOR AS PRINCIPAL		SURETY	hose appearing on t	
Company:	(Corporate Seal)	Company:		(Corporate Seal)
Signature:		Signature:		
Name and Title: Address:		Name and Title: Address:		
4				



Payment Bond

Bond No. 2202789

CONTRACTOR:

(Name, legal status and address)

156 Rocky Waters Way Georgetown, KY 40324

OWNER:

(Name, legal status and address) Lexington - Fayette Urban County Government 200 East Main Street Lexington, KY 40507

CONSTRUCTION CONTRACT

Date:

Amount: \$186,888.00

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00) Description:

(Name and location)

LFD Community Paramedicine Renovation Project

SURETY:

(Name, legal status and principal place of business)

FCCI Insurance Company 6300 University Parkway Sarasota, FL 34240

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

BOND

Date:

(Not earlier than Construction Contract Date)

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00)

☐ See Section 18 Modifications to this Bond:

CONTRACTOR AS PRINCIPAL

Company: BMI LLC

(Corporate Seal)

SURETY

(Corporate Seal) Company:

FCCI Insurance Compa

Signature: Signature: Name Edin R. Zukanov

Name

and Title: Attorney-in-Fact (Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY - Name, address and telephone)

AGENT or **BROKER**:

District Bonding, LLC 525K E. Market St. #308 Leesburg, VA 20176 703-639-4007

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

- § 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
- § 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
- § 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.
- § 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.
- § 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:
- § 5.1 Claimants, who do not have a direct contract with the Contractor,
 - .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - have sent a Claim to the Surety (at the address described in Section 13).
- § 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).
- § 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.
- § 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
- § 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
- § 7.2 Pay or arrange for payment of any undisputed amounts.
- § 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
- § 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
- § 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

- § 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.
- § 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
- § 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
- § 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
- § 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
- § 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- 4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim:
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.
- § 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.
- § 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

- § 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- § 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.
- § 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
- § 18 Modifications to this bond are as follows:

(Space is provided below for additional CONTRACTOR AS PRINCIPAL	signatures of addea	d parties, other than those appearing on the cover page.) SURETY		
Company:	(Corporate Seal)	Company:	(Corporate Seal)	
Signature: Name and Title: Address:		Signature: Name and Title: Address:		



GENERAL POWER OF ATTORNEY

Know all men by these presents: That the FCCI Insurance Company, a Corporation organized and existing under the laws of the State of Florida (the "Corporation") does make, constitute and appoint:

Joshua A. Etemadi; Edin R. Zukanovic; Kimberly D. Rose; Rachel L. Westerhaus

Each, its true and lawful Attorney-In-Fact, to make, execute, seal and deliver, for and on its behalf as surety, and as its act and deed in all bonds and undertakings provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the sum of (not to exceed \$30,000,000.00): \$30,000,000.00

This Power of Attorney is made and executed by authority of a Resolution adopted by the Board of Directors. That resolution also authorized any further action by the officers of the Company necessary to effect such transaction.

The signatures below and the seal of the Corporation may be affixed by facsimile, and any such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached.

bolid, undertaking of contract of surety to write					
In witness whereof, the FCCI Insurance Company has caused these presents to be signed by its duly authorized officers and its corporate Seal to be hereunto affixed, this <u>23rd</u> day of <u>July</u> , <u>2020</u> .					
Attest: Mustru D. Welch, President	GRANCE CONPORTED TO	Christopher Shoucair,			
FCCI Insurance Company	SEAL SI	EVP, CFO, Treasurer, Secretary FCCI Insurance Company			
State of Florida County of Sarasota	The same of the sa				
Before me this day personally appeared Christina D. Welch, who is personally known to me and who executed the foregoing document for the purposes expressed therein.					
My commission expires: 2/27/2027	PEGGY SNOW Commission # HH 326535 Expires February 27, 2027	Reggo Snow Notary Public			
State of Florida County of Sarasota					
Before me this day personally appeared Christopher Shoucair, who is personally known to me and who executed the foregoing document for the purposes expressed therein.					
My commission expires: 2/27/2027	PEGGY SNOW * Commission # HH 326535 Expires February 27, 2027	Reggy Snow Notary Public			
CERTIFICATE					

I, the undersigned Secretary of FCCI Insurance Company, a Florida Corporation, DO HEREBY	CERTIFY	that the
foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the	February 2	27, 2020
Resolution of the Board of Directors, referenced in said Power of Attorney, is now in force.		

Dated this	18th	_ day of	March	
		(Va	~	
Christo			FO, Treasurer, S	Secretary
	FU	CI Insurance	Company	

1-IONA-3592-NA-04, 7/2021





Performance Bond

Bond No. 2202789

CONTRACTOR:

(Name, legal status and address) **BMI LLC** 156 Rocky Waters Way Georgetown, KY 40324

OWNER:

(Name, legal status and address)

Léxington - Fayette Urban County Government 200 East Main Street Lexington, KY 40507

CONSTRUCTION CONTRACT

Date:

Amount:\$186,888.00

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00) Description:

(Name and location)

LFD Community Paramedicine Renovation Project

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$186,888.00

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00)

Modifications to this Bond: X None ☐ See Section 16

SURETY:

(Name, legal status and principal place of business)

FCCI Insurance Company 6300 University Parkway Sarasota, FL 34240

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312-2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

CONTRACTOR AS PRINCIPAL

Company: BMI LLC

Signature:

and Title:

Name

(Corporate Seal)

SURETY

Company:

(Corporate Seal) FCCI Insurance Comp

Signature

Name Edin R. Zukanovii

and Title: Attorney-in-Fact

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY - Name, address and telephone)

AGENT or **BROKER**:

District Bonding, LLC 525K E. Market St. #308 Leesburg, VA 20176

703-639-4007

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

- § 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
- § 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.
- § 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after
 - 11 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
 - .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety;
 - .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
- § 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
- § 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
- § 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
- § 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
- § 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
- § 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:
 - .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
 - .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.
- § 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

Init.

- § 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for
 - the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
 - .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
 - .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
- § 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.
- § 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.
- § 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
- § 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
- § 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.
- § 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

- § 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.
- § 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
- § 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
- § 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- § 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.
- § 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:		
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	4:	
\$		
2		
19		
(Space is provided below for additional signatures of add	ded narties other than the	nse annearing on the cover nage
CONTRACTOR AS PRINCIPAL	SURETY	
Company: (Corporate Sea		(Corporate Seal)
Signature:	Signature:	
Name and Title:	Name and Title: Address:	
Address:	Address:	



Payment Bond

Bond No. 2202789

CONTRACTOR:

(Name, legal status and address)

BMI LLC 156 Rocky Waters Way Georgetown, KY 40324

OWNER:

(Name, legal status and address)
Lexington - Fayette Urban County Government
200 East Main Street
Lexington, KY 40507

CONSTRUCTION CONTRACT

Date:

Amount: \$186,888.00

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00)

Description:

(Name and location)

LFD Community Paramedicine Renovation Project

SURETY:

(Name, legal status and principal place of business)

FCCI Insurance Company 6300 University Parkway Sarasota, FL 34240

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$186,888.00

One Hundred Eighty-six Thousand Eight Hundred Eighty-eight & 00/100 (\$186,888.00)

Modifications to this Bond: ☐ None ☐ See Section 18

CONTRACTOR AS PRINCIPAL

Company: BMI LLC

(Corporate Seal)

BIVII LLC

Signature:

Name

and Title:

SURETY

Company:

FCCI Insurance Compar

Name Edin R. Zukanovic

and Title: Attorney-in-Fact

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY - Name, address and telephone)

AGENT or **BROKER**:

District Bonding, LLC 525K E. Market St. #308 Leesburg, VA 20176 703-639-4007 OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

(Corporate Seal)

- § 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
- § 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
- § 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.
- § 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.
- § 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:
- § 5.1 Claimants, who do not have a direct contract with the Contractor,
 - have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - have sent a Claim to the Surety (at the address described in Section 13).
- § 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).
- § 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.
- § 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
- § 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
- § 7.2 Pay or arrange for payment of any undisputed amounts.
- § 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
- § 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
- § 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

- § 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.
- § 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.
- § 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
- § 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
- § 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
- § 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

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§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of
- .7 the total amount of previous payments received by the Claimant; and
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- § 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.
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- § 16.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
- § 16.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.
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- § 18 Modifications to this bond are as follows:

(Space is provided below for additional CONTRACTOR AS PRINCIPAL	signatures of addea	l parties, other than th SURETY	ose appearing on the cover page.)
Company:	(Corporate Seal)	Company:	(Corporate Seal)
Signature: Name and Title: Address:		Signature: Name and Title: Address:	



GENERAL POWER OF ATTORNEY

Know all men by these presents: That the FCCI Insurance Company, a Corporation organized and existing under the laws of the State of Florida (the "Corporation") does make, constitute and appoint:

Joshua A. Etemadi; Edin R. Zukanovic; Kimberly D. Rose; Rachel L. Westerhaus

Each, its true and lawful Attorney-In-Fact, to make, execute, seal and deliver, for and on its behalf as surety, and as its act and deed in all bonds and undertakings provided that no bond or undertaking or contract of suretyship executed under this authority shall exceed the sum of (not to exceed \$30,000,000.00): \$30,000,000.00

This Power of Attorney is made and executed by authority of a Resolution adopted by the Board of Directors. That resolution also authorized any further action by the officers of the Company necessary to effect such transaction.

The signatures below and the seal of the Corporation may be affixed by facsimile, and any such facsimile signatures or facsimile seal shall be binding upon the Corporation when so affixed and in the future with regard to any bond, undertaking or contract of surety to which it is attached.

bond, undertaking or contract of surety to w	hich it is attached	d.				
In witness whereof, the FCCI Insural officers and its corporate Seal to be hereunt		s caused 23rd	these pres _ day of	sents to be signed by July	its duly authorized , 2020	
Attest: Christina D. Welch, President FCCI Insurance Company State of Florida County of Sarasota		SEAL	- YNAS	Christophei EVP, CFO, Trea FCCI Insuran	surer, Secretary	
Before me this day personally app the foregoing document for the purposes ex			n, who is p	personally known to r	me and who execu	uted
My commission expires: 2/27/2027	PEGGY SNOW Commission # NH 32 Expires February 27,) 185 28		Reggn S Notary Pi	rnero ublic	
State of Florida County of Sarasota						
Before me this day personally appet the foregoing document for the purposes ex			air, who is	personally known to	me and who exect	uted
My commission expires: 2/27/2027	PEGGY SNOW Commission # HH 32 Expires February 27,			Reggy S Notary Po		
	CERTI	IFICATI	E			

I, the undersigned Secretary of FCCI Insurance Company, a Florida Corporation, DO HEREBY CERTIFY that the foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the February 27, 2020 Resolution of the Board of Directors, referenced in said Power of Attorney, is now in force.

Dated	this 18th	day of	March	, 2025
		(P)_		
	Christopher Sho	ucair, EVP, CF	O, Treasurer, S	ecretary
	£ F	CCI Insurance	Company	

1-IONA-3592-NA-04, 7/2021



CG - LFD COMMUNITY PARAMEDICINE RENOVATION PROJECT



117 Cisco Road, Lexington, KY 40504

FUCG BID #24-2025

OWNER



LEXINGTON

LEXINGTON FAYETTE URBAN COUNTY GOVERNMENT 200 E. Main Street, Lexington, KY 40507 Phone: (859) 258-3930 Division of General Services www.lexingtonky.gov Capital Project Management

MEP CONSULTANT

TECHNICAL HORIZONS 501 Darby Creek Road, Suite 31 Lexington, KY 40509 (859)-263-5983



CONSTRUCTION STAGING & SITE PLAN



VICINITY MAP (N.T.S.



architects bhone: 859-259-1515 • e-mail: earlyib@jearchitects.net • www.johnsonearlyarchitects.net johnson • early • architects 546 East Main Street, Suite 101•Lexington, Kentucky 40508

DRAWING INDEX

- ARCHITECTURAL
 A0.1 EXTERIOR SIGNAGE DETAILS
 AD.1 EXISTING FLOOR PLAN DEMOLITION
 A1.0 GENERAL INFORMATION
- REFLECTED CEILING PLAN FLOOR PLAN
- DOOR & ROOM SCHEDULES & DETAILS **EXTERIOR ELEVATIONS**

FLOOR FINISH PLAN INTERIOR ELEVATIONS & DETAILS

FLOOR PLANS - PLUMBING
PLUMBING SCHEDULES AND DETAILS

ELECTRICAL

E00 ELECTRIC DETAILS AND SCHEDULES

E01 DEMOLITION ELECTRICAL PLANS

E02 NEW ELECTRICAL PLANS

BUILDING STATISTICS

BASED ON 2015 IBC WITH 2018 KBC AMENDMENTS

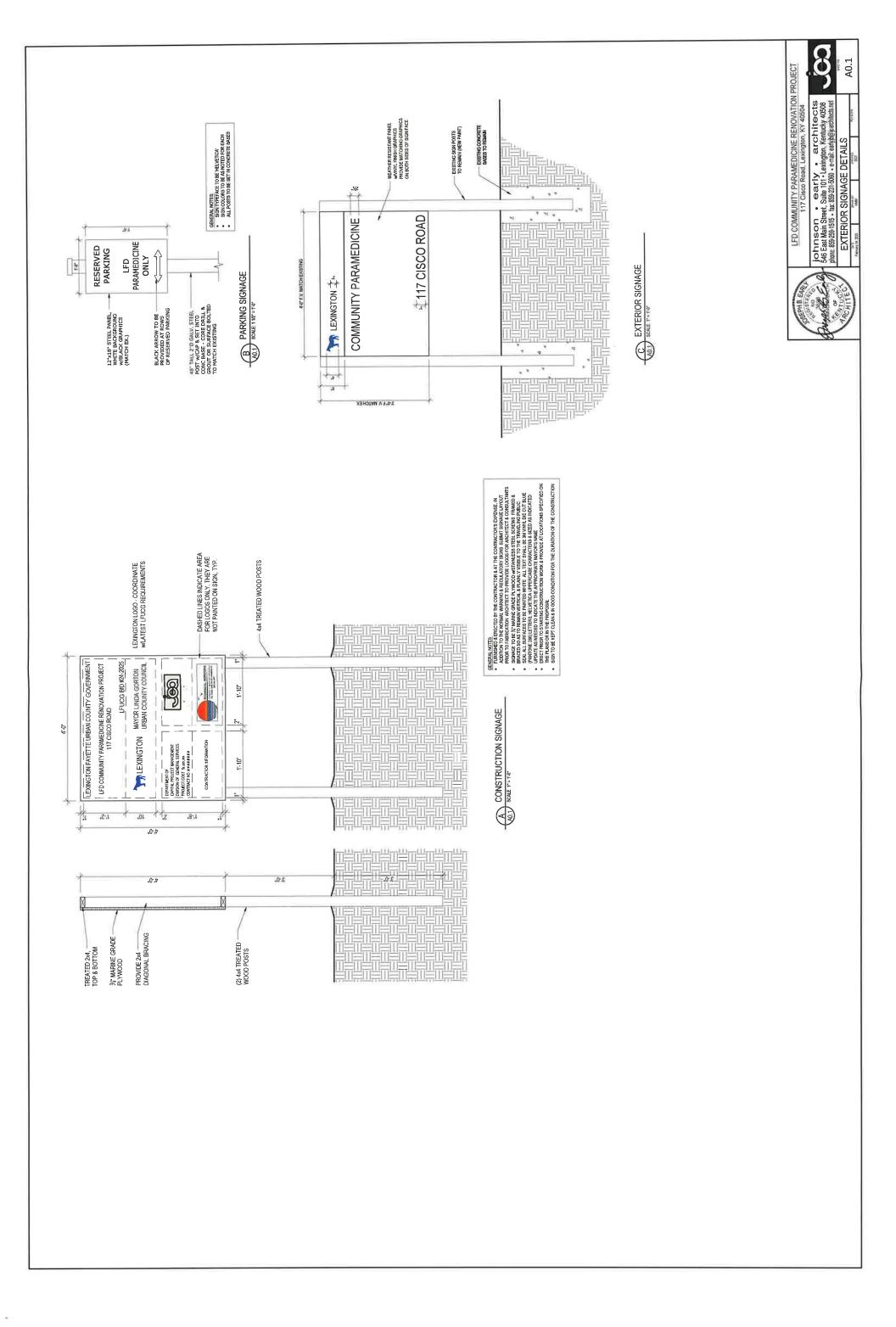
JSE GROUP: B (BUSINESS)

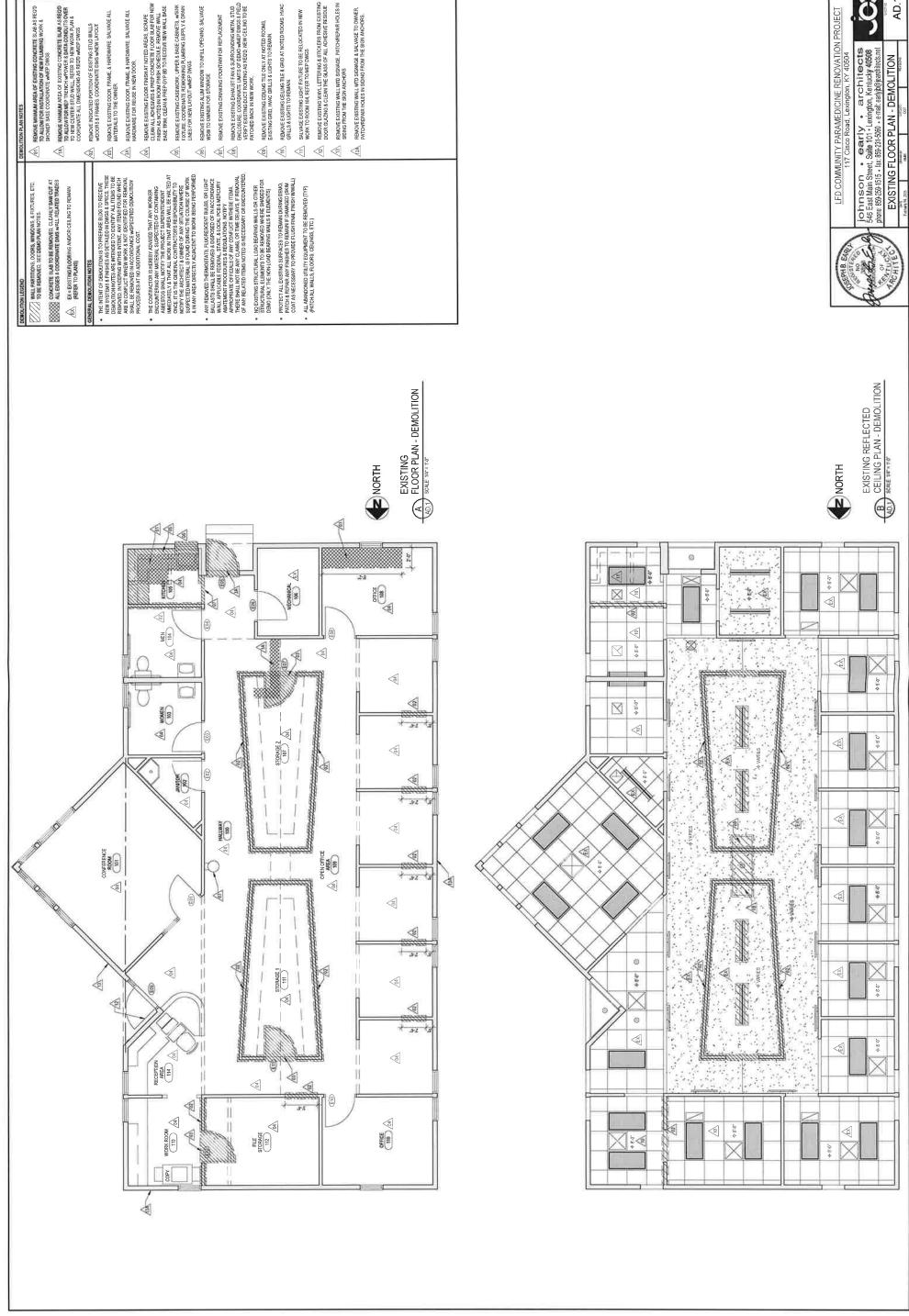
CONSTRUCTION TYPE: 58 - UNPROTECTED WOOD FRAMED EXTERIOR STRUCTURE & ROOF WITH METAL STUD INFILL INTERIOR

FIRE PROTECTION: NONE (NO EXISTING FIRE ALARM SYSTEM)

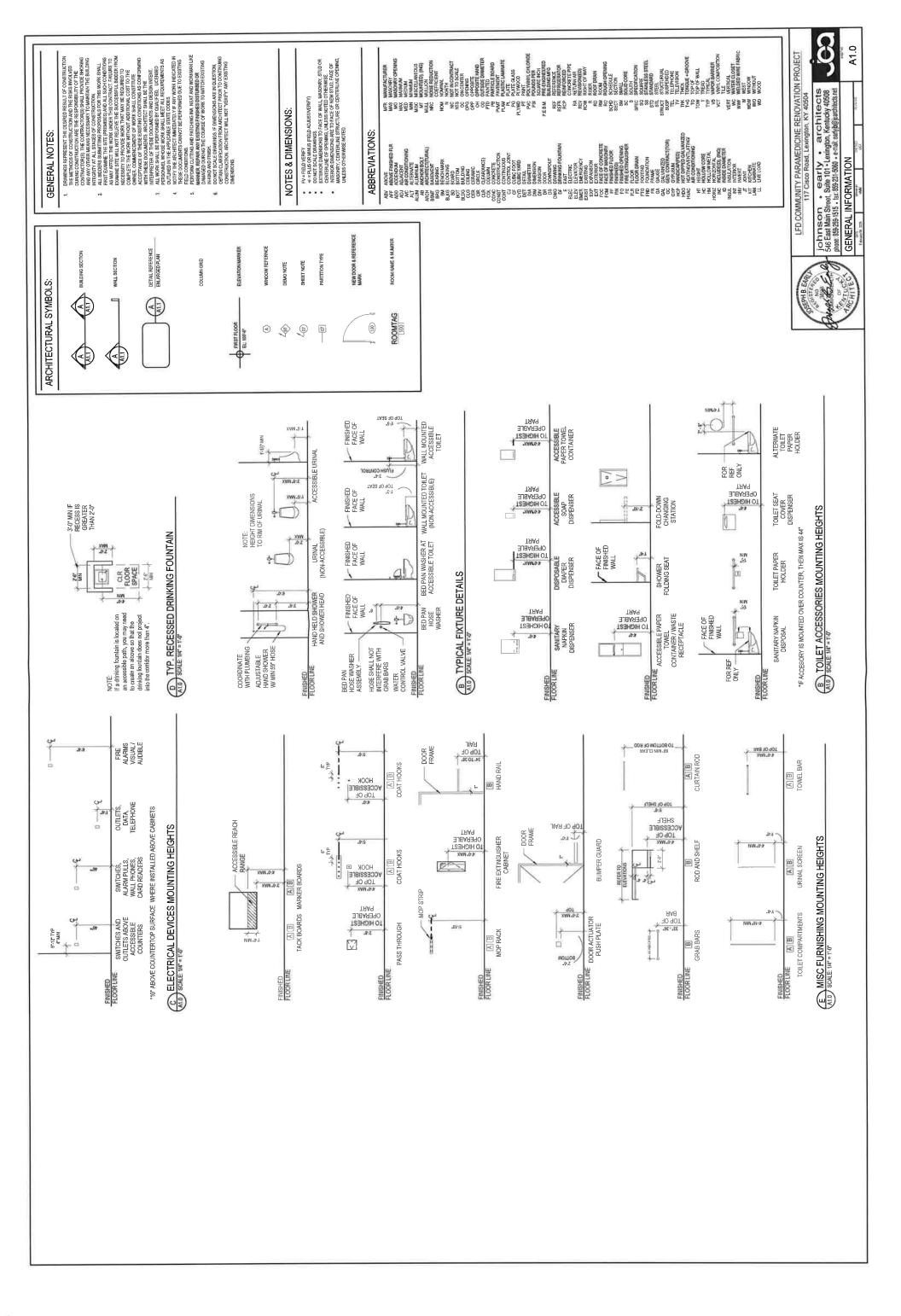
TOTAL BUILDING AREA = 2,240 SF GROSS

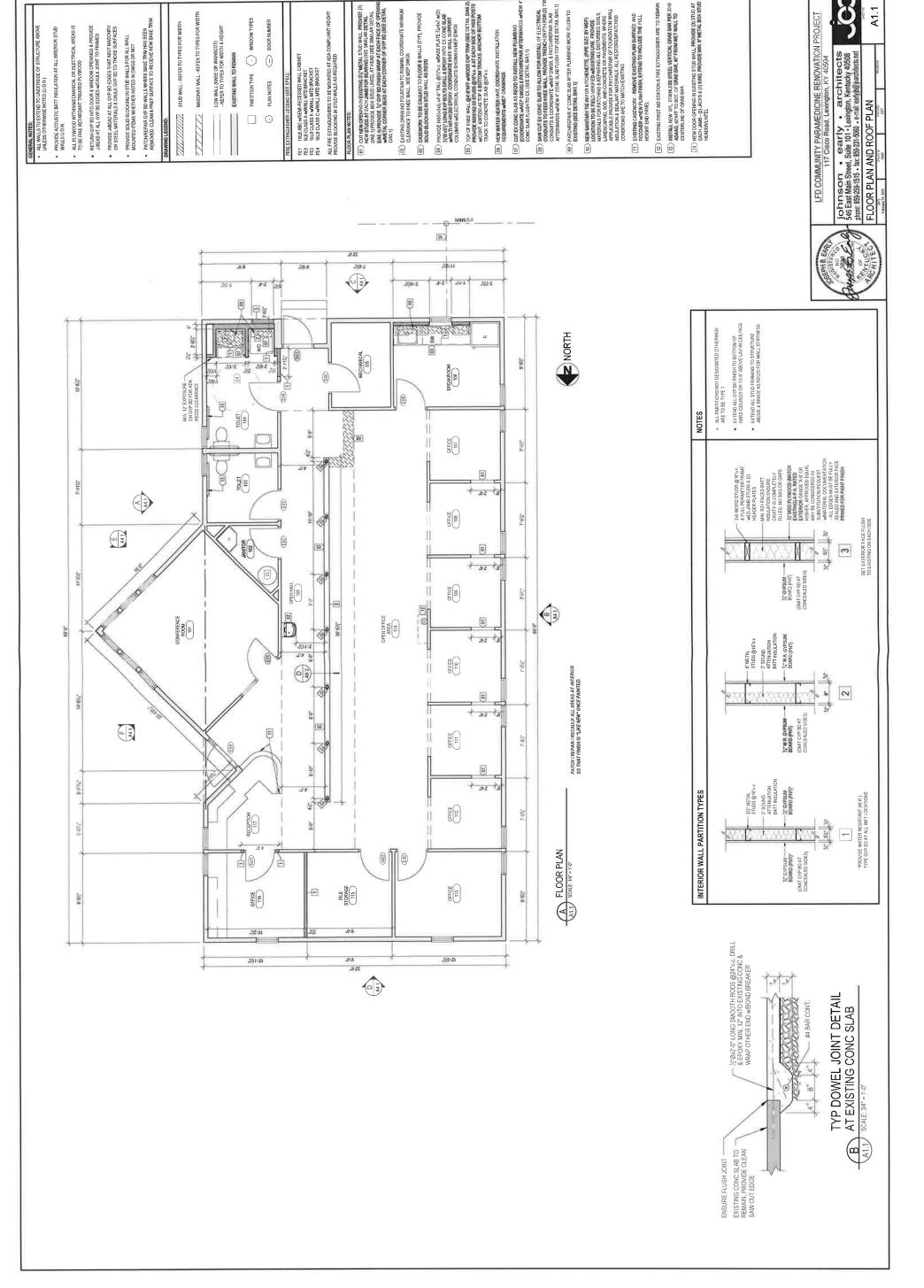
ROOM	AREA	FACTOR	OCC. LO
OFFICES	= 650 SF	150 GROSS	= 5 PEC
OPEN OFFICE AREA	= 848 SF	150 GROSS	= 6 PEC
CONFERENCE ROOM	= 220 SF	150 GROSS	= 2 PEC
ACCESSORY ROOMS	= 390 SF	300 GROSS	= 2 PEC
TOTAL BLDG OCCUPANT LOAD	NT LOAD		= 15 PEC

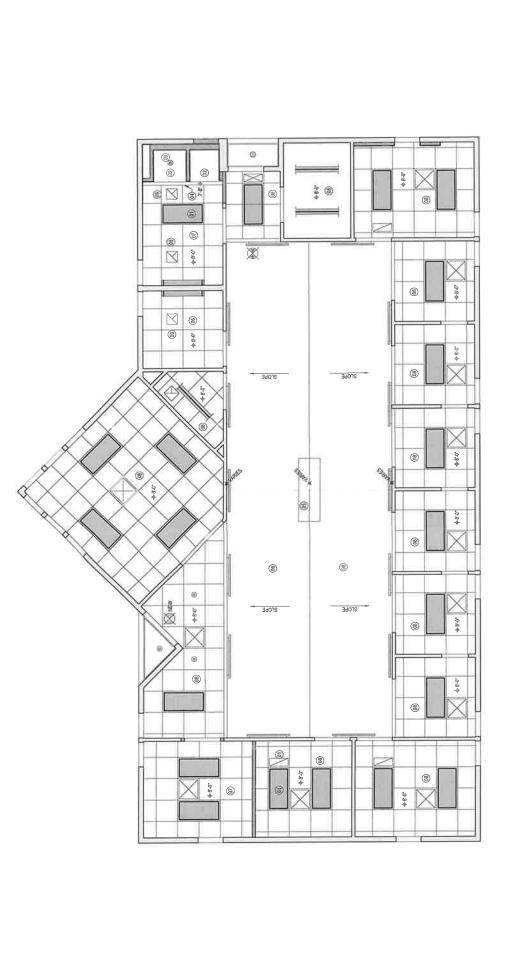




AD.1









REFLECTED CEILING PLAN

(B) NEW DI EXHAUST FANS & (1) LIGHT FIXTURE, REFER TO MEP DWGS (ALL REMANNIG LIGHTS ARE EXISTING FIXTURES)

(B) NEW VINT, CONTED LAY-IN CELLING TILE A 2-22 GRID
(II) NEW VINT, CONTED LAY-IN CELLING TILE A 2-22 GRID
(III) SEXISTING CELLINGS TO BRAINE PATCH REPAIR, WHERE
INECESSARY AFTER MEP WORK, TO MANCH EXISTING FINSH

(02) NEW Y, WATER RESISTANT GYP BD CEILING (PAINT) OVER 3% MTL. STUD FRANKIS (S16) of (ii) RELOCATE MOTED EXISTING LIGHT FIXTURES & HVAC GRILLES AS SHOWN (COORDINATE WARP DWGS)

BARRENCY LIGHT

EVENTUARY & ENTITLENT & ENERGENCY LIGHT COMBO UNIT

SUPPLY AIR DIFFUSER (SEE MEP) EXHAUST AIR DEVICE (SEE MEP)

RETURN AIR GRILLE (SEE MEP)

WALL MTD EXTERIOR LIGHT FIXTURE

RECESSED CAN LIGHT FIXTURE 2×4 LAY4N LIGHT FIXTURE

UNEAR LIGHT FIXTURE

LINTELS: METAL STUD BOX LINTELS ARE REQUIRED AT ALL OPENINGS IN STUD WALL, NEW OR EXISTING WALLS, PROVIDE MINIMUM (I) BACK TO BACK STUDS AT EACH JAMB FOR BEARING

GENERAL NOTE: ALL EXISTING FIXTURES ARE TO RE AND/OR TO BE PROVIDED & INSTALLED BY OWNER

14" WATER RESISTANT GIP BD CELING (PAINT)
OVER 31", MTL STUD FRAMINS @16"oc 2xZ SUSPENDED LAY-IN ACOUSTIC CEILING

** SUSPENDED GYP BD CEILING (PAINT)

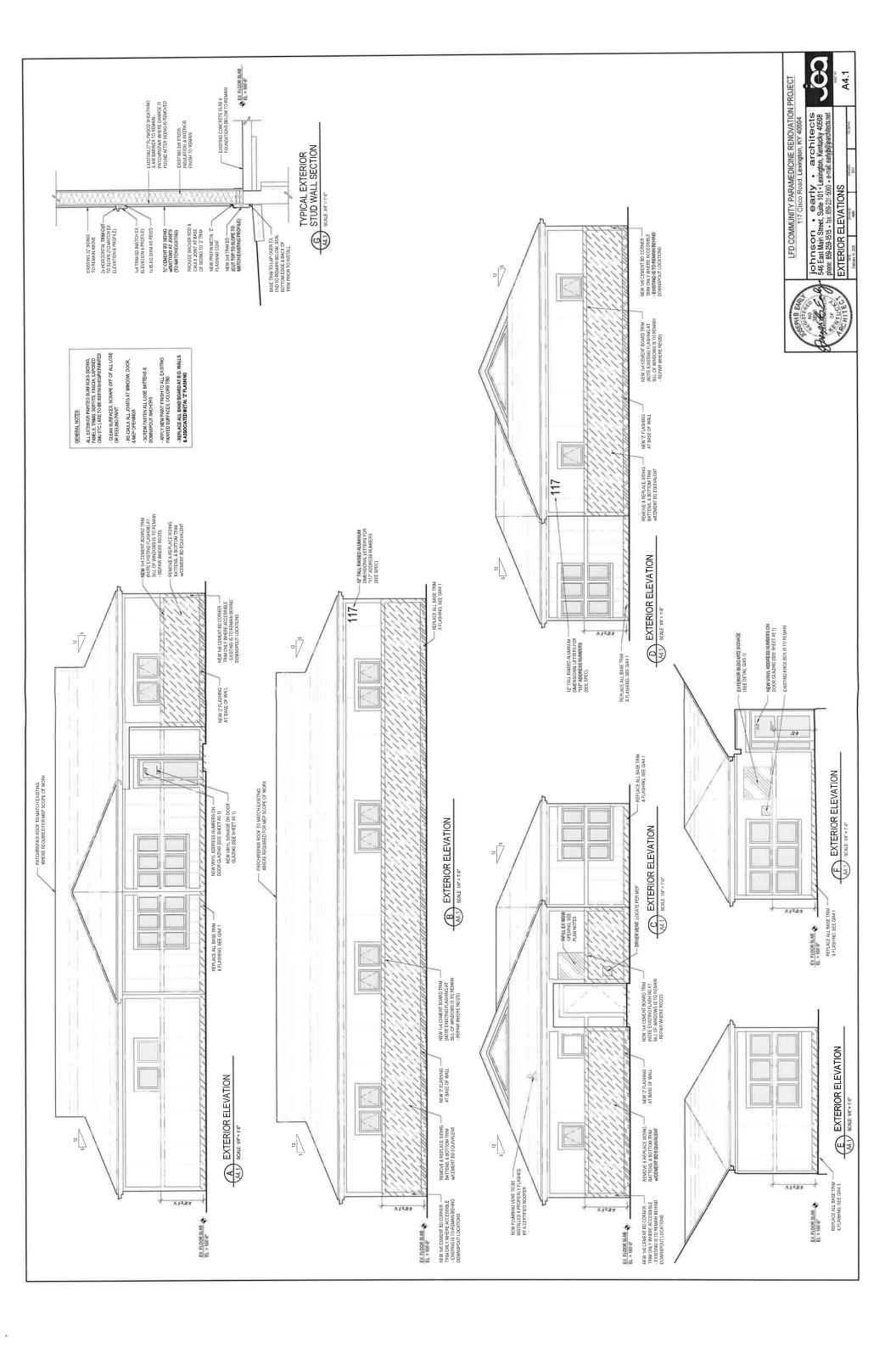
(B) PATCHREPAIR EXISTING ACCUSTICAL CEILING GRID WHERE STUD WALLS HAVE BEEN PEMOVED

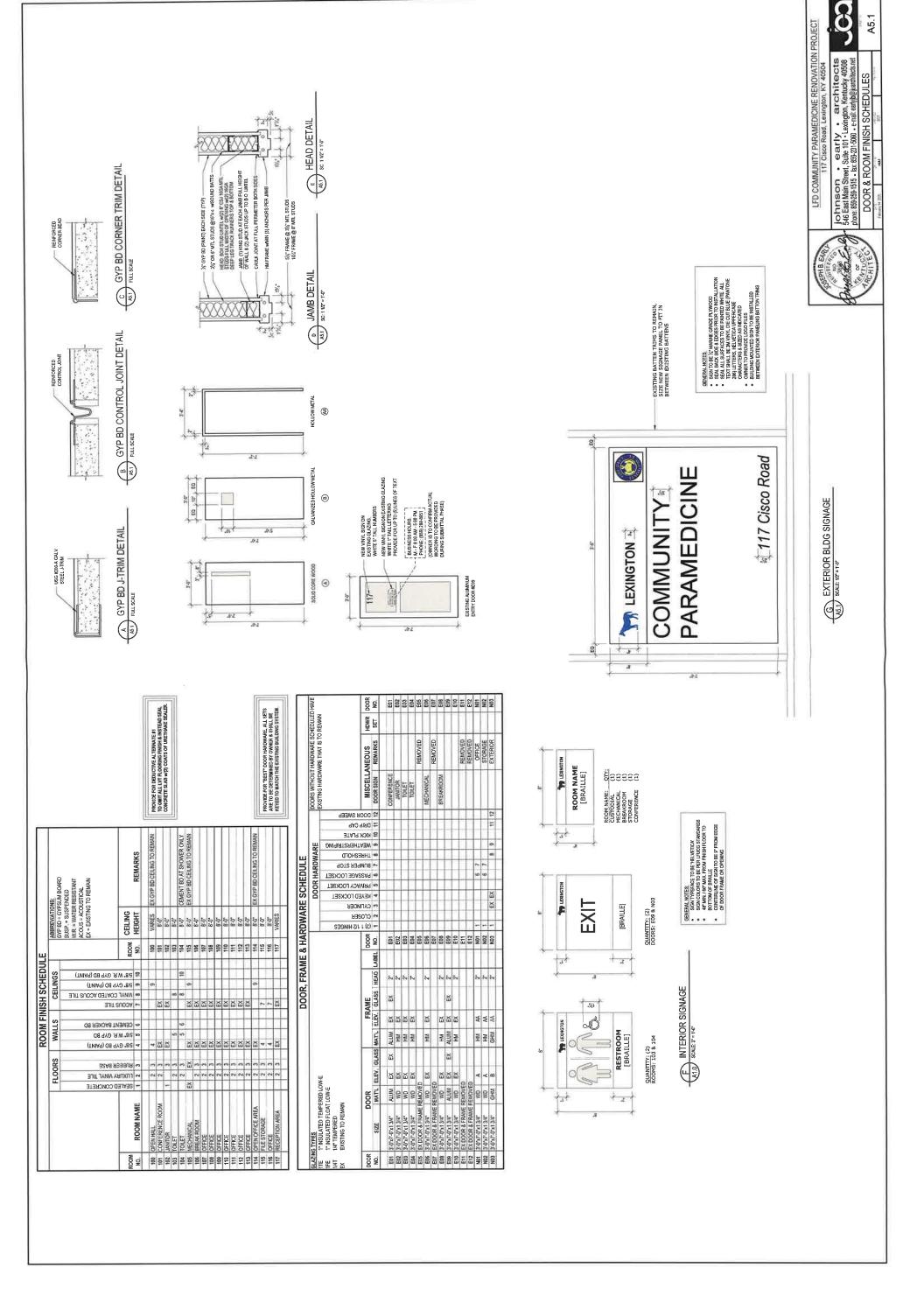
(b) BOTTOM OF GIP BD HEADER BELOW ACQUIS CELLING F.V. ELEVATION TO MAYOH EXISTING HEADERS ASSUMED AT (8)"-11" (B) PATCHREPARI HCLE IN OTP BD CELLING AFTER REMOVAL OF EDMASS FEARS SOFFIT PROMISE Y, F.C. GYP BD TO MATCH EXISTING CELLING PARK EXISTING 8 NEW

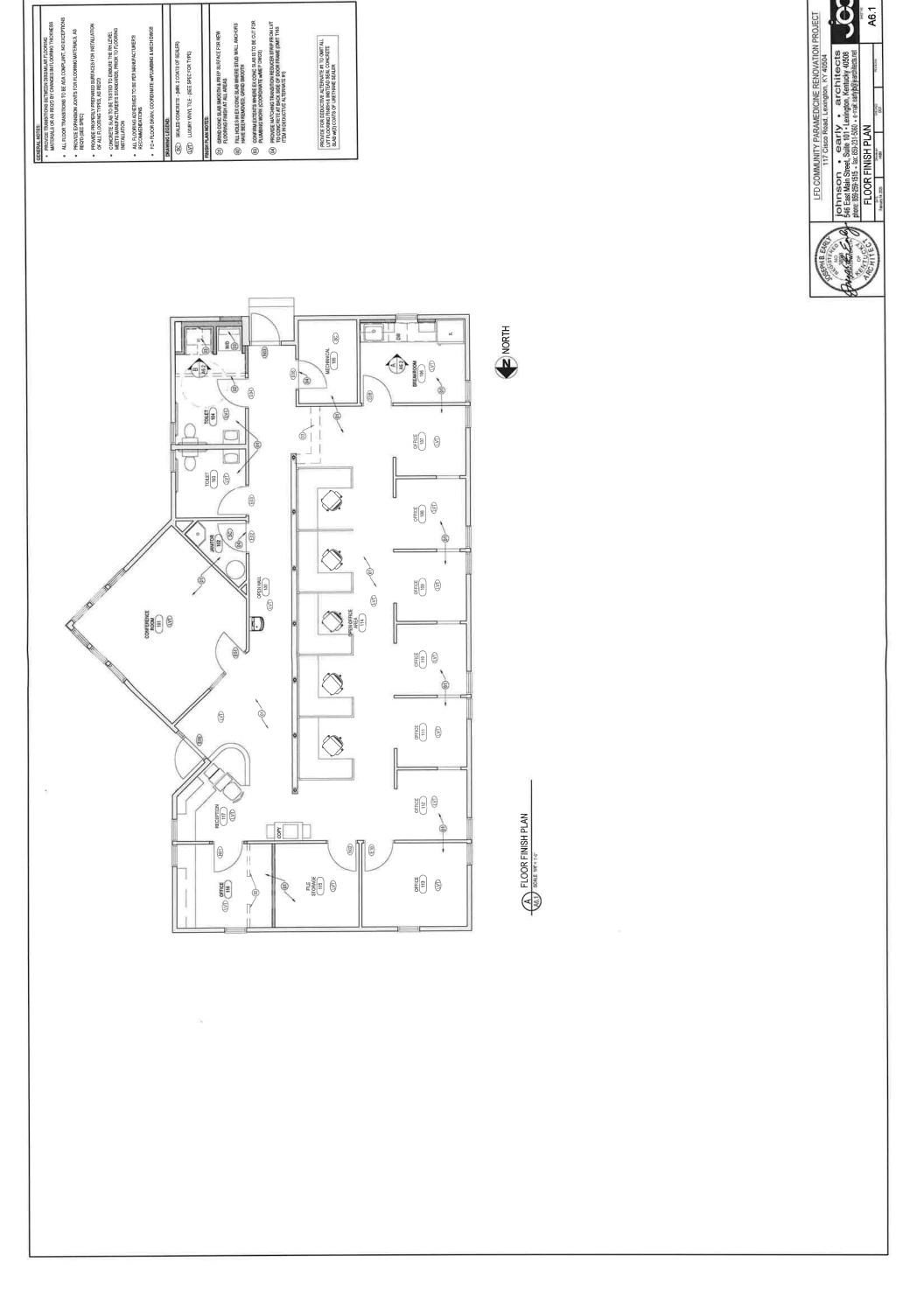
LFD COMMUNITY PARAMEDICINE RENOVATION PROJECT 117 Cisco Road, Lexington, KY 40504

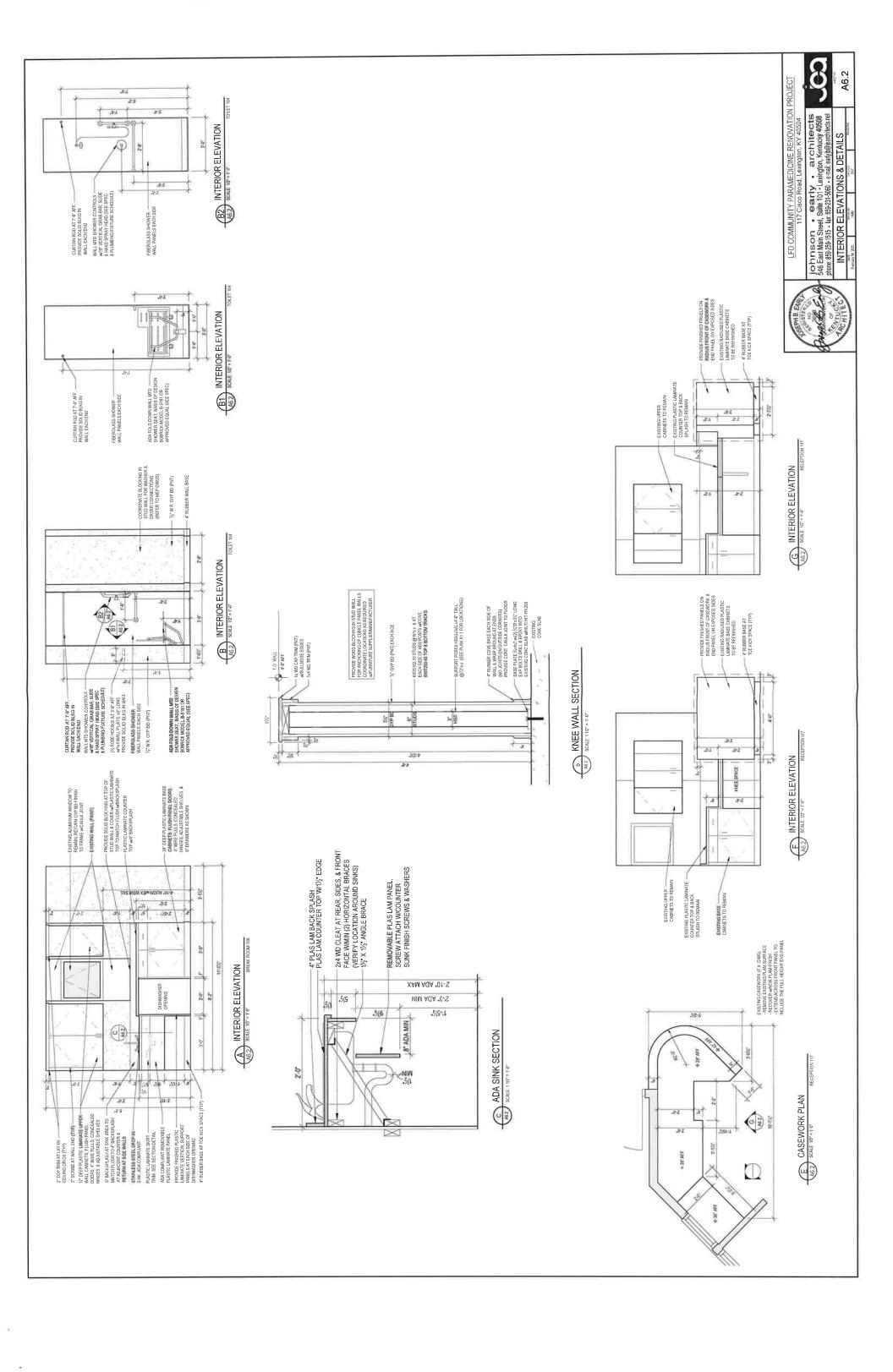
johnson • early • architects
546 East Main Street, Suite 101 • Lexington, Kentucky 40508
phone 859-259 1515 • 2a: 899-231-306) • email early@parchitects.net
REFLECTED CEILING PLAN

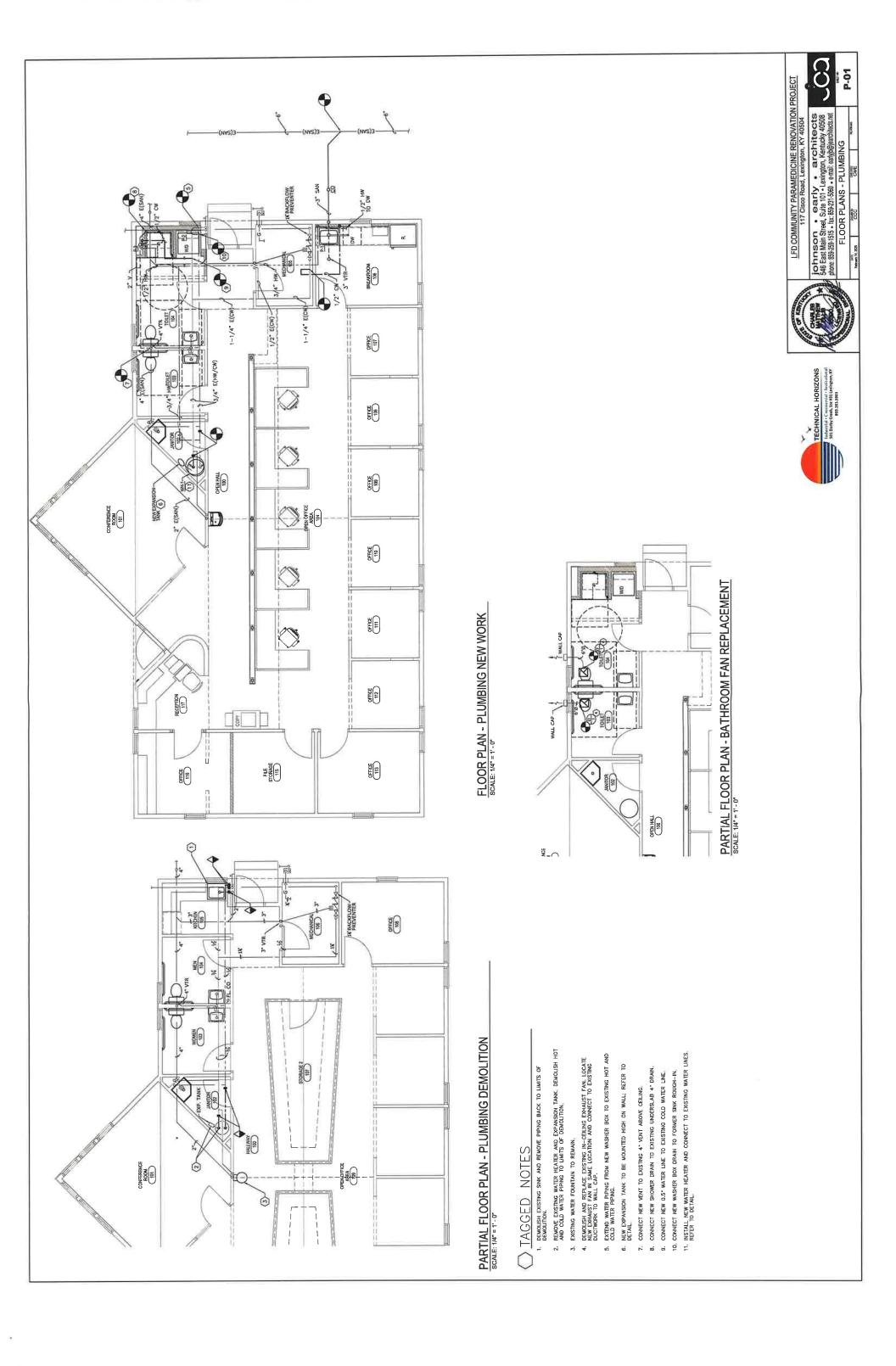
A1.2











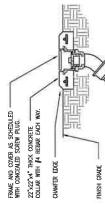
			LUMBIN	G FIXTURE	PLUMBING FIXTURES SCHEDULE
MARK	ITEM	МН	МЭ	WASTE	DESCRIPTION
1	KITCHEN SINK (COUNTERTOP)	1/2**	1/5=	2	ELKAY LUSTERONE CLASSIC STANLESS STEEL 25" X 22" X 5-1/2" SINGLE DROP IN ADA SINK, ENVOIDE ELKAY GOOSENECK FAUCET WITH WRISTBLADE HADDLES, PROVIDE STRAINER BASKET DRAIN, CHROWE PLATED TAILPIECE, ESCUTCHEON AND SUPPLIES,
P-2	WASHER BOX	1/2	1/2"	2**	CUY GRAY MODEL #82026 11.6" X 9.5" CALVANZIED WETAL WASHING WACHIE DULLET BOX 1/2" WIP INLET CONNECTION AND BRONZE OUARTER TURN VALVES.
5-9	WALL SHOWER (ADA ACCESSIBLE)	1/2"	1/2	2.	BRADIET HINSOA AON AONE LANT IN "WALL SHOWER WITH LEFT VALVE LOCATION, METERING VALVE, THERMOSTATIC VALVE WITH STORS, Z.O. OFW SHOWER HEAD, "VALVE THEE SHALL BE SNIGEL LEVER WITH PRESSURE AND EMPERATIONE SAFETY SETTINGS." 1.55PM FLOW CONTROL HAND HELD SHOWER-LAD WITH 50" CHROME HOSE, PROVIDE ADA COMPLIANT PHENDLIC SHOWER SEAT AND 18 GAUGE GRAB BAR.

120°F Strikes		_	PRESSURE RELIEF VALVE.	MOP SINK.	HOSE CONNECTION	
EPANSION TANK AMTROL SI-12 AND 3/4 UNDIN	BALL VALVE. THE SALOWETER. THE SALOWETER.	DIELECTRIC UNION, TYPICAL	BOILER DRAIN WITH THREADED OUTLET, TURN ON SIDE TO CLEAR PAN.	REO'D DIA 2" CLEAR AROUND WATER HEATER, 18 GAUGE GALVANIED METAL PAN, 3" DEEP. SFM. ALL SFMS	WATERTIGHT.	PIOTIO

MOTES:
1. SET WATER HEATER THERMOSTAT(S) TO DELIVER 120°F HOT WATER TEMPERATURE,
2. DO NOT INSTALL WATER HEATER INTO DRAIN PAM. PROVIDE BRICK OR OTHER
MEANS TO ELEVATE BOTTOM OF WATER HEATER ABOVE EDGE OF PAM.

WATER HEATER #1 PIPING SCHEMATIC NO SCALE

65

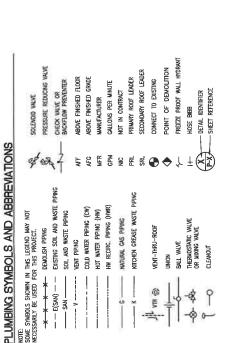


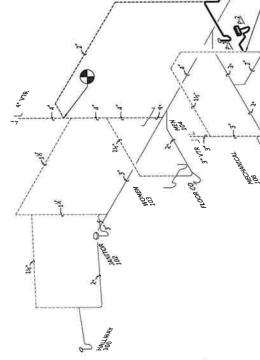
COVER WYE FITTING

EXTERIOR CLEANOUT NOTE: PROVIDE 1/8 BEND FITTING WHERE CLEAN OUT IS AT END OF LINE

(ECO) DETAIL NO SCALE

VER (ADA SIBLE)	1/2"	1/2	2.	LOCATION METERNO VALVE, THERNOSTATIC VALVE WITH S DEMONER HEAD, VALVE TYPE SHALL BE SINGLE LEVER WITH TEMPERATURE SAFETY SETIMGS, 1.5GPM FLOW CONTROL I. SHOWERHEAD WITH 60" CHROME HOSE, PROVIDE ADA CON SHOWER SEAT AND 18 GAUGE GRAB BAR.
OFICK WIVE (TYPICK)-	(MPCM)			
	- 120°F	\$4,798	100	
		N.O.	Ĺ	
	_			





SOIL, WASTE, AND VENT RISER 'B'

VENT RISER	E, AND	L, WASI
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					FXH	AUST	EXHAUST FAN SCHEDULE	SCHEDI	 <u> </u>							
DESIGNATION	LOCATION	MANUFAC.	MODEL	CFM	ESP	dBA	H.	DRIVE	MOTOR	SONES	VOLT/Ø	STARTER	DISC.	ROOF	WEIGHT (LBS)	REMARKS
EF-1	CEILING	GREENHECK	SPA70	70	0.126	36	1/200	DIRECT		1.7	115/2	BY M.C.	BY M.C.	YES	47	1,2,3,4
EF-2	CEILING	GREENHECK	SPA70	70	0.126	36	1/200	DIRECT		1.7	115/2	BY M.C. BY M.C.	BY M.C.	YES	47	1,2,3,4
REMARKS:																
1 PROVID	PROVIDE INTEGRAL INLET GRILLE	ET GRILLE														
2 PROVID	PROVIDE BACKDRAFT DAMPER	AMPER														
3 PROVID	PROVIDE FAN SPEED CONTROL	ONTROL														
4 INTERLO	CK FAN OPERA	TION WITH ACTIV	4 INTERLOCK FAN OPERATION WITH ACTIVATION OF LIGHT SWITCH	×												



TANK RECOVERY INPUT HT. DIA ELECTRICAL REWARKS SZE #070" F RISE POWER

MARK AO SMITH

DOMESTIC WATER HEATER SCHEDULE

DEN-40 50 GAL 34 GPH 6.1 KW 59" 20.5" 30 208/1

MANNA TURNISH WITH ASME TEMPERATURE GAUGE TEMPERATURE CONTROL WITH HIGH TEMP OUT OFF. HEATER ELEMENTS SHALL BE WIRED FOR NON-SIMULTANEOUS OPERATION.

- COMPACTOR SHALL BE RESPONSEE, FOR VERHAMIC LOCATIONS AND CONTINUE OF ALL DESIGNS STORES BETTER CONFIGURING BETAINS ALL SHALLONG CONFICTIONS TO SLOT SYSTEMS INCLIDING BUT NOT LIMITED TO, GAS, DOMESTIC WHERE SEWER, VERIF, ETC.,
- 4. THE PRIMEE ROLDSH-NE MOTHER LOCATIONS FOR MALLING IN CONNECTIVES, MEACAGRICT TO THE EST WE OLD KNOWINGS. IN CONNECTIVES THE CONNECT ON STRICTION WHICE STREAM WICE STREAM STREAM STREAM WICE STREAM STREAM STREAM WICE STREAM STREAM STREAM WICE STREAM STREAM WICE STREAM THER IS A EXPENDIT VOLUME TOR THE PROJECT THAT WILL BE SUBMINED THE WILL SET THEM CONCENTIONS. COMPACTOR SYLL COCOUNIES WITH NOOTH FROM TO STATING FROM THE NEW THE STATING FROM THE SUBMENT.
 - CONTRACTOR SAMIL SLIPTLY TO THE ARCHTECT BGHT COPIES OF SHOP DRAWINGS FOR APPROVAL SO THE CAMILTY OF INTENDED WITERALS OR EQUIPMENT ON THE REVIEWED BETOTE INSTALLATION
- DO NOT SOME THESE DRAWINGS. RETER TO ARCHITECTURAL FLOOR PLAN FOR BALDING DIAGREGING.
- I.E. SJBASSON OF A PROPOSAL WILL DE CONSIDERD. AS ENIDDICE
 THAT FOR CONTROLLOR AS RALLINAZOZO TAGASET, WITH PER PANCY
 AND BLIDON STIE. CAMES MACE SERSOLDON TO THE PROPOSAL
 FOR METBAUS AND LARGE RECLIES OF OPPICIATIES DOCUMINED
 WILL NOT BE RECORDIZO. IF THEY COLID HAVE EETH PROSESTEN
 HAU FOR PORMINION BEDN HAVE.
 - PLIMBNG CONTRACTOR STALL NETSOLL ALL SOLL AND WASTE PRINGS WITH A MINIMAN SLOPE OF 1/8" PER FOOT UNLESS OTHERANSE REQUIRED BY THE STATE OR LOOL, ADMINISTRATIVE ALTHORITY.
- TO WITERUS, EDUPADIT, ASSORBES NO SYSTEMS SHILL MET ALL PERINEM FEDUPADITS OF INTOWLY RECOONED TESTING ORGANIZATION SUCH AS THE U., ASTA, ASS., AMM. AND 1879. FLANCH & INSTALL 1/2" (MIN) FIBERGASS INSULATION WITH ALL SERVICE JACKET ON ALL HOIT & COLD WATER LINES ABOVE SLAB

 - 11. AL VENT FIPE TO EL COMPATIBLE WITH STRUCTURE, MECHANICAL EQUIPMENT AND DUCTWORK, BLECTRICAL EQUIPMENT AND LIGHTING. 12. THE CONTRACTOR SHALL COOPERATE FULLY ANONG THE TRADES
- 13. AL EXCHANGE, TRAVERS AND MITERALS ARRESTLESS HIS STREET, MARCHINER, ENGLISHER STREET, HIS STREET,
- 14. THE FOURIEE WITHS SHAPL'S HAU EE PROJUSTION AGAINST BAND THE AND STRANGE SITH NUMBER HAND NOTIFIED AND STRANGE OF SECURITION OF THE FOURIEE WITH STRANGE HAND STRANGE HAND
 - 15. AL ROOF FENERATIONS SHALL RE IMDE IN ACCORDANCE WITH ROOF SYSTEM IMMARKATICHER'S GLIDGLINES. COORDINATE WITH ARCHITECTURAL, DETAILS FOR ROOF SYSTEM USED.
 - 16. FURNSH AND INSTALL SHUTGET OR BULL WALKE AND IDELECTIFIC LINN ON ALL HOT AND COLD WINTER LINES. PLIABING COMPACTOR SHULL IMPC ALL HINN CONVENTIONS TO PLIANGHIC BRUTGES. ALL SHUT-OFFS TO BE IN ACCESSIBLE LOCATIONS.
 - 17. PROVICE CHROKE PLATED ESCUTCHEDAS AT ALL VISIBLE WALL, COLLINGS AND FLOOR PENETRATIONS.
 - 18. AL VIJR'S SYAL RE EXTENDED TO A MANAUM OF 1' ABOVE ROOF AND WANTANED 10'-O" MANAUM FROM ALL OUTSIDE AIR INTRACES.
- 19. VERFY MOUNTING HEIGHTS OF ALL HANDICAP FIXTURES WITH ARCHTECTURAL FLANS.
- 20. INDOOPED (ANDRY P-TREP NO MUSE STOP ASSISTED SWIL TE. NELLAND WITH THEY WEN PERIOSING IN SOOR PEROON (1-60-627)-6207 (8 EJM., APRICAD RESSINA DETEROR CARROLD SWILL SECOND MAD INSE 1/8" INIT WILL OUR CARROLD SWILL SECOND MAD INSECTION OF SWILL FOWN SUSSIMMULT) OUT OF SOOT.
 - 21, BIDDES SWILL EF LICENSED CONTRACTORS IN ACCORDANCE WITH LOCAL AND STATE LAWS.
- 22. ALI INSTALED SYSTEMS, DRIVES AND RELATED ITEMS SHALL DE TENDIO IN ALCE ON SITE, REPACE ANY AND ALL CONTINACION SLATELD DETERMS, DEMOSS, ITEMS OR SYSTEMS, AT CONTINACIONS OWN DREPORE BETORE COMPLETION OF PROJECT.
- 23. AL PERMIS AND FEES REQUIRED FOR THE WORK SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR AND INCLIDED IN THE BID PROC. THE WATER PRING SYSTEM SHALL BE FLUSHED AND STERLIZED IN ACCORDANCE WITH LOCAL REGULATIONS.



