ADDENDUM

CSO
ARCHITECTURE · INTERIOR DESIGN

ADDENDUM NO: 6

PROJECT: Hamilton Heights High School Phase 2 Projects

PROJECT NO: 2023060 DATE: 03/20/2024 BY: Brent Hite

This Addendum is issued in accordance with the provisions of "The General Conditions of the Contract for Construction," Article 1, "Contract Documents" and becomes a part of the Contract Documents as provided therein. This Addendum includes:

Addendum Pages:
1-4

Attached Documents:
03 35 00 – Concrete Surface Treatment
23 74 13 – Packaged Rooftop Units

Attached Drawing Sheets:
L103, M601

PART 0 - GENERAL INFORMATION

0.1 NOT USED

A. Not Used

PART 1 - BIDDING REQUIREMENTS

1.1 NOT USED

A. Not Used

PART 2 - SPECIFICATIONS

2.1 00 00 00 - TOC

A. Add section 03 35 00 – CONCRETE SURFACE TREATMENT to TOC.

2.2 03 35 00 – CONCRETE SURFACE TREATMENT

A. Add section in its entirety.

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2.3 23 74 13 – PACKAGED ROOFTOP UNITS

A. Revise Energy Recovery Wheel to Fixed-Plate Energy Recovery.

B. Reissue section in its entirety.

PART 3 - DRAWINGS

LANDSCAPE

3.1 L103 – SITE MATERIALS PLAN

A. Add text note with leader calling out wellhead cabinet enclosure and specification section on plan.

MECHANICAL

3.2 M601 – SCHEDULES - MECHANICAL

A. Remove RTU-3 from Package Rooftop Unit With Energy Recovery schedule for clarity.

B. Reissue drawing in its entirety.

PART 4 - OTHER ITEMS

4.1 NOT USED

A. Not Used

PART 5 - QUESTIONS AND ANSWERS

5.1 Question:

Please include a site furnishing drawing and schedule.

Answer:

See attached document in this addendum.

5.2 Question:

Can a spec be provided for the polished concrete to indicate depth and shine?

Answer:

See attached document in this addendum.

5.3 Question:

Addendum #2 C112 Notes 30 has removed football light poles/bases – abandon below grade. Will the electrician be removing these or should that be included in site demo?

Answer:

The sitework contractor will be responsible for the demolition and backfill of these bases. The electrician will be responsible for making these areas safe for demolition.

5.4 Question:

The dates shown in the schedule are very tight, ex. Site demo is shown to be 5 days, we are being told this is a 15-day activity. I realize it is a preliminary schedule, but I wanted to bring it up prior to submitting a bid.

Answer:

The schedule is preliminary, and final durations for activities will be determined with input from all bid packages and trades.

5.5 Question:

Note 29 on A350OB states that the called out item is a "back-lit signage panel by digital signage manufacturer". Is it possible to have "digital" taken out of this description, to prevent any confusion with note 14 on this page? (5' x 10' double sided digital sign)

Answer:

See Addendum No 3 for revised notation.

5.6 Question:

The roofing specifications are calling for substrate board to be included as a part of the roofing assemblies, but it is not shown in the drawings. Please confirm either the locations in which substrate board is to be included, or that it needs to be excluded from the pricing.

Answer:

Substrate boards are not used in this project and can be excluded from pricing.

5.7 Question:

Please confirm that Centerpoint Energy will be covering the cost of bringing the gas line, as called out by plan notes G1 and G2 on C401 and C402.

Answer:

The current understanding is that Centerpoint will be providing the gas line.

5.8 Question:

Please confirm Siemens is an acceptable manufacturer for the fire alarm system, as they are capable of integrating into the existing Fire- Lite open – source system.

Answer:

Owner currently has Firelite Systems in all buildings, with service from Elwood Fire Equipment Company.

END ADDENDUM #6

SECTION 03 35 00 – POLISHED CONCRETE SURFACE TREATMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Section includes the following:

1. Polished Concrete Floor Treatment

1.03 ACTION SUBMITTALS

A. Shop Drawings: Indicate information on shop drawings as follows:

1. Typical layout including dimensions and floor grinding schedule.
2. Plan view of floor and joint pattern layout.
3. Areas to receive colored surface treatment.
4. List hardener, sealer, densifier in notes.

B. Product Data: Submit product data, including manufacturer's SPEC-DATA® product sheet, for specified products.

1. Material Safety Data Sheets (MSDS).
2. Preparation and concrete grinding procedures.

1.04 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Quality Assurance:

1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Certificates:

a. Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
b. Current contractor's certificate signed by manufacturer declaring contractor as an approved installer of polishing system.

3. Manufacturer's Instructions: Manufacturer's installation instructions.

C. Material Certificates: For each of the following, signed by manufacturers:

1. Floor and slab treatments.

1.05 CLOSEOUT SUBMITTALS

A. Warranty: Submit warranty documents specified.

B. Operation and Maintenance Data: Submit operation and maintenance data for installed products in accordance with Division 01 Section “Closeout Submittals”. Include:

1. Manufacturer’s instructions on maintenance renewal of applied treatments.
2. Protocols and product specifications for joint filing, crack repair and/or surface repair.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: A firm experienced in manufacturing concrete surface treatment products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

C. Manufacturer’s Certification

1. Provide letter of certification from concrete finish manufacturer stating that installer is certified applicator of special concrete finishes and is familiar with proper procedure and installation requirements required by the manufacturer.

D. Source Limitations: Obtain each type of material of the same brand from the same manufacturer.

E. Mockups: Cast concrete slab-on-grade panels to demonstrate typical joints, surface finish, texture, tolerances, floor treatments, and standard of workmanship.

1. Construct a 10 foot by 10 foot mockup in the location indicated or, if not indicated, as directed by Architect.
2. Provide individual mockups for each color and pattern required.
3. For accurate color, the quantity of concrete mixed to produce the sample should not be less than 3 cubic yards (or not less than 1/3 the capacity of the mixing drum on the ready-mix truck) and should always be in full cubic yard increments. Excess material shall be discarded according to local regulations.
4. Construct mockup using materials, processes, and techniques required for the work, including curing procedures. Incorporate representative control, construction, and expansion joints according to Project requirements. Installer for the work to construct mockup.
5. Mockup to be stained and sealed by the Installer who will actually perform the work for the Project. Record the amount of chemical stain needed per square foot of application to establish coverage rates for the work.
6. Notify Architect and Owner a minimum of seven calendar days in advance of the date scheduled for each mockup construction.
7. Obtain the Architect’s and Owner’s acceptance of each mockup prior to commencement of the work.
8. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver products in original factory unopened, undamaged packaging bearing identification of product, manufacturer, batch number, and expiration date as applicable.

B. Store products in a location protected from damage, construction activity, and adverse environmental conditions, and away from combustible materials and sources of heat, according to manufacturer's printed instructions and current recommendations.

C. Handle products according to manufacturer's printed instructions.

1.08 PROJECT CONDITIONS

A. Environmental Limitations:

1. Store materials protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
2. Comply with manufacturer's written instructions for substrate temperature and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting topping performance.
3. Concrete must be cured a minimum of 45 days or as directed by the manufacturer before concrete polish application can begin.

B. Integrally Colored Concrete Environmental Requirements:

1. Schedule placement to minimize exposure to wind and hot sun before curing materials are applied.
2. Avoid placing concrete if rain, snow, or frost is forecast within 24-hours. Protect fresh concrete from moisture and freezing.
3. Comply with professional practices described in ACI 305R and ACI 306R.
4. Schedule delivery of concrete to provide consistent mix times from batching until discharge. Mix times shall meet manufacturer's written recommendations.

C. Protection Of Concrete Scheduled To Receive Polished Finish:

1. Protect from petroleum stains during construction.
2. Diaper hydraulic power equipment.
3. Restrict vehicular parking.
4. Restrict use of pipe cutting machinery.
5. Restrict placement of reinforcing steel on slab.
6. Restrict use of acids or acidic detergents on slab.

D. Close areas to traffic during floor application and after application for time period recommended in writing by manufacturer.

PART 2 - PRODUCTS

2.01 PERFORMANCE AND DESIGN CRITERIA

A. Performance Criteria: Provide polished flooring that has been selected, manufactured and installed to achieve the following:

1. Abrasion Resistance: ASTM C779, Method A, high resistance, no more than 0.008 inch (0.20 mm) wear in 30 minutes.

2. Reflectivity: Level -2 “Satin” appearance with a desired DOI Gloss Reading of 35% as determined by standard gloss meter.
3. Waterproof Properties: Rilem Test Method 11.4, 70% or greater reduction in absorption.
4. High Traction Rating: NFSI 101-A, ANSI B-101.1 2009 non-slip properties.
5. Exposure: Class A – Surface Cream, per the Concrete Polishing Council.

B. Design Requirements:

1. Hardened Concrete Properties:

a. Minimum Concrete Compressive Strength: 3500 psi (24 MPa).
b. Normal Weight Concrete: No lightweight aggregate.
c. Non-air entrained.

2. Placement Properties:

a. Natural concrete slump of 4 1/2 inches - 5 inches (114 - 127 mm). Admixtures may be used.
b. Flatness Requirements:

1) Overall FF 40.
2) Local FF 20.

3. Hard-Steel Troweled (3 passes) Concrete: No burn marks. Finish to ACI 302.1R, Class 5 floor.

a. Class 6 floors, special colored mineral aggregate hardener with repeated hard steel trowel finish.

4. Curing Options:

a. Membrane forming curing compounds (ASTM C309, Type 1, Class B, all resin, dissipating cure).

1) Acrylic curing and sealing compounds not recommended.

b. Sheet membrane (ASTM C171); polyethylene film not recommended.
c. Damp Curing: Seven day cure.

2.02 LIQUID FLOOR TREATMENTS

A. VOC Content: Liquid floor treatments shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.

1. Products: Subject to compliance with requirements, provide one of the following:

a. ChemMasters; Chemisil Plus.
b. ChemTec Int'l; ChemTec One.
c. Conspec by Dayton Superior; Intraseal.

d. Curecrete Distribution Inc.; Ashford Formula.
e. Dayton Superior Corporation; Day-Chem Sure Hard (J-17).
f. Euclid Chemical Company (The), an RPM company; Euco Diamond Hard.
g. L&M Construction Chemicals, Inc.; Seal Hard.
h. Meadows, W. R., Inc.; LIQUI-HARD.
i. Nox-Crete Products Group; Duro-Nox.
j. ProSoCo, Consolideck.
k. Scofield, L. M. Company.
l. Vexcon Chemicals, Inc.; Vexcon StarSeal PS Clear.

2.03 COLOR FLOOR AND SLAB TREATMENTS

A. Slip-Resistive Emery Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive, crushed emery aggregate containing not less than 50 percent aluminum oxide and not less than 24 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials with 100 percent passing No. 4 (4.75-mm) sieve.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Anti-Hydro International, Inc.; Emery.
b. Dayton Superior Corporation; Emery Tuff Non-Slip.
c. Lambert Corporation; EMAG-20.
d. L&M Construction Chemicals, Inc.; Grip It.
e. Metalcrete Industries; Metco Anti-Skid Aggregate.

B. Unpigmented Mineral Dry-Shake Floor Hardener: Factory-packaged dry combination of portland cement, graded quartz aggregate, and plasticizing admixture.

1. Products: Subject to compliance with requirements, provide one of the following:

a. BASF Construction Chemicals - Building Systems; Maximent.
b. ChemMasters; ConColor.
c. Conspec by Dayton Superior; Conshake 500.
d. Dayton Superior Corporation; Quartz Tuff.
e. Edoco by Dayton Superior; Burke Non Metallic Floor Hardener 250.
f. Euclid Chemical Company (The), an RPM company; Surflex.
g. Kaufman Products, Inc.; Tycron.
h. Lambert Corporation; Colorhard.
i. L&M Construction Chemicals, Inc.; Quartzplate FF.
j. Metalcrete Industries; Floor Quartz.
k. Scofield, L. M. Company; Lithochrome Color Hardener.
l. Symons by Dayton Superior; Hard Top.

C. Reactive Chemical Concrete Stain: Reactive, water-based solution of metallic salts which react with calcium hydroxide in cured concrete substrates to produce permanent variegated or translucent color effects. Zero VOC content.

1. Basis of Design Product: Scofield's "Formula One Liquid Dye Concentrate."
2. Acceptable Manufacturers: Subject to compliance with requirements, provide product by one of the following:

a. BASF Construction Chemicals - Building Systems.

b. ChemMasters.
c. Euclid Chemical Company (The), an RPM company.
d. Lambert Corporation.
e. L&M Construction Chemicals, Inc.
f. Scofield, L. M. Company.
g. QC Construction Products.

3. Color: As indicated in Drawings.

D. Colored Admixture for Integrally Color Concrete: Admixture shall be a colored, water-reducing, admixture containing no calcium chloride with coloring agents that are lime-proof and ultra-violet resistant. Colored admixture shall conform to the requirements of ACI 303.1, ASTM C979, ASTM C494 and ASSHTO M194. Raw pigments are not an equivalent and may not be substituted.

1. Basis of Design Product: Scofield's "CHROMIX P" Admixture; Sika Corporation.
2. Acceptable Manufacturers: Subject to compliance with requirements, provide product by one of the following:

a. BASF Construction Chemicals - Building Systems.
b. ChemMasters.
c. Euclid Chemical Company (The), an RPM company.
d. Lambert Corporation.
e. L&M Construction Chemicals, Inc.
f. Scofield, L. M. Company.
g. QC Construction Products.

3. Color: As indicated in Drawings.
4. Curing and Sealing Compound: Scofield Cureseal-W Semi-gloss; Sika Corporation. Curing and sealing compound shall comply with ASTM C309 and be of same manufacturer as colored admixture, for use with integrally colored concrete.
5. Do not add calcium chloride to mix as it causes mottling and surface discoloration.
6. Supplemental admixtures shall not be used unless approved by manufacturer.
7. Do not add water to the mix in the field.
8. Add colored admixture to concrete mix according to manufacturer's written instructions.

2.04 CONCRETE FLOOR SEALER

A. VOC Content: Liquid floor treatments shall have a VOC content of 100 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Acrylic-Polyurethane Sealer: One-component clear acrylic-polyurethane sealer. Low VOC formulation. VOC content less than 100 g/L.

1. Basis of Design: Scofield's "SCOFIELD Selectseal-W."
2. Acceptable Manufacturers: Subject to compliance with requirements, provide product by one of the following :

a. ChemMasters; Chemisil Plus.
b. Curecrete Distribution Inc.; Ashford Formula.
c. Euclid Chemical Company (The), an RPM company; Euco Diamond Hard.

d. L&M Construction Chemicals, Inc.; Seal Hard.
e. Meadows, W. R., Inc.; LIQUI-HARD.
f. Scofield, L. M. Company.

C. Penetrating Liquid Floor Treatment: Clear, chemically reactive, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and densifies concrete surfaces.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Conspec by Dayton Superior; Intraseal.
b. Curecrete Distribution Inc.; Ashford Formula.
c. Dayton Superior Corporation; Day-Chem Sure Hard (J-17).
d. Euclid Chemical Company (The), an RPM company; Euco Diamond Hard.
e. L&M Construction Chemicals, Inc.; Seal Hard.
f. Nox-Crete Products Group; Duro-Nox.
g. Vexcon Chemicals, Inc.; Vexcon StarSeal PS Clear.

2.05 POLISHED CONCRETE FINISHING PRODUCTS

A. Penetrating Liquid Floor Treatments for Polished Concrete Finish: Clear, waterborne solution of inorganic silicate or siliconate materials and proprietary components; odorless; that penetrates, hardens, and is suitable for polished concrete surfaces.

1. Basis of Design Manufacturer: Subject to compliance with requirements, provide L & M Construction Chemicals, Inc., or approved products/process by one of the following:

a. Advanced Floor Products.
b. L&M Construction Chemicals, Inc.
c. The Euclid Chemical Company.
d. BASF Construction Chemicals.
e. PROSOCO.

B. Proprietary Products/Systems:

1. Hardener, Sealer, Densifier: Proprietary, water based, odorless liquid, VOC compliant, environmentally safe chemical hardening solution leaving no surface film.

a. Acceptable Product: Basis of design: L & M Construction Chemicals, Inc., FGS Hardener Plus.

1) Advanced Floor Products; Retro Plate 99
2) American Decorative Concrete, AmeriPolish SureLock Densifier
3) L & M Construction Chemicals, Inc., FGS Hardener Plus.
4) ProSoCo, Consolideck LS or LC/CS.

2. Joint Filler: Semi-rigid, 2-component, self-leveling, 100% solids, rapid curing, polyurea control joint and crack filler with Shore A 80 or higher hardness.

a. Acceptable Material:

1) L & M Construction Chemicals, Inc., Joint Tite 750.
2) Metzger/McGuire, Spal-Pro RS88.
3) Sherwin-Williams Company, General Polymers 4880 Polyurea Joint Sealant.
4) Ardex L.P., Ardex Ardiseal Rapid Plus.
5) Joint sealant acceptable to concrete finish system manufacturer.

3. Oil Repellent Sealer: Ready to use, silane, siloxane and fluoropolymers blended water based solution sealer, quick drying, low-odor, oil and water repellent, VOC compliant and compatible with chemically hardened floors.

   a. Acceptable Material:

      1) Advanced Floor Products; Retro Pel
      2) American Decorative Concrete, AmeriPolish SureLock Stain Protector.
      3) L & M Construction Chemicals, Inc., Petrotex.
      4) ProSoCo, Consolideck LS Guard.

4. Concrete Dyes: Fast-drying dye, packaged in premeasured units ready for mixing with water or VOC exempt solvent; formulated for application to polished cementitious surfaces.

   a. Acceptable Material:

      1) Advanced Floor Products; Retro Plate Dye
      2) American Decorative Concrete, AmeriPolish SureLock Dye
      3) ProSoCo, Consolideck LS or LC/CS.
      4) L & M Construction Chemicals, Inc., Vivid Concrete Dyes or Vivid Dye WB Plus.

5. Cleaning Solution: Proprietary, mild, highly concentrated liquid concrete cleaner and conditioner containing wetting and emulsifying agents; biodegradable, environmentally safe and certified High Traction by National Floor Safety Institute (NFSI).

   a. Acceptable Material:

      1) Advanced Floor Products; Retro Clean
      2) American Decorative Concrete, AmeriPolish SureLock ProGuard Conditioning Cleaner or Rejuvenating Cleaner.
      3) L & M Construction Chemicals, Inc., FGS Concrete Conditioner.
      4) ProSoCo, Consolideck LS Clean.

