To: **All Vendors Bidding on The College of New Jersey**
Existing Bleacher Repairs & Related Work

From: **Anup Kapur**
Finance & Business Services

Date: **May 16, 2022**

ADDENDUM NO. 1 **ISSUE DATE: May 16, 2022**

REFERENCE: The College of New Jersey
Existing Bleacher Repairs & Related Work
Project No. AB220038

Date of Original Bidding Documents: May 2, 2022

INTENT: This Addendum forms a part of the Contract Documents and modifies the original Bidding Documents and Prior Addenda if any, as identified above. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

TCNJ Clarification:

Where the contractor has made any modifications or alterations to in-place bleacher seating structures, it shall be required that the structure be re-certified by authorities having jurisdiction.

Vendor Questions:

1. **Question:** Detail 1 and 6 CS.2: please provide sizing of cast stone caps so we can accurately bid.

   TCNJ Response: Cast stone caps are approximately 12" wide by 8" high. Dimensions provided are for reference only, the lowest bidder is required to field measure and verify all quantities.

2. **Question:** Detail 6/CS.2: why does the railing need to be extended? Is the base plate able to be welded to the bottom of the existing? Also, please clarify the flashing detail. Does the flashing sit overtop of the entire masonry wall? What happens at the fence posts?

   TCNJ Response: In most cases, the railing posts have deteriorated and rusted and require extensions and baseplates to be reinstalled per the provided detail. New flashing is to be

installed below the new cast stone cap. Fence posts installed at grade do not require alterations, only posts that are installed within the concrete wall caps.

3. **Question:** LS A1.1: Lions Stadium scope notes. Please quantify the amount of this work, only note #3 is quantified. For note 1, please provide electrical plan for the conduit replacement work. For note 7, please quantify the amount of soils that needs to be exported.

   TCNJ Response: The lowest bidder shall figure to replace 150' of conduit. Existing soil will remain on site, it just needs to be redistributed so that the existing column baseplates are not buried.

4. **Question:** LS A1.1: from the walk through it looks like there are concrete pads below the stadium. Are these to be removed? Are these slabs on grade?

   TCNJ Response: Any existing poured in place concrete is to remain in place.

5. **Question:** JW A1.1 calls for 2 bolts to a column. Please confirm this is the only location. If there are more, please provide quantity**.**

   TCNJ Response: This is the only location that requires replacement of bolts.

Attachments:

1. Pre-bid Signup sheet
2. New Specification Section 042000 – Unit Masonry
3. New Specification Section 061000 – Rough Carpentry
4. New Specification Section 083610 – Overhead Coiling Doors
5. New Specification Section 092900 – Gypsum Board
6. New Specification Section 116843 – Electronic Scoreboards
7. New Specification Section 131270 – Press Box
8. Revised Specification Section 131250 – Aluminum Bleacher Seating Assemblies
9. Revised Drawing LT.A1.1 – Lions Track Floor Plans
10. Revised Drawing LT.E0.1 – Electrical Legend and Notes
11. Revised Drawing LT.E0.2 – Electrical Specifications
12. Revised Drawing LT.ED1.1 – Electrical Partial Demolition Site Plans
13. Revised Drawing LT.E1.2 – Electrical Partial Site Plans
14. Revised Drawing LT.E2.1 – Electrical Details

END OF ADDENDUM NO. 1

BLEACHER REPAIRS + RELATED WORK

PRE BID MEETING MAY 10, 2022 - 10AM

	NAME	COMPANY	EMAIL
1,	DAVID JURKIN	TCNJ	JURKIN@TCNJ.EDU
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	Heather Fernandes	Golden Crown Cont.	Heather@GoldenCrown Contractors.com
	Tshombé Austin	Bancroft Construction	Taustin@Bancroftusa.com
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	JOSH LEVY	LevyCons.	Josh@levyconstruction.com

SECTION 042000 - UNIT MASONRY

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. Concrete masonry units.
2. Concrete and masonry lintels.
3. Clay face brick.
4. Mortar and grout.
5. Steel reinforcing bars.
6. Masonry-joint reinforcement.

B. Related Requirements:

1. Section 033000 "Cast-in-Place Concrete"
2. Section 079200 “Joint Sealants”.

1.3 DEFINITIONS

A. CMU(s): Concrete masonry unit(s).

B. Reinforced Masonry: Masonry containing reinforcing steel in grouted cells.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of masonry product and accessory required.

B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.

C. Samples for Verification: For each type and color of the following:

1. Exposed CMUs.
2. Accessories embedded in masonry, including reinforcing, ties, anchors and flashings.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each type and size of the following:

1. Masonry units.

    a. Include data on material properties and material test reports substantiating compliance with requirements.
    b. For brick, include size-variation data verifying that actual range of sizes falls within specified tolerances.
    c. For exposed brick, include test report for efflorescence according to ASTM C 67.

2. Integral water repellant used in CMUs.
3. Cementitious materials. Include name of manufacturer, brand name, and type.
4. Mortar admixtures.
5. Preblended, dry mortar mixes. Include description of type and proportions of ingredients.
6. Grout mixes. Include description of type and proportions of ingredients.
7. Reinforcing bars.
8. Joint reinforcement.
9. Anchors, ties, and metal accessories.

B. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports for mortar mixes required to comply with property specification. Test according to ASTM C 109 for compressive strength, ASTM C 1506 for water retention, and ASTM C 91 for air content.
2. Include test reports, according to ASTM C 1019, for grout mixes required to comply with compressive strength requirement.

C. Statement of Compressive Strength of Masonry: For each combination of masonry unit type and mortar type, provide statement of average net-area compressive strength of masonry units, mortar type, and resulting net-area compressive strength of masonry determined according to TMS 602/ACI 530.1/ASCE 6.

D. Cold-Weather and Hot-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with requirements.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1093 for testing indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver pre-blended, dry mortar mix in moisture-resistant containers. Store pre-blended, dry mortar mix in delivery containers on elevated platforms in a dry location or in covered weatherproof dispensing silos.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

F. Limit moisture absorption during delivery and until time of installation of the maximum percentage allowed by ASTM C 90 for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest the Project site.

1.8 FIELD CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides of walls, and hold cover securely in place.
2. Where one wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe, and hold cover in place.

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least three days after building masonry walls or columns.

C. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

D. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and higher and will remain so until masonry has dried, but not less than seven days after completing cleaning.

E. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in TMS 602/ACI 530.1/ASCE 6.

F. Do not lay masonry units which are wet or frozen.

1. Remove any ice or snow formed on masonry bed by carefully applying heat until top surface is dry to the touch.
2. Remove all masonry determined to be damaged by freezing conditions.
3. Protection of masonry against freezing when the temperature of the surrounding air is 40° F. and falling. Heat materials and provide temporary protection of completed portions of masonry work.

G. Furnish and install all temporary bracing required to prevent damage or stress to new and existing masonry work by reason of wind or other loads which may be superimposed on the work. Provide all bracing rigid, secure and solidly anchored against movement. Remove when no longer required. The Contractor shall be solely responsible for any damage incurred to the masonry work, including contingent and/or related damage, due to failure to properly brace and protect against external forces.

H. Coordination: Review installation procedures and coordinate with other work that must be integrated with unit masonry.

1.9 COORDINATION

A. Contractor will cooperate with other trades in building their work and equipment as masonry work progresses as follows:

1. Where so directed, chases are to be filled in solid at floors with masonry after piping is installed to prevent spreading of fire or vermin.
2. Build in conduit, plugs, sleeves, etc. as required for fastening of panels, electric, switches, receptacles, controls, etc. required by Mechanical and Electrical trades.
3. Build carefully against all flashings. All surfaces to receive flashings shall be smooth, hard, free from projection, and satisfactory for work of other trades.
4. Firestop masonry openings after setting sleeves or installation of ducts, conduit and other work in such manner as to maintain the nominal fire resistive rating of the wall or partition.
5. Restore masonry openings after setting sleeves or installation of ducts, conduit, and other work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from single source from single manufacturer for each product required.

B. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, including color for exposed masonry, from single manufacturer for each cementitious component and from single source or producer for each aggregate.

2.2 PERFORMANCE REQUIREMENTS

2.3 UNIT MASONRY, GENERAL

A. Masonry Standard: Comply with TMS 602/ACI 530.1/ASCE 6, except as modified by requirements in the Contract Documents.

B. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to contain chips, cracks, or other defects exceeding limits stated. Do not use units where such defects are exposed in the completed Work or will impair the quality of finished masonry work.

C. Fire-Resistance Ratings: Where a fire resistance classifications are shown or scheduled for unit masonry construction (1-hr., 2-hr., 3-hr., and similar designations), comply with the requirements for materials and installations established by Underwriters Laboratories, Inc. (UL) Refer to the latest edition of the “Fire Resistance Directory”.

2.4 CONCRETE MASONRY UNITS

A. Shapes: Provide shapes indicated and as follows, with exposed surfaces matching exposed faces of adjacent units unless otherwise indicated.

1. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

B. Integral Water Repellent: Provide units made with integral water repellent for exposed units and where indicated.

1. Integral Water Repellent: Liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested according to ASTM E 514 as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive, with test period extended to 24 hours, shall show no visible water or leaks on the back of test specimen.

a. ACM Chemistries; RainBloc.
b. BASF; Enviroseal 20.
c. Grace Construction Products, W. R. Grace & Co.; Dry-Block.

C. CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
2. Density Classification: as noted below by type.
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions.
4. Exposed Faces: Provide color and texture matching the range represented by Architect's selections.
5. Faces To Receive Plaster: Where units are indicated to receive a direct application of plaster, provide textured-face units made with gap-graded aggregates.

a. Foundation Units (below grade): Normal weight, load bearing units, (125 lbs/cu ft, or greater, oven dry weight of concrete) with at least 75% cross sectional area at bedding surfaces (bed faces)

b. Above grade units (exposed to exterior): Normal weight, load bearing, Architectural Faced Units, (125 lbs/cu ft, or greater, oven dry weight of concrete), with integral water repellent.

D. Decorative CMUs: ASTM C 90.

1. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 1900 psi.
2. Density Classification: Normal weight.
3. Size (Width): Manufactured to dimensions 3/8 inch less than nominal dimensions or as otherwise listed below.

4. Pattern, Texture and Color:

CMU Type 01:	
Manufacturer:	Anchor Block, Clayton Block, E.P. Henry
Texture:	Ground Face
Color #:	As selected from Manufacturer’s full range
Size:	As indicated on drawings

2.5 CONCRETE AND MASONRY LINTELS

A. General: Provide one of the following:

B. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMUs matching adjacent CMUs in color, texture, and density classification, with reinforcing bars

placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.6 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

1. Alkali content shall not be more than 0.1 percent when tested according to ASTM C 114.

B. Hydrated Lime: ASTM C 207, Type S. Do not use-air entraining additives.

C. Portland Cement-Lime Mix: Packaged blend of portland cement and hydrated lime containing no other ingredients.

D. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.

1. Davis Colors; True-Tone.
2. Lanxess Corporation; Bayferrox.
3. Solomon Colors, Inc.; SGS Mortar Colors.

E. Colored Cement Products: Packaged blend made from portland cement and hydrated lime and mortar pigments, all complying with specified requirements, and containing no other ingredients.

1. Colored Portland Cement-Lime Mix:

a. Lehigh Hanson, Inc; Custom Color Portland/Lime Cement.

2. Formulate blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
3. Pigments shall not exceed 10 percent of portland cement by weight.

F. Aggregate for Mortar: ASTM C 144.

1. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.
2. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.
3. White-Mortar Aggregates: Natural white sand or crushed white stone.
4. Colored-Mortar Aggregates: Natural sand or crushed stone of color necessary to produce required mortar color.

G. Aggregate for Grout: ASTM C 404.

H. Water-Repellent Admixture: Liquid water-repellent mortar admixture intended for use with CMUs containing integral water repellent from same manufacturer.

1. ACM Chemistries; RainBloc for Mortar.
2. Addiment Incorporated; Block Plus W-10.
3. Grace Construction Products, W. R. Grace & Co.; Dry-Block Mortar Admixture.

I. Water: Potable.

2.7 REINFORCEMENT

A. Uncoated-Steel Reinforcing Bars: ASTM A 615 or ASTM A 996, Grade 60.

B. Reinforcing Bar Positioners: Wire units designed to fit into mortar bed joints spanning masonry unit cells and to hold reinforcing bars in center of cells. Units are formed from 0.148-inch steel wire, hot-dip galvanized after fabrication. Provide units designed for number of bars indicated.

1. Hohmann & Barnard, Inc.,; RB and/or RB-Twin Rebar Positioners, or approved equal. Provide with Spyra-Lox Rebar Lap-Joint Tie where reinforcing bars are lapped.

C. Masonry-Joint Reinforcement, General: ASTM A 951.

1. Interior Walls: Hot-dip galvanized carbon steel.
2. Exterior Walls: Hot-dip galvanized carbon steel.
3. Wire Size for Side Rods: 0.187-inch diameter.
4. Wire Size for Cross Rods: 0.187-inch diameter.
5. Wire Size for Veneer Ties: 0.187-inch diameter.
6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches o.c.
7. Provide in lengths of not less than 10 feet, with prefabricated corner and tee units.

D. Masonry-Joint Reinforcement for Single-Wythe Masonry: Ladder or truss type with single pair of side rods.

2.8 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips in thicknesses required, complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.

1. Hohmann & Barnard, Inc.; NS – Neoprene Sponge, or approved equal.

B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 and designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

1. Hohmann & Barnard, Inc.; RS or RS-Tee Rubber Control Joint, or approved equal.

C. Bond-Breaker Strips: No. 15 Asphalt-saturated felt complying with ASTM D 226, Type I.

2.9 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Diedrich Technologies, Inc.
2. EaCo Chem, Inc.
3. ProSoCo, Inc.

2.10 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Use portland cement-lime mortar unless otherwise indicated.
3. Add cold-weather admixture (if used) at same rate for all mortar that will be exposed to view, regardless of weather conditions, to ensure that mortar color is consistent.

B. Preblended, Dry Mortar Mix: Furnish dry mortar ingredients in form of a preblended mix. Measure quantities by weight to ensure accurate proportions, and thoroughly blend ingredients before delivering to Project site.

C. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry].

1. For masonry below grade or in contact with earth, use Type M.
2. For reinforced masonry, use Type S.
3. For mortar parge coats, use Type N.
4. For exterior, above-grade, load-bearing and non-loadbearing walls and parapet walls; for interior load-bearing walls; for interior non-loadbearing partitions; and for other applications where another type is not indicated, use Type N.
5. For interior non-loadbearing partitions, use Type N.
6. Use Type M mortar to set anchor bolts and grout base plates.
7. Fire Clay Mortar: ASTM C 105 for use with flue liners.

D. Pigmented Mortar: Use colored cement product or select and proportion pigments with other ingredients to produce color required. Do not add pigments to colored cement products.

1. Pigments shall not exceed 10 percent of portland cement by weight.
2. Mix to match Architect's sample.
3. Application: Use pigmented mortar for exposed mortar joints with the following units:

    a. Decorative CMUs.

E. Grout for Unit Masonry: Comply with ASTM C 476.

1. Use grout of type indicated or, if not otherwise indicated, of type (fine or coarse) that will comply with TMS 602/ACI 530.1/ASCE 6 for dimensions of grout spaces and pour height.
2. Proportion grout in accordance with ASTM C 476, Table 1 or paragraph 4.2.2 for specified 28-day compressive strength indicated, but not less than 2000 psi.
3. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C 143.

PART 3 - EXECUTION

3.1 EXAMINATION

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

1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
2. Verify that foundations are within tolerances specified.
3. Verify that reinforcing dowels are properly placed.
4. Verify that substrates are free of substances that impair mortar bond.

B. Before installation, examine rough-in and built-in construction for piping systems to verify actual locations of piping connections.

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

3.2 INSTALLATION, GENERAL

A. Thickness: Build cavity and composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this and other Sections.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match construction immediately adjacent to opening.

D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp,

unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed.

E. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.

F. Matching Existing Masonry: Match coursing, bonding, color, and texture of existing masonry.

G. Wetting of Brick: Wet brick before laying if initial rate of absorption exceeds 30 g/30 sq. in. per minute when tested according to ASTM C 67. Allow units to absorb water so they are damp but not wet at time of laying.

1. For units with surface temperatures above 32° F (0° C), wet with water heated to above 70° F (21° C).
2. For units with surface temperatures below 32° F (0° C), wet with water heated to above 130° F (54° C).

H. Perform the following construction procedures while masonry work is progressing. Temperature ranges indicated below apply to air temperature existing at time of installation except for grout. For grout, temperature ranges apply to anticipated minimum night temperatures. In heating mortar and grout materials, maintaining mixing temperature selected within 10° F.

1. 40°F to 32°F:

    a. Mortar: Heat mixing water to produce mortar temperature between 40°F and 120°F.
    b. Grout: Follow normal masonry procedures.

2. 32°F to 25°F:

    a. Mortar: Heat mixing water and sand to produce mortar temperatures between 40°F and 120°F; maintain temperature of mortar on boards above freezing.
    b. Grout: Heat grout materials to 90°F to produce in place grout temperature of 70°F at end of work day.

3. 25°F to 20°F:

    a. Mortar: Heat mixing water and sand to produce mortar temperatures between 40°F and 120°F; maintain temperature of mortar on boards above freezing.
    b. Grout: Heat grout materials to 90°F to produce in-place grout temperature of 70°F at end of work day.
    c. Heat both sides of wall under construction using salamanders or other heat sources.
    d. Use windbreaks or enclosures when wind is excess of 15 mph.

4. 20°F and below:

    a. Mortar: Heat mixing water and sand to produce mortar temperatures between 40°F and 120°F.
    b. Grout: Heat grout materials to 90°F to produce in-place grout temperature of 70°F at end of work day.

c. Masonry Units: Heat masonry units so that they are above 20°F at time of laying.
d. Provide enclosure and auxiliary heat to maintain an air temperature of at least 40°F for 24 hours after laying units.
e. Do not heat water for mortar and grout to above 160°F.
f. Protect completed masonry and masonry not being worked on in the following manner:
g. Temperature ranges indicated apply to mean daily air temperature except for grouted masonry. For grouted masonry temperature ranges apply to anticipated minimum night temperatures.

5. 40°F to 32°F:

a. Protect masonry from rain or snow for at least 24 hours by covering with weather-resistive membrane.

6. 32°F to 20°F:

a. Completely cover masonry with weather-resistive insulating blankets or similar protection for at least 24 hours, 48 hours for grouted masonry.

7. 20°F and below:

a. Except as otherwise indicated, maintain masonry temperature above 32°F for 24 hours using enclosures using and supplementary heat, electric heating blankets, infrared lamps or other methods proved to be satisfactory. For grouted masonry maintain heated enclosure to 40°F for 48 hours.

3.3 TOLERANCES

A. Dimensions and Locations of Elements:

1. For dimensions in cross section or elevation, do not vary by more than plus 1/2 inch or minus 1/4 inch.
2. For location of elements in plan, do not vary from that indicated by more than plus or minus 1/2 inch.
3. For location of elements in elevation, do not vary from that indicated by more than plus or minus 1/4 inch in a story height or 1/2 inch total.

B. Lines and Levels:

1. For bed joints and top surfaces of bearing walls, do not vary from level by more than 1/4 inch in 10 feet, or 1/2-inch maximum.
2. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.
3. For vertical lines and surfaces, do not vary from plumb by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
4. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2-inch maximum.

5. For lines and surfaces, do not vary from straight by more than 1/4 inch in 10 feet, 3/8 inch in 20 feet, or 1/2-inch maximum.
6. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet or 1/2-inch maximum.
7. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

C. Joints:

1. For bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch.
2. For exposed bed joints, do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
3. For head and collar joints, do not vary from thickness indicated by more than plus 3/8 inch or minus 1/4 inch.
4. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch.
5. For exposed bed joints and head joints of stacked bond, do not vary from a straight line by more than 1/16 inch from one masonry unit to the next.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond do not use units with less-than-nominal 4-inch horizontal face dimensions at corners or jambs.

C. Stopping and Resuming Work: Stop work by stepping back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

E. Fill space between steel frames and masonry solidly with mortar unless otherwise indicated.

F. Where built-in items are to be embedded in cores of hollow masonry units, place a layer of metal lath, wire mesh, or plastic mesh in the joint below, and rod mortar or grout into core.

G. Fill cores in hollow CMUs with grout 24 inches under bearing plates, beams, lintels, posts, and similar items unless otherwise indicated.

1. Install compressible filler in joint between top of partition and underside of structure above.
2. Wall Bracing: Adequately brace all walls against forces and pressures during entire construction period.
3. Install Safing Insulation to fill gap between deck flutes and top of fire rated wall. Cut safing insulation wider than gap to be filled to ensure compression fit and seal joint between insulation and edges deck and wall with caulking approved by safing insulation manufacturer for this purpose. Leave no voids in completed insulation.

3.5 MORTAR BEDDING AND JOINTING

A. Lay CMUs as follows:

1. Bed face shells in mortar and make head joints of depth equal to bed joints.
2. Bed webs in mortar in all courses of piers, columns, and pilasters.
3. Bed webs in mortar in grouted masonry, including starting course on footings.
4. Fully bed entire units, including areas under cells, at starting course on footings where cells are not grouted.
5. Fully bed units and fill cells with mortar at anchors and ties as needed to fully embed anchors and ties in mortar.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures.

1. Mix units from several pallets or cubes as they are placed.
2. Match coursing, bonding, color, and texture of existing masonry.

D. Set stone and/or cast-stone trim units in full bed of mortar with full vertical joints. Fill dowel, anchor, and similar holes.

1. Clean soiled surfaces with fiber brush and soap powder and rinse thoroughly with clear water.
2. Allow cleaned surfaces to dry before setting.
3. Wet joint surfaces thoroughly before applying mortar.
4. Rake out mortar joints for pointing with sealant.

E. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

F. Rake out mortar for joints to receive caulking around door and window frames, and elsewhere as shown.

G. Maintain joint widths, except for minor variations required to maintain bond alignment, or where applicable to match existing. If not otherwise indicated, lay walls with 3/8" joints. Cut joints flush for masonry walls that are to be concealed or to be covered by other materials. Fill scored joints of masonry units and precast lintels with mortar to be tooled to match other mortar joints. Tool exposed joints slightly concave, including joints in cavity walls and scored joints of masonry units.

H. Batch Control:

1. Measure and batch materials either by volume or weight, such that the required proportions for mortar can be accurately controlled and maintained.

2. Mix mortars with the maximum amount of water consistent with workability to provide maximum tensile bond strength within the capacity of the mortar.

3. Mix mortar ingredients for a minimum of five minutes in a mechanical batch mixer. Use water clean and free of deleterious materials which would impair the work. Do not use mortar which has begun to set, or if more than 2-1/2 hours has elapsed since initial mixing. Re-temper mortar during 2-1/2 hour period as required to restore workability.

3.6 MASONRY-JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches.

1. Space reinforcement not more than 16 inches o.c.
2. Space reinforcement not more than 8 inches o.c. in foundation walls and parapet walls.
3. Provide reinforcement not more than 8 inches above and below wall openings and extending 12 inches beyond openings in addition to continuous reinforcement.

B. Interrupt joint reinforcement at control and expansion joints unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

E. Cut and bend reinforcing units as directed by manufacturer for continuity at corners, returns, offsets, column fireproofing, pipe enclosures, and other special conditions.

3.7 BOND BEAMS

A. Provide deformed bar reinforcing in bond beams and other unit masonry work as shown. Lap reinforcing 24 diameters minimum at splices. Fill cavities containing reinforcing steel with type M mortar, course grout conforming to ASTM C 476, or concrete conforming to the requirements of Section 033000.

3.8 CONTROL AND EXPANSION JOINTS

A. General: Install control- and expansion-joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

B. Form control joints in concrete masonry by installing temporary foam-plastic filler in head joints, and removing filler when unit masonry is complete for application of sealant.
   1. Install temporary foam-plastic filler in head joints, and remove filler when unit masonry is complete for application of sealant.

C. Form expansion joints in brick as follows:
   1. Build in compressible joint fillers where indicated.
   2. Form open joint full depth of brick wythe and of width indicated, but not less than 3/8 inch for installation of sealant and backer rod specified in Section 079200 "Joint Sealants."

D. Provide horizontal, pressure-relieving joints by either leaving an airspace or inserting a compressible filler of width required for installing sealant and backer rod specified in Section 079200 "Joint Sealants," but not less than 3/8 inch.

   1. Locate horizontal, pressure-relieving joints beneath shelf angles supporting masonry.

E. Provide vertical expansion, control and isolation joints in masonry at junctions to existing masonry, where shown and required, but not to exceed 28’-0” spacing, within 10 feet of one side of a corner, at wall offsets, at changes in wall height and directly below shelf angles. Build in related masonry accessory items as the masonry work progresses.

F. Provide approved rated expansion joints and/or joints at joints within and between firewalls and intersecting/abutting walls including other rated walls.

3.9 LINTELS

A. Install steel lintels where indicated.

   1. Steel lintels weighing more than 250 lbs. shall be installed by the Steel Contractor. All others shall be installed by the General Contractor or respective trade.

B. Provide concrete or masonry lintels where shown and where openings of more than 12 inches for brick-size units and 24 inches for block-size units are shown without structural steel or other supporting lintels.

C. In firewalls, provide concrete or masonry lintels. Steel lintels are prohibited at firewall locations.

D. Provide minimum bearing of 8 inches at each jamb unless otherwise indicated.

E. Thoroughly pack space between penetration material and masonry with mortar for full width of wall at fire rated walls or fill space thoroughly with fire-stopping sealant.

3.10 FLASHING, WEEP HOLES, AND CAVITY VENTS

A. Install single-wythe CMU flashing system in bed joints of CMU walls where indicated to comply with manufacturer's written instructions. Install CMU cell pans with upturned edges located below face shells and webs of CMUs above and with weep spouts aligned with face of wall. Install CMU web covers so that they cover upturned edges of CMU cell pans at CMU webs and extend from face shell to face shell.

3.11 PARGING

A. Parge exterior faces of below-grade masonry walls, where indicated, in two uniform coats to a total thickness of 3/4 inch. Dampen wall before applying first coat, and scarify first coat to ensure full bond to subsequent coat.

B. Use a steel-trowel finish to produce a smooth, flat, dense surface with a maximum surface variation of 1/8 inch per foot. Form a wash at top of parging and a cove at bottom.

C. Damp-cure parging for at least 24 hours and protect parging until cured.

3.12 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean brick by bucket-and-brush hand-cleaning method described in BIA Technical Notes 20.
6. Clean concrete masonry by applicable cleaning methods indicated in NCMA TEK 8-4A.

7. Clean masonry with a proprietary acidic cleaner applied according to manufacturer's written instructions.
8. Clean stone trim to comply with stone supplier's written instructions.
9. Clean limestone units to comply with recommendations in ILI's "Indiana Limestone Handbook."

3.13 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above or recycled, and other masonry waste, and legally dispose of off Owner's property.

END OF SECTION 042000

SECTION 061000 - ROUGH CARPENTRY

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. Wood blocking, cants, and nailers.
2. Plywood backing panels.

1.3 DEFINITIONS

A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

B. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.
2. NLGA: National Lumber Grades Authority.
3. RIS: Redwood Inspection Service.
4. SPIB: The Southern Pine Inspection Bureau.
5. WCLIB: West Coast Lumber Inspection Bureau.
6. WWPA: Western Wood Products Association.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
3. For fire-retardant treatments, include physical properties of treated lumber both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5664.

4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Fastener Patterns: Full-size templates for fasteners in exposed framing.

1.5 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Fire-retardant-treated wood.
3. Engineered wood products.
4. Shear panels.
5. Power-driven fasteners.
6. Powder-actuated fasteners.
7. Expansion anchors.
8. Metal framing anchors.

1.6 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Stack lumber flat with spacers beneath and between each bundle to provide air circulation. Protect lumber from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.

2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.

B. Maximum Moisture Content of Lumber: 19 percent unless otherwise indicated.

C. Engineered Wood Products: Provide engineered wood products acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable Design Stresses: Provide engineered wood products with allowable design stresses, as published by a manufacturer that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Category UC3b for exterior construction not in contact with the ground, and Category UC4a for items in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material.

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Use treatment that does not promote corrosion of metal fasteners.
2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.

C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

E. Application: Treat items indicated on Drawings, and the following:

1. Concealed blocking.
2. Plywood backing panels.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds.
7. Sleepers at grade

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any of the following species:

1. Hem-fir (north); NLGA.
2. Mixed southern pine; SPIB.
3. Spruce-pine-fir; NLGA.
4. Hem-fir; WCLIB or WWPA.
5. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.
6. Northern species; NLGA.
7. Eastern softwoods; NeLMA.