TECHNICAL HORIZONS

LFD COMMUNITY PARAMEDICINE RENOVATION PROJECT 117 Cisco Road, Lexington, KY 40504 johnson • early • architects 546 East Main Street, Suite 101 • Lexington, Kentudy 40508 phore: 889 284 1515 • Tax: 889 231 5060 • emait early)@jearchitects.net

PLUMBING SCHEDULES AND DETAILS

P-02

		CELLING, WET LISTED SHOWER
LIGHTING FIXTURE SCHEDULE	WATTS/FIXTIBE	8 RECESSED IN C
FING FIXTUR	LAMP	801
LIGHTIN	DESCRIPTIONICATALOG #	EV04SH 35/10 DFF SOL 120 ELR
	MANUFACTURER	GOTHAM
	TYPE	SW

VOLTAGE		120 /240			MINIMUN	MINIMUM INTERRUPTING RATING:	PTING R	ATING	10000				1	I		Г
품	PHASES: 1	1							3000		-	MAIN LUG RATING:	2004	4		
₹	WIRES: 3	В									MAIR	MAIN CIRCUIT BREAKER RATING:	200A	A		
88	GROUND: INSULATED	SULATED														
POLE	C.B.			-	1000	LOAD								1		
00	TRIP POLES	LES	CIRCUIT SERVED	SZE	Category	NA.	4		COAD	Load	WARE	CIRCUIT SERVED	-	C.B.	4	POLE
_	20 1	1	(EX) LGTS 112-114	812		800	3100	•	4	category			P	POLES TRIP	-	ğ
23	20 02	7	(EX) LGTS 109, 110	513	-	9	3	000	1300	-	#12	(EX) LG7S 100, 109		1	8	2
5	20 1		(EX) LGTS 108, 109	619		2000	2	38			#12	(#) SPARE	-		-	4
1	-		(EX)RCPTS 11d	100		TOWN	7100		1100	4	#12	(EX) LGTS 101, 105		-	30	4
c c	H		(FYICOBIED 113	277		88		1400	98	œ	#12	(EX)RCPTS 113	H		+	0
п	20 1		(EVIDEDIC 110	77,1	*	1500	2200		900	×	#12	(EX)RCPTS 112	f		+	9
-	20 1		Contraction of	77.6	x	200		2002	1100	H	#12	(EX)RCP15 109	t		+	
+	1	1.	CAJRUPTS JUS	#12	œ	1300	2400		1100	œ	#12	(EXIDEDICATION	t	1	+	7
+	2 2		(EX)RCPTS 108	#12	œ	900		1600	200	œ	61.6	Soller is 109	+		7	2
4	8		(EX)FU-01	#12	N	1500	2500	T	1000		7	LEAJRCP13 106, EXTERIOR			2	16
-	20 1		(a)XITCHEN	#12	æ	180	1	200	Alvan.	×	1112	(#) DISH WASHER		1	30	18
	20 1		(#) MICROWAVE	#12	a	1500	2000	8	300	¥	#12	(#) REF.	_	1	20 2	20
ย	20 1		(#) COPIER	#17			3	1	TIME	W	#12	(EX)EF-1, EF-2, EF-3		1	20 2	22
25	20 7		(EX) RCPTS 101	H12		000		200	8	œ	#12	(EX)RCPTS 102-104		1	20	24
27 2	20		(a) WORK CTATION	1		2	300	1	4000	Σ	#12	(EX)CU-01	-	-	╁	36
20	20		IND WORK STATION	77.1	-	2		4360	4000	Σ	#12	(EX)CU-01		-	+	P
1	H		NOTIFIC WORK IN	7,	×	360	3410		3050	×			-	+	+	T
+	1 0		IN) WORK STATION	<u> </u>	œ	360	ñ	3410	3050	ı	#12	WH-1	_	2 4	8	8
+	+		(#) WORK STATION	#12	æ	360	240		180	æ	213	THE PERSON NAMED IN COLUMN	+	+	+	
1	+		(#) WORK STATION	#12	×	360		360			613	In which woom ted in	1	~	34	
1	2		(#) WASHER	#12	ec	1000	1000	-				SPACE		-	36	
_	05		a since	#10	ex	1500	+-	9031			#12	SPACE			8	T_
41	-		DATEH	F12	0	2	-	300			915	SPACE			40	
				TOT	TOTAL KVA PER DAVEE.	2 DMAGE	1300	1			#12	SPACE	-	H	42	T
				TOT	TOTAL CONNECTED MAY	TED MAYA.	44.75	10.01 A	RECEPT (R)	75%	15.1		0 100	100% (C) CONT	Dia	Г
				2	T COMME	YAY C	41.76	7	UGHT (U)	125%	6.25		+-	100% 1957	MUNCHER	Te
						Control of the Control		Ī	MOTORIMI	110%	11.5	DEMAND CACLS (KVA)	+			T
					TOTAL	TOTAL DEMAND:	38.93		HEAT(H)	100%	6.1	П	+-	and the same	WHITE STATE OF	Т
1					DEAM	DEAMND AMPS	162 21	Ī	PANEZ (D)	1000	1	1	-	DIAM (WW) WILD	With	_

SPECIFICATIONS ELECTRICAL

SYMBOLS

LEGEND OF

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SHALL BE CONCEALED IN FINISHED AREAS.

T METRI ATMA	1. THE REQUIREMENTS HERE-IM-AFTER ARE IN ADDITION AND COMPLIMENT TO THE 1. CONCELLMENT: SHOWN ON THE DRAWNINGS.
GENERAL A. SCOPE OF WORK	1. THE REQUIREMENTS HERE—IN—AFTER REQUIREMENTS, SHOWN ON THE DRAWINGS.

- EXPANSION AND EARTHQUAKE JOINTS. RACEWAYS SHALL NOT BE INSTALLED IN CONCRETE SLAB OR WALL CONSTRUCTION WHEN PASSING THROUGH ON EXPANSION OR EARTHQUAKE JOINT. 2. EXPOSED PACEWAYS. INSTALL EXPOSED PACEWAYS AS HIGH AS POSSIBLE, ABOVE DUCTWORK PARALLEL OR AT RIGHT ANGLES TO BUILDING LINES. 2. PROVIDE ALL LABOR AND MATERIAL, NECESSARY TO ACCOMPLISH THE WORK SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS.
 - COORDINATE WORK WITH ALL OTHER TRADES.
 - VISIT THE SITE AND VERIFY EXISTING CONDITIONS.
- REMOVE ALL WASTE AND RUBBISH FROM THE STE ON A DAILY BASIS,
- 4. ROUTING: ALL RACEWAYS SHALL BE INSTALLED PARALLEL OR AT RIGHT ANGLES TO THE BUILDING CONSTRUCTION, UNLESS PROHIBITED BY A PHYSICAL OBSTRUCTION. WARRANTY: WORKMANSHIP AND MATERIALS SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR THE DATE OF FINAL ACCEPTANCE BY THE OWNER. FROM
- ELECTRICAL WORK SHALL COMPLY WITH THE FOLLOWING CODES AS PRESENTLY APPLICABLE:
- STEL STRONG SUPPORTS: PACENNYS SHALL BE SUPPORTED WITH HEAVT-DUTY, ONE—HOLE, PRESSED STELL STRONG SUN INTERMOL SUPPORTED SUPPORT POLICY—LOUNGER PACENNS SUPPORT POLICY—LOUNGER PACENNS SUPPORT POLICY—SUPPORT POLICY—SUPPORTED SUPPORTED SUPPORTED FROM 1-2/8-MOLY SHALL BE SUPPORTED FROM 1-2/8-MOLY SUPPORTED CHANKEL, AND PRE CLAMPS. ALL FITTINGS AND SUPPORTED FROM 1-2/8-MOLY SUPPORTED CHANKEL. AND PRE CLAMPS. ALL FITTINGS AND SUPPORTED WITH SUPPORTED FROM 1-2/8-MOLY SUPPORTED SUPPORTED FROM 1-2/8-MOLY SUPPORTED F 6. INDEPRIOENT SUPPORT: CONDUITS SAUL NOT BE SUPPORTED FROM THE CELLING SUSPENSION SYSTEM, OUTTS, PPES OF OTHER SYSTEMS FOREIGN TO THE ELECTRICAL INSTALLATION. THE ENTIRE ELECTRICAL INSTALLATION SAUL BE KEPT INDEPRIDENT FROM ANY OTHER TRADE.
 - 7. PULLBOXES WITH COVERS: SHALL BE PROVIDED AS SHOWN ON THE DRAWINGS OR AS REQUIRED BY CODE. ALL PULLBOXES SHALL BE LOCATED 50 AS TO BE ACCESSIBLE.
 - A. PLONGE CONDUT: SHALL BE USED ONLY FOR LIGHTING FIXTURE PICTALLS IN ACCESSBILE CELANGS, RUDSHAWGHTO SPECKER PROTING IN ACCESSBILE CELANGS, SQUAD CONTROL, MOTOR COMMENTIONS, AND AT BULLDING EPRANSINA, JOHNS AS SPECIFIED. ANY OTHER PROPOSED USE OF PLONGE CONDUIT MUST BE APPROVED PRIOR TO INSTALLATION.

SIBBUTTAL AND SHOP DRAWINGS. PRICK TO INSTALLATION, SUBUIT CATALOG DATA FOR ALL COUNSAGET AND WINGSIAS FOR PRICER'S SUBUIT SHOP DRAWINGS SHOWNG COMPLETE FERNANCE—TRANSAC, WINGS TOR EACH SHOW, SHOW AND COMMUNICATION SYSTEM. INREE COPIES REQUIRED. (DOES NOT APPLY TO ALL PROJECT PRICES)

PERMITS: OBTAIN AND PAY FOR ALL REQUIRED PERMITS.

LOCAL AND STATE CODES AND REGULATIONS

NATIONAL ELECTRICAL CODE (NEC)

ENERGY CODE

OPERATIONS AND MANTENANCE MANUALS: PROVIDE MANTENANCE AND OPERATIONS DATA FOR ALL ECTENDED, EQUIPMENT AND SIGNAL AND COMMUNICATIONS SYSTEMS. TWO COPIES & ONE TE, COBETY ARE REQUED.

RECORD DAWNES: CORRECTORS AND CHANGES WAS DEFAURANT THE PROCREES OF THE DAWNINGS STALL OF RETURN RECORDS ON A SET OF DAWNINGS STALLAR TO THE ARCHITECT OFFICE TO CHANGES STALLAR TO THE ARCHITECT OFFICE TO CHANGES STALLAR TO THE ARCHITECT OFFICE TO

3. EMPTY RACEWAYS: PROVIDE A INCON PULL STRING IN ALL EMPTY RACEWAYS, WITH 4'-0" TALLS AT EACH END.

129 VOLT DUPLEX COMPENENCE RECEPTACLE WITH SPLIT WIRED, TOP WIRED HOT, BOTTOM SMITCH AS INDICATED

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 \Rightarrow

TO VOLT DUPLET CONVENIENCE RECEPTACLE MITD ABOVE A COUNTERTOR

120 VOLT GROUND FAULT INTERRUPTING DUPLEX RECEPTACLE MTD ABOVE A COUNTERTOP

OUTSIDE ABOVE GRADE OR AT ROCKTOP HVAC UNITS FLUSH FLOCK COMBINATION POWER & DATA OUTLET 120 VOLT

(I) (I) BSY

•

WEATHER PROOF GFI 120 VOLT DUPLEX RECEPTACLE MITD OUTSIDE ABOVE GRADE OR AT ROOFTOP HVAC UNITS

WP/GF1

USB CHARGER DUPLEX RECEPTACLE

SPECIALTY OUTLET, COORDINATE WITH NOTES

WALL MOUNTED DUAD DATA CUTLET. PROVIDE WITH 1" EMT CONDUIT FROM CUTLET TO ABOVE GEILING

 \mathbf{v} Θ

JUNCTION BOX AS NOTED

FLUSH FLOOR SINGLE POWER OUTLET 120 VOLT

OUADPLEX RECEPTACLE; (1) DUPLEX RECEPTACLES IN 2 GANG BOX WITH 2 CANG PLASTER RING 120 VOLT 120 VOLT GROUND FAULT INTERRUPTING DUPLEX RECEPTACLE

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OCCUPANCY SENSOR, DUAL TECHNOLOGY CEILING MITD

8

DUPLEX CONVENIENCE RECEPTACLE 120 VOLT

LOWER CASE ALPHABET AT LUMINAIRES INDICATE SWITCHING SCHEME FOR INDIVIDUAL/GROUP OF LUMINAIRES

INDICATES LUMINAIRE W/ EMERGENCY POWER COMPONENTS AND/OR EMERGENCY CIRCUITRY

EXT SIGN - CEILING MTD SEE FIXTURE SCHEDULE SURFACE LUMINAIRE SEE FIXTURE SCHEDULE

0 Ø

- GENERAL, BOXES SHALL BE SUPPORTED SECURELY AND INDEPDIDENTLY. MUINT BOXES ON SULPING SURFACES OR SUPPORT WITH THEWEST MURKER & DESCRIBED IN BACKWAY INSTALLATION MORTION BOXES SHALL FOR USED UNLESS THE INMERS OF BOXES, PULLING LENGTH, OR ORGAN REGISTRATES NECESSIATES THEIR INSTALLATION. JUNCTION OF PULLBOX OFBINICS MUST BE RECESSIBLE.
 - SOUND CONTROL: WHERE DOES ARE MOUNTED IN A COMMON WALL, THEY SHALL WHEREVER PRESENCE, BE OFFEST, HORSTONESS THAT HATE DOES WITH ILEXABLE, CONNECT OF EXCESTO, 18 INCHEST IN LOWTH.
 - WIRING DEVICES A. WIRING DEVICES

H. PRODUCT LISTING OR LABELING: ALL ELECTRICAL EQUIPMENT SHALL BE LISTED AND LABELED BY UNDERWRITERS ABORATORIES, INC.

G. CERTIFICATES OF INSPECTION: SUBMIT SIGNED—OFF PERMITS FROM THE CODE ENFORCING AGENCIES TO THE OWNER UPON PROJECT COMPLETION.

- 1. APPROVED MANUFACTURES: HUBBELL, P. & S OR LEVITON, ALL PART NUMBERS REFER TO HUBBELL COLOR OF SWITCH HANDLES: WHITE IN COLOR,
 - RECEPTACLE FACES: WHITE IN COLOR, RECEPTACLES
- 1. RECEPTACLES: TAMPER RESISTANT, 20 AMPERE, 125-VOLT, GROUNDED TYPE, HUBBELL SNAPB300 SERIES.

UNUSED CONDUIT AND WIRNO. ALL UNUSED CONDUCTORS RESULTING FROM THIS PROJECT SHALL REMOVED. ALL UNISED CONDUIT SHALL BE REMOVED EXCEPT WHERE LOCATED IN OR ABOVE EXISTING CONSTRUCTION WHICH IS NOT BEING ALTERED AND WOULD REQUIRE REJUSAL, AND REPLACEMENT OF THE EXISTING CONSTRUCTION.

3. EXISTING PACEWAYS: PROPERLY SUPPORT ALL EXISTING PACEWAYS ABOVE SUSPENDED CELLINGS WHERE WORK IS TAKING PLACE. VERIFY EXTENT OF WORK PRIOR TO SUBMITTING BID.

M. ANCHORAGE AND BRACING: PROVIDE COMPLETE SESSING ANCHORAGE AND BRACING FOR THE INTERPALISACIAL BULLING CODE.

OF COMPUTE AND VERTICAL SEQUENCE OF CONDUIT AND ELECTRICAL EQUIPMENT AS REQUIRED BY THE INTERPALISACIAL BULLING CODE.

1. GENERAL. SPECING SCOPE OF DEMOLITION WORK AND OPERATING CONGITIONS TO BE NOT OWNER OF SALES SALE, BY SPECIED OF NO.4-STER REVIEW PRICE OF SALESTING SALES OF SALESTING SALEST

J. CUTTING AND PATCHING: PROVIDE ALL REQUIRED CUTTING AND PATCHING FOR THE ELECTRICAL WORK.

I, MATERAL AND EQUIPMENT: ALL MATERALS AND EQUIPMENT SHALL BE NEW UNLESS NOTED OTHERWISE. PROTECT ALL MATERALS AND EQUIPMENT FROM DAMAGE OR CORROSION.

FIRE ALARM VISUAL ONLY (STROBE) NOTIFICATION APPLIANCE

FIRE ALARM DUCT MTD SMOKE DETECTOR FIRE ALARM SYSTEM CONTROL PANEL

■ ② ₩

FIRE ALARM MANUAL PULL STATION

FIRE ALARM AUDIOMISUAL NOTIFICATION APPLIANCE

- 2. GFCI RECEPTACLES: TAMPER RESISTANT, 20-AMPERE, 125-VOLT, GROUNDED TYPE, GFTISSTAS SERIES. 3. USB RECEPTACLES: TAMPER RESISTANT, 20-AMPERE, 125-VOLT, GROUNDED TYPE, HUBBELL USBZOAC SERIES.
- SINGLE—POLE SWITCHES: SPECIFICATION—GRADE, 20AMPERE, 1221 SERIES, THREE-WAY SWITCHES: SPECIFICATION-GRADE, 20-AMPERE, 1223 SERIES,
- 3. OCCUPANCY WALL SWITCHES: SPECIFICATION-GRADE, 20-AMPERE WITH INTEGRAL PRECISION INFRARED OCCUPANCY SENSOR.
- 5. LINE VOLTACE DIMMING SWITCHES: SPECIFICATION GRADE, 800W SLIDE DIMMING SWITCH, LEVITON RENOIR SERIES OR APPROVED EQUAL. 4. LOW VOLTAGE WALL SWITCHES: HUBBELL LOW VOLTAGE SWITCH LYSM SERIES OR APPROVED EQUAL
 - TIMER SWITCH: LEVITON VPT24-1P.

). BRANCH CIRCUITS: TYPE THHN OR THWN, 600-VOLT INSULATION, STRANDED COPPER CONDUCTOR, WINIMUM CONDUCTOR SIZE.

CONDUCTORS AND CABLES
A. WIRE AND CABLE:

NEUTRAL: #12 AWG

GROUND: #12 AWG

O. INSTRUCTION: CONTRACTOR SHALL INSTRUCT THE OWNER IN THE USE AND OPERATION OF ALL SYSTEMS INSTALLED UNDER THE SCOPE OF THIS CONTRACT.

N. FIRESTOPPING: PROVIDE FIRESTOPPING FOR ALL PENETRATION IN RATED WALLS, CEILINGS AND FLOORS.

EXTERIOR BULDING MTD AREA SECURITY LUMINAIRE - SEE FIXTURE SCHEDULE

中

ELECTRICAL CONTRACTOR MECHANICAL CONTRACTOR

AFF EC MC UNO AFG EWC

ABOVE FINISHED FLOOR

ABOVE FINISHED GRADE ELECTRIC WATER COOLER

LIGHT CIRCUIT POINT OF SERVICE WATER PROOF

HOME RUN CIRCUIT CONDUCTORS TO BRANCH CIRCUIT PANEL

INDICATES CONDUIT CONCEALED ABOVE CEILING IN WALL OR EXPOSED ON SURFACE ABOVE

INDICATES CONDUIT IN FLOOR SLAB, CEILING BELOW OR BELOW GRADE

- C. DENCE PLATES: WHITE IN COLOR, SMOOTH, HIGH-IMPACT THERMOPLASTIC, P&S/SIERRA OR APPROVED EQUAL
- GENERAL: INSTALL DEVICES LEVEL, PLUMB AND SQUARE WITH BUILDING LINES, SWITCH LOCATIONS: LOCATE SWITCHES 6 INCHES FROM DOOR
 - 3. RECEPTACLE MOUNTING HEIGHT: + 18
- SWITCHES: + 48 TO THE CENTERLINE OF THE BOX, TO THE CENTERLINE OF THE BOX UNLESS OTH COMMUNICATIONS

METAL CLAD CABLE (MC) SHALL BE UTILZED ON THIS PROJECT for FISHING VERTICAL DROPS IN EXISTING WALLS FOR BRANCH CIRCUITS FOR OVER 30A

SPUCES AND TERMINATIONS: LIGHTING AND RECEPTACLE BRANCH CIRCUIT CONDUCTORS UP TO NO. 10 ANG SHALL BE SPUCED WITH WING NUT TYPE CONNECTORS.

FEDERS: FEDERS SHALL BE SIZED AS SHOWN ON THE DEAWINGS AND COLOR-CODED IN TOMOCE WITH LIST BELOW. MAKE NO SPLICES UNLESS SHOWN ON THE PLANS.

PHASE CONDUCTORS (MORE THAN SIX IN A RACEWAY): #10 AWG

PHASE CONDUCTORS (SIX OR LESS IN A RACEWAY): #12 AWG

COMPUTER CABLES SHALL UTILIZE ETHERNET 568-B STANDARD,

GROUND FAULT INTERRUPTER RECEPTACLE

FURNISHED BY OTHERS

- B. CAN'S CABLES TO BE USED FOR ALL DATA. CABLE SWALL BE BLUE IN COLOR. CONTRACTOR SWALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING CABLE, AND SWALL USE GRAY BAY, AWATER, COW-G, OR APPROVED EQUAL.
- C. NETWORK JACKS SHALL BE PANDUIT BRAND, AND ORANGE IN COLOR FOR DATA AND GREY IN COLOR FOR VOIP, CAT6 PATCH PANELS IN THE WIRE CLOSETS SHALL BE PANDUIT BRAND PUNCHED DOWN TO 568-B STANDARD.

1. ELECTRICAL METALLIC TUBING (BAT); STEEL-SCREW TYPE. FITTINGS TWO INCHES AND LARGER SHALL CONTAIN DUAL SET-SCREWS ON EACH SIDE OF THE COUPLING.

FLEXBLE METALLIC CONDUIT: STEEL, ONE- OR TWO-SCREW CLAMP TYPE.

CONDUIT STRAPS: HEAVY DUTY, TWO-HOLE PRESSED STEEL. OUTLET AND DEVICE BOXES:

FLEXIBLE METALLIC CONDUIT: GALVANIZED STEEL, SECURELY INTERLOCKED.

FITTINGS - SET SCREW TYPE

ELECTRICAL METALLIC TUBING (EMT): STEEL—SCREW TYPE, FITTINGS SHALL BE COMPRESSION TYPE

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS A. RACEWAYS

, MTERIOR SURFACE-MOUNTED IN UNFINISHED AREAS: ONE—PIECE PRESSED STEEL ELECTRO-GALVANIZED, SIZE AND DEPTH REQUIRED BY CODE, EXCEPT 4—INCH SQUARE OR 4—INCH

2. INTERIOR FLUSH-MOUNTED: SAME AS ABOVE EXCEPT PROVED PLASTER RING EXTENSION TO FINISHED SURFACE.

EXECUTION

A TWO POST OR FOUR POST RACK SHALL BE USED IN WIRE CLOSET/ DATA ROOM. THE RACK SHALL HOLD ETHERNET SWITCHES AND PATCH PANELS. COMTACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING JACKS AND PANELS, AND SHALL USE GRAY BAR, ANIXTER, CDW-C, OR APPROVED EQUAL.

NOTE:
1 ALL SYMBOLS INDICATED ON THIS LEGEND
MAY NOT BE UTILIZED FOR THIS PROJECT.

INDICATES CONDUIT FOR TELEPHO

| |

XFMR

EQUIPMENT MTD JUNCTION BOX INDICATES CONDUIT FOR DATA

- G. ETHETNET SWITCHES SHALL BE DYTREME BRAND WITH LIFETIME WARRANTY AND POE+, MODEL NUMBER TO BE VERHIED BY OWNER'S IT. COMPUTER SERVICES WILL PROVIDE UPS EXUMPADIT. UPS SHALL BE INSTALLED AT THE BOTTOM OF THE RACK. CONTRACTOR WILL NEED TO INSTALL APPROPRIATE ELECTRICAL, CIRCUIT AND OUTLET (CONDRIA WITH COMPUTER SERVICES BEFORE INSTALLING).
 - CATE CABLES SHALL BE USED FOR ALL PHONES, CABLE SHALL BE GRAY IN COLOR, PHONE CABLES SHALL UTILIZE ETHERNET 568-B STANDARD. JUNGTON AND PUL, BOXES FOR INTERIOR ARGAS: STEEL, SCREW COVER, CODE GALGE AND STEEL, MAGES JUNCTION AND PULL BOXES SHALL BE FABRICATED GALVANIZED SHEET STEEL WITH KETURN FLANCE, AND SCREW REJAIRED GODES.
- CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING CABLE, AND SHALL USE GRAY BAR, ANXIER, CDW-G, OR APPROVED EQUAL. PHONE JACKS SHALL BE PANDUIT BRAND, AND GRAY IN COLOR.
 - SERVICE LOOP (BLUE) SHALL BE TERMINATED AND LETT IN THE CEILING TO BE USED LATER FOR WIRELESS ACCESS POINT. WAP WILL BE PROVIDED BY IT.

COORDINATOR: THE ELECTRICAL CONTRACTOR SHALL REVIEW ALL DAWNINGS, DETAILS, AND CELLAGUARD SPROKE TO CONDIGHT WHITE TOOL BOARDERS BY TO CONTRACTOR SHALL REVIEW A ROUGH-IN, PARTIES, AND ELEATIONS CONTRACTOR SHALL REVIEW OF BUILT IN CHARITIES CONTRACTOR CONTRACTOR SHALL KREY COORDINATE. THE PARTIES OF BUILT IN CHARITIES CHARLES CONTRACTOR SHALL KREY COORDINATE. THE REQUIREMENT IS CHRIMISTED BY OTHERS. THE REQUIREMENTS OF EQUIPMENT PROVIDES THE PROPERTION.



TECHNICAL HORIZONS
Inductial -Commercial - Indicational
SOI burly Cee4, See 21 Leingeon, IV

b. PEDELE METALLE CONNENTI. RECESSOR PRIME CONNECTIONS, INTERIOR CONCELED EQUIPMENT CONNECTIONS, EXPRANSIA, VARIES AND SQUAD CONNECTIONS, EXPANSIAL CONDING SMALL NOT TO BE USED FOR EXPOSED INSTALLATIONS WITHIN THE PRINCED ARRAS OF THE BULDING.

MINIMUM RACEWAY SIZE SHALL BE 3/4 INCH

o. Electrical metallic tubing (emt): all interior areas. May be used for feeders with integral green ground conductor.

b. MATERALS: ALL MATERALS OF A SPECIFIC TYPE SHALL BE PROVIDED BY THE SAME MANUFACTURERY THROUGHOUT THE PROJECT.

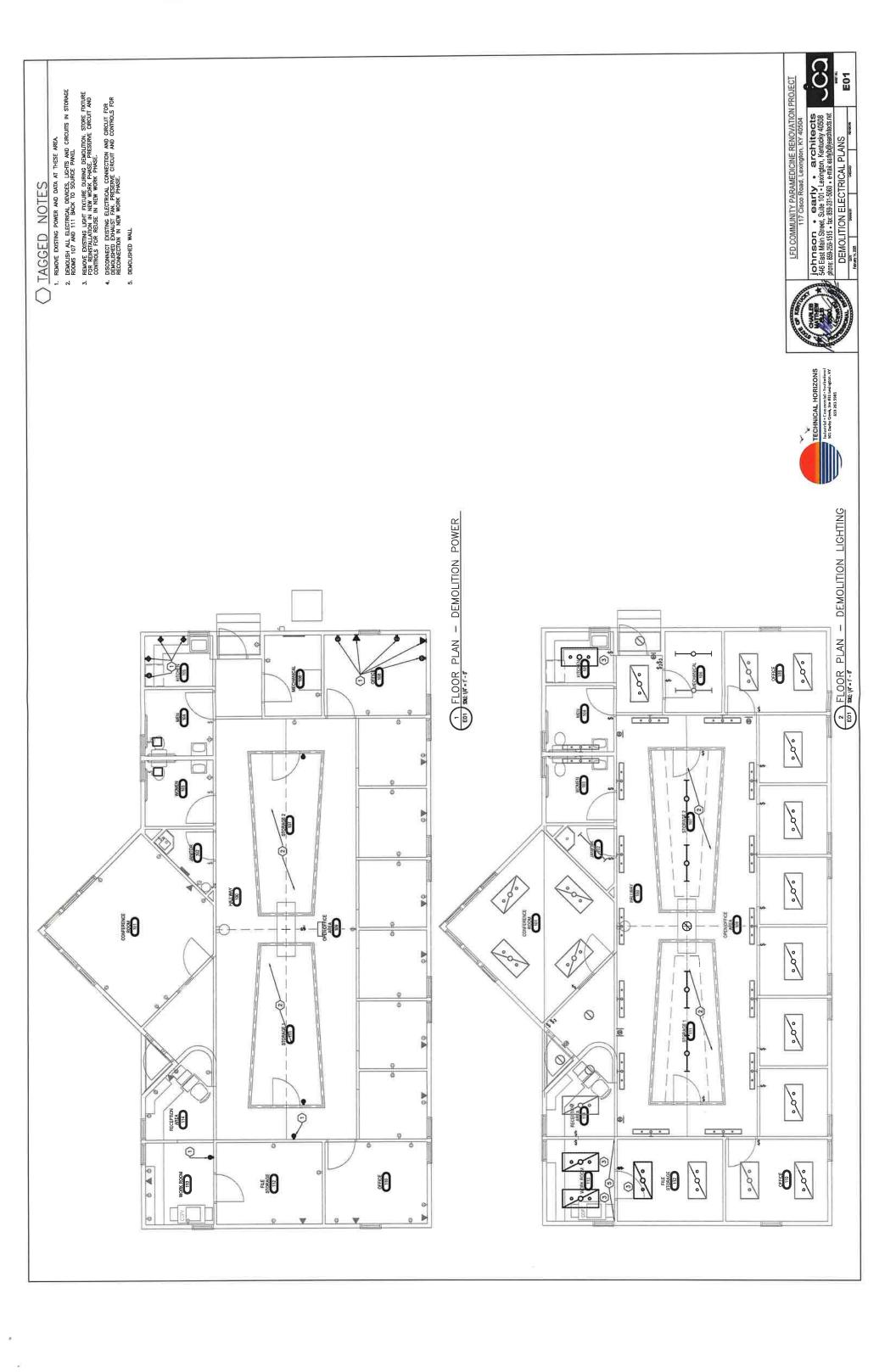
RACEWAYS: INSTALL RACEWAY TYPES AND SIZES AS LISTED BELOW;

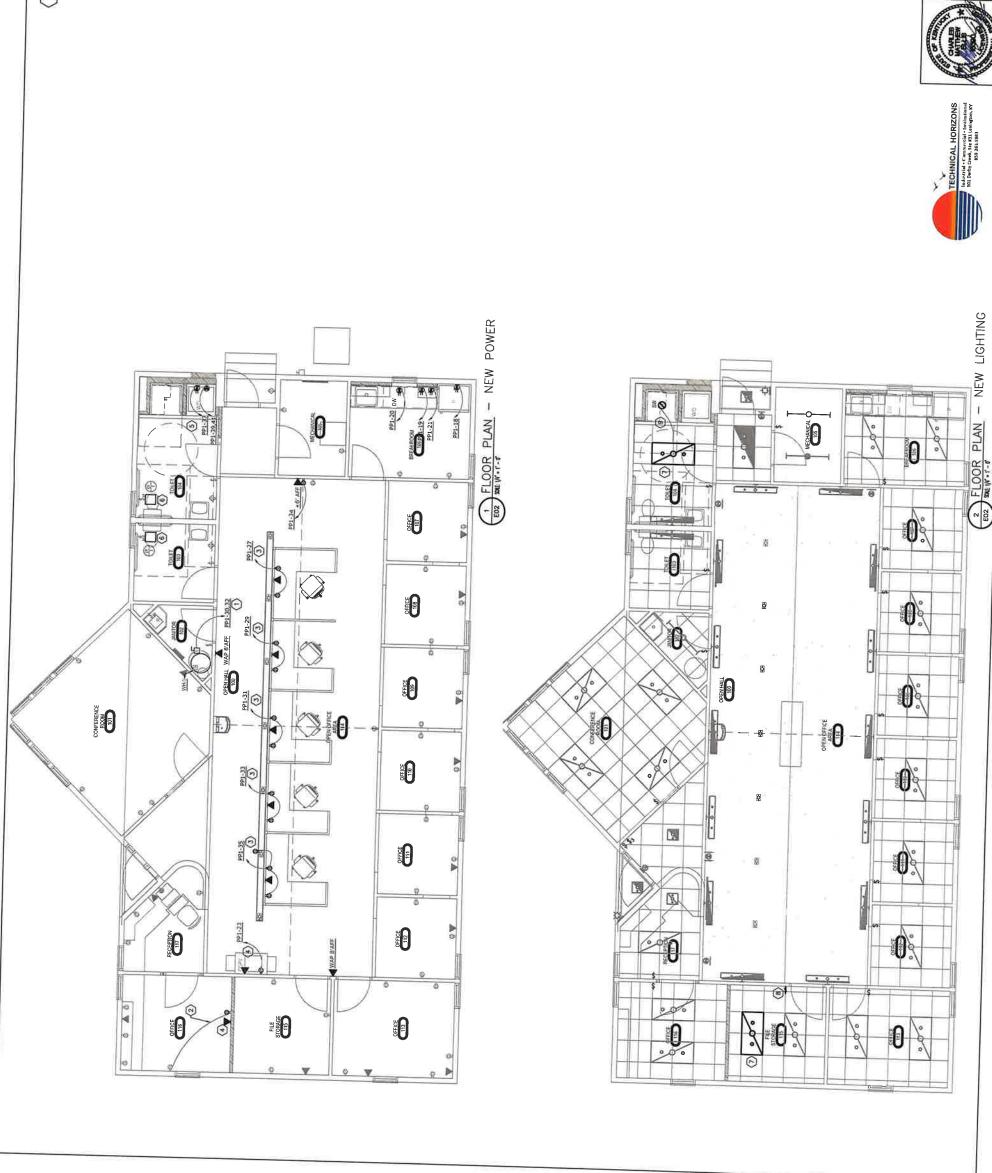
LFD COMMUNITY PARAMEDICINE RENOVATION PROJECT 117 Cisco Road, Lexington, KY 40504

johnson • early • architects 546 East Main Street, Suite 101 • Lexington, Kentucky 40508 phne: 839-259-1515 • bzt. 859-251-5060 • email: early@gearchitects.net

ELECTRIC DETAILS AND SCHEDULES

E00





TAGGED NOTES

1. NEW 60A, 1-PH FUSED DISCONNECT FOR NEW WATER HEATER. FUSE AT 40A. COORDINATE EXACT LOCATION IN FIELD. 2. CIRCUIT NEW RECEPTACLE TO EXISTING 12DV CIRCUIT SERVING ROOM.

4. NEW FOWER DATA CONNECTION FOR OFFICE EQUIPMENT. 5. NEW ELECTRICAL CONNECTIONS FOR NEW WASHER/DRYCR.

3. NEW 120Y, 20A CIRCUIT FOR WORK STATION IN MODULAR FURNITURE WITH STANDARD FACE PLATES AT 16" AFF. PROVIDE PATHWAY FOR POWER AND DATA TO FURNITURE.

6. RECONNECT EXISTING EXHAUST FAN CONTROLS AND CIRCUIT TO NEW EXHAUST FAN.

NEW LOCATION OF RELOCATED LIGHT FIXTURE, RECONNECT TO EXISTING POWER AND CONTROLS.

8. PROVIDE NEW WALL SWITCH FOR CONTROL OF EXISTING AND RELOCATED LIGHT FIXTURE IN THIS ROOM

9. PROVIDE NEW RECESSED SHOWER LIGHT IN NEW SHOWER AREA. CONNECT TO EXISTING CONTROLS AND CIRCUIT IN ROOM.

GENERAL NOTES
A. NEW LED LIGHT BULBS TO BE PURCHASED AND INSTALLED BY OWNER.
B.

LFD COMMUNITY PARAMEDICINE RENOVATION PROJECT 117 Cisco Road, Lexington, KY 40504

Johnson • early • architects 546 East Main Street, Suite 101 - Lexington, Kentucky 40508 phne: 899-59-1515 • Tax 899-201-5000 • emai: early/dejearchitects.net

NEW ELECTRICAL PLANS

5 E02



CONTRACT DOCUMENTS AND SPECIFICATIONS

DEPARTMENT OF GENERAL SERVICES

FOR

LFD Community Paramedicine Renovation Project

Bid No. 24-2025

Prepared by: Johnson Early Architects

PART 1

ADVERTISEMENT FOR BIDS

INDEX

- 1. INVITATION
- 2. DESCRIPTION OF WORK
- 3. OBTAINING PLANS, SPECIFICATIONS, AND BID DOCUMENTS
- 4. METHOD OF RECEIVING BIDS
- 5. METHOD OF AWARD
- 6. BID WITHDRAWAL
- 7. BID SECURITY
- 8. SUBMISSION OF BIDS
- 9. RIGHT TO REJECT
- 10. NOTIFICATION TO THE LFUCG FOR AFFIRMATIVE ACTION
- 11. NOTICE CONCERNING MWDBE AND VETERAN GOALS LFUCG
- 12. PRE-BID CONFERENCE

4. METHOD OF RECEIVING BIDS

Bids will be received from Prime Contracting firms on a Lump Sum for total Project. Bidder must include a price for all bid items to be considered. <u>Bids shall be submitted in the manner and subject to the conditions as set forth and described in the Information for Bidders and Special Conditions.</u>

Bids/proposals should be submitted online via Ion Wave.

5. METHOD OF AWARD

The Contract, if awarded, will be to the lowest responsive and responsible bidder for the total project whose qualifications indicate the award will be in the best interest of the OWNER and whose bid/proposal complies with all the prescribed requirements. No Notice of Award will be given until the OWNER has concluded such investigation as deemed necessary to establish the responsibility, qualifications and financial ability of Bidders to do the work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the Bid of any Bidder who does not pass such investigation to the OWNER's satisfaction. The OWNER reserves the right to reject the Bid of any Bidder that is deemed to be unbalanced or front loaded. In analyzing Bids, the OWNER may take into consideration alternate and unit prices, if requested by the Bid forms.

Bids will be evaluated based on the following weighted criteria:

- 1. Past record and performance on contracts with LFUCG with respect to control of cost, quality of work and ability to meet schedule. Provide General Contractor's Project Experiences with LFUCG or similar Government agency in the past 15 years with contact info (5 points);
- 2. Capacity. Provide General Contractor's number of current active projects with associated % of completion (15 points);
- 3. References: Provide at least two client references and one subcontractor/supplier reference for General Contractor, including references for all active projects listed above related to Capacity (20 points);
- 4. References: Provide at least one client reference for the following Subcontractors (10 pts);
 - o Plumbing
 - o Painting
 - o Electrical
 - o Exterior Siding
- 5. Cost of services (50 points).

11. NOTICE CONCERNING MWDBE and VETERAN OWNED SMALL BUSINESS GOALS

The Lexington-Fayette Urban County Government has a Certified Minority and Women Business Enterprise seventeen percent (17%) minimum goal including minimum subgoals of five percent (5%) for Minority Business Enterprises (MBE) and a subgoal of twelve percent (12%) for Women Business Enterprises (WBE); a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and/or Certified Service- Disabled Veteran Owned Businesses; and a goal of utilizing Disadvantaged Business Enterprises (DBE), where applicable, for government contracts.

For assistance in locating certified DBEs, MBEs, WBEs, VOSBs and/or VOSBs, contact Sherita Miller at 859/258-3320 or by writing the address listed below:

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, Kentucky 40507
smiller@lexingtonky.gov

12. PRE-BID CONFERENCE

A pre-bid conference is scheduled for February 26, 2025, 2:00 pm, at 117 Cisco Rd, Lexington, KY.

END OF SECTION

PART II

INFORMATION FOR BIDDERS

1. RECEIPT AND OPENING OF BIDS

The Lexington-Fayette Urban County Government (herein called the OWNER) invites bids from firms on the project described in the Advertisement for Bids. The OWNER will receive bids via Ion Wave, at the time and in the manner set forth in the Advertisement for Bids, and the Bids. The OWNER may consider informal any bid not prepared and submitted in accordance with the provisions hereof and may waive any informalities or reject any and all bids. Any bid may be withdrawn prior to the scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified shall not be considered. No bidder may withdraw a bid within 90 days after the actual time and date of the bid opening, but OWNER may, in its sole discretion, release any bid and return the Bid Security prior to that date.

The Lexington-Fayette Urban County Government assumes no responsibility for bids that are not delivered as indicated above.

2. PREPARATION OF BID

All sections of the bid package requiring Contractor information must be filled in and uploaded in the Response Attachments tab in IonWave. Bid bonds must be uploaded also. All pricing must be submitted in the Line Items tab in IonWave.

3. SUBCONTRACTS

The bidder is specifically advised that any person, firm, or other party to whom it is proposed to award a subcontract under this Contract must be acceptable to the OWNER. All proposed subcontractors must be identified on the Form of Proposal. Prior to the award of Contract, the OWNER or the OWNER'S representative will advise the CONTRACTOR of the acceptance and approval thereof or of any action necessary to be taken. Should any Subcontractor be rejected by the OWNER, the CONTRACTOR shall present a new name and/or firm to the OWNER at no change in the Contract Price.

4. QUALIFICATION OF BIDDER

The OWNER may make such investigations as the OWNER deems necessary to determine the ability of the bidder to perform the Work, and the bidder shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any bid if the evidence submitted by, or investigation of, such bidder fails to satisfy the OWNER that such bidder is properly qualified to carry out the obligations of the Contract and to complete the Work contemplated therein. Conditional bids will not be accepted.

5. BID SECURITY

- A. Each bid must be accompanied by a bid bond prepared on a Form of Bid Bond and attached hereto, duly executed by the bidder as principal and having as surety thereon a surety company approved by the OWNER, in the amount of 5% of the bid. Such bid bond will be returned to the unsuccessful bidder(s) only upon written request to the Director of Procurement within seven (7) days of opening of bids. Bid bond shall be made payable to the Lexington-Fayette Urban County Government. Bid security is not required for projects under \$50,000.
- B. Bonds shall be placed with an agent licensed in Kentucky with surety authorized to do business within the state. When the premium is paid for such coverage, the full commission payable shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

The successful bidder, upon his failure or refusal to execute and deliver the Contract and bonds required within ten (10) days after he has received notice of the acceptance of his bid, shall forfeit to the OWNER, as liquidated damages for such failure or refusal, the security deposited with his bid.

7. TIME OF COMPLETION

Bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" from the OWNER and to fully complete the Project within the time as specified in the Contract. Bidder must agree also to pay \$\frac{\$500.00}{}\$ per day thereafter deadline for substantial completion and \$\frac{\$500.00}{}\$ per day thereafter deadline for final completion.

8. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- A. It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Contract Documents thoroughly, (b) visit the site(s) to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work, (c) consider Federal, State and Local laws and regulations that may affect cost, progress, performance or furnishing of the work, (d) study and carefully correlate Bidder's observations with the Contract Documents, and (e) notify Owner of all conflicts, errors or discrepancies in the Contract Documents.
- B. Bidders should examine the requirements of Section 4 of the General Conditions for information pertaining to subsurface conditions, underground structures, underground facilities, and availability of lands, easements, and rights-of-way. The completeness of data, presented in the Contract Documents, pertaining to subsurface conditions, underground structures, and underground facilities for the

- B. All bonds required by this Contract and laws of this State shall be placed with agents licensed in the State of Kentucky. When the premium is paid for such coverages, the full commission shall be paid to such local agent who shall not divide such commission with any person other than a duly licensed resident local agent.
- C. Contractor shall use standard Performance and Payment Bond forms such as documents provided with this contract book or AIA form A312-1984 (or later).

11. POWER OF ATTORNEY

Attorney-in-fact who signs bid bonds or contract bonds must file with each bond a certified and effectively dated copy of their power of attorney.

12. TAXES AND WORKMEN'S COMPENSATION

The CONTRACTOR and subcontractor will be required to accept liability for payment of all payroll taxes, sales and use tax, and all other taxes or deductions required by local, state or federal law. Each shall carry Workmen's Compensation Insurance to the full amounts as required by Statutes and shall include the cost of all foregoing items in the proposal. The CONTRACTOR will not otherwise be reimbursed or compensated for such tax payments. The CONTRACTOR is urged to ascertain at his own risk his actual tax liability in connection with the execution or performance of his Contract.

13. LAWS AND REGULATIONS

The bidder's attention is directed to the fact that all applicable state laws, municipal ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the Project shall apply to the Contract throughout, and they will be deemed to be included in the contract, the same as though herein written out in full.

14. EROSION AND SEDIMENT CONTROL AND PERMITS

The CONTRACTOR and Subcontractors performing work on projects on behalf of the OWNER shall also comply with all applicable federal, state, and local environmental regulations and all requirements and conditions set forth in "special" permits including but not limited to Corp of Engineers 404 permits, 401 Water Quality Certifications, Stream Crossing and Floodplain Encroachment Permits as described in Part 4 General Conditions Paragraph 5.17.

Any Bidder who submits a bid incorporating an alternate proposal when alternate bids/proposals have not been requested in the Invitation for Bids shall have his/her bid rejected as non-responsive.

Any Bidder who submits a bid incorporating two (2) or more prices for an item or groups of items (unless such method of pricing is requested in the Invitation for Bids), or which imposes conditions for acceptance other than those established in the Invitation for Bids, shall have their bid rejected as non-responsive.

20. SIGNING OF AGREEMENT

When OWNER gives a Notice of Award to the successful Bidder, it will be accompanied by the required number of unsigned counterparts of the Agreement with all other written Contract Documents attached. Within ten days thereafter, CONTRACTOR shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER with the required Bonds, Certificate of Insurance, and Power of Attorney. The OWNER will deliver one fully signed counterpart to CONTRACTOR at such time as it has been signed by the Mayor.

21. ASSISTANCE TO BE OFFERED TO DISADVANTAGED BUSINESS ENTERPRISE (MWDBE) CONTRACTORS AND VETERAN OWNED SMALL BUSINESSES

A. Outreach for MWDBE(s) and Veteran Owned Small Businesses (VOSB)

The Lexington-Fayette Urban County Government (LFUCG) maintains a database of MWDBE contractors and Veteran Owned Small Businesses. When a LFUCG construction project is advertised for bidding, notices are sent to companies registered at https://lexingtonky.ionwave.net. The notices describe the project and indicate the deadline for submitting bids.

If you wish to be added to the LFUCG MWDBE and Veteran contractor database, please contact:

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov

Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street, Room 338
Lexington, Kentucky 40507
smiller@lexingtonky.gov
859-258-3323

22. LFUCG NON-APPROPRIATION CLAUSE

Contractor acknowledges that the LFUCG is a governmental entity, and the contract validity is based upon the availability of public funding under the authority of its statutory mandate.

In the event that public funds are unavailable and not appropriated for the performance of the LFUCG's obligations under this contract, then this contract shall automatically expire without penalty to the LFUCG thirty (30) days after written notice to Contractor of the unavailability and non-appropriation of public funds. It is expressly agreed that the LFUCG shall not activate this non-appropriation provision for its convenience or to circumvent the requirements of this contract, but only as an emergency fiscal measure during a substantial fiscal crisis, which affects generally its governmental operations.

In the event of a change in the LFUCG's statutory authority, mandate and mandated functions, by state and federal legislative or regulatory action, which adversely affects the LFUCG's authority to continue its obligations under this contract, then this contract shall automatically terminate without penalty to the LFUCG upon written notice to Contractor of such limitation or change in the LFUCG's legal authority.

23. NOTICE OF CONTENTION

Vendors who respond to this invitation have the right to file a notice of contention associated with the bid process or to file a notice of appeal of the recommendation made by the Director of Procurement resulting from this invitation.

Notice of contention with the bid process must be filed within 3 business days of the bid/proposal opening by (1) sending a written notice, including sufficient documentation to support contention, to the Director of the Division of Procurement or (2) submitting a written request for a meeting with the Director of Procurement to explain his/her contention with the bid process. After consulting with the Commissioner of Finance the Chief Administrative Officer and reviewing the documentation and/or hearing the vendor, the Director of Procurement shall promptly respond in writing findings as to the compliance with bid processes. If, based on this review, a bid process irregularity is deemed to have occurred the Director of Procurement will consult with the Commissioner of Finance, the Chief Administrative Officer and the Department of Law as to the appropriate remedy.

PART III

FORM OF PROPOSAL

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Addendum No	Date
Addendum No	Date

The Bidder hereby acknowledges receipt of the following addenda:

Insert above the number and the date of any Addendum issued and received. If none has been issued and received, the word "NONE" should be inserted.

3. <u>BIDDERS AFFIDAVIT</u>

Comes the Affiant,	, and a	fter being first duly sworn,
states under penalty of perjury as follows:		
1. His/her name is		and he/she is the
individual submitting the bid or is the authori	zed representative of	z.
		, the entity
submitting the bid (hereinafter referred to as	"Bidder").	
2. Bidder will pay all taxes and fees, which a	re owed to the Lexington-Fayette Urba	an County Government at the
time the bid is submitted, prior to award of	the contract and will maintain a "curr	ent" status in regard to those
taxes and fees during the life of the contract.		
3. Bidder will obtain a Lexington-Fayette U	Irban County Government business l	icense, if applicable, prior to
award of the contract.4. Bidder has authorized the Division of P	Progurament to verify the above-mer	ationed information with the
Division of Revenue and to disclose to the U		
business license has not been obtained.	Total County Council that taxes and/o	roes are definiquent of that a
5. Bidder has not knowingly violated any j	provision of Chapter 25 of the Levi	ngton-Favette Lirban County
Government Code of Ordinances, known as to		igion-rayene eroan county
6. Bidder acknowledges that "knowingly" for		with respect to conduct or to
circumstances described by a statute or ordina		
aware that his conduct is of that nature or tha		is aware or should have been
aware that his conduct is of that hatthe of tha	t tile en cultistatice exists.	
3 <u></u>		
Signature	Printed Name	
*		
Title	Date	
C. T. Warre		
Company Name		
A ddwogo		
Address		
Subscribed and green to before me by		
Subscribed and sworn to before me by	(Affiant)	<u> </u>
	(Title)	
of.	thisday of	20
of(Company Name)	tillsday oi	_, 20
Notary Public		
[seal of notary] My commission	expires:	<u> </u>

LIST OF UNIT PRICES

The following List of Unit Prices is required by the Owner to be completely executed and submitted with each Bidder's Proposal. Each unit price shall include the furnishing of all labor, materials, supplies and services, and shall include all items of cost, overhead and profit for the Contractor and any Sub-Contractors involved, and shall be used uniformly, without modification, for either additions or deductions from the Bid. These unit prices as established shall also be used to determine the equitable adjustment of the Contract Price in connection with changes, or extra work performed under the Contract. The "Rules of Measurement" set forth in the Special Conditions shall govern where volume units are concerned.

DESCRIPTION OF WORK	UNIT
Gypsum Board wall, each side with wood or metal stud framing and sound batt insulation	Square foot
5/8" OSB Roof Sheathing Replacement	Square foot
R-39 batt insulation	Square foot.
Cementitious Fiber Paneling + Batten replacement	Square foot
4/4 x 3.5" Fiber Cement Trim	Linear foot
4/4 x 5.5" Fiber Cement Trim	Linear foot
4/4 x 7.25" Fiber Cement Trim	Linear foot
Duplex receptacle, installed	Each
Quad receptacle, installed	Each
GFI receptacle, installed	Each
Light switch, installed	Each
#12 wire, installed	Linear foot
3/4" conduit, installed	Linear foot
1" conduit, installed	Linear foot
120V, 20A, 1P circuit breaker, installed	Each
Category 6 UTP cable	Linear foot
Data outlet with two category 6 jacks and pull string	Each

5. STATEMENT OF BIDDER'S QUALIFICATIONS

The following statement of the Bidder's qualifications is required to be filled in, executed, and submitted with the Proposal: Name of Bidder: 1. Permanent Place of Business: 2. 3. When Organized: Where Incorporated: 4. Construction Plant and Equipment Available for this Project: 5. (Attach Separate Sheet If Necessary) Financial Condition: 6. If specifically requested by the OWNER, the apparent low Bidder is required to submit its latest three (3) years audited financial statements to the OWNER'S Division of Procurement within seven (7) calendar days following the bid opening. In the event the Contract is awarded to the undersigned, surety bonds will be furnished by: 7.

Signed: ______(Representative of Surety)

(Surety)

DBE Participation on curren	t bonded projects under contr	act:	
SUBCONTRACTORS (LIST)	PROJECT (SPECIFIC TYPE)	<u>DBE</u>	% of WORK
	2	-	(
	-		-
-	,	=	
			-
	0		
	-		
		*	-
1			¥

11.

(USE ADDITIONAL SHEETS IF NECESSARY)

6. <u>LIST OF PROPOSED SUBCONTRACTORS</u>

The following list of proposed subcontractors is required by the OWNER to be executed, completed and submitted with the BIDDER'S FORM OF PROPOSAL. All subcontractors are subject to approval of the Lexington-Fayette Urban County Government. Failure to submit this list completely filled out may be cause for rejection of bid.

BRANCH OF WORK-LIST	<u>DBE</u> Work	% of <u>EACH MAJOR ITEM</u>
5		
(C-		
8		



MINORITY BUSINESS ENTERPRISE PROGRAM

Sherita Miller, MPA, CPSD
Minority Business Enterprise Liaison
Division of Procurement
Lexington-Fayette Urban County Government
200 East Main Street
Lexington, KY 40507
smiller@lexingtonky.gov
859-258-3323

OUR MISSION: The mission of the Minority Business Enterprise Program (MBEP) is to facilitate the full participation of minority and women owned businesses in the procurement process and to promote economic inclusion as a business imperative essential to the long- term economic viability of Lexington-Fayette Urban County Government.

To that end the urban county council adopted and implemented Resolution 272-2024 – a Certified Minority and Women Business Enterprise seventeen percent (17%) minimum goal including minimum subgoals of five percent (5%) for Minority Business Enterprises (MBE) and a subgoal of twelve percent (12%) for Women Business Enterprises (WBE); a three (3%) minimum goal for Certified Veteran-Owned Small Businesses and/or Certified Service- Disabled Veteran Owned Businesses; and a goal of utilizing Disadvantaged Business Enterprises (DBE), where applicable, for government contracts.

The resolution states the following definitions shall be used for the purposes of reaching these goals:

Certified Disadvantaged Business Enterprise (DBE) — a business in which at least fifty-one percent (51%) is owned, managed and controlled by a person(s) who is socially and economically disadvantaged as define by 49 CFR subpart 26.

Certified Minority Business Enterprise (MBE) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by an ethnic minority (i.e. Black American, Asian American, Hispanic American, Native American)

Certified Women Business Enterprise (WBE) -a business in which at least fifty-one percent (51%) is owned, managed and controlled by a woman.

Certified Veteran-Owned Small Business (VOSB) – a business in which at least fifty-one percent (51%) is owned, managed and controlled by a veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.

Certified Service -Disabled Veteran Owned Small Business (SDVOSB) — a business in which at least fifty-one percent (51%) is owned, managed and controlled by a disabled veteran who served on active duty with the U.S. Army, Air Force, Navy, Marines or Coast Guard.



LFUCG MWDBE PARTICIPATION FORM Bid/RFP/Quote Reference #_____

The MWDBE and/or veteran subcontractors listed have agreed to participate on this Bid/RFP/Quote. If any substitution is made or the total value of the work is changed prior to or after the job is in progress, it is understood that those substitutions must be submitted to the Division of Procurement for approval immediately. Failure to submit a completed form may cause rejection of the bid.

MWBE Company, Name, Address, Phone, Email	DBE/MBE WBE/VOSB/SDVOSB	Work to be Performed	Total Dollar Value of the Work	% Value of Total Contract
1.				
2.				
3.				
4.				

The undersigned company representative submits the above list of MDWBE and veteran firms to be used in accomplishing the work contained in this Bid/RFP/Quote. Any misrepresentation may result in the termination of the contract and/or be subject to applicable Federal and State laws concerning false statements and false claims.

Company	Company Representative	
7		
Date	Title	



DOCUMENTATION REQUIRED FOR GOOD FAITH EFFORTS AND OUTREACH PLANS

As affirmed in Resolution Number 272-2024, the Urban County Council has adopted an annual aspirational goal of utilizing at least seventeen percent (17%) of public funds spend from certain discretionary agreements with certified Minority Business Enterprises (MBEs) and certified Woman Business Enterprises (WBEs); utilizing at least three percent (3%) of public funds from certain discretionary agreements with Certified Veteran-Owned Small Business and Certified Service-Disabled Veteran-Owned Small Businesses (VOSBs); and utilizing Disadvantaged Business Enterprises (DBEs) where applicable. Bidders should make every effort to achieve these goals.

Therefore, as an element of the responsiveness of the bid, all Bidders are required to submit documentation of their good faith and outreach efforts to ensure all businesses, including small and disadvantaged businesses such as minority-, woman-, and veteran-owned businesses, have an equal opportunity to compete for and participate in the performance of any subcontracts resulting from this procurement. Examples of good faith and outreach efforts that satisfy this requirement to encourage the participation of, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs include:

- 1. Advertised opportunities to participate in the contract in at least two (2) publications of general circulation media; trade and professional association publications; small and minority business or trade publications; and publications or trades targeting minority, women, and disadvantaged businesses not less than fifteen (15) days prior to the deadline for submission of bids to allow, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs to participate.
- 2. Attended LFUCG Procurement Economic Inclusion Outreach event(s) within the past year to meet new small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs to partner with on LFUCG contracts and procurements.
- 3. Attended pre-bid/pre-proposal meetings that were scheduled by LFUCG to inform small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs of subcontracting opportunities.
- 4. Sponsored Economic Inclusion event to provide networking opportunities for prime contractors and small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs.
- 5. Requested a list of certified small, DBE, MBE, WBE, VOSB and/or SDVOSB subcontractors or suppliers from LFUCG and showed evidence of contacting the companies on the list(s).
- 6. Contacted organizations that work with small, DBE, MBE, WBE, and VOSB companies for assistance in finding certified DBEs, MBEs, WBEs, VOSB and/or SDVOSBs to work on this project. Those contacted and their responses must be a part of the bidder's outreach efforts documentation.

15. Other – any other evidence that the bidder submits that may demonstrate that the bidder has made reasonable efforts to include small, DBE, MBE, WBE, VOSB and/or SDVOSB participation.

Bidder must document, with specificity, each of the efforts it made to include small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs as subcontractors in the procurement, including the date on which each effort was made, the medium through which each effort was made, and the outcome of each effort.

Note: Failure to submit the documentation requested in this section may be cause for rejection of bid. Bidders may include any other documentation deemed relevant to this requirement which is subject to review by the MBE Liaison. Documentation of Good Faith and Outreach Efforts must be submitted with the Bid, regardless of the proposed level of small, DBE, MBE, WBE, VOSB and/or SDVOSB participation in the procurement. If the Good Faith and Outreach Effort documentation is not submitted with the bid response, the bid may be rejected.

OUTREACH EFFORTS EVALUATION

Outreach efforts demonstrated by the bidder or respondent will be evaluated on a pass/fail basis.

