ADDENDUM #2:

Waynesville Performing Arts Center

Wayne Local School District
Waynesville, Ohio

WAYNE LOCAL SCHOOL DISTRICT
Waynesville, Ohio

659 Dayton Road
Waynesville, Ohio 45068

Prepared by:

LWC Incorporated
434 E. First Street
Dayton, Ohio 45402
(937 223-6500

LWC INCORPORATED

Consultants:

Burkhardt Inc.
28 N. Cherry St.
Germantown, OH
937-388-0060

GOP Limited
644 Linn St. Suite 936
Cincinnati, OH
937-224-0861

CMTA Engineering
1650 Lake Shore Dr.
Suite 380
Columbus, Ohio 43204
614-992-1500

March 22, 2021

The contents of this Addendum shall become a part of the Contract Documents as if originally incorporated therein and as stated in Section 007100 – Contracting Definitions.

Item No. 1: <u>Bid Opening Time Change</u>: Bid opening time is hereby changed from 2:00 p.m. local time to <u>4:00 p.m.</u> local time. The date and location remain the same. ***Bidders should be aware that elementary school dismissal is between 3:30 and 3:45 so there is limited access to the site due to buses and parents picking up students. Please plan accordingly.***

Item No. 2: RFI's and Responses

1. See a list of Requests for Information and related responses attached to this addendum.

Item No. 3: Division 2-14 Substitutions:

Subject to compliance with requirements, the following may be incorporated into the work:

1. Section 116001: Staging Concepts, Brooklyn Park, MN

Item No. 4: Specifications Divisions 0-14

1. Specification Section 004113 – Bid Form – Stipulated Sum (Single Prime Contract): See update bid form included in the addendum.
2. Specification Section 004322 – Unit Prices From: Revised Section 004322 is attached to this addendum and adds Unit Price 3 for lean concrete fill.-
3. Specification Section 012200 – Unit Prices: Revised Section 012200 is attached to this addendum and adds Unit Price 3 for lean concrete fill.
4. Specification Section 093013 – Porcelain Tiling: At heading 2.3.A, PWT-1 shall apply to CT-1 and CT-2 on Sheet ID001 of the Drawings.
5. Specification Section 095113 – Acoustical Panel Ceilings: Revised section 095113 – Acoustical Panel Ceiling is attached to the addendum and updates the description of ceiling types.
6. Specification Section 096513 – Resilient Base and Accessories: At heading 2.2, omit reference to (B-1). Resilient base is B-3 on the Drawings and is the correct designation.
7. Specification Section 126100 – Fixed Audience Seating – Section 2.3, A: Irwin Seating, Citation Series shall be the Basis-of –Design for fixed audience seating.
8. Specification Section 126600 Telescoping Stands – Section 2.2, B, 7.e: Irwin Seating and Irwin Integra Chair Series shall be the Basis-of-Design for telescoping stands and seats.

Item No. 5: Drawings

1. Sheets A201 and A202 – Reflected Ceiling Plans: Restrooms 137, 138, 222, 223, and 224 are to receive ceiling type ACT-3. See revised Acoustical Panel Ceiling specification included in this addendum.
2. Sheet A601, Enlarged Scale Plans, Interior Elevations: Detail 1 - Enlarged Large Restrooms First Floor shall also apply to second floor restrooms 223 and 224.
3. Sheets ID001, ID101, ID201: Updated Sheets ID001, ID101, and ID201 are included in this addendum
4. Sheets G001 and A102: Wall type D3 shown at corridor 203 is to be the same as wall type D2 shown on G001 except without the single 5/8" GWB layer on the unfinished side.

Item No. 6: GOP Structural Addendum Items

1. See attached write up and drawings from GOP Ltd. which are a part of this addendum.

Item No. 7: CMTA Plumbing, Mechanical, Electrical, and Technology Engineering Addendum Items

1. See attached write up, specifications, and drawings from CMTA which are a part of this addendum.

Item No. 8: Civil Drawings

1. See attached revised sheets 1.C-1.2, 1.C-2.0, 1.C-4.0, and 1C-2.0A which are part of this addendum.

End of Addendum 2

WAYNE LOCAL SCHOOL DISTRICT
Waynesville Performing Arts Center
Project No. 18620.00

March 22, 2021

Addendum #2 RFI Log

1. In Addendum 1 CMTA responded to the MC question (Item 01) asking for an alternate for MC cable in walls and above ceiling. The specs still include a number of conflicting requirements in 260519 2.1 starting with sub section O. **A: This will be clarified in Addendum 2.**
2. There is a note on the foundation plan that states the following: "Bxxx Indicates approximate location of borings that show unsuitable fill material at varying level. If encountered, remove and replace to suitable bearing with Fc=1,500 psi lean-mix concrete". There is also a unit price No. 1 for removal/replacement of unsatisfactory soil. Just wanted to verify that if unsatisfactory soils are encountered and undercutting is required, it will be handled on either a T&M or Unit Price Basis? **A: If unsuitable soil is encountered, it is to be replaced on a Unit Price basis.**
3. What is the size of the wide flange column at K-11? **A: W12x50**
4. What is the size of the wide flange column at Y.8-6 **A: W10x49**
5. 260526 3.5 - IS A GROUND RING REQUIRED? IF REQUIRED DOES IT NEED TO BE INSTALLED AROUND THE PERIMETER OF THE EXISTING BUILDING ALSO? IF REQUIRED DOES THE ERICO GROUND ENHANCEMENT MATERIAL NEED TO BE USED? **A: Will address in Addendum 2**
6. 260501 1.28 B - IS A TEMPORARY FIRE ALARM NEEDED DURING CONSTRUCTION? IF REQUIRED DOES THIS INCLUDE THE EXISTING BUILDING AND NEW CONSTRUCTION? **A: Will address in Addendum 2**
7. 019113 – THE SPEC SECTION IS MISSING. IS THE ELECTRICAL CONTRACTOR TO INCLUDE A COMMISSIONING AGENT OR IS IT BY THE OWNER? **A: Will address in Addendum 2**
8. 283100 – IS THERE A SMOKE EVACUATION SYSTEM THAT NEEDS TO BE INCLUDED WITH THE FIRE ALARM SYSTEM? **A: Will address in Addendum 2**
9. 260533 1.2 K – CONFIRM THAT CONCEALED FIRE ALARM CONDUITS AND BOXES TO BE FACTORY FINISHED RED. **A: Will address in Addendum 2**
10. 260533 3.4 J – CONFIRM THAT ALL CONDUIT AND BOXES IN THEATER IS TO BE FACTORY FINISHED BLACK OR WILL THEY BE PAINTED TO MATCH THE CEILING COLOR. DOES THIS INCLUDE THE LOBBY, STORAGE AREAS, AND STAGE? **A: Will address in Addendum 2**
11. IS THERE A LIGHTING CONTROLS SPEC SECTION? (NON THEATRICAL) **A: Will address in Addendum 2**
12. IS OPEN CABLING ALLOWED IN EXPOSED CEILING AREAS FOR DIV 27 AND THEATRICAL LIGHTING CONTROLS? **A: Will address in Addendum 2**
13. In Addendum 1 CMTA responded to the MC question (Item 01) asking for an alternate for MC cable in walls and above ceiling. The specs still include a number of conflicting requirements in 260519 2.1 starting with sub section O. Please clarify the following on the use of MC Cable:
    a. What is to be included in the base bid? **A: Will address in Addendum 2**
    b. Is MC/AC cable not permitted for any use? **A: Will address in Addendum 2**
    c. Is it permitted for light fixture whips? **A: Will address in Addendum 2**
    d. Can it be fished into existing framed walls? **A: Will address in Addendum 2**

e. Can it be used in the Type F walls with shallow framing that will not allow for the installation of conduit? **A: Will address in Addendum 2**

14. REFERENCE SHEET E100. PLEASE CONFIRM THAT THE LIGHT POLE AT THE WALKWAY BETWEEN THE PK-6 BUILDING AND THE PERFORMING ARTS CENTER IS TO BE INCLUDED IN THE BASE BID. ARE ANY OF THE OTHER POLES SHOWN ON E100 IN BASE BID? **A: Will address in Addendum 2**
15. ON 1.C-1.2 NOTE 8 – IS THIS PART OF THIS PACKAGE OR THE NEW ELEMENTARY SCHOOL PACKAGE? IF PART OF THIS PACKAGE IS THERE INFORMATION ON IF THESE LINES ARE TO BE SPLICED OR COMPLETELY REPLACED AND WHERE THEY GO TO. **A: Will address in Addendum 2**
16. WHAT IS THE CORRECT LOCATION FOR THE UTILITY TRANSFORMER FOR THE BASE BID AND DOES IT CHANGE FOR ALTERNATE 1? SHEET 1.C-20 NOTE 18 SHOWS IT AT A DIFFERENT LOCATION THAN SHEET E100 **A: Will address in Addendum 2**
17. ALTERNATE 7 – IS THE ELECTRIC FOR THE STANDS PART OF THE BASE BID OR ALTERNATE? **A: Will address in Addendum 2**
18. ALTERNATE 10 – ELECTRICAL NOTES REFER TO SHEET AL101 FOR ADDITIONAL SCOPE. AL101 IS NOT ON THE DRAWING INDEX. PLEASE PROVIDE. **A: Will address in Addendum 2**
19. Is there an enlarged restroom plan for the Second floor gang bathrooms? I can't seem to find it. **A: Detail 1 – Enlarged Large Restrooms First Floor, Sheet A601 also apply to Restroom 223 and 224.**
20. Acoustical ceiling type ACT#1- specifies Armstrong Fine Fissures high NRC #1719 with 15/16" grid. Fine Fissured #1719 is for 9/16" grid. Do you mean Armstrong #1717 Fine Fissured High NRC which is made for 15/16" grid? **A: See updated Acoustical Panel Ceiling specification in Addendum 2. Numbers are corrected. ACT-1 will be for general use and have a square edge and 15/16" grid. ACT-2 will be for the auditorium and have a tegular edge, colored panels and grid, and 15/16" grid.**
21. Acoustical ceiling type ACT#2 clouds in the auditorium specifies Ceramaguard fine fissured. This ceiling tile has an NRC of .55 & is used mainly at clean room areas or restrooms, not in an auditorium. Is this correct? **A: See updated Acoustical Panel Ceiling specification in Addendum 2. Ceramaguard will be for use in restrooms**
22. What is your intent on the lobby wall as shown on detail 4/A401 & elevation 5/A603. Drawing 4/A401 shows wall type Q4 offsetting to make the vertical joints, but does not show an offset dimension. Elevation 5/A603 shows ½" joints both vertically & horizontally … like a ½" fry reveal. Not very clear on what you want. To offset the wall partition vertically… how do you provide a continuous ½"horizontal joint or are all the joints to be ½" fry reveals with no offset? **A: Refer to detail 9 on sheet A701 for how the reveals are handled. The idea is to create a recess that the acoustical panel set in such that the face of the panel is flush with the face of the adjacent drywall. The reveals divide the drywall into panels.**
23. More information needed at the raised platform seating shown on drawing S402. Cross-brace strapping is shown, but not the locations of where the cross-brace strapping is needed. Does the low wall P3 surrounding this area need to be structural too, plus the framing of the steps going up to the platform area. **A: Clarification will be provided in Addendum 2.**
24. Wall type D3 is specified at the chase wall at Upper level corridor #203, but is not specified on the wall types on drawing G003. What is wall type D3 or is this wall type D2? **A: Wall type D3 is the same as D2 except without the layer of 5/8" GWB on the unfinished side.**
25. Product List on Drawing ID001 does not coincide with Material Legend on Drawing ID101 or Specs. Please clarify the materials intended, with dimensional characteristics (sizes). (Ceramic Wall Tile, Porcelain Floor Tile, Vinyl Tile, etc.) **A: Most material dimensions are listed in the respective specification sections.**

26. What does B-3 Base "SELF-COVE RESILIENT" mean? Is this Integral Flash Cove Base? **A: For resilient base, this refers to normal cove base. Disregard that term for wood base.**
27. Is Stair 129 the only Stair intended to receive Resilient Stair Treads? **A: Yes**
28. Per attached Screenshots (3), the Floor Finishes, if any are intended, are unknown. Please clarify the areas circled in Red, what the floor finishes are to be. **A: Screen shots not received, but refer to update sheets ID001, ID101, and ID201 in Addendum 2.**
29. Please clarify which Rooms/Doors are intended to receive Marble/Stone Thresholds. **A: Only at doors into restrooms with porcelain tile floors.**
30. Per attached Screenshot, (assuming "C-1" indicates "CT-1") the sizes scale to be 6" x 6" Tile. Daltile Portfolio is not made in this size. Please Clarify. **A: See Specification Section 093013, 2.3.**
31. What is the Pattern on Walls where CT-1 and CT-2 are noted? **A: To be determined.**
32. In Screenshot "LIN-1", where is LIN-1 intended? On Wall(s)? **A: Screen shot not received. LIN-1 is field color of linoleum flooring. Not on walls.**
33. Which Wall Base is intended in Corridors 132 and 227? **A: Base is existing structural glazed tile.**
34. Is Wall Base intended in any other Rooms where it is not noted as such on Finish Plans? **A: See updated Sheets ID001, ID101, and ID 201 in Addendum 2.**
35. Are all Carpets intended to have Cushion Backing or only Carpets 3 and 5 ("High Traffic") **A: Follow description in Specification Section 096813, 2.8.A.**
36. Is Rubber Landing Tile acceptable on Stair Landings to Match Resilient Tread Hammered Finish—rather than Sheet Goods to Match Stair Tread Hammered Finish? **A: Yes**
37. At what locations are the specified Stair Nosings to be used? (Carpeted Stairs? Anywhere else?) **A: At all carpeted stairs and stepped aisles in the auditorium and balcony.**
38. Wall Base "B-1" is listed in Specs to be Resilient, but is described as Porcelain Base on Drawing Sheet ID001 (Material List). Please clarify. **A: Go by the Drawings.**
39. Are Wall Tiles CT-1 and CT-2 intended to be of equal sizes? **A: Yes**
40. If Alternate #2 is Accepted, is Sheet Note #4 on Drawings ID101 & ID102 to be disregarded? **A: The vinyl tile in Note #4 will still be needed where unit ventilators are removed.**
41. In Alternate #6, what would be the Floor Finish and Wall Base Finish in Room 207? **A: Carpet CPT-1 and base B-3.**
42. In Alternate #6, is Wall Base to be included in Room 206? If so, which Wall Base? **A: Base B-3**
43. I am writing to verify the duct construction in the specifications. I see where the round and oval closely follow SMACNA to 10". Will the rectangular be constructed at 4", 6" or 10". I see on RTU 1 and 2 that there is not a high side and low side, so can you clarify the rectangular construction on those systems. **A: The rectangular ductwork will be constructed at 4". All ductwork associated with RTU-1 and 2 will be low velocity ductwork.**

End of Addendum 2 RFI Log

DOCUMENT 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT) – Addendum 2

1.1 BID INFORMATION

A. Bidder: _____.

B. Project Name: Waynesville Performing Arts Center

C. Project Location: 625 Dayton Road, Waynesville, OH 45068.

D. Owner: Wayne Local School District

E. Architect: LWC Incorporated, 434 East 1st Street, Dayton, OH 45402

F. Architect Project Number: 18620.00

1.2 CERTIFICATIONS AND BASE BID

A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by LWC Incorporated and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:

1. _____ Dollars ($_____).
2. The above amount may be modified by amounts indicated by the Bidder on the attached Document 004322 "Unit Prices Form" and Document 004323 "Alternates Form."
3. ***The Base Bid amount above shall be based on the use of Basis-of-Design Irwin Seating for Section 126100 – Fixed Audience Seating and Section 126600 – Telescoping Stands***

1.3 BREAK OUT FOR AUDITORIUM SEATING

A. For audience seating listed from other acceptable manufacturers in Section 126100 – Fixed Audience Seating, submit the add or deduct to provide product from that manufacturer.

1. Add/Deduct _____ Dollars ($_____).

2. Manufacturer:_____

B. For telescoping stands listed from other acceptable manufacturers in Section 126600 – Telescoping Stands, submit the add or deduct to provide product from that manufacturer.

1. Telescoping Stands
Add/Deduct _____ Dollars ($_____).

2. Alternate 7 Seats
Add/Deduct _____ Dollars ($_____).

3. Manufacturer:_____

1.4 BID GUARANTEE

A. The undersigned Bidder agrees to execute a contract for this Work in the above amount and to furnish surety as specified within 10 days after a written Notice of Award, if offered within 60 days after receipt of bids, and on failure to do so agrees to forfeit to Owner the attached cash, cashier's check, certified check, U.S. money order, or bid bond, as liquidated damages for such failure, in the following amount constituting five percent (5%) of the Base Bid amount above:

1. _____ Dollars ($_____).

B. In the event Owner does not offer Notice of Award within the time limits stated above, Owner will return to the undersigned the cash, cashier's check, certified check, U.S. money order, or bid bond.

1.5 ACKNOWLEDGEMENT OF ADDENDA

A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated _____.
2. Addendum No. 2, dated _____.
3. Addendum No. 3, dated _____.
4. Addendum No. 4, dated _____.

1.6 BID SUPPLEMENTS

A. The following supplements are a part of this Bid Form and are attached hereto.

1. Bid Form Supplement - Alternates.
2. Bid Form Supplement - Unit Prices.
3. Bid Form Supplement - Bid Bond Form (AIA Document A310-2010).

1.7 CONTRACTOR'S LICENSE

A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in Ohio, and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

1.8 SUBMISSION OF BID

A. Respectfully submitted this ____ day of _____, <**Insert year**>.

B. Submitted By:_____(Name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

F. Witnessed By:_____(Handwritten signature).

G. Attest:_____(Handwritten signature).

H. By:_____(Type or print name).

I. Title:_____(Corporate Secretary or Assistant Secretary).

J. Street Address:_____.

K. City, State, Zip:_____.

L. Phone:_____.

M. License No.:_____.

N. Federal ID No.:_____(Affix Corporate Seal Here).

END OF DOCUMENT 004113

DOCUMENT 004322 - UNIT PRICES FORM – Addendum 2

1.1 BID INFORMATION

A. Bidder: _____.

B. Prime Contract: General Construction.

C. Project Name: Waynesville Performing Arts Center.

D. Project Location: 625 Dayton Road, Waynesville, OH 45068.

E. Owner: Wayne Local School District.

F. Architect: LWC Incorporated.

G. Architect Project Number: 18620.00.

1.2 BID FORM SUPPLEMENT

A. This form is required to be attached to the Bid Form.

B. The undersigned Bidder proposes the amounts below be added to or deducted from the Contract Sum on performance and measurement of the individual items of Work and for adjustment of the quantity given in the Unit-Price Allowance for the actual measurement of individual items of the Work.

C. If the unit price does not affect the Work of this Contract, the Bidder shall indicate "NOT APPLICABLE."

1.3 UNIT PRICES

A. Unit-Price No. 1: Removal of unsatisfactory soil and replacement with satisfactory soil material.

1. _____ dollars ($_____) per unit.

B. Unit-Price No. 2: Staining of brick per Section 042510.

1. _____ dollars ($_____) per unit.

C. Unit-Price No. 3: Removal of unsatisfactory soil and replacement with lean concrete.

1. _____ dollars ($_____) per unit.

1.4 SUBMISSION OF BID SUPPLEMENT

A. Respectfully submitted this ____ day of _____, <**Insert year**>.

B. Submitted By:_____(Insert name of bidding firm or corporation).

C. Authorized Signature:_____(Handwritten signature).

D. Signed By:_____(Type or print name).

E. Title:_____(Owner/Partner/President/Vice President).

END OF DOCUMENT 004322

SECTION 012200 - UNIT PRICES – Addendum 2

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 012100 "Allowances" for procedures for using unit prices to adjust quantity allowances.
2. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
3. Section 014000 "Quality Requirements" for field testing by an independent testing agency.

1.3 DEFINITIONS

A. Unit price is an amount incorporated into the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the Part 3 "Schedule of Unit Prices" Article contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: Removal of unsatisfactory soil and replacement with satisfactory soil material.

1. Description: Unsatisfactory soil excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required, in accordance with Section 312000 "Earth Moving."
2. Unit of Measurement: Cubic yard of soil excavated, based on in-place surveys of volume before and after removal.

B. Unit Price No. 2 – Staining of brick:

1. Description: Staining of brick in accordance with Section 042510 "Unit Masonry Staining."
2. Unit of Measurement: Square foot.

C. Unit Price No. 3 – Removal of unsatisfactory soil and replacement with lean concrete.

1. Description: Unsatisfactory soil excavation and disposal off-site and replacement with satisfactory fill material or engineered fill from off-site, as required, in accordance with Section 312000 "Earth Moving."
2. Unit of Measurement: Cubic yard of soil excavated, based on in-place surveys of volume before and after removal.

END OF SECTION 012200

SECTION 095113 - ACOUSTICAL PANEL CEILINGS – Addendum 1

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes acoustical panels and exposed suspension systems for interior ceilings.

B. Products furnished, but not installed under this Section, include anchors, clips, and other ceiling attachment devices to be cast in concrete.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified, 6 inches in size.

C. Samples for Initial Selection: For components with factory-applied finishes.

D. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of sizes indicated below:

1. Acoustical Panels: Set of 6-inch-square Samples of each type, color, pattern, and texture.
2. Clips: Full-size hold-down and impact clips.

E. Delegated-Design Submittal: For seismic restraints for ceiling systems.

1. Include design calculations for seismic restraints including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Ceiling suspension-system members.
2. Structural members to which suspension systems will be attached.
3. Method of attaching hangers to building structure.

a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.

4. Carrying channels or other supplemental support for hanger-wire attachment where conditions do not permit installation of hanger wires at required spacing.
5. Size and location of initial access modules for acoustical panels.
6. Items penetrating finished ceiling and ceiling-mounted items including the following:

a. Lighting fixtures.
b. Diffusers.
c. Grilles.
d. Speakers.
e. Sprinklers.
f. Access panels.
g. Perimeter moldings.

7. Minimum Drawing Scale: 1/8 inch = 1 foot.

B. Qualification Data: For testing agency.

C. Product Test Reports: For each acoustical panel ceiling, for tests performed by a qualified testing agency.

D. Evaluation Reports: For each acoustical panel ceiling suspension system and anchor and fastener type, from ICC-ES.

E. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials, from the same product run, that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Units: Full-size panels equal to 2 percent of quantity installed.
2. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

1.8 QUALITY ASSURANCE

A. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Build mockup of typical ceiling area as shown on Drawings.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

B. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension systems through one source from a single manufacturer.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical panels, suspension-system components, and accessories to Project site and store unopened packages in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.

1.10 FIELD CONDITIONS

A. Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weathertight, wet-work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical panel ceiling installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of acoustical ceiling panel and its supporting suspension system from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design seismic restraints for ceiling systems.

B. Seismic Performance: Suspended ceilings shall withstand the effects of earthquake motions indicated on Drawings.

C. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Class A according to ASTM E1264.
2. Smoke-Developed Index: 450 or less.

D. Fire-Resistance Ratings: Comply with ASTM E119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL or from the listings of another qualified testing agency.

2.3 ACOUSTICAL PANELS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Armstrong World Industries, Inc.
2. CertainTeed Corporation.
3. USG Corporation.

B. Acoustical Panel Standard: Provide manufacturer's standard panels according to ASTM E1264 and designated by type, form, pattern, acoustical rating, and light reflectance unless otherwise indicated.

C. Basis of Design Product: Subject to compliance with requirements, provide products by one of the following:

1. ACT-1: Square Lay-in, 15/16" grid, 2’ x 2’ x 3/4", .70 NRC (For general use)
- **a. Armstrong, Fine Fissured School Zone, High Acoustics, #1810 (Basis of Design)**
- **b. USG, Radar ClimaPlus High NRC**
- **c. Certainteed, HNRC**

2. ACT-2: Tegular Lay-in, 15/16” grid, 2’ x 2’ x ¾”, .70 NRC with colored panels and grid. Color selected from manufacturer’s standard range. (For use in auditorium)
- **a. Armstrong, Fine Fissured School Zone, High Acoustics, #1717 (Basis of Design)**
- **b. USG, Radar ClamaPlus High NRC**
- **c. Certainteed, HNRC**

3. ACT-3: Square Lay-in 15/16" grid, 2’ x 2’ x 5/8" (For use in restrooms 137, 138, 22, 223, 224)
- **a. Armstrong, Ceramaguard, Unperforated, #607 (Basis of Design)**
- **b. USG, Clean Room – ClimaPlus**
- **c. Certainteed Vinyl Shield A**

2.4 METAL SUSPENSION SYSTEM

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Armstrong World Industries, Inc.
2. CertainTeed Corporation.
3. USG Corporation.

B. Metal Suspension-System Standard: Provide manufacturer's standard, direct-hung, metal suspension system and accessories according to ASTM C635/C635M and designated by type, structural classification, and finish indicated.

1. High-Humidity Finish: Where indicated, provide coating tested and classified for "severe environment performance" according to ASTM C635/C635M.

    a. Prelude Plus XL Fireguard (Basis of Design)

C. Wide-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized, G30 coating designation; with prefinished 15/16-inch-wide metal caps on flanges.

1. Structural Classification: Heavy-duty system.
2. End Condition of Cross Runners: Override (stepped) or butt-edge type.
3. Face Design: Flat, flush.

4. Cap Material: Cold-rolled steel or aluminum.
5. Cap Finish: Painted white.

2.5 ACCESSORIES

A. Attachment Devices: Size for five times the design load indicated in ASTM C635/C635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.

1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing according to ASTM E488/E488M or ASTM E1512 as applicable, conducted by a qualified testing and inspecting agency.

    a. Type: Postinstalled expansion anchors.
    b. Corrosion Protection: Carbon-steel components zinc plated according to ASTM B633, Class SC 1 (mild) service condition.
    c. Corrosion Protection: Stainless-steel components complying with ASTM F593 and ASTM F594, Group 1 Alloy 304 or 316.
    d. Corrosion Protection: Components fabricated from nickel-copper-alloy rods complying with ASTM B164 for UNS No. N04400 alloy.

2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E1190, conducted by a qualified testing and inspecting agency.

B. Wire Hangers, Braces, and Ties: Provide wires as follows:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A641/A641M, Class 1 zinc coating, soft temper.
2. Size: Wire diameter sufficient for its stress at three times hanger design load (ASTM C635/C635M, Table 1, "Direct Hung") will be less than yield stress of wire, but not less than 0.135-inch- diameter wire.

C. Hanger Rods: Mild steel, zinc coated or protected with rust-inhibitive paint.

D. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

E. Angle Hangers: Angles with legs not less than 7/8 inch wide; formed with 0.04-inch-thick, galvanized-steel sheet complying with ASTM A653/A653M, G90 coating designation; with bolted connections and 5/16-inch-diameter bolts.

2.6 METAL EDGE MOLDINGS AND TRIM

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Armstrong World Industries, Inc.
2. CertainTeed Corporation.
3. USG Corporation.

B. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

1. Edge moldings shall fit acoustical panel edge details and suspension systems indicated and match width and configuration of exposed runners unless otherwise indicated.
2. For lay-in panels with reveal edge details, provide stepped edge molding that forms reveal of same depth and width as that formed between edge of panel and flange at exposed suspension member.
3. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.

B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders unless otherwise indicated, and comply with layout shown on reflected ceiling plans.

B. Layout openings for penetrations centered on the penetrating items.

3.3 INSTALLATION

A. Install acoustical panel ceilings according to ASTM C636/C636M and manufacturer's written instructions.

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.

4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly to structure or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
8. Do not attach hangers to steel deck tabs.
9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
10. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards.

C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers, without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

D. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.

1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
2. Screw attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends. Miter corners accurately and connect securely.
3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide precise fit.

1. Arrange directionally patterned acoustical panels as follows:

    a. As indicated on reflected ceiling plans.
    b. Install panels in a basket-weave pattern.

2. For square-edged panels, install panels with edges fully hidden from view by flanges of suspension-system runners and moldings.
3. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
4. For reveal-edged panels on suspension-system members with box-shaped flanges, install panels with reveal surfaces in firm contact with suspension-system surfaces and panel faces flush with bottom face of runners.
5. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.

6. Install hold-down, impact, and seismic clips in areas indicated; space according to panel manufacturer's written instructions unless otherwise indicated.

    a. Hold-Down Clips: Space 24 inches o.c. on all cross runners.

7. Protect lighting fixtures and air ducts according to requirements indicated for fire-resistance-rated assembly.

3.4 ERECTION TOLERANCES

A. Suspended Ceilings: Install main and cross runners level to a tolerance of 1/8 inch in 12 feet, non-cumulative.

B. Moldings and Trim: Install moldings and trim to substrate and level with ceiling suspension system to a tolerance of 1/8 inch in 12 feet, non-cumulative.

3.5 CLEANING

A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage.

B. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION 095113

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FINISH MATERIAL SCHEDULE

CODE	MATERIAL	MANUFACTURER	DESCRIPTION / PATTERN	COLOR / MATERIAL	REMARKS
ACT-1	ACOUSTICAL CEILING TILE	SEE SPECS	TBD	TBD	
ACT-2	ACOUSTICAL CEILING TILE	SEE SPECS	TBD	TBD	GRID TO MATCH
ACT-3	ACOUSTICAL CEILING TILE	SEE SPECS	TBD	TBD	
AP-1	LOBBY ACOUSTICAL PANEL	SEE SPECS	TBD	TBD	
AP-2	AUDITORIUM ACOUSTICAL PANEL	SEE SPECS	TBD	TBD	
B-1	BASE, PORCELAIN COVE TILE	DALTILE, SEE SPECS	PORTFOLIO	PF06 IRON GREY	
B-2	BASE, WOOD	TBD	TBD	TBD	ALL WOOD GETS STAIN & TRANSPARENT FINISH
B-3	BASE, RESILIENT	SEE SPECS	TBD	TBD	
B-4	BASE, VENT COVE	SEE SPECS	-	TBD	
B-5	STAINLESS STEEL BASE 0" HIGH	SEE SPECS	TBD	-	
CG-1	CORNER GUARD	SEE SPECS	TBD	TBD	ALL OUTSIDE DRYWALL CORNERS
CPT-1	CARPET TILE OFFICE	INTERFACE	SEE SPECS	TBD	
CPT-2	CLASSROOMS	INTERFACE	SEE SPECS	TBD	SEE ALTERNATE
CPT-3	CARPET TILE LOBBY & CORRIDOR	INTERFACE	ICE BREAKER 1473002500	106971 CARNELIAN	
CPT-4	CLASSROOM ACCENT COLOR	INTERFACE	SEE SPECS	TBD	SEE ALTERNATE
CPT-5	CARPET TILE LOBBY & CORRIDOR	INTERFACE	ICE BREAKER 1473002500	105710 CONCRETE	
CT-1	PORCELAIN TILE	DALTILE, SEE SPECS	PORTFOLIO	PF06 IRON GREY	
CT-2	PORCELAIN TILE ACCENT	DALTILE, SEE SPECS	PORTFOLIO	PF05 ASH GRAY	APPROX. 10% PATTERN FORTHCOMING
G-1	GROUT	MAPEI, SEE SPECS		09 GRAY	
LIN-1	LINOLEUM	FORBO, SEE SPECS	MARMOLEUM MARBLED		
LIN-2	LINOLEUM ACCENT #1	FORBO, SEE SPECS	MARMOLEUM MARBLED		
LIN-3	LINOLEUM ACCENT #2	FORBO, SEE SPECS	MARMOLEUM MARBLED		
LIN-4	LINOLEUM ACCENT #3	FORBO, SEE SPECS	MARMOLEUM MARBLED		
P-1	PAINT	SHERWIN WILLIAMS, SEE SPECS	SATIN	WHITE	
P-2	PAINT	SHERWIN WILLIAMS, SEE SPECS	SATIN	TBD	
P-3	PAINT	SHERWIN WILLIAMS, SEE SPECS	SATIN	TBD	
P-4	PAINT	SHERWIN WILLIAMS, SEE SPECS	SATIN	TBD	
P-5	PAINT	SHERWIN WILLIAMS, SEE SPECS	FLAT	DARK GRAY	
P-6	PAINT	SHERWIN WILLIAMS, SEE SPECS	DRYFALL	DARK GRAY	
P-7	PAINT	SHERWIN WILLIAMS, SEE SPECS	DRYFALL	TBD	
P-8	PAINT	SHERWIN WILLIAMS, SEE SPECS	SEMIGLOSS	WHITE	
P-9	PAINT	SHERWIN WILLIAMS, SEE SPECS	DRYFALL	TBD	
P-10	PAINT	SHERWIN WILLIAMS, SEE SPECS	DRYFALL	TBD	
P-11	PAINT	SHERWIN WILLIAMS, SEE SPECS	DRYFALL	TBD	
P-12	PAINT	SHERWIN WILLIAMS, SEE SPECS	FLAT	TBD	
P-13	ACCENT COLOR	SHERWIN WILLIAMS, SEE SPECS	SATIN	TBD	
PT-1	PORCELAIN TILE	DALTILE, SEE SPECS	PORTFOLIO	PF06 IRON GREY	
SC-1	POLISHED CONCRETE	SEE SPECS	TBD	TBD	
SC-2	SEALED CONCRETE	SEE SPECS	TBD	TBD	
SS-1	SOLID SURFACE	SEE SPECS	TBD	TBD	
TER-1	TERRAZZO	SEE SPECS	-	WHITE	
TER-2	TERRAZZO	SEE SPECS	-	LIGHT GRAY	
TER-3	TERRAZZO	SEE SPECS	-	MEDIUM GRAY	
TS-1	TRANSITION	SEE SPECS	TBD	TBD	
VT-1	VINYL TILE	SEE SPECS	TBD	TBD	
W-1	HARD WOOD FLOORING	SEE SPECS	TBD	NATURAL MAPLE	
W-2	PAINTED PLYWOOD	SEE SPECS	-	BLACK	
WO-1	WALK OFF MAT	SEE SPECS	TBD	TBD	

SHEET NOTES:

GENERAL NOTES:

A. PAINTING OR FINISHING OF MISCELLANEOUS ITEMS SHALL INCLUDE AND NOT BE LIMITED TO THE FOLLOWING:
   a. HOLLO METAL DOORS, DOOR FRAMES, AND BORROWED LITE FRAMES, RAILING: SEMIGLOSS.
   b. EXPOSED STEEL STAIR COMPONENTS.
   c. INTERIOR STEEL LINTELS SHALL BE PAINTED THE COLOR OF THE WALL. EXTERIOR LINTELS SHALL BE PAINTED CODE P-7 TO MATCH BRICK.
   d. SEE DIVISIONS15 AND 16 OF THE SPECIFICATIONS AND FIRE PROTECTION FOR PAINTING OF MECHANICAL AND ELECTRICAL ITEMS. ALL EXPOSED DUCTWORK, PIPING, CONDUIT, HANGERS, ETC. SHALL BE PAINTED TO MATCH ADJACENT WALL OR CEILING COLOR UNLESS OTHERWISE NOTED.
B. WOOD DOORS ARE TO BE FACTORY FINISHED.
C. SEE INTERIOR FINISH FLOOR PLANS FOR EXTENT OF WALL AND LOORING FINISHES.
D. SOFFIT OR BULKHEAD PAINT TO CONTINUE FROM FACE SIDE(S) TO UNDERSIDE, UNLESS OTHERWISE NOTED.
E. ALL BULKHEAD AND SOFFIT PAINT TO BE EGGSHELL FINISH.
F. TEATHER FLOORING MATERIALS WHEN TWO TYPES OF MATERIALS JOINT.
G. PAINT GRILLES TO MATCH ADJACENT WALL SURFACE.
H. ALL BASE TO BE FINISH CODE "B-3" UNLESS OTHERWISE NOTED.
I. ALL ACOUSTICAL CEILINGS TO BE FINISH CODE "ACT-1" UNLESS OTHERWISE NOTED.
J. ALL WALLS TO BE PAINT FINISH CODE "P-1" UNLESS OTHERWISE NOTED.
K. ALL WOOD TO RECEIVE STAIN AND TRANSPARENT FINISH.

KEY PLAN:

No.	Revisions / Submissions	Date
2	ADDENDUM#2	3/22/2021

LWC INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON RD.
WAYNESVILLE, OH 45068

INTERIOR DESIGN

STATE OF OHIO — JOHN CHARLES FABELO — 71170 — REGISTERED ARCHITECT
JOHN C. FABELO
LICENSE #ARC.9711799, EXPIRES: 12/31/21

Comm. No.	Date
18620.00	2021/03/01
Drawn: PA	Drawing No.: ID001
Checked: EGS	

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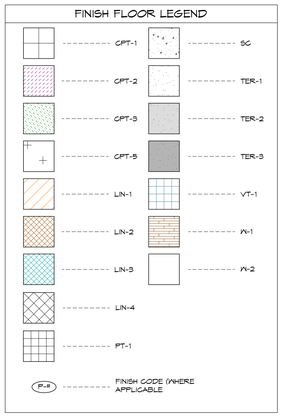
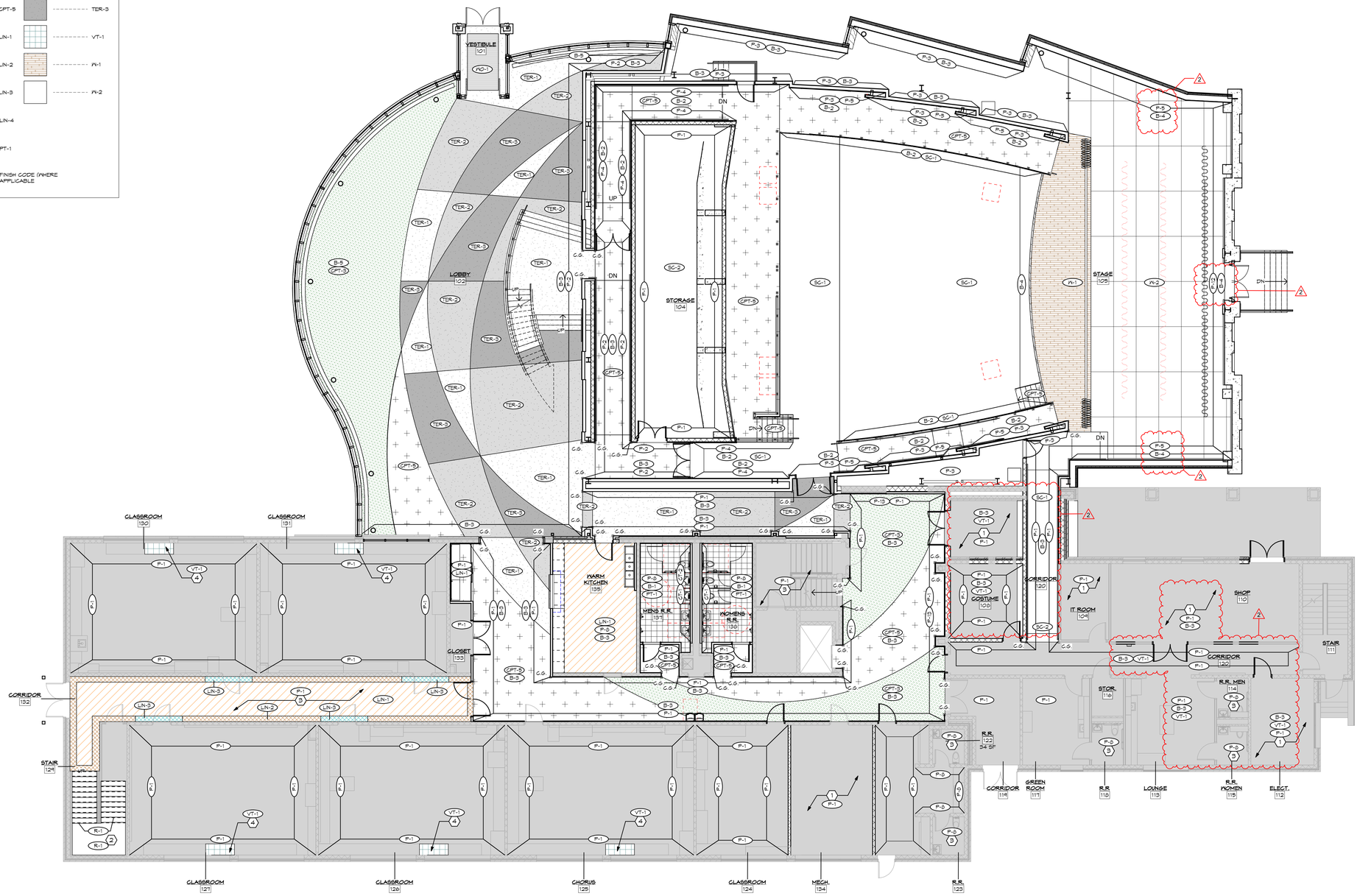




1 FIRST FLOOR FINISH PLAN
SCALE: 1/8" = 1'-0"

SHEET NOTES:

1. PAINT WALLS AND EXPOSED STRUCTURE.
2. NEW RUBBER TREADS, RISERS, AND LANDINGS.
3. PAINT ALL WALLS ABOVE +/- 4'-8" (V.I.F.) HIGH TILE WAINSCOT.
4. PATCH FLOOR COVERING WHERE UNIT VENTILATOR IS REMOVED WITH NEW VINYL TILE TO MATCH EXISTING.

GENERAL NOTES:

A. PAINTING OR FINISHING OF MISCELLANEOUS ITEMS SHALL INCLUDE AND NOT BE LIMITED TO THE FOLLOWING:
   a. HOLLO METAL DOORS, DOOR FRAMES, AND BORROWED LITE FRAMES, RAILING: SEMI-GLOSS.
   b. EXPOSED STEEL STAIR COMPONENTS.
   c. INTERIOR STEEL LINTELS SHALL BE PAINTED THE COLOR OF THE WALL. EXTERIOR LINTELS SHALL BE PAINTED CODE P-7 TO MATCH BRICK.
   d. SEE DIVISIONS15 AND 16 OF THE SPECIFICATIONS AND FIRE PROTECTION FOR PAINTING OF MECHANICAL AND ELECTRICAL ITEMS. ALL EXPOSED DUCTWORK, PIPING, CONDUIT, HANGERS, ETC. SHALL BE PAINTED TO MATCH ADJACENT WALL OR CEILING COLOR UNLESS OTHERWISE NOTED.

B. WOOD DOORS ARE TO BE FACTORY FINISHED.
C. SEE INTERIOR FINISH FLOOR PLANS FOR EXTENT OF WALL AND LOORING FINISHES.
D. SOFFIT OR BULKHEAD PAINT TO CONTINUE FROM FACE SIDE(S) TO UNDERSIDE, UNLESS OTHERWISE NOTED.
E. ALL BULKHEAD AND SOFFIT PAINT TO BE EGGSHELL FINISH.
F. TEATHER: FLOORING MATERIALS WHEN TWO TYPES OF MATERIALS JOINT.
G. PAINT GRILLES TO MATCH ADJACENT WALL SURFACE.
H. ALL BASE TO BE FINISH CODE "B-3" UNLESS OTHERWISE NOTED.
I. ALL ACOUSTICAL CEILINGS TO BE FINISH CODE "ACT-1" UNLESS OTHERWISE NOTED.
J. ALL WALLS TO BE PAINT FINISH CODE "P-1" UNLESS OTHERWISE NOTED.
K. ALL WOOD TO RECEIVE STAIN AND TRANSPARENT FINISH.

KEY PLAN:

No.	Revisions / Submissions	Date
1	ADDENDUM #1	3/15/2021
2	ADDENDUM#2	3/22/2021

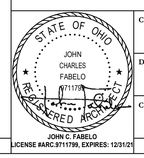
LWC INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON RD.
WAYNESVILLE, OH 45068

FIRST FLOOR FINISH PLAN



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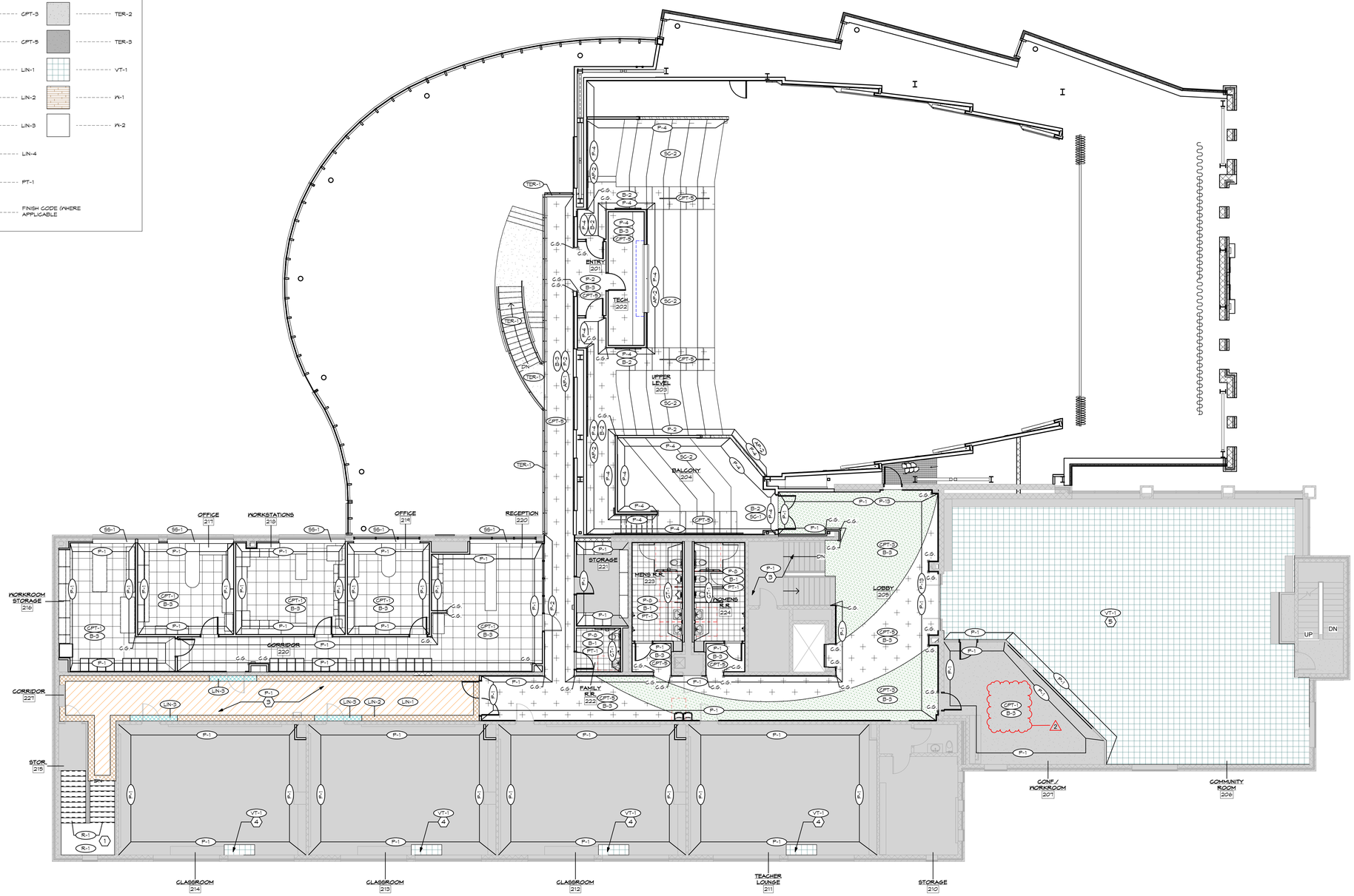
FINISH FLOOR LEGEND

CPT-1	SG
CPT-2	TER-1
CPT-3	TER-2
CPT-5	TER-3
LIN-1	VT-1
LIN-2	W-1
LIN-3	W-2
LIN-4	
PT-1	
P-#	FINISH CODE (WHERE APPLICABLE



1 SECOND FLOOR FINISH PLAN
SCALE: 1/8" = 1'-0"

SHEET NOTES:

1. PAINT WALLS AND EXPOSED STRUCTURE.
2. NEW RUBBER TREADS, RISERS, AND LANDINGS.
3. PAINT ALL WALLS ABOVE +/- 4'-8" (V.I.F.) HIGH TILE WAINSCOT.
4. PATCH FLOOR COVERING WHERE UNIT VENTILATOR IS REMOVED WITH NEW VINYL TILE TO MATCH EXISTING.
5. NEW VINYL TILE TO MATCH EXISTING AS AN ALTERNATE FOR LIBRARY.

GENERAL NOTES:

A. PAINTING OR FINISHING OF MISCELLANEOUS ITEMS SHALL INCLUDE AND NOT BE LIMITED TO THE FOLLOWING:
   a. HOLLO METAL DOORS, DOOR FRAMES, AND BORROWED LITE FRAMES, RAILING. SEMI-GLOSS.
   b. EXPOSED STEEL STAIR COMPONENTS.
   c. INTERIOR STEEL LINTELS SHALL BE PAINTED THE COLOR OF THE WALL. EXTERIOR LINTELS SHALL BE PAINTED CODE P-? TO MATCH BRICK.
   d. SEE DIVISIONS15 AND 16 OF THE SPECIFICATIONS AND FIRE PROTECTION FOR PAINTING OF MECHANICAL AND ELECTRICAL ITEMS. ALL EXPOSED DUCTWORK, PIPING, CONDUIT, HANGERS, ETC. SHALL BE PAINTED TO MATCH ADJACENT WALL OR CEILING COLOR UNLESS OTHERWISE NOTED.
B. WOOD DOORS ARE TO BE FACTORY FINISHED.
C. SEE INTERIOR FINISH FLOOR PLANS FOR EXTENT OF WALL AND LOORING FINISHES.
D. SOFFIT OR BULKHEAD PAINT TO CONTINUE FROM FACE SIDE(S) TO UNDERSIDE, UNLESS OTHERWISE NOTED.
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F. FEATHER FLOORING MATERIALS WHEN TWO TYPES OF MATERIALS JOINT.
G. PAINT GRILLES TO MATCH ADJACENT WALL SURFACE.
H. ALL BASE TO BE FINISH CODE "B-3" UNLESS OTHERWISE NOTED.
I. ALL ACOUSTICAL CEILINGS TO BE FINISH CODE "ACT-1" UNLESS OTHERWISE NOTED.
J. ALL WALLS TO BE PAINT FINISH CODE "P-1" UNLESS OTHERWISE NOTED.
K. ALL WOOD TO RECEIVE STAIN AND TRANSPARENT FINISH.

KEY PLAN:

No.	Revisions / Submissions	Date
1	ADDENDUM #1	3/15/2021
2	ADDENDUM#2	3/22/2021

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712 East Main Street Richmond, IN 47374 765.966.3546

WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON RD.
WAYNESVILLE, OH 45068

SECOND FLOOR FINISH PLAN

STATE OF OHIO — JOHN CHARLES FABELO — 8711799 — REGISTERED ARCHITECT

JOHN C. FABELO
LICENSE #ARC.8711799, EXPIRES: 12/31/21

Comm. No.	Date
18620.00	2021/03/01
Drawn: PA	Drawing No.
Checked: EGS	ID102

Waynesville Performing Arts Center
Wayne Local Schools
Waynesville, Ohio

Addendum #2 – Structural items
GOP, Ltd.
March 22, 2021

Item No. 1 – Sheet S101

Provide W12 x 50 column at grid line 11/K. W10 x 49 at grid line Y.8/6.

At slab on grade with recess for wood flooring, DO NOT provide control joints. See extents of wood flooring on plan.

Add F3.5 footings (2) at column line 4.3/4.6 -A and provide 4-#5 vertical dowels and bars in cmu – full height-see plan detail 8/A506.

Provide rail edge detail 12/S104, along length of radiused ramp walls, each side of auditorium-at section 1/S104 and 10/S104.

Item No. 2 – Sheet S201

See sketch SSK-01 for clarification of cold formed stud wall extents and strap bracing at elevated, over framed tiered seating area.

Provide outrigger framing at entry to lobby-see sketch SSK-02. Also see 1/A505. Provide dur-o-wall ties on all steel columns into cmu piers.

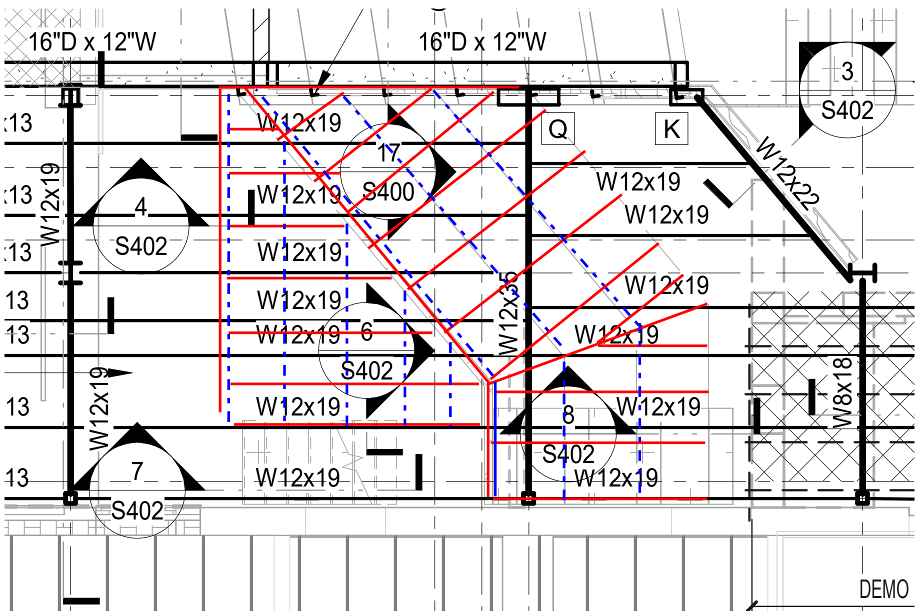
Item No. 3 – Sheets S201/S301

Provide continuous L6 x 6 x 3/8 with ¾" diameter epoxy screen anchors (3 ¼" min embedment) spaced at 24" c/c along existing wall (near and adjacent to line BB) between 8.4 to 9. Tie floor slab and roof deck to angle by welding deck to angle at 16" c/c.

Item No. 4 – Sheet 501

At door 135B, a lintel type L-3 has been provided, but this is an existing opening. Move this lintel to the upper level at the intersection of corridor A002/AF03 and 227.

End of Structural Items Addendum #2



REPRESENTS STUD WALL LINE AT 16" C/C ABOVE FLOOR -PROVIDE X STRAP AT EACH LINE

REPRESENTS STRAP BRACING LINE PERPENDICULAR TO STUD WALL LINE AT 24" C/C

PARTIAL FRAMING PLAN

N
W E
S

REFERENCE SHEET
S201

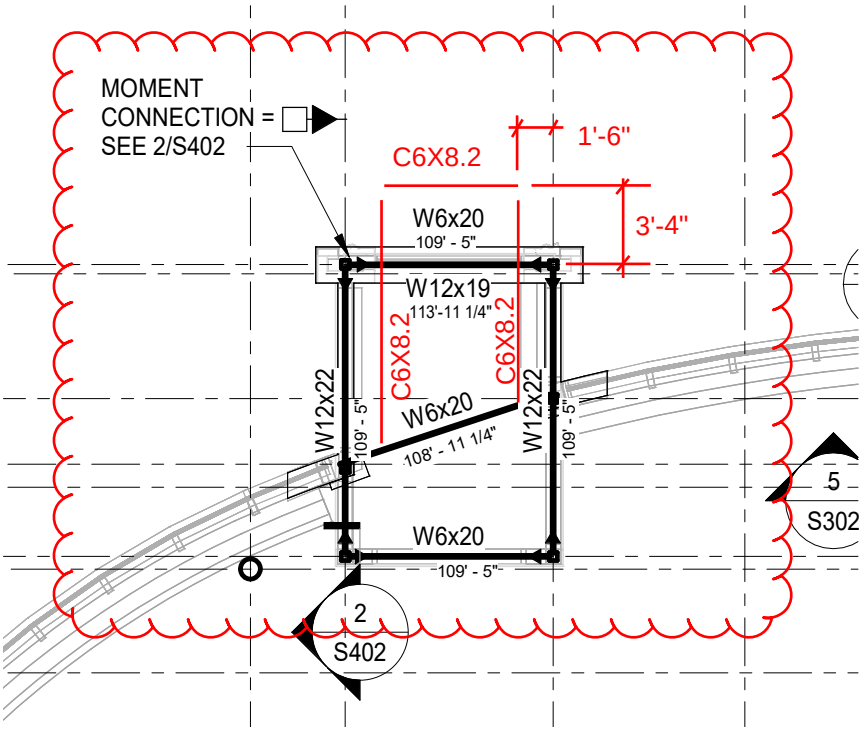
GOP Limited
Structural Engineers

644 Linn Street, Cincinnati, Ohio 45203 (513) 621-7073

WAYNESVILLE PERFORMING ARTS CENTER
WAYNE LOCAL SCHOOL DISTRICT
WAYNESVILLE, OHIO WARREN COUNTY

ADDENDUM NO. 2
3/22/21

DRAWING NUMBER
SSK-01



PARTIAL FRAMING PLAN

N
W E
S

REFERENCE SHEET
S201

GOP Limited
Structural Engineers
644 Linn Street, Cincinnati, Ohio 45203 (513) 621-7073

WAYNESVILLE PERFORMING ARTS CENTER
WAYNE LOCAL SCHOOL DISTRICT
WAYNESVILLE, OHIO WARREN COUNTY

ADDENDUM NO. 2
3/22/21

DRAWING NUMBER
SSK-02

Date: 03/22/2021
Project Name: Waynesville Performing Arts
Addendum 2

This Addendum is generally separated into sections for convenience; however, all contractors, subcontractors, material suppliers and other involved parties shall be responsible for reading the entire Addendum. Failure to list an item(s) in all affected sections of this Addendum does not relieve any party affected from performing per instructions, provided the information is set forth one time anywhere in the Addendum.

This document shall become attached to and part of the construction documents for the aforementioned project.

CLARIFICATIONS AND **MODIFICATIONS TO THE PROJECT DOCUMENTS:**

RFI's / Questions from Contractors:

ITEM 01 Question – The specs still include a number of conflicting requirements in 260519.2.1 starting with sub section o.
CMTA Response – refer to below modifications and revised specification.

ITEM 02 Question – What is to be included in the base bid?
CMTA Response – all conduit except for light fixture whips and equipment connections

ITEM 03 Question – Is MC/AC cable not permitted for any use?
CMTA Response – all conduit except for light fixture whips, fished in existing wall, and equipment connections

ITEM 04 Question – Is it permitted for light fixture whips?
CMTA Response – Yes

ITEM 05 Question – Can it be fished into existing framed walls?
CMTA Response – Yes

ITEM 06 Question – Can it be used in the Type F walls with shallow framing that will not allow for the installation of conduit?
CMTA Response – Yes

ITEM 07 Question - 260526 3.5 - is a ground ring required? If required does it need to be installed around the perimeter of the existing building also? If required does the erico ground enhancement material need to be used?

CMTA Response –No ground around the building is needed. A 3 point ground rod ring separated by 10' minimum is required. Refer to detail 5 on sheet E601.

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ITEM 08 Question - 260501 1.28 B - Is a temporary fire alarm needed during construction? If required does this include the existing building and new construction?

CMTA Response –This building will be unoccupied by school staff, so no fire alarm system is needed.

ITEM 09 Question - 019113 – The spec section is missing. Is the electrical contractor to include a commissioning agent or is it by the owner?

CMTA Response –No commission is required

ITEM 10 Question - 283100 – is there a smoke evacuation system that needs to be included with the fire alarm system?

CMTA Response –No mechanical smoke evacuation system is needed for this building. Omit all references to smoke evact.

ITEM 11 Question - 260533 1.2 K – Confirm that concealed fire alarm conduits and boxes to be factory finished red.

CMTA Response –Provide red per specifications.

ITEM 12 Question - 260533 3.4 J – Confirm that all conduit and boxes in theater is to be factory finished black or will they be painted to match the ceiling color. Does this include the lobby, storage areas, and stage?

CMTA Response –painted black conduit in all open area. Conduit in exposed areas open to public need to be black or match ceiling/color.

ITEM 13 Question - Is there a lighting controls spec section? (non theatrical)

CMTA Response –Lighting controls per drawings and specification section 26 51 13.

ITEM 14 Question - Is open cabling allowed in exposed ceiling areas for div 27 and theatrical lighting controls?

CMTA Response –Provide conduit, no open air cabling in theater.

ITEM 15 Question – 238129 3.2 C – Does this job require seismic certification?

CMTA Response – No, seismic certification is not required on this project.

ITEM 16 Question –Reference sheet E100. please confirm that the light pole at the walkway between the pk-6 building and the performing arts center is to be included in the base bid. Are any of the other poles shown on e100 in base bid?

CMTA Response: Fixture type P1 located at the sidewalk is base bid and part of this project as defined on E100. There're also (4) other P1 fixtures along the east driveway that should be listed as an alternate.

ITEM 17 Question – on 1.c-1.2 note 8 – is this part of this package or the new elementary school package? if part of this package is there information on if these lines are to be spliced or

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completely replaced and where they go to.

CMTA Response: The civil drawings are referencing underground telephone to the demolished to existing building. The phone line is going to the campus gas service, which maybe used for the meter reading.

ITEM 18 Question – What is the correct location for the utility transformer for the base bid and does it change for alternate 1? Sheet 1.c-20 note 18 shows it at a different location than sheet e100.

CMTA Response: Refer to revised electrical drawings for base bid and alternate bid utility transformer locations. The drive is still part of the alternate.

ITEM 19 Question – alternate 7 – is the electric for the stands part of the base bid or alternate?
CMTA Response: The electric for the stands needs to remain in the base bid. The alternate is just for the chairs that mount to the stands.

ITEM 20 Question - ALTERNATE 10 – Electrical notes refer to sheet al101 for additional scope. AL101 is not on the drawing index. please provide.

CMTA Response: This should reference sheet A104.

ITEM 21 Question – No schedule for the grease interceptor on drawings. Would it be provided with kitchen equipment?

CMTA Response: Refer to specification section 220100.8.3 for selection and sizing. Added grease interceptor schedule to drawing sheet P001. Grease interceptor shall be provided by plumbing contractor.

ITEM 21 Question – No information on roof drain sumps and drain bodies on drawings.

CMTA Response: Refer to specification section 220100.4 for roof drain information. Added roof drain schedule to drawing sheet P001.

SPECIFICATIONS

ITEM 01 Spec 26 05 19 – Low-voltage Electrical Power, Conductors, Cables, Splicing Devices and Connectors.

- Strike-thru (delete) 2.1, O
- Strike-thru (delete) 2.1, P
- Strike-thru (delete) 2.1, Q
- Strike-thru (delete) 2.1, R
- Strike-thru (delete) the following 2.1, S ~~All MC cable which serves patient care areas shall be type HCF, rated for healthcare use and shall have insulated ground wire and grounded sheath. HCF cable shall be NEMA WC 70 compliant, UL 4 and 1479 listed, with green exterior sheath.~~
- Add following 2.1, U, 7 “No MC cable will be allowed in the open areas exposed to

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public, catwalk, stage, etc.

ITEM 02 Spec 26 55 61 – Theatrical Stage Lighting
- Add Lehigh as an approved equal.

ITEM 03 Spec 28 31 00 – Fire Alarm System
- Add the following as approved equals:
  - Notifier
  - EST
  - Simplex
  - Siemens

ITEM 04 Spec 23 81 26 – Split-System Air-Conditioners
- Section 1.9 Warranty – Reduced labor warranty from 5 years to 1 year.

