

REMODELING FOR LIVING QUARTERS

AT

TOWN OF LINN FIRE/EMS STATION

LAKE GENEVA, WISCONSIN

ARCHITECT-ENGINEER

JOB NO.

2326

DATE

April 8, 2024

KEHOE-HENRY & ASSOCIATES, INC.

Architecture & Engineering

25 North Wisconsin Street

Elkhorn, Wisconsin 53121

262-723-4399

SPECIFICATIONS

PROJECT Remodeling for Living Quarters
TOWN OF LINN FIRE/EMS STATION
Lake Geneva, Wisconsin

OWNER **TOWN OF LINN**
W3728 Franklin Walsh Street
Zenda, Wisconsin 53147

ARCHITECT-ENGINEER **KEHOE-HENRY & ASSOCIATES, INC.**
Architecture and Engineering
25 North Wisconsin Street
Elkhorn, Wisconsin 53121

DATE April 8, 2024

JOB NO. 2326

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1 **ADVERTISEMENT FOR BIDS**

2
3 Sealed Bids shall be received by the Board of Supervisors, Town of Linn for the **Remodeling**
4 **for Living Quarters at Town of Linn Fire/EMS Station Project located at N1457 Hillside**
5 **Road, Lake Geneva, WI 53147 until 10:00 a.m. local time on May 3, 2024. Bids shall be**
6 **submitted to the office of Jim Hurley, Administrator, Town of Linn, W3728 Franklin**
7 **Walsh Street, P.O. Box 130, Zenda, WI 53195.** Bids shall be publicly opened and read aloud
8 shortly thereafter.

9
10 **All Bidders shall submit the Bidder's Pre-Qualification Statement not later than the**
11 **deadline for the Bids being due as noted above.** Bidders who are currently pre-qualified
12 with the Town of Linn for calendar year 2024 are not required to resubmit the Bidder's Pre-
13 Qualification Statement. The Bidder's Pre-Qualification Statement form is included in the
14 Specifications. The Bidder's Pre-Qualification Statement shall be submitted to Jim Hurley,
15 Administrator, Town of Linn, W3728 Franklin Walsh Street, P.O. Box 130, Zenda, WI 53195
16 for review and approval. The Town may or may not open the Bid of a Contractor not qualified,
17 but will not award a Project to a Contractor that is not qualified. Qualification submittals will
18 be held confidential.

19
20 Plans, Specifications, and other Bidding Documents shall be available from Copies and Prints
21 Plus, 906 South Wells Street, Lake Geneva, WI 53147 (262-248-2545) on or about April 9,
22 2024. Visit their website, www.copiesandprintsplus.com, and click on the Plan Room. Select
23 Kehoe-Henry from the list of companies and select Town of Linn Fire-EMS from the list of
24 projects. Enter user name kehoehenry and password kehoehenry.

25
26 Bids shall be received on the following Branch of Work:

27
28 **Branch A: General Construction Work**

29
30 Plans, Specifications, related Documents, and Addenda shall be available for review at the
31 Town of Linn, W3728 Franklin Walsh Street, Zenda, WI 53195, and available at the Town of
32 Linn website: <https://www.townoflinn.wi.gov>. Bidders wishing to receive hard copies of the
33 Documents may purchase sets directly from Copies and Prints Plus.

34
35 A certified check or bank draft payable to the Owner or a satisfactory Bid Bond executed by
36 the Bidders and a surety company licensed to do business in the State of Wisconsin in the
37 amount of not less than ten percent (10%) of the Base Bid shall accompany each Bid as a
38 guarantee that if their Bid is accepted, the Bidder shall execute and file the proper Contract and
39 a one hundred percent (100%) Performance/Labor and Material Payment Bond within ten (10)
40 days after the Award of the Contract.

41
42 If the successful Bidder fails, for any reason, to execute and file such Contract and
43 Performance/Payment Bond, the amount of the check or Bid Bond shall be forfeited to the
44 Town of Linn as liquidated damages. No Bids may be withdrawn for a period of thirty (30)
45 days after opening date.

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All Contractor non-residents of the State of Wisconsin shall comply with Section 71.10(14) Wisconsin Statutes.

The Owner reserves the right to reject any or all Bids, to waive any irregularities, or to accept any Bid which, in the judgment of the Owner, may be most advantageous to it. The acceptance or rejection of any Bid submitted is final and binding on all Bidders without recourse by rejected Bidders against the Town of Linn.

For further information, contact Bill Henry at Kehoe-Henry & Associates, Inc., 262-723-4399.

Date: April 9, 2024

By: Jim Hurley
Administrator
TOWN OF LINN
Zenda, Wisconsin

1 **INSTRUCTIONS TO BIDDERS**

2
3 **1.** The Project is combined for clarity and Contract purposes into the following Branch:

4
5 **Branch A: General Construction Work**

6
7 **2.** Each Bidder shall carefully examine the Plans and Specifications, visit the site, and
8 fully inform itself of the extent of all existing conditions and limitations, including the
9 accessibility of the site, and all other relevant matters concerning the Work to be performed.
10 Submission of a Proposal shall be conclusive evidence that the Bidder has made adequate
11 examination and has included in the Proposal a sum to cover the cost of all items included in
12 the Contract.

13
14 **3.** Should the Bidder find any discrepancies, omissions, ambiguities, or conflicts in or
15 among Contract Documents, or be in doubt as to their meaning, it should bring the question to
16 the Architect-Engineer's attention not later than ten (10) days prior to date for receipt of Bids.
17 The Architect-Engineer shall review the question, and where information sought is not clearly
18 indicated or specified, shall issue interpretations and corrections in writing by Addendum.
19 Neither Owner nor Architect-Engineer shall make or be responsible for any interpretations,
20 corrections, or changes to the Bidding Documents unless by Addendum.

21
22 **4.** In these Specifications, many materials and products are specified by manufacturer's
23 name, brand, trade name, or catalog number; and it is intended that only those items listed shall
24 be considered for inclusion into the Project. However, if a Bidder considers an additional
25 material or product to be equal to or superior to those specified, it may present that material or
26 product as an Approved Equivalent item for use on the Project by submitting all necessary
27 information and supporting data to the Architect-Engineer for approval at least ten (10) days
28 prior to the Bid deadline. If the Architect-Engineer approves the material or product, it shall
29 be included in an Addendum to all prospective Bidders as an approved equivalent for use on
30 the Project. For any item or installation not as specified, but as accepted as an approved
31 equivalent, the Contractor shall assume responsibility for performance of same and provide for
32 any modifications of the Work as required to accommodate such items at no additional cost.

33
34 **5.** Bids shall be submitted as set forth in the Advertisement for Bids by no later than 10:00
35 a.m. local time on May 3, 2024.

36
37 A. Bids shall be submitted upon the Bid form provided. The Bid form shall be
38 completely filled out in ink or typewritten in words and figures (in case of discrepancy, words
39 shall govern). Two (2) copies of the signed Bid must be submitted in a sealed envelope marked
40 "Remodeling for Living Quarters at Town of Linn Fire/EMS Station Bid" on or before the time
41 and at the place specified in the Advertisement for Bids, endorsed with the name of the person,
42 firm, or corporation presenting it, and the date. Bids received after the time and date for receipt
43 of Bids will be returned unopened.

44
45 B. Alterations of or amendments to the Bid form, attachments thereto, or inclusion
46 of other written or printed matter other than that called for may disqualify the Bid.

1 C. Bids must be properly signed by individuals making them, or shall have
2 attached thereto a Power-of-Attorney evidencing authority to sign the Bid in the name of the
3 person for whom it is signed.
4

5 D. Bids which are signed for a partnership shall be signed by all the partners or by
6 an Attorney-in-Fact. If signed by an Attorney-in-Fact, there shall be attached to the Bid a
7 Power-of-Attorney evidencing authority to sign the Bid, executed by the Partners.
8

9 E. Bids which are signed for a Corporation shall have the correct Corporate names
10 thereof and the signature of the authorized person or persons of the Corporation, handwritten
11 below the Corporate name following the word By: _____, and stamped with the
12 Corporate seal.
13

14 F. The Owner shall also be furnished with a certified copy of a Corporate
15 Resolution of the Board of Directors, or a certified copy of the Corporation's by-laws,
16 providing that the person who signed the Bid on behalf of said Corporation is authorized to do
17 so. This resolution or by-law shall be certified by the Secretary of said Corporation. The
18 foregoing shall also apply to the signing of all Contracts by the Corporation.
19

20 **6.** Bids MAY NOT be transmitted via fax machine or email.
21

22 **7.** A satisfactory Bid Bond executed by the Bidder and surety company or a certified
23 check in the amount equal to ten percent (10%) of the Bid shall be submitted with each Bid
24 payable to the Owner. Bidders, by submitting Bid and Bid Bond, agree that the Bid security
25 shall equal the liquidated damages that the Owner shall sustain should the successful Bidder
26 neglect or refuse to enter into the Contract with the Owner within ten (10) days after the Bid
27 is accepted by the Owner and the Contractor is given written notice thereof.
28

29 **8.** The successful Bidder shall take out and pay for a Performance, Labor, and Material
30 Payment Bond in the amount equal to 100% of the Contract. AIA Document A312 –
31 Performance and Payment Bond shall be completely filled out and submitted to the Owner
32 along with the completed Agreement and proof of insurance, as called for under the
33 Supplementary General Conditions, by the successful Bidder.
34

35 **9.** A Certificate of Insurance required by the Specifications shall be completed and
36 submitted by the successful Bidder(s). The Owner and Architect-Engineer shall be named as
37 additional insureds on each Certificate of Insurance.
38

39 **10.** Strict adherence to the Construction Schedule shown in the General Requirements shall
40 be insisted upon. Additional cost by the Owner or Architect-Engineer due to the Contractor's
41 failure to comply with the Schedule shall be charged to the Contractor as real damage. Such
42 additional costs include but are not limited to the following.
43

44 A. Owner's rental and moving costs for space required.

45 B. Owner's additional staff costs.
46

1 C. Additional services required of the Architect-Engineer during the Construction
2 Phase.

3
4 D. Additional time spent by the Architect-Engineer in coordinating trades to
5 maintain Schedule.

6
7 E. Additional clerical expenses.

8
9 F. Attorney fees and court costs in full incurred by the Owner in enforcing the
10 time schedule and in collecting its damages.

11
12 **11. PRE-BID CONFERENCE**

13
14 A. A Pre-Bid Conference is scheduled for 10:00 a.m. April 22, 2024 at the Town
15 of Linn Fire/EMS Station, N1457 Hillside Road, Lake Geneva, Wisconsin. Representatives
16 of the Owner and Architect-Engineer will be present to answer questions.

17
18 B. Bidders shall arrange additional site visits with Chief Pete Jones (262-749-
19 8365) prior to any on-site observations.

20
21 **12.** All Contractors and Subcontractors shall comply with Federal and State Fair
22 Employment (Equal Opportunity) Laws. At the commencement of the Project, Contractors
23 shall submit to the Architect-Engineer a certified letter indicating that Federal and State Fair
24 Employment Laws shall be complied with.

25
26 **13. TAXES**

27
28 The Owner is a municipality that is exempt from Wisconsin sales and use taxes.
29 Therefore, Wisconsin and county sales taxes do not apply to this Project, nor to any materials
30 purchased by Contractors, Subcontractors, or Suppliers for this Project.

31
32 **14. LOCAL SUBCONTRACTORS**

33
34 All Bidders are encouraged to solicit proposals from Subcontractors and Suppliers with
35 their principal place of business within the boundaries of the Town of Linn, or in close
36 proximity thereto, to the greatest extent possible, and applicable to the Work specified herein
37 for all Branches.

38
39 **15. WITHDRAWAL OF BIDS**

40
41 A. Any Bidder who has submitted a Bid may withdraw the Bid at any time prior
42 to the scheduled time for submission of Bids.

43
44 B. No Bids may be withdrawn for a period of thirty (30) days after opening date.

1 **16. ALTERNATE BIDS**
2

3 A. Alternate Bids must be submitted by the Contractor for the items listed in the
4 Proposal form. IN BIDDING THE ALTERNATE, the Contractor shall indicate the dollar
5 amount to be "Added To" or "Deducted From" the Base Bid or "No Change" should the amount
6 be the same as the Base Bid.
7

8 B. See Proposal form for list and description of Alternate Bids required.
9

10 **17. UNIT PRICES**
11

12 A. In the spaces provided on the Proposal form, Contractors for Branch A:
13 Reroofing Work shall submit the prices for the unit of materials requested. Overhead and
14 profit shall be included in this price. **Only one price may be submitted for each unit price**
15 **requested.**
16

17 B. See Proposal form for list and description of unit prices required.
18

19 **18. CONSIDERATION OF PROPOSALS TO DETERMINE LOW BIDDERS**
20

21 A. The low Bidder shall be determined solely on the basis of the Base Bid,
22 accepted separate Bids, accepted Alternate Bids, and accepted unit price work.
23

24 B. "Or Approved Equivalent" items that are accepted by the Owner and approved
25 in writing by the Architect-Engineer as equivalent or better than items specified ten (10) days
26 prior to the Opening of Bids may be included in the Base Bid. Notice of the acceptance of
27 such authorized approved equivalent items shall be provided to all affected Bidders at least
28 seven (7) days prior to the Opening of Bids.
29

30 C. The Owner reserves the right to reject any or all Proposals, to waive any
31 irregularities or technicalities, to advertise for new Proposals or to accept any Proposal which,
32 in the judgment of the Owner, may be most advantageous to it. The acceptance or rejection of
33 any Proposal submitted is final and binding on all Bidders without recourse by rejected Bidders
34 against the Town of Linn.
35

36 **19. LIST OF SUBCONTRACTORS**
37

38 A. Each Bidder shall submit a complete List of Subcontractors which is included
39 with the Proposal form. Work and material furnished by each Prime Contractor shall be so
40 listed, along with actual Subcontractors.
41

42 B. All Bidders are required to submit a complete List of Subcontractors.
43

44 C. No changes of Subcontractors shall be allowed by successful Bidders without
45 written approval from the Owner.

1 D. All Bidders shall be required to submit the list no later than twenty-four (24)
2 hours after Bids are due to the office of the Architect-Engineer in Elkhorn, Wisconsin. The
3 List of Subcontractors may be hand delivered or emailed to wrh@kehoe-henry.com.
4

5 **20. MATERIAL SELECTION LIST**
6

7 A. On the Material Selection List sheets provided at the end of the Proposal form,
8 each Bidder shall provide the name of the material or product they have based its Bid upon,
9 wherever more than one material or product is specified. If the Bidder does not list one of the
10 materials or products in the Proposal, the Owner shall have the right to select any of the
11 materials or products named without a change in the Proposal or Contract Price.
12

13 B. The above Material Selection List may be submitted with the Contractor's
14 Proposal form. If the Material Selection List is not included with the Proposal form, the
15 Contractor shall be required to submit the list no later than twenty-four (24) hours after Bids
16 are due to the office of the Architect-Engineer in Elkhorn, Wisconsin. The Material Selection
17 List shall be required to be submitted from the three (3) low Bidders of each Branch of
18 Construction.