6. Stain Guard Sealer: Ready to use, is a low odor, VOC compliant, topical sealer consisting of low molecular emulsified cross-linking, coupling polymers that effectively protect concrete and other natural stone floor surfaces from the damaging effects of staining, defacing and deterioration due to contaminant penetration.

   a. Acceptable Material: L& M Construction Chemicals, Inc. Permaguard SPS

7. Finish: Standard Medium gloss (MG-2), 800 grit.
8. Color: As selected by Architect or indicated on Drawings.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install concrete according to requirements of Division 03 "Cast-In-Place Concrete."

B. Do not add water to concrete mix in the field.

C. Surfaces shall be finished uniformly with the following finish:

1. Broomed: Pull broom across freshly floated concrete to produce fine texture in straight lines perpendicular to main line of traffic. Do not dampen brooms.

3.02 CURING

A. Integrally Colored Concrete: Apply curing and sealing compound for integrally colored concrete according to manufacturer's instructions using manufacturer’s recommended application techniques. Apply curing and sealing compound at consistent time for each pour to maintain close color consistency.

B. Curing compound shall be same color as the colored concrete and supplied by same manufacturer of the colored admixture.

C. Precautions shall be taken in hot weather to prevent plastic cracking resulting from excessively rapid drying at surface as described in CIP 5 Plastic Shrinkage Cracking published by the National Ready Mixed Concrete Association.

D. Do not cover concrete with plastic sheeting.

3.03 TOLERANCES

A. Minor variations in appearance of integrally colored concrete, which are similar to natural variations in color and appearance of uncolored concrete, are acceptable.

3.04 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

3.05 EXAMINATION

A. Site Verification of Conditions:

1. Verify that concrete substrate conditions, which have been previously installed under other sections or contracts, are acceptable for product installation in accordance with manufacturer’s instructions prior to installation of concrete finishing materials.

B. Verify Concrete Slab Performance Requirements:

1. Verify concrete is cured to 28 day 3500 psi strength.
2. Verify concrete surfaces received a hard steel-trowel finish (3 passes) during placement. Do not apply chemically stained concrete coloring system and sealer

over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to application.

C. Acceptance: Starting of work will be construed as Applicator's and manufacturer's acceptance of surfaces and conditions within any particular area.

3.06 PREPARATION

A. Surface Preparation: Allow new concrete to cure as recommended by manufacturer to ensure proper reaction between concrete and staining materials. Liquid curing materials must not be used.

1. General: Perform preparation and cleaning procedures in accordance with manufacturer's instructions and as herein specified, for each particular substrate condition.
2. Interior Applications: Minimum cure time of concrete is 30 to 60 days, or longer if necessary to meet the specified water vapor transmission requirements.
3. Do not use liquid curing materials. Cure concrete flatwork with new, unwrinkled, non-staining, high quality curing paper complying with ASTM C 171. Do not overlap curing paper.
4. Cure surfaces using the same method and different sections (pours) chemically stained when concrete is the same age.
5. Clean surfaces before applying surface treatments. Program cleaning so that contaminants from cleaning process will not fall onto clean surfaces and to prevent damage to adjacent construction from power washers and rotary scrubbers.

    a. The substrate shall be clean of loose dirt and debris. Any surface irregularities, such as concrete spillage or other built up foreign materials shall be removed prior to application of chemically stained concrete coloring system and sealer.
    b. Surface shall be dry and free of grease, oil stains or any unstable foreign materials.
    c. Pressure Washing: Use a pressure washer equipped with a fan tip and rated for a minimum pressure capability of 4000 psi.

6. Unless otherwise recommended by manufacturer, maintain surface temperature of concrete substrate at a minimum of 45 degrees F at least 72 hours prior to application of concrete coloring system and sealer and thereafter.
7. Repair and fill all “working” cracks and construction joints with a semi-rigid elastomeric material in accordance with manufacturer’s recommendations.
8. If required or recommended by finish system manufacturer, sand or surface grind cured concrete with a 50-200 grit finish.

B. Scoring: Score decorative jointing in concrete surfaces 1/8 inch deep with diamond blades. Rinse until water is completely clean.

1. Single Color Stain Applications: Score after staining.
2. Multiple Color Stain Applications: Score before staining.

3.07 DRY-SHAKE FLOOR HARDENER FINISH

A. Slip-Resistive Finish: Before final floating, apply slip-resistive aggregate finish where indicated and to concrete stair treads, platforms, and ramps, locker rooms, shower rooms corridors and other wet environments. Apply according to manufacturer's written instructions and as follows:

1. Uniformly spread 25 lb/100 sq. ft. (12 kg/10 sq. m) of dampened slip-resistive aggregate over surface in one or two applications. Tamp aggregate flush with surface, but do not force below surface.
2. After broadcasting and tamping, apply float finish.
3. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aggregate.

B. Dry-Shake Floor Hardener Finish: After initial floating, apply dry-shake floor hardener to surfaces according to manufacturer's written instructions and as follows:

1. Uniformly apply dry-shake floor hardener at a rate of 100 lb/100 sq. ft. (49 kg/10 sq. m) unless greater amount is recommended by manufacturer.
2. Uniformly distribute approximately two-thirds of dry-shake floor hardener over surface by hand or with mechanical spreader, and embed by power floating. Follow power floating with a second dry-shake floor hardener application, uniformly distributing remainder of material, and embed by power floating.
3. After final floating, apply a trowel finish. Cure concrete with curing compound recommended by dry-shake floor hardener manufacturer and apply immediately after final finishing.

3.08 CHEMICAL STAIN APPLICATION

A. General: Comply with chemical stain manufacturer’s printed instructions and current recommendations.

1. Do not mix the specified chemical stain with highly alkaline chemical stain materials. Doing so will result in a dangerous chemical reaction.

B. Protect surrounding areas, landscaping, and adjacent surfaces from overspray, runoff, and tracking. Divide surfaces into small work sections using walls, joint lines, or other stationary breaks as natural stopping points.

C. Apply chemical stains at the coverage rate recommended by the manufacturer and use application equipment according to the chemical stain manufacturer’s printed instructions. Note the color of the liquid chemical stain will not be the final color produced on the concrete substrate.

D. Transfer chemical stain to the substrate by brush or spray and immediate scrub into surface. Reaction time depends on wind conditions, temperatures, and humidity levels.

E. When multiple coats of one or more colors are required, washing and drying between colors is desirable to evaluate the color prior to the next coat.

F. Rinsing: After the final coat of chemical stain has remained on the surface for a minimum of four hours, neutralize unreacted chemical stain residue and then remove completely prior to sealing. After neutralization, thoroughly rinse surface with clean water several times to remove soluble salts. While rinsing, lightly abrade surface using a low-speed floor machine and red pad to remove residue and weakened surface material. Runoff may stain the adjacent areas or harm plants. Collect rinse water by wet vacuuming or absorbing with an inert material.

1. Failure to completely remove all residue prior to sealing the surface will cause appearance defects, adhesion loss or peeling, reduced durability, and possible bonding failure and delamination of sealer.

2. All stain residue, runoff liquid, and rinse water must be collected and disposed of according to applicable Federal regulations and governing authorities having jurisdiction.

3.09 SEALING APPLICATION

A. Concrete substrate must be completely dry. Test surface for proper pH prior to applying sealer. A pH value of 7 or higher indicates all acid has been neutralized. If the tested pH value is less than 7, repeat neutralization step until the required pH value is achieved.

B. Conduct a moisture vapor emission test prior to applying any sealer. Refer to the specific sealer's Technical-Data Bulletin for acceptable MVER.

C. Apply sealer according the sealer manufacturer's printed instructions at a rate of 300 to 500 square feet per gallon per coat. Maintain a wet edge at all times.

D. Allow sealer to completely dry before applying additional coats.

E. Apply second coat of sealer at 90 degrees to the direction of the first coat using the same application method and rates.

F. Seal horizontal joints in areas subject to pedestrian or vehicular traffic.

3.10 LIQUID FLOOR TREATMENTS- SEALER

A. Penetrating Liquid Floor Treatment: Prepare, apply, and finish penetrating liquid floor treatment according to manufacturer's written instructions.

1. Remove curing compounds, sealers, oil, dirt, laitance, and other contaminants and complete surface repairs.
2. Do not apply to concrete that is less than 28 days' old, unless required otherwise by manufacturer.
3. Apply liquid until surface is saturated, scrubbing into surface until a gel forms; rewet; and repeat brooming or scrubbing. Rinse with water; remove excess material until surface is dry. Apply a second coat in a similar manner if surface is rough or porous.

B. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

3.11 CONCRETE POLISHING AND TREATMENT

A. Polished Concrete Floor Treatment: Apply polished concrete finish system to cured and prepared slabs to match accepted mockup.

1. Machine grind floor surfaces to receive polished finishes level and smooth and to depth required to reveal aggregate to match approved mockup.

a. Size/level of aggregate exposed to produce a "salt and pepper" appearance. Grinding process to be uniform throughout to achieve a consistent appearance.

2. Apply penetrating liquid floor treatment for polished concrete in polishing sequence and according to manufacturer's written instructions, allowing recommended drying time between successive coats.
3. Continue polishing with progressively finer grit diamond polishing pads to gloss level to match approved mockup.
4. Control and dispose of waste products produced by grinding and polishing operations.
5. Neutralize and clean polished floor surfaces.

B. Provide polished concrete floor treatment in entirety of slab indicated by drawings. Provide consistent finish in all contiguous areas.

C. Apply floor finish prior to installation of fixtures and accessories.

D. Diamond polish concrete floor surfaces with power disc machine recommended by floor finish manufacturer. Sequence with coarse to fine grit. Installer to determine the optimum starting grit in order to achieve the specified aggregate exposure.

1. Comply with manufacturer’s recommended polishing grits for each sequence to achieve desired finish level. Level of sheen shall match that of approved mock-up.
2. Expose aggregate in concrete surface only as determined by approved mock-up.
3. All concrete surfaces shall be as uniform in appearance as possible.

E. Dyed and Polished Concrete (option):

1. Locate demarcation line between dyed surfaces and other finishes.
2. Polish concrete to the 400 grit level, (200 grit for water based dyes).
3. Apply pre-mixed dyes to polished concrete surface.
4. Allow dye to dry.
5. Remove residue with water and buffer pad; reapply as necessary for desired result.

F. Apply Hardener or Densifier as follows: Note: It is critical that two coats be applied

1. Apply hardener at rate and number of coats recommended by manufacturer.
2. Follow manufacturer’s recommendations for drying time between successive coats.
3. Remove dried residue before continuing to next application.
4. Dry Buff or Burnish dry concrete with an orbital polishing machine to achieve shine level required.

G. Remove defects and re-polish defective areas.

H. Finish edges of floor finish adjoining other materials in a clean and sharp manner.

I. Sealing Coat: Uniformly apply a continuous sealing coat of curing and sealing compound to hardened concrete by power spray or roller according to manufacturer's written instructions.

3.12 PROTECTION OF LIQUID FLOOR TREATMENTS

A. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

1. Provide plywood sheets in addition to the protective covering to ensure the concrete is not damaged during construction and before concrete treatments are applied.
2. Proprietary Cover: EZ Cover by McTech Group, Inc. or approved equivalent.

B. Protection of colored concrete treatment:

1. No satisfactory chemical or cleaning procedure is available to remove petroleum stains from the concrete surface. Prevention is therefore essential and contractor is responsible for all protection and providing an acceptable finished product as identified in the pre-construction meeting and approved mock up.

a. All hydraulic powered equipment must be diapered to avoid staining of the concrete.
b. No trade will park vehicles on the inside slab. If necessary to complete their scope of work, drop cloths will be placed under vehicles at all times.
c. No pipe cutting machine will be used on the inside floor slab
d. Steel will not be place on interior slab to avoid rust staining.
e. Acids and acidic detergents will not come into contact with slab.
f. All trades informed that the slabs must be protected at all times.

END OF SECTION

SECTION 23 74 13 – PACKAGED ROOFTOP UNITS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes packaged, outdoor rooftop units with the following components and accessories:

1. Direct-expansion cooling with inverter compressors.
2. Hot gas dehumidification coil.
3. Direct Drive VAV Supply fan and VAV Exhaust fan.
4. Economizer outdoor- and return-air damper section.
5. Fixed-Plate Energy Recovery.
6. Gas Fired Heat Exchanger.
7. Roof Curbs.
8. Rooftop Equipment Screens

1.2 SUBMITTALS

A. Product Data: Include manufacturer's technical data for each RTU, including rated capacities, dimensions, required clearances, characteristics, furnished specialties, and accessories.

B. Shop Drawings: Detail equipment assemblies and indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.

1. Wiring Diagrams: Power, signal, and control wiring.

C. Operation and maintenance data.

D. Warranty.

1.3 QUALITY ASSURANCE

A. ARI Compliance:

1. Comply with ARI 210/240 and ARI 340/360 for testing and rating energy efficiencies for RTU’s.
2. Comply with ARI 270 for testing and rating sound performance for RTU’s.

B. ASHRAE Compliance:

1. Comply with ASHRAE 15 for refrigerant system safety.
2. Comply with ASHRAE 33 for methods of testing cooling and heating coils.
3. Comply with ASHRAE/IESNA 90.1 for minimum efficiency of heating and cooling.

C. NFPA Compliance: Comply with NFPA 90A and NFPA 90B.

D. UL Compliance: Comply with UL 1995.

E. 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.

1.4 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to replace components of RTU's that fail in materials or workmanship within specified warranty period.

1. Warranty Period for Compressors: 5 year parts warranty for all compressors.
2. Warranty Period for Gas Furnace Heat Exchangers: 10 year parts warranty on all units from date of Substantial Completion.
3. Warranty Period for Entire Unit: 1 year parts and labor from date of Substantial Completion.

1.5 STARTUP/COMMISSIONING

A. Bid includes the following manufacturer's commissioning services:

1. Factory authorized service representative to perform installation supervision, start, check, and test.
2. Furnish copies of factory measured performance criteria to Owners' representative and installation contractor for inclusion in operation and maintenance manuals.
3. Complete factory startup checklist and provide a copy to the Owner's representative and installation contractor for inclusion in operation and maintenance manuals.
4. Assist installation contractor in completing items on commissioning checklist as required.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Products shall be provided by the following manufacturers:

1. AAON
2. Trane
3. Daikin
4. York
5. Temtrol

2.2 ROOFTOP UNITS

A. General Description

1. Packaged rooftop unit shall include compressors, evaporator coils, filters, supply fans, dampers, air-cooled condenser coils, condenser fans, hot gas reheat coil, gas fired heat exchangers, exhaust fans, fixed-plate energy recovery unit, and unit controls. Unit shall

be factory assembled and tested including leak testing of the DX coils, pressure testing of the refrigeration circuit, and run testing of the completed unit.

2. Unit shall have decals and tags to indicate lifting and rigging, service areas and caution areas for safety and to assist service personnel.
3. Unit components shall be labeled, including refrigeration system components, and electrical and controls components.
4. Estimated sound power levels (dB) shall be shown on the unit ratings sheet.
5. Installation, Operation, and Maintenance manual shall be supplied within the unit.
6. Laminated color-coded wiring diagram shall match factory installed wiring and shall be affixed to the interior of the control compartment's hinged access door.
7. Unit nameplate shall be provided in two locations on the unit, affixed to the exterior of the unit and affixed to the interior of the control compartment's hinged access door.

B. Construction

1. All cabinet walls, access doors, and roof shall be fabricated of double wall, impact resistant, rigid polyurethane foam panels.
2. Unit insulation shall have a minimum thermal resistance R-value of 13. Foam insulation shall have a minimum density of 2 pounds/cubic foot and shall be tested in accordance with ASTM D1929-11 for a minimum flash ignition temperature of 610°F.
3. Unit construction shall be double wall with G90 galvanized steel on both sides and a thermal break. Double wall construction with a thermal break prevents moisture accumulation on the insulation, provides a cleanable interior, reduces heat transfer through the panel, and prevents exterior condensation on the panel.
4. Unit shall be designed to reduce air leakage and infiltration through the cabinet. Cabinet leakage shall not exceed 1% of total airflow when tested at 3 times the minimum external static pressure provided in AHRI Standard 340/360. Panel deflection shall not exceed L/240 ratio at 125% of design static pressure, at a maximum 8 inches of positive or negative static pressure, to reduce air leakage. Deflection shall be measured at the midpoint of the panel height and width. Continuous sealing shall be included between panels and between access doors and openings to reduce air leakage. Piping and electrical conduit through cabinet panels shall include sealing to reduce air leakage.
5. Roof of the air tunnel shall be sloped to provide complete drainage. Cabinet shall have rain break overhangs above access doors.
6. Access to filters, dampers, cooling coils, reheat coil, heaters, fixed-plate energy recovery unit, compressors, and electrical and controls components shall be through hinged access doors with quarter turn, zinc cast, lockable handles. Hinged access panel shall be included on the doors.
7. Exterior paint finish shall be capable of withstanding at least 2,500 hours, with no visible corrosive effects, when tested in a salt spray and fog atmosphere in accordance with ASTM B 117-95 test procedure.
8. Units with cooling coils shall include double sloped 304 stainless steel drain pans.
9. Unit shall be provided with base discharge and return air openings. All openings through the base pan of the unit shall have upturned flanges of at least 1/2 inch in height around the opening.
10. Unit shall include lifting lugs on the top of the unit.
11. Unit shall include factory installed, painted galvanized steel condenser coil guards on the face of the condenser coil.

C. Electrical

1. Unit shall have minimum 65kAIC SCCR.
2. Unit shall be provided with factory installed and factory wired, non-fused disconnect switch.

3. Unit shall be provided with a factory installed and factory wired 115V, 12 amp GFI outlet disconnect switch in the unit control panel.
4. Unit shall be provided with phase and brown out protection which shuts down all motors in the unit if the electrical phases are more than 10% out of balance on voltage, the voltage is more than 10% under design voltage or on phase reversal.