ITEM 05 Spec 23 81 29 – Variable-Refrigerant-Flow HVAC Systems
- Section 1.9 Warranty – Reduced labor warranty from 10 years to 1 year.

DRAWINGS

ITEM 01 Refer to drawing sheet E600:
1. Refer to attached drawings sheet E600:
   a. Refer to SCENE CONTROLS, note E. Replace note to read the following to remove the heat pump control: "AUTO OFF ALL FIXTURES WITHIN 20 MINUTES OF OCCUPANTS LEAVING."
   b. Provide unit pricing for fixture types P1, FL1, and W4E.
   c. Add the following as approved equals:
      i. Type C1, C2, C3, and C3E – added Pathway Lighting
      ii. Type L10F, L12F, L17F – Mark Lighting -SL4L and Neoray S123DR
      iii. Type L11, L12, L13, L16, L26 – Mark Lighting – SL4L and Neoray S123DR.

ITEM 02 Refer to attached drawing sheet E100:
1. Defined base bid transformer location and added alternate transformer location.
2. Added fixture type FL1 to the southeast corner on the building.

ITEM 03 Refer to attached drawing sheet E401:
1. Defined base bid transformer location and added alternate transformer location.

ITEM 04 Refer to attached drawing sheet E301:
1. Refer to (4) lights adjacent to HALLWAY 120. Labeled lights as type D6.
2. Refer to CLASSROOM 126 and CHORUS 125. Labeled fixture type F4.
3. Refer to CORRIDOR 121. Labeled fixtures types A2 and A2E.

ITEM 05 Refer to attached drawing sheet P001:
1. Added GREASE INTERCEPTOR SCHEDULE for reference.
2. Added ROOF DRAIN SCHEDULE for reference.

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ITEM 06 Refer to attached drawing sheet M601:

1. Added schedule remark to include filter rack and filter with unit FC-223.

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DIVISION 23 - MECHANICAL

SECTION 238126 - SPLIT-SYSTEM AIR-CONDITIONERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes split-system air-conditioning and heat-pump units consisting of separate evaporator-fan and compressor-condenser components.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated. Include rated capacities, operating characteristics, and furnished specialties and accessories. Include performance data in terms of capacities, outlet velocities, static pressures, sound power characteristics, motor requirements, and electrical characteristics.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

1. Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
2. Wiring Diagrams: For power, signal, and control wiring.

C. Samples for Initial Selection: For units with factory-applied color finishes.

1.4 INFORMATIONAL SUBMITTALS

A. Field quality-control reports.

B. Warranty: Sample of special warranty.

1.5 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For split-system air-conditioning units to include in emergency, operation, and maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Filters: 2 set(s) for each fan coil unit.

1.7 QUALITY ASSURANCE

A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.

B. ASHRAE Compliance:

1. Fabricate and label refrigeration system to comply with ASHRAE 15, "Safety Standard for Refrigeration Systems."
2. ASHRAE Compliance: Applicable requirements in ASHRAE 62.1, Section 4 - "Outdoor Air Quality," Section 5 - "Systems and Equipment," Section 6 - " Procedures," and Section 7 - "Construction and System Start-up."

C. ASHRAE/IES Compliance: Applicable requirements in ASHRAE/IES 90.1.

1.8 COORDINATION

A. Coordinate sizes and locations of concrete bases with actual equipment provided. Cast anchor-bolt inserts into bases. Concrete, reinforcement, and formwork are specified in Section 033000 "Cast-in-Place Concrete."

B. Coordinate sizes and locations of roof curbs, equipment supports, and roof penetrations with actual equipment provided.

1.9 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of split-system air-conditioning units that fail in materials or workmanship within specified warranty period.

1. Warranty Period:

a. For Compressor: 5 years from date of Substantial Completion.
b. For Parts: 5 years from date of Substantial Completion.
c. For Labor: 1 year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Daikin, Mitsubishi, Carrier

2.2 INDOOR UNITS (5 TONS OR LESS)

A. Fan Coil Components:

1. Chassis: Galvanized steel with flanged edges, removable panels for servicing, and insulation on back of panel.
2. Insulation: Faced, glass-fiber duct liner.
3. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and thermal-expansion valve. Comply with ARI 206/110.
4. Water Coil: Copper tube, with mechanically bonded aluminum fins spaced no closer than 0.1 inch; leak tested to 300 psig underwater; with a two-position control valve.
5. Fan: Forward-curved, double-width wheel of galvanized steel; directly connected to motor.
6. Fan Motors:

    a. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
    b. Multitapped, multispeed with internal thermal protection and permanent lubrication.
    c. Wiring Terminations: Connect motor to chassis wiring with plug connection.

7. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
8. Filters: Permanent, cleanable.
9. Condensate Drain Pans:

    a. Fabricated with one percent slope in at least two planes to collect condensate from cooling coils (including coil piping connections, coil headers, and return bends) and humidifiers, and to direct water toward drain connection.

    b. Drain Connection: Located at lowest point of pan and sized to prevent overflow. Retain first subparagraph below for galvanized-steel drain pans; delete for stainless-steel drain pans.Pan-Top Surface Coating: Asphaltic waterproofing compound.
    c. Units with stacked coils shall have an intermediate drain pan to collect condensate from top coil.

B. Wall-Mounted, Evaporator-Fan Components:

1. Cabinet: Enameled steel with removable panels on front and ends in color selected by Architect, and discharge drain pans with drain connection.

2. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and thermal-expansion valve. Comply with ARI 206/110.
3. Electric Coil: Helical, nickel-chrome, resistance-wire heating elements; with refractory ceramic support bushings, automatic-reset thermal cutout, built-in magnetic contactors, manual-reset thermal cutout, airflow proving device, and one-time fuses in terminal box for overcurrent protection.
4. Fan: Direct drive, centrifugal.
5. Fan Motors:

    a. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements specified in Section 230513 "Common Motor Requirements for HVAC Equipment."
    b. Multitapped, multispeed with internal thermal protection and permanent lubrication.
    c. Enclosure Type: Totally enclosed, fan cooled.
    d. NEMA Premium (TM) efficient motors as defined in NEMA MG 1.
    e. Controllers, Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in electrical Sections.

6. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1.
7. Condensate Drain Pans:

    a. Fabricated with one percent slope in at least two planes to collect condensate from cooling coils (including coil piping connections, coil headers, and return bends) and humidifiers, and to direct water toward drain connection.
    b. Drain Connection: Located at lowest point of pan and sized to prevent overflow. Retain first subparagraph below for galvanized-steel drain pans; delete for stainless-steel drain pans.

    c. Pan-Top Surface Coating: Asphaltic waterproofing compound.

8. Air Filtration Section:

    a. General Requirements for Air Filtration Section:

        1) Comply with NFPA 90A.
        2) Minimum MERV according to ASHRAE 52.2.
        3) Filter-Holding Frames: Arranged for flat or angular orientation, with access doors on both sides of unit. Filters shall be removable from one side or lifted out from access plenum.

    b. Disposable Panel Filters:

        1) Factory-fabricated, viscous-coated, flat-panel type.
        2) Thickness: 1 inch

2.3 OUTDOOR UNITS 5 TONS OR LESS

A. Air-Cooled, Compressor-Condenser Components:

1. Casing: Steel, finished with baked enamel in color selected by Architect, with removable panels for access to controls, weep holes for water drainage, and mounting holes in base. Provide brass service valves, fittings, and gage ports on exterior of casing.
2. Compressor: Hermetically sealed with crankcase heater and mounted on vibration isolation device. Compressor motor shall have thermal- and current-sensitive overload devices, start capacitor, relay, and contactor.

    a. Compressor Type: Scroll.
    b. Two-speed compressor motor with manual-reset high-pressure switch and automatic-reset low-pressure switch.
    c. Refrigerant: R-410A
    d. Refrigerant Coil: Copper tube, with mechanically bonded aluminum fins and liquid subcooler. Comply with ARI 206/110.

3. Heat-Pump Components: Reversing valve and low-temperature-air cutoff thermostat.
4. Fan: Aluminum-propeller type, directly connected to motor.
5. Motor: Permanently lubricated, with integral thermal-overload protection.
6. Low Ambient Kit: Permits operation down to 0 deg F.
7. Mounting Base: Polyethylene.

2.4 ACCESSORIES

A. Thermostat: Low voltage with subbase to control compressor and evaporator fan.

B. Automatic-reset timer to prevent rapid cycling of compressor.

C. Refrigerant Line Kits: Soft-annealed copper suction and liquid lines factory cleaned, dried, pressurized, and sealed; factory-insulated suction line with flared fittings at both ends.

D. Monitoring:

1. Monitor constant and variable motor loads.
2. Monitor variable-frequency-drive operation.
3. Monitor economizer cycle.
4. Monitor cooling load.
5. Monitor air distribution static pressure and ventilation air volumes.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units level and plumb.

B. Install evaporator-fan components using manufacturer's standard mounting devices securely fastened to building structure.

C. Install roof-mounted, compressor-condenser components on equipment supports specified in Section 077200 "Roof Accessories." Anchor units to supports with removable, cadmium-plated fasteners.

D. Equipment Mounting:
   1. Comply with requirements for vibration isolation and seismic control devices specified in Section 230548 "Vibration and Seismic Controls for HVAC."
   2. Comply with requirements for vibration isolation devices specified in Section 230548.13 "Vibration Controls for HVAC."

E. Install and connect precharged refrigerant tubing to component's quick-connect fittings. Install tubing to allow access to unit.

3.2 CONNECTIONS

A. Piping installation requirements are specified in other Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

   1. Water Coil Connections: Comply with requirements specified in Section 232113 "Hydronic Piping" and Section 232116 Hydronic Piping Specialties." Connect hydronic piping to supply and return coil connections with shutoff-duty valve and union or flange on the supply connection and with throttling-duty valve and union or flange on the return connection.
   2. Remote, Water-Cooled Condenser Connections: Comply with requirements specified in Section 232113 "Hydronic Piping" and Section 232116 Hydronic Piping Specialties." Connect hydronic piping to supply and return connections with shutoff-duty valve and union or flange on the supply connection and with throttling-duty valve and union or flange on the return connection.

B. Where piping is installed adjacent to unit, allow space for service and maintenance of unit.

C. Duct Connections: Duct installation requirements are specified in Section 233113 "Metal Ducts." Drawings indicate the general arrangement of ducts. Connect supply[and return] ducts to split-system air-conditioning units with flexible duct connectors. Flexible duct connectors are specified in Section 233300 "Air Duct Accessories."

3.3 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test, and adjust components, assemblies, and equipment installations, including connections.

B. Perform tests and inspections.

   1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect components, assemblies, and equipment installations, including connections, and to assist in testing.

C. Tests and Inspections:

1. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
2. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
3. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

D. Remove and replace malfunctioning units and retest as specified above.

E. Prepare test and inspection reports.

3.4 STARTUP SERVICE

A. Engage a factory-authorized service representative to perform startup service.

1. Complete installation and startup checks according to manufacturer's written instructions.

3.5 DEMONSTRATION

A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain units.

END OF SECTION 238126

DIVISION 23 - MECHANICAL

SECTION 238129 – VARIABLE-REFRIGERANT-FLOW HVAC SYSTEMS

PART 1 - GENERAL

1.1 The Contractor's attention is directed to the General and Special Conditions, COMMON WORK RESULTS FOR HVAC and to all other Contract Documents as they apply to this branch of the work. Attention is also directed to all other sections of the Contract Documents which affect the work of this section and which are hereby made a part of the work specified in this section.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 SUMMARY

A. Section includes complete VRF HVAC system(s) including, but not limited to the following components to make a complete operating system(s) according to requirements indicated:
1. Indoor units
2. Outdoor, air-source, heat-pump units.
3. System controls.
4. System refrigerant and oil.

1.4 DEFINITIONS

A. Air-Conditioning System Operation: System capable of operation with all zones in cooling only.

B. Heat-Pump System Operation: System capable of operation with all zones in either heating or cooling, but not with simultaneous heating and cooling zones that transfer heat between zones.

C. Heat Recovery System Operation: System capable of operation with simultaneous heating and cooling zones that transfer heat between zones.

D. HRCU: Heat Recovery Control Unit. HRCUs are used in heat recovery VRF HVAC systems to manage and control refrigerant between indoor units to provide simultaneous heating and cooling zones. "Heat Recovery Control Unit" is the term used by ASHRAE for what different manufacturers term as branch circuit controller, branch selector box, changeover box, flow selector unit, mode change unit, and other such terms.

E. Low Voltage: As defined in NFPA 70 for circuits and equipment operating at less than 50 V or for remote-control, signaling power-limited circuits.

F. Plenum: A space forming part of the air distribution system to which one or more air ducts are connected. An air duct is a passageway, other than a plenum, for transporting air to or from heating, ventilating, or air-conditioning equipment.

G. Two-Pipe System Design: One refrigerant vapor line and one refrigerant liquid line connect a single outdoor unit or multiple manifold outdoor units in a single system to associated system HRCUs. One refrigerant liquid line and refrigerant vapor line connect HRCUs to associated indoor units. HRCUs used in two pipe systems act as an intermediate heat exchanger and include diverting valves and gas/liquid separators to move high and low pressure refrigerant between indoor units.

H. VRF: Variable refrigerant flow.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for indoor and outdoor units.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
3. Include operating performance at design conditions and at extreme maximum and minimum outdoor ambient conditions.
4. Include description of system controllers, dimensions, features, control interfaces and connections, power requirements, and connections.
5. Include system operating sequence of operation in narrative form for each unique indoor- and outdoor-unit control.
6. Include description of control software features.
7. Include total refrigerant required and a comprehensive breakdown of refrigerant required by each system installed.
8. Include refrigerant type and data sheets showing compliance with requirements indicated.
9. For system design software.
10. Indicate location and type of service access.

B. Shop Drawings: For VRF HVAC systems.

1. Include plans, elevations, sections, and mounting details.
2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
3. Vibration Isolation Base Details: Detail fabrication including anchorages and attachments to structure and to supported equipment. Include adjustable motor bases, rails, and frames for equipment mounting.
4. Include diagrams and details of refrigerant piping and tubing showing installation requirements for manufacturer-furnished divided flow fittings.
5. Include diagrams for power, signal, and control wiring.

C. Samples for Initial Selection: For fully and partially exposed indoor units with factory finishes viewable by occupants.

1. Include a Sample for each unique finish with unit identification, detailed description of application, and cross-referenced floor plans showing locations.

D. Delegated-Design Submittals:

1. Include design calculations for selecting vibration isolators and for designing vibration isolation bases.
2. Include design calculations with corresponding diagram of refrigerant piping and tubing sizing for each system installed.

3. Include design calculations with corresponding floor plans indicating that refrigerant concentration limits are within allowable limits of ASHRAE 15 and governing codes.
4. Include calculations showing that system travel distance for refrigerant piping and controls cabling are within horizontal and vertical travel distances set by manufacturer. Provide a comparison table for each system installed.

1.6 CLOSEOUT SUBMITTALS

A. Operation and Maintenance Data: For VRF HVAC systems to include in emergency, operation, and maintenance manuals.

B. Software and Firmware Operational Documentation:

1. Software operating and upgrade manuals.
2. Program Software Backup: On CD or DVD, USB media, or approved cloud storage platform, complete with data files.
3. Device address list.
4. Printout of software application and graphic screens.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Filters:

a. 2 sets for each unit with replaceable filters.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications:

1. Nationally recognized manufacturer of VRF HVAC systems and products.
2. Shipped VRF HVAC systems with similar requirements to those indicated for a continuous period of 5 years within time of bid.
3. VRF HVAC systems and products that have been successfully tested and in use on at least 5 completed projects.
4. Having complete published catalog literature, installation, and operation and maintenance manuals for all products intended for use.
5. Having full-time in-house employees for the following:

a. Product research and development.
b. Product and application engineering.
c. Product manufacturing, testing, and quality control.
d. Technical support for system installation training, startup, commissioning, and troubleshooting of installations.
e. Owner training.

B. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by VRF HVAC system manufacturer.

1. Each employee shall be certified by manufacturer for proper installation of systems, including, but not limited to, equipment, piping, controls, and accessories indicated and furnished for installation.
2. Installer certification shall be valid and current for duration of Project.
3. Retain copies of Installer certificates on-site and make available on request.
4. Each person assigned to Project shall have demonstrated past experience.

    a. Demonstrated past experience with products being installed for period within five consecutive years before time of bid.
    b. Demonstrated past experience on five projects of similar complexity, scope, and value.

5. Installers shall have staffing resources of competent, trained, and experienced full-time employees that are assigned to execute work according to schedule.

C. ISO Compliance: System equipment and components furnished by VRF HVAC system manufacturer shall be manufactured in an ISO 9001 and ISO 14001 facility.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in a clean and dry place.

B. Comply with manufacturer's written rigging and installation instructions for unloading and moving to final installed location.

C. Handle products carefully to prevent damage, breaking, denting, and scoring. Do not install damaged products.

D. Protect products from weather, dirt, dust, water, construction debris, and physical damage.

1. Retain factory-applied coverings on equipment to protect finishes during construction and remove just prior to operating unit.
2. Cover unit openings before installation to prevent dirt and dust from entering inside of units. If required to remover coverings during unit installation, reapply coverings over openings after unit installation and remove just prior to operating unit.

E. Replace installed products damaged during construction.

1.10 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace equipment and components that fail(s) in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

    a. Structural failures.
    b. Faulty operation.
    c. Deterioration of metals, metal finishes, and other materials beyond normal weathering and use.

2. Warranty Period:

    a. For Compressor: 10 years from date of Substantial Completion.
    b. For Parts, Including Controls: 10 years from date of Substantial Completion.

c. For Labor: 1 year from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS: Carrier, Mitsubishi, Daikin.

2.2 The system must be installed by a factory trained contractor/dealer. The bidders shall be required to submit training certification proof with bid documents. The mechanical contractor's installation price shall be based on the systems installation requirements. Untrained contractors who wish to bid this project will have to contact their local representation to arrange training prior to bid day.

2.3 SYSTEM DESCRIPTION:

A. The variable refrigerant flow system is a three-pipe system consisting of a single outdoor unit, and multiple indoor units of various types and capacities, individual or central indoor unit controls with on/off temperature settings, all connected by fully insulated refrigerant lines utilizing factory-supplied, fully insulated branching kits. Indoor units are connected to condensate piping that shall be terminated to the nearest drain point.

2.4 QUALITY ASSURANCE:

A. Units shall be listed by ETL (Engineering Testing Laboratory) and be evaluated in accordance with UL standard 1995, 4th. edition.

B. Units shall be listed in the AHRI directory.

C. All units shall meet the Federal minimum efficiency standards and be tested per AHRI 1230 Standard

2.5 DELIVERY, STORAGE, AND HANDLING:

A. Units shall be shipped in one piece and shall be stored and handled per unit manufacturer's recommendations.

B. Units shall be supplied with a base rail that provides openings for moving the unit by fork truck or rigging the unit by crane.

2.6 WARRANTY:

A. Provide written warranty, signed by manufacturer, agreeing to replace/repair, within warranty period, motors/compressors with inadequate or defective materials and workmanship, including leakage, breakage, improper assembly, or failure to perform as required; provide manufacturer's instructions for handling, installing, protecting, and maintaining units have been adhered to during warranty period. Warranty shall include parts only. Labor warranty is not to be included.

B. Warranty Period: 10 years from date of owner acceptance for components that are part of the variable refrigerant flow system. Components include fan coils, outdoor condensing units, and associated system control components.

2.7 EQUIPMENT:

A. Factory-assembled, single-piece, air-cooled outdoor unit. Contained within the unit enclosure shall be all factory wiring, piping, controls and compressors.

B. The outdoor unit shall be protected by a high-pressure switch, high-pressure sensor, low-pressure sensor, fusible plug, PC board, and an inverter overload protector.

C. The outdoor unit shall be capable of operating in cooling mode down to 14 F dry bulb ambient air temperature and down to -13 F wet bulb ambient air temperature in heating. For simultaneous heating and cooling the unit shall be capable of operating between 14 F and 60 F ambient air temperature.

D. High/low pressure gas line, liquid and suction lines must be individually insulated between the outdoor and indoor units.

2.8 UNIT CABINET:

A. Unit cabinet shall be constructed of pre-coated steel.

B. Unit access panels shall be removable with minimal screws and shall provide full access to the compressors, fan, and control components.

C. Unit shall have an acoustic wrap to assure quiet operation.

2.9 FANS:

A. Outdoor fan shall discharge air vertically and be driven by a DC-inverter variable-speed motor.

B. Outdoor fan motor shall be totally-enclosed with permanently-lubricated bearings.

C. Motor shall be protected by internal thermal overload protection.

D. Fan blade shall be corrosion resistant and shall be statically and dynamically balanced.

E. Outdoor fan shall be protected by a raised non-metallic protective grille.

2.10 COMPRESSORS:

A. Each outdoor unit module shall be equipped with two compressors with full-range control.

B. Compressor shall be totally enclosed in the machine compartment.

C. Compressors shall be equipped with factory-mounted crankcase heaters.

D. Internal safety logic shall protect the compressor from over-temperature operation.

E. Motor shall be suitable for operation in an R-410A refrigerant atmosphere.

F. Compressor assembly shall be installed on rubber vibration isolators.

G. To maximize compressor reliability, multiple compressors within a module shall be started and operated in variable patterns to ensure equal run time on all compressors.

2.11 OUTDOOR COIL:

A. Coil shall be constructed of aluminum fins mechanically bonded to seamless copper tubes, which are cleaned, dehydrated, and sealed.

B. The coil fins shall have a factory-applied corrosion resistant finish.

2.12 CONTROLS AND SAFETIES:

A. Operating controls and safeties shall be factory selected, assembled, and tested. The minimum control functions shall include the following:

B. Compressor speed to match the refrigerant flow and capacity with the system requirements.

C. Outdoor fan motor speed for higher efficiency and lower sound.

D. Oil control for improved system reliability and comfort

E. Pulse modulating valve control for precise control of the refrigerant distribution and accurate capacity management to avoid starving any units.

F. Control of compressor staging to maximize reliability and minimum run time on all compressors.

G. Module control of compressor operation, compressor speed, and outdoor heat exchanger surface to maximize efficiency and sound level and reliability across the entire operating range of the system.

H. Control of the outdoor heat exchanger surface (main vs sub heat exchangers) for maximum efficiency and comfort.

I. The following safety devices shall be part of the condensing unit: High-pressure switch, fuses, crankcase heater, fusible plug, over current relay for the compressor, thermal protectors for compressor and fan motor, compressor time delay, oil recovery system, oil level sensor, over-current sensor, compressor suction and discharge temperature sensor, compressor suction and discharge pressure sensor.

2.13 ELECTRICAL REQUIREMENTS:

A. All sizes shall utilize 208/230-3-60 (V-Ph-Hz) field power supply.

B. Power supply wiring from power source to power connection on Air Conditioning units. Include starters, disconnects, and required electrical devices, except where specified as furnished, or factory-installed, by manufacturer.

C. Low voltage cable shall be required for communication between outdoor and indoor unit. Manufacturer shall determine cable requirements for proper system operation.

D. All power and control wiring must be installed per NEC and all local electrical codes.

2.14 REFRIGERANT PIPING AND LINE LENGTHS:

A. Manufacturer shall be responsible for providing detailed piping diagrams with line set lengths and sizes. Refrigerant charge shall be determined by the VRF manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine products before installation. Reject products that are wet, moisture damaged, or mold damaged.

C. Examine roughing-in for piping and tubing to verify actual locations of connections before equipment installation.

D. Examine roughing-in for ductwork to verify actual locations of connections before equipment installation.

E. Examine roughing-in for wiring and conduit to verify actual locations of connections before equipment installation.

F. Examine walls, floors, roofs, and outdoor pads for suitable conditions where equipment will be installed.

G. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

H. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 EQUIPMENT INSTALLATION, GENERAL

A. Clearance:

1. Maintain manufacturer's recommended clearances for service and maintenance.
2. Maintain clearances required by governing code.

B. Loose Components: Install components, devices, and accessories furnished by manufacturer, with equipment, that are not factory mounted.

1. Loose components shall be installed by manufacturer's service representative.

C. Equipment Restraint Installation: Install equipment with seismic-restraint device. Comply with requirements for seismic-restraint devices specified in Section 230548 "Vibration and Seismic Controls for HVAC."

3.3 INSTALLATION OF INDOOR UNITS

A. Install units to be level and plumb while providing a neat and finished appearance.

B. Unless otherwise required by VRF HVAC system manufacturer, support ceiling-mounted units from structure above using threaded rods; minimum rod size of 3/8 inch.

C. Adjust supports of exposed and recessed units to draw units tight to adjoining surfaces.

D. Protect finished surfaces of ceilings, floors, and walls that come in direct contact with units. Refinish or replaced damaged areas after units are installed.

E. In rooms with ceilings, conceal piping and tubing, controls, and electrical power serving units above ceilings.

F. In rooms without ceiling, arrange piping and tubing, controls, and electrical power serving units to provide a neat and finished appearance.

G. Provide lateral bracing if needed to limit movement of suspended units to not more than 0.25 inch.

H. For wall-mounted units that are exposed, conceal piping and tubing, controls, and electrical power serving units within walls.

I. Attachment: Install hardware for proper attachment to supported equipment.

J. Grouting: Place grout under equipment supports and make bearing surface smooth.

3.4 INSTALLATION OF OUTDOOR UNITS

A. Install units to be level and plumb while providing a neat and finished appearance.

B. Install outdoor units on support structures indicated on Drawings.

C. Roof-Mounted Installations: Install outdoor units on equipment supports called out on drawings.

3.5 GENERAL REQUIREMENTS FOR PIPING INSTALLATION

A. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping and tubing systems. Install piping and tubing as indicated unless deviations to layout are approved on coordination drawings.

B. Install piping and tubing in concealed locations unless otherwise indicated and except in equipment rooms and service areas.

C. Install piping and tubing at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

D. Install piping and tubing above accessible ceilings to allow sufficient space for ceiling panel removal.

E. Install piping and tubing to permit valve servicing.

F. Install piping and tubing at indicated slopes.

G. Install piping and tubing free of sags.

H. Install fittings for changes in direction and branch connections.

I. Install piping and tubing to allow application of insulation.

J. Install groups of pipes and tubing parallel to each other, spaced to permit applying insulation with service access between insulated piping and tubing.

K. Install sleeves for piping and tubing penetrations of walls, ceilings, and floors. Comply with requirements for sleeves specified in Section 230517 "Sleeves and Sleeve Seals for HVAC Piping."

3.6 INSTALLATION OF SYSTEM CONDENSATE DRAIN PIPING

A. General Requirements for Drain Piping and Tubing:

1. Install a union in piping at each threaded unit connection.
2. Install an adjustable stainless-steel hose clamp with adjustable gear operator on unit hose connections. Tighten clamp to provide a leak-free installation.
3. If required for unit installation, provide a trap assembly in drain piping to prevent air circulated through unit from passing through drain piping. Comply with more stringent of the following:

a. Details indicated on Drawings.
b. Manufacturer's requirements.
c. Governing codes.
d. In the absence of requirements, comply with requirements of ASHRAE handbooks.

4. Extend drain piping from units with drain connections to drain receptors as indicated on Drawings. If not indicated on Drawings, terminate drain connection at nearest accessible location that is not exposed to view by occupants.
5. Provide each 90-degree change in direction with a Y- or T-fitting. Install a threaded plug connection in the dormant side of fitting or future use as a service cleanout.

B. Gravity Drains:

1. Slope piping from unit connection toward drain termination at a constant slope of not less than 1/8” per foot.

3.7 INSTALLATION OF REFRIGERANT PIPING

A. Refrigerant Tubing Kits:

1. Unroll and straighten tubing to suit installation. Deviations in straightness of exposed tubing shall be unnoticeable to observer.
2. Support tubing using hangers and supports indicated at intervals not to exceed 5 feet. Minimum rod size, 1/4 inch.
3. Prepare tubing ends and make mating connections to provide a pressure tight and leak-free installation.

B. Install refrigerant piping according to ASHRAE 15 and governing codes.

C. Select system components with pressure rating equal to or greater than system operating pressure.

D. Install piping as short and direct as possible, with a minimum number of joints and fittings.

E. Arrange piping to allow inspection and service of equipment. Install valves and specialties in accessible locations to allow for service and inspection. Install access doors or panels as specified in Section 083113 "Access Doors and Frames" if valves or equipment requiring maintenance is concealed behind finished surfaces.

F. Install refrigerant piping and tubing in protective conduit where installed belowground.

G. Install refrigerant piping and tubing in rigid or flexible conduit in locations where exposed to mechanical damage.

H. Unless otherwise required by VRF HVAC system manufacturer, slope refrigerant piping and tubing as follows:

1. Install horizontal hot-gas discharge piping and tubing with a uniform slope downward away from compressor.
2. Install horizontal suction lines with a uniform slope downward to compressor.
3. Install traps to entrain oil in vertical runs.
4. Liquid lines may be installed level.

I. When brazing, remove or protect components that could be damaged by heat.

J. Before installation, clean piping, tubing, and fittings to cleanliness level required by VRF HVAC system manufacturer.

K. Joint Construction:

1. Ream ends of tubes and remove burrs.
2. Remove scale, slag, dirt, and debris from inside and outside of tube and fittings before assembly.
3. Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter.

a. Use Type BCuP (copper-phosphorus) alloy for joining copper fittings with copper tubing.
b. Use Type BAg (cadmium-free silver) alloy for joining copper with bronze.

3.8 INSTALLATION OF PIPING AND TUBING INSULATION

A. Seal longitudinal seams and end joints with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated. Installation to maintain a continuous vapor barrier.

B. Insulation Installation on Pipe Fittings and Elbows:

1. Install mitered sections of pipe insulation.
2. Secure insulation materials and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

C. Insulation Installation on Valves and Pipe Specialties:

1. Install preformed valve covers manufactured of same material as pipe insulation when available.
2. When preformed valve covers are unavailable, install cut sections of pipe and sheet insulation to valve body. Arrange insulation to permit access to packing and to allow valve operation without disturbing insulation.
3. Secure insulation to valves and specialties and seal seams with manufacturer's recommended adhesive to eliminate openings in insulation that allow passage of air to surface being insulated.

D. Where PVC jackets are indicated, install with 1-inch (25-mm) overlap at longitudinal seams and end joints; for horizontal applications. Seal with manufacturer's recommended adhesive.

1. Apply two continuous beads of adhesive to seams and joints, one bead under lap and the finish bead along seam and joint edge.

E. Where metal jackets are indicated, install with 2-inch (50-mm) overlap at longitudinal seams and end joints. Overlap longitudinal seams arranged to shed water. Seal end joints with weatherproof sealant recommended by insulation manufacturer. Secure jacket with stainless-steel bands 12 inches (300 mm) o.c. and at end joints.

3.9 ELECTRICAL INSTALLATION

A. Comply with requirements indicated on Drawings and in applicable Division 26 Sections.

B. To extent electrical power is required for system equipment, components, and controls, and is not indicated on Drawings and addressed in the Specifications, the design for such electrical power shall be delegated to VRF HVAC system provider.

1. Delegated design of electrical power to equipment, components and controls, and associated installation shall be included at no additional cost to Owner.

C. Connect field electrical power source to each separate electrical device requiring field electrical power. Coordinate termination point and connection type with Installer.

D. Comply with requirements in Section 260519 "Low-Voltage Electrical Power Conductors and Cables" for wiring connections.

E. Comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems" for grounding connections.

F. Install nameplate or acrylic label with self-adhesive back for each electrical connection indicating electrical equipment designation and circuit number feeding connection.

1. Nameplate shall be laminated phenolic layers of black with engraved white letters. Letters at least 1/2 inch (13 mm) high.
2. Locate nameplate or label where easily visible.

G. Comply with requirements in Section 260533 "Raceways and Boxes for Electrical Systems" for raceway selection and installation requirements for boxes, conduits, and wireways as supplemented or revised in this Section.