Date: _____

To: Jim Hurley
Administrator
Town of Linn
W3728 Franklin Walsh Street
Zenda, WI 53195

Submission of Pre-qualification Forms for the Year _____

Dear Mr. Hurley,

Submitted herewith please find our pre-qualification application and class of work application for your consideration in determining whether our firm is qualified and capable to bid, perform and furnish the necessary labor, materials and skill on the basis of our work record, experience, equipment and staff as required to enter upon and complete those various types of projects indicated below as may be awarded by the Town of Linn and its Utilities, referenced herein as "Municipality", during the current calendar year.

It is understood that the determinations and decisions of the Municipality with regard to qualifications shall be final, and further, that the information herein will be considered confidential. The Municipality also expressly reserves the right to reverse its findings later in the year.

It is further understood that the undersigned firm is under a continuing obligation to report to the Municipality any circumstances which may affect the "qualified" status. Examples include but are not limited to bankruptcy, notices of claims, AG or DA referrals, lawsuits, and failure to complete projects. Failure to provide such an update may result in the Town rescinding the "qualified" status for that reason alone.

Sincerely yours,

Officer

Firm

Class of Work Application
(Contractor Please Check Class of Work)

Date: _____

To: Jim Hurley
Administrator
Town of Linn
W3728 Franklin Walsh Street
Zenda, WI 53195

From:

Contractor: _____

Address: _____

City, State, Zip: _____

Telephone: _____ Fax: _____

Email for notifications (**required**): _____

Class of Work:

- Asphalt _____
- Concrete _____
- Crackfilling _____
- Demolition _____
- Electrical _____
- Excavation _____
- Fencing _____
- Fire Protection _____
- General (Includes Buildings) _____
- Grading _____
- HVAC _____
- Irrigation _____
- Landscaping _____
- Painting _____
- Plumbing _____
- Roofing _____
- Sewer _____
- Tree Planting _____
- Tuckpointing _____
- Water _____
- Other _____

Approved as Qualified _____ Date _____

PRE-QUALIFICATION STATEMENT APPLICATION

1. Firm Name: _____

Address: _____

City, State, Zip: _____

Telephone: _____ Fax: _____

2. How many years has your firm been engaged in the contracting business? _____

3. How many years has your firm been engaged in the contracting business under its present name? _____

4. Type of Firm: _____
(Corporation, partnership, sole proprietorship, etc.)

Date of Incorporation: _____

State of Incorporation: _____

President/Partner: _____

Vice President/Partner: _____

Secretary/Clerk: _____

Treasurer: _____

(Cross out terms that do not apply)

5. Have you ever failed to complete any work awarded to you? Yes No

If yes, attach statement describing where and why.

6. Have you ever defaulted on a contract? Yes No

If yes, attach statement describing where and why.

PRE-QUALIFICATION STATEMENT APPLICATION

PROVIDE INFORMATION FOR QUESTIONS 7-16 ON SEPARATE SHEETS OF PAPER.

7. List the name of the project, owner, architect/engineer, contract amount, percent complete and scheduled completion date of the construction projects your firm has in progress on this date.
8. List the name of the project, owner, architect/engineer, contract amount and date of completion of the projects completed by your firm in the past five years involving similar work.
9. A statement of background and experience of the principle members of your staff, including officers.
10. List the trades and percentage of work that you normally handle with your own crews and do not sublet.
11. Furnish CURRENT written evidence from banks as to lines of credit available and amounts previously extended.
12. List as least five (5) trade references.
13. List bonding company, agent, address, telephone number, bonding limit and bonded work under contract.
14. List names of insurance company, agent, address and telephone number. Please include an updated Certificate of Liability Insurance.
15. Attach a copy of the latest dated regular Financial Statement of your firm which shall contain the following items:

Current & Total Assets:

- a) Cash
- b) Accounts Receivable
- c) Real Estate Equity
- d) Materials in Stock
- e) Equipment-Book Value
- f) Furniture and Fixtures-Book Value
- g) Other Assets

Current & Total Liabilities:

- a) Accounts, notes and Interest Payable
- b) Other liabilities
- c) Accrues Payroll Taxes

NET WORTH: _____

16. Additional information may be submitted if desired.

PRE-QUALIFICATION STATEMENT APPLICATION

17. Dated at _____

this _____ day of _____, 20____.

Name of organization: _____

By (signed): _____

State of _____

County of _____, being duly sworn,

says that he/she is _____ of

(Title)

(Name of Organization)

and that the answers to the foregoing questions and all statements contained herein are true and correct.

NOTARY PUBLIC:

Subscribed and sworn to before me this _____ day of

_____, 20____.

Notary Public,

County, _____.

My commission expires: _____

REFERENCE REQUEST

1. Name: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____

2. Name: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____

3. Name: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____

4. Name: _____
Contact: _____
Address: _____
Phone: _____ Fax: _____

INSURANCE QUESTIONNAIRE

Length of time in business _____ years _____ months.

Firm is insured as follows:

Name of Insurance Company: _____

Agency: _____

Policy Number: _____ Expiration Date: _____

Employer's Liability: _____

General Liability Limits:

_____ Per Occurrence

_____ Per Person

Worker's Compensation: _____

Other Coverage: _____

Respectfully submitted:

Name of Firm: _____

Signed by: _____

Address: _____

Date: _____

PROPOSAL

TO: TOWN OF LINN
Zenda, Wisconsin

CONTRACTOR'S NAME AND ADDRESS: _____

CONTRACTOR'S PHONE NO.: _____

PROPOSAL FOR: Remodeling for Living Quarters at
TOWN OF LINN FIRE/EMS STATION
Lake Geneva, Wisconsin
Job No. 2326

BIDS DUE: May 3, 2024 at 10:00 a.m.

1. The undersigned, having familiarized itself with the local conditions affecting the cost of the Work, and with the Contract Documents, including Invitation for Bids, Instructions to Bidders, Agreement, Proposal, Performance Bond, Labor and Material Payment Bond, Plans and Specifications, including any or all Addenda thereto, as prepared by Kehoe-Henry & Associates, Inc., hereby proposes to perform and to provide and furnish all labor, materials, necessary tools, expendable equipment, and all utility, transportation, and services necessary to complete the Work of:

Branch A: General Construction Work

for the Base Bid sum of:

_____ Dollars
(amount written in words)
(\$ _____)
(amount written in numbers)

2. ALTERNATE BIDS

All Bidders shall include below all applicable alternate prices requested as (add to), (deduct from), or (no change) in Base Bid price. *(Cross out terms that do not apply.)*

A. None required.

3. BID SECURITY ATTACHED *(check one)*

_____ – Bid Bond

_____ – Certified Check, Amount \$ _____

4. By submitting this Bid, we acknowledge the receipt and inclusion of the following Addenda:

Addendum #1: _____

Addendum #2: _____

Addendum #3: _____

PLEASE INITIAL ADDENDA RECEIVED!

5. UNIT PRICES

A. **Only one price may be submitted for each unit price requested.**

1) **Branch A:** General Contractors to provide unit prices for:

None required.

6. It is understood that the Owner reserves the right to reject any or all Bids. If written notice of acceptance of this Bid is mailed or delivered to the undersigned within thirty (30) days after the opening thereof, the undersigned agrees to execute and deliver a Contract in a prescribed form and furnish a Performance Bond and a Labor and Material Payment Bond within ten (10) days after the Contract is presented to them for signature.

7. SUBCONTRACTOR LISTINGS

List one (1) name for each Division of Work. After Bid opening, this list cannot be altered without written consent of the Owner. Pursuant to the requirements of the Instructions to Bidders, this Bid is based on the following Subcontractors:

<u>Class of Work</u>	<u>Subcontractor</u>
A. <u>Branch A</u> shall submit the following:	
Concrete	_____
Carpentry	_____
Hollow Metal Frames	_____
Wood Doors	_____
Aluminum Door and Frame	_____
Aluminum Windows	_____
Finish Hardware	_____
Glass and Glazing	_____
Drywall and Finishing	_____
Acoustical Work	_____
Carpeting	_____
Painting	_____
HVAC	_____
Electrical	_____

8. If a Corporation, state correct legal title:

State in which Incorporated: _____

NAMES AND TITLES OF OFFICERS authorized to sign Contracts: Attach a certified Corporate resolution naming persons authorized to sign Contracts and/or submit Bids on behalf of the Corporation.

9. If a Partnership, name the Partners:

10. I hereby certify that all statements herein are made on behalf of:

(Name of Corporation, Partnership)

(or Person Submitting)

By: _____
(Signature)

Title, if any: _____

Date: _____

Address: _____

Phone: _____

11. Subscribed and sworn to before me this _____ day of _____, 20_____.

NOTARY PUBLIC: _____

IN AND FOR THE STATE OF: _____

MY COMMISSION EXPIRES: _____

12. MATERIAL SELECTION LIST

Wherever more than one material or product is specified by name in the Specifications or added by Addendum, the Contractor shall state in the space provided below which particular

REQUEST FOR DRAWINGS VIA E-MAIL

Contractor: _____ Project: _____

Address: _____ Date: _____

_____ Phone: _____

Email Address (*print clearly*): _____

CAD files of some Drawings are available in AutoCAD (.DWG format) at a cost of \$125.00 per Drawing sheet. Payment must be received prior to release of Drawings files.

Drawings files requested: (*provide Drawing Number*)

_____	_____	_____
_____	_____	_____
_____	_____	_____

Please read the following paragraph and sign below.

Kehoe-Henry & Associates, Inc. assumes no responsibility for any consequences arising out of the use of the Drawing files provided via email. It is the sole responsibility of the user to check the validity of all information resulting from the use of the email. The user SHALL assume ALL risks and liabilities resulting from the use of the email.

Please sign and date below. Your signature constitutes your agreement with the terms set forth above. When you return this signed agreement to our office, we will forward the CAD file(s) to you via email.

Signed: _____ Date: _____

Title: _____ Purchase Order #: _____

Email to Kehoe-Henry & Associates, Inc. at wrh@kehoe-henry.com.

1 **CONTRACT FORMS/CONDITIONS OF THE CONTRACT**

2
3 The following AIA Documents, 2007 edition, are hereby made a part of these Contract
4 Documents.

5
6 AIA Document A107 – Standard Form of Agreement Between Owner and Contractor

7
8 AIA Document A312 – Performance and Payment Bond

9
10 AIA Document G702 and G703 – Application and Certificate for Payment and
11 Continuation Sheet

12
13 Copies of these documents may be reviewed at the office of the Architect-Engineer or obtained
14 directly from the American Institute of Architects (www.aia.org).

1 **SUPPLEMENTARY GENERAL CONDITIONS**

2
3 **SUPPLEMENTS AND AMENDMENTS TO AIA A107 GENERAL CONDITIONS**

4
5 WHENEVER any Article of the AIA General Conditions is supplemented herein, the
6 AIA provisions of such Article shall remain in effect, and the supplemental provisions shall be
7 considered as added thereto.

8
9 WHENEVER any portion of an Article of the AIA General Conditions is amended,
10 voided, or superseded by provisions herein, the portions not so specifically amended, voided,
11 or superseded shall remain in effect.

12
13 No other supplements or amendments to the AIA General Conditions shall be
14 permitted.

15
16 **ARTICLE 22: LABOR**

17
18 All labor shall be performed in the best and most workmanlike manner by mechanics
19 skilled in their respective trades. The standard of work required throughout shall be of such
20 grade as will bring results of the **First Class** only.

21
22 **ARTICLE 23: SHOP DRAWINGS**

23
24 A. The Contractor shall submit all Shop or Setting Drawings and Schedules to
25 Architect-Engineer as noted in specific sections of the Specifications and as follows.

- 26
27 1) Two (2) copies black line prints.
28
29 2) Electronic submittals are acceptable **in addition** to the hard copy
30 submittals.

31
32 B. Drawings shall be consecutively numbered and shall bear the Name and
33 Location of the Project, Name of the Contractor, Subcontractor and/or Supplier, and a Drawing
34 Date, including Revision Dates, if any.

35
36 C. Shop Drawings submitted to the Architect-Engineer not bearing the Prime
37 Contractor's stamp of approval shall be returned for resubmission.

38
39 D. The Shop Drawings shall be stamped by the Architect-Engineer
40 "**REVIEWED,**" "**REVIEWED AS NOTED,**" or "**REJECTED**" and "**REVISE AND**
41 "**RESUBMIT.**" The reviewed copy shall then be returned to the Contractor for printing and
42 distribution. All Drawings used on the Project shall be copies of this reviewed copy.

43
44 **ARTICLE 24: EXAMINATION OF SITE**

- 45
46 A. Before submitting the Proposal for its Work, the Contractor shall visit the site.

1 It shall satisfy itself as to the nature and location of the Work and the general and local
2 conditions. It shall have full knowledge as to transportation, disposal, handling and storage of
3 materials, availability of water, electric power, and all other facilities in the area which shall
4 have a bearing on the performance of its Work and the Contract for which it submits its
5 Proposal.

6
7 B. Any failure by the Contractor to acquaint itself with all the available
8 information shall not relieve itself from any responsibility for performing its Work properly.

9
10 C. No additional compensation shall be allowed for conditions increasing the
11 Contractor's cost which were not known to or appreciated by itself when submitting its
12 Proposal if the conditions were obvious and could have been discovered by itself had they
13 visited the Project and thoroughly informed itself of all existing conditions which would affect
14 its Work.

15 16 **ARTICLE 25: DISCREPANCIES**

17
18 A. The Contractor shall not proceed with any portion of the Work found by itself
19 to be incoherent in Contract Documents. If the Drawings or Specifications are not clear or
20 need further explanation, it shall request from the Architect-Engineer additional details or
21 information as may be necessary for full understanding of the Work in question. It shall
22 proceed only upon the clarification from the Architect-Engineer.

23
24 B. Whenever the Drawings and/or Specifications are in conflict or do not agree,
25 the better quality, or greater quantity, thickness or strength shall apply.

26
27 C. The Contractor cannot claim extra cost due to discrepancies between Contract
28 Documents after submitted Proposal.