D. Supply Fans.

1. Unit shall include direct drive, unhoused, backward curved, plenum supply fans.
2. Blowers and motors shall be dynamically balance and mounted on rubber isolators.
3. Motors shall be premium efficiency TEFC with ball bearings rated for 200,000 hours service with external lubrication points.
4. Variable frequency drives shall be factory wired and mounted in the unit. Fan motors shall be premium efficiency.
5. Motors shall include shaft grounding.

E. Exhaust Fans

1. Exhaust dampers shall be sized for 100% relief.
2. Fans and motors shall be dynamically balanced.
3. Unit shall include barometric relief dampers.
4. Motors shall be premium efficiency TEFC with ball bearings rated for 200,000 hours service with external lubrication points.
5. Access to exhaust fans shall be through double wall, hinged access doors with quarter turn lockable handles.
6. Unit shall include belt driven, unhoused, backward curved, plenum exhaust fans.
7. Variable frequency drives shall be factory wired and mounted in the unit. Fan motors shall be premium efficiency.
8. Motor shall include shaft grounding.

F. Cooling Coils

1. Evaporator Coils

a. Coils shall be designed for use with R-410A refrigerant and constructed of copper tubes with aluminum fins mechanically bonded to the tubes and galvanized steel end casings. Fin design shall be sine wave rippled.
b. Coils shall have interlaced circuitry and shall be 6 row high capacity.
c. Coils shall be hydrogen or helium leak tested.
d. Coils shall be furnished with factory installed expansion valves.

G. Refrigeration System

1. Unit shall be factory charged with R-410A refrigerant.
2. Compressors shall be scroll type with thermal overload protection and carry a 5 year non-prorated warranty, from the date of original equipment shipment from the factory.
3. Compressors shall be mounted in an isolated service compartment which can be accessed without affecting unit operation. Lockable hinged compressor access doors shall be fabricated of double wall, rigid polyurethane foam injected panels to prevent the transmission of noise outside the cabinet.
4. Compressors shall be isolated from the base pan with the compressor manufacturer’s recommended rubber vibration isolators, to reduce any transmission of noise from the compressors into the building area.

5. Each refrigeration circuit shall be equipped with expansion valve type refrigerant flow control.
6. Each refrigeration circuit shall be equipped with automatic reset low pressure and manual reset high pressure refrigerant safety controls, Schrader type service fittings on both the high pressure and low pressure sides and a factory installed liquid line filter driers.
7. Unit shall include an inverter driven, variable speed scroll compressor on the lead refrigeration circuit which shall be capable of modulating refrigerant capacity, and a two-stage compressor on the lag refrigeration circuit that shall modulate between two capacity settings, 67% and 100%.
8. Unit shall include factory provided and installed compressor sound jackets on all compressors.
9. Lead refrigeration circuit shall be provided with hot gas reheat coil, modulating valves, electronic controller, supply air temperature sensor and a control signal terminal which allow the unit to have a dehumidification mode of operation, which includes supply air temperature control to prevent supply air temperature swings and overcooling of the space.
10. The factory installed controls shall include a 3 minute off delay timer to prevent compressor short cycling. The controls shall also include an adjustable, 20 second delay timer for each additional capacity stage to prevent multiple capacity stages from starting simultaneously and adjustable compressor lock out.
11. Lag refrigeration circuit shall be provided with factory installed hot gas bypass to protect against evaporator frosting and to prevent excessive compressor cycling.

H. Condensers

1. Air-Cooled Condenser

   a. Condenser fans shall be a vertical discharge, axial flow, direct drive fans.
   b. Coils shall be designed for use with R-410A refrigerant. Coils shall be multi-pass and fabricated from aluminum microchannel tubes.
   c. Coils shall be designed for a minimum of 10°F of refrigerant sub-cooling.
   d. Coils shall be hydrogen or helium leak tested.
   e. Condenser fans shall be high efficiency electrically commutated motor driven with factory installed head pressure control module. Condenser airflow shall continuously modulate based on head pressure and cooling operation shall be allowed down to 35°F with adjustable compressor lockout.

I. Gas Fired Heat Exchanger

1. Description: Factory assembled, piped, and wired; complying with ANSI Z21.47 and NFPA 54.

   a. CSA Approval: Designed and certified by and bearing label of CSA.

2. Burners: Stainless steel with a minimum thermal efficiency of 80 percent.

   a. Fuel: Natural gas.
   b. Forced Combustion Blower.
   c. Ignition: Electronically controlled electric spark or hot-surface igniter with flame sensor.

3. Heat-Exchanger and Drain Pan: Stainless Steel.
4. Venting: Gravity vented with vertical extension flue shield.
5. Safety Controls:

a. Gas Control Valve: Modulating
b. Gas Train: Single-body, regulated, redundant, 24-V ac gas valve assembly containing pilot solenoid valve, pilot filter, pressure regulator, pilot shutoff, and manual shutoff.

J. Filters

1. Unit shall include 2 inch thick, pleated panel filters with an ASHRAE MERV rating of 8, upstream of the cooling coil.
2. Unit shall include a clogged filter switch.

K. Outside Air/Economizer (Unoccupied Mode)

1. Unit shall include a motor operated outside air damper and return air damper assembly constructed of extruded aluminum, hollow core, airfoil blades with rubber edge seals and aluminum end seals. Damper blades shall be gear driven and designed to have no more than 20 cfm of leakage per sq ft. at 4 in. w.g. air pressure differential across the damper. Low leakage dampers shall be Class 2 AMCA certified, in accordance with AMCA Standard 511. Unit shall include outside air opening bird screen, outside air hood, and relief dampers. Unit shall also include damper for re-circulation for unoccupied modes.

L. Energy Recovery

1. Unit shall contain a factory mounted and tested fixed-plate energy recovery unit. The energy recovery unit shall be mounted in a rigid frame. Each fixed-plate shall be independently removable and replaceable.
2. The energy recovery component shall incorporate an insulated frame complete with required dampers and seals.
3. The energy recovery plate shall be an Underwriters Laboratories Recognized Component for electrical and fire safety. It shall comply with NFPA 90A. Thermal performance shall be certified by the manufacturer in accordance with ASHRAE Standard 84, Method of Testing Air-to-Air Heat/Energy Exchangers and AHRI Standard 1060, Rating Air-to-air Energy Recovery Ventilation Equipment. Minimum efficiency performance shall be in compliance with ASHRAE 90.1.
4. Unit shall include 2-inch thick, pleated panel outside air filters with an ASHRAE MERV rating of 8, upstream of plate.
5. Hinged service access door shall allow access to plate.

a. Sensible Only Fixed Plate Energy Recovery Unit

1) Drain Pan: Unit shall contain drain pan with drain connections on exhaust and supply side to collect and drain water to exterior of unit casing.
2) Plates: Evenly spaced, sealed, and arranged for counter flow. Shall be constructed of aluminum frame and aluminum plates.

M. Controls

1. Factory Installed and Factory Provided Controller

a. Unit controller shall be capable of controlling all features and options of the unit. Controller shall be factory installed in the unit controls compartment and factory tested. Controller shall be capable of standalone operation with unit configuration,

setpoint adjustment, sensor status viewing, unit alarm viewing, and occupancy scheduling available without dependence on a building management system.

b. Controller shall have an onboard clock and calendar functions that allow for occupancy scheduling.

c. Controller shall include non-volatile memory to retain all programmed values without the use of a battery, in the event of a power failure.

d. Unit configuration, setpoint adjustment, sensor status viewing, unit alarm viewing, and occupancy scheduling shall be accomplished with connection to interface module with LCD screen and input keypad, interface module with touch screen, or with connection to PC with free configuration software. Controller shall be capable of connection with other factory installed and factory provided unit controllers with individual unit configuration, setpoint adjustment, sensor status viewing, and occupancy scheduling available from a single unit. Connection between unit controllers shall be with a modular cable. Controller shall be capable of communicating and integrating with Owner's BACnet MSTP Honeywell Tridium network.

2. Unit shall be provided with a high condensate level switch that shuts down the unit when a high water level is detected in the drain pan.

N. Curbs

1. Curbs shall be fully gasketed between the curb top and unit bottom with the curb providing full perimeter support, cross structure support and air seal for the unit. Curb gasket shall be furnished within the control compartment of the rooftop unit to be mounted on the curb immediately before mounting of the rooftop unit. Curb height shall be 14" tall.
2. Knockdown curb (with duct support rails) shall be factory furnished for field assembly.
3. Solid bottom curb shall be factory assembled and fully lined with curb rated 1 inch fiberglass insulation and include a wood nailer strip.
4. Isolation Rails

a. Curb mounted rooftop units shall be isolated on continuous roof top isolation consisting of galvanized sections formed to fit the RTU mfg supplied roof curb and rooftop unit equipment.

b. Isolation Rail Construction

1) Galvanized spring rails shall be constructed of minimum 16 ga G90 galvanized steel material. The spring rail shall bear directly on the curb supplied by others, and shall be flashed and waterproofed into the roof's membrane waterproofing system by the installing contractor.

2) Isolation springs shall be located around the perimeter of the spring rail. The springs shall be laterally stable and properly selected to provide minimum specified deflection with 50% additional travel to solid. Isolation springs shall be powder coated for corrosion resistance and have a minimum static spring deflection of (2").

3) Overhung condensing unit sections shall be supported by a structural steel pedestal assembly with isolation springs that are vertically and laterally restrained and shall be installed as the main curb section.

4) A galvanized and insulated pan shall be provided under condensing sections that are located within the curb perimeter.

5) The spring rail shall have factory installed lifting points.

6) The spring rail section shall be complete with factory installed duct supports.

7) The spring rail section shall be complete with factory installed supply air and return air neoprene flex connections.

8) Rail assembly shall have neoprene cushioned wind restraints which allow 6 mm (¼") movement before engaging in resisting wind loads in any lateral direction.
9) The perimeter of the rail shall have a flexible neoprene air and weather seal joining the upper and lower rail sections. There shall also be a continuous closed cell sponge material both above and below the rail to provide a waterproof seal between the curb and rail and the rail and the rooftop unit.
10) The isolation rail shall be shipped preassembled where possible. Where size prohibits one piece shipping, the isolation rail shall be split into a minimum number of sections and all connecting hardware shall be supplied by the manufacturer.
11) All installation hardware shall be provided by the isolation rail manufacturer.
12) Manufacturers: VibroAcoustics, Thybar, MicroMetl.

O. Training

1. Provide training for components as noted below:

a. Factory specialist to present training at 2 hours per session.
b. Include accessory equipment
c. Electrical
d. Controls
e. Refrigeration and piping
f. Seasonal considerations
g. Checklists
h. Emergency procedures
i. Manual/Automatic operation
j. Shutdown

2. Maintenance items, including:

a. Routine
b. Periodic
c. Service
d. Lubrication
e. Overhaul
f. List of recommended spare parts

3. Explanation of warranty
4. Normal or special tools required

P. Roof Top Equipment Screen

1. RTU manufacturer to provide equipment screen.
2. Manufacturers

a. CityScapes International Inc. – Envisor, Vertical 7.2 Rib Perforated
b. Approved Equal

3. Performance And Design Requirements

a. Regulatory Requirements: Comply with requirements of building authorities having jurisdiction in Project location.
b. Design Criteria:

1) Rooftop Equipment Screens:

a) The manufacturer is responsible for the structural design of all materials, assembly, and attachments to resist snow, wind, suction, and uplift loading at any point without damage or permanent set.
b) Framing shall be designed in accordance with the Aluminum Design Manual to resist the following loading:

- ASCE 7-18 - Minimum Design Loads for Buildings and Other Structures; American Society of Civil Engineers.

c) Default Clear Space Between Equipment and Screen: 48” inch nominal.
d) Standard Truss Sizes: 36 and 48 inch.
e) Screen Heights: 35, 52, and 70 inches and may be stacked as needed.
f) Corners may have one panel mounted at 45 degrees.
g) Screens may partially surround units.
h) Trusses: Should be spaced no further than 96 inches along cabinet perimeter.
i) Screens Mounted to Steel Posts: Posts must be set no further than 96 inches on center.

c. Design Requirements to be Supplied to Manufacturer:

1) Obstructions above unit base rail elevation and within 72 inches of unit must be identified.
2) Access panels, access doors, vent hoods, power disconnects, etc. must be accounted for in design; clearly noted on unit cut sheets or roof plans provided to Manufacturer.
3) Equipment Obstruction Details: Door swings, horizontal ducting, or piping may be made to run between top and bottom rails. Contact Manufacturer for custom solutions.

d. Limitations:

1) Screens may be designed 22 to 60 inches clear, as decided necessary by Manufacturer:

a) Requests for special clearances should be noted.

2) Screen Heights:

a) Cannot exceed 8 inches more than cabinet height.
b) Units may have varying screen heights if needed to clear obstructions such as parapet walls.

3) Top Trim: May be added to cover as much of the unit above attachment points.
4) Screen Supports: To be attached below any drip edges.
5) Removable Screen Sections:

a) May be used for large maintenance clearances under special conditions.
b) Removable Sections:

- Fit between two trusses.
- Are not adjacent to one another; two trusses either side of section.
- Are not placed on the ends of partially sided systems.

c) Units May be Nested Together If:

- Cabinets are no further than 96 inches (2438 mm) apart.
- Units have similar cabinet and curb heights.
- Units are not on isolation/vibration curbs.

d) If nested look is desired but not possible from one of the reasons above, independent screens can be sized to fit together with small gaps.

e. Materials

1) Perforated Metal Panels: Fabricated from rigid aluminum panels in multiple thicknesses.

a) Minimum Thickness: 0.063 inches (1.60 mm).

2) Framing: Aluminum Plate, Shapes and Bar: ASTM B 221, alloy 6061-T5 or 6063-T5.
3) Threaded Fasteners: Screws, bolts, nut, and washers to be Stainless steel.

a) Corner Assembly Fasteners: No. 12-14 x 1-1/4 inches stainless steel self-drilling screws.

- Length: As required to develop full holding capacity of screw when fastened to Mechanical Equipment.

b) Provide lock washer or other locking device at all bolted connections.

f. Fabrication

1) Provide factory-formed panel systems with continuous interlocking panel connections and indicated or necessary components: Form all components true to shape, accurate in size, square and free from distortion or defects. Cut panels to precise lengths indicated on approved shop drawings.
2) Fabricate all panels to slide horizontally to allow access to unit access panels behind.
3) Panel Style, Design, and Trim:

a) Panel Design: Metal Series. 7.2 Rib Vertical Perforated.

4) Trim and Closures: Material: Aluminum. Thickness: 0.050 to 0.25 inches.

a) Finish: Manufacturers standard coating system, unless shown otherwise on drawings.

5) Framing: Fabricate and assemble components in largest practical sizes, for delivery to Project site.

a) Corner Assemblies: Construct to required shape with joints tightly fitted.
b) Components Required Framing Anchorage: Fabricate anchors and related components of material and finish as required, or as specifically noted.

g. Finishes

1) Aluminum Framing: Mill finish.
2) Panel Coating: Manufacturer's standard powder coating system, factory applied.

a) Color: Custom color paint as selected and approved by Architect.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Roof Curb: Install on roof structure, level and secure, according to NRCA's "Low-Slope Membrane Roofing Construction Details Manual," Illustration "Raised Curb Detail for Rooftop Air Handling Units and Ducts." Install RTUs on curbs and coordinate roof penetrations and flashing with roof construction specified in Division 07 Section "Roof Accessories." Secure RTUs to upper curb rail, and secure curb base to roof framing or concrete base with anchor bolts.

B. Unit Support: Install unit level on structural curbs. Coordinate wall penetrations and flashing with wall construction. Secure RTUs to structural support with anchor bolts.

C. For horizontal discharge applications, provide flexible canvas duct connection to isolate ductwork from unit.

D. Install condensate drain, minimum connection size, with trap and indirect connection to nearest roof drain or area drain. Provide suitable pipe supports as required.

E. Duct installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of ducts. The following are specific connection requirements:

1. Install ducts to termination at top of roof curb.
2. Remove roof decking only as required for passage of ducts. Do not cut out decking under entire roof curb.
3. Connect supply ducts to RTUs with flexible duct connectors specified in Division 23 Section "Air Duct Accessories."
4. Install return-air duct continuously through roof structure.

F. Infill roof curb at roof deck except at duct penetrations with 2” rigid, unfaced fiberglass insulation above 3 layers of 5/8” gypsum board.

G. Roof Top Equipment Screen

1. Install units in accordance with the manufacturer's instructions and approved shop drawings. Keep perimeter lines straight, plumb, and level. Provide brackets, anchors, and accessories necessary for a complete installation.
2. Fasten structural supports to HVAC units without damaging the operation of the unit.

    a. Provide corner and mid-span assemblies as required by approved shop drawings so that the panels are supported uniformly.
    b. Fastening bottom rail using bolts to permit ease of access to HVAC units.

3. Insert panels into structural supports, except where fixed attachment points are indicated. Butt panels to adjacent panels for uniform fit. Fasten fixed panels in accordance with the shop drawings.
4. Metal Separation: Where aluminum materials would contact dissimilar materials, insert rubber grommets at attachment points, thus eliminating where dissimilar metals would otherwise be in contact.
5. Do not cut or abrade finishes which cannot be restored. Return items with such finishes to shop for required alterations.

3.2 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. Report results in writing.

B. Perform tests and inspections and prepare test reports.

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. Report results in writing.

C. Tests and Inspections:

1. After installing RTUs and after electrical circuitry has been energized, test units for compliance with requirements.
2. Inspect for and remove shipping bolts, blocks, and tie-down straps.
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.