C. For blocking not used for attachment of other construction, Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.

D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

E. For furring strips for installing plywood or hardboard paneling, select boards with no knots capable of producing bent-over nails and damage to paneling.

2.5 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners of Type 304 stainless steel.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Lag Bolts: ASME B18.2.1.

F. Bolts: Steel bolts complying with ASTM A 307, Grade A ; with ASTM A 563 hex nuts and, where indicated, flat washers.

G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to six times the load imposed when installed in unit masonry assemblies and equal to four times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.
2. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

2.6 METAL FRAMING ANCHORS

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

B. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:

1. Cleveland Steel Specialty Co.
2. KC Metals Products, Inc.
3. Phoenix Metal Products, Inc.
4. Simpson Strong-Tie Co., Inc.
5. USP Structural Connectors.

C. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, that meet or exceed those indicated on drawings. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

D. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

1. Use for interior locations unless otherwise indicated.

E. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

1. Use for wood-preservative-treated lumber and where indicated.

F. Stainless-Steel Sheet: ASTM A 666, Type 304.

1. Use for exterior locations and where indicated.

2.7 MISCELLANEOUS MATERIALS

A. Water-Repellent Preservative: NWWDA-tested and -accepted formulation containing 3-iodo-2-propynyl butyl carbamate, combined with an insecticide containing chloropyrifos as its active ingredient.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

D. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.

E. Shear Wall Panels: Install shear wall panels to comply with manufacturer's written instructions.

F. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

G. Install sill sealer gasket to form continuous seal between sill plates and foundation walls.

H. Do not splice structural members between supports unless otherwise indicated.

I. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board or lath at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

J. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

K. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

1. Use inorganic boron for items that are continuously protected from liquid water.
2. Use copper naphthenate for items not continuously protected from liquid water.

L. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
3. Comply with approved fastener patterns where applicable. Before fastening, mark fastener locations, using a template made of sheet metal, plastic, or cardboard.

3.2 WOOD GROUND, SLEEPER, BLOCKING, AND NAILER INSTALLATION

A. Install where indicated and where required for screeding or attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces unless otherwise indicated.

C. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

D. Provide permanent grounds of dressed, pressure-preservative-treated, key-beveled lumber not less than 1-1/2 inches wide and of thickness required to bring face of ground to exact thickness of finish material. Remove temporary grounds when no longer required.

3.3 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes sufficiently wet that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 061000

SECTION 083610 – OVERHEAD COILING DOORS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

A. Provide all labor, materials, accessories, equipment, incidentals and supervision to complete overhead coiling thermal door work as required for a complete working installation, including, but not limited to, the following:

1. Overhead Coiling Steel Doors

B. Related Sections Specified Elsewhere:

1.	Unit Masonry Assemblies	Division 4
2.	Miscellaneous Metal	Division 5
3.	Painting	Division 9

1.3 QUALITY ASSURANCE

A. Provide each rolling steel service door as a complete unit produced by one manufacturer including electric operators, controls, hardware, accessories, mounting and installation components.

B. Testing: Provide documentation from a certified testing agency that the door has been tested for a minimum of 50,000 cycles and 500 drop tests.

C. Installer Qualifications: Engage an experienced installer who is an authorized representative of the rolling steel service door manufacturer for both installation and maintenance of units required for this Project.

1.4 SUBMITTALS

A. Product Data: For each type and size of rolling steel service door, guides, brackets, counterbalance, barrel, hood, hardware, and accessories. Include details of construction relative to materials, dimensions of individual components, profiles, and finishes. Provide manufacturer's cataloged data sheets, written installation instructions, and details, roughing-in diagrams, power requirements, operating instructions, and maintenance information.

B. Shop Drawings: Provide shop drawings including elevations, sections, details, dimensions, materials, special components, finishes, surrounding conditions for anchorage and support of the door and coordination with work of other trades.

1. Setting drawings, templates, and installation instructions for built-in or embedded anchor devices.

C. Installer Certificates: Signed by manufacturer certifying that installers are experienced in the installation of coiling doors and are authorized by the manufacturer for installation of doors being provided for this project.

D. Maintenance and Operating Manuals: Provide three complete sets of manuals describing the materials, devices and procedures to be followed in operating and maintaining doors of this section. Include manufacturer's brochures and parts list describing the actual materials used on this project and the names and addresses of local service organizations.

1.5 DELIVERY, STORAGE & HANDLING

A. Deliver and store materials in manufacturer's original unopened packaging, legibly labeled to show name, brand and type. Store materials in a protected weatherproof, dry location off the ground in accordance with manufacturer's written instructions.

1.6 WARRANTY

A. Warranty: Provide 1 year written warranty signed by the Manufacturer and Installer agreeing to repair or replace all work that has failed as a result of defects in materials and workmanship at no cost to the Owner.

B. Warranty period shall be one year from date of substantial completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

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

1. Raynor Garage Doors, DuraCoil Optima, Interior Lintel Mount, Electric Operation, or approved equal. (Overhead Door)

2.2 OVERHEAD COILING STEEL SERVICE DOORS

A. Curtain: Lateral movement of the slats to be contained by means of zinc plated malleable cast-iron endlocks/windlocks fastened to the ends of every other slat with zinc-plated steel rivets. Windlocks shall be provided as required by door size or special windload requirements.

Windlocks to be zinc plated malleable cast-iron and fastened with zinc-plated steel rivets. Bottom bar shall be hot rolled galvanized steel angles, minimum 1-1/2" x 1-1/2" x 1/8" (38.1mm x 38.1mm x 3.2mm). Bottom astragal shall be single-contact type.

1. Slats: The curtain shall consist of steel interlocking flat slats not less than 18 gauge. Steel slats shall be commercial quality hot-dipped galvanized (G-90) steel per ASTM A-653, and painted with a primer and a finish coat in gray. The back cover shall be a 24 gauge (or 22 gauge), prime-painted, hot-dipped galvanized steel cover. The door shall be provided with a vinyl jamb seal and rubber hood baffle as standard.

B. Guides: All guide assemblies shall be fabricated from three structural steel angles. Guide angles shall be minimum 3" x 2" x 3/16" (76.2mm x 50.8mm x 4.8mm) and fitted with two removable curtain stops each. Wall mounted angles shall be continuous type.

C. Brackets: Mounting bracket plates shall be made from a minimum 3/16" (4.8mm) steel plate and attached to the wall angle of the guide assembly with 1/2" (12.7mm) diameter Class 5 hardened bolts. The drive side bracket shall be fitted with a sealed ball bearing.

D. Barrel: The barrel shall be made from a minimum 4-1/2" (114.3mm) O.D. x .120" (3.1mm) wall structural steel pipe. Deflection of pipe under full load shall not exceed .03" (.8mm) per foot of span. All 4" (102mm) and 6" (152mm) barrels shall include a galvanized steel removable plug to facilitate counterbalance maintenance.

E. Counterbalance: The curtain shall be counterbalanced by means of oil-tempered, helical torsion springs, grease-packed and mounted on a single continuous steel torsion shaft. Springs shall be compression spring design to facilitate any counterbalance maintenance.

F. Hood: Hood shall be 24 gauge prime painted, hot-dipped galvanized steel with rolled edges.

G. Wind load: Doors shall be designed to withstand 20 pounds per square foot (97.64 kg/sq.m.) wind load. Other wind loads are available.

H. Provide weather seals for air and water tightness.

I. Finish: All non-plated components of the door shall receive one coat of rust-inhibitive primer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Installer must examine the substrates, framing and conditions under which the overhead coiling door units are to be installed and notify the General Contractor in writing of conditions detrimental to the proper and timely completion. Assure unsatisfactory conditions have been corrected in a manner acceptable to the Installer.

3.2 INSTALLATION

A. Install doors, shutters, and operating equipment complete with necessary hardware, jamb and head weatherstrips, anchors, inserts, hangers and equipment supports in accordance with contract documents and final approved shop drawings and manufacturer's written instructions.

B. Upon completion of installation including work by other trades, lubricate, test and adjust doors to operate easily, free from warp, twist or distortion.

3.3 TESTING

A. Test overhead coiling thermal steel doors for proper smooth operation free from binding and obstructions.

END OF SECTION 08361

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

RELATED DOCUMENTS

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

DESCRIPTION OF WORK

Provide all labor, materials, accessories, equipment, incidentals to complete gypsum board assembly work, as indicated and required including, but not necessarily limited to, the following:

1. Interior Gypsum Wallboard.
2. Non-Load-Bearing Steel Framing and Furring.
3. Taping and Spackling.
4. Reinforcing and blocking to receive and support the work of other trades.
5. Building in items furnished by other trades and/or contracts.

Related Work Specified Elsewhere:

Rough Carpentry	Division 6

SUBMITTALS

Submit manufacturer's product data and installation instructions for each type of product indicated.

QUALITY ASSURANCE

Comply with the requirements of the following:

1. ASTM C 474 "Standard Test Methods for Joint Treatment Materials for Gypsum Board Construction."
2. ASTM C 475 "Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board."
3. ASTM C 645 "Standard Specification for Nonstructural Steel Framing Members."
4. ASTM C 754 "Standard Specification for Installation of Steel Framing Members to Receive Screw Attached Gypsum Panel Products."
5. ASTM C 840 "Standard Specification for Application and Finishing of Gypsum Board."
6. ASTM C 919 "Standard Specification for Use of Sealants in Acoustical Applications."

7.	ASTM C 954	"Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 inches to 0.112 in. in thickness."
8.	ASTM C 1002	"Standard Specification for Specification for Steel Drill Screws for the Application of Gypsum Panel or Metal Plaster Bases."
9.	ASTM C 1047	"Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base."
10.	ASTM C 1177	"Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing".
11.	ASTM C 1396	"Standard Specification for Gypsum Wallboard."
12.	GA-216	"Recommend Specifications for the Application and Finishing of Gypsum Board."

Sound Rated Assemblies: Provide materials and construction identical to assemblies indicated and in accordance with ASTM E 90 and classified according to ASTM E 413 by a qualified independent testing agency to achieve the STC Rating indicated, or if not indicated, a minimum STC Rating of 50.

DELIVERY, STORAGE AND HANDLING

Deliver materials in original unopened containers, packages or bundles bearing brand name and identification of manufacturer or supplier.

Use or develop a written plan for the management of the jobsite for the delivery, storage, installation and protection of the products until completion of the project.

Store materials inside under cover and in manner to keep them dry, protected from direct exposure to rain, snow, condensation, direct sunlight, surface contamination, corrosion, damage, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

Handle gypsum boards to prevent damage to edges, ends or surfaces. Protect metal corner beads and trim from being bent or damaged.

PROJECT CONDITIONS

Comply with ASTM C 840 requirements gypsum board manufacturer's written recommendations, whichever are more stringent, for environmental conditions before, during and after application of gypsum board construction work.

Environmental Limitations: Room temperatures shall be maintained at not less than 50 degrees F, during application of gypsum board for a minimum period of 48 hours prior to, during and following application of gypsum board, joint treatment materials and bonding of adhesives.

Further maintain not more than 80 degrees F for 7 days prior to application of gypsum base, continuously during application, and after application until plaster skim coat is dry.

Avoid exposure to excessive, repetitive or continuous moisture, before, during, and after installation. Eliminate sources of moisture immediately

Ventilation: Adequate ventilation shall be maintained in the work area of building spaces as required to remove water in excess of that required for drying of joint treatment material and plaster skim coat during installation and curing period. Avoid drafts during dry, hot weather to prevent too rapid drying.

Do not install interior gypsum panels until installation areas are enclosed and conditioned.

Do not install panels that are wet, moisture damaged, and those that are mold damaged.

13. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

ACCEPTABLE MANUFACTURERS

Manufacturer: Subject to compliance with requirements, provide products of one of the following or approved equivalent.

1. Gypsum Board and Related Products:

   Georgia-Pacific Corp.
   Gold Bond Building Products Div., National Gypsum Co.
   United States Gypsum Co.

INTERIOR GYPSUM WALLBOARD

Panel Size: Provide panels in maximum lengths and widths available that will minimize joints in each area and correspond with the support system indicated.

All Gypsum Wallboards: ASTM C-1396; tapered edges.

1. Interior Gypsum Ceiling Board: 5/8” thick, unless otherwise indicated, manufactured with a special gypsum core containing additives to offer greater support and sag resistance for water based spray texture paints and insulation than 5/8” standard regular-type panels.

TRIM ACCESSORIES

Interior Trim: ASTM C 1047. Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of electro-galvanized steel 28 gage (minimum) unless otherwise indicated

with either knurled and perforated or expanded flanges for nailing or screwing and beaded for concealment of flanges in joint compound.

2. Provide corner beads at outside corners, LC-Beads (J-Bead) at exposed panel edges, L-Beads, U-Beads, special L-kerf-type edge trim beads and one-piece expansion (control) joint beads.

JOINT TREATMENT MATERIALS

Joint Treatment Materials: Comply with ASTM C 475 and recommendations of manufacturer.

Joint tape:

3. Use perforated paper type for interior wallboard and exterior gypsum ceiling board. Use 10-by-10 glass mesh for glass mat gypsum sheathing board and veneer plaster base panels with plaster bonder. For tile backing panels, Use 2" alkali-resistant fiberglass tape unless otherwise recommended by the panel manufacturer.

Joint compound: Comply with ASTM C 475 and recommendations of the manufacturer.

4. For interior gypsum wallboard use setting-type taping compound followed by coats of setting-type sandable topping compound or as otherwise recommended by manufacturer.

5. For tile backing panels use the type recommended by the manufacturer for the application required at this project.

Concealed Acoustical Sealant: Non-drying, non-hardening, non-skinning, non-staining, non-bleeding, gunnable synthetic rubber sealant recommended for sealing interior concealed applications per ASTM C 919.

AUXILIARY MATERIALS

Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

Spot Grout: ASTM C 475, setting-type joint compound recommended for spot grouting steel door frames, transoms, side lites and borrowed lites.

Fastening Adhesive for Wood: ASTM C 557.

Fastening Adhesive for Metal: Special adhesive recommended for laminating gypsum panels to steel framing.

Steel Drill Screws: ASTM C 1002

Framing screws: ASTM C 646 - Corrosion Resistant

Power actuated fasteners: Type recommended by manufacturer for securing runners and furring strips to masonry and concrete.

Steel drill screws: ASTM C 954 - Corrosion Resistant for fastening panels to steel members.

Screws for cementitious backer units: Type and size as recommended by the backer unit manufacturer.

Isolation Strip at Exterior Walls: Foam gasket, adhesive-backed, closed-cell, vinyl foam strips that allow fastener penetration without foam displacement, 1/8” thick in width to suit steel stud size.

Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

Acoustical Sealant: As specified in Division 07 Section "Joint Sealants."

PART 3 - EXECUTION

INSPECTION

Installer must examine the areas and conditions under which gypsum board assembly work is to be installed and notify the General Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected.

METAL SUPPORT

Comply with specified standards.

Metal Studs: Space maximum 16" o/c, unless otherwise indicated.

Furring Channels: Space maximum 16" o/c, unless otherwise indicated, and at not more than 4" from floor and ceiling lines or abutting walls, Secure in place 24" o/c on alternate flanges.

Install Framing, Bracing and Connections, including stud kickers, web stiffeners, clip angles, continuous angles, anchors, fasteners, etc., whether shown or not, as required to provide a complete, rigid, stable and structurally sound installation.

Install supplementary framing and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, handrails, grab bars, accessories, furnishings, otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer and "Gypsum Construction Handbook" published by United States Gypsum Co.

Extend partition framing tight to overhead roof construction except as otherwise shown.

Install auxiliary framing at termination of drywall work, and at openings, as required for support of both the drywall construction and other work indicated for support thereon.

Do not bridge building expansion joints and control joints with support system, frame both sides of joints with furring and other supports as indicated.

Install grid suspension system materials in accordance with Ceiling and Interior Systems Construction Association's (CISCA) "Ceiling System's Handbook" and manufacturer's printed instructions. Also comply with governing regulations, referenced standards, industry standards applicable to the work and as shown on final approved shop drawings.

Install grid suspension systems to comply with ASTM C 636, with hangers supported from overhead construction. Locate hangers near each end and spaced on 4' centers along carrying channel or main runners. Level to a tolerance of 1/8" in 12'-0".

Seismic Restraints: Comply with Seismic Hazard Exposure Group II requirements in compliance with IBC International Building Code 2009, New Jersey Edition, Section 1613 Earthquake Loads, ASTM E 580 and CISCA's "Recommendations for Direct-Hung Acoustical and Lay-in Panel Ceilings — Seismic Zones 0 - 2."

Grid Suspension System: Attach perimeter wall track or angle where grid suspension system meets vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

1. Hangers: No. 12 hanger wires spaced 4'-0" o/c in both directions, closer spacing if loads increase due to additional loading. Provide extra wires to hang lights, diffusers, etc. independent of grid.

2. Provide additional independent hanger wires for lighting fixtures or air diffusers etc. to prevent fixture dropout, minimum four hangers per unit or as otherwise required by IBC International Building Code 2009, New Jersey Edition, Section 1613 Earthquake Loads.

3. Main Beam: Install at 4'-0" o/c with internal splice having expansion detail on both ends. Rout holes spaced 8" o/c to receive cross tees (spaced 16" o/c).

4. Cross Tees: Install at 16" o/c.

5. Vertical Steps, Soffits, Slopes, Curves: Use Drywall Angle Clips, Direct Load Ceiling Clips, Radius Clips, Drywall Attachment Clips, Transition Clips, Beam Adapter Clips, Retention Clips, Beam End Retaining Clips, Stiffening Braces, etc. or approved equivalent and additional wires as needed.

6. Accessories: Use Perimeter Trim and Angle Trim, Perimeter Channel Molding, Clips, Reinforcing Plates as recommended by system manufacturer or approved equivalent and additional wires as required.

Drywall to Acoustical transition: To form a transition from a drywall ceiling to an acoustical ceiling, use Drywall Transition Clips which allows use of the grid as a transitional trim.

Provide additional framing and blocking to build in and support items furnished in other Sections and other Contracts.

INSTALLATION OF METAL SYSTEM SUPPORT

Attach metal floor and top tracks in accordance with ASTM C 745 to beams and to underside of roof deck with suitable fasteners spaced no more than 24" on centers. Apply three (3) continuous bead of acoustical sealant above ceiling runner channels.

Install metal studs of appropriate gage and depth at specified spacing to meet intended fire rating and structural requirements.

Insert metal studs into floor and ceiling tracks and twist into position. Space studs on 16 inch centers. Screw studs to bottom and top/ceiling runners with sheet metal screws, (2) at top/ceiling and bottom. Provide additional studs not more that 2 inches from abutting partitions, and other construction. At corners, position on stud so that it forms the outside corner. Construct rough bucks and erect in place by cutting flanges and rigidly fastening to face of double studs with screws. Provide stud on each side of control joint set 1/2 inches apart.

Provide offsets and furring framing to form soffits, for pipe chases and other work. Fabricate special framing and hangers using 1-1/2" screw channels in addition to studs and runners specified. Space framing at not greater than 20" centers. Fasten members where required for rigidity using sheet metal screws or staples, as recommended by framing manufacturer.

Provide additional framing to build in and support items such as handrails, grab bars, electrical components, etc. furnished under other sections. All work shall be accurately located, plumb, level and true to line.

Install sound attenuation blankets between studs of operable partition soffits. Carry full height above finished ceiling. Butt all joints tight.

WALLBOARD INSTALLATION

Installation of gypsum board products shall be in accordance with ASTM C 840 “Standard Specification for Application and Finishing of Gypsum Board”.

Inspect all surfaces and framing to which gypsum wallboard is to be applied. Remedy all conditions that will jeopardize satisfactory finish walls prior to installation of drywall. Check alignment and plumb of all framing and furring. Insulation will be double layer of wallboard unless noted otherwise.

Install sound attenuation blankets as indicated, and in accordance with insulation manufacturer’s recommendations for installation and attachment, prior to gypsum base unless readily installed after base has been installed on one side.

Install appropriate gypsum panel perpendicular to the framing and up against the floor and metal deck. Use the correct type and length of fastener, including spacing to meet the intended fire resistance rating. Install panels on both sides of the metal framing unless otherwise indicated.

Install gypsum soffit and ceiling boards across framing to minimize the number of abutting end joints and avoid abutting end joints in the central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

Install single layer wallboard assemblies horizontally with Type "S" Bugle head drywall screws spaced not more than 12" o.c. Stagger joints on both sides of two sided partitions. Tightly install sound

or thermal batt insulation as indicated between studs. Run three continuous beads of caulking at top of beam prior to installing wallboard. Butt boards together for a light contact at edges and ends with not more than 1/16" open space between boards. Do not force into place.

Position boards so that like edges abut, tapered edges against tapered edges and mill-cut field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions. Provide temporary bracing as required until fully adhered.

Install gypsum board with face side out. Do not install imperfect, damaged, or damp panels. Butt panels together for a light contact at edges and ends with not more than 1/16-inch open space between panels. Do not force into place.

Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories. Spacing of control and expansion joints shall be as shown and/or in accordance with the gypsum board manufacturer's written recommendations.

Install in maximum practical lengths to span wall and ceiling framing without end (butt) joints. If butt joints do occur, stagger joints and locate as far as possible from center of walls and ceilings.

Cut openings in gypsum board to fit items to be built in, including electrical outlets, accessories, etc. Openings shall fit snugly and shall be small enough to be covered by plates and escutcheons. Both face and back paper shall be cut for all cutouts that are not made by use of a saw. Support gypsum board securely around all cutouts and openings.

Allow the other trades to install the needed services (MEP) through the first layer of gypsum board.

Install all required through stop penetrations. Continue installing the remaining gypsum panels to complete the wall in accordance with the fire rated design.

Install fasteners not more than 1" and no closer than 3/8" to end or edges. Space fasteners opposite each other on adjacent ends or edges. Begin fastening from center of wallboard and proceed toward outer end of edges. Apply pressure on wallboard adjacent to fasteners being driven to ensure that wallboard will be secured tightly to framing members. Check for looseness at fastener. Drive fasteners with shank reasonably perpendicular to face of board. Drive screws with a power screwdriver of type recommended by the wallboard manufacturer. Surface of head shall be below surface of paper without cutting paper. Apply acoustic sealant at all penetrations for electric receptacles, switches, wire, piping, ductwork and other applicable sources of sound transmission.

Pack voids in steel door and lite frames and the like, etc. with sound attenuation.

ACCESSORY INSTALLATION

General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges by nailing or stapling in accordance with manufacturer's instructions and recommendations.

Install metal corner beads at external corners of drywall work.

Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where semi-finishing type is indicated. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work kerfed to receive long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

Install J-type semi-finishing trim where gypsum board edges are not covered by applied moldings.

Omit fastening wallboard closer than one support away from area where casing trim will be installed. Insert metal flange between wallboard and bearing surface, and move in until properly aligned. Fasten wallboard through metal flange before bedding perforated tape.

Maintain metal edge in a true line.

JOINT TREATMENT

Apply bedding compound to edge and end joints and to fastener heads. Use types as recommended by gypsum manufacturer for use with gypsum product being installed. Shear off surplus leaving a tapered groove for embedding tape. Leave no material on high edge. Allow 12 hours for drying before taping.

Apply a uniformly thin layer of bedding compound over the joint approximately 4" wide. Center tape over joints and embed into compound.

Allow compound to dry thoroughly for approximately 24 hours. Cover tape with a coat of compound and spread out 3" on each side of tape. Feather out at edges.

After preceding coat is thoroughly dry, apply another coat with slight uniform crown over joints. This coat must be smooth and with edges feathered out 3" beyond preceding coat.

All fastener heads and dimples shall receive at least three (3) coats of compound. Apply as each coat is applied to joints, allowing at least 24 hours between each coat.

Cover flanges of beads and trim with at lease two (2) coats of compound. First layer shall be bedding compound. Apply along with respective coats of compound on joints. Feather out compound approximately 9" from metal bead.

Sand coats of compounds when thoroughly dry and sanding is needed. Avoid roughing surface of gypsum board product.

Leave wallboard uniformly smooth and ready for decoration.

Provide temporary protection to installed panels, such as tarps, as required. The intent is to protect the gypsum panels in those areas where, when installed, exhibit increased potential for impingement by water in its liquid state. Protect from cascading water.

Provide final protection and maintain conditions, in a manner suitable to installer, which ensures gypsum board assembly work being without damage or deterioration at time of substantial completion.

END OF SECTION 092900

116843 – ELECTRONIC SCOREBOARDS

PART 1 GENERAL

1.01 SECTION INCLUDES
- A. Single-sided LED baseball scoreboard

1.02 REFERENCES
- A. Standard for Electric Signs, UL 48
- B. Standard for CSA C22.2 #207
- C. Federal Communications Commission Regulation Part 15
- D. National Electric Code

1.03 SUBMITTALS
- A. Product data: Submit manufacturer’s product illustrations, shop drawings, data and literature that fully describe the scoreboards and accessories proposed for installation.
- B. Shop drawings: Submit electrical drawings.
- C. Maintenance data: Submit manufacturer’s installation, operation, and maintenance manuals.

1.04 DELIVERY, STORAGE, AND HANDLING
- A. Product delivered on site
- B. Scoreboard and equipment to be housed in a clean, dry environment

1.05 PROJECT CONDITIONS
- A. Environmental limitations: New sign to be mounted to existing structural steel colums after existing sign is removed and disposed of.
- B. Field measurements: Verify position and elevation of structure and its layout for scoreboard equipment. Verify dimensions by field measurements.
- C. Verify mounting structure is capable of supporting the scoreboard's weight and windload in addition to the auxiliary equipment.
- D. Installation may proceed within acceptable weather conditions.

1.06 QUALITY ASSURANCE
- A. For outdoor use
- B. Source Limitations: Obtain each type of scoring or related equipment through one source from a single manufacturer.
- C. ETL listed to UL 48
- D. NEC compliant
- E. FCC compliant
- F. ETLC listed to CSA 22.2 #207

1.07 WARRANTY
- A. Provide 5 years of no cost parts exchange including standard shipping on electronics parts and radios due to manufacturing defects
- B. Provide toll-free service coordination
- C. Provide technical phone support during Daktronics business hours

PART 2 PRODUCTS

2.01 BASIS OF DESIGN

A. Daktronics, Inc., 201 Daktronics Drive, P.O. Box 5128, Brookings, SD 57006-5128
B. Model BA-2030

2.02 PRODUCT

A. Daktronics BA-2030 single-sided baseball scoreboard displays HOME and GUEST team scores for up to nine innings, total RUNS to 99 for each team, BALL to three, STRIKE to two and OUT to two.

2.03 SCOREBOARD

A. General information
   1. Dimensions: 6'-6" (1.98 m) high, 20'-0" (6.10 m) wide, 0'-8" (203 mm) deep
   2. Base weight: 600 lb (272 kg) with vinyl captions – options may increase weight
   3. Base power requirement: 230 W (red/amber digits), 495 W (white digits) with vinyl captions – options may increase wattage
   4. Color: to be selected by Owner.
   5. Sponsor panels and custom lettering to be coordinated w/ Owner prior to ordering.
B. Construction
   1. Alcoa aluminum alloy 5052 for excellent corrosion resistance
   2. Scoreboard back, face, and perimeter: 0.063" (1.60 mm) thick
   3. Scoreboard top and bottom: 0.125" (3.18 mm) thick
C. Digits
   1. LED color:
      BALL, STRIKE, OUT and RUNS digits Red, all others Amber (-AR)
   2. BALL, STRIKE, and OUT digits: 18" (457 mm) high
   3. Inning scores and RUNS digits: 15" (381 mm) high
   4. Seven bar segments per digit
   5. PanaView® LED digit technology
   6. All digits are sealed front and back with weather-tight silicone gel
D. Captions
   1. Vinyl applied directly to scoreboard face
   2. HOME and GUEST captions: 12" (305 mm) high
   3. BALL, STRIKE, and OUT captions: 10" (254 mm) high
   4. Inning numbers and RUNS captions: 8" (203 mm) high
   5. Color: standard white or others available upon request
E. Accessory Equipment
   1. Vinyl striping applied around the scoreboard face
   2. Custom team name caption in place of HOME
   3. [Programmable Team Name Message Centers (TNMCs) – add 80 lb (36 kg) and 270 W]
   4. Individual digit protective screens

2.04 SCORING CONSOLE

A. Console is an All Sport® 5000 controller
B. Scores multiple sports using changeable keyboard inserts
C. Controls multiple scoreboards and displays, including other All Sport 5000 controlled displays currently owned by customer
D. Recalls clock, score, and period information if power is lost
E. Runs Time of Day and Segment Timer modes
F. Console includes:

1. Rugged aluminum enclosure to house electronics
2. Sealed membrane water-resistant keyboard
3. 32-character LCD to verify entries and recall information currently displayed
4. Power cord that plugs into a standard grounded outlet; 6 watts max
5. Control cable to connect to the control receptacle junction box (wired system only)
6. Hand-held switch for main clock start/stop and horn
7. Soft-sided carrying case

G. Accessory Equipment
1. 2.4 GHz spread spectrum radio system with frequency hopping technology and 64 non-interfering channels; system includes a transmitter installed inside the console and a receiver installed inside the scoreboard
2. Hard carrying case
3. Battery pack

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that mounting structure is ready to receive scoreboard. Verify that placement of conduit and junction boxes are as specified and indicated in plans and shop drawings. Verify concrete has cured adequately according to specifications.