Y	es 🗆 No 🗆
	please explain why in the field below. Do not complete the rest of this form and submit this e with your bid and/or proposal. Click or tap here to enter text.
If yes, p	please complete the following pages and submit all pages with your bid and/or proposal.
Describe MBEs, V	the steps Bidder/Proposer took to solicit small and disadvantaged businesses, including VBEs, VOSBs, and SDVOSBs, for subcontracting opportunities for this procurement.
3. Check participa SDVOSE	the good faith and outreach efforts the Bidder/Proposer used to encourage the tion of small and disadvantaged businesses including, MBEs, WBEs, VOSBs and Bs:
	Bidder placed advertisements in search of prospective small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs for the solicitation.
	Bidder attended LFUCG Procurement Economic Inclusion Outreach event(s) within the past year.
	Bidder attended pre-bid and/or pre-proposal meetings for this solicitation.
	Bidder sponsored an Economic Inclusion Outreach event.
	Bidder requested a list of certified small, DBE, MBE, WBE, VOSB and/or SDVOSB subcontractors or suppliers from LFUCG.
	Bidder contacted organizations that work with small, DBE, MBE, WBE, VOSB and/or SDVOSB companies.
	Bidder sent written notices to certified small, DBE, MBE, WBE, VOSB and SDVOSB businesses.
	Bidder followed up to initial solicitations with interested small, DBE, MBE, WBE, VOSB and/or SDVOSB.
	Bidder provided small, DBE, MBE, WBE, VOSB and/or SDVOSB businesses interested in performing the solicited work with prompt access to the plans, specifications, scope of work, and requirements of the solicitation.
	Bidder made efforts to segment portions of the work to be performed by small businesses, DBEs, MBEs, WBEs, VOSBs and/or SDVOSBs, including dividing sub-bid/partnership opportunities into economically feasible units/parcels, to facilitate participation.

Company	Company Representative
Date	Title

4870-1925-6809, v. 1

9. STATEMENT OF EXPERIENCE

IAME OF INDIVIDUAL:	
POSITION/TITLE;	
STATEMENT OF EXPERIENCE:	
NAME OF INDIVIDUAL:	
POSITION/TITLE:	
STATEMENT OF EXPERIENCE:	
NAME OF INDIVIDUAL:	
POSITION/TITLE:	
STATEMENT OF EXPERIENCE:	
NAME OF INDIVIDUAL:	
POSITION/TITLE:	
STATEMENT OF EXPERIENCE:	

10. EQUAL OPPORTUNITY AGREEMENT

Standard Title VI Assurance

The Lexington Fayette-Urban County Government, (hereinafter referred to as the "Recipient") hereby agrees that as a condition to receiving any Federal financial assistance from the U.S. Department of Transportation, it will comply with Title VI of the Civil Rights Act of 1964, 78Stat.252, 42 U.S.C. 2000d-4 (hereinafter referred to as the "Act"), and all requirements imposed by or pursuant to Title 49, Code of Federal Regulations, U.S. Department of Transportation, Subtitle A, Office of the Secretary, (49 CFR, Part 21) Nondiscrimination in Federally Assisted Program of the Department of Transportation – Effectuation of Title VI of the Civil Rights Act of 1964 (hereinafter referred to as the "Regulations") and other pertinent directives, no person in the United States shall, on the grounds of race, color, national origin, sex, age (over 40), religion, sexual orientation, gender identity, veteran status, or disability be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Recipient receives Federal financial assistance from the U.S. Department of Transportation, including the Federal Highway Administration, and hereby gives assurance that will promptly take any necessary measures to effectuate this agreement. This assurance is required by subsection 21.7(a) (1) of the Regulations.

The Law

- * Title VII of the Civil Rights Act of 1964 (amended 1972) states that it is unlawful for an employer to discriminate in employment because of race, color, religion, sex, age (40-70 years) or national origin.
- * Executive Order No. 11246 on Nondiscrimination under Federal contract prohibits employment discrimination by contractor and subcontractor doing business with the Federal Government or recipients of Federal funds. This order was later amended by Executive Order No. 11375 to prohibit discrimination on the basis of sex.
- * Section 503 of the Rehabilitation Act of 1973 States:
 - The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap.
- * Section 2012 of the Vietnam Era Veterans Readjustment Act of 1973 requires Affirmative Action on behalf of disabled veterans and veterans of the Vietnam Era by contractors having Federal Contracts.
- * Section 206 (A) of Executive Order 12086, Consolidation of Contract Compliance Functions for Equal Employment Opportunity, states:

The Secretary of Labor may investigate the employment practices of any Government contractor or sub-contractor to determine whether or not the contractual provisions specified in Section 202 of this order have been violated.

The Lexington-Fayette Urban County Government practices Equal Opportunity in recruiting, hiring and promoting. It is the Government's intent to affirmatively provide employment opportunities for those individuals who have previously not been allowed to enter into the mainstream of society. Because of its importance to the local Government, this policy carries the full endorsement of the Mayor, Commissioners, Directors, and all supervisory personnel. In following this commitment to Equal Employment Opportunity and because the Government is the

The Act further provides:

KRS 45.610. Hiring minorities – Information required

- (1) For the length of the contract, each contractor shall hire minorities from other sources within the drawing area, should the union with which he has collective bargaining agreements be unwilling to supply sufficient minorities to satisfy the agreed upon goals and timetable.
- (2) Each contractor shall, for the length of the contract, furnish such information as required by KRS 45.560 to KRS 45.640 and by such rules, regulations and orders issued pursuant thereto and will permit access to all books and records pertaining to his employment practices and work sites by the contracting agency and the department for purposes of investigation to ascertain compliance with KRS 45.560 to 45.640 and such rules, regulations and orders issued pursuant thereto.

KRS 45.620. Action against contractor - Hiring of minority contractor or subcontractor

- (1) If any contractor is found by the department to have engaged in an unlawful practice under this chapter during the course of performing under a contract or subcontract covered under KRS 45.560 to 45.640, the department shall so certify to the contracting agency and such certification shall be binding upon the contracting agency unless it is reversed in the course of judicial review.
- (2) If the contractor is found to have committed an unlawful practice under KRS 45.560 to 45.640, the contracting agency may cancel or terminate the contract, conditioned upon a program for future compliance approved by the contracting agency and the department. The contracting agency may declare such a contractor ineligible to bid on further contracts with that agency until such time as the contractor complies in full with the requirements of KRS 45.560 45.640.
- (3) The equal employment provisions of KRS 45.560 to 45.640 may be met in part by a contractor by subcontracting to a minority contractor or subcontractor. For the provisions of KRS 45.560 to 45.640, a minority contractor or subcontractor shall mean a business that is owned and controlled by one or more persons disadvantaged by racial or ethnic circumstances.

KRS 45.630 Termination of existing employee not required, when

Any provision of KRS 45.560 to 45.640 notwithstanding, no contractor shall be required to terminate an existing employee upon proof that that employee was employed prior to the date of the contract.

KRS 45.640 Minimum skills

Nothing in KRS 45.560 to 45.640 shall require a contractor to hire anyone who fails to demonstrate the minimum skills required to perform a particular job.

It is recommended that all of the provisions quoted above to be included as <u>special conditions</u> in each contract. In the case of a contract exceeding \$250,000, the contractor is required to furnish evidence that his work-force in Kentucky is representative of the available work-force in the area from which

11. EQUAL EMPLOYMENT OPPORTUNITY AFFIRMATIVE ACTION POLICY

It	is the policy of
to assure	that all applicants for employment and all employees are treated on a fair and equitable
basis with	nout regard to their race, religion, sex, color, handicap, natural origin or age.

Such action shall include employment, promotion, demotion, recruitment or recruitment advertising, layoff or termination, rates of pay and other forms of compensation, and selection for training, whether apprenticeship and/or on-the-job-training.

Furthermore, this company agrees to make special recruitment efforts to hire the protected class whenever feasible. This company also agrees to adhere to all applicable federal, state, and local laws relating to Equal Employment Opportunity for all individuals.

13. EVIDENCE OF INSURABILITY

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT CONSTRUCTION PROJECT (Use separate form for each Agency or Brokerage agreeing to provide coverage)

Names Insured:			Em	Employee ID:		
Address:			Pho	ne:		=
Project to be insured:						_
In lieu of obtaining certificates of insuran and Risk Management of Part V (Special	ce at this time, the undersig Conditions), including all r	equirements, and conditions:				
Section Items	Coverage	Minimum Limits and Policy Requirements	Limits Provided To Insured	Name of Insurer	A.M. Best's Code	Rating
SC-2 – see provisions	CGL	\$1,000,000 per occ. And \$2,000,000 aggregate	\$			
SC-2 – see provisions	AUTO	\$1,000,000/per occ.	\$			
SC-2 – see provisions	WC	Statutory w /endorsement as noted	\$			
SC-2 – see provisions	EXC	\$5,000,000 per occ.	\$			
Section 2 includes required provisions, st when submitting. Agency or Brokerage	atements regarding insurance	ce requirements, and the undersigned	l agrees to abide by all provisions Name of Authorized Re		d above unless stated	otherwise
Street Address			Title			
City	State	Zip	Authorized Signature			<u></u>
Talanhana Numbar		-	Date			

NOTE: Authorized signatures may be the agent's if agent has placed insurance through an agency agreement with the insurer. If insurance is brokered, authorized signature must be that of authorized representative of insurer.

IMPORTANT: Contract may not be awarded if a completed and signed copy of this form for all coverage's listed above is not provided with the bid.

15. DEBARMENT CERTIFICATION

All contractors/subcontractors shall complete the following certification and submit it with the bid proposal.

The contractor/subcontractor certifies in accordance with Executive Order 12549 (Debarment and Suspension 2/18/86) that to the best of its knowledge and belief, that it and its principals:

- 1) Are not presently debarred, suspended, proposed for debarment, declared negligible, or voluntarily excluded from covered transactions or contract by any Federal department or agency for noncompliance with the Federal Labor Standards, Title VI of the Civil Rights Act of 1964 as amended, Executive Order 11246 as amended or any other Federal law;
 - a) Have not within a three year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - b) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(a) of this certification; and
 - c) Have not within a three year period preceding this bid has one or more public (Federal, State or local) transactions or contracts terminated for cause or default.
- 2) Where the contractor is unable to certify to any of the statements in this certification, such prospective contractors shall attach an explanation to this certification form.

Firm Name:	·	
Project:		
Printed Name	and Title of Authorized Representative:	
Signature:		
Date:	-	

END OF SECTION

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PART IV

GENERAL CONDITIONS

1. **DEFINITIONS**

Wherever used in these General Conditions or the other Contract Documents, the following terms have the meanings indicated which are applicable to both the singular and plural thereof.

1.1 Addenda

Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bid Documents or the Contract Documents.

1.2 Agreement

The written agreement between OWNER and CONTRACTOR covering the Work to be performed; other Contract Documents are attached to the Agreement and made a part thereof as provided therein.

1.3 Application for Payment

The form accepted by CONSULTANT which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

1.4 Bid

The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

1.5 Bidder

An individual, partnership, or corporation, who submit a Bid for a prime contract with the OWNER, for the Work described in the proposed Contract Documents.

1.6 Bonds

Bid, performance and payment bonds and other instruments of security.

1.7 Calendar Day

A calendar day of twenty-four hours measured from midnight to the next midnight shall constitute a day.

1.8 Change Order

A document recommended by CONSULTANT, which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time, issued on or after the Effective Date of the Agreement.

1.18 Giving Notice

Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

1.19 Laws and Regulations

Laws, rules, regulations, ordinances, codes and/or orders.

1.20 Notice of Award

The written notice by OWNER to the apparent successful bidder stating that upon compliance by the apparent successful bidder with the conditions enumerated therein, within the time specified, OWNER will sign and deliver the Agreement.

1.21 Notice to Proceed

A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform CONTRACTOR'S obligations under the Contract Documents.

1.22 OWNER

The Lexington-Fayette Urban County Government.

1.23 Partial Utilization

Placing a portion of the Work in service for the purpose for which it is intended (or related purpose) before reaching Completion for all the Work.

1.24 Project

The total construction of which the Work to be provided under the Contract Documents may be the whole, or a part as indicated elsewhere in the Contract Documents.

1.25 Inspector

The authorized representative who is assigned to the site or any part thereof.

1.26 Shop Drawings

All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for CONTRACTOR to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a Supplier and submitted by CONTRACTOR to illustrate material or equipment for some portion of the Work.

1.27 Specifications

Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and

2. PRELIMINARY MATTERS

2.1 Delivery of Bonds

When the CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER, such Bonds, Insurance Certificate, and Power of Attorney as CONTRACTOR may be required to furnish.

2.2 Copies of Documents

Owner shall furnish to CONTRACTOR up to three copies (unless otherwise specified in the Special Conditions) of the Contract Documents as are reasonably necessary for the execution of the Work. Additional copies will be furnished, upon request, at the cost of reproduction.

2.3 Commencement of Contract Time; Notice to Proceed

The Contract Time will commence to run on the day specified in the Notice to Proceed.

2.4 Starting the Project

CONTRACTOR shall start to perform the Work on the date when the Contract Time commences to run, but no Work shall be done at the site prior to the date on which the Contract Time commences to run.

2.5 Before Starting Construction

Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to CONSULTANT any conflict, error or discrepancy which CONTRACTOR may discover and shall obtain a written interpretation or clarification from CONSULTANT before proceeding with any Work affected thereby; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents, unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

2.6 Submittal of Schedules

Within ten days after the effective date of the Agreement (unless otherwise specified) CONTRACTOR shall submit to CONSULTANT for review:

- **2.6.1** an estimated progress schedule indicating the starting and completion dates of the various stages of the Work;
- **2.6.2** a preliminary schedule of Shop Drawing submissions; and
- **2.6.3** a preliminary schedule of values for all of the Work which will include quantities and prices of items aggregating the Contract Price and will subdivide the Work into costs per labor and materials by specification

to describe Work, materials or equipment such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of OWNER, CONTRACTOR or CONSULTANT, or any of their consultants, agents or employees from those set forth in the Contract Documents, nor shall it be effective to assign to CONSULTANT, or any of CONSULTANT'S consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4. Clarifications and interpretations of the Contract Documents shall be issued by CONSULTANT as provided in paragraph 8.4.

3.3 Conflicts

If, during the performance of the Work, CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, CONTRACTOR shall so report to CONSULTANT in writing at once and before proceeding with the Work affected thereby shall obtain a written interpretation or clarification from CONSULTANT; however, CONTRACTOR shall not be liable to OWNER or CONSULTANT for failure to report any conflict, error or discrepancy in the Contract Documents unless CONTRACTOR had actual knowledge thereof or should reasonably have known thereof.

In resolving such conflicts, errors and discrepancies, the documents shall be given precedence in the following order:

- 1. Agreement
- 2. Field and Change Orders
- 3. Addenda
- 4. Special Conditions
- 5. Instruction to Bidders
- 6. General Conditions
- 7. Specifications and Drawings

Figure dimension on drawings shall govern over scale dimensions and detailed Drawings shall govern over general Drawings.

subsurface structures (except Underground Facilities referred to in paragraph 4.3 which are at or contiguous to the site that have been utilized by Documents. Contract preparation of the CONSULTANT in CONTRACTOR may rely upon the accuracy of the technical data contained in such drawings, but not for the completeness thereof for Except as indicated in the immediately CONTRACTOR'S purposes. preceding sentence and in paragraph 4.2.6, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.

4.2.3 Report of Differing Conditions

If CONTRACTOR believes that:

- 4.2.3.1 any technical data on which CONTRACTOR is entitled to rely as provided in paragraphs 4.2.1 and 4.2.2 is inaccurate, or
- 4.2.3.2 any physical conditions uncovered or revealed at the site differ materially from that indicated, reflected or referred to in the Contract Documents,

CONTRACTOR shall, promptly after becoming aware thereof and before performing and WORK in connection therewith (except in an emergency) notify OWNER and CONSULTANT in writing about the inaccuracy or difference.

4.2.4 CONSULTANT'S Review

CONSULTANT will promptly review the pertinent conditions, determine the necessity of obtaining additional explorations or tests with respect thereto and advise CONTRACTOR of CONSULTANT'S findings and conclusions.

4.2.5 Possible Document Change

If CONSULTANT concludes that there is a material error in the Contract Documents or that because of newly discovered conditions a change I the Contract Documents is required, a Change Order will be issued as provided in Article 10 to reflect and document the consequences of the inaccuracy or difference.

4.2.6 Possible Price and Time Adjustments

In each such case, an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, or any combination thereof, will be allowable to the extent that they are attributable to any such inaccuracy or difference.

4.3 Physical Conditions-Underground Facilities

4.3.1 Shown or Indicated

The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the site is

5. CONTRACTOR'S RESPONSIBILITIES

5.1 Supervision

CONTRACTOR shall supervise and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall assure that all CONTRACTOR personnel (including subcontractors, etc.) conduct themselves in a courteous and respectful manner toward the CONSULTANT and the general public. CONTRACTOR shall keep at the Project Site during the progress of the Work a competent project manager/superintendent and all necessary assistants, all of whom shall be satisfactory to OWNER. OWNER reserves the right to reject CONTRACTOR'S construction superintendent and project management personnel if they are unsatisfactory to OWNER and upon such rejection CONTRACTOR shall designate and provide competent successors. Failure to comply with this condition of the Contract will result in immediate suspension of the Work. Following a review by the Commissioner of Public Works, the Contract may be terminated (see GC section CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of others in the design or selection of a specific means, method, technique, sequence or procedure of construction which is indicated in and required by the Contract Documents. CONTRACTOR shall be responsible to see that the finished Work complies accurately with the Contract Documents.

5.2 Superintendence

CONTRACTOR shall keep on the Work at all times during its progress a competent resident superintendent, who shall not be replaced without written notice to OWNER and CONSULTANT except under extraordinary circumstances. The superintendent will be CONTRACTOR'S representative at the site and shall have authority to act on behalf of CONTRACTOR. All communications given to the superintendent shall be as binding as if given to CONTRACTOR.

5.3 Labor

CONTRACTOR shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and order at the site. OWNER reserves the right to require CONTRACTOR to remove from the Project any of it's personnel, or subcontractor's personnel for violating LFUCG Policies, Rules or Regulations. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all Work at the site shall be performed during regular working hours, and CONTRACTOR will not permit overtime work or the performance of Work on Saturday, Sunday or any legal holiday without OWNER'S written consent given after prior written notice to CONSULTANT.

5.7 Substitutes or "Or-Equal" Items

5.7.1 General

Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, the naming of the item is intended to establish the type, function, and quality required. Unless the name is followed by words indicating that no substitution is permitted, materials or equipment of other Suppliers may be accepted by OWNER/CONSULTANT if sufficient CONTRACTOR submitted by information is OWNER/CONSULTANT to determine that the material or equipment proposed is equivalent or equal to that named. The procedure for review by OWNER/CONSULTANT will include the following. Requests for review of substitute items of material and equipment will not be accepted by OWNER/CONSULTANT from anyone, other than CONTRACTOR. If CONTRACTOR wishes to furnish or use a substitute item of material or written application shall make CONTRACTOR equipment, OWNER/CONSULTANT for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. The application will state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR'S achievement of completion on time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service will be indicated. The application will also contain an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which shall be considered by OWNER/CONSULTANT in evaluating the proposed substitute. OWNER/CONSULTANT may require CONTRACTOR to furnish at CONTRACTOR'S expense additional data about the proposed substitute.

5.7.2 Substitutes

If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to OWNER/CONSULTANT, if CONTRACTOR submits sufficient information to allow OWNER/CONSULTANT to determine that the substitute proposed is equivalent to that indicated or required by the Contract

OWNER or CONSULTANT of any such Subcontractor, Supplier or other person or organization shall constitute a waiver of any right of OWNER or CONSULTANT to reject defective Work.

5.8.3 Contractor Responsible for Acts of Subcontractors

The CONTRACTOR shall perform on the site, and with its own organization, work equivalent to at least fifty (50) percent of the total amount of Work to be performed under the Contract. This percentage may be reduced by a supplemental agreement to this Contract if, during performing the Work, the CONTRACTOR requests a reduction and the Urban County project manager determines that the reduction would be to the advantage of the Urban County Government.

The CONTRACTOR shall, at the time he submits his proposal for the Contract, notify the OWNER in writing of the names of Subcontractors proposed for the Work. He shall not employ any Subcontractor without the prior written approval of the OWNER.

CONTRACTOR shall be fully responsible to OWNER and CONSULTANT for all acts and omissions of the Subcontractors, Suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for CONTRACTOR'S own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between OWNER or CONSULTANT and any such Subcontractor, Supplier or other person or organization, nor shall it create any obligation on the part of OWNER or CONSULTANT to pay or to see to the payment of any moneys due any such Subcontractor, Supplier or other person or organization except as may otherwise be required by Laws and Regulations.

5.8.4 Division of Specifications

The divisions and sections of the Specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

5.8.5 Agreement Between Contractor and Subcontractors

All Work performed for CONTRACTOR by a Subcontractor will be pursuant to an appropriate agreement between CONTRACTOR and the Subcontractor which specifically binds the Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER and CONSULTANT.

5.8.6 Statements and Comments by CONTRACTOR

Neither the CONTRACTOR, his employees, nor his subcontractors shall at any time make any statement or comment as

5.11 Laws and Regulations

5.11.1 CONTRACTOR to Comply

CONTRACTOR shall give all notices and comply with all Laws and Regulations applicable to furnishing and performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither OWNER nor CONSULTANT shall be responsible for monitoring CONTRACTOR'S compliance with any Laws and Regulations.

5.11.2 Specifications and Drawings at Variance

If CONTRACTOR observes that the Specifications or Drawings are at variance with any Laws or Regulations, CONTRACTOR shall give CONSULTANT prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in paragraph 3.4. If CONTRACTOR performs any Work knowing or having reason to know that it is contrary to such Laws, or Regulations, and without such notice to CONSULTANT, CONTRACTOR shall bear all costs arising therefrom; however, it shall not be CONTRACTOR'S primary responsibility to make certain that the Specifications and Drawings are in accordance with such Laws and Regulations.

Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.12 Taxes

CONTRACTOR shall pay all sales, consumer, use and other similar taxes required to be paid by CONTRACTOR in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work. Any party, firm or individual submitting a proposal pursuant to invitation must have paid all taxes owed to the Lexington-Fayette Urban County Government at the time the proposal is submitted, and must maintain a "current" status in regard to those taxes throughout the Contract. If applicable, business must be licensed in Fayette County.

5.13 Use of Premises

5.13.1 Project Site

CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the staging areas or work site areas identified in and permitted by the Contract Documents and other land and areas permitted by Laws and Regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such

with applicable procedures specified, CONTRACTOR shall submit to CONSULTANT for review and approval in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.8), or for other appropriate action if so indicated in the Special Conditions, five copies (unless otherwise specified) of all Shop Drawings, which will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission. All submissions will be identified as CONSULTANT may require. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable CONSULTANT to review the information as required.

5.15.2 Sample Submittals

CONTRACTOR shall also submit to CONSULTANT for review and approval with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and accompanied by a specific written indication that CONTRACTOR has satisfied CONTRACTOR'S responsibilities under the Contract Documents with respect to the review of the submission and will be identified clearly as to material, Supplier, pertinent data such as catalog numbers and the use for which intended.

5.15.3 Review by CONTRACTOR

Before submission of each Shop Drawing or sample CONTRACTOR shall have determined and verified all quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar data with respect thereto and reviewed or coordinated each Shop Drawing or sample with other Shop Drawings and samples and with the requirements of the Work and the Contract Documents.

5.15.4 Notice of Variation

At the time of each submission, CONTRACTOR shall give CONSULTANT specific written notice of each variation that the Shop Drawings or samples may have from the requirements of the Contract Documents, and, in addition, shall cause a specific notation to be made on each Shop Drawing submitted to CONSULTANT for review and approval of each such variation.

5.15.5 CONSULTANT'S Approval

CONSULTANT will review and approve with reasonable promptness Shop Drawings and samples, but CONSULTANT'S review and approval will be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents and shall not extend to means, methods, techniques, sequences or procedures of construction (except where a specific means, method, technique, sequence or

5.17.2 Stormwater Pollution Prevention

- A. The CONTRACTOR shall exercise due care to prevent or minimize any damage to any stream or wetland from pollution by debris, sediment or other material. The operation of equipment and/or materials in a jurisdictional wetland is expressly prohibited. Water that has been used for washing or processing, or that contains oils, sediments or other pollutants shall not be discharged from the job site. Such waters shall be collected and properly disposed of by the CONTRACTOR in accordance with applicable local, state and federal law.
- B. The CONTRACTOR is solely responsible for securing all required state and local permits associated with stormwater discharges from the project including, but not necessarily limited to the KY Notice of Intent to Disturb (NOI) for Coverage of Storm Water Discharges Associated with Construction Activities under the KPDES Storm Water General Permit KYR100000 and the LFUCG, Land Disturbance Permit. Permit application preparation and all required documentation are the responsibility of the CONTRACTOR. The CONTRACTOR is solely responsible for maintaining compliance with the stormwater pollution prevention plan or erosion and sediment control plan and ensuring the following:
- a. That the Stormwater Pollution Prevention Plan (SWPPP) or erosion control plan is current and available for review on site;
- b. That any and all stormwater inspection reports required by the permit are conducted by qualified personnel and are available for review onsite; and
- c. That all best management practices (BMPs) are adequately maintained and effective at controlling erosion and preventing sediment from leaving the site.
- C. The CONTRACTOR shall provide the necessary equipment and personnel to perform any and all emergency measures that may be required to contain any spillage or leakage and to remove materials, soils or liquids that become contaminated. The collected spill material shall be properly disposed at the CONTRACTOR's expense.
- D. Upon completion of the work and with the concurrence of the OWNER, the CONTRACTOR must file a Notice of Termination (NOT) of Coverage Under the KPDES General Permit for Storm Water Discharges Associated with Construction Activity with the appropriate local and state authorities.

responsibility will be itemized, and the extent of such authority and responsibilities will be provided, in the Special Conditions.

7. OWNER'S RESPONSIBILITIES

7.1 Communications

OWNER shall issue all communications to CONTRACTOR through CONSULTANT.

7.2 Data and Payments

OWNER shall furnish the data required of OWNER under the Contract Documents promptly after they are due.

7.3 Lands, Easements, and Surveys

OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1 and 4.4. Paragraph 4.2 refers to OWNER'S identifying and making available to CONTRACTOR copies of reports of explorations and tests of subsurface conditions at the site and in existing structures which have been utilized by CONSULTANT in preparing the Drawings and Specifications.

7.4 Change Orders

OWNER is obligated to execute Change Orders as indicated in paragraph 9.4.

7.5 Inspections, Tests and Approvals

OWNER'S responsibility in respect to certain inspections, tests and approvals is set forth in paragraph 13.3.

7.6 Stop or Suspend Work

In connection with OWNER'S right to stop Work or suspend Work, see paragraph 12.4 and 14.1 Paragraph 14.2 deals with OWNER'S rights to terminate services of CONTRACTOR under certain circumstances.

8. CONSULTANT'S STATUS DURING CONSTRUCTION

8.1 OWNER'S Representative

CONSULTANT will be OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of CONSULTANT as OWNER'S representative during construction are set forth in the Contract Documents and shall not be extended without written consent of OWNER and CONSULTANT.

8.2 Visits to Site

CONSULTANT will make visits to the site at intervals appropriate to the various stages of construction to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. CONSULTANT will not be required to make exhaustive or

8.10 Determinations for Unit Prices

CONSULTANT will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR.

CONSULTANT will review with CONTRACTOR CONSULTANT'S preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise).

8.11 Decision on Disputes

CONSULTANT will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work or the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the Work and claims under Articles 10 and 11 in respect of changes in the Contract Price or Contract Time will be referred initially to CONSULTANT in writing with a request for a formal decision in accordance with this paragraph, which CONSULTANT will render in writing within a reasonable time. Written notice of each such claim, dispute and other matter will be delivered to CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise thereto, and written supporting data will be submitted to CONSULTANT within sixty days after such occurrence unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim.

8.12 Limitations on CONSULTANT's Responsibilities

8.12.1 CONTRACTOR, Supplier, or Surety

Neither CONSULTANTS authority to act under this Article 8 or elsewhere in the Contract Documents nor any decision made by CONSULTANT in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of CONSULTANT to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization performing any of the Work, or to any surety for any of them.

8.12.2 To Evaluate the Work

Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved" or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper", or "satisfactory" or adjectives or like "effect" or "import" are used to describe a requirement, direction, review or judgment of CONSULTANT as to the Work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the Work for compliance with the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective shall not be effective to assign CONSULTANT any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of paragraph 8.12.3 or 8.12.4.

- 9.4.2 changes in the Contract Price or Contract Time which are agreed to by the parties; and
- 9.4.3 changes in the Contract Price or Contract Time which embody the substance of any written decision rendered by CONSULTANT pursuant to paragraph 8.11; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and REGULATIONS, but during any such appeal, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 5.16.

9.5 Notice of Change

If notice of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Time) is required by the provisions of any Bond to be given to a surety, the giving of any such notice will be CONTRACTOR'S responsibility, and the amount of each applicable Bond will be adjusted accordingly.

10. CHANGE OF CONTRACT PRICE

10.1 Total Compensation

The Contract Price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at his expense without change in the Contract Price.

10.2 Claim for Increase or Decrease in Price

The Contract Price may only be changed by a Change Order. Any claim for an increase or decrease in the Contract Price shall be based on written notice delivered by the CONTRACTOR to the CONSULTANT promptly (but in no event later than thirty days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim. Notice of the amount of the claim with supporting data shall be delivered within sixty days after such occurrence (unless CONSULTANT allows an additional period of time to ascertain more accurate data in support of the claim) and shall be accompanied by CONTRACTOR'S written statement that the amount claimed covers all known amounts (direct, indirect, and consequential) to which the CONTRACTOR is entitled as a result of the occurrence of said event.

10.3 Value of Work

The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

10.3.1 Unit Prices

Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of

10.4.3 Subcontractor Costs

Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to CONTRACTOR and shall deliver such bids to OWNER who will then determine, with the advice of CONSULTANT, which bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work Plus a Fee, the Subcontractor's Cost of the Work shall be determined in the same manner as CONTRACTOR'S Cost of the Work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

10.4.4 Special Consultant Costs

Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys and accountants) employed for services specifically related to the Work.

10.4.5 Supplemental Costs

- 10.4.5.1 The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.
- 10.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.
- 10.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or others in accordance with rental agreements approved by OWNER with the advice of CONSULTANT, and the costs of transportation, loading, unloading, installation, dismantling and removal shall be in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the Work.

managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in CONTRACTOR'S principal or a branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in paragraph 10.4.1 or specifically covered by paragraph 10.4.4 - all of which are to be considered administrative costs covered by the CONTRACTOR'S fee.

10.5.2 Principal Office

Expenses of CONTRACTOR'S principal and branch offices other than CONTRACTOR'S office at the site.

10.5.3 Capital Expense

Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR for delinquent payments.

10.5.4 Bonds and Insurance

Cost of premiums for all Bonds and for all insurance whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except for the cost of premiums covered by subparagraph 10.4.5.9 above).

10.5.5 Costs Due to Negligence

Costs due to the negligence of CONTRACTOR, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied and making good any damage to property.

10.5.6 Other Costs

Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 10.4.

10.8.1 Materials and Equipment

The allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and

10.8.2 Other Costs

CONTRACTOR'S costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the Contract Price and not in the allowances. No demand for additional payment on account of any thereof will be valid.

10.8.3 Change Order

Prior to final payment, an appropriate Change Order will be issued as recommended by CONSULTANT to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

10.9 Unit Price Work

10.9.1 General

Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by CONSULTANT in accordance with Paragraph 8.10.

10.9.2 Overhead and Profit

Each unit price will be deemed to include an amount considered by CONTRACTOR to be adequate to cover CONTRACTOR'S overhead and profit for each separately identified item.

10.9.3 Claim for Increase in Unit Price

Where the quantity of any item of Unit Price Work performed by CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of Work and if CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof, CONTRACTOR may make a claim for an increase in the Contract Price in accordance with Article 10.

12.3 Tests and Inspections

12.3.1 Timely Notice

CONTRACTOR shall give CONSULTANT timely notice of readiness of the Work for all required inspections, tests or approvals.

12.3.2 Requirements and Responsibilities

The CONSULTANT may require such inspection and testing during the course of the Work as he/she deems necessary to ascertain and assure the integrity and acceptable quality of the materials incorporated and the work performed. Inspection presence may be either full-time or intermittent, and neither the presence nor absence at any time of the CONSULTANT or the INSPECTOR shall relieve the CONTRACTOR of sole responsibility for the acceptability and integrity of the Work or any part thereof.

The costs of sampling, testing, and inspection on-site to ascertain acceptability of the Work and materials will be borne by the OWNER except as otherwise provided. The OWNER will select a testing laboratory to perform such sampling and testing. Sampling and/or testing required by the CONTRACTOR or necessitated by failure of Work or materials to meet the above acceptability test shall be at the expense of the CONTRACTOR.

Inspection services may be performed by the employees of the OWNER or by others selected or designated by the OWNER or the CONSULTANT.

Sampling and/or testing required for manufacturing quality and/or process control, for certification that raw mineral materials or manufactured products are the quality specified in the contract, or to assure the acceptability for incorporation into the Work shall be borne by the CONTRACTOR or the material supplier.

Cost for inspection, sampling, testing, and approvals required by the laws or regulations of any public body having competent jurisdiction shall be borne by the CONTRACTOR or the material supplier.

Sampling and testing will be in accord with pertinent codes and regulations and with appropriate standards of the American Society of Testing Materials or other specified standards.

12.3.3 On-Site Construction Test and Other Testing

All inspections, tests or approvals other than those required by Laws or Regulations of any public body having jurisdiction shall be performed by organizations acceptable to OWNER and CONTRACTOR (or by CONSULTANT if so specified).

(including but not limited to fees and charges of engineers, architects, attorneys and other professionals) will be paid by CONTRACTOR. In special circumstances where a particular item of equipment is placed in continuous service before Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications or by Change Order.

12.7 Acceptance of Defective Work

If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to OWNER'S evaluation of and determination to accept such defective Work (such costs to be approved by CONSULTANT as to reasonableness and to include but not be limited to fees and charges of engineers, architects, attorneys and other professionals).

12.8 OWNER May Correct Defective Work

If CONTRACTOR fails within a reasonable time after written notice of CONSULTANT to proceed to correct and to correct defective Work or to remove and replace rejected Work as required by CONSULTANT in accordance with paragraph 12.5, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days' written notice to CONTRACTOR, correct and remedy any such deficiency. In exercising the rights and remedies under this paragraph OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may exclude CONTRACTOR from all or part of the site, take possession of all or part of the Work, and suspend CONTRACTOR'S services related thereto, take possession of CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere. CONTRACTOR shall allow OWNER, OWNER'S representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this paragraph. All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount approved as to reasonableness by CONSULTANT, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and OWNER shall be entitled to an appropriate decrease in the Contract Price. Such direct, indirect and consequential costs will include but not be limited to fees and charges of engineers, architects, attorneys and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR'S defective Work. CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by OWNER of OWNER'S rights and remedies hereunder.

- 13.2.1.1 Requirement for waivers of Mechanic's Lien on Partial Applications for Payment will be determined and communicated at the Preconstruction Conference.
- 13.2.1.2 Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
- 13.2.1.3 When an application shows completion of an item, submit conditional final or full waivers.
- 13.2.1.4 Owner reserves the right to designate which entities involved in the Work must submit waivers.
- 13.2.1.5 Waiver Forms: Submit executed waivers of lien on forms acceptable to Owner.

13.3 CONTRACTOR'S Warranty of Title

CONTRACTOR warrants and guarantees that title to all Work, materials and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to OWNER no later than the time of payment free and clear of all Liens.

13.4 Review of Applications for Progress Payment

13.4.1 Submission of Application for Payment

CONSULTANT will, after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing CONSULTANT'S reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application.

13.4.2 CONSULTANT'S Recommendation

CONSULTANT may refuse to recommend the whole or any part of any payment, if, in CONSULTANT'S opinion, it would be incorrect to make such representations to OWNER. CONSULTANT may also refuse to recommend any such payment, or, because of subsequently discovered evidence or the results of subsequent inspections or tests, nullify any such payment previously recommended, to such extent as may be necessary in CONSULTANT'S opinion to protect OWNER from loss because:

furnish a release or receipt in full, CONTRACTOR may furnish a Bond or other collateral satisfactory to OWNER to indemnify OWNER against any Lien.

13.8 Final Payment and Acceptance

13.8.1 CONSULTANT'S Approval

If, on the basis of CONSULTANT'S observation of the Work during construction and final inspection, and CONSULTANT'S review of the final Application for Payment and accompanying documentation - all as required by the Contract Documents, CONSULTANT is satisfied that the Work has been completed and CONTRACTOR'S other obligations under the Contract Documents have been fulfilled, CONSULTANT will, after receipt of the final Application for Payment, indicate in writing CONSULTANT'S recommendation of payment and present the Application to OWNER for payment. Thereupon CONSULTANT will give written notice to OWNER and CONTRACTOR that the Work is acceptable, subject to the provisions of paragraph 13.10. Otherwise, CONSULTANT will return the Application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application.

13.8.2 Delay in Completion of Work

If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, OWNER shall, upon receipt of CONTRACTOR'S final Application for Payment and recommendation of CONSULTANT, and without terminating the Agreement, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by OWNER for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if Bonds have been furnished as required in paragraph 10 of Part II, <u>Information for Bidders</u>, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by CONTRACTOR to CONSULTANT with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

13.8.3 Retainage

Retainage is not applicable to this project.

13.9 CONTRACTOR'S Continuing Obligation

CONTRACTOR'S obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. Neither recommendation of any progress or final payment by CONSULTANT, nor the issuance of a certificate of Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and

CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency;

- 14.2.3 if CONTRACTOR makes a general assignment for the benefit of creditors;
- 14.2.4 if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a Lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR'S creditors;
- **14.2.5** if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;
- **14.2.6** if CONTRACTOR persistently fails to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under paragraph 2.8 as revised from time to time);
- **14.2.7** if CONTRACTOR disregards Laws or Regulations of any public body having jurisdiction;
- 14.2.8 if CONTRACTOR disregards the authority of CONSULTANT, or
- **14.2.9** if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents;

OWNER may, after giving CONTRACTOR (and the surety) seven days' written notice and to the extent permitted by Laws and Regulations, terminate the services of CONTRACTOR, exclude CONTRACTOR from the site and take possession of the Work and of all CONTRACTOR'S tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct, indirect and consequential costs of completing the Work (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) such excess will be paid to CONTRACTOR. If such costs exceed such unpaid balance, CONTRACTOR shall pay the

for Payment or OWNER has failed to make any payment as aforesaid, CONTRACTOR may upon seven days' written notice to OWNER and CONSULTANT stop the Work until payment of all amounts then due. The provisions of this paragraph shall not relieve CONTRACTOR of the obligations under paragraph 5.16 to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

15. MISCELLANEOUS

15.1 Claims for Injury or Damage

Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph 15.1 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitations or repose.

15.2 Non-Discrimination in Employment

The CONTRACTOR shall comply with the following requirements prohibiting discrimination:

15.2.1 That no person (as defined in KRS 344.010) shall bid on Lexington-Fayette Urban County Government construction projects, or bid to furnish materials or supplies to the Lexington-Fayette Urban County Government, if, within six months prior to the time of opening of bids, said person shall have been found, by declamatory judgment action in Fayette Circuit Court, to be presently engaging in an unlawful practice, as hereinafter defined. Such declamatory judgment action may be brought by an aggrieved individual or upon an allegation that an effort at conciliation pursuant to KRS 344.200 has been attempted and failed, by the Lexington-Fayette County Human Rights Commission.

excess materials, temporary structures, and weeds. Rubbish and all waste materials of whatever nature shall be disposed of, off of the project site, in an acceptable manner. All property, both public and private, which has been damaged in the prosecution of the Work, shall be restored in an acceptable manner. All areas shall be draining, and all drainage ways shall be left unobstructed, and in such a condition that drift will not collect or scour be induced.

15.6 General

The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto, and, in particular but without guarantees and obligations imposed warranties, limitation. the CONTRACTOR by paragraphs 12.1, 12.3.5, 13.3, and 15.2 and all of the rights and remedies available to OWNER and CONSULTANT thereunder, are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee or by other provisions of the Contract Documents, and the provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right and remedy to which they apply. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Agreement.

15.7 Debris Disposal

For all LFUCG projects any trash, construction demolition debris, yard waste, dirt or debris of any kind that is removed from the project site must be disposed of in accordance with local, state, and federal regulations. The disposal site or facility must be approved in advance by the LFUCG and disposal documentation is required. The Contractor will be responsible for payment of any fines associated with improper disposal of material removed from the project site.

END OF SECTION

1. <u>BLASTING</u> – not applicable.

INSURANCE REQUIREMENTS

YOUR ATTENTION IS DIRECTED TO THE INSURANCE REQUIREMENTS BELOW, AAND YOU MAY NEED TO CONFER WITH YOUR INSURANCE AGENTS, BROKERS, OR CARRIERS TO DETERMINE IN ADVANCE OF SUBMISSION OF A RESPONSE THE AVAILABILITY OF THE INSURANCE COVERAGES AND ENDORSEMENTS REQUIRED HEREIN. IF YOU FAIL TO COMPLY WITH THE INSURANCE REQUIREMENTS BELOW, YOU MAY BE DISQUALIFIED FROM AWARD OF THE CONTRACT.

Required Insurance Coverage

BIDDER/CONTRACTOR shall procure and maintain for the duration of this contract the following or equivalent insurance policies at no less than the limits shown below and cause its subcontractors to maintain similar insurance with limits acceptable to LFUCG in order to protect LFUCG against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONTRACTOR. The cost of such insurance shall be included in any bid:

Coverage	<u>Limits</u>
General Liability	\$1 million per occurrence, \$2 million
aggregate (Insurance Services Office Form CG 00 01)	or \$2 million combined single limit
Commercial Automobile Liability (Insurance Services Office Form CA 0001)	combined single, \$1 million per occurrence
Worker's Compensation	Statutory
Employer's Liability	\$100,000.00
Excess/Umbrella Liability	\$5 million per occurrence

The policies above shall contain the following conditions:

- a. All Certificates of Insurance forms used by the insurance carrier shall be properly filed and approved by the Department of Insurance for the Commonwealth of Kentucky (DOI). LFUCG shall be named as an additional insured in the General Liability Policy and Commercial Automobile Liability Policy using the Kentucky DOI approved forms.
- b. The General Liability Policy shall be primary to any insurance or self-insurance retained by LFUCG.

- d. Risk Management Manual or a description of the self-insurance and risk management program.
 - e. A claim loss run summary for the previous five (5) years.
 - f. Self-Insured Associations will be considered.

Safety and Loss Control

CONTRACTOR shall comply with all applicable federal, state, and local safety standards related to the performance of its works or services under this Agreement and take necessary action to protect the life, health and safety and property of all of its personnel on the job site, the public, and LFUCG.

Verification of Coverage

BIDDER/CONTRACTOR agrees to furnish LFUCG with all applicable Certificates of Insurance signed by a person authorized by the insurer to bind coverage on its behalf prior to final award, and if requested, shall provide LFUCG copies of all insurance policies, including all endorsements.

Right to Review, Audit and Inspect

CONTRACTOR understands and agrees that LFUCG may review, audit and inspect any and all of its records and operations to insure compliance with these Insurance Requirements.

DEFAULT

BIDDER/CONTRACTOR understands and agrees that the failure to comply with any of these insurance, safety, or loss control provisions shall constitute default and that LFUCG may elect at its option any single remedy or penalty or any combination of remedies and penalties, as available, including but not limited to purchasing insurance and charging BIDDER/CONTRACTOR for any such insurance premiums purchased, or suspending or terminating the work.

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- 2. "Adverse weather" atmospheric conditions at a definite time and place that are unfavorable to construction activities.
- 4. WAGE SCALES.

PART_VI

CONTRACT AGREEMENT

THIS AGREEMENT, made on the	day of		. 20,	by	and
between Lexington-Fayette Urban Cou	nty Government, activ	ng herein calle	d "OWN	ER"	and
(bidder's name)			_, doing	busii	ness
as *(an individual) (a partnership) (a corpo	oration) located in the Ci	ty of			,
County of, an	d State of	,	hereinaft	er ca	ılled
"CONTRACTOR."					
WITNESSETH: That the CONTRACTOR	R and the OWNER in c	onsideration of			
Dollars andC	ents (\$)	quoted		the
proposal by the CONTRACTOR, dated	d, h	nereby agree t	o comme	ence	and
complete the construction described as follows:					

1. SCOPE OF WORK

The CONTRACTOR shall furnish all the materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, and other accessories and services necessary to complete the said project in accordance with the conditions and prices stated in the Proposal, General Conditions, Special Conditions of the Contract, the Specifications, Contract Documents, and IonWave Q&A and Addenda, therefore as prepared by Johnson Early Architects for the LFD Community Paramedicine Renovation Project.

2. TIME OF COMPLETION

The time estimated and authorized by the OWNER for the proper execution of the Work by the Contract, in full, is hereby fixed as one hundred (100) calendar days to substantial completion and an additional fourteen (14) calendar days to final completion date. The time shall begin in accordance with the Notice to Proceed provided by OWNER.

3. ISSUANCE OF WORK ORDERS

Notice to begin Work will be given in whole or for part of the Work as determined by the OWNER pending the availability of funds. The order of construction will be as determined after consultation between the CONTRACTOR and the OWNER.

4. THE CONTRACT SUM

The OWNER agrees to pay the CONTRACTOR in current funds for the performance of the Contract, as quoted in the proposal, subject to any additions and deductions, as provided therein.

9. THE FOLLOWING IS AN ENUMERATION OF THE SPECIFICATIONS AND DRAWINGS (CONTRACT DOCUMENTS):

SPECIFICATIONS

SECTION NO.	TITLE
I	Advertisement for Bids
II	Information for Bidders
III	Form of Proposal
IV	General Conditions
V	Special Conditions
VI	Contract Agreement
VII	Performance and Payment Bonds
VIII	Addenda
IX	Technical Specifications and Drawings

PART VII

PERFORMANCE AND PAYMENT BONDS

- 1. PERFORMANCE BOND
- 2. PAYMENT BOND

- (1) Complete the Contract in accordance with its terms and conditions or
- Obtain a bid or bids for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, or if the OWNER elects, upon determination by the OWNER and Surety jointly of the lowest responsible bidder, arrange for a Contract between such bidder and OWNER, and make available as Work progresses (even though there may be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "balance of the Contract Price", as used in this paragraph shall mean the total amount payable by OWNER to Principal under the Contract and any amendments thereto, less the amount properly paid by OWNER to Principal.

Any suit under this bond must be instituted before the expiration of two (2) years from the date on which final payment under the Contract falls due.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the OWNER named herein or the heirs, executors, administrators or successors of OWNER.

PART VII

PAYMENT BOND

KNOW ALL MEN BY THESE PRESENT: that
(Name of Contractor)
(Address of Contractor)
a hereinafter
(Corporation, Partnership or Individual)
called Principal, and
(Name of Surety)
(Address of Surety)
hereinafter called Surety, are held and firmly bound unto:
LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT 200 East Main Street, Third Floor Lexington, Kentucky 40507
Obligee, hereinafter called OWNER, for the use and benefit of claimants as hereinafter defined, in the amount of Dollars (\$) the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.
WHEREAS, Principal by written agreement is entering into a Contract with OWNER for in accordance with drawings and specifications prepared by: (the Engineer) which Contract is by reference made a part hereof, and is hereinafter referred to as the Contract.
NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that, if Principal shall promptly make payment to all claimants as hereinafter defined for all labor and material used or reasonably required for use in the performance of the Contract, then this obligation shall be void; otherwise it shall remain in full force and effect, subject, however, to the following conditions.
1. A claimant is defined as one having a direct contract with the Principal or with a Subcontractor of the Principal for labor, material, or both, used or reasonably required for use in the performance of the Contract, labor and material being construed to include that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental of equipment directly applicable to the Contract.

IN WITNESS WHEREOF, this instrument	is executed in(number)	_counterparts, each one of
which shall be deemed an original, this the	day of	, 20
ATTEST:		
	(Principal))
(Principal) Secretary		
(SEAL)	BY:	(s)
	(Address)	
(Witness to Principal)	*	
(Address)		
ATTEST:	(Surety)	
	BY:(Attorney-	in-Fact)
(Surety) Secretary		
(SEAL)		
Witness as to Surety	(Address)	
(Address)		 2

NOTE: The number of executed counterparts of the bond shall coincide with the number of executed counterparts of the Contract.

END OF SECTION

IX. TECHNICAL SPECIFICATIONS

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ARCHITECTURAL SPECIFICATION INDICES

DIVISION 1	GENERAL REQUIREMENTS
01 23 00	ALTERNATES
01 70 00	EXECUTION REQUIREMENTS
01 73 10	CUTTING AND PATCHING
01 74 10	CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL
DIVISION 2	SITEWORK
02 01 00	SOIL EROSION CONTROL
02 20 00	EARTHWORK
02 52 00	PORTLAND CEMENT CONCRETE PAVING
02 83 20	CHAIN LINK FENCING & GATES (CONSTRUCTION FENCING)
02 90 00	LANDSCAPE / FINAL GRADING — SHRUBS & PLANTINGS
DIVISION 3	CONCRETE
03 30 00	CAST-IN-PLACE CONCRETE
DIVISION 4	MASONRY
04 81 00	UNIT MASONRY ASSEMBLIES
DIVISION 6	WOOD AND PLASTICS
06 10 00	ROUGH CARPENTRY
06 40 20	INTERIOR ARCHITECTURAL WOODWORK
06 61 00	SOLID SURFACE SHOWER SURROUNDS
DIVISION 7	THERMAL AND MOISTURE PROTECTION
07 21 00	BUILDING INSULATION
07 26 00	UNDER-SLAB VAPOR BARRIER
07 46 00	FIBER CEMENT SIDING, SOFFIT, AND TRIM
07 90 10	JOINT SEALANTS
0, 30 =0	
DIVISION 8	DOORS AND WINDOWS
08 11 00	STEEL DOORS AND FRAMES
08 21 10	FLUSH WOOD DOORS
08 71 01	DOOR HARDWARE
08 71 11	DOOR HARDWARE SETS
08 80 00	GLAZING
00 00 00	GENEINO
DIVISION 9	FINISHES
09 25 50	GYPSUM BOARD ASSEMBLIES
U3 23 3U	GIL 20161 BOWLD W22FIAIDFIF2

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MECHANICAL SPECIFICATION INDICES

DIVISION 22	PLUMBING
22 05 00	COMMON WORK RESULTS FOR PLUMBING
22 05 07	EXCAVATION, TRENCHING, AND BACKFILLING FOR PLUMBING
22 05 19	METERS AND GAUGES
22 05 23	GENERAL DUTY VALVES FOR PLUMBING PIPING
22 05 29	HANGER AND SUPPORTS FOR PLUMBING PIING AND EQUIPMENT
22 07 00	PLUMBING INSULATION
22 11 16	DOMESTIC WATER PIPING
22 11 19	DOMESTIC WATER PIPING SPECIALTIES
22 13 16	SANITARY WASTE AND VENT PIPING
22 33 00	ELECTRIC WATER HEATERS
22 40 00	PLUMBING FIXTURES
22 42 23	SHOWER BASIN

ELECTRICAL SPECIFICATION INDICES

DIVISION 26	ELECTRICAL
26 05 00	COMMON WORK RESULTS FOR ELECTRICAL
26 05 19	LOW-VOLTAGE ELECTRICAL POWER, CONDUCTORS, CABLES,
	SPLICING DEVICES AND CONNECTORS
26 05 26	GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS
26 05 29	HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
26 05 33	RACEWAYS AND FITTINGS FOR ELECTRICAL SYSTEMS
26 05 50	SHOP DRAWINGS, SUBMITTALS, LTERATURE, MANUALS, PARTS LISTS, AND
	SPECIAL TOOLS
26 05 53	IDENTIFICATIONS FOR ELECTRICAL SYSTEMS
26 05 80	SLEEVING, CUTTING, PATCHING, AND REPAIRING FOR ELECTRICAL SYSTEMS
26 27 16	CABINETS, OUTLET BOXES AND PULL BOXES FOR ELECTRICAL SYSTEMS
26 27 26	WIRING DEVICES
26 51 00	INTERIOR LIGHTING
DIVISION 27	TELECOM
27 10 00	TELECOM/DATA RACEWAY SYSTEM

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- C. Execute accepted alternates under the same conditions as other Work of this Contract.
- D. Schedule: A "Schedule of Alternates" is included at the end of this Section. Specification Sections referenced in the Schedule contain requirements for materials necessary to achieve the Work described under each alternate.

PART 3 - EXECUTION 3.1 SCHEDULE OF ALTERNATES

All rights are reserved by the Owner to consider alternates as they determine to be in their best interest. Alternates will be considered in numerical order of Additive Alternates and order of Deductive Alternates

DEDUCTIVE ALTERNATE #1 – ELIMINATE THE LVT FLOORING

Eliminate the LVT flooring for the entire project. In lieu of LVT flooring, prep the concrete slab as required and install a water-based low-sheen, clear concrete sealer that meets the specifications listed below.

- Basis of Design: H&C Clarishield Water-Based Natural Look Clear Concrete Sealer
- VOC <100 g/L
- Finish: ASTM D523
- Taber Abrasion Good after 1 week cure time.
- Chemical Resistance: ASTM D1308 [Good]
- Volume Solids: ASTM D2832 [26.7% +/- 1%]
- Weight Solids: ASTM D2832 [29.3% +/- 1%]

The contractor shall modify, adjust, and coordinate any affected work as necessary to completely and fully integrate the alternate into the work of the project. Include all miscellaneous devices, accessories, and similar items incidental to or required for a complete installation whether or not mentioned as part of the alternate.

END OF SECTION 01 23 00

ALTERNATES 01 23 00 - 2

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning site work, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.

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- 3. Inform installers of lines and levels to which they must comply.
- 4. Check the location, level and plumb, of every major element as the Work progresses.
- 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
- 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels.
 - Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
 - Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Benchmarks: Establish and maintain a minimum of [two] permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

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- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 - 2. Allow for building movement, including thermal expansion and contraction.
 - Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces.
 - Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

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H. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.

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SECTION 01 73 10 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes procedural requirements for cutting and patching.

1.3 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
 - 6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
 - 7. Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

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- j. Finished wood flooring.
- k. Aggregate wall coating.
- I. Wall covering.
- m. HVAC enclosures, cabinets, or covers.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
- B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

- 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

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- 4. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
- 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

3.4 CLEANING

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 01 73 10

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1.4 PERFORMANCE REQUIREMENTS

A. NOTE: ANY REMOVED THERMOSTATS, FLUORESCENT BULBS, OR LIGHT BALLASTS SHALL BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL — PCB AND MERCURY ABATEMENT PROCEDURES AND REGULATIONS. ANY EXISTING THERMOSTATS, FLUORESCENT LIGHT BULBS OR LIGHT BALLASTS THAT ARE TO REMAIN SHALL NOT BE DISTURBED AND OPERATIONS SHALL BE CONDUCTED TO AVOID ANY DAMAGE TO THE RELATED ITEMS. NOTIFY APPROPRIATE OFFICIALS OF ANY CONFLICT WITH THESE ITEMS. THERE SHALL NOT BE ANY CLAIMS, OR TIME DELAYS, IF REMOVAL OF ANY RELATED ITEMS NOTED IS NECESSARY OR ENCOUNTERED.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 - 1. Comply with operation, termination, and removal requirements
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
 - Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for [Sale] [and] [Donation]: [Not permitted] on Project site.
- B. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
 - 1. FLUORESCENT LIGHT FIXTURES FROM THE REMOVED COVERED PEN SALVAGE TO THE OWNER OR DISPOSE OF AT THE OWNER'S DIRECTION.

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- C. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- D. Metals: Separate metals by type.
 - Structural Steel: Stack members according to size, type of member, and length.
 - 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- E. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- F. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- G. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.
- H. Carpet[and Pad]: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
 - 1. Store clean, dry carpet[and pad] in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- 1. Carpet Tile: Remove debris, trash, and adhesive.
 - 1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- J. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- K. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

A. Packaging:

- 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location
- 2. Polystyrene Packaging: Separate and bag materials.
- 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
- 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

- 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
- 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

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- 4). 4' High Filter Fabric shall be installed per manufacturer's specifications and in accordance with the standard detail.
- 5). Provide appropriate and required concrete wash-off area and pit in accordance with indicated information as well as SWPPP requirements.

1.4 SUBMITTALS

- 1). SWPPP: Submit SWPPP to City of Shelbyville, City Engineer. A copy shall be sent to the OWNER AND ARCH/ENGINEER.
- 2). Subcontractor Signatures: Signatures of all subcontractors for approval stating that they have read, understand and that they intend to comply with the SWPPP. A copy of the signatures shall be submitted to the OWNER AND ARCH/ENGINEER.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL

- A. Continuous Service: The sediment and erosion control items are to be installed prior to the commencement of all other construction activities on site. Continuous maintenance shall be required until the project is complete and the site is fully stabilized.
 - 1). No work on the project may commence until Pollution Prevention Measures are installed and accepted and permit is issued.
- B. Prepare Daily Field Reports per SWPPP requirements. A sample form is attached. Submit to regulatory agency as required.
- C. Prepare Erosion and Sediment Control Inspection and Maintenance Report Form weekly per SWPPP requirements. A sample form is attached. Submit to regulatory agency as required.
- D. Remove temporary erosion sediment control measures when site is 95% stabilized. Seed OR SOD and protect any disturbed areas with permanent grass protect mixture.
- E. The SWPPP shall be updated by the preparer as field conditions warrant.

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	·		
Do any structural practices show			
evidence of overtopping, breaks or			
erosion?			
Are all earthen structures seeded and			
mulched? Is vegetation providing			
adequate protection?	<u> </u>		
Do any seeded areas require fertilizer,			
reseeding or additional mulch?			
2.1			
Other conditions:			
	Cadimant Cantual		
	Sediment Control		
Are perimeter sediment trapping			
measures in place and functioning			
properly?			
Have sediment-trapping practices been			
installed in the proper location and			
before extensive grading begins?			
Silt fences and in place and functional			
with no breaches.			
Is sediment leaving the site and/or			
damaging adjacent property?			
Is there mud on public roads or at			
intersections with public roads?			
Other conditions:			
Runoff Conveyance and Control			
Are all on-site drainage channels and			
outlets adequately stabilized?			
(channel lining, seeding,			
other; outlet			
stabilization)			
Are all operational storm sewer inlets			
protected so that sediment will not			
enter the system?			
Is there evidence of increased offsite			
erosion since the project began?			
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Do any structural practices require repair or clean-out?		
Have temporary structural practices that are no longer needed been removed?		
Is any work occurring in streams? Is channel damage being minimized? Is stabilization or a temporary stream crossing needed?		
Are there open drums (no lids or bungs) ?		
Are utility trenches being backfilled and seeded properly?		
Vehicle or equipment maintenance performed outside without cover or secondary containment.		
Wash water from vehicle or equipment washing that has potential to flow to storm drain, ditch, or ground.		
Uncovered construction debris dumpster or roll off box (without lid or cover when not in use.		
Other conditions:		

Signature of Inspector:	Date:	
		_

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SECTION 02 20 00 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - Preparing of subgrade for foundations, building slabs, walks, and pavements.
 - 2. Drainage fill course for support of pavement or building slabs is included as part of this work
 - 3. Excavating and backfilling of trenches within building lines.
 - 4. Excavating and backfilling for underground mechanical and electrical utilities and buried mechanical and electrical appurtenances.
 - 5. Soil & Rock Excavation as described and indicated
 - 6. Inspection and Proof rolling of building and parking lot locations.
- B. Excavating and Backfilling for Mechanical/Electrical Work: Refer to Divisions 15 and 16 sections for excavation and backfill required in conjunction with underground mechanical and electrical utilities and buried mechanical and electrical appurtenances.
- C. Final Grading, together with placement and preparation of topsoil for lawns and planting, is specified in
 - Division 2 Section, "02900 Fine Grading or Landscape Work."

1.3 DEFINITIONS

- A. Excavation consists of removal of material encountered to subgrade elevations indicated and subsequent disposal of materials removed.
- B. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be at Contractor's expense.
 - Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to Architect.

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- Do not interrupt existing utilities serving facilities occupied by Owner or others, during occupied hours, except when permitted in writing by Architect and then only after acceptable temporary utility services have been provided.
 - a. Provide minimum of 48-hour notice to Architect, and receive written notice to proceed before interrupting any utility.
- Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shutoff of services if lines are active.
 D. Use of Explosives: Use of explosives is not permitted.
- E. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post with warning lights.
 - 1. Operate warning lights as recommended by authorities having jurisdiction.
 - Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
 - 3. Perform excavation by hand within dripline of large trees to remain. Protect root systems from damage or dryout to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with moistened burlap.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

- A. Satisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups **CL, ML,GC, SC**,
- B. OFF-SITE BORROW MATERIAL SHALL HAVE A PLASTICITY INDEX (PL) OF LESS THAN 20 AND A STANDARD PROCTOR MAXIMUM DRY DENSITY OF AT LEAST 95 PCF. CONTRACTOR SHALL PROVIDE ENGINEERING CLASSIFICATION AND STANDARD PROCTOR TESTS ON ALL POTENTIAL BORROW SOILS PRIOR TO ANY MATERIAL BEING MOVED FROM ANOTHER SITE TO THIS PROPERTY. ALL TEST RESULTS SHALL EITHER BE PERFORMED BY AEI GEOTECHNICAL ENGINEERS OR REVIEWED AND EVALUATED TO APPROVE THE MATERIAL FOR SUITABILITY AS AN ENGINEERED FILL.
- C. ADDITIONALLY ALL MATERIAL SHALL BE ENVIRONMENTALLY TESTED AND PROVED TO BE FREE OF ANY CONTANMINATION AND NON-HAZARDOUS PRIOR DELIVERY TO THIS SITE.
- D. ALL OFF-SITE BORROW MATERIAL SHALL BE FREE OF CONTAMINATION, VEGETATION, TOPSOIL, ORGANIC MATERIAL, WET SOIL, CONSTRUCTION DEBRIS, AND ROCK FRAGMENTS GREATER THAN SIX INCHES IN DIAMETER.
- E. Unsatisfactory soil materials are defined as those complying with ASTM D2487 soil classification groups GW, GP, GM, SM, SW, SP, // MH, CH, OL, OH, and PT.
- F. <u>Subbase Compacted Fill Material #1: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone. #57 GRAVEL MATERIAL. Subbase material shall be permeable when compacted, but yet maintain a durable condition.</u>

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a 42-inch wide, short tip radius rock bucket rated at 0.81 cubic yard (heaped) capacity. Trenches in excess of 10 feet in width and pits in excess of 30 feet in either length or width are classified as open excavation.