29 30 **ARTICLE 26: ERRORS AND OMISSIONS**

31
32 A. If obvious errors or omissions appear in the Drawings, Specifications, or other
33 documents or instructions, the Contractor shall, during the Bidding period, notify the Architect-
34 Engineer in writing of such errors or omissions. Notifications shall be received by the
35 Architect-Engineer's office five (5) days prior to the Bid Opening.

36
37 B. In the event of the Contractor's failing to give such notice, it shall be held
38 responsible for the results of such errors or omissions and the cost of rectifying the same.

39 40 **ARTICLE 27: MANUFACTURER'S DIRECTIONS**

41
42 All manufactured articles, materials, and equipment shall be applied, installed,
43 connected, erected, used, cleaned, and conditioned as directed by the manufacturers, unless
44 herein specified to the contrary.

1 **ARTICLE 28: PERFORMANCE BOND AND PAYMENT BOND**
2

3 A. The Owner shall require the Contractor to furnish bond(s) in the amount of the
4 Contract Sum covering faithful performance of the Contract and the payment of all obligations
5 arising thereunder.
6

7 B. The premium for the required bond(s) shall be paid by the Contractor.
8

9 C. The obtaining of the bond(s) by the Contractor shall precede the Contract
10 between the Owner and the Contractor.
11

12 D. Surety to be licensed in the State of Wisconsin.
13

14 **ARTICLE 29: PAYMENTS**
15

16 A. Progress Payments:
17

18 1) The Contractor shall submit in duplicate to the Architect-Engineer a
19 signed statement of the estimated cost of the Work completed, using AIA Forms G-702 and
20 G-703. Time of submittal and period covered shall be as called for in General Requirements.
21

22 2) Waivers of Lien:
23

24 a) Waivers of Lien shall be submitted in duplicate covering all
25 items for which application for payment is requested.
26

27 3) Change Orders that have been signed by the Contractor and Owner shall
28 be added to or deducted from the original Contract Price.
29

30 4) Five percent (5%) of each estimated request shall be retained by the
31 Owner until final acceptance of the Project. No additional retainage shall be held after the
32 Work is fifty percent (50%) complete in accordance with State of Wisconsin statutes.
33

34 5) Approximately twenty (20) days following the request for payment, the
35 Owner shall issue payments for Work which has been accepted.
36

37 B. Final Payment:
38

39 1) Final Payment shall be made to the Contractor thirty (30) days from the
40 established Date of Substantial Completion provided that:
41

42 a) The Work has been completed and Contract fully performed.
43

44 b) An affidavit is submitted to the Architect-Engineer listing all
45 Subcontractors and Suppliers that were involved with the Project.

1 c) Waivers of Lien "In Full" from all Subcontractors and Suppliers
2 are submitted to the Architect-Engineer. Dollar amounts or invoice numbers shown on these
3 waivers are NOT acceptable.
4

5 d) An affidavit is submitted to the Architect-Engineer stating that
6 all payrolls, bills for materials and equipment, and other indebtedness connected with the
7 Project, for which the Owner or his property might in any way be responsible, have been paid
8 in full or otherwise satisfied.
9

10 e) Consent of the Surety to Final Payment is submitted to the
11 Architect-Engineer.
12

13 **ARTICLE 30: WATCHMEN**

14
15 Watchmen shall not be provided by the Owner. Each Contractor shall be held
16 responsible for loss or injury to persons or property where its Work is involved and shall
17 provide such watchmen and take such precautionary measures as it may deem necessary to
18 protect its own interests.
19

20 **ARTICLE 31: CLEANING**

21
22 A. In addition to general broom cleaning, the Contractor shall be responsible for
23 the following special cleaning at the completion of the Work.
24

25 1) Remove all putty, stains, and paint from glass and wash and polish all
26 glass (exterior face of glass and frames only).
27

28 2) Clean all painted, decorated, and stained work. Remove all marks,
29 fingerprints, or other soil or dirt from such work.
30

31 3) Remove all temporary protection and clean and polish all floors at
32 completion.
33

34 4) Clean and polish all waxed woodwork.
35

36 5) Clean and polish all hardware for all trades.
37

38 6) Remove all spots, soil, and paint from all tile work and wash same.
39

40 B. The above cleaning shall only be required in areas of the building affected by
41 the Work of this Project.
42

43 **ARTICLE 32: REPAIRS, BARRICADES, AND PROTECTION**

44
45 A. If the Contractor uses or damages either public or private roads, streets, walks,
46 or curbs on or adjacent to the Project site, it shall leave same in a clean and repaired condition

1 as specified by and acceptable to the public or private Owners of same.

2
3 B. Barricades and protection shall be in strict compliance with the requirements of
4 all safety codes and regulations as applicable to the Project.

5
6 C. Guard rails and barricades shall be of sufficient strength and height to protect
7 the Project and prevent injury to workers and the general public.

8
9 D. Provide protection against smoke or fire damage from operating machinery or
10 heating materials to interior or exterior of Project under construction or adjoining property.

11
12 **ARTICLE 33: FUTURE WORK**

13
14 If this Contract indicates any future Work to be added to the Project, the Contractor
15 shall execute all Work with special regard to facilitating this future Work.

16
17 **ARTICLE 34: GUARANTEE – WARRANTY**

18
19 A. Supplement and amend the General Conditions as follows.

20
21 1) For a period of one (1) year from the Date of **SUBSTANTIAL**
22 **COMPLETION**.

23
24 2) Any longer guarantee or warranty specifically mentioned and required
25 by the Plans and/or Specifications on material, labor, or items used in this Project shall precede
26 this warranty.

27
28 **ARTICLE 35: RECORD DOCUMENTS**

29
30 A. At commencement of the Project, the Owner shall provide the Contractor with
31 two (2) sets of Drawings to be used throughout construction as the Record Documents (these
32 are in addition to Drawings furnished for construction purposes).

33
34 B. Contractor shall, throughout construction, mark any and all changes or
35 variations from the original Drawings on these prints.

36
37 C. At completion of Project, and prior to final payment, Contractor shall turn these
38 Record Documents over to the Architect-Engineer.

39
40 D. Contractor shall be responsible for accuracy of such Record Documents.

41
42 **ARTICLE 36: SUBSTANTIAL COMPLETION**

43
44 The Date of Substantial Completion is hereby defined as the date, certified by the
45 Architect-Engineer, when construction is sufficiently complete, in conformance with the
46 Contract Documents, so the Owner can occupy the Work for the use for which it is intended.

1 **ARTICLE 37: TAXES**

2
3 A. The Owner is a municipality that is exempt from Wisconsin sales and use taxes.
4 Therefore, Wisconsin and county sales tax do not apply to this Project, nor to any materials
5 purchased by Contractors, Subcontractors, or Suppliers for this Project.
6

7 **ARTICLE 38: PERMITS**

8
9 A. Unless specifically noted otherwise below or elsewhere in these Specifications,
10 each Contractor shall secure and pay for the building permit as well as other permits, fees,
11 licenses, and inspections by government agencies necessary for proper execution and
12 completion of the Work.
13

14 B. The Town of Linn Building Inspector, Dave Hendrix (262-202-2173), shall
15 determine the building permit fees for this Project.
16

17 C. The cost of all permits and fees shall be included in the Base Bid.

1 **GENERAL REQUIREMENTS**

2
3 **1. TIME OF COMPLETION**

4
5 The Work on this Project shall begin immediately after the Contract is awarded and be
6 carried on continuously by as many personnel as the Work will allow. The Contractor(s) shall
7 provide cold weather enclosures and heat as required to permit Work to continue despite
8 adverse weather conditions. The Owner shall insist upon conformance with the above and also
9 with the Construction Schedule as listed below.

10
11 **2. OWNER'S USE OF PROJECT**

12
13 It is the intention of the Owner to occupy the Project as various areas and equipment
14 are accepted as being substantially complete. Each Contractor shall take all necessary
15 precautions to permit this occupancy, and shall cooperate in maintaining the housekeeping of
16 the building, and shall have each Subcontractor clean up after its Work is completed and to
17 screen off working areas and remove debris as soon as possible. All Contractors shall further
18 cooperate in maintaining access to the work areas and storage of materials on the site in a
19 manner satisfactory to the Owner. Occupation of remodeled areas by Owner shall not
20 constitute final acceptance of this or any other area unless so agreed upon by all parties
21 concerned at the time of occupancy.

22
23 **3. CONSTRUCTION SCHEDULE**

24
25 A. Work shall commence immediately upon receipt of Contract or notice to
26 proceed and shall progress according to the established Construction Schedule set forth below.
27 The Construction Schedule shall be established by the Contractor immediately upon
28 notification of Award of Contract and with the agreement of all other Subcontractors. A rough
29 draft shall be presented at the first job progress meeting.

30
31 B. Final Construction Schedule must be approved by the Owner and Architect-
32 Engineer. Once approved, all Contractors shall be expected to follow the schedule diligently
33 to the completion of the Project.

34
35 C. Contractors shall pay strict attention to the Construction Schedule when
36 submitting Proposals.

37
38 **Construction Schedule**

39	May 3, 2024	Receive Bids
40	Week of May 6, 2024	Bid Approval – Building/Grounds and Protective
41		Services Committees
42	May 13, 2024	Bid Award–Town Board
43	May 20, 2024	Contractor Begins Pre-Construction Work
44	May 28, 2024	Construction Starts–Phase 1 Areas
45	Week of June 17, 2024	Substantial Completion–Phase 1 Areas
46		

To Be Determined	Construction Starts–Phase 2 Areas (based on material deliveries)
45 Days After Phase 2 Construction Starts	Substantial Completion–All Work
30 Days After Substantial Completion	Final Completion

D. Services provided by the Architect-Engineer more than sixty (60) days after the specified Date of Substantial Completion for the purpose of administering the Contract, on-site observations, and other time required to complete the Contract shall be billed to the Owner at the hourly rate of up to \$225.00. The Owner shall deduct this amount from the Contractor's Contract.

E. Any Work required in the Project area after the specified Date of Substantial Completion shall be scheduled with and approved by the Owner. Such Work shall be done so as to not disrupt the Owner's activities.

4. BREAKDOWN

After agreements are signed, the successful Bidder shall submit to the Architect-Engineer a breakdown of the various divisions of the Work with the cost allocated for same. This shall be used to determine the work and materials on the job each month for the various divisions of the Work for authorization for payment to the Contractor. Contractors shall use AIA Form G702 – Application and Certificate for Payment and Form G703 – Continuation Sheet for this breakdown.

5. REQUESTS FOR PAYMENT

A. All requests for payment shall be made on AIA Forms G702 and G703 – Application and Certificate for Payment, latest publication, filled out in duplicate, and presented to the Architect-Engineer by the twentieth (20th) day of the month for Work performed up to the last day of the same month.

B. Five percent (5%) of each estimated request shall be retained by the Owner until final acceptance of the Project. No additional retainage shall be held after the Work is fifty percent (50%) complete.

6. CONTRACTORS' MEETINGS

All Contractors shall be expected to have a responsible representative available to attend weekly Contractors' meetings and be able to make decisions as to progress of Work, responsibility, deliveries, cooperation, etc. The Contractor shall keep minutes of each meeting and submit same to Owner, with copy to Architect-Engineer.

1 **7. PROGRESS CHART**

2
3 A. The Contractor shall submit to the Owner and Architect-Engineer a Progress
4 Chart indicating each phase of the Work. The Progress Chart shall be updated as construction
5 progresses.

6
7 B. The Progress Chart/Construction Schedule shall be established by the
8 Contractor, with the agreement of all other Subcontractors.

9
10 C. All Prime and Subcontractors shall plan and coordinate their Work and
11 cooperate with all other Contractors to facilitate completion of the Work.

12
13 **8. SAFETY REQUIREMENTS AND PROTECTION**

14
15 A. Contractors shall observe the safety provisions in the Manual of Accident
16 Prevention published by the Associated General Contractors of America.

17
18 B. The Contractor shall provide fencing, guard rails, and barricades of sufficient
19 strength and height to prevent injury to the general public.

20
21 C. The Contractor shall provide plank covering over concrete walks, curbs, or
22 other improvements.

23
24 **9. LIFTING DEVICES AND HOISTING FACILITIES**

25
26 A. Contractor shall provide cranes, hoists, towers, and other lifting devices
27 necessary for the proper efficient movement of materials, and provide operating personnel for
28 equipment as required. Equipment shall be provided with proper guys, bracing, and other
29 safety devices as required by local and/or state codes. Remove towers and hoisting equipment
30 when they are no longer needed, or as directed by the Contractor or Architect-Engineer.

31
32 B. Contractor's equipment for lifting and hoisting shall be made available to all
33 Prime and Subcontractors at a mutually agreed time and cost.

34
35 **10. SCAFFOLDS, STAGING, AND SAFETY DEVICES**

36
37 Contractor shall provide, erect, maintain, and remove when directed all scaffolds,
38 staging, platforms, temporary runways, temporary flooring, railings, barricades, stairs, etc. as
39 required by state and local codes or laws, for the protection of workers and the public. The
40 construction, inspection, and maintenance of the above items shall comply with all safety codes
41 and regulations as applicable to the Project.

42
43 **11. PROTECTION OF FINISHED FLOORS**

44
45 No wheeling of any loads over finished floors, either with or without plank for
46 protection, shall be permitted in anything except rubber tired wheelbarrows, buggies, trucks,

1 or dollies. This applies to all new and existing finished floors, balcony, deck, and patio
2 surfaces.

3 **12. BROKEN GLASS**

4
5 The Contractor shall be held responsible for all damaged, broken, or scratched glass,
6 and at completion of Work shall have replaced, at their own expense, by a Glass and Glazing
7 Contractor all such glass.

8
9 **13. CUTTING AND PATCHING**

10
11 A. All cutting and patching required to install the Work as shown on the Drawings,
12 in new or existing construction, shall be done by Contractor requiring such cutting and
13 patching. Contractor shall hire people normally employed in respective trades for cutting
14 and/or patching of materials requiring Work.

15
16 B. All cutting shall be done in a neat, workmanlike manner so as to avoid any
17 undue stress in existing construction to remain intact. Any damage caused by cutting of
18 existing or new construction to remain shall be repaired and/or replaced by Contractor causing
19 such damage.

20
21 C. All patching required shall be done to match existing or new construction at
22 adjacent areas. All existing items noted for removal on the Drawings shall have adjacent
23 construction patched to match existing. All existing items noted for removal that would, after
24 such removal, leave holes or other defects in such construction to remain, shall be patched to
25 match adjacent construction that remains.

