ADDENDUM NO. 7

October 16, 2024

TO THE PLANS AND PROJECT MANUAL FOR

CORNER CANYON HS FIELD HOUSE

12943 South 700 East
DRAPER UT, 84020

Prepared by:

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This addendum issued October 16, 2024, is hereby made a part of the contract documents. It shall be the responsibility of each Contractor to notify his subcontractors of the contents of this addendum. In case of conflict between drawings, specifications and the Addendum, this Addendum shall govern. All changes, corrections, deletions and/or additions to the initial bidding documents shall be included in the bid.

16 OCT '24

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Specification Items

1. **New Specification section**
   - **a.** Revised 07 5419 - PVC roofing with 80 mils and 30 year warranty.
   - **b.** Added 11 6834 – Athletic Field Equipment
   - **c.** Added11 6834.1 - Athletic Field Equipment
   - **d.** Added 25 1000 – Automatic Temperature Controls
2. **Approved Manufacture List –**
   - **a. Access Control**
     - i. Convergint Technologies LLC.
   - **b. PVC Roofing**
     - i. SOPREMA Sentinel
3. **COMcheck –** As a matter of clarification, COMchecks are attached.

Architectural Items:

1. **Owner Provided Turf –** See the attached details provided by field turf for depths of owner provided turf:

   Outdoor FT Profile: This is our standard profile for the outdoor field. As you can see, the holdown on the field for the GC from top of curb is 7-3/8" (or 7.5"). Holding the nailer down 1.5" from the top of curb is acceptable and how we typically build it.. The field has a crown in it (marked as ridge on the grading plan), so please make sure the subgrade mimics this crown, keeping the hold down of 7.5". I inserted a couple comments that you can remove or change (i.e. there is a thickened edge and not a curb; showing where subgrade is; the red box is by GC).

   Indoor Profile: Profile is flat so the subgrade should be down 7.5" from top of curb. This detail will be 6" of road base and then the turf. See attached.
2. **IonWave Questions** – See the attached updated questions and answers asked through IonWave. See item Numbers 28, 29, 30, 31, 32.
3. **Scoreboard Weight** – See the attached cut sheets with highlighted weights for the owner provided scoreboard.
4. **Roofing Membrane** – See updated roofing specifications for membrane to be an 80 mil thickness in lieu of 60 mil.
5. **Sheet A817 –** See the attached revised sheet for items noted by revision cloud Mark 5.
6. **Outdoor Sports Netting –** See added spec section and cut sheets for clarification.

Landscape Items:

1. **Landscape Addendum-** See attached - CCHS Fieldhouse – Landscape Addendum 07.

Electrical Items:

1. **Electrical Addendum –** See attached - CCHS Fieldhouse – Electrical Addendum 07.

END OF ADDENDUM NO. 7 – CORNER CANYON HS FIELD HOUSE

SECTION 07 5419 - POLYVINYL-CHLORIDE (PVC) ROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
1. Adhered polyvinyl chloride (PVC) roofing system.
2. Mechanically fastened, polyvinyl chloride (PVC) roofing system.
3. Roof insulation.
4. Walkways.
5. Protection Board.

B. Related Requirements:
1. Section 07 2100 "Thermal Insulation" for insulation beneath the roof deck.
2. Section 07 6200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
3. Section 07 9200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.

1.3 DEFINITIONS

A. Roofing Terminology: Definitions in ASTM D1079 and glossary in NRCA's "The NRCA Roofing Manual: Membrane Roof Systems" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS

A. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site.
1. Meet with Owner, Architect, Construction Manager, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

B. Preinstallation Roofing Conference: Conduct conference at Project site.
1. Meet with Owner, Architect, Construction Manager, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's

representative, deck Installer, air barrier Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.
1. For insulation and roof system component fasteners, include copy of FM Approvals' RoofNav listing.

B. Shop Drawings: Include roof plans, sections, details, and attachments to other work, including the following:
1. Layout and thickness of insulation.
2. Base flashings and membrane terminations.
3. Flashing details at penetrations.
4. Tapered insulation thickness and slopes.
5. Roof plan showing orientation of steel roof deck and orientation of roof membrane, fastening spacings, and patterns for mechanically fastened roofing system.
6. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
7. Tie-in with air barrier.

C. Samples for Verification: For the following products:
1. Roof membrane and flashing, of color required.
2. Walkway pads or rolls, of color required.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer and manufacturer.

B. Manufacturer Certificates:
1. Performance Requirement Certificate: Signed by roof membrane manufacturer, certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
a. Submit evidence of compliance with performance requirements.
2. Special Warranty Certificate: Signed by roof membrane manufacturer, certifying that all materials supplied under this Section are acceptable for special warranty.

C. Product Test Reports: For roof membrane and insulation, tests performed by independent qualified testing agency indicating compliance with specified requirements.

D. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
   1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
   1. Special warranty includes roof membrane, base flashings, roof insulation, fasteners, cover boards, substrate board, and other components of roofing system.
   2. Warranty Period: 30 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roof membrane, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:
   1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.
   1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
   2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.

C. FM Approvals' RoofNav Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in FM Approvals' RoofNav for Class 1 or noncombustible construction, as applicable. Identify materials with FM Approvals Certification markings.
   1. Fire/Windstorm Classification: Class 1A-90.

D. SPRI's Directory of Roof Assemblies Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in SPRI's Directory of Roof Assemblies for roof assembly identical for that specified for this Project.
   1. Wind Uplift Load Capacity: 90 psf.

E. Solar Reflectance Index (SRI): Three-year-aged SRI not less than 64 when calculated according to ASTM E 1980, based on testing identical products by a qualified testing agency.

2.2 POLYVINYL CHLORIDE (PVC) ROOFING

A. PVC Sheet: ASTM D4434/D4434M, Type II, polyester scrim reinforced.
   1. Basis-of-Design: Sike Sarnafil – S327 with Rhinobond attachment for mechanically fastened roof areas and Sika Sarnafil G410 for adhered roof areas or an approved comparable product by one of the followings:
      a. Carlisle SynTec Incorporated.
      b. Johns Manville.
   2. Thickness: 80 mils
   3. Exposed Face Color: White.

B. Source Limitations: Obtain components for roofing system from roof membrane manufacturer.

2.3 PROTECTION BOARD

A. Hardboard: Coverboard board thickness 1/4” Dens Deck or Securerock.

2.4 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with other roofing components.
   1. Adhesives and Sealants: Comply with VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Manufacturer's standard sheet flashing of same material, type, reinforcement, thickness, and color as PVC sheet.

C. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.

D. Roof Vents: As recommended by roof membrane manufacturer.
1. Size: Not less than 4-inch diameter.

E. Bonding Adhesive: Manufacturer's standard.

F. Water-Based, Fabric-Backed Membrane Adhesive: Roofing system manufacturer's standard water-based, cold-applied adhesive formulated for compatibility and use with fabric-backed membrane roofing.

G. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roofing components to substrate, and acceptable to roofing system manufacturer.

H. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.

2.5 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by PVC roof membrane manufacturer, approved for use in FM Approvals' RoofNav listed roof assemblies.

B. Polyisocyanurate Board Insulation: ASTM C1289, Type II, Class 2, Grade 2, felt or glass-fiber mat facer on both major surfaces.
1. Compressive Strength: 20 psi.
2. Size: 48 by 48 inches 48 by 96 inches.
3. Thickness:
   a. Base Layer: 2.6 inch.
   b. Upper Layer: 2.6 inch.

C. Tapered Insulation: Provide factory-tapered insulation boards.
1. Material: Match roof insulation.
2. Minimum Thickness: 1/4 inch.
3. Slope:
   a. Roof Field: 1/4 inch per foot unless otherwise indicated on Drawings.
   b. Saddles and Crickets: 1/2 inch per foot unless otherwise indicated on Drawings.

2.6 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with other roofing system components.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.

2.7 WALKWAYS

A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, slip-resisting, surface-textured walkway pads or rolls, approximately 3/16 inch thick and acceptable to roofing system manufacturer.
   1. Size: Approximately 36 by 60 inches.
   2. Color: Contrasting with roof membrane.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.
   1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
   2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
   3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 05 3100 "Steel Decking."
   4. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.
   5. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.

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

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing system installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Perform fastener-pullout tests according to roof system manufacturer's written instructions.
   1. Submit test result within 24 hours of performing tests.
      a. Include manufacturer's requirements for any revision to previously submitted fastener patterns required to achieve specified wind uplift requirements.

D. Install sound-absorbing insulation strips according to acoustical roof deck manufacturer's written instructions.

3.3 INSTALLATION OF ROOFING, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions, FM Approvals' RoofNav listed roof assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at end of workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 INSTALLATION OF INSULATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at end of workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Installation Over Decking:
1. Install base layer of insulation with end joints staggered not less than 12 inches in adjacent rows.
   a. Where installing composite and noncomposite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
   b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
   c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
   d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
      1) Trim insulation so that water flow is unrestricted.
   e. Fill gaps exceeding 1/4 inch with insulation.
   f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
   g. Mechanically attach base layer of insulation and substrate board using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to decks.
      1) Fasten insulation according to requirements in SPRI's Directory of Roof Assemblies for specified Wind Uplift Load Capacity.
      2) Fasten insulation to resist specified uplift pressure at corners, perimeter, and field of roof.
2. Install upper layers of insulation and tapered insulation with joints of each layer offset not less than 12 inches from previous layer of insulation.
   a. Install with long joints continuous and with end joints staggered not less than 12 inches in adjacent rows.
   b. Trim insulation neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
   c. Make joints between adjacent insulation boards not more than 1/4 inch in width.
   d. At internal roof drains, slope insulation to create a square drain sump with each side equal to the diameter of the drain bowl plus 24 inches.
      1) Trim insulation so that water flow is unrestricted.
   e. Fill gaps exceeding 1/4 inch with insulation.
   f. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
   g. Loosely lay each layer of insulation units over substrate.
   h. Adhere each layer of insulation to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
      1) Set each layer of insulation in a uniform coverage of full-spread insulation adhesive, firmly pressing and maintaining insulation in place.

3.5 INSTALLATION OF ADHERED ROOF MEMBRANE

A. Adhere roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. Accurately align roof membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Bonding Adhesive: Apply to substrate and underside of roof membrane at rate required by manufacturer and allow to partially dry before installing roof membrane. Do not apply to splice area of roof membrane.

E. In addition to adhering, mechanically fasten roof membrane securely at terminations, penetrations, and perimeter of roofing.

F. Apply roof membrane with side laps shingled with slope of roof deck where possible.

G. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.
   1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
   2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
   3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.6 INSTALLATION OF MECHANICALLY FASTENED ROOF MEMBRANE

A. Mechanically fasten roof membrane over area to receive roofing according to roofing system manufacturer's written instructions.

B. Unroll roof membrane and allow to relax before installing.

C. For in-splice attachment, install roof membrane with long dimension perpendicular to steel roof deck flutes.

D. Accurately align roof membrane and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

E. Mechanically fasten or adhere roof membrane securely at terminations, penetrations, and perimeter of roofing.

F. Apply roof membrane with side laps shingled with slope of roof deck where possible.

G. Seams: Clean seam areas, overlap roof membrane, and hot-air weld side and end laps of roof membrane and sheet flashings to ensure a watertight seam installation.
   1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of roof membrane and sheet flashings.
   2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
   3. Repair tears, voids, and lapped seams in roof membrane that do not comply with requirements.

H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roof membrane in place with clamping ring.

3.7 INSTALLATION OF BASE FLASHING

A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 INSTALLATION OF WALKWAYS

A. Flexible Walkways: Install walkway products according to manufacturer's written instructions.
1. Install flexible walkways at the following locations:
   a. Locations indicated on Drawings.
2. Provide 6-inch clearance between adjoining pads.
3. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to inspect substrate conditions, surface preparation, roof membrane application, sheet flashings, protection, and drainage components, and to furnish reports to Architect.

B. Owner will engage a qualified testing agency to perform the following tests:
1. Testing agency shall prepare survey report indicating locations of initial discontinuities, if any.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.

D. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.10 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.11 ROOFING INSTALLER'S WARRANTY

A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
1. Owner: Canyons School District
2. Address: 9361 South 300 East, Sandy, Utah 84070
3. Building Name: Corner Canyon High School – Fieldhouse & Soccer Fields
4. Address: 12943 South 700 East, Draper, Utah 84020
5. Acceptance Date: _____.
6. Warranty Period: 30 years.
7. Expiration Date: _____.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
   a. lightning;
   b. peak gust wind speed exceeding 90 mph;
   c. fire;
   d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
   e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
   f. vapor condensation on bottom of roofing; and
   g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations,

Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.
1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 07 5419

SECTION 11 6834 - ATHLETIC FIELD EQUIPMENT

PART 1 GENERAL

1.01 WORK INCLUDED

A. Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein. Athletic equipment shall include, but not be limited to:

1. BSS630 StormGuard® Professionally Pre-Engineered 30' Straight Pole Break-Away Ball Safety Netting System and Accessories

1.02 RELATED WORK

A. Examine contract documents for requirements that affect work of this section. Other specification divisions and sections that directly relate to the work of this section include, but are not limited to:

1. Division 03 – Concrete; Sections: Cast-in-Place Concrete
2. Division 31 – Earthwork; Sections: Excavation and Backfill and Establishment of Sub-Grade Elevations
3. Division 32 – Exterior Improvements; Sections: Athletic and Recreational Surfacing, Concrete, Asphalt and Site Improvements

1.03 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Federation of State High School Associations (NFHS)
2. National Collegiate Athletic Association (NCAA)
3. International Association of Athletics Federations (IAAF)
4. American Sports Builders Association (ASBA)

Manufacturers Data and Recommended Installation Requirements

1.04 SUBMITTALS

A. Manufacturers Product Data

1. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.

B. Shop Drawings

1. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects or Owners representatives review.

1.05 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements. The Manufacturer shall have a current American Sports Builders Association (ASBA) Supplier Certificate of Distinction designation.

1.06 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or indoors so as to provide proper protection.

PART 2 PRODUCTS

2.01 BSS630 StormGuard® Professionally Pre-Engineered 30' Straight Pole Break-Away Ball Safety Netting System and Accessories

A. BASE: BSS630 StormGuard® Professionally Pre-Engineered 30' Straight Pole Break-Away Ball Safety Netting System and Accessories as Manufactured and/or Supplied by:

Sportsfield Specialties, Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

B. COMPONENTS:

1. BSS630 StormGuard® Professionally Pre-Engineered Break-Away Ball Safety Netting System Straight Poles:
   a. 6" Schedule 40 Aluminum Pipe (6.625" O.D.), 35'L
   b. Standard Powder Coated Black Finish, Various Standard and Custom Powder Coat Finish Color Options Available

2. StormGuard® Professionally Pre-Engineered Break-Away Ball Safety Netting System (United States Patents #9,017,190, Issued April 28, 2015 and #9,586,123, Issued March 7, 2017):

   a. StormGuard® is the first and only ball safety netting system in the industry that is both designed and professionally pre-engineered to allow the net to fall to the ground before failures of the poles and/or hardware occur under extreme wind speed and/or adverse weather conditions such as ice and snow. This patented feature utilizes a shear pin device attached to the net at the top of each pole.

   As shown in the diagram, the snap clip that holds the net up is attached to the oblong shaped hole located at the bottom of the smaller drop shaft that is connected to the cylindrical steel weight utilizing a 150 lb. break strength aluminum shear pin.

The cylindrical steel weight is semi-permanently attached to the rope tether that hoists the net up and down with a removable bolt and includes a rubber absorption bumper to prevent damage to the pole's powder coated black finish.

The poles are installed at a maximum of twenty-five foot (25') on center or less. When the wind speed exceeds approximately sixty-five to seventy miles per hour (65 - 70 mph), the 150 lb. break strength aluminum shear pin will react to the environmental conditions by allowing the smaller drop shaft to release from the cylindrical steel weight causing the net to fall to the ground. The end user then simply unwinds the rope tether from the cleat, lowers the cylindrical steel weight to the ground, replaces the already provided aluminum shear pin and raises the net back up.

3. Ground Sleeves with Welded Base Plates:
    a. 48"L Ground Sleeves
    b. Steel Tube with Alignment Bolt

4. Net with Perimeter Rope Binding:
    a. Overall Dimensions Specified by Customer
    b. 1-3/4" Square Mesh
    c. #36 Black Nylon
    d. Sewn 1/4" Diameter Braided Rope Binding on Perimeter Edges
    e. Standard Color is Black

5. Included Accessories:
    a. Stainless Steel and/or Galvanized Steel Assembly Hardware
    b. Fixed Welded Upper Tab and Adjustable Lower Bracket with Tensioned Vertical Slide Cable System
    c. Secure Snap Clips for Net Attachment
    d. 3/16" Diameter Galvanized Wire Rope Black Vinyl Coated to 1/4" Diameter
    e. Aluminum Ground Sleeve Caps
    f. Model Specific Hardware Kit and Installation Instructions

6. Optional Accessories:
    a. Base Plate Mount Ball Safety Netting Systems
    b. Custom Ball Safety Netting System Sizes and Designs Available Upon Request
    c. Custom Net Mesh Sizes and Colors Available Upon Request
    d. Stamped and Sealed Drawings and Calculations by a Licensed Professional Engineer of Record in the State of Project Location

PART 3 EXECUTION

3.01 INSTALLATION OF EQUIPMENT

A. All BSS630 StormGuard® Professionally Pre-Engineered 30' Straight Pole Break-Away Ball Safety Netting System and Accessories shall be installed as recommended per manufacturer's written instructions and as indicated on the drawings. Concrete anchoring foundations to be determined by others based on local soil conditions and building codes. Installer should have a minimum of five (5) ball safety netting system installations or similar experience in the previous three (3) years.

END OF SECTION

SECTION 11 6834.1 - ATHLETIC FIELD EQUIPMENT – PART 2

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide all equipment and materials, and do all work necessary to furnish and install the athletic equipment, as indicated on the drawings and as specified herein. Athletic equipment shall include, but not be limited to:

1. BSS420 StormGuard® Professionally Pre-Engineered 20’ Straight Pole Break-Away Ball Safety Netting System and Accessories

1.02 RELATED WORK

A. Examine contract documents for requirements that affect work of this section. Other specification divisions and sections that directly relate to the work of this section include, but are not limited to:

1. Division 03 – Concrete; Sections: Cast-in-Place Concrete
2. Division 31 – Earthwork; Sections: Excavation and Backfill and Establishment of Sub-Grade Elevations
3. Division 32 – Exterior Improvements; Sections: Athletic and Recreational Surfacing, Concrete, Asphalt and Site Improvements

1.03 REFERENCES

A. Comply with applicable requirements of the following standards. Where these standards conflict with other specified requirements, the most restrictive requirements shall govern.

1. National Federation of State High School Associations (NFHS)
2. National Collegiate Athletic Association (NCAA)
3. International Association of Athletics Federations (IAAF)
4. American Sports Builders Association (ASBA)

5. Manufacturers Data and Recommended Installation Requirements

1.04 SUBMITTALS

A. Manufacturers Product Data

1. Provide manufacturers product data prior to actual field installation work, for Architects or Owners representatives review.

B. Shop Drawings

1. Provide drawings of the manufacturers recommended installation and foundation requirements prior to actual field installation work, for Architects or Owners representatives review.

1.05 QUALITY ASSURANCE

A. Manufacturers warranties shall pass to the Owner and certification made that the product materials meet all applicable grade trademarks or conform to industry standards and inspection requirements. The Manufacturer shall have a current American Sports Builders Association ASBA) Supplier Certificate of Distinction designation.

1.06 PRODUCT DELIVERY AND STORAGE

A. Materials delivered to the site shall be examined for damage or defects in shipping. Any defects shall be noted and reported to the Owners representative. Replacements, if necessary, shall be immediately re-ordered, so as to minimize any conflict with the construction schedule. Sound materials shall be stored above ground under protective cover or Indoors so as to provide proper protection.

PART 2 - PRODUCTS

2.01 BSS420 StormGuard® Professionally Pre-Engineered 20' Straight Pole Break-Away Ball Safety Netting System and Accessories

A. BASE: BSS420 StormGuard® Professionally Pre-Engineered 20' Straight Pole Break-Away Ball Safety Netting System and Accessories as Manufactured and/or Supplied by:

Sportsfield Specialties, Inc.
P.O. Box 231
41155 State Highway 10
Delhi, NY 13753
p. 888-975-3343
f. 607-746-8481
www.sportsfieldspecialties.com

B. COMPONENTS:

1. BSS420 StormGuard® Professionally Pre-Engineered Break-Away Ball Safety Netting System Straight Poles:
   a. 3-1/2" Schedule 40 Aluminum Pipe (4" O.D.), 23'-6"L
   b. Standard Powder Coated Black Finish, Various Standard and Custom Powder Coat Finish Color Options Available

2. StormGuard® Professionally Pre-Engineered Break-Away Ball Safety Netting System (United States Patents #9,017,190, Issued April 28, 2015 and #9,586,123, Issued March 7, 2017):

   a. StormGuard® is the first and only ball safety netting system in the industry that is both designed and professionally pre-engineered to allow the net to fall to the ground before failures of the poles and/or hardware occur under extreme wind speed and/or adverse weather conditions such as ice and snow. This patented feature utilizes a shear pin device attached to the net at the top of each pole.

   As shown in the diagram, the snap clip that holds the net up is attached to the oblong shaped hole located at the bottom of the smaller drop shaft that is connected to the cylindrical steel weight utilizing a 150 lb. break strength aluminum shear pin.

The cylindrical steel weight is semi-permanently attached to the rope tether that hoists the net up and down with a removable bolt and includes a rubber absorption bumper to prevent damage to the pole's powder coated black finish.

The poles are installed at a maximum of twenty-five foot (25') on center or less. When the wind speed exceeds approximately sixty-five to seventy miles per hour (65 - 70 mph), the 150 lb. break strength aluminum shear pin will react to the environmental conditions by allowing the smaller drop shaft to release from the cylindrical steel weight causing the net to fall to the ground. The end user then simply unwinds the rope tether from the cleat, lowers the cylindrical steel weight to the ground, replaces the already provided aluminum shear pin and raises the net back up.

3. Ground Sleeves with Welded Base Plates:
    a. 30"L Ground Sleeves
    b. Aluminum Tube with Alignment Bolt

4. Net with Perimeter Rope Binding:
    a. Overall Dimensions Specified by Customer
    b. 1-3/4" Square Mesh
    c. #36 Black Nylon
    d. Sewn 1/4" Diameter Braided Rope Binding on Perimeter Edges
    e. Standard Color is Black

5. Included Accessories:
    a. Stainless Steel and/or Galvanized Steel Assembly Hardware
    b. Fixed Welded Upper Tab and Adjustable Lower Bracket with Tensioned Vertical Slide Cable System
    c. Secure Snap Clips for Net Attachment
    d. 3/16" Diameter Galvanized Wire Rope Black Vinyl Coated to 1/4" Diameter
    e. Black Plastic Friction Fit Ground Sleeve Caps
    f. Model Specific Hardware Kit and Installation Instructions

6. Optional Accessories:
    a. Base Plate Mount Ball Safety Netting Systems
    b. Custom Ball Safety Netting System Sizes and Designs Available Upon Request
    c. Custom Net Mesh Sizes and Colors Available Upon Request
    d. Stamped and Sealed Drawings and Calculations by a Licensed Professional Engineer of Record in the State of Project Location

PART 3 EXECUTION

3.01 INSTALLATION OF EQUIPMENT

A. All BSS420 StormGuard® Professionally Pre-Engineered 20' Straight Pole Break-Away Ball Safety Netting System and Accessories shall be installed as recommended per manufacturer's written instructions and as indicated on the drawings. Concrete anchoring foundations to be determined by others based on local soil conditions and building codes. Installer should have a minimum of five (5) ball safety netting system installations or similar experience in the previous three (3) years.

END OF SECTION

SECTION 251000 - AUTOMATIC TEMPERATURE CONTROLS

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The General Conditions, Supplementary General Conditions, alternates and addenda, applicable drawings and the technical specifications, shall all apply to all work under this division.

1.2 SYSTEM DESCRIPTION

A. A system of web-based, password protected DDC automatic temperature controls shall be furnished and installed as a part of this contract to give the owner a completely operable system. Acceptable manufacturer and installer shall be: Structureware, as supplied and installed by UTAH YAMAS Controls, as an extensions of the existing campus system to remain consistent with the district wide automation system.

B. DDC system shall be configured and connected to the district Ethernet/Network. System shall be accessible from any remote site through an Ethernet or internet connection. All functions, programs and control system parameters shall be accessible and fully functional through the district network. The ATC contractor shall supply and install all required hardware and software to permit full access to the DDC system at the new school as well as every same manufactured system throughout the district. All controllers shall be LON or open Native BACnet and freely programmable. Controllers with canned programming are not permitted.

C. The entire building automation system shall tie into CSD Lan Network. The ATC contractor shall include all software and hardware to permit district wide network and complete intranet access to the DDC system. This includes graphic pages, per Canyons District standards, monitoring, alarming, trending, programming, database modifications, setpoint changes, DDC programming. All aspects and elements of the DDC control system shall be available across the entire district network. The use of PC anywhere, or similar remote software, or lick portal packages is not acceptable.

D. The system shall be as indicated on the drawings and specified herein. Building HVAC systems and unitary heating devices shall be entirely controlled by the DDC system. The system shall include local DDC controllers mounted at each fan systems, etc. These local DDC controllers shall be interconnected by a 2-wire or 3-wire LAN (local area network) with a master/central DDC controller located in the lower-level storage room, room as directed by the owner. The master/central DDC controller, in turn, shall communicate with both the existing school district host computer located in the district offices and a man-machine interface device located in the Main Custodian office. This interface device shall be a Pentium based computer as specified below. Device shall display on separate, bit-mapped color screens each fan system, unit heater, etc. Each screen shall have available for display in the appropriate location each input and output point monitored or generated by the DDC system. All digital output points shall have override capability. All screens shall be password protected so that sensitive data cannot be easily corrupted by inexperienced operators while allowing complete access to trained maintenance personnel. All of the above screens, data and features shall also be available for monitoring and modification from the Host computer located at the District offices via Networking (Ethernet) connections.

E. The latest technology DDC/Energy Management systems will be furnished and installed. As a standard, these systems will include graphics and data files for each building at the Canyons School District maintenance office.

F. The DDC/Energy system will be capable of different access levels for the different control and engineering functions of the system. The Canyons School District maintenance staff will have access at the highest level to allow for DDC program, graphic pages, and other changes and additions.

G. The DDC/Energy Management system will have dynamic alarm display capability. If an alarm should occur at a remote location or system, that alarm shall generate a message on whatever screen happens to be on the current display. All alarms shall be logged on the system printer. The system will be capable of printing logs and trends. It will also be capable of displaying graphic trend information for all points. Reference the alarm requirement section for more details on the energy alarms and system alarms.