3.02 INSTALLATION

A. All power and control cables to scoreboards and displays will be routed in conduit. Power to the scoreboards/displays as well as raceways shown on electrical plans by the Electrical Contractor. Scoreboard control wiring including conduit will be the responsibility of the contractor assigned the scoreboard equipment.

B. Install scoreboards and exterior displays to beams in location detailed and in accordance with manufacturer's instructions. Verify unit is plumb and level.

3.03 INSTALLATION—CONTROL CENTER

A. Provide boxes, cover plates and jacks in locations per plans.

B. Test connect control unit to all jacks and check for proper operation of control unit, scoreboard and all features. Leave control unit in carrying case and other loose accessories with owner's designated representative.

C. Verify earth ground does not exceed 15 ohms.

END OF SECTION 116843

SECTION 131270 – PRESS BOX

PART 1 - GENERAL

1.1 SCOPE of WORK

A. Furnish a 1 story prefabricated, modular press box equal to that as provided by Dant Clayton Corporation, Louisville Kentucky, or Approved Equal.

1.2 RELATED Work/RELATED SECTION

A. Aluminum Bleacher Seating Assemblies 131250

1.3 DESIGN CRITERIA

A. All material and workmanship shall be in accordance with the New Jersey state building code/ IBC current edition and NFPA.

B. All electric components shall be UL listed.

C. Design Loads:

1.	Live Load	100 psf	Floor
		50 psf	Roof
	Wind	20 psf	on vertical surfaces

D. Design Classification

1. Use Group: B, Construction Type: V-A

1.4 QUALITY ASSURANCE

A. Manufacturer: Company specializing in modular building construction with experience in manufacturing press boxes.

B. Engineer qualifications: The press box shall be approved by a registered professional engineer in the state the Press Box will exist in in.

C. Warranty: Press box shall be guaranteed for one (1) year against defective material or workmanship. Damage resulting from abnormal use or vandalism is not applicable.

PART 2 - PRODUCTS

2.1 FLOOR CONSTRUCTION

A. Bottom Board: 1/2” CCX foundation grade treated plywood. Industrial grade asphalt-based pint. Continuous aluminum vents on 8’ centers.

B. Insulation: 6” R-19 fiberglass batts, with vapor barrier.

C. Joists: 2” x 6” #2 SYP, on 16” centers, longitudinal framing.

D. Decking: 3/4” Sturdifloor, underlayment grade, tongue and groove fir plywood, (Index24 in O.C.). 5/8” type X fire-rated gypsum floor sheathing.

E. Covering: 1/8” Armstrong Excelon vinyl composition tile.

F. Molding: 4” Thermoplastic rubber base molding by Roppe.

2.2 WALL CONSTRUCTION

A. Studs: 2” x 4”, #2 or better SPF, on 16” centers, BOCA framing.

B. Bottom Plate: 2” x 4” #2 or better SPF.

C. Top Plates: (2) 2” x 4” #2 or better SPF.

D. Headers: As span and design load requires

E. Ceiling Height: 8’-2” x 8’-0”, front to back.

F. Covering: 5/8” type X fire-rated gypsum panels under vinyl-faced gypsum panels, Class A, F.S.R.

G. Insulation: 3-1/2” R-13 fiberglass batts with vapor barrier.

H. Sheathing: 1/2” CDX plywood.

- I. Siding: Metal Sales “U” panel .026 gauge ribbed steel panels with Kynar finish

2.3 ROOF CONSTRUCTION

A. Joists: 2” x 8”, #2 SYP, 16” O.C. spacing.

B. Overhang: 15-1/2” over front wall; 6” over rear wall. .019 metal fascia with perforated vinyl soffit panels.

C. Ceiling: 5/8” type-x fire-rated gypsum board, taped and bedded with spray textured finish, Class A F.S.R.

D. Insulation: 6” R-19 fiberglass batts with vapor barrier.

E. Decking: 3/4” tongue and groove oriented strand board (Index 24” O.C.).

F. Covering: .060 single-ply EPDM rubber membrane, fully adhered.

2.4 WINDOWS

A. Soft-Lite “Barrington DSL7 HS” or Approved Equal, Double horizontal slider windows w/ extruded vinyl frames, AAMA Structural Rating, w/ ¾” insulated Low-E, Argon filled tempered glass w/ removable insect screens.

B. Interior Windows to be ¼” tempered safety glass fixed pan with stained jambs and casing

2.5 DOORS

A. 18GA. Insulated hollow metal door with 16 GA. Steel wrap-around frames, 10” x 10” viewing window, vinyl weather-stripping, aluminum threshold and lever handled lock sets.

2.6 ELECTRICAL

A. Service Entrance Panel: Square D Q0124M100 with Main Disconnect; rated at 120/240v, single phase, 100 amp capacity.

B. Receptacles: Pass and Seymour 125 volt/15 amp duplex, spec-grade, along the rear wall. Wiremold 5400 Series two-piece multi-channel, dual voltage, non-metallic surface raceway along front wall below scorer’s counter, outlets on 48" centers.

C. Lighting: Lithonia M232PC1S 4-ft. 2-tube LED strips with low-glare parabolic diffusers.

D. Circuits: All branch circuit wiring is minimum #12 THHN encased in EMT thin wall conduit or MC Cable.

- E. HVAC: Zoneline #AZ61H07DAB 2.4 KW Electric Wall Mount Heat Pump Unit.

2.7. SCORERS' COUNTER

A. 20” deep x 1 ½” Clear Anodized finish aluminum countertop with rounded front nose. Mounted on brackets spaced a minimum of 32”.

PART 3 – EXECUTION

3.1 INSTALLATION

A. Installation: Shall be handled directly by the manufacturer or by a factory certified installation subcontractor.

B. Erect per plans, shop drawings, and specifications.

C. Contractor shall make all final electrical connections.

3.2 CLEANING

A. Clean all surfaces according to manufacturer’s recommendations.

B. Remove all packaging and construction debris.

END OF SECTION

SECTION 131250 – ALUMINUM BLEACHER SEATING ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. This section includes complete services to provide a permanent grandstand seating system of size and capacity, and with features indicated on the drawings.

B. Related Sections

1. Division 2 Site Construction
2. Division 5 Structural Steel

C. Complete Scope of Work in this bid package includes the following:

1. AISC certified steel fabrication
2. Steel Understructure Designed with a L/200 Serviceability Criteria
3. Galvanized structural steel finish
4. Fully Closed Welded Aluminum Tread System
5. Slip and Stain Resistant Tread Finish
6. Powder coated Finish Aluminum Risers

1.3 REFERENCES

A. NJ State Building Code
B. AISC Steel Manual Thirteenth Edition
C. ACI 318-05
D. Aluminum Association Aluminum Design Manual
E. ASTM E985
F. AWS D1.2

1.4 PERFORMANCE REQUIREMENTS

A. Design Loads

Dead Load	10 psf
Live Load	100 psf
Wind Speed	Design per local wind speeds and building codes
Sway Load	24 plf per row parallel to seatboards
Sway Load	10 plf per row perpendicular to seatboards
Seismic Load	Design per local seismic conditions
Guardrail Loads	50 plf distributed or 200 lb concentrated load applied in any direction

B. Serviceability Requirements

Deflection shall be limited to 1/200 of the span for all structural members.

C. Foundation Design

Foundations shall be designed for bearing, overturning, and sliding for the following load cases as well as all applicable load cases in the building code using an allowable stress design.

1. 1.0 DL + 1.0 LL + SWAY
2. 0.6 DL + 1.0 WL
3. 1.0 DL + 0.75 WL + 0.75 LL

Soil bearing capacity to be verified by owner prior to placement of footings. Foundation sizes if shown on drawings will not be reduced under any circumstances.

1.5 SITE REPRESENTATION

A qualified representative of the grandstand manufacturer must be onsite at all times during installation of the grandstand.

1.6 QUALITY ASSURANCE

A. AISC Certification: All structural steel shall be fabricated in an AISC certified plant that is certified "BU" at the time of the bid. The manufacturer shall be listed on AISC's website as a certified fabricator.

B. Experience: Manufacturer of grandstand system shall have a minimum of (5) years experience in fabrication of grandstand structures and shall, upon request, provide references to successful projects of similar size and project specific requirements.

C. The owner shall hire a third-party structural engineer to review all drawings and calculations provided by the bleacher manufacturer. A calculation package must be provided to the owner with the first set of approval drawings. The calculations and plans shall bear the preparing engineer's seal. The drawings and calculations shall be reviewed by the third-party structural engineer to verify that the design criteria outlined in Part 4 of this section has been met or exceeded. If the bleacher manufacturer refuses to comply with the peer reviewer design issues they will forfeit the total contract. A successful third-party engineer review is a requirement to be awarded contract.

D. Installation: Installation shall be performed by factory trained and certified representatives of the grandstand manufacturer.

1. Installer shall have completed at least three installations of similar size. Documentation shall be provided upon request.
2. Installation shall be performed using Prevailing wage rates. Certified payroll and copies of payroll checks shall be provided weekly.

1.7 SUBMITTALS

A. Fabricator AISC Certificate of compliance with the Standard for Steel Building Structures

B. Product Certificate: Prepare written statement on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

C. Shop Drawings: Complete detailed drawings prepared, signed, and sealed by a Registered Professional Engineer (P.E.) licensed in the State of New Jersey. Include:

a. Detailed and dimensioned plans.

b. Seating plan indicating aisles, walkways, seating sections and exits and showing exit calculations using appropriate tables and requirements of the New Jersey State Building Code.

c. Sections and details showing complete methods of assembly and anchorage.

d. Footings and foundation sizes and types and relationships to finish grade in compliance with construction documents. Exposed portions of foundations, pier height and top elevations shall be subject to architect approval. Foundation pier structural design type and capabilities shall be subject to peer review – see part 4 of this Section.

e. Engineering calculations.

f. Drawings and engineering calculations shall be reviewed by Architect's structural engineer to verify that the design criteria outlined in part 4 – "Peer Review" of this Section has been met or exceeded.

g. Minimum sizes for structural steel and foundations are shown on bid document drawings, in order to establish an equal bidding opportunity for all participants. Reduction in minimum sizes of concrete foundation and structural steel will not be allowed.

D. Qualifications of Professional Engineer who seals the shop drawings and calculations.

E. Samples for verification to include 3' section of deck assembly with interlocking riser in specified dimensions and finishes and 3' long seat board with mounting bracket.

F. Independent test data confirming the coefficient of friction and durability of the slip resistant finish.

NOTE: Delays caused by required resubmittals due to noncompliance with the specification shall not extend any milestone date in the contract. The contractor is responsible for complying with all aspects of this specification.

1.8 WARRANTY

Product shall be guaranteed for (5) years on the structure and (3) years on the finishes together with labor. Damage resulting from abnormal use or vandalism is not covered.

PART 2 - PRODUCTS

2.1 MANUFACTURER

The specifications and plans are based on the grandstand system and features of Dant Clayton Corporation or Approved Equal. Being listed as an approved manufacturer does not remove the requirement to comply with all portions of the drawings and specifications as these details, materials and finishes have been determined to be superior for their safety, durability, and overall quality.

2.2 PRODUCT COMPONENTS

A. Decking System shall be a Fully Closed Welded deck system bolted vertically and horizontally to the steel understructure.

1. The decking system has two components. The first component is a one-piece welded deck panel constructed by welding multiple aluminum extensions together in the factory utilizing a fully automated, computer controlled, multi-head welding machine. The welding machine will weld all extrusions together in a single pass with 0.040" diameter 4043 welded wire using Orlion Gas to insure uniform shape, dimension and appearance. The decking system is fixed with a 1% slope to the front to enhance water drainage. The decking system is attached by concealed clips and galvanized hardware. The decking extrusions are 1 ¾" vertically with a .078" wall thickness and are interlocked horizontally prior to welding using a tongue and groove connection.

2. The second component is a one-piece aluminum riser extension that has a male-female connection at the top with the welded deck panel and a shingled overlap connection at the bottom with the welded deck panel. The riser is finished with a powder coated or anodized surface treatment, covering 100% of the riser surface.

3. The decking system will run from raker beam to raker beam. There will be a ½" gap at joint of the welded deck panels to allow for expansion and construction of the aluminum due to temperature variations.

4. The joint of the welded deck panel is covered with a 4" wide aluminum extrusion joint cover.

5. Riser height per row and tread depth per row is indicated on design drawings.

6. The ends of decking system will be finished with a one-piece aluminum angle end cap.

7. See Section 2.4.B for decking and riser finishes.

B. Seating

1. Seat Brackets shall connect directly to the steel understructure. No connections to aluminum channels are permitted.

2. Seats shall be 6063-T6 extruded aluminum with a fluted surface and a minimum of 4 vertical legs. The exact size of seatboard is 2" x 10" x .080" wall thickened at the joints and weighing 1.9 lbs. per foot with 1" radius comfort curve front edge. Aluminum shall be cleaned, pre-treated and clear anodized.

3. Mounting brackets: 3/16" thick A36 steel plate, plasma cut, bent and galvanized.

C. Understructure shall consist of an open span I-Beam understructure.

1. Longitudinal bays may include angle cross bracing provided that it does not interfere with building entrances or vomitories.

2. All beams and columns may be made of either wide flange or tube shapes.

3. All steel shall be sized to support the most conservative of the loads in the table above, and the loads in the local building code. If sizes are shown in the drawing, they shall not be reduced for any reason.

D. Guard railing

1. Guard railing shall be provided to meet the height and loading requirements of all local building codes.

2. Vertical guardrail structural supports shall be aluminum rectangular tube 2.8” x 2.0 x .1888" or aluminum angle of equivalent strength, and shall be 6061-T6 alloy. Guardrail shall have structural support on each leg of the fencing at all 90^{o} turns. Tension bars do not meet this requirement.

3. Guardrail horizontal and vertical framing members will be 1 5/8” O.D. aluminum pipe.

4. Chain link fence shall be 2” mesh, 6 gauge vinyl-coated fabric.

E. Stairs

1. Stairs shall consist of L3x3x1/4" legs with a sloping steel channel supporting the treads. Each tread shall be supported by a clip angle bolted to the sloping channel. Minimum vertical leg spacing is 3 ft. Maximum spacing is 9 ft.

2. Guardrail on the stairs shall match the guardrail on the stand.

3. Material finishes shall match those on the grandstand.

G. Hand and Grab Rails

1. Hand and Grab Rails shall be located in all areas required by building code.

2. Hand and Grab Rails shall be 1 15/16" O.D. extruded aluminum pipe.

3. Two-Line mid-aisle handrails shall be located in all interior aisles. All mid-aisle rails shall feature internal fittings for both lines of rail. External fittings are not permitted.

2.3 MATERIALS

A. Structural Steel

1. All detailing, fabrication, and erection shall be completed in accordance with the AISC Steel Construction Manual 13th Edition. All fabrication shall be completed in an AISC certified facility as described in Para. 1.8 A.

2. Structural Steel shall be ASTM A572 multi-certified grade 50. Miscellaneous steel shall be ASTM A36.

3. Bolts and Nuts: All bolts 5/8" diameter and larger shall meet ASTM A325. All bolts 1/2" and small shall meet ASTM A307.

4. All welds shall conform to ANSI/AWS D1.1. Electrodes shall be E70xx

B. Aluminum

1. All footboards and seat boards shall consist of 6063-T6 aluminum alloy with minimum yield strength of 25 ksi.

2. All straight grab and handrails shall consist of 6061-T6 aluminum alloy with minimum yield strength of 35 ksi.

3. All bent grab and handrails shall consist of 6061-T4 aluminum alloy with minimum yield strength of 21 ksi.

2.4 FINISHES

A. Structural Steel

Structural steel shall be coated with a minimum of 2 oz. hot dipped galvanized in accordance with ASTM 123-A with a minimum galvanized film thickness of 3.3 mils. Zinc shall be 98% purity, certified with written test results based on samples taken from the tank. All structural steel fasteners shall be galvanized.

B. Aluminum

1. All aluminum footboards shall have an enhanced stain resistant and slip resistant finish at all locations intended for use as a walking surface.
   a. This finish shall be produced by the bleacher manufacturer in addition to the mill extrusion process and shall be uniform in appearance. The slip and stain resistant surface treatment shall be achieved either with a blasted and anodized process or an applied slip and stain coating. The metallic media blasting option must be performed in a controlled factory environment to ensure consistency. Hand processes or sand blasting is strictly prohibited as they produce an inconsistent finish that is not uniform in appearance or performance.
   b. This surface finish shall prevent oxidation staining and be resistant to staining from beverage spills and organic matter. Oxidation staining prior to warranty expiration shall be grounds for product replacement at the manufacturer’s expense.
   c. This surface finish shall exhibit enhanced slip resistance beyond the mill extrusion process, resulting in an improved coefficient of friction under wet conditions in all directions of travel.
   d. Untreated mill finish aluminum with raised extruded “flutes” or “ribs” does not meet this requirement.

2. All seat boards shall have a clear anodized finish.

3. All Riser boards shall have a powder coat finish in one of manufacturer’s standard colors.

4. All hand and Grab Rails shall be clear anodized

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine all existing conditions with installer present for compliance with requirements for installation tolerances and other conditions affecting performance of the work.

B. Prepare written report, endorsed by installer, listing conditions detrimental to performance of the work.

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

3.2 INSTALLATION

Install grandstand and all components according to manufacturer's written instruction and the approved shop drawings.

3.3 CLEANING

Clean all surfaces according to manufacturer's recommendations.
Use cleaning solutions and methods that do not damage the finishes or the adjacent surfaces.
Remove all metal burrs, sharp edges or other cutting, unsafe conditions.
Touch up finishes as recommended by manufacturer to the satisfaction of the architect.

PART 4 - STRUCTURAL PEER REVIEW GUIDELINES

4.1 PEER REVIEW REQUIREMENTS

The following shall be verified by a third-party structural engineer. Sufficient data shall be included on the drawings and calculations to prove compliance with the following items.

4.2 LOADING

A. Verify that at a minimum, the unfactored loads listed in the table in 1.4.A were used in the design of the grandstand.

B. Verify that if LRFD was used, the following load combinations are included in the design:

1. 1.2 DL + 1.6 LL + 1.6 Sway
2. 1.2 DL + 1.6 SL + 1.0 LL
3. 1.2 DL + 1.6 WL + 1.0 LL
4. 1.2 DL + 1.0 LL + 1.0 EL
5. 0.9 DL + 1.6 WL
6. 0.9 DL + 1.0 EL

C. Verify that if ASD was used, the following load combinations are included in the design:

1. DL + LL + Sway

2. DL + 0.75 SL + 0.75 LL

3. DL + 0.75 WL + 0.75 LL

4. DL + 0.75 LL + 0.525 EL

5. 0.6 DL + WL

6. 0.6 DL + 0.7 EL

4.3 FOUNDATIONS

A. Verify that at a minimum, the load combinations listed in Para 1.4.C were used in the design of the grandstand foundations and that the sizes are not less than what is shown in the bid documents.

B. Verify actual soil bearing stresses were calculated for combined vertical and lateral load combinations.

C. Verify foundation design meets the recommendations and conclusions provided in the geotechnical report.

D. Verify foundations were design the resist overturning and sliding - specifically for the reduced dead load load combinations.

E. Verify foundations were designed to resist all moments, shears, and other internal actions caused by the applied loads using ACI requirements.

F. Verify anchor rods were designed to resist yielding of the steel and pullout of the concrete.

4.4 STEEL DESIGN

A. Verify that all support beams and stringers were checked for the following using the AISC Steel Construction Manual 15th Edition:

1. Yielding

2. Biaxial Bending

3. Lateral-Torsional Buckling

4. Crippling and Vertical Buckling of webs

B. Verify that the compression flange of steel beams are adequately braced to prevent lateral buckling.

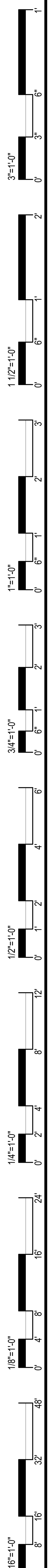
C. Verify that lateral bracing was designed to withstand the factored wind and sway loads.

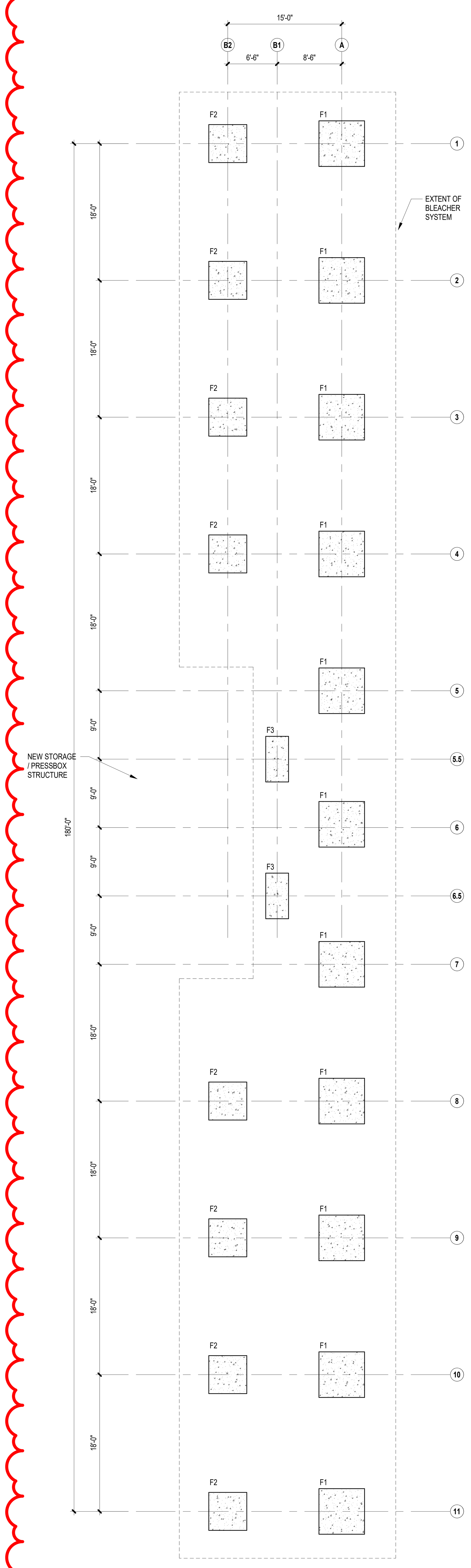
D. Verify that all columns, base plates, and connections were designed in accordance with AISC 13th Edition.

E. Verify that all serviceability requirements are met as outlined in Para 1.4.C.

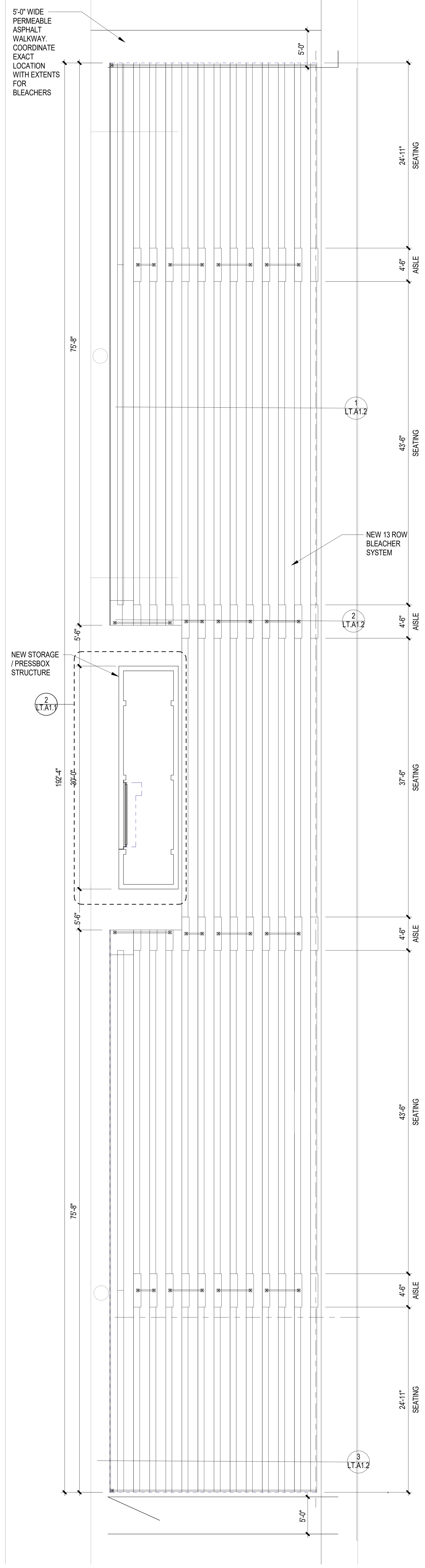
F. Verify that members in which stresses or deflections are greater under a partial loading of the grandstand than under a full load have been designed for the controlling condition.