- 3. Rock excavation in open excavations includes removal and disposal of materials and obstructions encountered that cannot be dislodged and excavated with modern, trackmounted, heavy-duty excavating equipment without drilling, blasting, or ripping. Rock excavation equipment is defined as Caterpillar Model No. 973 or equivalent trackmounted loader, rated at not less than 210 HP flywheel power and developing minimum of 45,000-pound breakout force (measured in accordance with SAE J732).
 - Typical of materials classified as rock are boulders 1/2 cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.
 - Intermittent drilling, blasting, or ripping performed to increase production and not necessary to permit excavation of material encountered will be classified as earth excavation.
- C. Do not perform any additional rock excavation anticipated to be beyond the Base Bid Scope of Work until material to be excavated has been cross-sectioned and classified by Architect. Such excavation will be paid on basis of Contract Conditions relative to changes in work.

D. Rock payment lines are limited to the following:

- Two feet outside of concrete work for which forms are required, except footings.
- 2. One foot outside perimeter of footings.
- 3. In pipe trenches, 6 inches below invert elevation of pipe and 2 feet wider than inside diameter of pipe, but not less than 3 feet minimum trench width.
- 4. Outside dimensions of concrete work where no forms are required.
- 5. Under slabs on grade, 6 inches below bottom of concrete slab.

3.2 STABILITY OF EXCAVATIONS

- A. General: Comply with local codes, ordinances, and requirements of agencies having jurisdiction.
 - B. Slope sides of excavations to comply with local codes, ordinances, and requirements of agencies having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling.
 - BB. Foundation and Trench excavations should be properly sloped back in accordance with the Kentucky Occupational Safety and Health Standards for the Construction Industry 29 CFR Part 1926, Subpart P Excavations. The soil overburden at the site should be classified as Type B soil in accordance with the above standard. Soil above these depths should be laid back on temporary slopes of 1:1 Horizontal to Vertical.
 - C. Shoring and Bracing: Provide materials for shoring and bracing, such as sheet piling, uprights, stringers, and cross braces, in good serviceable condition. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Extend shoring and bracing as excavation progresses.
 - 1. Provide permanent steel sheet piling or pressure-creosoted timber sheet piling wherever subsequent removal of sheet piling might permit lateral movement of soil under

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- 4. Bearing capacity at substrate shall be verified by geotechnical consultant. If subgrade is determined to be unsuitable by geotechnical consultant contractor shall undercut subgrade until suitable bearing conditions have been verified by the geotechnical consultant.
- 5. TEST TOP 8" OF SUBGRADE MATERIALS, MOISTURE SHOULD BE AT OR SLIGHTLY ABOVE OPTIMUM.
- ONCE THE ORIGINAL CONTOUR HAS BEEN DISTURBED, COMPLETE THE EXCAVATION AND POUR CONCRETE AS SOON AS POSSIBLE. BEST RESULTS WILL BE OBTAINED IN NO PRECIPITATION FALLS DURING THIS PERIOD.
- 7. UNDER NO CIRCUMSTANCESS SHOULD WATER BE ALLOWED TO POND. THIS IS IMPORTANT DURING AND AFTER CONSTRUCTION. DURING CONSTRUCTION, THIS MAY REQUIRE PLANNING AHEAD FOR THE UNEXPECTED RAIN STORM.
- 8. OPENINGS IN SLAB SUCH AS COLUMN FOOTINGS OR COTACTS WITH WALLS SHALL NOT ALLOW INFILTRATION OF SURFACE WATER. THE JOINTS SHALL BE PROTECTED AND/OR CAULKED AND SEALED AS SOON AS IS POSSIBLE.

3.6 EXCAVATION FOR ASPHALT PAVEMENTS

- A. PROOFROLING AFTER EXCAVATION AND PRIOR TO ANY SUBBASE FILL PLACEMENT AT THE PARKING LOT AREAS, THE AREA SHALL BE PROOFROLLED WITH TWO COVERAGES OF A LOADED DUMP TRUCK OR SCRAPER. NOTIFY GEOTECHNICAL CONSULTANT PRIOR TO PROOF TESTING SO CONSULTANT MAY BE PRESENT DURING THE PROOFROLLING. AREAS FOUND TO BE SOFT OR PUMPING SHALL HAVE THE UNSUITABLE SOILS REMOVED AND REPLACED WITH COMPACTED ENGINNEERED FILL OR COMPACTED SUBBASE MATERIAL AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
 - B. Cut surface under pavements to comply with cross-sections, elevations and grades as indicated.
 - C. Provide compacted fill materials to form cross-sections and elevations indicated for parking and other paved areas.

3.7 TRENCH EXCAVATION FOR PIPES AND CONDUIT

- A. Excavate trenches to uniform width, sufficiently wide to provide ample working room and a minimum of 6 to 9 inches of clearance on both sides of pipe or conduit.
- B. Excavate trenches and conduit to depth indicated or required to establish indicated slope and invert elevations and to support bottom of pipe or conduit on undisturbed soil. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.
 - 1. Where rock is encountered, carry excavation 6 inches below required elevation and backfill with a 6-inch layer of crushed stone or gravel prior to installation of pipe.
 - 2. For pipes or conduit less than 6 inches in nominal size, and for flat-bottomed, multiple-duct conduit units, do not excavate beyond indicated depths. Hand-excavate bottom cut to accurate elevations and support pipe or conduit on undisturbed soil.
 - 3. For pipes and equipment 6 inches or larger in nominal size, shape bottom of trench to fit bottom of pipe for 90 degrees (bottom 1/4 of the circumference). Fill depressions with tamped sand backfill. At each pipe joint, dig bell holes to relieve pipe bell of loads ensure continuous bearing of pipe barrel on bearing surface.

3.8 BACKFILL AND FILL

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- 2. Provide wheeled dump truck proof rolling of the area under the building after stripping of the site, and prior to any additional fill placement.
- B. Place backfill and fill materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated motorized vibratory tampers.
- C. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each layer to required percentage of maximum dry density or relative dry density for each area classification. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
- D. Place backfill and fill materials evenly adjacent to structures, piping, or conduit to required elevations. Prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping, or conduit to approximately same elevation in each lift.
- E. **Control soil and fill compaction**, providing minimum percentage of density specified for each area classification indicated below. Correct improperly compacted areas or lifts as directed by Architect if soil density tests indicate inadequate compaction.
 - 1. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density, in accordance with ASTM D 698-91 + D 1557:
 - a. Under structures, building slabs and steps, and pavements, compact top 18 inches of subgrade and each layer of backfill or fill material at 98% maximum density.
 - b. Under lawn or unpaved areas, compact top 12 inches of subgrade and each layer of backfill or fill material at 92% maximum density.
 - c. Under walkways, driveways and the like compact top 6 inches of subgrade and each layer of backfill or fill material at 98% maximum density.
 - 2. Bearing Capacities to be achieved: The building and all appurtenances shall bear directly on suitable soil. The foundations were designed to provide the following bearing capacities.
 - a. isolated spread footings: [8,000 pounds per square foot] for rock bearing
 - b. continuous wall footings: [8,000 pounds per square foot]for rock bearing
 - 2A. IN UPPER 3 FEE OF FILL AREAS, USE FILL MATERIALS WITH A PLASTICITY INDEX OF LESS THAN 20, WITH A MAXIMUM DRY DENSITY OF GREATER THATN 95 PCF PER (ASTM D 698)
 - 2B. PLACE FILL AT, OR SLIGHTLY ABOVE, THE OPTIMUM MOISTURE CONTENT.
 - 2C. PROVIDE POSITIVE SITE DRAINAGE AWAY FROM BUILDING TO MINIMIZE EXPOSURE OF MOISTURE TO SOILS.
 - 2D. CONSTRUCT COMPACTED FILL MATERIAL OF MAXIMUN 8" THICK LOOSE
 - 2E. PERFORM A MINIMUM OF ONE IN-PLACE DENSITY TEST IN EVERY 5,000 SF FOR EACH 8" THICK LIFT.
 - 2F. MOISTURE CONTENT OF COMPACTED FILL SHOULD BE MAINTAINED AT PLUS OR MINUS 2% OF OPTIMUM MOISTURE
 - 2G. PROVIDE ADEQUATE SURFACE DRAINAGE DURING ALL SITE GRADING AND FILL PLACEMENT OPERATIONS.

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- D. Placing: Place subbase course material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting subbase material during placement operations.
 - 1. When a compacted subbase course is indicated to be 6 inches thick or less, place material in a single layer. When indicated to be more than 6 inches thick, place material in equal layers, except no single layer more than 6 inches or less than 3 inches in thickness when compacted.

3.12 BUILDING SLAB OR PARKING LOT - FILL DRAINAGE COURSE

- A. General: Drainage course consists of placement of drainage fill material, in layers of indicated thickness, over subgrade surface to support concrete building slabs.
- B. Placing: Place drainage fill material on prepared subgrade in layers of uniform thickness, conforming to indicated cross-section and thickness. Maintain optimum moisture content for compacting material during placement operations.
 - 1. When a compacted drainage course is indicated to be 6 inches thick or less, place material in a single layer. When indicated to be more than 6 inches thick, place material in equal layers, except no single layer more than 6 inches or less than 3 inches in thickness when compacted.

3.13 FIELD QUALITY CONTROL

- A. Quality Control Testing During Construction: Allow testing service to inspect and approve each subgrade and fill layer before further backfill or construction work is performed.
 - 1. If in opinion of Architect, based on testing service reports and inspection, subgrade or fills that have been placed are below specified density, perform additional compaction and testing until specified density is obtained.

3.14 EROSION CONTROL

A. Provide erosion control methods in accordance with requirements of authorities having jurisdiction, and as indicated on the drawings.

3.15 MAINTENANCE

- A. Protection of Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades in settled, eroded, and rutted areas to specified tolerances.
- C. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, reshape, and compact to required density prior to further construction.
- D. Settling: Where settling is measurable or observable at excavated areas during general project warranty period, remove surface (pavement, lawn, or other finish), add backfill material, compact, and replace surface treatment. Restore appearance, quality, and condition of surface

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SECTION 02 52 00 - PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes exterior portland cement concrete paving for the following: Walkways, sidewalks, and steps.
 - □ ADA Truncated Dome pavers for accessible ramp locations.
 - □ GALVANIZED CHECKERPLATE METAL PANELS AND ANGLE FRAME FOR DRAINGE FLUMES
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - Division 2 Section "Earthwork" for subgrade preparation, grading and subbase course.
 - 2. Division 3 Section "Cast-in-Place Concrete" for general building applications of concrete.
 - 3. Division 7 Section "Paving Joint Sealants" for joint fillers and sealants within concrete paving and at joints with adjacent construction.

1.3 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Design mixes for each class of concrete. Include revised mix proportions when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Laboratory test reports for evaluation of concrete materials and mix design tests.

1.4 QUALITY ASSURANCE

- A. Concrete Standards: Comply with provisions of the following standards, except where more stringent requirements are indicated.
 - 1. American Concrete Institute (ACI) 301, "Specifications for Structural Concrete for Buildings."
 - 2. ACI 318, "Building Code Requirements for Reinforced Concrete."
 - 3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."
- B. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

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- B. Fly Ash: ASTM C 618, Type F.
- C. Normal-Weight Aggregates: ASTM C 33, Class 4, and as follows. Provide aggregates from a single source.
 - 1. Maximum Aggregate Size: 1-1/2 inches.
 - 2. Do not use fine or coarse aggregates that contain substances that cause spalling.
 - 3. Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Architect. D. Water: Potable.

2.4 ADMIXTURES

- A. Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
- B. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.
- E. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
- F. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, see concrete specification 03010.

2.4A ADA – TRUNCATED DOME ACCESSIBLE PAVERS

- A. WAUSA TILE OR APPROVED EQUAL.
- B. 12" ADA-2 PAVER STRAIGHT ROW 2.375" SPACING
- C. COLOR FY7008 FEDERAL YELLOW
- D. BLOCKOUT FRAME AND EXTENSION AS NECESSARY FOR PROPER INSTALLATION
- E. INSTALL VIA WET SET INSTALLATION SYSTEM
- F. INSTALL UNITS IN STRICT ACCORDANCE WITH THE MANUFACTURERS RECOMMNDATIONS FOR INSTALLATION OF THIS PRODUCT.
- 2.4A CHECKERPLATE GALVANIZED STEEL PLATE & ANGLES TRENCH DRAIN MATERIAL NEENAH R-4996-B1 [SOLID COVER].
 - A. PROVIDE ¼" THICK CHECKERPLATE MATERIAL FOR DRAINGE FLUMES AS DETAILED.
 - B. METAL FABRICATION / 05500 SHALL APPLY TO ALL STEEL MATERIALS TO BE PROVIDED
 - (*). PROVIDE EDGE ANGLES WITH STUDS FOR ANCHORING INTO CONCRETE FORMED MATERIALS AS INDICATED IN THE DETAILS.

2.5 CURING MATERIALS

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- B. Moisture-Retaining Cover: One of the following, complying with ASTM C 171.
 - Polyethylene film.
- C. Clear Solvent-Borne Liquid Membrane-Forming Curing Compound: ASTM C 309, Type I, Class A or B, wax free.
- D. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type I, Class B.

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B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for paving to required lines, grades, and elevations. Install forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.
- B. Check completed formwork and screeds for grade and alignment to following tolerances:
 - 1. Top of Forms: Not more than 1/8 inch in 10 feet.
 - 2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.
- C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

3.3 PLACING REINFORCEMENT

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.
- D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

3.4 JOINTS

- A. General: Construct contraction, construction, and isolation joints true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to the centerline, unless indicated otherwise
 - 1. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.
- B. Contraction Joints: Provide weakened-plane contraction joints, sectioning concrete into areas as shown on Drawings. Construct contraction joints for a depth equal to at least 1/4 of the concrete thickness, as follows:
 - 1. Tooled Joints: Form contraction joints in fresh concrete by grooving and finishing each edge of joint with a radiused jointer tool.
 - 2. Cut Joints: At concrete curb/gutter sections at a maximum of 8' OC. between expansion joints.

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- H. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete.
- When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength.
- J. Cold-Weather Placement: Comply with provisions of ACI 306R and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
- K. Hot-Weather Placement: Place concrete complying with ACI 305R and as specified when hot weather conditions exist.

3.6 CONCRETE FINISHING

- A. Float Finish: Begin floating when bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Finish surfaces to true planes within a tolerance of 1/4 inch in 10 feet as determined by a 10-foot-long straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.
 - 1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across concrete surface perpendicular to line of traffic to provide a uniform fine line texture finish.
- B. Final Tooling: Tool edges of paving, gutters, curbs, and joints formed in fresh concrete with a jointing tool to the following radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces.
 - 1. Radius: 3/8 inch.

3.7 CONCRETE PROTECTION AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendations of ACI 306R for cold weather protection and ACI 305R for hot weather protection during curing.
- B. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before floating.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
 - Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

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- C. Protect concrete from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep concrete paving not more than 2 days prior to date scheduled for Substantial Completion inspections.

END OF SECTION 02 52 00

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SECTION 02 83 20 - CHAIN LINK FENCES AND GATES [CONSTRUCTION FENCING]

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. TEMPORARY CONSTRUCTION FENCING 6' TALL Galvanized-steel chain link fabric and framing.
 - 2. CONTRACTOR SHALL FENCE THE ENTIRE CONSTRUCTION AREA THE CONSTRUCTION PROJECT FOR THE NEW BUILDING WORK.
 - 3. THE IMMEDIATE CONSTRUCTION SITE SHALL BE SECURE FROM PUBLIC ACCESS TO CONSTRUCTION
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 2 Section "Earthwork" for filling and grading work.
 - 2. Division 3 Section "Cast-in-Place Concrete" for concrete for post footings.

1.3 SUBMITTALS

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data in the form of manufacturer's technical data, specifications, and installation instructions for fence and gate posts, fabric, gates, gate operators, and accessories.
- C. Shop drawings showing location of fence, gates, each post, and details of post installation, extension arms, gate swing, hardware, and accessories.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has at least three years' experience and has completed at least five chain link fence projects with same material and of similar scope to that indicated for this Project with a successful construction record of in-service performance.
- B. Single-Source Responsibility: Obtain chain link fences and gates, including accessories, fittings, and fastenings, from a single source.

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- A. Material: Comply with ASTM F 626. Mill-finished aluminum or galvanized iron or steel to suit manufacturer's standards.
- 1. Steel and Iron: Unless specified otherwise, hot-dip galvanize pressed steel or cast-iron fence fittings and accessories with at least 1.2 oz. zinc per sq. ft. as determined by ASTM A 90.
- B. Post and Line Caps: Provide weathertight closure cap for each post. Provide line post caps with loop to receive tension wire or top rail.
- C. Post Brace Assembly: Manufacturer's standard adjustable brace. Use material specified below for brace, and truss to line posts with 3/8-inch-diameter rod and adjustable tightener. Provide manufacturer's standard galvanized-steel, cast-iron or cast-aluminum cap for each end.
 - 1. Round Steel: 1.660-inch OD Type I or II steel pipe coated as posts.
- D. Tension or Stretcher Bars: Hot-dip galvanized steel with a minimum length 2 inches less than the full height of fabric, a minimum cross section of 3/16 inch by 3/4 inch, and a minimum of 1.2 oz. of zinc coating per sq. ft. Provide one bar for each gate and end post, and two for each corner and pull post, except where fabric is integrally woven into the post.
- E. Tension and Brace Bands: 3/4-inch-wide minimum hot-dip galvanized steel with a minimum of 1.2 oz. of zinc coating per sq. ft.
- 1. Tension Bands: 0.074 inch thick (14 gage) minimum.
- 2. Brace Bands: 0.105 inch thick (12 gage) minimum.
- F. Tie Wires: 0.106-inch-diameter (12-gage) galvanized steel with a minimum of 0.80 oz. per sq. ft. of zinc coating according to ASTM A 641, Class 3 or 0.148-inch-diameter (9-gage) aluminum wire alloy 1350-H19 or equal, to match fabric wire.

2.4 CONCRETE

- A. Concrete: Provide concrete consisting of portland cement per ASTM C 150, aggregates per ASTM C 33, and potable water. Mix materials to obtain concrete with a minimum 28-day compressive strength of 3000 psi. Use at least four sacks of cement per cu. yd., 1-inch maximum size aggregate, 3-inch maximum slump.
- B. Packaged Concrete Mix: Mix dry-packaged normal-weight concrete conforming to ASTM C 387 with clean water to obtain a 2- to 3-inch slump.

2.5 GATES

- A. Fabricate perimeter frames of gates from same material and finish as fence framework. Assemble gate frames by welding. Provide horizontal and vertical members to ensure proper gate operation and attachment of fabric, hardware, and accessories. Space frame members maximum of 8 feet apart unless otherwise indicated.
 - 1. Fabric: Same as for fence unless otherwise indicated. Secure fabric at vertical edges with tension bars and bands and to top and bottom of frame with tie wires.

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on security side of fence, and anchor to framework so that fabric remains under tension after pulling force is released.

- G. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not over 15 inches o.c.
- H. Tie Wires: Use wire of proper length to secure fabric firmly to posts and rails. Bend ends of wire to minimize hazard to persons or clothing.
- Maximum Spacing: Tie fabric to line posts 12 inches o.c. and to rails and braces 24 inches o.c.
- Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts for added security.

3.2 GATE INSTALLATION

A. Install gates plumb, level, and secure for full opening without interference. Install ground-set items in concrete for anchorage. Adjust hardware for smooth operation and lubricate where necessary. Install gates according to manufacturer's instructions, plumb, level, and secure.

3.3 ADJUSTING

A. Gates and Gate Operators: After repeated operation of completed installation equivalent to 3 days' use by normal traffic, readjust gates and gate operators and controls for optimum operating condition and safety. Lubricate operating equipment and clean exposed surfaces.

END OF SECTION 02 83 20

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SECTION 02 90 00 - LANDSCAPE / FINAL GRADING - SHRUBS & PLANTINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes provisions for the following items:
 - 1. Final grading.
 - 2. Prepare Planting Beds
 - 3. Top Soil Placement and Soil Amendments
 - 4. Lawns Sodding.
 - 5. Reconditioning, repair, or rework of existing lawn areas that are damaged during construction.
 - 6. Landscape edgings, and mulched river gravel bed area.
 - 7. RAIN GARDEN SOILS MIX FOR DRAINAGE AREAS AS INDICATED
 - 8. NONWOVEN SOD STABILIZATION MATERIAL @ STORM DRAINAGE OVERFLOW AREA.
 - 9. POLYETHELENE BARRIER MATERIAL
 - 10. PLANT MATERIALS NOTED BELOW
- B. The plant material and installation of related landscape materials. This Section does include provisions for the following items:
 - 1. Shrubs.
 - 2. Ground covers.
 - 3. Plants.
 - 4. Fertilizers

1.5 JOB CONDITIONS

- A. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until removal is mutually agreed upon by parties concerned.
- B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Architect before planting.

1.6 SEQUENCING AND SCHEDULING

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1. Maintenance Period: 3 months following Substantial Completion.

1.10 GROUND COVER AND PLANT MAINTENANCE

- A. Maintain ground cover and plants by watering, weeding, fertilizing, and other operations as required to establish healthy, viable plantings for the following period:
 - 1. Maintenance Period: 3 months following Substantial Completion.

PART 2 - PRODUCTS

2.1 TOPSOIL MINIMUM DEPTH 12" (GOOD CLEAN TOPSOIL – NO GRAVEL) OVER ALL PLANTING BEDS OR LAWN AREAS

- A. Topsoil may be stockpiled for re-use in landscape work. If quantity of stockpiled topsoil is insufficient, provide additional topsoil as required to complete landscape work.
- B. Topsoil Source: PROVIDE NEW TOPSOIL MATERIAL SINCE THERE WILL NOT BE SUFFICIENT MATERIAL ON SITE. Verify suitability of surface soil to produce topsoil meeting requirements and amend when necessary. Supplement with imported topsoil when quantities are insufficient. Clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.
 - 2. Topsoil Source: Import topsoil from off-site sources. Obtain topsoil from naturally well-drained sites where topsoil occurs at least 4 inches (100 mm) deep; do not obtain from bogs or marshes.
 - 3. Topsoil Source: Amend existing surface soil to produce topsoil.

 Supplement with imported topsoil when required.

2.1A RAIN GARDEN TOPSOIL MIX - MINIMUM DEPTH 12" OVER FRENCH DRAIN OR - STORM DRAINAGE LAWN AREAS INDICATED

- A. Raingarden Topsoil Medium shall consist of well blended, homogenous mixture of 60-70% construction sand, 10-20% topsoil, and 20-30% organic leaf composte:
 - SAND Provide clean construction sand, free of deleterious materials. ASHTO M-6 or ASTM C-33 with grain size of 0.02"-0.04".
 - TOPSOIL Sandy Loam, Loamy Sand, or loam texture per USDA textural triangle with less than 5% clay content.
 - COMPOST Mn/DOT Grade 2

2.2 SOIL AMENDMENTS

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proportions and minimum percentages of purity, germination, and maximum percentage of weed seed, as specified.

- 1. 75% Finelawn Fescue and 25% Perennial Ryegrass.
- B. Sod: Provide strongly rooted sod, not less than 2 years old, free of weeds and undesirable native grasses, and machine cut to pad thickness of 3/4 inch (plus or minus 1/4 inch), excluding top growth and thatch. Provide only sod capable of vigorous growth and development when planted (viable, not dormant).
 - Provide sod of uniform pad sizes with maximum 5 percent deviation in either length or width.
 Broken pads or pads with uneven ends will not be acceptable. Sod pads incapable of supporting
 their own weight when suspended vertically with a firm grasp on upper 10 percent of pad will be
 rejected.
 - Provide sod composed principally of following:
 - Finelawn Fescue.

2.9 MISCELLANEOUS MATERIALS

- D. Provide the miscellaneous materials necessary to prepare, provide and install the materials under the contract.
- E. North American Green Sod Stabilization Mat shall be installed per manufacturer's specifications in location of the storm drainage overflow area that will be sodded.

A.28 WEED-CONTROL BARRIERS + STORM DRAINAGE STABILIZATION MATERIAL

- A.29 STORM DRAINAGE Nonwoven Fabric: NORTH AMERICAN GREEN EROSION

 CONTROL MAT Polypropylene or polyester fabric, 4 oz. per sq. yd. (100 g per sq. m) minimum.
- **A.30** WEED CONTROL BARRIERS Composite Fabric: Woven, needle-punched polypropylene substrate bonded to a nonwoven polypropylene fabric, 4.8 oz. per sq. yd. (160 g per sq. m).

A.28 POLYETHELENE BARRIERS

A.29 MIN 15 MIL POLYETHELENE BARRIER MATERIAL FOR BOTTOM OF DRAINAGE GRAVEL BED AREA IN DETAILS INDICATED. OVERLAP AND SEAL ALL JOINTS

A.25 MULCHES

A.26 Organic Mulch: Organic mulch, free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following: A.27 Type: Shredded hardwood.

2.8 LANDSCAPE EDGINGS

A. ALUMINUM Edging: ASTM A 569 (ASTM A 569M), rolled edge, extruded standard aluminum edging, 6063 alloy, T-6 hardness edging for straight line installation. Fabricated in sections with

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- 2. Place approximately 1/2 of total amount of top soil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil. Add specified soil amendments and mix thoroughly into upper 4 inches of topsoil.
- B. Preparation of Unchanged Grades: Where lawns are to be planted in areas that have not been altered or disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: Till to a depth of not less than 6 inches. Apply soil amendments and initial fertilizers as specified. Remove high areas and fill in depressions. Till soil to a homogenous mixture of fine texture, free of lumps, clods, stones, roots and other extraneous matter.
 - 1. Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Dispose of such material outside of Owner's property. Do not turn existing vegetation over into soil being prepared for lawns.
 - 2. Allow for sod thickness in areas to be sodded.
- C. Fine grade lawn areas to smooth, even surface with loose, uniformly fine texture. Roll, rake, and drag lawn areas, remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas which can be planted immediately after grading.
- D. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface moisture to dry before planting lawns. Do not create a muddy soil condition.
- E. Restore lawn areas to specified condition, if eroded or otherwise disturbed, after fine grading and prior to planting.
- F. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
- G. Fill excavations for trees and shrubs with water and allow water to percolate out prior to planting.

3.2 PLANTERS AND BEDS

- A. Planters: Place at least a 4-inch (100-mm) layer of gravel in bottom of planters, cover with nonwoven fabric, and fill with planter soil mixture. Place soil in lightly compacted layers to an elevation of 1-1/2 inches (38 mm) below top of planter, allowing natural settlement.
 - 1. Planter Soil Mixture: 1 part topsoil, 1 part coarse sand, 1 part peat humus, and 3 lb (1.4 kg) dolomitic limestone per cu. yd. (cu. m) of mix.

3.3 PLANTING SOIL PREPARATION

- A. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.
- B. Mix soil amendments and fertilizers with topsoil at rates indicated. Delay mixing fertilizer if planting does not follow placing of planting soil within a few days.
- C. For tree pit or trench backfill, mix planting soil before backfilling and stockpile at site.

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3.5 RECONDITIONING EXISTING LAWNS

- A. Recondition existing lawn areas damaged by Contractor's operations including storage of materials and equipment and movement of vehicles. Also recondition existing lawn areas where minor regrading is required.
- B. Provide fertilizer, seed or sod, and soil amendments as specified for new lawns, and as required, to provide a satisfactorily reconditioned lawn.
- C. Provide new topsoil, as required, to fill low spots and meet new finish grades.
- D. Cultivate bare and compacted areas thoroughly to provide a satisfactory planting bed.
- E. Remove diseased and unsatisfactory lawn areas; do not bury into soil. Remove topsoil containing foreign materials resulting from Contractor's operations, including oil drippings, stone, gravel, and other loose building materials.
- F. Where substantial lawn remains, but is thin, mow, rake, aerate if compacted, fill low spots, remove humps, and cultivate soil, fertilize, and seed. Remove weeds before seeding, of if extensive, apply selective chemical weed killers as required. Apply a seedbed mulch, if required, to maintain moist condition.
- G. Water newly planted lawn areas and keep moist until new grass is established.

3.7 CLEANUP AND PROTECTION

- A. During landscape work, keep pavements clean and work area in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.18 INSPECTION AND ACCEPTANCE

- A. When landscape work is completed, including maintenance, Architect will, upon request, make an inspection to determine acceptability.
 - 1. Landscape work may be inspected for acceptance in portions as agreeable to Architect, provided each portion of work offered for inspection is complete, including maintenance.
- B. When inspected landscape work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by Architect and found to be acceptable. Remove rejected plants and materials promptly from project site.

3.19 DISPOSAL OF SURPLUS AND WASTE MATERIALS

1. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the Owner's property.

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- C. Samples: Submit samples of materials as specified and as otherwise requested by Architect, including names, sources and descriptions.
- D. Laboratory Test Reports: Submit laboratory test reports for concrete materials and mix design test as specified.
- E. Material Certificates: Provide materials certificates in lieu of materials laboratory test reports when permitted by Architect. Material certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements.

PART 2 - PRODUCTS

1. Form Materials:

- A. Forms for Exposed Finish Concrete: Unless otherwise indicated, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.
 - 1. Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled an edge-sealed, with each piece bearing legible inspection trademark.
- B. Forms for Unexposed Finish Concrete: Form concrete surfaces which will be unexposed in finished structure with plywood, lumber, metal or other acceptable material. All lumber used must be dressed on at least 2 edges and one side to insure a tight fit.
- C. Form Coatings: Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will impair subsequent treatments of concrete surfaces.

2. Reinforcing Materials:

- A. Recycled Content of Steel Products: Provide products with an average recycled content of steel products so postconsumer recycled content plus one-half of preconsumer recycled content is not less than 25 percent.
- B. Reinforcing Bars (Rebar): ANSI/ASTM A 615, Grade 60, deformed.
- C. Steel Wire: ANSI/ASTM A 82, plain, cold-drawn, steel.
- D. Welded Wire Fabric (WWF): ASTM A 185, welded steel wire fabric (flat sheets).
- E. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use wire bar type supports complying with CRSI recommendations, unless otherwise acceptable.

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- E. Liquid Membrane-Forming Curing Compound: ASTM C 1315, Type 1, Class A.
- 1. Provide a curing compound compatible with floor sealers and floor finishes in areas to receive sealer and finishes. See Division 9 and room finish schedule for type of floor sealer and finishes.
 - F. Expansion Joint Material:
 - 1. Type F by Sonneborn for exterior slab conditions.
 - 2. Self-adhesive bond break material and interior slab conditions.
- 5. Proportioning and Design of Mixes:
 - A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to Architect for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing unless otherwise acceptable to Architect.
 - B. Submit written reports to Architect of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Architect.
 - C. Design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules.
 - 1. 4000 psi 28-day compressive strength; 520 lbs. cement per cu. yd. minimum; W/C ratio, 0.46 max. Combined fly ash and Pozzolan: 25% max (by weight). Fly ash substitution only permitted in slabs.
 - D. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Architect before using in work.

E. Admixtures:

- 1. Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having air content within following limits:
 - a. Concrete structures and slabs exposed to freezing and thawing or subjected to hydraulic pressure:

3% to 5% for maximum 1" aggregate.

b. Other Concrete:

2% to 4% air.

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- D. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.
- E. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar. Locate temporary openings on forms at inconspicuous locations.
- F. Chamfer exposed corners and edges as indicated, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- G. Form Ties: Factory-fabricated, adjustable-length, removable or snapoff metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.
 - 1. Unless otherwise indicated, provide ties so portion remaining within concrete after removal is at least 1-1/2" inside concrete.
 - 2. Unless otherwise shown, provide form ties which will not leave holes larger than 1" diameter in concrete surface.
- H. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.
- I. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

2. Placing Reinforcement:

- A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.
- C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
- D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

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- C. General: Comply with ACI 304, and as herein specified. Deposit concrete continuously or in layers of such thickness that no concrete will placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.
- D. Placing Concrete in Forms: Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
- E. Consolidate placed concrete by mechanical vibrating equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.
- F. Do not use vibrators to transport concrete inside form. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.
- G. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
- H. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
- 1. Bring slab surfaces to correct level with straightedge and strikeoff. All interior slabs shall pitch to floor drains (if drains are indicated on Architectural or Mechanical or Structural Drawings). All exterior slabs shall drain away from the building and shall not pond any water. Do not set screeds off metal deck setting on steel beams. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
- J. Maintain reinforcing in proper position during concrete placement operations.
- K. Cold Weather Placing: Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.
- L. When air temperature has fallen to or is expected to fall below 40 degrees (F), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees (F), and not more than 80 degrees (F) at point of placement.
- M. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
- N. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs. Non-chloride accelerators may be used if submitted and approved in the design mix.

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- G. Chemical-Hardener Finish: Apply chemical-hardener finish to interior concrete floors where indicated by the Architect on the Room Finish Schedule. Apply liquid chemical-hardener after complete curing and drying of the concrete surface. Dilute liquid hardener with water, and apply in 3 coats; first coat, 1/3-strength; second coat, 1/2-strength; third coat, 2/3-strength. Evenly apply each coat, and allow 24 hours for drying between coats.
 - 1. Apply proprietary chemical hardeners, in accordance with manufacturer's printed instructions.
 - 2. After final coat of chemical-hardener solution is applied and dried, remove surplus hardener by scrubbing and mopping with water.

8. Concrete Curing and Protection:

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
- C. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.
- D. Curing Methods: Perform curing of concrete by moist curing, by moisture-retaining cover curing, by curing compound, and by combinations thereof, as herein specified.
- E. Provide moisture curing by following methods.
 - 1. Keep concrete surface continuously wet by covering water.
 - 2. Continuous water-fog spray.
 - 3. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.
- F. Provide moisture-cover curing as follows: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
- G. Provide curing compound to slabs as follows:
 - 1. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuously operation by powerspray or roller in accordance with manufacturer's directions. Recoat areas subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during period.

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11. Inspection:

Concrete shall not be placed over pipes, conduits, etc. until such work has been tested, inspected and approved. No concrete shall be deposited until the Architect has inspected the forms and placing of steel reinforcement and given permission to place concrete.

12. Notifying Other Trades:

This Contractor shall notify the Mechanical and Electrical Contractors, and all other Contractors, at the proper time to install all conduits, pipes, pipe sleeves, anchors, or other equipment coming under their respective contracts in the form work.

13. Miscellaneous Concrete Items:

- A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.
- B. Equipment Bases and Foundations: Provide machine and equipment bases and foundations, as shown on drawings. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.

14. Concrete Surface Repairs:

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to Architect.
- B. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
- C. For exposed-to-view surfaces, blend white portland cement and standard portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- D. Repair of Formed Surfaces: Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of Architect. Surface defects, as such, include color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets, fins and other projections on surface; and stains and other discolorations that cannot be removed by cleaning. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.
- E. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.

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- 4. Compression Test Specimen: ASTM C 31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.
- 5. Compressive Strength Tests: ASTM C 39; one set for each 100 cu. yds. or fraction thereof, of each concrete class placed in any one day or for each 5000 sq. ft. of surface area placed; 1 specimen tested at 7 days, 2 specimen tested at 28 days, and one specimen retained in reserve for later testing if required.
- 6. When frequency of testing will provide less than 5 strength tests for a given class of concrete, conduct testing from at least 5 randomly selected batches or from each batch if fewer than 5 are used.
- When total quantity of a given class of concrete is less than 50 cu. yds., strength test may be waived by Architect if, in his judgement, adequate evidence of satisfactory strength is provided.
- 8. When strength of field-cured cylinders is less than 85 % of companion laboratory-cured cylinders, evaluate current operations and provide corrective procedures for protecting and curing the in-place concrete.
- Strength level of concrete will be considered satisfactory if averages of sets of three
 consecutive strength test results equal or exceed specified compressive strength, and no
 individual strength test result falls below specified compressive by more than 500 psi.
- B.Test results will be reported in writing to Architect, Structural Engineer, and Contractor on same day that tests are made. Reports of compressive strength test shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 7-day tests and 28-day tests.
- C.Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor shall pay for such test required, when unacceptable concrete is verified.

END OF SECTION 03 30 00

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1.4 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
 - Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used, net amount of preservative retained, and chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
 - Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials, both before and after exposure to elevated temperatures when tested according to ASTM D 5516 and ASTM D 5664.
 - 3. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 - 4. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the American Lumber Standards Committee Board of Review.
- C. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
 - 1. Preservative-treated wood.
 - 2. Fire-retardant-treated wood.
 - 3. Engineered wood products.
 - 4. Power-driven fasteners.
 - 5. Powder-actuated fasteners.
 - 6. Expansion anchors.
 - 7. Metal framing anchors.
 - 8. Building wrap.

1.5 QUALITY ASSURANCE

- A. Source Limitations for Engineered Wood Products: Obtain each type of engineered wood product through one source from a single manufacturer.
- B. Source Limitations for Fire-Retardant-Treated Wood: Obtain each type of fire-retardant-treated wood product through one source from a single producer.

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- 1. Plywood: [DOC PS 1], unless otherwise indicated].
- Thickness: As needed to comply with requirements specified but not less than thickness indicated.
- Comply with "Code Plus" provisions in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial."
- 4. Factory mark panels according to indicated standard.

2.3 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: [AWPA C2 (lumber)] [and] [AWPA C9 (plywood)], except that lumber that is not in contact with the ground and is continuously protected from liquid water may be treated according to AWPA C31 with inorganic boron (SBX).
 - 1. Preservative Chemicals: Acceptable to authorities having jurisdiction.
 - 2. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.
- B. Kiln-dry material after treatment to a maximum moisture content of [19 percent for lumber] [and] [15 percent for plywood]. Do not use material that is warped or does not comply with requirements for untreated material.
- C. Mark each treated item with the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
 - 1. For exposed lumber indicated to receive a stained or natural finish, mark end or back of each piece, or omit marking and provide certificates of treatment compliance issued by inspection agency.
- D. Application: Treat items indicated on Drawings, and the following:
 - 1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
 - 2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
 - 3. Wood floor plates that are installed over concrete slabs directly in contact with earth.

2.4 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, provide materials that comply with performance requirements in [AWPA C20 (lumber)] [and] [AWPA C27 (plywood)]. Identify fire-retardant-treated wood with appropriate classification marking of UL, U.S. Testing, Timber

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- B. For items of dimension lumber size, provide [Construction, Stud, or No. 2grade lumber with [19] percent maximum moisture content and [any] species:
- C. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.7 SHEATHING

- A. Plywood Roof Sheathing: [Exterior] [Exposure 1] sheathing.
 - 1. Span Rating: Not less than [24/0].
 - 2. Thickness: Not less than [3/4"]
 - 3. Fire Retardant Rated material
 - 4. Provide non-corrosive screw fasteners per structural requirements
- B. Plywood Floor Sheathing: [Exterior] [Exposure 1] sheathing.
 - 1. Span Rating: Not less than [16/0].
 - 2. Thickness: Not less than [3/4"]
 - 3. Fire Retardant Rated material
 - 4. Provide non-corrosive screw fasteners per structural requirements

2.8 PLYWOOD BACKING PANELS

A. MECHANICAL ROOM AND Telephone and Electrical Equipment Backing Panels:

DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or, if not indicated, not less than 1/2 inch (12.7 mm) thick.

2.9 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
 - 1. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M of Type 304 stainless steel. B. Nails, Brads, and Staples: ASTM F 1667.
- B. Power-Driven Fasteners: CABO NER-272.
- C. Wood Screws: ASME B18.6.1.

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- C. Bridging: Rigid, V-section, nailless type, 0.062 inch (1.6 mm) thick, length to suit joist size and spacing.
- D. Joist Ties: Flat straps, with holes for fasteners, for tying joists together over supports.
 - 1. Width: [1-1/4 inches (32 mm)].
 - 2. Thickness: [0.062 inch (1.6 mm)].
 - 3. Length: [24 inches (600 mm)] [As indicated].
- E. Truss / Rafter Tie-Downs: Bent strap tie for fastening rafters or roof trusses to wall studs below, 1-1/2 inches (38 mm) wide by 0.050 inch (1.3 mm) thick. [Tie fastens to side of rafter or truss, face of top plates, and side of stud below.]

Truss / Rafter Tie-Downs (Hurricane or Seismic Ties): Bent strap tie for fastening rafters or roof trusses to wall studs below, 2-1/4 inches (57 mm) wide by 0.062 inch (1.6 mm) thick. Tie fits over top of rafter or truss and fastens to both sides of rafter or truss, face of top plates, and side of stud below. SIMPSON H2.5 FOR ALL TRUSSES

- Floor-to-Floor Ties: Flat straps, with holes for fasteners, for tying upper floor wall studs to band joists and lower floor studs, 1-1/4 inches (32 mm) wide by 0.050 inch (1.3 mm) thick by 36 inches (914 mm) long.
- G. PLYWOOD ROOF SHEATHING FIRE RETARDANT
 - Provide acceptable non-corrosive screw fasteners per structural requirements

2.11 MISCELLANEOUS MATERIALS

- A. **Building Wrap:** Air-retarder sheeting made from polyolefins; cross-laminated films, woven strands, or spun-bonded fibers; coated or uncoated; with or without perforations; and complying with ASTM E 1677, Type I.
 - 1. Thickness: Not less than 3 mils (0.08 mm).
 - 2. Permeance: Not less than 10 perms (575 ng/Pa x s x sq. m).
 - 3. Flame-Spread Index: 25 or less per ASTM E 84.
 - 4. Allowable Exposure Time: Not less than three months.
- B. **Building Wrap Tape**: Pressure-sensitive plastic tape recommended by building wrap manufacturer for sealing joints and penetrations in building wrap.
- C. **Sheathing Tape:** Pressure-sensitive plastic tape for sealing joints and penetrations in sheathing and recommended by sheathing manufacturer for use with type of sheathing required.

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- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated. Build anchor bolts into masonry during installation of masonry work. Where possible, secure anchor bolts to formwork before concrete placement.
- C. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches (38 mm) wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 WOOD FURRING INSTALLATION

- A. Install level and plumb with closure strips at edges and openings. Shim with wood as required for tolerance of finish work.
 - 1. Fire block furred spaces of walls, at each floor level and at ceiling, with wood blocking or noncombustible materials accurately fitted to close furred spaces.
- B. Furring to Receive Gypsum Board: Install 1-by-2-inch nominal- (19-by-38-mm actual-) size furring vertically at 16 inches (406 mm) o.c.

3.4 WOOD FRAMING INSTALLATION, GENERAL

- A. Framing Standard: Comply with AFPA's "Manual for Wood Frame Construction," unless otherwise indicated.
- B. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.
- C. Do not splice structural members between supports.
- D. Where built-up beams or girders of 2-inch nominal- (38-mm actual-) dimension lumber on edge are required, fasten together with 2 rows of 20d (100-mm) nails spaced not less than 32 inches (812 mm) o.c. Locate one row near top edge and other near bottom edge.
 - 1. For continuous members, [stagger end joints at quarter points between supports] [locate end joints over supports].

3.5 WALL AND PARTITION FRAMING INSTALLATION

A. General: Arrange studs so wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel. Provide single bottom plate and double top plates using members of 2-inch nominal (38-mm actual) thickness whose widths equal that of studs, except single top plate may be used for non-load-bearing partitions. Anchor [or nail] plates to supporting construction, unless otherwise indicated.

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- 1. Where ceiling joists are at right angles to rafters, provide additional short joists parallel to rafters from wall plate to first joist; nail to ends of rafters and to top plate and nail to first joist or anchor with framing anchors or metal straps 2-by-4-inch nominal size stringers spaced 48 inches (1200 mm) o.c. crosswise over main ceiling joists.
- B. Rafters: Notch to fit exterior wall plates and **toe nail and** use metal framing anchors. Double rafters to form headers and trimmers at openings in roof framing, if any, and support with metal hangers. Where rafters abut at ridge, place directly opposite each other and nail to ridge member or use metal ridge hangers.
 - 1. At valleys, provide double-valley rafters of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches (50 mm) deeper. Bevel ends of jack rafters for full bearing against valley rafters.
 - 2. At hips, provide hip rafter of size indicated or, if not indicated, of same thickness as regular rafters and 2 inches (50 mm) deeper. Bevel ends of jack rafters for full bearing against hip rafter.
- C. Provide collar beams (ties) as indicated or, if not indicated, provide 1-by-6-inch nominal- (19by-140-mm actual-) size boards between every third pair of rafters, but not more than 48 inches (1219 mm) o.c. Locate below ridge member, at third point of rafter span. Cut ends to fit roof slope and nail to rafters.
- D. Provide special framing as indicated for eaves, overhangs, dormers, and similar conditions, if any.

3.7 WOOD STRUCTURAL PANEL INSTALLATION

- A. General: Comply with applicable recommendations contained in APA Form No. E30K, "APA Design/Construction Guide: Residential & Commercial," for types of structural-use panels and applications indicated.
 - 1. Comply with "Code Plus" provisions in above-referenced guide.
 - B. Fastening Methods: Fasten panels as indicated below:
 - 1. Roof Sheathing:
 - a. [SCREWS] to wood framing with non-corrosive screws appropriate to the installation indicated submit for approval prior to application.
 - b. Space panels 1/8 inch (3 mm) apart at edges and ends.
 - 2. Plywood Backing Panels: Nail or screw to supports.

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SECTION 06 40 20 - INTERIOR ARCHITECTURAL WOODWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Laminate clad cabinets (plastic-covered casework).
 - 2. Plastic Laminate material countertops and miscellaneous.
 - 3. Plastic Laminate Re-Cover system for re-lamination of existing laminate cabinets
 - 4. Flush wood paneling and cabinets for paint finish or natural stain/seal finish
 - 5. Hardware and accessories
 - 6. Computer articulated keyboard trays
 - Caulk base of all cabinets new or replaced to the floor prior to the addition rubber base.

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Shop drawings showing location of each item, dimensioned plans and elevations, large-scale details, attachment devices, and other components.
 - 1. Apply AWI Certified Compliance Label to first page of shop drawings.
- C. Samples for initial selection purposes of the following in form of manufacturer's color charts consisting of actual units or sections of units showing full range of colors, textures, and patterns available for each type of material indicated.
 - 1. Plastic laminate.
 - 2. Solid surfacing material.
- D. Samples for verification purposes of the following:
 - 1. Lumber with or for transparent finish, 50 square inches, for each species and cut, finished on one side and one edge.
 - 2. Wood veneer faced panel products; with or for transparent finish, 8-1/2 inches by 11 inches, for each species and cut with one half of exposed surface finished, with separate samples of unfaced panel product used for core.
 - 3. Exposed cabinet hardware, one unit of each type and finish.

1.4 QUALITY ASSURANCE

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4. Wilsonart

2.2 MATERIALS

A. General: Provide materials that comply with requirements of the AWI woodworking standard for each type of woodwork and quality grade indicated and, where the following products are part of woodwork, with requirements of the referenced product standards, that apply to product characteristics indicated:

1. Hardboard: ANSI/AHA A135.4

2. High Pressure Laminate: NEMA LD 3.

Particleboard: ANSI A208.1
 Softwood Plywood: PS 1.

2.3 FABRICATION, GENERAL

- A. Wood Moisture Content: Comply with requirements of referenced quality standard for moisture content of lumber in relation to relative humidity conditions existing during time of fabrication and in installation areas.
- B. Fabricate woodwork to dimensions, profiles, and details indicated. Ease edges to radius indicated for the following:
 - 1. Corners of cabinets and edges of solid wood (lumber) members less than 1 inch in nominal thickness: 1/16 inch.
 - Edges of rails and similar members more than 1 inch in nominal thickness: 1/8 inch.
- C. Complete fabrication, including assembly, finishing, and hardware application, before shipment to project site to maximum extent possible. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.
- D. Factory-cut openings, to maximum extent possible, to receive hardware, appliances, plumbing fixtures, electrical work, and similar items. Locate openings accurately and use templates or roughing-in diagrams to produce accurately sized and shaped openings. Smooth edges of cutouts and, where located in countertops and similar exposures, seal edges of cutouts with a water-resistant coating.

2.4 WOOD MATERIALS

- A. Wood Species and Cut for Transparent Finish: [MAPLE, plain sawn or sliced]
- B. Wood Species for Opaque Finish: Poplar, S4S, FAS
- C. Plywood Species for Cabinets and Paneling for Transparent Finish: [MAPLE or OAK Veneer Plywood], Plain Sliced, Book Matched, Grade A, (provide fire retardant core panels for Class 1 or A (0-25) fire rating, AWI-500A-G-1, flush wood veneer paneling, provide veneer edge treatment where edge of panel is visible, AWI-500B-S-4.

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- B. Hardware Standard: Comply with ANSI/BHMA A156.9 "American National Standard for Cabinet Hardware" for items indicated by reference to BHMA numbers or referenced to this standard.
- C. Exposed Hardware Finishes: For exposed hardware, provide finish that complies with ANSI/BHMA A156.18 for BHMA code number indicated.
 - 1. Brushed Chrome, 4" wire pulls, typical
- D. For concealed hardware provide manufacturer's standard finish that complies with product class requirements of ANSI/BHMA A156.9.
- E. Keyed locks of material to match the pulls, keyed separately for lockable doors and/or drawers. Provide additional frames to lock cabinets indicated.

2.7 HARDWARE SCHEDULE

- 1. Pulls: Trimco, 562-4 x 625, stainless steel where wire pulls indicated
- 2. Hinges: Fully concealed, adjustable, allowing for 110 degree opening.
- 3. Drawer Guides: Full extension, side mounted, heavy duty, ball bearing nylon roller, guides. For file drawers provide heavy duty, full extension file drawer slides.
- 4. Closet Rods Knape & Vogt, KV #880-CHR, 18Ga. Steel, with #881 flange brackets.
- Locks: Standard, 5 pin or disc type tumbler locks, (National Cabinet Lock), C8055 Cam Lock, CHROME Finish to match pulls. [PROVIDE A TOTAL OF [8] LOCKS TO BE FIELD LOCATED] Keying of locks to be determined by Architect.
- 6. Shelf Supports: provide slotted type standards for fully adjustable shelving where indicated, with standard brackets with uniform load of 40 lb, per SF.
- 7. Cable Covers: Provide HAFFLE brand cable covers, model # 429.99, (2-3/8") color to be selected by Architect, where indicated on the drawings. [PROVIDE A TOTAL OF [36] CABLE COVERS TO BE FIELD LOCATED]
- 16. PROVIDE ADJUSTABLE KEYBOARD TRAYS AS SHOWN ECONOMY ADJUSTABLE SHELF, MODEL #HBC5988P, WITH WRIST WREST, AS SUPPLIED BY GLOBAL.

 COMPUTER SUPPLIES, 175 AMBASSADOR DR., DEPT. HB, NAPERVILLE, IL 60540, PHONE [800] 227-1246

2.8 ARCHITECTURAL CABINET TOPS (COUNTERTOPS)

- A. Quality Standard: Comply with AWI Section 400 and its Division 400C.
- B. Type of Top: High pressure decorative laminate complying with the following:
 - 1. Grade: Custom.
 - 2. Laminate Cladding for Horizontal Surface: High pressure decorative laminate as follows:
 - a. Colors, Patterns, and Finishes: Provide materials and products that result in colors and textures of exposed laminate surfaces complying with the following requirements:
 - 1) Provide selections made by Architect from manufacturer's full range of standard colors and finishes in the following categories:
 - a) Solid colors.
 - b) Patterns.
 - b. Grade: GP-50 (0.050-inch nominal thickness).

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1. Grade: Custom.

- 2. Provide stained and clear sealer finish to match the existing circulation desk. The fabricator shall be responsible for determining the proper finish and stains to match the new casework to the existing.
- 3. Staining: Match approved sample for color.

Effect: Open grain.
 Sheen: Match existing.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Condition woodwork to average prevailing humidity conditions in installation areas before installing.
- B. Deliver concrete inserts and similar anchoring devices to be built into substrates well in advance of time substrates are to be built.
- C. Before installing architectural woodwork, examine shop-fabricated work for completion and complete work as required, including back priming and removal of packing.

3.2 INSTALLATION

- A. Quality Standard: Install woodwork to comply with AWI Section 1700 for same grade specified in Part 2 of this section for type of woodwork involved.
- B. Quality Standard: Install woodwork to comply with WIC Section 26 for same grade specified in Part 2 of this section for type of woodwork involved.
- C. Install woodwork plumb, level, true, and straight with no distortions. Shim as required with concealed shims. Install to a tolerance of 1/8 inch in 8'-0" for plumb and level (including tops) and with no variations in flushness of adjoining surfaces.
- D. Scribe and cut woodwork to fit adjoining work and refinish cut surfaces or repair damaged finish at cuts.
- E. Anchor woodwork to anchors or blocking built in or directly attached to substrates. Secure to grounds, stripping and blocking with countersunk, concealed fasteners and blind nailing as required for a complete installation. Except where prefinished matching fastener heads are required, use fine finishing nails for exposed nailing, countersunk and filled flush with woodwork and matching final finish where transparent finish is indicated.
- F. Standing and Running Trim and Rails: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to the greatest extent possible. Stagger joints in adjacent and related members. Cope at returns and miter at corners.

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SECTION 06 61 00 - SOLID SURFACE SHOWER SURROUNDS

PART 1 - GENERAL

1.01 SUMMARY

A. Shower Receptors and Shower Systems from Manufacturer's Standard Sizes

1.02 REFERENCES

A. American National Standards Institute (ANSI)

1.03 SYSTEM DESCRIPTION

- A. Performance Requirements: Provide shower receptors and shower systems that conform to the following requirements of regulatory agencies and the quality control of Inpro® Corporation.
 - Provide shower receptors and shower systems that conform to ANSI Z124.1.2-2005 when tested for workmanship and finish, structural integrity and material characteristics.

1.04 SUBMITTALS

- A. Product Data: Manufacturer's printed product data for each type of shower receptor and shower system specified.
- B. Samples: Verification samples minimum of 3" x 3" samples indicating color and pattern.
- C. Manufacturer's Installation Instruction: Printed installation instructions for shower receptors and shower systems.

1.05 DELIVERY, STORAGE, & HANDLING

- A. Deliver materials in unopened factory packaging to the jobsite.
- B. Inspect materials at delivery to assure that specified products have been received.
- C. Store in original packaging in an interior climate-controlled location away from direct sunlight.

1.06 PROJECT CONDITIONS

A. Environmental Requirements: Products must be installed in an interior climate-controlled environment.

1.07 WARRANTY

A. Standard Prism™ Solid Surface Limited 10 Year Warranty against material and manufacturing defects.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Basis-Of-Design Product: Inpro Corporation
 - 1. Submit comparable products of one the following for approval by architect:
 - Submit requests for substitution in accordance with Instructions to Bidders and Division 01
 General Requirements
 - b. Provide specified product; Owner will not consider substitution requests.

2.02 MANUFACTURED UNITS

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A. General: Install components plumb and level, scribe adjacent finishes, in accordance with approved shop drawings and recommended installation instructions.

3.04 CLEANING

A. At completion of the installation, clean surfaces in accordance with the manufacturer's clean-up and maintenance instructions.

END OF SECTION

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- C. Product test reports from and based on tests performed by qualified independent testing laboratory evidencing compliance of insulation products with requirements including r-values (aged values for plastic foam insulations), fire performance characteristics, perm ratings, water absorption ratings, and other properties, based on comprehensive testing of current products.
- D. Research reports or evaluation reports of the model code organization acceptable to authorities having jurisdiction that evidence compliance of plastic foam insulations with building code in effect for Project.

1.5 QUALITY ASSURANCE

- A. Fire Performance Characteristics: Provide insulation materials identical to those whose indicated fire performance characteristics have been determined per the ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing and inspecting organization.
 - 1. Surface Burning Characteristic: ASTM E 84.
 - 2. Fire Resistance Ratings: ASTM E 119.
 - 3. Combustion Characteristics: ASTM E 136.
- B. Single-Source Responsibility for Insulation Products: Obtain each type of building insulation from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect insulation materials from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's recommendations for handling, storage, and protection during installation.
- B. Protect plastic insulation as follows:
 - 1. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
 - 2. Protect against ignition at all times. Do not deliver plastic insulating materials to project site ahead of installation time.
 - 3. Complete installation and concealment of plastic materials as rapidly as possible in each area of construction.

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- TAPE ALL JOINTS with 3" wide tape materials approved by the manufacturer for this installation.
- C. MISC INFILL INSULATION MATERIAL Unfaced Mineral Fiber Blanket/Batt Insulation: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type I (blankets without membrane facing); and as follows:
 - L. Mineral Fiber Type: Fibers manufactured from glass.
 - 2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.
- D. WALL INSULATION Faced Mineral Fiber Blanket/Batt Insulation: Thermal insulation produced by combining mineral fibers of type described below with thermosetting resins to comply with ASTM C 665 for Type III, Class A (blankets with foil reflective vapor-retarder membrane facing with flame spread of 25 or less); foil-scrim-kraft membrane on one face, and as follows:
 - 1. Mineral Fiber Type: Fibers manufactured from glass.
 - 2. Surface Burning Characteristics: Maximum flame spread and smoke developed values of 25 and 50, respectively.
 - 3. Flanged Units: Provide blankets/batts fabricated with facing incorporating 4inch-wide flanges along their edges for attachment to framing members.
 - 4. TAPE ALL JOINTS with 3" wide tape materials approved by the manufacturer for this installation.
- E. SPRAY FOAM INSULATION Window & Door Jamb Cavities Open-Cell Polyurethane Foam Insulation: Spray-applied polyurethane foam using water as a blowing agent, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84. Minimum density of 0.4 lb/cu. ft. (6.4 kg/cu. m), thermal resistivity of 3.4 deg F x h x sq. ft./Btu x in. at 75 deg F (24 K x m/W at 24 deg C).

2.4 AUXILIARY INSULATING MATERIALS

A. Adhesive for Bonding Insulation: Product with demonstrated capability to bond insulation or mechanical anchors securely to substrates indicated without damaging or corroding either insulation, anchors, or substrates.

2.8 TAPES AND SEALANT

A. RIGID INSULATION OR BATT INSULATION WITH FOIL FACING JOINT Tape: Tape specifically designed and manufactured to seal joints in gypsum sheathing against water and air infiltration, formulated with an adhesive that permanently bonds to gypsum sheathing substrates, and as indicated below:

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- B. Extend insulation full thickness as indicated to envelop entire area to be insulated. Cut and fit tightly around obstructions, and fill voids with insulation. Remove projections that interfere with placement.
- C. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF PERIMETER AND UNDER-SLAB INSULATION

- A. On vertical surfaces, set units in adhesive applied in accordance with manufacturer's instructions. Use type of adhesive recommended by manufacturer of insulation.
- B. Protect below-grade insulation on vertical surfaces (from damage during back-filling) by application of protection board. Set in adhesive in accordance with recommendations of manufacturer of insulation.
- C. Protect top surface of horizontal insulation (from damage during concrete work) by application of protection board.

3.5 INSTALLATION OF GENERAL BUILDING INSULATION

- A. Apply insulation units to substrate by method indicated, complying with manufacturer's recommendations. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.
- B. Seal joints between closed-cell (nonbreathing) insulation units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.
- C. Set vapor retarder faced units with vapor retarder to warm side of construction, except as otherwise indicated. Do not obstruct ventilation spaces, except for firestopping.
 - 1. Tape joints and ruptures in vapor retarder, and seal each continuous area of insulation to surrounding construction to ensure airtight installation.
- D. Set reflective, foil-faced units accurately with not less than 0.75-inch air space in front of foil as indicated.
- E. CONTRACTOR TO USE FOAM INSULATION MATERIAL AT OPENINGS.
- F. IF AREA CANNOT BE FOAM INSULATED THEN Stuff glass fiber loose fill insulation into miscellaneous voids and cavity spaces around all windows and door frames and

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of type recommended by vapor retarder manufacturer. Locate all joints over framing members or other solid substrates.

- D. Firmly attach vapor retarders to substrates with mechanical fasteners or adhesives as recommended by vapor retarder manufacturer.
- E. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with tape of type recommended by vapor retarder manufacturer to create an airtight seal between penetrating objects and vapor retarder.
- F. Repair any tears or punctures in vapor retarders immediately before concealment by other work. Cover with tape or another layer of vapor retarder.

3.6 TAPE AND SEALANT APPLICATION - RIGID INSULATION AT WALL INSTALLATION IN MASONRY CAVITY

- A. INSULATION JOINTS Tape: Apply tape to **ALL** joints in INSULATION; overlap tape by not less than the tape width at joint intersections.
 - 1. For polyethylene tape, apply primer, specified by tape manufacturer, to sheathing surfaces.
 - 2. Install sealant material in any large cracks to seal openings prior to taping the panel joint.

3.6 TAPE AND SEALANT APPLICATION - WALL INSULATION WITH FOIL FACED BACKING AT STUD WALLS

- A. INSULATION JOINTS Tape: Apply tape to **ALL** joints in INSULATION; overlap tape by not less than the tape width at joint intersections.
 - For polyethylene tape, apply primer, specified by tape manufacturer, to sheathing surfaces.
 - 2. Install sealant material in any large cracks to seal openings prior to taping the panel joint.