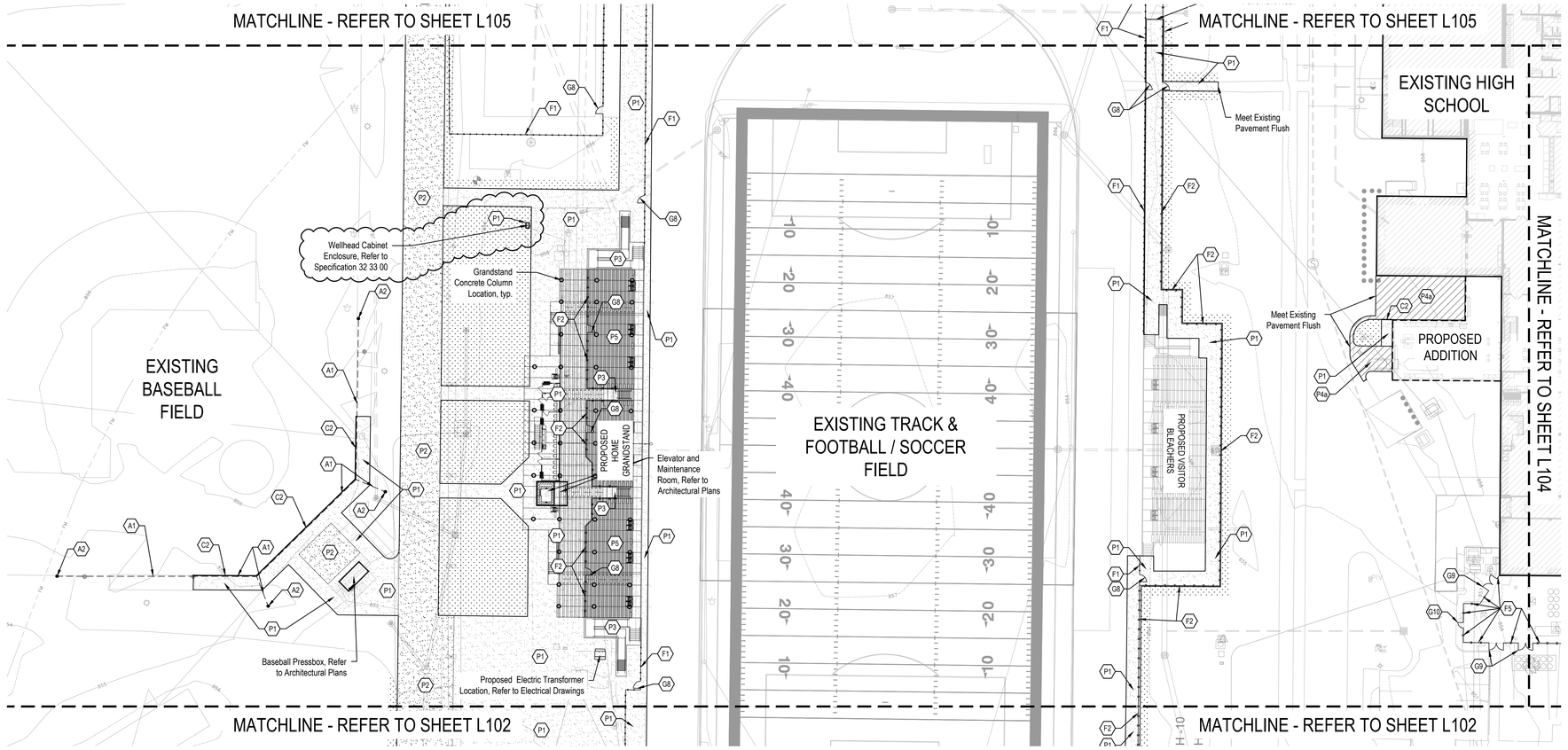
D. Remove and replace malfunctioning units and retest as specified above.

3.3 CLEANING AND ADJUSTING

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

B. After completing system installation and testing, adjusting, and balancing RTU and air-distribution systems, clean filter housings and install new filters.

END OF SECTION



	ATHLETIC EQUIPMENT
KEY	DESCRIPTION / REFERENCE
A1	BACKSTOP TENSION NETTING SYSTEM, REFER TO SITE DETAILS 5, 7/L601 AND SPECIFICATIONS
A2	BACKSTOP TENSION NETTING SYSTEM POSTS, REFER TO SITE DETAIL 4/L601 AND SPECIFICATIONS

	CURBS
KEY	DESCRIPTION / REFERENCE
C1	WHEEL STOP, REFER TO SITE DETAIL 10/L600
C2	INTEGRAL CURB AND SIDEWALK, REFER TO SITE DETAIL 8/L600
C3	POST CURB, REFER TO SITE DETAIL 7/L600
C4	CURB TURNOUT, REFER TO SITE DETAIL 9/L600

	FENCING
KEY	DESCRIPTION / REFERENCE
F1	CHAIN LINK FENCE, 4'-0" HT., VINYL COATED, BLACK, REFER TO SITE DETAIL 3/L601 AND SPECIFICATIONS
F2	CHAIN LINK FENCE, 6'-0" HT., VINYL COATED, BLACK, REFER TO SITE DETAIL 3/L601 AND SPECIFICATIONS
F3	CHAIN LINK FENCE, 8'-0" HT., VINYL COATED, BLACK, REFER TO SITE DETAIL 3/L601 AND SPECIFICATIONS
F4	ORNAMENTAL FENCE, 6'-0" HT. REFER SPECIFICATIONS
F5	CHAIN LINK FENCE, 6'-0" HT., VINYL COATED, BLACK, WITH PRIVACY SLATS, REFER TO SITE DETAIL 3/L601 AND SPECIFICATIONS

	GATES
KEY	DESCRIPTION / REFERENCE
G1	CHAIN LINK, DOUBLE WING SWING GATE, 24'-0" WIDTH, VINYL COATED, BLACK, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G2	CHAIN LINK, DOUBLE WING SWING GATE, 20'-0" WIDTH, VINYL COATED, BLACK, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G3	ORNAMENTAL DOUBLE SLIDING GATE, 18'-0" WIDTH, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G4	ORNAMENTAL DOUBLE SLIDING GATE, 16'-0" WIDTH, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G5	CHAIN LINK, DOUBLE WING SWING GATE, 12'-0" WIDTH, VINYL COATED, BLACK, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G6	CHAIN LINK, DOUBLE WING SWING GATE, 10'-0" WIDTH, VINYL COATED, BLACK, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G7	CHAIN LINK, SINGLE WING SWING GATE, 8'-0" WIDTH, VINYL COATED, BLACK, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G8	CHAIN LINK, SINGLE WING SWING GATE, 4'-0" WIDTH, VINYL COATED, BLACK, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G9	CHAIN LINK, SINGLE WING SWING GATE, 8'-0" WIDTH, VINYL COATED, BLACK, WITH PRIVACY SLATS, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS
G10	CHAIN LINK, SINGLE WING SWING GATE, 3'-0" WIDTH, VINYL COATED, BLACK, WITH PRIVACY SLATS, MATCH ADJACENT FENCING HT., REFER TO SPECIFICATIONS

	PAVEMENT, CONCRETE
KEY	DESCRIPTION / REFERENCE
P1	STANDARD DUTY CONCRETE, REFER TO SITE DETAILS 1,3-4/L600
P2	HEAVY DUTY CONCRETE, REFER TO SITE DETAIL 2,3-4/L600
P3	HOME BLEACHER PAD CONCRETE, REFER TO MANUFACTURER REQUIREMENTS

	PAVEMENT, ASPHALT
KEY	DESCRIPTION / REFERENCE
P4a	STANDARD DUTY ASPHALT, REFER TO SITE DETAIL 5/L600
P4b	HEAVY DUTY ASPHALT, REFER TO SITE DETAIL 6/L600

	PAVEMENT, GRAVEL
KEY	DESCRIPTION / REFERENCE
P5	GRAVEL SURFACING, REFER TO SITE DETAIL 6/L601

	RAMPS & STAIRS
KEY	DESCRIPTION / REFERENCE
R1	PARALLEL CURB RAMP, REFER TO SITE DETAIL 1/L602
R2	ONE WAY DIRECTIONAL PERPENDICULAR CORNER CURB RAMP, REFER TO SITE DETAIL 2/L602
R3	STAIRS WITH HANDRAILS, REFER TO SITE DETAILS 3,5/L602
R4	TRUNCATED DOMES WITH NO WALK CONDITION, REFER TO SITE DETAIL 6/L602
R5	CURB RAMP, STRAIGHT, REFER TO SITE DETAIL 8/L602

	SIGNAGE AND STRIPING, (COMPLY WITH MUTCD STANDARDS, VIF REGULATORY SIGNS WITH CITY REPRESENTATIVE)
KEY	DESCRIPTION / REFERENCE
S1	ADA PARKING SYMBOL, REFER TO SITE DETAIL 1/L601
S2	VAN ACCESSIBLE ADA PARKING SIGN, REFER TO SITE DETAIL 11/L600
S3	ACCESSIBLE ADA PARKING SIGN, REFER TO SITE DETAIL 11/L600
S4	ADA STRIPING , REFER TO SITE DETAIL 12/L600
S5	CROSSWALK STRIPING, REFER TO SITE DETAIL 7/L602

	WALLS
KEY	DESCRIPTION / REFERENCE
W1	MASONRY PIER, REFER TO SITE DETAILS 4-5/L602
W2	CAST IN PLACE RETAINING WALL, REFER TO SITE DETAIL 2/L601
W3	MONUMENT SIGN, REFER TO ARCHITECTURAL PLANS

	LANDSCAPE AREA
KEY	DESCRIPTION / REFERENCE
L	REFER TO L300 SERIES PLANTING PLANS
	SEEDED LAWN TURF, REFER TO SPECIFICATIONS

Hamilton Heights School Corporation

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PROJECT:
HAMILTON HEIGHTS SCHOOL CORPORATION
HAMILTON HEIGHTS HIGH SCHOOL
PHASE 2 PROJECTS
25802 IN-19 Site 2, Arcadia, IN 46030

SCOPE DRAWINGS:
These drawings indicate the general scope of the project in terms of architectural design concept, the dimensions of the building, the major architectural elements and the type of structural, mechanical and electrical systems.
The drawings do not necessarily indicate or describe all items required for the performance and completion of the requirements of the Contract.
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REVISIONS:
- 02/22/2024 Addendum #1
- 02/26/2024 Addendum #2
- 03/04/2024 Addendum #3

ISSUE DATE	DRAWN BY	CHECKED BY
02/09/2024	MA	FP

DRAWING TITLE:
SITE MATERIALS PLAN

CERTIFIED BY:
FREDDIE J. PRATEAU
REGISTERED
No. 2020-0052
STATE OF INDIANA
LANDSCAPE ARCHITECT
EXPIRES 12-31-2025

DRAWING NUMBER
L103

PROJECT NUMBER
2022060

PACKAGED ROOFTOP UNIT WITH ENERGY RECOVERY SCHEDULE

MARK NO	AREA SERVED	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO	AIR VOLUME (CFM) TOTAL	AIR VOLUME (CFM) MIN. O.A.	SUPPLY FAN ESP	SUPPLY FAN HP	SUPPLY FAN BHP	FILTER	RETURN FAN AIR VOLUME (CFM)	RETURN FAN ESP	RETURN FAN HP	RETURN FAN BHP	COOLING MBH TOTAL	COOLING MBH SENS	COOLING CONDITIONS EAT DB	COOLING CONDITIONS EAT WB	COOLING CONDITIONS LAT DB	COOLING CONDITIONS LAT WB	EER	STAGES	NO OF CIRCUITS	HOT GAS REHEAT	COMPRESSOR QTY	COMPRESSOR TYPE	GAS HEAT INPUT (MBH)	GAS HEAT OUTPUT (MBH)	GAS HEAT TURNDOWN	ELECTRIC MCA	ELECTRIC MOCP	ELECTRIC VOLTS	ELECTRIC PHASE	VFD	120V CONVENIENCE OUTLET	WEIGHT (LBS)	REMARKS
RTU-1	HOME LOCKERS	23 74 13	PACKAGED ROOFTOP UNITS	100% OA UNIT	DAIKIN DPS015A	3500	3500	3.9"	8	3.5	Y	4000	1.0	4.3	3.5	175	107	82.5	70	54.4	54.4	10.8	INVERTING	2	Y	2	INVERTER	300	240	MODULATING	37.1	45	460	3	Y	Y	4001	WITH RECIRCULATION DAMPER FOR UNOCC.
RTU-2	VISTORS LOCKERS	23 74 13	PACKAGED ROOFTOP UNITS	100% OA UNIT	DAIKIN DPS010A	2250	2250	3.3"	8	2.24	Y	2750	1.0	4.3	1.87	115	70	80.8	68.5	52.1	51.9	12.1	INVERTING	2	Y	2	INVERTER	300	240	MODULATING	27.6	35	460	3	Y	Y	3850	WITH RECIRCULATION DAMPER FOR UNOCC.

4

VERTICAL UNIT VENTILATOR SCHEDULE

MARK NO.	AREA SERVED	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO.	FAN CFM	FAN ESP	FAN AMPS	FAN VOLTS/PHASE	FAN HP	COOLING COIL TOTAL MBH SENS.	COOLING COIL EAT DB	COOLING COIL EAT WB	COOLING COIL LAT DB	COOLING COIL LAT WB	CHILLED WATER EWT	CHILLED WATER LWT	COOLING COIL WATER FLOW (GPM)	COOLING COIL MIN ROWS	COOLING COIL MAX WPD	HEATING COIL MIN MBH	HEATING COIL EAT	HEATING COIL LAT	HEATING WATER EWT	HEATING WATER LWT	HEATING COIL WATER FLOW (GPM)	HEATING COIL MIN ROWS	HEATING COIL MAX WPD FT	REMARKS
VUV-A	AGRICULTURE LAB	23 82 23	CLASSROOM UNIT VENTILATORS	UNIT VENTILATOR	TEMSPEC VUD 1600	1500	0.42	8.9	120/1	3/4	49.1/ 34.1	80	67	57.4	56.0	45	57	11	3	10'	76.8	50	100	140	125	6	2	10	FREEZESTAT, COLOR BY ARCHITECT, PSC MOTOR, TOP ACCOUSTICAL PLENUM, REAR OUTDOOR AIR INTAKE PLENUM.

DX ROOFTOP UNIT SCHEDULE

MARK NO	AREA SERVED	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO	AIR VOLUME (CFM) TOTAL	AIR VOLUME (CFM) MIN. O.A.	SUPPLY FAN ESP	SUPPLY FAN HP	SUPPLY FAN BHP	FILTER	ECONOMIZER TYPE	ECONOMIZER BAROMETRIC RELIEF	COOLING MBH TOTAL	COOLING MBH SENS	CONDITIONS EAT DB	CONDITIONS EAT WB	CONDITIONS LAT DB	CONDITIONS LAT WB	EER	SEER	STAGES	NO OF CIRCUITS	HOT GAS REHEAT	EXP VALVE	COMPRESSOR QTY	COMPRESSOR TYPE	GAS HEAT INPUT (MBH)	GAS HEAT OUTPUT (MBH)	GAS HEAT TURNDOWN	ELECTRIC MCA	ELECTRIC MOCP	ELECTRIC VOLTS	ELECTRIC PHASE	VFD	120V CONVENIENCE OUTLET	WEIGHT (LBS)	REMARKS
RTU-3	TEAM ROOM	23 74 13	PACKAGED ROOFTOP UNITS	PACKAGED ROOFTOP UNIT	DAIKIN DPS-015	4850	1500	3.0"	5	3.8	2" MERV 13	MODULATING	YES	190	116	80	66.2	55	53.4	11.0	18	MODULATING	2	YES	YES	2	INVERTER SCROLL	200	160	10:1 MODULATING	32	45	460	3	YES	YES	2600	VARIABLE SPEED FIRST STAGE COMPRESSOR, FACTORY PROVIDED DUCT DETECTOR IN UNIT

AIR HANDLING UNIT SCHEDULE

MARK NO	AREA SERVED	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO	AIR VOLUME (CFM) TOTAL	AIR VOLUME (CFM) O.A.	SUPPLY FAN TSP	SUPPLY FAN ESP	WHEEL RPM	WHEEL DIA	QTY	HP	BHP	ELECTRICAL VOLTS	ELECTRICAL PHASE	ELECTRICAL MCA	ELECTRICAL MOCP	VFD	PREHEAT COIL MBH	PREHEAT WATER FLOW (GPM)	PREHEAT EAT	PREHEAT LAT	PREHEAT EWT	PREHEAT LWT	PREHEAT MIN ROWS	PREHEAT MAX FPI	PREHEAT MAX FACE (FPM)	PREHEAT MAX APD (IN)	PREHEAT MAX WPD (FT)	COOLING COIL MBH	COOLING WATER FLOW (GPM)	COOLING EAT DB	COOLING EAT WB	COOLING LAT DB	COOLING LAT WB	COOLING EWT	COOLING LWT	COOLING MIN ROWS	COOLING MAX FPI	COOLING MAX FACE (FPM)	COOLING MAX APD (IN)	COOLING MAX WPD (FT)	120V CONVENIENCE OUTLET	REMARKS
AHU-A	ADMINISTRATION	23 74 14	MODULAR OUTDOOR AIR-HANDLING UNIT	OUTDOOR CHILLED WATER AIR HANDLING SYSTEMS	YORK XTO-39x42	2,750	550	5.3	1.5"	2,600	16	1	5	3.5	460	3	5.7	20	Y	75	10	50	75	140	125	2	10	700	0.23"	10'	90	15	77	63.9	54	53	45	57	8	8	450	0.85"	10'	Y	2,500 LBS, INSULATED PIPE CHASE, 18" ROOF CURB, BOTTOM SUPPLY AND RETURN, OUTSIDE AIR HOOD.

AIR-COOLED CONDENSING UNIT SCHEDULE

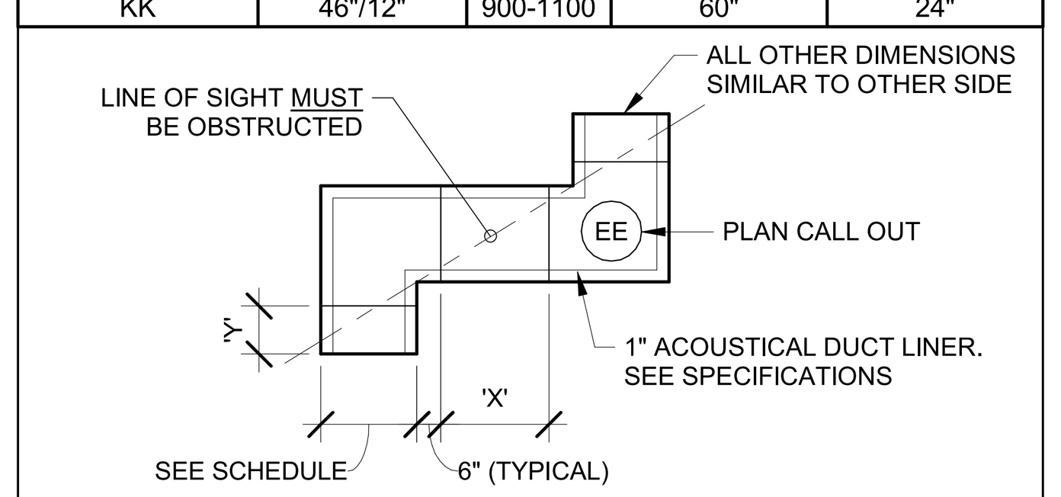
MARK NO	DRAWING NAME &/OR PURPOSE	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO	AMBIENT TEMP	NOMINAL HEAT REJECTED (MBH)	REFRIGERANT	METERING ORIFICE	NO OF CIRCUITS	COMPRESSORS QTY	COMPRESSORS STAGES	ELECTRICAL DATA MCA	ELECTRICAL DATA VOLTS	ELECTRICAL DATA PHASE	WEIGHT (LBS)	REMARKS
ACCU-A	MDF OUTBUILDING	26 62 01	AIR COOLED CONDENSING UNITS	CONDENSING UNIT	LG LSU120HSV5	95	12	R410A	Y	1	1	VARIABLE	10	208	1	79	PAIR WITH DXFC-A, LOW AMBIENT KIT.
ACCU-B	CONCESSIONS	26 62 01	AIR COOLED CONDENSING UNITS	CONDENSING UNIT	LG LSU240HEV2	75	24	R410A	Y	1	1	VARIABLE	15	208	1	95	PAIR WITH DXFC-B, LOW AMBIENT KIT.