END OF SECTION

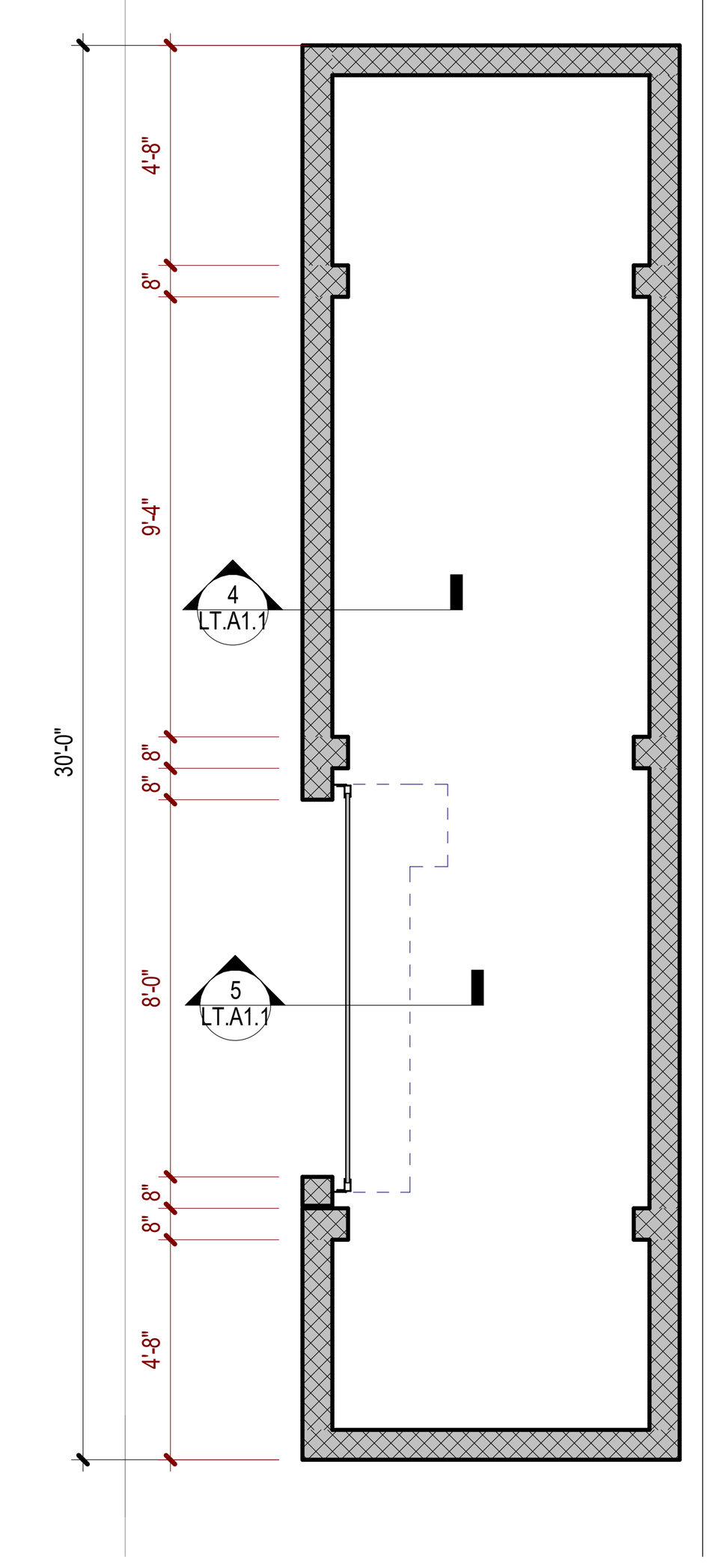




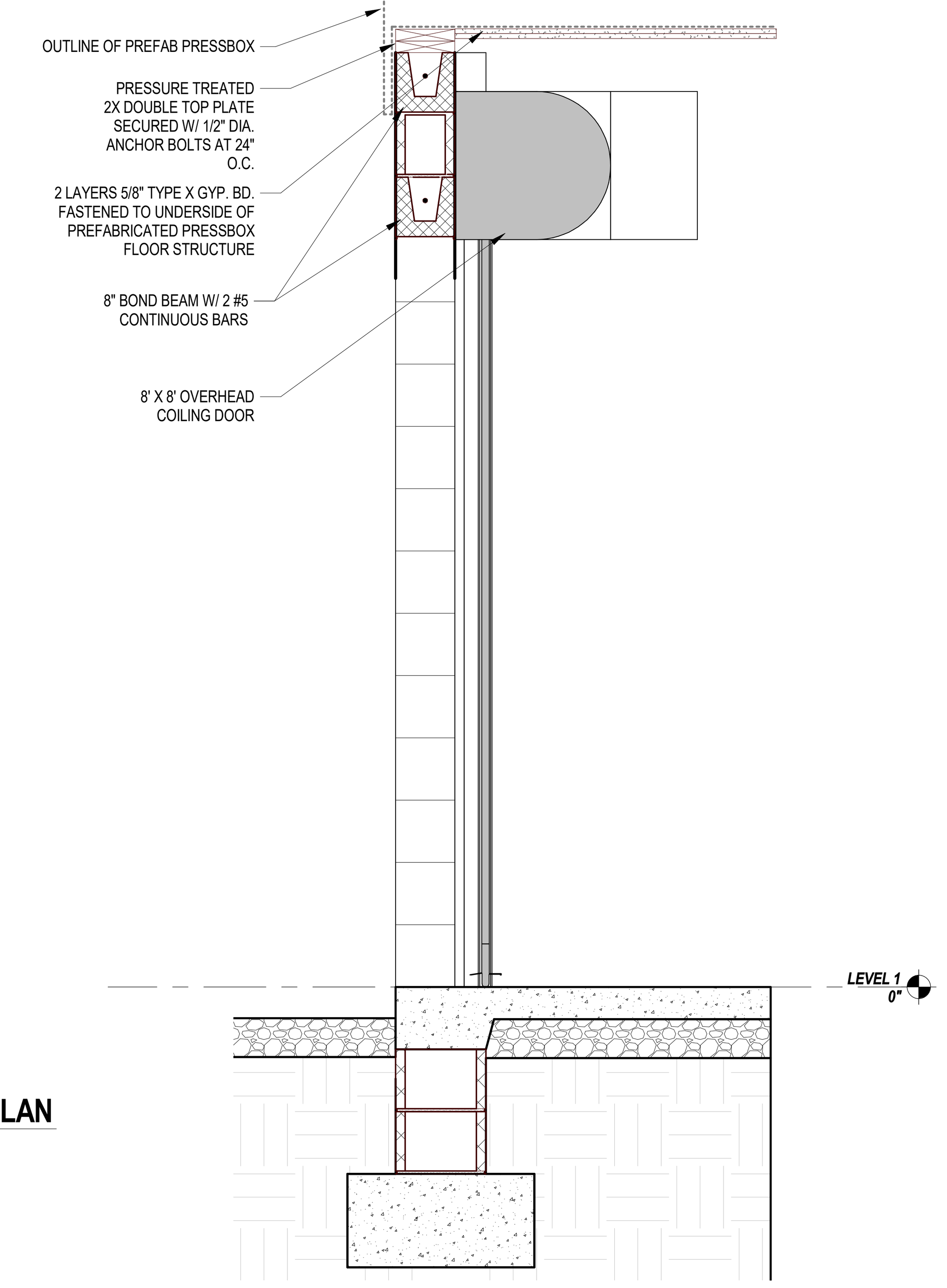
3 LIONS TRACK - BLEACHER PIER LAYOUT PLAN
1/8" = 1'-0"



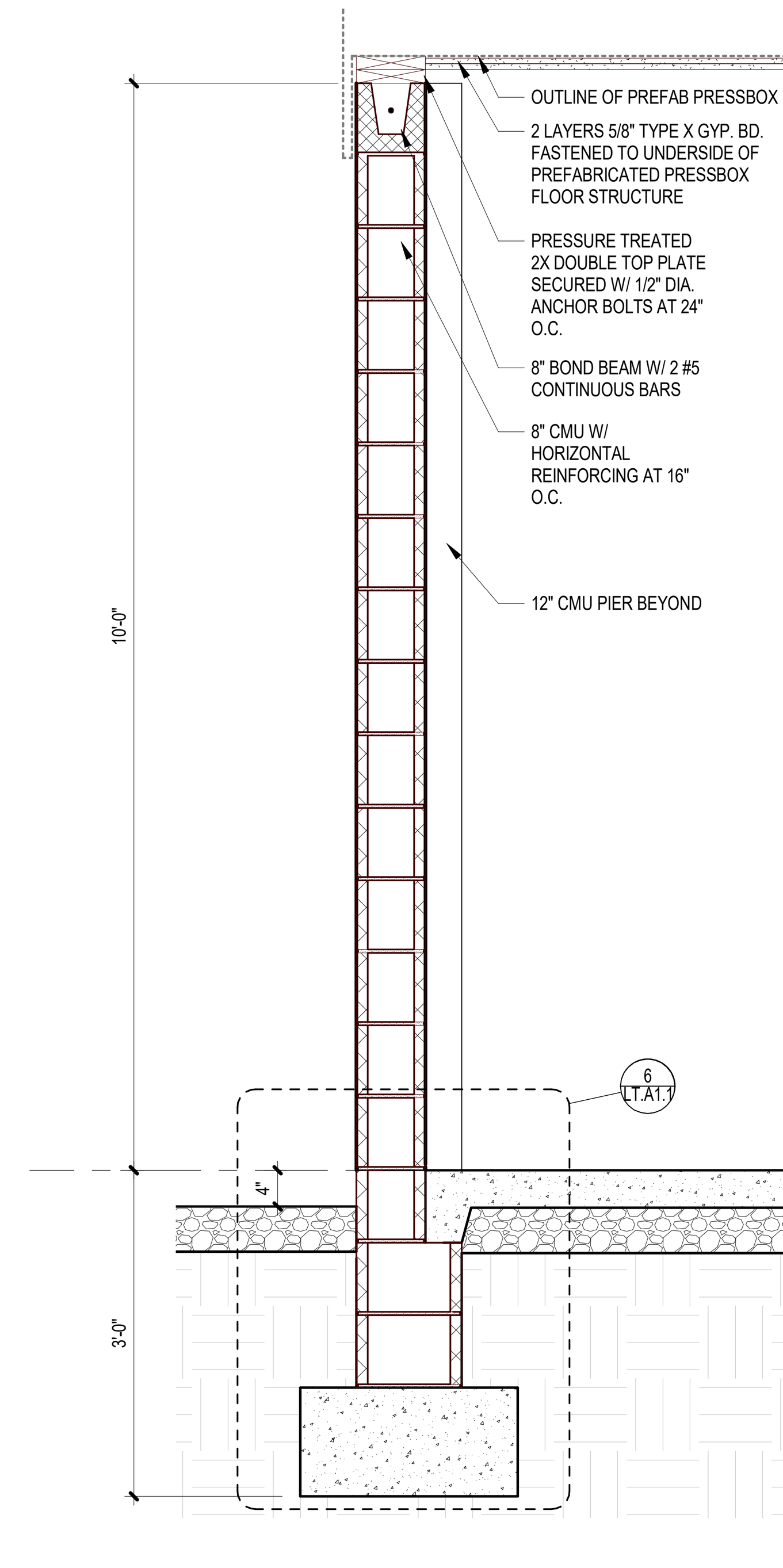
1 LIONS TRACK - FIRST FLOOR PLAN
1/8" = 1'-0"



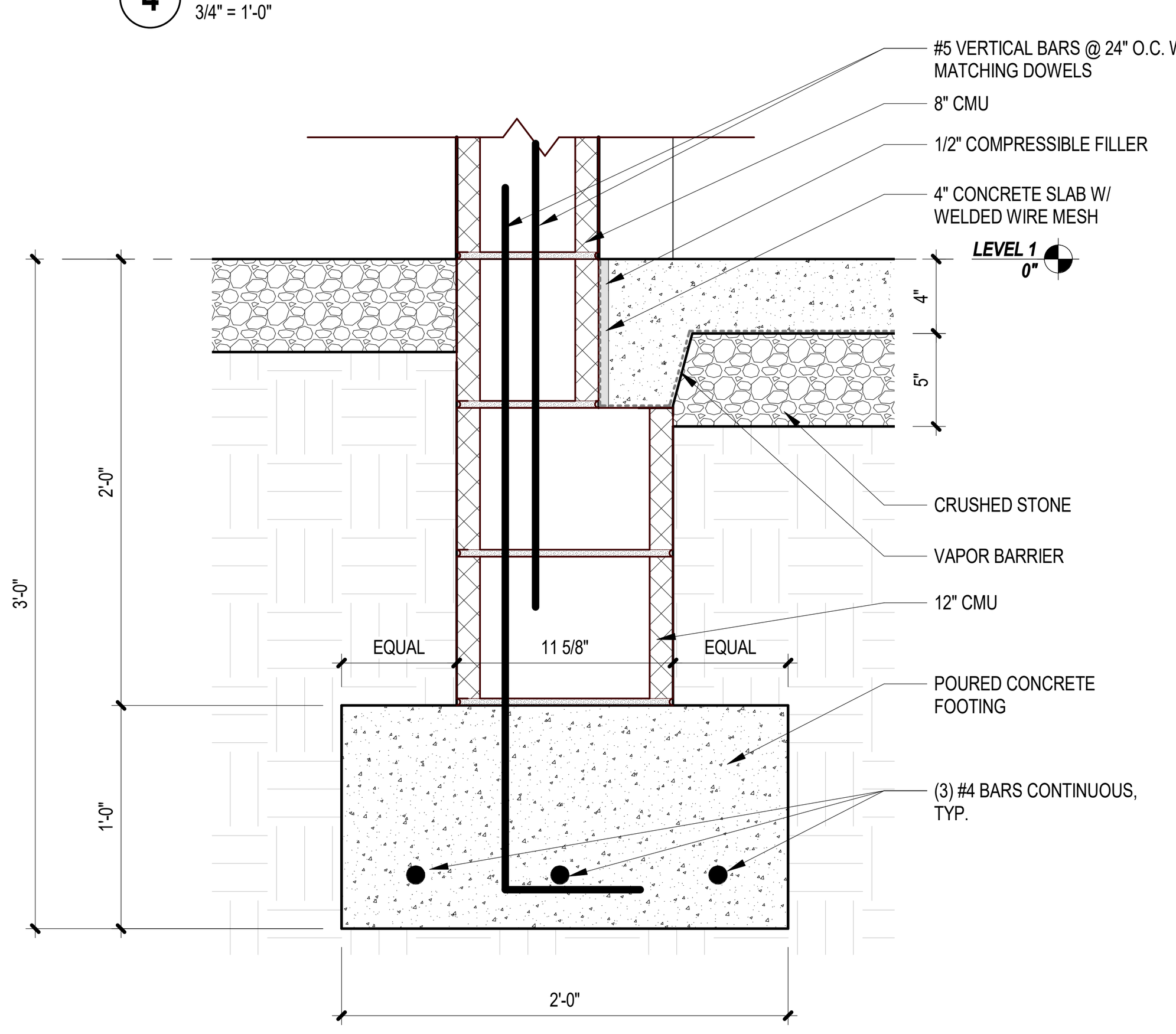
2 LIONS TRACK - STORAGE STRUCTURE DETAIL PLAN
1/4" = 1'-0"



5 WALL SECTION @ COILING DOOR
3/4" = 1'-0"



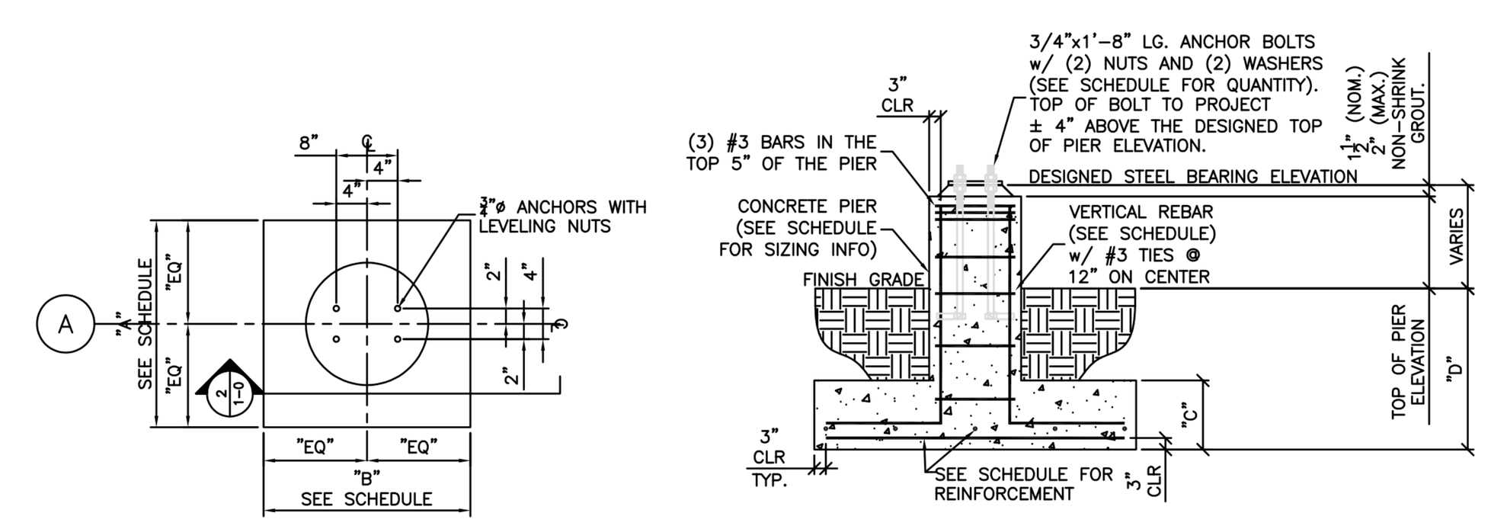
4 TYPICAL WALL SECTION
3/4" = 1'-0"



6 TYPICAL FOUNDATION DETAIL
1 1/2" = 1'-0"

FOOTING SCHEDULE						PIER SCHEDULE				
MARK	SIZE "A"	SIZE "B"	SIZE "C"	SIZE "D"	REINFORCING EA. WAY	SIZE	REINFORCING	# OF ANCHORS	SIZE OF ANCHORS	ANCHOR BOLT TEMPLATE NO.
F1	6'–0"	6'–0"	1–0"	4'–0"	#5@12"O.C.	18"ø	4 #5 BARS	4	3/4" x 1'–8" HEAVY HEX HEADED, ASTM F1554 GR. 55	0055517
F2	5'–0"	5–0"	1–0"	4'–0"	#5@12"O.C.	18"ø	4 #5 BARS	4	3/4" x 1'–8" HEAVY HEX HEADED, ASTM F1554 GR. 55	0055517
F3	3'–0"	6'–0"	1–0"	4'–0"	#5@12"O.C.	18"ø	4 #5 BARS	4	3/4" x 1'–8" HEAVY HEX HEADED, ASTM F1554 GR. 55	0055517

ASSUMED SOIL BEARING CAPACITY – 2000PSF



APPLICABLE CODES (NJ)

1. NJ UNIFORM CONSTRUCTION CODE - N.J.A.C. 5:23
2. INTERNATIONAL BUILDING CODE - 2018 NEW JERSEY EDITION
3. NATIONAL STANDARD PLUMBING CODE - 2018
4. NATIONAL ELECTRICAL CODE (NFPA 70) - 2017
5. ENERGY SUBCODE - ASHRAE 90.1-2016
6. INTERNATIONAL MECHANICAL CODE - 2018
7. INTERNATIONAL FUEL GAS CODE - 2018
8. REHABILITATION SUBCODE, N.J.A.C. 5:23-6
9. BARRIER FREE SUBCODE, CHAPTER 11 OF IBC-2018 & ICC/ANSI A117.1-2009
10. ELEVATOR SUBCODE - N.J.A.C. 5:23-12

BUILDING DATA

INTERNATIONAL BUILDING CODE (2018)

CHAPTER 3 - OCCUPANCY CLASSIFICATION AND USE

302 USE GROUP CLASSIFICATION B, S2

CHAPTER 5 - BUILDING HEIGHTS AND AREAS

504.3 ALLOWABLE BUILDING HEIGHT (55')
ACTUAL BUILDING HEIGHT (35')

504.4 ALLOWABLE NUMBER OF STORIES (3)
ACTUAL NUMBER OF STORIES (2)

CHAPTER 6 - TYPES OF CONSTRUCTION

MIN. CONSTRUCTION TYPE REQ. (IIB)
CONSTRUCTION TYPE FOR REVIEW (IIB) (NON-SPRINKLERED)

TABLE 601		REQ'D RATING (HRS)
PRIMARY STRUCTURAL FRAME		0
BEARING WALLS — EXTERIOR: THE STORAGE (S1) USE AT THE LOWER LEVEL SHALL BE SEPERATED FROM THE SEATING (A) USE WITH A 2 HOUR RATED CMU WALL		2
INTERIOR		0
NON BEARING WALLS	EXTERIOR (TABLE 602)	0
	INTERIOR	0
FLOOR CONSTRUCTION — THE STORAGE (S1) USE AT THE LOWER LEVEL SHALL BE SEPERATED FROM THE PRESS BOX (B) USE WITH A 1 HOUR RATED FLOOR / CEILING ASSEMBLY		1 HR
ROOF CONSTRUCTION		0

CHAPTER 8 - INTERIOR FINISHES

OCCUPANCY (NON SPRINKLERED)	NS
INTERIOR EXIT STAIRS, RAMPS, PASSAGEWAYS	A
CORRIDORS AND ENCLOSURE FOR EXIT ACCESS STAIRWAYS AND RAMPS	B
ROOMS AND ENCLOSED SPACES	C

CHAPTER 9 - FIRE PROTECTION

AUTOMATIC SPRKINKER SYSTEM PROVIDED NO

CHAPTER 10 - MEANS OF EGRESS

TOTAL OCCUPANT LOAD

FUNCTION OF SPACE	AREA (SF)	OCCUPANCY LOAD FACTOR	NUMBER OF OCCUPANTS
PRESS BOX	240	150	5 (ACTUAL)
TRACK STORAGE	240	300	1
		TOTAL	6

BLEACHER REPLACEMENT

INTERNATIONAL BUILDING CODE (2018)

USE GROUP CLASSIFICATION B
MIN. CONSTRUCTION TYPE REQ. II B
CONSTRUCTION TYPE FOR REVIEW II B
ALLOWABLE BUILDING HEIGHT 2 STORY (55')
ACTUAL BUILDING HEIGHT TBE
ALLOWABLE BUILDING AREA PER FLOOR 14,500 SF
ACTUAL BUILDING AREA PER FLOOR (TABLE 603 AND SECTION 504) TBE

SEATING CAPACITY

BANK - A SEATS WITH HANDICAPPED SPACES = 171 ACCESSIBLE SEATING = 0	PER UCC 2000 5:23-7.10.3 REQUIRED ACCESSIBLE SEATING FOR OVER 500 OCCUPANTS IS 6 PLUS 1 FOR EACH 100 OVER 500, WHICH EQUALS 6 + 10 = 16 FOR SEATING CAPACITY OF . **12 ACCESSIBLE SEATS ARE PROVIDED IN THE NEW BLEACHER LAYOUT WITH ADDITIONAL SEATING AVAILABLE AT GRADE.**
BANK - B SEATS WITH HANDICAPPED SPACES = 306 ACCESSIBLE SEATING = 4	
BANK - C SEATS WITH HANDICAPPED SPACES = 322 ACCESSIBLE SEATING = 4	
BANK - D SEATS WITH HANDICAPPED SPACES = 306 ACCESSIBLE SEATING = 4	
BANK - E SEATS WITH HANDICAPPED SPACES = 171 ACCESSIBLE SEATING = 0	

CP - Building Code Data (2018)
12" = 1'-0"

TOTAL SEATING CAPACITY = 1,288
TOTAL ACCESSIBLE SEATING REQUIRED= 13

CLEARANCES

PER ICC 300 : TABLE 404.5(3)
EGRESS CAPACITY : EQUAL TO OR LESS THAN 15,000 OCCUPANTS

PASSAGEWAYS, DOORWAYS AND RAMPS NOT STEEPER THAN 1:10 SLOPE =0.060 PER OCC.

1541 x 0.060 = 93" / 4 EXITS = 24" REQ'D.
50" PER EXIT PROVIDED

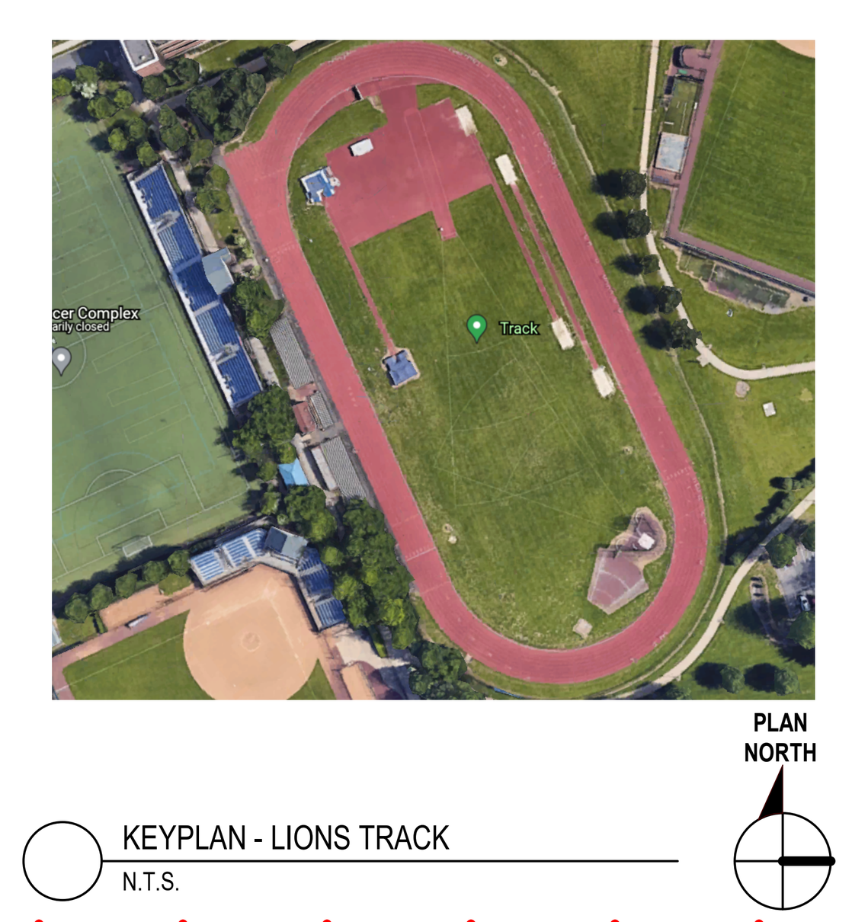
GENERAL NOTES

1. BLEACHER DRAWINGS ARE PROVIDED FOR DESIGN INTENT ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING FULLY DESIGNED AND ENGINEERED DRAWINGS SIGNED BY A LICENSED ENGINEER IN THE STATE OF NJ FOR PERMIT.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR TEST BORINGS ON SITE IN AREA OF PROPOSED FOOTINGS.

LIONS TRACK - SCOPE NOTES

CONTRACTOR SHALL PERFORM THE FOLLOW WORK WITHIN THE SCOPE LIMITATIONS DEFINED ON THE OVERALL FLOOR PLAN:

1. CONTRACTOR SHALL COORDINATE NEW BLEACHER DESIGN INCLUDING OVERALL DIMENSIONS FOR ASSEMBLY AS WELL AS CONCRETE FOUNDATION PAD WITH BLEACHER VENDOR.
2. CONTRACTOR SHALL OBTAIN SIGNED AND SEALED ENGINEERING DRAWINGS FROM VENDOR FOR INSTALLATION.
3. BLEACHER VENDOR SHALL COORDINATE LOCATIONS AND ELEVATIONS OF LANDING FOR ACCESS TO NEW PRESS BOX PROVIDED BY OWNER.
4. PROVIDE NEW ASPHALT WALKWAYS AT EACH END OF BLEACHER AS INDICATED ON PLANS.



KEYPLAN - LIONS TRACK
N.T.S.

CODE REVIEW:

CERTIFICATE:

SPIEZLE ARCHITECTURAL GROUP INC.
1395 YARDVILLE HAMILTON SQUARE ROAD
SUITE 2A
HAMILTON, NJ 08691
PHONE: 609-695-7400

SIGNATURE:
THOMAS S. PERRINO 21AI01505400
SCOTT E. DOWNIE 21AI01674400
STEVEN LEONE 21AI01170100
STEVEN G. SIEGEL 21AI01564200
ANGELO ALBERTO 21AI01046700
JOHN F. WRIGHT 21AI01784200
SPIEZLE ARCHITECTURAL GROUP, INC. 21AC00063000

SEAL:

CONSULTANTS:

ISSUED FOR PERMIT / BID

PROJECT:

EXISTING BLEACHER REPAIRS AND RELATED WORK

FOR

THE COLLEGE OF NEW JERSEY

2000 PENNINGTON ROAD, EWING TOWNSHIP, NEW JERSEY 08618

FOR CODE REVIEW: 05/02/2022

REVISIONS:

#	REVISION NAME	DATE
1	ADDENDUM 1	05/16/2022

FOR BID: 05/02/2022

DRAWING TITLE:

LIONS TRACK FLOOR PLANS

COMMISSION NUMBER:
21U019

DO NOT SCALE THE DRAWINGS

DRAWING NUMBER:
LT.A1.1

THIS DRAWING IS FORMATTED TO BE PRINTED AT 30"x42"

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ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	SINGLE RECEPTACLE, HUBBEL HBL5251I
	DUPLEX RECEPTACLE, HEAVY DUTY HOSPITAL GRADE, HUBBELL HBL8300I
2	DOUBLE DUPLEX RECEPTACLES, HEAVY DUTY HOSPITAL GRADE, HUBBELL 8300IVTR
GF	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE, HEAVY DUTY HOSPITAL GRADE, HUBBELL GFR8300HIL
WP	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE WITH WEATHER-PROOF COVER. MUST BE W/P WITH CORDS CONNECTED.
IG	DUPLEX RECEPTACLE, ISOLATED GROUND, HEAVY DUTY HOSPITAL GRADE, HUBBELL IG8300.
42	DUPLEX RECEPTACLE, HEAVY DUTY HOSPITAL GRADE, MOUNTED 42" AFF OR ABOVE COUNTER BACKSPLASH, HUBBELL HBL8300I.
	CEILING MOUNTED DUPLEX RECEPTACLE, ISOLATED GROUND, HEAVY DUTY HOSPITAL GRADE, HUBBELL HBLG8300I.
42 2	DOUBLE DUPLEX RECEPTACLES, HEAVY DUTY HOSPITAL GRADE, HUBBELL 8300IVTR, MOUNTED 42" AFF OR ABOVE COUNTER BACKSPLASH
	SPECIAL PURPOSE RECEPTACLE
IG	DOUBLE DUPLEX RECEPTACLE, ISOLATED GROUND, HEAVY DUTY HOSPITAL GRADE, HUBBELL IG8300.
	MULTISERVICE RECESSED FLOOR BOX, WIREMOLD RFB6E-OG SERIES WITH THREE (3) 20A STANDARD DUPLEX RECEPTACLES AND THREE (3) DATA DEVICE PLATES AS SPECIFIED BY OWNER. PROVIDE 1" EMPTY RACEWAY STUBBED UP CEILING WITH BUSHED OPENING AND NYLON PULL CORD FOR USE BY TECHNOLOGY CONTRACTOR. PROVIDE TRIM AND COVER ASSEMBLIES AS SPECIFIED BY ARCHITECT.
S^T	MANUAL MOTOR STARTER THERMAL OVERLOAD SWITCH
S x	LIGHT SWITCH, HUBBELL 1221I, "X"=SWITCH LETTER*
S^3_x	3-WAY SWITCH, HUBBELL 1223I, "X"=SWITCH LETTER*
S^3_P	3-WAY WITH PILOT LIGHT ON WHEN LIGHTS ARE ON
S^4_x	4-WAY SWITCH, HUBBELL 1224I, "X"=SWITCH LETTER*
S x S x	2 OR MORE- SWITCHES IN MULTI-GANG BOX "X"=SWITCH LETTER*
S^K	KEY OPERATED SWITCH, HUBBELL HBL122XI
S^D	SINGLE TOUCH ELECTRONIC LOW-VOLTAGE DIMMER, LUTRON VTELV-600M. PROVIDE LUTRON SERIES VT-1000MN IF NEUTRAL CONNECTION IS REQUIRED. MAGNETIC LOW-VOLTAGE DIMMERS SHALL BE LUTRON NTLV SERIES, VOLTAGE AS REQUIRED.