1. Outlet boxes shall be no smaller than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.
2. Outlet boxes for cables shall be no smaller than 4 inches (102 mm) square by [1-1/2 inches (38 mm)] [2-1/8 inches (53 mm)] deep with extension ring sized to bring edge of ring to within 1/8 inch (3.1 mm) of the finished wall surface.
3. Flexible metal conduit shall not be used.

H. Comply with TIA-569-D for pull-box sizing and length of conduit and number of bends between pull points.

I. Install manufactured conduit sweeps and long-radius elbows if possible.

J. Install metal conduits with grounding bushings and connect with grounding conductor to grounding system.

3.10 GROUNDING INSTALLATION

A. For data communication wiring, comply with TIA-607-B and with BICSI TDMM, "Bonding and Grounding (Earthing)" Chapter.

B. For low-voltage control cabling, comply with requirements in Section 260526 "Grounding and Bonding for Electrical Systems."

3.11 IDENTIFICATION

A. Identify system equipment, piping, tubing, and valves. Comply with requirements for identification specified in Section 230553 "Identification for HVAC Piping and Equipment."

B. Identify system electrical and controls components, wiring, cabling, and terminals. Comply with requirements for identification specified in Section 260553 "Identification for Electrical Systems."

1. Identify each control cable on each end and at each terminal with a number-coded identification tag. Each cable shall have a unique tag.

3.12 FIELD QUALITY CONTROL

A. Manufacturer's Field Service: Engage VRF HVAC system manufacturer's service representative to advise and assist installers; witness testing; and observe and inspect components, assemblies, and equipment installations, including controls and connections.

1. Field service shall be performed by a factory-trained and -authorized service representative of VRF HVAC system manufacturer whose primary job responsibilities are to provide direct technical support of its products.

a. Additional factory-authorized representatives may assist with completion of certain activities only if supervised by manufacturer's employee. A factory-authorized representative shall not provide assistance without manufacturer's employee supervision.

2. Final Inspection before Startup:

a. Before inspection, Installer to provide written request to manufacturer stating the system is fully installed according manufacturer's requirements and ready for final inspection.
b. All system equipment and operating components shall be inspected. If components are inaccessible for inspection, they shall be made accessible before the final inspection can be completed.
c. Manufacturer shall provide a comprehensive inspection of all equipment and each operating component that comprise the complete system(s). Inspection shall follow a detailed checklist specific to each equipment and operating component.
d. Inspection reports for indoor units shall include, but not be limited to, the following:

1) Unit designation on Drawings.
2) Manufacturer model number.
3) Serial number.
4) Network address, if applicable.
5) Each equipment setting.
6) Mounting, supports, and restraints properly installed.
7) Proper service clearance provided.
8) Wiring and power connections correct.
9) Line-voltage reading(s) within acceptable range.
10) Wiring and controls connections correct.
11) Low-voltage reading(s) within an acceptable range.
12) Controller type and model controlling unit.
13) Controller location.
14) Temperature settings and readings within an acceptable range.
15) Humidity settings and readings within an acceptable range.
16) Condensate removal acceptable.
17) Fan settings and readings within an acceptable range.
18) Unit airflow direction within an acceptable range.
19) If applicable, fan external static pressure setting.
20) Filter type and condition acceptable.
21) Noise level within an acceptable range.
22) Refrigerant piping properly connected and insulated.

23) Condensate drain piping properly connected and insulated.
24) If applicable, ductwork properly connected.
25) If applicable, external interlocks properly connected.
26) Remarks.

e. Inspection reports for outdoor units shall include, but not be limited to, the following:

1) Unit designation on Drawings.
2) Manufacturer model number.
3) Serial number.
4) Network address, if applicable.
5) Each equipment setting.
6) Mounting, supports, and restraints properly installed.
7) Proper service clearance provided.
8) Wiring and power connections correct.
9) Line-voltage reading(s) within acceptable range.
10) Wiring and controls connections correct.
11) Low-voltage reading(s) within an acceptable range.
12) Condensate removal acceptable.
13) Noise level within an acceptable range.
14) Refrigerant piping properly connected and insulated.
15) Condensate drain piping properly connected and insulated.
16) Remarks.

f. Installer shall provide manufacturer with the requested documentation and technical support during inspection.
g. Installer shall correct observed deficiencies found by the inspection.
h. Upon completing the on-site inspection, manufacturer shall provide a written report with complete documentation describing each inspection step, the result, and any corrective action required.
i. If corrective action is required by Installer that cannot be completed during the same visit, provide additional visits, as required, until deficiencies are resolved and systems are deemed ready for startup.
j. Final report shall indicate the system(s) inspected are installed according to manufacturer's requirements and are ready for startup.

B. Perform the following tests and inspections with the assistance of manufacturer's service representative:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Leak Test: After installation, charge system and test for leaks. Repair leaks and retest until no leaks exist.
3. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
4. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

C. Refrigerant Tubing Positive Pressure Testing:

1. Comply with more stringent of VRF HVAC system manufacturer's requirements and requirements indicated.
2. After completion of tubing installation, pressurize tubing systems to a test pressure of not less than 1.5times VRF HVAC system operating pressure, but not less than 600 psig, using dry nitrogen.

3. Successful testing shall maintain a test pressure for a continuous and uninterrupted period of 24 hours. Allowance for pressure changes attributed to changes in ambient temperature are acceptable.
4. Prepare test report to record the following information for each test:

    a. Name of person starting test, company name, phone number, and e-mail address.
    b. Name of manufacturer's service representative witnessing test, company name, phone number, and e-mail address.
    c. Detailed description of extent of tubing tested.
    d. Date and time at start of test.
    e. Test pressure at start of test.
    f. Outdoor temperature at start of test.
    g. Name of person ending test, company name, phone number, and e-mail address.
    h. Date and time at end of test.
    i. Test pressure at end of test.
    j. Outdoor temperature at end of test.
    k. Remarks:

5. Submit test reports for Project record.

D. Refrigerant Tubing Evacuation Testing:

1. Comply with more stringent of VRF HVAC system manufacturer's requirements and requirements indicated.
2. After completion of tubing positive-pressure testing, evacuate tubing systems to a pressure of 500 microns.
3. Successful testing shall maintain a test pressure for a continuous and uninterrupted period of one hour(s) with no change.
4. Prepare test report to record the following information for each test:

    a. Name of person starting test, company name, phone number, and e-mail address.
    b. Name of manufacturer's service representative witnessing test, company name, phone number, and e-mail address.
    c. Detailed description of extent of tubing tested.
    d. Date and time at start of test.
    e. Test pressure at start of test.
    f. Outdoor temperature at start of test.
    g. Name of person ending test, company name, phone number, and e-mail address.
    h. Date and time at end of test.
    i. Test pressure at end of test.
    j. Outdoor temperature at end of test.
    k. Remarks:

5. Submit test reports for Project record.
6. Upon successful completion of evacuation testing, system shall be charged with refrigerant.

E. System Refrigerant Charge:

1. Using information collected from the refrigerant tubing evacuation testing, system Installer shall consult variable refrigerant system manufacturer to determine the correct system refrigerant charge.
2. Installer shall charge system following VRF HVAC system manufacturer's written instructions.
3. System refrigerant charging shall be witnessed by system manufacturer's representative.
4. Total refrigerant charge shall be recorded and permanently displayed at the system's outdoor unit.

F. Products will be considered defective if they do not pass tests and inspections.

G. Prepare test and inspection reports.

3.13 STARTUP SERVICE

A. Engage a VRF HVAC system manufacturer's service representative to perform system(s) startup service.

1. Service representative shall be a factory-trained and -authorized service representative of VRF HVAC system manufacturer.
2. Complete startup service of each separate system.
3. Complete system startup service according to manufacturer's written instructions.

B. Startup checks shall include, but not be limited to, the following:

1. Check control communications of equipment and each operating component in system(s).
2. Check each indoor unit's response to demand for cooling and heating.
3. Check each indoor unit's response to changes in airflow settings.
4. Check each indoor unit and outdoor unit for proper condensate removal.
5. Check sound levels of each indoor and outdoor unit.

C. Installer shall accompany manufacturer's service representative during startup service and provide manufacturer's service representative with requested documentation and technical support during startup service.

1. Installer shall correct deficiencies found during startup service for reverification.

D. System Operation Report:

1. After completion of startup service, manufacturer shall issue a report for each separate system.
2. Report shall include complete documentation describing each startup check, the result, and any corrective action required.
3. Manufacturer shall electronically record not less than [two] <Insert number> hours of continuous operation of each system and submit with report for historical reference.

a. All available system operating parameters shall be included in the information submitted.

E. Witness:

1. Invite Engineer to witness startup service procedures.
2. Provide written notice not less than 10 business days before start of startup service.

3.14 ADJUSTING

A. Adjust equipment and components to function smoothly, and lubricate as recommended by manufacturer.

B. Adjust initial temperature and humidity set points. Adjust initial airflow settings and discharge airflow patterns.

C. Set field-adjustable switches and circuit-breaker trip ranges according to VRF HVAC system manufacturer's written instructions, and as indicated.

D. Occupancy Adjustments: When requested within 12months from date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.15 PROTECTION

A. Protect products from moisture and water damage. Remove and replace products that are wet, moisture damaged, or mold damaged.

B. Protect equipment from physical damage. Replace equipment with physical damage that cannot be repaired to new condition. Observable surface imperfections shall be grounds for removal and replacement.

C. Protect equipment from electrical damage. Replace equipment suffering electrical damage.

D. Cover and seal openings of equipment to keep inside of equipment clean. Do not remove covers until finish work is complete.

3.16 DEMONSTRATION

A. Engage a VRF HVAC system manufacturer's factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain entire system.

B. Instructor:

1. Instructor shall be factory trained and certified by VRF HVAC system manufacturer with current training on the system(s), equipment, and controls that are installed.
2. Instructor's credentials shall be submitted for review by Owner before scheduling training.
3. Instructor(s) primary job responsibility shall be Owner training.

C. Schedule and Duration:

1. Schedule training with Owner at least 10 business days before first training session.
2. Training shall occur before Owner occupancy.
3. Training shall be held at mutually agreed date and time during normal business hours.
4. Each training day shall not exceed eight hours of training.
5. Perform not less than eight total hours of training.

D. Location: Owner shall provide a suitable on-site location to host classroom training.

E. Training Attendees: Assume three people.

F. Training Attendance: For record purposes, document training attendees at the start of each new training session. Record attendee's name, signature, phone number, and e-mail address.

G. Training Format: Individual training modules shall include classroom training followed by hands-on field demonstration and training.

H. Training Materials: Provide training materials in electronic format to each attendee.

1. Include instructional videos showing general operation and maintenance that are coordinated with operation and maintenance manuals.

2. Video record each classroom training session and submit an electronic copy to Owner before requesting Owner acceptance of training.

I. Acceptance: Obtain Engineer or Owner written acceptance that training is complete and requirements indicated have been satisfied.

END OF SECTION 238129

SECTION 260519 – LOW-VOLTAGE ELECTRICAL POWER, CONDUCTORS, CABLES, SPLICING DEVICES AND CONNECTORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General, Special and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. The Contractor is directed to examine each and every section of these specifications, all drawings relating to the Contract Documents, any and all Addenda, etc., for work described elsewhere that may relate to the provision of the work described herein. Materials and performance requirements are specified elsewhere herein that relate to these systems.

C. Each Electrical Contractor's attention is directed to Section 260501 - General Provisions, Electrical, and all other Contract Documents as they apply to his work.

1.2 SUMMARY

A. This Section includes the following:

1. Building wires and cables rated 600 V and less.
2. Connectors, splices, and terminations rated 600 V and less.

B. This section of the Specifications covers all of the electrical power, lighting, and control power (line voltage) conductors, but does not include communications, data or signal system conductors, which are specified separately in these specifications.

C. All conduits installed without conductors shall have a 200 lb. test nylon string installed for future use, tied off securely at each end.

D. No more than 40% conduit fill is permitted for any conduit system, including video, intercom, data, power or other signal circuits unless specifically indicated otherwise on the plans.

E. No more than seven conductors (six current-carrying and one ground) shall be installed in a conduit except for switch legs and travelers in multi-point switching arrangements. Multi-wire branch circuits with a shared neutral are not allowed.

F. If multiple circuits are pulled in a single homerun, a dedicated neutral shall be provided for each phase conductor. In these cases, a maximum of seven conductors (six current carrying and one ground) are permitted in a single conduit. Conductors shall be derated per NEC.

G. Intentional or unintentional painting of exposed low voltage or line voltage cabling is prohibited. The contractor shall ensure that exposed cabling is adequately protected from direct painting or overspray whether painting is required within the electrical specifications or required by other disciplines/trades. The contractor shall review the painting requirements for all disciplines and shall provide cabling protection as required. Where exposed cabling is being installed in exposed ceiling or wall spaces that are required to be painted, the contractor shall provide alternate options for cable colors and shall provide submittals for such cabling to engineer for approval.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Coordinate paragraph below with qualification requirements in Division 01 Section "Quality Requirements" and as supplemented in "Quality Assurance" Article.

B. Qualification Data: For testing agency.

C. Field quality-control test reports.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency, with the experience and capability to conduct the testing indicated, that is a member company of the InterNational Electrical Testing Association or is a nationally recognized testing laboratory (NRTL) as defined by OSHA in 29 CFR 1910.7, and that is acceptable to authorities having jurisdiction.

1. Testing Agency's Field Supervisor: Person currently certified by the InterNational Electrical Testing Association or the National Institute for Certification in Engineering Technologies to supervise on-site testing specified in Part 3.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

C. Comply with NFPA 70.

PART 2 - PRODUCTS

2.1 CONDUCTORS AND CABLES

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Alcan Products Corporation; Alcan Cable Division.
2. Alpha Wire Company.
3. American Insulated Wire Corp.; a Leviton Company.
4. Belden Inc.
5. Cerro Wire LLC.
6. Encore Wire Corporation.
7. General Cable Technologies Corporation.
8. General Cable Corporation.
9. Senator Wire & Cable Company.
10. Southwire Company.

B. All conductors shall be 98% conductive annealed copper unless otherwise noted, UL listed and labeled. Comply with ANSI/NEMA WC 70/ICEA S-95-658.

C. Conductor Insulation:

1. Comply with ANSI/NEMA WC 70/ICEA S-95-658.
2. Lighting and receptacle branch circuits shall be Type THW, THHN or THWN insulation.
3. All feeders shall be Type THW or THWN of the size as shown on the Contract Drawings.
4. THHN wiring shall only be installed in overhead, dry or damp locations.
5. THWN OR THW wiring shall be used for all circuits pulled in underground or other wet locations.

D. Conductor sizes indicated on drawings are based upon 75 degree C rating.

E. Minimum branch circuit or feeder size shall be not less than #12 AWG copper wire or of the sizes shown on the drawings.

F. Conductors #10 AWG and smaller shall be solid. Conductors #8 AWG and larger sizes shall be stranded.

G. Conductors for fire alarm wiring shall be stranded and in full compliance with NEC 760. All fire alarm conductors shall be installed within conduit and enclosed junction boxes. Exposed cabling in air plenums shall be rated for plenum installation.

H. All wire on the project shall be new, in good condition, and shall be delivered in standard coils or reels.

I. The color of the wire shall be selected to conform to Section 210-5 of the latest edition of the National Electrical Code. Power conductors of all sizes shall follow the color coding scheme listed under PART 3, IDENTIFICATION below.

J. Conductors used for motor connections and connections to vibrating or oscillating equipment shall be extra flexible.

K. Conductors for main ground from neutral bus, equipment grounding bus, building steel, grounding grid and main cold water pipe connection shall be bare copper.

L. All conductors shall be identified by color code and by means of labels placed on conductors in all junction boxes and at each terminal point with Brady, Ideal, T & B or approved equivalent labels indicating source, circuit number or terminal number.

M. Branch wiring and feeder conductors that are greater than 50' in length shall be increased at least one size to compensate for voltage drop. All circuits shall be installed and sized for a maximum 2% voltage drop. As calculated using 80% of the supply breaker rating as the load. Adjust conductors and conduit size accordingly for actual field installed conditions.

N. No aluminum conductors shall be used.

~~O. Designer Note: Choose one of the following three options (*) for MC cable:~~

~~P. Designer Note: Keep P. for projects where MC cable is not desired.~~

~~Q. (*)MC cable and AC cable shall not be permitted.~~

~~R. Designer Note: Keep Q. for non-HCA projects where MC cable is desired.~~

S. MC cable may be used for normal power branch circuits, #10 and smaller, where concealed in walls, above ceilings, etc. MC cable shall not be used for emergency power circuits, any feeders, any exposed locations, or any wiring larger than #10. Supports shall be per NEC and all runs shall be parallel or perpendicular to building lines with right angle turns. Cables shall be bundled where run in groups using listed supports. Do not route through structure or on work of other trades. Provide independent supports directly from structure. ~~All MC cable which serves patient care areas shall be type HCF, rated for healthcare use and shall have insulated ground wire and grounded sheath. HCF cable shall be NEMA WC 70 compliant, UL 4 and 1479 listed, with green exterior sheath.~~

T. MC cable is acceptable for the following applications:

1. Feeders for lighting fixture whips and for branch circuits concealed in walls and partitions only. Locate junction box and convert to single conductors in rigid raceway within the same room as where the cable enters/exits the wall.
2. Use only for single-circuit cable (i.e. two wire plus ground). For devices in the same wall connected to different circuits, install separate single circuit cable for each circuit.
3. The MC cable length for power circuits shall be limited to 30′ from the junction box to the wiring device located in the wall. If the circuit continues outside the wall, the circuit must immediately transition to conduit.
4. The MC cable length for lighting circuits shall be limited to 30′ from the junction box to the first fixture and from that point only those fixtures above the enclosed space/room shall be served by this HCF circuit.

U. MC cable is not acceptable for the following applications:

1. Homeruns to Panelboards.
2. Branch circuits serving Essential Electrical System (Emergency & Standby) loads; including Life Safety branch, Critical branch and equipment emergency system.
3. Branch circuits serving HVAC, elevator/escalator, medical and kitchen equipment loads.
4. Within mechanical, electrical or telecommunication equipment rooms.
5. Exposed Branch Circuits within areas that do not have a ceiling (i.e. open to structure).
6. Wet locations.
7. No MC cable will be allowed in the open areas exposed to public, catwalk, stage, etc.

2.2 SPLICING DEVICES & CONNECTORS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. 3M; Electrical Products Division.
2. AFC Cable Systems, Inc.
3. Burndy
4. Gardner Bender.
5. Hubbell Power Systems, Inc.
6. Ideal Industries, Inc.
7. ILSCO.
8. NSi Industries LLC.
9. O-Z/Gedney; an EGS Electrical Group brand; an Emerson Industrial Automation business.
10. Reliable
11. T&B
12. Tyco Electronics Corp.

B. Description: Factory-fabricated connectors and splices of size, ampacity rating, material, type, and class for application and service indicated.

C. Splicing devices for use on #10 AWG and smaller conductors shall be pressure type such as T&B "Sta-Kon".

D. Wire nuts shall be spring pressure type, insulation 600V, 105°C insulation, up to #8 AWG. Greater than #6 AWG shall be a compression type connection, 600V insulation, cold shrink tubing, taped to restore full insulation value of the wire being spliced.

E. Pressure crimp-applied ring type (or fork with upturned ends) terminations shall be employed on motor and equipment terminals where such terminals are provided on motor and equipment leads or on all stranded wire terminations using #10 AWG or smaller conductors.

F. Splices, where necessary, shall be made with hydraulically-set "Hy-press" or equivalent crimped connectors. All splices shall be insulated to the full value of the wiring insulation using a cold-shrink kit or the equivalent in built-up materials.

G. Large connectors (lugs) at terminals shall be mechanical type, hex-head socket or crimp-on style, installed per the manufacturer's recommendations.

H. Underground connections made between bare ground wires or to ground rods shall be exothermically welded, "Cadweld" or equivalent.

I. No aluminum splicing devices or connectors shall be used.

PART 3 - EXECUTION

3.1 CONDUCTOR AND INSULATION MATERIAL APPLICATIONS

A. Feeders and Branch Circuits: Copper. Solid for #10 AWG and smaller; stranded for # 8 AWG and larger.

B. Conductors used for motor connections and connections to vibrating or oscillating equipment shall be extra flexible stranded.

C. Conductors used for theatrical lighting branch cables shall be extra flexible stranded.

D. Lighting and receptacle branch circuits shall be Type THW, THHN or THWN insulation.

E. All feeders shall be Type THW or THWN of the size as shown on the Contract Drawings.

F. THHN wiring shall only be installed in overhead, dry or damp locations.

G. THWN or THW wiring shall be used for all circuits pulled in underground or other wet locations.

H. Class 1 Control Circuits: Type THHN-THWN, in raceway.

I. Motor Connections shall use connection lugs with motor stub splice insulators.

J. Cord Drops and Portable Appliance Connections: Type SO, hard service cord with stainless-steel, wire-mesh, strain relief device at terminations to suit application.

3.2 INSTALLATION

A. Clean out raceway system before pulling conductors.

B. Use manufacturer-approved pulling compound or lubricant where necessary; compound used must not deteriorate conductor or insulation. Do not exceed manufacturer's recommended maximum pulling tensions and sidewall pressure values.

C. Use pulling means, including fish tape, cable, rope, and basket-weave wire/cable grips, that will not damage cables or raceway.

D. The pulling of all wires and cable on this project shall be performed in strict compliance with applicable sections of the National Electrical Code. No conductor entering or leaving a cabinet or box shall be deflected in such a manner as to cause excess pressure on the conductor insulation. Conductors shall only be installed after insulating bushings are in place.

E. The radius of bending of conductors shall be not less than eighteen times the outside diameter of the conductor insulation or more, if recommended by the manufacturer.

F. Conductors installed within environmental air plenums shall be per NEC. Article 800 and other applicable codes, with FEP-type insulation or an approved equivalent. Also provide plenum-rated tie-wraps where plastic straps or other supports, etc., are installed in plenum areas.

G. Where indicated, systems and control conductors that are installed exposed shall not be routed across ceilings or ductwork. They shall be held up against building structure or against permanent support members. They shall be installed in such a manner that they do not interfere with the access to or operation of equipment or removal of ceiling tiles. Nylon tie-wraps shall be installed in such a manner so as to bundle conductors neatly, allowing runouts of single conductors or groups to drop down to equipment served. Install grommeting where dropping out of trays or into panels or service columns. Install sleeves with bushings where penetrating partitions. Firestop sleeves with approved material. Do not penetrate firewalls if so indicated on plans. Refer to the drawings for support requirements and details on routing exposed communications conductors.

H. Conductors for isolated power systems shall be installed in as short a run of conduit as practicable. No pulling soap shall be used on conductors in isolated power systems.

I. Where conductors are installed in industrial facilities, they shall be per JIC standards.

J. Maximum permissible pulling tensions, as recommended by the manufacturer for any given type of cable or wire installed shall not be exceeded. Utilize special remote readout equipment to ensure compliance. Use particular caution when installing twisted pair data cable or fiber optic cables -- forces permitted for pulling in are typically very low for these cable types.

K. All cables and wiring, regardless of voltage, installed in manholes or cable vaults shall be routed in such a manner to provide a minimum of 6 feet of slack cable for future splicing. Install cables along walls by utilizing the longer route from entry to exit. If both routes are symmetrical, provide a loop of cable secured to wall. All cables shall be tied to insulated cable supports on wall-mounted racks, spaced a maximum of three feet apart.

L. Where multi-wire branch circuits are allowed on the drawings, the phases and neutral shall be wire-tied together in the panelboard and in all pull boxes.

3.3 CONNECTIONS

A. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

B. Make splices and taps that are compatible with conductor material and that possess equivalent or better mechanical strength and insulation ratings than un-spliced conductors.

C. Wiring at Outlets: Install conductors at each outlet with at least 12 inches of slack.

3.4 FIELD QUALITY CONTROL

A. Testing Agency: Engage a qualified testing agency to perform tests and inspections and prepare test reports.

B. Perform tests and inspections and prepare test reports.

C. Tests and Inspections:

1. Perform each visual and mechanical inspection and electrical test stated in NETA Acceptance Testing Specification. Certify compliance with test parameters.
2. Perform insulation resistance (megger) testing for all bus duct and feeders in accordance with NETA ATS. Testing may be witnessed by the Engineer and/or Commissioning agent. Schedule all tests with Architect with ample notice.
3. Megger tests shall be performed at a DC voltage of 1,000 volts for 600 volt rated equipment, and at a DC voltage of 500 volts for 120-300 volt rated equipment. Minimum acceptable (temperature corrected) resistance is 25 megaohms for 120-300 volt rated equipment and 100 megaohms for 600 volt rated equipment and wiring.
4. Test instruments shall be calibrated to national standards within the last 12 months.

D. Infrared Scanning: After Substantial Completion, but not more than 60 days after Final Acceptance, perform an infrared scan of each splice in cables and conductors #3 AWG and larger. Remove box and equipment covers so splices are accessible to portable scanner.

1. Follow-up Infrared Scanning: Perform an additional follow-up infrared scan of each splice 11 months after date of Substantial Completion.
2. Instrument: Use an infrared scanning device designed to measure temperature or to detect significant deviations from normal values. Provide calibration record for device.
3. Record of Infrared Scanning: Prepare a certified report that identifies splices checked and that describes scanning results. Include notation of deficiencies detected, remedial action taken, and observations after remedial action.

E. Test and Inspection Reports: Prepare a written report to record the following:

1. Test procedures used.
2. Results that comply with requirements.
3. Results that do not comply with requirements and corrective action taken to achieve compliance with requirements.

F. Cables will be considered defective if they do not pass tests and inspections. Remove and replace malfunctioning units and retest as specified above.

G. Submit test results to Architect and Engineer for approval

3.5 IDENTIFICATION

A. Color coding distribution voltage conductors, 600 volts or less

B. Conductors, in all sizes of cable, shall have continuous insulation color(s) from the manufacturer. Taped ends shall not be acceptable.

1. Conductors shall be color coded as follows:

a. 120/208 Volt Conductors

1) Phase A: Black
2) Phase B: Red
3) Phase C: Blue
4) Neutral: White
5) Ground: Green
6) Isolated Ground: Green/Yellow

b. 277/480 Volt Conductors

1) Phase A: Brown
2) Phase B: Orange
3) Phase C: Yellow
4) Neutral: Gray or White with Brown tracer
5) Ground: Green
6) Isolated Ground: Green/Yellow

c. Isolated Power Conductors (Type XLP or XHHN)

1) Phase A - Brown
2) Phase B - Orange
3) Phase C - Yellow
4) Neutral - White with brown tracer stripe
5) Note: Provide each phase with tracer color other than white, green, or gray.

d. Note: Further identify isolated power conductors with ½" wide purple tape at all terminations and junctions.

2. Fire Alarm Wiring: Red
3. Signal voltage wiring color coding shall be consistent throughout the project and shall match existing equipment and standards where applicable. Color coding for each system shall be unique.
4. Conductors within enclosures that may be energized when enclosure disconnect is off - yellow, or taped with 1/2" yellow tape every 6" of length, inside enclosure. Provide lamacoid plate warning sign on front of enclosure where this condition occurs.
5. DC Wiring: Positive: Light Blue
Negative: Dark Blue

C. Identify each spare conductor at each end with identity number and location of other end of conductor, and identify as spare conductor.

END OF SECTION

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PLUMBING FIXTURE SCHEDULE

TAG	MANUFACTURER	MODEL	FAUCET/VALVE MANUFACTURER	FAUCET/VALVE MODEL	CW	HW	SAN	VENT	ACCESSORIES
P-1A	AMERICAN STANDARD	0356.421	T&S BRASS	B-2711-VF05	1/2"	1/2"	2"	1-1/2"	WALL-HUNG LAVATORY, ADA COMPLIANT, VITREOUS CHINA, FRONT OVERFLOW, FAUCET LEDGE WITH PEDESTAL SPOUT, 0.5 GPM, MANUAL BALL FAUCET.
P-1A	AMERICAN STANDARD	0491.156	T&S BRASS	B-2711-VF05	1/2"	1/2"	2"	1-1/2"	TOP MOUNT LAVATORY, ADA COMPLIANT, VITREOUS CHINA, FRONT OVERFLOW, FAUCET LEDGE WITH PEDESTAL SPOUT, 0.5 GPM, MANUAL BALL FAUCET.
P-2A	AMERICAN STANDARD	3351.101	SLOAN	111 ESS-1.28-OR-HW	1-1/4"	---	3"	2"	WALL-HUNG FLUSHVALVE TOILET, ADA COMPLIANT, VITREOUS CHINA, 1.28 GPF SIPHON JET, HARDWIRED AUTOMATIC FLUSHVALVE.
P-2B	AMERICAN STANDARD	3351.101	SLOAN	111 ESS-1.28-OR-HW	1-1/4"	---	3"	2"	WALL-HUNG FLUSHVALVE TOILET, VITREOUS CHINA, 1.28 GPF SIPHON JET, HARDWIRED AUTOMATIC FLUSHVALVE.
P-3	AMERICAN STANDARD	6590.001	SLOAN	186 ESS-0.125-DBP-OR-HW	3/4"	---	2"	2"	WALL-HUNG URINAL, VITREOUS CHINA, 0.125 GPF WASHOUT, HARDWIRED AUTOMATIC FLUSHVALVE.
P-4A	ZURN	MS2620	ZURN	Z812H4-XL	1/2"	1/2"	1-1/2"	2"	FLOOR MOUNT UTLITY SINK, PVC DRAIN BODY, STEEL SELF-LEVELING LEGS, SWING GOOSENECK SPOUT, 2.2 GPM AERATOR.
P-4B	ELKAY	14-3C16X20-2-18X	T&S BRASS	B-0133-12-CR-B	3/4"	3/4"	2"	3"	FLOOR MOUNT THREE-COMPARTMENT SINK WITH DRAINBOARDSAND BACKSPLASH, STAINLESS STEEL, ADJUSTABLE LEGS, 1.15 GPM FLEXIBLE SPRAY VALVE, GOOSENECK SWING POTFILLER.
P-5	HALSEY TAYLOR	HTHB-HACG8BLPV-NF	---	---	1/2"	---	1-1/2"	1-1/2"	WALL-HUNG BI-LEVEL WATER COOLER WITH BOTTLE FILLER, 8.0 GPH CHILLING CAPACTIY, PUSH BUTTON ACTIVATION.

