

# Lee's Summit R7 District Athletics Facilities

Lee's Summit North High School 901 NE Douglas Street Lee's Summit, MO 64086

VOLUME 2 Cover Sheet

N-G000

September 28, 2020

Project Team:

owner:

architect:

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

**Gould Evans** 

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civil engineer:

mechanical/electrical engineer:

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0119-0101

	Index of Drawings		SITE LOCATION MAP	General Notes:
Volume 1 - LSHS	Volume 2 - LSNHS	Volume 3 - LSWHS		THE INTENT OF THE CONTRACT DOCUMENTS IS TO     INCLUDE ALL ITEMS NECESSARY FOR THE PROPER     EXECUTION AND COMPLETION OF THE WORK BY THE
rers O VOLUME 1 Cover Sheet	00 Covers  N-G000 VOLUME 2 Cover Sheet	00 Covers W-G000 VOLUME 3 Cover Sheet		CONTRACTOR. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ONE
neral Information	01.0 General Information	01.0 General Information		SHALL BE AS BINDING AS IF REQUIRED BY ALL; PERFORMANCE BY THE CONTRACTOR SHALL BE REQUIRED ONLY TO THE EXTENT CONSISTENT WITH
Index of Drawings & General Project Notes	N-G001 Index of Drawings & General Project Notes	W-G001 Index of Drawings & General Project Notes		THE CONTRACT DOCUMENTS AND REASONABLY INFERABLE FROM THEM AS BEING NECESSARY TO
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	N-G101 Code Summary - Stadium, Press Box, & Ticket Booths N-G102 Code Summary - Home Press Box & Ticket Booths	W-G101 Code Summary - Stadium & Home Press Box		DIVISIONS, SECTIONS AND ARTICLES, AND ARRANGEMENT OF DRAWINGS SHALL NOT CONTROL THE CONTRACTOR IN DIVIDING THE WORK AMONG
- Civil  .00 Site and Dimension Plan	N-G103 Code Summary - Athletics Building & Concessions	W-G102 Code Summary - Press Box W-G103 Code Summary - Visitor Concessions & South Ticket Booth		THE CONTRACTOR IN DIVIDING THE WORK AMONG SUBCONTRACTORS OR IN ESTABLISHING THE EXTENT OF WORK TO BE PERFORMED BY ANY TRADE.
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Retaining Wall Plan and Profile Utility Plan	N-C310 Site and Grading Plan Alternate N-C500 Utility Plan	02.0 - Civil W-C100 Site & Dimension Plan		WRITTEN THEREON, THE FIGURES, UNLESS OBVIOUSLY INCORRECT, ARE TO GOVERN OVER SCALED DIMENSIONS. IN THE CASE OF ANY
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OO2 Architectural Site Plan Pencing and Hardscape Plans	N-AS001 Architectural Site Plan N-AS101 Bleacher Plans	W-C910 Utility Details W-C920 Utility Details		SCALE DETAILS ARE TO GOVERN. SUPPLEMENTARY CONDITIONS SHALL GOVERN OVER SPECIFICATIONS,
tructural	N-AS201 Fencing and Hardscape Plans	03.1 Architectural Site		DRAWINGS AND GENERAL CONDITIONS. THE  CONTRACTOR SHALL ADVISE THE ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS BETWEEN CONTRACT
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1 Foundation Sections	N-S131 South Ticket Booth Plans N-S141 Vistior Restroom Plans	W-S001 General Notes & Site Foundation Plans  W-S002 CMU Details  W-S111 Home Press Box Plans		OR GREATER QUANTITY SHALL BE PROVIDED.  5. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSIONS. IF DIMENSIONS APPEAR TO BE
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LOO Overall (Site) Demolition Plans	N-AD111 Home Press Box Demolition Plans N-AD112 Restroom and Concessions Demolition Plans	05.0 Architectural Demolition W-AD100 Demolition Plan - Overall Site		7. PROVIDE ALL WORK INDICATED UNLESS SPECIFICALLY INDICATED AS "NOT IN CONTRACT"
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TECHNOLOGY HOME GATEWAY - PLAN  TECHNOLOGY VISITOR TICKET BOOTH - PLAN				
TECHNOLOGY DETAILS				

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**Summit R7 District** etics Facilities

Summit North High School E Douglas Street Summit, MO 64086

nmit R-7 School District udor Road nmit, MO 64086

nnsylvania Avenue ity, MO 64111 655 voice ldevans.com ll engineer:
ampbell & Company, Inc. eview Avenue

cal/electrical engineer: on Engineers lexa Drive | Suite 300 (S 66214

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ctural Corporation
i License No. 2018022991
en Browning Date: 09/28/2020
ct License No. A-2009027279

ECT NO: 0119-0101 : September 28, 2020

Index of Drawings & eneral Project Notes

BID SET

#### General Notes (Code Plans):

- 1. ALL WORK, MATERIALS, AND METHODS SHALL BE IN CONFORMANCE WITH THE CODES, ORDINANCES AND REGULATIONS OF ALL GOVERNMENTAL AGENCIES HAVING JURISDICTION AT THE PROJECT
  - . CONTRACTOR SHALL PROVIDE AND IS SOLELY RESPONSIBLE AND LIABLE FOR PUBLIC AND EMPLOYEE PROTECTION AS NECESSARY AND AS REQUIRED BY THE CODES, INCLUDING EXTERIOR PEDESTRIAN AND TRAFFIC BARRIERS. ALL WORK SHALL CONFORM TO ORDINANCES AND REGULATIONS OF GOVERNMENTAL AGENCIES HAVING JURISDICTION AT THE PROJECT LOCATION.
- 3. THE SIZE, TYPE, QUANTITY, AND LOCATION OF ALL TEMPORARY FIRE EXTINGUISHERS SHALL BE DETERMINED BY THE AUTHORITY HAVING JUISDICTION.
- 4. COORDINATE LOCATION OF KNOX BOX WITH ARCHITECT, OWNER'S REPRESENTATIVE, AND THE AUTHORITY HAVING JUISDICTION IN THE FIELD.

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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

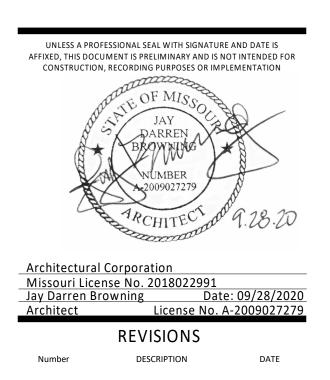
Lee's Summit, MO 64086

**Gould Evans** 4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com

structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111 816.531.4144

civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215 913.485.0318

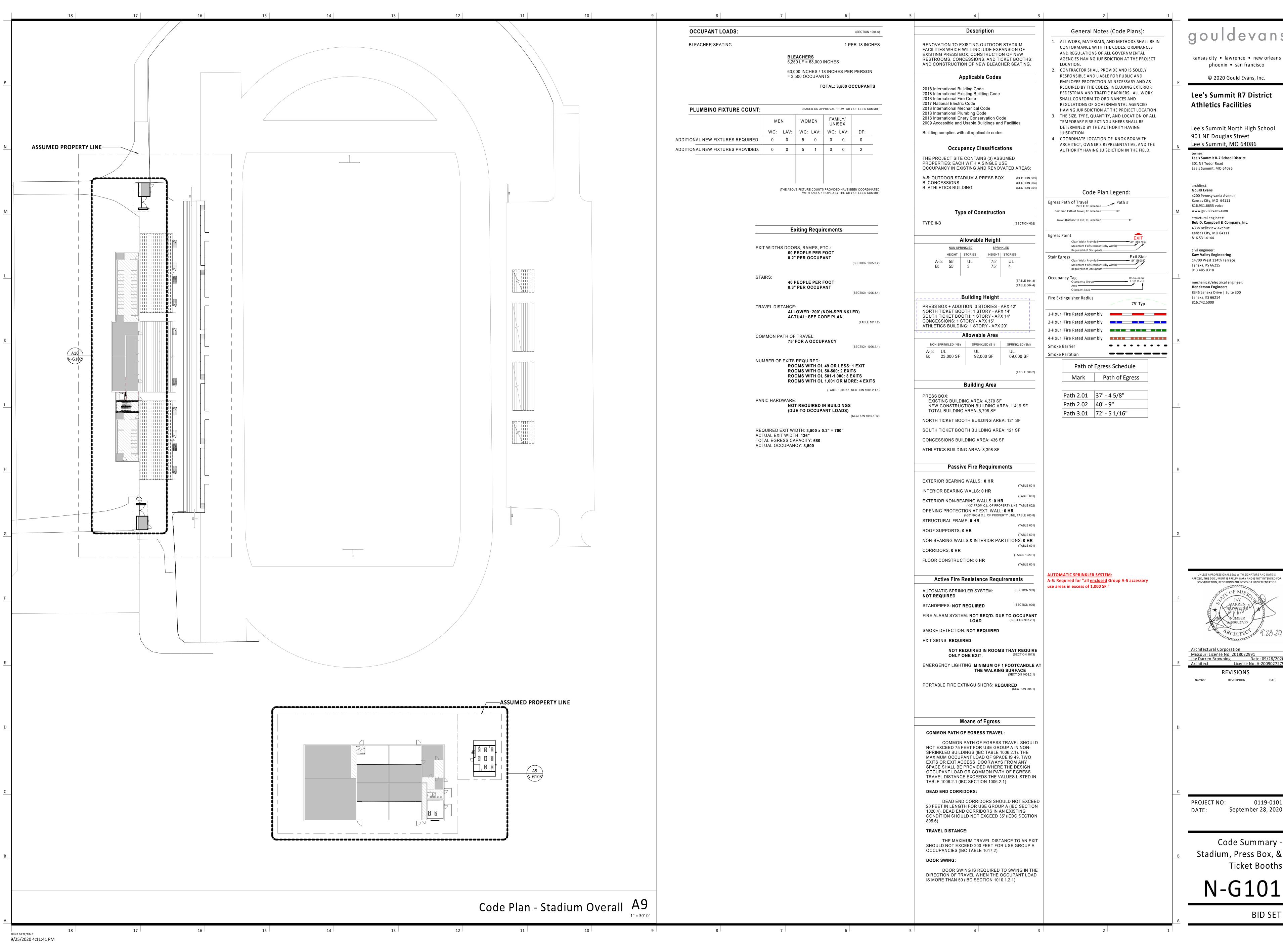
mechanical/electrical engineer: **Henderson Engineers** 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214 816.742.5000



O: 0119-0101 September 28, 2020 PROJECT NO:

Site Context





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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

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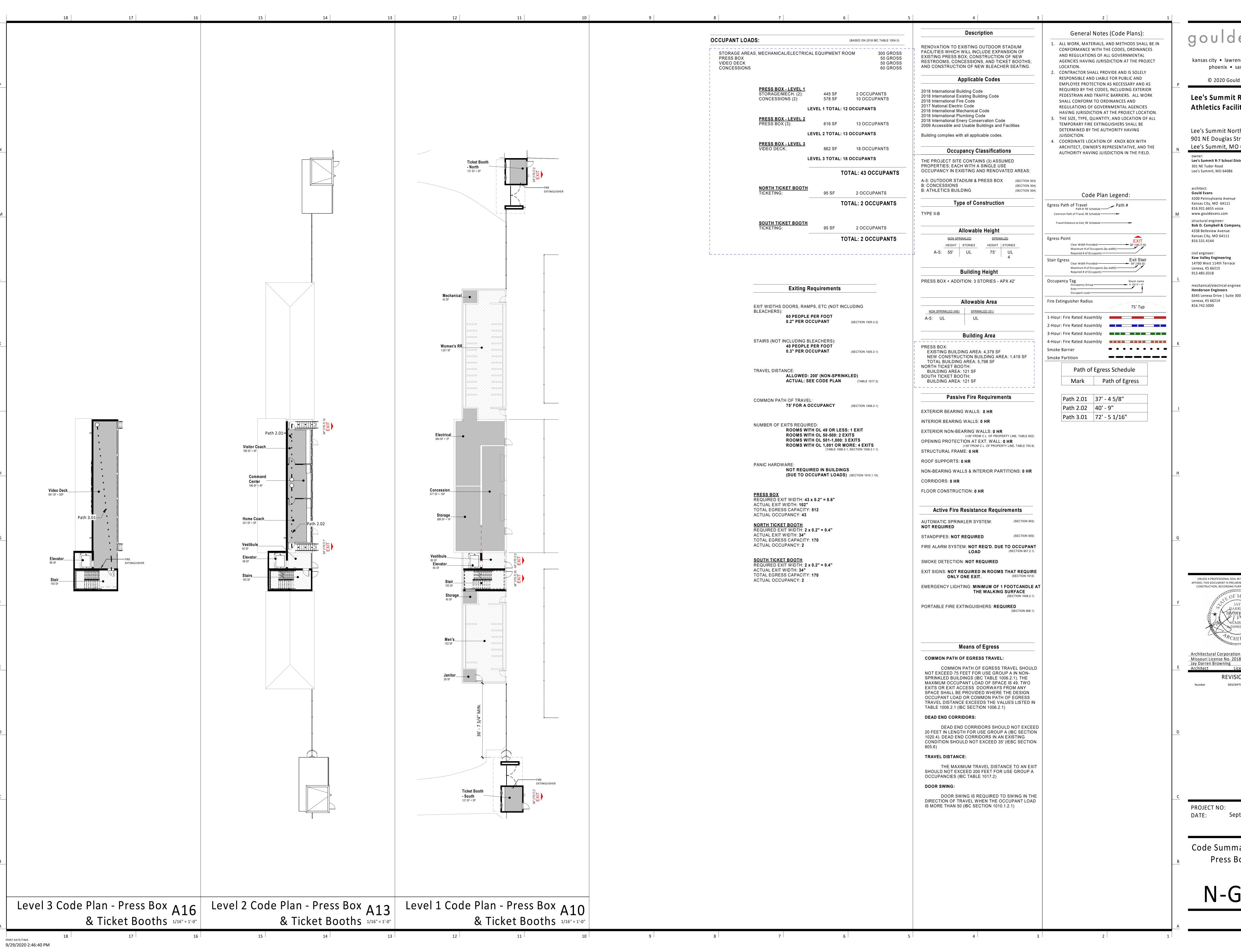
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PROJECT NO:

September 28, 2020

Code Summary -Stadium, Press Box, & **Ticket Booths** 



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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street Lee's Summit, MO 64086

Lee's Summit R-7 School District 301 NE Tudor Road

Gould Evans 4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc.

civil engineer: **Kaw Valley Engineering** 14700 West 114th Terrace Lenexa, KS 66215

mechanical/electrical engineer: Henderson Engineers 8345 Lenexa Drive | Suite 300

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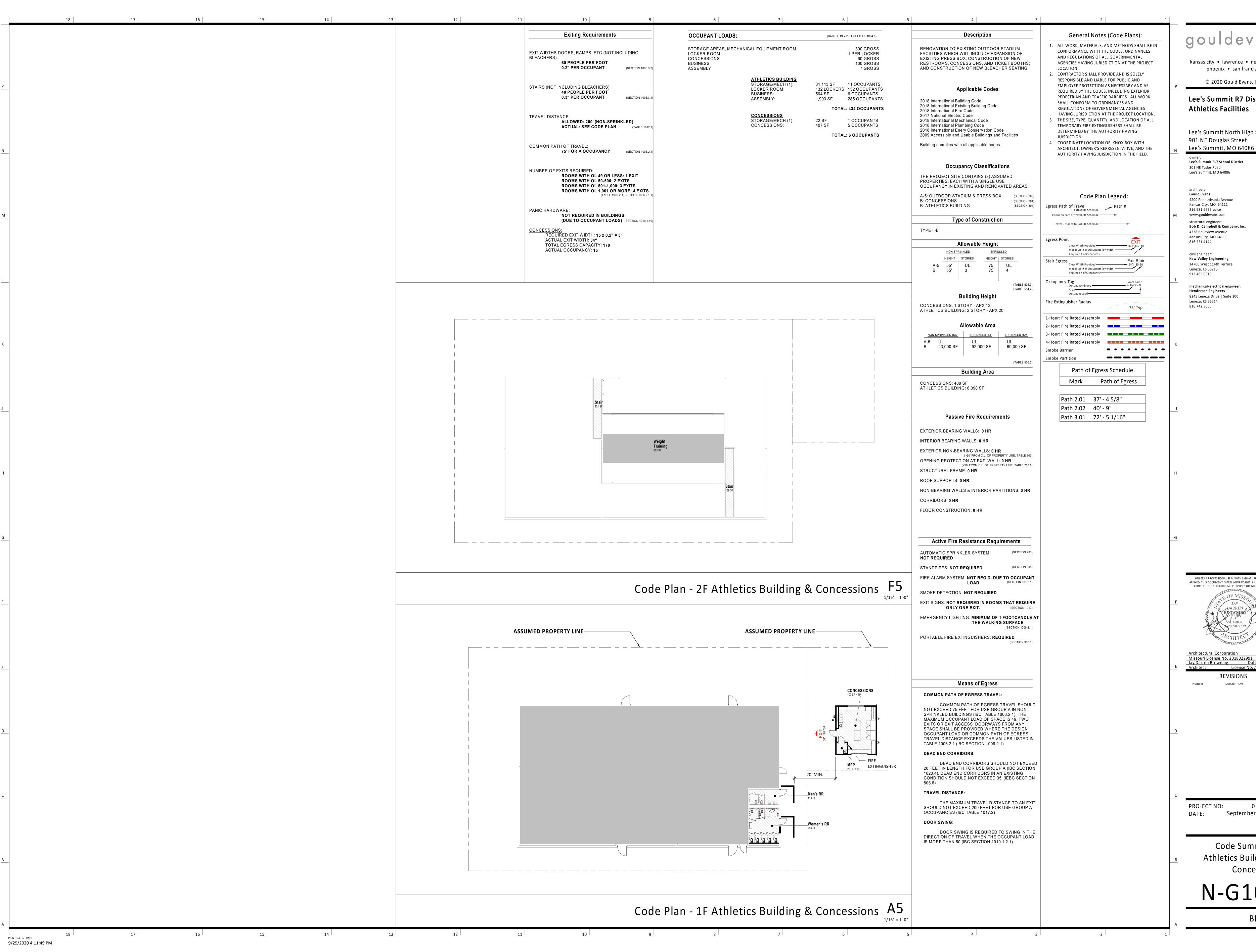
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September 28, 2020

Code Summary - Home Press Box & Ticket Booths

N-G102



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Lee's Summit R7 District **Athletics Facilities** 

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civil engineer: Kaw Valley Engineering

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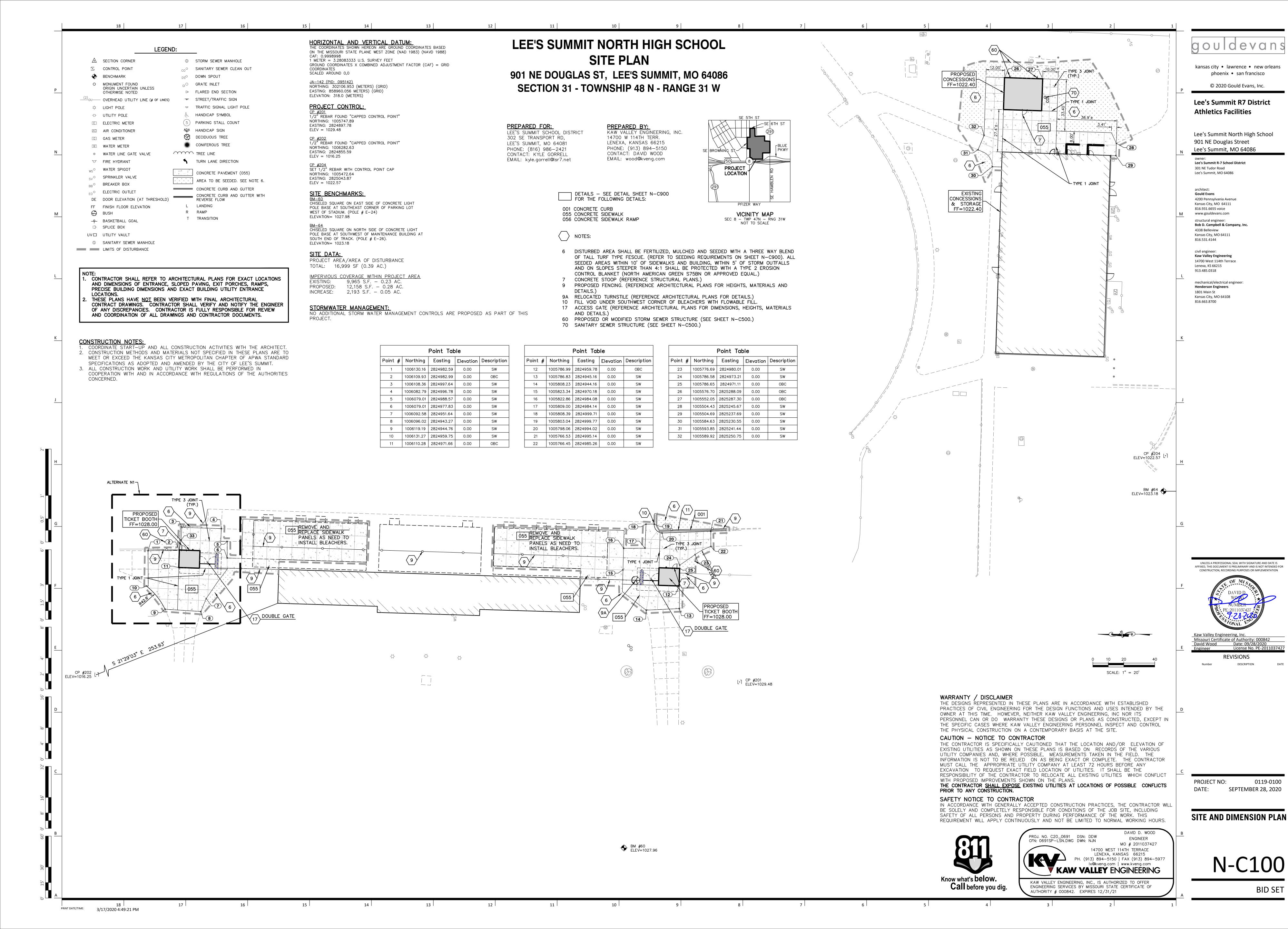
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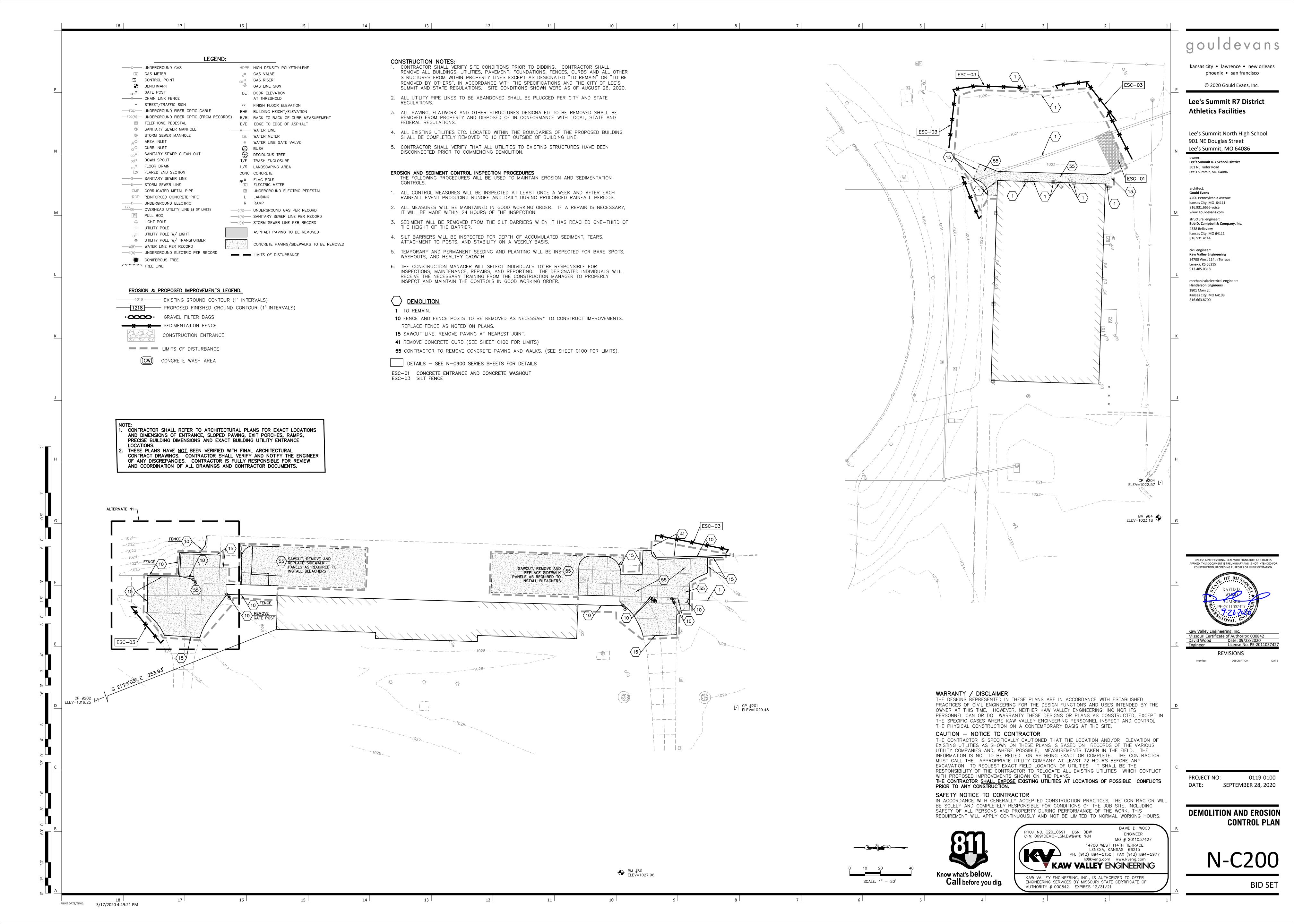
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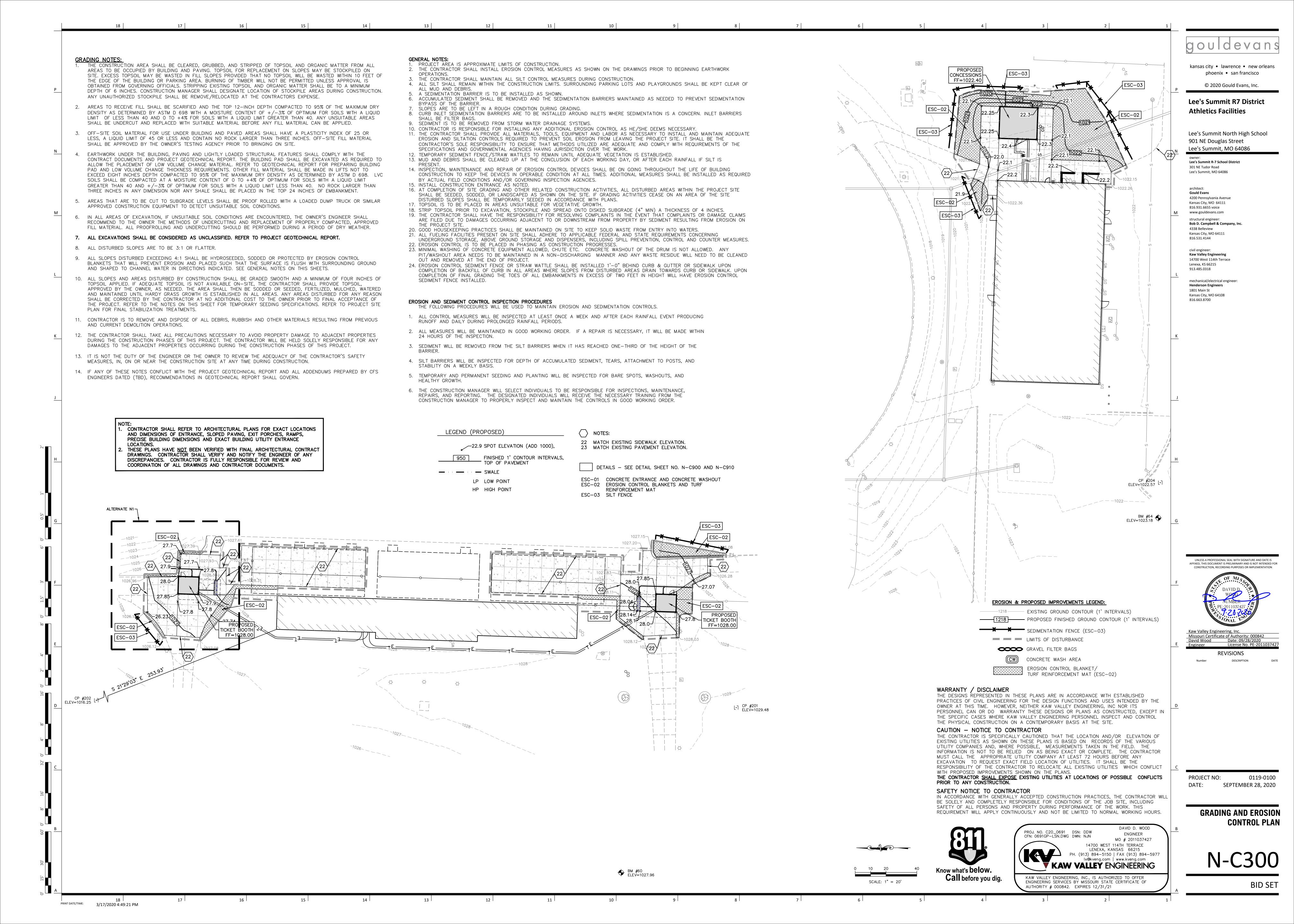
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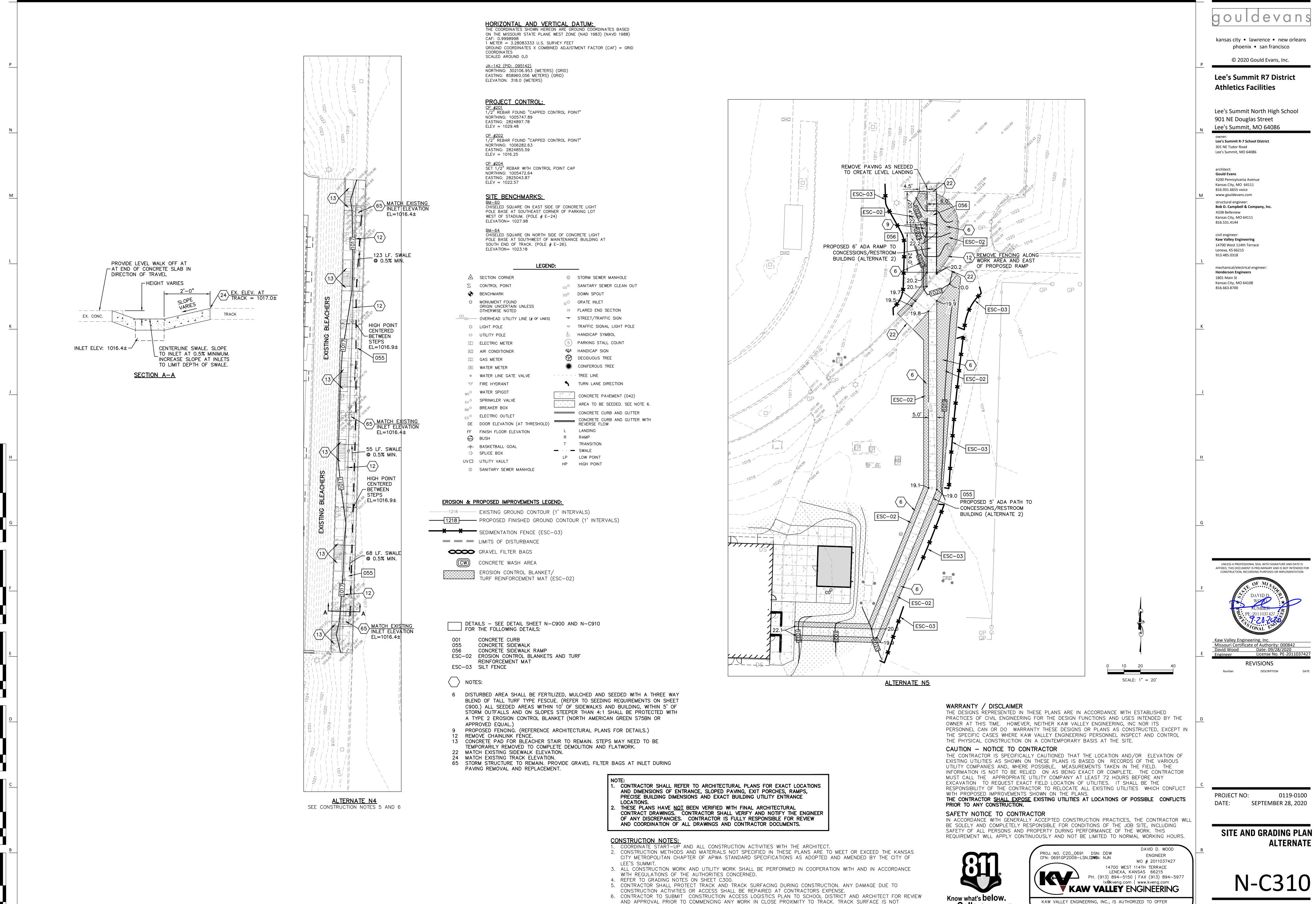
September 28, 2020