SYMBOL	DESCRIPTION
	EXIT LIGHT - FILLED QUADRANT INDICATES VISIBLE FACE
	WALL MOUNTED EXIT SIGN
	EXIT LIGHT WITH EMERGENCY LIGHTS
1	MOTOR - NUMERAL DESIGNATES HORSEPOWER
f	FRACTIONAL HORSEPOWER MOTOR
XX #	EQUIPMENT ID AND NUMBER
TC	TIME CLOCK
J J	JUNCTION BOX, CEILING/WALL MOUNTED, PROVIDE ALL CONNECTIONS TO DESIGNATED EQUIPMENT AND/OR WITHIN BOX
	GROUND BAR
—OH—	OVERHEAD WIRING
PC	PHOTO CELL
XX	HOMERUN, WITH CIRCUIT NUMBER
	CONDUIT
	CONDUIT UNDERGROUND
	CONDUIT UP
	CONDUIT DOWN
H	HAND HOLE

SYMBOL	DESCRIPTION
M2 / O2	PLAN OR DETAIL TAG DRAWING # TO LOCATE DETAIL DETAIL #
M2 / O4	SECTION TAG DRAWING # TO LOCATE SECTION DETAIL #
M2 / O4	ELEVATION TAG DRAWING # TO LOCATE ELEVATION DETAIL #
1	KEY NOTE SYMBOL
1 2	KEY NOTES APPLYING TO SAME ITEM
	CONNECT TO EXISTING
N	PLAN NORTH

* NOTE THAT NOT ALL SYMBOLS APPLY TO THE PROJECT

NOTES:

1. SWITCHES AND LUMINAIRES MAY BE LABELED WITH A LOWERCASE LETTER THAT IDENTIFIES THE SWITCHING CIRCUIT. MULTIPLE LETTERS INDICATE MULTIPLE SWITCHES MOUNTED IN A MULTI-GANG BOX. IF THERE ARE NO LETTERS, ALL LUMINAIRES IN THAT AREA OR ROOM ARE CONTROLLED BY A SINGLE SWITCH.
2. ALL RECEPTACLES ON EXTERIOR OF BUILDING AND IN WET LOCATIONS SHALL BE GROUND FAULT TYPE.
3. PROVIDE TEN FEET (10'-0") OF TYPE SJ CORD FOR EACH SPECIAL PURPOSE RECEPTACLE.
4. ALL HOME RUNS ARE NOT INDICATED. PROVIDE ALL HOME RUNS REQUIRED FOR ALL EQUIPMENT, SYSTEMS AND DEVICES.
5. SWITCH CONTROL MAY NOT BE STATED WHERE REDUNDANT OR OBVIOUSLY INTENDED.
6. GROUND WIRES ARE NOT INDICATED, BUT SHALL BE PROVIDED WHERE REQUIRED BY NEC.
7. ALL DISCONNECT AND SAFETY SWITCHES SHALL BE FUSED UNLESS NOTED OTHERWISE.
8. COLORS OF SPECIFIED FIXTURES AND DEVICES SHALL BE SELECTED BY ARCHITECT FROM THOSE AVAILABLE AS STANDARD FROM THE MANUFACTURERS. COVERPLATES FOR DEVICES SHALL BE HIGH IMPACT NYLON UNO, COLORS SELECTED BY ARCHITECT FROM THOSE AVAILABLE AS STANDARD FROM THE MANUFACTURERS. COVERPLATES FOR DEVICES IN ELECTRICAL ROOMS AND CLOSETS SHALL BE GALVANIZED STEEL.
9. PROVIDE FIRE RESISTANT PLYWOOD BACKBOARD OR GALVANIZED UNISTRUT FOR MOUNTING PANELBOARDS.

ELECTRICAL ABBREVIATIONS

IDENTIFIER	DESCRIPTION	IDENTIFIER	DESCRIPTION
# OR NO.	NUMBER	KVA	KILOVOLT AMPERE
Ø OR PH	PHASE	KVAR	KILOVOLT AMPERE REACTIVE
A OR AMP.	AMPERE	KW	KILOWATT
ACT	ACOUSTIC CEILING TILES	LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
AF	AMP FRAME	LP	LOW POWER
AFC	ABOVE FINISHED CEILING	LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MAX.	MAXIMUM
AFG	ABOVE FINISHED GRADE	MC	MECHANICAL CONTRACTOR/METAL CLAD CABLE
AHJ	AUTHORITY HAVING JURISDICTION	MCB	MAIN CIRCUIT BREAKER
AIC	AMPS INTERRUPTING CURRENT RATING	MDP	MAIN DISTRIBUTION PANEL
AT	AMP TRIP	MH	MOUNTING HEIGHT
AWG.	AMERICAN WIRE GAUGE	MIN.	MINIMUM
BFG	BELOW FINISHED GRADE	MLO	MAIN LUG ONLY
℄	CENTERLINE	N	NEUTRAL
C	CONDUIT OR RACEWAY	NAC	NOTIFICATION APPLIANCE CIRCUIT
CB	CIRCUIT BREAKER	NIC	NOT IN CONTRACT
CKT	CIRCUIT	NP	NORMAL POWER
C.O.	CONDUIT ONLY	P	POLES
C.T.	CURRENT TRANSFORMER	PC	PHOTOCELL
DC	DIRECT CURRENT	PIR	PASSIVE INFRARED
DED.	DEDICATED	Pmax	MAXIMUM POWER
DF	DOUBLE FACE	PNL	PANELBOARD
DT	DUAL TECHNOLOGY	PR	PAIR
DWG/DWGS	DRAWING OR DRAWINGS	PRI	PRIMARY
E	EXISTING TO REMAIN	PSE&G	PUBLIC SERVICE ELECTRIC & GAS
EC	ELECTRICAL CONTRACTOR	PV	PHOTOVOLTAIC
EF	EXHAUST FAN	PVC	POLYVINYL CHLORIDE CONDUIT
EMT	ELECTRIC METAL TUBING	REC.	RECEPTACLE
ETR	EXISTING TO REMAIN	RL	EXISTING TO BE RELOCATED
EX.	EXISTING	RGS	RIGID GALVANIZED STEEL CONDUIT
G OR GND.	GROUND	S	SURFACE MOUNTED ELECTRICAL EQUIPMENT/DEVICES
GC	GENERAL CONTRACTOR	SCH.	SCHEDULE
GEC	GROUNDING ELECTRODE CONDUCTOR	SEC.	SECONDARY
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	SLC	SIGNALING LINE CIRCUIT
GFI	GROUND FAULT INTERRUPT	SS	STAINLESS STEEL
GFPD	GROUND FAULT PROTECTION DEVICE	SW	SWITCH
GND.	GROUND	TS	TIME SWITCH
GRMC	GALVANIZED RIGID METAL CONDUIT	TYP.	TYPICAL
HP	HIGH POWER	UNO	UNLESS NOTED OTHERWISE
HVAC	HEATING VENTILATION AND AIR CONDITIONING	US	ULTRASONIC
HZ	HERTZ	V	VOLTS
IC	INTERRUPTING CURRENT	VA	VOLT-AMPERES
IDF	INTERMEDIATE DISTRIBUTION FRAME	VAC	VOLTS, ALTERNATING CURRENT
IG	ISOLATED GROUND	VDC	VOLTS, DIRECT CURRENT
IMC	INTERMEDIATE METAL CONDUIT	Voc	OPEN CIRCUIT VOLTAGE
Ipm	MAXIMUM POWER CURRENT	Vpm	MAXIMUM POWER VOLTAGE
Isc	SHORT CIRCUIT CURRENT	W	WATTS OR WIRE
KAIC	THOUSAND AMPERE INTERRUPTING CURRENT	WP	WEATHERPROOF-NEMA 3R
	THOUSAND CIRCULAR MILLS	XFMR	TRANSFORMER
KCM	KILOAMPERE	VOIP	VOICE OVER INTERNET PROTOCOL
KA	KILOVOLT	Y	WYE
KV			

APPLICABLE CODES (NJ)

LISTED BELOW ARE THE CURRENT ADOPTED CODES UNDER THE NEW JERSEY STATE UNIFORM CONSTRUCTION CODE (U.C.C.):

INTERNATIONAL BUILDING CODE- NEW JERSEY EDITION	2018
INTERNATIONAL MECHANICAL CODE	2018
ASHRAE 90.1	2016
THE NATIONAL ELECTRICAL CODE	2017
THE NATIONAL STANDARD PLUMBING CODE	2018
INTERNATIONAL FUEL GAS SUBCODE	2018
BARRIER FREE SUBCODE ICC/ANSI A117.1	2009
NJ REHABILITATION SUBCODE	NJAC 5:23-6
NJ BARRIER FREE SUBCODE	NJAC 5:23-7

ANY WORK WHICH DEVIATES FROM SUCH STANDARDS SHALL BE RECTIFIED TO THE SATISFACTION OF THE GOVERNING AUTHORITY. THE REQUIREMENTS OF GOVERNING AUTHORITIES SHALL SUPERSEDE THE DRAWINGS AND SPECIFICATIONS IN ALL CASES. THE ENGINEER SHALL BE NOTIFIED BY WRITTEN CHANGE ORDER BEFORE SUCH WORK IS STARTED. NON-FAMILIARITY WITH GOVERNING RULES AND REGULATIONS SHALL NOT BE CAUSE FOR AN EXTRA CHARGE IN THE EVENT THAT WORK MUST BE REPLACED FOR NONCOMPLIANCE.

STANDARD MOUNTING HEIGHTS

0.23M (9") BELOW FINISHED CEILING	FIRE ALARM HORNS AND P.A. HORN SPEAKERS
2.03m (6'–8")	FIRE ALARM STROBE, COMBINATION HORN/STROBE
1.98m (6'–6")	TOP OF ELECTRICAL PANELBOARDS, TELEPHONE CABINETS, SYSTEM CONTROL PANELS AND REMOTE ANNUNCIATORS
1.91m (6'–3")	TOP OF BACK–MOUNTED WALL EXIT FIXTURES (MOUNTED ABOVE DOORS NOT INCLUDED)
1.83m (6'–0")	TOP OF HIGHEST ELECTRICAL SAFETY DISCONNECT SWITCHES, MOTOR STARTERS, VARIABLE FREQUENCY DRIVES, CONTACTORS, PANELBOARDS, ENERGY MANAGEMENT UNITS AND PUSHBUTTONS
1.37m (4'–6")	WALL MOUNTED TELEPHONES AND PAY STATIONS (1.1m [3'–6"] AT HANDICAP LOCATIONS)
1.22m (4'–0")	WALL MOUNTED ELECTRICAL DEVICES INCLUDING: LIGHT SWITCHES, MANUAL MOTOR STARTERS, THERMOSTATS AND INTERCOM VOLUME CONTROLS
1.1m (3'–6")	MANUAL FIRE ALARM PULL STATION
0.61m (2'–0")	ELECTRICAL RECEPTACLES IN MAINTENANCE AND PARKING AREAS, MECHANICAL SPACES AND ELECTRICAL ROOMS
0.46m (1'–6")	ELECTRICAL RECEPTACLES IN OFFICE AREAS, TELEPHONE OUTLETS AND TELEPHONE/DATA OUTLETS
0.0m (0'–0")	FINISHED FLOOR

NOTES:

1. MOUNTING HEIGHTS TO CENTER OF OUTLETS UNLESS OTHERWISE NOTED. IN MASONRY CONSTRUCTION, THE MOUNTING HEIGHTS SHALL BE USED FOR REFERENCE TO NEAREST BLOCK OR BRICK COURSING.
2. THE INDICATED MOUNTING SHALL BE ADHERED TO UNLESS SPECIFICALLY NOTED OR DETAILED OTHERWISE ON THE DRAWINGS OR SPECIFICATIONS.
3. VERIFY ALL MOUNTING HEIGHTS AND LOCATIONS WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. THEIR INSTRUCTIONS SHALL TAKE PRECEDENCE OVER THIS DETAIL EXCEPT WHERE IN CONFLICT WITH NJUCC REQUIREMENTS.
4. VISIBLE FIRE ALARM APPLIANCES SHALL BE MOUNTED BETWEEN 2.0m TO 2.4m (6'-8" TO 8'-0") ABOVE FINISHED FLOOR.
5. ALL DEVICES SHALL BE MOUNTED 1.11m (3'-8") AT ALL AREAS WITH FORWARD WHEELCHAIR APPROACH ONLY.

ELECTRICAL DRAWING LIST

DWG. NO	DRAWING TITLE
LT.E0.1	ELECTRICAL LEGEND AND NOTES
LT.E0.2	ELECTRICAL SPECIFICATIONS
LT.ED1.1	ELECTRICAL PARTIAL DEMOLITION SITE PLANS 1
LT.E1.2	ELECTRICAL PARTIAL SITE PLANS 1
LT.E2.1	ELECTRICAL DETAILS, SCHEDULES AND NOTES

CODE REVIEW:

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SEAL:

CONSULTANTS:

100% CD SUBMISSION

PROJECT:

EXISTING BLEACHER REPAIRS AND RELATED WORK

FOR

THE COLLEGE OF NEW JERSEY

2000 PENNINGTON ROAD,
EWING TOWNSHIP, NEW JERSEY 08618

FOR CODE REVIEW: DD/MM/YYYY

REVISIONS:

#	REVISION NAME	DATE
1	ADDENDUM 1	05/16/2021

FOR BID: 03/17/2022

DRAWING TITLE:

ELECTRICAL LEGEND AND NOTES

COMMISSION NUMBER:
21U019

AGENCY NUMBER:

DO NOT SCALE THE DRAWINGS

DRAWING NUMBER:
LT.E0.1

THIS DRAWING IS FORMATTED TO BE PRINTED AT 30"x42"

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ELECTRICAL SPECIFICATIONS

1. GENERAL REQUIREMENTS:

1.1 ALL WORK SHALL BE DONE IN A NEAT WORKMANLIKE MANNER, LEFT CLEAN AND FREE FROM DEFECTS, AND COMPLETELY OPERABLE AS DESCRIBED IN ANSI/NECA 1-2006, "STANDARD PRACTICE FOR GOOD WORKMANSHIP IN ELECTRICAL CONTRACTING." THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AS SHOWN ON THE DRAWINGS AND/OR AS SPECIFIED. ALL MATERIALS SHALL BE NEW.

1.2 THE WORK TO BE DONE UNDER THIS PROJECT INCLUDES PROVIDING ALL EQUIPMENT, MATERIALS, LABOR AND SERVICES, AND PERFORMING ALL OPERATIONS FOR COMPLETE AND OPERATING SYSTEMS. ANY WORK NOT SPECIFICALLY COVERED BUT NECESSARY TO COMPLETE THIS INSTALLATION, SHALL BE PROVIDED. ALL EQUIPMENT AND WIRING TO BE NEW AND PROVIDED UNDER THIS CONTRACT, UNLESS OTHERWISE NOTED.

1.3 ENTIRE INSTALLATION, INCLUDING MATERIALS, EQUIPMENT AND WORKMANSHIP, SHALL CONFORM TO THE 2011 EDITION OF THE NATIONAL ELECTRIC CODE (NEC), AS WELL AS ALL APPLICABLE LAWS AND REGULATIONS AND REGULATORY BODIES HAVING JURISDICTION OVER THIS WORK.

1.4 ALL WORK SHALL BE DONE IN COMPLIANCE WITH ALL LAWS, CODES, ORDINANCES, ETC., OF ANY GOVERNING BODY HAVING JURISDICTION. THE CONTRACTOR MUST BE REGISTERED AND HAVE ALL LICENSES, PERMITS AND CONSENTS REQUIRED BY GOVERNMENTAL AUTHORITY TO CARRY OUT THE WORK UNDER THIS CONTRACT.

1.5 THE CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS FROM THE WORK AREA ON A DAILY BASIS, AND SHALL NOT DISTURB AND/OR INTERFERE WITH THE OWNER'S BUSINESS. ALL WORK THAT MAY EFFECT OPERATION OF BUILDING SYSTEMS MUST BE COORDINATED WITH OWNER'S REPRESENTATIVE.

1.6 THE TERM "FURNISH" SHALL MEAN TO OBTAIN AND SUPPLY TO THE JOB SITE. THE TERM "INSTALL" SHALL MEAN TO FIX IN POSITION AND CONNECT FOR USE. THE TERM "PROVIDE" SHALL MEAN TO FURNISH AND INSTALL. THE TERM "CONTRACTOR" SHALL MEAN ELECTRICAL CONTRACTOR.

1.7 ALL EQUIPMENT AND SYSTEMS SHALL BE INSTALLED AS PER APPLICABLE SEISMIC REQUIREMENTS, OR THE BUILDING CODE AND EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. MANUFACTURER'S DIRECTION SHALL BE FOLLOWED IN INSTALLING, TESTING AND PLACING INTO OPERATION ALL EQUIPMENT AND SYSTEMS.

1.8 ONLY WRITTEN CHANGES AND/OR MODIFICATIONS APPROVED BY THE OWNER'S REPRESENTATIVE SHALL BE RECOGNIZED.

1.9 THE ELECTRICAL CONTRACTOR SHALL SUBMIT, FOR THE ENGINEER'S APPROVAL, DETAILED SHOP DRAWINGS OF ALL EQUIPMENT SPECIFIED.

1.10 DRAWINGS ARE TO BE CONSIDERED DIAGRAMMATIC, AND SHALL BE FOLLOWED AS CLOSELY AS CONDITIONS ALLOW TO COMPLETE THE INTENT OF THE CONTRACT. THE DRAWINGS AND SPECIFICATIONS COMPLIMENT ONE ANOTHER, AND WHAT IS SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, AND VICE VERSA, IS TO BE INCLUDED IN THE SCOPE OF WORK.

1.11 THE CONTRACTOR SHALL COORDINATE WITH THE PLANS AND SPECIFICATIONS PROVIDED BY OTHER TRADES.

1.12 KEEP PREMISES FREE FROM RUBBISH. REMOVE ALL ELECTRICAL RUBBISH FROM SITE.

1.13 THE DRAWINGS ARE DIAGRAMMATIC AND ALL SPECIALTIES AND APPURTENANCES ARE NOT SHOWN, BUT SHALL BE PROVIDED AS REQUIRED.

1.14 THE WORK SHALL INCLUDE ALL PANELS, LIGHTING FIXTURES, DEVICES, FEEDERS, BRANCH CIRCUIT WIRING, ETC., AS REQUIRED FOR THE DISTRIBUTION SYSTEM INDICATED AND CALLED FOR ON THE DRAWINGS, REQUIRED BY SPECIFICATIONS AND AS NECESSARY FOR COMPLETE FUNCTIONAL SYSTEMS PRESENTED AND INTENDED.

1.15 THE CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, TOOLS, EQUIPMENT, CONSUMABLES AND SERVICES REQUIRED FOR OBTAINING, DELIVERY, INSTALLATION, CONNECTION, DISCONNECTION, REMOVAL, RELOCATION, REPAIR, REPLACEMENT, TESTING AND COMMISSIONING OF ALL EQUIPMENT AND DEVICES INCLUDED IN OR NECESSARY FOR THE WORK, AS APPLICABLE.

1.16 WORK UNDER THIS CONTRACT COMPRISES ALL LABOR, MATERIAL, EQUIPMENT, TRANSPORTATION, SCAFFOLDING, RIGGING, TOOLS AND RELATED ITEMS AND SUBCONTRACT WORK FOR A COMPLETE OPERATING ELECTRICAL SYSTEM.

1.17 ALL PENETRATIONS OF WALLS, FLOORS AND ROOFS SHALL BE DONE BY THE USE OF SLEEVES MANUFACTURED OR FABRICATED FOR THAT PURPOSE. ALL OPENINGS IN FIRE RATED WALL, FLOORS ETC., SHALL BE SEALED WITH COMPATIBLE FIRE RESISTANT MATERIAL.

1.18 BEFORE SUBMITTING HIS BID, THE CONTRACTOR SHALL VISIT THE JOB SITE AND FULLY ACQUAINT HIMSELF/HERSELF WITH THE EXISTING JOB CONDITIONS AND DIFFICULTIES THAT WILL PERTAIN TO THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. LATER CLAIMS SHALL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED, WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.

1.19 THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING UTILITIES.

1.20 UPON COMPLETION OF THE ELECTRICAL WORK, THE CONTRACTOR SHALL TEST THE COMPLETE ELECTRICAL SYSTEM FOR SHORTS, GROUNDS, AND PROPER OPERATION, IN THE PRESENCE OF THE ENGINEER.

1.21 UPON COMPLETION OF WORK, THE CONTRACTOR SHALL CLEAN AND ADJUST ALL EQUIPMENT AND LIGHTING AND TEST SYSTEMS TO THE SATISFACTION OF OWNER AND ENGINEER. RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

1.22 THE CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF FINISHED CONSTRUCTION PRIOR TO FABRICATION AND INSTALLATION OF FIXTURES AND EQUIPMENT.

1.23 ALL WORK SHALL BE PERFORMED BY THOSE SKILLED IN THEIR PARTICULAR TRADE IN A NEAT AND WORKMANLIKE MANNER.

1.24 ALL NEW ELECTRICAL MATERIAL AND EQUIPMENT SHALL BE LISTED BY UNDERWRITERS' LABORATORIES, INC. (UL) AND BEAR THE UL LABEL.

1.25 THE CONTRACTOR MUST HAVE THE H.V.A.C., FIRE PROTECTION AND PLUMBING DRAWINGS FOR LOCATIONS OF EQUIPMENT AND CONTROL WIRING REQUIREMENTS. ONLY POWER FEEDERS TO MECHANICAL EQUIPMENT ARE SCHEDULED ON THE ELECTRICAL DRAWINGS. FURNISH AND INSTALL ALL CODE REQUIRED DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT UNLESS SPECIFIED ON MECHANICAL DRAWINGS TO BE SUPPLIED BY MANUFACTURER. PROVIDE FUSED SWITCHES WHEREVER MANUFACTURER REQUIRES THEM. THIS TRADE SHALL INSTALL ALL LOOSE EQUIPMENT PROVIDED BY OTHERS.

2. PROJECT COORDINATION:

2.1 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY FIELD CONDITIONS AT THE SITE AND NOTIFY THE OWNER OF ANY DISCREPANCIES, PRIOR TO COMMENCING WITH THE WORK.

2.2 THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING AND COORDINATING WITH THE DOCUMENTS OF ALL TRADES.

2.3 THE CONTRACTOR SHALL FURNISH A SCHEDULE INDICATING HIS PORTION OF TIME, WITHIN THE OVERALL SCHEDULE, REQUIRED TO COMPLETE THE WORK, IN CONJUNCTION WITH ALL TRADES.

2.4 ALL CONDUITS, DEVICE BOXES AND FACEPLATES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.

2.5 SHUT DOWN OF POWER SHALL BE COORDINATED WITH OWNER AND ENGINEER AT LEAST 12 WORKING DAYS PRIOR TO SHUT DOWN.

2.6 REFER TO THE HVAC DRAWINGS FOR THE LOCATIONS OF THE FOLLOWING:
A. MECHANICAL EQUIPMENT, CONTROL PANELS AND MOTORS.

3. PROTECTION OF WORK:

3.1 EFFECTIVELY PROTECT ALL MATERIALS AND EQUIPMENT FROM ENVIRONMENTAL AND PHYSICAL DAMAGE UNTIL FINAL ACCEPTANCE. CLOSE AND PROTECT ALL OPENINGS DURING CONSTRUCTION.

3.2 PROVIDE NEW MATERIALS AND EQUIPMENT TO REPLACE ITEMS DAMAGED.

4. WARRANTIES AND BONDS:

4.1 ALL MATERIALS, EQUIPMENT AND WORKMANSHIP SHALL BE GUARANTEED IN WRITING FOR A MINIMUM OF ONE YEAR AFTER FINAL ACCEPTANCE BY OWNER.

4.2 OBTAIN AND DELIVER TO THE ENGINEER TWO (2) COPIES OF ALL GUARANTEES AND CERTIFICATES OF COMPLIANCE.

5. PERMITS:

5.1 CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS, APPROVALS AND INSPECTION FEES FOR ELECTRICAL WORK.

6. RACEWAYS:

6.1 LIQUID TIGHT FLEXIBLE METAL CONDUIT IN LENGTHS OF 3' OR LESS WITH APPROVED TYPE FITTINGS SHALL BE USED FOR CONNECTIONS TO VIBRATING EQUIPMENT, MOTORS, AND OTHER OUTLETS WHERE WIRING WILL BE EXPOSED TO WEATHER, MOISTURE OR VIBRATIONS.

6.2 INSTALL RACEWAYS FROM BOX TO BOX OR TERMINATIONS AS SHOWN ON THE DRAWINGS OR AS REQUIRED TO EFFECT CIRCUITING DESCRIBED WITH CIRCUIT NUMBERS ADJACENT TO EQUIPMENT. GROUPING HOME RUNS OR COMBINING WIRES IN COMMON RACEWAYS WILL BE ALLOWED WITH A MAXIMUM OF THREE SINGLE POLE BRANCH CIRCUITS IN A RACEWAY. INCREASE WIRE SIZES AND RACEWAYS WHERE REQUIRED TO AVOID LOSS OF AMPACITY AS REQUIRED BY NATIONAL ELECTRIC CODE.

6.3 FLEXIBLE METAL CONDUIT WITH APPROVED TYPE FITTINGS MAY BE USED IN LIMITED LENGTHS FOR CONNECTIONS TO RECESSED FIXTURES WHERE IT IS NECESSARY TO PROVIDE FLEXIBLE CONNECTIONS. IT MAY ALSO BE USED WHERE STRUCTURAL MEMBERS PRECLUDE THE USE OF ELECTRICAL METALLIC TUBING OR CONDUITS.

6.4 INSTALL CONDUIT CONTINUOUS BETWEEN BOXES AND CABINETS WITH NO MORE THAN FOUR (4) 90 DEGREE BENDS. SECURELY FASTEN IN PLACE WITH STRAPS, HANGERS AND STEEL SUPPORTS AS REQUIRED. DO NOT SUPPORT CONDUIT FROM SUSPENDED CEILING GRID OR SUSPENSION WIRES. REAM CONDUIT ENDS BEFORE INSTALLATION AND THOROUGHLY CLEAN BEFORE INSTALLATION. OPENINGS SHALL BE PLUGGED OR COVERED TO KEEP CONDUIT CLEAN. TERMINALS ON SWITCHES AND RECEPTACLES SHALL NOT BE USED TO "FEED THRU" TO THE NEXT SWITCH OR RECEPTACLE. THE DISCONNECTIONS OR REMOVAL OF A DEVICE FROM A BOX SHALL NOT INTERFERE WITH OR INTERRUPT THE CONDUCTOR CONTINUITY. SEE SCHEDULE FOR ADDITIONAL INFORMATION.

6.5 ALL CONDUIT SHALL BE MINIMUM SIZE OF 3/4" FOR POWER CIRCUITS AND CONTROL CIRCUITS EXCEPT WHERE FLEXIBLE CONDUIT IS CALLED FOR ON PROJECT DOCUMENTS. BRANCH CIRCUIT AND FEEDER WIRING RUN WITHIN THE BUILDING SHALL BE INSTALLED IN ELECTRICAL METALLIC TUBING WITH COMPRESSION FITTINGS AND RUN CONCEALED WHERE POSSIBLE, BUT EXPOSED ON EXISTING SURFACES WHERE CONDUITS CANNOT BE CONCEALED. METAL CLAD CABLE (TYPE MC OR HFC-90) SHALL BE PERMITTED FOR BRANCH CIRCUITS IN CONCEALED AREAS ONLY AND TO THE EXTENT PERMITTED BY CODE. ALL EXTERIOR CONDUIT SHALL BE GRC (GALVANIZED RIGID METAL CONDUIT) UNLESS NOTED OTHERWISE.