26
27 D. Contractor requiring such cutting and/or patching shall leave construction area
28 in at least a broom-clean condition.

29
30 E. Contractor requiring such cutting and patching shall be responsible for patching
31 the substrate as required to match adjacent areas, unless specifically noted otherwise on the
32 Drawings. Contractor shall be responsible for patching of finishes (flooring, tile, paint).

33
34 **14. DAMAGES**

35
36 A. Contractor shall be responsible for adequate shoring and bracing of existing and
37 new throughout construction.

38
39 B. Any damage caused to any existing, or new structure, equipment, or services,
40 which is intended to remain in operation, shall be repaired or replaced at the expense of the
41 Contractor causing such damage.

42
43 C. Contractor shall be responsible for obtaining and paying for any and all testing
44 or investigative procedures required to assure itself that no damage shall be done to any
45 existing structure, services, or equipment prior to performing any cutting or demolition work.

1 D. Any damaged structure, equipment, or services shall be repaired or replaced to
2 at least the original condition and shall match adjacent construction.

3
4 E. In the event that the responsibility for damages cannot be determined, the cost
5 for repair or replacement shall be prorated among the Contractors working on the Project.

6
7 F. Contractor causing such damage to structure, equipment, or services shall also
8 pay for any costs incurred to the Owner for damage done by the Contractor.

9
10 **15. QUALITY OF MATERIALS AND WORKMANSHIP**

11
12 A. All materials used or furnished for the Project shall be of the best quality offered
13 by the manufacturer or supplier, as specified herein.

14
15 B. All labor shall be performed in the best and most workmanlike manner by
16 mechanics skilled in their respective trades. The standard of work required throughout shall
17 be of such grade as will bring results of the **First Class** only.

18
19 **16. TEMPORARY SERVICES AND FACILITIES**

20
21 A. Light and power may be obtained from the existing building. Contractors and
22 Subcontractors requiring more than 15 amp single phase circuits shall contact an Electrical
23 Contractor and pay for installation and removal of same. The cost of electrical energy
24 consumed shall be paid by the Owner. All personnel shall make every effort to conserve
25 electrical energy.

26
27 B. The Contractor shall provide and maintain an adequate number of temporary
28 toilets with proper enclosures as necessary for use of workers during construction. Locate
29 toilets where directed. Keep toilets clean and comply with all local and state health
30 requirements and sanitary regulations.

31
32 C. Water may be obtained from the existing building. Hoses shall be provided by
33 Contractors needing water. Cost of all water shall be paid for by the Owner. All Contractors
34 shall be careful not to waste water at any time.

35
36 D. All heating required by Contractors to protect their work during the construction
37 period shall be furnished by each Contractor requiring same. All heating units shall be of an
38 approved type.

39
40 E. Contractors shall provide and maintain such storage sheds and other temporary
41 buildings or trailers on the Project site as required for their own use. (Subcontractors shall
42 provide their own temporary sheds or trailers.) Location of sheds and trailers shall be approved
43 by the Contractor and Owner. Remove sheds when Work is completed or as directed.

1 **17. BUILDING SECURITY**

2
3 The Contractor shall be responsible for maintaining building security throughout the
4 Project. All exterior openings shall be closed and secured with permanent construction at the
5 end of each day's work. Closure of exterior openings shall maintain the security of the building
6 throughout construction.
7

8 **18. USE OF ASBESTOS OR PRODUCTS WITH ASBESTOS**

9
10 A. The use of asbestos or any product containing any substance banned by the
11 Environmental Protection Agency or Department of Labor's Occupational Safety and Health
12 Administration is absolutely prohibited from this Project. Any Contractor installing any
13 product with asbestos shall bear full responsibility and liability for any penalties, damages, or
14 loss and shall pay for any and all costs which are involved. Any product specified that
15 unknowingly contains asbestos shall be brought to the attention of the Architect-Engineer in
16 writing prior to its purchase and shall not be used on this Project.
17

18 B. All Prime Contractors shall be required to submit a statement to the Owner
19 (with a copy to the Architect-Engineer) indicating that, to the best of their knowledge, no
20 ACBM was used as a building material in the Project.
21

22 **19. MISCELLANEOUS**

23
24 A. Architect-Engineer assumes no responsibility for any work designated by
25 others for any work not shown on and/or per these Plans. Any deviation is the total
26 responsibility of the person who authorized such deviation.
27

28 B. All Work to conform to all applicable state and local codes.
29

30 **20. ISOLATION OF CONSTRUCTION AREAS**

31
32 A. Contractor shall isolate all construction areas from the existing building and
33 non-construction areas of the site by erecting temporary barriers, fencing, or other methods
34 acceptable to Owner and/or Architect-Engineer.
35

36 B. Temporary barriers and fencing shall be of substantial construction, complete
37 with security hardware as required.
38

39 C. Locations and extent of temporary barriers and fencing shall be as approved by
40 Owner and/or Architect-Engineer.
41

42 D. Snow fencing or other similar temporary barriers shall not be acceptable unless
43 specifically approved by the Owner.
44

45 E. Contractor shall isolate all remodeling construction areas from the non-
46 construction areas of the existing facilities by erecting temporary partitions or other methods

1 acceptable to the Owner and Architect-Engineer.

2

3 F. Temporary partitions shall be of substantial construction, complete with
4 sheathing (gypsum board or plywood), dust barrier, and security hardware as required.

5

6 G. Locations of temporary partitions shall be as approved by Owner and Architect-
7 Engineer.

DIVISION 2 - SITE WORK

1
2
3 **1.** Demolish portions of building, paving, and other site improvements completely and
4 remove from the site. Turn over removed items to Owner as noted.

5
6 **2.** Items to be of salvageable value to the Contractor may be removed from the structure
7 as the work progresses. Salvaged items must be transported from the site as they are removed.
8 Storage or sale of removed items on the site shall not be permitted.

9
10 **3.** Protections:

11
12 A. Provide covered passageways or enclosing partitions as required to ensure the
13 safety of persons around the area of work. Conduct operations to prevent damage by falling
14 debris or other causes to adjacent building, structures, and other facilities, as well as persons.

15
16 B. Provide tarpaulin covers over all existing floors that are to remain.

17
18 C. Provide protection of exterior grass and pavement areas to insure that any
19 broken glass from demolition procedures shall be completely removed.

20
21 **4.** Promptly repair damage caused to adjacent facilities by demolition or construction
22 operations as directed by the Owner or Architect-Engineer, and at no cost to the Owner.

23
24 **5.** Disposal of Excess Materials:

25
26 A. Remove all excess material, trash, debris, rubbish, waste, and other materials
27 resulting from demolition and construction operations from the site and legally dispose of.

28
29 B. Items of salvageable value to the Owner shall be removed and retained by him
30 unless noted otherwise.

31
32 **6.** Burning of materials is not permitted on site.

33
34 **7.** Erosion Control (if required):

35
36 A. Contractor to provide layout for erosion control which will be used during
37 construction. Layout to be in accordance with requirements of authorities having jurisdiction.
38 Contact Town of Linn Building Inspector, Dave Hendrix (262-202-2173).

39
40 B. Contractor shall inspect erosion control devices weekly and whenever rainfall
41 of 1/2" or more from any one storm occurs. Contractor shall maintain a log of such inspections
42 at the job site.

43
44 C. Wind Erosion: Apply moisture as necessary to control wind blown particles.

45
46 D. Provide other erosion control measures in accordance with and as required by

1 local and county authorities having jurisdiction, and as follows.

2
3 1) Contractor shall comply with all requirements of the municipality
4 having jurisdiction and State of Wisconsin concerning environmental protection and erosion
5 control including, but not limited to, WPDES NOI.

6
7 2) Contractor shall obtain all required permits necessary to complete this
8 portion of the work.

9
10 3) Contractor shall be responsible for all erosion control measures and their
11 maintenance.

12
13 **8.** Existing topsoil within construction areas shall be stripped and stockpiled on site.

14
15 **9.** All excess excavated materials shall be removed and legally disposed of off site.

16
17 **10.** Verify locations of existing and new utilities with local authorities having jurisdiction
18 as required.

19
20 **11.** Contractor shall perform dewatering as required to maintain excavations suitable to
21 receive new work.

22
23 **12.** Unsatisfactory soil materials shall be removed as required and directed by Architect-
24 Engineer and replaced with compacted fill.

25
26 **13.** Filling and backfilling shall be done in maximum 8" layers. Backfilling shall be done
27 uniformly on each side of wall.

28
29 **14.** Fill and backfill materials and compaction to be as follows:

30
31 A. General Fill: Suitable material from excavation or existing stockpiled material;
32 for use under lawn or planting areas, compacted to 85% maximum density (95% maximum
33 density within 5' of exterior building perimeter). Leave grade 6" below that shown for topsoil
34 placement.

35
36 B. Subbase Material: Fractured rock, crushed stone or gravel, uniformly graded
37 throughout the particle size range, maximum aggregate size 2" with not more than 5% passing
38 a 3/8" sieve; for use under structures, interior and exterior slabs, and paving areas, compacted
39 to 95% maximum density.

40
41 C. Base Material: Free-draining material to be a mixture of natural or crushed
42 gravel and sand and crushed stone, uniformly graded throughout the particle size range,
43 maximum aggregate size 3/4", D.O.T. gradation #2 or equivalent; for use under structures,
44 interior and exterior slabs, and paving areas, compacted to 95% maximum density.

45
46 **15.** Repair/restore all lawn areas damaged by construction operations to at least original

1 condition as follows.

2

3 A. Place topsoil as required to a minimum 6" uniform thickness for seeding.
4 Eliminate rough or low areas and maintain levels, profiles, and contours of subgrade. Provide
5 topsoil to a minimum 24" deep in planting beds.

6

7 B. Remove stones, roots, grass, weeds, debris, and foreign materials from topsoil,
8 perform fine grading operations, and lightly roll placed topsoil.

9

10 C. Install seed mixture of minimum 50% Kentucky Bluegrass at a rate of minimum
11 6 lbs. per 1,000 square feet throughout lawn areas of construction site.

DIVISION 3 - CONCRETE

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

1. Reinforcing bars to conform to ASTM A-615 deformed bars $F_y = 60,000$ psi minimum. Welded wire fabric to conform to ASTM A185.

2. Cast-in-place concrete compressive strength to be $F'_c = 4,000$ psi minimum at 28 days curing. Use air-entraining admixture in all exterior concrete. For footings, $F'_c = 3,000$ psi minimum at 28 days curing also acceptable.

3. All exterior concrete slabs are to receive a non-slip, stiff broom finish.

4. Concrete for 4" thick slabs on grade and for precast plank topping shall be as specified above. Fibermesh admixture may be used in lieu of welded wire fabric reinforcing. Concrete slabs on grade greater than 4" thickness shall receive welded wire fabric reinforcing as specified.

1 **DIVISION 6 - WOOD AND PLASTICS**

- 2
- 3 **1.** Dimension lumber 2 x 8 and smaller to be Southern Pine No. 2.
- 4
- 5 **2.** Dimension lumber 2 x 10 and larger to be Douglas Fir No. 2.
- 6
- 7 **3.** Pressure-treated (P.T.) members to be Wolmanized, or equivalent. Provide pressure-
- 8 treated members where noted on plans and at all members in contact with concrete or masonry.
- 9
- 10 **4.** **When in contact with pressure-treated wood, use hot-dip galvanized or stainless**
- 11 **steel anchors and fasteners. Miscellaneous framing materials to be Simpson Zmax, HDG,**
- 12 **or stainless steel with fasteners to match.**
- 13
- 14 **5.** All interior wood trim to be as selected by Owner.
- 15
- 16 **6.** Solid surface material to be as manufactured by LG Hausys Hi-Macs, Wilsonart,
- 17 Dupont Corian, Formica Surell, or equivalent. Color as selected by Owner from
- 18 manufacturer's standard line of solid and patterned colors (not including premium colors).
- 19
- 20 **7.** Plywood floor decking to be exterior sheathing grade, 42/20 panel identification index,
- 21 tongue and groove.

1 **DIVISION 7 - THERMAL & MOISTURE PROTECTION**

2
3 **1.** Rigid wall insulation to be Dow Industries Blue Board, type "SM" below grade or in
4 contact with earth.

5
6 **2.** Batt insulation type to be glass fiber, unfaced unless shown otherwise on drawings. All
7 glass fiber insulation to be high density/high performance batts with minimum R-values as
8 follows.

9
10 A. 3-1/2" – R-13

11 B. 6" – R-21

12 C. 9" – R-33

13
14 **3.** Exterior sealant to be Tremco Spectrum 1 or 2, color as selected by Architect-Engineer.
15 Interior caulking to be Tremco Acrylic Latex 834, paintable.

16
17 **4.** Architectural sheet metal to be 24 gauge galvanized steel in sizes and shapes as shown
18 on the drawings. Finish to be Kynar fluoropolymer coating system, color as selected by
19 Architect-Engineer. Fascia, panning and trim to be similar to products offered by Petersen
20 Aluminum Corporation, or equivalent. **Provide stainless steel fasteners when in contact**
21 **with, or anchoring into, pressure-treated wood. Separate architectural sheet metal from**
22 **pressure-treated wood by painting each surface in the area of contact with a heavy**
23 **application of bituminous coating, or by other permanent separation as recommended**
24 **by the manufacturers of the architectural sheet metal and pressure-treated wood**
25 **members.**

DIVISION 8 - DOORS & WINDOWS

- 1.** Interior hollow metal frames to be minimum 16 gauge, knock-down or full welded type, as shown on drawings. Provide three (3) rubber door silencers at latch jamb of door frames.
- 2.** Exterior hollow metal door frames to be minimum 16 gauge, full welded type, galvanized.
- 3.** Exterior hollow metal doors to be minimum 18 gauge, with expanded polyurethane or polystyrene insulation filler. Provide top and bottom steel channel closures as required.
- 4.** Interior doors to be wood doors with solid particle board core, red oak veneer, plain sliced to match existing. Submit veneer samples for review. Provide mineral composition core at fire-rated doors.
- 5.** Submit hollow metal door/frame and wood door shop drawings for review.
- 6.** Finish hardware to be as scheduled on drawings, satin chrome finish. Locksets, etc. to be Schlage, series as noted, lever design Rhodes. Keying to be as directed by Owner and master keyed to match existing system.
- 7.** Submit finish hardware shop drawings for review.
- 8.** Aluminum entrance to be Kawneer, or approved equivalent. Door to be Kawneer Flushline Entrance with embossed aluminum face sheets. Framing to be thermally broken with 4-1/2" deep members. Provide manufacturer's standard weatherstripping. Finish to be dark bronze to match existing. Submit two (2) copies of manufacturer's standard 2-year warranty. Equivalent products by Vistawall also acceptable.
- 9.** Aluminum windows to be Kawneer 6315T-HS/FX (or current similar model number) horizontal sliding windows, complete with half screen. Finish to be dark bronze to match existing. Aluminum windows equivalent to those specified as manufactured by Modu-Line also acceptable. Submit two (2) copies of manufacturer's standard 10-year warranty.
- 10.** Submit aluminum entrance and window shop drawing for review.
- 11.** Glass and glazing to be as follows.