H. The DDC/Energy Management system will have a graphic and/or text page for each major mechanical piece of equipment or system (I.E.: boilers, chillers, fans, etc.). From these pages, there will be “live” readouts of temperatures, pressures, RH levels, on/off status, valve and damper positions, outside air temperature, etc. It shall be possible from this screen to perform setpoint changes, equipment on/off overrides, implement “test” status and values, without additional screen or program manipulation. Functions such as equipment schedules and reset schedules shall be accessed from editing screens. All functions shall be protected with different levels and passwords.

I. There will also be a floor plan(s) which will show the location of rooms, room sensors, etc., and will give a “live” display of the current condition of that location. Room temperatures will be adjustable from this graphic. Outside air temperature will also display on this graphic. Larger buildings will require more than one of these floor plan pages. No more than 40 points should be on any one page.

J. All system and unitary controls shall be of the direct digital type (DDC). Self-tuning PID (Proportional, Integral, Derivative) control algorithms shall be applied where applicable on all applications. The control system shall be a networked, distributed intelligence system, with the control loops for each system being capable of stand-alone operation.

K. The system shall include all control devices, valves and damper parts as called for hereinafter.

L. The ATC contractor is required to supply and install a complete 100% ¾” WHITE EMT conduit system for the DDC control system throughout this building.

1.3 SCOPE OF WORK

A. The scope of work shall include all labor, material, and equipment necessary to supply an automatic temperature control system for the facility. The Contractor under this heading shall furnish and install a complete direct digital control system as specified.

B. Contractor shall provide at time of bid a statement of compliance including, but not limited to:
   1. Detailed points list.
   2. Any deviations from base specification with listed costs.

C. Install a new complete, fully programmable, customized Direct Digital Control (DDC) system for control of the systems. This DDC control system shall be configured to operate over the district wide network.

D. Provide the following:
   Master DDC Control Panel
   Local DDC Control Panels
   ATC Interface Panels
   Local Area Network Wiring & Setup
   Integration of new systems with existing Systems - Existing CCHS main building

Air turnover unit system control
Evaproative cooler sysems control
Packaged rooftop unit control
Gas unit heater control
AC split system control
Exhaust fan control
Destratification fan control
Room Temperature Control
Fire Riser Room Alarm (Low)
Domestic Water Flow - Provide as Required and Coordinate with Division 26.
CO2 Sensors/Detectors
Building Fire Alarm Interlocks
Energy Reporting here in.
Alarming as specified here in.
120-degree Domestic Hot Water System Control
Data server room temperature alarms and required tie-ins
Connectivity and Interface with all VFD's
Other Scheduled Items

1.4 WORK TO BE PERFORMED BY OTHERS

A. Division 26 shall furnish and install all single phase and multiple phase electrical power wiring to magnetic starters, disconnect switches, VFDs and motors. He shall also provide 120 VAC, 20 Ampere power sources to each group of ATC panels & equipment as shown on the electrical plans. The ATC contractor shall be responsible for all 24 VAC wiring, raceways, conduit and associated material as prescribed in Division 26 to ATC equipment.

B. Division 26 shall furnish all duct smoke detectors. Refer to Duct Detectors in this specification for the ATC contractor's responsibilities.

C. The sheet metal contractor shall install all dampers supplied by the ATC contractor. Each damper shall be installed so that it will operate freely and without binding. To ensure that the damper both opens and closes completely with less than 7#/sq. ft. torque applied at the operating shaft, each damper shall be checked after its installation, but before the damper actuators are attached. Dampers not properly installed or meeting this torque requirement shall be replaced and/or reinstalled without additional cost to the ATC contractor or the School District.

D. The mechanical contractor shall install all valves, immersion wells and pressure taps supplied to him by the ATC contractor.

1.5 INSTALLATION BY AUTOMATIC TEMPERATURE CONTROL (ATC) CONTRACTOR

A. The ATC contractor shall furnish and install all necessary electrical control wiring, raceways, conduit and associated materials as prescribed in Division 26 for the complete temperature control system, heating and ventilating equipment motor starting circuit controls and all electrical control interlocks for same, and for control wiring for miscellaneous HVAC equipment furnished by the Owner.

B. The ATC contractor shall be a licensed Electrical Contractor in the State of Utah with full time Master, Journeyman and apprentice electricians. If the ATC subcontracts the installation, it shall be to a licensed Electrical Contractor in the State of Utah. Full-time Master, Journeyman and apprentice electricians shall be utilized for the installation.

C. The ATC contractor shall furnish & install all necessary electrical control wiring, conduit, raceways, and all associated materials in accordance with Division 26 for all temperature controls, heating and ventilating equipment motor starting circuit controls, all electrical control interlocks for same and for miscellaneous packaged equipment.

D. All line voltage electrical control wiring associated with Division 251000 shall be installed in **100% conduit, "WHITE" 3/4" minimum EMT** by the Division 251000 contractor in accordance with the 2018 version of the National Electrical Code and applicable local codes. 3/4" nominal trade conduit shall be installed. When connecting to controllers, valves etc. that have no provisions for EMT connections, EMT may terminate in a junction box located within 36" of the controller. When making a transition between EMT and plenum cable, protect cable from abrasion by installing an insulating connector or equivalent on the exposed end of the EMT. Full time employees holding Master, Journeyman and apprentice electrician licenses in the State of Utah shall be utilized for the installation. **ALL ATC wiring shall be in 100% factory colored WHITE ¾" minimum conduit**. Painting conduit with brushes or spray cans before or after installation is not permitted.

E. All ATC rough-in boxes shall be identified with the letters "ATC" written across the inside of the box with permanent marker. In addition, each ATC cover plate shall be painted white with the letters "ATC" stenciled in black.

1.6 QUALITY ASSURANCE

A. Provide an unconditional TWO-YEAR parts and service warranty. This warranty shall commence at the time of demonstration of system completion of all portions of the ATC system.

B. Emergency response by contractor shall be available 24 hrs./day 7 days/week 365 days/yr. Response time shall not be greater than 12 hours from time of call.

C. All parts and material and their installation methods shall be in accordance with the manufacturer's recommendations and specifications. All parts and material shall be new.

D. The Contractor or firm executing the work of this section shall have at least 5 years' experience in completing work of similar scope and nature to that specified.

1.7 SUBMITTAL AND TECHNICAL INFORMATION

A. Submit digital shop drawings and manufacturer's data for the following items to the mechanical engineer:

1. Wiring and installation diagrams.
2. ATC device specification sheets
3. Point list
4. Control flow diagrams, complete with all control schematics and sequences of operation.
5. Documentation of all software and hardware. These manuals shall be complete with installation procedures as well as startup and programming instructions. They should also contain any testing or maintenance procedures required to operate system on a continuing basis.

1.8 PROJECT COMPLETION REQUIREMENTS

A. It is required that the ATC contractor commission and test all controllers used on this project. A worksheet shall be provided and filled out for each controller indicating the results of the testing to ensure the controller is commissioned and functioning properly. A copy of each worksheet shall be bound in the O & M manuals. Prior to commissioning, submit a copy of the worksheet to the School District for approval.

B. Upon completion of the project, the ATC contractor shall spend no less than **8 hours** with the Canyons School District maintenance personnel to adequately instruct them on the operation and maintenance of the system. These training sessions shall be scheduled at times convenient to the School District and shall be conducted at the project. One on one, live, local hands-on training will be provided.

C. The training sessions shall be professionally videoed, with notations as required for owner references as to specific equipment.

D. The ATC contractor shall provide as part of his contract the on-site services of a certified technician familiar with the system to assist the air & water balance contractor in completing his portion of the project. The technician shall be available for a minimum of an additional **8 hours** for this assistance.

E. The ATC contractor shall provide as part of his contract the on-site services of a programmer familiar with the system for an additional **4 hours** which the Engineer and/or the School District may use as they see fit to fine-tune or add features to the system.

F. The ATC contractor shall provide a minimum of **8 hours** to aid the commissioning agent as required. See 230800.

G. 6 months after the completion date of the project, the ATC contractor will provide **4 hours** of onsite training with the owner. This training is part of this scope of work and costs shall be inclusive. The hours can be allotted in separate training sessions as determined by the owner. One on one, live, local hands-on training will be provided.

H. Provide a complete digital copy of the project operating and maintenance instruction manuals for use during the training sessions. Manual shall contain all system components and DDC system programming.

I. ATC contractor shall be available to aid the system commissioning contractor. The time required shall be determined by the commissioning contractor for the verification and adjustment of all ATC system components and sequences.

J. Operation & Maintenance Manuals: These manuals shall provide descriptions of maintenance procedures for all system components, including sensors and controlled devices. They shall cover inspection, periodic preventative maintenance, fault diagnosis, and repair or replacement of defective components. They shall include complete as-built ATC installation drawings with sequences of operation for all mechanical systems controlled by the ATC contractor. Provide a digital copy of all as-built system programming.

K. ATC contractor to furnish complete, backup and restore information. Provide software for the entire DDC system, including operating system and data files.

PART 2 – EQUIPMENT

2.1 CONTROLLERS

A. Schneider Electric LON or BACnet Controls as supplied and installed by UTAH YAMAS Controls Open BACNet controls with freely programmable controllers shall be utilized as indicated and specified elsewhere in this specification. Proprietary control system communication protocols will not be accepted.

B. All main level controller inputs shall have at least 12-bit A/D converters for input accuracy. Less resolution is unacceptable for main level controllers or any controllers using an air monitoring station or monitoring building pressure. All main level controller outputs shall have board mounted hand-off-auto switches for local output override capability.

C. The contractor shall utilize and employ only the following controllers for any central plant systems and air handling units. A single controller shall be designated with all programming and I/O for each system. This will allow stand-alone equipment operation in the event of communications failure. Connection of multiple small controllers or combined operation with other programmable controllers on air handlers and central plant equipment is not permitted. All controllers shall be freely programmable; controllers with canned programming are not acceptable.

F. All controllers and devices shall be identified.

2.2 DDC INPUT DEVICES

A. All DDC input devices shall provide industry standard signals and shall be compatible with the DDC controllers used.

B. All temperature input devices shall have a rated accuracy of 1% or better.

C. All pressure input devices shall have a rated accuracy of 2% or better. Pressure transmitters shall be selected to match the application and shall not be damaged by pressures at five times the maximum measurable pressure.

D. Miscellaneous input devices shall have accuracies as individually specified. All miscellaneous devices shall be specifically identified (with specifications) with submittals.

2.3 DDC OUTPUTS

A. Modulating outputs shall be in accordance with industry standards and shall be compatible with the driven DDC devices.

B. DDC digital outputs shall be either relay contact closures or Triacs rated for the application.

C. Outputs shall be 0-10 VAC/VOC or 0.5 sec - 5.0 sec. 4-20 MA or a pneumatic signal 0-20 PSI.

2.4 MANUFACTURERS

A. Provide a new Direct Digital Control (DDC) system manufactured by Schneider Electric or equal by Alerton Controls, or WebCTRL as provided by Automated Logic for the facility mechanical equipment. The new system shall be installed, programmed and commissioned by the ATC contractor.

2.5 DUCT SMOKE DETECTORS

A. Duct smoke detectors are to be furnished and wired by Division 26. Detectors shall be installed in the supply and return of the unit by the ATC contractor.

B. Detectors shall be wired to allow monitoring by the DDC system as well as the fire alarm system. Division 26 shall furnish & install a fire alarm/fan shutdown relay at each fan system. The ATC contractor shall wire between the alarm relay contacts and the fan system starter to lock out the supply fans when the building is in fire alarm.

C. Shutdown relay shall be wired to allow monitoring by the DDC System.

2.6 MOTORIZED ATC DAMPERS

A. Motorized control dampers that are not supplied with the air handling units shall be furnished by the Automatic Temperature Control Contractor.

B. Dampers shall be factory-built, low leakage units such as Ruskin CD-50 or approved equal. Blades shall be 6" maximum width, 6063-T5 extruded aluminum width, 1/2" axles, and Oilite or Cycoloy bearings. No round shafts will be accepted.

C. Frames shall be 5" x 1", 6063-T5 extruded aluminum hat channel design, 0.125" minimum thickness with corner braces to assure squareness.

D. Dampers shall be low leakage type with compressible end seals and neoprene or extruded vinyl blade and jamb seals. Leakage shall not exceed 6.2 cfm/sq. ft. at 4" W.G. Dampers shall require less than 7#-in/sq. ft. torque at the operating shaft for proper operation.

E. All blade-to-blade linkages shall be external and accessible. No linkage within the damper frame will be accepted.

F. Outdoor & return air dampers shall be parallel blade with blade direction oriented to assist mixing of air streams. Relief air and other volume control dampers shall be opposed blade.

2.7 DAMPER ACTUATORS

A. Damper actuators shall be of the gear-train type. All moving parts shall be permanently lubricated and not require addition or replacement of oil. Actuators shall meet the NEMA 3R rainproof rating and shall have an ambient temperature operating rating of -40°F to 140°F, without the addition of extra equipment. Actuators shall also carry the UL 94-5V rating for installation in return air plenums.

B. Damper actuators shall accept the appropriate PWM, VDC or digital output signals provided by the DDC controllers.

C. Damper actuators shall be mounted outside the air stream whenever possible and be of sufficient size to operate the connected damper. Mount damper actuator on firm baseplate.

D. Damper actuators linked to outdoor air and relief air dampers shall close their attached dampers upon power failure or fan shutdown by means of a mechanical spring return.

E. Actuator manufacturers shall be Belimo or Honeywell (No substitutions).

2.8 BUILDING STATIC PRESSURE CONTROL

A. Building static pressure will be controlled by modulating open relief dampers which are located between the space and outside air. There will be a differential pressure control function which will compare inside static pressure with outside pressure and position the relief damper to maintain a .05 inch water column (adjustable) positive pressure inside with respect to outside. If building power should fail the relief damper will close (spring return). Sequencing the relief damper with the mixed air dampers will not be acceptable.

2.9 ROOM THERMOSTATS

A. Wall-mounted space temperature thermostat. **No visible readout or adjustment at thermostat**. Setpoint range shall be adjustable by owner via building control system. Flat plate, stainless steel plate sensors will not be accepted.

B. Thermostats shall be located on interior stud walls wherever possible.

C. Mount thermostats at 48” AFF.

D. Standardized locations and mounting heights shall be predetermined with owner prior to rough-in.

E. Provide sample thermostat to owner for review.

2.10 ROOM TEMPERATURE SENSORS

A. Fast response type wall mounted space temperature sensors shall be installed in wall boxes behind blank, stainless-steel plates in all corridors, gymnasiums, cafeteria and commons locations. Sensors shall be of a type approved by engineer and building owner.

B. Each temperature sensor shall be calibrated by means of a high-quality stand-alone temperature measuring instrument.

2.11 ZONE TEMPERATURE SENSORS

A. Fast response type wall mounted space temperature sensors shall be installed in wall boxes behind blank, plastic housing. Sensors shall be of a type approved by engineer and building owner. None shall be mounted on outside walls or pipe chase.

2.12 AIR QUALITY TRANSMITTERS

A. CO2 transmitters shall be suitable for duct mounting and shall be mounted in the return air duct. Output signal shall be 0-5 or 0-10 VDC as required by the DDC system.

B. CO2 transmitters shall be “Vulcain” 90DM3, ADT03-1, Veris or approved equal.

C. Current CO2 value shall be displayed on the CO2 sensor, as well as transmitted to the DDC system.

2.13 PRESSURE SENSORS

A. All wet and dry pressure sensor transducers shall include a display indicating the pressure reading on the face of the transducer.

2.14 OUTSIDE AIR SENSOR

A. The building shall use an outside air temperature reading as obtained from government operated web sites over an internet connection for accurately controlling mechanical equipment. The ATC contractor shall provide IP level devices, hardware and any software to permit the use of the outside air temperature from the government website. A backup sensor shall be installed at the building and shall be used whenever the internet outside air temperature reading is unavailable.

B. All outdoor air sensors shall be installed on the north face of the building or equipment. No Exceptions.

2.15 HOST COMPUTERS & USER INTERFACE

A. The ATC contractor will connect to the existing district user interface and provide individual user interfaces that are customized for each user type. If there is no existing district user interface, the ATC contractor shall supply and install the user interfaces as defined below and will include all software required to edit, create and modify the individual profiles. The user interface must be configured so the user type cannot see the parameters, menus, etc. not included in the specific user interface as defined below. The ATC contractor shall provide the following user interface types for the project. User interfaces that do not adhere to the following will not be accepted.

a. USER INTERFACE FOR ALARM RESPONDER USERS
   i. Email and SMS Text notification of alarms.
   ii. Workspace that contains a Work Area pointed to a Dedicated alarm window that only shows critical alarm information for the entire school district, a graphic pointed to the district summary graphic to the right. Alarms will include:
      1. Low Building Temperature (below 50°F at anytime)
   iii. Email and SMS Text notification of alarms. Each Notification will include the following:
      1. Notify on Alarm state and Reset State
      2. Building name in the Subject line.
      3. Alarm Text in the Text selection
      4. Monitored Value in the Text selection
      5. Timestamp in the Text selection
      6. Filtered by Categories - Temp Low Space, Temp Low Hot Water, High Freeze Cooler.
   iv. Each alarm will contain a link to the main floor plan graphics page of the school that shows where the alarm originated from.
   v. Each alarm will contain a link with detailed information showing steps the alarm responder should take when responding to the alarm. A detailed step by step instruction for each alarm will be provided and configured by the ATC contractor upon approval of the steps by the District.

b. USER INTERFACE FOR CUSTODIANS
   i. Full web-based graphics that include unit layouts and floor plans maps of the school. All temperature, status, command and control points shall be displayed on the graphics.
   ii. The system tree shall be hidden.
   iii. All other schools within the district shall be hidden and non-accessible at the Custodian level.
   iv. Alarms view on the bottom showing all alarms within the system.
   v. The Software Permissions shall allow the user to override points on graphics pages.
   vi. A dedicated alarm window that only shows critical alarm information for the school, the alarm filter for each building will done by alarm priority.
   vii. Custodian Interface Alarms will include:
      1. Low Building Temperature (below 50 deg. F. at any time)
      2. Fan Failures
      3. Domestic Water Flow
      4. Fire riser room low temperature (below 50 deg. F. at any time)
   viii. An event notification will be created for the school that contains the correct filtered alarms, it will be up to the individual school as to whether or not the custodian and/or principal is notified. Each Notification will include the following.
      1. Notify on Alarm state and Reset State
      2. Building name in the Subject line
      3. Alarm Text in the Text selection
      4. Monitored Value in the Text selection

5. Timestamp in the Text selection
6. Filtered by priority
7. Filtered by Categories - Temp Low Space, Temp Low Hot Water, Failure Fan, Failure Pump, Temp High Freeze Cooler

ix. Graphic page(s) that include the ability for the custodian to override the system occupancy by entering a duration in minutes of how long the system shall run. The initial setting will be not to exceed 180 minutes (3 hours). Custodians will **not** have access to time schedules.

c. USER INTERFACE FOR ENERGY USERS

i. Energy and maintenance users will have access to all schools/buildings within the district. A summary page will provide basic information for each building, the information will include:
   1. Building HW Supply Temp
   2. HW Pump Status'
   3. Building Low Space Temp

ii. Full web-based graphics that include unit layouts and floor plans maps of the school. All temperature, status, command and control points shall be displayed on the graphics.

iii. Energy users will have access to all DDC logic pages throughout the district.

iv. Energy users will have access to equipment runtime information and will receive equipment runtime alarms in addition to all other categorized alarms. Runtime alarms will include:
   1. Any fan runs longer than 13 hours per day

v. Email and SMS Text notification of alarms. Each Notification will include the following:
   1. Notify on Alarm state and Reset State
   2. Building name in the Subject line.
   3. Alarm Text in the Text selection
   4. Monitored Value in the Text selection
   5. Timestamp in the Text selection
   6. Filtered by Categories - Temp Low Space, Failure Fan,

vi. Energy users will have access to the daily schedules for each building.

vii. Energy users will have a Holiday Calendar that will provide a means for un-occupying the buildings no matter what the schedules or overrides are set to.

viii. Energy users will have access to historical trend log data that is captured by the system.

ix. Default logs will be setup to sample every 10 minutes and keep 5000 samples available for real time reporting.

x. Energy users will have access to web-based reporting for historical trend log data, this can be access independently of the ATC system software.

d. USER INTERFACE FOR HVAC TECHINCIANS

i. Full web-based graphics that include unit layouts and floor plans maps of the school. All temperature, status, command and control points shall be displayed on the graphics.

ii. The configuration will permit access to all graphic pages and all other buildings throughout the district. The permissions will be set up to allow the user to override points on graphics pages.

e. USER INTERFACE FOR ADMINISTRATION USERS

i. Full web-based graphics that include unit layouts and floor plans maps of the school. All temperature, status, command and control points shall be displayed on the graphics.

ii. Email and SMS Text notification of alarms if requested.

B. The School District facility management and control system includes an existing Centralized Host computer currently located at the District offices. If the control system provided for this project will not seamlessly connect to the existing centralized computer, the ATC contractor shall provide as specified to provide all programming, monitoring, alarming and configuration functions within this specification. Networking, lines, and software shall be furnished and installed by Division 25. Communication shall be completed to the Canyons School District office by Division 25. This includes complete control system access from the District office in addition to complete control system access at the school.

C. The most current versions of all necessary controlling & monitoring software & graphic displays shall be installed on the District Centralized Host computer. Copies of all software disks, operation manuals, along with installation instruction shall be provided to the owner.

D. All new software releases available within one year of the substantial completion date shall be provided to the owner and installed at no additional cost to the School District.

E. The controlling software database shall be constructed by the ATC contractor to Canyons School District requirements. The contractor shall consult with Canyons School District to verify these requirements as a part of this contract. Contractor shall provide a fully operational DDC control system that may be monitored, controlled & modified from the District Centralized Host computer. All control schedules, algorithms, and control logic shall be in place within each DDC controller and stored as back-up copies on both Host computers which may be downloaded to individual DDC controllers as necessary. Documentation provided shall include block software flowchart showing the interconnection between each of the control algorithms and sequences. A digital copy of points for each device shall be provided. Copies shall be provided in O&M manual.

F. The building shall be represented by complete graphical floor plans, with accurate locations of each major piece of HVAC equipment. A zoom feature shall allow the operator to select any of the main fan systems and see a graphical representation of the system with dynamic representation of all appropriate DDC input & output devices. Each major piece of HVAC equipment shall be graphically represented at each Host computer with all appropriate DDC points dynamically represented.

2.16 MASTER DDC CONTROL PANEL

A. The master DDC control panel for the building shall be mounted in a NEMA 2 enclosure in the Main Custodian office or as directed by the owner. The ATC contractor shall furnish and install a Network/Ethernet connecting device via District supplied network lines to the District host computer.

B. The master DDC control panel shall have the capability of overriding all HVAC unit control. Panel shall have override indicating light. Override shall be programmed for 4 hours (adjustable) and be interconnected to building DDC system.

C. The master DDC controller shall have a minimum of (2) ports for connection to external devices. One port is to be connected to a Network/Ethernet connection, the other is to be connected directly to the local Host computer system.

D. The master DDC controller shall be 16-bit microcomputer based, providing a multi-tasking operating system for control functions simultaneous with all other facility management, operator interface, and system communications functions.

E. The master DDC controller shall be 16-bit microcomputer based, providing a multi-tasking operating system for control functions simultaneous with all other facility management, operator interface, and system communications functions.

F. The master DDC controller shall provide to the Host computer diagnostic reports of the following types, for all DDC devices:
   a. Trend logs
   b. Energy reports, KW, BTUH
   c. Exception tables/by operator
   d. Override information table/by operator
   e. Run time information on equipment
   f. Review of specific facility information by operators

G. When specified alarm conditions occur, provide a report internally listing the status of specific items associated with the equipment generating the alarm.

H. Report shall be routed to the local Host computer, District Host computer or other combinations of computers via Network as designated by the owner. Depending on the time of day, the owner shall specify up to five sites to which exceptions shall be auto-dialed and reported. This shall allow the owner to assign off hour's exception responses to various facility personnel as necessary. The selection of the sites to be dialed can be programmed by the owner and set to change automatically per time of day and day of week. Information may be duplicated to multiple combinations of locations. Report shall record the time the status information was taken and shall allow operational personnel to use this information to diagnose the alarm situation.

I. All programming defining the functions to be performed by the master DDC control panel from loss due to power failure for a minimum of six months.

J. The master DDC control panel shall be multi-tasking and shall provide the capability to simultaneously perform at least, but not limited to, the following functions: Downloading of application program changes without affecting the simultaneous operation of existing operating application programming.

K. Operator access to the entire network of local digital controllers.

2.17 LOCAL DDC CONTROL PANELS

A. Local DDC control panels shall be located near mechanical systems as necessary to provide both digital and analog input and output points as specified and/or required to achieve specified system performance.

B. Sharing of controllers between different mechanical systems will not be allowed.

C. Each local DDC control panel shall provide all control functions for the mechanical equipment specified to be controlled from that panel.

D. Every input and output point shall be well labeled, and every digital output shall have an LED indication of the position of the output relay.

E. ATC contractor shall provide documentation of the software application program for each digital controller.

F. Documentation provided shall include block software flowchart showing the interconnection between each of the control algorithms and sequences. Complete ATC drawings including terminal connection assignments shall be available at each local panel. Drawings shall be furnished in a plastic envelope in each local control panel.

G. System acceptance shall not be completed until this documentation is provided and located in each ATC interface panel.

H. Systems providing modulating outputs via pulse width modulation techniques shall provide within each ATC interface panel all the components required to implement the functions equivalent to an analog output.

2.18 ATC INTERFACE PANELS

A. ATC interface panels shall be mounted near each group of local DDC controllers. Each panel shall be made of not less than 16 gage steel. Panel shall have a full back plate and full hinged door such that when the door is closed, the assembly provides a completely enclosed, NEMA 1 enclosure. Panels shall be fully painted and fitted with key locks. Appropriately sized nameplates shall be used to identify all panel mounted devices. Major wiring within panels shall be installed within distribution gutters (similar to Panduit). All wiring entering and leaving panels shall terminate on numbered terminal strips. All wiring within panels shall be color coded and the color shall not be changed between the terminal strip and the end destination of that wire. Panels shall contain wiring diagrams of the panel interior and associated devices. Diagrams shall identify all interior devices and shall include terminal numbers.

B. Panels shall contain the following devices as applicable:

1. Control transformers
2. NEC required fusing
3. Local DDC controllers (contractor option)
4. NEC required grounding
5. Logic relays
6. 120 VAC convenience outlet
7. Air pressure transmitters
8. Control switches
9. Pilot lights
10. Terminal strips
11. Status indicating lights

2.19 LABELING

A. All ATC supplied devices shall be permanently identified with plastic, engraved labels indicating device name, system identifier, and function within the system.