FAN SCHEDULE

MARK NO	DRAWING NAME &/OR PURPOSE	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO	CFM	OPERATING DATA TOT STAT PRESS	OPERATING DATA RPM	OPERATING DATA BHP	OPERATING DATA SONES	OPERATING DATA DRIVE	MOTOR DATA HP/KW	MOTOR DATA VOLTS	MOTOR DATA PHASE	WEIGHT (LBS)	REMARKS
EF-A	OUTBUILDING RESTROOMS	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL ROOF VENTILATOR	GREENHECK G-140-VG	1990	1.3	1607	0.83	15.4	DIRECT	1	208	3	69	ROOF MOUNTED, DISCONNECT, BIRDSCREEN.
EF-B	CONCESSIONS	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL ROOF VENTILATOR	GREENHECK G-098-VG	575	0.75	1645	0.16	10.1	DIRECT	1/4	115	1	38	ROOF MOUNTED, DISCONNECT, BIRDSCREEN.
EF-C	AG LAB EXHAUST FAN	23 34 23	HVAC POWER VENTILATORS	INLINE VENTILATOR	GREENHECK SQ-160-VG	2300	0.5	1050	0.42	9.7	DIRECT	3/4	208	3	136	-
EF-D	OUTBUILDING LAUNDRY/DRYING	23 34 23	HVAC POWER VENTILATORS	CENTRIFUGAL ROOF VENTILATOR	GREENHECK CUE-090-VG	500	0.5	1564	0.09	7.5	DIRECT	1/10	115	1	31	ROOF MOUNTED UPBLAST, DISCONNECT, BIRDSCREEN.
EF-E	WOOD SHOP CIRCULATION FAN	23 34 23	HVAC POWER VENTILATORS	INLINE VENTILATOR	GREENHECK SQ-160	3600	1.5	1725	1.9	16.1	DIRECT	2	208	3	160	DISCONNECT, VFD RATED MOTOR
HVLS-A	STRATIFICATION FAN	23 34 23	HVAC POWER VENTILATORS	HVLS FAN	BIG ASS FAN POWERFOIL D	-	-	200	-	-	DIRECT	-	208	3	212	8 FT DIAMETER, FACTORY DISCONNECT, INTEGRAL SPEED CONTROLLER, BAS INTEGRATION.

TRANSFER DUCT SCHEDULE

PLAN CALL OUT	TRANSFER DUCT SIZE	CFM RANGE	'X' DIMENSION	'Y' DIMENSION
AA	10"/10"	0-200	12"	0"
BB	14"/12"	205-325	12"	0"
CC	16"/16"	330-500	18"	0"
DD	20"/20"	505-800	18"	6"
EE	24"/22"	805-1000	18"	12"
FF	26"/24"	1005-1250	24"	12"
GG	28"/26"	1255-1500	28"	12"
HH	30"/14"	805-1000	36"	14"
JJ	38"/14"	805-1000	48"	18"
KK	46"/12"	900-1100	60"	24"



NOTES:

1. 'X' AND 'Y' DIMENSIONS SHOWN ARE MINIMUMS TO NULLIFY ANY "LINE OF SIGHT" THROUGH THE TRANSFER DUCT. ACTUAL FIELD DIMENSIONS MAY VARY BASED ON APPLICATION, WALL THICKNESS, ORIENTATION, ETC. FIELD VERIFY CONDITIONS PRIOR TO FABRICATION.
2. "TRANSFER DUCT SIZE" LISTED IN THE SCHEDULE ARE THE INTERNAL DIMENSIONS.

DX FAN COIL SCHEDULE

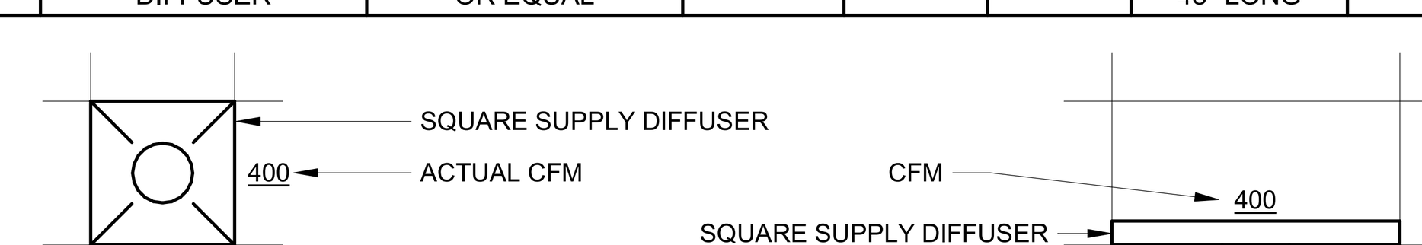
MARK NO	DRAWING NAME &/OR PURPOSE	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO	CAPACITY COOLING THC	CAPACITY COOLING SHC	CAPACITY HEATING	AIRFLOW HI	AIRFLOW LOW	ELECTRICAL DATA MCA	ELECTRICAL DATA MOCP	ELECTRICAL DATA FLA	ELECTRICAL DATA VOLTS	ELECTRICAL DATA PHASE	REMARKS
DXFC-A	MDF	23 81 34	MINI-SPLIT AIR CONDITIONING	INDOOR UNIT	LG LSN120HSV5	12	12	13.6	459	194	10	15	0.4	208	1	PAIRED WITH ACCU-A, WALL-MOUNTED UNIT & WALL-MOUNTED THERMOSTAT.
DXFC-B	CONCESSIONS	23 81 34	MINI-SPLIT AIR CONDITIONING	INDOOR UNIT	LG LSN240HEV2	24	24	25	689	371	15	20	0.4	208	1	PAIRED WITH ACCU-B, WALL-MOUNTED UNIT & WALL-MOUNTED THERMOSTAT.

DUST COLLECTOR SCHEDULE

MARK NO.	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURE & MODEL NO.	AIR VOLUME (CFM)	FILTER EFF.	EXHAUST FAN TSP (IN WG.)	EXHAUST FAN ESP (IN WG.)	WHEEL RPM / DIA. (IN)	QTY	HP	BHP	VFD	VOLTS	PH.	WEIGHT (LBS)	REMARKS
DC-1	23 34 23	HVAC POWER VENTILATORS	DUST COLLECTOR	DONALDSON 360-IRWDR-909RB-100	2,700	99.9%	-	10.0	-	1	10	-	NO	460	3	2,200	ENCLOSURELESS. REFER TO SECTION 23 34 23.

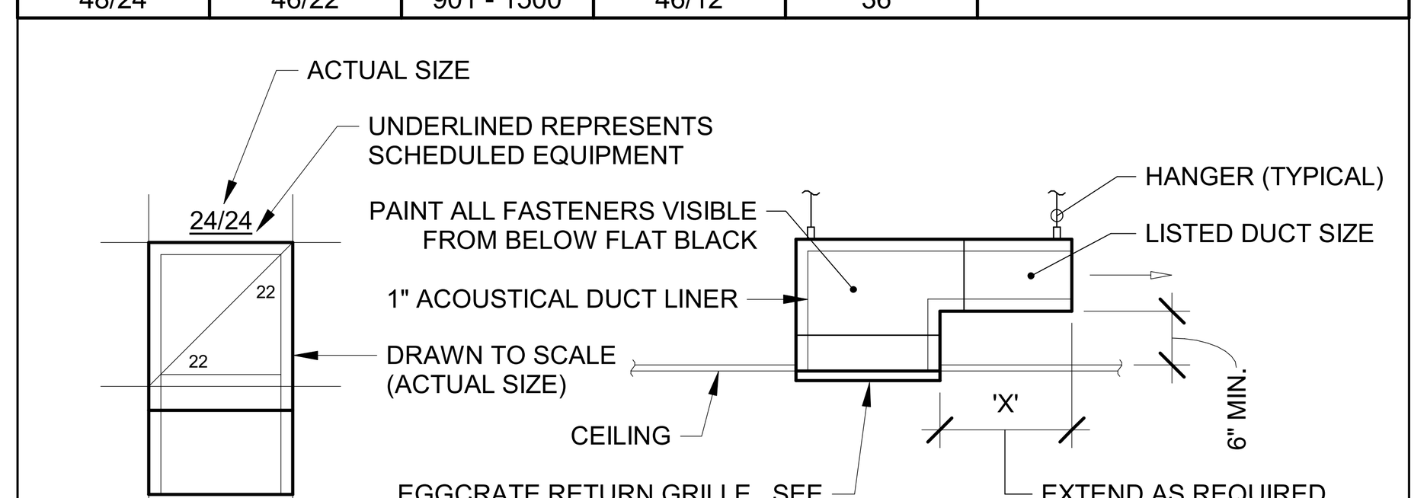
CEILING DIFFUSER SCHEDULE

MARK NO.	SPECIFICATION NAME	MANUFACTURER AND MODEL NO.	CFM RANGE	MAX. N.C.	NECK DIA.	FACE SIZE	CEILING MODULE SIZE
50 - 120	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	50 - 120	15	6"	24/24	24/24
125 - 245	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	125 - 245	19	8"	24/24	24/24
250 - 325	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	250 - 325	19	10"	24/24	24/24
330 - 475	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	330 - 475	19	12"	24/24	24/24
480 - 645	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	480 - 645	18	14"	24/24	24/24
650 - 735	SQUARE CEILING DIFFUSER	PRICE SCDA OR EQUAL	650 - 735	18	15"	24/24	24/24
130-190	LINEAR SLOT DIFFUSER	PRICE TBDI SEIRES OR EQUAL	130-190	18	8" OVAL	(2) 3/4" SLOTS 48" LONG	N/A
191-230	LINEAR SLOT DIFFUSER	PRICE TBDI SEIRES OR EQUAL	191-230	19	8" OVAL	(2) 3/4" SLOTS 48" LONG	N/A
231-270	LINEAR SLOT DIFFUSER	PRICE TBDI SEIRES OR EQUAL	231-270	18	10" OVAL	(3) 3/4" SLOTS 48" LONG	N/A
371-340	LINEAR SLOT DIFFUSER	PRICE TBDI SEIRES OR EQUAL	271-340	20	10" OVAL	(3) 3/4" SLOTS 48" LONG	N/A
341-400	LINEAR SLOT DIFFUSER	PRICE TBDI SEIRES OR EQUAL	341-400	21	12" OVAL	(4) 3/4" SLOTS 48" LONG	N/A
401-520	LINEAR SLOT DIFFUSER	PRICE TBDI SEIRES OR EQUAL	401-520	22	12" OVAL	(4) 1" SLOTS 48" LONG	N/A



PLENUM RETURN GRILLE SCHEDULE

MARK NO.	GRILLE SIZE	CFM RANGE	DUCTED ELBOW SIZE	'X' DIMEN.	REMARKS
24/6	22/6	0 - 240	22/6	12"	
24/12	22/12	241 - 500	22/8	18"	
24/24	22/22	501 - 900	22/12	24"	
48/24	46/22	901 - 1500	46/12	36"	



NOTES:

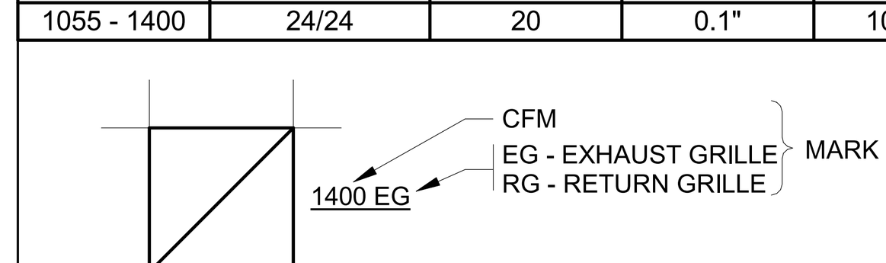
1. INSIDE OF DUCT TO BE BLACK.
2. DUCT SUPPORTED FROM STRUCTURE, NOT CEILING GRID.

ROOF RELIEF AND INTAKE VENT SCHEDULE

MARK NO	DRAWING NAME &/OR PURPOSE	SPECIFICATION SECTION	SPECIFICATION NAME	SPECIFICATION EQUIPMENT TYPE	MANUFACTURER & MODEL NO	MAX CFM	ΔP AT MAX CFM	THROAT LENGTH	THROAT WIDTH	HOOD SIZE	ROOF CURB HEIGHT	REMARKS
RRV-A	AG LAB EXHAUST	23 37 23	HVAC GRAVITY VENTILATORS	ROOF INTAKE AND RELIEF VENTS	GREENHECK FGR	2,300	0.1" (DUCTED)	20"	20"	34"x39"	24"	BIRDSCREEN, HINGED HOOD.

EXHAUST/RETURN REGISTER SCHEDULE

MARK NO.	NOMINAL GRILLE SIZE	MAX N.C.	MAX ΔP	CFM RANGE	REMARKS
0 - 170	8/8	20	0.1"	0 - 170	
175 - 240	10/10	20	0.1"	175 - 240	-
245 - 400	12/12	20	0.1"	245 - 400	-
405 - 520	14/14	20	0.1"	405 - 520	
525 - 640	16/16	20	0.1"	525 - 640	-
645 - 830	18/18	20	0.1"	645 - 830	
835 - 1050	20/20	20	0.1"	835 - 1050	-
1055 - 1400	24/24	20	0.1"	1055 - 1400	-



Hamilton Heights School Corporation

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732 North Capitol Avenue
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Phone: (317) 634-6672
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PROJECT:
HAMILTON HEIGHTS SCHOOL CORPORATION
HAMILTON HEIGHTS HIGH SCHOOL
PHASE 2 PROJECTS
25802 IN-19 Site 2, Arcadia, IN 46030

SCOPE DRAWINGS:
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REVISIONS:

4	Addendum #6	2024-03-19

ISSUE DATE	DRAWN BY	CHECKED BY
02/08/2024	EPK	DJU

DRAWING TITLE:
SCHEDULES - MECHANICAL

CERTIFIED BY:
DANIEL JOSEPH ULRICH
REGISTERED
No. 12100624
STATE OF INDIANA
PROFESSIONAL ENGINEER
02/08/2024

DRAWING NUMBER
M601

PROJECT NUMBER
2022060

ADDENDUM

ADDENDUM NO. 06

BID PACKAGE NO. ALL

PROJECT: Hamilton Heights High School – Phase Two Projects

The information contained herein modifies the original Bidding Documents and all prior Addenda as applicable. Requirements of the original Bidding Documents and previous Addenda remain in effect, except as modified by this Addendum.

Bidders must acknowledge receipt of this Addendum on the Bid Form. Failure to acknowledge receipt of this Addendum may subject Bidder to disqualification. This addendum includes:

ATTACHMENTS

1. 01 12 00 – Multiple Revised Sections
   1.1 BP-01 – Sitework
   1.2 BP-02 – Building and Site Concrete
   1.3 BP-06 – General Trades
   1.4 BP-07 – Roofing

PART 1 – GENERAL INFORMATION

PART 2 – DIVISIONS 00 & 01

2.1 01 12 00 – BP-01 – Sitework: Added/ revised scope. Please reference section.
2.2 01 12 00 – BP-02 – Building and Site Concrete: Added specification section (as it applies to scope)
2.3 01 12 00 – BP-06 – General Trades: Removed/ revised scope. Please reference section.
2.4 01 12 00 – BP-07 – Roofing: Clarification regarding substrate board.

PART 3 – DRAWINGS

3.1 - N/A

END MEYER NAJEM PORTION ADDENDUM 6

BID PACKAGE #01 – SITEWORK

Scope Specific Inclusions:

All work per Specification Sections

00 & 01 Complete	Bidding & General Requirements
~~Section 02 41 19~~	~~Selective Demolition~~ **– Addendum 3**
Section 02 41 19	Selective Structure Demolition
~~Section 12 93 02~~	~~Netted Backstop~~ **– Addendum 3**
~~Section 13 34 16~~	~~Permanent Grandstands and Press box~~ **– Addendum 3**
Section 31 10 00	Site Clearing
Section 31 20 00	Earth Moving
Section 31 20 10	Earthwork – Building
Section 31 23 10	Dewatering
Section 31 26 00	Erosion and Sedimentation Controls
Section 32 11 33	Granular Base
~~Section 32 12 16~~	~~Asphalt Paving~~ **– Addendum 3**
~~Section 32 12 17~~	~~Geosynthetics~~ **– Addendum 5**
~~Section 32 31 13~~	~~Chain Link Fences and Gates~~ **– Addendum 5**
~~Section 32 31 19~~	~~Decorative Fencing and Gates~~ **– Addendum 5**
Section 32 33 00	Site Furnishings **– Addendum 5 – Addendum 6**
Section 32 92 00	Turf and Grasses
Section 32 93 00	Plants
Section 33 05 00	Common Work Results for Utilities
Section 33 14 16	Site Water Utility Distribution Piping
Section 33 14 17	Site Water Service Utility Laterals
Section 33 14 19	Valves and Hydrants for Water Utility Service
Section 33 31 23	Sanitary Sewerage Force Main Piping
Section 33 46 00	Playground Subdrainage

Work Included but not limited to: (Provide all material, labor/installation, and equipment for the following, unless noted otherwise below)

---

1. Include a Payment and Performance Bond in the proposal for this scope of work.
2. All work/responsibilities as listed in the “General Scope Items - Applies to ALL Bidders” above.
3. Provide all material, labor, equipment, and mobilizations necessary to supply and install the complete Grading & Utilities scope of work, including but not limited to, site clearing & site demolition, stripping of topsoil, stockpiling topsoil, redistribution of topsoil, grading to proposed sub-grades for building pad and all pavements, utilities, including all related accessories, as per the documents and the below items, required for this project. Haul all excess topsoil and spoils, generated by this package off site.
4. Review and abide by all recommendations in the Geotechnical Report provided by Alt & Witzig Engineering, Inc. Refer to Section 00 80 00 Geotechnical Report in the Project Manual.
5. Contractor has visited the project site and is aware of existing conditions.
6. Include requirements per notes on the Civil drawings that apply to this Bid Package.
7. Protect adjacent building areas as required for your work, this includes dust control.
8. Include street cleaning for work under this Bid Package.
9. Contractor shall import fill materials (meeting the fill requirements of the Geotechnical Report) as required to meet proposed subgrades.
10. All excess or unused materials to be hauled off site and disposed of legally.