 - A. Interior safety glazing to be 1/4" clear Lexan MR-4000 as manufactured by General Electric and certified by an independent laboratory to meet requirements of ANSI 297.1 Safety Glazing in Buildings.
 - B. Exterior glass to be nominal 1" insulated, exterior glass, tinted to match existing, interior glass to be Low-E, clear.

1 **12.** Speak-Through Devices: 6" diameter cast stainless steel with evenly spaced concentric
2 louvers for natural voice transmission. Provide optional spacer ring as required. Creative
3 Industries, Inc. No. 6-D, Norshield Security NS-6D, North American Bullet Proof NASD-6, or
4 equivalent.

5
6 **13.** Door Grilles: Metalaire 300 DG-DF, Anemostat NSA, Titus T-700-BF, or Carnes 930.
7 All door grilles to have an adjustable 1-1/4" frame on both sides of grille. Grilles to be finished
8 with baked enamel prime coat for field painting by Division 9, paint type P-2.

DIVISION 9 - FINISHES

1
2
3 **1.** Colors/finishes of materials and products specified shall be selected by Architect-
4 Engineer/Owner from manufacturer's standards as required.

5
6 **2.** Resilient base to be Johnsonite, or equivalent, rubber, top-set cove base or straight carpet
7 base as required, furnished in rolls for continuous length installation.

8
9 **3.** Ceramic tile to be as follows (Dal-Tile, American Olean, or equivalent):

10
11 Base: Dal-Tile Corp., series to match existing, 6" x 8" sanitary cove units,
12 bullnose top as required, Price Group 3. Submit samples for review.

13
14 All ceramic tile base to be thinset installation with organic adhesive and latex-Portland
15 cement grout, Tile Council of America installation method W242.

16
17 **4.** Interior painting/staining to be as required for various substrates, as shown and scheduled,
18 and keyed to below:

19
20 S/S: Stain to match existing plus 2 coats polyurethane varnish (wood doors
21 and trim)

22 P-1: Primer plus 2 finish coats latex eggshell

23 P-2: Primer plus 2 finish coats semi-gloss enamel

24 Provide primer/filler as primer coat on masonry substrates
25

26 **5.** Steel studs at interior partitions to be 25 gauge. Steel studs at exterior walls (as back-up
27 to brick veneer) to be 20 gauge. Provide additional framing as required for wall-mounted items
28 (grab bars, cabinets, TV brackets, etc). All partitions to extend to underside of structure above as
29 a complete assembly (studs, insulation, drywall both sides, and joint treatment).

30
31 **6.** Provide manufacturer's gypsum drywall as recommended for the following installations.

32
33 A. Moisture-resistant at toilet rooms and as required for ceramic wall tile.

34
35 B. Durock at shower walls and ceilings, walls or ceilings to receive thin coat plaster,
36 and at exterior soffits.

37
38 C. Dens-Glas Gold (Georgia Pacific) at exterior wall sheathing.

39
40 D. Type "X" at fire-rated walls.

41
42 E. All gypsum drywall to be 5/8" thick.

43
44 F. All gypsum drywall within 4 feet of floors to be impact resistant.

1 **7.** Suspended acoustical ceilings to be Armstrong or USG with Chicago Metallic grid, as
2 follows:

3
4 SAT-1: 24" x 24" x 3/4" lay-in, cirrus, white steel grid

5
6 SAT-2: 24" x 48" x 1/2" USG Sheetrock ClimaPlus, white vinyl, stipple
7 pattern, lay-in, white aluminum grid. Existing to be removed and
8 reinstalled as shown and noted on drawings.
9

10 Provide USG Impact Spring Assembly #20429 clips in all vestibules/entries.
11

12 **8.** Carpet to be carpet tiles (manufacturer's standard size) as follows.
13

14 A. Class A Interior Finish: Flame-spread rating of less than 25 (ASTM E84).
15

16 B. Class I Interior Floor Finish: Minimum critical radiant flux of 0.45 watts per
17 square centimeter (ASTM E648).
18

19 C. Color Fasteners: Use manufacturer's standard method as needed to achieve a fade
20 resistance of 40 hours S.F.H (4000 langleys) no color change.
21

22 D. Yarn to be solution dyed type with stain resistance, anti-microbial treatment, and
23 static control.
24

25 E. Color(s) to be as selected by Owner/Architect-Engineer.
26

27 F. Acceptable manufacturers include:
28

- 29 1) Interface FLOR (Steve Jende, 262-389-4773)
30 2) Lees/Mohawk (Gary Landisch, 414-254-7427)
31 3) J & J Invision (Robert Schuler, 414-975-5487)
32

33 G. The allowances listed below shall be included in the base bid for carpeting
34 material only. This shall be a job site cost for carpeting, including freight and all other incidental
35 costs incurred in delivering carpeting to job site. All other costs shall be included by Contractor
36 in its Base Bid, including adhesive and accessory materials as required, labor, overhead, and
37 profit.
38

- 39 1) Carpet Tiles: \$35.00 per square yard
40

41 H. Carpet edge trim at carpet to other flooring to be included.
42

43 **10.** Preparation of various substrates, existing or new, as required to receive new carpet or
44 other flooring shall be included in the base bid.

1 A. Conduct moisture testing in accordance with the carpet manufacturer's
2 recommendations using test kits and equipment supplied by, or approved by, the manufacturer.
3 Conduct a minimum of five (5) tests for the first 1,000 square feet of substrate to be covered with
4 carpeting. Thereafter, conduct a minimum of one (1) test per 1,000 square feet over the
5 remaining areas to receive carpet. Submit test reports and installation recommendations to
6 Contractor and Architect-Engineer in writing. Advise if additional surface preparation prior to
7 installation of carpeting is required, including two (2) coats of concrete sealer as recommended
8 by carpet manufacturer.

9
10 **11.** Submit an additional ten percent (10%) of each material quantity required for project as
11 Owner's replacement stock for the following:

- 12 A. Carpet tiles
13 B. Rubber base
14 C. Suspended acoustical tile
15

DIVISION 10 - SPECIALTIES

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- 1.** All door signs to be furnished and installed by others.
- 2.** Fire extinguishers (F.E.) to be by Owner in locations as required by code and local authorities. Minimum rating 2A for each extinguisher.

DIVISION 11 - EQUIPMENT

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1. TV wall brackets to be furnished by Owner, installed by Contractor. Verify model based on flat screen TV to be furnished and installed by Owner. Provide manufacturer's recommended wall plate at steel stud partitions. Furnish all wall bracket hardware and coordinate installation with the Owner and Electrical Subcontractor.

DIVISION 12 - FURNISHINGS

1
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5

- 1.** Remove and reinstall existing window blinds where noted on drawings.
- 2.** Room darkening shades in Dorm 102 to be furnished and installed by Owner.

1 **SECTION B15500 - HVAC REQUIREMENTS**
2

3 **1.1 SECTION REQUIREMENTS**
4

5 A. Submittals:
6

7 1. Shop Drawings of proposed mechanical layouts.
8

9 B. Analyze all documents and provide all labor, materials, and equipment required
10 to service the project with heating, cooling, and ventilation.
11

12 **1.2 RELATED SECTIONS**
13

14 A. SECTION B15810 - DUCTS AND ACCESSORIES

15 B. SECTION B15838 - POWER VENTILATORS

16 C. SECTION B15855 - DIFFUSERS, REGISTERS, AND GRILLES

17 D. SECTION B15900 - HVAC INSTRUMENTATION AND CONTROLS
18

19 **1.3 DESCRIPTION OF PROJECT**
20

21 A. HVAC work shall include the following:
22

23 1. General:
24

25 a) New ERV #1 in Mechanical Mezzanine

26 b) New duct runs for intake and exhaust.

27 c) Removal of existing exhaust ductwork and capping of exhaust
28 vents.

29 d) Rerouting of ductwork and duct modifications as shown on
30 plans.

31 e) New insulated ductwork.

32 f) New 2-hour fire dampers and service access doors.

33 g) New acoustically lined transfer ducts.

34 h) New ceiling grilles.

35 i) New intake and exhaust wall louvers.

36 j) New recessed wall mounted electric heater in vestibule.

37 k) Relocation of existing furnace thermostat.

38 l) Coordinate equipment shutdown control with Fire Alarm
39 system.
40

41 B. Per reference sections as identified in Part 1.2.
42

43 **1.4 PART 3 - EXECUTION**
44

45 A. Per reference sections as identified in Part 1.2.

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- B. Contractor is responsible for setting sleeves for ductwork and Unistrut for equipment.
- C. Contract is responsible for recommending the size and locations of all openings to the General Contractor prior to execution for the incorporation of their work.
- D. HVAC Contractor shall verify ceiling heights, check all measurements at the building and provide required offsets and changes in elevation, and adjust work to fit into spaces allotted for same. Coordinate required duct chase spaces with Kehoe-Henry & Associates Architects.

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SECTION B15810 - DUCTS AND ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

- A. Summary: Metal ducts and accessories in pressure classes 2 inch wg or less and a maximum velocity of 2400 fpm.
- B. Submittals:
 - 1. Provide airflow reports at final completion.
- C. Comply with UL 181 and UL 181A for ducts and closures. Ducts shall be fabricated from prime sheets of galvanized steel.
- D. Contractor to size ductwork in accordance with the plans. Areas shown are net areas. Ductwork dimensions shall increase to accommodate liner materials.
- E. This section to include ducting of ERV ventilation units.

PART 2 - PRODUCTS

2.1 DUCTS

- A. Galvanized Steel Sheet: Forming steel, ASTM A 653/653M, G90 (Z275) coating designation.
- B. Joint and Seam Sealant: Comply with UL 181A. Seal duct joints with mastic.
- C. Rectangular Metal Duct Fabrication: Comply with SMACNA's "HVAC Duct Construction Standard" for metal thickness, reinforcing types and intervals, tie-rod applications, and joint types and intervals.

2.2 ACCESSORIES

- A. Volume-Control Dampers: Factory-fabricated volume-control dampers, complete with required hardware and accessories. Single blade and multiple opposed blade, standard leakage rating, and suitable for horizontal or vertical applications.
- B. Flexible Ducts: Use only at connections to ceiling mounted supply air diffusers. Factory fabricated, insulated round duct with grey film outer jacket enclosing 1-1/2" (38-mm) thick glass fiber insulation around a continuous inner liner. Flex duct equal to Thermaflex G-KM.

- 1 C. Fire dampers UL approved and labeled of class required for penetration of 2-
2 hour building separations. Advanced Air, American Warming, or National
3 Council.
4

5 **2.3 DUCT INSULATION**
6

- 7 A. Duct liner shall be equal to Schuller 1" thick standard "Linacoustic" duct liner
8 with permacote acrylic face at return ducts. NRC equal to 0.70 or better.
9
10 B. New supply ducts below the fire rated ceiling shall be insulated with 1" duct
11 wrap.
12
13 C. All outside air ducts and ducts outside the building envelope (above the
14 insulated ceiling) or (unless lined) shall be insulated with external blanket duct
15 wrap equal to Schuller 1-1/2" R-series Microlite with FSK foil face. $K=0.31$
16 $\text{BTU/in.}/(\text{hr.} \cdot \text{s.f.} \cdot \text{deg.F})$.
17

18 **PART 3 - EXECUTION**
19

20 **3.1 INSTALLATION**
21

- 22 A. Insulate all supply ducts connected to units with cooling.
23
24 B. Conceal ducts from view in finished and occupied spaces.
25
26 C. Avoid passing through electrical equipment spaces and above panel enclosures.
27
28 D. Support and connect metal ducts according to SMACNA's "HVAC Duct
29 Construction Standard."
30
31 E. Line rectangular return ducts as noted on the drawings.
32
33 F. Install duct accessories according to applicable portions of details of
34 construction as shown in SMACNA standards.
35
36 G. Install volume-control dampers in lined duct with methods to avoid damage to
37 liner and to avoid erosion of duct liner.
38
39 H. ERV Energy Recovery exhaust and outside air intakes to exterior, and tempered
40 air to furnace unit returns shall be insulated with 1-1/2" blanket insulation.
41
42 I. Install fire dampers in accordance with NFPA requirements and Wisconsin
43 Code requirements. Provide sleeves and angles as required for ductwork at the
44 fire damper location. Install as detailed by manufacturer per NFPA testing and
45 approval requirements.

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J. Provide access doors as shown on the plans to service fire dampers.

3.2 TESTING, ADJUSTING, AND BALANCING

A. Balance airflow within distribution systems, including submains, branches, and terminals to provide maximum comfort and comply with air flow requirements. Rebalance for maximum occupant comfort.

1 **SECTION B15838 - POWER VENTILATORS AND EXHAUST FANS**

2
3 **PART 1 - GENERAL**

4
5 **1.1 SECTION REQUIREMENTS**

- 6
7 A. Submittals: Product Data and Shop Drawings, including exhaust discharge
8 details.
9
10 B. Bear the HVI Certified label and be UL listed.

11
12 **PART 2 - PRODUCTS**

13
14 **2.1 VENTILATORS AND ACCESSORIES**

- 15
16 A. In-Line Centrifugal Ventilation/Heat Recovery Fans: RENewAire. Static
17 Plate design with heat and humidity transfer.
18
19 B. See drawings for size and capacity
20
21 C. Ductwork shall be rigid metal. Outside air intake to unit, exhaust to discharge
22 and tempered fresh air ducts to furnace return ducts shall be insulated. See
23 Section B15810 - Ducts and Accessories
24

25 **PART 3 - EXECUTION**

26
27 **3.1 INSTALLATION**

- 28
29 A. In-Line Centrifugal Fans: Support ERV-1 from support frame using Unisrut
30 anchored to the Mezzanine floor and overhead structural framing. Install per
31 manufacturer recommendations to minimize noise and prevent vibration.

1 **SECTION B15855 - DIFFUSERS, REGISTERS, AND GRILLES**

2
3 **PART 1 - GENERAL**

4
5 **1.1 SECTION REQUIREMENTS**

6
7 A. Submit Product Data, including color charts for factory finishes. Reuse existing
8 supply diffusers; remove, clean, and reinstall in new ceiling grid.