Code Summary -Athletics Building & Concessions









SUITABLE FOR HEAVY EQUIPMENT.

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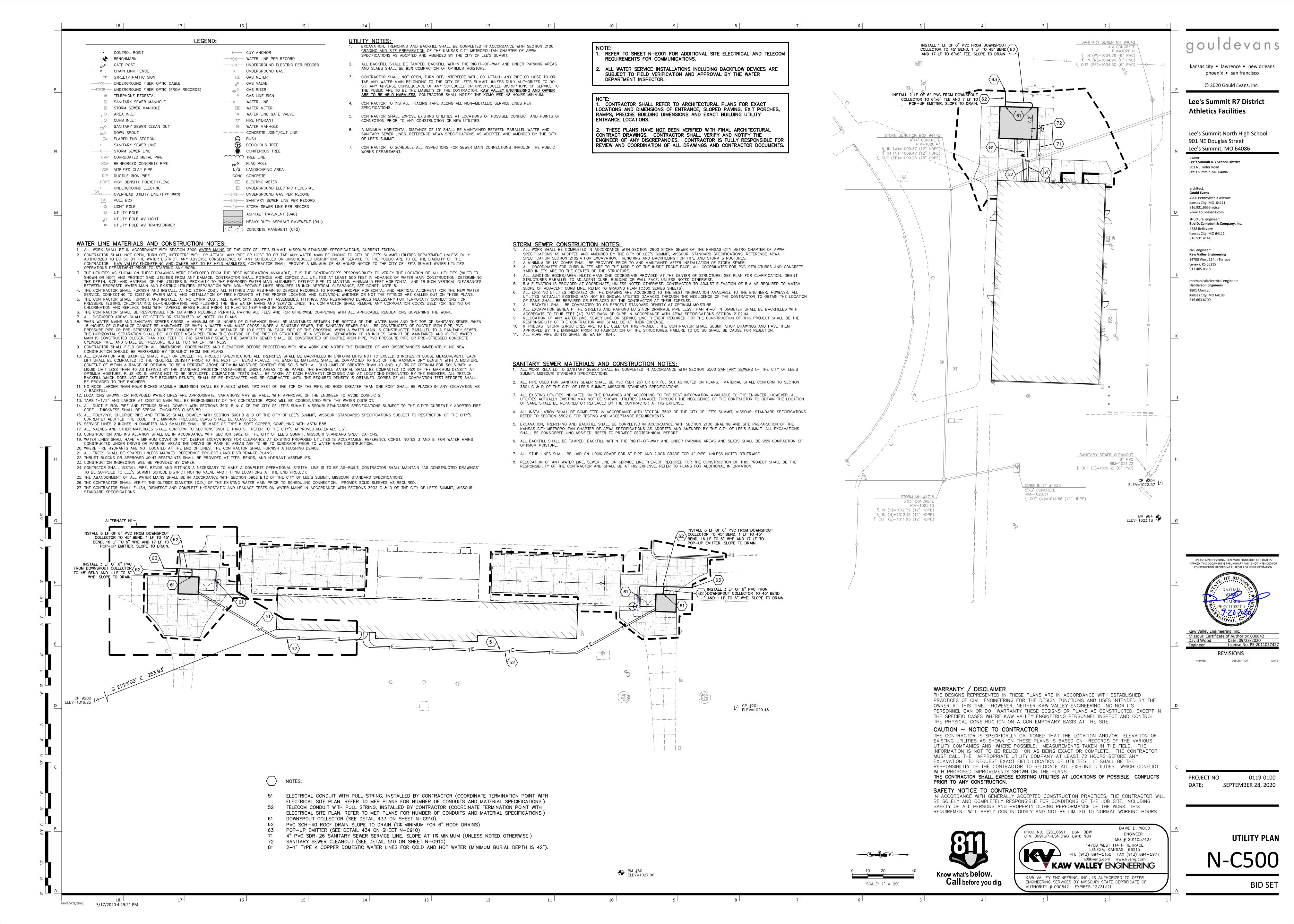
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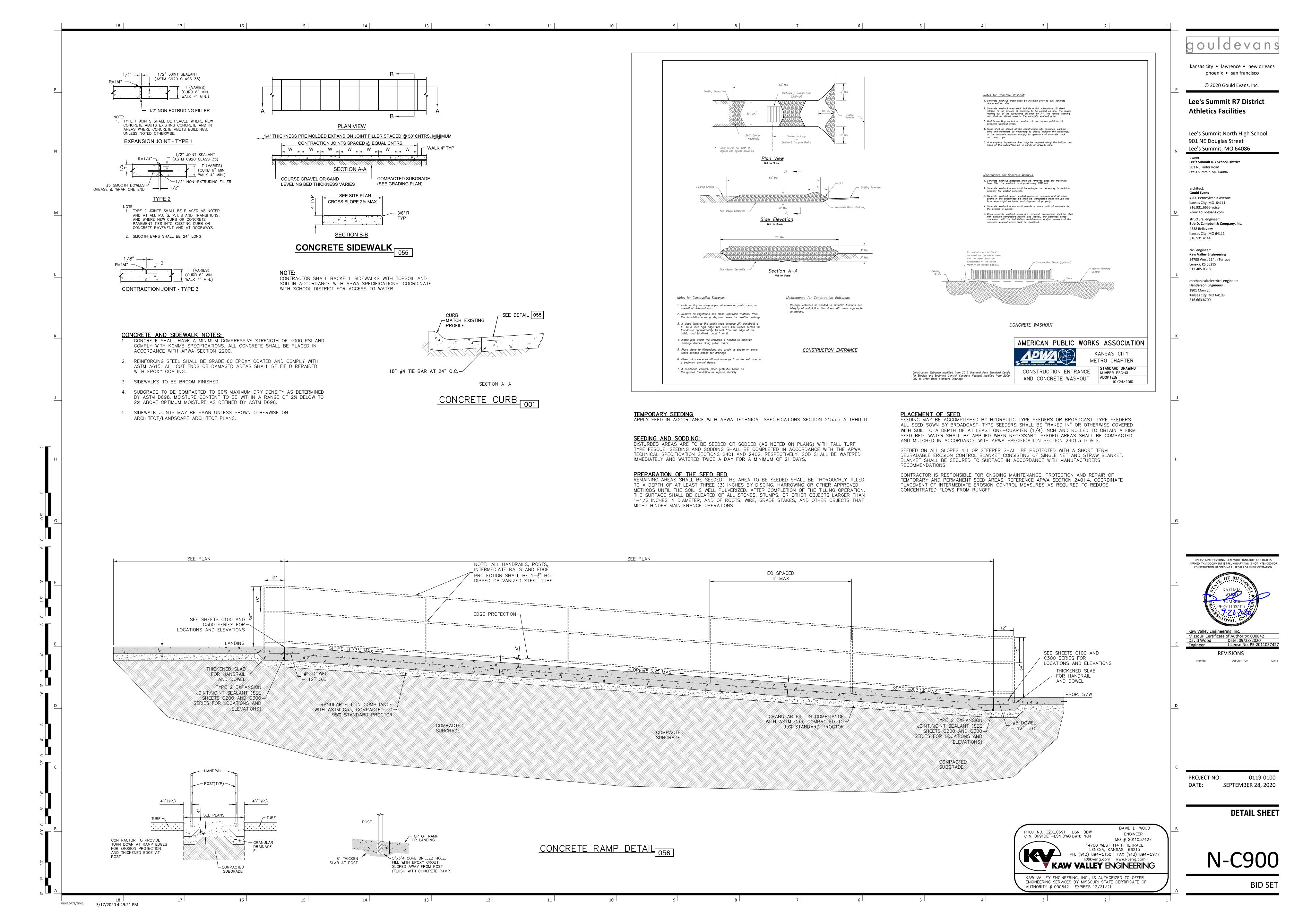
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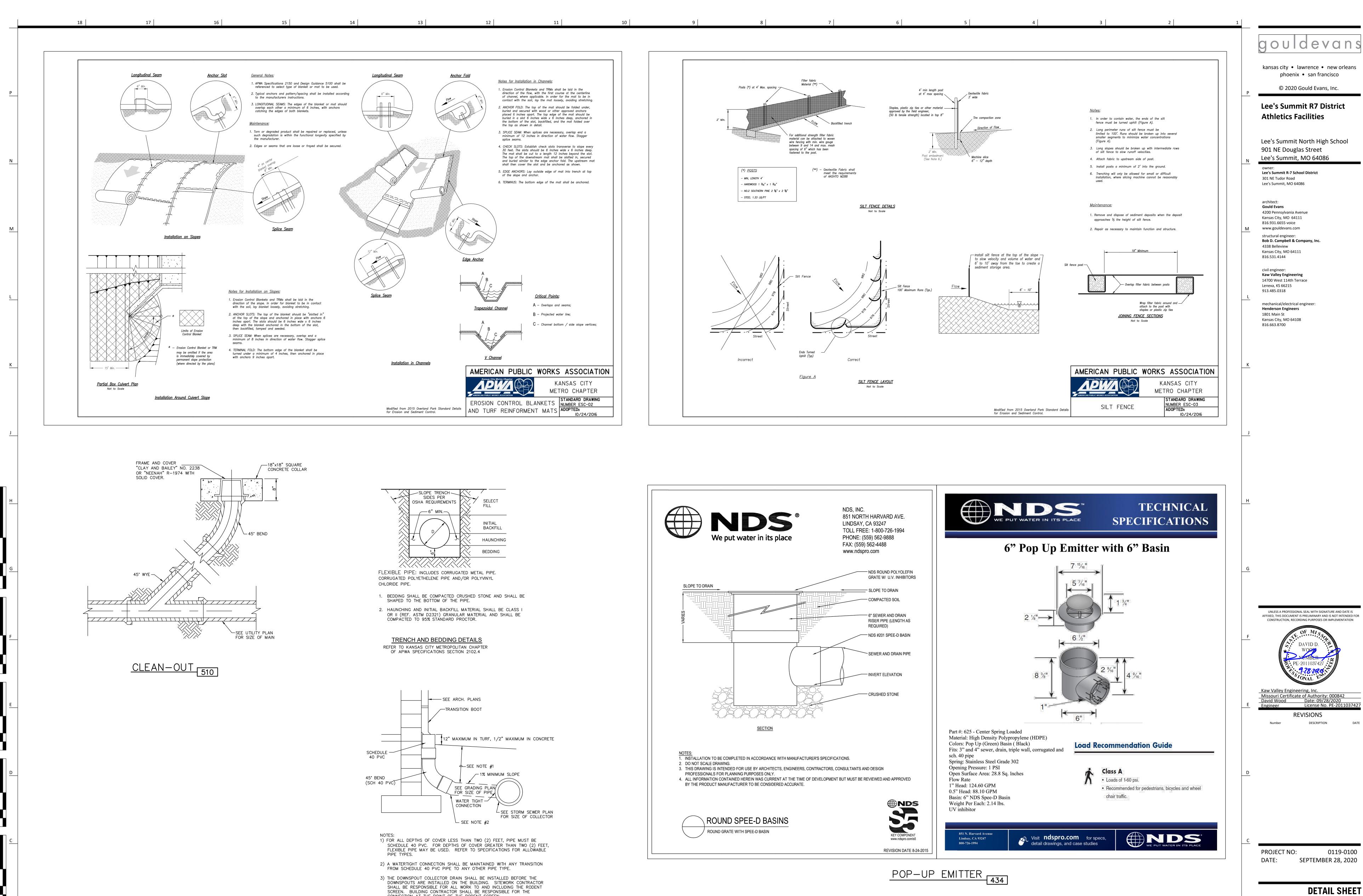
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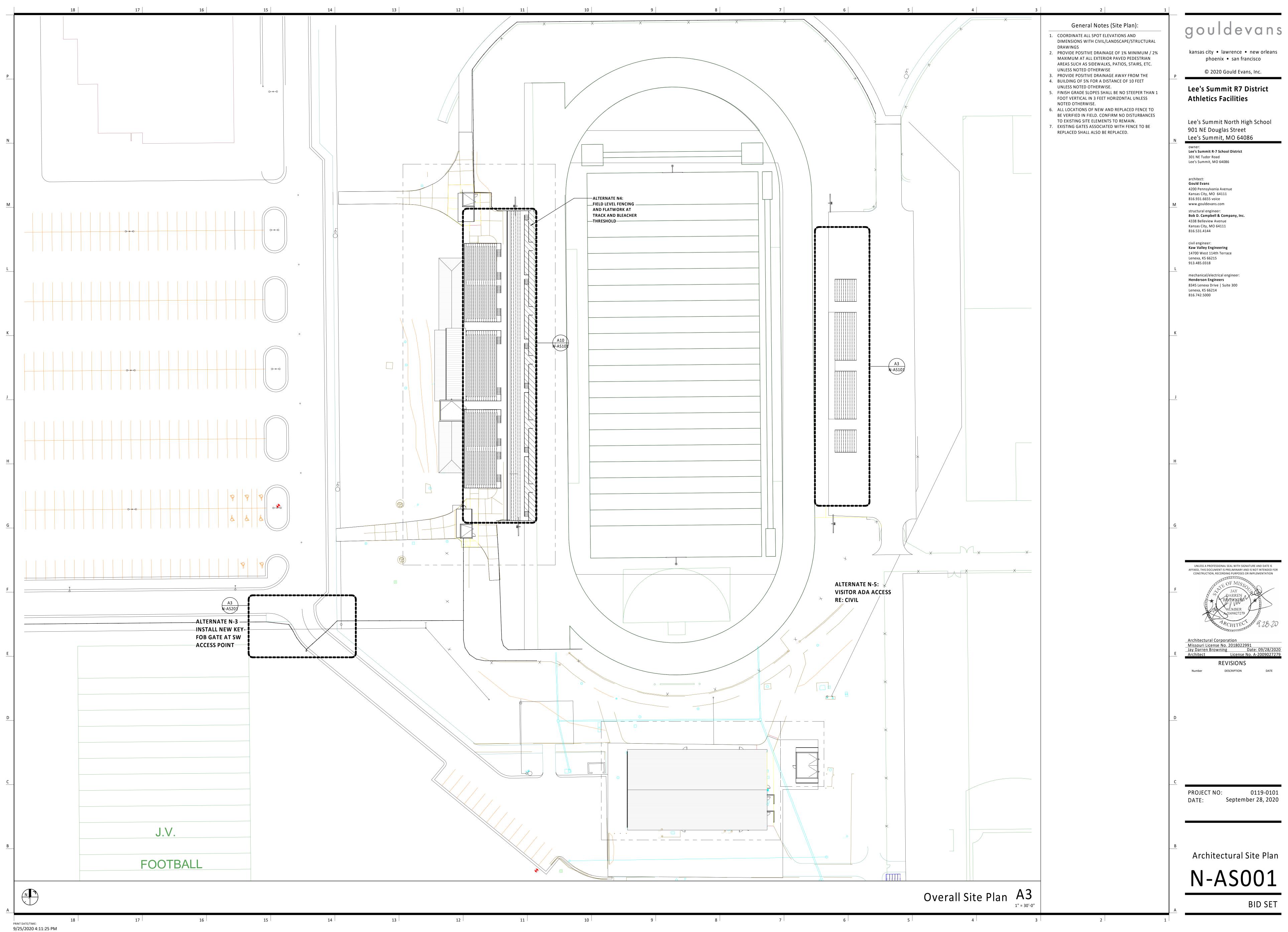
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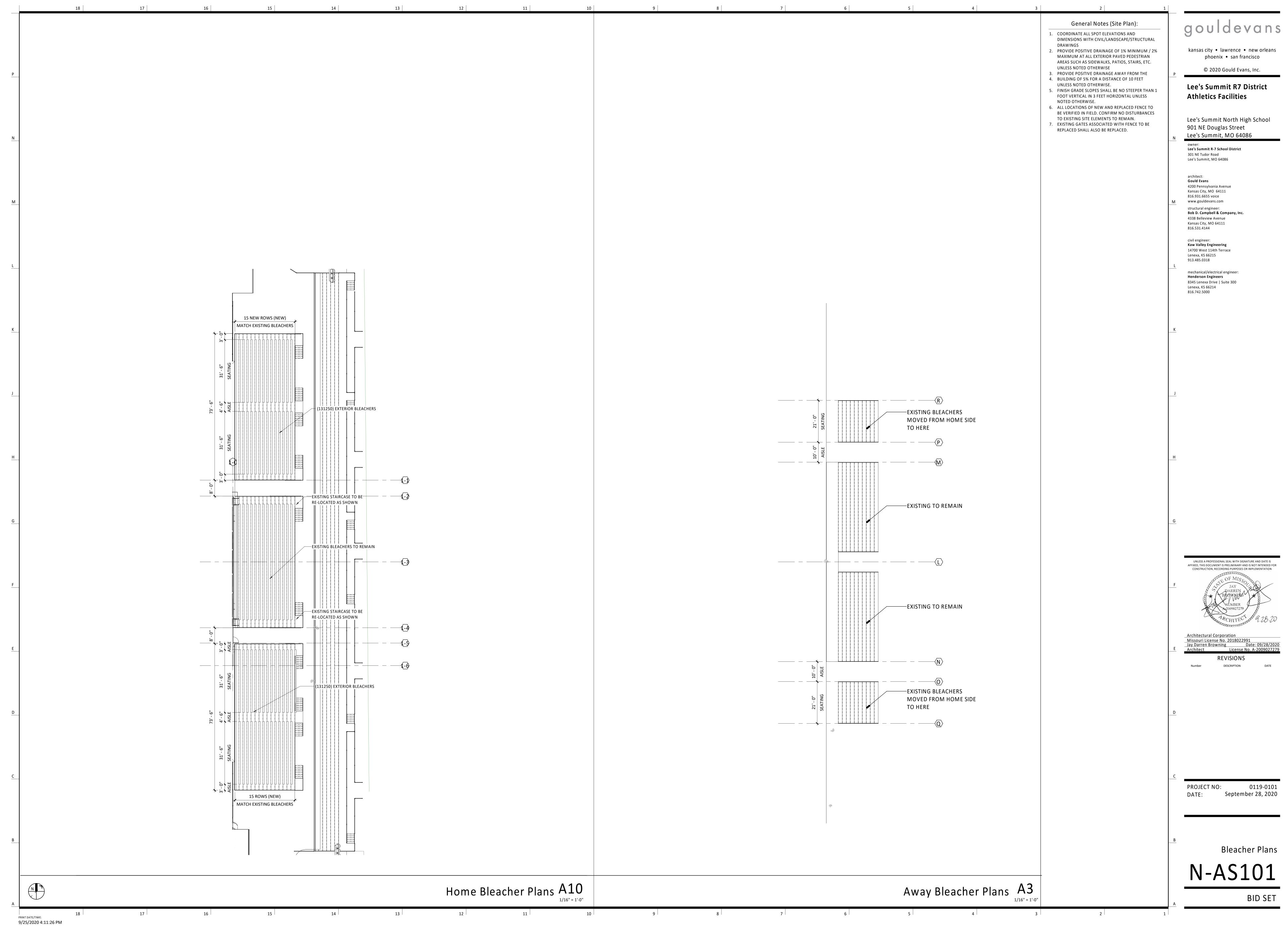
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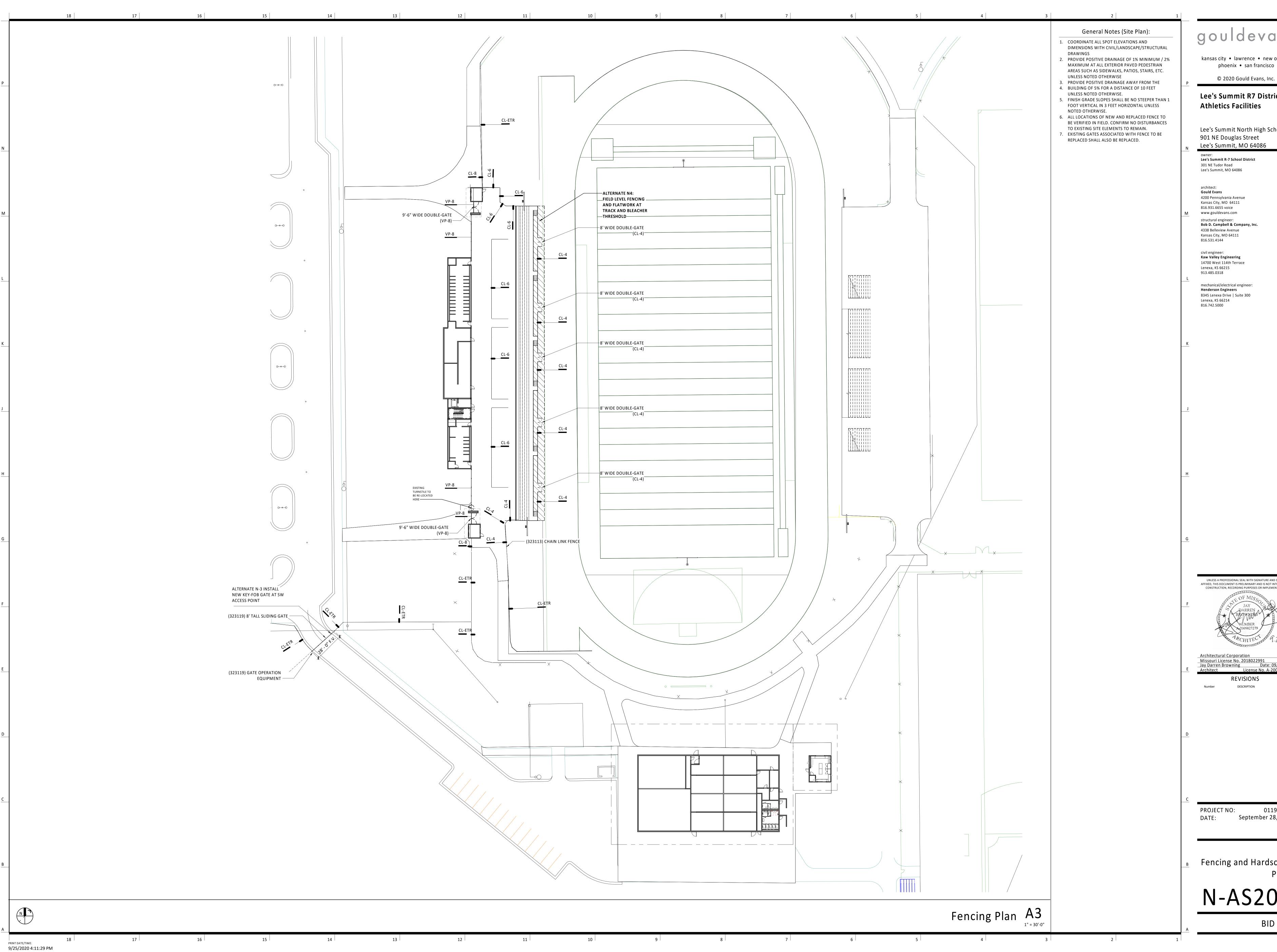
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Architectural Corporation