6.6 ELECTRICAL RACEWAY CONNECTIONS TO VIBRATING EQUIPMENT AND MACHINERY SUCH AS MOTORS, TRANSFORMERS, ETC., SHALL BE MADE WITH FLEXIBLE METAL CONDUIT (FMC) IN DRY LOCATIONS & LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) IN WET LOCATIONS.

6.7 ALL PENETRATIONS THROUGH ALL WALLS AND FLOORS SHALL BE SEALED. THE CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS AND FLOORS WITH APPROVED FIRE RATED SEALANT.

6.8 CONDUIT SHALL BE RUN AT RIGHT ANGLES AND PARALLEL TO BUILDING LINES, SHALL BE NEATLY RACKED, AND SECURELY FASTENED. JUNCTION BOXES SHALL BE PROVIDED WHERE REQUIRED TO FACILITATE INSTALLATION OF WIRES.

6.9 ALL CONDUIT, CABLES AND ELECTRICAL EQUIPMENT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN AN APPROVED MANNER.

6.10 ALL EMPTY RACEWAYS SHALL BE FURNISHED WITH A 200 LB. TEST NYLON DRAG LINE.

6.11 ALL RACEWAY AND WIRING SHALL BE CONCEALED IN FINISHED AREAS AS DETERMINED BY THE ARCHITECT.

6.12 FOR CONDUITS CROSSING EXPANSION JOINTS, PROVIDE EXPANSION FITTINGS FOR SIZE 1-1/4", AND LARGER, 0Z-GEDWAY TYPE AX OR EQUAL WITH APPROPRIATE BONDING JUMPER. PROVIDE SECTIONS OF FLEXIBLE CONDUIT WITH GROUNDING JUMPERS FOR SIZES 1" AND SMALLER.

6.13 EXACT ROUTING OF RACEWAY SHALL BE DETERMINED IN THE FIELD. ARRANGEMENT OF CONDUIT AND EQUIPMENT, WHERE SHOWN ON PLANS, SHALL BE AS INDICATED UNLESS MODIFICATION IS REQUIRED TO AVOID INTERFERENCES.

7. BOXES:

7.1 JUNCTION BOXES SHALL BE METALLIC, WITH SCREW COVERS. BOXES SHALL BE SUPPORTED INDEPENDENTLY OF CONDUITS. MOUNTING HEIGHTS OF EQUIPMENT AND DEVICES SHALL BE AS INDICATED ON THE DRAWINGS. WHERE MOUNTING HEIGHTS ARE NOT GIVEN ON THE DRAWINGS, CONFIRM WITH ARCHITECT.

7.2 PROVIDE OUTLET BOXES AT ALL FIXTURES, JUNCTION BOXES AND WIRING DEVICES. BOXES SHALL BE PROPERLY SUPPORTED AND SIZED FOR THE NUMBER OF CONDUCTORS IN ACCORDANCE WITH NEC. INTERIOR BOXES SHALL BE GALVANIZED STEEL UNO.

7.3 PROVIDE JUNCTION BOXES AND WIRING TROUGHS, SIZED AS PER NEC, WHERE SHOWN OR WHERE NECESSARY TO FACILITATE PULLING OF CONDUCTORS. BOXES AND TROUGH SHALL BE SHEET STEEL, EITHER GALVANIZED OR PAINTED FINISH. COVERS SHALL BE COMBINATION HINGED AND SCREWED.

7.4 PULL BOXES SHALL BE INSTALLED AS REQUIRED TO KEEP PULLING TENSIONS AND SIDEWALL PRESSURES BELOW CABLE VENDOR'S RECOMMENDATION.

8. WIRING:

8.1 CONDUCTORS SHALL BE COPPER WITH 600 VOLT INSULATION, MINIMUM #12 AWG FOR POWER AND LIGHTING AND #16 AWG FOR CONTROL CIRCUITS, THW, THWN OR THHN UNLESS NOTED OTHERWISE. ALL WIRE #10 AWG AND SMALLER SHALL BE SOLID CONDUCTOR.

8.2 PROVIDE A SEPARATE NEUTRAL FOR EACH BRANCH CIRCUIT, NEUTRALS SHALL NOT BE SHARED. UNDER NO CIRCUMSTANCES SHALL FEEDERS BE SPLICED.

8.3 ALL WIRE SPLICES SHALL BE MADE WITH PRESSURE TYPE CONNECTORS. SPLICES IN DAMP OR WET LOCATIONS SHALL BE MADE WATERTIGHT AND WATERPROOF.

8.4 ALL WIRING SHALL BE PROVIDED BASED ON CIRCUIT BREAKER TRIP RATING, PER NEC. EACH CONDUIT SHALL INCLUDE GROUNDING CABLE.

8.5 ALL RACEWAYS FEEDING ISOLATED GROUND DEVICES SHALL INCLUDE AN ISOLATED GROUND WIRE SIZED IN ACCORDANCE TO THE NEC.

8.6 FURNISH AND INSTALL ALL POWER WIRING AS REQUIRED FOR EQUIPMENT FURNISHED UNDER H.V.A.C., PLUMBING AND GENERAL TRADE SECTIONS, UNLESS OTHERWISE NOTED.

8.7 WIRING FOR CONTROLS, COMMUNICATIONS AND OTHER SYSTEMS SHALL BE IN RACEWAY SPECIFIED FOR BRANCH CIRCUITS UNLESS OTHERWISE NOTED.

8.8 WIRE AND CABLE COLOR CODING.

1. POWER WIRING: CONSISTENT PHASE IDENTIFICATION OF ALL WIRES SHALL BE MAINTAINED AS FOLLOWS:

	208/120V, 3Ø, 60 HZ	277/480V, 3Ø, 60 HZ
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL WIRE	WHITE	GRAY
GROUND WIRE	GREEN	
ISOLATED GROUND WIRE	GREEN WITH YELLOW STRIPE	

(THIS CHART SHALL BE POSTED ON PANELBOARDS AND SIMILAR DISTRIBUTION EQUIPMENT)

2. CONTROL WIRES: WIRES OF CONTROL CIRCUITS SHALL BE CONSISTENTLY COLOR CODED TO PERMIT EASY IDENTIFICATION OF CONDUCTORS.

8.9 CONDUCTORS SHALL BE CONTINUOUS FROM ORIGIN TO PANEL OR EQUIPMENT WITHOUT SPLICES. WHERE TAP SPLICES ARE NECESSARY AND APPROVED, THEY SHALL BE MADE WITH SUITABLE CONNECTORS IN JUNCTION BOXES.

8.10 MECHANICAL CONTRACTOR SHALL FURNISH AND INSTALL CONTROL WIRING.

8.11 ALL WIRE AND CABLE AMPACITIES INDICATED ON DRAWINGS ARE BASED ON 75°C. TEMPERATURE RATING. ALL LUGS, BREAKERS, SWITCHES AND OTHER TERMINATIONS SHALL HAVE 75°C. RATINGS AS A MINIMUM.

8.12 BALANCE ALL LOADS BETWEEN PHASES.

8.13 LOW VOLTAGE CABLES IN A PLENUM SHALL BE PLENUM RATED AND ARE NOT REQUIRED TO BE INSTALLED IN RACEWAY. SUPPORTING DEVICES SUCH AS TIES AND WRAPS SHALL ALSO BE PLENUM RATED. ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NONCOMBUSTIBLE OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84. CONTRACTOR SHALL PROVIDE PROOF OF COMPLIANCE WITH REQUIREMENT UPON REQUEST.

9. MECHANICAL SYSTEMS POWER:

9.1 EXCEPT AS OTHERWISE NOTED, EQUIPMENT FURNISHED UNDER THE MECHANICAL TRADE SHALL INCLUDE MOTORS, STARTERS, CONTROL EQUIPMENT, INTERLOCK AND CONTROL WIRING. ELECTRICAL CONTRACTOR SHALL PROVIDE ALL POWER WIRING FROM SOURCE THROUGH INTERVENING EQUIPMENT TO MOTOR TERMINALS. STARTERS SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR.

9.2 DISCONNECT SWITCHES SHALL BE HEAVY DUTY, HORSEPOWER RATED, QUICK MAKE, QUICK BREAK TYPE, ENCLOSED IN A HEAVY SHEET METAL ENCLOSURE WITH HINGED INTERLOCKING COVER, IN PROPER NEMA RATED ENCLOSURES, FUSED OR NON-FUSED AS REQUIRED. DISCONNECT SWITCHES SHALL BE PROVIDED BY CONTRACTOR, EXCEPT AS NOTED ON DRAWINGS.

9.3 THE RATING FOR DISCONNECT SWITCHES SHALL BE THE SAME AS, OR GREATER THAN, THE PROTECTIVE DEVICE SERVING THE EQUIPMENT.

9.4 A STRUT FRAME SHALL BE PROVIDED AT ALL LOCATIONS WHERE STRUCTURE WILL NOT ADEQUATELY SUPPORT EQUIPMENT, OR FOR FREESTANDING EQUIPMENT.

9.5 THE CONTRACTOR SHALL WIRE ALL MECHANICAL AND FIRE ALARM EQUIPMENT SHOWN ON THE DRAWINGS. COORDINATE WITH MECHANICAL DRAWINGS.

9.6 PROVIDE ALL SAFETY SWITCHES AS SHOWN ON THE DRAWINGS AND\OR REQUIRED BY NEC FOR MOTOR, APPLIANCE AND ELECTRIC HEAT EQUIPMENT DISCONNECTION. ALL DISCONNECT SWITCHES SHALL BE LOCKABLE IN THE "ON" OR "OFF" POSITION. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY, QUICK-MAKE, QUICK-BREAK TYPE NEMA 1 ENCLOSURE (NEMA 3R FOR OUTDOOR). FURNISH AND INSTALL ALL FUSES AS MANUFACTURED BY BUSSMAN, GOULD-SHAWMUT OR LITTLE FUSE. ALL CONDUCTOR TERMINALS TO BE U.L. LISTED FOR MINIMUM 75°C.

9.7 PROVIDE ANY/ALL PROPERLY SIZED THERMAL ELEMENTS IN STARTERS AS REQUIRED.

10. PANELBOARDS:

10.1 EXISTING PANELS SHALL BE AS INDICATED ON THE DRAWINGS. PROVIDE NEW CIRCUIT BREAKERS THAT MATCH THOSE EXISTING CIRCUIT BREAKERS IN MANUFACTURE, TYPE AND SHORT CIRCUIT INTERRUPTING CAPACITY.

10.2 BREAKERS SHALL BE THERMAL MAGNETIC TYPE, BOLT-IN, QUICK-MAKE, QUICK-BREAK TYPE, SINGLE UNIT CONSTRUCTION WITH TRIP SETTINGS AND NUMBER OF POLES AS INDICATED ON DRAWINGS. TWO AND THREE POLE BREAKERS SHALL BE SINGLE UNIT COMMON TRIP TYPE. ALL BREAKERS CONNECTED TO LIGHTING BRANCH CIRCUITS SHALL BE APPROVED FOR THAT USE AND MARKED "SWD".

10.3 ALL ELECTRICAL PANELS AND DISCONNECT SWITCHES SHALL BE PROPERLY IDENTIFIED WITH PHENOLIC NAMEPLATES. ALL PANELS SHALL HAVE TYPEWRITTEN SCHEDULES FOR ACTIVE AND SPARE CIRCUITS.

10.4 CIRCUIT NUMBERS SHOWN SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. HOWEVER, CONTRACTOR IS RESPONSIBLE FOR BALANCING LOADS ON ALL PHASES AND MAY ALTER ASSIGNMENT OF CIRCUITS FOR BALANCING PHASES.

11. GROUNDING:

11.1 GROUNDING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

11.2 PROVIDE ALL FINAL TESTS TO ASSURE A GROUNDED SYSTEM FREE FROM SHORT CIRCUITS OR UNINTENTIONAL GROUNDS.

11.3 PERMANENTLY AND EFFECTIVELY GROUND ALL METALLIC CONDUITS, SUPPORTS, CABINETS, PANELBOARDS AND SYSTEM GROUNDING NEUTRAL IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEC. MAINTAIN CONTINUITY OF EQUIPMENT GROUND THROUGHOUT THE SYSTEM. GROUND CLAMPS SHALL BE APPROVED TYPE, SPECIFICALLY DESIGNED FOR GROUNDING. WHERE GROUNDING CONDUCTOR IS ENCLOSED IN CONDUIT, GROUND CLAMPS SHALL BE OF A TYPE WHICH GROUNDS BOTH CONDUCTOR AND CONDUIT.

11.4 EQUIPMENT GROUNDING CONDUCTORS SHALL BE PROVIDED FOR ALL FEEDERS AND BRANCH CIRCUITS. USE GREEN GROUND WIRE SIZED IN ACCORDANCE WITH NEC TABLE 250-122.

12. IDENTIFICATION:

12.1 PROVIDE BLACK PHENOLIC IDENTIFICATION PLATES WITH WHITE LETTERS ON ALL NEW ELECTRICAL EQUIPMENT. INCLUDING STARTERS, TRANSFORMERS, DISCONNECT SWITCHES AND OTHER ELECTRICAL BOXES AND CABINETS INSTALLED UNDER THIS CONTRACT. PROVIDE ID PLATES FOR ALL OVERCURRENT PROTECTION DEVICES RATED 100A OR HIGHER. ATTACH WITH MECHANICAL FASTENERS AND SUITABLE ADHESIVE.

12.2 PROVIDE BLACK PHENOLIC IDENTIFICATION PLATES WITH WHITE LETTERS ON ALL EXISTING ELECTRICAL EQUIPMENT WHERE EXISTING EQUIPMENT IS IDENTIFIED BY TAG NAME.

12.3 PROVIDE A PLASTIC COVERED TYPEWRITTEN SCHEDULE IDENTIFYING ALL BRANCH CIRCUITS INSIDE EACH PANELBOARD CABINET. UPDATE EXISTING SCHEDULES AS REQUIRED.

12.4 APPLY CABLE/CONDUCTOR IDENTIFICATION MARKERS ON EACH CABLE AND CONDUCTOR IN EACH BOX, ENCLOSURE OR CABINET.

12.5 PROVIDE PLASTIC ENGRAVED LABELS ON PANELS, DISCONNECT SWITCHES AND TRANSFORMERS TO INDICATE POWER SOURCE AND VOLTAGE.

13. EQUIPMENT SUPPORTS:

13.1 THE CONTRACTOR SHALL PROVIDE ALL STRUCTURAL SUPPORTS AND MOUNTING DEVICES FOR THE PROPER ATTACHMENTS OF EQUIPMENT SUPPLIED BY THIS TRADE. THIS SHALL ALSO INCLUDE STARTERS, DISCONNECTS, CONTROLLERS, ETC. FURNISHED BY THE MECHANICAL TRADE.

13.2 CONDUIT SUPPORTS SHALL BE PLACED AT A MAXIMUM DISTANCE OF TEN (10) FEET APART.

13.3 SUPPORT CEILING MOUNTED LIGHT FIXTURES FROM STRUCTURE ABOVE WITH METAL TIE WIRES.

13.4 PROVIDE EARTHQUAKE CLIPS AS REQUIRED BY NEC 410-16(C).

14. RECORD DOCUMENTS AND CLOSEOUT PROCEDURES:

14.1 DURING CONSTRUCTION, THE CONTRACTOR SHALL MAINTAIN A RECORD SET OF INSTALLATION PRINTS. HE SHALL NEATLY AND CLEARLY RECORD ON THESE PRINTS ALL DEVIATIONS FROM THE CONTRACT DRAWINGS IN SIZES, LOCATIONS AND DETAILS.

14.2 AS-BUILTS SHALL BE PROVIDED WITHIN 30 DAYS OF SYSTEM ACCEPTANCE, INCLUDING BUT NOT LIMITED TO SINGLE-LINE OF ELECTRICAL DISTRIBUTION SYSTEM AND FLOOR PLAN WITH LOCATIONS OF DISTRIBUTION EQUIPMENT AND AREAS SERVED BY THAT EQUIPMENT. (ASHRAE/IESNA STANDARD 90.1-2007.) CONTRACTOR SHALL SUBMIT THREE (3) COPIES OF AS-BUILT DRAWINGS.

14.3 O & M MANUALS MUST BE PROVIDED FOR THE ELECTRICAL DISTRIBUTION SYSTEM, INCLUDING BUT NOT LIMITED TO NAMEPLATE RATINGS, SCHEDULED MAINTENANCE, SPECIFIC EQUIPMENT SUPPLIED, NAMES AND ADDRESSES OF QUALIFIED SERVICE AGENCIES, COMPLETE NARRATIVE AND SCHEMATIC OF SYSTEM IN NORMAL OPERATION. (ASHRAE/IESNA STANDARD 90.1-2007.) CONTRACTOR SHALL SUBMIT 3 COPIES OF O & M MANUALS.

14.4 ALL ELECTRICAL EQUIPMENT SHALL BE ADJUSTED AND TESTED FOR PROPER OPERATION. AFTER WIRES ARE IN PLACE AND CONNECTED TO DEVICES AND EQUIPMENT. THE SYSTEM SHALL BE TESTED FOR SHORTS AND GROUNDS. ALL HOT AND NEUTRAL CONDUCTORS, IF SHORTED OR GROUNDED, SHALL BE REMOVED AND REPLACED. ALL METERS, INSTRUMENTS, CABLE CONNECTIONS, EQUIPMENT OR APPARATUS NECESSARY FOR MAKING ALL TESTS, SHALL BE FURNISHED BY THIS CONTRACTOR AT HIS OWN EXPENSE.

14.5 TOUCH-UP OR REFINISH DAMAGED SURFACES OF FIXTURES AND EQUIPMENT, EXPOSED TO VIEW.

15. SHORT-CIRCUIT/ARC FLASH HAZARD ANALYSIS

15.1 THE CONTRACTOR SHALL FURNISH A PROTECTIVE DEVICE COORDINATION STUDY AS PREPARED BY A NJ LICENSED PROFESSIONAL ENGINEER.

15.2 THE CONTRACTOR SHALL FURNISH AN ARC FLASH HAZARD ANALYSIS STUDY PER THE REQUIREMENTS SET FORTH IN NFPA 70E "STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE". THE ARC FLASH HAZARD ANALYSIS SHALL BE PERFORMED ACCORDING TO THE IEEE 1584 EQUATIONS THAT ARE PRESENTED IN NFPA 70E-2004, ANNEX D.

15.3 THE SCOPE OF THE STUDIES SHALL INCLUDE ALL DISTRIBUTION EQUIPMENT SUPPLIED BY THE EQUIPMENT MANUFACTURER UNDER THIS CONTRACT. THE STUDIES SHALL BE COMPLETED PRIOR TO THE START OF CONSTRUCTION OF THE ELECTRICAL SYSTEM AND SHALL BE USED TO DETERMINE FINAL SELECTION OF ELECTRIC DISTRIBUTION SYSTEM COMPONENTS PRIOR TO FABRICATION.

1

16. DRY TYPE TRANSFORMER

16.1
- A. TRANSFORMERS SHALL BE HIGH PERFORMANCE DRY-TYPE FACTORY-ASSEMBLED AND TESTED, 105% CONTINUOUS DUTY OVERLOAD CAPACITY K-7 RATED, AIR-COOLED UNITS AS MANUFACTURED BY POWERSMITHS INTERNATIONAL CORP, E-SAVER-33L SERIES. (BASIS OF DESIGN)
- B. TRANSFORMERS SHALL BE OPTIMIZED TO DELIVER 33% LESS LOSSES THAN COMPRABLE DOE 2016 TRANSFORMERS.
- C. CORES SHALL BE GRAIN-ORIENTED, NON-AGING SILICON STEEL.
- D. COILS SHALL BE ALUMINUM WITH CONTINUOUS WINDINGS WITHOUT SPLICES EXCEPT FOR TAPS.
- E. TRANSFORMERS SHALL COMPLY WITH NEMA ST 20, AND BE LISTED AND LABELED AS COMPLYING WITH UL 1561 AND BE MANUFACTURED PER 150 9061 AND 14001 STANDARS. TEST REPORTS SHALL BE SUPPLIED FOR EACH UNIT DOCUMENTING COMPLIANCE IN 150 17025 TEST LAB SIGNED BY ENGINEER.
- F. ENCLOSURE SHALL BE VENTILATED, NEMA 250, TYPE 2. CORE AND COIL SHALL BE ENCAPSULATED WITHIN RESIN COMPOUND, SEALING OUT MOISTURE AND AIR.
- G. TRANSFORMER TAPS SHALL BE TWO 2.5 PERCENT TAPS ABOVE AND TWO 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.
- H. INSULATION CLASS SHALL BE 220 DEG C, UL-COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 130 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
- I. TRANSFORMERS SHALL COMPLY WITH NEMA TP 1, CLASS 1 EFFICIENCY LEVELS AND BE TESTED ACCORDING TO NEMA TP 2.
- J. EACH WINDING SHALL HAVE AN INDEPENDENT, SINGLE, FULL-WIDTH ELECTROSTATIC SHIELD ARRANGED TO MINIMIZE INTERWINDING CAPACITANCE.
- K. TRANSFORMER SHALL EMIT A MINIUMUM OF 3 DBA LESS THAN NEMA ST 20 STANDARD SOUND LEVELS WHEN FACTORY TESTED ACCORDING TO IEEE C57.12.91.
- L. PROVIDE WRITTEN 32 YEAR PRODUCT AND PERFORMANCE WARRANTY.

CODE REVIEW:

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SPIEZLE ARCHITECTURAL GROUP, INC.	21AC00063000

SEAL:

CONSULTANTS:

100% CD SUBMISSION

PROJECT:

EXISTING BLEACHER REPAIRS AND RELATED WORK

FOR

THE COLLEGE OF NEW JERSEY

2000 PENNINGTON ROAD,
EWING TOWNSHIP, NEW JERSEY 08618

FOR CODE REVIEW: DD/MM/YYYY

REVISIONS:

#	REVISION NAME	DATE
1	ADDENDUM 1	05/16/2021

FOR BID: 03/17/2022

DRAWING TITLE:

ELECTRICAL SPECIFICATIONS

COMMISSION NUMBER:
21U019

AGENCY NUMBER:

DO NOT SCALE THE DRAWINGS

DRAWING NUMBER:
E0.2

THIS DRAWING IS FORMATTED TO BE PRINTED AT 30"x42"

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EXISTING CONDITIONS

208 Y/ 120 VOLTS — 3 PH — 4 WIRES — PANEL: UM (E) — LOCATION: PRESSBOX — MAIN CB: 200A — MAIN LUG: — TYPE: EXISTING — MTG.: SURFACE

	CKT No.	BKR SIZE	LOAD	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	QUANTITY LTG	QUANTITY REC	QUANTITY MIS	LOAD AMPS	SIZE WIRE AWG	SIZE COND INCH	SIZE COND INCH	SIZE WIRE AWG	LOAD AMPS	QUANTITY MIS	QUANTITY REC	QUANTITY LTG	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	LOAD	BKR SIZE	CKT No.	
2)	1	20	UNMARKED (E)																			UNMARKED (E)	20	2	2)
2)	3	20	UNMARKED (E)																			UNMARKED (E)	20	4	2)
2)	5	20	UNMARKED (E)																			UNMARKED (E)	20	6	2)
2)	7	20	UNMARKED (E)																			UNMARKED (E)	20	8	2)
2)	9	20	UNMARKED (E)																			UNMARKED (E)	20	10	2)
	11		SPACE																			SPACE		12	
2)	13	20	UNMARKED (E)																			UNMARKED (E)	20	14	2)
	15																					SPACE		16	
	17		SPACE																			SPACE		18	
	19		SPACE																			SPACE		20	
	21		SPACE																			SPACE		22	
	23		SPACE																			SPACE		24	
	25		SPACE																			SPACE		26	
	27		SPACE																			TEMP SCOREBOARD (E)	20	28	2)
	29		SPACE																					30	
	31		SPACE																			SPACE		32	
			SUBTOTALS	0	0	0													0	0	0	SUBTOTALS			

CONTINUOUS LOAD = 0 — DEMAND FACTOR PERCENT (%) 100 — AIC RATING = EXISTING

CONTINUOUS LOAD X 125% = 0 — DEMAND TOTAL = 0

OTHER LOADS = 0 — TOTAL = 0 A

PANEL FEED FROM = — PHASE A = 0 , PHASE B = 0 , PHASE C = 0

FEED BREAKER LABEL =

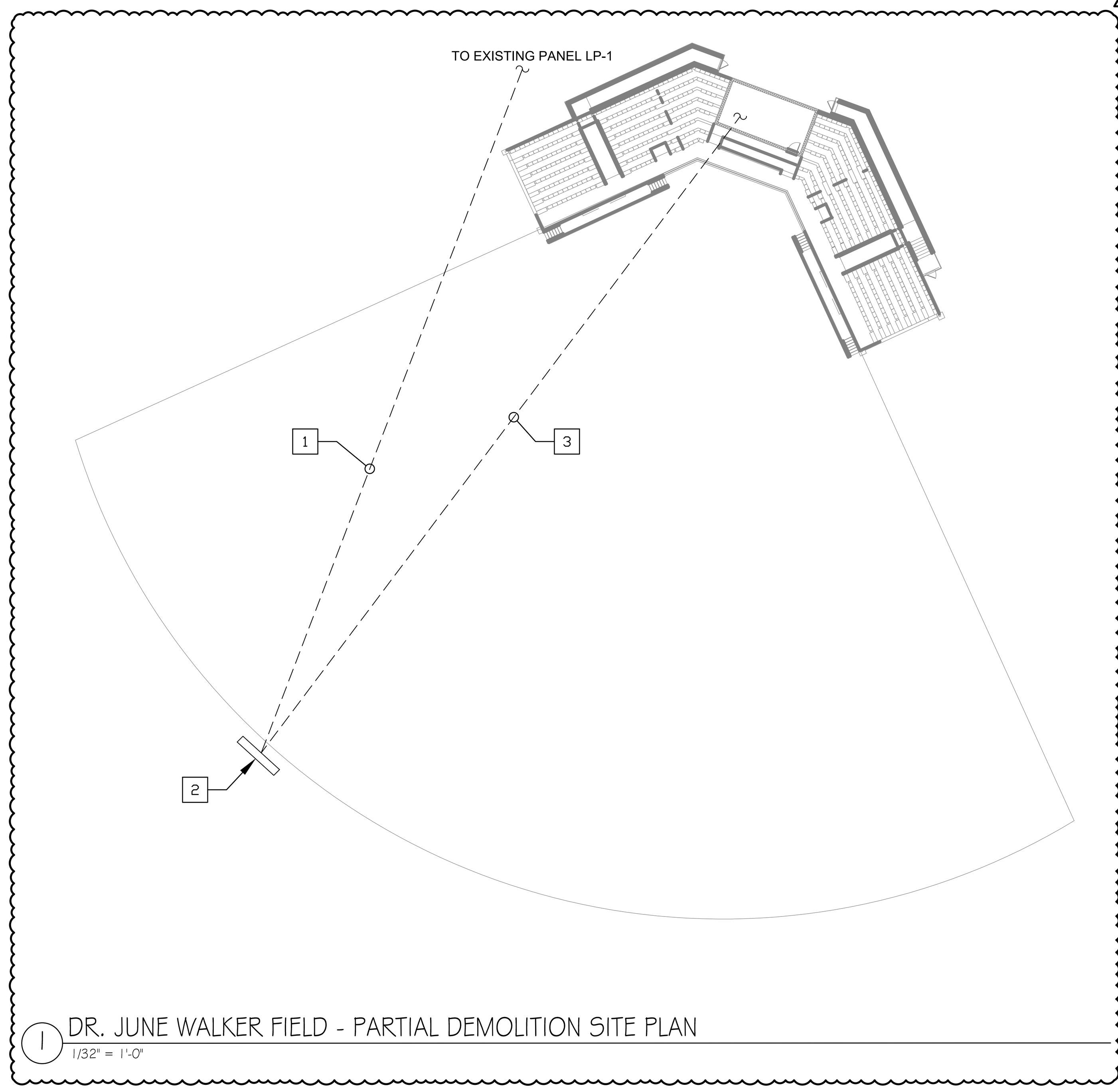
NOTES:
1) COPPER BUSSING.
2) SALVAGE EXISTING CIRCUITS GOING TO EQUIPMENT ON TRACK, REFEED TO PANEL LT-1.