WATER HEATER SCHEDULE

TAG	TYPE	MANUFACTURER	MODEL	STORAGE CAPACITY	WATER RECOVERY	LOAD RATING	OUTLET TEMP
WH-1	NATURAL GAS	AO SMITH	BTX-100	50 GAL	115 GPH @ 100 DEG RISE	100,000 BTU/HR	140 F

RECIRCULATION PUMP SCHEDULE

TAG	RP-1
MANUFACTURER	BELL & GOSSETT
MODEL	PL-30
HP	1/12 HP
FLOW (GPM)	5 GPM
HEAD (FT)	25 FT
ALL BRONZE BODY / LEAD FREE	YES

EXPANSION TANK SCHEDULE

TAG	ET-1
MANUFACTURER	WATTS
MODEL	DETA-5
STORAGE CAPACITY	3.5 GAL

ROOF DRAIN SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	DRAIN
OF-1	OVERFLOW DOWNSPOUT	ZURN	Z ZARB-199-SS	8"
ORD-1	OVERFLOOR ROOF DRAIN	ZURN	ZC-100-DP	4"
RD-1	ROOF DRAIN	ZURN	ZC-100-DP	3"
RD-2	ROOF DRAIN	ZURN	ZC-100-DP	4"

GREASE INTERCEPTOR SCHEDULE

TAG	TYPE	MANUFACTURER	MODEL	INLET	OUTLET	FLOW (GPM)	WATER CAPACITY	GREASE CAPACITY
GI-1	FLOOR MOUNT GREASE INTERCEPTOR	ZURN	Z1170-600	3"	3"	25	21 GAL	50 LBS

PLUMBING GENERAL NOTES:

A. COORDINATE THE LOCATION OF DRAIN, GAS OUTLETS, ETC., WITH ALL CASEWORK EQUIPMENT, MECHANICAL ROOM EQUIPMENT, ETC., PRIOR TO COMMENCING INSTALLATION. WORK NOT SO COORDINATED SHALL BE REMOVED AND PROPERLY INSTALLED AT THE EXPENSE OF THE CONTRACTOR.
B. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. VERIFY THE LOCATION, SIZE, TYPE, ETC., OF EACH UNDERGROUND OR OVERHEAD UTILITY. ALL WORK SHALL BE PERFORMED IN ACCORD WITH ALL FEDERAL, STATE AND/OR LOCAL RULES, REGULATIONS, STANDARD AND SAFETY REQUIREMENTS. UTILITIES SHALL BE INSTALLED IN ACCORD WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY.
C. WHERE WORK IS REQUIRED ABOVE EXISTING LAY-IN, PLASTER OR GYPSUM BOARD CEILINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REINSTALLATION (OR REPLACEMENT, IF DAMAGED) OF ALL CEILING OR TILE AND GRID MEMBERS NECESSARY TO PERFORM HIS WORK. NEW TILE AND GRID SHALL MATCH THE SURROUNDING AREAS. ALL PATCHING WORK SHALL MATCH ADJACENT SURFACES.
D. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES, WHETHER EXISTING OR NEW.
E. COORDINATE ALL WORK WITH PROJECT PHASING REQUIREMENTS.
F. PATCH, REPAIR AND PAINT OR PROVIDE WALL COVERING FOR (TO OWNER'S STANDARDS) EXISTING WALLS, CEILINGS, ETC., THAT ARE TO REMAIN IF DAMAGED DURING CONSTRUCTION. REPAIRS SHALL MATCH ADJACENT SURFACES TO THE SATISFACTION OF THE ARCHITECT AND OWNER.
G. OBSERVE ALL APPLICABLE CODES, RULES AND REGULATIONS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT. (CITY, COUNTY, LOCAL, FEDERAL, MUNICIPALITY, UTILITY COMPANY, STATE, ETC.)
H. CONTRACTOR SHALL BE AWARE OF UNSEEN PLUMBING WORK DURING DEMOLITION. IF ITEMS ARE UNCOVERED DURING DEMOLITION THEN FIELD VERIFY THE USE OF THE ITEMS AND PLAN AN ALTERNATE ROUTE TO RUN THESE ITEMS. THEN CONTACT THE ENGINEERS TO REVIEW THE ROUTING.
I. IF AREA OF CONSTRUCTION HAS A POST TENSION FLOOR SLAB, CONTRACTOR SHALL USE ULTRA SOUND OR OTHER APPROVED METHODS TO SURVEY THE EXISTING FLOOR STRUCTURE BEFORE MAKING ANY AND ALL FLOOR PENETRATIONS.
J. WHERE FIRE PROOFING IS SPRAYED ON EXISTING STRUCTURE ALL EXISTING CONDUITS, WATER, HYDRONIC, STEAM, CHILLED WATER, FIRE PROTECTION LINES, MED GAS, ETC. SHALL BE LOWERED TO BE BELOW FULL THICKNESS OF FIRE PROOFING WITH NO INTERFERENCE.
K. ALL PENETRATIONS OF FIRE AND SMOKE RATED ASSEMBLIES SHALL BE APPROPRIATELY FIRE STOPPED PER AN APPROVED U.L. LISTED STANDARD. CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO INSULATED PIPING PENETRATIONS.
L. ALL WORK REQUIRING DOWNTIME OF ANY AREA IN THE BUILDING SHALL BE SCHEDULED 2 WEEKS IN ADVANCE, AND SHALL COMPLY WITH INTERIM LIFE SAFETY MEASURES.
M. ALL PIPING IN ROOMS WITH CEILINGS SHALL BE ABOVE CEILING EXCEPT AS NOTED.
N. LOCATIONS OF PIPING AND EQUIPMENT ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD. DO NOT SCALE THE DRAWINGS.
O. ALL OFFSETS IN PIPING ARE NOT NECESSARILY SHOWN. PROVIDE ADDITIONAL OFFSETS WHERE NECESSARY.
P. THE CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY COMPANY FEES OR OTHER COSTS THAT ANY UTILITY COMPANY MAY REQUIRE TO COMPLETE THEIR WORK. (GAS, SEWER, WATER, ETC.).
Q. WHERE MOUNTING HEIGHTS ARE NOT INDICATED OR ARE IN CONFLICT WITH ANY OTHER BUILDING SYSTEM, CONTACT THE ENGINEERS BEFORE INSTALLATION. REFER ALSO TO ARCHITECTURAL WALL INTERIOR AND EXTERIOR WALL ELEVATIONS, CEILING HEIGHTS AND OTHER DETAIL OF THESE DOCUMENTS.
R. ANY VIBRATING, OSCILLATING OR OTHER NOISE OR MOTION PRODUCING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISY OR STRUCTURALLY DAMAGING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTOR'S EXPENSE. THE FINAL DECISION ON THE SUITABILITY OF A PARTICULAR INSTALLATION'S ACCEPTABILITY SHALL BE THAT OF THE ENGINEER.
S. DEVIATIONS IN SIZE, CAPACITIES, FIT, FINISH, ETC. FOR EQUIPMENT FROM THAT USED AS BASIS OF DESIGN SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, WHETHER APPROVED BY THE ENGINEERS OR NOT, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.
T. VALVES OR ANY MECHANICAL/ELECTRICAL ITEM REQUIRING ACCESS SHALL NOT BE LOCATED ABOVE A HARD CEILING. IF THIS IS NOT POSSIBLE, THEN AN APPROPRIATELY SIZED ACCESS DOOR SHALL BE PLACED UNDER THE ITEM TO ALLOW EASY MAINTENANCE AND ADJUSTMENT. ADDITIONALLY ALL SUCH ITEMS SHALL NOT BE LOCATED AN UNREASONABLE DISTANCE ABOVE THE CEILINGS. IN GENERAL ALL SUCH ITEMS UNLESS INDICATED OTHERWISE SHALL BE MOUNTED SIX TO TWELVE INCHES ABOVE THE CEILING. IF IN DOUBT, CONTACT ENGINEER PRIOR TO INSTALLING.
U. ALL MANHOLES, VAULTS AND SIMILAR UNDERGROUND STRUCTURES SHALL HAVE THE TOP ELEVATION SET FLUSH WITH FINISHED GRADE UNLESS SPECIFICALLY NOTED OTHERWISE.
V. WHEN RUNNING ANY TYPE OF PIPING BELOW A FOOTER, OR IN THE ZONE OF INFLUENCE THE PIPING SHALL BE BACKFILLED WITH CEMENTITIOUS FLOWABLE FILL PER SPECIFICATIONS. WHENEVER POSSIBLE, LOCATE PIPING OUTSIDE OF THE ZONE OF INFLUENCE. THE ZONE OF INFLUENCE IS THE AREA UNDER THE FOOTER WITHIN A 45 DEGREE ANGLE PROJECTING DOWN FROM THE BOTTOM EDGE OF THE FOOTER OF ALL SIDES OF THE FOOTER. ADDITIONALLY, GREASE TRAPS, MANHOLES, VAULTS AND OTHER UNDERGROUND STRUCTURES SHALL BE HELD AWAY FROM BUILDING WALLS FAR ENOUGH TO BE OUTSIDE OF THE ZONE OF INFLUENCE.

PLUMBING DEMOLITION NOTES:

A. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR AREAS IN WHICH THE CEILING IS REMAINING. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THE EXISTING CEILING AS REQUIRED AND REINSTALLATION. TEMPORARILY SUPPORT LIGHTS, DIFFUSERS, CEILING ETC. REPLACE BROKEN CEILING TILES WITH NEW AT NO ADDITIONAL COST TO OWNER. FIELED VERIFY EXACT REQUIREMENTS.
B. ALL OUTAGES SHALL BE SCHEDULED THROUGH THE PROJECT REPRESENTATIVE FOR PROPER COORDINATION. A REQUEST FOR AN OUTAGE SHALL BE SUBMITTED IN WRITING A MINIMUM OF TWO WEEKS IN ADVANCE.
C. DURING SPRINKLER SYSTEM OUTAGES THE CONTRACTORS SHALL PROVIDE FIRE WATCH OF AREAS WITH OUTAGES.
D. ALL WALLS AND FLOOR SLABS SHALL BE REPAIRED TO MATCH EXISTING AND TO A LIKE NEW CONDITION. ALL RATED WALLS AND FLOOR SLABS SHALL BE PATCHED AND REPAIRED TO MAINTAIN RATING.
E. ALL EXISTING BUILDING FINISHES SHALL BE PROTECTED DURING THE DEMOLITION PHASE.
F. HEAVY DASHED LINES INDICATE ITEMS FOR REMOVAL (U.O.N) AND LIGHT SOLID LINES INDICATE EXISTING ITEMS TO REMAIN.
G. COORDINATE DISPOSAL OF ALL FIXTURES, DEVICES, ETC. (INDICATED FOR DEMOLITION) WITH THE OWNER.

SYMBOLS & ABBREVIATIONS

A, AIR	MEDICAL AIR		POINT OF CONNECTION
AFF	ABOVE FINISHED FLOOR		LIMIT OF DEMOLITION
AFR	ABOVE FINISHED ROOF		PIPE ELBOW TURNING UP/TURNING DOWN
C.I.	CAST IRON		PIPE TEE TURNING UP/TURNING DOWN
CO2	CARBON DIOXIDE	A	MEDICAL AIR
CW	DOMESTIC COLD WATER	CA	COMPRESSED AIR
DN	DOWN	FM	FORCED MAIN
EV	EVACUATION (WASTE ANESTHETIC GAS DISPOSAL)	FP	FIRE PROTECTION LINE
FHV	FIRE HOSE VALVE WITH CABINET	G	GAS LINE
FPRH	FREEZE PROOF ROOF HYDRANT	GW	SANITARY WASTE PIPING TO GREASE TRAP
FPWH	FREEZE PROOF WALL HYDRANT	O	OXYGEN PIPING
HB	HOSE BIBB	ORL	OVERFLOW ROOF LEADER PIPING
HW	DOMESTIC HOT WATER	RWL	ROOF LEADER PIPING
IAW	IN ACCORDANCE WITH	SAN	SANITARY WASTE PIPING
ID	INSIDE DIMENSION	SS	STORM SEWER PIPING
IE	INVERT ELEVATION	V	VACUUM PIPING
LPA	LINE PRESSURE ALARM (MEDICAL GAS AREA ALARM)	VT	VENT PIPING
MH	MANHOLE	E(NAME)	EXISTING PIPING (THIN LINE)
MSA	MULTI-SINGLE ALARM (MEDICAL GAS MASTER ALARM)	ABAN(NAME)	ABANDONED EXISTING PIPING (THIN LINE)
NTS	NOT TO SCALE		DOMESTIC COLD WATER PIPING
NIC	NOT IN CONTRACT		DOMESTIC HOT WATER SUPPLY
NO	NORMALLY OPEN		DOMESTIC RECIRCULATING HOT WATER
NC	NORMALLY CLOSED	CO	CLEANOUT IN CEILING SPACE
O, OX	OXYGEN	CO	FLOOR CLEANOUT
OD	OUTSIDE DIMENSION	ECO	EXTERIOR CLEANOUT
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED		BALANCING VALVE
OFOI	OWNER FURNISHED, OWNER INSTALLED		BALL VALVE
CFCI	CONTRACTOR FURNISHED, CONTRACTOR INSTALLED		SAFETY RELIEF VALVE
OR	OPEN RECEPTACLE		SAFETY RELIEF VALVE
ORL	OVERFLOW ROOF LEADER		OS&Y (GATE) VALVE
PRV	PRESSURE REDUCING VALVE (STEAM, WATER, OR GAS)		PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH		STRAINER
RHW	DOMESTIC RECIRCULATING HOT WATER		CHECK VALVE
RL	ROOF LEADER		DOUBLE CHECK VALVE ASSEMBLY
SCW	SOFT DOMESTIC COLD WATER		PIPING UNION
SR	SANITARY RISER		FLOW SWITCH
TB	THRUST BLOCK		PRESSURE SWTICH
TE	TOP ELEVATION		TAMPER SWITCH
TP	TRAP PRIMER		THERMOMETER
TYP	TYPICAL	V	VACUUM BREAKER
UON	UNLESS OTHERWISE NOTED		LIMITED AREA SPRINKLER HEAD
V, VAC	VACUUM		PETE'S PLUG
VTR	VENT THRU ROOF	FD-#	FLOOR DRAIN DESIGNATOR
X	TAGGED NOTE DESIGNATOR	RD-#	ROOF DRAIN DESIGNATOR
2	REVISION DESIGNATOR	P-#	PLUMBING FIXTURE DESIGNATOR
			HOSE BIB

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT

Sheet List - Plumbing

SHEET #	SHEET NAME
P001	PLUMBING LEGEND
P100	PLUMBING UNDERSLAB DEMOLITION PLAN
P101	PLUMBING FIRST FLOOR DEMOLITION PLAN
P102	PLUMBING SECOND FLOOR DEMOLITION PLAN
P200	PLUMBING UNDERSLAB PLAN
P201	PLUMBING FIRST FLOOR PLAN
P202	PLUMBING SECOND FLOOR PLAN
P203	PLUMBING ROOF PLAN
P301	PLUMBING DETAILS AND ISOMETRICS

No.	Revisions / Submissions	Date
2	ADDENDUM 2	3/22/2021

LWC INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

CMTA
222 E. 14th Street. Floor 4. Cincinnati, Ohio 45202
513 429 4404 f 513 429 4693 www.cmta.com

WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON RD.
WAYNESVILLE, OH 45068

PLUMBING LEGEND

STATE OF OHIO · BRADLEY STEVEN BRUENING · 81283 · REGISTERED PROFESSIONAL ENGINEER

Comm. No.	Date
18620.00	2021/03/01
Drawn: JDW	Drawing No.: P001
Checked: BSB	

C:\Users\jwaldron\Documents\OWPA20_MEP_R20_jwaldronUC2020.rvt

PACKAGED RTU SCHEDULE

MARK	MANUFACTURER	MODEL	DIMENSIONS				MIN. OUTDOOR AIR (CFM)	MAX. OUTDOOR AIR, NON ECONOMIZER (CFM)	SUPPLY FAN				EXHAUST FAN				COOLING PERFORMANCE										HOT GAS REHEAT		GAS HEAT			ELECTRICAL DATA				REMARKS
			LENGTH	WIDTH	HEIGHT	WEIGHT (LBS)			AIRFLOW (CFM)	ESP (in. wg)	MOTOR TYPE	HP	EXHAUST AIRFLOW (CFM)	ESP (in. wg.)	MOTOR TYPE	HP	REFRIGERANT	COOLING STAGES	TOTAL (MBH)	SENSIBLE (MBH)	ENTERING COIL TEMPERATURE		LEAVING COIL TEMPERTURE		FACE VELOCITY (FPM)	APD (in. wg.)	COIL ROWS	FINS/IN	EER	CAPACITY (MBH)	COIL LAT DB	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	HEATING STAGES	VOLTS / HZ / PH	MCA	MOPD	
																					EAT DB	EAT WB	DB (F)	WB (F)												
RTU-1	DAIKIN	DPSA031	29' - 9"	8' - 0 1/2"	6' - 5 77/128"	8540	550	2000	10550	2.5	ECM	(2) 6.3	10550	0.50	ECM	7.0	R410A	(1) VARIABLE SPEED, (2) FIXED SPEED COMPRESSORS	344	279.7	76.8	63.7	52.6	52.5	398.2	0.66	6	12	11.3	199.7	70	400	324.0	MODULATING 10-100%	208/60/3	193.3	225	1-15
RTU-2	DAIKIN	DPS020A	13' - 6 77/256"	6' - 4 1/2"	5' - 10 1/2"	4041	260	400	8800	1.50	DIRECT	10	8800	0.25	ECM	8	R410A	(1) INVERTER SCROLL	241	223	74.5	60.9	51.3	51.1	411.2	0.46	4	15	11	178.3	70	300	240.0	MODULATING 12:1 TURNDOWN	208/60/3	130.6	175	1-13,16

PACKAGED RTU SOUND DATA

MARK	INLET FREQUENCY							DISCHAGE FREQUENCY							RADIATED FREQUENCY						
	63 Hz	125 Hz	250 Hz	1 kHz	2 kHz	4 kHz	8 kHz	63 Hz	125 Hz	250 Hz	1 kHz	2 kHz	4 kHz	8 kHz	63 Hz	125 Hz	250 Hz	1 kHz	2 kHz	4 kHz	8 kHz
RTU-1	70	61	66	65	64	60	70	74	78	82	82	81	77	78	46	63	68	78	77	74	66
RTU-2	77	76	84	71	70	65	62	83	82	87	80	77	72	67	80	74	76	75	72	73	65

REMARKS:
1. IF SELECTED EQUIPMENT SIZE OR WEIGHT DEVIATES FROM BASIS OF DESIGN, CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COSTS RELATED TO THIS CHANGE.
2. PROVIDE NEEDLEPOINT BIPOLAR IONIZATION UPSTREAM OF COOLING COIL. BASIS OF DESIGN IS GLOBAL PLASMA SOLUTIONS, GPS-IMOD OR EQUAL. ALL SUBSTITUTE MANUFACTURERS MUST MEET THE FOLLOWING REQUIREMENTS AND MUST RECEIVE ENGINEER'S APPROVAL:
   A. MUST BE COMPLETELY INSTALLED, STARTED, COMMISSIONED, WARRANTED AND SUPPORTED BY A LOCAL FACTORY AUTHORIZED TECHNICIAN.
   B. EQUIPMENT MUST BE SELF CLEANING.
   C. UL LISTED TO BE OZONE FREE.
   D. PROVIDE AN 18 MONTH WARRANTY FROM CONSTRUCTION COMPLETION DATE.
3. SUPPLY AND RETURN CONNECTIONS ON SIDE OF UNIT. REFER TO PLANS FOR CONFIGURATION.
4. SPRING VIBRATION ISOLATORS ON SUPPLY AND EXHAUST FANS.
5. 2" MERV 8 FILTERS.
6. UNIT SHALL BE PROVIDED WITH MANUFACTURER INSTALLED OUTSIDE AIRFLOW MONITORING STATION.
7. FIELD POWERED 120V GFI RECEPTACLE FOR MAINTENANCE.
8. 12" TALL ROOF CURB. PROVIDE VIBRATION ISOLATION RAIL, KINETICS KSR 2.0 OR EQUAL.
9. 1 YEAR PARTS WARRANTY, 5 YEAR COMPRESSOR WARRANTY, AND 10 YEAR GAS HEAT EXCHANGER WARRANTY.
10. PROVIDE FACTORY CONTROLS WITH BACNET COMMUNICATION.
11. SINGLE POINT POWER CONNECTION.
12. SUPPLY STAINLESS STEEL CONDENSATE DRAIN PAN FOR COOLING COIL SECTIONS. ENTIRE DRAIN SHALL BE PITCHED TO OUTLET. ROUTE CONDENSATE TO NEAREST ROOF DRAIN.
13. COMPRESSOR SOUND BLANKET.
14. THERMALLY BROKEN DOUBLE WALL CONSTRUCTION, R-13 INSULATION.
15. VARIABLE SPEED COMPRESSOR SHALL BE LEAD COMPRESSOR.
16. 2" R-13 INJECTED FOAM INSULATION WITH GALVANIZED STEEL LINER.

DEDICATED OUTSIDE AIR UNIT SCHEDULE - BUILDING D

MARK	MANUFACTURER	MODEL #	PHYSICAL DATA				SUPPLY FAN						EXHAUST FAN						ELECTRICAL				REMARKS
			WIDTH (IN.)	LENGTH (IN.)	HEIGHT (IN.)	WEIGHT (LBS)	TOTAL OA CFM	FAN MOTOR TYPE	# OF FANS	FAN RPM	E.S.P. (" WC)	T.S.P. (" WC)	B.H.P.	TOTAL EA CFM	FAN MOTOR TYPE	# OF FANS	FAN RPM	E.S.P. (" WC)	B.H.P.	VOLTS / HZ / PH	MCA	MOCP	
DOAS-1	DAIKIN	DPS016A	182	77	71	4318	4575	DIRECT	1	2076	2.00	3.80	5.46	4130	ECM	1	1467	2.00	3.36	208/60/3	105	150	1-15

DEDICATED OUTSIDE AIR UNIT SCHEDULE - CONTD. 1

MARK	DX COOLING PERFORMANCE									HOT GAS REHEAT COIL		GAS HEATING PERFORMANCE				
	COOLING STAGES	REFRIGERANT	COIL AIRFLOW (CFM)	TOTAL (MBH)	SENSIBLE (MBH)	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	TOTAL CAPACITY (MBH)	LAT (°F)	HEATING AIRFLOW (CFM)	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	EAT (°F)	LAT (°F)
DOAS-1	(1) INVERTER SCROLL	R410A	4585	188.3	140.6	81.2	67.4	55.4	55.4	100.6	74.0	4585	600	480	0.0	88.5

DEDICATED OUTSIDE AIR UNIT SCHEDULE - CONTD. 2

MARK	ENERGY RECOVERY WHEEL PERFORMANCE														
	WINTER OPERATION							SUMMER OPERATION							
	OUTDOOR AIR STREAM				EXHAUST AIR STREAM			OUTDOOR AIR STREAM				EXHAUST AIR STREAM			
	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	EAT DB (°F)	EAT WB (°F)	TOTAL EFFECTIVENESS	EAT DB (°F)	EAT WB (°F)	LAT DB (°F)	LAT WB (°F)	EAT DB (°F)	EAT WB (°F)	TOTAL EFFECTIVENESS	OUTDOOR AIR APD (IN. WG.)	EXHAUST AIR APD (IN. W.G.)
DOAS-1	0	-1	45	38	72	54	65.5	92	74	81	67	74	62	59	0.56	0.56

REMARKS:
1. IF SELECTED EQUIPMENT SIZE OR WEIGHT DEVIATES FROM BASIS OF DESIGN, CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL COSTS RELATED TO THIS CHANGE. IT IS THE CONTRACTOR'S AND ALTERNATE MANUFACTURER'S RESPONSIBILITY TO ENSURE FIT AND CLEARANCES ARE MAINTAINED. HEIGHT OF ALTERNATE UNITS CANNOT EXCEED BASIS OF DESIGN.
2. SUPPLY AND RETURN CONNECTIONS ON BOTTOM OF UNIT. REFER TO PLANS FOR CONFIGURATION. COORDINATE DUCT DROPS WITH EXISTING ROOF STRUCTURE AND PROVIDE DUCT TRANSITIONS IN CURB AS NECESSARY.
3. SPRING VIBRATION ISOLATORS ON SUPPLY AND EXHAUST FANS.
4. 2" MERV 8 FILTERS.
5. UNIT SHALL BE PROVIDED WITH MANUFACTURERS INSTALLED OUTSIDE AIRFLOW MONITORING STATION.
6. FIELD POWERED 120V GFI RECEPTACLE FOR MAINTENANCE.
7. 12" TALL MINIMUM ROOF CURB. PROVIDE VIBRATION ISOLATION RAIL, KINETICS KSR 2.0 OR EQUAL.
8. 1 YEAR PARTS WARRANTY, 5 YEAR COMPRESSOR WARRANTY, AND 10 YEAR GAS HEAT EXCHANGER WARRANTY.
9. PROVIDE FACTORY CONTROLS WITH BACNET COMMUNICATION.
10. PROVIDE FACTORY CONTROLS WITH BACNET COMMUNICATION.
11. SINGLE POINT POWER CONNECTION.
12. SUPPLY STAINLESS STEEL CONDENSATE DRAIN PAN FOR COOLING COIL SECTIONS. ENTIRE DRAIN SHALL BE PITCHED TO OUTLET. ROUTE CONDENSATE TO NEAREST ROOF DRAIN.
13. COMPRESSOR SOUND BLANKET.
14. 2" R-13 INJECTED FOAM INSULATION WITH GALVANIZED STEEL LINER.
15. ENERGY RECOVERY WHEEL VFD PROVIDED BY MANUFACTURER.

VRF INDOOR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	DESCRIPTION	DIMENSIONS (IN.)			WEIGHT (LBS)	AIRFLOW (CFM)	REQUIRED COOLING (BTU/H)	REQUIRED HEATING (BTU/H)	AVAILABLE COOLING (BTU/H)	AVAILABLE HEATING (BTU/H)	ELECTRICAL					REMARKS
				LENGTH	WIDTH	HEIGHT							VOLTAGE	PHASE	HZ	MCA	MOCP	
FC-121	DAIKIN	FXQM48PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	101.40 lb	1377	30500	16200	44665	55993	208	1	60	3.4	15	1-5
FC-125	DAIKIN	FXMQ54PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	103.60 lb	1624	40800	14300	50211	62203	208	1	60	3.4	15	1-5
FC-126	DAIKIN	FXMQ54PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	103.60 lb	1624	40800	14300	50211	62203	208	1	60	3.4	15	1-5
FC-127	DAIKIN	FXMQ54PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	103.60 lb	1624	40800	14600	50211	62203	208	1	60	3.4	15	1-5
FC-130	DAIKIN	FXMQ30PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	101.40 lb	1094	24900	14300	27802	35247	208	1	60	2.8	15	1-5
FC-131	DAIKIN	FXMQ24PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	40	12	79.40 lb	688	20300	8000	22309	28014	208	1	60	1.8	15	1-5
FC-134a	DAIKIN	FXMQ07PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	22	12	55.10 lb	317	5500	2200	6984	8803	208	1	60	0.6	15	1-5
FC-134b	DAIKIN	FXMQ07PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	22	12	55.10 lb	317	5500	2200	6984	8803	208	1	60	0.6	15	1-5
FC-135	DAIKIN	FXMQ15PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	40	12	79.40 lb	560	10500	700	13944	17095	208	1	60	1.5	15	1-5
FC-211	DAIKIN	FXMQ54PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	103.60 lb	1624	41700	18500	50211	62203	208	1	60	3.4	15	1-5
FC-212	DAIKIN	FXMQ54PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	103.60 lb	1624	41400	14400	50211	62203	208	1	60	3.4	15	1-5
FC-213	DAIKIN	FXMQ54PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	103.60 lb	1624	41400	14400	50211	62203	208	1	60	3.4	15	1-5
FC-214	DAIKIN	FXMQ54PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	55	12	103.60 lb	1624	41500	14400	50211	62203	208	1	60	3.4	15	1-5
FC-216	DAIKIN	FXMQ09PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	22	12	55.10 lb	317	8300	6100	8832	10885	208	1	60	0.6	15	1-5
FC-217	DAIKIN	FXMQ07PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	22	12	55.10 lb	317	6400	5800	6984	8803	208	1	60	0.6	15	1-5
FC-218	DAIKIN	FXMQ15PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	40	12	79.40 lb	560	9500	8300	13944	17095	208	1	60	1.5	15	1-5
FC-219	DAIKIN	FXMQ07PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	22	12	55.10 lb	317	2900	200	6984	8803	208	1	60	0.6	15	1-5
FC-220	DAIKIN	FXMQ09PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	22	12	55.10 lb	317	7300	700	8832	10885	208	1	60	0.6	15	1-5
FC-223	DAIKIN	FXMQ24PBVJU	DUCTED ABOVE CEILING FAN COIL UNIT	28	40	12	79.40 lb	688	18700	10700	22309	28014	208	1	60	1.8	15	1-5, 6

REMARKS:
1. PROVIDE DIGITAL WALL MOUNTED THERMOSTAT (DAIKIN MODEL BRC1E72RMF) TO CONTROL UNIT. REFER TO PLANS FOR THERMOSTAT LOCATIONS.
2. INTEGRATE CONTROL OF VRV INDOOR UNITS TO THE INTELLIGENT TOUCH MANAGER.
3. CONTRACTOR SHALL COORDINATE LOCATION TO MAINTAIN MANUFACTURER RECOMMENDED SERVICE CLEARANCES.
4. DO NOT PROVIDE WITH FILTERS FOR UNIT 6"CTEN RACK FILTERS SHALL BE PROVIDED AT RETURN GRILLES.
5. UNIT SHALL HAVE INTEGRAL CONDENSATE PUMP WITH MINIMUM 18" RISE.
6. PROVIDE THIS UNIT WITH 2" FILTER RACK AT RETURN OPENING AND MERV 8 FILTER.

VRF OUTDOOR UNIT SCHEDULE

MARK	MANUFACTURER	MODEL #	DESCRIPTION	DIMENSIONS (IN.)			WEIGHT (LBS)	REQUIRED COOLING (BTU/H) @ 95°F	REQUIRED HEATING (BTU/H) @ 0°F	EQUIPMENT PERFORMANCE (NON-DUCTED)				ELECTRICAL		REFRIGERANT TYPE	REMARKS
				LENGTH	WIDTH	HEIGHT				EER	IEER	COP @ 47°F	COP @ 17°F	VOLTAGE	PHASE		
HRCU-1	DAIKIN	REYQ456XAYDA	VRV IV HEAT RECOVERY SYSTEM	30	148	67	2247 lb	542146	673864	9.3	16.2	3.21	2.07	208	3	R410A	1-8

REMARKS:
1. PROVIDE WITH R-410A REFRIGERANT. SIZE LINES PER MANUFACTURER'S INSTRUCTIONS. SUBMIT DETAILED PIPING SCHEMATIC WITH SHOP DRAWINGS.
2. PROVIDE ROOF SUPPORT SYSTEM. ROOF SUPPORT SHALL BE 18" OR THE MINIMUM HEIGHT RECOMMENDED BY THE VRV MANUFACTURER (WHICHEVER IS HIGHER).
3. PROVIDE DAIKIN INTELLIGENT TOUCH MANAGER (MODEL DCM601A71) WITH BACNET IP CLIENT SOFTWARE (MODEL DCM009A51).
4. MANUFACTURERS SUBMITTAL MUST INCLUDE REFRIGERANT PIPING DIAGRAM WITH PIPING DIAGRAM WITH PIPE DIAMETERS, LENGTHS, AND REFRIGERANT VOLUMES.
5. SUBSTITUTE MANUFACTURERS SHALL BE RESPONSIBLE FOR ADDITIONAL PIPING AND REFRIGERANT.
6. CONTRACTOR AND MANUFACTURER ARE RESPONSIBLE FOR PIPING DIMENSIONS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DIRECT COSTS ASSOCIATED WITH ANY DEVIATIONS RESULTING FROM CHANGES IN DESIGN.
8. THE EQUIPMENT PERFORMANCE TO MEET OR EXCEED IECC 2015.

VRF BRANCH SELECTOR UNIT SCHEDULE

MARK	MODEL	MANUFACTURER	DIMENSIONS (IN.)			WEIGHT (LBS)	ASSOCIATED HEAT PUMP	NUMBER OF BRANCHES	VOLTAGE	PHASE	MCA	REMARKS
			LENGTH	WIDTH	HEIGHT							
BC-1	BSF4Q54TVJ	DAIKIN	14	24	10	48.5	HRCU-1	4	208	1	0.4	1-2
BC-2	BSF6Q54TVJ	DAIKIN	24	24	10	72.8	HRCU-1	6	208	1	0.6	1-2
BC-3	BS12Q54TVJ	DAIKIN	19	32	12	101.4	HRCU-1	10	208	1	1.0	1-2

REMARKS:
1. REFER TO PIPING SCHEMATICS FOR ADDITIONAL INFORMATION.
2. CONTRACTOR SHALL COORDINATE TO ENSURE MANUFACTURERS RECOMMENDED CLEARANCES ARE MAINTAINED.