Missouri License No. 2018022991

Jay Darren Browning Date: 09/28/2020

Architect License No. A-2009027279 REVISIONS

PROJECT NO:

September 28, 2020

Fencing and Hardscape

#### **GENERAL NOTES - STRUCTURAL**

#### 1. General Information

- A. The contractor shall verify dimensions and conditions before construction and notify the engineer of any discrepancies, inconsistencies, or difficulties affecting the work before proceeding.
- B. The contractor shall coordinate all disciplines, verifying size and location of all openings, whether shown on structural drawings or not, as called for on architectural. mechanical, or electrical drawings. In the case of work in an existing building the contractor shall scan existing structure to locate all rebar in the area of the new core/opening using ground penetrating radar and notify the engineer of record for review prior to coring/cutting. Conflicts, inconsistencies, or other difficulties affecting structural work shall be called to the architect or engineer's attention for direction before proceeding.
- C. All design and construction work for this project shall conform to the requirements of the following governing design codes: 1.) International Building Code (IBC 2018) as amended by the city of
- Lee's Summit, MO 2.) Minimum Design Loads for Buildings and Other Structures (ASCE7-16) 3.) Specification for Structural Steel Buildings (AISC 360-16) Member Design Basis is Allowable Stress Design (ASD) Connection Design Basis is Allowable Stress Design (ASD)
- 4.) Structural Welding Code (AWS D1.4-2017) 5.) Building Code Requirements for Structural Concrete (ACI 318-14) 6.) Building Code Requirements for Masonry Structures (ACI 530-13/TMS 402-16)
- 7.) North American Specification for the Design of Cold-Formed Steel Structural Members (AISI S100-16) 8.) National Design Specification (NDS) for Wood Constriction with 2018
- Supplements (ANSI/AWC NDS-2018) 9.) Special Design Provisions for Wind and Seismic (AWC SDPWS-2015) D. These drawings are for this specific project and no other use is authorized.

#### 2. Structural Load Design Criteria

- A. Floor Live = 100 psf
- B. Roof Live = 20 psf C. Snow: Pg = 20psf, Pf =14psf, Is = 1.0, Ce = 1.0, Ct = 1.0, Drift per ASCE/SEI 7
- D. Lateral Loads: 1.) Wind: V = 109 mph, Exposure B Occupancy [Risk] Category II, Iw=1.0 GCpi=+/-0.18 Design wind pressures to be used for the design of exterior component and cladding materials on the designated zones of wall and roof surfaces shall
- be per section 30.7 and Table 30.7-2 of ASCE/SEI 7. Tabulated pressures shall be multiplied by effective area reduction factors, exposure adjustment factors, and topographic factors where applicable 2.) Seismic: Ss = 0.114, S1 = 0.067

Occupancy [Risk] Category II, le=1.0,

Equivalent Lateral Force Procedure

- Site Classification D; Sds = 0.121; Sd1 = 0.107 Seismic Design Category B Basic Seismic Force-resisting System: Bearing Wall Systems - Ordinary reinforced masonry shear walls
- R = 2; V = 0.0605W; Omega =  $2\frac{1}{2}$ ; Cd= $1\frac{3}{4}$ E. This project is designed to resist the most critical effects resulting from the load combinations of section 1605.3 of the International Building Code.

#### 3. Concrete

- A. All concrete for foundations (walls, grade beams, footings and piers) shall develop minimum ultimate compressive design strength of 3500 psi in 28 days, but not less than 500 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 6 gallons of water per 100 pounds of cement and not over 4 inches of slump.
- B. All concrete for interior flatwork (without floor covering) shall develop minimum ultimate compressive design strength of 4000 psi in 28 days, but not less than 525 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 5.75 gallons of water per 100 pounds of cement and not over 4 inches of slump. Concrete mix shop drawing shall contain testing data proving concrete design mix shrinkage is less than 0.034% at 28 days when
- tested according to ASTM C157 (air drying method only). C. All concrete for interior flatwork (with floor covering) shall develop minimum ultimate compressive design strength of 4000 psi in 28 days, but not less than 540 pounds of cement shall be used per cubic yard of concrete regardless of strengths obtained, not over 5.40 gallons of water per 100 pounds of cement and not over 4 inches of slump. Concrete mix shop drawing shall contain testing data proving concrete design mix shrinkage is less than 0.034% at 28 days when tested according to ASTM C157 (air drying method only).
- D. All concrete for exterior flatwork shall have a minimum design compressive strength of 4500 psi in 28 days, with not less than 560 pounds of cement per cubic yard of concrete, not over 5 gallons of water per 100 pounds of cement, with 6% +/- 1% air entrainment, and a maximum of 4 inches of slump.
- conforming to ASTM C494 added to the mix at manufacturer's dosage rates for G. The preceding minimum mix requirements may have up to 15% maximum of the
- cement content replaced with an approved ASTM C618 Class C fly ash, provided the total minimum cementitious content is not reduced. H. Combined aggregate (coarse plus fine) for all concrete shall be well graded from

F. The preceding minimum mix requirements may have water-reducing admixtures

- coarsest to finest with no more than 18 percent and not less than 8 percent retained on an individual sieve, except that less than 8 percent may be retained on coarsest sieve and on No. 50 and finer sieves. Submit this gradation report with the concrete mix design shop drawings. I. All interior concrete slabs on grade shall be placed over 15 mil, Class A Vapor Barrier per ASTM E1745 with less than 0.01 perms, tested after mandatory
- conditioning. All joints shall be lapped and sealed per manufacturer's recommendations. All penetrations, as well as damaged vapor barrier material shall also be sealed per manufacturer's recommendation prior to concrete placement. Install barrier per manufacturer recommended details at all discontinuous edges (at interior columns, exterior edge of slab, etc.) to ensure terms of warranty are followed. The vapor barrier shall be placed over freedraining granular material as prescribed by the project soils report. J. All concrete is reinforced concrete unless specifically called out as unreinforced.
- Reinforce all concrete not otherwise shown with same steel as in similar sections or areas. Any details not shown shall be detailed per ACI 315 and meet requirements of ACI 318, current editions. K. Control joints in dirt formed slab to be as shown on plans. Where not shown,
- limit controlled areas to not more than 144 square feet, or 12 feet on any side. Slab panel side ratio shall not exceed 1 1/2 to 1. L. Contractor shall verify that all concrete inserts, reinforcing and embedded items
- are correctly located and rigidly secured prior to concrete placement. M. Construction joints in beams, slabs, and grade beams shall occur at midspan (middle third) unless noted otherwise. Provide 2 x 4 horizontal keys at
- construction joints for shear transfer. N. No aluminum items shall be embedded in any concrete.

#### 4. Reinforcing Steel

- A. All reinforcing steel shall conform to the requirements of ASTM A615 or A706
- grade 60 steel. Welded plain wire fabric shall be supplied in sheets and conform to the requirements of ASTM A185. B. Clear minimum coverage of concrete over reinforcing steel shall be as follows: 1.) Concrete placed against earth:
- 2.) Formed concrete against earth: 4.) Beams or Columns: 5.) Other
- All coverage shall be nominal bar diameter minimum. C. All dowels shall be the same size and spacing as adjoining main bars (splice lap
- 48 bar diameters or 24" minimum unless noted otherwise). D. At corners of all walls, beams, and grade beams supply corner bars (minimum 2'-0" in each direction or 48 bar diameters) in outside face of wall, matching size and spacing of horizontal bars. Where there are no vertical bars in outside face of wall, supply 3 - #4 vertical support bars for corner bars.

E. Bars marked continuous and all vertical steel shall be lapped 48 bar diameters

- (2'-0" minimum) at splices and embedments, unless shown otherwise. Splice top bars near midspan and splice bottom bars over supports, unless noted F. At all holes in concrete walls and slabs, add 2 - #5 bars (opening dimension plus
- 96 diameters long) at each of four sides and add 2 #5 x 5'-0" diagonally at each of four corners of hole. Openings in 8" thick walls are reinforced similar, but with 1 - #5 instead of 2 - #5, respectively. G. Unless otherwise covered on architectural plans or specifications, vertical control ioints in concrete wall shall be spaced at a maximum of 20'-0" on center and coordinated with the architect. Every other horizontal wall reinforcing bar shall be
- otherwise. Provide base seal waterstop style number 772 (by Greenstreak Inc. or approved equal) on dirt face side of wall at all walls below grade. H. Accessories shall be as specified in latest edition of the ACI Detailing Handbook and the concrete Reinforcing Steel Institute Design Handbook. Maximum accessory spacing shall be 4'-0" on center, and all accessories on exposed
- surfaces are to have plastic coated feet. I. All slabs and stairs not shown otherwise shall be 6" thick with #4 bars at 12" on center each way. All exterior porches and stoops not otherwise detailed may be constructed in any standard manner, solid or hollow, but must be reinforced with #4 bars at 12" on center each way minimum. Porches shall be doweled to adjacent walls or grade beams with #4 bars at 12" on center, hooked or embedded 48 diameters into both members. Slope porches 1/8" per foot for
- drainage unless noted otherwise. J. Allow ½ ton of reinforcing bars #4 or larger to be used as directed in the field for special conditions by the engineer of record (labor for placing same to

#### 5. Structural Steel

- A. All structural steel beams and columns shall be ASTM A992, grade 50 steel and all miscellaneous steel shall be ASTM A36 grade steel (except at moment connections where plates shall be ASTM A572, grade 50). Hollow Structural Sections (HSS) shall be ASTM A500, grade B. Fabrication and erection shall be in accordance with AISC 303-05 "Code of Standard Practice for Steel Buildings and Bridges" in the 13th Edition of the AISC Steel Construction Manual.
- B. All welding shall conform to the recommendations of the AWS. All exterior steel and connections, and brick relief angles shall be hot-dip galvanized. D. All bolts not otherwise specified shall be 3/4" diameter high strength (ASTM A325-N). All bolts shall be fully pretensioned. All beam connections shall be designed per the AISC Manual of Steel Construction "Framed Beam Connections" for the indicated reactions shown in the beam shear connection table on sheet H-S300: and. shall account for eccentricity when the bolt line is more than 2" from the center of the
- All connections must be two bolt minimum. Additional connection elements may not be specifically shown in the conceptual details in this set but may be required by the final connection design, such as stiffener plates, doubler plates, supplement/reinforcing plates or other connection material. Connection design and shop drawing preparation shall be completed under the direct supervision of a professional engineer licensed in the state the project is located and shop drawings and connection calculations shall bear his/her seal.
- E. All anchor bolts shall be 3/4" diameter, ASTM F1554, Grade 36 unless noted otherwise. Washers of minimum size and thickness for the given anchor diameter in Table 14-2 of the AISC Steel Construction Manual shall be provided at every column anchor bolt. Washers shall have a standard size hole for the anchor bolt. At braced frames washers shall be welded all around to the column base plate with 3/16" fillet weld. F. Design, fabrication and erection of all open-web bar joists shall comply with the recommendations of the Steel Joist Institute (SJI). Joists shall be designed to support loads given in the standard load tables of SJI Specs and Tables plus an additional point
- load of 200 lbs. on the top or bottom chord at any location without additional web G. All K-series joists shall bear 2-1/2" minimum on structural steel beams and be welded to the beams with 1 1/2" of 1/8" fillet weld each side (minimum).
- H. All K-series joists bearing on masonry walls shall have 6" x 3/8" x 6" bearing plates set in bond beams. Bearing plates shall be located not more than 1/2" from the face of the wall on the bearing side. Joists shall bear 4" minimum on bearing plates and be welded to beams or bearing plates with 1-1/2" of 1/8" fillet weld each side (minimum). I. All steel joists shall have horizontal bar or angle bridging per Steel Joist Institute Specifications. Provide rigid x-bridging in addition to and matching horizontal bridging where joists are discontinuous unless horizontal bridging is anchored to wall top and
- bottom. Joist sweep allowance shall comply with AISC Standard Practice. J. Steel joists shall be designed for uplift per Components & Cladding Roof Uplift Pressures Table on this sheet. K. All openings in steel joist roof to have 3x3x1/4 angle frame set between joists. Support mechanical equipment with 4x4x5/16 angles laid between joists framed to 4x4x5/16 angles (length equals mechanical unit dimension plus distance each end to next panel
- point) laid parallel to and welded to top and/or bottom cord of joists to distribute load to joist panel points. L. All steel joists shall have a midspan camber approximately equal to that recommended by the Steel Joist Institute Specifications.
- M. Design and installation of steel decking shall comply with the recommendations of the Steel Deck Institute (SDI). All decking shall be galvanized unless noted otherwise. N. Allow 1.0 tons structural steel to be used as directed in field for special conditions by the engineer of record. Cost for shop drawings, fabrication, delivery, detailing, and erection to be included. 50% of structural steel allowance shall be bid as miscellaneous

#### 6. Post Installed Anchors

galvanized angle and plate.