B. All room thermostats and sensors shall be labeled with labels indicating air handling unit number.

PART 3 - SEQUENCE OF OPERATION

3.1 GENERAL

A. After either a momentary or sustained power outage, all supply fans and pumps shall stop & remain off for at least 2 minutes. After the 2-minute time period has elapsed, fans & pumps shall restart over a minimum of a 5-minute period at a rate of not more than an average of 20% of full system load per minute. All setpoints specified herein shall be field adjustable to match jobsite conditions.

3.2 DOMESTIC HOT WATER SYSTEMS

A. There is a single domestic hot water heating system; 120° F. The system consists of an electric hot water heater, and a recirculation pump.

B. When the building is in OCCUPIED mode, the 120° F system hot water heater & its associated pump shall be enabled & the recirculating pump shall cycle from a pipe mounted strap-on thermostat to maintain 95° F return water temperature. When the building is in UNOCCUPIED mode, the hot water heater & the recirculating pump shall remain off.

C. When the building is in UNOCCUPIED mode, the hot water heater and the recirculating pumps shall remain off.

D. Once enabled, the domestic hot water heater shall operate under its factory furnished and wired control systems.

3.3 GAS FIRED UNIT HEATER CONTROL

A. A room temperature sensor, acting through a DDC controller, shall cycle the gas fired unit heater to maintain desired room space temperature as the 2nd stage of heat.

3.4 AIR TURNOVER UNIT – ATU-1

A. Install and wire factory control panel and thermostat.

B. BMS to monitor fan status and discharge air temperature.

C. Provide space temperature alarm point.

D. Provide building static pressure alarm point.

3.5 TRAINING CENTER EVAPORATIVE COOLERS

A. Install and wire factory 7-postion switch and thermostat.

B. BMS to monitor fan status and discharge air temperature.

C. Provide interlock with associated relief air motorized dampers.

D. Supply discharge motorized damper shall interlock with unit fan,

E. Provide interlock as required with control, unit fan, motorized damper and pump.

F. Provide area static pressure alarm point

3.6 GAS/DX PACKACED ROOFTOP UNITS

A. The package rooftop unit is a gas fired DX cooling unit with economizer.

B. The rooftop units shall come with a BACNet card and ATC contractor shall supply thermostats, so they can integrate into the DDC system. This contractor will wire the factory furnished controls. In occupied mode the fan shall run continuously, and the outside air damper shall be open to minimum position. The economizer cooling, mechanical cooling and gas heating shall be staged to maintain space temperature. In unoccupied mode, the unit shall cycle with the outside air damper closed to maintain unoccupied set point. The BACNet controller shall control the economizer dampers.

C. The control contractor shall wire to the factory provided BACnet card, or as required for system provided.

3.7 FIRE ALARM FAN SHUT-DOWN (All Fan Systems)

A. All heating, ventilating and air conditioning system fans shall automatically shut off when the building fire alarm system is energized. All fans shall automatically start up again when fire alarm system is reset. Fire alarm system fan relays shall be "normally energized" and shall be installed by division 26 at each fan system.

3.8 FAN SYSTEM FILTER BANK ALARMS

A. A differential pressure indication control element with its static pressure tips located across each fan system filter bank & makeup air unit filter bank shall provide the DDC system with the differential pressure drop across each filter bank. An alarm shall be supplied to the DDC system whenever the filter differential pressure remains above 0.35" w.c. for more than 15 continuous minutes.

3.9 TOILET ROOM EXHAUST FANS

A. Ceiling mounted, toilet room exhaust fans shall be individually switched with the light switch in the area served. In addition, each exhaust fan shall run for 10 minutes after the room lights have been turned off.

B. Roof mounted, toilet room exhaust fans shall be individually operated by pre-determined schedules from the building DDC system.

3.10 DE-STATIFICATION FANS

A. This contractor shall install factory provided thermostat and link all fans associated with fan MSTP BACnet controller

B. Fans shall be programmable from the BMS, with occupancy schedules.

C. Provide graphics of all systems.

3.11 ELECTRIC UNIT HEATER CONTROL

A. Electric unit heaters & electric wall heaters shall be controlled with a room thermostat reading to the BMS.

3.12 DATA ROOM COOLING CONTROL

A. A split system cooling unit “AC-1” shall be cycled by an electric, cooling type, wall thermostat provided. The ATC contractor shall install and wire between indoor and outdoor unit and install the factory provided thermostat.

B. Room shall be on District temperature alarm.

3.13 FIRE RISER ROOM TEMPERATURE ALARMS

A. Provide an analog DDC temperature sensor at fire riser room. An alarm to the District remote security facility through the Lan Network shall be generated whenever temperatures drop below or rises above the owner determined limits. Coordinate with Division 26.

3.14 DOMESTIC WATER FLOW SECURITY SENSOR

A. A pipe mounted vane operated, water flow sensor located in the smaller of the two lines in the main domestic water line and upstream from the pressure reducing valve, shall through the DDC system, signal the Host computer any time flow is sensed during the UNOCCUPIED mode. Division 251000 contractor shall run line to building security dam for tie into building security system. The paddle shall be a Flotect Model VA or equal and shall be furnished and wired by the ATC contractor and installed by the plumbing contractor. ATC contractor to coordinate size required. Coordinate line to security panel with Division 26.

3.15 BUILDING ENERGY METERS

A. The ATC contractor shall provide and install an electric KWH meter on the main building power entrance. The power data shall be displayed on the graphics pages which shall include: Current KW demand, Daily High KW demand, Monthly High KW demand, Daily Total KWH consumption, and Monthly Total KWH consumption. Daily power data from the power meters shall be logged into the database of the control system. The control system shall generate reports showing the history of the power usage in the building by month, by year, or month to month or year to year comparisons. The ATC contractor shall provide all necessary hardware and software.

3.16 ENERGY ALARMS AND AREA SECURITY TEMPERATURE ALARMS

A. Alarms shall be provided and configured to report to the alarm responder and energy user interface. Email accounts and text message alarms shall be configured to alarm details as designated by the owner.

B. Energy alarms shall include the following, quantities per equipment in the facility:
   a. Runtime Fan
   b. Temp Low Space
   c. Domestic Water Flow
   d. Failure Fan

C. Each non-runtime individual alarm will have an attachment that is linked to the main graphic for the individual building. Each individual CO alarm will be displayed on the graphic pages and alarm information shall provide the exact location of the sensor.

D. Temperature sensors located in an area served by each fan system shall continuously monitor the space temperature and alarm the building Host computer anytime the space temperature drops below or rises above preset set points. The Host computer shall then notify the District Remote Security Facility that an alarm has occurred via a status contact closure of the security system.

E. Upon receiving an alarm the Host computer at the school and at the District Offices shall indicate which area(s) of the building are in alarm through a graphic floor plan and/or text message display of the building(s). Current space temperatures shall also be displayed at the Host computer.

3.17 HOST COMPUTER & BUILDING GRAPHIC DISPLAY

A. Graphics pages shall be created to remain consistent with the existing graphics on the districts host computer. Floor plans, air handler summaries, and alarm pages, equipment pages, summary pages, etc. shall all be included. In addition to this section, the ATC contractor shall refer to section 2.13 and other sections within this specification for user interface, alarming, programming and configuration requirements from the graphical user interface (Host Computer).

B. User views shall be configured and display the specified information.

C. The building shall be represented by complete graphical floor plans, with accurate locations of each major piece of HVAC equipment. Each piece of HVAC equipment shall be graphically represented at each Host computer with all appropriate DDC points dynamically represented. The ATC contractor shall supply and install any and all software required, and leave with the owner, that permits full capabilities including programming, graphic page alterations, creations, system additions, modifications, controller additions, alarm configuration, alarm notification, trending, scheduling and permit full access to all features, set up and configuration of the DDC control system in its entirety.

D. Table view or spread sheet style graphics shall be included for air handlers:
   a. The table view graphics page shall summarize the air handlers in the building by looking at a single graphics page.
   b. Summarized information for each air handler shall include:
      1. Air Handler/RTU number
      2. Occupancy state
      3. Fan Status
      4. % Heating or Cooling load of the Air Handler
      5. High space Temp
      6. Low Space Temp
      7. Duct Static Pressure
      8. Discharge Temperature
      9. Total Daily Runtime (resets at midnight)
      10. Optimum Start Runtime (shows daily start time required)
   c. The above data will be used for continuous commissioning purposes and energy management.

E. All graphics of air handlers, chillers, and boiler systems shall include daily equipment runtime values that reset each midnight.

F. Runtimes of all evaporative coolers, rooftop units, make-up air units and exhaust fans, shall be logged at the host computer. The ATC contractor shall provide runtime reports to enable monitoring of the building's performance.

G. Table view or spread sheet style graphics shall be included for all VAV boxes:
   a. Summarized information for each unit shall include:
      1. Room Number/VAV box number
      2. Occupancy state
      3. KBTU
      4. KBTU per square foot
      5. Space Temp
      6. Space Set Point
      7. CFM Set Point
      8. CFM Flow
      9. Discharge Temperature
      10. Total Daily Runtime (resets at midnight)
      11. Optimum Start Runtime (shows daily start time required)
   b. The above data will be used for continuous commissioning purposes and energy management.

BUILDING DDC SYSTEM INPUT/OUTPUT POINT SUMMARY:

The ATC contractor shall furnish and install all DDC controllers, sensors, interface relays, wiring and other field accessories for the DDC system to provide for implementation of the above sequences of operation and including the input-output points listed below. All points shall be displayed on password-protected graphic screens on both the existing District host computer and the man-machine interface or Host computer located in the Main Custodial office.

DIGITAL OUTPUTS:

LIGHTING CONTROL	ON/OFF
SUPPLY FAN	START-STOP
110° F CULINARY SYSTEM	ENABLE-DISABLE
HEATING UNITS (each heater)	ENABLE-DISABLE
TOILET ROOMS EXHAUST FANS (each fan)	START-STOP
PACKAGED ROOFTOP UNITS	START-STOP
AIR TURNOVER UNIT	START-STOP
EVAPORATIVE COOLERS	START-STOP
MAKE-UP AIR UNIT	START-STOP
FUTURE USE BY OWNER (6 outputs)	

DIGITAL INPUTS:

DOMESTIC WATER FLOW SECURITY SENSOR	STATUS
BUILDING FIRE ALARM SYSTEM	STATUS
SMOKE DETECTORS (each individual detector)	STATUS
LOW LIMIT THERMOSTAT	STATUS
SUPPLY DUCT HIGH STATIC	STATUS
OVERRIDE TIMERS	STATUS
DOMESTIC WATER METERS	STATUS
BUILDING POWER CONSUMPTION (each power meter)	PULSE
FUTURE USE BY OWNER (4 inputs)	

ANALOG INPUTS:

CULINARY 120° F STORAGE TANK	TEMP
SUPPLY AIR (EACH ROOFTOP & AIR HANDLING UNIT)	TEMP
FAN SYSTEM SPACE	TEMP
UNITARY HEATERS	SPACE TEMP
MIXED AIR (EACH ROOFTOP UNIT)	TEMP
RETURN AIR (EACH ROOFTOP UNIT)	TEMP
FAN SYSTEM CO2 SENSORS (EACH ROOFTOP & AIR HANDLING UNIT)	PPM
BUILDING STATIC	PRESS
SUPPLY DUCT STATIC (EACH ROOFTOP & AIR HANDLING UNIT)	PRESS
FUTURE USE BY OWNER (4 INPUTS)	

ANALOG OUTPUTS:

SUPPLY FAN SPEED	0-10 VDC OR PWM
FUTURE USE BY OWNER (4 OUTPOUTS)	0-10 VDC OR PWM

END OF SECTION 25 1000

COMcheck Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code: 2021 IECC
Project Title: CCHS Fieldhouse and Soccer Field - ALTERNATE BID
Project Type: New Construction

Construction Site:
12943 South 700 East
Draper, Utah 84020

Owner/Agent:

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Common Space Types:Classroom/Lecture/Training	320	0.71	227
2-Common Space Types:Corridor/Transition <8 ft wide	2500	0.71	1775
3-Gymnasium/Fitness Center:Exercise Area	35000	0.90	31500
4-Common Space Types:Restrooms	1300	0.63	819
5-Common Space Types:Office - Enclosed	2800	0.74	2072
6-Common Space Types:Office - Open Plan	3700	0.61	2257
7-Common Space Types:Storage >=50 - <=1000 sq.ft.	800	0.38	304
		Total Allowed Watts =	38954

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Common Space Types:Classroom/Lecture/Training				
LED: B33: LED Panel 19W:	1	6	31	186
2-Common Space Types:Corridor/Transition <8 ft wide				
LED 2X2 PANEL: B33: LED Panel 19W:	1	15	31	465
LED: A44: LED Panel 19W:	1	16	48	768
3-Gymnasium/Fitness Center:Exercise Area				
LED: HB1: LED Panel 19W:	1	63	271	17073
LED: SL2C: LED Linear 8W:	1	4	30	120
LED: A75: LED Panel 19W:	1	45	48	2160
4-Common Space Types:Restrooms				
LED STRIP, 8': L8H100: LED Linear 8W:	1	2	75	150
LED, STRIP 4': L4H100: LED Linear 8W:	1	14	38	532
LED DOWNLIGHT, WET RATED: S7R: LED A Lamp 2.5W:	1	2	14	28
LED: SL2C: LED Linear 8W:	1	3	30	90
5-Common Space Types:Office - Enclosed				
LED: A44: LED Panel 19W:	1	30	48	1440

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
LED: SL2: LED Linear 8W:	1	3	30	90
LED: L2RM: LED Linear 8W:	1	1	84	84
LED: D4A: LED A Lamp 2.5W:	1	15	10	150
6-Common Space Types:Office - Open Plan				
LED: LED Panel 19W:	1	42	31	1302
LED: LED A Lamp 2.5W:	1	30	10	300
LED: LED Linear 8W:	1	3	50	150
7-Common Space Types:Storage >=50 - <=1000 sq.ft.				
LED: SL2C: LED Linear 8W:	1	8	30	240
			Total Proposed Watts =	25328

Interior Lighting PASSES: Design 35% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

COM*check* Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	CCHS Fieldhouse and Soccer Field - ALTERNATE BID
Project Type:	New Construction
Exterior Lighting Zone	3 (Other (LZ3))

Construction Site:
12943 South 700 East
Draper, Utah 84020

Owner/Agent:

Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Walkway < 10 feet wide	825 ft of	0.6	Yes	495
			Total Tradable Watts (a) =	495
			Total Allowed Watts =	828
			Total Allowed Supplemental Watts (b) =	500

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Walkway < 10 feet wide (825 ft of walkway length): Tradable Wattage				
LED: OW1: WALL PACK: LED A Lamp 2.5W:	1	16	49	784
Emergency services, loading area (950 ft2): Non-tradable Wattage				
			Total Tradable Proposed Watts =	784

Exterior Lighting PASSES: Design 21% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title | Signature | Date

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 38.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3.1 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.2 [EL19][1]	Occupancy sensors control function in warehouses: In warehouses, the lighting in aisleways and open areas is controlled with occupant sensors that automatically reduce lighting power by 50% or more within 20 minutes of when the areas are unoccupied. The occupant sensors control lighting in each aisleway independently and do not control lighting beyond the aisleway being controlled by the sensor. Lights not turned off by occupant sensors is done so by time-switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1.3 [EL20][1]	Occupant sensor control function in open plan office areas: Occupant sensor controls in open office spaces >= 300 sq.ft. have controls 1) configured so that general lighting can be controlled separately in control zones with floor areas <= 600 sq.ft. within the space, 2) general lighting in each zone permitted to turn on upon occupancy in control zone, 3) automatically turn off general lighting in all control zones within 20 minutes after all occupants have left the space, 4) are configured so that general lighting power in each control zone is reduced by >= 80% of the full zone general lighting power within 20 minutes of all occupants leaving that control zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.2, C405.2.2.1 [EL21][2]	Each area not served by occupancy sensors (per C405.2.1.1) have time-switch controls and functions detailed in sections C405.2.2.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.4, C405.2.4.1, C405.2.4.2 [EL23][2]	Daylight zones provided with individual controls that control the lights independent of general area lighting. See code section C405.2.3 Daylight-responsive controls for applicable spaces, C405.2.3.1 Daylight responsive control function and section C405.2.3.2 Sidelit zone.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.5 [EL27][1]	Additional interior lighting power allowed for special functions per the approved lighting plans and is automatically controlled and separated from general lighting.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.7 [EL28][1]	Automatic lighting controls for exterior lighting installed. Controls will be daylight controlled, set based on business operation time-of-day, or reduce connected lighting > 30%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.7 [EL26][2]	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.8 [EL27][2]	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.9.1, C405.9.2 [EL28][2]	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.10 [EL29][2]	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.1.1 [EL30][2]	At least 90% of dwelling unit permanently installed lighting shall have lamp efficacy >= 65 lm/W or luminaires with efficacy >= 45 lm/W or comply with C405.2.4 or C405.3.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C405.11, C405.11.1 [EL31][2]	50% of 15/20 amp receptacles installed in enclosed offices, conference rooms, copy rooms, break rooms, classrooms and workstations and > 25% of branch circuit feeders for modular furniture will have automatic receptacle control in accordance with C405.11.1.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.2 [FI17][3]	Furnished O&M instructions for systems and equipment to the building owner or designated representative.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.5.1 [FI19][1]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Exterior Lighting fixture schedule for values.*
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.5 [FI16][3]	Furnished as-built drawings for electric power systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

COM*check* Software Version COMcheckWeb

Interior Lighting Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	CCHS Fieldhouse and Soccer Field
Project Type:	New Construction

Construction Site:
12943 South 700 East
Draper, Utah 84020

Owner/Agent:

Designer/Contractor:

Additional Efficiency Package(s)

Credits: 10.0 Required 0.0 Proposed

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft2)	C Allowed Watts / ft2	D Allowed Watts
1-Gymnasium/Fitness Center:Exercise Area	35800	0.90	32220
2-Common Space Types:Corridor/Transition <8 ft wide	650	0.71	462
3-Common Space Types:Classroom/Lecture/Training	320	0.71	227
4-Common Space Types:Restrooms	1100	0.63	693
		Total Allowed Watts =	33602

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
1-Gymnasium/Fitness Center:Exercise Area				
LED: HB1: LED Panel 19W:	1	81	271	21951
LED: SL2C: LED Linear 8W:	1	4	30	120
2-Common Space Types:Corridor/Transition <8 ft wide				
LED 2X2 PANEL: B33: LED Panel 19W:	1	15	31	465
3-Common Space Types:Classroom/Lecture/Training				
LED: B33: LED Panel 19W:	1	6	31	186
4-Common Space Types:Restrooms				
LED STRIP, 8': L8H100: LED Linear 8W:	1	2	75	150
LED, STRIP 4': L4H100: LED Linear 8W:	1	11	38	418
LED DOWNLIGHT, WET RATED: S7R: LED A Lamp 2.5W:	1	1	14	14
LED: SL2C: LED Linear 8W:	1	3	30	90
			Total Proposed Watts =	23394

Interior Lighting PASSES: Design 30% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable

mandatory requirements listed in the Inspection Checklist.

Name - Title	Signature	Date

COM*check* Software Version COMcheckWeb

Exterior Lighting Compliance Certificate

Project Information

Energy Code:	2021 IECC
Project Title:	CCHS Fieldhouse and Soccer Field
Project Type:	New Construction
Exterior Lighting Zone	3 (Other (LZ3))

Construction Site:
12943 South 700 East
Draper, Utah 84020

Owner/Agent:

Designer/Contractor:

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts /	D Tradable Wattage	E Allowed Watts (B X C)
Exterior walls (Walkway < 10 feet wide)	825 ft of	0.6	Yes	495
			Total Tradable Watts (a) =	495
			Total Allowed Watts =	602
			Total Allowed Supplemental Watts (b) =	500

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.
(b) A supplemental allowance equal to 500 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixture	D Fixture Watt.	E (C X D)
Exterior walls (Walkway < 10 feet wide, 825 ft of walkway length): Tradable Wattage				
LED: OW1: WALL PACK: LED A Lamp 2.5W:	1	16	49	784
Illuminated area of facade wall or surface (950 ft2): Non-tradable Wattage				
			Total Tradable Proposed Watts =	784

Exterior Lighting PASSES: Design 21% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 2021 IECC requirements in COM*check* Version COMcheckWeb and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Name - Title _____ Signature _____ Date _____

Inspection Checklist

Energy Code: 2021 IECC

Requirements: 38.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR4][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the interior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include interior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C103.2 [PR8][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and document where exceptions to the standard are claimed. Information provided should include exterior lighting power calculations, wattage of bulbs and ballasts, transformers and control devices.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.2.3.1 [EL22][1]	Spaces required to have light-reduction controls have a manual control that allows the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern >= 50 percent.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C405.2.1, C405.2.1.1 [EL18][1]	Occupancy sensors installed in classrooms/lecture/training rooms, conference/meeting/multipurpose rooms, copy/print rooms, lounges/breakrooms, enclosed offices, open plan office areas, restrooms, storage rooms, locker rooms, corridors, warehouse storage areas, and other spaces <= 300 sqft that are enclosed by floor-to-ceiling height partitions. Reference section language C405.2.1.2 for control function in warehouses and section C405.2.1.3 for open plan office spaces.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
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Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
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C405.5.1 [FI19][1]	Exterior lighting power is consistent with what is shown on the approved lighting plans, demonstrating proposed watts are less than or equal to allowed watts.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Exterior Lighting fixture schedule for values.*
C408.1.1 [FI57][1]	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
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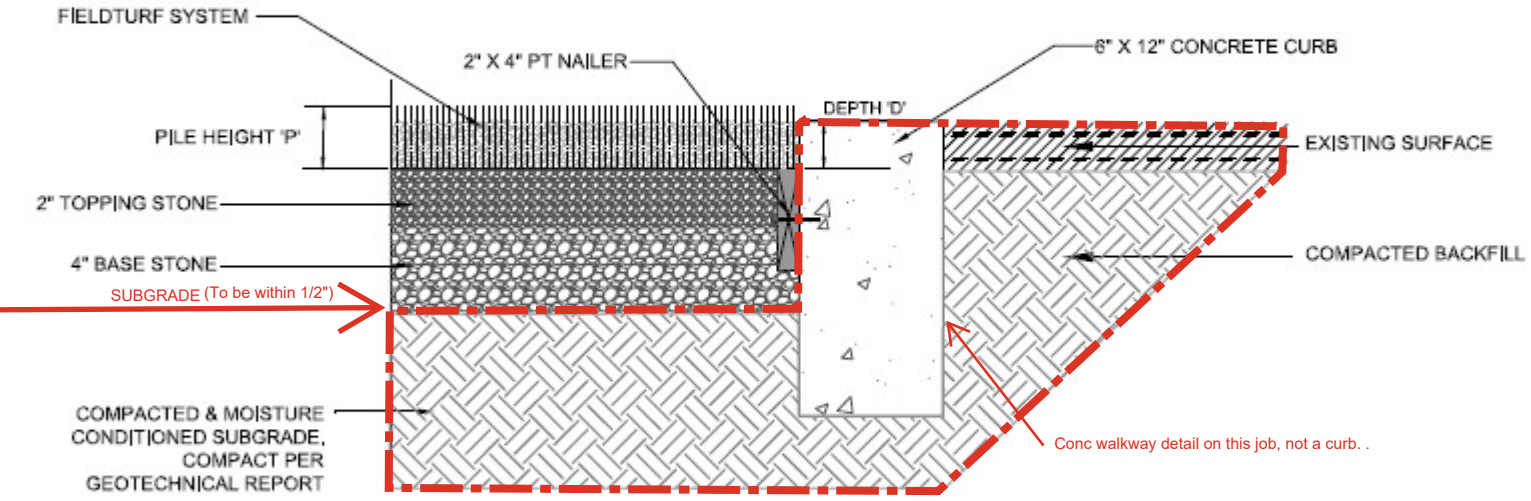
C408.3 [FI33][1]	Lighting systems have been tested to ensure proper calibration, adjustment, programming, and operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

NAILER DEPTH:

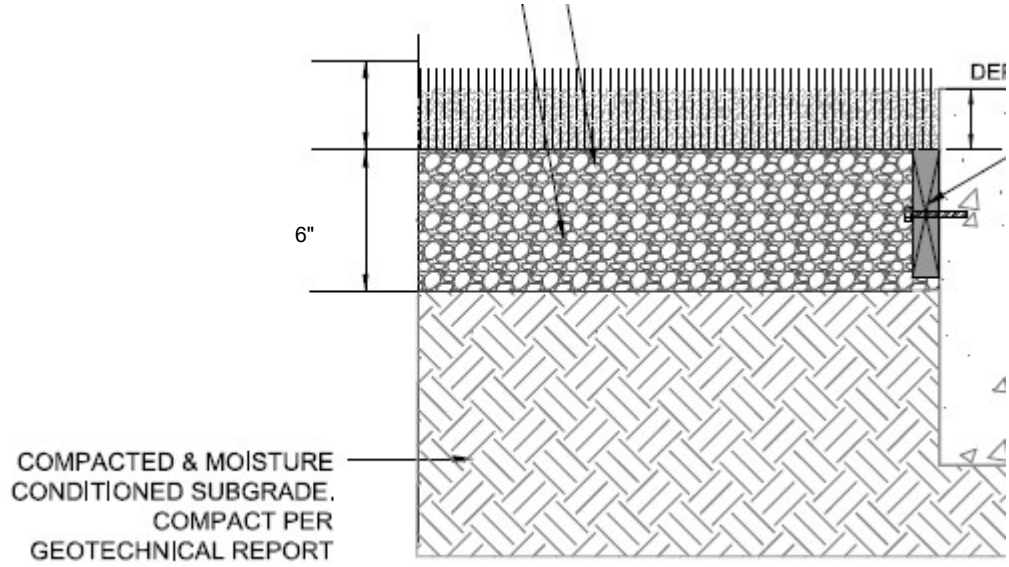
PILE HEIGHT 'P'	DEPTH 'D'
2-1/2"	1-5/8"
2-1/4"	1-3/8"
2"	1-1/8"



SYNTHETIC TURF EDGE DETAIL - 6" x 12" CURB

SCALE: NTS

OUTDOOR TURF PROFILE



NAILER DEPTH:

PILE HEIGHT 'P	DEPTH 'D'
2-1/2"	1-5/8"
2-1/4"	1-3/8"
2"	1-1/8"

INDOOR TURF PROFILE

CCHS Fieldhouse Pre-Bid Questions

#	Date	A/E TEAM	QUESTION	RESPONSE
1	10/1/24	ARCHITECTURAL	Question: I have been reviewing section 10 1200 for the display cases and I am getting some conflicting information and questions. Spec says 3/16" Rolling Glass Doors, The print page A985 says 5/8" Pivot Doors. We propose to use ¼" tempered glass rolling doors. Spec says ¼" Glass shelves, The print page A985 says ½' Glass shelves. We propose to use 3/8" tempered glass s they do not warp over time. The glass shelves are about 20" deep, which is deeper than our shelf brackets can handle. We propose to use steel cables instead of wall mounted brackets. I know the spec says in 101200 Section 2.1 "or comparable" . Would these changes qualify as comparable? Do we need to get the architect to adjust the spec or drawing so that they are more clear on what they want?	The specification is accurate, please follow spec. If a product is comparable it will be reviewed in the submittal process.
2	10/1/24	ARCHITECTURAL	Question: The finish schedule needs to be updated from 3' tile to rolls for the Mondo Sport Impact, F2. Can we have that change made?	F2 has been updated to reflect this change. See Revised Sheets A802, A980
3	10/1/24	MECHANICAL	Question: We noticed that there is no Specification for Automated Temperature Controls, will this be needed?	See provided spec.
4	10/1/24	ARCHITECTURAL	Question: We cannot find the locations for roller shades in the drawings, can you let us know where they are to be located.	Roller shades will be provided on all exterior window systems, see updated drawings indicating locations.
5	10/1/24	ARCHITECTURAL	Question: Will there be a signage schedule providing locations besides sheet A004 ADA signage?	Yes, See Revised sheet A601, A801, A960, A980
6	10/2/24	ARCHITECTURAL	Question: Specifications are calling for 2" thick insulated panels, but details such as those found on A540 seem to indicate a 2 ½" thick insulated panel. Please clarify Insulated Panel thickness requirements for project.	2" Spec drives this requirement.
7	10/2/24	ARCHITECTURAL	Question: Specifications are calling for 36" wide insulated panels which is a standard size for the Metal-Span panels being specified. However, the elevations on A201 & A202 are calling for an 18" vertical joint for the SF Striated panels and an 8" lap for the CF Mesa panels. The smallest width the Striated panels are manufactured in is 24" and the smallest width the Mesa panels are manufactured in is 30" neither of which are standard widths and although available, would be more expensive than the standard 36" wide panels. I'm not familiar with any IMP panels that are 18" or 8" in width. Please advise.	The 36" standard panels per spec are the correct panel.
8	10/2/24	ARCHITECTURAL	Question: The "EM-2" panels on A201 & A202 have the notation "horizontal lap siding" for the CF Mesa. Is the intent to have these panels installed horizontally so the mesa lines are horizontal? It appears that these panels are only installed in three 'popout' locations on the building, but I can't see any details on the 'popout' framing. Is this framing to be steel stud? Or provided by the PEMB manufacturer? Could a detail be provided on these 'popouts' with included dimensions?	Yes, install in a horizontal pattern.