9
10 **PART 2 - PRODUCTS**

11
12 **2.1 OUTLETS AND INLETS**

- 13
- 14 A. Diffusers: 24 x 24 air supply diffusers to be reused.
- 15
- 16 B. Ceiling Return and Transfer Grilles:
- 17
- 18 1. Price 80 or equal.
- 19
- 20 2. Material: Aluminum, 1/2" x 1/2" x 1/2" grid core.
- 21
- 22 3. Finish: Powder coat white.
- 23
- 24 4. Mounting: 24 x 24 lay-in T bar.
- 25
- 26 5. Mounting in Tile: 12 x 12 surface mounted w/1-1/4" flat frame.
- 27
- 28 C. Exhaust: As follows:
- 29
- 30 1. Price 10, or equal.
- 31
- 32 2. Material: Aluminum perforated face.
- 33
- 34 3. Finish: Powder coat white.
- 35
- 36 4. Mounting: 24 x 24 lay-in T bar flat frame with 8" x 8" face opening.
- 37
- 38 D. Exterior Louvers: As follows:
- 39
- 40 1. Arrow United FS-400, American Warming, or Ruskin equal.
- 41
- 42 2. Material: Aluminum, welded, 4" deep, 1/4" square 18 ga. galv. bird screen.
- 43
- 44 3. Finish: Enamel finish as selected by Architect, colors to be verified.
- 45
- 46 4. Mounting: Flanged frame in framed construction.

PART 3 - EXECUTION

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3.1 **INSTALLATION**

- A. Coordinate location and installation with duct installation and installation of other ceiling, wall-mounted, and floor items.

1 **SECTION B15900 - HVAC INSTRUMENTATION AND CONTROLS**

2
3 **PART 1 - GENERAL**

4
5 **1.1 SECTION REQUIREMENTS**

- 6
- 7 A. Summary: Electric/electronic controls sequences for HVAC systems and
- 8 equipment with application-driven remote access.
- 9
- 10 B. Submittals: Shop Drawings detailing operating control sequences of each item
- 11 of HVAC equipment and system and Product Data for controllers, sensors,
- 12 operators, control panels, and dampers.
- 13
- 14 C. Control systems consist of hardwired sensors, remote thermostats, indicators,
- 15 final control elements, interface equipment, other apparatus, and accessories to
- 16 operate mechanical systems according to sequences of operation indicated and
- 17 specified.
- 18
- 19 D. ERV-1 power ventilator/air exchangers shall have a 12VDC single-pole contact
- 20 installed on it to allow the fan’s operation to be interrupted as long as the circuit
- 21 is closed. This contact will be connected to a relay on the security system (by
- 22 Low Voltage Contractor) that would be programmed to close when the system
- 23 goes into fire alarm. It would open when the alarm is manually cleared by
- 24 entering the appropriate code via the system’s keypad or control system
- 25 touchscreen.
- 26
- 27 E. Operation Sequence:
- 28
- 29 1. ERV-1:
- 30
- 31 a) Energy Recovery Unit shall operate continuous unless
- 32 interrupted by a fire alarm.
- 33
- 34 2. Existing Furnaces: Furnace fan blower shall operate continuous (FAN
- 35 ON) unless interrupted by a fire alarm. Provide contact interface with
- 36 a relay on the security system (by Low Voltage Contractor) that would
- 37 be programmed to close when the system goes into fire alarm.
- 38

39 **PART 2 - PRODUCTS**

40
41 **2.1 TEMPERATURE SENSING/THERMOSTATS**

- 42
- 43 A. Reuse existing thermostat control.

PART 3 - EXECUTION

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3.1 **INSTALLATION**

- A. Install control wiring concealed, except in mechanical rooms, and according to requirements specified in the NEC.

- B. Clearly label all controls in Mechanical spaces.

1 **SECTION 26 00 00 ELECTRICAL**

2
3 **INDEX**

4 1.1 Description	2.2 Systems
5 1.2 Quality Assurance	3.1 Surface Conditions
6 1.3 Submittals	3.2 Preparation
7 1.4 Product Delivery, Storage	3.3 Installation
8 and Handling	3.4 Field Quality Control
9 1.5 Job Conditions	3.5 Adjustments and Cleaning
10 1.6 Alternatives	3.6 Equipment Start-Up and
11 2.1 Materials	Testing

12
13 **PART 1 GENERAL**

14
15 **1.1 Description**

16
17 A. Work Included: The electrical system required for this Work includes all labor and materials,
18 equipment, services and other items necessary to complete the installation of all electrical
19 items indicated on the Drawings, specified herein, and needed for a complete and operable
20 facility but not specifically described in any other Section of these Specifications. Among
21 the items required are:

- 22 1. Temporary electrical service (if required) and lighting.
- 23 2. Branch circuit panels for power and lighting.
- 24 3. Complete branch circuit wiring system for lighting, motors, receptacles, junction
25 boxes and similar uses.
- 26 4. Wall switches, receptacles and similar items.
- 27 5. Main distribution panel with metering equipment and feeder switches or circuit
28 breakers (if required).
- 29 6. Complete feeder system, in conduit, to power panels and
30 branch circuit panels.
- 31 7. Lighting fixtures.
- 32 8. Systems
 - 33 a. Fire Alarm
 - 34 b. Systems boxes and conduit
- 35 9. Bid to include coordination with Utility if required. Owner to pay
36 utility charges for Utility if needed.
- 37 10. Include all permit and review fees.
- 38 11. Necessary equipment as shown on Electrical Plans.
- 39 12. All items and appurtenances necessary, reasonably incidental or customarily
40 included, even though each and every item is not specifically called out or shown.

41
42 B. Related Work Specified Elsewhere

- 43 1. Coordination General Section
- 44 2. Perform all trenching and backfilling required in connection with the Work of this Section
45 in strict accord with the provisions of the General Section of these Specifications.

1 3. Provide all required electrical connections and service to items described in all other
2 Sections of these Specifications.

3
4 **1.2 Quality Assurance**

5
6 A. Qualifications of Installers: For the actual fabrication, installation and testing of the Work of
7 this Section, use only thoroughly trained and experienced personnel who are completely
8 familiar with the requirements for this Work and with the installation recommendations of
9 the Manufacturers of the specified items.

10
11 B. Requirements of Regulatory Agencies

12 1. Materials and workmanship shall comply with the Contract Documents and applicable
13 codes and standards. Should the Contractor perform any work that does not comply with
14 the requirements of these codes and standards, they shall bear all costs arising in correcting
15 such defects. Applicable codes and standards shall include all ordinances, utility company
16 regulations and applicable requirements of nationally accepted codes and standards.

17 2. Except as modified by this Specification, conform to the applicable provisions and
18 recommendations of the following codes and standards:

- 19 a. National Electrical Manufacturer's Association (NEMA)
- 20 b. American Society for Testing and Materials (ASTM)
- 21 c. American Institute of Electrical Engineers (AIEE)
- 22 d. American Standards Association (ASA)
- 23 e. American Institute of Electrical and Electronic Engineers (IEEE)
- 24 f. NFPA 70, National Electrical Code (NEC)
- 25 g. Underwriters' Laboratories (UL)
- 26 h. American National Standards Institute (ANSI)
- 27 i. Uniform Building Code (UBC)
- 28 j. International Building Codes (IBC, IEBC, IECC)
- 29 k. NFPA 72, National Fire Alarm Code
- 30 l. State and Local Codes and Standards

31
32 **1.3 Submittals:** Within 30 days after award of Contract, and before any of the materials of this
33 Section are delivered to the job site, submit complete to the Architect in accord with
34 the provisions of General Section of these Specifications; the following:

35
36 A. Shop Drawings

37 1. Drawings are required for: See Section 2.2.

- 38 a. Distribution equipment
- 39 b. Wiring Devices
- 40 b. Light Fixtures
- 41 c. Fire alarm
- 42 d. Any additional data requested by Architect

43
44 2. Show variations from the Contract Documents.

1 3. The Contractor shall not be relieved of responsibility for executing work in accord with
2 Contract Documents, even though such drawings have been approved.

3
4 B. Affidavits: The Contractor shall execute the Standard State Electrical Affidavit of
5 Compliance with the Electrical Code and Safe Practices. Notarize and file two copies with
6 the Owner before final payment is issued.

7
8 C. Record Drawings: Day by day, as installed, details shall be transferred to a set of scale
9 drawings prepared by the Electrical Contractor. The completed drawings shall be turned
10 over to the Owner upon completion of the Project.

11
12 D. Operation and Maintenance Data: The Contractor shall provide PDF files or three sets in
13 looseleaf binders a compilation of catalog data of each manufactured item of equipment used
14 in the electrical work and shall present this compilation to the Architect before final payment
15 is made. Descriptive data and printed installation, operating and maintenance instructions
16 and recommended spare parts for each item of equipment shall be included.

17 18 **1.4 Product Delivery, Storage and Handling**

19
20 A. Protection: Use all means necessary to protect the materials of this Section before, during
21 and after installation and to protect the installed work and materials of all other trades.

22
23 B. The Contractor shall follow the Manufacturer's directions completely in the delivery, storage
24 and handling of equipment and materials. Equipment and materials shall be tightly covered
25 and protected against dirt, water, chemical or mechanical injury and theft. At the completion
26 of the work, fixtures, equipment and materials shall be cleaned and polished thoroughly and
27 shall be in a condition satisfactory to the Architect.

28
29 C. Replacements: In the event of damage, immediately make all repairs and replacements
30 necessary to the approval of the Architect and at no additional cost to the Owner.

31 32 **1.5 Job Conditions**

33
34 A. Existing Conditions

35 1. The Electrical Contractor shall visit the site of construction to familiarize itself with the
36 site and existing conditions so as to become fully informed as to extent and character of the
37 Work and its relationship to work of other trades and existing facilities.

38
39 2. Failure to provide for the cost of all contingencies in original Bid will not be accepted as an
40 excuse for extra payment.

41 42 **1.6 Alternatives**

43
44 A. The Work of this Section is affected by alternatives as described on the Drawings and in
45 General Section of these Specifications.

- 1 B. The Electrical Contractor shall assume full responsibility for any alternate material proposed,
2 regardless if it is approved or not. This responsibility will also include any and all costs of
3 modifying feeders, branch circuits, ceilings, finishes, supports, structural, HVAC or any
4 other incidental changes brought about by the alternate.
5
6 C. Submission of the alternate bid is indication that all of these contingencies have been
7 covered and that cost is included in the Bid.
8

9 **PART 2 PRODUCTS**

10 **2.1 Materials**

11 **A. General**

- 12
13
14 1. All equipment and materials shall be new, unless specifically noted otherwise and shall
15 bear the Manufacturer's name, trademark and ASME, UL and/or other labels in every case
16 where a standard has been established for the particular item. Equipment shall be the latest
17 approved design of the standard product of a Manufacturer regularly engaged in the
18 production of the required type of equipment and shall be supported by a service
19 organization that is, in the opinion of the Architect reasonably convenient to the site.
20
21 2. It is the responsibility of the Contractor to insure that items furnished fit the space
22 available. He shall make field measurements to ascertain space requirements, including
23 those connections, and shall furnish and install such sizes and shapes of equipment that, in
24 the final installation, will suit the true intent and meaning of the Drawings and
25 Specifications.
26
27 3. Equipment Accessories: The Contractor shall furnish and install all equipment accessories,
28 connections and incidental items necessary to complete the work and operations.
29

30 **B. Basic Materials and Methods**

- 31 1. Raceways: Provide complete conduit raceway system for feeders, branch circuits, controls
32 and alarm circuits as shown.
33 a. Conduit for General Areas: EMT up to 4".
34 b. Conduit for Underground: RIGID, PVC.
35 c. Conduit where exposed to weather or subject to damage: RIGID.
36 d. Underfloor Conduit: RIGID, PVC.
37
38 2. Wires and Cable:
39 a. Conductors: Copper, 600 volt insulation (ASTM standard
40 compounds) and color coded as required by Code.
41 (1) Minimum wire size: No. 12 AWG and not less than shown on Drawings.
42 (2) Type THHN solid or stranded: No. 10 AWG and smaller.
43 (3) Type THHN stranded: No. 8 AWG and larger.
44 b. MC Cable: Multi-conductor metal clad cable, polypropylene tape, galvanized steel
45 armor. Lightweight steel metal clad or steel metal clad cable on branch circuits. Steel

- 1 metal clad fire alarm cable on fire alarm systems.
- 2 (1) Conductor: Copper. Where type MC cable carries multiple phase conductors, the cable
3 shall include an oversized neutral conductor (150 to 200%) or one neutral conductor
4 per phase for multi phase systems.
- 5 (2) Insulation Voltage Rating: 600 volts.
- 6 (3) Insulation: ANSI/NFPA 70, Type THHN, material rated 90 degrees C minimum.
- 7 (4) Grounding Conductors: An insulated grounding conductor, sized per code, shall be cabled
8 with the circuit conductors and identified as a ground.
- 9 (5) Type MC cable may only be used in concealed areas inside walls or above drop
10 ceilings. Use PVC jacketed MC cable in masonry walls and damp and wet locations
11 where protected.
- 12
- 13 3. Receptacles:
- 14 a. Single Tamper Resistant Convenience Receptacle:
- 15 1. Leviton: TBR15, 15 Amp; TBR20 20 Amp white commercial specification grade.
16 2. Hubbell: commercial specification grade equal to Leviton.
17 3. Eagle: commercial specification grade equal to Leviton.
- 18 b. Duplex Tamper Resistant Convenience Receptacle:
- 19 1. Leviton: TBR15 15 Amp, TBR20 20 Amp white commercial specification grade.
20 2. Hubbell: commercial specification grade equal to Leviton.
21 3. Eagle: commercial specification grade equal to Leviton.
- 22 c. Duplex Tamper Resistant Convenience Receptacle with USB ports.
- 23 1. Leviton: M56AA, 15 Amp; M58AAA, 20 Amp white commercial specification
24 grade.
25 2. Hubbell: commercial specification grade equal to Leviton.
26 3. Eagle: commercial specification grade equal to Leviton.
- 27 d. GFCI Receptacle:
- 28 1. Leviton: Interior - 7599 Smart lock pro 15 Amp GFCI, 7899 Smart lock pro 20 Amp
29 white GFCI.
30 Interior tamper resistant - T7599 Smart lock pro 15 Amp GFCI, T7899 Smart lock
31 pro 20 Amp white GFCI.
32 Exterior weather resistant - W7599 Smart lock pro 15 Amp GFCI, W7899 Smart lock
33 pro 20 Amp white GFCI.
34 Exterior weather and tamper resistant - W7599-TR Smart lock pro 15 Amp GFCI,
35 W7899-TR Smart lock pro 20 Amp white GFCI.
- 36 2. Hubbell: Equal to Leviton.
37 3. Eagle: Equal to Leviton.
38 4. Weather resistant in damp or wet locations.
- 39 e. Isolated Ground Receptacle:
- 40 1. Leviton: 5262-IG 15 Amp, 5362-IG 20 Amp white industrial specification grade.
41 2. Hubbell: industrial specification grade equal to Leviton.
42 3. Eagle: industrial specification grade equal to Leviton.
- 43 f. Outdoor GFI receptacles shall have cast aluminum padlockable covers or equal.
44 Receptacles on emergency circuits to be colored red.