- A. Post-installed anchors shall be used only where specified on the drawings unless approved in writing by the engineer of record. See drawings for anchor diameter, spacing and embedment. Performance values of the anchors shall be obtained for specified products using appropriate design procedures and/or standards as required by the governing building code. Anchors installed in concrete shall have an ICC-ES Evaluation Service Report. Special inspection is required for all post installed anchors. The contractor shall coordinate an on-site meeting with the post installed anchor manufacturer field representative to educate the construction
- team on the anchor installation guidelines and requirements. B. Mechanical anchors used in cracked and uncracked concrete shall have been tested and qualified for use in accordance with ACI 355.2 and ICC-ES AC193. All anchors shall be installed per the anchor manufacturer's written instructions. C. Adhesive anchors used in cracked and uncracked concrete shall have been tested
- and qualified for use in accordance with ICC-ES AC308. All anchors shall be installed per the anchor manufacturer's written instructions. D. Mechanical anchors used in solid grouted masonry shall have been tested and qualified for use in accordance with ICC-ES AC01. All anchors shall be installed
- per the anchor manufacturer's written instructions. E. Adhesive anchors used in solid grouted masonry shall have been tested and qualified for use in accordance with ICC-ES AC58. All anchors shall be installed per the anchor manufacturer's written instructions.
- F. Anchors used in hollow concrete masonry shall have been tested and qualified in accordance with ICC-ES AC106 or ICC-ES AC58 as appropriate. All anchors shall be installed per the anchor manufacturer's written instructions with appropriate screen tubes used for adhesives.

#### $\mathcal{L}$ 7. Foundations

- A. The soil investigation was prepared by CFS Engineers, the report number is 20-1228, and the telephone number is 913-627-9040. B. Spread footings, grade beams, and retaining walls are designed to bear on
- engineered fill or undisturbed soil capable of safely sustaining 2500psf. C. Retaining walls are designed for an active lateral load of 55pcf equivalent fluid pressure.
- D. Contractor shall provide for dewatering at excavations from either surface water or E. All foundation excavations shall be inspected by a qualified soil engineer, approved by the architect and/or structural engineer, prior to placement of steel or concrete.
- This inspection shall be at the owner's expense. All concrete in the structural portion retaining the backfill shall have attained its design strength prior to being backfilled. Moisture content in soils beneath building locations should not be allowed to change
- after footing excavations and after grading for slabs on grade are completed. If subgrade materials become desiccated or softened by water or other conditions, recompact materials to the density and water content specified for engineered fill. Do not place concrete on frozen ground.

#### 8. Concrete Masonry Units

- A. Concrete block used in exterior walls or load bearing walls shall meet the requirements of ASTM C90 and have a minimum net compressive strength of 2650 psi and laid up using type N mortar such that f'm equals 2000 psi. Mortar shall be volume proportion based cement lime mortar. Proportioning shall be completed by box measure. Any block in contact with earth shall be normal weight units, laid using type "S" mortar and grouted solid. B. The contractor shall provide adequate temporary bracing for all masonry walls
- during construction. C. All concrete block shall have 9 gage (or larger) horizontal joint reinforcing (ladder or truss) per architectural drawings and specifications (16" maximum vertical spacing). D. Cavity wall construction shall be reinforced as designed for specific concrete block
- used. The horizontal joint reinforcing shall be of the ladder or truss style per specification and continuous between brick and block, as prescribed by the architectural drawings.
- E. Concrete block shall be reinforced as indicated on Sheet H-S002 Grout, where noted above, shall have a minimum design ultimate compressive strength of 2500 psi at 28 day test and 3/8" maximum aggregate size.
- G. Non-load bearing concrete block walls shall be isolated from adjacent structural elements with vertical 3/8" control joints and at the top of the wall with 1" air space or compressible material and support per architectural detail. H. Unless otherwise covered on architectural plans or specifications, vertical control joints in masonry construction shall be 3/8" wide, full height of wall. Joints shall
- be spaced at a maximum of 24'-0" on center and coordinated with the architect. All horizontal joint reinforcing shall be discontinuous at control joints in masonry. All bond beam horizontal reinforcing shall be continuous through control joints. I. Lintels over all openings up to 8'-0" wide in new and existing masonry walls not otherwise covered shall be one 6x3 1/2x5/16 angle for each 4" width of masonry.
- All exterior lintels to be galvanized. J. Walls shall be anchored top and bottom by dowels matching wall vertical reinforcing(unless noted otherwise) from floor slab bottom and bracing angles at the top, per details on the drawings.

#### 9. Light Gage Metal Structural Framing

- A. All load bearing, light gage structural studs, track, and bridging shall be of the
- type, size, gage, and spacing as shown on the plans, minimum. All materials shall be 33,000 psi minimum yield, except studs of 16 gage or
- heavier shall have a minimum yield of 50,000 psi. C. All properties, fabrication, and erection shall be in accordance with latest editions of
- the AISI "Specifications for the Design of Cold-Formed Structural Members." All framing components shall be cut squarely or at an angle to fit squarely against abutting members. Splicing of axially loaded members is not permitted. Members shall be held firmly in place until properly fastened. Attachments of similar components shall be by welding, screw attachment, or bolting. Wire
- tying of components is not permitted. Tracks shall be securely anchored to floor and overhead members. Special anchorage requirements required for wind bracing shall be as shown on the plans. Prior to fabrication and/or erection, the contractor shall submit shop drawings complete with detail of erection, fabrication, attachments, anchorages, lintels, etc., for review by the architect/engineer.

#### 10. Shop Drawing Review

- Bob D. Campbell and Company, Inc. will review the General Contractor's (GC) shop drawings and related submittals (as indicated below) with respect to the ability of the detailed work, when complete, to be a properly functioning integral element of the overall structural system designed by
- Bob D. Campbell and Company, Inc. B. Prior to submittal of a shop drawing or any related material to Bob D. Campbell and Company, Inc., the GC shall: 1.) Review each submission for conformance with the means, methods, techniques, sequences and operations of construction and safety
- precautions and programs incidental thereto, all of which are the sole responsibility of the GC. 2.) Review and approve each submission 3.) Stamp each submission as approved.
- Bob D. Campbell and Company, Inc. shall assume that no submission comprises a variation unless the GC advises Bob D. Campbell and Company, Inc. with written documentation. Bob D. Campbell and Company, Inc. shall review shop drawings and related materials with comments provided that each submission has met the above
- requirements. Bob D. Campbell and Company, Inc. shall return without comment unrequired material or submissions without GC approval stamp. Shop drawings and related material (if any) required are indicated below. Should Bob D. Campbell and Company, Inc. require more than ten (10) working
- days to perform the review, Bob D. Campbell and Company, Inc. shall so notify the GC. 1.) Concrete mix designs and material certificates including admixtures and
- compounds applied to the concrete after placement. 2.) Reinforcing steel shop drawings including erection drawings and bending details. Bar list will not be reviewed for correct quantities.
- 3.) Elevations of all reinforced concrete masonry walls at a scale no smaller than 3/8" = 1'-0" showing all required reinforcing. 4.) Grout mix designs (for CMU). 5.) Construction and control joint plans and/or elevations.
- 6.) Structural steel shop drawings including erection drawings and piece details. Include joist, decking and connector submittals. Include miscellaneous framing specified on the structural drawings, but do not submit framing specified on non-structural drawings for Bob D. Campbell and Company, Inc. review.
- 7.) Structural steel connection design calculations submitted concurrently with structural steel shop drawings. 8.) Miscellaneous anchors shown on the structural drawings.

#### 9.) Standard details and bridging information for light gage metal framing. Erection plans and details for light gage metal joists and lintels spanning more than 6'-0" shall be submitted. Standard wall framing need not be submitted.

#### 11. Statement of Structural Special Inspections

- A. The structural design for this project is based on completion of special inspections during construction in accordance with section 1704 of the
- International Building Code. The owner shall employ one or more qualified special inspectors to provide the required special inspections.
- The special inspector shall furnish inspection reports to the building official, owner, architect and structural engineer, and any other designated person. All discrepancies shall be brought to the immediate attention of the contractor
- for correction, then, if uncorrected, to the proper design authority, building official and structural engineer. D. The special inspector shall submit a final signed report stating that the work
- requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions of the building code. The following inspections and tests are required with the frequency (continuous or periodic) as defined within the referenced section or standard listed below. The General Contractor shall provide notification to the inspector when items
- requiring inspection are ready to be inspected and provide access for those inspections. 1. Shop Fabrication – structural steel and steel bar joist per Section 1704.2.5 unless AISC certified shop Shop Fabrication – pre-engineered wood trusses per Section 1704.2.5 unless TPI
- certified shop 3. Steel Construction per Section 1705.2 and the quality assurance requirements of AISC 341 Chapter J (as referenced by AISC 360) 4. Cold-Formed Steel Deck per Section 1705.2.2 and the quality assurance
- requirements of SDI QA/QC. Concrete Construction per Section 1705.3 and Table 1705.3 a. Reinforcing Steel Placement
- b. Reinforcing Steel Welding c. Cast in Place Anchors d. Post Installed Anchors e. Design Mix Verification
- f. Concrete Sampling and Testing g. Concrete Placement h. Concrete Curing Masonry Construction per Section 1705.4 and the quality assurance requirements
  - of TMS 402/ACI530/ASCE5 and TMS602/A530.1/ASCE6 [Level B]

#### 12. Copyright and Disclaimer

document package.

- A. All drawings in the structural set (S-series drawings) are the copyrighted work of Bob D. Campbell and company, Inc. These drawings may not be photographed, traced, or copies in any manner without the written permission of Bob D. Campbell and Company, Inc. Exception: Original drawings may be printed for distribution to the owner, architect, and general contractor for
- coordination, bidding, and construction. Subcontractors may not reproduce these drawings for any purpose or in any manner. I, Richard C. Crabtree, P.E., registered engineer and a representative of Bob D. Campbell and Company, Inc., do hereby accept professional responsibility as required by the professional registration laws of this state for the structural design drawings consisting of S-series drawings. I hereby disclaim responsibility for all other drawings in the construction document package, they being the responsibility of other design professionals whose seals and signed statements may appear elsewhere in the construction

### ULTIMATE UPLIFT PRESSURE ZONE 2 ZONE 3 [psf] [psf]

102.0

73.0

. REFER TO GENERAL NOTE 2D FOR WIND LOAD DESIGN CRITERIA WIND PRESSURES SHOWN ARE ULTIMATE (LRFD). FOR ASD WIND PRESSURES, MULTIPLY VALUES BY 0.6 WIND PRESSURES SHOWN ARE BASE ON AN EFFECTIVE WIND AREA OF 50 SQUARE FEET

COMPONENTS & CLADDING ROOF UPLIFT PRESSURES

BUILDING / ROOF TYPE

Open Building, Monosloped Roof

Enclosed Building, Flat Roof

BUILDING

LOCATION

Press Box Roof

Other Structures

DIMENSION

[ft]

4.0 ft

3.0 ft

ZONE 1

[psf]

34.0

78.0

54.0

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**Athletics Facilities** 

Lee's Summit North High School

901 NE Douglas Street Lee's Summit, MO 64086

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

Gould Evans 4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc 4338 Belleview Avenue

> civil engineer: **Kaw Valley Engineering** 14700 West 114th Terrace Lenexa, KS 66215 913.485.0318

mechanical/electrical engineer: Henderson Engineers 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214 816.742.5000

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PROJECT NO:

September 28, 2020

**General Notes** 

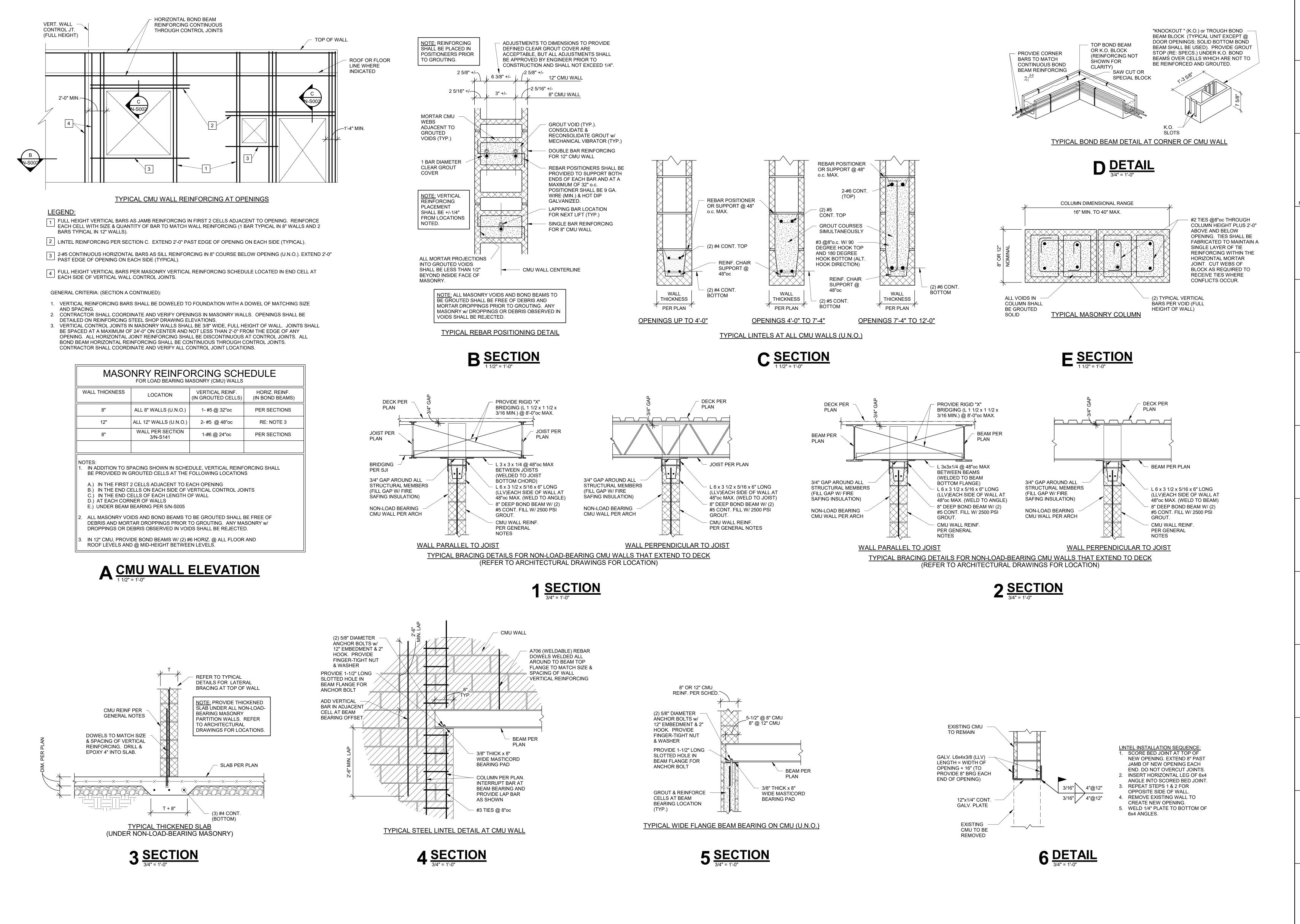
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Kansas City, MO 64111 816.531.4144

REVISIONS

DESCRIPTION

10.20.2020



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Lee's Summit R7 District Athletics Facilities

Lee's Summit North High School

901 NE Douglas Street Lee's Summit, MO 64086

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Jane Doe

Architect

Architect

Bull Date: MM/DD/2018

Architect

Architect

Architect

Architect

Date: MM/DD/2018