CCHS Fieldhouse Pre-Bid Questions

9	**10/2/24**	ARCHITECTURAL	Question: Could the weight be provided for the owner furnished scoreboard so the PEMB can be designed to support that loading?	Yes, See attached Cut Sheets for owner provided scoreboard.
10	**10/2/24**	ARCHITECTURAL	Question: It appears that logos and signage called out as keynote 4.51 will be something such as a vinyl wrap that will not impose additional significant weight upon the structure. If this assumption is incorrect, could the weights of that signage be provided so the PEMB can be designed to support it?	These are applied graphics, see attached specification.
11	**10/2/24**	STRUCTURAL	Question: The structural design criteria indicates the structure is to be designed with a 10 PSF collateral load. The turf field includes underhung netting /batting cage netting suspended from the structure. Is the 10 PSF collateral load sufficient for the underhung netting? Or does the structure need to be designed to support the weight of the netting in addition to the 10 PSF collateral load? If so, could the weight of the netting be provided so the PEMB can be designed to support those additional loads	The netting and other items listed under plan notes E and F on sheet S103 are not included in the 10 psf collateral load. The PEMB designer may, after award, coordinate all applicable elements with general contractor and, if applicable, request a reduction in weight if it is determined the 10 psf is excessively high.
12	**10/2/24**	STRUCTURAL / ARCHITECTURAL	Question: The drawings indicate that the parapets are framed with structural C-channel with steel stud infill. Detail C5 & C6 on A540 has callouts to see the structural drawings for more information, however I don't see anything in the structural drawings relating to the parapets. Is there any reason these parapets are not being framed by the PEMB manufacturer with PEMB stub columns and girts in lieu of the steel channel and steel stud framing? Putting the parapet framing in the scope of the PEMB I imagine would be the most economical way to frame these parapets. Is it acceptable to have the PEMB manufacture design and provide the framing for the building's parapets?	The PEMB is responsible for the parapet framing.
13	**10/2/24**	ARCHITECTURAL	Question: Plan keynote 9.36 states "Aluminum Z Girt Framing". I'm not sure any manufacturer makes their girts from aluminum. These are typically either primed steel Z girts, or for an additional cost galvanized steel Z girts. Please clarify the desired girt type.	Z Girt Framing is to be steel. Primed or galvanized is acceptable.
14	**10/2/24**	STRUCTURAL	Question: The PEMB specifications include verbiage about FM global and wind uplift requirements for roof panel assemblies, however no roof panels are being provided. I would assume that these parts of the specifications are not applicable to this project.	This should apply to all metal roof panels, decking, or other component materials as noted in the specifications.
15	**10/2/24**	STRUCTURAL	Question: All steel deck info in structural drawings appears to be only applicable to the floor decking. What are the project requirements for the PEMB provided roof decking such as gage, finish, etc.?	The minimum deck gage and profile will be determined based on design load criteria. CRCE defers to CORE for finish and other criteria.
16	**10/3/24**	ARCHITECTURAL	Question: Will a specification for the exterior bleachers be provided or are they OPOI as well?	Bleachers are NIC.
17	**10/3/24**	ELECTRICAL	Question: On sheet E602 the panel schedules are missing for CT/MS, MDPH, and MDPL. Will this be updated or provided?	After Reviewing the Construction Documents, it is confirmed that panel schedules for CT/MS, MDPH, and MDPL are present. It is unclear what is needed.
18	**10/3/24**	ELECTRICAL	Question: looking at panel 1L4, (going off of the one-line) I think it needs to be a two section, 225A panel, not a one section 150A. Please advise?	Panel 1L4 has a total connected load of less than 40A (see panel schedule on E602) A 150A panel is sufficient. There is plenty of capacity for additional circuits – a second section is not needed. Keynote X7 on Sheet E501 notes that the wire size has been upsized due to voltage drop for the length of the conduit to the panel.

CCHS Fieldhouse Pre-Bid Questions

19	**10/4/24**	CIVIL	Question: Are drainage plans available to show under artificial turf system. These are not shown in any of the current civil drawings.	Not a this time.
20	**10/8/24**	ARCHITECTURAL	Question: Article 2.3.A.1.a calls for 48"H frames. Article 2.3.A.1.b calls for 72"H frames with a manufacturer's base. The typical base height for welded frames is 4". That puts the top of the double-tier frames at nominally 76"H not including the sloped tops. Detail E3 on plan sheet A550 looks to show the locker base height at 14". That puts the top of the single-tier frames at nominally 62"H. The difference in frame heights will not allow a continuous run of sloped tops but will instead have 2 runs at different heights. Is this acceptable? Additionally, the frame depth in Detail E3 looks to be shown as 18". Detail A4 on plan sheet A812 looks to show 60"H double-tier frames. Can you please confirm the required heights and depths of the frames?	Locker tops do not need to be aligned.
21	**10/8/24**	ELECTRICAL	Question: ON SCHEET E201 AND E202 THERE IS A LIGHT FIXTURE TYPE "OWS1" THAT IS SHOWN ON THE PLANS BUT IT IS OMITED ON THE LIGHT FIXTURE SCHEDULE. NEED CLARIFICATION AND MANUFACTURE SPECS FOR THAT FIXTURE.	Looks like there is a typo on the Schedule on E002. OW1 was meant to be OWS1, please have them use the information provided for OW1 on the schedule.
22	**10/8/24**	ELECTRICAL	Question: This project lists numerous 1G down-link/1G up-link Netgear switches under the A/V section. Are these A/V switches tied into the district network via fiber optics? If so, we will also need to include optics, and the structured wiring sub-contractor will need to run fiber during the build-out instead of copper.	No, the AV switches are not tied to the district network.
23	**10/9/24**	ARCHITECTURAL	Question: Page A201 shows what appears to be 3 pairs of store front doors. Page A202 shows what appears to be 2 more pairs of store front doors. The door schedule lists 1 pair of store front doors. Please provide some clarification.	See floor plans, elevations and door schedule for locations, quantities and types. See door types for type of style of door as called out.
24	**10/14/24**	CIVIL	Question: How thick is the concrete underneath the bleachers on sheet CS232.	See updated Civil Drawings in Addendum 6.
25	**10/14/24**	CIVIL	Question: Is the earthwork scope to include any material under the turf? (sand, roadbase) There is no detail provided for the turf Installation. Please advise.	Earthwork is responsible for all subgrade at soccer field, owner provided field turf will provide final road base, grading and under drain system.
26	**10/14/24**	CIVIL	Question: There are two valves on the fire hydrant line on sheet CU301. Typically we only see one valve. Can you confirm that 2 valves is necessary?	Valving requirements per Draper City standards.
27	**10/14/24**	ARCHITECTURAL	Question: There is no detail for the turf inside the field house. Will there be a concrete slab underneath or something else? Please advise.	General Contractor is responsible for all subgrade at indoor field, owner provided field turf will provide final road base and grading.
28	**10/15/24**	ELECTRICAL	Question: please clarify fiber type (multimode or singlemode) and strands count. Also is there a site plan showing Press Box location?	Manufacturer (Daktronics) to provide and pull fiber for the scoreboard from the pressbox. No, there aren't any site plans showing the current location of the press box but here is a snapshot of google earth with it's approximate location circled.
29	**10/15/24**	ELECTRICAL	Question: Will there be a requirement for overhead ladder rack in the TDR Room?	Yes. Provide Overhead Rack. See Spec update for details
30	**10/15/24**	ELECTRICAL	Question: Is the A/V contractor responsible for providing and installation 4-post rack shown on plan sheet # E302 (Alt #1)?	A/V contractor is only responsible for Rack R3 shown on the upper floor for Alt 1.

CCHS Fieldhouse Pre-Bid Questions

31	**10/15/24**	ARCHITECTURAL	Question: Does aluminum door type B #101F, for the exterior entrance to vestibule 101, need to be a thermal aluminum door to meet the overall U-Factor requirements of .63 for the 2021 IECC?	Yes, exterior aluminum doors need to be insulated systems.
32	**10/15/24**	ARCHITECTURAL	Question: Batting Tunnels: - Spec Section 11 6833.33 – 2 Calls out the tunnel dimensions at 13'H x 14'W x 75'L. Please confirm whether to cost as the Drawing Shows (at 66.5'L x 20'W x 13'H) OR Spec Dimensioned (75'L x 14'W x 13'H)	Batting Tunnels will be sized per the spec (75'L x 14'W x 13'H)
33				

DAKTRONICS ORDER AGREEMENT # 828370-1-4

Canyons School District
Accounts Payable
9361 S 300 E
Sandy, UT USA 84070
Phone: (801)826-5348
Fax:
Email:

10/Sep/2024
Valid for: 90 days
Terms: AGREEMENT
Subject to Credit Review
FCA: DESTINATION
Delivery: Call for Production Time

Reference: Corner Canyon High School - Stadium Video - State of Utah Contract MA3352
Payment Terms: ACPT – Acceptance, Net 30 days from shipment

Item No.	Model	Description	Qty	Price
1	**LVX-3000-400X720-10SMD-FP-25.0, 13.2' x 0.7' Side Borders**	**Daktronics Live Video Display** Matrix: 400 lines by 720 columns Line Spacing: 10mm LED Color: RGB- - 281 Trillion Colors Cabinet Dimensions: 13' 2" H X 25' 0" W X 0' 11" D (Approx. Dimensions) Max Power: 19340 watts/display Weight: Unpackaged 3575 lbs per display; Packaged 4495 lbs per display	**1**	**$196,626.00**
	Daktronics System Installation Drawings >100	Attachment support system drawings	1	
	Daktronics System Electrical Drawings >100	Power and control system drawings	1	
	Daktronics System Certified Structural Drawings >100	Engineered stamped drawings for footing and beams	1	
	Control-1 video input (Primary Player & Processor Only) w/ Laptop	Standard Definition or High Definition (1080p); 1 video input	1	
	All Sport® Pro Kit	Hardware and Software bundle to control Video/Scoring Information with tablet	1	
	Outdoor Scoreboard Radio Communication (Transmitter)	Frequency of 2.4 GHz	1	
	All Sport® Pro Wireless Access Point	TP-Link Wireless Access Point	1	
	W-1489	Fiber Optic Cable; 50 µm Multimode; 6 Fiber with non-terminated ends	1000	
	FB-2036-W-PV-F	PanaView® Football Scoreboard; Scoreboard Color: Navy Blue 42111; Caption Color: White 7725-10 Cabinet Dimensions: 4' 0" H X 25' 0" W X 0' 8" D (Approx. Dimensions) Digit Type: PANAVIEW Digit Color: WHITE Weight: Packaged 600 lbs per display	1	
	TNMC_8x48_White LED (34mm)	8x48-34mm LED Team Name Message Center; Set of 2; White LED's	1	

		Digit Color: WHITE Weight: Unpackaged 120 lbs per display; Packaged 250 lbs per display			
	Radio Receiver	Frequency of 2.4 GHz		1	
	Stripe; FB-2036	Perimeter Border Stripe for FB-2036 Scoreboard; Color: Satin Aluminum 7725-120		1	
	12VDC Trumpet Horn w/Power Supply	For Outdoor Scoreboards		1	
	I-Beam Mounting Method (A)	For 2 I-Beams		1	
	Outdoor Non-Backlit 2' 0" x 25' 0" Horizontal	Ad Panel, Above or Below Display Cabinet Dimensions: 2' 0" H X 25' 0" W X 0' 8" D Weight: Packaged 160 lbs per display		1	
	TI-2003-R-PV for Delay of Game	Outdoor PanaView® Delay of Game Timer; Set of 2; Scoreboard Color: Black 8800 Cabinet Dimensions: 3' 0" H X 4' 0" W X 0' 8" D (Approx. Dimensions) Digit Type: PANAVIEW Digit Color: RED Max Power: 150 watts/display Weight: Unpackaged 65 lbs per display; Packaged 120 lbs per display		1	
	Radio Receiver	Frequency of 2.4 GHz		2	
	I-Beam Mounting Method (A)	For 2 I-Beams		1	
	System Startup	Final Commissioning of Equipment		1	
2	**DA-1000-25 with Non-Backlit Lettering and Screen Backing**	**Sq Truss; Alum, 3ft tall x 25ft long w/ 50% Non-Backlit Lettering/Logo & Screen Backing.** Cabinet Dimensions: 3' 0" H X 25' 0" W X 0' 3" D (Approx. Dimensions) Weight: Unpackaged 315 lbs per display; Packaged 625 lbs per display		**1**	**$7,610.00**
3	**FREIGHT**	**Shipping to site via 2 Independent Carriers (flatbed trailer). Crane or telehandler required for unloading. Customer is responsible for receiving & unloading truck upon delivery.**		**1**	**$6,585.00**
Services					
4	**P2G5 - 2 Year Platinum, Additional 3 Years Gold Extended Service for a total of 5 Years for 828370-1-3 Main Equipment**	**2 Year Parts and On-Site Labor, Additional 3 Years Parts for a total of 5 Years of Daktronics Coverage**		**1**	**$8,450.00**
	Standard Video with SCS One-on-One Webinar Training			1	
	Custom RTD Frames -- Single Logo Background	Custom Logo RTD Frames. 1-3 RTD Frames		1	

Team Spirit Vol.1 Animations Starter Package	Personalized Package - Your School Colors, Mascot/Logo - 20 Pre-Selected Popular/Essential Animations Included	1
Team Spirit Vol.1 Animations Pick 20 Sponsor Package	Personalized Package - Pick 20 Animations from any Team Spirit Animations. Intended to further fulfill sponsor features and sponsor logos.	1
FrameWrx Creator Package, 1 year subscription	Cloud-based content tool subscription renewed/billed annually. Access for 2 Content Administrators. ADMINISTRATORS OF ACCOUNT REQUIRED.	1

Total Price Excluding Applicable Tax:	**$219,271.00**

Please reference listed sales literature: DD1696958 for TNMC_8x48_White LED (34mm), DD1757027 for TI-2003-R-PV for Delay of Game, DD1923154 for Control-1 video input (Primary Player & Processor Only) w/ Laptop, DD2563729 for Custom RTD Frames -- Single Logo Background, DD4757173 for FB-2036-W-PV-F, DD5296700 for LVX-3000-400X720-10SMD-FP-25.0, 13.2' x 0.7' Side Borders, SL-04370 for Outdoor Scoreboard Radio Communication (Transmitter), SL-04370 for Radio Receiver, SL-08027 for DA-1000-25 with Non-Backlit Lettering and Screen Backing

Please reference listed shop drawings: DWG-05278970 for LVX-3000-400X720-10SMD-FP-25.0, 13.2' x 0.7' Side Borders

DAKTRONICS ORDER AGREEMENT # 828370-1-4

Exclusions:

- **Physical/Mechanical Installation**
- **Foundation**
- **Hoist**
- **Signal Conduit**
- **Applicable Permits**
- **Electrical Switch Gear or Distribution Equipment**
- **Structure**
- **Power**
- **Engineering Certification**
- **Labor to Pull Signal Cable**
- **Taxes**
- **Front End Equipment**

Unless expressly stated otherwise in this Order Agreement # 828370-1 Rev 4 or the attachments, if Daktronics performs installation of the Equipment, the price quoted does not include the following services pertaining to physical installations: digging of footings (including dirt removal), any materials fabrication, installation of steel cages, rebar, or bolt attachments, or pouring and finishing of concrete footings. Those service may be provided for an additional cost beyond the quoted price. Purchaser shall be fully responsible for any and all additional costs plus overhead in the event anything unexpected of any nature whatsoever is found while digging the footings including but are not limited to rock, water, utility lines, pipes or any other unforeseen circumstance. The Purchaser acknowledges and agrees that it is fully responsible for all site conditions.

Prices and charges are subject to change by Daktronics at any time before the final agreement between the parties is effective. Ship Date will be determined after customer purchase order is received or agreement is signed or otherwise effective, shop drawings are approved (if required) and down payment is received (if required).

Installation Responsibilities:

If applicable please reference Attachment A for Installation Responsibilities.

Ad/ID Copy Approval Process

Customer shall provide digital artwork for advertising and identification panels, conforming to Daktronics' graphic file standards, at the time of order. Daktronics will create a proof of provided artwork and require approval of that proof three weeks prior to the initial anticipated ship date. Advertising and identification panels not approved in time, will be shipped without copy in Daktronics' standard finish.

Ty Torgerson
PHONE: 605-692-0200 x 58024
FAX:
EMAIL: Ty.Torgerson@daktronics.com

Alex Ciszewski
PHONE:
FAX:
EMAIL: Alex.Ciszewski@daktronics.com

Terms And Conditions:

The Terms and Conditions which apply to this order available on request.

Limited Warranty and Extended Service Terms and Conditions	(www.daktronics.com/DD5459759)
SL-02375 Standard Terms and Conditions of Sale	(www.daktronics.com/terms_conditions/SL-02375.pdf)
SL-07862 Software License Agreement	(www.daktronics.com/terms_conditions/SL-07862.pdf)
Additional Links:	
Gold Scope of Services	(www.daktronics.com/TermsConditions/SL-05659)
Platinum Scope of Services	(www.daktronics.com/Web%20Documents/Services/SL-04703.pdf)
Team Spirit Animation Packages	(https://daktronics.widen.net/s/fdxxhmk9l8/flyer_team-spirit-animation-package-option)

Acceptance:

The parties acknowledge and agree that the agreement (the "Agreement") is comprised of the terms and conditions contained within this order agreement and any attachments thereto, along with the documents at the website addresses above. Purchaser hereby agrees to purchase the equipment as defined in the Agreement. Purchaser acknowledges having had the opportunity and means to review the Agreement. The Agreement represents the entire agreement of the parties and supersede any previous understanding or agreement. The Undersigned has actual authority to execute this document and Daktronics is relying on such authority. Purchaser acknowledges and agrees to the above, as evidenced by its attestation below.

Customer Signature _____ Date _____

Print Name _____ Title _____

DAKTRONICS FB-2036 PRODUCT SPECIFICATIONS

This outdoor LED football scoreboard displays period time to 99:59, HOME and GUEST scores to 99, T.O.L. (time outs left) to nine, and DOWN/TO GO/BALL ON/QTR (quarter) information. Arrows indicate possession. When period time is less than one minute, the scoreboard displays time to 1/10 of a second. Scoreboard shown with optional striping and amber PanaView® digits.

		VINYL CAPTIONS (STANDARD)	TNMCS & VINYL CAPTIONS	BACKLIT CAPTIONS
POWER (120 VAC)*	Red/Amber Digits	190 Watts, 1.6 Amps	290 Watts, 2.4 Amps	410 Watts, 3.4 Amps
	White Digits	400 Watts, 3.3 Amps	630 Watts, 5.3 Amps	620 Watts, 5.2 Amps
UNCRATED WEIGHT		400 lb (181 kg)	520 lb (236 kg)	584 lb (265 kg)
DIMENSIONS		4'-0" H x 25'-0" W x 8" D (1.22 m, 7.62 m, 203 mm)		

**Scoreboard requires a dedicated circuit. Models with 240 VAC power at half the indicated amperage are also offered (International Use Only).*

DIGITS & INDICATORS

- Clock and score digits are 18" (457 mm) high. All other digits are 15" (381 mm) high.
- Select red, amber, or white LED digits and indicators. Scoreboard may instead have mixed LED digit colors (see DD1965467).
- Scoreboard features robust weather-sealed digits (see DD2495646).
- Digits may be dimmed for night viewing.

DISPLAY COLOR

Choose from 150+ colors (from Martin Senour® paint book) at no additional cost.

OPERATING TEMPERATURES

- Display: -22° to 122° Fahrenheit (-30° to 50° Celsius)
- Console: 32° to 130° Fahrenheit (0° to 54° Celsius)

CAPTIONS

- HOME and GUEST captions are 15" (381 mm) high. All other captions are 8" (203 mm) high.
- Standard captions are vinyl, applied to the display face.
- Optional backlit captions consist of white letters on a black background. Team names are 14" (356 mm) high. All other captions are 8" (203 mm) high.
- Optional TNMCs are 10.6" (269 mm) high.

CONSTRUCTION

Alcoa aluminum alloy 5052 for excellent corrosion resistance

PRODUCT SAFETY APPROVAL

ETL-listed to UL 48, tested to CSA standards, and CE-labeled

WWW.DAKTRONICS.COM E-MAIL: SALES@DAKTRONICS.COM

201 Daktronics Drive, PO Box 5128, Brookings, SD 57006
Phone: 1-800-325-8766 or 605-692-0200 Fax: 605-697-4746

DAKTRONICS

DAKTRONICS FB-2036 PRODUCT SPECIFICATIONS

CONTROL CONSOLE	CONTROL OPTIONS
All Sport® 5000 (see SL-03991)	***Wired (standard):*** One-pair shielded cable of 22 AWG minimum is required. A cover plate with mounted connector and standard 2" x 4" x 2" (51 mm x 102 mm x 51 mm) outlet box is provided. Connector mates with signal cable from control console.
	Wireless (optional): 2.4 GHz spread spectrum radio features 64 non-interfering channels and 8 broadcast groups (see SL-04370).

SEGMENT TIMER MODE

The segment timer mode is ideal for keeping practices on schedule. The horn at the end of a segment allows coaches and athletes to focus on the practice and to listen for the horn when it is time to change drills (see SL-04004).

TIME OF DAY MODE

This scoreboard features a Time of Day (TOD) mode that allows it to act as a clock when the control console is unplugged or off. Refer to the scoreboard installation manual for instructions on how to enable the Time of Day mode.

MOUNTING

Scoreboard is typically mounted on two vertical beams or poles. Hardware to mount scoreboard on two beams is included; hardware for more beams is at additional cost. Standard mounting uses I-beam clamps. Optional mounting method using angle brackets is also offered; maximum beam width is 12" (305 mm) and maximum beam depth is 22" (559 mm). Refer to attached drawings for more information on mounting methods.

OPTIONS & ACCESSORIES

- Scoreboard border striping
- Multiple caption and striping colors (see DD2101644)
- Team name caption in place of HOME *
- Team names on changeable panels **
- Programmable Team Name Message Centers (see DD1696958)
- Backlit team name captions
- Backlit captions
- Lacrosse/field hockey and soccer captions on changeable panels
- LED colon
- Horn
- Individual digit protective screens (see SL-04939)
- Protective netting (see DD2690927)
- Optional angle bracket mounting method
- Advertising/identification panels
- Decorative accents
- Electronic message centers and video displays in multiple sizes

** Not available with TNMCs*
*** Not available with TNMCs or Backlit Team Names*

SERVICE ACCESS

Digit panels and electronics are serviced from the front of the scoreboard.

GENERAL INFORMATION

Scoreboard provides scoring capabilities for two teams. 100% solid state electronics are housed in an all aluminum cabinet. Scoreboard is shipped in one sections. Scoreboard power is to be provided on a dedicated circuit to prevent loss of game information due to failure of another component on the circuit. Specifications and pricing are subject to change without notice.

ADVERTISING/IDENTIFICATION PANELS

Backlit & Non-Backlit:

1'-6" H x 25'-0" W (457 mm, 7.62 m)
2'-0" H x 25'-0" W (610 mm, 7.62 m)
2'-6" H x 25'-0" W (762 mm, 7.62 m)
3'-0" H x 25'-0" W (914 mm, 7.62 m)
4'-0" H x 25'-0" W (1.22 m, 7.62 m)

For additional non-backlit panel sizes, see SL-03761.