3.7 PROTECTION

A. General: Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation will be subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END SECTION 07 21 00

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PART 2 - PRODUCTS

2.1 MATERIALS

- A. Vapor barrier must have all of the following qualities:
 - 1. Permeance as tested before and after mandatory conditioning (ASTM E 1745 Section 7.1 and sub-paragraphs 7.1.1 7.1.5): less than 0.01 Perms [grains/(ft² · hr · inHg)].
 - 2. Other performance criteria:
 - a. Strength: ASTM E 1745 Class A.
- B. Provide one of the following Vapor barrier products:
 - 1. Stego Industries, LLC; Stego Wrap, 15 mil Class A
 - 2. Carlisle Coatings & Waterproofing, Inc.; Blackline 400
 - 3. Fortifiber Corporation; Moistop Ultra 15
 - 4. Grace Construction Products, W. R. Grace & Company; Florprufe 120
 - 5. Insulation Solutions, Inc; Viper Vaporcheck 16
 - 6. Raven Industries, Inc.; Vapor Block 15
 - 7. W. R. Meadows, Inc.; Perminator 15 mil

2.2 ACCESSORIES

- A. Vapor Retarding Seam tape must have the following qualities:
 - 1. Water Vapor Transmission Rate less than or equal to 0.3 perms as tested by ASTM E96
- B. Vapor Proofing Mastic must have the following qualities:
 - 1. Water Vapor Transmission Rate less than or equal to 0.3 perms as tested by ASTM E96.
- C. Pipe Boots must be constructed from vapor barrier material, pressure sensitive tape and/or mastic per vapor barrier system manufacturer's instructions.

PART 3 – EXECUTION

3.1 PREPARATION

A. Ensure that subsoil is approved by Engineer or Special Inspector.

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SECTION 07 46 00 - FIBER CEMENT SIDING, SOFFIT, AND TRIM

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Fiber cement panels, trim, fascia, moulding, and accessories; BASIS OF DESIGN - James Hardie HZ5 Engineered for Climate Siding and Hardie Architectural Panels.

1.2 RELATED SECTIONS

- A. Section 05 40 00 Cold-Formed Metal Framing.
- B. Section 06 10 00 Rough Carpentry.
- C. Section 06 10 00 Rough Carpentry.
- D. Section 07 21 19 Foamed-In-Place Insulation.

1.3 REFERENCES

- A. ASTM C1186 Standard Specification for Flat Fiber-Cement Sheets.
- B. ASTM D3359 Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- C. ASTM E136 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 Administrative Requirements.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years' experience with installation of similar products.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store products in manufacturer's unopened packaging until ready for installation.

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- C. Soffit Panels: Non-Vented Soffit Panel
 - Factory sealed on 5 sides.
 - 2. Thickness: 1/4 inch (6 mm).
 - 3. Type: Smooth, 12 inches (305 mm) by 12 feet (3658 mm).
 - 4. Type: Smooth, 16 inches (406 mm) by 12 feet (3658 mm.
 - 5. Type: Smooth, 24 inches (610 mm) by 8 feet (2438 mm). D. Trim:
 - 1. Fiber cement trim boards; sizes as required by construction documents
 - 2. Fiber cement fascia boards; sizes as required by construction documents

2.3 FASTENERS

- A. Wood Framing Fasteners:
 - 1. Wood Framing: 4d common corrosion resistant nails.
 - 2. Wood Framing: 6d common corrosion resistant nails.
 - 3. Wood Framing: 8d box ring common corrosion resistant nails.
 - 4. Wood Framing: 0.089 inch (2.2 mm) shank by 0.221 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
 - 5. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
 - 6. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2-1/2 inches (64 mm) corrosion resistant siding nails.
 - 7. Wood Framing: 0.091 inch (2.3 mm) shank by 0.221 inch (5.6 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
 - 8. Wood Framing: 0.091 inch (2.3 mm) shank by 0.225 inch (5.7 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
 - 9. Wood Framing: 0.121 inch (3 mm) shank by 0.371 inch (9.4 mm) head by 1-1/4 inches (32 mm) corrosion resistant roofing nails.
 - 10. Wood Framing: No. 11 gauge 1-1/4 inches (32 mm) corrosion resistant roofing nails. 11.

 Wood Framing: No. 11 gauge 1-1/2 inches (38 mm) corrosion resistant roofing nails.
 - 12. Wood Framing: No. 11 gauge 1-3/4 inches (44 mm) corrosion resistant roofing nails.
- 13. Wood Framing: 16 gauge 1-1/2 inches (38 mm) stainless finish nails B. Metal Framing:
 - Metal Framing: 1-1/4 inches (32 mm) No. 8-18 by 0.375 inch (9.5 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
 - 2. Metal Framing: 1-5/8 inches (41 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
 - 3. Metal Framing: 1 inch (25 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant ribbed buglehead screws.
 - 4. Metal Framing: 1 inch (25 mm) No. 8-18 by 0.311 inch (7.9 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
 - 5. Metal Framing: 1.5 inch (38mm) [AGS-100] .100 inches by 25 inches (2540 mm by 635 mm) ET&F Pin or equivalent pneumatic fastener. C. Masonry Walls (CMU):
 - 1. Masonry Walls: Aerico Stud Nail, ET&F ASM No.-144-125, 0.14 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 2 inches (51 mm) long corrosion resistant nails.

2.4 FINISHES

A. Factory Primer: Provide factory applied universal primer.

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- 1. Panels may be installed as soffit or ceiling over wood or steel framing; 20 gauge (33 mils) minimum to 16 gauge (54 mils), complying with local building code. Install soffits to nominal 2 x 4 inch (50 x 100 mm) framing members spaced a maximum of 24 inches (610 mm) on center with the long dimension perpendicular to the rafter or joist framing.
- 2. Support edges by framing.
- 3. Install water barriers and air barriers as required by local building codes.
- 4. Ensure gutters have end caps. Maintain a minimum 1 inch (25 mm) gap between end caps and siding and trim.
- 5. Install kickout flashing at roof-wall junctions per manufacturer's instructions.
- 6. Additional framing may be needed to ensure proper fastening. 7. Position vent holes toward outside of eave for optimal airflow.
- 8. Vents can be installed into non-vented soffit.
- 9. Insect screen can be installed using construction adhesive.
- 10. Fastener Positioning: Position fasteners 3/8 inches (9.5 mm) from panel edges and no closer than 2 inches (51 mm) away from corners when using soffit greater than 12 inch (305 mm) wide and no closer than 1 inch (25 mm) away from corners when using soffit that is less than or equal to 12 inch (305 mm) wide.
- 11. Jointing Methods: Install panels in moderate contact at ends, provide PVC or metal jointers, battens or leave appropriate gap and caulk.
- 12. Drive fasteners perpendicular to siding and framing.
- 13. Fastener heads should fit snug against siding; no air space.

3.5 INSTALLATION - TRIM BOARDS

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
- D. Maintain clearance between trim and adjacent finished grade.
- E.Trim inside corner with a single board trim both side of corner.
- F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.
- G. Allow 1/8 inch gap between trim and siding.
- H. Seal gap with high quality, paint-able caulk.
- I. Shim frieze board as required to align with corner trim.
- J. Fasten through overlapping boards. Do not nail between lap joints.
- K.Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten Trim boards to Trim boards. L. Shim frieze board as required to align with corner trim.
- M. Install Trim Fascia boards to rafter tails or to sub fascia.

3.6 FINISHING

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SECTION 07 90 10 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes joint sealants for the following locations:
 - 1. Exterior joints in the following vertical surfaces and non-traffic horizontal surfaces:
 - a. Control and expansion joints in cast-in-place concrete.
 - b. Joints between architectural precast concrete units.
 - c. Control and expansion joints in unit masonry.
 - d. Joints in dimension stone cladding.
 - e. Joints in glass unit masonry assemblies.
 - f. Joints in exterior insulation and finish systems.
 - g. Joints between metal panels.
 - h. Joints between different materials listed above.
 - i. Perimeter joints between materials listed above and frames of doors and windows.
 - j. Control and expansion joints in ceiling and overhead surfaces.
 - k. Other joints as indicated.
 - 2. Exterior joints in the following horizontal traffic surfaces:
 - a. Control and expansion joints in brick pavers.
 - b. Control, expansion, and isolation joints in cast-in-place concrete slabs.
 - c. Joints between architectural precast concrete paving units.
 - d. Joints in stone paving units, including steps.
 - e. Tile control and expansion joints.
 - f. Joints between different materials whether indicated or not.
 - g. Other joints as indicated.

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- a. Control, expansion, and isolation joints in cast-in-place concrete slabs.
- b. Joints between different materials listed above.
- c. All Existing joints related to the renovation area and other joints as indicated.

1.3 SYSTEM PERFORMANCE REQUIREMENTS

- A. General Performance: Joint sealers are required to establish and maintain airtight and waterproof continuous seals on a permanent basis, within recognized limitations of wear and aging as indicated for each application. Failures of installed sealers to comply with this requirement will be recognized as failures of materials and workmanship.
- B. Provide elastomeric joint sealants that have been produced and installed to establish and to maintain watertight and airtight continuous seals without causing staining or deterioration of joint substrates.
- C. Provide joint sealants for interior applications that have been produced and installed to establish and maintain airtight continuous seals that are water resistant and cause no staining or deterioration of joint substrates.

1.4 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.
- B. Product data from manufacturers for each joint sealant product required.
- C. Samples for initial selection purposes in form of manufacturer's standard bead samples, consisting of strips of actual products showing full range of colors available, for each product exposed to view.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.
- B. Colors: Provide color of exposed joint sealants to comply with the following:

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- C. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming in any way joint substrates and adjacent nonporous surfaces, and formulated to promote optimum adhesion of sealants with joint substrates.
- D. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with recommendations of joint sealant manufacturer.
- B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealant manufacturer. Apply primer to comply with joint sealant manufacturer's recommendations. Confine primers to areas of joint sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Existing caulked joints: Provide clean out or removal of all deteriorated joints and prepare as necessary all joints for installation of joint sealant. Install joint sealant at all existing joint areas as would be installed if the work were new.
- D. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.2 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint sealant manufacturer's printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply.

3.3 CLEANING

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- B. Inspect doors and frames on delivery for damage. Minor damages may be repaired provided refinished items match new work and are acceptable to Architect; otherwise, remove and replace damaged items as directed.
- C. Store doors and frames at building site under cover. Place units on minimum 4-inch-(100-mm-) high wood blocking. Avoid using non-vented plastic or canvas shelters that could create a humidity chamber. If cardboard wrappers on doors become wet, remove cartons immediately. Provide minimum 1/4-inch (6-mm) spaces between stacked doors to promote air circulation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Doors and Frames:
 - a. Amweld Building Products, Inc
 - b. Ceco Door Products
 - c. Copco Door Co
 - d. Curries Co
 - e. Deansteel Manufacturing Co
 - f. Fenestra Corp.
 - g. Kewanee Corp.
 - h. Mesker Door, Inc.
 - i. Pioneer Industries
 - j. Republic Builders Products
 - k. Steelcraft

2.2 MATERIALS

- A. Hot-Rolled Steel Sheets and Strip: Commercial-quality carbon steel, pickled and oiled, complying with ASTM A 569 (ASTM A 569M).
- B. Cold-Rolled Steel Sheets: Carbon steel complying with ASTM A 366 (ASTM A 366M), commercial quality, or ASTM A 620 (ASTM A 620M), drawing quality, special killed.
- C. Galvanized Steel Sheets: Zinc-coated carbon steel complying with ASTM A 526 (ASTM A 526M), commercial quality, or ASTM A 642 (ASTM A 642M), drawing quality, hot-dip galvanized according to ASTM A 525, with A 60 or G 60 (ASTM A 525M, with Z 180 or ZF 180) coating designation, mill phosphatized.
- D. Supports and Anchors: Fabricated from not less than 0.0478-inch- (1.2-mm-) thick steel sheet; 0.0516-inch- (1.3-mm-) thick galvanized steel where used with galvanized steel frames.
- E. Inserts, Bolts, and Fasteners: Manufacturer's standard units. Where items are to be built into exterior walls, hot-dip galvanize complying with ASTM A 153, Class C or D as applicable.

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2.6 FABRICATION

- A. Fabricate steel door and frame units to be rigid, neat in appearance, and free from defects, warp, or buckle. Where practical, fit and assemble units in manufacturer's plant. Clearly identify work that cannot be permanently factory assembled before shipment, to assure proper assembly at Project site. Comply with ANSI/SDI 100 requirements.
 - 1. Internal Construction: Manufacturer's standard honeycomb, polyurethane, polystyrene, unitized steel grid, vertical steel stiffeners, or rigid mineral fiber core with internal sound deadener on inside of face sheets where appropriate in accordance with SDI standards.
 - 2. Fire-Rated Doors and/or frames: Fabricate in accordance and with clearances specified in NFPA 80.
 - 3. Clearances: Not more than 1/8 inch (3.2 mm) at jambs and heads, except not more than 1/4 inch (6.4 mm) between non-fire-rated pairs of doors. Not more than 3/4 inch (19 mm) at bottom.
- B. Tolerances: Comply with SDI 117 "Manufacturing Tolerances Standard Steel Doors and Frames."
- C. Fabricate concealed stiffeners, reinforcement, edge channels, louvers, and moldings from either cold- or hot-rolled steel sheet.
- D. Galvanized Steel Doors, Panels, and Frames: At exterior locations, interior shower room doors, and as indicated for interior doors, fabricate doors, panels, and frames from galvanized steel sheet according to SDI 112. Close top and bottom edges of doors flush as an integral part of door construction or by addition of minimum 0.0635-inch- (1.6-mm-) thick galvanized steel channels, with channel webs placed even with top and bottom edges. Seal joints in top edges of doors against water penetration.
- E. Exposed Fasteners: Unless otherwise indicated, provide countersunk flat or oval heads for exposed screws and bolts.
- F. Hardware Preparation: Prepare doors and frames to receive mortised and concealed hardware according to final door hardware schedule and templates provided by hardware supplier. Comply with applicable requirements of SDI 107 and ANSI A115 Series specifications for door and frame preparation for hardware.
 - For concealed overhead door closers, provide space, cutouts, reinforcing, and provisions for fastening in top rail of doors or head of frames, as applicable.
- G. Reinforce doors and frames to receive surface-applied hardware. Drilling and tapping for surface-applied hardware may be done at Project site.

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1.5 DELIVERY, STORAGE, AND HANDLING

- A. Protect doors during transit, storage, and handling to prevent damage, soiling, and deterioration. Comply with requirements of referenced standard and manufacturer's instructions.
- B. Package doors individually in [plastic bags or cardboard cartons]
- C. Identify each door with individual opening numbers as designated on shop drawings, using temporary, removable, or concealed markings.

1.6 PROJECT CONDITIONS

- A. Conditioning: Do not deliver or install doors until conditions for temperature and relative humidity have been stabilized and will be maintained in storage and installation areas during the remainder of the construction period to comply with the following requirements applicable to Project's geographical location:
 - 1. AWI quality standard Section 100-S-11 "Relative Humidity and Moisture Content."

1.7 WARRANTY

- A. General Warranty: Door manufacturer's warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.
- B. Door Manufacturer's Warranty: Submit written agreement on door manufacturer's standard form signed by manufacturer, Installer, and Contractor, agreeing to repair or replace defective doors that have warped (bow, cup, or twist) more than 1/4 inch (6.35 mm) in a 42-by-84-inch (1067-by-2134-mm) section or that show telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch (0.25 mm in a 75-mm) span, or do not conform to tolerance limitations of referenced quality standards.
 - Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors where defect was not apparent prior to hanging.
 - 2. Warranty shall be in effect during the following period of time after date of Substantial Completion, for the Life of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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1. Light Openings: Trim openings with moldings of material and profile indicated.

1.2 SHOP PRIMING

A. Doors for Transparent Finish: Shop seal faces and edge of doors, including cutouts, with stain (if required), other required pretreatments,

1.3 FACTORY FINISHING

- A. General: Comply with [AWI's "Architectural Woodwork Quality Standards Illustrated"] for factory finishing.
- B. Finish doors at factory.
- C. Transparent Finish:
 - 1.Grade: [Premium]
 - 2. Finish: AWI System [TR-6 catalyzed polyurethane].
 - 3. Finish: Manufacturer's standard finish with performance comparable

[AWI System TR-6 catalyzed polyurethane

- 4. Staining: [As selected by Architect from manufacturer's full range.
- 5. Effect: [Open-grain] finish.
- 6. Sheen: [Satin] or [Semigloss] as selected.
- 7. Provide touch up materials for repair of small damage areas.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine installed door frames prior to hanging door:
 - 1. Verify that frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with plumb jambs and level heads.

3.2 INSTALLATION

- A. Hardware: For installation see Division 8 Section "Door Hardware."
- B. Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and referenced quality standard and as indicated.
 - 1. Install fire-rated doors in corresponding fire-rated frames according to requirements of NFPA 80.
- C. Job-Fit Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted with fire-rated doors. Machine doors for hardware. Seal cut surfaces after fitting and machining.

FLUSH WOOD DOORS 08 21 10 - 1

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SECTION 08 71 00 - DOOR HARDWARE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Door hardware for doors specified in "Hardware Sets" and required by actual conditions. Include screws, bolts, expansion shields, electrified door hardware, and other devices for proper application of hardware.
- B. Products supplied but not installed under this Section:
 - 1. Hardware for aluminum doors will be furnished under this Section, but installed under Division 08 Openings.
 - Electrified hardware will be furnished under this Section, but installed by the security contractor.
 - 3. Final replacement of cylinder cores shall be installed by Owner.
 - 4. Hold open wall magnets.

1.2 RELATED DIVISIONS

- A. Division 08 Openings.
- B. Division 13 Special Construction.
- C. Division 26 Electrical.
- D. Division 28 Fire Detection and Alarm.

1.3 REFERENCES

- A. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI):
 - ANSI/BHMA A156.1 Butts & Hinges (2006).
 - 2. ANSI/BHMA A156.2 Bored & Preassembled Locks & Latches (2011).
 - ANSI/BHMA A156.3 Exit Devices (2008).
 - 4. ANSI/BHMA A156.4 Door Controls Closers (2008).
 - 5. ANSI/BHMA A156.5 Cylinders and Input Devices for Locks (2010).
 - ANSI/BHMA A156.6 Architectural Door Trim (2010).
 - 7. ANSI/BHMA A156.7 Template Hinge Dimensions (2009).
 - 8. ANSI/BHMA A156.8 Door Controls Overhead Stops and Holders (2010).
 - 9. ANSI/BHMA A156.10 Power Operated Pedestrian Doors (2011).
 - 10. ANSI/BHMA A156.12 Interconnected Locks & Latches (2005).
 - 11. ANSI/BHMA A156.13 Mortise Locks & Latches (2005).
 - 12. ANSI/BHMA A156.14 Sliding & Folding Door Hardware (2007).
 - 13. ANSI/BHMA A156.15 Closer Holder Release Devices (2011).
 - 14. ANSI/BHMA A156.16 Auxiliary Hardware (2008).
 - 15. ANSI/BHMA A156.17 Self Closing Hinges & Pivots (2010).
 - 16. ANSI/BHMA A156.18 Materials & Finishes (2006).
 - 17. ANSI/BHMA A156.19 Power Assist & Low Energy Power Operated Doors (2007).
 - 18. ANSI/BHMA A156.21 Thresholds (2009).
 - 19. ANSI/BHMA A156.22 Door Gasketing Systems (2012).
 - 20. ANSI/BHMA A156.23 Electromagnetic Locks (2010).

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- 1. Provide products where indicated with NOA numbers approved by Miami-Dade Building Code Compliance.
- H. Florida Building Code Compliance:
 - Provide products where indicated with Florida Building Code Certification Number.

1.4 SUBMITTALS

- A. Submit in accordance with Conditions of the Contract and provisions of Section 01 30 00 Administrative Requirements.
- B. Shop Drawings: Hardware schedule shall be organized in vertical format illustrated in DHI Publications Sequence and Formatting for the Hardware Schedule. Include abbreviations and symbols page according to DHI Publications Abbreviations and Symbols. Complete nomenclature of items required for each door opening as indicated
 - 1. Coordinate the final Door Hardware Schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of hardware.
 - 2. Architectural Hardware Consultant (AHC), as certified by DHI, who shall affix seal attesting to completeness and correctness, shall review hardware schedule prior to submittal.
- C. Submit manufacturer's catalog sheet on design, grade and function of items listed in hardware schedule. Identify specific hardware item per sheet, provide index, and cover sheet.
- D. Coordination: Distribute door hardware templates to related divisions within fourteen days of receiving approved door hardware submittals.
- E. Electrified Hardware: Provide electrical information to include voltage, and amperage requirements for electrified door hardware and description of operation.
 - Description of operation for each electrified opening to include description of component functions including location, sequence of operation and interface with other building control systems.
 - 2. Wiring Diagrams: Detail wiring for power, signal, and control system and differentiate between manufacturers installed and field installed wiring. Include the following:
 - a. System schematic.
 - b. Point to point wiring diagram.
 - c. Riser diagram.
 - d. Elevation of each door.
 - 3. Detail interface between electrified door hardware and fire alarm, access control, security, and building control systems.
- F. Upon door hardware submittal approval, provide for each electrified opening, three copies of point to point diagrams.
- G. Maintenance Tool and Instructions: Furnish a complete set of specialized tools and maintenance instructions for Owner's continued adjustment, maintenance, removal and replacement of door hardware.
- H. Closeout Submittals: Submit to Owner in a three ring binder or CD if requested.
 - 1. Warranties.
 - 2. Maintenance and operating manual including list of maintenance tools.
 - Maintenance service agreement.

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representative from hardware supplier to establish a keying conference. Verify keyway, visual key identification, number of master keys and keys per lock. Provide keying system per Owners instructions.

- J. Installer Qualifications: Specialized in performing installation of this Section and shall have five years minimum documented experience.
- K. Hardware listed in Par.: Hardware Schedule is intended to establish a type and grade.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Provide a clean, dry and secure room for hardware delivered to Project but not yet installed.
- B. Furnish hardware with each unit marked and numbered in accordance with approved finish hardware schedule. Include door and item number for each type of hardware.
- C. Pack each item complete with necessary parts and fasteners in manufacturer's original packaging.
- D. Deliver permanent key, cores, access control credentials, software and related accessories directly to Owner via registered mail or overnight package service. Instructions for delivery to Owner shall be established at "Keying Conference."
- E. Waste Management and Disposal: Separate waste materials for reuse or recycling in accordance with Division 1.

1.7 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

1.8 WARRANTY

- A. General Warranty: Owner may have under provisions of the Contract Documents and shall be in addition to and run concurrent with other warranties made by Contractor under requirements of the Contract documents.
- B. Special Warranty: Warranties specified in this article shall not deprive Owner of other rights. Contractor, hardware supplier, and hardware installer shall be responsible for servicing hardware and keying related problems.
 - Ten years for manual door closers.
 - 2. Five years for mortise, auxiliary and bored locks.
 - 3. Five years for exit devices.
 - 4. Two years for electromechanical door hardware.
- C. Products judged defective during warranty period shall be replaced or repaired in accordance with manufacturer's warranty at no cost to Owner. There is no warranty against defects due to improper installation, abuse and failure to exercise normal maintenance.

PART 2 PRODUCTS

2.1 MANUFACTURERS

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- d. Electric Through Wire (ETW) to have appropriate number of wires to transfer power through door frame to door for proper connection of finish hardware and certified to handle an amperage rating of 3.5AMPS/continuous duty with 16.0AMPS/intermittent duty.
- e. Provide mortar boxes for frames that require any electrically modified hinges if not an integral part of frame.
- f. When shims are necessary to correct frame or door irregularities, provide metal shims only.

2.3 CONTINUOUS HINGES

- A. Continuous hinges shall be of one manufacturer as listed for continuity of design and consideration of warranty and shall meet ANSI/BHMA A156.26 Grade 1.
- B. Continuous Geared Hinges: Determine model number by door and frame application, door thickness, frequency of use, and fire rating requirements according to manufacturer's recommendations. Length of hinge shall be 1 inch (25 mm) less door height unless otherwise stated in hardware sets.
- C. Material and Design:
 - Base material: Anodized aluminum manufactured from 6063-T6 material, unexposed working metal surfaces shall be coated with TFE dry lubricant
 - 2. Bearings:
 - a. Vertical loads shall be carried on Lubriloy RL bearings for Non-Fire Rated doors.
 - b. Standard weight hinges shall have a minimum spacing between bearings of 5-1/8 inch (130 mm). Typical door from 80 inches (2032 mm) to 84 inches (2134 mm) in height to have a minimum of 16 bearings.
 - c. Heavy Weight hinges shall have a minimum spacing between bearings of 2-9/16 inches (65 mm). Typical door from 80 inches (2032 mm) to 84 inches (2134 mm) in height to have a minimum of 32 bearings.
 - d. Removable Electric Through-Wire (RETW) shall have appropriate number of wires to transfer power through door frame to door for proper connection of finish hardware. Provide RETW in a form that can be removed for connection, servicing without removing entire hinge from door and frame, and certified to handle an amperage rating of 3.5AMPS/continuous duty with 16.0AMPS/intermittent duty.
 - e. Hinges shall have Rounded Back Cover Channel (RBCC).
 - f. When full width of opening is required, use hinges that are designed to swing door completely from opening when door is opened to 95 degrees.
 - g. Fire rated hinges shall carry UL certification, up to and including 90-minute applications for wood doors and up to 3-hour applications for metal doors.
- D. Continuous Pinned Hinges: Determine model number by door and frame application, door thickness, frequency of use, and fire rating requirements according to manufacturer's recommendations.

 Length of hinge shall be 1 inch (25 mm) less door height unless otherwise stated in hardware sets.
- E. Material and Design:
 - 1. Base material: 14 gauge type 304 stainless steel with a 1/4 inch (6 mm) diameter stainless steel non-rising pin.
 - Bearings: Vertical loads shall be carried on lubricated nylon 6/6 bearings between each knuckle and stainless steel pin.

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warranty. Manufacturer shall meet the requirements for Materials and Finishes: ANSI/BHMA A156.18; Provide invisible hinges tested and listed by UL.

B. Material and Design: Construct with interpolated, laminated links connected with non-removable riveted pins which provide moving pivot points and allow for 180 degree opening. Material: High strength plated steel and heavy duty zinc alloy casting, or 300 series stainless steel and 300 series stainless steel castings.

2.6 RESCUE HARDWARE

- A. Rescue hardware sets shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer shall meet the requirements for:
 - 1. Butts and Hinges: ANSI/BHMA A156.1
- B. Material and Design: Head and floor pivots shall consist of stainless steel and polycarbonate top and bottom units. Provide walking type cam operated pivots for top and bottom. Use with wood or hollow metal doors not exceeding 36 by 70 inches (914 mm by 1778 mm) and 135 pounds (61 Kg). Edge of doors shall be square on pivot side.
- C. Acceptable Manufacturer: Hager Companies, which is located at: 139 Victor St.; St. Louis, MO 63104; Toll Free Tel: 800-325-9995; Tel: 314-772-4400; Fax: 800-782-0149; Email: request info (bwilkins@hagerco.com); Web: http://www.hagerco.com
 - 1. Hager Companies 512.
- D. Combination Rescue Door Stop and Double Lipped Strike: Door release allows doors to be opened in both directions without damage to frame. Strike shall be full lip and be width dimension of jamb depth.
 - 1. =

2.7 FLUSH BOLTS AND COORDINATORS

- A. Flushbolts shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer to be listed for Auxiliary Hardware: ANSI/BHMA A156.16
- B. Labeled openings: Provide automatic or constant latching flush bolts per hardware schedule for inactive leaf of pairs of doors. Provide dust proof strikes for bottom bolt.
- C. Non-Labeled openings: Provide two flush bolts for inactive leaf of pairs of doors per hardware schedule. Top bolt shall not be more than 78 inches (1981 mm) centerline from floor. Provide dust proof strike for bottom bolt.
 - 1
- D. Coordinators: Provide for labeled pairs of doors with automatic flush bolts or with vertical rod exit device with a mortise-locking device per hardware schedule. Provide filler piece to extend full width of stop on frame. Provide mounting brackets for closers and special preparation for latches where applicable.

2.8 FLUSHBOLTS FOR ALUMINUM DOORS

A. Provide two-point flushbolt for inactive leaf of pairs of doors with locked and unlocked indicator. Match cylinder height of lock on active leaf with indictor. Provide stainless steel top and bottom bolts.

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- 4. UL10C/UBC 7-2 Positive Pressure Rated.
- 5. ICC/ANSI A117.1.
- B. Lock and latch function numbers and descriptions of manufacturer's series as listed in hardware sets. Material and Design:
 - Lock and Latch chassis to be Zinc dichromate for corrosion resistance.
 - 2. Keyed functions to be of a freewheeling design to help resists against vandalism.
 - 3. Non-handed, field reversible.
 - 4. Thru-bolt mounting with no exposed screws.
 - Levers shall be Zinc cast and plated to match finish designation in hardware sets.
 - Roses shall be of solid Brass or Stainless Steel material.

C. Latch and Strike:

- Stainless Steel latch bolt with minimum of 1/2 inch (13 mm) throw and deadlocking for keyed and exterior functions. Provide 3/4 inch (19 mm) latchbolt for pairs of fire rated doors where required by door manufacture. Standard backset to be 2-3/4 inches (70 mm) and faceplate shall be adjustable to accommodate a square edge door or a standard 1/8 inch (3 mm) beveled edge door.
- 2. Strike is to fit a standard ANSI A115 prep measuring 1-1/4 inches (32 mm) by 4-7/8 inches (124 mm) with proper lip length to protect surrounding trim.
- 3. Doors requiring lead line protection provide locks with 1/16 inch (1.5 mm) lead applied to lock and 1/16 inch (1.5 mm) lead wrapped around latch bolt.
- 4. Provide knurled levers on entry side of doors that are potentially dangerous to visually impaired persons.

D. Electric Locks:

- 1. Fail Safe (power locks lever) outside trim is locked when power is applied and unlocked when power is removed. Lockset will unlock in the event of a power failure. (EL).
- 2. Fail Secure (power unlocks lever) outside trim is locked when there is no power and unlocked when power is applied. Lockset will be locked in the event of a power failure. (EU).
- 3. Request to Exit: Monitors inside lever rotation. (RX).

2.12 LOCKS AND LATCHES (GRADE 2 CYLINDRICAL)

- A. Locks and latches shall be of one manufacturer as listed for continuity of design and consideration of warranty. Product to be certified and listed by following:
 - 1. ANSI/BHMA A156.2 Series 4000 Certified to Grade 2.
 - 2. ANSI/BHMA A250.13 Certified for a minimum design load of 860lbf (80psf) for single out swinging doors measuring 36 inches (914 mm) in width and 84 inches (2134 mm) in height and a minimum design load of 860lbf (50psf) for out swinging single doors measuring 48 inches (1219 mm) in width and 84 inches (2134 mm) in height.
 - 3. UL/cUL Labeled and listed for functions up to 3 hours for single doors up to 48 inches (1219 mm) in width and up to 96 inches (2438 mm) in height.
 - 4. UL10C/UBC 7-2 Positive Pressure Rated.
 - 5. ICC/ANSI A117.1.
- B. Lock and latch function numbers and descriptions of manufacturer's series as listed in hardware sets. Material and Design:
 - 1. Lock and Latch chassis to be Zinc dichromate for corrosion resistance.
 - 2. Keyed functions to be of a freewheeling design to help resists against vandalism.

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- and up to 96 inches (2438 mm) in height.
- 3. UL10C/UBC 7-2 Positive Pressure Rated.
- 4. ICC/ANSI A117.1.
- B. Lock and latch function numbers and descriptions of manufacturer's series as listed in hardware sets.

 Material and Design:
 - 1. Lock cases from fully wrapped, 12 gauge steel, Zinc dichromate for corrosion resistance.
 - 2. Non-handed, field reversible without opening lock case.
 - 3. Break away spindles to prevent unlocking during forced entry or vandalism.
 - 4. Levers are to be Zinc cast, Forged Brass or Stainless Steel and plated to match finish designation in hardware sets.
 - 5. Sectional Roses are to be of solid Brass or Stainless Steel material and have a minimum diameter of 2-7/16 inches (62 mm).
 - 6. Escutcheons are to be of solid Brass or Stainless Steel material.
 - 7. Armor fronts are to be self-adjusting to accommodate a square edge door or a standard 1/8 inch (3 mm) beveled edge door.

C. Latch and Strike:

- 1. Stainless Steel latch bolt with minimum of 3/4 inch (19 mm) throw and deadlocking for keyed and exterior functions.
- 2. Strike is to fit a standard ANSI A115 prep measuring 1-1/4 inches (32 mm) by 4-7/8 inches (124 mm) with proper lip length to protect surrounding trim.
- 3. Deadbolts to be 1-3/4 inches (44.5 mm) total length with a minimum of a 1 inch (25 mm) throw and 3/4 inch (19 mm) internal engagement when fully extended and made of Stainless Steel material.
- 4. Doors requiring lead line protection provide locks with 1/16 inch (1.5 mm) lead applied to lock and 1/16 inch (1.5 mm) lead wrapped around latch bolt.
- 5. Provide knurled levers on entry side of doors that are potentially dangerous to visually impaired persons.

D. Electric Locks:

- 1. Fail Safe (power lock) outside trim is locked when power is applied and unlocked when power is removed. Lockset will unlock in the event of a power failure. (EL).
- 2. Fail Secure (power unlock) Outside trim is locked when there's no power and unlocked when power is applied. Lockset will be locked in the event of a power failure. (EU).
- 3. Latchbolt monitoring: Single switch SPDT mounted inside lockset monitors full extension of latchbolt. (LM).
- 4. Door Position Monitor: Single switch SPDT Reed magnetic switch mounted inside lockset monitors whether door is fully closed. (DPM).
- Request to Exit: Monitors inside lever rotation. (RX).

2.15 LOCKS AND LATCHES (GRADE 2 INTERCONNECTED)

- A. Locks and latches shall be of one manufacturer as listed for continuity of design and consideration of warranty. Product to be certified and listed by following:
 - ANSI/BHMA A156.12 Series 5000 Certified to Grade 2.
 - 2. UL/cUL Labeled and listed for functions up to 3 hours for single doors up to 48 inches (1219 mm) in width and up to 96 inches (2438 mm) in height.
 - 3. UL10C/UBC 7-2 Positive Pressure Rated.
 - 4. ICC/ANSI A117.1.

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3. Non-handed, field reversible.

2.19 DEADBOLTS (GRADE 2)

- A. Deadbolts shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer to be certified by the following:
 - Auxiliary Locks: ANSI/BHMA A156.5 Grade 1.
 - 2. UL/cUL listed for functions up to 3 hours for "A" label.
 - 3. UL10C/UBC 7-2 Positive Pressure Rated.
- B. Deadbolt function numbers and descriptions of manufacturer's series as listed in hardware sets. Material and Design:
 - 1. Latch bolt 1 inch (25 mm) throw, material brass with concealed harden steel roller to prevent sawing or cutting.
 - 2. Freewheeling collar design to help resists against vandalism.
 - Non-handed, field reversible.
 - 4. Deadbolts to be 1-3/4 inches (44.5 mm) total length with a minimum of a 1 inch (25 mm) throw and 3/4 inch (19 mm) internal engagement when fully extended and made of Stainless Steel material.

2.20 MORTISE DEADBOLTS

- A. Deadbolts shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer to be certified by the following:
 - 1. ANSI/BHMA A156.13 Series 2000 Grade 1 Operational and Security.
 - 2. UL/cUL listed for functions up to 3 hours for "A" label.
 - 3. UL10C/UBC 7-2 Positive Pressure Rated.
 - 4. ADA Thumbturn.
- B. Deadbolt function numbers and descriptions of manufacturer's series as listed in hardware sets. Material and Design: Latch bolt projection 1 inch (25 mm) throw. Case steel, zinc dichromate. Armor front 5-9/16 inches (141 mm), case dimension 4-5/16 inches (110 mm) by 3-9/16 inches (90 mm) by 1 inch (25 mm).

2.21 MAGNETIC LOCKS

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer shall meet requirements for ANSI/BHMA A156.23 Grade 1 Compliant. Design:
 - Epoxy free, field upgradeable and repairable.
 - 2. Interlocking mounting plate to secure wiring and mounting screws.
 - 3. 1,200 lb (540 Kg) holding force.
 - 4. Surfaces plated and anodized.
 - 5. Built-in field adjustable 0-30 seconds re-lock delay (TIME).
 - 6. Indicates door open and door closed (DPS).
 - 7. Indicates locked and unlocked, low holding power, tampering and obstruction between armature and magnetic core. (MBS).
 - 8. Indicates access cover removed, SPDT dry, 1 amp @ 30 VDC.
 - 9. Door coordinator mounting kit (DC-1).
 - 10. Spacer bracket for concrete filled and blade stop applications. (UF11V).

2.22 INTERGRATED DELAYED EGRESS LOCK

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- Touch pad shall extend a minimum of one half-door width. Freewheeling lever design shall match design of locks levers. Exit device to mount flush with door.
- 2. Latchbolts: Rim device 3/4 inch (19 mm) throw, Pullman type with automatic dead-latching, stainless steel. Surface vertical rod device Top 1/2 inch (13 mm) throw, Pullman type with automatic dead-latching, stainless steel. Bottom 1/2 inch (13 mm) throw, Pullman type, held retracted during door swing, stainless steel.
- 3. Fasteners: Wood screws, machine screws and thru-bolts.
- C. Lock and Latch Functions: Function numbers and descriptions of manufacturer's series and lever styles indicated in door hardware sets.

D. Electric Modifications:

- Electric Latch Retraction: Continuous duty solenoids retract the latch bolt for momentary or maintained periods of time.
- 2. Provide Request to Exit (REX) switches as scheduled.
- 3. Electrified Trim: Outside trim locked (EL) or unlocked (EU) by electric current.
- 4. Delayed Egress with Wall Mounted Controller (4501 DE).

2.25 NON-LATCHING PRESURE SENSE PUSH BAR

- A. Shall be finish to match balance of door hardware. Non-latching push bars shall be of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Design: No moving parts. Tri-Failsafe, third redundant switch is automatically activated to release door if both sensors or electronics fail. Minimum projection from door 1.875 inches (48 mm). Two dry contact for lock release, request to exit, alarm, or CCTV. Activation force 5 lbs, field adjustable to 15 lb (6.75 Kg).

2.26 CYLINDERS AND KEYING

- A. Cylinders shall be of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Standards: Manufacturer shall meet the following:
 - 1. Auxiliary Locks: ANSI/BHMA A156.5
 - 2. DHI Handbook "Keying systems and nomenclature" (1989)

C. Cylinders:

- Manufacturer's standard tumbler type, seven-pin IC core and seven-pin conventional core supported by the Hager H1 keyway.
- 2. Shall be furnished with cams/tailpieces as required for locking device that is being furnished for project.

D. Keying:

- 1. Copy of Owners approved keying schedule shall be submitted to Owner and Architect with documentation of which keying conference was held and Owners sign-off.
- 2. Provide a bitting list to Owner of combinations as established, and expand to twenty five percent for future use or as directed by Owner.
- 3. Key into Owner's existing keying system if applicable.
- 4. Keys to be shipped to Owner's representative, individually tag per keying conference.
- 5. Provide visual key control identification on keys.

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- hardware schedule.
- 2. In swing doors shall have surface regular arm mount closers except where noted on hardware schedule.
- 3. Provide brackets and shoe supports for aluminum doors and frames to mount fifth screw.
- 4. Furnish drop plates where top rail conditions on door do not allow for mounting of closer and where backside of closer is exposed through glass.
- D. Size closers in compliance with requirements for accessibility (ADDAG). Comply with following maximum opening force requirements. Interior hinged openings: 5.0 lb (2.25 Kg) Fire rated and exterior openings shall have minimum opening force allowable by authority having jurisdiction.
- E. Fasteners: Provide self-reaming and self-tapping wood and machine screws and sex nuts and bolts for each closer.

2.29 CLOSERS (ALUMINUM BODY GRADE 1)

- A. Shall be product of one manufacturer. Unless otherwise indicated on hardware schedule, comply with manufacturer's recommendations for size of closer, depending on width of door, frequency of use, atmospheric pressure, ADAAG requirements, and fire rating. Manufacturer to be certified by the following:
 - 1. BHMA Certified ANSI A156.4 Grade 1.
 - 2. ADA Complaint ANSI A117.1.
 - 3. UL/cUL Listed up to 3 hours.
 - 4. UL10C Positive Pressure Rated.
 - 5. UL10B Neutral Pressure Rated.

B. Material and Design:

- Provide aluminum non-handed bodies with full plastic covers.
- Closer shall have separate staked adjustable valve screws for latch speed, sweep speed, and backcheck.
- 3. Provide Tri-Pack arms and brackets for regular arm, top jamb, and parallel arm mounting.
- Double heat-treated steel, tempered springs.
- Precision machined, heat-treated steel piston.
- 6. Triple heat-treated steel spindle.
- 7. Full rack and pinion operation.

C. Mounting:

- 1. Out swing doors shall have surface parallel arm mount closers except where noted on hardware schedule.
- 2. In swing doors shall have surface regular arm mount closers except where noted on hardware schedule.
- 3. Provide brackets and shoe supports for aluminum doors and frames to mount fifth screw.
- 4. Furnish drop plates where top rail conditions on door do not allow for mounting of closer and where backside of closer is exposed through glass.
- D. Size closers in compliance with requirements for accessibility (ADDAG). Comply with following maximum opening force requirements. Interior hinged openings: 5.0 lb (2.25 Kg) Fire rated and exterior openings shall have minimum opening force allowable by authority having jurisdiction.
- E. Fasteners: Provide self-drilling and tapping wood screws, machine screws and sex nuts and bolts for each closer.

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- B. Standards: Manufacturer shall meet the requirements for:
 - Power Assist and Low Energy Power Operated Doors: ANSI/BHMA A156.19
 - 2. ADA Complaint ANSI A117.1

C. Materials and Design:

- Self-contained electrical control unit, including necessary transformers, relays, rectifiers, and other electronic component for proper operation and switching. Control of door up to 350 pounds shall also include time delay for normal cycle.
- 2. On pair of doors, either door to be opened manually without the other door opening.
- 3. Operates as a mechanical closer if power is disconnected. Forces consistent with ANSI A117.1 and ANSI A156.19.
- 4. Provide delay switches for motor activation, exit device latch retraction interfacing and hold open times. Hold open times to be adjustable from 1 second to continuous seconds.
- 5. Adjustable vestibule sequencing input for operation of two or more units. Specify 2-659-0240.
- 6. Adjustable powered swing degree from 80 degrees to 110 degrees.
- 7. Integral obstruction detection for closing and opening cycle.
- 8. Adjustable built in stop, set from 80 degrees maximum to 180 degrees manual swing.
- 9. When in "blow open "operation for smoke ventilation, operator will stay in the open position when loss of power.
- 10. Boost to close selectable on/off switch.
- D. Signage: Provide signage in according to the requirements of ANSI/BHMA A156.19.

E. Actuators:

- 1. Opening cycle shall be activated by pressing switches with international symbol of accessibility and "PUSH TO OPEN" engraved on faceplate.
- 2. Switches shall be installed in standard 2-gang electrical wall box and placed in a location in compliance with ANSI A117.1.
- 3. Wireless actuators optional.

2.33 PROTECTIVE TRIM

- A. Size of protection plate: Single doors, size two inches (51 mm) less door width (LDW) on push side of door, and one inch (25 mm) less on pull side of door. For pairs of doors, size one inch less (25 mm) door width (LDW) on push side of door, and 1/2 inch (13 mm) on pull side of door. Kick plates 10 inches (254 mm) high or sized to door bottom rail height. Mop Plates 4 inches (102 mm) high. Armor Plates 36 inches (914 mm) high. Manufacturer shall meet requirements for:
 - Architectural Door Trim: ANSI/BHMA A156.6.
- B. Material and Design:
 - 1. .050 inch (1.3 mm) gage stainless steel.
 - 2. Corners shall be square. Polishing lines or dominant direction of surface pattern shall run across the door width of plate.
 - 3. Bevel top, bottom and sides uniformly leaving no sharp edges. Edges shall be de-burred.
 - 4. Countersink holes for screws. Screws holes shall be spaced equidistant eight inches (203 mm) CTC, along a centerline not over 1/2 inch (13 mm) in from edge around plate. End screws shall be a maximum of 0.53 inch (1.35 mm) from corners.
- UL label stamp required on protection plates when top of plate is more than 16 inches (406 mm)

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Design:

- 1. 1-6 digit PIN codes with 4 outputs, 2 relays and solid status outputs timed or latching (on/off).
- 2. LED status: access, lockout.
- 3. Tactile audible key press with selectable volume.
- 4. Timed anti-pass back with keypad tamper lockout.
- 5. Choice of door sense/relay inhibit input functions; Forced Entry/Door prop alarm; Door ajar; Inhibit relay 1 or 2; Auto re-locks when door closes;
- Choice of 2 solid status output functions: Alarm shunt; Forced entry; Door ajar; Tamper lockout; Keypad active.
- 7.

2.38 KEY SWITCHES

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty.

 Material and Design:
 - 1. Single gang, wall mounted, recessed mortise cylinder.
 - 2. Tamper resistance spanner screws.
 - 3. 20 gauge stainless steel faceplate.
- B. Functions:
 - 1. Momentary (MO); Timed actuation (1-60 seconds); Alternate action (on/off) (AA)
 - 2. Anti-tamper switch (ATS).
 - 3. One (1) green LED (LEDG).
 - 4. One (1) red LED (LEDR).
 - 5. One (1) green LED and one (1) red LED (2LED).

2.39 EXIT SWITCHES

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Design:
 - 1. 2 inches (51 mm) square button "PUSH TO EXIT".
 - 2. Single gang, wall mounted, integrated electronic timer, fixed 30 seconds.
 - Momentary, SPDT.
- B. Standards: Manufacturer shall meet requirements for:
 - 1. IBC 1008.1.3.4.
 - 2. NFPA 7.2.1.6.2.
 - 3. California Fire Code.
 - 4. One (1) green LED (LEDG).
 - 5. One (1) red LED (LEDR).
 - 6. One (1) green LED and one (1) red LED (2LED).
 - 7.

2.40 TOUCHLESS EXIT SWITCHES

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty.
- B. Design:
 - 1. No touch wave to exit switch with no moving parts.
 - 2. Dual LED, illuminated sensor indicates status.
 - 3. Sensing range up to 4 inches (102 mm).
 - DPDT dry contact.

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2.46 POWER SUPPLY (for fail safe or fail secure locking devices)

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer shall meet requirements for UL listed power supply. Design:
 - 1. Interface with building alarm controls, card readers, keypads, and other door controls.
 - 2. Filtered and regulated 24 VDC constant voltage; 2 AMP load capacity; Over voltage/short circuit protection; Surge protection for locking devices.
 - 3. Interface relay; Adjustable time delay.

2.47 POWER SUPPLY (for electrified locking devices and automatic door operator)

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer shall meet requirements for UL listed power supply. Design:
 - 1. Power and control for openings with electrified locking device and automatic door operator.
 - 2. Filtered and regulated 24 VDC constant voltage; 2 AMP load capacity.
 - 3. Voltage overload/short circuit protection; Surge protection for locking devices.
 - Interface relay; Adjustable time delay.
 - Separate inputs for activation switch on entry and egress and ingress side of opening.
 - 6. Relay contact output to automatic operator.
 - 7. Input optional emergency release switch.
 - 8. Auxiliary 24 VDC output and separate 24VDC outputs for Fail SAFE and FAIL SECURE electrified locking devices.

2.48 POWER SUPPLY (for modular access control)

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty. Manufacturer shall meet requirements for UL listed power supply. Design:
 - 1. Use with modular access control systems
 - 2. Field selectable filtered and regulated 12 VDC or 24 VDC constant voltage; 1 AMP load capacity; Circuit breaker protected AC input voltage, secondary output PTC protected.
 - 3. Fire alarm input provides simultaneous release of Fail Safe locks and holders.
 - 4. Interface relay.
 - LED status indicators provide information regarding AC input, DC output, and battery backup status.
 - 6. Separate inputs for activation switch on entry and egress and ingress side of opening.
 - 7. 5 amp hour battery backup.
 - 8. Input 115 VAC (230 VAC optional).
 - 9. Optional dual 12 VDC or 24 VDC output.

2.49 DOOR GASKETING AND WEATHERSTRIP

- A. Provide continuous weatherstrip gasketing on exterior doors and provide smoke, light, or sound gasketing where indicated on hardware schedule. Provide non-corrosive fasteners for exterior applications.
 - 1. Perimeter gasketing: Apply to head and jamb, forming seal between door and frame.
 - 2. Meeting stile gasketing: Fasten to meeting stiles, forming seal when doors are in closed position.
 - 3. Door bottoms: Apply to bottom of door, forming seal with threshold or floor when door is in closed position.
 - 4. Sound Gasketing: Cutting or notching for stop mounted hardware not permitted.
 - Drip Guard: Apply to exterior face of frame header. Lip length to extend 4 inches (102 mm)

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(152 mm by 203 mm) fastened with double-sided pressure sensitive tape.

2.54 FINGER GUARDS

- A. Shall be of one manufacturer as listed for continuity of design and consideration of warranty.

 Manufacturer to be UL listed for use on fire doors rated up to 3 hours for metal door and 1 hour for wood doors.
- B. Materials and Design: Provide aluminum tube with internal spring mechanism that maintains constant tension against the fabric that prevents fingers from entering area behind edge of door on hinge side.
- C. Finishes: Available in clear anodized aluminum with white polyethylene material or dark bronze anodized aluminum with black polyethylene material.
- D. Acceptable Manufacturer:
 - 1. National Guard: 2248 push side mount, 2252 pull side mount or approved equal.

2.55 FINISHES

- A. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if within range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within range of approved Samples.
- B. Comply with base material and finish requirements indicated by ANSI/BHMA A156.18 designations in hardware schedule.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance.
- B. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install hardware per manufacturer's instructions and in compliance with the following as applicable:
 - NFPA 80; NFPA 105; ICC/ANSI A117.1; ANSI/BHMA A156.115 Hardware Preparation in Steel Doors and Steel Frames; ANSI/BHMA A156.115W Hardware Preparation in Wood Doors with Wood or Steel Frames; DHI Publication - Installation Guide for Doors and Hardware; UL10C/UBC7-2; Local building code.
 - 2. Approved shop drawings.
 - 3. Approved finish hardware schedule.
- B. Do not install surface mounted items until finishes have been completed on substrates involved. Set

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SECTION 08 71 11 - DOOR HARDWARE SETS

Set #001

Doors: N01, N02

3 Hinge	CB199 4 1/2 X 4 1/2 NRP	32D
1 Lockset	7KC3-F75-GRADE 2 [Passage N]	626
1 Strike	6KS3	626
1 Latch	63KCL3	626
3 Silencer	1229A	Gray
1 Wall Bumper	1270CX	626

Set #002

Doors: N03

3 Hinge	BB1168 4 1/2 X 4 1/2	US26D
1 Threshold	896 V 36" RCE - ALUM - BOTH ENDS	AL
1 Gasketing	C627 A 36"	
1 Drip Cap	16 A 76"	626
1 Closer	8916 AF89P FC SN1	689

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E. Deterioration of Insulating Glass: Failure of the hermetic seal under normal use that is attributed to the manufacturing process and not to causes other than glass breakage and practices for maintaining and cleaning insulating glass contrary to manufacturer's written instructions. Evidence of failure is the obstruction of vision by dust, moisture, or film on interior surfaces of glass.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide glazing systems capable of withstanding normal thermal movement and wind and impact loads (where applicable) without failure, including loss or glass breakage attributable to the following: defective manufacture, fabrication, and installation; failure of sealants or gaskets to remain watertight and airtight; deterioration of glazing materials; or other defects in construction.
- B. Glass Design: Glass thicknesses indicated are minimums and are for detailing only. Confirm glass thicknesses by analyzing Project loads and in-service conditions. Provide glass lites for various size openings in nominal thicknesses indicated, but not less than thicknesses and in strengths (annealed or heat treated) required to meet or exceed the following criteria:
- C. Thermal Movements: Provide glazing that allows for thermal movements resulting from the following maximum change (range) in ambient and surface temperatures acting on glass framing members and glazing components. Base engineering calculation on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change (Range): 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- D. Thermal and Optical Performance Properties: Provide glass with performance properties specified based on manufacturer's published test data, as determined according to industry accepted procedures.

1.5 SUBMITTALS

- A. Product Data: For each glass product and glazing material indicated.
- B. Samples: For the following products, in the form of 12-inch- (300-mm-) square Samples for glass and of 12-inch- (300-mm-) long Samples for sealants. Install sealant Samples between two strips of material representative in color of the adjoining framing system.
- C. Glazing Schedule: Use same designations indicated on Drawings for glazed openings in preparing a schedule listing glass types and thicknesses for each size opening and location.

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- D. Elastomeric Glazing Sealant Product Testing: Obtain sealant test results for product test reports in "Submittals" Article from a qualified testing agency based on testing current sealant formulations within a 36-month period.
- E. Preconstruction Adhesion and Compatibility Testing: Submit to elastomeric glazing sealant manufacturers, for testing indicated below, samples of each glass type, tape sealant, gasket, glazing accessory, and glass-framing member that will contact or affect elastomeric glazing sealants.
 - 1. Use manufacturer's standard test methods to determine whether priming and other specific preparation techniques are required to obtain rapid, optimum adhesion of glazing sealants to glass, tape sealants, gaskets, and glazing channel substrates.
 - a. Perform tests under normal environmental conditions replicating those that will exist during installation.
 - 2. Submit not fewer than nine pieces of each type and finish of glass-framing members and each type, class, kind, condition, and form of glass (monolithic, laminated, and insulating units) as well as one sample of each glazing accessory (gaskets, tape sealants, setting blocks, and spacers).
 - 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 - 4. For materials failing tests, obtain sealant manufacturer's written instructions for corrective measures, including the use of specially formulated primers.
 - 5. Testing will not be required if elastomeric glazing sealant manufacturers submit data based on previous testing of current sealant products for adhesion to, and compatibility with, glazing materials matching those submitted.
- Fire-Rated Door Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 252.
- G. Fire-Rated Window Assemblies: Assemblies complying with NFPA 80 that are listed and labeled by a testing and inspecting agency acceptable to authorities having jurisdiction, for fire ratings indicated, based on testing according to NFPA 257.
- H. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201 and ANSI Z97.1.
 - 1. Subject to compliance with requirements, permanently mark safety glass with certification label of Safety Glazing Certification Council or another certification agency acceptable to authorities having jurisdiction.

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1.9 WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.
- B. Manufacturer's Special Warranty on Insulating Glass: Written warranty, made out to Owner and signed by insulating-glass manufacturer agreeing to furnish replacements for insulatingglass units that deteriorate as defined in "Definitions" Article, f.o.b. the nearest shipping point to Project site, within specified warranty period indicated below.
 - 1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRODUCTS AND MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products indicated in schedules at the end of Part 3.

2.2 PRIMARY FLOAT GLASS

A. Float Glass: ASTM C 1036, Type I (transparent glass, flat), Quality q3 (glazing select); class as indicated in schedules at the end of Part 3.

2.3 HEAT-TREATED FLOAT GLASS

- A. Fabrication Process: By horizontal (roller-hearth) process with roll-wave distortion parallel to bottom edge of glass as installed, unless otherwise indicated.
- B. Fabrication Process: By vertical (tong-held) or horizontal (roller-hearth) process, at manufacturer's option, except provide horizontal process where indicated as tongless or free of tong marks.
- C. Heat-Treated Float Glass: ASTM C 1048; Type I (transparent glass, flat); Quality q3 (glazing select); class, kind, and condition as indicated in schedules at the end of Part 3.

2.4 SAFETY GLAZING.

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- A. Insulating-Glass Units: Preassembled units consisting of sealed lites of glass separated by a dehydrated interspace, and complying with ASTM E 774 for Class CBA units and with requirements specified in this Article and in the Insulating-Glass Schedule at the end of Part 3.
 - Provide Kind HS (heat-strengthened) float glass in place of annealed glass where needed to resist thermal stresses induced by differential shading of individual glass lites and to comply with glass design requirements specified in "Performance Requirements" Article. Provide Kind FT (fully tempered) where safety glass is indicated.
- B. Overall Unit Thickness and Thickness of Each Lite: Dimensions indicated in the Insulating Glass Schedule at the end of Part 3 are nominal and the overall thicknesses of units are measured perpendicularly from outer surfaces of glass lites at unit's edge.
- C. Sealing System: Dual seal, with primary and secondary sealants as follows:
 - 1. Manufacturer's standard sealants.
- D. Spacer Specifications: Manufacturer's standard spacer material and construction.
- E. Spacer Specifications: Manufacturer's standard spacer material and construction complying with the following requirements:
 - 1. Aluminum with mill or clear-anodized finish.
 - 2. Corner Construction: Manufacturer's standard corner construction.

2.8 ELASTOMERIC GLAZING SEALANTS

- A. General: Provide products of type indicated, complying with the following requirements:
 - Compatibility: Select glazing sealants that are compatible with one another and
 with other materials they will contact, including glass products, seals of
 insulating-glass units, and glazing channel substrates, under conditions of service
 and application, as demonstrated by sealant manufacturer based on testing and
 field experience.
 - Suitability: Comply with sealant and glass manufacturers' written instructions for selecting glazing sealants suitable for applications indicated and for conditions existing at time of installation.
 - 3. Colors of Exposed Glazing Sealants: As selected by Architect from manufacturer's full range for this characteristic.
- B. Elastomeric Glazing Sealant Standard: Comply with ASTM C 920 and other requirements indicated for each liquid-applied, chemically curing sealant in the Glazing Sealant

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- B. Dense Compression Gaskets: Molded or extruded gaskets of material indicated below, complying with standards referenced with name of elastomer indicated below, and of profile and hardness required to maintain watertight seal:
 - 1. Neoprene, ASTM C 864.
 - 2. EPDM, ASTM C 864.
 - 3. Silicone, ASTM C 1115.
 - 4. Thermoplastic polyolefin rubber, ASTM C 1115.
 - 5. Any material indicated above.

2.11 MISCELLANEOUS GLAZING MATERIALS

- A. General: Provide products of material, size, and shape complying with referenced glazing standard, requirements of manufacturers of glass and other glazing materials for application indicated, and with a proven record of compatibility with surfaces contacted in installation.
- B. Cleaners, Primers, and Sealers: Types recommended by sealant or gasket manufacturer.
- C. Setting Blocks: Elastomeric material with a Shore A durometer hardness of 85, plus or minus 5.
- D. Spacers: Elastomeric blocks or continuous extrusions with a Shore A durometer hardness required by glass manufacturer to maintain glass lites in place for installation indicated.
- E. Edge Blocks: Elastomeric material of hardness needed to limit glass lateral movement (side walking).
- F. Cylindrical Glazing Sealant Backing: ASTM C 1330, Type O (open-cell material), of size and density to control glazing sealant depth and otherwise produce optimum glazing sealant performance.

2.12 FABRICATION OF GLASS AND OTHER GLAZING PRODUCTS

A. Fabricate glass and other glazing products in sizes required to glaze openings indicated for Project, with edge and face clearances, edge and surface conditions, and bite complying with written instructions of product manufacturer and referenced glazing standard, to comply with system performance requirements.

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- E. Install setting blocks in sill rabbets, sized and located to comply with referenced glazing publications, unless otherwise required by glass manufacturer. Set blocks in thin course of compatible sealant suitable for heel bead.
- F. Do not exceed edge pressures stipulated by glass manufacturers for installing glass lites.
- G. Provide spacers for glass lites where the length plus width is larger than 50 inches (1270 mm) as follows:
 - Locate spacers directly opposite each other on both inside and outside faces of glass. Install correct size and spacing to preserve required face clearances, unless gaskets and glazing tapes are used that have demonstrated ability to maintain required face clearances and to comply with system performance requirements.
 - 2. Provide 1/8-inch (3-mm) minimum bite of spacers on glass and use thickness equal to sealant width. With glazing tape, use thickness slightly less than final compressed thickness of tape.
- H. Provide edge blocking where indicated or needed to prevent glass lites from moving sideways in glazing channel, as recommended in writing by glass manufacturer and according to requirements in referenced glazing publications.
- 1. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.
- J. Where wedge-shaped gaskets are driven into one side of channel to pressurize sealant or gasket on opposite side, provide adequate anchorage so gasket cannot walk out when installation is subjected to movement.
- K. Square cut wedge-shaped gaskets at corners and install gaskets in a manner recommended by gasket manufacturer to prevent corners from pulling away; seal corner joints and butt joints with sealant recommended by gasket manufacturer.

3.4 TAPE GLAZING

- A. Position tapes on fixed stops so that, when compressed by glass, their exposed edges are flush with or protrude slightly above sightline of stops.
- B. Install tapes continuously, but not necessarily in one continuous length. Do not stretch tapes to make them fit opening.
- C. Where framing joints are vertical, cover these joints by applying tapes to heads and sills first and then to jambs. Where framing joints are horizontal, cover these joints by applying tapes to jambs and then to heads and sills.

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A. Comply with ASTM C 716 and gasket manufacturer's written instructions. Provide supplementary wet seal and weep system, unless otherwise indicated.