- 1 4. Switches:
- 2 a. Single Pole Switch:
- 3 1. Leviton: CSB1-20 20 Amp commercial specification grade.
- 4 2. Hubbell: 20 Amp commercial specification grade equal to Leviton.
- 5 3. Cooper: 20 Amp commercial specification grade equal to Leviton.
- 6 b. Double Pole Switch:
- 7 1. Leviton: CSB2-20 20 Amp commercial specification grade.
- 8 2. Hubbell: 20 Amp commercial specification grade equal to Leviton.
- 9 3. Cooper: 20 Amp commercial specification grade equal to Leviton.
- 10 c. Three-way Switch:
- 11 1. Leviton: CSB3-20 20 Amp commercial specification grade.
- 12 2. Hubbell: 20 Amp commercial specification grade equal to Leviton.
- 13 3. Cooper: 20 Amp commercial specification grade equal to Leviton.
- 14 d. Four-way Switch:
- 15 1. Leviton: CSB4-20 20 Amp commercial specification grade.
- 16 2. Hubbell: 20 Amp commercial specification grade equal to Leviton.
- 17 3. Cooper: 20 Amp commercial specification grade equal to Leviton.
- 18 e. Indicator Switch:
- 19 1. Leviton: 1221PL, 1222PL, 1223PL 20 Amp industrial specification grade.
- 20 2. Hubbell: 20 Amp industrial specification grade equal to Leviton.
- 21 3. Cooper: 20 Amp industrial specification grade equal to Leviton.
- 22 f. Locator Switch:
- 23 1. Leviton: 1221LH, 1223LH 20 Amp industrial specification grade.
- 24 2. Hubbell: 20 Amp industrial specification grade equal to Leviton.
- 25 3. Cooper: 20 Amp industrial specification grade equal to Leviton.
- 26 h. Color: White.
- 27
- 28 5. Incandescent Dimmers
- 29 a. Manufacturers:
- 30 1. Lithonia: ISD-W white dimmer.
- 31 2. Leviton: Equal to specified.
- 32 3. Lutron: Equal to specified.
- 33 4. Cooper: Equal to specified.
- 34 4. Substitutions: under provisions of Division One -General -Requirements.
- 35 b. Description: NEMA WD 1, architectural grade preset slide control dimmer for
- 36 incandescent lamps.
- 37 c. Power rating as needed for circuit or as indicated on drawing.
- 38 d. Color: White. Switches on emergency power shall be red. If red is not available, switch
- 39 cover plate shall be labeled "Emergency Power" or "Optional Emergency Power" as wired.
- 40
- 41 6. 0-10VDC Dimmers
- 42 a. Manufacturers:
- 43 1. Cooper: 0-10V Décorator ivory dimmer with linear slide dimming.
- 44 2. Leviton: Equal to specified.
- 45 3. Lutron: Equal to specified.

- 1 4. Lithonia: Equal to specified.
- 2 b. Description: NEMA WD 1, linear slide preset slide control dimmer for LED lamps.
- 3 c. Power rating as needed for circuit or as indicated on drawing.
- 4 d. Color: White. Switches on emergency power shall be red. If red is not available, switch
- 5 cover plate shall be labeled "Emergency Power" or "Optional Emergency Power" as wired.
- 6
- 7 7. Motor Disconnects: Motors furnished and installed under other Sections and wired under
- 8 this Section. Provide disconnect switches as required by NEC and shown on Drawings.
- 9 Coordinate with other trades for controls, accessories and conflicts. Provide rack
- 10 support.
- 11
- 12 8. Supporting Devices:
- 13 a. Metal supporting devices shall be zinc galvanized, cadmium plated or malleable iron.
- 14 b. Lighting Fixture Support:
- 15 (1) Provide stems, hickies, bar hangers and clips
- 16 required to securely attach fixtures to ceilings or
- 17 walls.
- 18 (2) Grid troffer support clips.
- 19 (3) Auxiliary supports so fixtures can be drawn up tightly, and not tilted, rotated or
- 20 affected by vibrations.
- 21 c. Conduit Supports:
- 22 (1) Two-hole galvanized steel straps.
- 23 (2) Continuous or t-slot galvanized steel insert channel.
- 24
- 25 9. Nameplates and Equipment Identification:
- 26 a. Nameplates: Each major item of equipment shall have the Manufacturer's name, address,
- 27 serial and model number on a plate securely attached to the item.
- 28 b. Equipment Identification: Unless specified otherwise, all items of equipment, except
- 29 those in finished areas, fixtures, etc., shall be identified as to number, name, function,
- 30 capacity and other pertinent data with securely attached laminated plastic name tags of an
- 31 appropriate size with black letters and white background or laminated tape from a label
- 32 printer. Laminated labels shall be black letters on white background in shop/mechanical
- 33 areas or black letters on clear background in office areas. Generally the number and name
- 34 shall be at least 1/4 inch high and other data at least 1/8 inch high. Identification tags on
- 35 items in finished areas such as special switches, etc., shall be securely attached on, or in
- 36 the immediate vicinity of the item.
- 37 c. Wire markers shall be self-laminating type.
- 38 d. Underground warning tape shall be 6 inch wide (minimum) foil-backed detectable tape,
- 39 colored yellow with suitable warning legend describing buried electrical lines; NAF-0708
- 40 Model as manufactured by Thomas & Betts or equal.

41

42 C. Service and Distribution

43

- 44 1. Disconnect Switches: Cutler-Hammer
- 45 a. HP rated heavy-duty type with provisions for padlocking.

- 1 b. Fusible switches arranged for cartridge type fuses.
- 2 2. Existing Panelboards: Cutler-Hammer
- 3 a. Provide new bolt on circuit breakers for existing C-H PRL1A panelboards as shown or
- 4 noted on drawings.
- 5 b. Updated circuit directory by typing or printing out new directory on a laser printer.
- 6
- 7 3. Load Centers: Cutler-Hammer
- 8 a. Provide circuit breaker load center as shown on drawings.
- 9 b. Dead front type, of construction manufactured in accord with latest NEMA standards.
- 10 c. Painted cabinet and trim.
- 11 d. Flush steel cylinder tumbler type locks with spring loaded door pulls.
- 12 g. Typed circuit directory or printed out directory on a laser printer.
- 13

14 D. Lighting

- 15
- 16 1. Lighting Fixtures:
- 17 a. Provide lighting fixtures of size, type and rating indicated in the Lighting Fixture
- 18 Schedule. Include all parts and accessories and any other details required for a complete
- 19 working installation.
- 20 b. Verify ceiling system compatibility with fixture mounting devices before placing fixture
- 21 order.
- 22 c. Provide stems and swivel hangers for suspended fixtures.
- 23 d. Provide lighting control per drawings.
- 24

25 2.2 Systems

26 A. Fire Alarm System

27 Furnish and install devices as shown on the drawings. Connect to existing fire alarm system
28 as needed and according to NFPA, NEC, ADA, state and local standards. Existing fire alarm
29 panel is a Potter IPA-60 addressable fire alarm panel. Provide construction documents for
30 review per the latest adopted International Fire Code Section 907.1.1 to local authorities having
31 jurisdiction and/or state as required. State submittal required if over 20 devices are changed or
32 added. Include services of certified technician to supervise installation, adjustments, final
33 connections, programming and system testing.

34 Provide additional devices:

- 35
- 36
- 37 1. Addressable pull station: Potter PAD100-PSDA dual action (match existing). Install
- 38 manual station with operating handle no more than 48 inches above finished floor. Box at
- 39 44" AFF.
- 40 2. Addressable photoelectric smoke detector: Potter PAD200-PD with PAD100-6DB 6"
- 41 standard base.
- 42 3. Addressable smoke/heat/carbon Monoxide Detector: Potter PAD200-PHCD with PAD100-
- 43 6DB 6" standard base.
- 44 4. Ceiling Horn/strobe and strobe: Potter PE-HSC white ceiling horn/strobes (15cd – 177cd),
- 45 Potter PE-STC white ceiling strobes (15cd to 177cd). All strobes shall be synchronized.

- 1 5. Wall Horn/strobe: Potter PE-LFHS red wall low frequency Temporal 3 and 4 (520Hz)
- 2 horn/strobe (177cd). Install wall horn/strobe 80 inches above finished floor
- 3 6. Door holder: Potter DH-24120SP series door holder, 24 VDC, powder coated. Provide
- 4 chrome accessory hardware and extensions as required for application. Mount outlet box
- 5 for electric door holder to withstand 80 pounds pulling force.
- 6 7. Provide documentation box by panel with up to date information and drawings.
- 7 8. Reconfigure and reprogram existing fire alarm panel and annunciator as required.
- 8 9. Fire Alarm Power Branch Circuits: Building wire as specified in Part 2.1 per local codes.
- 9 10. Initiating Device and Indicating Appliance Circuits: Building wire as specified in Section Part
- 10 2.1 per local code. Fire alarm wiring may be conductors run inside conduit, steel Type MC
- 11 cable or UL Type FPLR and/or FPLP cable per code. Steel Type MC cable may only be used in
- 12 concealed areas. Conduit will be used at all exposed locations. UL Type FPLR and/or FPLP
- 13 cable may only be used above ceiling grid where it is not subject to damage or visible. Where
- 14 FPLR and/or FPLP cable is used in office areas, it will be run in conduit down to wall mounted
- 15 devices.
- 16 11. Automatic Detector Installation: Conform to NFPA 72E.
- 17 12. Paint 120V fire alarm circuit breakers fronts red.
- 18 13. Test in accordance with NFPA 72H and local fire department requirement.
- 19 14. Provide systems demonstration under provisions of General Requirements. Demonstrate
- 20 normal and abnormal modes of operation, and required responses to each.
- 21
- 22 B. Phone: Provide conduit, box and ring as shown on drawings. Owner's system contractor to
- 23 provide and pull cable, terminate devices and provide wall plates.
- 24

25 **PART 3 EXECUTION**

26 **3.1 Surface Conditions**

27 **A. Inspection**

- 28 1. Prior to all Work of this Section, carefully inspect the installed work of all other trades and
- 29 verify that all such work is complete to the point where this installation may properly
- 30 commence.
- 31 2. Verify that all electrical installation may be made in complete accord with all pertinent
- 32 codes and regulations, the original design.
- 33

- 34
- 35
- 36 B. Discrepancies: In the event of discrepancy, notify the
- 37 Architect immediately for clarification. Do not proceed until discrepancies have been fully
- 38 resolved.
- 39

40 **3.2 Preparation**

- 41
- 42 A. Co-ordination of Work: The Contractor shall compare the electrical Drawings and
- 43 Specification with the Drawings and Specification for other trades and report any
- 44 discrepancies between them to the Architect and obtain written instructions for changes
- 45 necessary in the electrical work. The electrical work shall be installed in cooperation with

1 other trades installing interrelated work. Before installation, the Contractor shall make
2 proper provisions to avoid interferences. Changes required in the work of the Contractor
3 caused by neglect to do so, shall be made at the Contractor's own expense.
4

5 B. Verification of Dimensions: The Contractor shall visit the premises to verify all dimensions
6 in the field; and shall advise the Architect of any discrepancies before performing any work.
7

8 **3.3 Installation**

9

10 A. General

- 11 1. It is the intent of this Specification that the Owner is presented with a complete, operable
12 facility and Electrical Contractor shall include ALL costs in the original Bid.
- 13 2. When the Architect has reviewed equipment submittals and given instructions to proceed
14 with the installation of items of equipment that require arrangements or connection
15 different from those shown on the Drawings, it shall be the responsibility of the Contractor
16 to install the equipment to operate properly and in accord with the intent of the Drawings
17 and Specifications and he shall provide any additional motors, controllers, fittings and
18 other equipment and materials that may be required. The Contractor shall be responsible
19 for the proper location of roughing in and connections by other trades. All changes
20 shall be made at no increase in the Contract amount or additional costs to other trades.
- 21 3. The Contractor shall support work and equipment plumb, rigid and true to line. The
22 Contractor shall study the general, structural, mechanical and electrical Drawings,
23 Shop Drawings and catalog data to determine how equipment, fixtures, conduit, etc., are to
24 be installed and shall provide foundations, bolts, inserts, stands, hangers, brackets and
25 accessories for proper support whether or not shown on the Drawings.
- 26 4. All materials and equipment shall be installed in accord with the approved
27 recommendations of the Manufacturer, the best practices of the trade, and in conformance
28 with the Contract Documents. Should the Contractor perform any work that does not
29 comply with the Manufacturer's directions or such written instructions from the Company's
30 representative, he shall bear all costs arising in correcting deficiencies.
- 31 5. Interferences:
 - 32 a. Locations of conduit, equipment, fixtures, etc., shall be adjusted to accommodate the
33 work to interferences anticipated or encountered. Devices specifically dimensioned on
34 the Drawings are critical dimensions and to be installed as shown. The Contractor shall
35 determine the exact route and locations of each conduit prior to installation.
 - 36 b. Right-of-way: Lines which pitch shall have right-of-way over those which do not pitch.
37 For example, plumbing drains shall normally have right-of-way over lines whose
38 elevations can be changed.
 - 39 c. Offsets and changes in direction in conduit shall be made as required to maintain proper
40 head room and not interfere with pitch of sloping lines whether or not indicated on the
41 Drawings.
- 42 6. Location of lighting switches, outlets and equipment as shown on Drawings is approximate
43 and exact location to be verified.
- 44 7. Minor modifications in location of switches, outlets and equipment is considered incidental
45 up to a distance of 10 feet with no additional compensation, provided necessary