FOR ADDITIONAL INFORMATION

- Installation Specifications: DWG-1183308 (attached)
- Standard I-beam Mounting: DWG-1052565 (attached)
- LVX I-Beam Mounting: DWG-3918361 (attached)
- Optional Pole Mounting: DWG-1048184 (attached)
- Component Locations: DWG-4773418 (attached)
- Architectural Specifications: See DD4757171

ALTERNATE CAPTIONS & SCORING MODES

Segment Timer Mode

Standalone Time of Day Mode

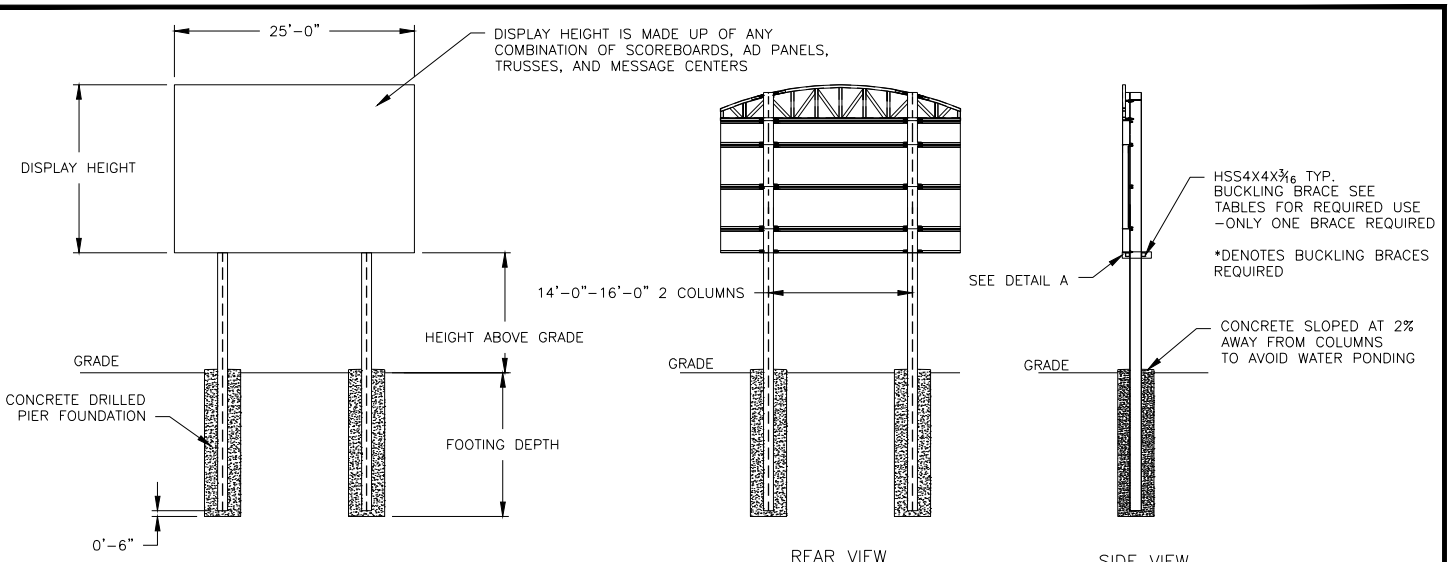
Football Mode –
vinyl and backlit captions shown

Football Mode –
Optional TNMCs shown

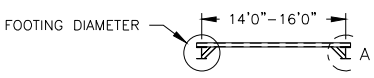
Soccer Mode –
vinyl and backlit captions shown

Lacrosse/Field Hockey Mode –
vinyl and backlit captions shown

DAKTRONICS



FRONT VIEW

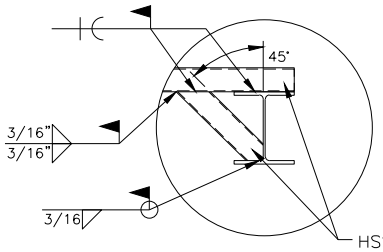


LAYOUT VIEW

COLUMNS & FOOTING ONLY

REAR VIEW

SIDE VIEW



DETAIL A

SCALE 1:32

TABLE A – MOUNTING

EXPOSURE B

HEIGHT ABOVE GRADE = 10'						HEIGHT ABOVE GRADE = 15'					
DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY				DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY			
		115 MPH	130 MPH	150 MPH	170 MPH			115 MPH	130 MPH	150 MPH	170 MPH
8	COLUMN FOOTING	W8X28 3.0'X8.0'	W8X31 3.0'X9.0'	W14X38 3.0'X10.0'	W12X40 3.0'X11.0'	8	COLUMN FOOTING	W10X39 3.0'X9.0'	W14X43 3.0'X10.0'	W10X49 3.0'X11.0'	W12X58 3.0'X12.0'
10	COLUMN FOOTING	W10X33 3.0'X9.0'	W10X39 3.0'X10.0'	W14X43 3.0'X11.0'	W12X53 3.0'X12.0'	10	COLUMN FOOTING	W10X45 3.0'X10.0'	W12X53 3.0'X11.0'	W12X58 4.0'X11.0'	W16X67 4.0'X13.5'
12	COLUMN FOOTING	W10X39 3.0'X10.0'	W14X43 3.0'X10.5'	W12X53 3.0'X12.0'	W14X61 4.0'X12.0'	12	COLUMN FOOTING	W12X53 3.0'X11.0'	W12X58 3.0'X12.0'	W12X72 3.0'X13.5'	W18X76 3.0'X13.5'
14	COLUMN FOOTING	W14X43 3.0'X10.5'	W12X53 3.0'X11.5'	W12X58 4.0'X11.5'	W16X67 4.0'X13.0'	14*	COLUMN FOOTING	W14X48 3.0'X11.5'	W18X55 3.0'X13.0'	W21X62 4.0'X13.0'	W24X68 4.0'X15.0'
16	COLUMN FOOTING	W12X53 3.0'X11.5'	W14X61 4.0'X11.0'	W12X72 4.0'X12.5'	W18X86 4.0'X14.5'	16*	COLUMN FOOTING	W21X48 4.0'X11.0'	W21X62 4.0'X12.0'	W21X68 4.0'X14.5'	W24X76 4.0'X17.0'
18*	COLUMN FOOTING	W16X40 3.0'X12.0'	W21X48 4.0'X12.0'	W21X55 4.0'X14.0'	W21X68 4.0'X16.0'	18*	COLUMN FOOTING	W21X55 4.0'X12.0'	W16X67 3.0'X16.0'	W18X76 4.0'X16.0'	W27X84 4.0'X18.5'
20*	COLUMN FOOTING	W14X48 3.0'X13.0'	W18X55 3.0'X15.0'	W21X62 4.0'X15.0'	W24X68 4.0'X18.0'	20*	COLUMN FOOTING	W21X62 4.0'X12.5'	W24X68 4.0'X14.5'	W24X84 4.0'X17.5'	W30X90 5.0'X17.5'

FOOTING DIMENSIONS = DIAMETER X DEPTH
* DENOTES ADDITIONAL BRACES REQUIRED AT THE MID HEIGHT OF DISPLAY

EXPOSURE C

HEIGHT ABOVE GRADE = 10'				HEIGHT ABOVE GRADE = 15'			
DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY		DISPLAY HEIGHT (FT)		DESIGN WIND VELOCITY	
		115 MPH	140 MPH			115 MPH	140 MPH
8	COLUMN FOOTING	W10X33 3.0'X9.5'	W12X40 3.0'X10.5'	8	COLUMN FOOTING	W14X43 3.0'X10.0'	W12X58 3.0'X12.0'
10	COLUMN FOOTING	W14X43 3.0'X10.5'	W12X53 3.0'X11.5'	10	COLUMN FOOTING	W12X53 3.0'X11.5'	W12X65 3.0'X13.5'
12	COLUMN FOOTING	W14X48 3.0'X11.5'	W12X58 4.0'X11.5'	12	COLUMN FOOTING	W14X61 4.0'X12.0'	W18X76 4.0'X13.0'
14	COLUMN FOOTING	W12X53 4.0'X11.0'	W16X67 4.0'X13.0'	14*	COLUMN FOOTING	W21X48 4.0'X12.0'	W21X68 4.0'X14.5'
16	COLUMN FOOTING	W12X65 4.0'X11.5'	W18X76 4.0'X14.0'	16*	COLUMN FOOTING	W21X62 4.0'X13.0'	W18X76 4.0'X16.0'
18*	COLUMN FOOTING	W21X48 4.0'X12.5'	W21X62 4.0'X15.5'	18*	COLUMN FOOTING	W21X68 4.0'X14.0'	W24X84 4.0'X18.0'
20*	COLUMN FOOTING	W21X55 4.0'X13.5'	W21X68 4.0'X17.0'	20*	COLUMN FOOTING	W18X76 4.0'X15.5'	W30X90 5.0'X17.0'

FOOTING DIMENSIONS = DIAMETER X DEPTH
* DENOTES ADDITIONAL BRACES REQUIRED AT THE MID HEIGHT OF DISPLAY

NOTES:

1. FOOTING AND COLUMN SIZES ARE SUGGESTIONS ONLY, PROVIDED TO ASSIST WITH ESTIMATING INSTALLATION COSTS AND ARE NOT INTENDED FOR CONSTRUCTION PURPOSES. THE DESIGN MUST BE CERTIFIED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF THE INSTALLATION BEFORE THEY CAN BE USED FOR FABRICATION Or ERECTION.

2. INTERNATIONAL BUILDING CODE 2012 USED IN DESIGN OF COLUMNS AND FOOTINGS WITH, IMPORTANCE FACTOR=1, Kzt=1.0, Kd=0.85, G=0.85. SEISMIC DESIGN WAS NOT CONSIDERED.

3. FOOTING DIMENSIONS ARE BASED ON ASSUMED SOIL CLASS 4 (ALLOWABLE LATERAL BEARING PRESSURE OF 150 psf).

4. STRUCTURAL STEEL IS GRADE A992 (50 ksi) STEEL. CONCRETE SHALL HAVE A MINNIMUM 28 DAY COMPRESSIVE STRENGTH OF 2500 psi.

5. THE AVERAGE DISPLAY WEIGHT FOR A LAYOUT CAN NOT EXCEED 8 PSF.

6. DAKTRONICS INC. IS NOT RESPONSIBLE FOR STRUCTURES DESIGNED AND INSTALLED BY OTHERS.

7. LOCAL BUILDING OFFICIALS SHOULD BE CONTACTED TO DETERMINE THE WIND SPEED AND EXPOSURE CATEGORY FOR THE PROPOSED SIGN LOCATION. THE EXPOSURE CATEGORY C IS DEFINED AS:

EXPOSURE B – URBAN AND SUBURBAN AREAS, OR OTHER TERRAIN WITH NUMEROUS SPACED OBSTRUCTIONS HAVING THE SIZE OF SINGLE-FAMILY DWELLINGS OR LARGER. THESE CONDITIONS MUST PREVAIL FOR A DISTANCE FROM THE SIGN OF AT LEAST 2,600 ft OR 20 TIMES THE SIGN HEIGHT, WHICHEVER IS GREATER

EXPOSURE C – OPEN TERRAIN WITH SCATTERED OBSTRUCTIONS HAVING HEIGHTS GENERALLY LESS THAN 30 FT. THIS CATEGORY INCLUDES FLAT OPEN COUNTRY, GRASSLANDS, AND ALL WATER SURFACES IN HURRICANE PRONE REGIONS.

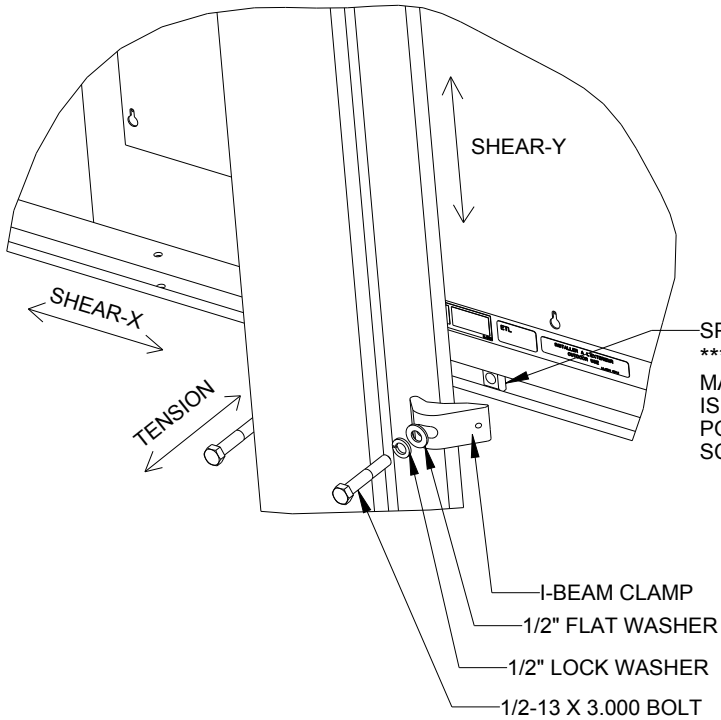
8. FOR SPECIFIC PRODUCT DETAILS ON WEIGHT, MOUNTING, ETC. REFER TO THE INDIVIDUAL PRODUCT SPECIFICATION SHEETS.

DAKTRONICS, INC.
BROOKINGS, SD 57006

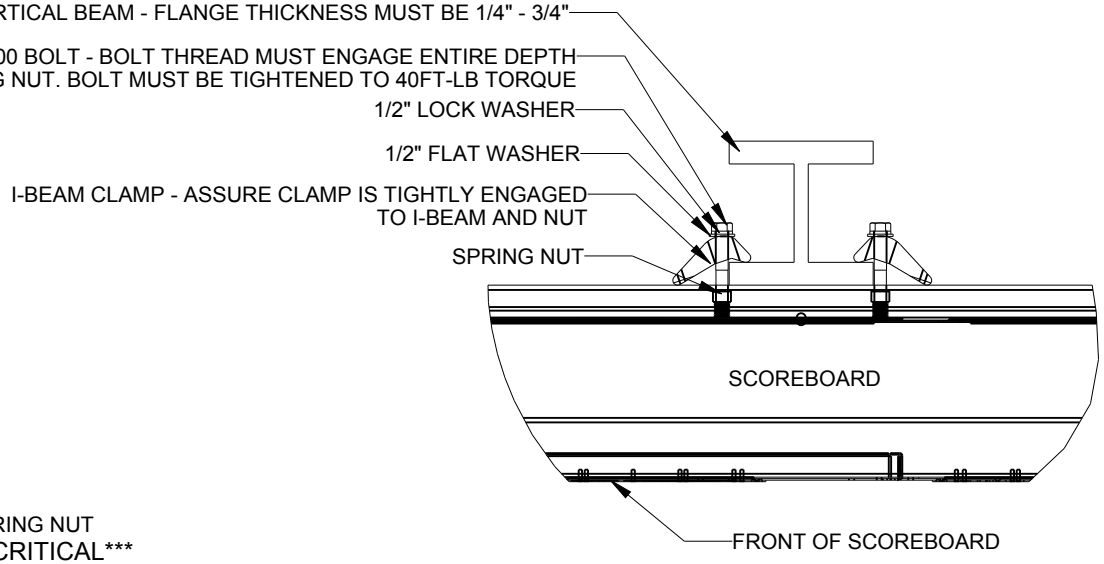
DO NOT SCALE DRAWING

PROJ: OUTDOOR SCOREBOARD INSTALLATION			
TITLE: 25' WIDTH SCOREBOARD INSTALLATION SPECS.			
DESIGN: TTASCHN	DRAWN: TTASCHN		DATE: 22JUL14
SCALE: 1/16"=1'			

SHEET	REV	JOB NO:	FUNC-TYPE-SIZE	
	00	P1538	E-10-A	1183308



EXPLODED REAR ISOMETRIC VIEW



TOP VIEW

CRITICAL
DO NOT USE ANY LUBRICANT
ON ANY MOUNTING HARDWARE
OR WARRANTY WILL BE VOIDED

STANDARD MOUNTING METHOD

MOUNTING INSTRUCTIONS:
1. PLACE SPRING NUTS INTO SCOREBOARD CHANNEL IN APPROXIMATE LOCATION OF VERTICAL BEAMS
2. LIFT SCOREBOARD INTO POSITION
3. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE
4. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY
5. IF FLANGE THICKNESS IS MORE THAN 3/4" THICK LONGER BOLTS WILL BE REQUIRED AT THE CUSTOMER'S EXPENSE.

STRUCTURAL NOTES

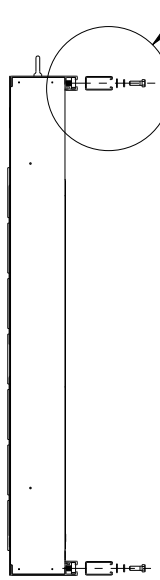
ALLOWABLE CAPACITY PER EACH CLAMP:
SHEAR = 160 LBS
TENSION = 2300 LBS

SHEAR AND TENSION LOAD DIRECTION ARE AS INDICATED ON REAR ISOMETRIC VIEW

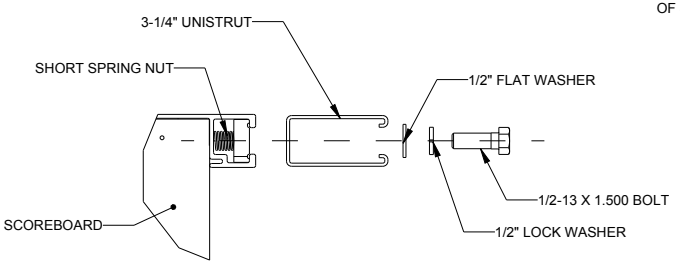
REV	DATE:		BY:	
05	22 DEC 15	PER EC-22871; ADDED LUBRICANT NOTE	PJS 18704	
04	06 JAN 14	ADDED ALLOWABLE TENSION AND SHEAR CAPACITY DETAILS	JAVA	
03	23 OCT 13	PER EC-12382; CHANGED BOLT TORQUE FROM 30 FT-LB TO 40 FT-LB	NJM	
02	07 MAR 12	ADDED STANDARD MOUNTING METHODS NOTES	KDD	
01	21 FEB 12	CHANGED ROCKER TO I-BEAM	KDD	

THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR SCOREBOARD			
TITLE:	P1647; I-BEAM CLAMP MOUNTING			
DATE: 22-DEC-15	DIM UNITS: INCHES [MILLIMETERS]		SHEET 1 OF 1	REV 05
SCALE: 1/8	DO NOT SCALE DRAWING			
DESIGN: MCARSRU	JOB NO. P1647	FUNC - TYPE - SIZE E - 07 - A	1052565	
DRAWN: MCARSRU				

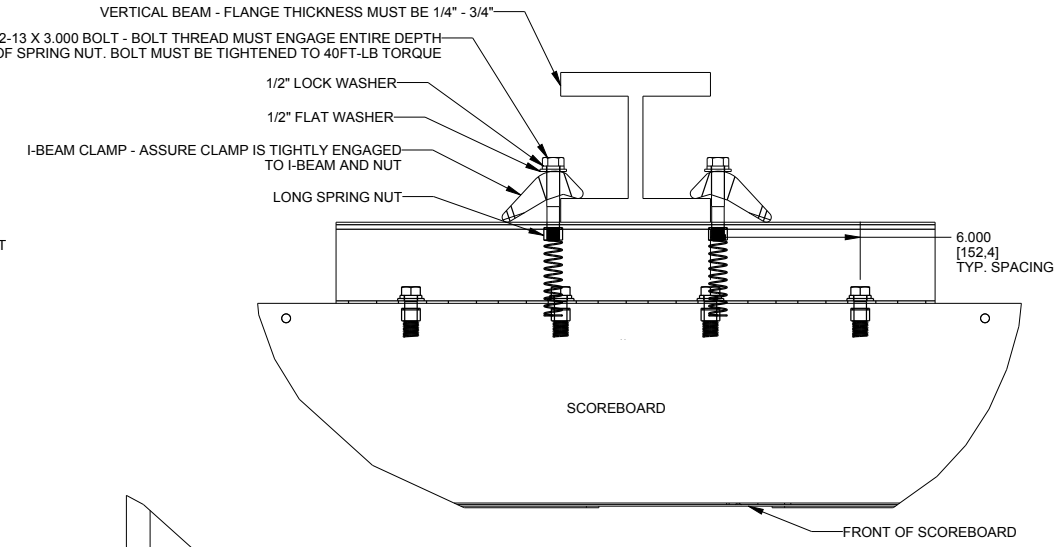


EXPLODED SIDE VIEW
UNISTRUT ATTACHMENT
SCALE 1/15

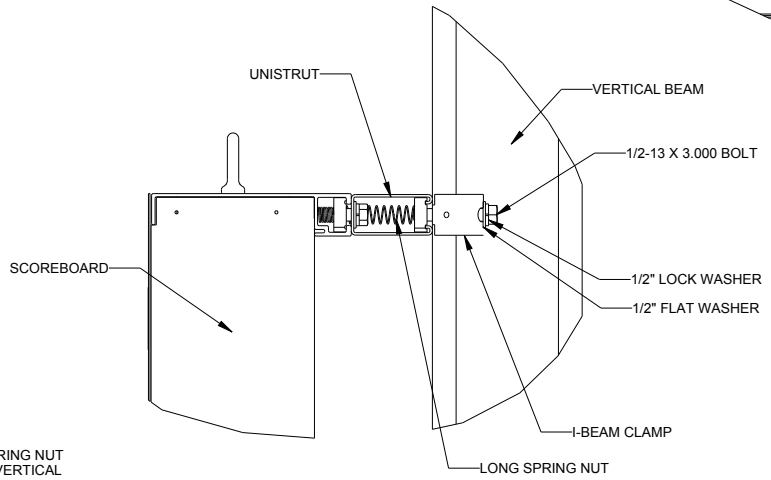


DETAIL A
SCALE 1/4

RECOMMENDED METHOD OF INSTALLATION:
- INSTALL 1 1/2" BOLT, 1/2" LOCK WASHER, 1/2" FLAT WASHER USING SHALLOW SOCKET WITH EXTENSION.
- ENTER FRO MSIDE OF UNISTRUT SECURING INSIDE BOLTS FIRST AND MOVING OUTWARD.



TOP VIEW



SIDE VIEW
SCOREBOARD ATTACHEMENT

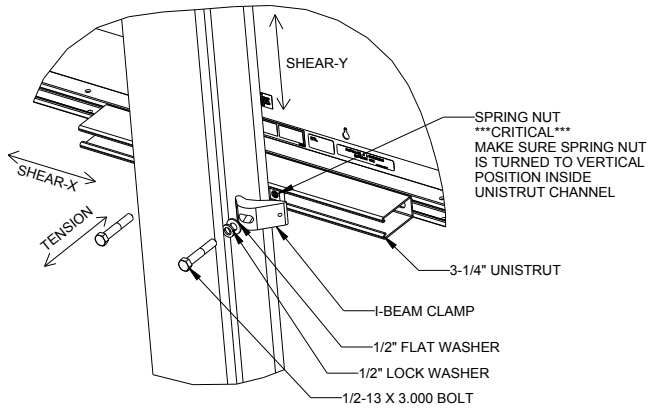
STRUCTURAL NOTES

ALLOWABLE CAPACITY PER
COLUMN CONNECTION:
SHEAR = 185 LBS
TENSION = 2400 LBS

SHEAR AND TENSION LOAD
DIRECTION ARE AS INDICATED ON
REAR ISOMETRIC VIEW

STANDARD MOUNTING METHOD

MOUNTING INSTRUCTIONS:
1. PLACE SPRING NUTS INTO SCOREBOARD CHANNEL IN LOCATIONS SHOWN IN TOP VIEW
2. PLACE SPRING NUTS IN UNISTRUT IN APPROXIMATE LOCATION OF VERTICAL BEAMS
2. LIFT SCOREBOARD INTO POSITION
3. MAKE SURE THE 1/2-13 BOLTS ARE AS CLOSE TO THE I-BEAM FLANGES AS POSSIBLE
4. WHEN SCOREBOARD IS ADJUSTED TO FINAL DESIRED POSITION, TIGHTEN BOLTS FIRMLY
5. IF FLANGE THICKNESS IS MORE THAN 3/4" THICK LONGER BOLTS WILL BE REQUIRED AT THE CUSTOMER'S EXPENSE.