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11. Provide all site dewatering for work within this bid package as to not delay the construction schedule. Refer to Geotechnical Report for water table elevations. Include well points as required to complete your scope of work.

Erosion Control

12. Provide a complete erosion control system as required by the contract documents and local requirements.
13. Develop, install, maintain, and remove (at the direction of Meyer Najem superintendent), and complete inspection reporting of erosion control per SWPPP for the duration of the project.
14. Provide, install, and maintain and remove construction entrance per SWPPP requirements.
15. Coordinate installation of silt fencing with the location with proposed utility installations and temporary construction entrance, fencing, gates that will surround the property boundaries. Modify erosion control as needed for all phases of the project. Reference the CM drawings.
16. Provide, install, and maintain all required inlet protection and rock rip rap measures for new and existing storm inlets.
17. Include removal of all temporary erosion control measures and correction of disturbed area from removal on a timetable as directed by the Site Superintendent.
18. Ensure all erosion control measures are installed/inspected prior to commencing earthwork and site demo activities.
19. Provide the following as shown on C501, C502, and as detailed on C520 and C521:
    i. Silt Fencing
    ii. Inlet Protection
    iii. Temporary Seeding
    iv. Erosion Control Blanket with Seeding
    v. Gravel Construction Entrance
    vi. Stone Staging Area
    ~~vii. Concrete Washout Area~~
        ~~i. It is the responsibility of this bid package to build, maintain, properly deconstruct, fine grade, and seed this, and all adjacent areas following construction.~~ **– Addendum 3**
    viii. Dumpster/ Recycling Area
    ix. Port-O-Let Area
    x. Outlet Protection
    xi. Rock Donuts
    xii. Construction Entrance
        i. Provide and install temporary stone drives and staging areas as shown on the CM Drawings. Adjust grades accordingly for final stone elevations prior to performing asphalt and concrete pavements, if applicable. Contaminated temporary stone is not to be used as permanent stone. Remove any contaminated stone prior to final grading for pavement process. Coordinate locations with Construction Manager.
    ~~xiii. By Others: Dumpsters, Port-O-Lets, Concrete Washout Dumpsters~~ **– Addendum 3**
20. Provide silt fencing/erosion control measures around all stockpile/material storage locations.

Site Clearing & Demolition

21. Provide site clearing and demolition per drawings C111 and C112, and as designated in the specifications above.
22. Provide Demolition Plan Notes 1-7,10, and 15-22, per drawings C111 and C112.
    i. For items 8,9,11,and 12: Protect applicable structures and utilities accordingly.
    ii. Provide demolition per notes 13 and 19. Any new conduit, conductors, light pole bases, or light poles are to be the responsibility of bid package 11
23. Contractor to include clean sawcut of existing pavement (concrete & asphalt) where new pavement abuts.
24. Clear site (include grubbing, pavement removal, and other removal) as required to strip topsoil.

25. Strip and stockpile/haul off ~~topsoil if required~~. **All excess topsoil – Addendum 3**
26. All material whether of salvageable value or not, must be hauled off site and disposed of legally, as work progresses.
27. It is the responsibility of this bid package to disconnect or coordinate disconnection for utilities prior to any demolition activities. Notify local utilities, ~~Danville Community Schools~~ **Hamilton Heights High School** and the Construction Manager prior to any utility shut down and removal. **– Addendum 3**
28. Backfill all removed utilities within pavement or building areas with compactable fill which meets requirements set forth in Geotechnical Report.
29. Include capping of all utilities as required after demolition activities are complete.
30. Completely fill below-grade areas and voids resulting from demolition operations with compactable structural fill. Refer to Geotechnical Report for structural fill requirements.
31. Include all traffic control required for demolition and proposed work per local and state requirements.
32. Remove/patch back fence at County Road for access drive. Reference CM drawings.

Grading

33. Ensure streets remain clean during the duration of this scope, clean as required.
34. After stripping topsoil material, removal of existing pavements, provide proof roll to determine locations of any pockets of unsuitable soil at building areas, drives and parking as required. Remediation for unsuitable soils will be determined at time of construction. Coordinate with Alt & Witzig recommendations in Geotechnical Reports.
35. Provide cut/fills for new sub-grades per plans for building pads, parking areas, asphalt paving, concrete paving, curbs, lawn areas, etc. Refer to Civil (C-Series) for existing and proposed grades and subgrade requirements.
36. Include re-spreading of topsoil to final grade (import additional topsoil as needed) per specifications **and drawings. – Addendum 3**
37. Contractor shall import fill materials (meeting the fill requirements of the Geotechnical Report) as required to meet proposed subgrades.
38. All excess or unused materials to be hauled off site and disposed of legally.
39. Provide all site dewatering for work within this bid package as to not delay the construction schedule. Refer to Geotechnical Report for water table elevations. Include well points as required to complete your scope of work.
40. Contractor shall include lime ~~modification~~ **cement stabilization** (5% ~~lime~~ **cement**) of the new building pad and the new pavement areas per below: **- Addendum3**
    i. Any cut areas, in locations as identified in iii. below, will need to be lime modified after reaching subgrade elevations, to a depth of 14”.
    ii. At “fill” areas, in locations as identified in iii. below, all initial subgrades after removal of pavement and/or topsoil will need to be lime modified, to a depth of 14”. All additional lifts of fill materials shall also be modified, to a depth of 14”.
    iii. Provide lime modification of the subgrade under all new building pads, standard and heavy-duty asphalt pavement, and heavy-duty concrete pavement areas.

Utilities - General

41. All work performed in strict accordance with all OSHA rules and regulations.
42. Protect all existing water main, gas main, storm lines, overhead power lines and telecom services.
43. Protect existing utilities and structures that are to remain, including newly installed utilities, during the sitework/earthwork activities. Notify all utility companies 5 days before construction is to start.
44. Provide all excavation and backfill for utilities. Provide and install all proper materials for utility trench backfill including all recommended lifts with proper compaction to meet the project requirements.
45. Coordinate with Electrical trade for new site lighting and conduit runs, if required.

46. Coordinate with Landscaping trade for new irrigation sleeve runs, if required.
47. Perform all required testing for this scope including but not limited to: leakage, infiltration, and deflective testing.
48. All excess spoils from utility work excavation if not utilized to be hauled off-site to a suitable location (include hauling permit if required).
49. Where utilities are removed, relocated, or re-routed, this bid package is to provide temporary service and pumping, if necessary, as required to maintain service of this utility.
50. Any part of sanitary or storm sewer trenches running under or within 5' of paved areas are to be backfilled with compacted granular material, if required by the contract documents.
51. Contractor shall only excavate to the extent that the hole / trench can be backfilled on the same day. MNC / ~~DCSC~~ **HHHS** will not be responsible for unsuitable soils created by exposure to weather, due to premature excavations, or left open. **– Addendum 3**

Sanitary Sewer System

52. Provide and install a complete sanitary sewer system as shown and required to comply with local requirements as well. Tie in to existing sanitary manhole.
53. Plumbing Contractor to extend/continue sewer lines maximum of 5' outside the building perimeter. Extension/continuation beyond 5' will be the responsibility of the Utility Contractor herein. Reference "Plumbing Connection Detail" on sheet C503 and the plumbing drawings.
54. Provide all pertinent final connections to sanitary system.
55. Perform all testing as required.

Storm Sewer System

56. Provide and install all storm structures (water quality structures, manholes, inlets, grates, end sections, etc.) and concrete collars for a complete storm sewer system.
57. Provide connection and continuation of roof drain piping as required to connect to storm piping system. Verify locations with the Plumbing and Architectural drawings.
58. Reference the "Downspout Connection Detail" on sheet C503. Provide the "Manufactured Downspout Adapter," and everything down.
59. All inlet castings are to "environmentally friendly logos" for water quality awareness.
60. Provide and install all downspout connections and associated subsurface drain lines.

Landscaping

61. Provide plants, grasses, turfs as shown on the contract documents. Reference planting schedule(s) and layouts for additional information.
62. Include all planting/soil amendments as required. It is the responsibility of this scope to include any topsoil as indicated by the drawings and specifications, or as required for the completion of this scope of work.
63. Provide backfill of all materials provided by this scope (trees, shrubs, plants).
64. Provide site to finish grade prior to seeding or sodding.
65. Reference Civil/Landscape drawings for additional information pertaining to grading, plantings, seeding, sod, etc.
66. Provide all much, rock, or ground cover that is required.
67. Provide segmental retaining walls if shown.
68. Provide Lawn Restoration as noted in the civil drawings.
69. Provide permanent seeding where temporary work is removed (i.e., laydown areas, temporary sidewalks, etc.). Reference the CM drawings.
70. Provide permanent seeding shown on the erosion control plans (reference the civil drawings). Temporary seeding by ~~Bid Package 17 Grading & Utilities~~ **BP01 – Sitework – Addendum 3**.
71. Provide steel landscape edging & metal stakes per the documents.
72. Provide tree/shrub planting per the documents including rubber hosing, guy wires, galvanized turnbuckles, stakes, etc.

73. Provide and install all crushed stone as it is called out on the landscaping drawings and site plans. Coordinate installations with BP02 – Building and Site Concrete, as well as BP10 – Bleachers.

Fencing and Site Furnishings

74. ~~This bid package is responsible for the installation of all fences and gates as shown on the drawings and outlined in specification sections 32 31 13 and 32 31 19. Coordinate spacing and locations of all masonry piers with BP-04 Masonry.~~ – Addendum 5

75. ~~Provide and install all site furnishings as shown in the drawings including but not limited to; Litter Receptacles, Benches, Bike Racks, and Wind Sculptures.~~ – Addendum 5

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Site Demo

76. Contractor to include demo note 1, listed on AD201.
77. Provide all demolition of exterior plumbing similar to that which is shown on PD101.

Erosion Control:

78. Contractor to include all SWPPP notes as listed on C510

Utilities:

79. Include notes W1-W9 on pages C401 and 402 of the drawings.
80. Coordinate notes G1 and G2 with utility provider on C401 and C402.
81. Include notes M1-M4 on C401 and C402.

Storm

82. Contractor to include all items listed on "Storm Structure Data Table", shown on page C303

Landscaping/ Site Furnishings

83. It is the responsibility of this bid package to furnish and install the following items, listed on the "L" Series drawings.
    - i. ~~**Athletic Equipment**: Items A1 and A2~~
        - i. ~~It is the responsibility of this bid package to drill and anchor all components of netting and backstop systems associated with these assemblies.~~ – Addendum 5
    - ii. ~~**Fencing:** F1 – F5~~
        - i. ~~All core drilling for installation of fence posts at concrete sidewalks and surfaces is the responsibility of this bid package.~~ – Addendum 5
    - iii. ~~**Gates:** G1-G10~~ – Addendum 6
    - iv. **Gravel Paving**: P5
84. Furnish and install all plantings and other landscaping items per the plant schedule listed on L400 and shown on L301 – L305.
85. Contractor to include railings shown at the concrete steps leading to the south stadium entrance.

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86. Refer to alternate section 01 23 00 for alternates that affect this bid package.
87. ~~This bid package is responsible for the selective demolition of masonry partitions within the high school, and adjacent areas including but not limited to plan notes 3,7,8,10,13,15, and 19 in the "AD" Series Drawings.~~ – Addendum 5
88. ~~Contractor to provide and install all temporary bracing (prior- to and during demolition) that may be required for the demolition of masonry assemblies.~~ – Addendum 5
89. It is the responsibility of this contractor to provide any demolition and/ or relocation of the grandstands/ bleachers as a part of their scope of work under "Site Demolition"

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90. Clarification provided within this addendum places the scope of work outlined in 32 33 00 – Site furnishings, within this bid package. Contractor is to include this scope of work within their proposal.

Work Excluded:

91. Primary Construction Layout
92. Engineering
93. Soil Testing
94. Permanent Seeding
95. Utility Tap & Usage Fees
96. Stone Base Under Concrete and Asphalt
97. All fencing and gates – Addendum 6

END OF BID PACKAGE #01 SITEWORK

BID PACKAGE #02 – BUILDING & SITE CONCRETE

Scope Specific Inclusions:

All work per Specification Sections

00 & 01 Complete	Bidding & General Requirements
Section 03 30 00	Cast-In-Place Concrete~~–~~ ***ADD1*** **– Addendum 3 – Include in scope.**
Section 03 30 01	Site Cast-In-Place Concrete
Section 03 35 00	Concrete Surface Treatment - Sealer
Section 03 35 19	Concrete Surface Treatment – Stain
Section 07 92 00	Site Wall Joint Sealants
Section 32 11 33	Granular Base
Section 31 13 16	Concrete Paving

Work Included but not limited to: (Provide all material, labor/installation, and equipment for the following, unless noted otherwise below)

General

1. All work/responsibilities as listed in the "General Scope Items - Applies to ALL Bidders" above.
2. Provide all material, labor, equipment, and mobilizations necessary to supply and install the complete Building & Site Concrete scope of work, including all related accessories, as per the documents and the below items, required for this project.
3. Provide all concrete other than as described in the specific exclusions below.
4. Refer to all drawing sheets for abbreviations and symbols, general notes, schedules that pertain to this scope (specifically, the civil, structural, and architectural drawings).
5. Provide all excavation as required for this scope of work (foundations and curbs **and thickened slabs**). **– Addendum 3**
6. Review and abide by all recommendations in the Geotechnical Report provided by Alt & Witzig Engineering, Inc. Refer to Section 00 80 00 Geotechnical Report in the Project Manual.
    i. Remediation for unsuitable soils will be determined at time of construction. Coordinate with Alt & Witzig recommendations in Geotechnical Reports.
7. Provide backfill for this scope of work. Backfill all curbs, walks, interior and exterior side of foundations, interior and exterior side of curb islands, etc. Include backfilling of any below-grade CMU. Coordinate backfilling activities with the site superintendent.
8. Include haul off/disposal of all spoils created from this scope of work. All excess or unused materials to be hauled off site and disposed of legally.
9. Provide all site dewatering for work within this bid package to not delay the construction schedule.
10. Provide winter conditions if required. Refer the Construction Schedule in the Project Manual.
11. Include labor and equipment to unload and install all reinforcing materials (rebar, wire mesh, fiber, etc.) and accessories. Accessories include but are not limited to: rebar supports, chairs/bricks for setting and rebar accessories, caps, etc., per specification sections.
12. Provide all forming and placement methods (pumping etc.) as required per the contract documents.
13. Provide all layout for this scope of work. Reference Field Engineering spec in the Project Manual.
14. ~~Concrete washout area to be provided by bid package 1. Coordinate service requirements with corresponding contractor.~~ **– Addendum 3**
15. This scope shall be responsible for cleanliness of treads and tires on equipment prior to moving across roadways. Include cleaning of adjacent streets/drives from dirt during the concrete operations.

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16. Provide all architectural finishes of concrete including rubbing, smooth forms, colored concrete, or other finishes as defined by the documents.
17. Provide all concrete per the contract documents. Include specified mix designs, expansion joints, control joints, curing materials, hardener/sealers, etc. for a complete installation.
18. Provide and install all stone required or shown under/at concrete locations.
19. Include material and installation of all expansion material which abuts concrete provided by this scope of work.
20. Provide installation of embedded items, provided by others (ex. embeds, sleeves, angles, etc.).

Building Concrete

21. Provide all building concrete including but not limited to: foundations, piers, slabs on grade, elevated slabs, stair pans, walls, thickened slabs, footings, stoops, diamond infills, etc.
    i. Equipment pads are by others.
22. It is this trade's responsibility to determine if footings need to be formed. No cost adjustments will be provided for forming of footings for any reason.
23. Coordinate with the Fire Protection, Mechanical, Electrical, Plumbing (FMEP) trades installing under-slab MEP.
24. This Bid Package is to provide an anchor bolt survey. ~~BP05 Steel will set the anchor bolt elevations.~~ **– Addendum 3**
25. Include setting of all steel column anchor bolts in concrete at structural steel column locations shown per structural plans. Anchor bolts will be provided by BP05 – Steel.
26. Refer to structural drawings for anchor bolt sizing and quantities.
27. Set all vertical, reinforcing for piers as required.
28. Providing grouting of all base plates.
29. Provide and install all required free-draining granular base for the building slab, per notes on documents.
30. Provide and install vapor barrier under building slab.
31. Provide and install foundation insulation under building slab and vertically as shown in the drawings. **– Addendum 3**
32. Provide and install all required control joints and diamonds at columns in slabs on grade, per drawings and details.
33. Provide recessed concrete at locations indicated on the drawings (reference finish plans).
34. Cutting and patching of existing concrete slabs for MEP work is by the MEP trades.
35. Provide touch-up grading of building pad prior to placement of stone subbase.

Site Concrete

36. Provide all site concrete including but not limited to: ramps, walks, curbs, pavement, integral walks and curbs, exterior equipment pads, dumpster pads, ~~truck dock retaining walls etc~~. **– Addendum 3**
37. Refer to architectural civil, and landscaping drawings for locations and details pertaining to site concrete.
38. Provide and install all required ADA ramps/walks where concrete walks transition to road ways or parking lots. Truncated domes to be provided and installed per the local jurisdiction's requirements.
39. Provide and install all required site concrete paving.
40. Saw cut all control joints at concrete pavement, curbs and sidewalks as required.
41. Layout, set, and fill concrete pipe bollards. Steel bollards provided by BP05.
42. Provide installation and removal of the temporary sidewalks noted on the CM drawings.