CMTA
222 E. 14th Street. Floor 4. Cincinnati, Ohio 45202
513 429 4404 f 513 429 4693 www.cmta.com

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625 DAYTON RD.
WAYNESVILLE, OH 45068

MECHANICAL SCHEDULES

STATE OF OHIO BRIAN K. ROSE E-56929 REGISTERED PROFESSIONAL ENGINEER

Comm. No.	Date
18620.00	2021/03/01
Drawn: KAS	Drawing No.: M601
Checked: BKR	

EXISTING BUILDING

EXISTING ELEMENTARY SCHOOL TRANSFORMER. SHOWN FOR REFERENCE ONLY

EXISTING (2) 4" CONDUIT FOR POWER

APPROXIMATE LOCATION OF THE EXISTING MDF ROOM

EXISTING PK-6 BUILDING

EXISTING PULLBOX FOR DATA

UTILIZE EXISTING DP&L LBC CABINET INSTALLED IN PK-6 ADDITION.

EXISTING (2) 4" CONDUIT FOR POWER

EXISTING (2) 4" CONDUIT FROM ELEMENTARY SCHOOL

EXISTING PULLBOX FOR DATA

EXISTING 3'-10" SQUARE X 2'-4" DEEP PULLBOX

NEW (2) 4" CONDUIT FOR DATA. PROVIDE NEW CONDUIT FROM EXISTING PULLBOX UNDERGROUND TO MECHANICAL ROOM. (3) 24 STRANDS OF RFIBER. (1) PHONE, (1) PA, AND (1) CAMERA

NEW PRIMARY CONDUITS 30" MIN. BELOW GRADE

FUTURE GYMNASIUM

NEW AUDITORIUM ADDITION

NEW MDF AND EXISTING CAMERA LOCATION IT ROOM 109

EXISTING MDF TO BE RELOCATED BY OWNER

EXISTING BUILDING

PROVIDE J-HOOK PATHWAY FOR FIBER AND DATA

NEW MECHANICAL ROOM 134

EXISTING SCHOOL SIGN

1B -64

REFED EXISTING DIGITAL SIGN. FIELD VERIFY POWER AND DATA REQUIREMENTS PRIOR TO DISCONNECTING.

1B -68 VIA TIME CLOCK

UTILITY METER (BASE BID)

NEW UTILITY TRANSFORMER UT1 (BASE BID)

CONCRETE BOLLARDS (BASE BID)

CT CABINET AND UTILITY METER (BASE BID)

OUTLINE OF NEW MAIN ELECTRICAL ROOM 112

NEW PRIMARY CONDUITS 30" MIN. BELOW GRADE BASE BID

NEW SECONDARY UNDER GROUND (BASE BID)

PULLBOX (BASE BID)

ALTERNATE UTILITY TRANSFORMER UT1 LOCATION. REFER TO DRAWING SHEET E401 FOR ADDITIONAL INFORMATION (ALTERNATE)

1B -66 VIA TIME CLOCK

AREA OF NEW WORK

1 ELECTRICAL SITE PLAN
SCALE: 1" = 30'-0"

GENERAL NOTES (SITE):

A. DO NOT SCALE FROM MECHANICAL AND ELECTRICAL DRAWINGS. FIELD VERIFY REQUIRED DIMENSIONS AND COORDINATE WITH CIVIL DRAWINGS AND SURVEYS.
B. REFER ALSO TO ALL OTHER PLANS AND THE SPECIFICATION, BUT ESPECIALLY TO: THE SITE SURVEY, THE ARCHITECTURAL SITE PLAN, THE SITE GRADING PLAN, THE PLANTING PLAN (WHERE AVAILABLE), FOUNDATION PLAN(S), APPROPRIATE MECHANICAL & ELECTRICAL FLOOR PLANS FOR SERVICE CONTINUATIONS, THE SITE UTILITY PLAN - MECHANICAL & ELECTRICAL. WHERE THERE ARE CONFLICTS AMONG THESE PLANS AND/OR RELATED SPECIFICATIONS, ADVISE THESE ENGINEERS AT LEAST TEN DAYS PRIOR TO SUBMISSION OF BIDS.
C. ALL FEES AND ANY OTHER COSTS TO UTILITY COMPANIES, MUNICIPALITIES, INSPECTORS, REVIEWING AGENCIES, ETC. ARE TO BE INCLUDED AS A PART OF THIS CONTRACT.
D. FEDERAL, STATE, LOCAL, MUNICIPALITY AND UTILITY COMPANY CODES, RULES, REGULATIONS AND REQUIREMENTS APPLY UNLESS EXCEEDED BY THIS DESIGN.
E. WHEN INTERRUPTION OF AN EXISTING UTILITY OR SERVICE IS PLANNED OR OCCURS ACCIDENTALLY, THE CONTRACTOR(S) SHALL WORK CONTINUOUSLY AS NEEDED TO RESTORE SAME PROVIDING PREMIUM TIME AS NEEDED AT NO INCREASE IN THE CONTRACT PRICE.
F. LOCATIONS, DEPTHS, MATERIAL TYPES, ELEVATIONS, ETC. OF ALL APPURTENANCES, LINES, BUILDINGS, ETC. INDICATED ON THESE DRAWINGS WERE TAKEN FROM VARIOUS SOURCES, ARE DIAGRAMMATIC ONLY AND ARE SUBJECT TO SUBSTANTIAL VARIATION FROM EXISTING CONDITIONS. EXISTING UTILITIES LOCATIONS MAY VARY. CONSEQUENTLY ALL CONTRACTORS SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL FEDERAL, STATE, AND/OR LOCAL RULES, REGULATIONS, STANDARDS AND SAFETY REQUIREMENTS.
G. PROVIDE LONG RADIUS ELBOWS FOR UNDERGROUND CONDUIT BENDS. WHERE SERVING A UTILITY OWNED TRANSFORMER, THE UTILITY STANDARDS SHALL TAKE PRECEDENCE.
H. UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY. IF ANY VARIATION OCCURS, CONSULT THE ENGINEER. CONTRACTOR SHALL VISIT THE SITE AND FIELD VERIFY THE ROUTING OF ALL UTILITIES NEW AND EXISTING PRIOR TO SUBMISSION OF BIDS. SUBMISSION OF A BID PROPOSAL INDICATES THAT THE CONTRACTOR IS FULLY AWARE OF ALL OBSTRUCTIONS AND WILL INSTALL ALL OF THE NEW UTILITIES WITHOUT REQUESTS FOR ANY ADDITIONAL CHANGES.
I. PROVIDE GALVANIZED RIGID CONDUIT FOR EXTERIOR UNDERGROUND TRANSITIONS TO ABOVE GRADE; EXTEND CONDUIT A MINIMUM OF 6" ABOVE GRADE.
J. CONTRACTOR SHALL PERFORM A SMOKE TEST ON ALL CONDUITS INSTALLED ON SITE AND SHALL TAKE ALL NECESSARY CORRECTIVE ACTION IF NOT FOUND IN COMPLIANCE WITH FACILITY STANDARDS.
K. CONTRACTOR SHALL CONTACT ENGINEER FOR INSPECTION OF TRENCHES PRIOR TO INSTALLATION OF CONDUITS OR RACEWAYS. PROVIDE PHOTOS UPON REQUEST.
L. CONTRACTOR SHALL CUT AND PATCH ALL PAVEMENT, CURBING, ETC. AS REQUIRED FOR WORK. CONTRACTOR SHALL REPAIR ALL LANDSCAPING THAT IS DAMAGED FOR WORK. FINISH GRADE, SEED AND STRAW ALL DISTURBED GREEN SPACES. ALL PATCH AND REPAIR WORK SHALL BE IN ACCORDANCE WITH BOTH CIVIL AND LANDSCAPE DRAWINGS AND SPECIFICATIONS.

TAGGED NOTES

L9	EXISTING LIGHTING STANDARD INSTALLED IN THE ELEMENTARY CONSTRUCTION. SHOWN FOR REFERENCE ONLY.
L10	THIS FIXTIRE IS TO BE LISTED AS PART OF THE DRIVE ALTERANTE. ALTERNATE TO INCLUDE ALL ASSOCIATED WIRE, CONDUIT, POLE BASE, ETC. ASSOCIATED WITH POLE.

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625 DAYTON RD.
WAYNESVILLE, OH 45068

ELECTRICAL SITE PLAN

CMTA
222 E. 14th Street. Floor 4. Cincinnati, Ohio 45202
513 429 4404 f 513 429 4693 www.cmta.com

STATE OF OHIO — JEFFREY ALLEN MILLARD — E-47512 — REGISTERED PROFESSIONAL ENGINEER

Comm. No. 18620.00	Date 2021/03/01
Drawn RAR	Drawing No. E100
Checked JAM/JRH	

GENERAL NOTES (LIGHTING):

A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER N.E.C. #310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER N.E.C. #300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN N.E.C #100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. IN HEALTHCARE FACILITIES, ENGRAVE EMERGENCY DEVICE COVERPLATES IN PATIENT CARE AREAS. ALSO, MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
D. LOCATE CHAIN-HUNG INDUSTRIAL FIXTURES IN MECHANICAL ROOMS TO AVOID DUCTWORK AND PIPING, TO MAXIMIZE AVAILABLE LIGHT. SPACE AROUND EQUIPMENT, AIR HANDLERS, ETC. TO PROVIDE ADEQUATE LIGHTING TO ALL AREAS OF ROOM. PROVIDE ADDITIONAL FIXTURES OF SAME TYPE AS NEEDED TO FULFILL THIS REQUIREMENT.
E. LOCATE EXIT SIGNS FOR MAXIMUM VIEWING AREA TO IDENTIFY EGRESS PATHS AS INDICATED ON PLANS. COORDINATE LOCATIONS SUCH THAT ARCHITECTURAL FEATURES OR EQUIPMENT FROM OTHER TRADES DO NOT OBSTRUCT VIEW.
F. WHERE EXIT SIGNS OR EMERGENCY BATTERY PACKS ARE PROVIDED, THEY SHALL BE CONNECTED TO AN UNSWITCHED LINE.
G. LUMINAIRES INDICATED WITH MULTI-LEVEL SWITCHING SHALL HAVE SIMILAR LAMPS CONTROLLED TOGETHER, I.E. INBOARD AND OUTBOARD LAMPS OR RIGHT AND LEFT HAND LAMPS.
H. IT IS PREFERRED THAT FIXTURES BE SHIPPED AND INSTALLED WITH CLEAR PLASTIC BAGS TO PROTECT LOUVERS. AT CLOSE OF PROJECT, AND AFTER CONSTRUCTION AIR FILTERS ARE CHANGED, REMOVE BAGS. ANY LOUVER OR CONE SHOWING DIRT OR FINGER PRINTS SHALL BE CLEANED WITH SOLVENT RECOMMENDED BY THE MANUFACTURER, OR REPLACED AS NECESSARY IN ORDER TO TURN OVER TO THE OWNER NEW FIXTURES AT OCCUPANCY.
I. RECESSED LUMINAIRES SHALL BE SECURED SUCH THAT THE FORCE REQUIRED INSERTING LAMPS, TRIMS, LENSES, LOUVERS, OR DOOR FRAMES DOES NOT SHIFT HOUSING. ALL TRIMS SHALL BE COMPLETELY FLUSH WITH FINISHED CEILINGS AT COMPLETION OF CONSTRUCTION.
J. CONTRACTOR SHALL PROVIDE UNSWITCHED CONDUCTOR TO ALL EXIT SIGNS, EMERGENCY INVERTER BATTERY PACKS, AND NIGHT LIGHTS AS REQUIRED
K. OCCUPANCY SENSOR LAYOUT IS DESIGNED WITH THE INTENT TO HAVE 100% COVERAGE OF ALL SPACES CONTROLLED BY SENSORS. PROVIDE SENSORS WITHIN CONTROLLED SPACES TO MEET THE 100% COVERAGE REQUIREMENT. THIS MAY RESULT IN SUPPLEMENTAL SENSORS THAN INDICATED ON PLANS OR VARYING SENSOR TYPES TO ENSURE FULL COVERAGE. PROVIDE ALL POWER PACKS AND LOW VV VOLTAGE WIRING AS REQUIRED TO INTERCONNECT MULTIPLE SENSORS SERVING THE SAME SPACE.

TAGGED NOTES

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L1	PROVIDE WALL MOUNTED LINEAR FIXTURE. COORDINATE FIXTURE OVERALL LENGTH, MOUNTING AND DRIVER LOCATION IN FIELD WITH DESIGN TEAM PRIOR TO INSTALLATION.
L2	CONNECT TO EXISTING LIGHTING CIRCUIT MADE AVAILABLE BY DEMOLITION.
L6	PROVIDE 1-GANG BACKBOX FOR TWO-BUTTON LIGHTING CONTROL STATION. PROVIDE CONDUIT PATHWAY AND WIRING. REFER TO THEATRICAL LIGHTING CONTROLS DIAGRAM FOR ADDITIONAL REQUIREMENTS.
L7	BLUE BULLET LIGHT (RUNNING LIGHT) SURFACE MOUNTED AT 7'-0" ABOVE FINISHED FLOOR TO BOTTOM OF FIXTURE.
L8	ALTERNATE BID IN THIS AREA TO REMOVE WALL BETWEEN PAIRS OF CLASSROOMS TO CREATE A SINGLE ENLARGED SPACE. THE LIGHTING AND CONTROLS POINTS IN THIS REMAIN THE SAME, BUT WILL BE REARRANGED DUE TO CEILING CHANGES. INCLUDE EXITS LIGHTS (TYPE EX1) OVER DOORS IF MORE THAN EXIT DOOR REMAINS IN THE ROOM. REFER TO ARCHITECTURAL DRAWING SHEET AL101 ALTERNATE FOR ADDITIONAL SCOPE.

1 FIRST FLOOR LIGHTING PLAN
SCALE: 1/8" = 1'-0"

No.	Revisions / Submissions	Date
2	ADDENDUM 2	3/22/2021

LWC INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON RD.
WAYNESVILLE, OH 45068

ELECTRICAL LIGHTING FIRST FLOOR PLAN

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222 E. 14th Street. Floor 4. Cincinnati, Ohio 45202
513 429 4404 f 513 429 4693 www.cmta.com

STATE OF OHIO — JEFFREY ALLEN MILLARD — E-29012 — REGISTERED PROFESSIONAL ENGINEER

Comm. No.	Date
18620.00	2021/03/01
Drawn: RAR	Drawing No.: E301
Checked: JAM/JRH	

GENERAL NOTES (POWER):

A. REFER TO THE ARCHITECT'S REFLECTED CEILING PLANS, ELEVATIONS, AND CASEWORK DETAILS FOR EXACT LOCATIONS OF ALL WALL AND CEILING MOUNTED ELECTRICAL DEVICES.
B. CONTRACTOR SHALL FOLLOW BRANCH CIRCUITING LAY-OUT, AS INDICATED ON THE FLOOR PLANS, WITH A MAXIMUM OF THREE (3) BRANCH CIRCUITS PER HOMERUN. EACH BRANCH CIRCUIT SHALL BE PROVIDED WITH A DEDICATED NEUTRAL CONDUCTOR. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT CARRYING. IF ADDITIONAL CONDUCTORS ARE RAN IN THE SAME CONDUIT WITH THOSE INDICATED, CONTRACTOR SHALL DERATE ALL CURRENT CARRYING CONDUCTORS PER NEC 310.15(B)(3), AND UPSIZE CONDUIT AS REQUIRED PER NEC 300.17 AND ANNEX C. MULTIWIRE BRANCH CIRCUITS AS DEFINED IN NEC 100 / 210.4 (CIRCUITS SHARING A COMMON NEUTRAL CONDUCTOR) SHALL NOT BE PERMITTED.
C. IDENTIFY THE PANEL AND CIRCUIT NUMBER FOR ALL RECEPTACLES, SWITCHES, ETC. IN AREA OF CONSTRUCTION. PROVIDE CLEAR ADHESIVE LABELS WITH BLACK LETTERING. IN HEALTHCARE FACILITIES, ENGRAVE EMERGENCY DEVICE COVERPLATES IN PATIENT CARE AREAS. MARK INSIDES OF ALL DEVICE BOXES WITH PANEL AND CIRCUIT NUMBER.
D. RECEPTACLES THAT ARE CONTROLLED BY AN AUTOMATIC MEANS SUCH AS OCCUPANCY SENSOR OR ENERGY MANAGEMENT SYSTEM SHALL BE MARKED IN ACCORDANCE WITH NEC 406.3(E).
E. LOCATIONS OF ELECTRICAL CONNECTIONS AND LOCAL DISCONNECTS SHALL BE COORDINATED WITH MECHANICAL AND PLUMBING CONTRACTORS TO ENSURE ACCESS AND WORKING CLEARANCE IS MAINTAINED PER NEC. NOTIFY OTHER TRADES OF REQUIRED CLEARANCE AREAS TO AVOID ROUTING OF OTHER SYSTEMS IN THESE AREAS. DO NOT INSTALL ELECTRICAL EQUIPMENT OVER EQUIPMENT NAMEPLATES OR ACCESS PANELS OR THROUGH ACCESS/MAINTENANCE CLEARANCES OF EQUIPMENT BY OTHER TRADES.
F. ALL NEW RECEPTACLES ARE TO BE TAMPER RESISTANT PER NEC 406.12.

TAGGED NOTES

E1	PROVIDE A NEW SURFACE MOUNTED 120/208 VOLT PANEL. REWORK ALL EXISTING 120 VOLT BRANCH CIRCUITS FROM DEMOLISHED PANEL TO THIS NEW PANEL. SOME OF THE EXISTING BRANCH CIRCUITS WILL NEED TO BE REWORKED / EXTENDED TO THIS NEW PANEL. PROVIDE PULLBOXES, WIRE, CONDUIT, ETC. AS NEEDED TO EXTEND THE EXISTING BRANCH CIRCUITS.
E2	EXISTING PANEL REFED FROM NEW DISTRIBUTION PANEL, REFER TO SINGLE-LINE.
E4	PROVIDE POWER AND DATA FOR FUTURE INTERACTIVE TV. UTILIZE EXISTING TV POWER MADE AVAILABLE BY DEMOLITION. PROVIDE DUAL CHANNEL SURFACE RACEWAY WITH POWER AND DATA. COORDINATE EXACT LOCATION WITH OWNER AND ARCHITECT PRIOR TO INSTALL.
E7	REFEED EXISTING 240 VOLT, 1-PHASE WATER HEATER FROM NEW PANEL.
E8	REFEED EXISTING 240 VOLT, 3-PHASE ELEVATOR FROM NEW PANEL.
E9	INDOOR SPLIT SYSTEM IS POWERED BY OUTDOOR UNIT. PROVIDE ALL REQUIRED CONNECTS BETWEEN UNITS SS-1 AND CU-01.
E10	MOUNT RECESSED RECEPTACLE HORIZONTALLY IN BASE OF 8" CURTAIN WALL. SPACE RECEPTACLES 10' ON CENTER.
E11	PROVIDE RECESSED JUNCTION BOX FOR BACKLIT SIGNAGE. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH SIGN VENDOR PRIOR TO INSTALLATION.
E12	PROVIDE COMPLETE INSTALLATION OF MOTORIZED TELESCOPING STANDS. COORDINATE MOTOR LOCATION, VOLTAGE, AND CONTROL LOCATION WITH VENDOR PRIOR TO INSTALLATION.
E13	ALTERNATE BID IN THIS AREA TO REMOVE WALL BETWEEN PAIRS OF CLASSROOMS TO CREATE A SINGLE ENLARGED SPACE. THE EXISTING POWER, DATA, SURFACE RACEWAY WILL NEED TO BE REMOVED AND REWORKED. REFER TO ARCHITECTURAL DRAWING SHEET AL101 ALTERNATE FOR ADDITIONAL SCOPE.

EPH-01 UNITS ARE RECESSED IN CONCRETE SLAB. COORDINATE UNDERSLAB CONDUIT ROUTING IN FIELD WITH ALL DISIPLINES PRIOR TO POURING CONCRETE FLOOR TO ENSURE PROPER INSTALLATION. SURFACE RACEWAYS WILL NOT NE ACCEPTED.

PROVIDE 12"X12" IN GROUND PULL BOX WITH (5) 1" CONDUITS. (2) FOR FUTURE SITE LIGHTING AND (2) TO REFEED EXISTING DIGITAL SIGN AND (1) SPARE. PROVIDE PATHWAY BACK TO PANEL "1B". LABEL CONDUITS AS INDICATED.

ECPB DMX OUT/NET

CONCRETE PAD PER DP&L STANDARDS (BASE BID)

METER AND CT CABINET PER DP&L STANDARDS (BASE BID)

REFER TO ELECTRICAL SITE PLAN FOR CONT.

EXISTING DATA CLOSET, SHOWN FOR REFERENCE

POWER FOR RACKS

4" CONCRETE HOUSE KEEPING PAD

4" CONCRETE HOUSE KEEPING PAD

4" CONCRETE HOUSE KEEPING PAD

PROVIDE (4) 1" CONDUITS TO WATER METER PIT SHOWN ON CIVIL DRAWINGS. (1) CONDUIT FOR POWER, (1) CONDUIT FOR FIRE ALARM, (1) FOR FUTURE SITE LIGHTING, (1) SPARE. PROVIDE INGROUND PULL BOXES AS NEEDED.

SECONDARY CONDUCTOR (BASE BID)

PROVIDE ALTERNATE PRICING TO LOCATE THE UTILITY TRANSFORMER, CT CABINET, CONCRETE BOLLARDS, METER, PAD, AND ALL ASSOCIATED CONDUITS AND WIRING TO THIS LOCATION IN LIEU OF LOCATION SHOWN. THE INTENT IS TO SHORTEN THE SECONDARY CONDUITS BETWEEN THE TRANSFORMER AND MSB-1

PROVIDE (2) EMPTY CONDUIT TO IT ROOM 109. LABEL AS FUTUREGYM

PROVIDE (2) 3" EMPTY CONDUIT TO MSB1 IN ROOM ELECT. 11 AND LABEL AS FUTURE GYM

PROVIDE (4) EMPTY CONDUITS FOR FUTURE GYM. (2) 3" C. FOR POWER AND (2) 1" C. FOR FIBER. PROVIDE (2) 12"X12" IN GROUND PULL BOXES. (1) FOR POWER AND (1) FOR DATA. STUB UP INTO ELECTRICAL ROOM AND LABEL. COORDINATE LOCATION IN FIELD WITH DESIGN TEAM.

POWER

DATA

1 FIRST FLOOR POWER PLAN
SCALE: 1/8" = 1'-0"

KEY PLAN:

No.	Revisions / Submissions	Date
2	ADDENDUM 2	3/22/2021

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434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

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ELECTRICAL POWER FIRST FLOOR PLAN

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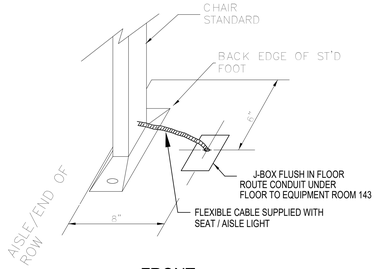
513 429 4404 f 513 429 4693 www.cmta.com

JEFFREY ALLEN MILLARD 6/9/15 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

Comm. No.	Date
18620.00	2021/03/01
Drawn: RAR	Drawing No.: E401
Checked: JAM/JRH	

TYPE TD FIXTURES (SEAT LIGHTS MOUNTED ON END STANDARDS OF SEATS WHERE INDICATED ON DRAWINGS)



FRONT

3 AISLE LIGHT - TYPE "TD"
SCALE: 1" = 1'-0"

OCCUPANCY CONTROLS

OS$_A$ - OCCUPANCY SENSOR (A) CORRIDOR

A. BUSINESS HOURS LIGHTS ARE ON.
B. AFTER HOURS LIGHTING AUTO ON TO 100% WHEN OCCUPANCY DETECTED.
C. LIGHTING AUTO OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING.
D. NORMAL POWER FAILURE EMERGENCY LIGHTING SHALL REVERT TO 100% ON.

OS$_B$ - OCCUPANCY SENSOR (B) RESTROOM

A. FOR EACH RESTROOM, LIGHTING AUTO ON TO 100% AND EXHAUST FAN (IF APPLICABLE) TO AUTO ON WHEN OCCUPANCY IS DETECTED.
B. LIGHTING AND EXHAUST FAN (IF APPLICABLE) TO AUTO OFF FOR EACH RESTROOM WITHIN 10 MINUTES OF OCCUPANTS LEAVING.
C. NORMAL POWER FAILURE EMERGENCY LIGHTING SHALL REVERT TO 100% ON.

OS$_C$ - OCCUPANCY SENSOR (C)

A. LIGHTING AUTO ON TO 100% WHEN OCCUPANCY IS DETECTED.
B. LIGHTING TO AUTO 50% OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING.
C. REMAINING 50% WILL REMAIN ON CONTINUOUSLY TO PROVIDE FAILSAFE EMERGENCY OR NORAML EGRESS.

OS - OCCUPANCY SENSOR - MEDIUM STORAGE, CLOSETS

A. LIGHTING AUTO ON TO 100% WHEN OCCUPANCY DETECTED.
B. LIGHTING AUTO OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING.

$_OS - OCCUPANCY SENSOR SWITCH

A. LIGHTING AUTO ON TO 100% WHEN OCCUPANCY DETECTED.
B. LIGHTING AUTO OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING.

VACANCY CONTROLS

VS - VACANCY SENSOR

A. LIGHTING MANUAL ON VIA LOCAL SWITCH.
B. PROVIDE MANUAL CONTROL OF DIMMING FOR LIGHTING VIA MASTER RAISE/LOWER WITH DIMMER SWITCH.
C. LIGHTING AUTO OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING.
D. NORMAL POWER FAILURE EMERGENCY LIGHTING SHALL REVERT TO 100% ON.

$_VS - VACANCY SWITCH

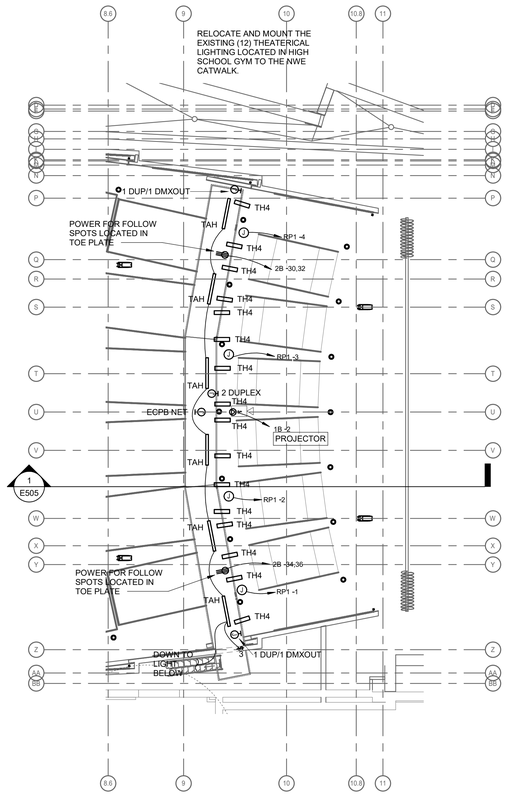
A. PROVIDE MANUAL CONTROL OF DIMMING FOR LIGHTING VIA MASTER RAISE/LOWER WITH DIMMER SWITCH.
B. LIGHTING AUTO OFF WITHIN 20 MINUTES OF OCCUPANTS LEAVING.

SCENE CONTROLS

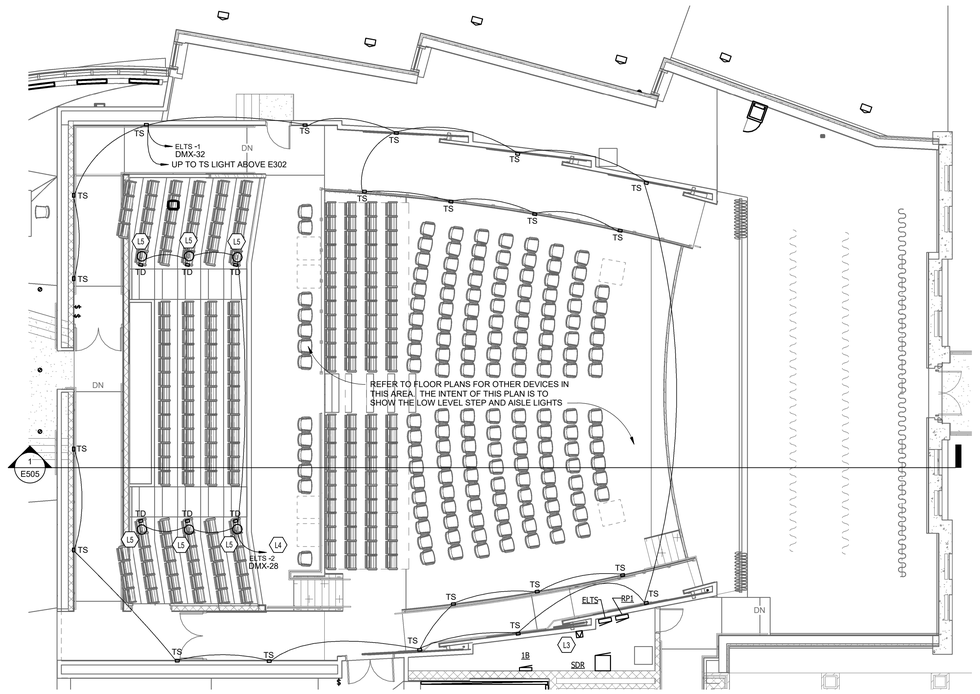
$LV1 - 4 SCENE, ON/OFF, RAISE/LOWER

A. GENERAL LIGHTING IS TO BE MANUAL ON. PROGRAM SYSTEM TO MAINTAIN AN AVERAGE OF 50FC MAX IN SPACE.
B. MANUAL CONTROL OF DIMMING FOR LIGHTING ZONES VIA RAISE/LOWER FUNCTION ON CONTROL STATION.
C. CONTROL STATION TO ALSO HAVE (4) PROGRAMMABLE PRESET SCENES. INITIAL PROGRAMMING SHALL BE:
   a. 15%
   b. 40%
   c. 75%
   d. 100%
D. FOR CLASSROOMS WITH PHOTOCELLS, LIGHTING WILL CONTINUOUSLY DIM BASED ON DAYLIGHTING CONTRIBUTION TO MAINTAIN THE MAXIMUM OF THE ROOM DIMMER LEVELS. LIGHTING FIXTURES ON DAYLIGHT ZONE ARE LABELED WITH A LOWERCASE "d".
E. AUTO OFF ALL FIXTURES WITHIN 20 MINUTES OF OCCUPANTS LEAVING.
F. NORMAL POWER FAILURE EMERGENCY LIGHTING SHALL REVERT TO 100% ON.