EXPLODED REAR ROTATED VIEW

SCALE 1/8

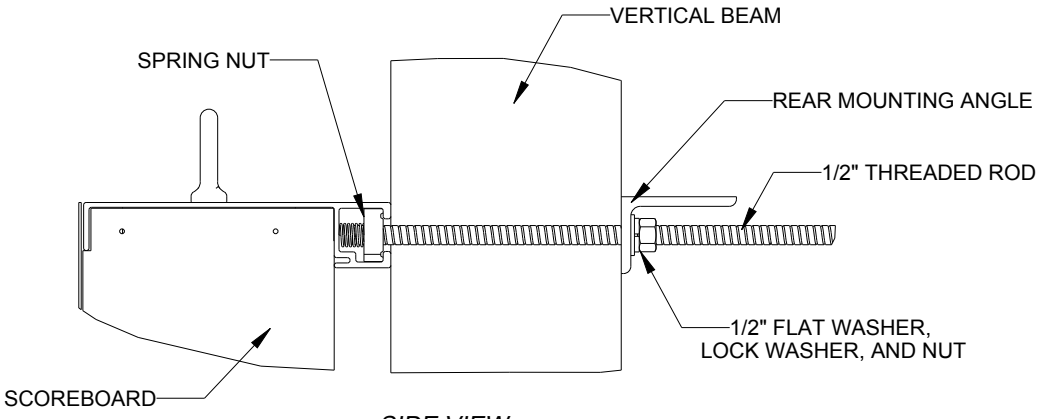
CRITICAL
DO NOT USE ANY LUBRICANT
ON ANY MOUNTING HARDWARE
OR WARRANTY WILL BE VOIDED

REV	DATE:		BY:

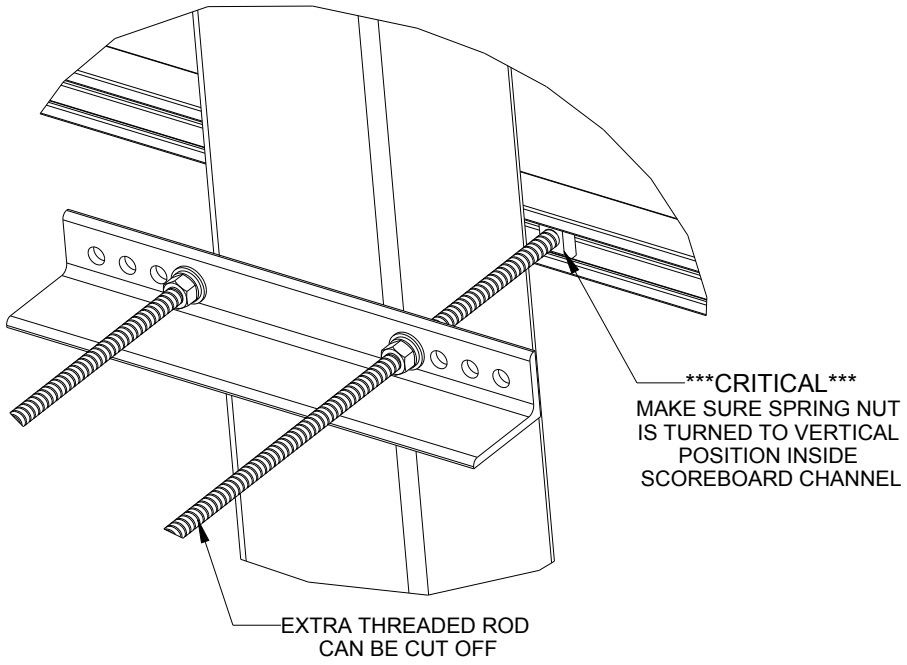
THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR SCOREBOARD		
TITLE:	P1647; LVX I-BEAM CLAMP MOUNTING		
DATE: 18-MAY-18	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE: 1/5	DO NOT SCALE DRAWING	1 OF 1	00
DESIGN: KDRAGT	JOB NO. P1647	FUNC - TYPE - SIZE: E - 07 - B	3918361
DRAWN: KDRAGT			

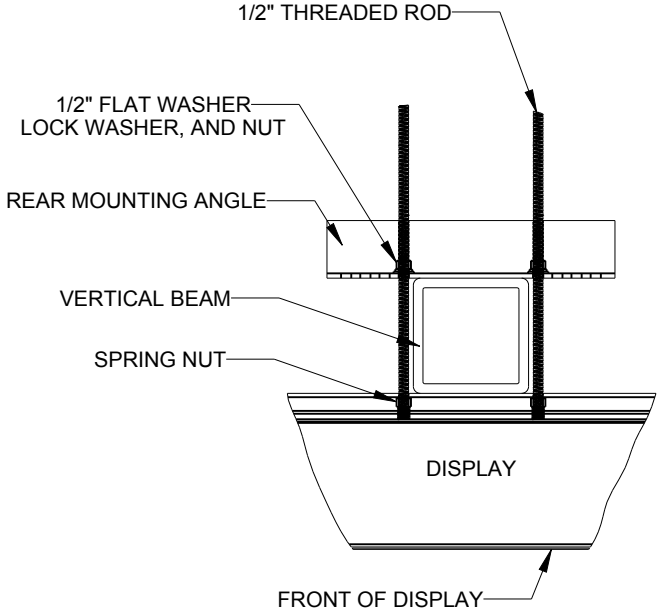
Part # - 0A-1647-1074 | Version - 00.2 | Description - LVX I-BEAM MTG; P1647 FB EXT, 4 CONNECTIONS | Lifecycle State - Full Production | Last Modified By - kdragt | Last Modified - 2018-05-24



SIDE VIEW



REAR ISOMETRIC VIEW



TOP VIEW
SCALE 1/10

CRITICAL
DO NOT USE ANY LUBRICANT
ON ANY MOUNTING HARDWARE
OR WARRANTY WILL BE VOIDED

STRUCTURAL NOTES:
- BOLT TORQUE: 30 FT-LB

NOTES:
- THREADED RODS RUN ALONG BOTH SIDES OF BEAM
- RODS DO NOT PASS THROUGH THE FLANGES OF THE BEAM
- NO DRILLING NECESSARY
- MAKE SURE SPRING NUT IS PERPENDICULAR TO CHANNEL OPENING ON SCOREBOARD

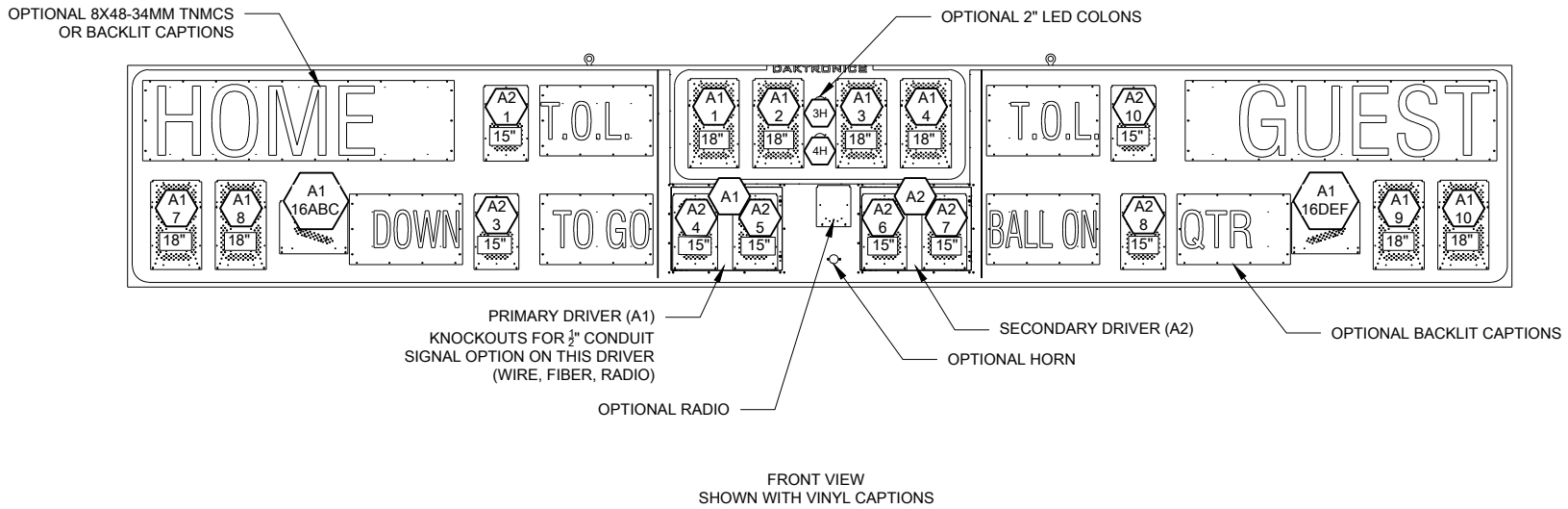
REV	DATE:		BY:	
04	22 DEC 15	PER EC-22871; ADDED LUBRICANT WARNING	PJS 18704	
03	03 JULY 13	ADDED STRUCTURAL NOTE	TTF	
02	20 SEP 12	PER EC-7114; REMOVED CHAMFER FROM 0M-133259	LMG	
01	06 OCT 11	REPLACED VERTICAL I-BEAM WITH 6" X 6" SQUARE TUBE	JAVA	

DAKTRONICS

THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR SCOREBOARDS			
TITLE:	P1647; POLE MOUNTING OPTIONS			
DATE: 22-DEC-15	DIM UNITS: INCHES [MILLIMETERS]		SHEET 1 OF 1	REV 04
SCALE: 1/5	DO NOT SCALE DRAWING			
DESIGN: DOPPELT	JOB NO. P1647	FUNC - TYPE - SIZE E - 10 - A	1048184	
DRAWN: DOPPELT				

FB-2036-R/A/W



FRONT VIEW
SHOWN WITH VINYL CAPTIONS

NOTES:

A1 / 1 = LED DRIVER NUMBER & LED DRIVER CONNECTOR WIRED TO THAT DIGIT.

36" = DIGIT SIZE

A1 = DRIVER NUMBER

THIRD ANGLE PROJECTION

PROJECT:	OUTDOOR EXTRUDED SCOREBOARDS			
TITLE:	COMPONENT LOCATION; FB-2036-R/A/W			
DATE:	12 NOV 20	DIM UNITS: INCHES [MILLIMETERS]	SHEET	REV
SCALE:	1=40	DO NOT SCALE DRAWING		00
DESIGN:	DOPPELT	JOB NO. P1647 / FUNC - TYPE - SIZE E - 10 - A		4773418
DRAWN:	AYOUNG			

OUTDOOR NON-BACKLIT AD & ID PANEL SPECIFICATIONS

All non-backlit ad panels are 8" (203 mm) deep. Sizes are arranged by width from narrowest to widest.

DIMENSIONS HEIGHT x WIDTH		UNCRATED WEIGHT	
Feet-Inches	*Meters*	*LB*	*KG*
6'-6" x 3'-0"	1.98 x 0.91	59	27
2'-6" x 4'-0"	0.76 x 1.22	30	14
6'-6" x 5'-0"	1.98 x 1.52	98	44
7'-6" x 5'-0"	2.29 x 1.52	113	51
8'-0" x 5'-6"	2.44 x 1.68	132	60
1'-6" x 6'-0"	0.46 x 1.83	27	12
2'-0" x 6'-0"	0.61 x 1.83	36	16
4'-0" x 6'-6"	1.22 x 1.98	78	35
1'-6" x 8'-0"	0.46 x 2.44	36	16
2'-0" x 8'-0"	0.61 x 2.44	48	22
2'-6" x 8'-0"	0.76 x 2.44	60	27
6'-6" x 8'-0"	1.98 x 2.44	156	71
7'-6" x 8'-0"	2.29 x 2.44	180	82
6'-0" x 8'-2"	1.83 x 2.49	147	67
3'-0" x 8'-6"	0.91 x 2.59	77	35
1'-0" x 9'-0"	0.30 x 2.74	27	12
1'-6" x 9'-0"	0.46 x 2.74	41	19
2'-0" x 9'-0"	0.61 x 2.74	54	24
2'-6" x 9'-0"	0.76 x 2.74	68	31
1'-0" x 10'-0"	0.30 x 3.05	30	14
1'-6" x 10'-0"	0.46 x 3.05	45	20
2'-0" x 10'-0"	0.61 x 3.05	60	27
2'-6" x 10'-0"	0.76 x 3.05	75	34
3'-0" x 10'-0"	0.91 x 3.05	90	41
4'-0" x 10'-0"	1.22 x 3.05	120	54
2'-0" x 10'-6"	0.61 x 3.20	63	29
1'-6" x 12'-0"	0.46 x 3.66	54	24
2'-0" x 12'-0"	0.61 x 3.66	72	33
2'-6" x 12'-0"	0.76 x 3.66	90	41
3'-0" x 12'-0"	0.91 x 3.66	108	49
1'-6" x 14'-0"	0.46 x 4.27	63	29
2'-0" x 14'-0"	0.61 x 4.27	84	38
2'-6" x 14'-0"	0.76 x 4.27	105	48
3'-0" x 14'-0"	0.91 x 4.27	126	57
1'-0" x 16'-0"	0.30 x 4.88	48	22
1'-6" x 16'-0"	0.46 x 4.88	72	33
2'-0" x 16'-0"	0.61 x 4.88	96	44
2'-6" x 16'-0"	0.76 x 4.88	120	54
3'-0" x 16'-0"	0.91 x 4.88	144	65
3'-6" x 16'-0"	1.07 x 4.88	168	76

DIMENSIONS HEIGHT x WIDTH		UNCRATED WEIGHT	
Feet-Inches	*Meters*	*LB*	*KG*
4'-6" x 16'-0"	1.37 x 4.88	216	98
3'-0" x 16'-1.38"	0.91 x 4.91	145	66
1'-0" x 18'-0"	0.30 x 5.49	54	24
1'-6" x 18'-0"	0.46 x 5.49	81	37
2'-0" x 18'-0"	0.61 x 5.49	108	49
2'-6" x 18'-0"	0.76 x 5.49	135	61
3'-0" x 18'-0"	0.91 x 5.49	162	73
4'-0" x 18'-0"	1.22 x 5.49	216	98
1'-0" x 20'-0"	0.30 x 6.10	60	27
1'-6" x 20'-0"	0.46 x 6.10	90	41
2'-0" x 20'-0"	0.61 x 6.10	120	54
2'-6" x 20'-0"	0.76 x 6.10	150	68
3'-0" x 20'-0"	0.91 x 6.10	180	82
4'-0" x 20'-0"	1.22 x 6.10	240	109
4'-0" x 22'-0"	1.22 x 6.71	264	120
3'-0" x 23'-6"	0.91 x 7.16	212	96
2'-0" x 24'-0"	0.61 x 7.32	144	65
2'-6" x 24'-0"	0.76 x 7.32	180	82
3'-0" x 24'-0"	0.91 x 7.32	216	98
1'-0" x 25'-0"	0.30 x 7.62	75	34
1'-6" x 25'-0"	0.46 x 7.62	113	51
1'-8" x 25'-0"	0.51 x 7.62	125	57
2'-0" x 25'-0"	0.61 x 7.62	150	68
2'-6" x 25'-0"	0.76 x 7.62	188	85
3'-0" x 25'-0"	0.91 x 7.62	225	102
3'-6" x 25'-0"	1.07 x 7.62	263	119
4'-0" x 25'-0"	1.22 x 7.62	300	136
2'-6" x 26'-0"	0.76 x 7.92	195	88
2'-0" x 27'-0"	0.61 x 8.23	162	73
2'-6" x 28'-0"	0.76 x 8.53	210	95
3'-0" x 28'-0"	0.91 x 8.53	252	114
2'-0" x 30'-0"	0.61 x 9.14	180	82
4'-0" x 30'-0"	1.22 x 9.14	360	163
1'-6" x 32'-0"	0.46 x 9.75	144	65
2'-0" x 32'-0"	0.61 x 9.75	192	87
2'-6" x 32'-0"	0.76 x 9.75	240	109
3'-0" x 32'-0"	0.91 x 9.75	288	131
4'-0" x 32'-0"	1.22 x 9.75	384	174
1'-0" x 36'-0"	0.30 x 10.97	108	49
1'-6" x 36'-0"	0.46 x 10.97	162	73

WWW.DAKTRONICS.COM E-MAIL: SALES@DAKTRONICS.COM

201 Daktronics Drive, PO Box 5128, Brookings, SD 57006
Phone: 1-800-325-8766 or 605-692-0200 Fax: 605-697-4746

DAKTRONICS

OUTDOOR NON-BACKLIT AD & ID PANEL SPECIFICATIONS

DIMENSIONS HEIGHT x WIDTH		UNCRATED WEIGHT	
Feet-Inches	*Meters*	*LB*	*KG*
2'-0" x 36'-0"	0.61 x 10.97	216	98
2'-6" x 36'-0"	0.76 x 10.97	270	122
3'-0" x 36'-0"	0.91 x 10.97	324	147
4'-0" x 36'-0"	1.22 x 10.97	432	196

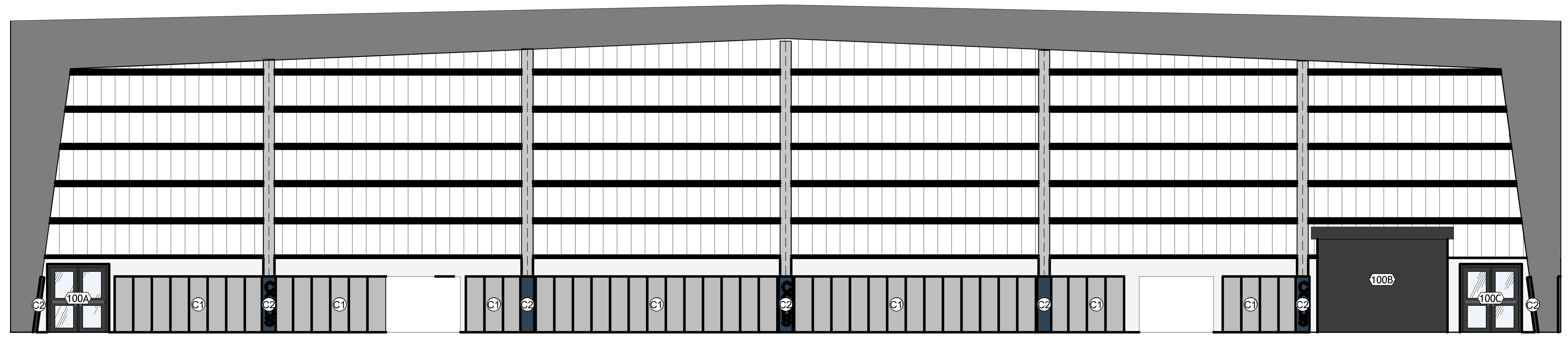
Notes:

1. Lengths and heights listed can be combined to make additional display sizes.
2. For sizes not listed, weight is calculated at 3 pounds per square foot.
3. Optional back sheets are available.

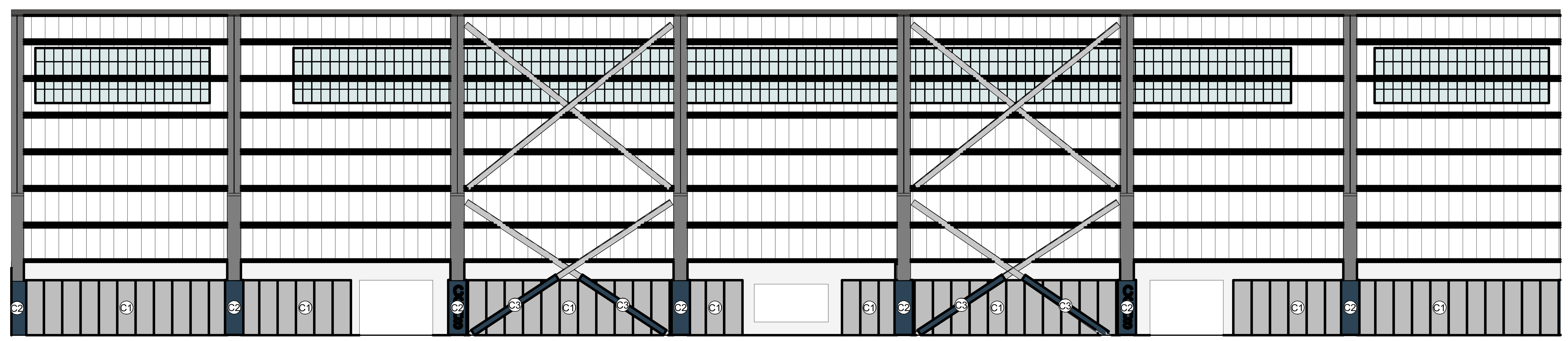
FOR ADDITIONAL INFORMATION

- Installation Manual: See DD2956757

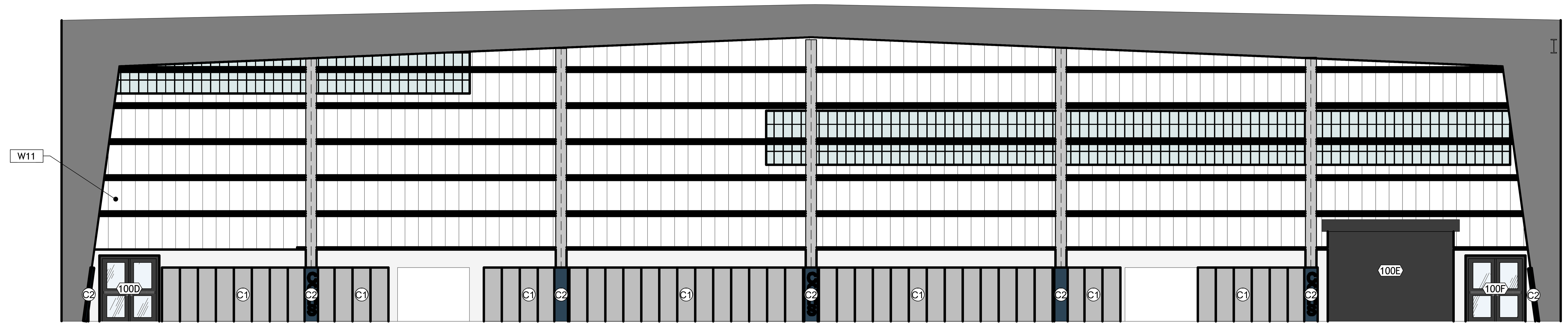
DAKTRONICS



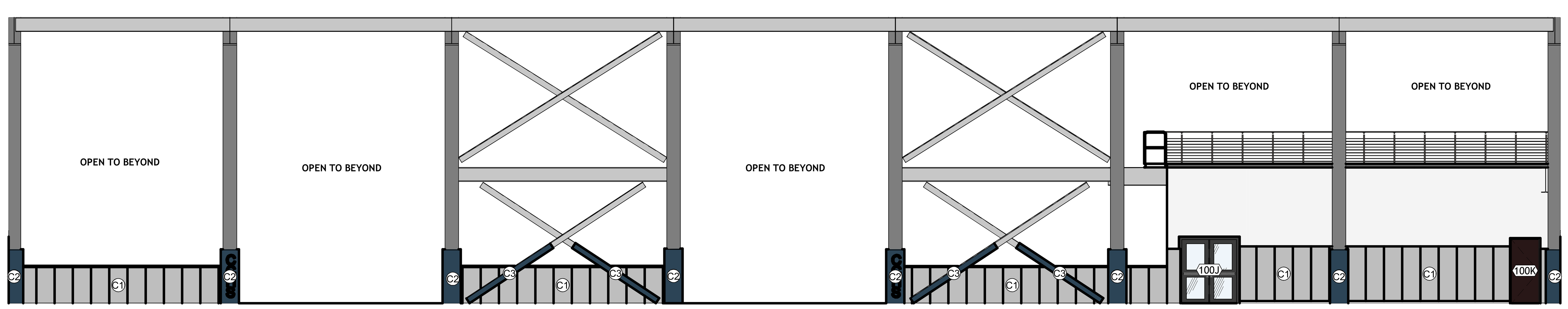
A2 TURF FIELD 100 - A
A817 | SCALE: 1/8" = 1'-0"



C2 TURF FIELD 100 - B
A817 | SCALE: 1/8" = 1'-0"



D2 TURF FIELD 100 - C
A817 | SCALE: 1/8" = 1'-0"



E2 TURF FIELD 100 - D
A817 | SCALE: 1/8" = 1'-0"

KEYNOTES

FLOOR FINISHES

F1	RUBBER FLOORING TYPE 1
F2	RUBBER FLOORING TYPE 2 FIELD & ACCENT 1
F3	EPOXY PAINTED CONCRETE
F4	TURF TYPE 1
F5	TURF TYPE 2
F6	TURF TYPE 3
F7	TURF TYPE 4
F8	EXISTING RUBBER FLOORING TO REMAIN, PATCH AND REPAIR WHERE NEEDED
F9	LUXURY VINYL TILE
F10	ACCENT LUXURY VINYL TILE
F11	CARPET TILE
F12	ACCENT CARPET TILE
F13	PORCELAIN FLOOR TILE

SEE A802 FOR FINISHES

FINISH LEGEND

CODE	MATERIAL
2- BASE FINISHES	
B1	6" RUBBER BASE
B2	CORRESPONDING TILE BASE
3- WALL FINISH	
W1	GENERAL PAINT
W2	ACCENT PAINT
W3	PORCELAIN WALL TILE
W4	CERAMIC WALL TILE
W5	EPOXY PAINTED CONCRETE
W6	PORCELAIN WALL TILE
W7	WALL PADDING
W8	ACCENT PAINT 2
W9	ACCENT PAINT 3
W10	PAINTED METAL STRUCTURE
W11	FIELD METAL PAINT
W12	DIAMOND PLATE
W13	PLASTIC LAMINATE WALL PANELS
W14	TEXTILE WALLCOVERING
4- MILLWORK FINISHES	
M1	PLASTIC LAMINATE MILLWORK
M2	PLASTIC LAMINATE COUNTERTOP
M3	SOLID SURFACE
M4	PLASTIC LAMINATE MILLWORK
5-CEILING FINISH	
CL1	PAINTED GYPSUM BOARD
CL2	ACOUSTIC CEILING TILE
CL3	PAINTED STRUCTURE
6-DOOR FINISHES	
D1	PAINTED METAL DOOR & TRIM
D2	WOOD DOOR & PAINTED METAL TRIM

WALL FURNISHINGS LEGEND

A1	6'-0" x 4'-0"	MARKER BOARD
A2	12'-0" x 4'-0"	MARKER BOARD
B1	24" X 36"	MIRROR
B2	48" X 72"	MIRROR
C1	24" X 72"	WALL PADDING
C2	18" X 72"	I-BEAM WALL PADDING
C3	10" X 132"	CROSS BEAM WALL PADDING
D	8" X 8"	SIGNAGE, SEE SHEET A004
E	SEE WINDOW TYPES	MANUAL WINDOW SHADES - SEE SPECS
F	SEE WINODW TYPES	MOTORIZED WINDOW SHADES - SEE SPECS

3

NOTE: COORDINATE FINAL LOCATION WITH OWNER AND ARCHITECT PRIOR TO INSTALLATION
* ALL SHADES IN MAIN AND AUXILIARY GYMS TO BE 1% TRANSMISSION, ALL OTHERS TO BE 5%

GENERAL NOTES

A. GENERAL CONTRACTOR SHALL VERIFY ALL CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION. REPORT ANY SIGNIFICANT DISCREPANCIES TO THE ARCHITECT.
B. COORDINATE INSTALLATIONS OF ALL "AFTER CONTRACT" ASSEMBLIES WITH OWNER PRIOR TO CONSTRUCTION OF ADJOINING OR RELATED STRUCTURES.
C. INTERIOR DRYWALL CORNERS TO BE SQUARE.
D. WALL TYPES SHOWN DO NOT ADDRESS CERAMIC TILE INSTALLATION ON WALL SURFACES AS SHOWN ON THE FLOOR PLANS. REFER TO THE CURRENT EDITION OF THE HANDBOOK FOR CERAMIC TILE INSTALLATION PUBLISHED BY THE TILE COUNCIL OF AMERICA, INC., FOR PROPER INSTALLATION MATERIALS AND METHODS. TILE TO BE INSTALLED OVER TILE BACKER BOARD.
E. SEE DETAILS ON SHEET A003 FOR TYPICAL FIXTURE MOUNTING HEIGHTS. BLOCK WALLS AS REQUIRED FOR HANGING FIXTURES AND FURNISHINGS.
F. PROVIDE BLOCKING IN WALLS AT ALL TOILETS AND SHOWERS FOR GRAB BARS. SEE DETAIL C3/A003 & D6/A003.
G. ALL MILLWORK NUMBERS NOTED ARE TMI SYSTEMS. COORDINATE BETWEEN ENLARGED FLOOR PLANS AND INTERIOR ELEVATIONS FOR MISCELLANEOUS ITEMS THAT MAY ONLY BE SHOWN ON ONE OR THE OTHER.
H. FINISH ALL EXTERIOR TILE CORNERS WITH SCHLUTER ECK - K.
I. IN ADDITION TO TMI SYSTEMS SELECT MILLWORK NUMBERS NOTED ARE KEWAUNEE. COORDINATE BETWEEN ENLARGED FLOOR PLANS AND INTERIOR ELEVATIONS FOR LOCATIONS OF KEWAUNEE MILLWORK AND OTHER MISCHELANOUS ITEMS THAT MAY ONLY BE SHOWN ON ONE OR THE OTHER.
J. PROVIDE SCHLUTER-RONDEC CORNER PIECE WHERE TILE MEETS DOOR JAMBS