3.8 PROTECTION AND CLEANING

- A. Protect exterior glass from damage immediately after installation by attaching crossed streamers to framing held away from glass. Do not apply markers to glass surface. Remove nonpermanent labels, and clean surfaces.
- B. Protect glass from contact with contaminating substances resulting from construction operations, including weld splatter. If, despite such protection, contaminating substances do come into contact with glass, remove them immediately as recommended by glass manufacturer.
- C. Examine glass surfaces adjacent to or below exterior concrete and other masonry surfaces at frequent intervals during construction, but not less than once a month, for build-up of dirt, scum, alkaline deposits, or stains; remove as recommended by glass manufacturer.
- D. Remove and replace glass that is broken, chipped, cracked, abraded, or damaged in any way, including natural causes, accidents, and vandalism, during construction period.
- E. Wash glass on both exposed surfaces in each area of Project not more than four days before date scheduled for inspections that establish date of Substantial Completion. Wash glass as recommended by glass manufacturer.

3.9 MONOLITHIC FLOAT-GLASS SCHEDULE

- A. Uncoated Clear Float Glass: Where glass as designated below is indicated, provide Type I (transparent glass, flat), Class 1 (clear) glass lites complying with the following:
 - 1. Uncoated Clear Annealed Float Glass FG-[#]: Annealed or Kind HS (heat strengthened), Condition A (uncoated surfaces) where heat strengthening is required to resist thermal stresses induced by differential shading of individual glass lites and to comply with performance requirements.
 - Uncoated Clear Fully Tempered Float Glass FG-[#]: Kind FT (fully tempered).

3.10 INSULATING-GLASS SCHEDULE

A. Low-E Insulating Glass IG-[1]: Where glass of this designation is indicated, provide low emissivity insulating-glass units complying with the following:

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SECTION 09 25 50 - GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Nonload-bearing steel framing members for WALL AND SOFFIT gypsum board assemblies.
 - 2. Gypsum board assemblies attached to wood or steel framing.
 - 3. Exterior gypsum board panels for walls, ceilings and soffits.
 - 4. Water-resistant gypsum backing board installed with gypsum board assemblies.
 - 5. Sound Attenuation Insulation blankets for all interior walls.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 6 Section "Rough Carpentry" for wood framing and furring, and gypsum sheathing applied over wood framing.
 - 2. Division 7 Section "Firestopping" for firestopping systems and fire-resistance-rated joint sealants.

1.3 DEFINITIONS

A. Gypsum Board Construction Terminology: Refer to ASTM C 11 and GA-505 for definitions of terms for gypsum board assemblies not defined in this Section or in other referenced standards.

1.4 ASSEMBLY PERFORMANCE REQUIREMENTS

A. Sound Transmission Characteristics: For gypsum board assemblies with STC ratings, provide materials and construction identical to those of assemblies whose STC ratings were determined according to ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency.

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B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Neatly stack gypsum panels flat to prevent sagging.

1.8 PROJECT CONDITIONS

- A. Environmental Conditions, General: Establish and maintain environmental conditions for applying and finishing gypsum board to comply with ASTM C 840 requirements or gypsum board manufacturer's recommendations, whichever are more stringent.
- B. Room Temperatures: For nonadhesive attachment of gypsum board to framing, maintain not less than 40 deg F. For adhesive attachment and finishing of gypsum board, maintain not less than 50 deg F for 48 hours before application and continuously after until dry. Do not exceed 95 deg F when using temporary heat sources.
 - C. Ventilation: Ventilate building spaces as required to dry joint treatment materials. Avoid drafts during hot, dry weather to prevent finishing materials from drying too rapidly.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Steel Framing and Furring:
 - a. Dale Industries, Inc.
 - b. Dietrich Industries, Inc.
 - c. Marino/Ware (formerly Marino Industries Corp.).
 - d. National Gypsum Co.; Gold Bond Building Products Division.
 - e. Unimast, Inc.
 - f. USG Interiors, Inc.
 - 2. Grid Suspension Assemblies:
 - a. USG Interiors, Inc. Rigid X drywall suspension system with RCX cross channel supports, or approved equal system.
 - 3. Gypsum Board and Related Products:
 - a. Domtar Gypsum.
 - b. Georgia-Pacific Corp.
 - c. National Gypsum Co.; Gold Bond Building Products Division.

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- J. Fire Rated Ceiling Construction Steel Shaft Wall Rigid Framing: ASTM C 645, profile "CH" shaped, See NER 258, depth and minimum thickness of base (uncoated) metal as follows:
 - 1. Thickness: 20 GA, unless otherwise indicated.
 - 2. Depth: 2 1/2" inch.
- K. Grid Suspension System for Interior Ceilings: ASTM C 645, manufacturer's standard direct hung grid suspension system composed of main beams and cross-furring members that interlock to form a modular supporting network.

2.3 STEEL FRAMING FOR WALLS AND PARTITIONS

- A. General: Provide steel framing members complying with the following requirements:
 - Component Sizes and Spacing: As indicated but not less than that required to comply with ASTM C 754 under the following maximum deflection and lateral loading conditions.
 - 2. Protective Coating: Manufacturer's standard corrosion-resistant coating.
- B. Steel Studs and Runners: ASTM C 645, with flange edges of studs bent back 90 degrees and doubled over to form 3/16-inch- wide minimum lip (return), and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:
 - 1. Thickness: 20 GA unless otherwise indicated.
 - 2. Size: 1 ½", 2 ½", 3 5/8" or 6" refer to plan.
- C. Slip Joint Deep Steel Runners: ASTM C 645, with flange edges of studs bent back 90 degrees wide minimum lip (return), and complying with the following requirements for minimum thickness of base (uncoated) metal and for depth:
 - 1. Thickness: 20 GA unless otherwise indicated.
 - 2. Size: 11/2", 21/2", 35/8" or 6" refer to plan.
 - 3. PROVIDE UNITS AT TOP OF STUD WALLS ATTACHED TO ROOF DECK TO PROVIDE SLIP JOINT TO ALLOW MOVEMENT AT TOP OF STUD WALL WITHOUT PLACING LOAD DIRECTLY ON THE STUD WALL

Black & Williams Community Center Gymnasium Building Improvements

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- Type: Type X Shaft Wall Liner. (FIRCODE)
 Type: Sag-resistant type for ceiling surfaces.
- 3. Edges: Square
- 4. Thickness: 1" inch, unless otherwise indicated.
- C. Exterior Gypsum ceiling or soffit board: ASTM C 931/C 931M, with manufacturer's standard edges:
 - 1. Glass Mat Gypsum Sheathing Board: ASTM C 1177/C 1177M
 - 2. Product: Subject to compliance with requirements, provide "Dens-Glass Gold" by G-P Gypsum Corp. (OR EQUAL)
 - 3. Type: Type X (FIRECODE)
 - 4. Thickness: 5/8 inch, unless otherwise indicated.
- D. Water-Resistant Gypsum Backing Board: for use at ALL ceramic or porcelain tile finish locations, complying with ASTM C 630 and as follows:
 - 1. Type: Type X (FIRECODE).
 - 2. Thickness: 5/8 inch, unless otherwise indicated.

2.5 TRIM ACCESSORIES

- A. Accessories for Interior Installation: Cornerbead, edge trim, and control joints complying with ASTM C 1047 and requirements indicated below:
 - 1. Material: Formed metal or plastic, with metal complying with the following requirement:
 - a. Steel sheet zinc coated by hot-dip or electrolytic process, or steel sheet coated with aluminum or rolled zinc.
 - 2. Shapes indicated below by reference to Fig. 1 designations in ASTM C 1047:
 - a. Cornerbead on outside corners, unless otherwise indicated.
 - b. LC-bead with both face and back flanges; face flange formed to receive joint compound. Use LC-beads for edge trim, unless otherwise indicated.
 - c. L-bead with face flange only; face flange formed to receive joint compound. Use L-bead where indicated.
 - d. U-bead with face and back flanges; face flange formed to be left without application of joint compound. Use U-bead where indicated.
 - e. One-piece control joint formed with V-shaped slot and removable strip covering slot opening.
 - B. Accessories for Exterior Installations: Cornerbead, edge trim, and control joints formed from steel sheet zinc coated by hot-dip process or rolled zinc complying with ASTM C 1047, in shapes indicated below by reference to Fig. 1 designations in ASTM C 1047.

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2.7 ACOUSTICAL SEALANT

- A. Acoustical Sealant for Exposed and Concealed Joints: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 and the following requirements:
 - 1. Product is effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
 - 2. Product has flame-spread and smoke-developed ratings of less than 25 per ASTM E 84.
- B. Acoustical Sealant for Concealed Joints: Manufacturer's standard nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant recommended for sealing interior concealed joints to reduce transmission of airborne sound. Provide at all metalstud walls to help seal gap and provide better sound attenuation.

2.8 MISCELLANEOUS MATERIALS

- A. General: Provide auxiliary materials for gypsum board construction that comply with referenced standards and recommendations of gypsum board manufacturer.
- B. Laminating Adhesive: Special adhesive or joint compound recommended for laminating gypsum panels.
- C. Spot Grout: ASTM C 475, setting-type joint compound recommended for spot-grouting hollow metal door frames.
- D. Fastening Adhesive for Wood: ASTM C 557.
- E. Fastening Adhesive for Metal: Special adhesive recommended for laminating gypsum panels to steel framing.
- F. Steel drill screws complying with ASTM C 1002 for the following applications:
 - 1. Fastening gypsum board to steel members less than 0.033 inch thick.
 - 2. Fastening gypsum board to wood members.
 - 3. Fastening gypsum board to gypsum board.
- G. Steel drill screws complying with ASTM C 954 for fastening gypsum board to steel members from 0.033 to 0.112 inch thick.
- H. Steel drill screws of size and type recommended by unit manufacturer for fastening cementitious backer units.
- I. Gypsum Board Nails: ASTM C 514.
- J. Sound-Attenuation Blankets: Unfaced mineral-fiber blanket insulation produced by combining mineral fibers of type described below with

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- C. Isolate steel framing from building structure at locations indicated to prevent transfer of loading imposed by structural movement. Comply with details shown on Drawings.
 - 1. Where building structure abuts ceiling perimeter or penetrates ceiling.
 - 2. WHERE PARTITION FRAMING AND WALL FURRING ABUT STRUCTURE, AND/OR ROOF STRUCTURE [EXCEPT AT FLOOR].
 - a. PROVIDE SLIP OR CUSHIONED-TYPE JOINTS AS APPROPRIATE TO CONDTION TO ATTAIN LATERAL SUPPORT AND AVOID AXIAL LOADING. ATTACH STUD TO ONLY ONE SIDE AND ALLOW FOR VERTICAL MOVEMENT.
 - D. Do not bridge building control and expansion joints with steel framing or furring members. Independently frame both sides of joints with framing or furring members as indicated.

3.4 INSTALLING STEEL FRAMING FOR SUSPENDED AND FURRED CEILINGS

- A. Screw furring members to wood framing.
- B. Suspend ceiling hangers from building structural members and as follows:
 - Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or ceiling suspension system. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with the location of hangers required to support standard suspension system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.
 - Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause them to deteriorate or otherwise fail.
 - 4. Secure flat, angle, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eyescrews, or other devices and fasteners that are secure and appropriate for structure as well as for type of hanger involved, and in a manner that will not cause them to deteriorate or otherwise fail.
 - 5. Do not support ceilings directly from permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
 - 6. Do not attach hangers to steel deck tabs.
 - 7. Do not attach hangers to steel roof deck. Attach hangers to structural members.

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closures needed to make partitions continuous from floor to underside of solid structure.

- D. Install steel studs and furring in sizes and at spacings indicated.
 - 1. Single-Layer Construction: Space studs 16 inches or 24 inches as indicated.
 - 2. Multilayer Construction: Space studs 24 inches, unless otherwise indicated.
- E. Install steel studs so flanges point in the same direction and leading edge or end of each gypsum board panel can be attached to open (unsupported) edges of stud flanges first.
- F. Frame openings other than door openings to comply with details indicated or, if none indicated, as required for door openings. Install framing below sills of openings to match framing required above door heads.
- G. Install polyethylene vapor retarder where indicated to comply with the following requirements:
 - 1. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with mechanical fasteners or adhesives. Extend vapor retarder to cover miscellaneous voids in insulated substrates, including those filled with loose mineral-fiber insulation.
 - Seal vertical joints in vapor retarders over framing by lapping not less than 2 wall studs. Fasten vapor retarders to framing at top, end, and bottom edges, at perimeter of wall openings, and at lap joints; space fasteners 16 inches o.c.
 - 3. Seal joints in vapor retarders caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor retarder tape.
 - 4. Repair any tears or punctures in vapor retarder immediately before concealing it with the installation of gypsum board or other construction.

3.6 APPLYING AND FINISHING GYPSUM BOARD, GENERAL

- A. Gypsum Board Application and Finishing Standards: Install and finish gypsum panels to comply with ASTM C 840 and GA-216.
- B. Install sound-attenuation blankets, where indicated, prior to installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

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gypsum panels to fit profile formed by coffers, joists, and other structural members; allow 1/4- to 3/8-inch- wide joints to install sealant.

- L. Isolate perimeter of nonload-bearing gypsum board partitions at structural abutments, except floors, as detailed. Provide 1/4- to 1/2-inch- wide spaces at these locations and trim edges with U-bead edge trim where edges of gypsum panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
- M. STC-Rated Assemblies: Seal construction at perimeters, behind control and expansion joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through gypsum board assemblies, including sealing partitions above acoustical ceilings.
 - N. Floating Construction: Where feasible, including where recommended by manufacturer, install gypsum panels over wood framing, with floating internal corner construction.
 - O. Space fasteners in gypsum panels according to referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.7 GYPSUM BOARD APPLICATION METHODS

- A. Single-Layer Application: Install gypsum wallboard panels as follows:
 - 1. On ceilings, apply gypsum panels prior to wall/partition board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.
 - 2. On partitions/walls, apply gypsum panels vertically (parallel to framing), unless otherwise indicated, and provide panel lengths that will minimize end joints.
 - 3. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing), unless parallel application is required for fire-resistance-rated assemblies. Use maximum-length panels to minimize end joints.
- B. Wall Tile Substrates: For substrates indicated to receive thin-set ceramic tile and similar rigid applied wall finishes, comply with the following:
 - 1. Install water-resistant gypsum backing board panels where ceramic tile is indicated. Install with 1/4-inch open space where panels abut other construction or penetrations.

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- B. Prefill open joints, rounded or beveled edges, and damaged areas using setting-type joint compound.
- C. Apply joint tape over gypsum board joints, except those with trim accessories having flanges not requiring tape.
- D. Apply joint tape over gypsum board joints and to flanges of trim accessories as recommended by trim accessory manufacturer.
- E. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C 840, for locations indicated:
 - 1. Level 1: Embed tape at joints in ceiling plenum areas, concealed areas, and where indicated[, unless a higher level of finish is required for fire resistance-rated assemblies and sound-rated assemblies].
 - 2. Level 2: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges where [panels are substrate for tile and where indicated].
 - 3. Level 4: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges [at panel surfaces that will be exposed to view, unless otherwise indicated].
- F. Finish exterior gypsum soffit board using setting-type joint compounds to prefill joints and embed tape, and for first, fill (second), and finish (third) coats, with the last coat being a sandable product. Smooth each coat before joint compound hardens to minimize need for sanding. Sand between coats and after finish coat.
 - 1. Painting exterior gypsum soffit board after finish coat has dried is specified in another Division 9 Section.
- G. Finish water-resistant gypsum backing board forming base for ceramic tile to comply with ASTM C 840 and gypsum board manufacturer's directions for treatment of joints behind tile.

3.12 CLEANING AND PROTECTION

- A. Promptly remove any residual joint compound from adjacent surfaces.
- B. Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure gypsum board assemblies are without damage or deterioration at the time of Substantial Completion.

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SECTION 09 51 10 - ACOUSTICAL PANEL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes ceilings composed of acoustical panels and exposed suspension systems.
- B. This section includes gypsum panel ceilings of vinyl faced ceiling panels.

1.3 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each type of product specified.
- C. Samples for initial selection in the form of manufacturer's color charts consisting of actual acoustical panels or sections of panels and sections of suspension system members showing the full range of colors, textures, and patterns available for each ceiling assembly indicated.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who has completed acoustical panel ceilings similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.
- B. Fire-Test-Response Characteristics: Provide acoustical panel ceilings that are identical to those tested for the following fire-performance characteristics, per ASTM test method indicated below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.
 - 1. Surface-burning characteristics: tested per ASTM E 84 and complying with ASTM E 1264 for Class A products.
- C. Single-Source Responsibility for Ceiling Units: Obtain each type of acoustical ceiling panel from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.
- D. Single-Source Responsibility for Suspension System: Obtain each type of suspension system from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.
- E. Coordination of Work: Coordinate layout and installation of acoustical ceiling units and suspension system components with other construction that penetrates ceilings or is supported by them, including light fixtures, HVAC equipment, fire-suppression system components, and partition system.

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- 1. Mineral-Base Panel, Nodular, Cast or Molded with Painted Finish, Non-Fire Resistance-Rated:
 - a. "FINE FISSURED"; Open Plan with Humigard Plus, #1756, Armstrong World Industries, Inc or approved equal.
 - b. "RADAR-CLIMA PLUS"; Fine Fissured Open Plan with Clima Plus, #22360-SLT EDGE, USG, Inc or approved equal.

(MUST MEET SAME ACOUSTIC PERFORMANCE REQUIREMENTS)

- B. Fissured Pattern: Units fitting ASTM E 1264 pattern designation D, with other characteristics as follows:
 - 1. Color/Light Reflectance Coefficient: White/LR 1.
 - 2. Color: White.
 - 3. Noise Reduction Coefficient: NRC 0.65 0.80.
 - 4. Ceiling Sound Transmission Class: CSTC 35 39.
 - 5. Edge Detail: Tegular edge reveal sized-to-fit flange of exposed suspension system members.
 - 6. Size: 24 by 24 inches by 3/4 inch.
 - 7. SAG RESISTANCE will hold up in indoor high humidity applications.

2.4 VINYL FACED – GYPSUM BASE ACOUSTICAL PANELS, - NODULAR, CAST, OR MOLDED

- A. Mineral based acoustic panels Type, Form and Finish: Provide Type III, Form 1 units per ASTM E 1264 with painted finish that comply with pattern and other requirements indicated. Vinyl Faced Panel, Nodular, Cast or Molded, Non-Fire-Resistance-Rated: "VINYLTONE"; VTS-8974, 24" X 48", TYPE III, FORM 1, SQUARE EDGE, NRC .45-.49, LR1, WHITE, PER ASTM E 1264, AS MANUFACTURED BY CELOTEX OR EQUAL FROM USG, OR ARMSTRONG.
- B. Units fitting ASTM E 1264 pattern designation D, with other characteristics as follows:
 - 1. Color/Light Reflectance Coefficient: White/LR 1.
 - 2. Color: White.
 - 3. Noise Reduction Coefficient: NRC 0.65 0.80.
 - 4. Ceiling Sound Transmission Class: CSTC 35 39.
 - 5. Edge Detail: square edge sized-to-fit flange of exposed suspension system members.
 - 6. Size: 24 by 48 inches by 3/4 inch.
 - 7. PROVIDE ANCHOR CLIPS FOR THE INSTALLATION OF THIS SYSTEM

2.5 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal Suspension System Standard: Provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable ASTM C 635 requirements. Non-Fire-Resistance-Rated Direct-Hung, Double-Web, Galvanized Steel Suspension Systems:
 - a. Armstrong World Industries, Inc.
 - b. Chicago Metallic Corporation.
 - c. National Rolling Mills, Inc.
 - d. USG Interiors, Inc.

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- 1. Standard for Ceiling Suspension System Installations: Comply with ASTM C 636.
- B. Arrange acoustical units and orient directionally patterned units with pattern running in **one** direction:
- C. Suspend ceiling hangers from building's structural members and as follows:
 - Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of the supporting structure or of the ceiling suspension system. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 2. Where width of ducts and other construction within ceiling plenum produces hanger spacing that interfere with the location of hangers at spacing required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.
 - Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye screws, or other devices that are secure, that are appropriate for substrate, and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 4. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
 - 5. Do not attach hangers to steel deck tabs.
 - 6. Do not attach hangers to steel roof deck. Attach hangers to structural members.
 - 7. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers, unless otherwise shown; and provide hangers not more than 8 inches (200 mm) from ends of each member.
- D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
 - 1. Screw attach moldings to substrate at intervals not over 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
- E. Install suspension system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

3.4 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension system members. Comply with manufacturer's instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 09 51 10

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SECTION 09 65 10 - RESILIENT WALL BASE & ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - Resilient wall base and accessories.

1.3 SUBMITTALS

- A. Product Data: For each type of product specified.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors and patterns available for each type of product indicated.
- C. Samples for Verification: Full-size tiles of each different color and pattern of resilient floor tile specified, showing the full range of variations expected in these characteristics.
 - 1. For resilient accessories, manufacturer's standard-size samples, but not less than 12 inches (300 mm) long, of each resilient accessory color and pattern specified.
- D. Product Certificates: Signed by manufacturers of resilient products certifying that each product furnished complies with requirements.
- E. Maintenance Data: For resilient floor tile to include in the maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

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- A. Maintain a temperature of not less than 70 deg F (21 deg C) or more than 85 deg F (35 deg C) in spaces to receive products for at least 48 hours before installation, during installation, and for at least 48 hours after installation, unless manufacturer's written recommendations specify longer
 - time periods. After post-installation period, maintain a temperature of not less than 55 deg F (13 deg C) or more than 98 deg F (35 deg C).
- B. Do not install products until they are at the same temperature as the space where they are to be installed.
- C. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by manufacturer.
- D. Install tiles and accessories after other finishing operations, including painting, have been completed.
- E. Where demountable partitions and other items are indicated for installation on top of resilient tile flooring, install tile before these items are installed.
- F. Do not install flooring over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive, as determined by flooring manufacturer's recommended bond and moisture test.

1.7 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.
 - 1. Furnish not less than one box for each 20 boxes or fraction thereof, of each type, color, pattern, class, wearing surface, and size of resilient tile flooring installed. Furnish not less than ½ box of any color utilized.
 - 2. Furnish not less than 10 linear feet (3 linear m) for each 500 linear feet (150 linear m) or fraction thereof, of each type, color, pattern, and size of resilient accessory installed.
 - 3. Deliver extra materials to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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2.6 RESILIENT BASE MATERIALS

- A. Manufacturers: Subject to compliance with requirements, resilient floor products that may be incorporated in the Work include:
 - 1. FLEXCO
 - 2. ARMSTRONG
 - 3. JOHNSONITE
 - 4. Or Approved Equal
- B. Smooth Rubber Floor Base: Homogenous rubber, 4" or 6", coved set-on type, 120ft. continuous rolls.
 - 1. Provide "Rubber Cove Base" in colors (Standards Colors)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions where installation of resilient products will occur, with Installer present, for compliance with manufacturer's requirements. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified.
- B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710, RH Testing per ASTM F 2170 and the following:
 - Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by flooring manufacturer.
 - 2. Subfloor finishes comply with requirements specified in Division 3 Section "Castin-Place Concrete" for slabs receiving resilient flooring.
 - 3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.
 - 4. Adhesives for installation shall meet a minimum of 90%RH for VCT and 85%RH for Rubber.
- C. Do not proceed with installation until unsatisfactory conditions have been corrected.
- D. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
 - Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by flooring manufacturer.

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- Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other nonpermanent, nonstaining marking device.
- G. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to comply with tile manufacturer's written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.
 - 1. Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections. H. Hand roll tiles according to tile manufacturer's written instructions.

. VCTile – Seal all joints with silicone for sealing all tile perimeters, door bucks, abutments,

floor drains, and other dissimilar material intersections.

3.4 RESILIENT ACCESSORY INSTALLATION

- A. General: Install resilient accessories according to manufacturer's written installation instructions.
- B. Apply resilient wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
 - 1. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
 - 2. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
 - 3. Do not stretch base during installation.
 - 4. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
 - 5. Install premolded outside corners before installing straight pieces.
 - 6. Install premolded outside and inside corners before installing straight pieces.
 - 7. Form outside corners on job from straight pieces of maximum lengths possible, without whitening at bends. Shave back of base at points where bends occur and remove strips perpendicular to length of base that are only deep enough to produce a snug fit without removing more than half the wall base thickness.
 - 8. Form inside corners on job, from straight pieces of maximum lengths possible, by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce a snug fit to substrate.

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2. After cleaning, reapply polish wax to floor surfaces to restore protective floor finish according to flooring manufacturer's written recommendations. Coordinate with Owner's maintenance program.

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- B. In accordance with the technical instructions in the installation instructions, use all accessories recommended by manufacturer when installing its flooring.
- C. Follow the instructions specified in the most recent version of manufacturer's installation instructions.

1.06 DELIVERY, HANDLING, STORAGE

- A. Deliver the flooring to the installation site in manufacturer's original packaging. Indicate the project name and handling instructions on the outside of the boxes.
- B. Advise the carrier of any damaged material and indicate it on the packing slip.
- C. Store the flooring inside, sheltered from extreme hot or cold temperatures. Place the material on a smooth level floor or where there is uniform solid support in a clean, dry, well-ventilated area. The long-term storage temperature must be maintained between 65°F (18°C) and 85°F (29°C). Protect adhesive and flooring material from freezing, extreme heat and direct sun exposure.
- D. Acclimatize the subfloor, all flooring material and adhesive for 48 hours before, during and after the installation by maintaining the room temperature between 65°F (18°C) and 85°F (29°C). The pallets should be unstacked 24 hours prior to use.
- E. Afterwards, maintain the room temperature between 65°F (18°C) and 85°F (29°C). Protect the material from direct sources of heat such as air vents and other types of heaters.
- F. Install the flooring after all other finishing work, including painting, has been completed.

PART 2 - PRODUCTS

2.01 MANUFACTURER

- A. Mohawk Group
- B. Mannington
- C. Interface
- D. Substitutions or Equals:
 - 1. Substitutions are allowed only if they meet the following criteria:
 - a. Must be submitted for review and approval prior to bid submission.

2.02 MATERIALS

DETAILED PRODUCT CONSTRUCTION SPECIFICATIONS

Style Name Basis of Design: Mohawk; Reforestation C0188

Product Type Glue Down LVT
Overall Thickness 4.5 mm (0.18")
Wear Layer 20 mil (0.51 mm)
Size 9.25" W x 59" L
Square Feet Per Carton 26.52 sf/ctn
Pounds Per Carton 44.8 lbs/ctn
Installation Method Glue Down

Recommended Installation Methods Monolithic, Monolithic Stepping, Half Lap, **Random**, Brick Ashlar,

Herringbone

Complies with ASTM F1700, Class III, Type B - Embossed

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- D. Ensure Moisture, Relative Humidity and pH tests have all been conducted and measurements meet manufacturer's recommendations.
- E. In case of doubt, test the adhesion on the cement subfloor or other surface that will be covered by the flooring. Do the test using the specified flooring and recommended adhesive.

3.03 RESILIENT FLOORING INSTALLATION

- A. Install the flooring according to the latest version of manufacturer's installation instructions. Use the tools, adhesives, trowel types and procedures recommended in the instructions.
- B. Acclimatize the subfloor, all flooring material and adhesive for 48 hours before, during and after the installation by maintaining the room temperature between 65°F (18°C) and 85°F (29°C). Afterwards, maintain the temperature between 65°F (18°C) and 85°F (29°C).

3.04 CLEANING AND PROTECTION

- A. Remove all excess adhesive immediately after installation as recommended in Mohawk Group's installation instructions.
- B. Before allowing traffic after installation, consult and follow the recommendations in Mohawk Group's installation instructions.
- C. Following installation and cleanup, if the work of all other trades has not yet been completed, protect the flooring by laying sheets of non-staining brown Kraft paper and then a layer of plywood sheets (rolls of non-staining heavy cardboard material could also be used for protection).
- D. Follow the instructions in Mohawk Group's Maintenance Instructions when performing initial and regular maintenance procedures.

Please note that technical website documents prevail.

END OF SECTION

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- d. Duct shafts.
- 3. Finished metal surfaces not to be painted include:
 - a. Anodized aluminum.
- 4. Operating parts not to be painted include moving parts of operating equipment, such as the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
- Labels: Do not paint over Underwriters Laboratories, Factory Mutual or other code required labels or equipment name, identification, performance rating, or nomenclature plates.
- D. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 5 Section "Structural Steel" for shop-priming structural steel.
 - Division 5 Section "Metal Fabrications" for shop-priming ferrous metal.
 - Division 6 Section "Interior Architectural Woodwork" for shop-priming interior architectural woodwork.
 - 4. Division 8 Section "Standard Steel Doors and Frames" for shop-priming steel doors and frames.
 - 5. Divisions 15 and 16: Painting mechanical and electrical work is specified in Divisions 15 and 16, respectively.

1.3 SUBMITTALS

- A. General: Submit the following according to Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for each paint system specified, including block fillers and primers.
 - Provide the manufacturer's technical information including label analysis and instructions for handling, storage, and application of each material proposed for use
 - 2. List each material and cross-reference the specific coating, finish system, and application. Identify each material by the manufacturer's catalog number and general classification.
 - 3. Certification by the manufacturer that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).
- C. Samples for initial color selection in the form of manufacturer's color charts.
 - 1. After color selection, the Architect will furnish color chips for surfaces to be coated.
 - 2. Submit samples on the following substrates for the Architect's review of color and texture only:

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1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by the manufacturer during application and drying periods.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturer: Subject to compliance with requirements, provide products of one of the following:
 - 1. Devoe and Raynolds Co. (Devoe).
 - 2. The Glidden Company (Glidden).
 - 3. Benjamin Moore and Co. (Moore).
 - 4. PPG Industries, Pittsburgh Paints (PPG).
 - 5. Pratt and Lambert (P & L).
 - 6. The Sherwin-Williams Company (S-W).
 - 7. Porter Paints (Porter)
 - 8. U.S. GYUPSUM FIRST COAT READY MIXED GYP. BD. PRIMER OR BUILDERS SOLUTION SYSTEM PRIMER / SURFACER

2.2 PAINT MATERIALS, GENERAL

- A. Material Compatibility: Provide block fillers, primers, finish coat materials, and related materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by the manufacturer based on testing and field experience.
- B. Material Quality: Provide the manufacturer's best-quality trade sale paint material of the various coating types specified. Paint material containers not displaying manufacturer's product identification will not be acceptable.
- C. Colors: Provide color selections made by the Architect from the manufacturer's full range of standard colors.

2.3 PRIMERS

- A. Primers: Provide the manufacturer's recommended factory-formulated primers that are compatible with the substrate and finish coats indicated.
- B. Primers: Exposed finished areas including walls, soffits, and ceilings For gypsum board and abuse resistant gypsum panels provide "First Coat" primer material on all surfaces.
- C. Interior Flat Latex-Based Paint: Flat latex paint used as a primer on plaster under flat, semigloss, and full-gloss alkyd finishes:

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- 2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.
- B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 - 1. Notify the Architect about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION

- A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted, or provide surface-applied protection prior to surface preparation and painting. Remove these items, if necessary, to completely paint the items and adjacent surfaces. Following completion of painting operations in each space or area, have items reinstalled by workers skilled in the trades involved.
- B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease prior to cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
- C. Surface Preparation: Clean and prepare surfaces to be painted according to the manufacturer's instructions for each particular substrate condition and as specified.
 - 1. Provide barrier coats over incompatible primers or remove and reprime. Notify Architect in writing about anticipated problems using the specified finish-coat material with substrates primed by others.
 - 2. Cementitious Materials: Prepare concrete, concrete masonry block, cement plaster, and mineral-fiber-reinforced cement panel surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen, as required, to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
 - a. Use abrasive blast-cleaning methods if recommended by the paint manufacturer.
 - b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's printed directions.
 - c. Clean concrete floors to be painted with a 5 percent solution of muriatic acid or other etching cleaner. Flush the floor with clean water to remove acid, neutralize with ammonia, rinse, allow to dry, and vacuum before painting.

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color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

- A. General: Apply paint according to manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.
- B. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
 - 1. Paint colors, surface treatments, and finishes are indicated in the schedules.
 - 2. Provide finish coats that are compatible with primers used.
 - 3. The number of coats and the film thickness required are the same regardless of the application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. Sand between applications where sanding is required to produce a smooth even surface according to the manufacturer's directions.
 - 4. Apply additional coats if undercoats, stains, or other conditions show through final coat of paint until paint film is of uniform finish, color, and appearance. Give special attention to ensure that surfaces, including edges, corners, crevices, welds, and exposed fasteners, receive a dry film thickness equivalent to that of flat surfaces.
 - 5. The term exposed surfaces includes areas visible when permanent or built-in fixtures, convector covers, covers for finned tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
 - 6. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 7. Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, nonspecular black paint.
 - 8. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
 - 9. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.
 - 10. Finish exterior doors on tops, bottoms, and side edges same as exterior faces.
 - 11. Sand lightly between each succeeding enamel or varnish coat.
 - 12. Omit primer on metal surfaces that have been shop-primed and touch-up painted.
- C. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
 - 1. Allow sufficient time between successive coats to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky

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3.6 PROTECTION

- A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.
- B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
 - 1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.7 EXTERIOR PAINT SCHEDULE

(ALL EXISTING AREAS - VERIFY COMPATABILITY W/ EXISTING SURFACE - AND PROVIDE PROPER PRODUCT)

- A. General: Provide the following paint systems for the various substrates, as indicated.
- B. Concrete Masonry Units / Concrete:
 - 1. Semi-gloss Elastomeric Finish: Two coats over block filler with total dry film thickness not less than 2.5 mils, excluding the block filler.
 - a. Block Filler: High-performance, latex block filler SW Prep Rite Block Filler or

SW Loxon Block Surfacer or Glidden Bloxfill 4000 or Equal

b. First & Second Coats: Semi-Gloss Acrylic Elastomeric Coating Finish – SW CONFLEX XL A5-400 HIGH BUILD COATING or Equal

C. Wood Trim

- Medium-Shade, Semi-Gloss Alkyd Finish: Two finish coats over primer.
 - a. Primer: Exterior primer coating.
 - b. First and Second Coats: Medium-shade, alkyd trim paint.
- D. Ferrous Metal: Primer is not required on shop-primed items.
 - 1. Handrails, Downspout Boots Full-Gloss Alkyd Enamel: Two finish coats over primer.
 - a. Primer: Synthetic rust-inhibiting primer.
 - First and Second Coats: Gloss alkyd enamel.
 - 2. Doors and Frames Semi-Gloss Alkyd Enamel: Two finish coats over primer.
 - a. Primer: Synthetic rust-inhibiting primer.
 - b. First and Second Coats: Lusterless alkyd enamel.

E. Zinc-Coated Metal:

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- b. [2] Finish Coats: Best Grade, Interior, Flat, Eggshell, or Semi-Gloss, latexenamel based paint.
- c. All soffits and/or ceilings shall be lusterless flat finish. (VERIFY COMPATABILITY W/ EXISTING SURFACE AND PROVIDE PROPER PRODUCT).

G. Under Acoustical and other Wall Covering:

- 1. New Areas Lusterless (Flat) Emulsion Finish: one coat.
 - a. Primer: Interior primer, FIRST COAT BY U.S. GYPSUM OR BUILDERS SOLUTION SYSTEM PIMER/SURFACER.

GG. Ferrous Metal:

- Doors and Frames Semi-gloss Enamel Finish: Two coats over primer with total dry film thickness not less than 2.5 mils.
 - a. Primer: Synthetic, quick-drying, rust-inhibiting primer.
 - b. Undercoat: Interior enamel undercoat.
 - c. Finish Coats: Interior, semi-gloss, odorless, alkyd enamel.
- 2. Handrails and Miscellaneous Trims Full-Gloss Enamel Finish: Two coats over primer with total dry film thickness not less than 2.5 mils.
 - a. Primer: Synthetic, quick-drying, rust-inhibiting primer.
 - b. Undercoat: Interior enamel undercoat.
 - c. Finish Coat: Exterior, gloss, alkyd enamel.

H. Zinc-Coated Metal:

- 1. High-Gloss Alkyd Enamel: Two finish coats over primer.
 - a. Preparation: Surface preparation for Galvanized metal to properly bond paint materials.
 - b. Primer: Galvanized metal BONDING primer.
 - c. First and Second Coats: Gloss alkyd enamel.

END OF SECTION 09 90 00

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PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Signs and supporting elements shall withstand the effects of gravity and other loads within limits and under conditions indicated.
- B. Thermal Movements: For exterior signs, allow for thermal movements from ambient and surface temperature changes.
 - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.
- C. Accessibility Standard: Comply with applicable provisions in the USDOJ's "2010 ADA Standards for Accessible Design" and ICC A117.1.

2.2 POST-AND-PANEL SIGNS

- A. Post-and-Panel Sign < Parking lot signage>: Sign of single-panel aluminum configurations; with smooth, uniform surfaces and support assembly; with message and characters having uniform faces, sharp corners, and precisely formed lines and profiles; and as follows:
 - 1. ISigns Inc. Parking Lot Signage or equal.
 - 2. Solid-Sheet Sign Panels (Parking Lot Signage): **Aluminum** sheet with finish specified in "Sign-Panel-Face Finish and Applied Graphics" Subparagraph and as follows:
 - a. Surface-Applied Graphics: Applied vinyl film and reflective paint.

3. Posts: Aluminum.

- a. Shape: Round (Parking Lot Signage) and Square (Interpretive Display).
- b. Size: 1 1/2-inch diameter (Parking Lot Signage) and 4 by 4 inches (Interpretive Display.
- c. Installation Method: Direct burial
- d. Finish and Color: Black powder coat.
- 4. Sign-Panel-Face Finish and Applied Graphics:
 - a. Integral Aluminum Finish: Clear anodized.
 - b. Baked-Enamel or Powder-Coat Finish and Graphics: Manufacturer's standard, in color as selected by Architect from manufacturer's full range.
 - c. Painted Finish and Graphics: Manufacturer's standard, factory-applied exterior grade acrylic polyurethane, in color as selected by Architect from manufacturer's full range.

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2.5 FABRICATION

- A. General: Provide manufacturer's standard sign assemblies according to requirements indicated.
 - 1. Mill joints to tight, hairline fit. Form assemblies and joints exposed to weather to resist water penetration and retention.
 - 2. Provide welds and brazes behind finished surfaces without distorting or discoloring exposed side. Clean exposed welded and brazed joints of flux, and dress exposed and contact surfaces.
 - 3. Conceal fasteners and anchors unless indicated to be exposed; locate exposed fasteners where they will be inconspicuous.
 - 4. Internally brace signs for stability, to meet structural performance loading without oil-canning or other surface deformation, and for securing fasteners.
- B. Post Fabrication: Fabricate posts designed for structural performance indicated and of lengths required for installation method indicated for each sign.
 - 1. Aluminum Posts: Manufacturer's standard 0.125-inch-thick, extruded-aluminum tubing unless otherwise indicated, with brackets or slots to engage sign panels.
 - 2. Direct Burial: Fabricate posts 36 inches longer than height of sign to permit direct burial or embedment in concrete foundations or concrete-filled postholes.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. General: Install signs using installation methods indicated and according to manufacturer's written instructions.
 - 1. Install signs level, plumb, and at locations and heights indicated, with sign surfaces free of distortion and other defects in appearance.
 - 2. Install signs so they do not protrude or obstruct according to the accessibility standard.
 - 3. Before installation, verify that sign components are clean and free of materials or debris that would impair installation.
 - 4. Corrosion Protection: Coat concealed surfaces of exterior aluminum in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

3.2 INSTALLING POSTS

A. Direct-Burial Method:

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SECTION 10 43 20 – EXTERIOR RAISED LETTER SIGNS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Dimensional characters (letters and numbers) [for exterior use].

1.3 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of sign.
- B. Shop Drawings: Include plans, elevations, and large-scale sections of typical members and other components. Show mounting methods, grounds, mounting heights, layout, spacing, reinforcement, accessories, and installation details.
 - 1. Provide message list for each sign, including large-scale details of wording, lettering, [artwork,]and braille layout.
- C. Samples for Initial Selection: For each type of sign material indicated that involves color selection.
 - 1. Casting: Show representative texture, character style, spacing, finish, and method of attachment.
 - 2. Approved samples will **not** be returned for installation into Project.
- D. Qualification Data: For Installer.
- E. Maintenance Data: For signage cleaning and maintenance requirements to include in maintenance manuals.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: [An employer of workers trained and approved by signage manufacturer].

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- 6. Metal Arts; Div. of L&H Mfg.
- 7. Mills Manufacturing, Inc.
- 8. Mohawk Sign Systems.
- 9. Signature Sign Signs, Inc.
- 10. Southwell Co. (The).
- B. Aluminum Castings: Provide aluminum castings of alloy and temper recommended by sign manufacturer for casting process used and for type of use and finish indicated.
- C. Cast Characters: Form individual letters and numbers by casting. Produce characters with smooth flat faces, sharp corners, and precisely formed lines and profiles, free from pits, scale, sand holes, and other defects. Cast lugs into back of characters and tap to receive threaded mounting studs. Comply with requirements indicated for finish, style, and size.
 - 1. Material: [Aluminum].
- D. Fabricated Characters: Fabricate letters and numbers to required sizes and styles, using metals and thicknesses indicated. Form exposed faces and sides of characters to produce surfaces free from warp and distortion. Include internal bracing for stability and attachment of mounting accessories. Comply with requirements indicated for finish, style, and size.
 - 1. Character Height: [8 & 12 inches] [As indicated].
 - 2. Pin applied with [1"] standoffs.
 - 3. Character Style: [HELVETICA] [ALL CAPS (LARGE & SMALL FOR TEXT)].
 - 4. PROVIDE SETS OF LETTERS MOUNTED AT LOCATIONS INDICATED SEE EXTERIOR ELEVATIONS [C/A3.1] at building

2.3 ACCESSORIES

A. Anchors and Inserts: Provide nonferrous-metal or hot-dip galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance. Use toothed steel or lead expansion-bolt devices for drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

2.4 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying strippable, temporary protective covering before shipping.

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1. Projected Mounting: Mount characters at 3/4" projection distance from wall surface indicated.

3.3 CLEANING AND PROTECTION

A. After installation, clean soiled sign surfaces according to manufacturer's written instructions. Protect signs from damage until acceptance by Owner.

END OF SECTION 10 43 20

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2.1 MANUFACTURERS

- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Portable Fire Extinguishers and Cabinets:
 - a. J.L. Industries, Inc.
 - b. Larsen's Manufacturing Company.
 - c. Potter-Roemer; Div. of Smith Industries, Inc.

2.2 MATERIALS

- A. Cold-Rolled Steel Sheet: Carbon steel, complying with ASTM A 366/A 366M, commercial quality, stretcher leveled, temper rolled.
- B. Aluminum: Alloy and temper recommended by aluminum producer and manufacturer for type of use and finish indicated, and as follows:
 - Sheet: ASTM B 209 (ASTM B 209M).
 - 2. Extruded Shapes: ASTM B 221 (ASTM B 221M).
- C. Stainless-Steel Sheet: ASTM A 666/A 666M, Type 302 or Type 304 alloy.

2.3 FIRE EXTINGUISHERS

- A. General: Provide fire extinguishers for each cabinet and other locations indicated, in colors and finishes selected by Architect from manufacturer's standard, that comply with authorities having jurisdiction.
- B. SEE DRAWINGS FOR TYPES, SIZES, MOUNTING METHOD, AND LOCATIONS

2.4 FIRE-PROTECTION CABINETS

- A. Cabinet Construction: Provide manufacturer's standard box (tub), with trim, frame, door, and hardware to suit cabinet type, trim style, and door style indicated. Weld joints and grind smooth. Miter and weld perimeter door frames.
- B. Cabinet Type: Suitable for the following:
 - 1. Fire extinguisher.
- C. Fire-Rated Cabinets: UL listed with UL listing mark with fire-resistance rating of wall where it is installed.
- D. FE #1 Cabinet Type: J. L. Industries, COSMOPOLITAN Series, Model #1037-W-10:
- E. Cabinet Mounting: Suitable for the following mounting conditions:
 - Semi-Recessed Mounting: Partially recessed into wall area for model indicated
- F. Cabinet Trim Style: Fabricate cabinet trim in one piece with corners mitered, welded, and ground smooth.
 - 1. Exposed Trim: One-piece combination trim and perimeter door frame overlapping surrounding wall surface with exposed trim face and wall return at outer edge (backbend).

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- Identify bracket-mounted extinguishers with the words "FIRE EXTINGUISHER" in red letter decals applied to wall surface.
- 2. Identify fire extinguisher in cabinet with the words "FIRE EXTINGUISHER" applied to door.

a. Lettering Color: Black.b. Orientation: Vertical.

2.6 FINISHES, GENERAL

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in the same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 STEEL FINISHES – INTERIOR OF CABINETS

- A. Surface Preparation: Clean surfaces of dirt, oil, grease, mill scale, rust, and other contaminants that could impair paint bond using manufacturer's standard methods.
- Baked-Enamel Finish: Immediately after cleaning and pretreating, apply manufacturer's standard two-coat, baked-enamel finish consisting of prime coat and thermosetting topcoat. Comply with paint manufacturer's written instructions for applying and baking to achieve a minimum dry film thickness of 2 mils (0.05 mm).
 - 1. Color and Gloss: As indicated by manufacturer's designations.

2.8 STAINLESS-STEEL FINISHES – EXTERIOR OF CABINETS

- A. General: Remove or blend tool and die marks and stretch lines into finish. Grind and polish surfaces to produce uniform, directionally textured polished finish indicated, free of cross scratches. Run grain with long dimension of each piece.
- B. Polished and Buffed Finish: Oil-ground, 180-grit finish followed by buffing.
- C. Satin, Directional Polish: No. 6 finish.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine roughing-in for hose valves, hose racks, and cabinets to verify actual locations of piping connections before cabinet installation.
- B. Examine walls and partitions for suitable framing depth and blocking where recessed and semirecessed cabinets are to be installed.
- C. Examine fire extinguishers for proper charging and tagging.
 - 1. Remove and replace damaged, defective, or undercharged units.

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- I. NEC National Electrical Code.
- J. NFPA National Fire Protection Association.
- K. AGA American Gas Association
- L. ASME American Society of Mechanical Engineers.
- M. ANSI American National Standards Institute.
- N. ASHRAE American Society of Heating, Refrigeration and Air Conditioning Engineers.
- O. NEMA National Electrical Manufacturers Association.
- P. UL Underwriters Laboratories.

1.4 INSPECTION OF THE SITE:

A. The contractor shall personally inspect the site of the proposed work and inform himself fully as to the conditions under which the work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

1.5 MATERIAL AND WORKMANSHIP:

- A. Materials, equipment, fixtures, and other appurtenances shall comply with applicable Underwriters Laboratories, (UL) Inc., American National Standards Institute, Inc., and National Electrical Manufacturer's Association standards or applicable standards of a similar independent testing organization. All materials shall be new and shall bear the label of Underwriters Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency. All equipment provided shall be listed and labeled suitable for the specified purpose, environment, application, and installed in accordance with manufacturer's instructions.
- B. All material and apparatus shall be new and in first class condition. All workmanship shall be of the finest possible by experienced mechanics. All installations shall be made in a manner that will comply with applicable Codes and laws. In general, all materials and equipment shall be of commercial specification grade in quality.

1.6 DRAWINGS AND SPECIFICATIONS

- A. The drawings are diagrammatic only and indicate the general arrangement of the systems and are to be followed. If deviations from the layouts are necessitated by field conditions, detailed layouts of the proposed departures shall be submitted to the Engineer for approval before proceeding with the work. The drawings are not intended to show every item that may be necessary to complete the systems. All proposers shall anticipate that additional items may be required and submit their bid accordingly.
- B. Each Contractor shall make all his own measurements in the field and shall be responsible for correct fitting. He shall coordinate this work with all other branches of work in such a manner as to cause a minimum of conflict or delay.
- C. The Engineer shall reserve the right to make adjustments in location of piping, ductwork, equipment, etc. where such adjustments are in the interest of improving the project.

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- B. NOTE: Any drawings, Specifications, Diagrams, etc., required to describe and coordinate such substitutions or deviations shall be professionally prepared at the responsible Contractor's expense. Review of Shop Drawings by the Engineers does not in any way absolve the Contractor of this responsibility.
- C. Notwithstanding any reference in the specifications to any article, device, product, material, fixture, form, or type of construction by name, make or catalog number, such reference shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; any devices, products, materials, fixtures, forms, or types of construction which, in the judgment of the Engineer, are equivalent to those specified are acceptable, provided the provisions of the paragraph immediately preceding are met. Requested substitutions shall be submitted to the Engineer a minimum of five days prior to bids.

1.11 SUPERVISION OF WORK

A. Each Contractor shall personally supervise the work for which he is responsible or have a competent superintendent, approved by the Engineers, on the work at all times during progress with full authority to act for him.

1.12 SHOP DRAWINGS:

- A. Submit for approval eight sets of manufacturers shop drawings of all major items of equipment and all items requiring coordination between contractors. Before submitting shop drawings and material lists, the contractor shall verify that all equipment submitted is mutually compatible and suitable for the intended use, and shall fit the available space and allow ample room for maintenance. The Engineer's checking and subsequent approval of such shop drawings shall not relieve the contractor from responsibility for errors in dimensions, details, size of members, or quantities; or omissions of components or fittings; or for coordinating items with actual building conditions. Provide any needed wiring diagrams.
- B. Catalog data must have the item or model number clearly marked and all accessories indicated. Mark out all inapplicable items.
- C. NOTE: Any shop drawings received without being reviewed and stamped by the Contractor shall be returned Rejected without review.

1.13 OPERATION AND MAINTENANCE INSTRUCTIONS:

- A. Submit to the architect four (4) copies each of material for maintenance and operation instruction manuals, appropriately bound into manual form including approved copies of the following, revised if necessary to show system and equipment as actually installed:
 - 1. Manufacturers Catalog Sheets
 - 2. Wiring Diagrams
 - 3. Maintenance Instructions
 - 4. Recommended Maintenance Schedules and Timelines
 - 5. Operating Instructions
 - 6. Parts Lists
 - 7. Preventative Maintenance Recommendations
- B. All binders shall be as per the applicable Division I General Specifications.

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with chrome plated brass escutcheons of sufficient outside diameter to amply cover the sleeved openings and an inside diameter to closely fit the pipe around which it is installed.

1.18 LINTELS

A. The Mechanical Contractor shall provide lintels for all masonry bearing openings required for the mechanical work (Louvers, wall boxes, duct penetrations, etc.). Lintels shall be sized as indicated by the structural drawings and specifications. Coordinate requirements with the general contractor and the Structural Engineer. Contact Engineer for additional direction if necessary. Plan all lintel depths to ensure maintenance of all Architectural ceiling levels. Also, plan all required angles for fire damper and UL listed sleeves for a total depth for coordination with ceiling heights. No cutting is to be done at points or in a manner that will weaken the structure and unnecessary cutting must be avoided. If in doubt, contact the Structural Engineer. Provide lintels where ever bearing walls are penetrated. Plan the location of all lintels prior to any penetrations being performed.

1.19 ACCESSIBILITY

A. The Contractor shall locate and install all equipment so that it may be serviced, and maintained as recommended by the manufacturer. Allow ready access and removal of the entire unit and, or parts such as valves, filters, fan belts, motors, prime shafts, etc.

1.20 REQUIRED CERTIFICATIONS

- A. Upon completion of the project, the Contractor shall deliver all inspection certificates acquired during the course of the project to the Owner for their records, inclusive of the boiler certificate (if applicable).
- B. The Contractor shall upon completion of the Final Punch list, deliver to Architect and Engineer a written certification that all systems and work has been completed in compliance with the plans and specifications. The Contractor also shall deliver over to the Owner all required maintenance manuals and phone numbers of the equipment suppliers. The delivery of these documents and certifications will be required prior to final payment and release of retainage.

1.21 INDEMNIFICATION

A. The Contractor(s) shall hold harmless and indemnify the Engineer, employees, officers, agents and consultants from all claims, loss,damage, actions, causes of actions, expense and/or liability resulting from, brought for, or on account of any personal injury or property damage received or sustained by any person, persons, (including third parties), or any property growing out of, occurring, or attributable to any work performed under or related to this contract, resulting in whole or in part from the negligence of the Contractor, any subcontractor, any employee, agent or representative.

PART 2 - PRODUCTS

2.1 NONE

PART 3 - EXECUTION

3.1 NONE

END OF 220500

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220507- EXCAVATION, TRENCHING, AND BACKFILLING FOR PLUMBING

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Excavation and Backfilling:

- 1. Do all excavation of all materials encountered including rock required for work under this section. Backfill all trenches, tamping well in 6" layers. System shall be tested, made tight and accepted before backfill. Remove from premises all excess material not used in backfilling. Repair all streets, sidewalks, drives, paving, etc. damaged. Repair materials shall generally match existing construction. All backfilling and repairing shall meet all requirements of the city and others having jurisdiction. Repair work shall be thoroughly first class.
- 2. Extent of earthwork is to be determined from work indicated on the drawings.
- 3. Backfilling of trenches is included as part of this work.

1.2 QUALITY ASSURANCE:

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

1.3 JOB CONDITIONS:

- A. Site Information: Complete data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity. It is expressly understood that Owner will not be responsible for interpretations or conclusions drawn from any available data. Classification of Rock: Unclassified.
- B. Should uncharted, or incorrectly charted piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- C. Provide minimum of one week notice to Architect/Engineer and Owner, and receive written notice to proceed before interrupting any utility.

D. Use of Explosives:

- 1. The use of explosives is not permitted.
- E. Protection of Persons and Property: Barricade open excavations occurring as part of this work and post warning lights.
- F. Operate warning lights as recommended by authorities having jurisdiction. No trenches shall be left open without wood planks capable of supporting 250 pounds (one man) being placed over the open sections.
- G. Protect structures, utilities, retaining walls, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.
- H. Perform excavation within drip-line of large trees to remain by hand, and protect the root system from

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- J. Do not backfill trenches until tests and inspections have been made and backfilling authorized by Architect, Engineer and local authority having jurisdiction. Use care in backfilling to avoid damage or displacement of pipe systems.
- K. Cold Weather Protection: Protect excavation bottoms against freezing when atmospheric temperature is less than 35°F. (1°C).

3.3 COMPACTION:

- A. General: Control soil compaction during construction providing minimum percentage of density specified for each area classification.
- B. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum dry density for soils which exhibit a well-defined moisture density relationship determined in accordance with ASTM D 698; and not less than the following percentages of relative density, determined in accordance with ASTM D 2049, for soil which will not exhibit a well-defined moisture-density relationship.
- C. Compact top 6" of subgrade and each layer of backfill or fill material at 90% maximum dry density.
- D. Moisture Control: When subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or subsequent to compaction operations.
- E. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
- F. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

3.4 BACKFILL AND FILL:

- A. General: Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below.
- B. In excavations, use satisfactory excavated or borrow material.
- C. Under piping and conduit, use subbase material where subbase is indicated under piping or conduit; shape to fit bottom 90° of cylinder.
- D. Backfill excavations as promptly as work permits, but not until completion of the following:
- E. Inspection, testing, approval, and recording locations of underground utilities.
- F. Removal of shoring and bracing, and backfilling of voids with satisfactory materials.
- G. Removal of trash and debris.
- H. Placement and Compaction: Place backfill and fill materials in layers not more than 8" in loose depth for material compacted by heavy compaction equipment, and not more than 4" in loose depth for material compacted by hand operated tampers.

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220519: METERS AND GAGES

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Extent of gauges and thermometers required by this section is indicated on drawings and/or specified in other Division 22 sections.

1.2 QUALITY ASSURANCE:

A. Manufacturers: Firms regularly engaged in manufacturer of pressure gauges and thermometers, of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

1.3 SUBMITTALS:

A. Product Data: Submit catalog cuts, specifications, and installation instructions, for each type of measuring device required. Submit showing Manufacturer's figure number, size, and features for each required device.

PART 2 - PRODUCTS

2.1 TEMPERATURE GAGES:

A. Direct Mount Dial Thermometers:

- 1. General: Provide direct mount dial thermometers of materials, capacities, and ranges indicated, designed and constructed for use in service indicated.
- 2. Type: Vapor tension, universal angle.
- 3. Case: Drawn steel or brass, clear acrylic plastic lens, 4½" diameter.
- 4. Adjustable Joint: Die cast aluminum, 180° adjustment in vertical plane, 360° adjustment in horizontal plane, with locking device.
- 5. Thermal Bulb: Copper with phosper bronze bourbon pressure tube, on scale division accuracy.
- 6. Movement: Brass precision geared.
- 7. Scale: Progressive, satin faced, non-reflective aluminum, permanently etched markings.
- 8. Stem: Copper plated steel, or brass, for separable socket, length to suit installation.
- 9. Range: Conform to the following:
 - a. Hot & Cold Water: 40° 240°F (10°-115°C).
- 10. Available Manufacturers: Subject to compliance with requirements, manufacturers offering direct mount dial thermometers which may be incorporated in the work include, but are not limited to the following:

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- 1. Ametek, U.S. Gauge Div.
- 2. Marsh Instrument Co., Unit of General Signal.
- 3. Marshalltown, An Eltra Company
- 4. Trerice (H.O.) Co.
- 5. Weiss (Albert A.) & Son, Inc.

H. Pressure Gage Cocks:

- 1. General: Provide pressure gage cocks between pressure gages and gage tees on piping systems. Construct gage cock of brass with ¼" female NPT on each end, and "T" handle brass plug.
- I. Snubber: ¼" brass bushing with corrosion resistant porous metal disc, through which pressure fluid is filtered. Select disc material for fluid served and pressure rating.
- J. Pressure Gage Connector Plugs:
 - 1. General: Provide pressure gage connector plugs pressure rated for 150 PSI and 200°F. Construct of brass and finish in nickel-plate, equip with ½" NPT fitting, with self-sealing valve core type neoprene gasketed orifice suitable for inserting 1/8" O.D. probe assembly from dial type insertion pressure gage. Equip orifice with gasketed screw cap and chain. Provide extension, length equal to insulation thickness, for insulated piping.

PART 3 - EXECUTION

3.1 INSTALLATION OF TEMPERATURE GAGES:

- A. General: Install temperature gages in vertical upright position, and tilted so as to be easily read by observer standing on floor.
- B. Locations: Install at the following locations, and elsewhere as indicated:
 - 1. At the supply line from the domestic water heater
- C. Thermometer Wells: Install in piping tee where indicated, in vertical upright position. Fill well with oil or graphite, secure cap.

3.2 INSTALLATION OF PRESSURE GAGES:

- A. General: Install pressure gages in piping tee with pressure gage cock, located on pipe at most readable position.
- B. Locations: Install in the following locations, and elsewhere as indicated:
 - 1. At inlet and discharge of each pump

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which may be incorporated in the work include, but are not limited to, the following:

- 1. Crane Co., Valve Div.
- 2. Fairbanks Co.
- 3. Hammond Valve Corp., Div. of Conval Corp.
- 4. Jenkins Bros., A Corp.
- 5. NIBCO, Inc.
- 6. Powell (Wm.) Co.
- 7. Stockham Valves and Fittings, Inc.
- 8. Walworth Co.

2.4 SWING CHECK VALVES:

- A. General: Check valves 2 inches and smaller shall be rated Class 125 SWP<5 degree T- pattern swing check type, meeting MSS SP80. ASTM B-62 bronze body. Brass, Bronze or TFE disc with stainless steel disc pins. Brass disc pins are not acceptable. Check valves 2-1/2 inches and larger shall be Class 125 SWP, ASTM A126 Class B cast iron body, bronze trim, swing check meeting MSS SP71.
- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering swing check valves which may be incorporated in the work include, but are not limited to the following:
 - 1. Crane Co., Valve Div.
 - 2. Fairbanks Co. (The)
 - 3. Hammond Valve Corp., A Condec Co.
 - 4. Jenkins Bros., A Corp.
 - 5. NIBCO, Inc.
 - 6. Powell Co. (The Wm.)
 - 7. Stockham Valves and Fittings, Inc.
 - 8. Walworth Co.

2.5 BALL VALVES:

- A. Ball valves 3 inches and smaller shall be rated 150 SWP, 600 WOG meeting WWV 35C Type II, Class A, Style 3. Valves shall be two pieces treaded ASTM B0584 bronze body, smooth bore, solid or tunnel drilled, large port, stainless steel ball providing laminar flow. Seats and seals shall be reinforced Teflon. Stem shall be of blowout-proof design with threaded adjustable packing follower. Packing shall be retained under full working pressure with handle or handle nut removed. Brass valves shall not be accepted.
- B. Available Manufacturers: Subject to compliance with requirements, manufacturers offering ball valves which may be incorporated in the work include, but are not limited to the following:
 - 1. Conbraco Industries, Inc.
 - 2. Crane Co., Valve Div.
 - 3. Fairbanks Co.
 - 4. Hammond Valve Corp., Div. of Conval Corp.
 - 5. Jamesbury Corp.
 - 6. NIBCO, Inc.
 - 7. Stockham Valves and Fittings, Inc.
 - 8. Walworth Co.

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- 8. Adjustable Band Hangers: MSS Type 9.
- 9. Extension Split Pipe Clamps: MSS Type 12.
- 10. Single Pipe Rolls: MSS Type 41.
- 11. Pipe Roll Stands: MSS Type 44.
- 12. Adjustable Roller Hangers: MSS Type 43.
- 13. Pipe Rolls and Plates: MSS Type 45.

2.2 VERTICAL-PIPING CLAMPS:

- A. General: Except as otherwise indicated, provide factory fabricated vertical-piping clamps complying with ANSI/MSS SP-58, of one of the following types listed, selected by Installer to suit vertical piping systems, in accordance with MSS SP-69 and manufacturer's published product information. Select size of vertical piping clamps to exactly fit pipe size of bare pipe.
 - 1. Two-Bolt Riser Clamps: MSS Type 8.
 - 2. Four-Bolt Riser Clamps: MSS Type 42.