2



2 CATWALK LIGHTING AND POWER PLAN
SCALE: 1/8" = 1'-0"



1 ELECTRICAL LIGHTING AISLE AND STEP LIGHT PLAN
SCALE: 1/8" = 1'-0"

ELECTRICAL - LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	BASIS OF DESIGN	EQUAL MANUFACTURERS	MOUNTING	LAMPS / CCT	MINIMUM LUMENS	MAXIMUM WATTAGE	VOLTAGE	REMARKS
A2	2'X4' LED CONTEMPORARY ARCHITECTURAL TROFFER WITH ACRYLIC CURVED CENTER LENS	HUBBELL - LCAT24-80-35-VW-G-E-U	LITHONIA-2BLT4, METALUX-24CZ2, DAYBRITE-2-FGEZ	RECESSED GRID	LED / 3500K	3124	28	120	
A2D	2'X4' LED CONTEMPORARY ARCHITECTURAL TROFFER WITH ACRYLIC CURVED CENTER LENS. PROVIDE WITH 0-10V DIMMING TO 1%	HUBBELL - LCAT24-80-35-VW-G-E-U-DIM	LITHONIA-2BLT4, METALUX-24CZ2, DAYBRITE-2-FGEZ	RECESSED GRID	LED / 3500K	3124	28	120	
A2E	2'X4' LED CONTEMPORARY ARCHITECTURAL TROFFER WITH ACRYLIC CURVED CENTER LENS. PROVIDE WITH 1400 LUMEN BATTERY PACK INSTALLED.	HUBBELL - LCAT24-80-35-VW-G-E-U-ELL14	LITHONIA-2BLT4, METALUX-24CZ2, DAYBRITE-2-FGEZ	RECESSED GRID	LED / 3500K	3124	28	120	
A5	2X2 LED CONTEMPORARY ARCHITECTURAL TROFFER WITH ACRYLIC CURVED CENTER LENS. PROVIDE WITH DIMMING.	HUBBELL - LCAT22-35-LW-G-ED1-U	LITHONIA-2BLT4, METALUX-24CZ2, DAYBRITE-2-CT-G	RECESSED GRID	LED / 3500K	3063	23	120	
C1	10" DMX LED CYLINDER, DMX CONTROL, AND BLANK HOUSING. DIM TO LESS THAN .1%	PRESCOLITE - MC10LED-P-8L-27K-8-MVOLT-DMX-XFL55-SL-8L	PATHWAY LIGHTING -CALIBER-C68Q, PORTFOLIO-LSR8B40, SSL-SSC10-17	CEILING / AIRCRAFT	LED / 2700K	8000	78	120	
C2	6" ROUND LED CYLINDER, DMX CONTROL, AND BLANK HOUSING.DIM TO LESS THAN 1%	PRESCOLITE -LTC-6RDW-CM-55L-27K-8-XX-DMX-X-BL	PATHWAY LIGHTING CALIBER-C95, PORTFOLIO-LER6B40, SSL-SSC6I	CEILING / AIRCRAFT	LED / 2700K	5500	54	120	
C3	6" ROUND LED CYLINDER AND BLANK HOUSING. DIM TO LESS THAN 1%	PRESCOLITE -LTC-6RDW-CM-55L-35K-8-XX-DM01-X-BL	PATHWAY LIGHTING CALIBER-C95, PORTFOLIO-LER6B40, SSL-SSC6I	CEILING / AIRCRAFT	LED / 3500K	5500	54	120	
C3E	6" ROUND LED CYLINDER AND BLANK HOUSING. PROVIDE WITH EMERGENCY BATTERY	PRESCOLITE -LTC-6RDW-CM-55L-35K-8-XX-DM01-X-BL-EM	PATHWAY LIGHTING CALIBER-C95, PORTFOLIO-LER6B40, SSL-SSC6I	CEILING / AIRCRAFT	LED / 3500K	5500	54	120	
D3	6" RECESSED CAN LIGHT FIXTURE. PROVIDE BAR HANGERS	GOTHAM - EV06-40/20/AR/MD/LSS/MVOLT/GZ1	PRESCOLITE-LTR-6RD, PORTFOLIO-LD6B20, DAYBRITE-6R-N	RECESSED GYPBOARD CEILING	LED / 3500K	2000	19	120	
D3E	6" RECESSED CAN LIGHT FIXTURE. PROVIDE BAR HANGERS. PROVIDE WITH EMERGENCY BATTERY PACK	GOTHAM - EV06-40/20/AR/MD/LSS/MVOLT/GZ1/EL	PRESCOLITE LTR-6RD, PORTFOLIO-LD6B20, DAYBRITE-6R-N	RECESSED GYPBOARD CEILING	LED / 3500K	2000	19	120	
D4	6" RECESSED CAN LIGHT FIXTURE. DIMMING WITH DMX LESS 1%	GOTHAM - EV06-27/20/AR/MD/LSS/MVOLT-EDXB-EL	PRESCOLITE LTR-6RD, PORTFOLIO-LD6B20, DAYBRITE-6R-N	RECESSED GYPBOARD CEILING	LED / 2700K	2000	19	120	
D5	6" RECESSED CAN LIGHT FIXTURE. DIMMING	GOTHAM - EV06-35/40/AR/ND/LSS/MVOLT-GZ1-	PRESCOLITE LTR-6RD, PORTFOLIO-LD6B20, DAYBRITE-6R-N	RECESSED GYPBOARD CEILING	LED / 3500K	4000	39	120	
D6	6" RECESSED CAN LIGHT FIXTURE.	GOTHAM - EV06-27/20/AR/MD/LSS/MVOLT-GZ1	PRESCOLITE LTR-6RD, PORTFOLIO-LD6B20, DAYBRITE-6R-N	RECESSED GRID	LED / 3500K	2000	19	120	
D6E	6" RECESSED CAN LIGHT FIXTURE.	GOTHAM - EV06-27/20/AR/MD/LSS/MVOLT-GZ1-EM	PRESCOLITE LTR-6RD, PORTFOLIO-LD6B20, DAYBRITE-6R-N	RECESSED GRID	LED / 3500K	2000	19	120	
EX1	LED SINGLE SIDED EXIT SIGN. RED LETTERS	HUBBELL - EVE-U-R-W-E	LITHONIA-LHQM, SUITE-LITES - APX, CHLORIDE-CLX	CEILING MOUNTED	N/A		2	120	
EX2	LED DOUBLE SIDED EXIT SIGN. RED LETTERS	HUBBELL - EVE-U-R-W-E	LITHONIA-LHQM, SUITE-LITES - APX, CHLORIDE-CLX	CEILING MOUNTED	N/A		2	120	
F4	2'X4' LED FLAT PANEL	COLUMBIA - CFP24-4135	LITHONIA-CPANL, METALUX - 24FP38, DAYBRITE-2SB	RECESSED GRID	LED / 3500K	4069	35	120	
FL1	LED GROUND MOUNTED FLOOD LIGHT	HUBBELL - RFL5-360L-130-4K7-M-UNV-K-X-X-SP-DIM	NO EQUALS	CONCRETE POLE BASE	LED/4000K	18520	133	120	
K1	2'X2'X4' LED STRIPLIGHT	LITHONIA - ZL1D-48-3000LM-FST-MVOLT-35K-80CRI-WH	COLUMBIA - MPST, METALUX - 4SNLED, DAYBRITE-FSS	CEILING / AIRCRAFT	LED / 3500K	3000	30	120	
K1E	2'X2'X4' LED STRIP LIGHT WITH EMERGENCY BATTERY	LITHONIA - ZL1D-48-3000LM-FST-MVOLT-35K-80CRI-WH-EM	COLUMBIA - MPS4, METALUX - 4SNLED, DAYBRITE-FSS	CEILING / AIRCRAFT	LED / 3500K	3000	30	120	
L10F	3"X10' LED RECESSED LINEAR WITH 1/2" FLANGE FOR GYPBOARD CEILING. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-10'-FL-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GYPBOARD CEILING	LED / 3500K	500 LM/FT	48	120	
L11	3"X11' LED RECESSED LINEAR. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-11'-GX-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GRID	LED / 3500K	500 LM/FT	53	120	
L12	3"X12' LED RECESSED LINEAR. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-12'-GX-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GRID	LED / 3500K	500 LM/FT	58	120	
L12F	3"X12' LED RECESSED LINEAR WITH 1/2" FLANGE FOR GYPBOARD CEILING. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-12'-FL-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GYPBOARD CEILING	LED / 3500K	500 LM/FT	58	120	
L13	3"X13' LED RECESSED LINEAR. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-13'-GX-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GRID	LED / 3500K	500 LM/FT	62	120	
L16	3"X16'6" LED RECESSED LINEAR. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-16'6"-GX-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GRID	LED / 3500K	500 LM/FT	77	120	
L17F	3"X17' LED RECESSED LINEAR WITH 1/2" FLANGE FOR GYPBOARD CEILING. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-17'-FL-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GYPBOARD CEILING	LED / 3500K	500 LM/FT	82	120	
L26	3"X26'10" LED RECESSED LINEAR. CONTRACTOR TO DETERMINE LENGTH IN FIELD SO FIXTURE WILL RUN WALL TO WALL	PINNACLE-EV3D-WHE-35-26'10"-GX-U-EE1-1-0-W-X-X	LEDALITE-39, MARK LIGHTING-SL4L, NEORAY S123DR	RECESSED GRID	LED / 3500K	500 LM/FT	128	120	
P1	LED AREA LIGHT ON 12'-0" POLE. MATCH EXISITNG LIGHTING INSTALLED IN ELEM. SCHOOL. COLOR TO MATCH EXISTING ELEM SCHOOL	HUBBELL - RAR-1160L-100-4K7-5QW-UNV (MATCH EXISTING)	NO EQUALS	POLE	LED/4000K	12000	100	120	
TA	4" LED HIGH PREFORMANCE STRIP LIGHT. MOUNTED VERTICAL. PROVIDE WIRE GUARDS AND BLACK FINISH.	PHILLIPS - FSS4-55L-840-UNV-DIM-BKFSSWG4	COLUMBIA-MP84-35HL, LITHONIA ZL1D, LUX DYNAMICS STRIP-835	SURFACE WALL VERTICAL	LED / 3500K	6000	45	120	
TAH	4" LED HIGH PREFORMANCE STRIP LIGHT. MOUNTED HORIZ. PROVIDE WIRE GUARDS AND BLACK FINISH.	PHILIPS - FSS4-55L-840-UNV-DIM-BKFSSWG4	COLUMBIA-MP84-35HL, LITHONIA ZL1D, LUX DYNAMICS STRIP-835	SURFACE WALL HORZ.	LED / 3500K	6000	45	120	
TB	WALL MOUNTED LED LINEAR RGBW GRAZING SYSTEM WITH FROST LENS. PROVIDE ALL ENDCAPS, MOUNTING HARDWARE FOR FIXTURE AND REMOTE DRIVER.	LUMINII - KM-(ESTIMATED 24') -RGBW-MO-C-AH-BK-S-1X2	CALI-LLED8600, KELVIX-409, NOVAFLEXLED-NF-RGBW	SURFACE WALL	LED /RGBW	156 LM/FT	140	120	CONTRACTOR TO FIELD VERIFY EXACT LENGTH IN FIELD PRIOR TO ORDERING. ESTIMATED LENGTH SHOWN FOR BIDDING ONLY.
TBA	SURFACE MOUNTED BULLET WALL MOUNTED LIGHT. FIXTURES COLOR TO BE BLACK WITH FLAT DARK BLUE LENS	VISATAPRO-1007-B-DBL	SLV LIGHTING - BILAS, WAC LIGHTING MO-LED522F, HYDREL-PINE, LUMOUTDOOR-TCRL15M	SURFACE WALL		1037	50	120	
TD	LED AISLE LIGHT. LIGHT AND 12 VOLT TRANSFORMER BY SEAT MANUFACTURE.	BY OTHERS	N/A	N/A			0	120	
TH1	LED WORK / FLOOD LIGHT. IP65. PROVIDE ALL CLAMPS, CONNECTORS, AND 30" SAFETY CABLE W/SPRING HOOK. BLACK FINISH	OSRAM - KREIOS FLX 90W	PAC LIGHTS-FFLA	PIPE OVER STAGE	LED / 3500K	5000	90	120	
TH2	RGBW LED PAR WITH MOTORIZED ZOOM AND UNIVERAL PSU-BLACK. PROVIDE ALL CLAMPS AND 30" BLACK SAFETY CABLE WITH SPRING HOOK	ALTMAN - AP-150-RGBW-B	CHAUVET PROFESSIONAL - COLORADO SOLO3	PIPE OVER STAGE	LED /RGBW	1600	135	120	
TH4	LED FOUR COLOR SPOTS	ETC - CSSPOTDBS	CHAUVET PROFESSIONAL - OVATION E-910FC	CATWALK	LED /RGBW	6932	166	120	
TH5	LED FOUR COLOR SPOTS	ETC - CSSPOTDBS	CHAUVET PROFESSIONAL - OVATION E-910FC	OVERSTAGE ELECTRIC 1	LED /RGBW	6932	166	120	
TS	5"x5' LED STEP LIGHT	TIVOLI - VET-27-B-NL-1	LIGMAN-URA-40531, BEGA-24202, COLE-L111W-AL	RECESSED WALL	LED / 2700K	169	23	120	
W3	LINEAR DIRECT / INDIRECT 2" LED WALL MOUNTED. DIMMING O-10V. WHIITE FINISH	3G LIGHTING - 3G-2WL1-D1-L750-L750-S80-35K-UNV-DIM-FL-ASY-WH-1C	MARK LIGHTING - S2LW1D, AXIS-TB2WD, FINELITE-HP-2-P	SURFACE WALL	LED / 3500K	750 LM/FT	50	120	
W3E	LINEAR DIRECT / INDIRECT 2" LED WALL MOUNTED.DIMMING 0-10V. WHIITE FINISH. PROVIDE WITH INTEGRAL BATTERY	3G LIGHTING - 3G-2WL1-D1-L750-L750-S80-35K-UNV-DIM-FL-ASY-WH-1C-EMB	MARK LIGHTING - S2LW1D, AXIS-TB2WD, FINELITE-HP-2-P	SURFACE WALL	LED / 3500K	750 LM/FT	50	120	
W4E	WALL MOUNTED EGRESS LIGHT. MATCH EXISITNG LIGHTING INSTALLED IN ELEM. SCHOOL. COLOR TO MATCH EXISTING ELEM SCHOOL	HUBBELL - RWL1-48L-25-4K7-4W-UNV-X	NO EQUALS	SURFACE WALL	LED/4000K	2680	28	120	
W5	LED EXTERIOR WORK LIGHT MOUNTED ROOF TOP UNIT WITH CLEAR GLASS	CANLET-01-12W-LED-W-F	LITHONIA - OLVTWM, HALO COMM-VT11730, STONCO-VWXL	WALL	LED / 3500K	1548	12	120	

GENERAL NOTES (LUMINAIRE SCHEDULE):

A. ALL LUMINAIRES AND COMPONENTS SHALL BE UL LISTED.
B. WHERE LUMINAIRES ARE SHOWN SPLIT-WIRED (HALF EMERGENCY POWER/ HALF NORMAL POWER) ON FLOOR PLANS, LUMINAIRES SHALL BE PROVIDED WITH MULTIPLE ELECTRONIC BALLASTS FOR MULTIPLE POWER CIRCUITS AS INDICATED ON FLOOR PLANS.
C. PROVIDE BALLASTS FOR FIXTURE LAMP SWITCHING AS INDICATED ON LIGHTING FLOOR PLANS. WHERE A SINGLE FIXTURE IS POWERED FROM NORMAL AND EMERGENCY POWER, HALF OF THE LAMPS WITH A MINIMUM OF TWO LAMPS SHALL BE ON EMERGENCY POWER.
D. CONTRACTOR SHALL FOCUS, AIM AND ADJUST LUMINAIRES UNDER THE SUPERVISION AND DIRECTION OF THE ENGINEER AND ARCHITECT. ALLOW LABOR FOR FINAL FOCUS AND ADJUSTMENTS AFTER DARK. LIFTS AND SCAFFOLDING SHALL BE AVAILABLE.
E. ALL LAY-IN FIXTURES SHALL BE PROVIDED WITH SCREW ON HOLD DOWN CLIPS AND MAXIMUM 6'-0" LONG FLEXIBLE CONDUIT WHIPS.
F. EXIT SIGNS AND FIXTURES THAT ARE HATCHED OR WHERE THE FIXTURE TYPE CONTAINS THE SUFFIX "E" FOR EMERGENCY OPERATION SHALL HAVE AN INTEGRAL 90 MINUTE BATTERY INVERTER IF NOT POWERED FROM AN EMERGENCY GENERATOR.
G. ALL BATTERY POWERED FIXTURES SHALL HAVE TEST SWITCHES FACTORY INSTALLED INTEGRAL TO THE REFLECTOR, REMOTE TEST SWITCHES WILL NOT BE ACCEPTED.

No.	Revisions / Submissions	Date
1	ADDENDUM 1	3/15/2021
2	ADDENDUM 2	3/22/2021

LWC INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON RD.
WAYNESVILLE, OH 45068

ELECTRICAL ELARGED PLANS AND LUMINAIRE SCHEDULE

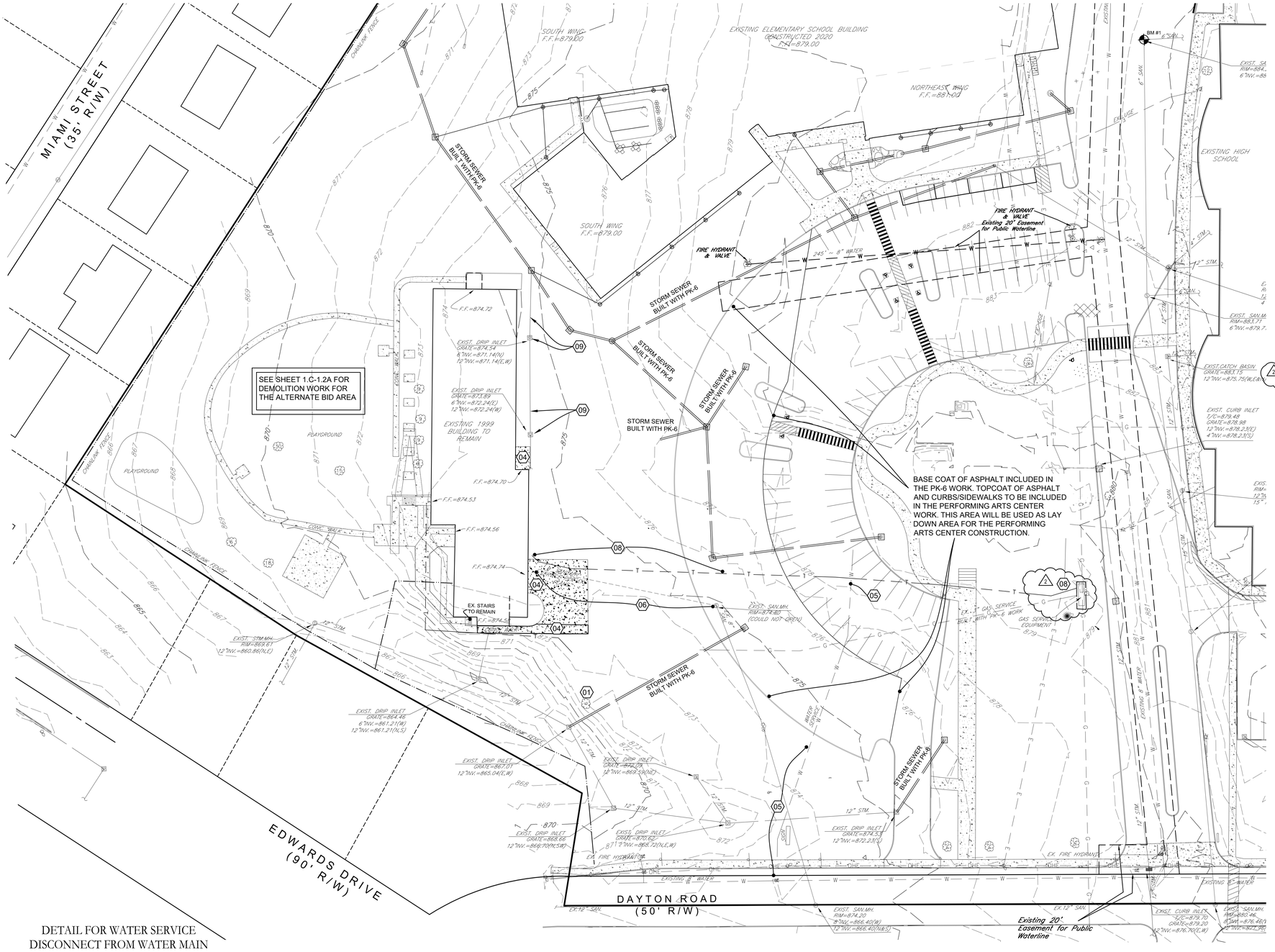
CMTA
222 E. 14th Street. Floor 4. Cincinnati, Ohio 45202
513 429 4404 f 513 429 4693 www.cmta.us

JEFFREY ALLEN MILLARD 54910 REGISTERED PROFESSIONAL ENGINEER STATE OF OHIO

Comm. No.	Date
18620.00	2021/03/01
Drawn: RAR	Drawing No.: E600
Checked: JAM/JRH	

GENERAL DEMOLITION NOTES

1. Within the subject property, the intent is to have a clean, clear site, free of all existing items noted to be removed in order to allow for the construction of the new project.
2. All items noted to be removed shall be done as part of the contract for general construction.
3. Remove and dispose of any materials requiring removal from the work area in an approved off-site landfill.
4. The Contractor shall secure all permits for demolition and disposal of demolition material to be removed from the site. The Contractor shall post all bonds and pay all permit fees as required.
5. The Contractor shall cut and plug, or arrange for the appropriate utility company to cut and plug service piping at the property line or at the main (as required). All services may not be shown on this plan.
6. For all items noted to be removed, remove not only above ground elements, but all underground elements as well, including, but not necessarily limited to: foundations, slabs, gravel fills, tree roots, pipes, wires, unsuitable materials, etc.
7. The Contractor shall sawcut existing pavement to provide a clean edge between existing pavement to remain and existing pavement to be removed.
8. Limits of removal shown on demolition plan are approximate only. Actual quantities may vary due to construction activities. Contractor is responsible for all demolition, removal and restoration work necessary to allow for the construction of the new project.
9. Backfill excavations resulting from demolition work to meet the requirements for fill outlined in the Geotechnical / Soils Report.
10. Ensure that clear access is maintained to all existing fire hydrants along all adjacent access routes.
11. Clean all dirt, mud, and debris tracked onto adjacent parking lots and roadways immediately.
12. Prior to beginning any proposed work, all permits required for site work shall be obtained by contractor from regulating authorities.
13. Do not disturb any property line iron pins, survey monuments, or established benchmarks. If disturbed, these items shall be reset by a professional licensed surveyor at the disturbing contractor's expense.
14. No site work or demolition work shall begin until the construction manager has approved the general contractor's submitted schedule and phasing plan. All demolition activities shall be performed at the times indicated in the approved schedule and phasing plan.
15. Disconnect and remove all utility services to the existing buildings that are being removed. Remove each service entirely. Do not abandon in place any portion of any service that would no longer be functional. Coordinate removals and terminations of removal work with the owner of each utility system. This requirement applies to electric, water, sanitary sewer, storm sewer, telephone, cable tv, and any other utilities that serve the existing building.
16. If any existing utilities that serve the existing buildings are removed prior to the building being vacated, provide temporary services and connections to the building. Capacities of temporary services shall not be less than capacities of removed services. The requirement applies to electric, water, sanitary sewer, storm sewer, telephone, cable tv, and any other utilities that serve the existing building.
17. Backfill all excavations resulting from removal of below grade materials per the Geotechnical Report.
18. Remove all lights and electrical devices receiving power from the existing building. Remove all mounting systems for lights and devices and remove all wiring.
19. Underground items exist that are not shown. Contact all local utilities services and the Ohio Utilities Protection Service to verify locations of all underground utilities before performing excavation.



EXISTING CONDITIONS LEGEND

- RAILROAD SPIKE FOUND
- IRON PIN FOUND
- SANITARY SEWER MANHOLE
- LIGHT POLE
- UTILITY POLE
- WATER SERVICE VALVE
- FIRE HYDRANT
- FLAG POLE
- PINE TREE
- STORM SEWER MANHOLE
- DRIP INLET
- TREE (WITH SIZE)
- POLE
- GAS MAIN VALVE
- SIGN
- DIRECTION OF TRAFFIC
- ADA PARKING SPACE
- WATER MANHOLE
- BASKETBALL GOAL
- PROPERTY LINE
- CLEANOUT

E/P = EDGE OF PAVEMENT
E/G = EDGE OF GRAVEL
B/C = BACK OF CURB

- EX. FENCE
- EX. WATER SERVICE
- EX. GAS SERVICE
- EX. UNDERGROUND ELECTRIC
- EX. OVERHEAD ELECTRIC
- EX. UNDERGROUND TELEPHONE
- EX. CONCRETE

811 Know what's below. Call before you dig.

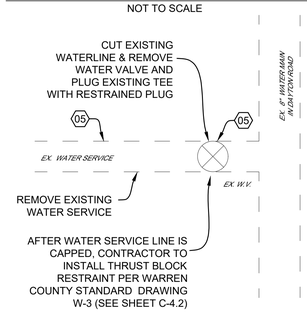
SITE BENCHMARKS

BM#1 San. Manhole
N: 563104.987
E: 1519146.580
Elev: 884.290

BM#2 Stm. Manhole
N: 562719.628
E: 1518772.189
Elev: 869.893

DETAIL FOR WATER SERVICE DISCONNECT FROM WATER MAIN

NOT TO SCALE



NOTE: COST OF WATER VALVE REMOVAL INCLUDES CAPPING EXISTING TEE WITH RESTRAINED PLUG, INSTALLATION OF THRUST BLOCK RESTRAINT AND GRANULAR BACKFILL. CONTRACTOR TO COORDINATE ALL WATER MAIN CUTTING AND CAPPING WITH SCHOOL DISTRICT AND THE VILLAGE. TIME RESTRICTIONS TO PERFORM THE WORK WILL APPLY.

CONTRACTOR SHALL COORDINATE WITH SCHOOL DISTRICT ALL WORK THAT INVOLVES REMOVING/RELOCATING UTILITIES THAT CURRENTLY ARE SERVING THE EXISTING 1999 BUILDING (THE BUILDING THAT IS TO REMAIN). CONTRACTOR TO VERIFY THAT UTILITIES WILL STILL BE AVAILABLE TO 1999 BUILDING AS NEEDED BY THE SCHOOL DISTRICT.

UNDERGROUND UTILITIES ARE DEPICTED BASED ON OBSERVED EVIDENCE, UNDERGROUND UTILITY LOCATION SERVICES, AND RECORD DRAWINGS. LOCATIONS ARE APPROXIMATE AND NOT ALL UNDERGROUND UTILITIES MAY BE SHOWN ON THIS SURVEY. CONTRACTOR SHALL CONTACT OUPS AND THE UTILITY OWNERS TO HAVE UTILITIES MARKED IN FIELD BEFORE PROCEEDING WITH DEMOLITION WORK.

GRAPHIC SCALE
30 0 15 30
1 inch = 30 ft.

SHEET NOTES

DEMOLITION KEYNOTES

01 REMOVE TOPSOIL, TREES, BUSHES AND ANY OTHER UNSUITABLE MATERIALS IN PROJECT AREA AND PREPARE SITE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT

02 SAWCUT EXISTING PAVEMENT FOR NEW PAVEMENT OR CURB AND GUTTER - SAWCUT FOR CLEAN EDGE

03 REMOVE EXISTING ASPHALT PAVEMENT AND CURB IN THIS AREA

04 REMOVE EXISTING CONCRETE/SIDEWALKS

05 REMOVE EXISTING WATER SERVICE AND WATER METER PIT. DISCONNECT SERVICE LINE AT WATER MAIN PER VILLAGE REQUIREMENTS. SEE DETAIL ON THIS SHEET FOR DISCONNECTING WATER SERVICE AT THE WATER MAIN IN DAYTON ROAD. INCLUDE COST FOR RESTORING PAVEMENT, SIDEWALK AND CURB. THIS EXISTING WATER SERVICE IS TO REMAIN IN USE UNTIL NEW WATER SERVICE IS INSTALLED AND APPROVED FOR USE (SEE SHEET 1C-4.0 FOR NEW WATER SERVICES TO SERVICE THE 1999 BUILDING AND THE PERFORMING ARTS BUILDING). COORDINATE THIS WORK WITH OWNER AND VILLAGE.

06 REMOVE SANITARY SERVICE FROM MANHOLE TO WHERE IT ENTERS BUILDING. THIS SANITARY SERVICE LINE TO REMAIN IN USE UNTIL NEW SANITARY SERVICE LINE IS IN PLACE AND APPROVED FOR USE. COORDINATE THIS WORK WITH OWNER.

07 REMOVE ELECTRIC LINES. COORDINATE WITH OWNER

2 08 EXISTING TELEPHONE LINE GOING TO GAS SERVICE MANIFOLD TO BE ABANDONED.

09 REMOVE CATCH BASIN AND STORM SEWER. CONTRACTOR TO VERIFY THAT NEW STORM SEWER IS IN PLACE TO ACCEPT EXISTING ROOF DRAINAGE.

GENERAL NOTES:

No.	Revisions / Submissions	Date
2.	ADDENDUM 2	03/22/2021

LWC INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

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WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON ROAD
WAYNESVILLE, OHIO 45068

DEMOLITION PLAN

STATE OF OHIO · KURT M ZIESSLER · E-62910 · REGISTERED PROFESSIONAL ENGINEER
03/22/2021

Comm. No.	Date
18.163	2021/03/01
Drawn: RRT	Drawing No.: 1.C-1.2
Checked: KMZ	

GENERAL SITE NOTES

1. Building dimensions shown on the Civil Engineering Plans are for reference purposes only. The Contractor shall use the Architectural and Structural Plans for exact building dimensions.
2. All site and radii dimensions are referenced to the face of curbs or edge of paving unless otherwise noted.
3. All dimensions to the building are referenced to the outside face of the structure's facade.
4. All sidewalks, curb and gutter, street paving, curb cuts, driveway approaches, handicap ramps, etc. constructed outside the property line in the right-of-way shall conform to all Local and/or State specifications and requirements.
5. All proposed handicap ramps, parking areas, and accessible routes shall strictly comply with current Local, State, and Federal regulations, including but not necessarily limited to the ADA Accessibility Guidelines (ADAAG).
6. All ADA accessible routes shall have detectable warnings installed as required by the ADAAG. Detectable warnings shall consist of raised truncated domes which contrast visually with the adjoining surfaces, either light-on-dark, or dark-on-light.
7. Contractor shall sawcut existing pavement to provide a clean, straight joint where new pavement meets existing pavement and ensure positive drainage.
8. All concrete pavement shall have joints in accordance with ACI 330R-08, Section 3.7 and Appendix C. Contraction joints shall be 1/4 of the slab thickness. Isolation joints shall be placed between pavement and foundations, inlets, and other fixed structures. Contraction joints shall be tool finished and spaced as follows:
   Curbing: 10'-0" (max) spacing.
   Sidewalks: 5'-0" (max) spacing.