ELECTRICAL KEYED NOTES: X

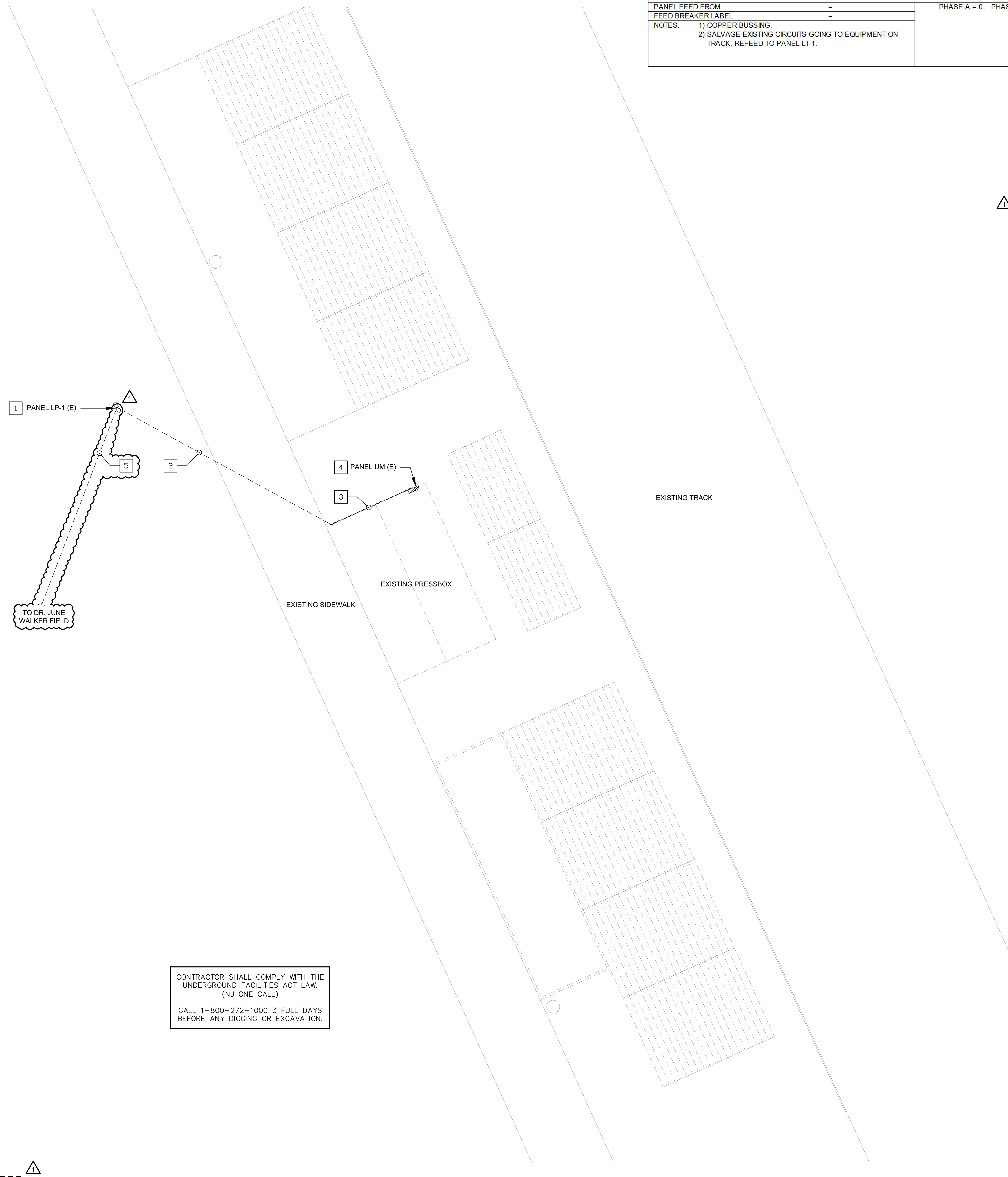
1. APPROXIMATE LOCATION OF EXISTING PANEL LP-1 LOCATED IN ENCLOSED AREA UNDER STADIUM STANDS, 225A MCB, 208Y/120V, 3Ø, 4W, 42 POLES.
2. EXISTING UNDERGROUND RACEWAY SHALL REMAIN. REMOVE EXISTING FEEDERS TO EXISTING PANEL UM.
3. REMOVE EXISTING SURFACE MOUNTED RACEWAY AND FEEDERS TO EXISTING PANEL UM.
4. REMOVE EXISTING PANEL UM, 200A MCB, 208Y/120V, 3Ø, 4W, 32 POLES. SEE PANEL SCHEDULE FOR ADDITIONAL INFORMATION.
5. EXISTING UNDERGROUND RACEWAY TO EXISTING SCOREBOARD AT DR. JUNE WALKER FIELD SHALL REMAIN.

ELECTRICAL KEYED NOTES: X

1. EXISTING UNDERGROUND RACEWAY TO EXISTING PANEL LP-1 SHALL REMAIN.
2. REMOVE EXISTING SCOREBOARD. REMOVE EXISTING DISCONNECT SWITCH AND ALL ASSOCIATED WIRING FEEDING SCOREBOARD BACK TO EXISTING PANEL LP-1. REMOVE EXISTING 20AT/3P CIRCUIT BREAKER.
3. ABANDON EXISTING UNDERGROUND TELECOMMUNICATION RACEWAY TO PRESS BOX. CAP RACEWAY ON BOTH ENDS.



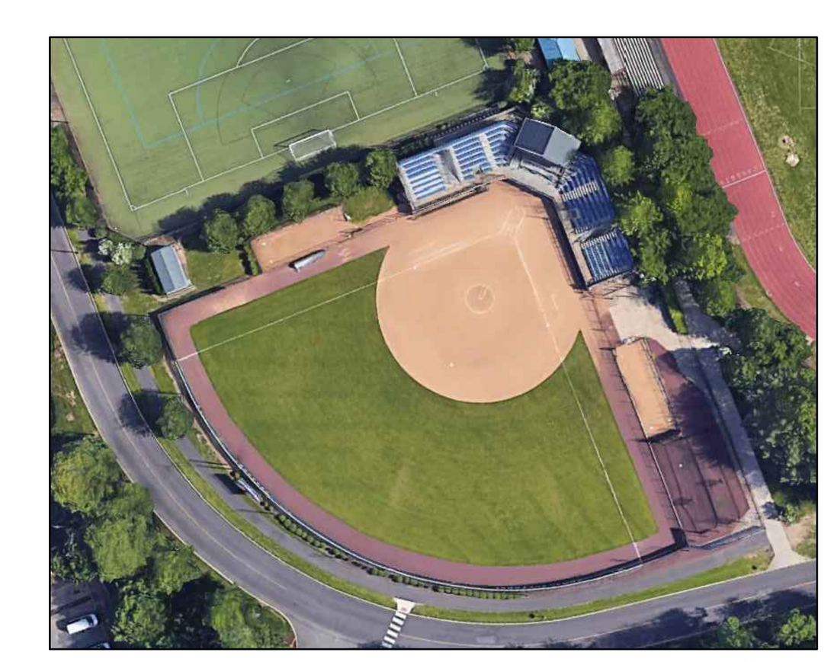
1 DR. JUNE WALKER FIELD - PARTIAL DEMOLITION SITE PLAN
1/32" = 1'-0"



CONTRACTOR SHALL COMPLY WITH THE UNDERGROUND FACILITIES ACT LAW. (NJ ONE CALL)

CALL 1-800-272-1000 3 FULL DAYS BEFORE ANY DIGGING OR EXCAVATION.

2 LIONS TRACK - PARTIAL DEMOLITION SITE PLAN
1/8" = 1'-0"



PLAN NORTH

KEYPLAN - DR. JUNE WALKER FIELD
N.T.S.

PLAN NORTH

KEYPLAN - LIONS TRACK
N.T.S.

CODE REVIEW:

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SPIEZLE ARCHITECTURAL GROUP, INC.	21AC00063000

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FOR

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FOR CODE REVIEW: DD/MM/YYYY

REVISIONS:

△	REVISION NAME	DATE
1	ADDENDUM 1	05/16/2022

FOR BID: 03/17/2022

DRAWING TITLE:

ELECTRICAL PARTIAL DEMOLITION SITE PLANS

COMMISSION NUMBER: 21U019

AGENCY NUMBER:

DO NOT SCALE THE DRAWINGS

DRAWING NUMBER: LT.ED1.1

THIS DRAWING IS FORMATTED TO BE PRINTED AT 30"x42"

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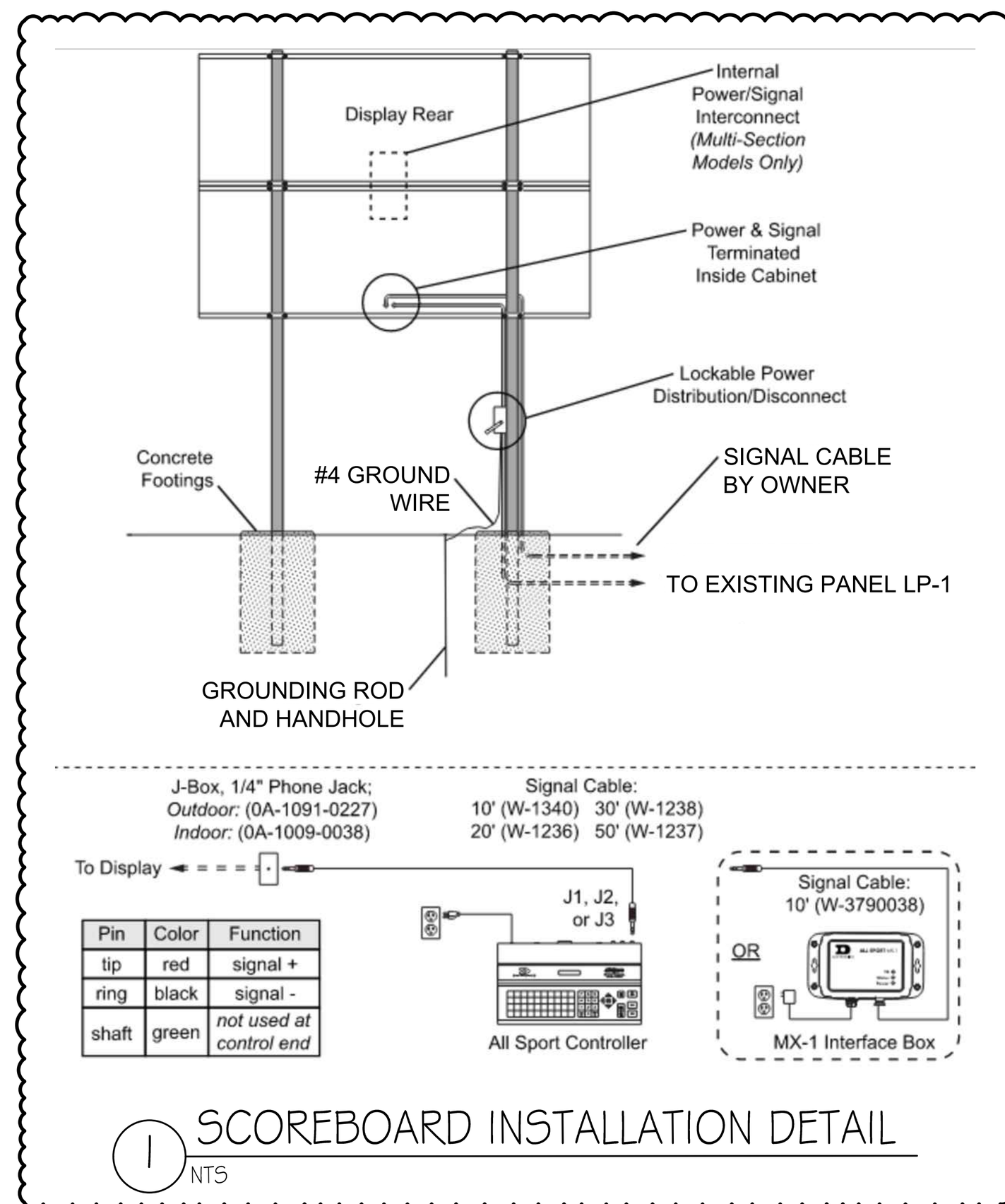
POWER WIRE/CABLE INSTALLATION SCHEDULE

SERVICE	TYPE	LOCATION	RACEWAY	FITTINGS	NOTES
FEEDERS	ALL	ABOVE GRADE	RIGID METAL CONDUIT	THREADED RIGID STEEL	1
FEEDERS	ALL	BELOW GRADE	RIGID POLYVINYL CHLORIDE (PVC) SCHEDULE 40	SOCKET COUPLINGS WITH PRIMER AND CEMENT	
BRANCH CIRCUITS	ALL	ABOVE GRADE	RIGID METAL CONDUIT	THREADED RIGID STEEL	1
BRANCH CIRCUITS	ALL	BELOW GRADE	RIGID POLYVINYL CHLORIDE (PVC) SCHEDULE 40	SOCKET COUPLINGS WITH PRIMER AND CEMENT	
BRANCH CIRCUITS	ALL	INSIDE STORAGE	ELECTRICAL METALLIC TUBING	STEEL COMPRESSION	2

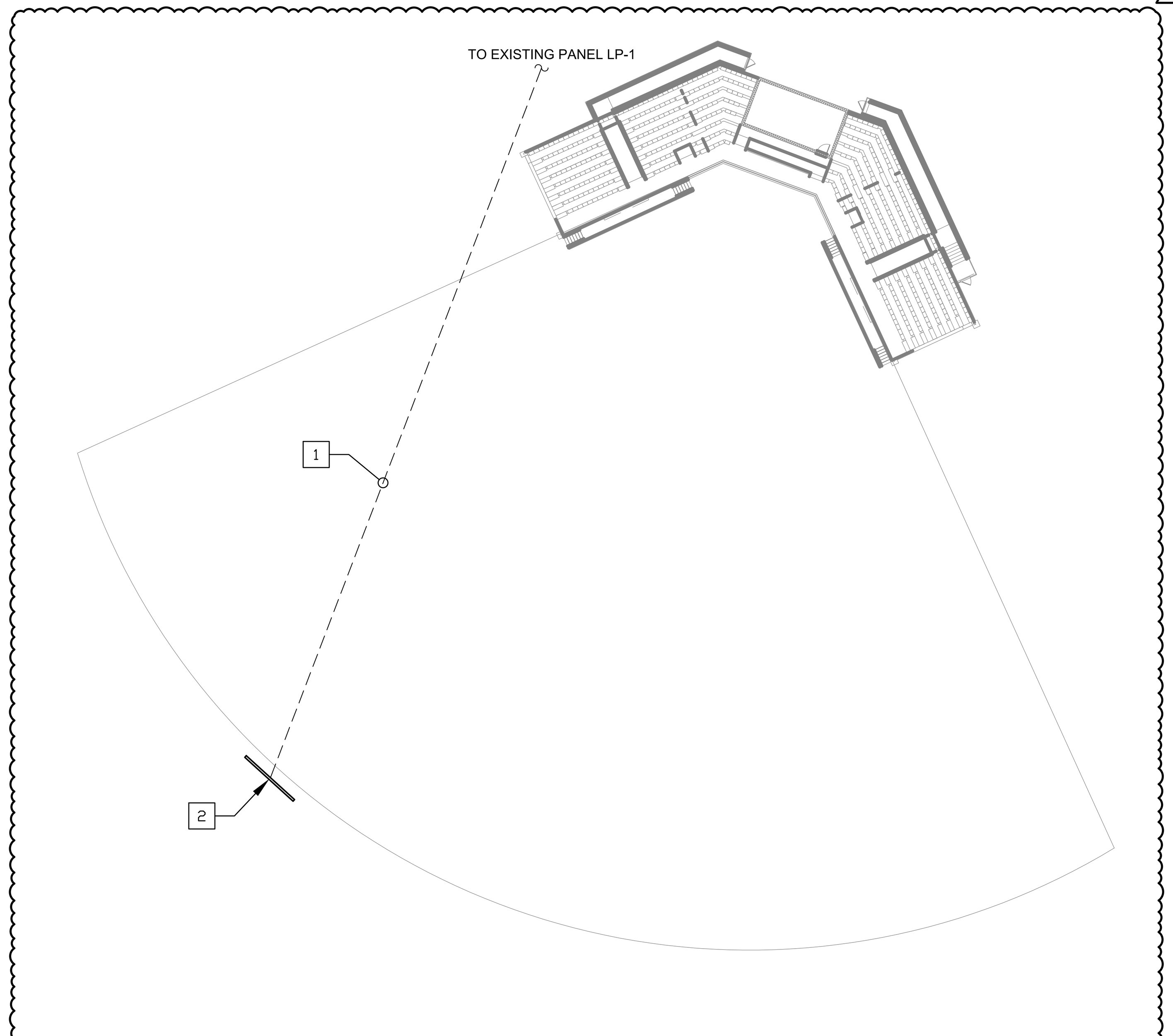
NOTES: 1. RACEWAYS AND FITTINGS SHALL BE HOT-DIP GALVANIZED.
2. RACEWAYS AND FITTINGS SHALL BE GALVANIZED.



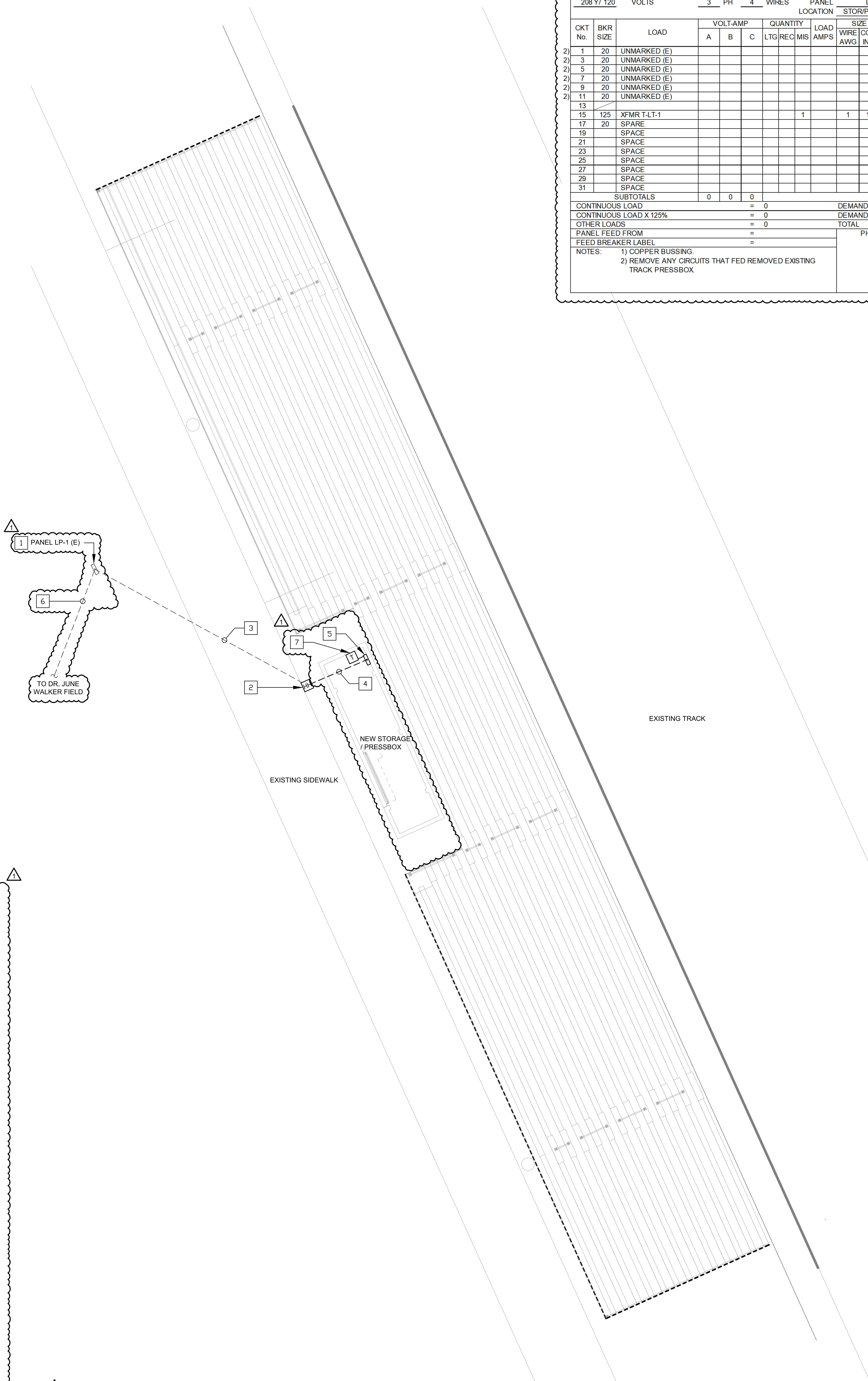
1 SCOREBOARD INSTALLATION DETAIL
NTS

ELECTRICAL KEYED NOTES: X

1. EXISTING UNDERGROUND RACEWAY TO EXISTING PANEL LP-1. PROVIDE 2#10 + 1#10G THHW FEEDERS, APPROXIMATE RUN OF 400'. PROVIDE THREE (3) 15AT/1P CIRCUIT BREAKERS, ONE FOR SCOREBOARD AND TWO SPARES, REUSING CIRCUIT BREAKER LOCATION FROM REMOVED SCOREBOARD.
2. APPROXIMATE LOCATION OF NEW SCOREBOARD, VERIFY EXACT LOCATION IN THE FIELD. PROVIDE 30A/1P, LOCKABLE WEATHERPROOF, NEMA 3R DISCONNECT SWITCH AND GROUNDING ROD. REFER TO SCOREBOARD INSTALLATION DETAIL 1/LT.E.1.2 FOR ADDITIONAL INFORMATION.



2 DR. JUNE WALKER FIELD - PARTIAL DEMOLITION SITE PLAN
1/32" = 1'-0"



3 LIONS TRACK - PARTIAL SITE PLAN
1/16" = 1'-0"

PROPOSED CONDITIONS

208 Y/ 120 VOLTS 3 PH 4 WIRES — PANEL LT-1, LOCATION STOR/PRESSBOX — MAIN CB 100A, MAIN LUG — TYPE SQUARE D, MTG. SURFACE

	CKT No.	BKR SIZE	LOAD	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	QUANTITY LTG	QUANTITY REC	QUANTITY MIS	LOAD AMPS	SIZE WIRE AWG	SIZE COND INCH	SIZE COND INCH	SIZE WIRE AWG	LOAD AMPS	QUANTITY MIS	QUANTITY REC	QUANTITY LTG	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	LOAD	BKR SIZE	CKT No.	
2)	1	20	UNMARKED (E)																			UNMARKED (E)	20	2	2)
2)	3	20	UNMARKED (E)																			UNMARKED (E)	20	4	2)
2)	5	20	UNMARKED (E)																			UNMARKED (E)	20	6	2)
2)	7	20	UNMARKED (E)																			UNMARKED (E)	20	8	2)
2)	9	20	UNMARKED (E)																			UNMARKED (E)	20	10	2)
2)	11	20	UNMARKED (E)																			UNMARKED (E)	20	12	2)
	13																					TEMP SCOREBOARD (E)	20	14	2)
	15	125	XFMR T-LT-1						1		1	1.5												16	
	17	20	SPARE																			SPACE		18	
	19		SPACE																			SPACE		20	
	21		SPACE																			SPACE		22	
	23		SPACE																			SPACE		24	
	25		SPACE																			SPACE		26	
	27		SPACE																			SPACE		28	
	29		SPACE																			SPACE		30	
	31		SPACE																			SPACE		32	
			SUBTOTALS	0	0	0													0	0	0	SUBTOTALS			

CONTINUOUS LOAD = 0 — DEMAND FACTOR PERCENT (%) 100 — AIC RATING = 22,000
CONTINUOUS LOAD X 125% = 0 — DEMAND TOTAL = 0
OTHER LOADS = 0 — TOTAL = 0 A
PANEL FEED FROM = — PHASE A = 0 , PHASE B = 0 , PHASE C = 0
FEED BREAKER LABEL =

NOTES:
1) COPPER BUSSING.
2) REMOVE ANY CIRCUITS THAT FED REMOVED EXISTING TRACK PRESSBOX.

ELECTRICAL KEYED NOTES: X

1. APPROXIMATE LOCATION OF EXISTING PANEL LP-1. PROVIDE 100AT, 2P CIRCUIT BREAKER AND 1P SPARE. SEE PANEL SCHEDULE FOR ADDITIONAL INFORMATION.
2. HANDHOLE - SEE DETAIL 2/LT.2.1.
3. EXISTING UNDERGROUND RACEWAY TO REMAIN. PROVIDE 3#3 + 1#3N+ 1#8G FEEDERS.
4. UNDERGROUND RACEWAY. PROVIDE 2#3 + 1#3N+ 1#8G IN 1.25" EMT.
5. APPROXIMATE LOCATION OF PANEL LT-1, 208Y/120V, 100A MCB, 3Ø, 4W, 32 POLES IN NEW STORAGE/PRESSBOX. VERIFY FINAL LOCATION IN FIELD.
6. EXISTING UNDERGROUND RACEWAY TO NEW SCOREBOARD AT DR. JUNE WALKER FIELD. PROVIDE 2#10 + 1#10G THHW FEEDERS.
7. TRANSFORMER T-LT-1, 208V 1Ø PRI // 120/240V 1Ø SEC, DRY TYPE, 30 KVA. VERIFY LOCATION IN FIELD.

KEYPLAN - DR. JUNE WALKER FIELD
N.T.S.
PLAN NORTH

KEYPLAN - LIONS TRACK
N.T.S.
PLAN NORTH

CODE REVIEW:

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#	REVISION NAME	DATE
1	ADDENDUM 1	05/16/2022

FOR BID: 03/17/2022

DRAWING TITLE:

ELECTRICAL PARTIAL SITE PLANS

COMMISSION NUMBER:
21U019

AGENCY NUMBER:

DO NOT SCALE THE DRAWINGS

DRAWING NUMBER:
LT.E1.2

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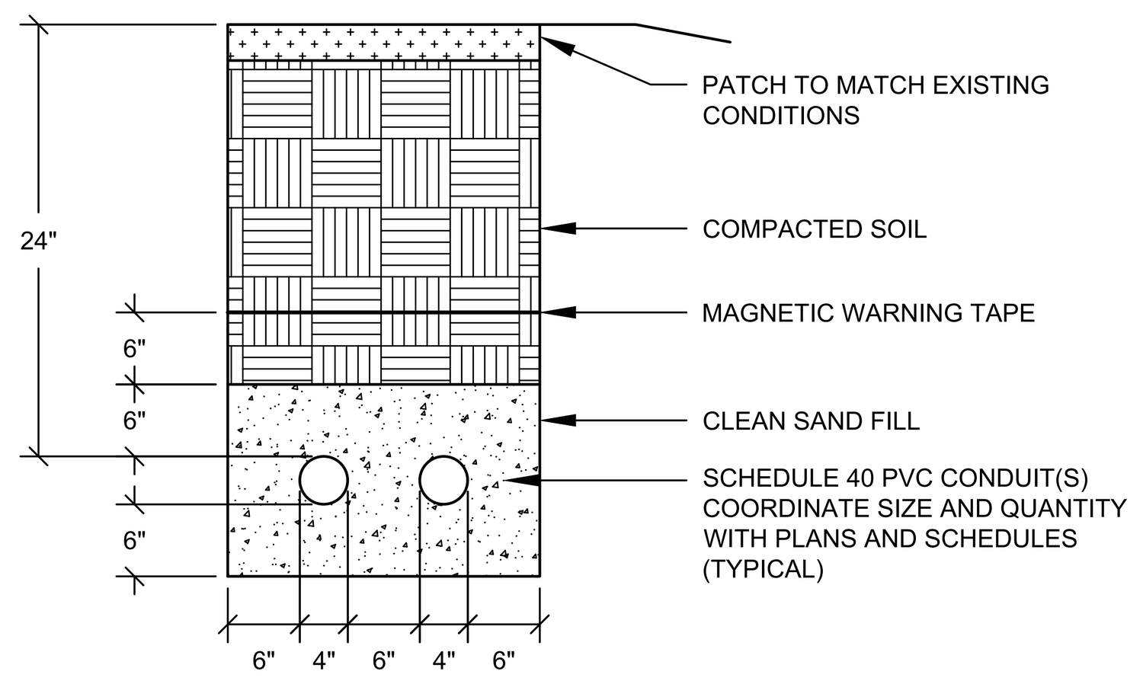
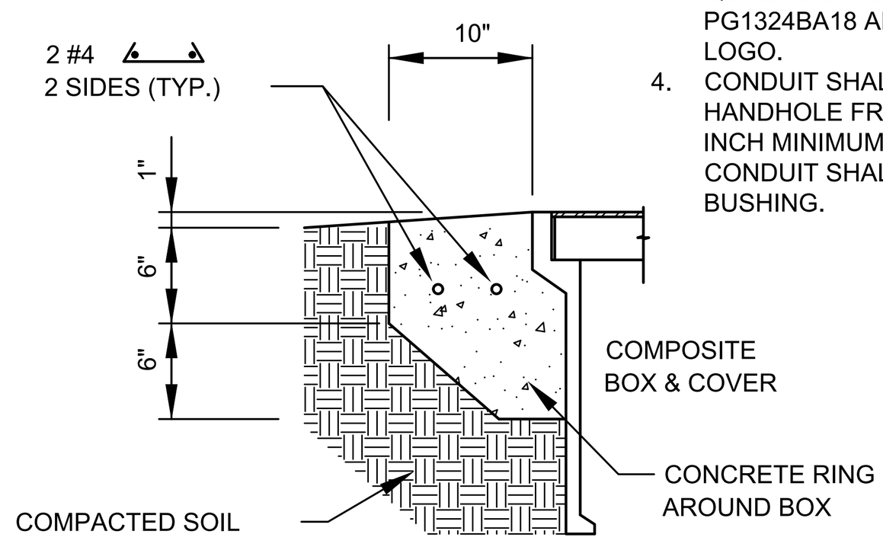


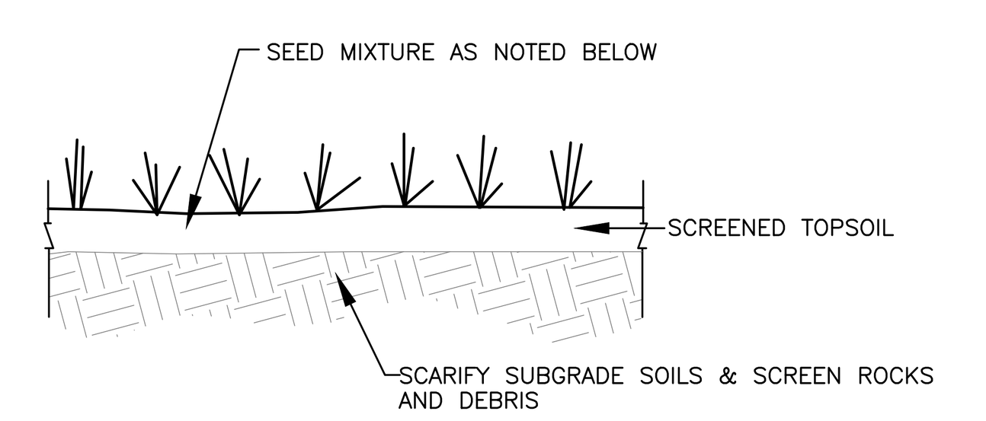
1 SECONDARY SERVICE DUCTBANK DETAIL
NTS



NOTES:
1. CONCRETE ENCASEMENT SHALL BE 3,000 PSI MINIMUM.
2. HANDHOLES SHALL BE INSTALLED OVER 6 INCHES OF 3/4" BROKEN STONE ON COMPACTED SUBGRADE.
3. HANDHOLES SHALL BE 13" W x 24" L x 18" D MINIMUM; QUAZITE CORPORATION CATALOG NUMBER PG1324BA18 AND HEAVY DUTY COVER WITH "ELECTRIC" LOGO.
4. CONDUIT SHALL STUB-UP VERTICALLY INTO EACH HANDHOLE FROM THE BURIED CONDUIT UTILIZING 36 INCH MINIMUM RADIUS SWEEPS. THE END OF EACH CONDUIT SHALL BE PROVIDED WITH A PVC BELL AND BUSHING.