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Site Concrete

43. It is the responsibility of this bid package to include all of the following site concrete items, as they are shown on the "L" Series Drawings.
    i. Curbs: C1 – C4
    ii. Concrete Pavement: P1 – P2
44. Ramps: R1-R4, as shown in the site plans, and as detailed on L602
45. Contractor to provide assemblies per the site details listed on L600.
46. Contractor to include curb shown at existing baseball field, as detailed on 5/L601
47. Include retaining walls as detailed on 2/L601
48. Contractor to include E5 Internal Cure and E5 Catalyst at all walks and curbs.

Building Concrete

49. Include elevated benches called out on A251OB with plan note 3.
50. Include isolated thickened slab under washer and dryer, as noted by plan note 5 on A251OB.
51. Contractor to include E5 Internal Cure and E5 Catalyst at all slabs.

Addendum 3 – 03/05/2024

Additional Specification Sections:

~~Section 03 35 00~~	~~Concrete Surface Treatment – Sealer~~ - Addendum 4
~~Section 03 35 19~~	~~Concrete Surface Treatment – Stain~~- Addendum 4

52. Include a performance and payment bond.
53. It is the responsibility of this bid package to provide concrete washout dumpster/ area.
54. Contractor to include work shown at the monument sign, along SR 19.
55. Provide and install relocated transformer pad.

Addendum 4 – 03/07/2024

56. Sections 03 35 00 and 03 35 19 that were added in Addendum 3, have been re- allocated to bid package 06 – General Trades.

Addendum 6 – 03/20/2024

Additional Specifications:

Section 03 35 00	Polished Concrete Surface Treatment – As it applies to this scope

57. This bid package is to provide substrate as it is outlined in 03 35 00. Polish and finish to be provided by BP-06 – General Trades

Work Excluded:

1. Rough Grade of Building Pad
2. Concrete Testing
3. Asphalt
4. Parking Signage
5. Curb Stops
6. MEP Equipment Pads
7. Site Lighting Pole Bases
8. Joint Sealants

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9. MEP Cut and Patch of Existing Concrete
10. Equipment pads, light pole foundations, bleacher foundations
11. Fence Post Foundations – Will be provided by 01 – Sitework – ADD2
12. 4/L601 – to be provided by 01 – Sitework – ADD2

END OF BID PACKAGE #02 – BUILDING & SITE CONCRETE

BID PACKAGE #06 – GENERAL TRADES

Scope Specific Inclusions:

All work per Specification Sections

00 & 01 Complete	Bidding & General Requirements	Section 09 67 00	Fluid-Applied Flooring
Section 03 35 00	Concrete Surface Treatment - Sealer **Addendum 3** **Addendum 4**	Section 09 68 13	Tile Carpeting
Section 03 35 19	Concrete Surface Treatment – Stain **Addendum 3** **Addendum 4**	Section 09 72 00	Wall Covering
Section 06 10 53	Wood Blocking	Section 09 91 23	Interior Painting
Section 06 16 00	Wood Wall Sheathing	Section 09 96 00	High-Performance Coatings
Section 07 21 00	Thermal Insulation	Section 10 11 00	Visual Display Units
~~Section 07 21 19~~	~~Spray Foam Insulation~~ **Addendum 3**	Section 10 14 16	Plaques
Section 07 84 13	Penetration Firestopping	Section 10 14 19	Dimensional Letter Signage
Section 07 84 46	Fire-Resistive Joint Systems	Section 10 14 23	Panel Signage
Section 07 92 00	Joint Sealants	Section 10 21 13	Toilet Compartments
Section 07 95 00	Expansion Control	Section 10 26 00	Wall and Door Protection - Corner Guards
Section 08 11 13	Hollow Metal Doors and Frames	Section 10 28 00	Toilet, Bath, and Laundry Accessories
Section 08 14 19	Flush Wood Doors	Section 10 43 13	Defibrillator Cabinets
Section 08 31 13	Access Doors and Frames	Section 10 44 13	Fire Extinguishers and Cabinets
Section 08 33 13	Coiling Counter Doors	Section 10 50 00	High Density Athletic Storage
Section 08 33 23	Overhead Coiling Doors	Section 10 51 13	Metal Lockers
Section 08 41 13	Aluminum-framed Entrances and Storefronts	Section 11 23 00	Laundry Equipment
Section 08 71 00	Door Hardware	Section 11 31 00	Residential Appliances
Section 08 80 00	Glazing	Section 11 52 13	Projection Screens
Section 08 87 00	Glazing Film	Section 12 24 13	Roller Window Shades
Section 08 91 19	Fixed Louvers	Section 12 32 16	Manufactured Plastic-Laminate-Faced Casework
Section 09 30 00	Tiling	Section 12 36 13	Epoxy Resin Tops
~~Section 09 51 13~~	~~Acoustical Panel Ceilings~~ **ADD2**	Section 12 36 16	Metal Countertops
Section 09 65 13	Resilient Base and Accessories	Section 12 36 63	Solid Surface Countertops
Section 09 66 23	Resinous Matrix Terrazzo Flooring	Section 14 24 00	Hydraulic Elevators

Work Included but not limited to: (Provide all material, labor/installation, and equipment for the following, unless noted otherwise below)

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General

1. Include a Payment and Performance Bond in the proposal for this scope of work.
2. All work/responsibilities as listed in the "General Scope Items - Applies to All Bidders" above.
3. This Contractor shall be responsible for including an onsite General Superintendent for supervision and coordination, at all instances where either self-perform or subcontract work that is under this Bid Package's scope of work is present on site. This includes receiving and unloading materials.

Temporary Work

4. Provide the following. Reference the CM drawings and phasing.
    i. Provide temporary enclosures at all window locations.
    ii. Provide temporary enclosures at all bump-out window locations. Reference Detail A on CM-09.
    iii. Provide leading edge protection of all existing conditions being re-worked (perimeter safety rails at roof, second floor, floor openings, controlled access zones, etc.).
    iv. Provide temporary toilets/ Port-O-Lets
    v. Provide all mowing, trimming, weeding, etc. within construction fence areas for the duration of the project.
    vi. Provide and maintain all dumpsters and recycling containers throughout the entire project for all trades. **– Addendum 3**
    vii. Provide temporary stairs, guardrails, walkways to accommodate ALL construction activities (activities for all Bid Packages).
    viii. Provide, maintain and locate fire extinguishers per OSHA.

Selective Demolition

5. Provide all selective building demolition per the Architectural Demolition drawings and specs.
    i. Provide all interior demolition as required to accept new work including, but not limited to, walls/partitions, soffits, bulkheads, ceilings, doors & frames, casework, windows, floors, flooring, wall base etc.
    ii. Demolition by others:
        i. Site Demolition - BP01 - Sitework
        ii. Roof Gutters – BO-07 - Roofing
        iii. Structure Demolition – BP01 - Sitework
    iii. The MEP trades will make safe, cut, cap, and dispose of all MEP demolition items.
    iv. The MEP trades are cutting and patching concrete as needed for their MEP work.
    v. Provide Demolition Plan Note 6 on the Site Demolition Plans.
6. Include all notifications, wrecking/demo permits as required.
7. Coordinate with Meyer Najem and Hamilton Heights Schools for existing utility service disconnects as required.
8. All demolition items/debris to be removed from site unless noted otherwise. Dispose of legally.
9. Coordinate demolition sequence with the Meyer Najem superintendent and other trades as required. (Reference CM drawings for phasing)
10. Means and methods to protect existing conditions to remain from demolition activities as necessary.
11. Provide and manage dumpsters for all demolition debris.
12. Provide means and methods to remove all demolition debris out of building. Include floor protection, continual dust removal and mopping, dust abatement, etc.
13. Refer to the Architectural and Mechanical demolition plans. Provide all interior selective demolition as required for installation of new MEP systems. General Trades contractor to consult with BP-09 Metal Studs, Drywall, and Ceilings to ensure a seamless reinstallation of all metal studs, drywall, and ceilings. **– Addendum 3**
14. ~~Contractor to provide all concrete and flooring demolition as required for MEP systems~~. See "Flooring" section for more information. **– Addendum 3**

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Rough Carpentry

15. Provide all in- wall blocking for interior wall- mounted fixtures, to be installed by this scope of work.
16. Provide all exterior blocking as shown in the drawings. Include in all locations, whether shown or implied, for elements including but not limited to; exterior metal panels, roofing components, MEP items, etc.
17. Include all interior and exterior plywood sheathing as it is shown on the drawings and implied in the specifications.
18. ~~Provide~~ – **Addendum 3**

Casework

19. All fasteners, adhesives, sealants, fillers for materials provided by this scope of work.
20. All out of wall blocking as required for installation of materials provided by this scope of work.
21. Field measuring prior to fabrication.
22. All materials installed by this scope of work are to be installed level and plumb.
23. The scope is responsible for all tack boards that are within or adjacent to casework installations.
24. Provide templates for all work in which coordination between other trades is necessary to incorporate MEP systems, accessories, equipment etc. into the materials provided by this scope of work. Including but not limited to Casework islands, information desks, reception desks and other similar casework fabrications.
25. All cut outs for sinks and faucets where required. Coordinate sizes with plumbing specifications/trade.
26. Include finished sides and back of all casework/millwork where exposed.
27. Reference all specifications, finish plans, finish legends etc. for material finish requirements.
28. Finish Carpentry including but not limited to: wood trim, paneling, casings, molding, chair rail, base, handrails, sills etc.
29. All wood finish carpentry items installed shall be prefinished (stained or painted per finish requirements). Putty and touch up all fastener holes after installation.
30. All casework fabrications including but not limited to: wall & base cabinets, countertops, fixed and operable shelving, open wall cabinets, soffits, mail slots, valances, swing gates, toe kicks, splashes, transaction tops, wall caps, bathroom vanity and below counter guards, coat rods and shelves, etc.
31. Includes in- wall metal countertop supports as shown in the drawings. Please coordinate installation with metal stud and drywall contractor.
32. This scope of work is responsible for glass that is integral to any door, drawer etc. relating to their work.
33. Provide and install all supplemental framing required for installations such as receptions desks and other similar conditions for a complete finished system.
34. Include all hardware as for materials provided by this scope of work including but not limited to hinges, pulls, guides/slides, stops, locks (include all keying and cylinders as specified), grommets, trays, shelves, adjustable shelf supports, hanger rods, hooks (if located on or within casework), clips, bumpers, countertop supports/brackets, standoffs, etc. for a complete installation of materials provided by this scope.
35. Filler pieces and reveals for materials provided by this scope.
36. Include all edge profiles and seaming material for each type of countertop provided by this scope work.
37. Solid surface fabrications including but not limited to: countertops, splashes, worktops, sills, transaction tops, wall cap/tops, etc.
38. Include integral solid surface sinks (plumbing fixtures, connections by plumbing contractor)
39. Include all supports and brackets as required.
40. Include all resinous tops as shown in the drawings.

~~Sprayed Insulation~~

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~~41. Provide per the drawings and the specs. Provide protection of adjacent surroundings to prevent overspray. Provide cleaning of overspray and material that falls to the floor. –~~ **Addendum 3**

Firestopping

42. Provide firestopping in new and existing walls per the drawings and specifications. Reference the Life Safety Plan, Floor Plans, Wall Partition Types, and Wall Sections/Detail sheets for details.
43. Provide Firestopping at all top of walls, bottom of walls, and slab edges, if required. Fire Suppression, Mechanical, Electrical, and Plumbing (FMEP) penetrations in new and existing walls will be by the FMEP Bid Packages.
44. Provide fire resistive joint systems equal to the wall rating at all wall head/floor intersections with rated assemblies.

Caulking

45. Provide all caulking per the drawings and specs except as excluded below.
46. Provide caulking of exterior flatwork, concrete to building, expansion joints in concrete, bollard base perimeters, etc.
47. Provide caulking of interior and exterior masonry control joints.
48. Provide caulking where dissimilar materials meet, including but not limited to EIFS, masonry, soffit perimeters, etc. Exterior caulking around window perimeters is by Bid Package 14 Glazing.
49. Provide slab on grade isolation joint detail sealant, if required.
50. Provide caulking of interior perimeters of exterior aluminum entrances and storefront. Exterior perimeter by Bid Package 14 Glazing). Provide caulking of interior and exterior of storefront. - **Addendum 3**
51. Provide caulking of plumbing fixtures to walls and floors.
52. Provide caulking of fixed casework and countertops to wall surface.
53. Provide backer rod where required.

Doors, Frames, and Hardware

54. Provide and install all doors, frames, and hardware for the project except as excluded below.
55. Review Section 01 73 30 Electronic Door Hardware Coordination. Provide and install that which is called out in this specification and shown in the drawings. LV wiring to be performed by ~~BP-18~~ BP-13 - Electrical. **Addendum 3**
56. Provide and install door vision kits.
57. Provide and install glass for vision kits as listed below in “Glass and Glazing”
58. Provide fire and smoke ratings of doors, frames, and hardware per the Fire/Smoke Ratings denoted by the Wall types, the Floor Plans, and the Life Safety Plans. The most stringent shall govern.
59. Provide unloading, staging, and installation of the delivered doors and hardware provided by this scope of work.
60. Delivery of materials provided by this scope to the job site shall be in accordance with the Construction Schedule and phasing requirements (reference CM Drawings) as determined by the Site Superintendent or Project Manager. Materials delivered shall be palletized or grouped in logical order for the installation/sorting sequence and all items are to be clearly labeled by opening number.
61. Provide all keys, cylinders, and cores for project. Provide keying requirements as listed in specifications. This includes temporary construction keying/cores for the project.
62. Supplier shall meet in person with owner/architect and contractor to finalize keying requirements prior to the locks and exit devices being ordered and match existing or start a new Restricted and Patented Master Key System for the project. During keying meeting, all hardware functions should be reviewed with the owner/architect/contractor to finalize lock and exit device functions.
63. Contractor to install all access panels, provided by the fire suppression, mechanical/ plumbing, and electrical/ av contractors. ~~Bid package 09 –~~ **Addendum 3**

Rolling Service Doors/ Overhead Doors

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64. Provide all overhead doors, insulated and non-insulated per the drawings and specifications. Provide any hoisting/lifts required for installation.
65. Provide door and operating equipment with necessary hardware, anchors, inserts, hangers and supports. Follow manufacturer's installation instructions.
66. Provide low voltage wiring up to the line voltage junction box. Line voltage connection will be provided by the Electrical Contractor.
67. Provide operation training and demonstration for the Owner.

Glass and Glazing

68. All glass and glazing for the project complete. Includes all exterior and interior glazing for complete project. Including but not limited to the scope listed below.
69. Exterior storefront and curtain wall systems complete. Includes all framing, flashings, pans, sills, glazing, fasteners, spandrel insulation, metal panels contained within aluminum framing, accessories, etc. for a complete glazed system. Reference wall sections and details for additional information.
70. Flashings (jambs, sills of openings provided by this trade), sealing, etc. of all aluminum frame systems- Coordinate with all exterior façade trades for integrated connections between different products.
71. Provide all interior storefront glazing systems. Include all framing, glazing, fasteners etc. for a complete system.
72. All exterior caulking between your scope and dissimilar items and any caulking required to make the building weathertight (associated with, or in contact with, this scope). Include any caulking or sealants that come into contact with your scope of work. Interior finish caulking between your scope and dissimilar materials is by others.
73. Glazing gaskets should be tight fitting and waive free.
74. Glazing within wood, hollow metal doors and frames, including fire rated glass in doors as required for the life safety plan.
75. Provide and install all hardware installation for aluminum doors. Coordinate requirements with door hardware supplier. - **Addendum 3**
76. Includes all aluminum trim surrounding all exterior storefront and curtain wall per the details shown for weathertight condition. Color to match curtain wall. Coordinate installation etc. with air barrier application to ensure a weather tight building. Air barrier to be provided and installed by others.
77. Include insulation within aluminum framing systems. Includes mineral wool in misc. voids, rigid insulation @ spandrel panels, and when shown against flashing or trim within glazing system provided and installed by this trade. (does not include cavity insulation between masonry and metal stud locations, etc. or any insulation outside of aluminum framing system/perimeter) - **Addendum 3**
78. Include all shims, supporting components, and miscellaneous support angles for installation purposes or as required.
79. Ensure glass provided and installed by this scope of work is free from factory/shop applied stickers and adhesive that are not required to remain post installation.
80. Contractor to provide packing mineral wool insulation/ spray foam insulation at the perimeter of thermal frames.
81. Frames to be finished per 08 41 00. Final frame color selection occurs at submittal phase. Custom color is included in the contract amount.
82. Includes labor for water test after aluminum systems are installed and flashed correctly to check for water penetration per the specifications.
83. It is the responsibility of this bid package to provide and install all fixed louvers as shown or implied in the construction documents. In the event they are attached to ductwork, it is the responsibility of BP12 Plumbing and HVAC to supply and install louvers in these locations. **Addendum 3**

Flooring/ Tiling

84. Furnish and install all tile, resilient tile flooring, tile carpeting, tile and vinyl base IAW the drawings, specifications room finish plan and schedule. Include all products (tile backer board by others), materials, trim and accessories listed in the specifications for a complete installation.
85. Source all items through an approved manufacturer.
86. Provide and install hydraulic cement underlayment for locations ~~indicated on the plans~~ needing sloped or leveled. **Addendum 3**
87. Conduct minor floor preparation to accept new finishes. This includes control joints, minor concrete depressions, and other small impurities in the sub- surface.
88. All floor areas shall be cleaned and swept free of debris prior to installation of flooring.
89. Float floor at material transitions for a smooth finish.
90. All cuts, trims, outlets, and fixtures should be tight and smooth so that cover plates, trims or escutcheons will cover completely.
91. Grout joints shall be free of voids and have a smooth finish. Remove all haze and debris once grouting has been completed. Properly dispose of grout water.
92. Clean and protect ~~IAW~~ in accordance with the specifications. **- Addendum 3**
93. This scope of work incorporates flooring/wall material patterns/directions as required by the contract documents.
94. All products will be warranted ~~IAW~~ in accordance with the specifications. **- Addendum 3**
95. This project is utilizing E5 concrete slab treatment. Additional information can be found at www.specificationproducts.com. All warranties and guarantees shall be maintained.
96. Provide and install Terrazzo demolition and patching as required for MEP system modifications. Reference demolition and architectural finish drawings for more details.
97. Contractor to provide and install all resinous flooring as it is indicated in the construction documents.