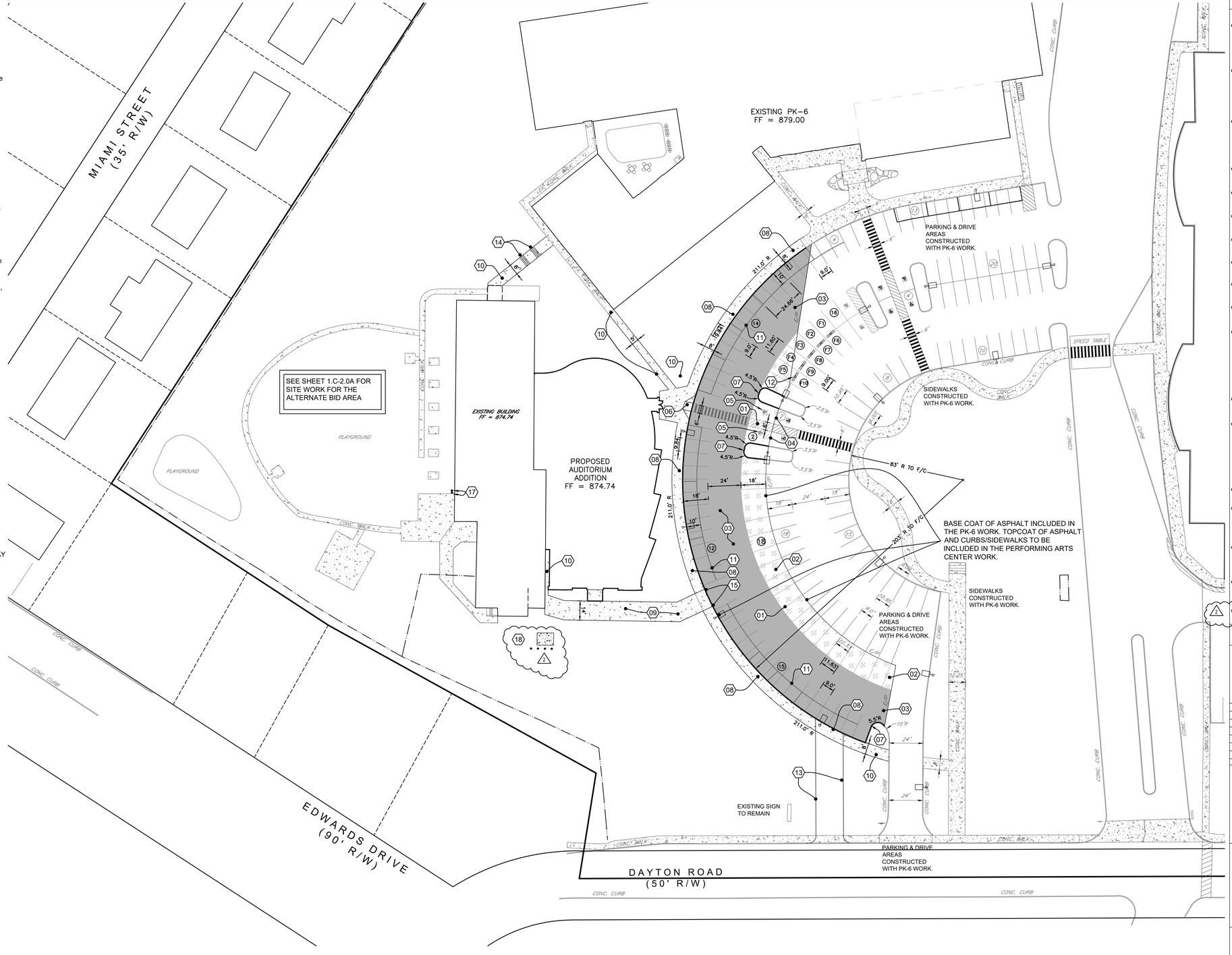
PERMITTING CONTACT INFORMATION:

PLANNING, ZONING, ROADS, ACCESS, & RIGHT-OF-WAY
VILLAGE OF WAYNESVILLE
Telephone: 513.897.8015

SITE AND PAVEMENT LEGEND

- (#) NUMBER OF PARKING SPACES
- (F#) FUEL EFFICIENT VEHICLE PARKING SPACES (10 TOTAL)
- PIPE BOLLARD
- ADA PARKING SYMBOL
- SIGN (SINGLE POST, TWO SIGNS)
- SIGN (SINGLE POST, SINGLE SIGN)
- PROPOSED LIGHT FIXTURE
- PAINT STRIPE AREA
- CONCRETE
- LIGHT-TRAFFIC PAVEMENT
- BASE BID: LIGHT-TRAFFIC PAVEMENT
  ALTERNATE BID: HEAVY-TRAFFIC PAVEMENT

BUILDING FACADE/AWNING/OVERHANG
O/O CONCRETE FOUNDATION



SITE BENCHMARKS

BM#1 San. Manhole
N: 563104.987
E: 1519146.580
Elev: 884.290

BM#2 Stm. Manhole
N: 562719.628
E: 1518772.189
Elev: 869.893

811 Know what's below. Call before you dig.

GRAPHIC SCALE
30 0 15 30
1 inch = 30 ft.

SHEET NOTES:

SITE KEYNOTES

01 PARKING STRIPE / HATCH
- 4" WIDE PAINTED STRIPES. ADA HATCHING TO BE AT 45° AND 2'-0" O.C.
- STRIPING ON ASPHALT PAVEMENT TO BE PAINTED WHITE.
- STRIPING ON CONCRETE PAVEMENT TO BE PAINTED YELLOW

02 LIGHT-TRAFFIC ASPHALT "PARKING AREA" PAVEMENT. SURFACE COURSE OF ASPHALT IS ONLY PART OF PAVEMENT INCLUDED WITH PERFORMING ARTS BUILDING.
- PER PAVEMENT SECTION / SHEET 1.C-5.0

03 HEAVY-TRAFFIC ASPHALT "DRIVEWAY AREA" PAVEMENT. SURFACE COURSE OF ASPHALT IS ONLY PART OF PAVEMENT INCLUDED WITH PERFORMING ARTS BUILDING.
- PER PAVEMENT SECTION / SHEET 1.C-5.0

04 ADA PARKING SIGNAGE
-PER DETAIL / SHEET 1.C-5.0

05 ADA PARKING SYMBOL
-PER DETAIL / SHEET 1.C-5.0

06 ADA ACCESSIBLE RAMP
-PER DETAIL / SHEET 1.C-5.0

07 CONCRETE BARRIER CURB
- PER DETAIL / SHEET 1.C-5.0

08 CONCRETE SIDEWALK WITH INTEGRAL CURB
-PER DETAIL / SHEET 1.C-5.0

09 CONCRETE DRIVE
-PER DETAIL / SHEET 1.C-5.0

10 CONCRETE SIDEWALK
-PER DETAIL / SHEET 1.C-5.0

11 DUAL PARKING IN THESE AREAS. PERPENDICULAR PARKING WOULD BE FOR ONLY EVENING EVENTS. PARALLEL PARKING WOULD BE FOR BUS AND PARENT PICKUP PARKING DURING SCHOOL HOURS. NO PARKING SIGNS WILL BE PLACED ON PROPOSED LIGHT POLES ALONG SOUTH SIDE OF PARKING LOT STATING "NO HEAD ON PARKING FROM 7:30AM TO 3:30PM".

12 LOW EMITTING AND FUEL EFFICIENT VEHICLES PARKING ONLY SIGN. SEE DETAIL ON SHEET 1.C-5.0

13 20' WIDE TEMPORARY CONSTRUCTION DRIVE. CONTRACTOR TO MAINTAIN SIDEWALK ACCESS ACROSS CONSTRUCTION DRIVE. ONCE CONSTRUCTION IS COMPLETED TEMPORARY DRIVE TO BE REMOVED AND CURB AND SIDEWALK ALONG DAYTON ROAD TO BE REPLACED AND AREA TO GRADED PER PLAN & RE SEEDED.

14 STAIRS, SEE ARCHITECTURAL PLANS FOR DETAILS.

15 PAVEMENT TO BE FLUSH WITH TOP OF SIDEWALK IN THIS AREA. THIS AREA IS TO BE USED AS DRIVE ACCESS TO PARKING SPACES LOCATED SOUTH OF BUILDING.

16 ADA RAMP WITH TRUNCATED DOME. 0" HEIGHT CURB AT RAMP, TRANSITIONING TO 6" HEIGHT CURB AT END OF ADA SPACES.

17 BOLLARD FOR GAS METER, VERIFY LOCATION OF GAS METER WITH MEP PLANS.
-PER DETAIL / SHEET 1.C-5.0

18 DP&L TRANSFORMER PAD WITH BOLLARDS. SEE SHEET E100 FOR ADDITIONAL DETAILS.

GENERAL NOTES:

No.	Revisions / Submissions	Date
2.	ADDENDUM 2	03/22/2021

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434 East First Street Dayton, OH 45402 937.223.6500
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625 DAYTON ROAD
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SITE PLAN

STATE OF OHIO · KURT M ZIESSLER · E-62910 · REGISTERED PROFESSIONAL ENGINEER
03/22/2021

Comm. No.	Date
18.163	2021/03/01
Drawn: RRT	Drawing No.: 1.C-2.0
Checked: KMZ	

PROPOSED STORM STRUCTURES

NOTE:
All storm structures, headwalls, storm pipe and rock channel protection are to be per ODOT Specifications and Installation requirements.

All storm pipe under pavement, sidewalk or gravel parking areas to have compacted granular backfill per ODOT Specifications.

All proposed catch basins in pavement are to have 4" perforated pipe fingers drains per detail on sheet C-5.0.

(3) *BUILT WITH PK-6 PROJECT*
EXISTING 2-3 CATCH BASIN
GRATE = 873.20
30" (W) INV. = 867.45
24" (NE) INV. = 867.70
8" ROOF DRAIN (N) INV.= 869.28
PROPOSED 18" (NW) INV. = 867.45

(25) 2-2 CATCH BASIN
GRATE = 869.9
18" (NW) INV. = 867.67

(9) *BUILT WITH PK-6 PROJECT*
EXISTING 2-3 CATCH BASIN
GRATE = 873.80
EX. 24" (SW) INV.= 869.08
24" (NE) INV.= 869.08
PROPOSED 8" (E) INV. = 870.08

(10) *BUILT WITH PK-6 PROJECT*
EXISTING STORM MANHOLE
GRATE = 873.75 (GRATED LID)
12" (NW) INV. = 870.58
18" (NE) INV. = 869.32
24" (SW) INV. = 869.32

NOTE:
ALL STORM SEWERS ARE A PRIVATE SYSTEM.

NOTE:
DETENTION BASIN CONSTRUCTED WITH BUS GARAGE WORK TO ALSO SERVE AS DETENTION BASIN FOR PERFORMING ARTS CENTER

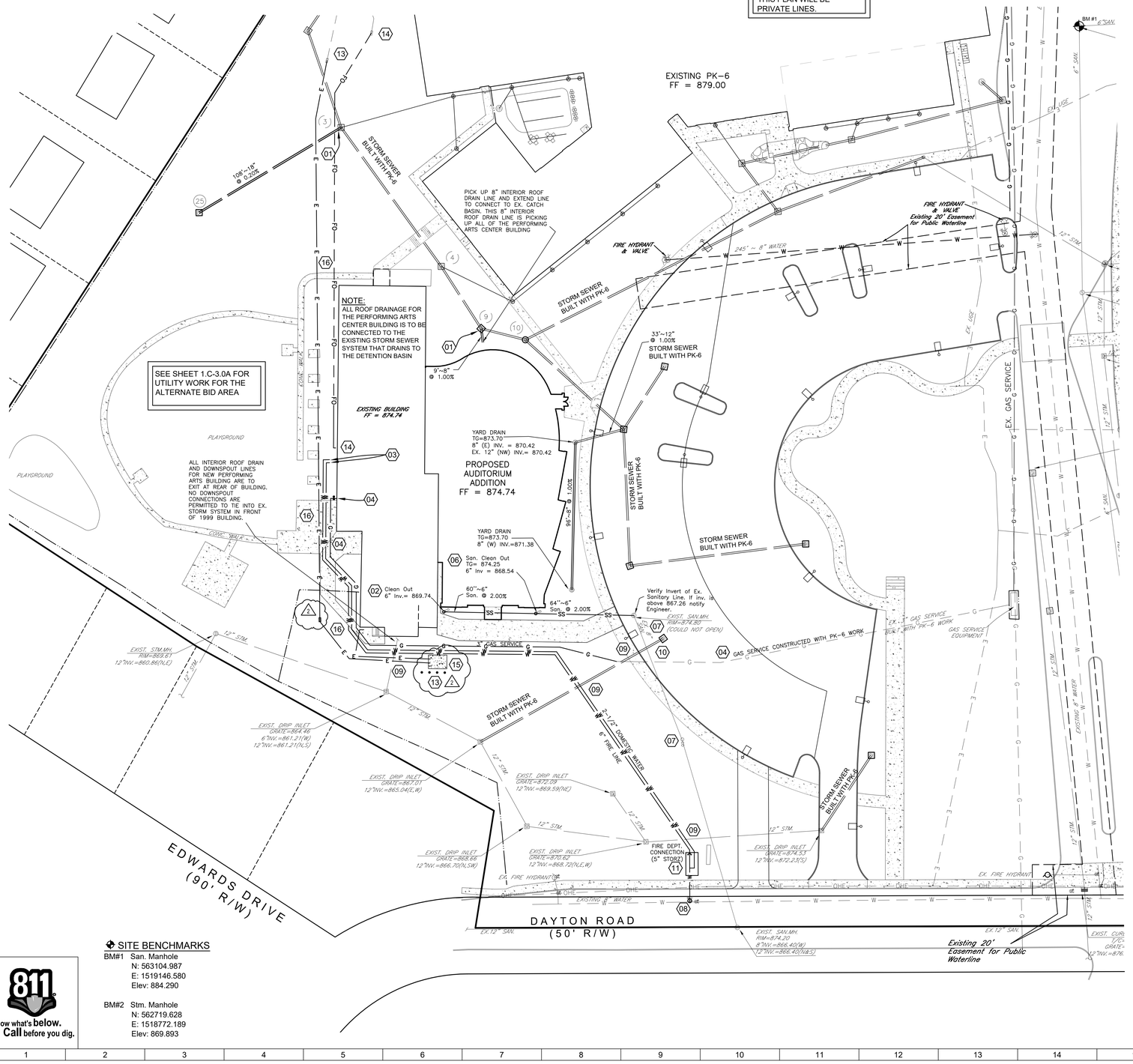
NOTE:
ALL SANITARY SEWER SERVICE LINES SHOWN ON THIS PLAN WILL BE PRIVATE LINES.

UTILITY CONTACT INFORMATION:

SANITARY SEWER
Warren County Sanitary Engineer
Contact: Christopher Wojnicz
Telephone: 513-695-1377
Email: christopher.wojnicz@co.warren.oh.us

STORM WATER
Village of Waynesville
Contact: Jeremiah Norris
Telephone: 513-897-8015
Email: jnorris@waynesville-ohio.org

WATER
Village of Waynesville
Contact: Nelson McKeever
Telephone: 513-897-8015
Email: nmckeever@waynesville-ohio.org



SITE BENCHMARKS

BM#1 San. Manhole
N: 563104.987
E: 1519146.580
Elev: 884.290

BM#2 Stm. Manhole
N: 562719.628
E: 1518772.189
Elev: 869.893

811 Know what's below. Call before you dig.

GENERAL UTILITY NOTES:

1. All utilities shown are approximate locations only and have been compiled from the latest available mapping. The exact location of all underground utilities shall be verified by the Contractor prior to the start of construction.
2. Contractor to coordinate with the local utility companies for all locations and connections. A preconstruction meeting with the various utility companies may be required prior to the start of any construction activity.
3. The Contractor shall visit the site and verify the location, elevation, and condition of all existing utilities by various means prior to beginning any excavation. Test pits shall be dug at all locations where existing and proposed utility lines cross, and the horizontal and vertical locations of the utilities shall be determined. The Contractor shall contact the Engineer in the event of any unforeseen conflicts between existing and proposed utilities so that an appropriate modification may be made.
4. The Contractor shall ensure that all utility companies and local standards for materials and construction methods are met. The Contractor shall perform proper coordination with the respective utility company. The Contractor shall coordinate work to be performed by the various utility companies and shall pay all fees for connections, disconnection, relocations, inspections, and demolition.
5. This plan details pipes up to 5' from the building face. Refer to the building drawings for building connections. Supply and install pipe adapters as necessary.
6. All valve boxes and curb boxes shall be adjusted to the final grades and located in grassed areas unless indicated otherwise on the plans.
7. The Contractor shall provide traffic bearing concrete collars and lids for all cleanouts, manholes, inlets, valves, etc. which are located in paved areas.
8. All existing pavement within the rights-of-way where utility piping is to be installed shall be saw cut and replaced or directionally bored in accordance with Local and/or State requirements. Existing pavement shall be repaired as necessary.
9. All utility lines and trenches shall be installed, bedded and backfilled according to manufacturer's specifications and to the satisfaction of Local and State Authorities.
10. Sanitary sewer laterals shall maintain (10' min. horizontal, 1.5' min. vertical) separation distance from water lines unless otherwise shown, or additional protection measures will be required. Where water line crosses above sanitary lateral by less than 2' vertical, a concrete encasement shall be installed, Contractor shall center one joint of pipe at crossing.
11. Roof drains, foundation drains, and other clean water connections to the sanitary sewer system are prohibited.

STORM SEWER NOTES:

All storm sewer shall be reinforced concrete pipe (ASTM C76 - Class III, minimum) or high-density polyethylene pipe (ADS N-12 or equivalent), unless otherwise noted on plans. All pipe shall be installed according to Local, ODOT, and manufacturer's specifications.

Contractor to provide downspout collection system to connect building downspouts / roof drains to on-site storm sewer system.

Downspout collection pipe may be HDPE (ADS N-12 or equivalent) or Schedule 40 PVC pipe. All pipe shall be installed according to Local, ODOT, and manufacturer's specifications. Provide cleanouts at all bends, angles, and junctions. All cleanouts in pavement areas shall be installed with traffic bearing lids and concrete collars, per detail / Sheet 1.C-5.0.

Storm sewer connection, permit and construction to be coordinated with Village of Waynesville.

GAS NOTES:

Coordinate gas service lines, meter, and connections with Plumbing Plans and Vectren. Contractor shall verify both location and availability of service prior to the start of construction.

ELECTRIC NOTES:

Coordinate electric service lines, meter, and connections with electrical plans and DP&L. Contractor shall verify both location and availability of service prior to the start of construction.

Coordinate site lighting, signage wiring, conduit locations, connections, etc. with electrical plans. Notify Engineers of any potential conflicts.

TELECOM NOTES:

Coordinate telecommunication service lines and connections with electrical plans and local utility provider. Contractor shall verify both location and availability of service prior to the start of construction.

SANITARY SEWER NOTES:

Contractor to provide 6" sanitary sewer service lines lines from building to public sewer main. Install tap, manholes, cleanouts and other appurtenances as required by Warren County Engineer. Coordinate building connection with plumbing plans. Sanitary sewer service lines shown on this plan will be private lines.

All 6"sanitary sewer pipe shall be P.V.C. SDR-35, ASTM D-3034. All 6" sanitary lines shall be installed in accordance with the manufacturer's recommended procedures.6" lines shall maintain a minimum slope of 2.00% .

Sanitary sewer clean-outs shall be installed at all sewer pipe bends, angles, and junctions, unless a manhole is indicated. All cleanouts in pavement areas shall be installed with traffic bearing lids and concrete collars. Cleanout spacing should not exceed 100'. Clean-outs Per detail S-17, Sheet 1.C-4.1.

Sanitary sewer service connection, permit and construction to be coordinated with Warren County Sanitary Engineer.

WATER NOTES:

Contractor to provide meter pit (complete), a 6" fire service and a ??" domestic water service line from existing 8" waterline to new building. Install tapping sleeve, valves, backflow preventer, meters and other appurtenances as required by the Village of Waynesville. Coordinate building connection with plumbing plans.

Water lines shall be per Village of Waynesville requirements, installed per manufacturer's recommended procedures. >2" waterlines to be Class 52 Ductile Iron. 2" and smaller service lines to be K Copper with Ford Meter Valves, and a curb stop valve in a box in front of meter pit. Tapping Sleeve to be Stainless Steel or Ductile Iron. Main line valves to be Mueller. Fire hydrant to be 5-1/4 Darling with Stortz 5" front nozzle and two 2-1/2" side ports. Lines shall be installed with a minimum cover of 48" or below frost line, whichever is greater. Pits - 20" wide with Turnball plastic lids for 1" and smaller meters and lines, 36" wide for meters > 1"-2". Sealed premanufactured concrete vaults for 3" and larger meters. Fire Services must have back flow prevention.

Fire Department Connection shall be a 5" Storz and located at the Meter Pit location. There is an existing Knox Box located on the existing building. Contractor to coordinate with Fire Department about reuse/relocating Knox Box.

Water service connection, meter pit permit and construction to be coordinated with Village of Waynesville.

UTILITY LEGEND

- PROP. INLET/MANHOLE/CLEANOUT
- PROP. DOWNSPOUT @ BUILDING
- PROP. YARD DRAIN
- SS — PROP. SANITARY SEWER SERVICE
- W — PROP. WATER SERVICE
- PROP. STORM SEWER
- G — PROP. GAS SERVICE
- E — PROP. ELECTRIC SERVICE
- FO — PROP. DATA CABLE SERVICE
- PROP. LIGHT POLE

GRAPHIC SCALE
30 0 15 30
1 inch = 30 ft.

SHEET NOTES:

UTILITY KEYNOTES

(01) CONNECT STORM LINE TO EX. STORM SEWER.

(02) SEE PLUMBING PLANS FOR SANITARY SEWER CONNECTION DETAILS AND EXACT LOCATION. SANITARY SERVICE LINE INVERT AT BUILDING CONNECTIONS = 869.74.

(03) SEE MEP PLANS FOR WATER SERVICE CONNECTION DETAILS AND EXACT SIZE, ELEVATIONS & LOCATIONS.

(04) GAS SERVICE FROM EXISTING REGULATOR TO THE SOUTH SIDE OF THE SIDEWALK FOR THE NEW PARKING LOT TO BE CONSTRUCTED UNDER PK-6 WORK. PERFORMING ARTS CONTRACTOR TO PICK UP GAS SERVICE FROM SOUTH OF SIDEWALK AND EXTEND TO NEW LOCATION FOR PERFORMING ARTS BUILDING. SEE MEP PLANS FOR GAS SERVICE LINE SIZE AND EXACT LOCATION INTO BUILDING.

(05) STORM SEWER DOWNSPOUT BOOT AND FIVE FEET OF UNDERGROUND PIPING TO BE PROVIDED BY PLUMBING CONTRACTOR. SITE CONTRACTOR TO PICK UP ROOF DRAIN LINES FROM THAT POINT AND EXTEND TO STORM SEWER.

(06) SANITARY SEWER CLEANOUT PER DETAIL S-17, SHEET 1.C-4.2

(07) ADJUST EXISTING SANITARY MANHOLE/CLEAN OUT TO GRADE.

(08) CONNECT TO EXISTING 8" WATERLINE WITH A TAPPING SLEEVE AND VALVE PER VILLAGE OF WAYNESVILLE REQUIREMENTS.

(09) MAINTAIN 18" VERTICAL SEPARATION BETWEEN WATERLINE AND SANITARY & STORM SEWERS.

(10) ELEVATION OF EX. 8" SANITARY UNKNOWN. CONTRACTOR TO EXPOSE EX. SANITARY AND VERIFY THAT PROPOSED STORM CAN MAINTAIN 1.5' VERTICAL CLEARANCE WITH EX. SANITARY.

(11) WATER METER PIT FOR COMBINED DOMESTIC AND FIRE SERVICES TO BE CONSTRUCTED PER VILLAGE OF WAYNESVILLE REQUIREMENTS. COST TO INCLUDE ALL REQUIRED ELECTRICAL AND DRAINAGE WORK FOR METER PIT. METER PIT IS TO HAVE AN 8" WATERLINE COMING INTO PIT. CONTRACTOR TO COORDINATE METER WITH VILLAGE. METER PIT DETAIL W-15A, SEE SHEET 1.C.4.3. FIRE DEPARTMENT CONNECTION (5" STORZ) TO BE LOCATED AT METER PIT.

(12) PICK UP FOUNDATION DRAIN FROM BUILDING AND CONNECT INTO STORM SEWER SYSTEM.

(13) EXTEND UGE CONDUIT FROM PRE K-6 PROJECT. SEE MEP PLANS FOR CONNECTION AT BUILDING.

(14) EXTEND DATA CONDUIT FROM PRE K-6 PROJECT. SEE MEP PLANS FOR CONNECTION AT BUILDING.

(15) TRANSFORMER PAD. VERIFY PAD REQUIREMENTS WITH DP&L. VERIFY PAD LOCATION WITH MEP PLANS.

(16) REPAIR SIDEWALK, PLAYGROUND AREA AND FENCE TO ORIGINAL OR BETTER CONDITION FROM INSTALLING WATER LINES, ELECTRIC LINES AND GAS LINES.

GENERAL NOTES:

No.	Revisions / Submissions	Date
2.	ADDENDUM 2	03/22/2021

LWC INCORPORATED
434 East First Street Dayton, OH 45402 937.223.6500
712 East Main Street Richmond, IN 47374 765.966.3546

BURKHARDT ENGINEERS • SURVEYORS
28 North Cherry Street | Germantown, Ohio 45327 | Phone: 937-388-0060 | BURKHARDTINC.COM
CIVIL ENGINEERING | LAND SURVEYING | NATIONAL RETAIL SITE DEVELOPMENT

WAYNE LOCAL SCHOOLS

WAYNESVILLE PERFORMING ARTS CENTER

625 DAYTON ROAD
WAYNESVILLE, OHIO 45068

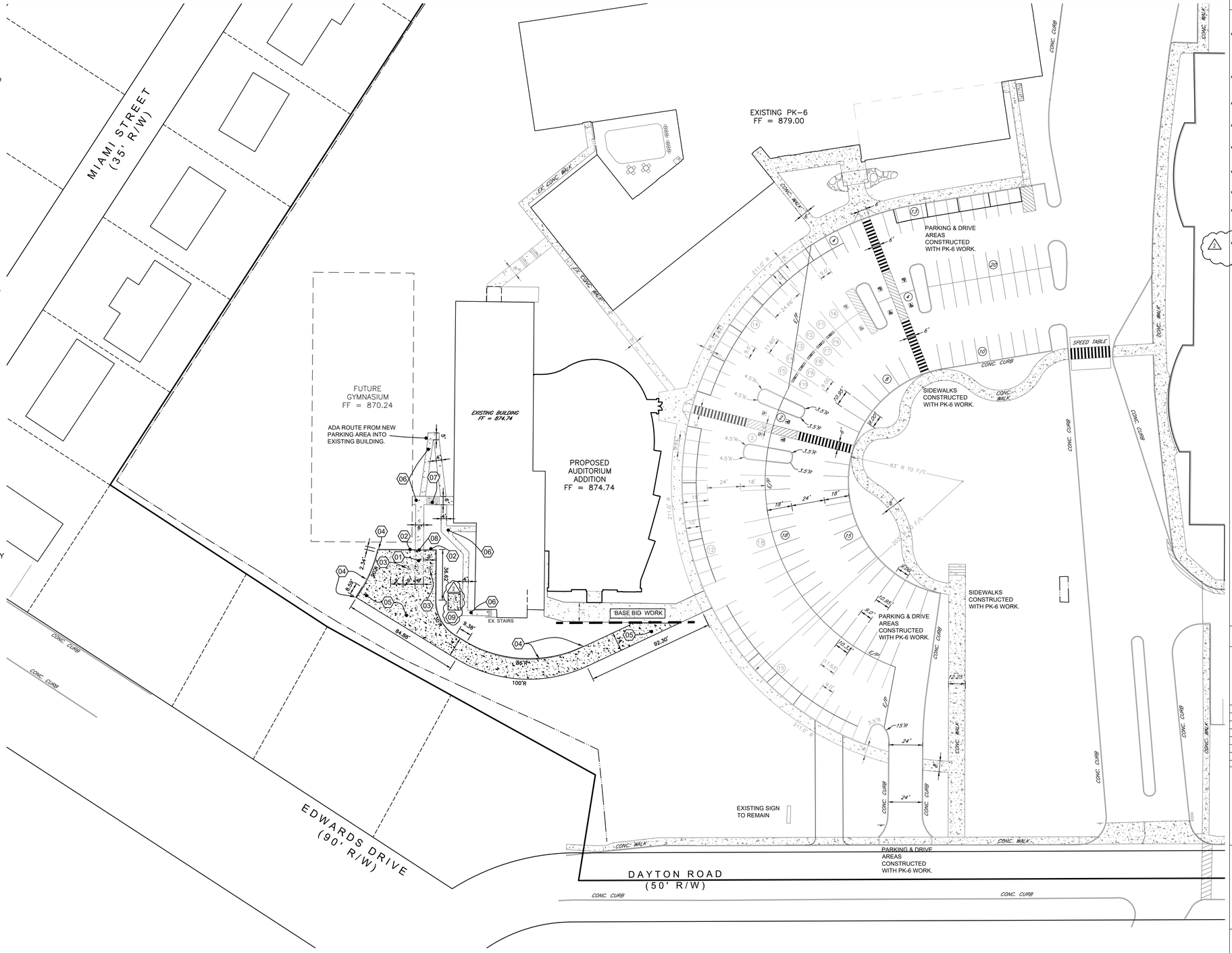
UTILITY PLAN

STATE OF OHIO — KURT M. ZIESSLER — E-62910 — REGISTERED PROFESSIONAL ENGINEER
03/22/2021

Comm. No.	Date
18.163	2021/03/01
Drawn: RRT	Drawing No.: 1.C-4.0
Checked: KMZ	

GENERAL SITE NOTES

1. Building dimensions shown on the Civil Engineering Plans are for reference purposes only. The Contractor shall use the Architectural and Structural Plans for exact building dimensions.
2. All site and radii dimensions are referenced to the face of curbs or edge of paving unless otherwise noted.
3. All dimensions to the building are referenced to the outside face of the structure's facade.
4. All sidewalks, curb and gutter, street paving, curb cuts, driveway approaches, handicap ramps, etc. constructed outside the property line in the right-of-way shall conform to all Local and/or State specifications and requirements.
5. All proposed handicap ramps, parking areas, and accessible routes shall strictly comply with current Local, State, and Federal regulations, including but not necessarily limited to the ADA Accessibility Guidelines (ADAAG).
6. All ADA accessible routes shall have detectable warnings installed as required by the ADAAG. Detectable warnings shall consist of raised truncated domes which contrast visually with the adjoining surfaces, either light-on-dark, or dark-on-light.
7. Contractor shall sawcut existing pavement to provide a clean, straight joint where new pavement meets existing pavement and ensure positive drainage.
8. All concrete pavement shall have joints in accordance with ACI 330R-08, Section 3.7 and Appendix C. Contraction joints shall be 1/4 of the slab thickness. Isolation joints shall be placed between pavement and foundations, inlets, and other fixed structures. Contraction joints shall be tool finished and spaced as follows:
   Curbing: 10'-0" (max) spacing.
   Sidewalks: 5'-0" (max) spacing.



PERMITTING CONTACT INFORMATION:

PLANNING, ZONING, ROADS, ACCESS, & RIGHT-OF-WAY
VILLAGE OF WAYNESVILLE
Telephone: 513.897.8015

SITE AND PAVEMENT LEGEND

- (#) NUMBER OF PARKING SPACES
- (F#) FUEL EFFICIENT VEHICLE PARKING SPACES (10 TOTAL)
- PIPE BOLLARD
- ADA PARKING SYMBOL
- SIGN (SINGLE POST, TWO SIGNS)
- SIGN (SINGLE POST, SINGLE SIGN)
- PROPOSED LIGHT FIXTURE
- PAINT STRIPE AREA
- CONCRETE

BUILDING FACADE/AWNING/OVERHANG
O/O CONCRETE FOUNDATION

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GRAPHIC SCALE
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1 inch = 30 ft.

SHEET NOTES:

SITE KEYNOTES

01 PARKING STRIPE / HATCH
- 4" WIDE PAINTED STRIPES. ADA HATCHING TO BE AT 45° AND 2'-0" O.C.
- STRIPING ON ASPHALT PAVEMENT TO BE PAINTED WHITE.
- STRIPING ON CONCRETE PAVEMENT TO BE PAINTED YELLOW

02 ADA PARKING SIGNAGE
-PER DETAIL / SHEET 1.C-5.0

03 ADA PARKING SYMBOL
-PER DETAIL / SHEET 1.C-5.0

04 CONCRETE BARRIER CURB
- PER DETAIL / SHEET 1.C-5.0

05 CONCRETE DRIVE
-PER DETAIL / SHEET 1.C-5.0

06 CONCRETE SIDEWALK
-PER DETAIL / SHEET 1.C-5.0

07 STAIRS, SEE ARCHITECTURAL PLANS FOR DETAILS.

08 ADA RAMP WITH TRUNCATED DOME. 0" HEIGHT CURB AT RAMP, TRANSITIONING TO 6" HEIGHT CURB AT END OF ADA SPACES.

△2 09 DP&L TRANSFORMER PAD AND BOLLARDS (ALTERNATE BID LOCATION). SEE SHEET E401 FOR ADDITIONAL INFORMATION.

GENERAL NOTES:

No.	Revisions / Submissions	Date
2.	ADDENDUM 2	03/22/2021

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SITE PLAN, ALTERNATE BID

STATE OF OHIO · KURT M. ZIESSLER · E-42960 · REGISTERED PROFESSIONAL ENGINEER
03/22/2021

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