5

CORE ARCHITECTURE
233 SOUTH PLEASANT GROVE BLVD.
SUITE #105
PLEASANT GROVE, UTAH 84062
PHONE: (801) 769-3000
core@corearch.com

PROFESSIONAL STAMP

LICENSED ARCHITECT
CURTIS LELAND LIVINGSTON
No. 10606440
STATE OF UTAH
09 OCT. 24

CONSULTANT INFORMATION

OWNER INFORMATION

CANYONS SCHOOL DISTRICT

PROJECT TITLE AND ADDRESS

CCHS FIELDHOUSE & SOCCER FIELD

12943 SOUTH 700 EAST
DRAPER, UTAH 84020

REVISIONS

△	DESCRIPTION	DATE
3	ADDENDUM #4	10/09/2024
5	ADDENDUM #7	10/15/2024

PROJECT INFORMATION

DATE: SEPTEMBER 12, 2024
PROJECT #: 24-013
PM / PA: KJM
PIC: CLL

DRAWING SET STATUS

BID SET

THIS DRAWING SET IS INTENDED TO BE PRINTED IN COLOR

SHEET TITLE

ENLARGED TURF FIELD

SHEET NUMBER

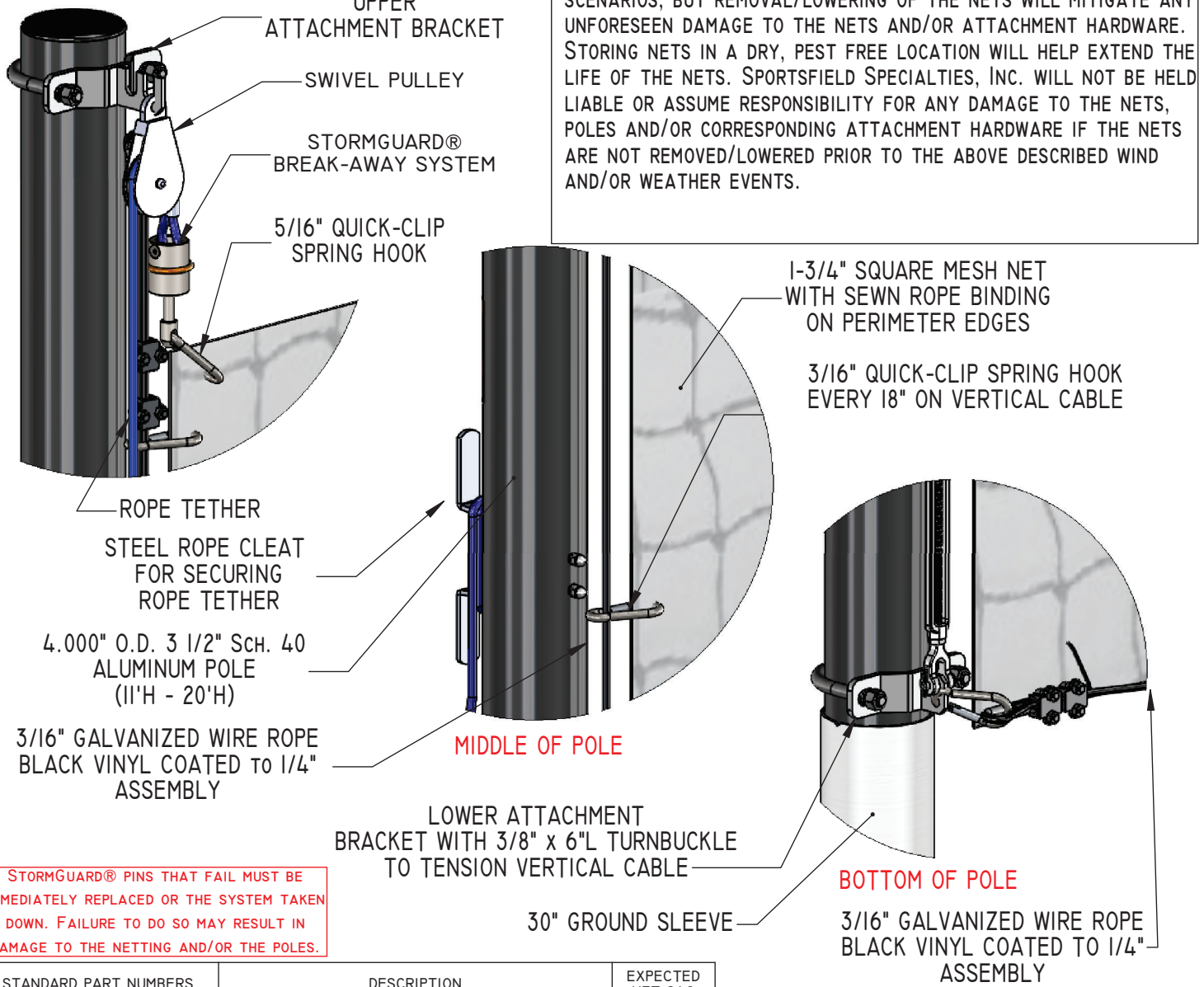
A817

SPORTSFIELD SPECIALTIES
WWW.SPORTSFIELD.COM

Excellence from Design to Installation
41155 State Highway 10, PO Box 231, Delhi, NY 13753 CALL: 888-975-3343 FAX: 607-746-8481

United States Patent #9,017,190 Issued April 28, 2015
United States Patent #9,586,123 Issued March 7, 2017
Standard Black Powder Coated Finish

Sportsfield Specialties, Inc. strongly recommends the removal of all nets prior to exposure to winter weather, including snow and/or ice storms. Whenever possible, the nets should also be lowered prior to any extreme wind events. The StormGuard® system will prevent pole failure in the above scenarios, but removal/lowering of the nets will mitigate any unforeseen damage to the nets and/or attachment hardware. Storing nets in a dry, pest free location will help extend the life of the nets. Sportsfield Specialties, Inc. will not be held liable or assume responsibility for any damage to the nets, poles and/or corresponding attachment hardware if the nets are not removed/lowered prior to the above described wind and/or weather events.



StormGuard® pins that fail must be immediately replaced or the system taken down. Failure to do so may result in damage to the netting and/or the poles.

STANDARD PART NUMBERS	DESCRIPTION	EXPECTED NET SAG
BSS412 (TFBSS412P-SG)	12'H SYSTEM	±1'-8"
BSS415 (TFBSS415P-SG)	15'H SYSTEM	±1'-8"
BSS420 (TFBSS420P-SG)	20'H SYSTEM	±2'-2"
BSS-CUSTOM (TFBSS4__P-SG)	CUSTOM HEIGHTS GREATER THAN 10' AND UP TO 20' AVAILABLE	

Foundation requirements based on local codes and soil conditions

Professionally Pre-Engineered to Meet ASCE 7-10 Wind Rating up to 105 mph Exposure B

4" Straight Pole StormGuard® Professionally Pre-Engineered Break-Away Ball Safety Netting System

Not To Scale

Sportsfield Specialties Inc 07022024

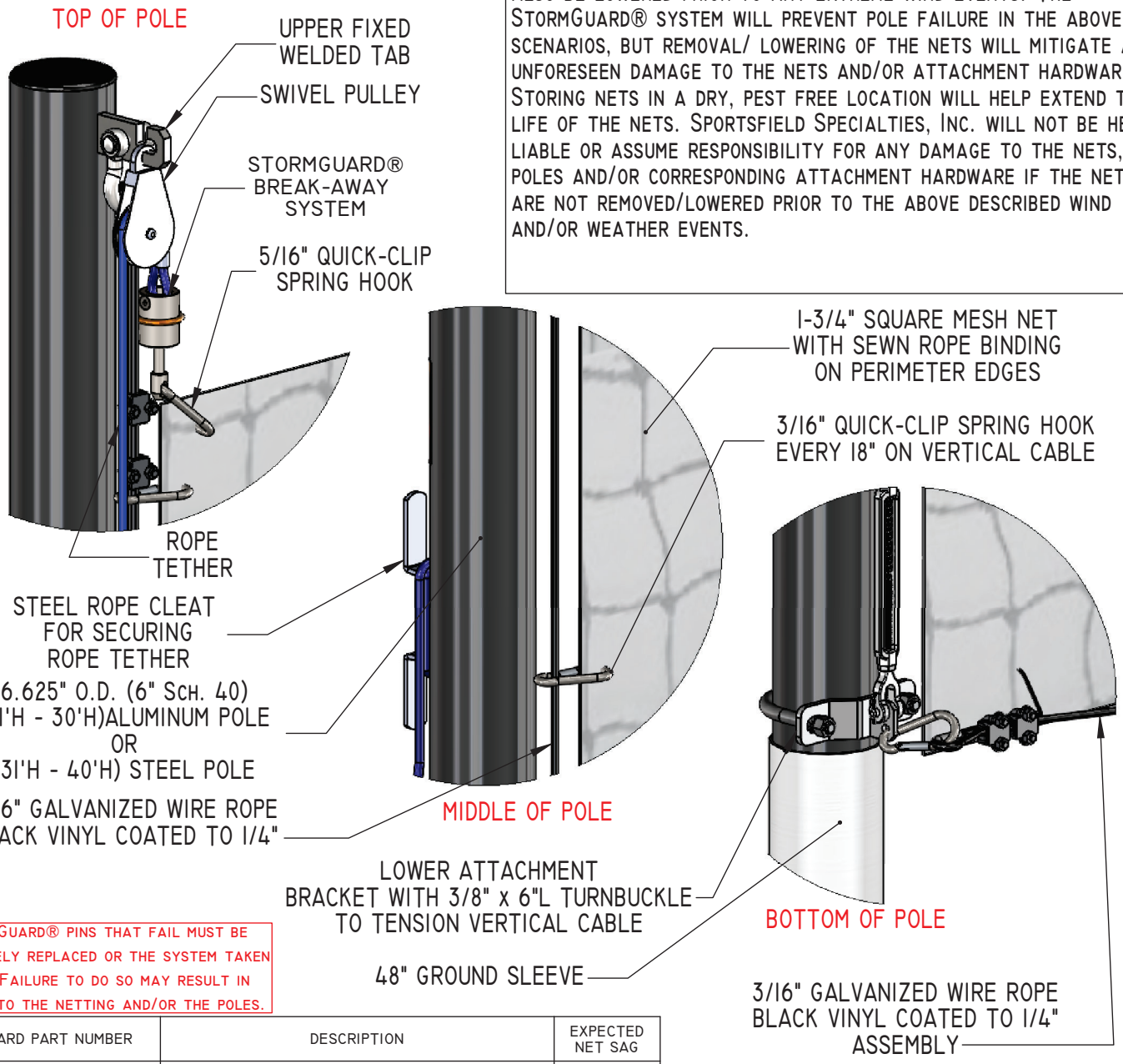
SPORTSFIELD SPECIALTIES
WWW.SPORTSFIELD.COM

Excellence from Design to Installation
41155 State Highway 10, PO Box 231, Delhi, NY 13753 CALL: 888-975-3343 FAX: 607-746-8481

UNITED STATES PATENT #9,017,190 ISSUED APRIL 28, 2015
UNITED STATES PATENT #9,586,123 ISSUED MARCH 7, 2017

STANDARD BLACK POWDER COATED FINISH

SPORTSFIELD SPECIALTIES, INC. STRONGLY RECOMMENDS THE REMOVAL OF ALL NETS PRIOR TO EXPOSURE TO WINTER WEATHER, INCLUDING SNOW AND/OR ICE STORMS. WHENEVER POSSIBLE, THE NETS SHOULD ALSO BE LOWERED PRIOR TO ANY EXTREME WIND EVENTS. THE STORMGUARD® SYSTEM WILL PREVENT POLE FAILURE IN THE ABOVE SCENARIOS, BUT REMOVAL/ LOWERING OF THE NETS WILL MITIGATE ANY UNFORESEEN DAMAGE TO THE NETS AND/OR ATTACHMENT HARDWARE. STORING NETS IN A DRY, PEST FREE LOCATION WILL HELP EXTEND THE LIFE OF THE NETS. SPORTSFIELD SPECIALTIES, INC. WILL NOT BE HELD LIABLE OR ASSUME RESPONSIBILITY FOR ANY DAMAGE TO THE NETS, POLES AND/OR CORRESPONDING ATTACHMENT HARDWARE IF THE NETS ARE NOT REMOVED/LOWERED PRIOR TO THE ABOVE DESCRIBED WIND AND/OR WEATHER EVENTS.



STORMGUARD® PINS THAT FAIL MUST BE IMMEDIATELY REPLACED OR THE SYSTEM TAKEN DOWN. FAILURE TO DO SO MAY RESULT IN DAMAGE TO THE NETTING AND/OR THE POLES.

STANDARD PART NUMBER	DESCRIPTION	EXPECTED NET SAG
BSS625 (TFBSS625P-SG)	25'H SYSTEM	±2'-0"
BSS630 (TFBSS630P-SG)	30'H SYSTEM	±2'-0"
BSS635 (TFBSS635P-SG)	35'H SYSTEM	±2'-0"
BSS640 (TFBSS640P-SG)	40'H SYSTEM	±2'-3"
BSS-CUSTOM (TFBSS6__P-SG)	CUSTOM HEIGHTS GREATER THAN 20' AND UP TO 40' AVAILABLE	

FOUNDATION REQUIREMENTS BASED ON LOCAL CODES AND SOIL CONDITIONS

PROFESSIONALLY PRE-ENGINEERED TO MEET ASCE 7-10 WIND RATING UP TO 105 MPH EXPOSURE B

6" Straight Pole StormGaurd® Professionally Pre-Engineered Break-Away Ball Safety Netting System

Not To Scale

Sportsfield Specialties Inc 07022024

SPORTSFIELD SPECIALTIES
WWW.SPORTSFIELD.COM

Excellence from Design to Installation
41155 State Highway 10, PO Box 231, Delhi, NY 13753 CALL: 888-975-3343 FAX: 607-746-8481

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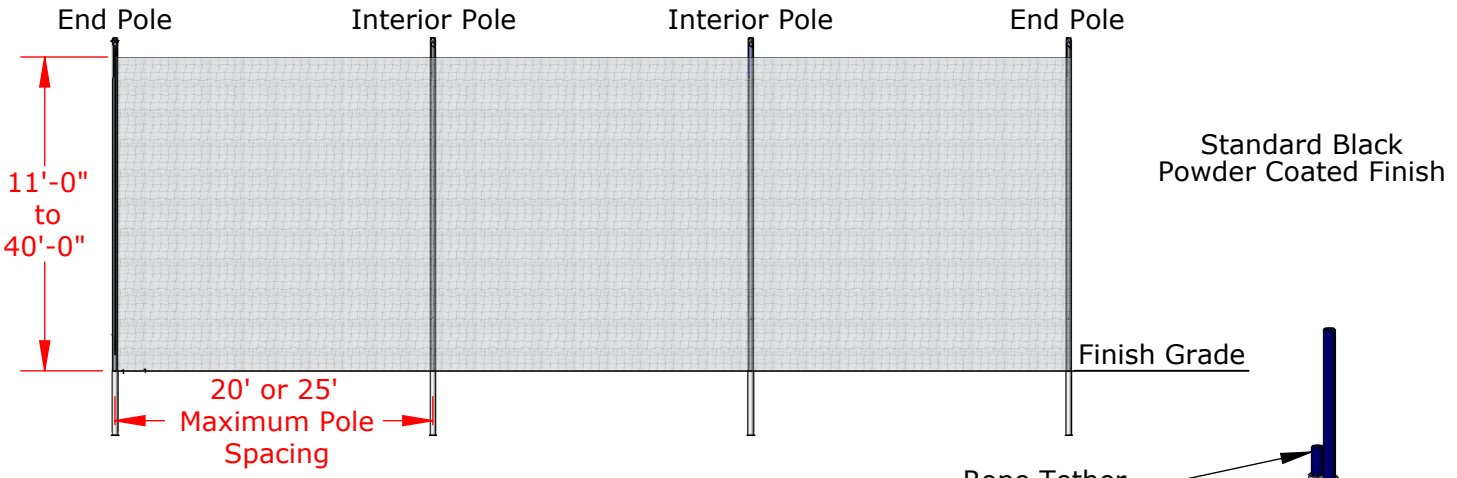
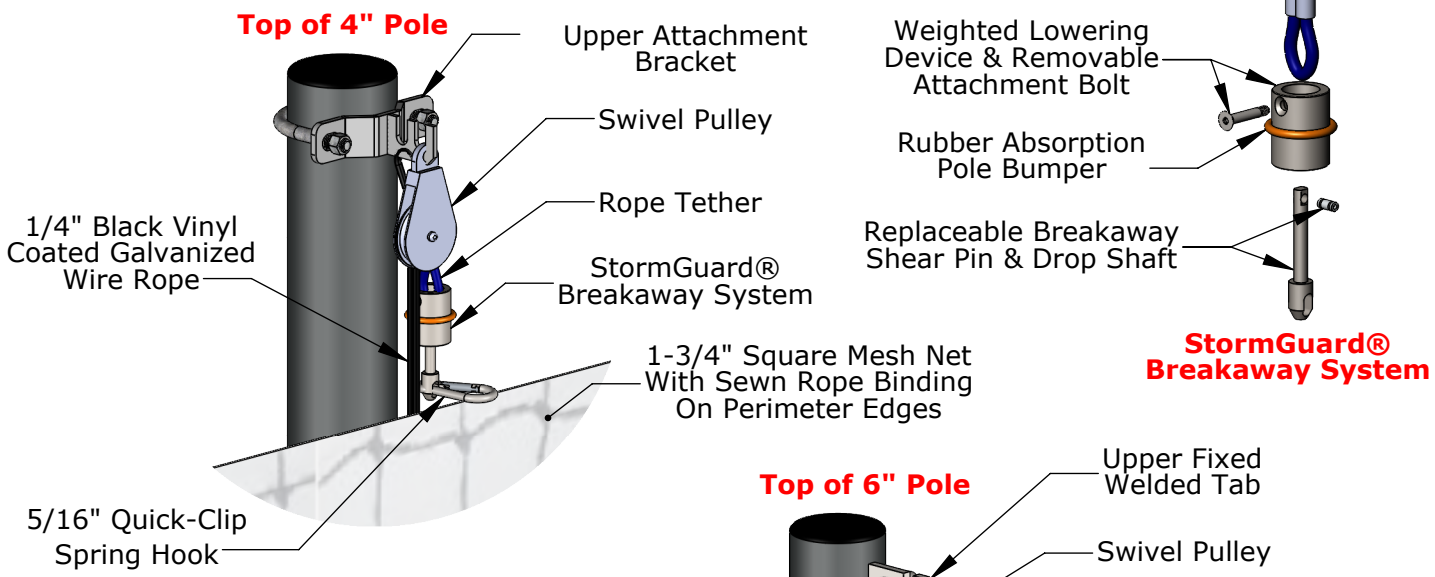
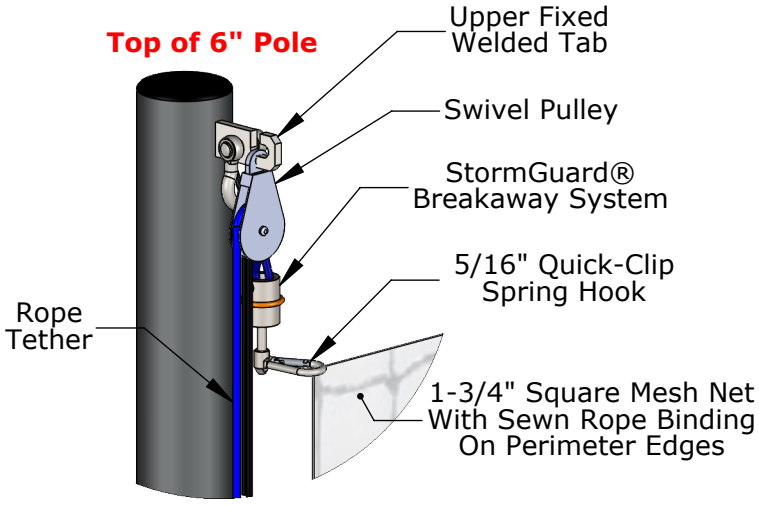






Foundation Requirements Based on Local Codes and Soil Conditions

StormGuard® Professionally Pre-Engineered Breakaway Ball Safety System Netting

Not To Scale

Sportsfield Specialties Inc 07162020

October 16, 2024

Core Architecture
c/o Curtis Livingston
233 South Pleasant Grove Blvd. Suite 105
Pleasant Grove, UT 84062

RE: Corner Canyon High School Addendum 7

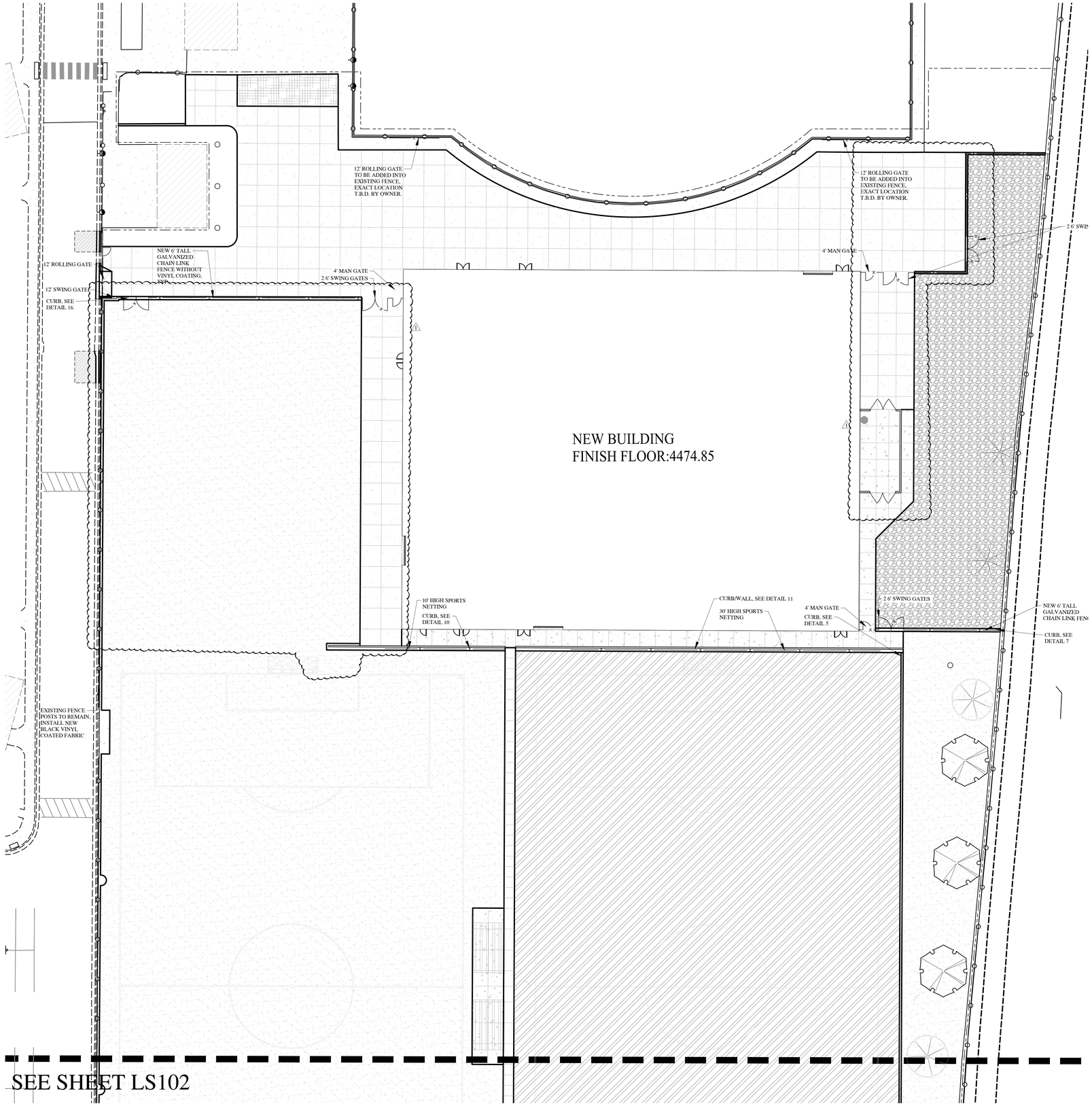
Curtis-

The fire marshal has requested the added fire truck access on the east and west sides of the fieldhouse. Changes are as follows:

1. The concrete sidewalk on the west was widened and the lawn area reduced.
2. The concrete sidewalk and plaza on the east side was widened and rock mulch area was reduced.
3. A double swing gate was added to the east and west side of the fieldhouse.
4. Irrigation zones 2 and 3 were adjusted and re-piped.