1 instructions are given prior to roughing in of outlet.
2

3 B. Existing Conditions

- 4 1. Move or remove electrical connections, devices or equipment necessary for completion of
5 project and reconnect reused existing equipment or wiring removed to accommodate new
6 work.
7 2. Existing electrical equipment indicated on the Drawings as being removed, reworked or
8 relocated, are shown for guidance and estimating purposes only; additional work found in
9 field or changes required but not shown shall be included in the Base Bid.
10 3. Existing equipment that is removed shall remain the property of the Owner. That which he
11 does not desire shall be disposed of by the Electrical Contractor.
12 4. Work involving shutdown of present service and equipment now functioning in present
13 area shall be done at such time as to provide the least amount of inconvenience to the
14 Owner at times established by the Owner.
15 5. Any existing electrical devices or equipment found at job site, but not shown on Plans shall
16 be reconnected to spare circuit breakers in new panels, if such circuits are necessary for
17 operation of the remodeled portion of the building.
18 6. Locations and elevations of utilities have been obtained from utility maps or other sources
19 and are offered as a general guide only without guarantee as to accuracy. The Contractor
20 shall verify the location and elevation of utilities and their relation to the work before
21 beginning work.
22

23 C. Cutting and Patching

- 24 1. The Electrical Contractor shall do all necessary cutting and coring but only after obtaining
25 approval from the Architect as to the location and size of openings and the proper method
26 and materials for patching.
27 2. The Electrical Contractor shall patch and refinish existing surfaces when affected by the
28 demolition work required in the existing building unless that surface shall be
29 refinished as part of the General Contractor's work included in the Project.
30 3. The Electrical Contractor may utilize the General Contractor for cutting, patching,
31 refinishing, but the cost of same shall be borne by the Electrical Contractor.
32

33 D. Temporary Electric Service and Lighting During Construction

34 1. Services:

35 a. Power:

- 36 (1) Electrical Contractor shall make all arrangements with owner to temporarily get power
37 from existing building panels as needed on remodel or renovation projects.
38 (2) Furnish and install four-wire feeders and necessary 12 circuit panels for 120/208 volt
39 three phase power to required locations; complete with ground and ground fault
40 protection.
41 (3) Each Contractor shall provide own extension cord for portable lamps and hand tools.
42 (4) Each contractor will make own service arrangements for heavy duty equipment and
43 tools or other voltages.
44 (5) General Contractor shall pay for cost of power consumed on a temporary service (if
45 required).

- 1 b. Lighting: Provide at least one lamp per room, hallway, stairwell or corridor and to
- 2 construction field offices where required. Maintain all lamps.
- 3 c. Electrical Contractor shall be responsible for all other aspects of the temporary service,
- 4 except as noted.
- 5 d. Remove temporary services and all associated equipment when it is no longer required.

6
7 E. Feeders and Branch Circuits

- 8 1. Follow most accessible routes. Conceal in finished areas.
- 9 2. On network systems, neutral shall be run with ungrounded wires. Unbalanced neutral
- 10 current shall not exceed normal or derated conductor capacity.
- 11 3. Do not use wire smaller than No. 12 AWG unless otherwise noted.

12
13 F. Conduits and Conduit Fittings

- 14 1. Install conduit and tubing products in accord with NEC, Manufacturer's written
- 15 instructions, applicable standards and recognized industry practices to ensure products
- 16 serve intended function.
- 17 2. Complete conduit installation prior to installing cables.
- 18 3. Use set screw type connectors on EMT.
- 19 4. Provide watertight conduit system (rigid or PVC) where installed in wet places,
- 20 underground or where buried in masonry or concrete.
- 21 5. Use galvanized rigid conduit when conduit is run below slabs on grade or run in earth,
- 22 unless otherwise noted on
- 23 Drawings.
- 24 a. Exterior underground conduit shall be minimum of 3/4 inch, buried at depth of not less
- 25 than 24 inches below grade.
- 26 b. Provide conduits or ducts terminating below grade with means to prevent entry of dirt or
- 27 moisture.
- 28 6. EMT may be used for branch circuit wiring only in all trade size where it can be concealed
- 29 in hollow spaces of walls, above suspended ceilings or exposed on interior ceilings and
- 30 walls in non-hazardous, non-corrosive, dry areas.
- 31 7. Conduit shall be run concealed except exposed surface conduit may be installed where
- 32 noted on Drawings or where concealment is found to be impractical or impossible and
- 33 only with approval of the Architect.
- 34 8. Continuous from outlet to outlet and from outlets to cabinets, junction or pull boxes.
- 35 9. Enter and secure to boxes ensuring electrical continuity
- 36 from point of service to outlets.
- 37 10. Conduit runs extending through areas of different temperature or atmospheric conditions
- 38 or partly indoors and partly outdoors shall be sealed, drained and installed in a
- 39 manner preventing drainage of condensed or entrapped moisture into cabinets, motors or
- 40 equipment enclosures.
- 41 11. Run conduits within concrete structures parallel to each other and spaced on center of at
- 42 least three times conduit trade diameter with minimum 2 inch concrete covering.
- 43 Conduits over one inch may not be installed in slabs without approval of Architect.
- 44 12. Route conduit and MC cable runs above suspended acoustical ceilings so not to interfere
- 45 with tile panel removals.

- 1 13. Secure conduit in place with not less than one malleable corrosion proof alloy strap or
2 hanger per eight feet of conduit. DO NOT use perforated strapping.
- 3 14. Connections to Motors and Equipment Subject to Vibration:
 - 4 a. Flexible steel conduit, not over three feet long, where exposed in mechanical and utility
5 areas and not subjected to moisture, dirt and fumes.
 - 6 b. Liquid-tight flexible conduit, not over three feet long, where exposed in finished areas or
7 where subject to moisture, dirt, fumes, oil, corrosive atmosphere, exposed or concealed,
8 with connectors to ensure liquid-tight, permanently grounded connection. Locate
9 where least subject to physical abuse.
- 10 15. Use double lock nuts and insulated bushings with threads fully engaged.
- 11 16. Connectors at fixture bodies and boxes shall be rigidly secured with galvanized lock nut
12 and bushing.
- 13 17. Cap conduits after installation to prevent entry of debris.
- 14 18. Use explosion-proof fittings and seals in hazardous areas in accord with NEC.
- 15 19. Install conduit expansion fittings complete with bonding jumper in following locations:
 - 16 a. Conduit runs crossing structural expansion joints.
 - 17 b. Conduit runs attached to two separate structures.
 - 18 c. Conduit runs where movement perpendicular to axis of
19 conduit may be encountered.

20 21 G. Wire and Cable

- 22 1. Run wire and cable in conduit or use MC cable in concealed areas unless otherwise
23 indicated Drawings.
- 24 2. On branch circuits, use standard colors.
- 25 3. Each tap, joint or splice in conductors No. 8 AWG and larger shall be taped with two half-
26 lap layers of vinyl plastic electrical tape and finish strap of color coding tape, where
27 required by Code.
- 28 4. Surface wiring in finished areas at inaccessible surfaces, if allowed by architect, shall be in
29 wiremold or equal surface wireway.

30 31 H. Boxes

- 32 1. Install knockout closures to cap unused knockout holes where blanks have been removed.
- 33 2. Locate boxes to ensure accessibility of electrical wiring.
- 34 3. Secure boxes rigidly to surface upon which they are being
35 mounted or solidly embed boxed in concrete or masonry. Do not support from conduit.
- 36 4. Do not burn holes, use knockout punches or saw.
- 37 5. Provide outlet box accessories as required for each installation such as mounting brackets,
38 fixture studs, cable clamps, and metal straps for supporting outlet boxes compatible with
39 outlet boxes being used and meeting requirements of individual wiring situations.
- 40 6. Flush outlets shall have edges or plaster flush with finished wall or ceiling surfaces so
41 plates can be drawn tightly to wall or ceiling surfaces.
- 42 7. Conduits entering anything but a galvanized box shall be equipped with a grounding
43 bushing and a jumper wire.

44 45 I. Wiring Devices

- 1 1. Do not install devices until wiring is complete.
- 2 2. Do not use terminals on wiring devices (hot or neutral for feed-thru connections, looped or
- 3 otherwise. Make circuit connections via wire connectors and pigtails.
- 4 3. Install gasket plates for devices or system components having light emitting features such
- 5 as switch with pilot light and dome lights. Where installed on rough textured surfaces, seal
- 6 with black self-adhesive polyfoam.
- 7 4. Ground receptacles with insulated green ground wire from device ground screw to bolted
- 8 outlet box connection.

9
10 J. Mounting Heights: All devices to be accessed must be between 18" and 48" above the
11 finished floor.

- 12 1. Switches: box 44 inches above floor.
- 13 2. Receptacles and Systems Outlets: 18 inches above floor or as shown on Drawings.
- 14 3. Wall Bracket Lighting Fixtures: 8 inches above mirrors, 6'-6" above floor or as detailed on
- 15 the Drawings.
- 16 4. Pushbuttons: 44 inches above floor.
- 17 5. Motor Starters and Disconnects: 60 inches above floor.
- 18 6. Thermostats: 44 inches above floor.
- 19 7. Bells: 12 inches below ceiling.
- 20 8. Locate special purpose outlets as required to serve the equipment involved.

21
22 N. Panelboards

- 23 1. Flush or surface mount bolt-on as specified on Drawings and Schedules.
- 24 2. Support panel cabinets independently to structure with no weight bearing on conduits.
- 25 3. Install recessed panelboards to allow cover to be drawn tight against wall to provide neat
- 26 appearance.
- 27 4. Install panelboards so top breaker is not higher than 6 foot above floor.
- 28 5. Adjacent panel cabinets shall be same size and mounted in horizontal alignment.
- 29 6. Install typewritten directory in each panelboard, accurately indicating rooms and/or
- 30 equipment being served.
- 31 7. Install two spare one inch conduits from top of each flush mounted panelboard to area
- 32 above ceiling for future use. On flush mounted panelboards located on first and higher
- 33 level floors, provide two spare one inch conduits from bottom of panel board to ceiling area
- 34 of floor below for future use.

35
36 P. Grounding

- 37 1. All conduit work and other electrical equipment wired for and connected by the Electrical
- 38 Contractor, shall be effectively and permanently grounded and bonded in accord with the
- 39 applicable codes.
- 40 2. Ground neutral at service only.
- 41 3. Install equipment ground in all conduits.
- 42 4. Provide ground for any electronic systems.

43
44 Q. Source of Power

- 45 1. Electrical Contractor shall coordinate work with the utility company (if new service

- 1 installed or reworked) for bringing power to and through the building.
- 2 2. Electrical Contractor shall verify all service details with local utility and furnish all labor
- 3 and materials to complete the Project (if new service installed or reworked). Furnish all
- 4 labor and materials not provided by the Utility.
- 5 3. Electrical Contractor shall maintain power to existing areas at all times and make cutover
- 6 to new service or panels when directed by the Architect.
- 7 4. Include any costs of revising the existing service in the original Bid.
- 8 5. Verify short circuit current requirements with Utility Company.
- 9

10 **R. Lighting Fixtures**

- 11 1. The Contractor shall include all costs in his original Bid to cover the cost of handling,
- 12 hanging and connecting all fixtures.
- 13 2. Verify local codes and ordinances that may pertain to the installation and aiming of exterior
- 14 fixtures, and notify Owner prior to bid time if problems are encountered.
- 15 3. The Electrical Contractor shall check equipment layouts and install the fixtures so that
- 16 piping, duct work, chases, etc. shall not cover or interfere with the fixtures
- 17 components or its performance.
- 18

- 19 **S. Painting:** Unless otherwise specified, job finish painting will be done by the Painting
- 20 Contractor. Electrical equipment shall have baked enamel or powder coat finish. The
- 21 Electrical Contractor shall restore damaged painted surfaces of electrical equipment
- 22 to its original condition.
- 23

24 **3.4 Field Quality Control**

25

26 **A. Control Circuits, Branch Circuits, Feeders, Motor Circuits and Transformers**

- 27 1. Megger check of phase-to-phase and phase-to-ground insulation levels. Do not megger
- 28 check solid state equipment.
- 29 2. Continuity
- 30 3. Short circuit
- 31 4. Operational check
- 32

- 33 **B. Wiring Devices:** Test receptacles with Hubbell 5200, Woodhead 1750 or equal tester for
- 34 correct polarity, proper ground connection and wiring faults.
- 35

36 **3.5 Adjustments and Cleaning**

37

38 **A. Adjustments**

- 39 1. Motor Starters and Disconnects:
- 40 a. Adjust covers and operating mechanisms for free mechanical movement.
- 41 b. Tighten wire cable connections.
- 42 c. Verify overcurrent protection thermal unit size with motor nameplate to provide proper
- 43 operation and compliance with NEC.
- 44 d. Clean interior of enclosures.
- 45 e. Touch up scratched or marred surfaces to match original finish.

- 1 2. Circuit Breakers: Adjustable settings shall be set to provide selective coordination, proper
2 operation and compliance with NEC.
- 3 3. Repairs to Other Work: Make good and pay for all damage such as glass breakage, plaster
4 patching, defacement of acoustical tile and any repair to all other finished work caused by
5 the electrical installation.
- 6 4. Defective fixtures, lamp sockets and heating or noisy ballasts shall be promptly removed
7 and replaced at no cost to the Owner.
- 8 5. Any loose connections, loose outlet boxes or cover plates that do not adequately cover the
9 openings in walls or ceilings must be fixed or promptly replaced.
- 10 6. Where painted surfaces of equipment have been abused, removed or rusted during
11 construction, the Electrical Contractor shall paint same to match original factory or
12 surrounding finish.

13 B. Cleaning

- 14 1. This Contractor shall daily remove crates, boxes, metal cuttings and debris from the
15 building and at the end of work, shall leave the building clean.
- 16 2. This Contractor shall clean all equipment surfaces, interior and exterior of panels and pull
17 boxes, etc.

18 19 **3.6 Equipment Start-up and Testing**

- 20 A. The Contractor shall instruct the Owner's operating personnel during start-up and separate
21 operating test of each major item of equipment. During the operating test, the Contractor
22 shall prove the operation of each item of equipment to the satisfaction of the Architect. At
23 least two days' notice shall be given to the Architect of equipment start-up and operating
24 tests.
25
- 26 B. Should any item of the system fail to perform in an approved manner, this test shall be
27 repeated until the operating test is approved by the Architect.
28
- 29 C. Following the successful completion of operating test by the Contractor, the Owner shall
30 have the privilege of making such tests as they may desire to ascertain in detail if any
31 corrections are to be made to the system. At the end of the testing by the Owner and
32 Architect, the Architect shall direct the Contractor in writing to make such corrections to the
33 system as are within the scope of the Contract.
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43 END OF SECTION
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