2.3 HANGER-ROD ATTACHMENTS:

- A. General: Except as otherwise indicated, provide factory fabricated hanger-rod attachments complying with ANSI/MSS SP-58. Select size of hanger-rod attachments to suit hanger rods.
 - 1. Steel Clevises: MSS Type 14.
 - 2. Swivel Turnbuckles: MSS Type 15.
 - 3. Steel Weldless Eye Nuts: MSS Type 17.

2.4 BUILDING ATTACHMENTS:

 General: Except as otherwise indicated, provide factory fabricated building attachments complying with ANSI/MSS SP-58

2.5 SADDLES AND SHIELDS:

- 1. General: Except as otherwise indicated, provide saddles or shields for piping hangers and supports, factory-fabricated, for all insulated piping. Size saddles and shields for exact fit to mate with pipe insulation.
- B. Protection Saddles: MSS Type 39; fill interior voids with segments of insulation matching adjoining insulation.
- C. Protection Shields: MSS Type 40; of length recommended by manufacturer to prevent crushing of insulation.

2.6 MANUFACTURERS OF HANGERS AND SUPPORTS:

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering hangers and supports which may be incorporated in the work include, but are not limited to the following:
 - 1. Anvil
 - 2. C & S Mfg. Corp.
 - 3. Carpenter and Patterson, Inc.

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220700 - PLUMBING INSULATION

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

- A. Extent of mechanical insulation required by this section is indicated on drawings, and by requirements of this section.
- B. Types of mechanical insulation specified in this section include the following:
 - 1. Piping System Insulation:
 - a. Domestic Cold Water Lines
 - b. Hot Water & Circulating Hot Water Lines
 - c. Lavatory P-Trap and Supplies

1.2 QUALITY ASSURANCE:

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to the following:
 - 1. Armaflex
 - 2. Armstrong World Industries, Inc.
 - 3. Babcock & Wilcox Co., Insulating Products Div.
 - 4. Certainteed Corp.
 - 5. Johns-Manville Corp.
 - 6. Keene Corp.
 - 7. Knauf Fiber Glass
 - 8. Owens-Corning Fiberglass Corp.
- B_{*} Flame/Smoke Ratings: Provide composite mechanical insulation (insulation, jackets, coverings, sealers, mastics and adhesives) with flame-spread rating of 25 or less, and smoke-developed rating of 50 or less, as tested by ANSI/ASTM E 84 (NFPA 255) method.

1.3 INSULATION SHIELDS

A. Metal insulation shields are required at all pipe hangers where the piping is insulated. Metal shields shall be constructed of galvanized steel, formed to a 180 degree arc with lengths equal to at least twice the pipe diameter.

1.4 SUBMITTALS:

- A. Product Data: Submit manufacturer's specifications and installation instructions for each type of mechanical insulation. Submit schedule showing manufacturer's product number, thickness, and furnished accessories for each mechanical system requiring insulation.
- B. Certified Tests: With product data submit certified test reports on performances including burning characteristics and thermal insulating valves.

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where otherwise indicated.

G. Install protective metal shields and insulated inserts wherever needed to prevent compression of insulation. Pipe Hanger Insulation Inserts: Butt pipe insulation against pipe hanger insulation inserts. For cold piping apply wet coat of vapor barrier lap cement on butt joints and seal joints with 3 inch wide vapor barrier tape or band.

3.2 PROTECTION AND REPLACEMENT:

- A. Replace damaged insulation which cannot be repaired satisfactorily, including units with vapor barrier damage and moisture saturated units.
- B. Protection: Insulation Installer shall advise Contractor of required protection for insulation work during remainder of construction period, to avoid damage and deterioration.

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3.1 PIPING INSTALLATION;

- A. Pipe shall be accurately cut from job measurements and shall be neatly aligned, securely connected, and properly supported. Piping shall be thoroughly cleaned before installation. Provide pipe sleeves where piping passes through structure. Threaded and soldered joints shall be made in a workmanlike manner according to good pipe fitting practices.
- B. Saddle taps are prohibited.
- C. Locate piping runs, except as otherwise indicated, vertically and horizontally (pitched to drain) and avoid diagonal runs wherever possible. Orient horizontal runs parallel with walls and column lines. Locate runs as shown or described by diagrams, details and notations or, if not otherwise indicated, run piping in shortest route which does not obstruct usable space or block access for servicing building and its equipment. Hold piping close to walls, overhead construction, columns and other structural and permanent-enclosure elements of building; limit clearance to 1/2" where furring is shown for enclosure or concealment of piping, but allow for insulation thickness, if any. Where possible, locate insulated piping for 1.0" clearance outside insulation. Wherever possible in finished and occupied spaces, conceal piping from view, by locating in column enclosures, in hollow wall construction or above suspended ceilings; do not encase horizontal runs in solid partitions, except as indicated.
- D. Electrical Equipment Spaces: Do not run piping through transformer vaults, over panels and other electrical or electronic equipment spaces and enclosures.
- E. Braze copper tube-and-fitting joints where indicated, in accordance with ANSI B31.
- F. Solder copper tube-and-fitting joints where indicated, in accordance with recognized industry practice. Cut tube ends squarely, ream to full inside diameter, and clean outside of tube ends and inside of fittings. Apply solder flux to joint areas of both tubes and fittings. Insert tube full depth into fitting, and solder in manner which will draw solder full depth and circumference of joint. Wipe excess solder from joint before it hardens.
- G. Install valves where required for proper operation of piping and equipment, including valves in branch lines where necessary to isolate sections of piping. Locate valves so as to be accessible and so that separate support can be provided when necessary. Install shut-off valves for each piece of plumbing equipment.
- H. Install valves with stems pointed up, in vertical position where possible, but in no case with stems pointed downward for horizontal plane unless unavoidable. Install valve drains with hose end adapter for each valve that must be installed with stem below horizontal plane.
- I. Ferrous pipe hangers shall be Fee & Mason Figure 215 or equal Unistrut malleable iron split ring hanger; copper pipe hangers shall be Figure 361 cast brass with plated adjuster. No perforated strap iron hangers will be permitted. Fee & Mason #400 "Auto-Grip" type hangers are an acceptable alternative hanger. Concrete inserts, where required, shall be Unistrut, Midwest, or Truscon. Hangers shall be spaced at ten foot intervals or less, as required to avoid sag, prevent vibration, and allow accurate leveling or grading. Vertical piping shall be supported by Fee & Mason Figure 241 or equal clamp for ferrous piping, and Figure 368 for copper. Provide sheet metal saddles for insulated piping.
- J. Do not use wire or perforated metal to support piping, and do not support piping from other piping, ductwork or other supported mechanical or electrical items. Install hangers and supports to provide indicated pipe slopes.

3.2 WATER HAMMER ARRESTORS AND TRAPS:

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221119 -: DOMESTIC WATER PIPING SPECIALTIES

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

- A. Extent of piping specialties required by this section is indicated on drawings and/or specified in other Division 22 sections or as required to provide a complete system.
- B. Types of piping specialties specified in this section include the following:
 - 1. Wall Hydrants
 - 2. Backflow Preventer
 - 3. Pressure Reducing Valve
 - 4. Pipe Escutcheons
 - 5. Pipeline Strainers.
 - 6. Dielectric Unions.
 - 7. Sleeves.
 - 8. Sleeve Seals.

1.2 QUALITY ASSURANCE:

- A. Plumbing Code Compliance: Comply with Kentucky State Plumbing Code and pertaining to plumbing materials, construction and installation of products. Also comply with all state and local codes having jurisdiction. No work shall begin until the Contractor has approved plumbing plans. The Contractor is responsible for installing the indicated systems in accordance with code, therefore any modifications to the project required by the Division of Plumbing shall be considered as part of this project and shall be made at no increase in contract price.
- B. Manufacturers: Firms regularly engaged in manufacturer of piping specialties of types and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

1.3 SUBMITTALS:

- A. Product Data: Submit catalog cuts, specifications, installation instructions, Also submit dimensioned drawings for pipeline strainers. Include pressure drop curve or chart for each type and size of pipeline strainer. Submit schedule showing manufacturer's figure number, size, location and features for each required pipeline strainer.
- B. Maintenance Data: Submit maintenance data and spare parts lists for each type of pipeline strainer. Include this data in Maintenance Manual.

PART 2 - PRODUCTS

2.1 MANUFACTURED PIPING SPECIALTIES:

A. General: Provide factory-fabricated piping specialties recommended by manufacturer for use in service indicated. Provide piping specialties of types, pressure ratings, voltage and wattage indicated for each service, or if not indicated, provide proper selections as determined by Engineer to comply with

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- b. Armstrong Machine Works.
- c. Hoffman Specialty, ITT Fluid Handling Div.
- d. Metraflex Co.
- e. Sarco Co., Div. of White Consolidated.
- f. Crane Co.
- g. Trerice (H.O.) Co.
- h. Victaulic Co. of America
- H. Dielectric Unions, General: Provide standard products recommended by manufacturer for use in service indicated, which effectively isolate ferrous from non-ferrous piping (electrical conductance), prevent galvanic action, and stop corrosion. Universal Controls or equal
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering dielectric unions which may be incorporated in the work include, but are not limited to the following:
 - a. Atlas Products Co.
 - b. Capital Mfg. Co., Div. of Harsco Corp.
 - c. Eclipse, Inc.
 - d. Epco Sales, Inc.
 - e. FMC Corp.
 - f. McNally, Inc.
 - g. PSI Industries.
 - h. Stockham Valves and Fittings.
 - i. Universal Controls

2.2 FABRICATED PIPING SPECIALTIES:

- A. Pipe Sleeves: Provide pipe sleeves of one of the following:
 - 1. Sheet-Metal: Fabricate from galvanized sheet metal; round tube closed with snaplock joint, welded spiral seams or welded longitudinal joint. Fabricate from the following gages: 3" and smaller, 20 gage; 4" to 6", 16 gage; over 6", 14 gage.
 - a. Steel-Pipe: Fabricate from Schedule 40 galvanized steel pipe; remove burrs.
 - b. Iron-Pipe: Fabricate from cast-iron or ductile-iron pipe, remove burrs.
- B. Sleeve Seals: Provide sleeve seals for sleeves located in foundation walls below grade, or in exterior walls, of one of the following:
 - Mechanical Sleeve Seals: Modular mechanical type, consisting of interlocking synthetic rubber links shaped to continuously fill annular space between pipe and sleeve, connected with bolts and pressure plates which cause rubber sealing elements to expand when tightened, providing watertight seal and electrical insulation.
- C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering mechanical sleeve seals which may be incorporated in the work include, but are not limited to the following:
 - 1. Thunderline Corp.

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3.3 SPARE PARTS:

A. Furnish to Owner, with receipt, one valve key for each key operated hydrant, bibb, or faucet installed.

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PART 3 - EXECUTION

3.1 PIPING INSTALLATION;

- A. Pipe shall be accurately cut from job measurements and shall be neatly aligned, securely connected, and properly supported. Piping shall be thoroughly cleaned before installation. Joints shall be made in a workmanlike manner according to good pipe fitting practices.
- B. Locate piping runs, except as otherwise indicated, vertically and horizontally (pitched to drain) and avoid diagonal runs wherever possible. Locate runs as shown or described by diagrams, details and notations or, if not otherwise indicated, run piping in shortest route which does not obstruct usable space or block access for servicing building and its equipment.
- C. Do not use wire or perforated metal to support piping, and do not support piping from other piping, ductwork or other supported mechanical or electrical items. Install hangers and supports to provide indicated pipe slopes.

3.2 <u>CLEANOUTS:</u>

- A. Cleanouts shall be installed at points as noted on the drawings, as well as at the foot of each soil, waste or interior downspout stack, minimum every 80 feet in horizontal soil and waste lines, and at other points as required for easy system maintenance. Cleanouts shall be full size of the pipe up to 4", and 4" size for pipe above 4" size. Grease all cleanout plugs.
- B. Cleanouts and/or test tees concealed in inaccessible pipe spaces, walls and other locations shall have an eight (8) inch by eight (8) inch (minimum) access panel or cover plates shall be set flush with finished floors and walls and shall be key or screw driver operable.
- C. Access panels for cleanouts shall be of the Zurn, 1460 series or equivalent by Josam or Wade. Where they are not to receive paint, they shall be polished bronze unless otherwise indicated where they are to receive paint or other finishes. They may, at the Contractor's option, be Perma-Coated steel, prepared to receive finish.
- D. Cleanouts and access panels shall be sized so as to permit the entry of a full sized rodding head capable of one hundred percent circumferential coverage of the line served.
- E. Provide a non-hardening mixture of graphite and grease on threads of all screwed cleanouts during installation.
- F. Do not install cleanouts against walls, partitions, etc. where rodding will be difficult or impossible. Extend past the obstruction. Hold a minimum of 12" from all walls.
- G. In finished walls, floors, etc., insure that cleanouts are installed flush with finished surfaces and, where required, grout or otherwise finish in a neat and workmanlike manner.

3.3 FLOOR DRAINS

A. Provide floor drains at locations indicated and/or as required by Kentucky Building Code. Install in a neat

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223300 - ELECTRIC WATER HEATERS

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK:

A. Extent of water heater work required by this section is indicated on drawings and schedules, and by requirements of this section.

1.2 QUALITY ASSURANCE:

- A. Manufacturers: Firms regularly engaged in manufacturer of electric water heaters, of types and capacities required, whose products have been in satisfactory use in similar service for not less than 5 years.
- B. ASME Compliance: Construct water heaters in accordance with American Society of Mechanical Engineers (ASME) Pressure Vessel Codes, where such requirements is indicated.
- C. UL Labels: Provide electrical water heaters which have been listed and labeled by Underwriters Laboratories (UL).

1.3 PRODUCT DELIVERY, STORAGE, AND HANDLING:

A. Handle water heaters carefully to prevent damage, breaking, and scoring. Store heaters and equipment in clean dry place. Protect from weather, dirt, fumes, water, construction debris and physical damage.

PART 2 - PRODUCTS

2.1 DOMESTIC WATER HEATERS

- A. Water heaters to be electric with power as specified on the Drawings. Provide water heaters with glass-lined tank, steel jacket, polyurethane foam insulation, magnesium or equal anode protection, and ASME temperature & pressure relief valves. Provide electronic control module, thermal overload protection and temperature control. Minimum tank warranty shall be five (5) years.
- B. Acceptable Manufacturers:
 - 1. A.O. Smith
 - 2. Lochinvar
 - 3. Teledyne

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G. All faucets, stops and fittings must be of one manufacturer with interchangeable parts, unless otherwise specified.

PART 3 - EXECUTION

3.1 INSPECTION AND PREPARATION:

- A. Examine roughing-in work of domestic water and waste piping systems to verify actual locations of piping connections prior to installing fixtures. Also examine floors and substrates, and conditions under which fixture work is to be accomplished. Correct any incorrect locations of piping, and other unsatisfactory conditions for installation of plumbing fixtures. Do not proceed with work until unsatisfactory conditions have been corrected.
- B. Install plumbing fixtures of types indicated where shown and at indicated heights; in accordance with fixture manufacturer's written instructions, roughing-in drawings, and with recognized industry practices. Ensure that plumbing fixtures comply with requirements and serve intended purposes. Comply with applicable requirements of the Kentucky State and local codes pertaining to installation of plumbing fixtures.
- C. Fasten plumbing fixtures securely to indicated supports or building structure; and ensure that fixtures are level and plumb. Secure plumbing supplies behind or within wall construction so as to be rigid, and not subject to pull or push movement.

3.2 CLEAN AND PROTECT:

- A. Clean plumbing fixtures of dirt and debris upon completion of installation.
- B. Protect installed fixtures from damage during the remainder of the construction period.

3.3 FIELD QUALITY CONTROL:

A. Upon completion of installation of plumbing fixtures and after units are water pressurized, test fixtures to demonstrate capability and compliance with requirements. When possible, correct malfunctioning units at site, then retest to demonstrate compliance; otherwise, remove and replace with new units and proceed with retesting.

END OF 224000

LFD Community Paramedicine Renovation Project

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1.4 CLOSEOUT SUBMITTALS

A. Maintenance Data: For shower basins to include in maintenance manuals.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Shower valves intended to convey or dispense water for human consumption are to comply with the U.S. Safe Drinking Water Act (SDWA), with requirements of the Authority Having Jurisdiction (AHJ), and with NSF 61 and NSF 372, or be certified in compliance with NSF 61 and NSF 372 by an ANSI-accredited third-party certification body, in that the weighted average lead content at wetted surfaces is less than or equal to 0.25 percent.

2.2 SHOWER BASINS

- A. Precast-Terrazzo Shower Basins
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Acorn Engineering; Morris Group International, model [SBADAR] or comparable product by one of the following:
 - a. Florestone Products Co., Inc.
 - b. Stern-Williams Co., Inc.
 - c. < Insert manufacturer's name>.
 - 2. Source Limitations: Obtain shower basins from single source from single manufacturer.
 - 3. Description: Precast-terrazzo base for built-up-type shower fixture.
 - 4. Standard:
 - a. CSA B45.8/IAPMO Z403.
 - b. IAPMO PS 99.
 - c. 2010 ADA Standards for Accessible Design.
 - 5. Threshold Type: [Handicapped/accessible].
 - 6. Shape: [Square, ADA with ramp]
 - 7. Nominal Size:
 - a. Rectangular, with Ramp for ADA: [60 by 30 in. (1524 by 762 mm)] [60 by 36 in.
 - 8. Color: from manufacturer's standard color selection.
 - 9. Outlet: [Removable stainless steel grid strainer, NPS 2 (DN 50), no-caulk drain] [Back outlet stainless steel strainer 2 in. NPT, female].
 - 10. Tiling Flange: Integral, stainless steel.

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3.3 PIPING CONNECTIONS

- A. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with traps and soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."

3.4 ADJUSTING

- A. Operate and adjust showers and controls. Replace damaged and malfunctioning showers, fittings, and controls.
- B. Adjust water pressure at shower valves to produce proper flow.

3.5 CLEANING AND PROTECTION

- A. After completing installation of showers[and basins], inspect and repair damaged finishes.
- B. Clean showers [and basins], shower valves, and other fittings with manufacturers' recommended cleaning methods and materials.
- C. Provide protective covering for installed fixtures and fittings.
- D. Do not allow use of showers [and basins] for temporary facilities unless approved in writing by Owner.

END OF SECTION 224223

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- C. Electrical Contractor Any Contractor whether bidding or working independently or under the supervision of a General Contractor, that is: the one holding the Prime Contract and who installs any type of Electrical work, such as: power, lighting, television, telecommunications, data, fiber optic, intercom, fire detection and alarm, security, video, underground or overhead electrical, etc.
- D. Electrical Sub-Contractor Each or any Contractor contracted to, or employed by, the Electrical Contractor for any work required by the Electrical Contractor.
- E. Engineer The Consulting Mechanical-Electrical Engineer either consulting to the Owner, Architect, or Other, etc. In this case: Technical Horizons, Consulting Engineers.
- F. Architect The Architect of Record for the project.
- G. Contract Documents All documents pertinent to the quality and quantity of work to be performed on this project. Includes, but not limited to: Plans, Specifications, Instructions to Bidders, General and Special Conditions, Addenda, Alternates, Lists of Materials, Lists of Sub-
 - Contractors, Unit Prices, Shop Drawings, Field Orders, Change Orders, Cost Breakdowns, Schedules of Value, Periodical Payment Requests, Construction Manager's Assignments, Architect's Supplemental Instructions, Construction Contract with Owner, etc.
- H. Bidder/Proposer Any person, agency or entity submitting a proposal to any person, agency or entity for any part of the work required under this contract.
- I. The Project All of the work required under this Contract.
- J. Furnish Deliver to the site in good condition and turn over to the Contractor who is to install.
- K. Provide Furnish and install complete, tested and ready for operation.
- L. Install Install equipment furnished by others in complete working order.
- M. Indicated Listed in the Specifications, shown on the Plans or Addenda thereto.
- N. Basis of Design (BOD): Documentation of primary thought processes and assumptions behind design decisions made to meet design intent. Describes systems, components, conditions and methods chosen to meet intent.
- 0. Monitoring: Recording of parameters (flow, current, status, pressure, etc.) of equipment operation using data loggers or trending capabilities of control systems.
- P. Start-up: The activities where systems or equipment are initially tested and operated. Start-up is completed prior to functional testing.
- Q. Vendor: Supplier of equipment.
- R. Typical or Typ- Where indicated repeat this work, method or means each time the same or similar condition occurs whether indicated or not.
- S. ADA Americans with Disabilities Act.
- T. ANSI American National Standards Institute.
- U. ASA American Standards Association.
- V. ASTM American Society for Testing Materials.

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materials, installation, and workmanship shall be in accordance with the mandatory and advisory provisions of NFPA 70 unless more stringent requirements are specified or indicated.

PART 2- INTENT AND INTERPRETATION

- 2.1 It is the intent of these specifications and all associated drawings that the Contractor provide finished work, tested, and ready for operation. Wherever the word "provide" is used, it shall mean "furnish and install complete, tested and ready for operation."
- 2.2 Minor details not usually shown or specified, but necessary for the proper installation and operation, shall be included in the work, the same as if herein specified or shown.
- 2.3 It is the intention of the Contract Documents to call for a complete and operational system, including all components, accessories, finish work, etc as necessary for trouble free operation; tested and ready for operation. Anything that may be required, implied, or inferred by the Contract Documents shall be provided and included as part of the Bid.
- 2.4 All Contractors and Vendors providing a bid for this project shall review the Plans and Specifications and determine any modifications and/or adjustments necessary relative to the proposed equipment and materials with specific manufacturer's installation requirements. Include in the bid any necessary installation methods, features, options, accessories, etc. necessary to install the proposed equipment and materials, regardless of whether used as basis of design or being offered as a substitution in accordance with the specific manufacturer's installation requirements whether specifically detailed or not within the Plans and Specifications.
- 2.5 Details not usually shown or specified, but necessary for the proper installation and operation of systems, equipment, materials, etc., shall be included in the work, the same as if herein specified or indicated.
- 2.6 The Bidder/Proposer shall completely review the Contract Documents. Any interpretation as to design intent or scope shall be provided by the Engineer / Architect. Should an interpretation be required, the Bidder/Proposer shall request a clarification not less than ten (10) days prior to the submission of the proposal so that the condition may be clarified by Addendum. In the event of any conflict, discrepancy, or inconsistency develops; the interpretation of the Engineer shall be final.
- 2.7 The Contractor shall give written notice of any materials or apparatus believed inadequate or unsuitable; in violation of laws, ordinances, rules or regulations of authorities having jurisdiction; and any necessary items of work omitted a minimum of ten (10) days prior to bid. In the absence of such written notice and by the act of submitting a bid, it shall be understood that the Contractor has included the cost of all required items in the bid, and that will be responsible for the approved satisfactory functioning of the entire system without extra compensations.

PART 3- ELECTRICAL DRAWINGS AND SPECIFICATIONS

- 3.1 The drawings are diagrammatic only and indicate the general arrangement of the systems and are to be followed insofar as possible. If deviations from the layouts are necessitated by field conditions, detailed layouts of the proposed departures shall be submitted in writing to the Engineer for approval before proceeding with the work. The Contract Drawings are not intended to show every vertical or horizontal offset which may be necessary to complete the systems. Contractors shall, however, anticipate that additional offsets may be required and submit their bid accordingly.
- 3.2 The drawings and specifications are intended to supplement each other. No Contractor, bidder, proposer or supplier shall take advantage of conflict between them, or between parts of either, but should this condition exist, the Contractor or supplier shall request a clarification of the

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- examine all Drawings and Specifications and inform themselves of the kind and type of materials to be used throughout the project and which may, in any way, affect the execution of his work.
- 4.2 Each Contractor shall fully acquaint himself with all existing conditions as to ingress and egress, distance of haul from supply points, routes for transportation of materials, facilities and services, availability of temporary or permanent utilities, etc. The Contractor shall include in his work all expenses or disbursements in connection with such matters and conditions. Each Contractor shall verify all work shown on the drawings and conditions at the site, and shall report in writing to the Engineer ten days prior to bid, any apparent omissions or discrepancies in order that clarifications may be issued by written addendum. No allowance is to be made for lack of knowledge concerning such conditions after bids are accepted.
- 4.3 The Electrical Contractor is required to provide coordination drawings, data and collaboration for all aspects of his work in accordance with the general and special conditions Divisions 15 and 16 and the General Contractor's procedures.

PART 5- EQUIPMENT AND MATERIALS SUBSTITUTIONS OR DEVIATIONS

- 5.1 When any Contractor requests review of substitute materials and/or equipment, and when under an approved formal alternate proposal, it shall be understood and agreed that such substitution, if approved, will be made without additional cost regardless of changes in connections, spacing, service, mounting, etc. In all cases where substitutions affect other trades, the Contractor offering such substitutions shall advise all such Contractors of the change and shall reimburse them for all necessary changes in their work. Any drawings, Specifications, Diagrams, etc., required to describe and coordinate such substitutions or deviations shall be professionally prepared at the responsible Contractor's expense. Special Note: Review of Shop Drawings by the Engineer does not absolve the Contractor of this responsibility.
- 5.2 References in the specifications to any article, device, product, material, fixture, form, or type of construction by name, make, or catalog number shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition. Each Contractor, in such cases, may, at his option, use any article, device, product, material, fixture, form, or type of construction which in the judgment of the Engineer is equivalent to that specified, provided the provisions of Paragraph 5.1 immediately preceding are met. Substitutions shall be submitted to the Engineer a minimum of ten (10) days prior to bid date for approval to bid in written form through addenda or other method selected by the Engineer. If prevailing laws of cities, towns, states or countries are more stringent than these specifications regarding such substitutions,
 - then those laws shall prevail over these requirements.
- 5.3 Wherever any equipment and material is specified exclusively only such items shall be used unless substitution is accepted in writing by the engineers.
- Each Contractor shall furnish along with his proposal a list of specified equipment and materials which he proposes to provide. Where several makes are mentioned in the Specifications and the Contractor fails to state which he proposes to furnish, the Engineer shall have the right to choose any of the makes mentioned without change in price.

PART 6- SINGLE SOURCE RESPONSIBILITY AND OBSOLETE EQUIPMENT

Except where specifically noted otherwise, all equipment supplied by the Contractor shall be the standard products of a single manufacturer of known reputation and experience in the industry. Only equipment, components and accessories in current production for at least five (5) years beyond the completion date of this system shall be used and installed. Any equipment found to be obsolete or not in future production will be removed and replaced at Contractor's expense. This includes all equipment, materials and labor.

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- 9.2 In addition to cost breakdowns by specification section, the following shall also be provided: Material and labor shall be listed separately. These items are in addition to items listed in front end specifications. Pay special attention to required withholding percentages for startup, testing, documentation, acceptance, owner training, etc. The breakdown shall be minimally as follows:
 - A. Permitting
 - B. Mobilization
 - C. Electrical Shop Drawings/Submittals
 - D. Electrical Coordination Drawings
 - E. Temporary Power
 - F. Interior Lighting Materials & Labor
 - G. Exterior Lighting Materials & Labor
 - H. Lighting Controls Materials & Labor
 - I. Electrical Distribution (Switchgear) Materials & Labor
 - J. Feeders Materials & Labor
 - K. Branch Circuiting Materials & Labor
 - L. Service Grounding Materials & Labor
 - M. Surge Suppression Materials & Labor
 - N. Electrical Devices Materials & Labor
 - 0. Ladder/Cable Trays Materials & Labor
 - P. Fiber/Communication Duct Banks Materials & Labor
 - Q. Fire Alarm Materials & Labor
 - R. Access Controls Equipment and Cabling Materials & Labor
 - S. Security Equipment and Cabling Materials & Labor
 - T. Fire Alarm System Startup, Testing, & Verification (shall equal 5% of Equipment Value)
 - U. Electrical Distribution Equipment Startup, Testing, & Verification (shall equal 2.5% of Equipment Value)
 - V. Lighting and Lighting Controls Startup, Testing, & Verification (shall equal 2.5% of Equipment Value)
 - W. Low-Voltage Systems Startup, Testing, & Verification (shall equal 5% of Equipment Value)
 - X. Owner Training & Acceptance
 - Y. Punchlist
 - Z. As-Built/Record Drawings & Acceptance
 - AA. O&M Manuals & Acceptance

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- Inspections shall be scheduled for rough as well as finished work. The rough inspections shall be divided into as many inspections as may be necessary to cover all roughing-in without fail. Report of each such inspection visit shall be submitted to the Architect, Engineer and the Contractor within three days of the inspection.
- Approval by an Inspector does not relieve the Contractor from the responsibilities of furnishing equipment having a quality of performance equivalent to the requirements set forth in these plans and specifications. All work under this contract is subject to the review of the Architect and/or Engineer, whose decision is binding.
- 11.7 Before final acceptance, the Contractor shall furnish three (3) copies of the certificates of final approval by the Electrical Inspector (as well as all other inspection certificates) to the Engineer with one (1) copy of each to the appropriate government agencies, as applicable. Final payment for the work shall be contingent upon completion of this requirement.
- 11.8 The Contractor shall test all wiring and connections for continuity and grounds before equipment and fixtures are connected, and when indicated or required, demonstrate by Megger Test the insulation resistance of any circuit or group of circuits. Where such tests indicate the possibility of faulty insulation, locate the point of such fault, pull out the defective conductor, replacing same with new and demonstrate by further test the elimination of such defect.

PART 14 - SURVEYS, MEASUREMENTS AND GRADES

- 14.1 The Contractor shall lay out his work and be responsible for all necessary lines, levels, elevations and measurements. He must verify the figures shown on the drawings before laying out the work and will be held responsible for any error resulting from his failure to do so.
- 14.2 The Contractor shall base all measurements, both horizontal and vertical from established bench marks. All work shall agree with these established lines and levels. Verify all measurements at site and check the correctness of same as related to the work.
- 14.3 Should the Contractor discover any discrepancy between actual measurements and those indicated, which prevents following good practice or the intent of the drawings and specifications, he shall notify the Engineer thru normal channels of job communication and shall not proceed with his work until he has received instructions from the Engineer.

PART 15- UTILITY COMPANY REQUIREMENTS

- 15.1 The Contractor shall provide the local utility company with a drawing produced by a licensed Land Surveyor or a licensed Engineer and acceptable to the utility that locates the centerline of the primary duct. Coordinate further requirements with utility company.
- 15.2 Contact the utility company for specifics on construction of pads, conduit, etc., prior to bidding the work and determine all their requirements. All work shall be in accordance with their standards.
- 15.3 The electrical contractor is responsible for all fees, permit costs, etc., from the electrical utility, data, telephone and cable TV companies. This includes any cost associated with the underground electrical service extension.
- Each contractor, prior to bidding the work, is to contact the utility companies (electric, data, telephone and cable TV) and determine the exact points of extension of all underground services in the field with a representative of each utility company. Also, obtain construction details on manholes, transformer pads,

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- 18.7 Comply with National Electrical Contractors Association (NECA) performance standards that are published as National Electrical Installation Standards (NEIS).
- 18.8 All applicable equipment and devices provided shall meet all FCC requirements and restrictions.

PART 19- QUALIFICATIONS OF WORKMEN

- All electrical contractors bidding this project must have been a licensed company for a minimum of three (3) years to qualify to bid this project. Individual employee experience does not supersede this requirement.
- 19.2 All subcontractors bidding the electrical work must have completed one project of 70% this subcontract cost size and two projects of 50% this subcontract cost size.
- 19.3 All electrical work shall be accomplished by qualified workmen competent in the area of work for which they are responsible. Untrained and incompetent workmen as evidenced by their workmanship shall be relieved of their responsibilities in those areas. The Engineer shall reserve the right to determine the quality of workmanship of any workman and unqualified or incompetent workmen shall refrain from work in areas not satisfactory to him. Requests for relief of a workman shall be made through the normal channels of responsibility established by the Architect or the contract document provisions.
- All electrical work shall be accomplished by Journeymen electricians and electrical apprentices under the direct supervision of a licensed Electrician. All applicable codes, utility company regulations, laws and permitting authority of the locality shall be fully complied with by the Contractor.
- 19.5 Special electrical systems, such as Fire Detection and Alarm Systems, Telecommunications or Data Systems, Video Systems, Special Electronic Systems, Control Systems, etc., shall be installed by workmen normally engaged or employed in these respective trades. As an exception to this, where small amounts of such work are required and are, in the opinion of the
 - Engineer, within the competency of workmen directly employed by the Contractor involved, they may be provided by this Contractor.

PART 20- CONDUCT OF WORKMEN

20.1 The Contractor shall be responsible for the conduct of all workmen under his supervision. Misconduct on the part of any workmen to the extent of creating a safety hazard, or endangering the lives and property of others, shall result in the prompt relief of that workman. The consumption or influence of alcoholic beverages, narcotics or illegally used controlled substances on the jobsite is strictly forbidden.

PART 21 - COOPERATION AND COORDINATION BETWEEN TRADES

- The Contractor is expressly directed to read the General Conditions and all detailed sections of these specifications for all other trades and to study all drawings applicable to his work, including Architectural, Mechanical, Structural and other pertinent Drawings, to the end that complete coordination between trades will be affected.
- The Contractor is responsible for the correct location of all rough-in and connections at every piece of equipment. Work not correctly located shall be relocated at the Contractor's expense.
- 21.3 Where any work is to be installed in close proximity to, or will interfere with work of other trades, each shall cooperate in working out space conditions to make a satisfactory adjustment. If so directed by the Engineer, the Contractor shall prepare composite working drawings and sections at a suitable scale not less than 1/4" = 1'-0", clearly indicating how his work is to be installed in relation to the work of other trades, or

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PART 25- SMOKE AND FIRE PROOFING

- 25.1 The Contractor shall not penetrate rated fire walls, ceilings or floors with conduit, cable, bus duct, wireway or other raceway system unless all penetrations are protected in a code compliant manner which maintains the rating of the assembly. Smoke and fire stop all openings made in walls, chases, ceiling and floors. Patch all openings around conduit, wireway, bus duct, etc., with appropriate type material to smoke stop walls and provide needed fire rating at fire walls, ceilings and floors. Smoke and fire proofing materials and method of application shall be approved by the local authority having jurisdiction. Refer to architectural plans and specifications for further requirements.
- 25.2 Firestopping materials and installation shall be by a single source through-out the project, by all trades.
- All fire-stopping assemblies must be UL listed. Provide shop drawings indicating penetration detail for each type of wall and floor construction. Shop drawings must be specific for each individual type (i.e., one hour fire rated gypsum wall board with insulated metal pipe penetration.) and must indicate a UL listing for the complete fire-stopping assembly.
- 25.4 3M fire protection products are listed below. Equivalent products may be submitted if they are UL listed.
- All fire-stopping shall be applied by a Contractor who is certified by the manufacturer of the firestopping product for installation of the product.
- 25.6 Fire-stopping materials to include but not limited to the following:
 - A. 3M fire barrier FS-195 wrap/strip.
 - B. 3M fire barrier CP 25 caulk.
 - C. 3M fire barrier MP moldable putty.
 - D. 3M fire barrier RC-1 restricting collar with steel hose clamp.
 - E. 3M fire barrier damming materials.
 - F. 3M fire barrier CS-195 composite sheet.
 - G. 3M fire barrier fire dam 150 caulk.
 - H. Steel sleeves.
 - I. Hilti Speed Sleeves.

PART 26- OUIET OPERATION, SUPPORTS, VIBRATION AND OSCILLATION

- All work shall operate under all conditions of load without any objectionable sound or vibration, the performance of which shall be determined by the Engineer. Noise from moving machinery or vibration noticeable outside of room in which it is installed, or annoyingly noticeable noise or vibration inside such room, will be considered objectionable. Sound or vibration conditions considered objectionable by the Engineer shall be corrected in an approved manner by the Contractor (or Contractors responsible) at his expense.
- All equipment subject to vibration and/or oscillation shall be mounted on vibration supports suitable for the purpose of minimizing noise and vibration transmission and shall be isolated from external connections such as piping, ducts, etc., by means of flexible connectors, vibration absorbers or other approved means. Surface mounted equipment such as panels, switches, etc., shall be affixed tightly to their mounting surface.

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- 30.2 Known utilities and lines as available to the Engineer are shown on the drawings. However, it is additionally required that, prior to any excavation being performed, each Contractor ascertain and mark all utilities or lines that would be endangered by the excavation. Contractor shall bear costs of repairing damaged utilities.
- 30.3 If the above-mentioned utilities or lines occur in the earth within the construction site, the Contractor shall first probe and make every effort to locate the lines prior to excavating in the respective area.
- Owner of the utility. The Contractor shall work continuously to restore service(s) upon deliberate or accidental interruption, providing premium time and materials as needed without extra claim to the Owner.
- 30.5 The Contractor shall repair to the satisfaction of the Engineer any surface or subsurface improvements damaged during the work, unless such improvement is shown to be abandoned or removed.
- Machine excavation shall not be permitted within ten feet of existing gas or fuel lines. Hand excavate only in these areas, in accord with utility company, agency or other applicable laws, standards or regulations.
- 30.7 Protect all new or existing lines from damage by traffic, etc. during construction.
- 30.8 Protect existing trees, indicated to remain with fencing or other approved method. Hold all new subsurface lines outside the drip line of trees, offsetting as necessary to protect root structures. Refer to planting or landscaping plans, or in their absence, consult with the Architect.

PART 31 - MANUFACTURER'S NAMEPLATE

31.1 Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

PART 32 - ELECTRICAL CONNECTIONS

- 32.1 The Contractor shall furnish and install all power wiring complete from power source to motor or equipment junction box, including power wiring through starters. The Contractor shall install all starters not factory mounted on equipment. Unless otherwise noted, the supplier of equipment shall furnish starters with the equipment. Also, refer to Division 15 and 16 of Specifications, shop drawings and equipment schedules for additional information and requirements.
- All control, interlock, sensor, thermocouple and other wiring required for equipment operation shall be provided by the Contractor. All such installations shall be fully compliant with all requirements of Division 26 regardless of which trade actually installs such wiring. Motors and equipment shall be provided for current and voltage characteristics as indicated or required. All wiring shall be enclosed in raceways unless otherwise noted.
- 32.3 Each Contractor or Sub-Contractor, prior to bidding the work, shall coordinate power, control, sensor, interlock and all other wiring requirements for equipment or motors with all other contractors or sub-contractors, to ensure all needed wiring is provided in the Contract. Failure to make such coordination shall not be justification for claims of extra cost or a time extension to the Contract.

PART 33- FINAL CONNECTIONS TO EQUIPMENT

33.1 The roughing-in and final connections to all electrically operated equipment furnished under this and all other sections of the contract documents or by others, shall be included in the Contract and shall consist of furnishing all labor and materials for connection. The Contractor shall carefully coordinate with equipment

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- 37.2 Sleeves shall be provided for all electrical conduit passing thru concrete floor slabs and concrete, masonry, tile and gypsum wall construction. Sleeves shall not be provided for piping running embedded in concrete or insulating concrete slabs on grade, unless otherwise noted.
- Where sleeves are placed in exterior walls below grade, the space between the pipe or conduit and the sleeves shall be packed with oakum and lead, mechanical water-stop or other approved material and made completely water tight by a method approved by the Engineer and/or Architect.
- Where conduit motion due to expansion and contraction will occur, make sleeves of sufficient diameter to permit free movement of pipe. Check floor and wall construction finishes to determine proper length of sleeves for various locations; make actual lengths to suit the following:
 - A. Terminate sleeves flush with walls, partitions and ceiling.
 - B. In areas where pipes are concealed, as in chases, terminate sleeves flush with floor.
 - C. In all areas where pipes are exposed, extend sleeves 1/2 inch above finished floor, except in rooms having floor drains, where sleeves shall be extended 3/4 inches above floor.
- 37.5 Sleeves shall be constructed of 24 gauge galvanized sheet steel with lock seam joints for all sleeves set in concrete floor slabs terminating flush with the floor. All other sleeves shall be constructed of galvanized steel pipe unless otherwise indicated on the drawings.
- Fasten sleeves securely in floors, walls, so that they will not become displaced when concrete is poured or when other construction occurs around them. Take precautions to prevent concrete, plaster or other materials being forced into the space between pipe and sleeve during construction. Fire and smoke stop all sleeves in a manner approved by the local authority having jurisdiction or per prevailing codes.

PART 38- ANCHORS

38.1 Each Contractor shall provide and locate all inserts required for his work before the floors and walls are built or shall be responsible for the cost of cutting and patching required where inserts were not installed, or where incorrectly located. Each Contractor shall do all drilling required for the installation of his hangers. Drilling of anchor holes may be prohibited in post-tensioned concrete construction, in which case the Contractor shall request approved methods from the Architect and shall carefully coordinate setting of inserts, etc., with the Structural Engineer and/or Architect.

PART 39- CONDUIT MOUNTING HEIGHTS

39.1 All exposed or concealed conduit, raceways, etc., shall be held as high as possible unless otherwise noted and coordinated with all other trades. Exposed conduit shall, insofar as possible, run perpendicular or parallel to the building structure.

PART 40- PAINTING

40.1 Each fixture device, panel, junction box, etc., that is in a finished area shall be provided with finish of color and type as selected or approved by the Architect or Engineer. If custom color is required, it shall be provided at no additional cost to the Owner. All other equipment, fixtures or devices located in finished or unfinished areas, that are not required to have or are provided with finish color or coating shall be provided in a prime painted condition, ready to receive finish paint or coating. All galvanized metal in finished areas shall be properly prepared with special processes to receive finish paint as directed and approved by the Architect.

PART 41 - WEATHERPROOFING

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equipment included in this contract. All instructions shall be submitted in draft, for approval, prior to final issue. Manufacturer's advertising literature or catalogs will not be acceptable for operating and maintenance instructions.

Unless specified otherwise, each Contractor, in the above mentioned instructions, shall include the maintenance schedule for the principal items of equipment furnished under this contract and a detailed, easy to read parts list and the name and address of the nearest source of supply.

PART 44- CLEANING

- The Contractor shall, at all times, keep the area of his work presentable to the public and clean of rubbish caused by his operations; and at the completion of the work, shall remove all rubbish, all of his tools, equipment, temporary work and surplus materials, from and about the premises, and shall leave the work clean and ready for use. If the Contractor does not attend to such cleaning immediately upon request, the construction manager may cause cleaning to be done by others and charge the cost of same to the responsible Contractor. Each Contractor shall be responsible or all damage from fire which originates in, or is propagated by, accumulations of his rubbish or debris.
- After completion of all work and before final acceptance of the work, each Contractor shall thoroughly clean all equipment and materials and shall remove all foreign matter such as grease, dirt, plaster, labels, stickers, etc., from the exterior of materials, equipment and all associated fabrication. Pay attention to finished area surfaces such as lighting fixture lenses, lamps, reflectors, panels, etc.

PART 45- INDEMNIFICATION

45.1 The Contractor shall hold harmless and indemnify the Engineer, employees, officers, agents and consultants from all claims, loss, damage, actions, causes of actions, expense and/or liability resulting from, brought for, or on account of any personal injury or property damage received or sustained by any person, persons, (including third parties), or any property growing out of, occurring, or attributable to any work performed under or related to this contract, resulting in whole or in part from the negligence of the Contractor, any subcontractor, any employee, agent or representative.

PART 47- ABOVE-CEILING AND FINAL PUNCH LISTS

- 47.1 The Contractor shall review each area and prepare a punch list for each of the subcontractors, as applicable, for at least two stages of the project.
 - A. For review of in-wall work that will be concealed by drywall or other materials well before substantial completion.
 - B. For review of the above-ceiling work that will be concealed by tile or other materials well before substantial completion.
 - C. For review of all other work as the project nears substantial completion.
- When all work from the Contractor's punch list is complete at each of these stages and prior to completing ceiling installations (or at the final punch list stage), the Contractor shall request that the Engineer develop a punch list. This request is to be made in writing two weeks prior to the proposed date. After all corrections have been made from the Engineer's punch list, the Contractor shall review and initial off on each item. This signed-off punch list and all work prior to the ceilings being installed and at the final punch list review.

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- 49.4 Brochures: Furnish Owner a complete set of operating instructions and diagrams.
- 49.5 Systems/Components which require owner training. The training shall be accomplished by a factory trained representative. Include (8) hours minimum for each system described here-in. Each equipment representative shall be represented wherever their equipment is used. All training shall be videotaped by the Installer. The following systems shall include owner training at a minimum:
 - A. Lighting control system
 - B. Electrical Distribution (Switchgear)
 - C. Service Grounding
 - D. Electrical Devices
 - E. Fire Alarm Materials & Labor
 - F. Access Controls
 - G. lightning protection system including surge protection devices
 - H. Security
 - I. Video Surveillance
 - J. Critical power engine generator set and associated transfer switches.
- 49.6 Instruction Program: Submit outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
- 49.7 At completion of training, submit two complete training manual(s) for Owner's use.
- 49.8 Oualification Data: For facilitator, instructor and photographer.
- 49.9 Attendance Record: For each training module, submit list of participants and length of instruction time.
- 49.10 Demonstration and Training DVDs: Submit two copies within seven days of end of each training module.
- 49.12 Identification: On each copy, provide an applied label with the following information:
 - A. Name of Project.
 - B. Name and address of photographer.
 - C. Name of Architect and Construction Manager.
 - D. Name of Contractor.
 - E. Date video was recorded.
 - F. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
- 49.13 Transcript: Prepared on 8-1/2-by-11-inch paper, punched and bound in heavy duty, 3-ring, Vinyl-covered binders. Mark appropriate identification on front and spine of each binder. Include a cover sheet with same label information as the corresponding video. Include name of Project and date of video on each page.

PART 50- EQUIPMENT/SYSTEMS TESTING, VERIFICATION, & START-UP

The Contractor (and Sub-Contractors) shall be responsible for commissioning, starting-up, testing, checking, examining, inspecting, etc. their own systems.

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PART 51 - SPECIAL WRENCHES, TOOLS AND KEYS

Each Contractor shall provide, along with the equipment provided, any special wrenches or tools necessary to dismantle or service equipment or appliances installed by him. Wrenches shall include necessary keys, handles and operators for valves, switches, breakers, etc. and keys to electrical panels, emergency generators, alarm pull boxes and panels, etc. At least two (2) of any such special wrench, keys, etc. shall be turned over to the Architect prior to completion of the project. Obtain a receipt that this has been accomplished and forward a copy to the Engineer.

PART 52- CLOSEOUT DOCUMENTS

All items listed in this section shall be provided to the engineer upon substantial completion. Provide three bound copies with complete index and tabs to locate each item.

52.2 As-Built Record Drawings:

- A. The Contractor shall insure that any deviations from the design are being recorded daily, as necessary, on record drawings being maintained by the Contractor. Dimensions from fixed, visible permanent lines or landmarks shown in vertical and horizontal ways shall be utilized. Compliance shall be a requirement for final payment. Pay attention to the location of underfloor or underground exterior in-contract or utility-owned or leased service lines, main switches and other appurtenances important to the maintenance and safety of the Electrical System. Deliver these record drawings to the Engineer as a system is completed, within ten days of the mark-up and/or while the accuracy of the mark-ups can be verified visually. Monthly payment may be withheld if the requirement is not complied with.
- B. All underground utilities/piping installed as part of this project shall be surveyed by a land surveyor licensed in the State of Kentucky. This shall include underground electrical primary, communications, vaults. The survey shall include actual duct bank depths to top of conduit every 100 feet in length. The survey shall also include benchmarks dimensions relative to above grade, fixed structures. The survey shall be furnished on a compact disc in AutoCAD ".dwg" format and ".pdf" format. Provide a GPS coordinate of each geothermal well and indicate on the as-built drawing. The survey information shall be included in the closeout documentation.
- C. Refer to additional record drawing requirements within the general conditions and other sections of these specifications.
- 52.3 Start-up and System Testing Certifications and Reports:
 - A. Provide reports from all required testing to indicate procedures followed and complete results of all tests. Provide reports on manufacturer's standard forms for all equipment and system tests. Testing shall be per applicable NEC, NFPA, UL, NETA, and/or ANSI standards.

52.4 Operation and Maintenance Manuals

A. Upon substantial completion of the project, the Contractor shall deliver to the Engineers (in addition to the required Shop Drawings) three (3) complete bound hard copies and a digital copy of operation and maintenance instructions and parts lists for all equipment provided in this contract. Formatting and content shall follow the guidelines outlined in the latest version of ASHRAE Application Handbook, Guideline 4. As a minimum, the following shall be included:

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- 52.7 Parts Lists: Provide an inventory of all spare parts, special tools, attic stock, etc. that have been provided to the owner.
- 52.8 Warranties: Contractor's one year warranty and all other specific warranties indicated in the Construction documents.
- 52.9 Training Verification: Provide certification that all specified training has been completed. List training session dates, times, and types.
- 52.10 Inspection Certificates: Provide certificates of inspection from electrical inspector, fire marshal, and any other required special inspections.
- 52.11 Panel Schedules: Provide hard copies and digital copies of Excel files for all panel-board schedules.
- 52.12 Final Power System Study Reports.
- 52.13 Fire Alarm System Certification.
- 52.14 Lightning Protection System Certification.
- 52.15 Power Riser Diagram: Provide a framed full-size copy of the overall power riser diagram (under glass) to the Owner. Also provide three vinyl-coated copies of same. Where an existing power riser diagram is present, the Contractor shall obtain the document from the Owner, and update in digital format with the scope of this project. Edits shall be in digital format and this work shall be closely coordinated with the Owner.
- 52.16 Fire Alarm Riser Diagram: Provide vinyl coated fire alarm system diagrams including floor plans and device addresses at fire alarm equipment. Provide a full system diagram at the main fire alarm control panel and provide the respective level's system diagram at the NAC panels located on other levels of the structure.

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- A. Coordinate paragraph below with qualification requirements in Division 01 Section "Quality Requirements" and as supplemented in "Quality Assurance" Article.
- B. Qualification Data: For testing agency.
- C. Field quality-control test reports.

1.5 QUALITY ASSURANCE

- A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the International Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.
 - 1. Testing Agency's Field Supervisor: Person currently certified by the International Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.
- B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- C. Comply with NFPA 70.

PART 2- PRODUCTS

2.1 CONDUCTORS AND CABLES

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. Alcan Products Corporation; Alcan Cable Division.
 - 2. Alpha Wire Company.
 - 3. American Insulated Wire Corp.; a Leviton Company
 - 4. Belden Inc.
 - 5. Cerro Wire LLC.
 - 6. Encore Wire Corporation.
 - 7. General Cable Technologies Corporation.
 - 8. General Cable Corporation.
 - 9. Senator Wire & Cable Company.
 - 10. Southwire Company.
- B. All conductors shall be 98% conductive annealed copper unless otherwise noted, UL listed and labeled. Comply with ANSI/NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation:

- 1. Comply with ANSI/NEMA WC 70/ICEA S-95-658.
- 2. Lighting and receptacle branch circuits shall be Type THW, THHN or THWN insulation.
- 3. All feeders shall be Type THW or THWN of the size as shown on the Contract Drawings.
- 4. THHN wiring shall only be installed in overhead, dry or damp locations.
- 5. THWN or THW wiring shall be used for all circuits pulled in underground or other wet locations.

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- 3. Burndy
- 4. Gardner Bender.
- 5. Hubbell Power Systems, Inc.
- 6. Ideal Industries, Inc.
- 7. ILSCO.
- 8. NSi Industries LLC.
- 9. O-Z/Gedney; an EGS Electrical Group brand; an Emerson Industrial Automation business.
- 10. Reliable
- 11. T&B
- 12. Tyco Electronics Corp.
- B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.
- C. Splicing devices for use on #10 AWG and smaller conductors shall be pressure type such as T&B "Sta-Kon".
- D. Wire nuts shall be spring pressure type, insulation 600V, 105°C insulation, up to #8 AWG. Greater than #6 AWG shall be a compression type connection, 600V insulation, cold shrink tubing, taped to restore full insulation value of the wire being spliced.
- E. Pressure crimp-applied ring type (or fork with upturned ends) terminations shall be employed on motor and equipment terminals where such terminals are provided on motor and equipment leads or on all stranded wire terminations using #10 AWG or smaller conductors.
- F. Splices, where necessary, shall be made with hydraulically-set "Hy-press" or equivalent crimped connectors. All splices shall be insulated to the full value of the wiring insulation using a cold shrink kit or the equivalent in built-up materials.
- G. Large connectors (lugs) at terminals shall be mechanical type, hex-head socket or crimp-on style, installed per the manufacturer's recommendations.
- H. Underground connections made between bare ground wires or to ground rods shall be exothermically welded, "Cadweld" or equivalent.

PART 3- EXECUTION

- 3.1 CONDUCTOR AND INSULATION MATERIAL APPLICATIONS
 - B. Branch Circuits: Copper. Solid for #12 AWG and smaller; stranded for #8 AWG and larger.
 - C. Conductors used for motor connections and connections to vibrating or oscillating equipment shall be extra flexible stranded.
 - D. Conductors used for theatrical lighting branch cables shall be extra flexible stranded.
 - E. Lighting and receptacle branch circuits shall be Type THW, THHN or THWN insulation.
 - F. All feeders shall be Type THW or THWN of the size as shown on the Contract Drawings.
 - G. THHN wiring shall only be installed in overhead, dry or damp locations.
 - H. THWN or THW wiring shall be used for all circuits pulled in underground or other wet locations.

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3.3 CONNECTIONS

- A. Tighten electrical connectors and terminals according to manufacturer's published torque tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.
- B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.
- C. Wiring at Outlets: Install conductor at each outlet, with at least 12 inches of slack.

3.4 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.
- B. Perform tests and inspections and prepare test reports.
- C. Tests and Inspections:
 - 1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
 - Perform insulation resistance (megger) testing for all bus duct and feeders in accordance with NETA ATS. Testing may be witnessed by the Engineer and/or Commissioning agent. Schedule all tests with Architect with ample notice.
 - Megger tests shall be performed at a DC voltage of 1,000 volts for 600 volts rated equipment, and at a DC voltage of 500 volts for 120-300 volt rated equipment.
 Minimum acceptable (temperature corrected) resistance is 25 megaohms for 120-300 volt rated equipment and 100 megaohms for 600 volt rated equipment and wiring.
 - 4. Test instruments shall be calibrated to national standards within the last 12 months.
- D. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors #3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.
 - 1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.
 - 2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
 - 3. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.
- E. Test and Inspection Reports: Prepare a written report to record the following:
 - 1. Test procedures used.
 - 2. Results that comply with requirements.
 - 3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.
- F. Cables will be considered defective if they do not pass tests and inspections. Remove and replace malfunctioning units and retest as specified above.
- G. Submit test results to Architect and Engineer for approval

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260529 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General, Special and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes the following:
 - 1. Hangers and supports for electrical equipment and systems.
 - 2. Construction requirements for concrete bases.
 - 3. Isolation pads.

1.3 DEFINITIONS

- A. EMT: Electrical metallic tubing.
- B. FMC: Flexible metal conduit
- C. LFMC: Liquid-tight flexible metal conduit
- D. GRS: Galvanized rigid steel conduit.

1.4 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design supports for multiple raceways, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Design supports for multiple raceways capable of supporting combined weight of supported systems and its contents.
- C. Design equipment supports capable of supporting combined operating weight of supported equipment and connected systems and components.
- D. Rated Strength: Adequate in tension, shear, and pullout force to resist maximum loads calculated or imposed for this project, with a minimum structural safety factor of five times the applied force.

1.5 SUBMITTALS

- A. Product Data: For the following:
 - 1. Steel slotted support systems.
 - 2. Nonmetallic slotted support systems.
- B. Shop Drawings: Signed and sealed by a qualified professional engineer. Show fabrication and installation details and include calculations for the following:
 - 1. Trapeze hangers. Include Product Data for components.

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- 2.1 SUPPORT, ANCHORAGE, AND ATTACHMENT COMPONENTS
 - A. Steel Slotted Support Systems: Comply with MFMA-4, factory-fabricated components for field assembly.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Allied Tube & Conduit
 - b. Cooper B-Line, Inc.; a division of Cooper Industries.
 - c. ERICO International Corporation.
 - d. Thomas & Betts Corporation.
 - e. Unistrut; Tyco International, Ltd.
 - 2. Metallic Coatings: Hot-dip galvanized after fabrication and applied according to MFMA-4.
 - 3. Channel Dimensions: Selected for applicable load criteria.
 - B. Raceway and Cable Supports: As described in NECA 1 and NECA 101,
 - C. Conduit and Cable Support Devices: Steel and malleable hangers, clamps, and associated fittings, designed for types and sizes of raceway or cable to be supported.
 - D. Support for Conductors in Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug or plugs for non-armored electrical conductors or cables in riser conduits. Plugs shall have number, size, and shape of conductor gripping pieces as required to suit individual conductors or cables supported. Body shall be malleable iron.
 - E. Device Box Mounting Brackets: Factory-fabricated sheet steel brackets for support of device boxes adjacent to or between studs.
 - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cooper B-Line, Inc.; a division of Cooper Industries.
 - b. ERICO International Corporation.
 - F. Through-Stud Cable and Raceway Support Clips: Factory-fabricated spring steel clip for cables or raceways where run horizontally through metal studs.
 - Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Cooper B-Line, Inc.; a division of Cooper Industries.
 - b. ERICO International Corporation.
 - G. Roof-mounted Raceway Support Blocking: Factory-fabricated support blocking for use under roof-mounted raceways. Wedge-shaped blocking constructed of 100% recycled UV-resistant Rubber with integral galvanized steel strut to accept raceway support clips.
 - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Cooper BLine C-Port series components or a comparable product by one of the following:

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- 5. Through Bolts: Structural type, hex head, and high strength. Comply with ASTM A 325.
- 6. Toggle Bolts: All-steel springhead type.
- 7. Hanger Rods: Solid, threaded steel.

2.2 FABRICATED METAL EQUIPMENT SUPPORT ASSEMBLIES

- A. Description: Welded or bolted, structural-steel shapes, shop or field fabricated to fit dimensions of supported equipment.
- B. Materials: Comply with requirements in Division 05 Section "Metal Fabrications" for steel shapes and plates.

2.3 VIBRATION ISOLATION PADS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Korfund Maxi-Flex Pads or a comparable product by one of the following:
 - 1. Ace Mountings Co., Inc.
 - 2. Amber/Booth Company, Inc.
 - 3. California Dynamics Corporation.
 - 4. Isolation Technology, Inc.
 - 5. Kinetics Noise Control.
 - 6. Mason Industries.
 - 7. Vibration Eliminator Co., Inc.
 - 8. Vibration Isolation.
 - 9. Vibration Mountings & Controls, Inc.
- B. Pads: Arrange in single or multiple layers of sufficient stiffness for uniform loading over pad area, molded with a nonslip pattern, and factory cut to sizes that match requirements of supported equipment.
 - 1. Resilient Material: Oil- and water-resistant neoprene.

PART 3- EXECUTION

3.1 APPLICATION

- A. Comply with NFPA 70, NECA 1 and NECA 101 for application of hangers and supports for electrical equipment and systems except where requirements of this Section are more stringent.
- B. Maximum Horizontal and Vertical Support Spacing for Raceway(s): Space supports for EMT and GRS as required by NFPA 70.
- C. Minimum Hanger Rod Size for Raceway Supports: Minimum rod size shall be 1/4 inch in diameter.

D. Single Raceways:

- For Raceways 1-1/4-inch and smaller: Install adjustable steel band hanger suspended on threaded rod.
- 2. For Raceways larger than 1-1/4-inch: Install trapeze-type supports fabricated with steel slotted support system suspended on threaded rods. Size trapeze members, including the suspension rods, based on the support required for the size, and loaded weight of the conduits.

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- H. Support raceways at a distance above suspended ceilings to permit removal of ceiling panels and luminaires.
- I. Locate raceways so as not to hinder access to mechanical equipment.
- J. Do not secure conductors, raceways, or supports to suspended ceiling hanger rods or wires.
- K. Strength of Support Assemblies: Where not indicated, select sizes of components so strength will be adequate to carry present and future static loads within specified loading limits. Minimum static design load used for strength determination shall be weight of supported components plus 200 lb (90 kg).
- L. Mounting and Anchorage of Surface-Mounted or Recessed-Mounted Equipment and Components: Anchor and fasten electrical items and their supports to building structural elements by the following methods unless otherwise indicated by code:
 - 1. To Wood: Fasten with lag screws or through bolts.
 - 2. To New Concrete: Bolt to concrete inserts. Where support anchors are required, establish their type and locate in concrete construction before concrete is poured, if possible. Fit each hanger rod with a nut at its upper end, and set nut in a universal concrete insert in the form. Where supported weight exceeds holding strength of a single insert, pass rods through top slot of inserts and interlock with reinforcing steel. Also, where particularly heavy loads are to be supported, suspend hanger rod or rods from a structural angle spanning two or more inserts and securely bolted thereto to distribute the weight.
 - 3. To Masonry: Approved toggle-type bolts on hollow masonry units and expansion anchor fasteners on solid masonry units.
 - 4. To Existing Concrete: Expansion anchor fasteners.
 - 5. To Steel: Beam clamps (MSS Type 19, 21, 23, 25, or 27) complying with MSS SP-69 or Spring-tension clamps.
 - 6. To Light Steel: Sheet metal screws.
 - 7. For Surface-Mounted Items on Hollow Walls and Nonstructural Building Surfaces: Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices on slotted-channel racks attached to structure by means that meet seismic-restraint strength and anchorage requirements. Attachment to gypsum wall board is not acceptable as sole support means; slotted-channel rack solidly attached to structure or light-gauge metal framing at both ends is required.
 - 8. For Recessed-Mounted Items in Hollow Walls and Nonstructural Building Surfaces:
 Mount cabinets, panelboards, disconnect switches, control enclosures, pull and junction boxes, transformers, and other devices to intermediate light-gauge metal framing members on each side of device or provide slotted-channel racks within hollow wall attached to structure by means that meet seismic-restraint strength and anchorage requirements. Attachment to gypsum wall board is not acceptable as sole support means.
- M. Do not support any items (equipment, piping, conduit, etc.) exceeding 2 inches in diameter from the bottom of slabs. Where intermediate supports are required between structural members, use slotted steel channels support systems attached to beams or joists in order to avoid attachment to slabs.
- N. Drill holes for expansion anchors in concrete at locations and to depths that avoid reinforcing bars. Verify reinforcing locations with Structural Engineer. X-Ray existing concrete structures as required.
- 3.4 INSTALLATION OF FABRICATED METAL SUPPORTS

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260533 - RACEWAYS AND FITTINGS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General, Special and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The Contractor is directed to examine each and every section of these specifications, all drawings relating to the Contract Documents, any and all Addenda, etc., for work described elsewhere that may relate to the provision of the work described herein. Materials and performance requirements are specified elsewhere herein that relate to these systems.