Painting & Wall Covering

98. Provide all exterior painting, interior painting, and wall coverings for the entire project per the drawings and specifications.
99. Reference general notes on the drawings that refer to this scope of work.
100. Provide prime and finish coats per contract documents.
101. This scope of work shall include a final touch up coat as needed prior to project completion.
102. Provide exterior painting of all unfinished materials including but not limited to:
    i. Exposed steel (rails, lintels, gates, ladders, bollards, posts, roof screen supports, hollow metal frames and doors, etc.)
    ii. CMU/Masonry materials scheduled to be painted, etc.
103. Provide interior painting of all unfinished materials including but not limited to:
    i. Exposed steel (deck, columns, beams, tubes, rails, joists, bollards, gats, posts, etc.).
        i. Coordinate painting of exposed structure with Construction Manager and other trades prior to painting exposed structure.
    ii. Gypsum surfaces: walls, ceilings, soffits, bulkheads, etc.
    iii. Hollow metal doors & frames
    iv. Masonry materials scheduled to be painted.
104. Do not paint over required labels.
105. ~~Stain or paint all unfinished wood doors~~. **- Addendum 3**
106. Stain or paint all unfinished finish carpentry. Patch all fastener marks/holes prior to painting.
107. After prime coat has been applied, this scope of work and drywall trade shall review drywall surfaces to determine acceptance. Any inconstancies shall be addressed prior to final paint.
108. Wallcovering where indicated is the responsibility of this scope of work.
109. Review substrate prior to application of wall covering. Any inconsistencies shall be brought to the attention of the site superintendent and drywall trade prior to installation of wall covering.
~~110. Provide sealing of Concrete as indicated by contract documents.~~ **- Addendum 3**

Specialties

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111. Provide and install the following per the documents. Provide complete with all accessories for a complete installation. Provide in- wall blocking as applicable.
    i. Visual Display Boards
    ii. Cast Plaques
    iii. Dimensional Letters & Signage
    iv. Panel Signage
    v. Toilet Partitions & Doors
    vi. Cubicle Track and Hospital Cubicles
        i. Provide supports per the documents.
    vii. Wall Guards
    viii. FRP Paneling
    ix. Toilet Accessories
    x. Shower Seat
    xi. Polycarbonate Plastic Coat Hooks
    xii. Key Cabinet
    xiii. Defibrillator Cabinets
    xiv. Recessed AV Cabinet
    xv. Fire Extinguishers & Cabinets
    xvi. High density athletic storage units – Provide and install components for a complete system.
    xvii. Metal lockers

Equipment

112. Provide and install all laundry equipment/ appliances as they are shown in the drawings.
113. Include all food service equipment as is shown in the documents.
114. All electrical requirements and final connections, relating to food service and laundry equipment are to be coordinated with the electrical bid package.

Furnishings

115. Provide the following per the documents. Provide all accessories for a complete installation. Provide field measurements as required.
    i. Blinds

Elevators

116. It is the responsibility of this bid backage to provide and install the hydraulic elevator, shown at the new football grandstands.
    i. Contractor to coordinate with MNC, as well as all corresponding trades to ensure
        i. All power requirements are met
        ii. All shaft clearances are correct
        iii. Pit depths are achieved
        iv. Sufficient mechanical room/ chase space is provided.

Addendum 2 – 02/28/2024

Selective Demolition

117. Contractor to include selective demolition per demo notes 2, 4, 5, 6, 7, 9, 11, 12, 14, 17, 18, 20, and 23 in the “AD” Series Drawings.

Expansion Joints

118. Furnish and install all structural expansion joints, not included within roofing systems including but not limited to:
    i. 07 95 00 A and B, called out on A181. Roof expansion joints by BP07.
    ii. Note 6/A201

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iii. Note 7/A201
iv. Note 12/A201
v. Note 10/A211
vi. Note 12/A201
vii. Note 7/A201
viii. Note 6/A201

Signage

119. Furnish and install all interior signage per elevation notes 14,17, and 25-29 on A350OB.
120. All signage as shown on A960 with the exception of the digital signage, which will be provided and installed by ~~BO13~~ BP13 – Electrical and Low Voltage. An example of the referenced signage can be found on A350OB, called out by note 14. **- Addendum 3 - Addendum 4**
121. Notes 17, 25, 26, 27, and 28. 29 to be furnished and installed by BP13

Addendum 3 – 03/05/2024

Additional Specification Sections:

Section 02 41 19	Selective Demolition
Section 12 93 02	Netted Backstops

122. Include all new countertops as they are shown in the drawings.

Addendum 4 – 03/07/2024

123. Sections 03 35 00 and 03 35 19 that were removed in Addendum 3, have been re- allocated to this bid package.

Addendum 5 – 03/11/2024

Additional Specifications:

Section 05 40 00	Cold- Formed Metal Framing
Section 06 16 43	Glass-Mat Gypsum Wall Sheathing
Section 07 21 00	Thermal Insulation
Section 07 21 19	Spray Foam Insulation
Section 07 24 15	Polymer-Based Direct Applied Finish System (DAFS)
Section 09 22 16	Non-Structural Metal Framing
Section 09 29 00	Gypsum Board
Section 09 51 13	Acoustical Panel Ceilings
Section 32 31 13	Chain Link Fences and Gates
Section 32 31 19	Decorative Fenes and Gates
~~Section 32 33 00~~	~~Site Furnishings~~ Addendum 6

Selective Demolition

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124. This bid package is responsible for the selective demolition of masonry partitions within the high school, and adjacent areas including but not limited to plan notes 3,7,8,10,13,15, and 19 in the “AD” Series Drawings
125. Contractor to provide and install all temporary bracing (prior- to and during demolition) that may be required for the demolition of masonry assemblies.

Metal Studs, Drywall, and Ceilings

126. Provide and install all structural metal framing including but not limited to all studs, tracks, headers, boxes, fasteners, plates, clips, gussets etc. for a complete structural metal framing system.
127. Provide stamped engineering for exterior framing conditions per the contract documents.
128. Removal of temporary steel/cable guard rail. Coordinate removal of posts and cable with site superintendent if applicable.
129. Include all interior wall partition construction as noted on documents.
130. All stud track and wall cavities shall be vacuumed and free of dust and debris prior to drywall installation.
131. No layout markings are permitted on sealed concrete floors. Reference finish drawings for sealed concrete locations.
132. All floors shall be swept/vacuumed and cleaned thoroughly after taping and sanding activities. Any means necessary shall be utilized to Remove buildup of joint compound off of the slab immediately after work completion.
133. Provide drywall touchup to drywall surfaces after all casework, trim, and division 10 items are installed. Coordinate touch- up requirements with General Trades contractor, as well as MNC.
134. This scope is responsible for all non-load bearing metal framing.
135. Provide and install all exterior sheathing board and accessories where indicated for a complete system, including all joint treatment requirements etc.
136. Provide and install all exterior sheathing where indicated including but not limited to exterior walls, soffits, breezeways, canopies, back side of parapet walls etc.
137. Include all joint treatment required per designed wall system. Fluid applied air barrier by others.
138. Provide and install all thermal and acoustic insulation within metal stud framing including but not limited to partitions, exterior walls, parapets, soffits, canopies, etc. This scope responsible for all insulation except for horizontal roof insulation, underground / slab insulation, and rigid insulation at exterior walls. Contractor to provide mineral wool insulation as it is called out in the drawings and specifications.
139. Include stuffing or filling of misc. voids around openings and penetrations with mineral wool.
140. Sound batt insulation at ceilings where required per partition/ ceiling schedule.
141. Contractor to frame all access doors within their assemblies as shown on the floor plans and reflected ceiling plan. Installation of access doors to be by the general trades package.
142. All metal stud walls, shafts, furring, bulkheads, soffits ceilings, column and beam wraps, channels, etc. Include all necessary tracks, bracing, clips, fasteners for a complete installation.
143. Supply and install all suspension systems and required bridging as required for drywall ceiling assemblies.
144. All gypsum board for all bulkheads, ceilings, walls, column wraps, soffits, etc. for a complete package. Include all impact resistant drywall, moisture resistant drywall etc. as required per partitions schedule and specifications.
145. Drywall control joints as required per field conditions/industry standards.
146. Coordination with Mechanical & Electrical trades for all wall penetrations.
147. Label of all fire rated walls above ceilings as required.
148. Expansion joint material where required at all drywall/metal stud locations.
149. All detailing at doors jambs and head conditions including, but not limited to, jack and king stud details, control joint details, and reveals.
150. All U.L./Rated assemblies as required/indicated for all materials supplied or installed by this scope. (Drywall, framing, taping, finishing, etc.)
151. Provide top and bottom acoustical sealants as implied and indicated by the contract documents.

152. Contractor to provide acoustical joint sealants at all wall penetrations as required to meet STC ratings.
153. Include all drywall finishing. Provide a minimum level of finish of 4 at indicated locations.
154. Provide and install all gypsum based tile backer boards / cementitious backer boards at locations required.
155. All acoustical ceilings. Include all suspension systems, trim, grid, panels etc. per the finish plans and specifications. Caulk grid as required for acoustical performance, or as indicated in the specifications.
156. Stud assemblies meet minimum deflection criteria outlined in specification section 05 40 00.
157. Subcontractor to provide shop drawings and delegated design drawings for cold- formed metal framing.
158. Framer to provide a minimum G90 coating at all exterior studs, located in unconditioned spaces. (05 40 00 spec forthcoming)
159. Include Eliminator track as it is shown, or implied in the drawings where partitions terminate flush with the ceilings.
160. Provide and install DensGlass (Or similar) exterior sheathing as specified and as shown in the drawings
161. Tape/ caulk per manufacturer's recommendations.
162. Interior framing to be minimum 33 mil, 20 gauge framing.
163. Contractor has included delegated design at all exterior load- bearing partitions. This includes shop drawings and stamped engineering drawings as required.
164. Contractor to provide fire rated top track as required. Please coordinate with General Trades contractor for all fire/ smoke rated assemblies.
165. Contractor to provide and install gypsum board per specification section 09 29 00 including but not limited to; Abuse resistant and impact resistant interior panels, paper faced gypsum board, moisture resistant gypsum board, High- impact gypsum board, and tile backer board.
166. Provide and install reveals in drywall partitions as shown in the drawings and indicated in the contract documents.
167. Provide and install control joints as shown in the drawings. Please note that if not shown, control joints will be required as outlined in the specifications.
168. Provide direct applied finish system as indicated in the drawings and the specifications. Provide manufacturer and color as indicated.
169. Include all supporting components for retractable projection screens, to be installed by the owner.
170. It is the responsibility of this contractor to demo all ACT and drywall ceilings, required for MEP work as shown in the drawings. Contractor to coordinate with applicable trades for sufficient demolition areas.
171. Contractor to include all acoustic treatments as they are shown in the drawings.
172. It is the responsibility of this bid package to provide and install all spray foam insulation as it is shown in the drawings.

Additional Site Items

173. This bid package is responsible for the installation of all fences and gates as shown on the drawings and outlined in specification sections 32 31 13 and 32 31 19. Coordinate spacing and locations of all masonry piers with BP-04 Masonry.
174. Provide and install all site furnishings as shown in the drawings including but not limited to; Litter Receptacles, Benches, Bike Racks, and Wind Sculptures.
175. It is the responsibility of this bid package to furnish and install the following items, listed on the “L” Series drawings.
    i. **Athletic Equipment**: Items A1 and A2
        i. It is the responsibility of this bid package to drill and anchor all components of netting and backstop systems associated with these assemblies.
    ii. **Fencing:** F1 – F5

i. All core drilling for installation of fence posts at concrete sidewalks and surfaces is the responsibility of this bid package.

iii. **Gates:** G1-G10

Addendum 6 – 03/20/2024

Additional Specifications:

Section 03 35 00	Polished Concrete Surface Treatment

176. Clarification in this addendum for specification section 32 33 00, places this scope of work back with BP01 – Sitework. Please exclude this item from your proposal.
177. Work associated with 03 35 00 – Polished Concrete Surface Treatment falls under this scope of work. BP-02 – Building and Site Concrete to provide slab as outlined in this specification.

Work Excluded:

1. Site Demolition
2. MEP selective demolition and disposal
3. Asbestos, hazardous material removal and abatement
4. ~~Exterior perimeter caulking of Storefront~~ **ADD2**
5. ~~Structure demolition~~ **ADD2**
6. ~~Pipe and tube railings – to be provided and installed by BP-05 – Steel~~ **ADD2**
7. ~~Acoustical caulking at top and bottom of MSDW assemblies~~
8. Liquid Air and Vapor Barrier – Addendum 5
9. Metal Soffit Panels – Addendum 5
10. Specification Section 32 33 00 – Addendum 6

END OF BID PACKAGE 06 - GENERAL TRADES

BID PACKAGE #07 – ROOFING

Scope Specific Inclusions:

All work per Specification Sections

00 & 01 Complete	Bidding & General Requirements
Section 07 41 13	Standing-Seam Metal Roof Panels
Section 07 54 19	PVC Roofing
Section 07 54 23	Thermoplastic Polyolefin (tpo) Roofing
Section 07 62 00	Sheet Metal Flashing and Trim
Section 07 71 00	Roof Specialties
Section 07 71 29	Manufactured Roof Expansion Joints
Section 07 72 00	Roof Accessories

Work Included but not limited to: (Provide all material, labor/installation, and equipment for the following, unless noted otherwise below)

General

1. All work/responsibilities as listed in the General Scope Items "Applies to All Bidders".
2. Please carefully review divisions 00 and 01, as well as the drawings, for Alternate requirements.
3. The contractor shall include the work required under each contract area as set forth in this Bid Package.
4. Include a Payment and Performance Bond in the proposal for this scope of work.
5. The contractor shall include all provisions for cold weather installation to meet the milestone schedule.
    i. The contractor shall include all costs associated with snow / water removal to allow for roofing installation to continue.
6. This bid package shall coordinate with the Construction Manager suitable locations and means and methods when loading materials to the roof. The contractor shall carry costs and take all precautions to protect the surrounding areas (landscape, asphalt, concrete, etc.) from damage including but not limited to providing, maintaining, and removing temporary stone, wood timbers, prefabricated outrigger pads, for example. Any costs to repair damaged areas will be the responsibility of this contractor.
7. Provide all warranties as noted in the documents.
8. Contractor shall include costs as necessary to generate and submit "expedited" shop drawings for the entire package, as outlined in the Preliminary Schedule and CM Drawings.
9. Clean substrate of all dirt, dust, and debris prior to roof installation.
10. Omit blank **- Addendum 3**

Roofing

11. Provide all material, labor, equipment, and mobilizations necessary to supply and install the complete Roofing scope of work, including but not limited to, rough carpentry (blocking), metal roof panels, ~~soffit panels~~, thermal insulation, Roofing membrane (s), sheet metal flashing and trim, roof accessories and joint sealants, as per the documents and the below items, required for this project. **- Addendum 3**
12. Provide & install all Standing Seam Metal Roofing and accessories for a complete roofing system as shown by the project documents.
13. Provide and install all flashings, reglets, counter-flashings as indicated.
14. Install all roofing, flashings, and boots for MEP vents or penetrations. It's the responsibility of this contractor to coordinate with the MEP trades.
15. Includes all roofing, flashings, coping and scuppers for Canopies.
16. Provide all coping caps, flashings, counter flashings, coping, and termination bars as indicated and required for a complete roofing system.

17. Provide & Install Roof Hatch ~~(if required)~~ and any required accessories including all flashing, curbs etc. **- Addendum 3**
18. Provide caulking of all scope items as indicated, including any caulking to dissimilar materials.
19. Coordinate with both the Plumber, and the Utility contractors to ensure complete installation of assemblies.
20. Provide and install temporary roof walkway pads where indicated. ~~(if shown)~~ **- Addendum 3**
21. Ensure all new roof areas slope to downspouts, scuppers, or internal roof drains.
22. Provide all splash pads at downspout locations.
23. Provide gutters, downspouts, and accessories complete.
24. ~~Provide snow guards. (if shown)~~ **- Addendum 3**
25. Provide modification to existing roof system to accept new work. Provide temporary roof protection as required until new construction is completed, and roofing system can be reworked/installed.
26. Refer to sheet M9.01 mechanical roof plan for mechanical and plumbing roof penetrations.
27. Roofing Contractor is to inspect all new roof drains for damage or missing components and report if any components are damaged or missing.
28. Contractor to provide all new roof to roof, roof to wall and coping expansion joints as shown on the plans.
29. This bid package is responsible for the “Roof Plan General Notes” as they apply to this scope of work, on drawings A101, A102, and A151OB

~~Rough Carpentry~~ - Addendum 3

30. The contractor is responsible for ensuring roofing materials are installed in a complete manner at the end of the day to protect partially installed materials. Raw edges of materials shall be sealed / protected in a temporary or permanent manner to prevent damage to the roofing system and/or adjacent building materials.
31. Flash roof drains as indicated. Roof and overflow drains provided by others.
32. Flashing at all roof penetrations for MEP items.
33. Base flashings, counter flashings, and membrane terminations

Roof Accessories

34. Provide roofing and base flashing systems that remain watertight; do not permit the passage of water; resist specific uplift pressures, thermally induced movement, and exposure to weather all without failure.
35. Insulation, cants, tapered edge strips, tapered insulation, and cover boards.
36. Provide all new galvanized iron flashing and rain collars as shown and required.
37. Provide new interlocking rubber walkway pads as indicated on drawings and at all man ladders and roof access points.

Addendum 3 – 03/05/2024

38. Provide all sealing of penetrations created by MEP contractors for a complete, watertight assembly.

Work Excluded:

39. Blocking shown on the drawings
40. Skylight
41. RTU screening – to be included with HVAC and Plumbing scope of work
42. Back of parapet wall sheathing
43. Snow Guards **- Addendum 3**
44. Rough Carpentry **- Addendum 3**
45. Substrate Board – Addendum 6

END OF BID PACKAGE #07 – ROOFING