2 HANDHOLE DETAIL
NTS

NOTE: DO NOT OVERCOMPACT SUBGRADE



PERMANENT SEEDING – LAWN AREAS
- LIME – USE 2 TONS PER ACRE GROUND LIMESTONE.
- FERTILIZER – 500 LBS PER ACRE 10–20–10 OR EQUAL WORKED INTO TOP 4" OF SOIL.
- SEED – HARD FESCUE AT 120 LBS/ACRE
  PERENNIAL RYEGRASS AT 30 LBS/ACRE
  KENTUCKY BLUEGRASS AT 40 LBS/ACRE
  PLANTING DATES: MARCH 1 THRU APRIL 30
  AUGUST 15 THRU NOVEMBER 15.
- MULCH – SALT HAY OR SMALL GRAIN STRAW AT 70–90 LBS PER 1,000 SQ.FT.
- BINDER – LIQUID SYNTHETIC OR ORGANIC SUCH AS CURASOL DCA 70, PETRO SET, OR TERRA TACK AT RATES ESTABLISHED BY THE MANUFACTURER TO BIND THE MULCH BLANKET.

IMMEDIATELY PRIOR TO SEEDING, SURFACE SHALL BE SCARIFIED 6" TO 12" WHERE THERE HAS BEEN SOIL COMPACTION.

HIGH ACID PRODUCING SOILS: SOILS HAVING A pH OF 4 OR LESS OR CONTAINING IRON SULFIDE SHALL BE COVERED WITH A MINIMUM OF 12 INCHES OF SOIL HAVING A pH OF 5 OR MORE BEFORE INITIATING SEEDBED PREPARATION. CONTRACTOR TO TEST TOPSOIL AND ADJUST AS REQUIRED.

3 LAWN REPAIR DETAIL
NTS

PANEL LP-XX
480Y/277V, 3Ø, 4W

INTERIOR

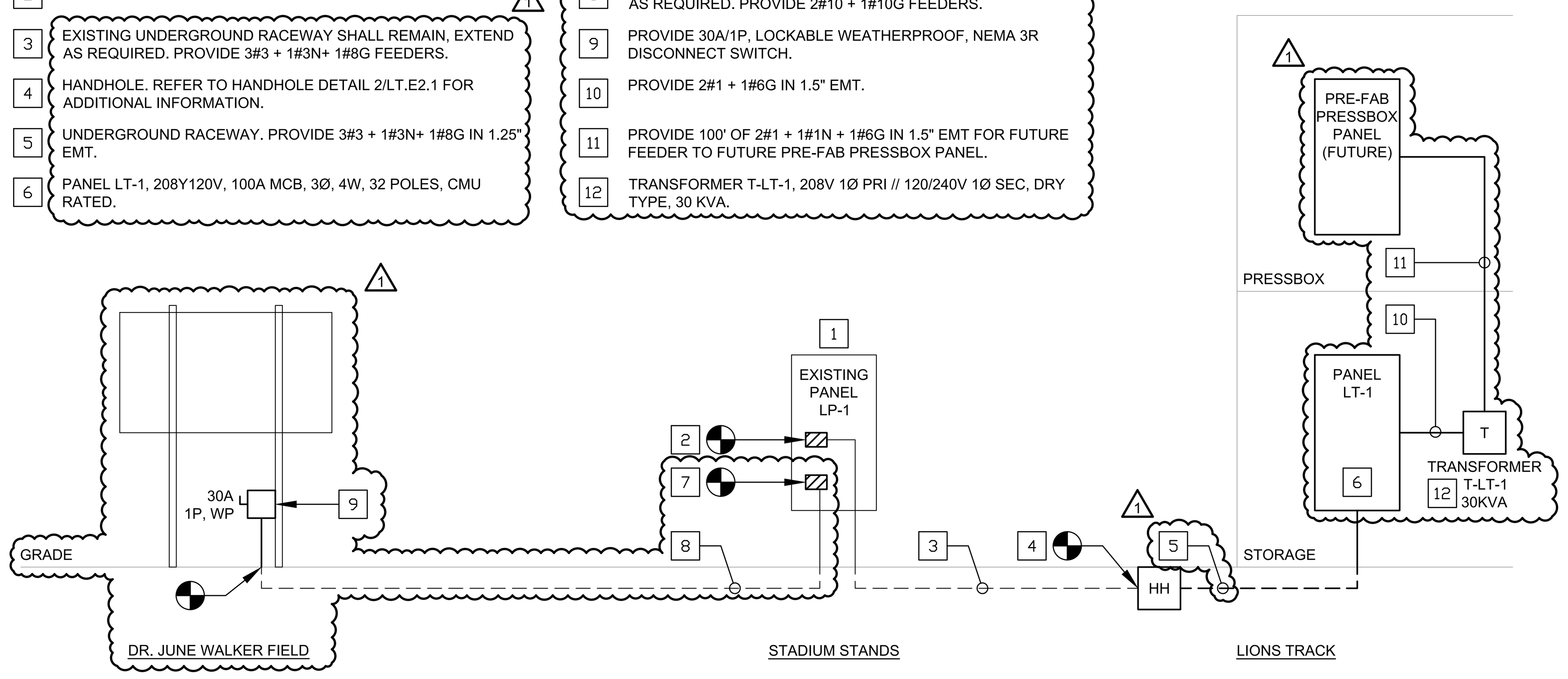
FED FROM PANEL DP-XX
CKT 21,23,25

4 PANELBOARD IDENTIFICATION TAG
NTS

NOTES:
1. TAG SIZE SHALL BE 1.5" X 5.0" WITH 0.25" LETTER HEIGHT FIRST LINE, 0.125" LETTER HEIGHT ALL OTHER LINES.
2. PROVIDE BLACK TAGS WITH WHITE LETTERING AND ADHESIVE BACK.
3. EQUIPMENT/TAG NAMES SHOWN ARE EXAMPLES ONLY. COORDINATE NAMES WITH EQUIPMENT SHOWN ON PLANS AND ARCHITECT.
4. PROVIDE A LIST OF TAG NAMES FOR APPROVAL BY ARCHITECT PRIOR TO FABRICATION OF TAGS.

ELECTRICAL KEYED NOTES: X

1. EXISTING PANEL LP-1, 225A MCB, 208Y/120V, 3Ø, 4W, 42 POLES.
2. PROVIDE 100AT/2P CIRCUIT BREAKER.
3. EXISTING UNDERGROUND RACEWAY SHALL REMAIN, EXTEND AS REQUIRED. PROVIDE 3#3 + 1#3N+ 1#8G FEEDERS.
4. HANDHOLE. REFER TO HANDHOLE DETAIL 2/LT.E2.1 FOR ADDITIONAL INFORMATION.
5. UNDERGROUND RACEWAY. PROVIDE 3#3 + 1#3N+ 1#8G IN 1.25" EMT.
6. PANEL LT-1, 208Y120V, 100A MCB, 3Ø, 4W, 32 POLES, CMU RATED.
7. PROVIDE 15AT/1P CIRCUIT BREAKER.
8. EXISTING UNDERGROUND RACEWAY SHALL REMAIN, EXTEND AS REQUIRED. PROVIDE 2#10 + 1#10G FEEDERS.
9. PROVIDE 30A/1P, LOCKABLE WEATHERPROOF, NEMA 3R DISCONNECT SWITCH.
10. PROVIDE 2#1 + 1#6G IN 1.5" EMT.
11. PROVIDE 100' OF 2#1 + 1#1N + 1#6G IN 1.5" EMT FOR FUTURE FEEDER TO FUTURE PRE-FAB PRESSBOX PANEL.
12. TRANSFORMER T-LT-1, 208V 1Ø PRI // 120/240V 1Ø SEC, DRY TYPE, 30 KVA.



5 PARTIAL POWER RISER DIAGRAM
NTS

ELECTRICAL GENERAL NOTES

1. THE POWER DISTRIBUTION RISER DIAGRAM REPRESENTS THE ELECTRICAL CONNECTIONS BETWEEN VARIOUS EQUIPMENT AND PANELS SHOWN. THE SCOPE OF THE ELECTRICAL WORK SHALL INCLUDE THE PROVISION OF ALL DISTRIBUTION EQUIPMENT AND THE FEEDER CONNECTIONS SHOWN. EQUIPMENT SHALL BE LOCATED AND FEEDERS SHALL BE ROUTED AS SHOWN ON PLANS AND DETAILS AND AS REQUIRED FOR THE ELECTRICAL DISTRIBUTION INTENDED.
2. UNLESS OTHERWISE NOTED ON PLANS, THE CONDUITS FOR ALL UNDERGROUND FEEDERS SHALL BE SCHEDULE 40 PVC. ELBOWS SHALL BE GALVANIZED RIGID METAL CONDUIT. CONDUITS SHALL BE DIRECT BURIED UNO.
3. NEW CABLES FOR ALL UNDERGROUND FEEDERS SHALL BE TYPE "XHHW". OTHER WIRES AND CABLES SHALL BE NOTED ON THE DRAWINGS OR, IF NONE ARE NOTED, AS REQUIRED BY CODES AND THE ELECTRICAL SPECIFICATIONS.
4. TERMINATE BOTH ENDS OF THE CONDUIT FOR EACH FEEDER THAT RUNS FULLY OR PARTIALLY UNDERGROUND WITH O.Z. GEDNEY TYPE "KR" SEALING BUSHINGS. BOND CONDUIT WITH GROUNDING LUG MOUNTED ON THE BUSHING COLLAR. SEALING DISKS MAY BE FIELD DRILLED. BOND UNDERGROUND ELBOWS PER THE NEC. WHERE PVC CONDUIT TURNS UP UNDER FLOOR MOUNTED EQUIPMENT, CONDUIT SHALL BE GALVANIZED RIGID METAL CONDUIT.
5. PROVIDE ALL GROUNDING AND BONDING AS REQUIRED BY THE NATIONAL ELECTRIC CODE (N.E.C.) AND AS SHOWN ON PLANS AND DETAILS.
6. ALL BREAKERS IN SWITCHBOARD AND IN EACH PANEL SHALL HAVE THE INTERRUPTING RATING AS SPECIFIED FOR THE RESPECTIVE BUS BRACING, AS A MINIMUM. VENDOR SHALL PROVIDE COORDINATED BREAKERS FOR THE SWITCHBOARD AND PANELS FURNISHED.
7. ALL BREAKERS SHOWN SHALL BE THERMAL MAGNETIC, UNO (3 POLE OR AS NOTED).
8. ALL FEEDERS SHALL BE PROVIDED BASED ON FEEDER CIRCUIT BREAKER TRIP RATING, PER NEC UNLESS NOTED OTHERWISE. EACH CONDUIT SHALL INCLUDE FULL SIZE NEUTRAL AND GROUNDING CABLE.
9. SIZE TVSS CIRCUIT BREAKER AND WIRE SIZE ACCORDING TO MANUFACTURER'S INSTRUCTIONS.
10. CONSTRUCT A 4" CONCRETE PAD FOR THE FULL LENGTH AND WIDTH OF FLOOR MOUNTED EQUIPMENT PLUS 6 INCHES (MINIMUM) WHERE GROUND/FLOOR MOUNTED EQUIPMENT IS INDICATED.
11. VERIFY AVAILABLE SHORT CIRCUIT RATING FROM THE UTILITY PRIOR TO INSTALLATION.
12. MOUNT ALL PANELBOARDS AND SAFETY SWITCHES AND ENCLOSED OCPD'S ON 3/4" FIRE RESISTANT PLYWOOD BACKBOARD. PROVIDE TWO (2) COATS BLACK ENAMEL PAINT.
13. ALL NEUTRAL WIRES SHALL BE FULL SIZE UNLESS NOTED OTHERWISE.
14. PROVIDE INSULATED GROUND WIRE FOR ALL PANELBOARD FEEDERS.
15. ALLOWABLE AMPACITY OF CONDUCTORS INSTALLED IN INTERIOR AND BELOW GRADE LOCATIONS SHALL BE THOSE INDICATED IN THE 167°F (75°C) COLUMN OF TABLE 310.16 OF THE NATIONAL ELECTRICAL CODE.
16. ALLOWABLE AMPACITY OF CONDUCTORS MOUNTED ABOVE GRADE SHALL BE THOSE INDICATED IN THE 167°F (75°C) COLUMN OF TABLE 310.16 OF THE NATIONAL ELECTRICAL CODE, WITH AN APPLIED CORRECTION FACTOR OF 0.75 BASED ON A 91°F MEAN HIGH AMBIENT TEMPERATURE (ASHRAE FUNDAMENTALS HANDBOOK) AND THE CONDUCTOR BEING MOUNTED NOT LESS THAN 6 INCHES ABOVE THE SURFACE.
17. CONTRACTOR SHALL PROVIDE QUANTITY AND TYPE OF PULLBOXES/JUNCTION BOXES AS REQUIRED BY NEC AND MANUFACTURER'S CABLE PULLING REQUIREMENTS FOR PULLING TENSIONS AND SIDEWALL PRESSURES.
18. ALL NEW ELECTRICAL SYSTEMS, INCLUDING CONDUIT, PANELS, ETC., SHALL BE SEISMICALLY BRACED IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE.

ELECTRICAL LEGEND

Symbol	Description
75 K7	HIGH EFFICIENCY DRY TYPE TRANSFORMER, 480V PRIMARY, 208Y/120V SECONDARY. NUMBER DENOTES KVA RATING. K RATING AS SHOWN.
	POWER, LIGHTING, OR DISTRIBUTION PANEL, 480Y/277V OR 208Y/120V, 3Ø, 4W.
•	INDICATES CONNECTION - NOT ALL CONNECTIONS ARE SHOWN
M	UTILITY POWER METER
M	METER
	SAFETY DISCONNECT SWITCH
	FUSED SAFETY DISCONNECT SWITCH
	3 POLE CIRCUIT BREAKER WITH AMPERE TRIP AS NOTED
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR (SURGE SUPPRESSION DEVICE - SPD)
	CURRENT TRANSFORMER
——E——	RACEWAY
– – –E– – –	RACEWAY UNDERGROUND
——OH——	MEDIUM VOLTAGE CABLES SUPPORTED OVERHEAD FROM UTILITY COMPANY POLES
– – –UG– – –	UNDERGROUND PRIMARY AND/OR SECONDARY SERVICE AS INDICATED
H	HANDHOLE

SITE CONSTRUCTION NOTES

1. THE CONTRACTOR MUST VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE SCOPE OF CONSTRUCTION BEFORE COMMENCING WITH ANY WORK.
2. AREAS ADJACENT TO CONSTRUCTION MUST BE RESTORED TO ORIGINAL OR BETTER CONDITION, IF DISTURBED, AT NO ADDITIONAL COST. MINIMUM RESTORATION IN GRADED AREAS SHALL BE 6" OF TOPSOIL & FERTILIZER. SEEDING PER DETAILS. IN ADDITION, AREAS ADJACENT TO CONSTRUCTION SHALL BE GRADED TO INSURE THE PROPER CONVEYANCE OF OVERLAND STORM WATER RUNOFF.
3. CONSTRUCTION SURVEY STAKE-OUT AND LAYOUT WORK SHALL BE PERFORMED BY A LICENSED LAND SURVEYOR. ALL PROPOSED SITE IMPROVEMENTS AND GRADING MUST BE STAKED OUT.
4. ALL EXCAVATION IS "UNCLASSIFIED".
5. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS NECESSARY FOR CONSTRUCTION IN ACCORDANCE WITH EXISTING LOCAL, COUNTY, OR STATE REGULATIONS, OR ANY OTHER AGENCY HAVING JURISDICTION IN THESE MATTERS.
6. THE CONTRACTOR IS RESPONSIBLE FOR AND SHALL VERIFY ALL DIMENSIONS AND DETAILS BEFORE PROCEEDING WITH WORK, ANY DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT.
7. ALL REGRADED AREAS AT THE SITE WHICH ARE NOT DESIGNATED AS PAVED OR GRAVEL AREAS SHALL BE TOPSOILED AND SEEDED AND SHALL BE STABILIZED IN ACCORDANCE WITH STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY AND THE CONTRACT SPECIFICATIONS.
8. ALL GRADING OPERATIONS SHALL PROVIDE FOR POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS AND STRUCTURES AND SHALL ELIMINATE PONDING AREAS.
9. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE THE LOCATION OF THE UTILITIES WITH THE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
10. THE COORDINATION OF THE LOCATION OR RELOCATION WHERE REQUIRED OF TELEPHONE, ELECTRIC, GAS, STORM AND WATER FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR AND SAME SHALL BE COORDINATED TO INSURE COMPLETION WITHIN THE TIME PERMITTED.
11. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION NECESSARY TO PRECLUDE DAMAGE TO EXISTING STRUCTURES, FACILITIES, AND UTILITIES DUE TO LOSS OF LATERAL SUPPORT AND/OR CONSTRUCTION LOADINGS. SPECIFIC DETAILS NECESSARY TO ACCOMPLISH SAME SHALL BE SUBMITTED BY THE CONTRACTOR FOR REVIEW AND APPROVAL PRIOR TO COMMENCING CONSTRUCTION OF SUBSURFACE IMPROVEMENTS.
12. THE CONTRACTOR IS HEREIN ADVISED THAT ALL WORK TO BE PERFORMED SHALL BE GOVERNED BY THE LOCAL MUNICIPAL ORDINANCES. THIS SHALL INCLUDE THE PROVISIONS IN THEIR CODES WHICH SET FORTH PERMITTED HOURS OF CONSTRUCTION WITHIN THE MUNICIPALITY.
13. THE CONTRACTOR SHALL CONTINUOUSLY DEWATER ALL EXCAVATIONS UNTIL BACKFILLING OPERATIONS HAVE BEEN COMPLETED. PRIOR TO DISCHARGE TO STREAMS, SILT SHALL BE SETTLED OUT IN AN APPROVED SETTLING BASIN.
14. THE CONTRACTOR SHALL MAINTAIN THE FLOW OF ALL STREAMS, DRAINAGE DITCHES, STORM SEWERS AND SANITARY SEWERS AT ALL TIMES BY A MEANS ACCEPTABLE TO THE ARCHITECT AND ALL THE RESPONSIBLE AGENCIES.
15. THE CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICE FLOWS AND PRESSURES UNLESS WRITTEN APPROVAL BY THE RESPONSIBLE UTILITY PERMITS HIM TO DO OTHERWISE.

EXISTING CONDITIONS

208 Y/ 120 VOLTS 3 PH 4 WIRES PANEL LP-1 (E) LOCATION STADIUM STANDS MAIN CB 225A MAIN LUG TYPE SQUARE D MTG. SURFACE

CKT No.	BKR SIZE	LOAD	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	QUANTITY LTG	QUANTITY REC	QUANTITY MIS	LOAD AMPS	SIZE WIRE AWG	SIZE COND INCH	SIZE COND INCH	SIZE WIRE AWG	LOAD AMPS	QUANTITY MIS	QUANTITY REC	QUANTITY LTG	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	LOAD	BKR SIZE	CKT No.
1	100	TRACK PRESSBOX																			SPARE (E)	100	2
3																							4
5																							6
7	20	SOFTBALL																			EAST TIMECLOCK (E)	20	8
9		SCOREBOARD (E)																			LAX SCOREBOARD (E)	20	10
11																					WEST TIMECLOCK (E)	20	12
13	20	SOFTBALL																			LAX CNTRL BOX REC (E)	20	14
15		DUGOUT (E)																			SPARE (E)	20	16
17																					SPARE (E)	20	18
19	20	SPARE (E)																			SPARE (E)	20	20
21																							22
23																							24
25	20	SPARE (E)																			PP-1 TIME CLOCK (E)	15	26
27	15	PP-2 TIME CLOCK (E)																			PP-2 CNTRL BOX (E)	15	28
29	15	PP-2 CNTRL BOX (E)																			SPACE		30
31		SPACE																			SPACE		32
33		SPACE																			SPACE		34
35		SPACE																			SPACE		36
37		SPACE																			SPACE		38
39		SPACE																			SPACE		40
41		SPACE																			SPACE		42
		SUBTOTALS	0	0	0													0	0	0	SUBTOTALS		

CONTINUOUS LOAD = 0; DEMAND FACTOR PERCENT (%) 100; AIC RATING = EXISTING
CONTINUOUS LOAD X 125% = 0; DEMAND TOTAL = 0
OTHER LOADS = 0; TOTAL = 0 A
PANEL FEED FROM =; PHASE A = 0 , PHASE B = 0 , PHASE C = 0
FEED BREAKER LABEL =
NOTES: 1) COPPER BUSSING.

PROPOSED CONDITIONS

208 Y/ 120 VOLTS 3 PH 4 WIRES PANEL LP-1 (E) LOCATION STADIUM STANDS MAIN CB 225A MAIN LUG TYPE SQUARE D MTG. SURFACE

CKT No.	BKR SIZE	LOAD	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	QUANTITY LTG	QUANTITY REC	QUANTITY MIS	LOAD AMPS	SIZE WIRE AWG	SIZE COND INCH	SIZE COND INCH	SIZE WIRE AWG	LOAD AMPS	QUANTITY MIS	QUANTITY REC	QUANTITY LTG	VOLT-AMP A	VOLT-AMP B	VOLT-AMP C	LOAD	BKR SIZE	CKT No.
1	100	TRACK STORAGE/	10400					1	100.0	3	1.0										SPARE (E)	100	2
3		PRESSBOX		10400																			4
5	20	SPARE																					6
7	15	SOFTBALL SCORE BD	660					1	5.5	10	0.75										EAST TIMECLOCK (E)	20	8
9	15	SPARE																			LAX SCOREBOARD (E)	20	10
11	15	SPARE																			WEST TIMECLOCK (E)	20	12
13	20	SOFTBALL																			LAX CNTRL BOX REC (E)	20	14
15		DUGOUT (E)																			SPARE (E)	20	16
17																					SPARE (E)	20	18
19	20	SPARE (E)																			SPARE (E)	20	20
21																							22
23																							24
25	20	SPARE (E)																			PP-1 TIME CLOCK (E)	15	26
27	15	PP-2 TIME CLOCK (E)																			PP-2 CNTRL BOX (E)	15	28
29	15	PP-2 CNTRL BOX (E)																			SPACE		30
31		SPACE																			SPACE		32
33		SPACE																			SPACE		34
35		SPACE																			SPACE		36
37		SPACE																			SPACE		38
39		SPACE																			SPACE		40
41		SPACE																			SPACE		42
		SUBTOTALS	11060	10400	0													0	0	0	SUBTOTALS		

CONTINUOUS LOAD = 0; DEMAND FACTOR PERCENT (%) 100; AIC RATING = EXISTING
CONTINUOUS LOAD X 125% = 0; DEMAND TOTAL = 21460
OTHER LOADS = 21460; TOTAL = 60 A
PANEL FEED FROM =; PHASE A = 11060 , PHASE B = 10400 , PHASE C = 0
FEED BREAKER LABEL =
NOTES: 1) COPPER BUSSING.

TRENCHING NOTES

1. PROVIDE ALL NECESSARY TRENCH WORK FOR THE PROPER INSTALLATION OF THE UNDERGROUND PIPING INCLUDING EXCAVATION AND BACK FILLING AS SPECIFIED.
2. TRENCHING INCLUDES THE REMOVAL OF MATERIALS OF EVERY NATURE AND DESCRIPTION ENCOUNTERED IN OBTAINING THE LINES AND GRADE NECESSARY FOR THE PROPER INSTALLATION OF THE COMPLETE SYSTEM.
3. TRENCHES WITHIN BUILDINGS AND STRUCTURES SHALL BE DEEP ENOUGH TO PROVIDE A MINIMUM OF 12" OF FILL BETWEEN CONDUIT AND PIPE SUPERIMPOSED CONSTRUCTION, EXCEPT AS OTHERWISE DIRECTED.
4. THE BOTTOM OF TRENCHES FOR RACEWAYS SHALL BE CAREFULLY GRADED SO AS TO PROVIDE AN EVEN BED FOR THE FULL LENGTH OF THE RACEWAYS WITH THE BOTTOM OF THE TRENCH HOLLOWED OUT FOR EACH FITTING AS REQUIRED, PROVIDE A BED OF SAND NOT LESS THAN 6" DEEP UNDER THE RACEWAYS. PRIOR TO BACK FILLING, CLEAN TRENCHES OF ALL DEBRIS.
5. BACK FILL TO NOT LESS THAN 6" ABOVE THE PIPE USING SAND THAT IS FREE FROM CLAY, STONES, AND DELETERIOUS MATERIALS. CAREFULLY COMPACT AROUND RACEWAYS. BACK FILL OVER RACEWAYS SHALL BE PLACED IN LIFTS NOT EXCEEDING 12". COMPACT EACH LAYER TO NOT LESS THAN THE DENSITY OF THE ADJACENT UNDISTURBED SOIL EXCEPT AS OTHERWISE SPECIFIED. COMPACT BACK FILLS IN AREAS UNDER PAVING OR STRUCTURES TO NOT LESS THAN 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT.

CODE REVIEW:

CERTIFICATE:

spiezle
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SEAL:

CONSULTANTS:

100% CD SUBMISSION

PROJECT:

EXISTING BLEACHER REPAIRS AND RELATED WORK

FOR

THE COLLEGE OF NEW JERSEY

2000 PENNINGTON ROAD, EWING TOWNSHIP, NEW JERSEY 08618

FOR CODE REVIEW: DD/MM/YYYY

REVISIONS:

	REVISION NAME	DATE
1	ADDENDUM 1	05/16/2021

FOR BID: 03/17/2022

DRAWING TITLE:

ELECTRICAL DETAILS

COMMISSION NUMBER: 21U019

AGENCY NUMBER:

DO NOT SCALE THE DRAWINGS

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LT.E2.1

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