Architect

REVISIONS

Number

Description

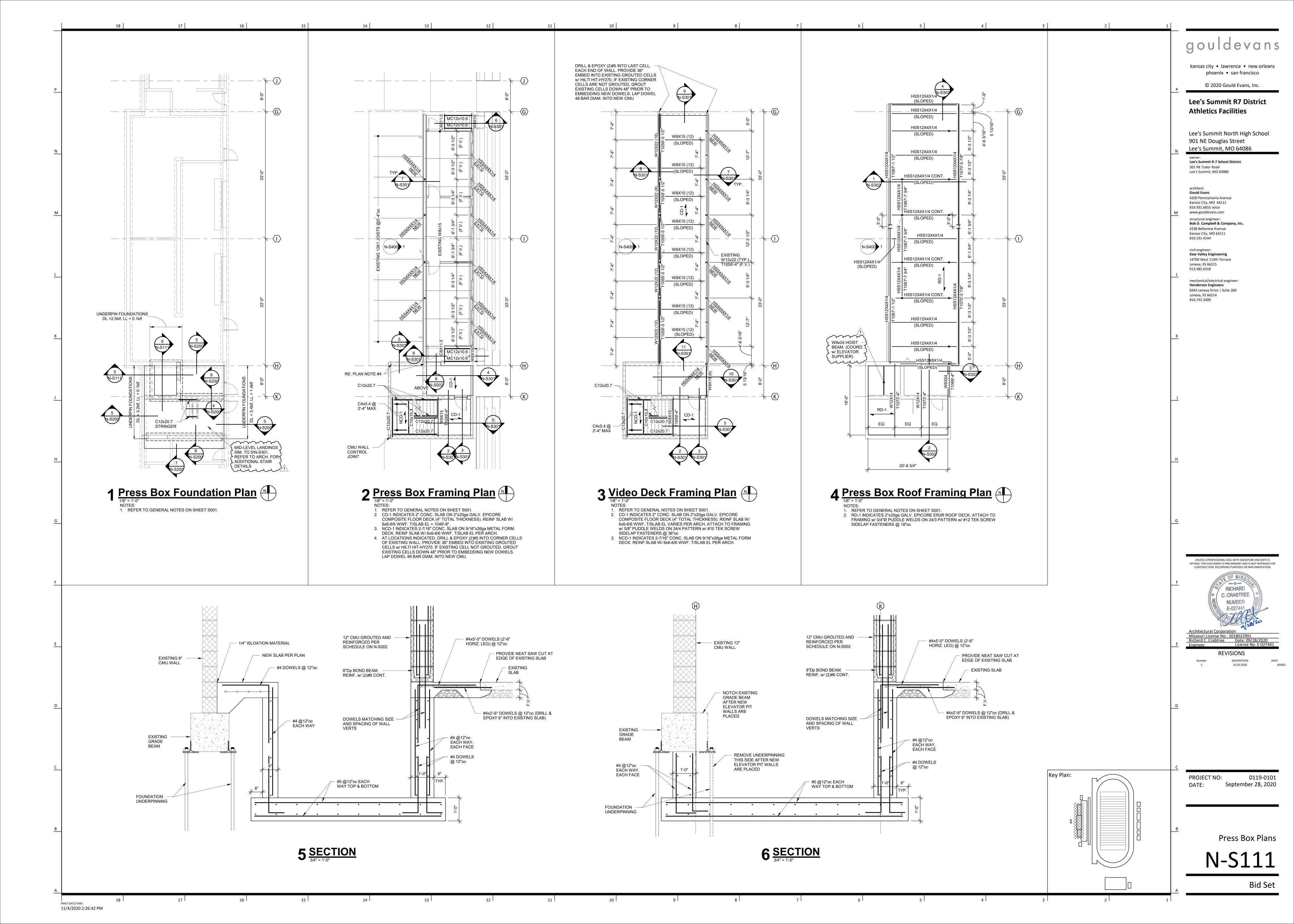
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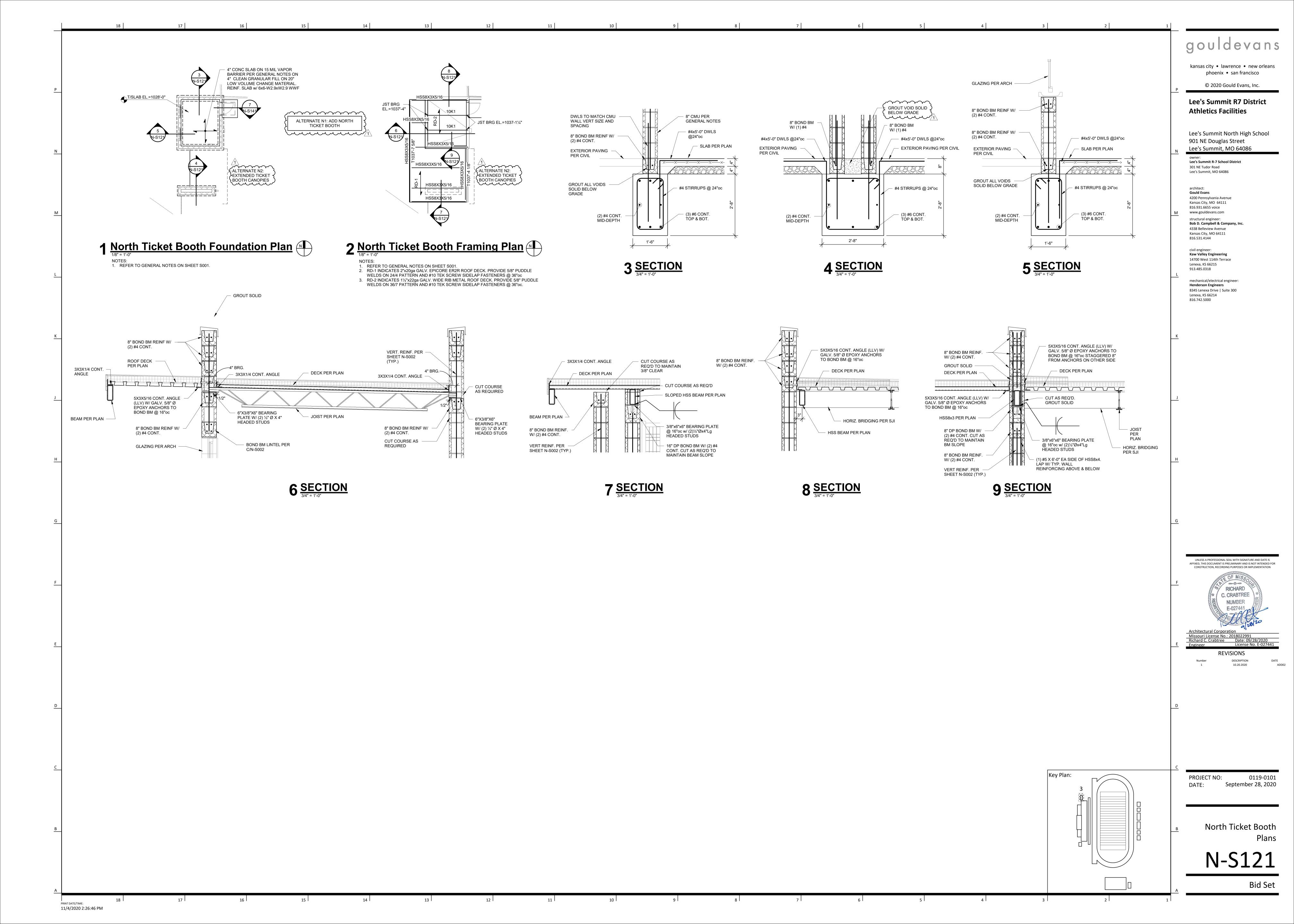
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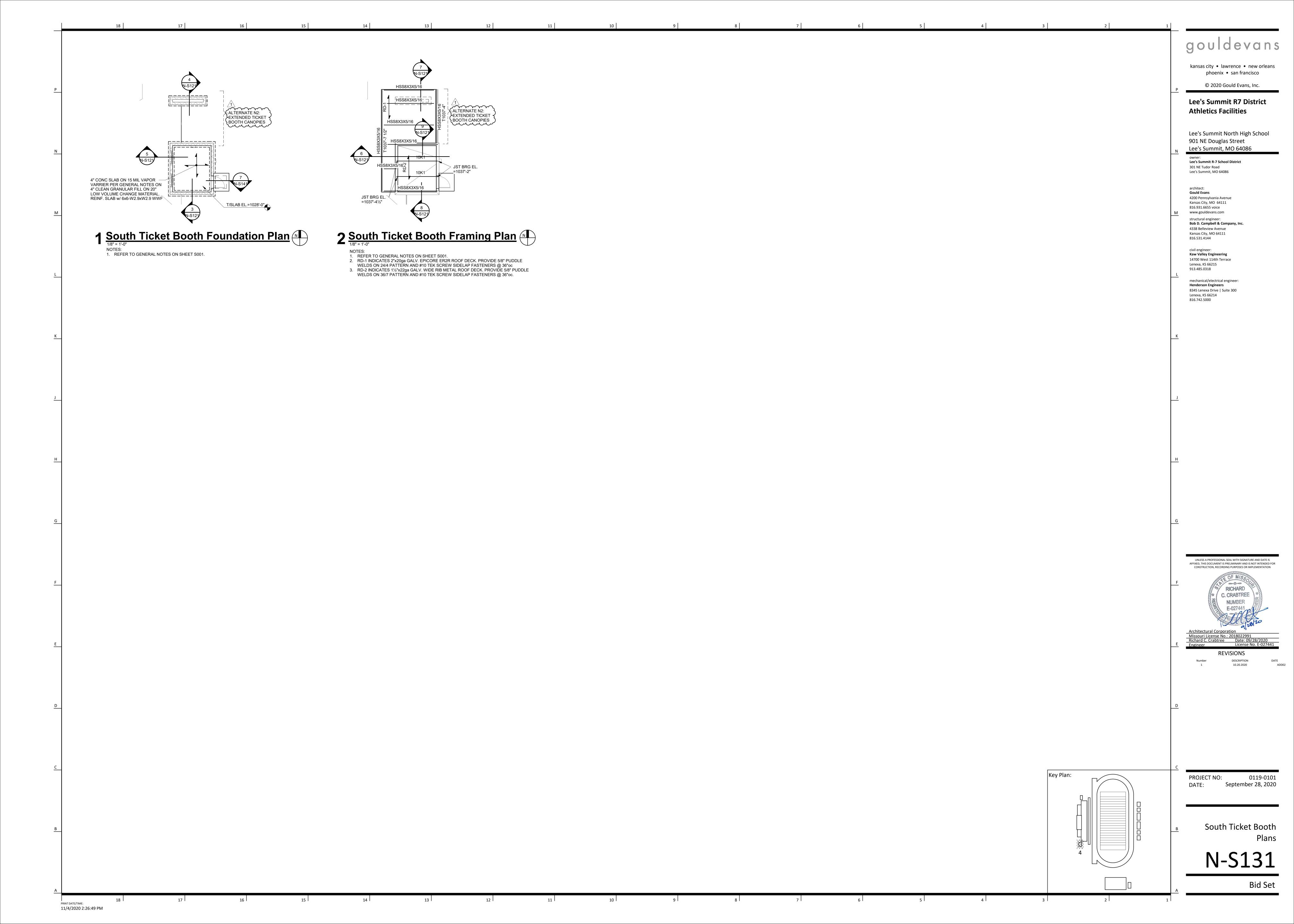
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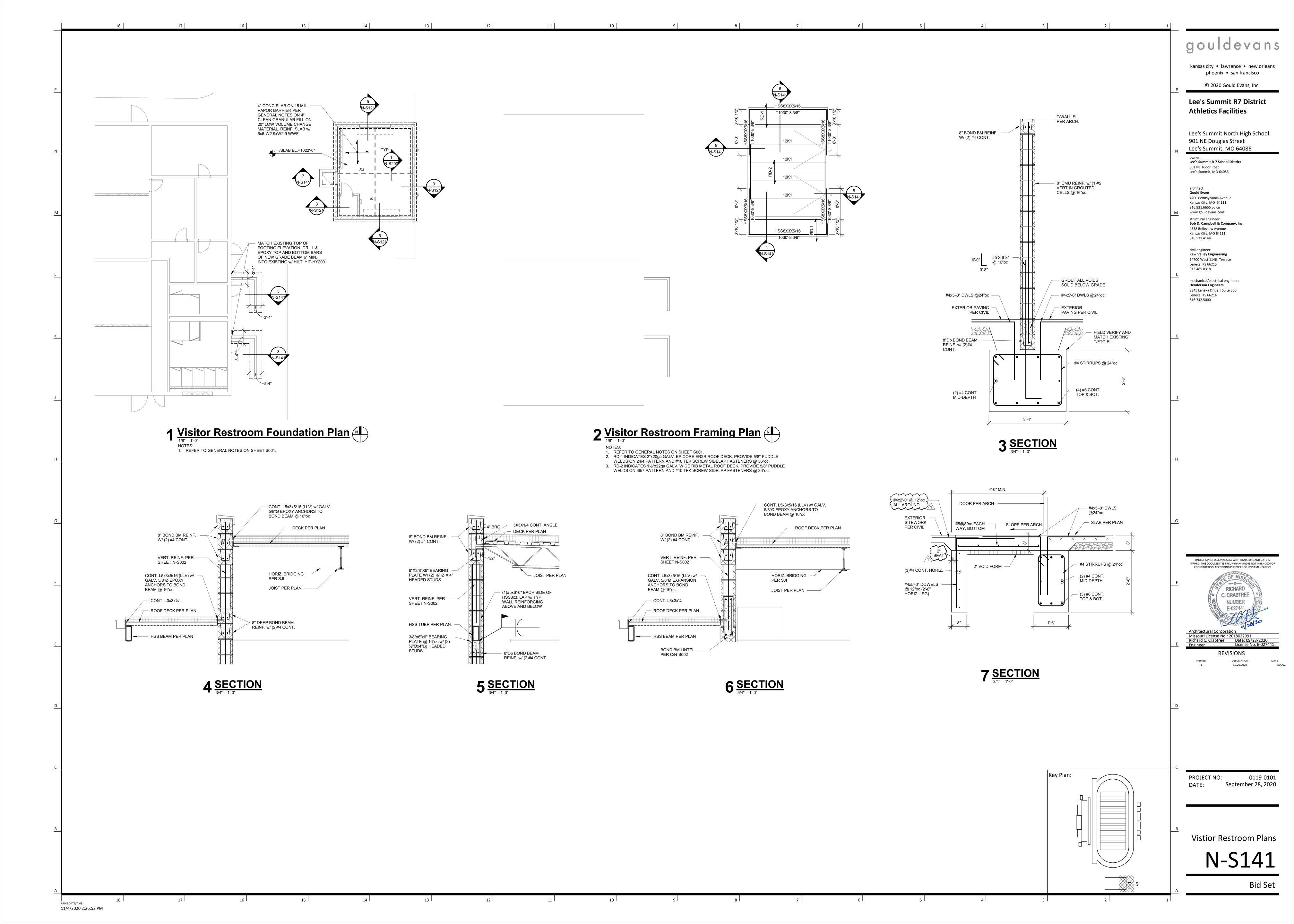
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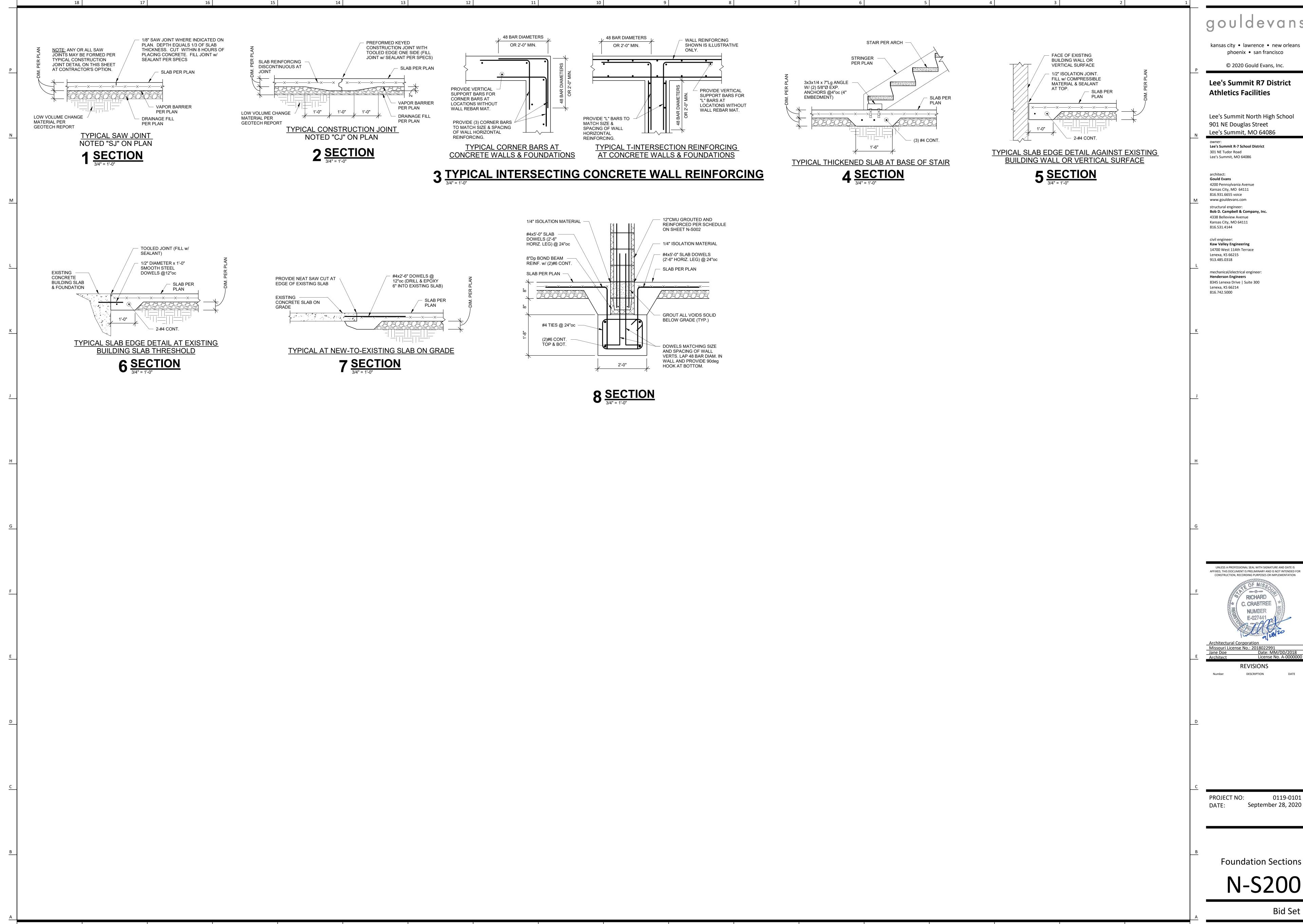
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Lee's Summit R7 District