1.2 SUMMARY

- A. This section is intended to specify the raceways, conduit, conduit fittings, hangers, junction boxes, splice boxes, specialties and related items necessary to complete the work as shown on the drawings and specified herein.
- B. This section specifies basic materials and methods and is a part of each Division 16 Section that implies or refers to electrical raceways specified therein.
- C. The types of raceways specified in this section include the following:
 - 1. Steel electrical metallic tubing (EMT)
 - 2. Galvanized rigid steel conduit (GRS or RMC)
 - 3. Intermediate metal conduit (IMC)
 - 4. Rigid aluminum conduit (RAC)
 - 5. Flexible metal conduit (FMC)
 - 6. Liquid-tight flexible metal conduit (LFMC)
 - 7. Rigid nonmetallic conduit (RNC)
 - 8. Surface metal raceway (SMR)
 - 9. Metal wireways and auxiliary gutters.
 - 10. Wall ducts and trench ducts.
 - 11. Duct banks, and their construction.
- D. All raceways, as listed above and otherwise specified herein shall be provided in compliance with latest editions of all applicable UL, NEMA, NEC and ANSI standards. All conduit, raceways and fittings shall be Underwriters Laboratories listed and labeled, or bear the listing of an agency acceptable to the local authority having jurisdiction.
- E. Conduit and raceways, as well as supporting inserts in contact with or enclosed in concrete shall comply with the latest edition of all ACI standards and the equipment manufacturer's recommendations for such work.
- F. The decision of the Engineer shall be final and binding in any case where a question or inquiry arises regarding the suitability of a particular installation or application of raceways, supports or materials, if other than outlined herein.
- G. Minimum size of conduit shall be 3/4" trade size for power and 1" trade size for voice/data/TV unless otherwise noted on the drawings. All conduit and raceways shall be sized for the

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2.1 METAL CONDUITS AND FITTINGS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - 1. AFC Cable Systems, Inc.
 - 2. Allied Tube & Conduit; a Tyco International Ltd. Co.
 - 3. Anamet Electrical, Inc.
 - 4. Electri-Flex Company.
 - 5. O-Z/Gedney; a brand of EGS Electrical Group.
 - 6. Picoma Industries, a subsidiary of Mueller Water Products, Inc.
 - 7. Republic Conduit.
 - 8. Robroy Industries.
 - 9. Southwire Company.
 - 10. Thomas & Betts Corporation.
 - 11. Western Tube and Conduit Corporation.
 - 12. Wheatland Tube Company; a division of John Maneely Company.
- B. Listing and Labeling: Metal conduits, tubing, and fittings shall be listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

C. STEEL ELECTRICAL METALLIC TUBING

- 1. Electrical metallic tubing (EMT), of corrosion-resistant zinc coated cold rolled steel tubing shall be permitted for concealed installation in dry interior locations.
- 2. EMT shall not be installed underground, in concrete slabs or where exposed to physical damage. EMT shall be permitted for exposed work in mechanical and electrical rooms and other exposed structure areas where not subjected to physical damage, as determined by the Engineer. All exposed conduit and fittings located within 8'-0" of finished floor shall be rigid steel with threaded connectors.
- 3. Comply with ANSI C80.3 and UL 797.

D. GALVANIZED RIGID STEEL CONDUIT

- 1. Galvanized rigid steel conduit (GRS or RMC) shall have a zinc coating inside and outside by means of hot-dip galvanizing.
- 2. Use GRS where subject to physical damage for exposed work in mechanical spaces, within factory or other industrial work areas, for exposed fit-up work on machinery, for exposed exterior damp or wet location work, in hazardous atmospheres, in exterior underground locations where installed beneath roadways, where ells occur in underground PVC conduits, or where turning out of concrete encased duct banks, and at other locations as specifically called out on the drawings.
- 3. GRS shall be used for all building interior power wiring or cables of over 600 Volts.
- 4. GRS shall be delivered with plastic protectors on the threads.
- 5. GRS threads shall not have any coating which will reduce conductivity of the joint.
- 6. Couplings, bends, elbows and fittings shall be subject to the same requirements as for the straight lengths.
- 7. Comply with ANSI C80.1 and UL 6.
- 8. "Kwik-Couple" type fittings are not acceptable.

E. INTERMEDIATE METAL CONDUIT

1. Unless otherwise indicated on the drawings, intermediate metal conduit (IMC) may be

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conduit may be installed in locations where the ambient temperature might exceed the rating of the raceway.

- 4. Where rigid non-metallic conduit is placed underground, as for feeder circuits, secondaries or branch circuit runs and where ell is made upward thru a slab on grade, transition the turning ell and the riser to rigid steel conduit to a height of 6" above the concrete slab.
- 5. Flexible non-metallic conduit shall not be used, except by special permission, obtained in writing from the Engineer.
- 6. Provide equipment grounding conductors of copper, sized as required by codes, in all circuits installed in rigid nonmetallic raceways.
- 7. Manufactured in conformance with UL standards.

J. RACEWAY FITTINGS

- 1. Fixture whips shall be 1/2" flexible, with clamp-on steel fittings at each end, six foot maximum length, with insulated throat bushings at each end and bonding locknuts.

 Wiring thru fixture whips shall be #12 AWG, with #12 AWG ground bonded to outlet at source end.
- 2. Raceway fittings (or condulets) shall be of gray iron, malleable iron or heavy copper-free cast aluminum. They shall be furnished in proper configurations, avoiding excessive plugged openings. Any openings that are left shall be properly plugged. All coverplates shall be gasketed with neoprene or similar approved materials, rated for the environment. Wiring splices within are not permitted.
- 3. Where required, raceway fittings shall be provided in explosion-proof configurations rated for the atmosphere. Place conduit seal off fittings at each device in accord with applicable codes. Seal off fittings shall be packed with wadding, and poured with an approved nonshrink sealing compound.
- 4. Where conduit transitions in a run from a cold to a warm environment, (such as at a freezer, refrigerator or exterior wall) sealoff fittings shall be placed on the warm side immediately at the boundary to prevent migration of condensation within raceway systems.
- Conduit bodies, junction boxes and fittings shall be dust tight and threaded for dusty areas, weatherproof for exterior locations and vapor tight for damp areas. Conduit fittings shall be as manufactured by Crouse Hinds, Appleton, Killark or approved equivalent. All surface mounted conduit fittings as with "FS", "FD", "GUB" Types etc., shall be provided with mounting hubs.
- 6. Where lighting fixtures, appliances or wiring devices are to be suspended from ceiling outlet boxes, they shall be provided with 3/4" rigid conduit pendants. Outlet boxes shall be malleable iron, provided with self-aligning covers with swivel ball joint and #14 gauge steel locking ring. Provide safety chain between building structure and ballast housing of light fixtures for all fixtures, appliances or devices greater than 10 lbs weight. Fixtures shall be installed plumb and level. Cover pendants shall be finished to match fixtures.
- 7. UL listed expansion/deflection fitting shall be provided at all locations where a raceway/conduit crosses a structural joint intended for expansion, contraction or deflection. Other approved means may be acceptable with permission of the Engineer. Provide copper ground bonding jumpers across expansion fittings.
- 8. Fittings for threaded raceways shall be tapered thread with all burrs removed, reamed ends and cutting oil wiped clean.
- 9. Fittings for EMT conduits 2-1/2" and smaller shall be of steel, compression type. Fittings for sizes larger than 2-1/2" shall be setscrew, with two setscrews each side. Conduit stops shall be formed in center of couplings. All EMT connectors and couplings shall be of formed steel construction. All connectors shall be insulated throat type.
- 10. Indentation or die-cast fittings shall not be permitted in any raceway system.
- 11. Compression type fittings shall be utilized for EMT conduit installed in damp or dusty locations, or where otherwise indicated.

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- C. Fittings and Accessories: Include covers, couplings, offsets, elbows, expansion joints, adapters, hold-down straps, end caps, and other fittings to match and mate with wireways as required for complete system.
- D. Wireways of painted steel construction shall be corrosion-resistant, moisture and oil resistant where indicated or necessary. Wireways shall be furnished in nominal sizes of 2 'A " X 2 'A ", 4" X 4", 6" X 6", 8" X 8" or 12" X 12", as indicated on plans. Furnish with hinged covers on all runs and removable covers on all fittings, to allow a continuous unobstructed path for conductor installation. Provide knockouts on all runs, unless otherwise indicated or prohibited by codes.
- E. Provide wireways with hangers of same manufacturer, installed so as to allow unobstructed access to wireway interior. Install at not to exceed 8'-0" centers, closer as needed at fittings and turns. Use 1/4" rod hangers minimum for up to 4"X 4", 3/8" rod minimum up to 8"X 8", 1/2 11 rod minimum for 12" X 12".
- F. Wireway Covers: Furnish with continuous hinged covers on all runs and removable covers on all fittings, to allow a continuous unobstructed path for conductor installation.
- G. Finish: Manufacturer's standard enamel finish.

2.4 WALL DUCTS

- A. Where wall duct type raceways are indicated to be installed flush, they shall be a minimum 3 ½" deep by 10" wide (or 18" width, as indicated), furnished with screw covers to overlap flange 1" on each side. Covers shall be furnished in nominal 3'-0" lengths. Provide fully grommeted openings or bushed nipples as needed in coverplates to pass cables thru. Where indicated or required, provide transition fittings between horizontal runs of wireway and wall ducts to properly interface each raceway system.
- B. Where wall ducts are installed flush either vertically or horizontally as a collector duct, provide proper blocking and support in stud walls, adding a layer of studs as needed to prevent undercutting major structural elements of walls. Trim flange shall be set tight to wall surface with 1/16" tolerance each way.
- C. Wall ducts, if indicated to be surface mounted, shall be furnished with flangeless coverplates.
- D. All completed systems shall be provided with a factory prime painted finish, suitable for field finish painting.
- E. Wall ducts shall be equivalent to Square D Company "RWT" Series, as a standard of construction and quality.

2.5 TRENCH DUCTS

- A. Trench duct is to be installed flush with finished concrete floor slab with a vertical tolerance to adjacent surfaces of 1/16" plus or minus. Nominal depth of trench duct shall be adjustable from 2 3/8" to 3 1/2", minimum 12" width unless otherwise noted on plans.
- B. Trench duct shall be constructed of code-gauge steel, 14 gauge minimum, with corrosion resistant finish. Surfaces of duct or fittings in contact with concrete shall be painted with two coats of "Asphaltum" or receive equivalent coating or taping prior to placement of concrete.
- C. Furnish trench duct with flat turns, riser transition fittings to wall duct or panelboard as shown, concrete tight couplings, internal barriers as required to separate services, reducers, end closers, tees and all other fittings as indicated or required.

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- B. Supports and hangers shall be installed in accord with all applicable codes and standards. They shall be corrosion resistant, galvanized or furnished with an equivalent protective coating. All electrical raceways shall be hung independently from the building structure with UL listed and approved materials. Hangers and supports depending from the support systems of other trades work shall not be permitted, except with specific approval in writing from the Engineer. The use of tie wire for support or fastening of any raceway system is prohibited. Perforated metal tape shall not be used for raceway support.
- C. No raceway shall be installed on acoustic tile ceiling tees, or in any location that will impair the functioning, access or code-required clearances for any equipment or system.
- D. Supports for raceways shall be of materials compatible with the raceway, of malleable iron, spring steel, stamped steel or other approved material. Die-cast fittings are not permitted for supports.
- E. The installing contractor shall provide all necessary supports and braces for raceways, in a rigid and safe installation, complying with all applicable codes.
- F. Individual conduits routed on building walls or equipment shall be secured by two-hole galvanized malleable iron or stamped steel pipe strap or "minerallac" 2-piece straps. The straps are to be anchored by an approved means such as expansion anchors, toggle bolts, through bolts, etc. Where required by codes or other standards, provide spacers behind mounting clamps to space conduits off walls.
- G. Supports may not be fastened to roof decking on drive pins.
- H. Individual conduits run on building steel shall be secured by means of clamp supports similar and equal to those manufactured by the C.C. Korn Company, Elcen Co., B-Line or approved equivalent. Provide korn clamps, bulb-tee, flange clamps, beam clamps, "minerallacs", etc.
- I. Where feasible, vertical and/or horizontal runs of conduit shall be grouped in common hangers on "trapezes" of channel stock as manufactured by "Unistrut" or equivalent, 1-5/8" minimum depth. Utilize conduit clamps appropriate to the channel.
- J. Channel strut systems for supporting electrical equipment or raceways shall be constructed of 16 gauge minimum hot dip galvanized steel with 9/16" diameter holes on 8" centers, with finish coat of paint as manufactured by Unistrut, B-Line, Kindorf, or approved equivalent.
- K. The minimum diameter of round all-thread steel rods used for hangers and supports shall be 1/4", 20 threads per inch. All-thread rod shall be furnished with a corrosion-resistant finish.
- L. Welding directly on conduit or fittings is not permitted.
- M. Provide riser support clamps for vertical conduit runs. Riser support clamps shall be of heavy gauge steel construction. Install riser support clamps at each floor level penetration, or as otherwise required.
- N. Provide conduit cable support clamps for vertical conductor runs as required or indicated on plans. Clamps to be insulating wedging plug, with malleable iron support ring. Install within properly sized and anchored junction box.
- Spring steel clips and fittings such as those manufactured by HITT-Thomas, Caddy-Erico, or approved equivalent, with black oxide finish are permitted in any indoor dry location for concealed work, where acceptable to the local authority having jurisdiction.

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2.9 SPECIALTIES

- A. All EMT terminations at junction boxes, panels, etc. shall be made with case hardened locknuts and appropriate fittings, with insulated throat liners. Insulating terminations shall be manufactured as a single unit. The use of split sleeve insulators is not permitted.
- B. All rigid conduit, except main and branch feeders, shall have heavy fiber insulating bushings reinforced with double locknuts. All branch and main feeders shall have insulated bushings with grounding lugs and shall be bonded to enclosures with appropriately sized copper jumpers, except at pad mounted transformers. Bonding jumpers shall be installed as required by the NEC and other applicable codes.
- C. All conduit stubbed through floor during construction shall have openings protected with plastic caps approved for this purpose. Connections on both ends of all flexible conduit shall be equivalent to Thomas and Betts, Ideal, Appleton, Efcor, or approved equivalent, rated for the environment.
- D. Nylon pull strings shall be provided in all empty conduit and in all conduit installed for other trades. Pull strings shall be left securely tied off at each end.
- E. Where spare raceways terminate in switchboards or motor control centers a fishtape barrier shall be provided.
- F. All outlet, junction and pull boxes shall be grounded with pigtail to the equipment grounding conductor.
- G. All fire alarm raceways in concealed areas, data/mechanical/electrical rooms and above ceilings shall be red. Exposed fire alarm raceways shall match adjacent finishes.
- H. All junction, outlet and pull boxes in data/mechanical/electrical rooms and above ceilings shall be identified with panel and circuit designation on outside of covers. All junction, outlet and pull boxes in exposed areas shall be identified with panel and circuit designation on inside of covers.

2.10 COMMUNICATIONS AND A/V OUTLETS

- A. Outlet boxes shall be 5" square by 2-7/8" deep with single or double-gang with raised extension ring.
- B. All communications outlets shall be fed with at least (1) 1-1/4" inch EMT conduits, with an absolute minimum number of bends from the outlet to the cable tray, wire way or homerun directly to the Telecommunications room. Pull boxes must be installed after every 270 degrees of bend (including offsets) or 100 feet of the conduit run.
- C. When mounting the outlet box in a steel studded wall, use a back brace.
- D. Use only compression fittings at joints. No more than one offset in a conduit run, unless additional pull boxes are provided after each offset.

PART 3- EXECUTION

3.1 RACEWAY APPLICATION

A. Outdoors: Apply raceway products as specified below unless otherwise indicated:

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- Horizontal runs of conduit between outlet boxes in walls shall not be permitted.
- D. This Contractor shall lay-out and install all conduit systems so as to avoid any other service or systems, the proximity of which may prove injurious to the conduit, or conductors which it confines. All conduit systems, except those otherwise specifically shown to the contrary, shall be concealed in the building construction or run above ceilings. Size of all conduit shall conform to Annex C, of the National Electrical Code, unless otherwise shown on the Contract Drawings.
- E. Conceal conduit and EMT within finished walls, ceilings, and floors unless otherwise indicated. Install conduits parallel or perpendicular to building lines.
- F. Support conduit within 12 inches of enclosures to which attached.
- G. No conduit shall be installed in or below poured concrete slabs except with permission of the architect or engineer. Conduit shall be held at least 12" from flues, steam or hot water pipes.
- H. All conduits in slab, under slab and in areas subject to abuse shall be shall be galvanized rigid steel with threaded fittings or rigid PVC Conduit encased in 3" (minimum) and steel reinforced concrete with dye identification.
- I. Intermediate grade conduit will not be acceptable in place of galvanized rigid steel conduit.
- J. All exposed conduit shall be installed with runs parallel or perpendicular to walls, structural members or intersections of vertical planes and ceilings, with right angle turns consisting of cast metal fittings or symmetrical bends unless otherwise shown. All conduit shall have supports spaced not more than eight feet apart. Randomly routed conduits will not be acceptable.
- K. Conduit shall be installed in such a manner so as to insure against collection of trapped condensation. All runs of conduit shall be arranged so as to be devoid of traps. Trapped conduit runs shall be provided with explosion proof drains at low points. Runs of conduit between junctions shall not have more than the equivalent of three 900 bends.
- L. Junction boxes shall be installed so that conduit runs will not exceed 50', or as shown on the Contract Drawings. Junction boxes shall be sized per NEC, Article 370.
- M. Install electrical raceways in accordance with manufacturer's written instructions, applicable requirements of latest edition of the NEC, and NECA "Standard of Installation", complying with recognized industry practices.
- N. Coordinate with other trades, including metal and concrete deck trades, as necessary to interface installation of electrical raceways and components.
- 0. Level and square raceway runs, and install at proper elevations and required heights. Hold tight to structure wherever possible, to maximize available space and not restrict other trades.
- P. Complete installation of electrical raceways before starting installation of cables or wires within raceways.
- Q. Bushings shall be provided on conduits to protect cables transitioning from conduits to cable tray pathway.
- R. Provide plastic bushings on the end of all conduit stub-ups.
- S. Install electrical raceways in accordance with manufacturer's written instructions, applicable

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- II. All exterior conduits and raceways shall be painted.
- JJ. All floor slabs and concrete walls shall be x-rayed before cutting.
- KK. Contractor must maintain a minimum 12" clear space above, 6" below and a minimum 26" clear on one side of all cable trays and wireways (both new and existing).
- LL. Absolutely no "LB's" are allowed in any communications conduit installation.
- MM. Conduit ends at a wireway will be mechanically fastened, have plastic bushings, and be wire bonded to the wireway.
- NN. Underground electric, cable TV, telephone service or other rigid steel conduit and underfloor rigid steel conduit below the concrete floor slab shall be painted with two coats of bitumastic paint, such as "Asphaltum".
- 00. All underground or underfloor conduits shall be swabbed free of all moisture and debris before conductors are pulled.
- PP. At least one (1) 1" and three (3) 3/4" conduits shall be stubbed from flush-mounted panelboards into the nearest accessible area for future use. Provide suitable closures for these stubs. Identify each stub with a suitable hang tag.
- QQ. Coordinate with other trades, including metal and concrete deck trades, as necessary to interface installation of electrical raceways and components.
- RR. All underground conduits shall be buried to minimum depth of 36" from the top of the concrete encasement or raceway to finished grade, unless otherwise noted on plans or specifications. Observe minimum burial requirements of local utility company where their standards or regulations apply. Conduits containing primary power conductors, (higher than 600 volts to ground) shall be 48" to top below finished grade, unless otherwise noted on plans. Conduits containing secondary power conductors, (600 volts and less to ground) shall be 36" to top below finished grade, unless otherwise noted on plans.
- SS. Provide uni-strut racks where multiple conduits are supported at one location.
- TT. Provide separate a completely separate raceway system of conduits, pull-boxes, etc. for each emergency power branch and for normal power for complete separation per NEC.
- UU. Where existing panels are flush-mounted in walls, contractor shall cut, patch, and repair existing construction as required for concealed conduit entry for new connections to those panels.

VV. Expansion-Joint Fittings:

- 1. Install expansion fittings at all locations where conduits cross building or structure expansion joints.
- Install each expansion-joint fitting with position, mounting, and piston setting selected according
 to manufacturer's written instructions for conditions at specific location at time of installation.
 Install conduit supports to allow for expansion movement.

WW. Surface Raceways:

- 1. Install surface raceway with a minimum 2-inch radius control at bend points.
- 2. Secure surface raceway with screws or other anchor-type devices at intervals not exceeding 48 inches and with no less than two supports per straight raceway section.

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260550 - SHOP DRAWINGS, SUBMITTALS, LITERATURE, MANUALS, PARTS LISTS, AND SPECIAL TOOLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General, Special and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The Contractor is directed to examine each and every section of these specifications, all drawings relating to the Contract Documents, any and all Addenda, etc., for work described elsewhere that may relate to the provision of the work described herein. Materials and performance requirements are specified elsewhere herein that relate to these systems.

1.2 SUMMARY

- A. Each Contractor shall submit to the Architect and/or Engineer, within thirty days after the date of the Contract, one set of shop drawings and/or manufacturer's descriptive literature on all equipment required for the fulfillment of his contract via eComm. Each shop drawing and/or manufacturer's descriptive literature shall have proper notation indicated on it and shall be clearly referenced so the specifications, schedules, light fixture numbers, panel names and numbers, etc., so that the Architect and/or Engineer may readily determine the particular item the Contractor proposes to furnish. All data and information scheduled, noted or specified by hand shall be noted in color red on the submittals. The Contractor shall make any corrections or changes required and shall resubmit for final review as requested. Review of such drawings, descriptive literature and/or schedules shall not relieve the Contractor from responsibility for deviation from drawings or specifications unless they have, in writing, directed the reviewer's attention to such deviations at the time of submission of drawings, literature and manuals; nor shall it relieve them from responsibility for errors or omissions of any nature in shop drawings, literature and manuals. The term "as specified" will not be accepted.
- B. If the Contractor fails to comply with the requirements set forth above, the Architect and/or Engineer shall have the option of selecting any or all items listed in the specifications or on the drawings, and the Contractor will be required to provide all materials in accordance with this list.
- C. Review of shop drawings by the Engineer applies only to conformance with the design concept of the project and general compliance with the information given in the contract documents. In all cases, the installing Contractor alone shall be responsible for furnishing the proper quantity of equipment and/or materials required, for seeing that all equipment fits the available space in a satisfactory manner and that piping, electrical and all other connections are suitably located.
- D. The Engineer's review of shop drawings, schedules or other required submittal data shall not relieve the Contractor from responsibility for the adaptability of the equipment or materials to the project, compliance with applicable codes, rules, regulations, information that pertains to fabrication and installation, dimensions and quantities, electrical characteristics, and coordination of the work with all other trades involved in this project.
- E. No cutting, fitting, rough-in, connections, etc., shall be accomplished until reviewed equipment shop drawings are in the hands of the Contractors concerned. It shall be each Contractor's responsibility to obtain reviewed shop drawings and to make all connections, etc. in the neatest and most workmanlike manner possible. Each Contractor shall coordinate with all the other Contractors having any connections, roughing-in, etc., to the equipment, to make certain proper

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- b. Floor boxes and poke-thrus, each by type, with required accessories.
- c. Data/voice/video wallplates, each by type.

d.

Any special items not listed above.

5. Lighting

- a. Light fixtures, each by type, marked to indicate all required accessories and lamp selection. Also provide original color selection chart to allow Architect and/or Engineer to indicate color selection.
- b. Lamps, each by type.
- c. Ballast and drivers, each by type.
- d. Lighting standards or poles.
- e. Photocells, time clocks or other lighting accessories.
- f. Lighting control system schematic, functional & programming data, along with building specific floor plan drawings indicating each device, master controller, input device locations and specific interconnect/wiring requirements for each device.
- g. Fire alarm system.
- h. Note: Each system submittal is to be complete with legible cutsheets for all devices, equipment, special wiring, etc. Include system specific wiring schematics showing each device and its specific interconnect/wiring requirements. For rack mounted equipment, provide a scalable elevation drawing with proposed component locations & specific interconnect wiring requirements for each component/panel. Also provide scale building specific layout drawings that indicate device placement, wiring, etc. Refer to the specific system's specification for additional submittal requirements where required.

6. Grounding

- a. Electrodes, bonding devices, terminals, etc.
- b. Building service grounding electrode components.
- 7. Dimensioned electrical room plans/equipment layouts

8. Fire-stopping

- 9. Lightning Protection
- 10. Seismic Restraints
- 11. Miscellaneous
 - a. Control panel assemblies.
 - b. Non-standard junction/pullboxes.
 - c. Manholes, hand holes, and all outdoor electrical equipment and fittings.
 - d. Floor plan and riser drawings that show the location of all fire alarm devices.
 - e. Floor plan and riser drawings that show the location of all low-voltage systems.

12. Systems

- a. Note: Each system submittal is to be complete with legible cutsheets for all devices, equipment, special wiring, etc. Also provide scale building layout drawings that indicate device placement, wiring, etc. Drawings shall be in digital format and shall include complete (not typical) riser diagrams of all systems. Refer to specific system's specification for additional submittal requirements where required.
- b. Fire alarm system
- c. Building paging/intercom audio system
- d. Telephone system
- e. Television/video system
- f. Data network

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260553 - IDENTIFICATIONS FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General, Special and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. The Contractor is directed to examine each and every section of these specifications, all drawings relating to the Contract Documents, any and all Addenda, etc., for work described elsewhere that may relate to the provision of the work described herein. Materials and performance requirements are specified elsewhere herein that relate to these systems.

1.2 SUMMARY

- A. Section Includes:
 - 1. Identification for raceways.
 - 2. Identification of power and control cables.
 - 3. Identification for conductors.
 - 4. Underground-line warning tape.
 - 5. Warning labels and signs.
 - 6. Instruction signs.
 - 7. Equipment identification labels.
 - 8. Miscellaneous identification products.

1.3 DEFINITIONS AND ABBREVIATIONS

- A. T Transformer
- B. SWGR Switchgear.
- C. SWBD Switchboard.
- D. ATS Automatic Transfer Switch.
- E. MCC Motor Control Center.
- F. DP Distribution Panel. Electrical distribution panel which is an integral part of a switchboard or switchgear but has its own isolation circuit breaker.
- G. P—Panel. Electrical distribution panels with manually operated circuit breakers which feed other distribution panels or directly to loads. These are generally the last distribution panel before the load.
- H. N Normal power system. Annotates that the associated component is part of the Normal Power distribution system and receives no backup power from the Emergency Power distribution system.
- I. E Emergency power system. Annotates that the associated component is part of the Normal Power and Emergency Power distribution systems. In the event of a loss of the supply from the normal power system, the component will receive power from the emergency power system.

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- 3. Nominal size, 10 by 14 inches.
- E. Warning label and sign shall include, but are not limited to, the following legends:
 - 1. Multiple Power Source Warning: "DANGER ELECTRICAL SHOCK HAZARD EOUIPMENT HAS MULTIPLE POWER SOURCES."
 - 2. Workspace Clearance Warning: "WARNING OSHA REGULATION AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES"
- F. Provide warning signs for the enclosures of electrical equipment including pad-mounted transformers, pad-mounted switches, and switchgear having a nominal rating exceeding 600 volts.
 - 1. When the enclosure integrity of such equipment is specified to be in accordance with IEEE C57.12.28 or IEEE C57.12.29, such as for pad-mounted transformers, provide selfadhesive warning signs on the outside of the high voltage compartment door(s). Sign shall be a decal and shall have nominal dimensions of 7 by 10 inches with the legend "DANGER HIGH VOLTAGE" printed in two lines of nominal 2 inch high letters. The word "DANGER" shall be in white letters on a red background and the words "HIGH VOLTAGE" shall be in black letters on a white background. Decal shall be Panduit No. PPS0710D72 or approved equal.
 - 2. When such equipment is guarded by a fence, mount signs on the fence. Provide metal signs having nominal dimensions of 14 by 10 inches with the legend "DANGER HIGH VOLTAGE KEEP OUT" printed in three lines of nominal 3 inch high white letters on a red and black field. Sign shall be Panduit No. PAS0710D72 or approved equal.

2.3 INSTRUCTION SIGNS

- A. Engraved, laminated acrylic or melamine plastic, minimum 1/16 inch thick for signs up to 20 sq. inches and 1/8 inch thick for larger sizes.
 - 1. Engraved legend with black letters on white face.
 - 2. Punched or drilled for mechanical fasteners.
 - Framed with mitered acrylic molding and arranged for attachment at applicable equipment.
- B. Adhesive Film Label: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch.
- C. Adhesive Film Label with Clear Protective Overlay: Machine printed, in black, by thermal transfer or equivalent process. Minimum letter height shall be 3/8 inch. Overlay shall provide a weatherproof and UV-resistant seal for label.

2.4 EQUIPMENT IDENTIFICATION LABELS

- A. Self-Adhesive, Engraved, Laminated Acrylic or Melamine Label: Adhesive backed, with white letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).
- B. Engraved, Laminated Acrylic or Melamine Label: Punched or drilled for screw mounting. White letters on a dark-gray background. Minimum letter height shall be 3/8 inch (10 mm).
- C. Retain paragraph below to specify type of label for identifying outdoor equipment if specified in "Identification Schedule" Article.
- D. Stenciled Legend: In non-fading, waterproof, black ink or paint. Minimum letter height shall be

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starters, variable frequency drives, special device plates, and similar materials shall be clearly marked as to their function and use. Markings shall be applied neatly and conspicuously to the front of each item of equipment with 1/2" black lamacoid plate (or equivalent) with white letters 1/4" high unless otherwise specified.

- I. All receptacle cover plates shall be marked with their panel and circuit number with clear, machine, printed adhesive labels. Circuit number shall also be hand written inside outlet box with black permanent marker.
- J. The Contractor shall provide clearly legible typewritten directories in each electrical panel indicating the area, item of equipment, etc. controlled by each switch, breaker, fuse, etc. These directories are to be inserted into plastic cardholders on back door in each panel. Provide electronic Excel files of all directories to owner as part of Close-out Documentation.
- K. Electrical distribution equipment, including branch circuit panelboards switchboards, shall be provided with a black lamacoid plastic plate with 1/2" white letters for panel designation and 1/4" white letters showing voltage and feeder information. Branch circuit switches shall be designated as to function. Electrical distribution equipment labels shall indicate the source they are fed from, and the circuit number at that source. Clearly indicate the exact label legend to be furnished with each panelboard and switchgear on the shop drawings for each item of equipment prior to submission of shop drawings. Refer to drawings for further details.
- L. Where branch circuit panelboards and switchgear are connected to an emergency source, the lamacoid plate shall be red, and the word "emergency" shall be incorporated into the legend. In health care applications, the NEC designated branch (life safety, critical or equipment branch) shall also be incorporated into the legend, all in 'A" letters. Also provide similar plates and legends for automatic transfer switches, as appropriate. Refer to drawings for further details.
- M. Lamacoid plates shall be located at center of top of trim for branch circuit panels, switch gear, and centered at side for branch circuit switches. Fasten with self-tapping stainless steel screws or other approved method.
- N. Verify identity of each item before installing identification products
- 0. All junction boxes utilized for life-safety branch emergency power circuits, connections, devices, etc. shall have the cover painted blue. Mark over paint with panel and circuit number.
- P. All junction boxes utilized for fire alarm circuits, connections, devices, etc. shall have the cover painted red. Mark over paint with letters "FA".
- Q. All device coverplates which are not engraved shall have clear adhesive labels with panel and circuit number type-written in black lettering.
- R. All systems requiring room names and/or numbers for labeling or programming shall use the owner's actual room name and numbering scheme, not floor plans. All reprogramming shall be included as required to accommodate construction phasing.
- S. All junction, outlet and pull boxes in data/mechanical/electrical rooms and above ceilings shall be identified with panel and circuit designation on outside of covers. All junction, outlet and pull boxes in exposed areas shall be identified with panel and circuit designation on inside of covers.
- T. The inside of all junction and backboxes shall be marked with panel and circuit number in permanent marker.

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- II. Emergency Operating Instruction Signs: Install instruction signs with white legend on a red background with minimum 3/8-inch high letters for emergency instructions at equipment used for power transfer and load shedding.
- JJ. Equipment Identification Labels: On each unit of equipment, install unique designation label that is consistent with wiring diagrams, schedules, and the Operation and Maintenance Manual. Apply labels to disconnect switches and protection equipment, central or master units, control panels, control stations, terminal cabinets, and racks of each system. Systems include power, lighting, control, communication, signal, monitoring, and alarm systems unless equipment is provided with its own identification.

KK. Labeling Instructions:

- 1. Indoor Equipment: Engraved, laminated acrylic or melamine label. Unless otherwise indicated, provide a single line of text with 1/2-inch high letters on 1-1/2-inch high label; where two lines of text are required, use labels 2 inches high.
- 2. Outdoor Equipment: Engraved, laminated acrylic or melamine label.
- 3. Elevated Components: Increase sizes of labels and letters to those appropriate for viewing from the floor.
- 4. Unless provided with self-adhesive means of attachment, fasten labels with appropriate mechanical fasteners that do not change the NEMA or NRTL rating of the enclosure.

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- J. Sleeves passing through roof or exterior wall or where there is a possibility of water leakage and damage shall be caulked water tight for horizontal sleeves and flashed and counter-flashed with lead (4 lb.) or copper and soldered to the piping, lapped over sleeve and properly weather sealed.
- K. All rectangular or special shaped openings in plaster, stucco or similar materials including gypsum board shall be framed by means of plaster frames, casing beads, wood or metal angle members as required. The intent of this requirements is to provide smooth even termination of wall, floor and ceiling finishes as well as to provide a fastening means for lighting fixtures, panels, etc. Lintels shall be provided where indicated over all openings in bearing walls, etc.
- L. No cutting is to be done at points or in a manner that will weaken the structure and unnecessary cutting must be avoided. If in doubt, contact the Architect and Structural Engineer.
- M. The Contractor shall be responsible for properly shoring, bracing, supporting, etc. any existing and/or new construction to guard against cracking, settling, collapsing, displacing or weakening while openings are being made. Any damage occurring to the existing and/or new structures, due to failure to exercise proper precautions or due to action of the elements, shall be promptly and properly made good to the satisfaction of the Architect.
- N. All work improperly done or not done at all as required by the Electrical trades in this section will be performed by the Contractor at the direction of the trade whose work is affected. The cost of this work shall be paid for by the Contractor who is in non-compliance with the Contract.
- 0. All penetrations shall be patched with materials matching that which has been disturbed.

PART 2- PRODUCTS

2.1 SLEEVES

- A. Sleeves:
 - 1. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, hot-dipped galvanized, plain ends.
- B. Sleeves for Rectangular Openings:
 - 1. Material: Galvanized sheet steel.
 - 2. Minimum Metal Thickness:
 - a. For sleeve cross-section rectangle perimeter less than 50 inches and with no side larger than 16 inches, thickness shall be 0.052 inch (18 gauge).
 - b. For sleeve cross-section rectangle perimeter 50 inches or more and one or more sides larger than 16 inches, thickness shall be 0.138 inch (10 gauge).

2.2 GROUT

- Description: Nonshrink; recommended for interior and exterior sealing openings in non-fire-rated walls or floors.
- B. Standard: ASTM C 1107/C 1107M, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
- C. Design Mix: 5000-psi, 28-day compressive strength.
- D. Packaging: Premixed and factory packaged.

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or damaged, in strict accordance with the provisions herein before specified for work of like type to match adjacent surfaces and in a manner acceptable to the Engineer.

- B. Where portions of existing lawns, shrubs, paving, etc. are disturbed for installation of work of this Division, such items shall be repaired and/or replaced to the satisfaction of the Engineer.
- C. Where the installation of conduit, raceways, etc. requires the penetration of fire or smoke rated walls, ceilings or floors, the space around such conduit, raceways, etc., shall be tightly filled with an approved non-combustible fire insulating material satisfactory to maintain the rating integrity of the wall, floor or ceilings affected.
- D. Conduits passing through floors, ceilings and walls in finished areas, unless otherwise specified, shall be fitted with chrome plated brass escutcheons of sufficient outside diameter to amply cover the sleeved openings and an inside diameter to closely fit the conduit around which it is installed.
- E. Stainless steel collars shall be provided around all conduits, raceways, etc., at all wall penetrations; both sides were exposed.
- F. Where conduits pass through interior or exterior walls, the wall openings shall be sealed air tight. This shall include sealing on both sides of the wall to insure air does not enter or exit the wall cavity. This is especially critical on exterior walls where the wall cavity may be vented to the exterior.

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for panelboards.

- D. Ceiling outlet boxes shall be galvanized steel, 4" octagonal, not less than 2 1/8" deep, with lugs or ears to secure covers, and those for use with ceiling lighting fixtures shall be fitted with 3/8" fixture studs fastened to the back of the boxes, where applicable. Provide adequate support with at least a 2 x safety factor for the anticipated fixture weight.
- E. Special size concealed outlet boxes for clocks, speakers, alarms, TV, etc., shall be provided by the manufacturer of the equipment.
- F. The location of outlets, as shown on the drawings, shall be considered as approximate only. It shall be incumbent upon this Contractor to study the general building drawings, with relation to spaces surrounding each outlet, in order to make his work fit the work of others and in order that when the devices or fixtures are installed, they will be symmetrically located and will not interfere with any other work or equipment. Any change in fixture or layout shall be coordinated with and approved by the Engineer before this change is made. Regardless of the orientation shown on the drawings, all devices shall be easily accessible when installed.
- G. All outlets, pull boxes, junction boxes, cabinets, etc., shall be sized per the current edition of the National Electrical Code.
- H. General Requirements for Boxes, Enclosures, and Cabinets: Boxes, enclosures, and cabinets installed in wet locations shall be listed for use in wet locations.
- I. Outlet boxes and junction or pull boxes shall be threaded for rigid-threaded conduit, dust-tight vapor-tight or weatherproof as required for areas other than for NEMA 1 or 1A application. These shall be as manufactured by Crouse-Hinds, Appleton, Killark, or approved as equivalent.
- J. Sheet Metal Outlet and Device Boxes: Comply with NEMA OS 1 and UL 514A.
- K. Cast-Metal Outlet and Device Boxes: Comply with NEMA FB 1, ferrous alloy or aluminum, Type FD, with gasketed cover.
- L. Luminaire Outlet Boxes: Nonadjustable, designed for attachment of luminaire weighing 50 lb. Outlet boxes designed for attachment of luminaires weighing more than 50 lb shall be listed and marked for the maximum allowable weight.
- M. NEMA 1 or 1A outlet boxes or pull or junction boxes shall be as manufactured by Appleton, Steel City, T & B, or approved equivalent.
 - Outlet boxes for switches, receptacles, etc., concealed in walls shall be galvanized steel, 4" x 4" x 2 1/8" deep with plaster cover for the number of devices as required and to be flush with finished wall. Where outlet boxes are installed in walls of glazed tile, brick, concrete block, or other masonry which will not be covered with plaster or in walls covered by wood wainscot or paneling, deep sectional masonry boxes shall be used and they shall be completely covered with the plates or lighting fixtures. This Contractor shall cooperate with the brick layers, block layers and carpenters to insure that the outlet boxes are installed straight and snugly in the walls. Receptacles shall be set vertically in walls.
 - 2. Outlet boxes for data/voice locations shall be as specified in Division 27.
- N. Unless otherwise noted on the drawings or in the specifications, outlet boxes shall be installed at the following heights to centerline of box:

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Lexington, Kentucky

- A. Comply with NECA 1 and NECA 101 for installation requirements except where requirements on Drawings or in this article are stricter. Comply with NFPA 70 limitations for types of raceways allowed in specific occupancies and number of floors.
- B. Comply with requirements in Section 16050 "Hangers and Supports for Electrical Systems" for hangers and supports.
- C. Comply with requirements in Section 16130 "Raceways and Boxes for Electrical Systems."
- D. Install electrical boxes as required for splices, taps, wire pulling, equipment connections.
- E. Do not install flush mounting boxes back-to-back in walls; install with minimum 6-inches separation. Install with 24-inches separation in acoustic rated walls.
- F. Do not fasten boxes to ceiling support wires or other piping systems.
- G. Support all boxes independently of conduit.
- H. Grounding bushings and bonding jumpers shall be used on conduit terminations at all junction boxes, pull boxes and cabinets to maintain grounding integrity of conduit system.

3.2 PROTECTION

- A. Protect coatings, finishes, and cabinets from damage and deterioration.
 - 1. Repair damage to galvanized finishes with zinc-rich paint recommended by manufacturer.
 - 2. Repair damage to PVC coatings or paint finishes with matching touchup coating recommended by manufacturer.

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Lexington, Kentucky

A. Coordination:

- 1. Receptacles for Owner-Furnished Equipment: Match plug configurations.
- 2. Cord and Plug Sets: Match equipment requirements.

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: List of legends and description of materials and process used for pre-marking wall plates.
- C. Samples: One for each type of device and wall plate specified, in each color specified.

1.6 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For wiring devices to include in all manufacturers' packing label warnings and instruction manuals that include labeling conditions.

PART 2- PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers' Names: Shortened versions (shown in parentheses) of the following manufacturers' names are used in other Part 2 articles:
 - 1. Hubbell Incorporated; Wiring Device-Kellems (Hubbell).
 - 2. Leviton Mfg. Company Inc. (Leviton).
 - 3. Pass & Seymour/Legrand (P&S).
 - 4. Cooper Wiring Devices; Division of Cooper Industries, Inc. (Cooper).
- B. Source Limitations: Obtain each type of wiring device and associated wall plate from single source from single manufacturer.

2.2 GENERAL WIRING-DEVICE REQUIREMENTS

- A. Wiring Devices, Components, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NFPA 70.
- C. Straight-Blade Receptacles
 - Convenience Receptacles, 125V, 20A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
 - 2. Isolated-Ground, Duplex Convenience Receptacles, 125 V, 20 A: Comply with NEMA WD 1, NEMA WD 6 Configuration 5-20R, UL 498, and FS W-C-596.
 - a. Description: Straight blade; equipment grounding contacts shall be connected only to the green grounding screw terminal of the device and with inherent electrical isolation from

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				Equal
RECEPTACLE, SINGLE	250V, 50A	NEMA 6-50R	BLACK	HUBBELL 9367 LEVITON or p & s Equal
SWITCH, SINGLE POLE	120/277V, 20A	SPST	!	HUBBELL HBL-1221 LEVITON or P & S Equal
SWITCH, THREE-WAY	120/277V, 20A	3-WAY	1	HUBBELL HBL-1223 LEVITON or P & S Equal

NOTES:

- 1. PROVIDE MATCHING CAP (PLUG) FOR ALL RECEPTACLES 30 AMP RATED AND ABOVE AS REQUIRED FOR EQUIPMENT.
- 2. ALL RECEPTACLES SHALL BE BACK OR SIDE-WIRED, CLAMPING TYPE
- 3. RECEPTACLES SHALL BE TAMPER RESISTANT AND WEATHER RESISTANT AND MARKED ACCORDINGLY AS REQUIRED BY NEC
- ! SEE PART 2.5, COLOR.

2.4 SMALL MOTOR CONTROL SWITCHES

A. For small line-to-neutral motor loads of 3/4 HP or less, single phase, rated at 120 or 277 volts, provide snap-type, HP rated motor starter switch with thermal overloads. Overload heaters sized to match the motor nameplate amperes and the ambient temperature shall be provided. Provide with NEMA 1, NEMA 3R or other enclosure suitable for the location and atmosphere. All manual starters in finished areas shall be in flush-mounted enclosures. If the motor to be controlled is not equipped with internal thermal overload protection, overload heaters sized to match the motor nameplate amperes and the ambient temperature shall be provided.

2.5 COLOR

- A. Color of devices shall be Ivory or as selected by the architect during Shop Drawing Review. Samples (devices, plates or both) may be required to be submitted with other architectural color items by the Contractor. The Contractor shall coordinate any such submission required with other trades, the Prime Contractor or as needed.
- B. Where devices are controlling or supplying emergency power from a standby source, the device color shall be red, as with switch toggles or receptacle fronts. Plate color shall match others on normal power in the building unless otherwise noted.
- C. Where surface finishes next to the devices vary in color or shade throughout the project, the Contractor may be required to provide lighter or darker plates and devices to more closely match wall finishes. These variations are considered to be included in the original contract for construction.

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C. Description:

- 1. Comply with NEMA WD 1, NEMA WD 6 Configuration L5-20R, and UL 498.
- Equipment grounding contacts shall be connected only to the green grounding screw terminal of the device and with inherent electrical isolation from mounting strap.
 Isolation shall be integral to receptacle construction and not dependent on removable parts.

2.10 PENDANT CORD-CONNECTOR DEVICES

A. Description:

- 1. Matching, locking-type plug and receptacle body connector.
- NEMA WD 6 Configurations L5-20P and L5-20R, heavy-duty grade, and FS W-C-596.
- 3. Body: Nylon, with screw-open, cable-gripping jaws and provision for attaching external cable grip.
- 4. External Cable Grip: Woven wire-mesh type made of high-strength, galvanized-steel wire strand, matched to cable diameter, and with attachment provision designed for corresponding connector.

2.11 CORD AND PLUG SETS

A. Description:

- 1. Match voltage and current ratings and number of conductors to requirements of equipment being connected.
- Cord: Rubber-insulated, stranded-copper conductors, with Type SOW-A jacket; with green-insulated grounding conductor and ampacity of at least 130 percent of the equipment rating.
- 3. Plug: Nylon body and integral cable-clamping jaws. Match cord and receptacle type for connection.

PART 3- EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1, including mounting heights listed in that standard, unless otherwise indicated.
- B. All wiring devices in dusty areas, exposed to weather and moisture shall be installed in Type "FS" conduit fittings having mounting hubs, with appropriate cover plates.
- C. Devices that have been installed before painting shall be masked. No plates or covers shall be installed until all finishing and cleaning has been completed.
- D. Provide GFCI duplex feed-thru style receptacles where indicated or required by the National Electrical Code, whether specifically called out or not. When a GFCI receptacle is on a circuit with other non-GFCI receptacles, it shall always be placed at the homerun point of the circuit and shall be wired to ground-fault interrupt protect the downstream outlets on that circuit unless specifically indicated to the contrary. Provide a "GFCI protected" label on each downstream outlet. GFCI receptacles shall audibly alarm when tripped.
- E. All receptacles shall be installed with ground prong at bottom position.

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Lexington, Kentucky

- 1. Install dimmers within terms of their listing.
- 2. Verify that dimmers used for fan speed control are listed for that application.
- 3. Install unshared neutral conductors on line and load side of dimmers according to manufacturers' device listing conditions in the written instructions.
- Adjust locations of floor service outlets and service poles to suit arrangement of partitions and furnishings.
- 3.2 IDENTIFICATION: Comply with Division 16 Section "Identification for Electrical Systems.
- 3.3 FIELD QUALITY CONTROL
 - A. Perform the following tests and inspections:
 - 1. Test Instruments: Use instruments that comply with UL 1436.
 - 2. Test Instrument for Convenience Receptacles: Digital wiring analyzer with digital readout or illuminated digital-display indicators of measurement.
 - B. Wiring device will be considered defective if it does not pass tests and inspections.
 - C. Tests for Convenience Receptacles:
 - 1. Line-Voltage: Acceptable range is 105 to 132 V.
 - 2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is unacceptable.
 - 3. Ground Impedance: Values of up to 2 ohms are acceptable.
 - 4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
 - 5. Using the test plug, verify that the device and its outlet box are securely mounted.
 - 6. Tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.
 - D. Wiring device will be considered defective if it does not pass tests and inspections.
 - E. Prepare test and inspection reports.

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Lexington, Kentucky

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, product(s) indicated on Drawings. Substitutions shall be submitted to Engineer minimum (10) days prior to bid date for evaluation.

2.2 LIGHTING FIXTURE SUPPORT COMPONENTS

- A. Comply with Division 26 Section "Hangers and Supports for Electrical Systems" for channeland angle-iron supports and nonmetallic channel and angle supports.
- B. Single-Stem Hangers: 1/2-inch steel tubing with swivel ball fittings and ceiling canopy. Finish same as fixture.
- C. Twin-Stem Hangers: Two, 1/2-inch steel tubes with single canopy designed to mount a single fixture. Finish same as fixture.
- D. Wires: ASTM A 641/A 641M, Class 3, soft temper, zinc-coated steel, 12 gage.
- E. Wires for Humid Spaces: ASTM A 580/A 580M, Composition 302 or 304, annealed stainless steel, 12 gage.
- F. Rod Hangers: 3/16-inch minimum diameter, cadmium-plated, threaded steel rod.
- G. Hook Hangers: Integrated assembly matched to fixture and line voltage and equipped with threaded attachment, cord, and locking-type plug.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Lighting fixtures: Set level, plumb, and square with ceilings and walls. Install lamps in each fixture.
- B. Comply with NFPA 70 for minimum fixture supports.
- C. Suspended Lighting Fixture Support:
 - 1. Pendants and Rods: Where longer than 48 inches brace to limit swinging.
 - 2. Stem-Mounted, Single-Unit Fixtures: Suspend with twin-stem hangers.
 - 3. Continuous Rows: Use tubing or stem for wiring at one point and tubing or rod for suspension for each unit length of fixture chassis, including one at each end.
- D. Adjust aimable lighting fixtures to provide required light intensities.

INTERIOR LIGHTING 265100 - 2

TELECOM/DATA RACEWAY SYSTEM - 271000

PART 1 - PRODUCTS

CONDUIT REQUIREMENTS

1.1 METAL CONDUIT

- A. Manufacturers: Subject to compliance with project requirements, manufacturers offering specified items which may be incorporated in the Work include the following:
 - Allied Tube & Conduit, Harvey, IL (800) 882-5543.
 - 2. Wheatland Tube Co., Collinswood, NJ (800) 257-8182.
 - 3. Republic Wire & Cable, Rocky Mount, NC (800) 533-8198.
 - 4. Section 016000 Product Requirements: Product options and substitutions. Substitutions: Permitted.
- B. Rigid Galvanized Steel Conduit (GRC): ANSI C80.1, UL6.
- C. Intermediate Metal Conduit (IMC): UL1242.
- D. Fittings and Conduit Bodies: NEMA FB1 Material to match conduit.

1.2 ELECTRICAL METALLIC TUBING (EMT)

- A. Manufacturers: Subject to compliance with project requirements, manufacturers offering specified items which may be incorporated in the Work include the following:
 - Allied Tube & Conduit, Harvey, IL (800) 882-5543.
 - 2. Wheatland Tube Co., Collinswood, NJ (800) 257-8182.
 - 3. Republic Wire & Cable, Rocky Mount, NC (800) 533-8198.
 - 4. Section 016000 Product Requirements: Product options and substitutions. Substitutions: Permitted.
- B. Description: ANSI C80.3; galvanized tubing.
- C. Fittings and Conduit Bodies: NEMA FB 1; steel set-screw type. Die-cut Zinc not permitted.

1.3 OUTLET BOXES

- A. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
 - Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; include 1/2 inch male fixture studs where required.
 - 2. Receptacle and Device Boxes 4 inch square x 2-1/8 inch deep with raised, single gang, plaster ring unless indicated otherwise.

VENDOR ID: 0000047152

LEXINGTON-FAYETTE URBAN COUNTY GOVERNMENT

Form 211-5 - Revised Feb 2025

DISBURSEMENT REQUEST

Form 211-5 - Rev	used Feb 2025										
Payable To:	BMI Bui	lds, LLC									\$ 291,905.55
Address: 156 I											
Georgetown,								-			
(859) 913-110											
INFORMAT	TON TO	BE WRITTE	EN ON CHE	CK				PURCHASE (
									CEIPT #:		
								NEED CH		Pay App #3	
								NEED CH		TO: Supplier	
BUSINESS UNI	T:								ROUTE	, TO, Supplier	
FOR NON-PRO	JECTS REO	UEST									
7.500						Travel Advance					
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FOR PROJECTS	S REQUEST			1.0			•				
Amount	Fund	DeptID	Section	Account	Site	Budget Ref	Project Bus Unit	Project	Activity	Travel Advance EE #	
\$ 274,339.50	3230	707602	7221	91015	795	2022	LFUCG	AR_PARKQCT_2022	VALLEY		
-\$ 27,433.95	3230	707602	7221	20020	795	2022	LFUCG	AR_PARKQCT_2022	VALLEY		
\$ 50,000.00	1105	707602	7221	91015	795	2024	LFUCG	VALLEY_PK_2024	COUNCIL		
-\$ 5,000.00	1105	707602	7221	20020	795	2024	LFUCG	VALLEY_PK_2024	COUNCIL		
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Approved:			WA	m		_			Date:	3/17/2	5
Approved:			Mur	Required >\$2,50	0 Director	>.		-	Date:	3/19/2	25
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Approved:			0	Malasa	Son	(an)			Date:	2/26/3	25
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APPLICATION AND CERTIFICATION FOR PAYMENT TO OWNER: LFUCG

PROJECT: LF00207105

Dunbar Community Center Roof and Restroom Replacement

~ APPLICATION NO:

10-Feb-25

PAGES Distribution to:

PAGE ONE OF

ALA DOCUMENT G702

PERIOD TO:

CONTRACTOR BMILLC ARCHITECT **OWNER** ×

> thomberrydg@jearchitects.net PROJECT NOS: 156 Rocky Waters Way Georgetown, KY 40324

FROM CONTRACTOR; BMI LLC

Lexington, Kentucky 40504

200 E. Main Street

Daniel Thomberry, AIA

25-May-25

VIA ARCHITECT: JOHNSON EARLY ARCHITECTS

completed in accordance with the Contract Documents, that all anyounts have been paid by payments received from the Owner, and that current payment shown herein is now due. the Contractor for Work for which previous Certificates for Payment were issued and information and belief the Work covered by this Application for Payment has been The undersigned Contractor certifies that to the best of the Contractor's knowledge CONTRACT DATE: \$/26/2024 CONTRACT FOR: Valley Park Building Renovation & Expansion (Bid No. 17-2024) CONTRACTOR'S APPLICATION FOR PAYMENT Application is made for payment, as shown below, in connection with the Contract, Continuation Sheet, AIA Document G703, is attached.

CONTRACTOR

802,763.72

CONTRACT SUM TO DATE (Line 1 ± 2)

ORIGINAL CONTRACT SUM

Net change by Change Orders

TOTAL COMPLETED & STORED TO

(Column G on G703)

5. RETAINAGE: DATE

a. 10% % of Completed Work (Column D + E on G703)

% of Stored Material

ف

\$80,276,37

1,671,409.73

1,5-25 By: BMI LLC

Subscribed and sworn to before me this / p** My Commission expires: . 12-02-202 5 Kentucky State of:

day of Fahrony

County of: Fayette

ARCHITECT'S CERTIFICATE FOR PAYMEN

80,276.37

191,905,55 430,581.80

DEDUCTIONS

VDDITIONS

CHANGE ORDER SUMMAR

in previous months by Owner

Total changes approved

Total approved this Month

TOTALS

BALANCE TO FINISH, INCLUDING RETAINAGE

(Line 3 less Line 6)

PAYMENT (Line 6 from prior Certificate) LESS PREVIOUS CERTIFICATES FOR

8. CURRENT PAYMENT DUE

6. TOTAL EARNED LESS RETAINAGE

Total in Culumn I of G703) (Line 4 Less Line 5 Total)

Fotal Retainage (Lines 5a + 5b or

(Column F on G703)

\$157,384.88 \$157.384.88

Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor In accordance with the Contract Documents, based on on-site observations and the data comprising the application, the Architect certifies to the Owner that to the best of the is entitled to payment of the AMOUNT CERTIFIED.

291,905.55 AMOUNT CERTIFIED

Application and onthe Continuation Sheet that are changed to conform with the amount certified.) (Attach explanation if amount certified differs from the umount upplied. Initial all figures on this

This Certificate is not despreadable. The AMOUNT CERTIFIED is payable only to the Date: ARCHITECT: /

Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

ARDOOMEN GIVE: APPLICATION AND CERTHECATION FOR PAYMENT 11992 EDITION - AM. GRI992
USERS may obtain validation of this document by requesting a completed AIA Document D401 - Certification of Document's Authenticity from the Licensee.

\$157,384.88

NET CHANGES by Change Order

\$0.00

R- 737846 F00207105

1105.707602.7221. 91015 | VALEY, PK. 2024 | COUNCIL AR. PARKACT-2022 VALLEY \$274,339.50

OK to Pay 3.7.25 \$50,000.

The state of the s								
137 Interior CMI Walls - I shor	\$16,000.00	84.800.00	\$11.200.00	\$0.00	\$16,000.00	100.00%	\$0.00	\$1,600.00
	54 000 00	\$3.200.00	SKUD DO	\$0.00	\$4,000.00	100.00%	80.00	\$400.00
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	\$10,000,00	80.00	\$0.00	80.00	\$0.00	0.00%	\$10,000.00	80.00
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_	\$14,692.11	\$7,346.06	\$7,346,05	20.00	\$14,692.11	100.00%	80.00	\$1,469.21
_	\$24,205.81	\$0.00	\$24,205.81	\$0.00	\$24,205.81	%00.001	80.00	\$2,420.58
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_	\$30,000.00	\$0.00	\$12,000.00	\$0,00	\$12,000.00	40.00%	\$18,000.00	\$1,200.00
	\$54,150.04	\$16,245.01	\$10,830.01	\$0.00	\$27,075.02	50.00%	\$27,075.02	\$2,707.50
_	\$70,000.00	\$0.00	\$35,000.00	\$0.00	\$35,000.00	50.00%	\$35,000.00	\$3,500.00
_	\$18,000.00	\$0.00	\$0.00	\$0.00	\$0.00	0.00%	\$18,000.00	\$0.00
_	\$12,000.00	80.00	\$0.00	\$0.00	\$0.00	0.00%	\$12,000.00	\$0.00
-	\$4,500.00	80.00	20.00	\$0.00	\$0,00	0.00%	\$4,500.00	\$0.00
64 Exterior Siding & Soffits - Labor	\$27,990.87	\$0.00	\$13,995.44	80.00	\$13,995.44	\$0.00°	\$13,995,44	51,399.54
65 Exterior Siding & Soffits - Material	\$25,000.00	\$0.00	\$12.500.00	20.00	\$12,500.00	50,00%	\$12,500.00	\$1,250.00
66 Structural Steel & Railing - Labor	8%,000.00	\$2,000.00	\$0.00	\$0.00	\$2,000.00	40.000:	26,000.00	00.0024
_	832,000.00	\$12,800.00	20.00	20.00	\$12,800.00	40.00%	\$19,200.00	51,260,00
68 Doors / Hardware - Materials	\$43,775.93	\$13,132.78	\$0.00	\$0.00	\$13,132,78	20.000	550,045.15	07,515,10
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76 Paint - Materials	\$7,495.44	80.00	00.08	20.00	\$0.00		87,493.44	00.02
Paint - Labor	\$19,000.00	20.00	20.00	20.00	20.00		00.000.614	00.00
78 Flooring - Materials	\$18,346.06	20.00	\$0,00	\$0.00	\$0.00	0.00%	\$18,346.00	00.03
79 Flooring - Prepartation	\$12,000.00	\$0.00	\$0.00	20.00	20.00		512,000,000	00.00
80 Flooring - Installation	\$30,000.00	20.00	20.00	20.00	30.00		230,000.00	\$0.00
1 Flooring - Covebase	\$4,000.00	\$0.00	\$0.00	\$0.00	20.00		\$4,000.00	30.00
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AFFIDAVIT AND PARTIAL RELEASE OF LIENS AND CLAIMS FOR PROGRESS PAYMENT

Add/Update Receipts Maintain Receipts Receiving Business Unit LFUCG Receipt Status Fully Received × Header Comments/Attachments Receipt ID 0000737846 Activities Document Status > Header Run PO Receipt Accrual Select Purchase Order Close Short All Lines Print Delivery Report Receipt Lines E Q Receipt Lines More Details Links and Status Item / Mfg Data Optional Input Source Information ⊮⊳ Line item Description Receipt Qty Receipt Price Accept Qty Status Resolution 235-2024 ; Bid# 17-

☐ Interface Receipt

Save

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Refresh

Notify

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☐ Run Close Short

CO #1 to LF00207105 - R-570-20

Interface Asset Information

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