Submitted By:
In-Site Design Group LLC
Cory Whiting – PLA, ASLA
Landscape Architect/Owner

17 North 470 West, American Fork, UT 84003 – Office 801.756.5043 Fax 801.756.5279
Email: architects@in-sitedesigngroup.com Website: www.in-sitedesigngroup.com



TREE LEGEND

SYMBOL	BOTANICAL NAME/COMMON NAME	QTY	SIZE
	ACER TRUNCATUM X A. PLATANOIDES KEITHSFORM NORWEGIAN SUNSET NORWEGIAN SUNSET MAPLE	8	3" CAL
	EXISTING TREE TO REMAIN		EXISTING
	EXISTING TREE TO REMOVE		EXISTING

TURF/INERT MATERIAL LEGEND

SYMBOL	BOTANICAL NAME/COMMON NAME	QTY	SIZE
	NEW LAWN AREA: KENTUCKY BLUE GRASS BLEND MIN. 3 VARIETIES. SUBMIT CUT SHEET OF SOURCES AND BLEND FOR APPROVAL PRIOR TO INSTALLATION. SEE SOD SPEC FOR PROPER INSTALLATION DETAILS AND METHODS.	128,870 S.F.	SOD
	NEW ARTIFICIAL TURF AREA (N.I.C.) TO BE INSTALLED BY OWNER	59,382 S.F.	PER OWNER
	PLANTING BEDS TO BE 6" DEPTH OF SOUTHTOWN ROCK MULCH, AVAILABLE THROUGH STAKER PARSONS OR UTAH LANDSCAPE ROCK. ROCK TO BE DOUBLE WASHED PRIOR TO PLACING ROCK ON TOP OF WEED BARRIER FABRIC. INSTALL A 1" LAYER OF ¾"-1" ROCK TO COVER FABRIC AFTERWHICH A 5" LAYER OF 2-4" ROCK SHALL BE INSTALLED. SEE DETAIL 12 ON SHEET LS300 FOR ADDITIONAL INSTALLATION INSTRUCTION. CONTRACTOR TO PROVIDE OWNER WITH SAMPLE FOR APPROVAL PRIOR TO INSTALLATION.	12,414 S.F.	2"-4" ROCK MULCH

LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING QUANTITIES OF ALL MATERIALS FOR BIDDING AND INSTALLATION PURPOSES. IF DISCREPANCIES EXIST, THE PLAN SHALL DICTATE.
2. PLANT MATERIAL TO BE INSTALLED PER PLANT LEGEND. ANY SUBSTITUTIONS TO BE APPROVED BY OWNER AND/OR LANDSCAPE ARCHITECT.
3. NEW AUTOMATIC UNDERGROUND IRRIGATION SYSTEM TO BE INSTALLED FOR NEW LANDSCAPE AREAS PER PLANS. SEE IRRIGATION PLANS FOR EXACT LAYOUT.
4. NEW LAWN AREAS TO BE SODDED. FINE LEVEL ALL AREAS PRIOR TO LAYING SOD. SEE SPECS FOR ADDITIONAL REQUIREMENTS.
5. TOPSOIL TO BE INSTALLED PER SPECS. LAWN AND PLANTER BEDS TO BE EXCAVATED AS NECESSARY IN ORDER TO ACCOMMODATE TOPSOIL, AMENDMENTS AND ROCK MULCH TO REACH FINISHED GRADE.
6. DEWITT 5 OZ. WEED BARRIER FABRIC TO BE INSTALLED IN ALL PLANTER AREAS UNDER ROCK MULCH. ROCK MULCH TO BE IMPLEMENTED PER LEGEND.
7. ALL TREES TO BE STAKED AT TIME OF PLANTING. SEE TREE STAKING DETAILS FOR SPECIFICS. REMOVE STAKING WITHIN FIRST YEAR OR WHEN TREE IS ESTABLISHED.
8. SEE FINISH GRADING AND SOIL PREPARATION SPEC SECTION FOR TOPSOIL REQUIREMENTS FOR ALL LAWN AND PLANTER AREAS.
9. SEE CIVIL PLANS FOR ALL GRADING AND DRAINAGE INFORMATION.
10. SEE ARCHITECTS AND CIVIL PLANS FOR ALL BUILDINGS AND SITE HARDSCAPING INCLUDING BUT NOT LIMITED TO WALKWAYS, CONCRETE, RETAINING WALLS, SPORTS NET FENCING, ARTIFICIAL TURF, ETC.
11. CONTRACTOR SHALL PATCH AND REPAIR LAWN AND IRRIGATION AROUND THE EDGES OF THE PROJECT LIMIT LINE AS NECESSARY. CONTRACTOR SHALL REMOVE GRASS, LANDSCAPING AND IRRIGATION AS NECESSARY FOR INSTALLATION OF THE NEW PROJECT ELEMENTS.

SOD LAYING NOTES

1. LAY SOD WITHIN 24 HOURS OF BEING LIFTED.
2. LAY SOD IN ROWS WITH JOINTS STAGGERED. BUTT SECTIONS CLOSELY WITHOUT OVERLAPPING OR LEAVING GAPS BETWEEN SECTIONS. CUT OUT IRREGULAR OR THIN SECTIONS WITH A SHARP KNIFE.
3. LAY SOD FLUSH WITH ADJOINING EXISTING SODDED OR PAVED SURFACES.
4. AFTER SODDING HAS BEEN COMPLETED, ROLL HORIZONTAL SURFACE AREAS IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER WITH A 150 POUND SOD ROLLER. REPAIR AND RE-ROLL AREAS WITH DEPRESSIONS, LUMPS OR OTHER IRREGULARITIES. HEAVY ROLLING TO CORRECT IRREGULARITIES IN GRADE IS NOT PERMITTED.
5. WATER ALL SODDED AREAS IMMEDIATELY AFTER SOD LAYING TO OBTAIN MOISTURE PENETRATION THROUGH SOD INTO TOP 4" OF TOPSOIL.
6. PROVIDE ADEQUATE PROTECTION OF SODDED AREAS AGAINST TRESPASSING, EROSION AND DAMAGE OF ANY KIND. REMOVE THIS PROTECTION AFTER SODDED AREAS HAVE BEEN ACCEPTED BY THE OWNER.
7. REPLACE DAMAGED AREAS AT NO ADDITIONAL COST TO OWNER.

N

20' 0 20' 40' 60'

SCALE: 1"=20'-0" ON 30X42 SHEET

CORE ARCHITECTURE
233 SOUTH PLEASANT GROVE BLVD.
SUITE #105
PLEASANT GROVE, UTAH 84062
PHONE: (801) 769-3000
core@corearch.com

PROFESSIONAL STAMP

LICENSED LANDSCAPE ARCHITECT # 4884514 Cory B. Whiting 09-13-24 STATE OF UTAH

CONSULTANT INFORMATION

In Site DESIGN GROUP
Landscape Architecture Land Planning
17 North 470 West American Fork, Utah 84003
801.756.5043 www.in-sitedesigngroup.com

OWNER INFORMATION

CANYONS SCHOOL DISTRICT

PROJECT TITLE AND ADDRESS

CCHS FIELDHOUSE & SOCCER FIELD

12943 SOUTH 700 EAST
DRAPER, UTAH 84020

REVISIONS

	DESCRIPTION	DATE
1	ADDENDUM 7	10/16/24

PROJECT INFORMATION

DATE:	9/12/24
PROJECT #:	24-013
PM / PA:	CBW
PIC:	HAH

DRAWING SET STATUS

BID SET

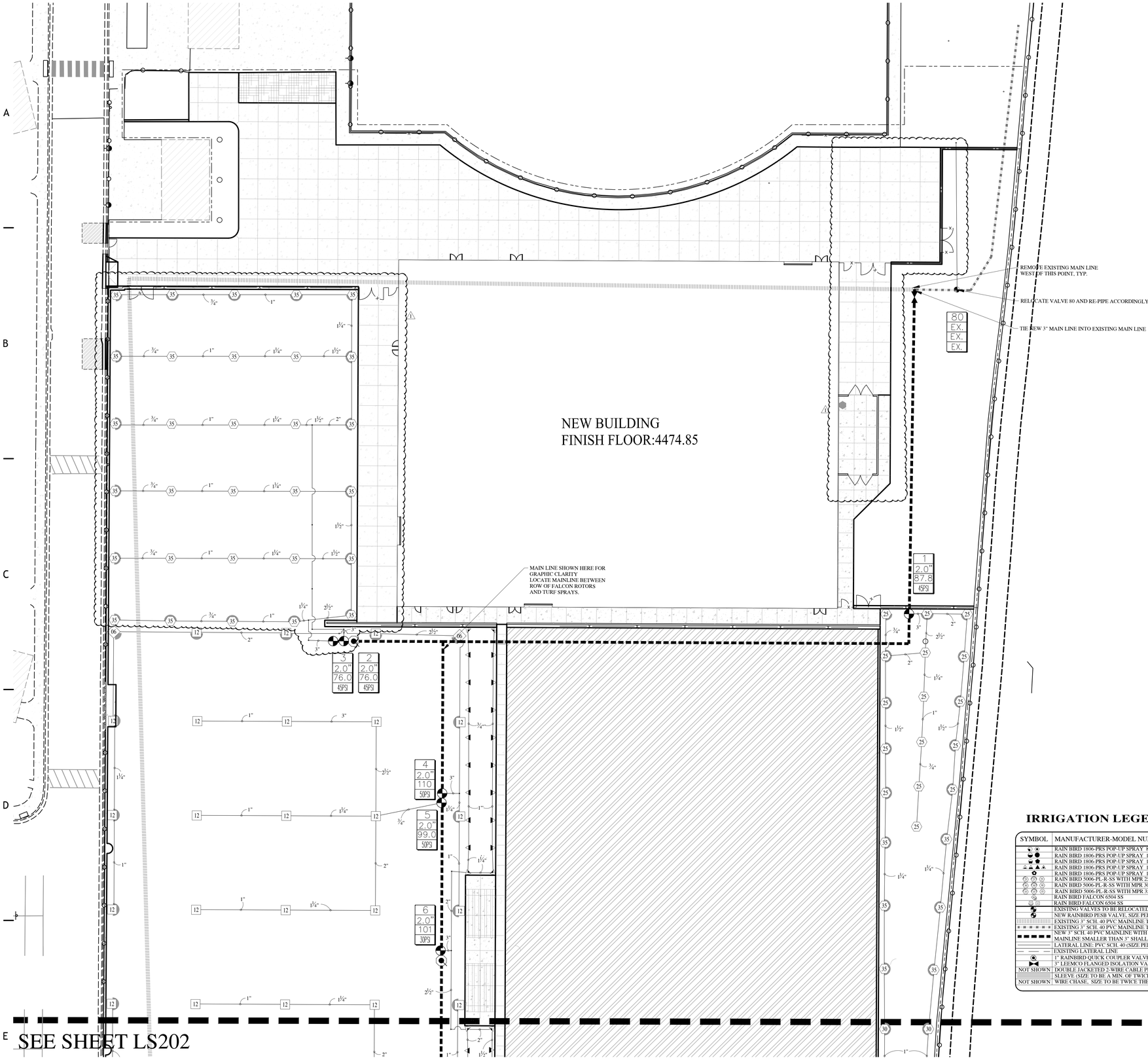
THIS DRAWING SET IS INTENDED TO BE PRINTED IN COLOR

SHEET TITLE

LANDSCAPE PLAN

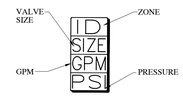
SHEET NUMBER

LS101



VALVE ID TAGS

EXISTING, RELOCATED, OR NEW VALVE:



IRRIGATION NOTES

1. SEE SHEETS LS4.0 FOR IRRIGATION DETAILS. SEE SPECS FOR ADDITIONAL IRRIGATION INSTALLATION PROCEDURES.
2. EXISTING AND NEW VALVES TO BE CONNECTED TO EXISTING CALSENSE 2-WIRE CONTROLLER. INSTALL NEW 2-WIRE AS NECESSARY. RE-USE EXISTING DECODERS FROM EXISTING VALVES THAT ARE TO BE REMOVED.
3. ALL VALVES, VALVE BOXES, DRAINS, AND BOTH ENDS OF SLEEVES SHALL HAVE GPS POINTS TO CREATE AN GPS AS-BUILT DOCUMENT. CONSULT WITH THE OWNER FOR THE DELIVERABLE TYPE REQUIRED. SEE SPECS FOR ADDITIONAL REQUIREMENTS.
4. ALL MAINLINE 3" AND LARGER SHALL HAVE LEEMCO FITTINGS WITH JOINT RESTRAINTS. ALL MAINLINE SMALLER THAN 3" SHALL BE SCH 40 PVC WITH SCHEDULE 80 FITTINGS. SIZE MAINLINE PER PLAN. LATERAL LINES SHALL BE NO SMALLER THAN 3/4". MAINLINE AND LATERAL LINE LAYOUT IS SCHEMATIC. ADJUST LOCATION OF MAINLINE AND LATERAL LINES AS NECESSARY IN ORDER TO AVOID TREES AND OTHER OBSTRUCTIONS AS WELL AS NEW TREES OR SHRUBS PLANTINGS. PIPES SHALL CARRY NO MORE THAN THE FOLLOWING: 3/4" PIPE MAX. 8 GPM, 1" PIPE MAX. 13 GPM, 1-1/4" PIPE MAX. 23 GPM, 1-1/2" PIPE MAX. 30 GPM, 2" PIPE MAX. 50 GPM, 2-1/2" PIPE MAX. 75 GPM, 3" PIPE MAX. 110 GPM.
5. CONTRACTOR SHALL HAVE ALL UTILITIES BLUE STAKED BEFORE DIGGING. ANY DAMAGE TO THE UTILITIES SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR WITH NO EXTRA COST TO THE OWNER.
6. INSTALL ALL NEW VALVE BOXES 6" MIN. FROM WALKS AND WALLS SQUARED WITH THE WALK. PLACE VALVE BOXES IN PLANTER BEDS WHEN POSSIBLE. ROUND VALVE BOXES ARE NOT ALLOWED. CONTRACTOR SHALL ONLY USE COMMERCIAL GRADE RAINBIRD PRODUCTS OR AN OWNER APPROVED EQUAL. EXISTING VALVE BOXES MAY BE USED IF THEY ARE NOT DAMAGED. ANY DAMAGED BOXES AND/OR LIDS SHALL BE REPLACED BY THE CONTRACTOR.
7. CONTRACTOR MAY MAKE SUBSTITUTIONS TO IRRIGATION COMPONENTS ONLY UPON WRITTEN APPROVAL FROM THE SCHOOL DISTRICT. IF CONTRACTOR ELECTS TO USE DIFFERENT COMPONENTS THAN WHAT IS CALLED FOR, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A NEW DESIGN SHOWING HOW NEW COMPONENTS MEET OR EXCEED THE EXISTING DESIGN STANDARD SET FORTH IN THESE CONSTRUCTION DOCUMENTS.
8. CONTRACTOR IS RESPONSIBLE FOR ENSURING ACCURATE COUNTS AND QUANTITIES OF ALL IRRIGATION MATERIALS FOR BIDDING AND INSTALLATION PURPOSES.
9. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE CITY AND/OR COUNTY CODES. THE LANDSCAPE CONTRACTOR SHALL APPLY AND PAY FOR ALL NECESSARY PERMITS.
10. ACTUAL INSTALLATION OF IRRIGATION SYSTEM MAY VARY SOMEWHAT FROM PLANS. CONTRACTOR IS RESPONSIBLE TO MAKE NECESSARY ADJUSTMENTS AS NEEDED TO ENSURE PROPER COVERAGE OF ALL LANDSCAPED AREAS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID.
11. INSTALL SCH. 40 ELECTRICAL WIRING CONDUIT BETWEEN ALL IRRIGATION BOXES FOR NEW 2-WIRE, TYP.
12. REMOVE ALL EXISTING VALVES, HEADS, AND PIPING FOR ZONES 1-14, 16, 81-83, 100-102
13. MODIFY EXISTING ZONES 15, 17, 21, 80. REMOVE HEADS AND RE-PIPE TO ACCOMMODATE CHANGES.

IRRIGATION LEGEND

SYMBOL	MANUFACTURER-MODEL NUMBER	PAT.	RD.	PSI	GPM Q	GPM T	GPM H	GPM TT	GPM TQ	GPM F	DRIP GPH	DETAILS	REMARKS
	RAIN BIRD 1806-PRS POP-UP SPRAY 8 SERIES	Q, HE-VAN	8'	30	.26	--	--	--	--	--	--	11	ADJUST ARC AS NEEDED
	RAIN BIRD 1806-PRS POP-UP SPRAY 10 SERIES	H,F	10'	30	--	--	.79	--	--	1.58	--	11	ADJUST ARC AS NEEDED
	RAIN BIRD 1806-PRS POP-UP SPRAY 12SERIES	H,F	12'	30	--	--	1.30	--	--	2.60	--	11	ADJUST ARC AS NEEDED
	RAIN BIRD 1806-PRS POP-UP SPRAY 15 SERIES	Q, H, F, HE-VAN	15'	30	0.92	--	1.85	--	2.78	3.70	--	11	ADJUST ARC AS NEEDED
	RAIN BIRD 1806-PRS POP-UP SPRAY 18 SERIES	HE-VAN	18'	30	1.33	--	2.66	--	--	--	--	11	
	RAIN BIRD 5006-PL-R-SS WITH MPR 25 SERIES NOZZLES	Q,T,H,F	25'	45	1.00	1.38	1.98	--	--	3.82	--	12	ADJUST ARC AS NEEDED
	RAIN BIRD 5006-PL-R-SS WITH MPR 30 SERIES NOZZLES	Q,T,H,F	30'	45	1.40	1.85	2.96	--	--	5.78	--	12	ADJUST ARC AS NEEDED
	RAIN BIRD 5006-PL-R-SS WITH MPR 35 SERIES NOZZLES	Q,T,H,F	35'	45	1.92	2.46	3.81	--	--	--	--	12	ADJUST ARC AS NEEDED
	RAIN BIRD FALCON 6504 SS	Q	44'	50	5.5	--	--	--	--	--	--	12	ADJUST ARC AS NEEDED
	RAIN BIRD FALCON 6504 SS	H, F	50'	50	--	--	11	--	--	11	--	12	ADJUST ARC AS NEEDED
	EXISTING VALVES TO BE RELOCATED											13, 14	
	NEW RAINBIRD PESB VALVE, SIZE PER PLAN											13, 14	JUMBO VALVE BOX
	EXISTING 3" SCH. 40 PVC MAINLINE TO BE REMOVED											--	
	EXISTING 3" SCH. 40 PVC MAINLINE TO REMAIN. MODIFY EXISTING MAINLINE PER PLANS											--	FIELD VERIFY EXACT LOCATION
	NEW 3" SCH. 40 PVC MAINLINE WITH LEEMCO FITTINGS AND JOINT RESTRAINTS UNLESS OTHERWISE NOTED. ALL MAINLINE SMALLER THAN 3" SHALL ALSO BE SCH. 40 PVC BUT SHALL HAVE SCH. 80 FITTINGS.											1, 2, 4, 5, 13	SEE IRRIGATION DETAILS
	LATERAL LINE: PVC SCH. 40 (SIZE PER PLAN)											1, 4	SEE IRRIGATION DETAILS
	EXISTING LATERAL LINE												SEE PLAN
	1" RAINBIRD QUICK COUPLER VALVE, MODEL #44NP. FOR IRRIGATION SYSTEM BLOWOUT. ALL STAINLESS STEEL FITTINGS & PIPE.											9	SEE IRRIGATION DETAILS
	3" LEEMCO FLANGED ISOLATION VALVE WITH 2" SQUARE NUT (INSTALL MANUAL DRAIN AT EACH ISOLATION VALVE)											5	SEE IRRIGATION DETAILS
NOT SHOWN	DOUBLE JACKETED 2-WIRE CABLE PER CALSENSE SPECS											1, 4, 15, 16	ROUTE WITH MAINLINE
	SLEEVE (SIZE TO BE A MIN. OF TWICE THE DIAMETER OF THE MAIN, LATERAL)											3	COORDINATE WITH ALL TRADES
NOT SHOWN	WIRE CHASE, SIZE TO BE TWICE THE DIAMETER OF THE WIRE BUNDLE WITHIN, 1" DIA. WC IS THE MINIMUM SIZED ALLOWED.											1, 4, 15, 16	COORDINATE WITH ALL TRADES

N

20' 0 20' 40' 60'

SCALE: 1"=20'-0" ON 30X42 SHEET

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PROFESSIONAL STAMP

LICENSED LANDSCAPE ARCHITECT #4884514 Cory B. Whiting 09-13-24 STATE OF UTAH

CONSULTANT INFORMATION

In Site DESIGN GROUP
Landscape Architecture Land Planning
57 North 470 West American Fork, Utah 84003
801.756.5043 www.in-sitedesigngroup.com

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DRAWING SET STATUS

BID SET

THIS DRAWING SET IS INTENDED TO BE PRINTED IN COLOR

SHEET TITLE

IRRIGATION PLAN

SHEET NUMBER

LS201

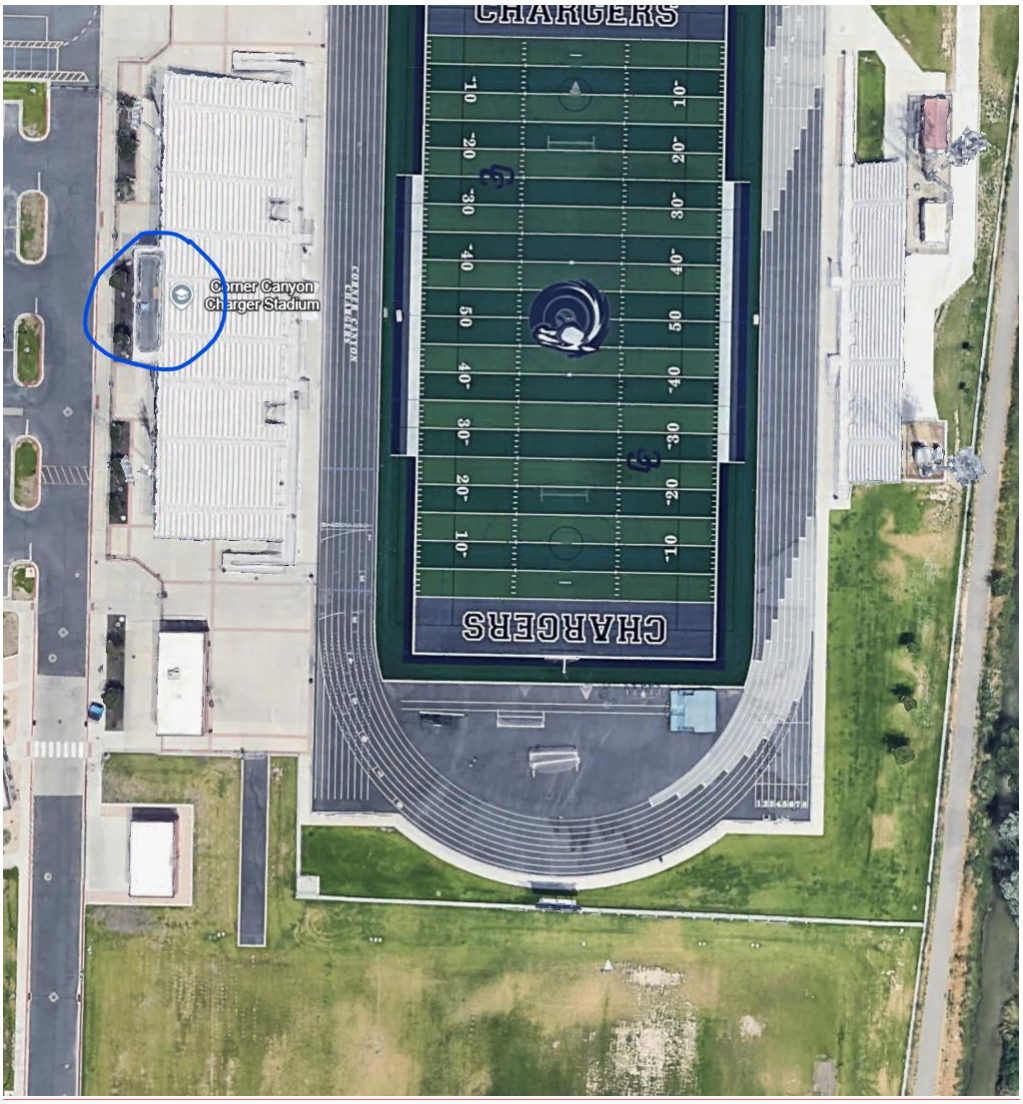
CYD CORNER CANYON HS – FIELD HOUSE

Electrical Addendum #7 **Issue Date: 10/16/2024**

CLARIFICATIONS TO THE BIDDERS:

Daktronics shall provide and install fiber for the scoreboard from the press box.

The site plan does not extend to include the existing press box. This is a google earth image with the existing press box circled to give an approximate distance.



The AV Contractor is only responsible for Rack R3 shown on the upper floor for Alt 1 package. If only the base bid is built out, then the AV contractor shall use some of the space from one of the (2) data racks for their equipment.

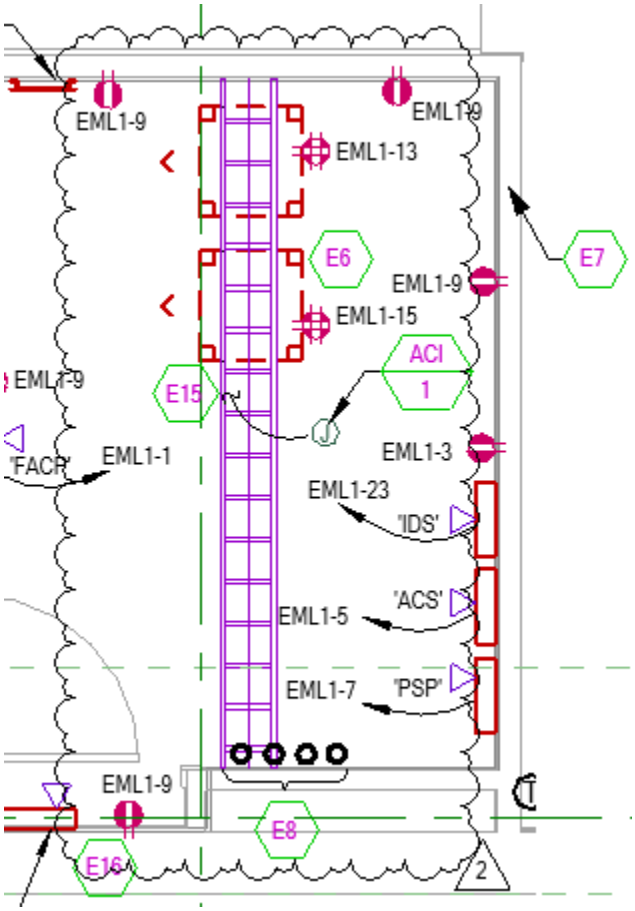
CYD CORNER CANYON HS – FIELD HOUSE

Electrical Addendum #7 **Issue Date: 10/16/2024**

CHANGES TO THE DRAWINGS:

SHEET E301 – CHANGES FOR IT

1. Add Ladder Tray in TDR Room.



CHANGES TO THE SPECIFICATIONS:

SPECIFICATION 27 1500 TELEPHONE & DATA SYSTEMS

Provide overhead ladder tray:

1. Tray shall have minimum 6” rung spacing.
2. Mount tray 18” above racks unless otherwise noted. Provide additional vertical tray as required to provide pathways between the tray above racks and the tray entering the communications room from outside.
3. Size tray according to quantity of cables entering space. However, in no case shall the tray be smaller than 4” high by 6” wide. Do not exceed 50% cable fill of tray.

4. For overhead installations, utilize profile supports to support tray every 5’-0”.
5. For wall mounted installations, utilize shelf brackets to support tray every 5’-0”.
6. Provide blind ends to provide closure for a dead-end tray.
7. Provide cable rollers, two at each 90-degree bend. A radius shield or horizontal bend radius may also be used in lieu of cable rollers.
8. Provide drop-out fittings, or waterfalls, over each cabinet of sufficient quantity to provide an acceptable path for cables to enter equipment. For single cables leaving the tray, utilize a cable drop-out in lieu of a waterfall.
9. Cables must enter the racks from the top.
10. Provide conduit to tray adapters for each conduit terminating to cable tray.
    1. Acceptable Manufacturers
        1. Chatsworth Universal Cable Runway
        2. Cooper B-Line Redi Rail Runway
        3. Cablofil PW Ladder Tray
        4. CommScope Cable Runway
        5. Panduit WyrGrid Cable Tray
        6. MonoSystems Series MR-16T

END OF ELECTRICAL ADDENDUM