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District

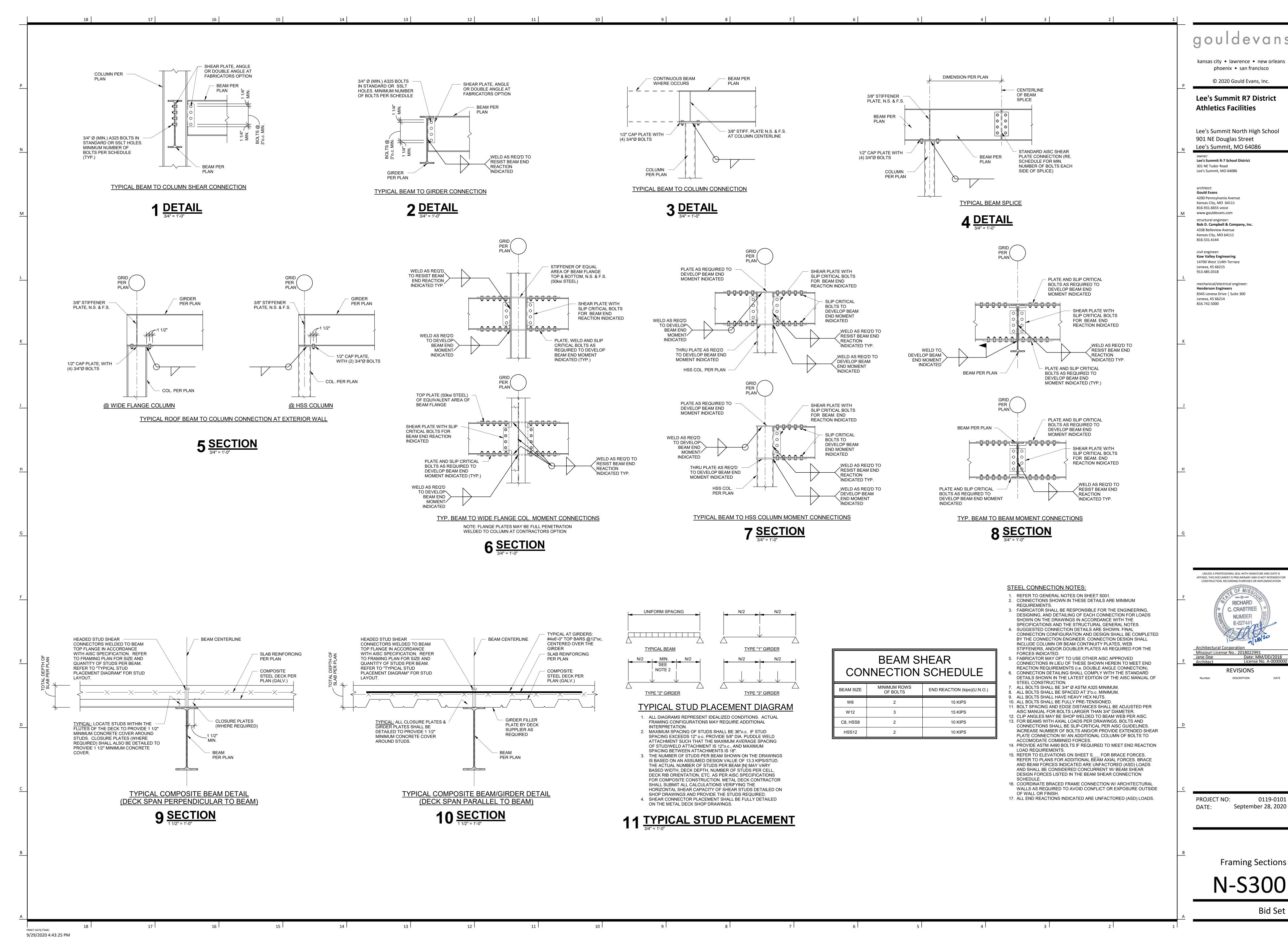
4200 Pennsylvania Avenue Kansas City, MO 64111 www.gouldevans.com Bob D. Campbell & Company, Inc.

**Kaw Valley Engineering** 14700 West 114th Terrace

mechanical/electrical engineer: **Henderson Engineers** 8345 Lenexa Drive | Suite 300

September 28, 2020

Foundation Sections



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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School

Lee's Summit R-7 School District

4200 Pennsylvania Avenue

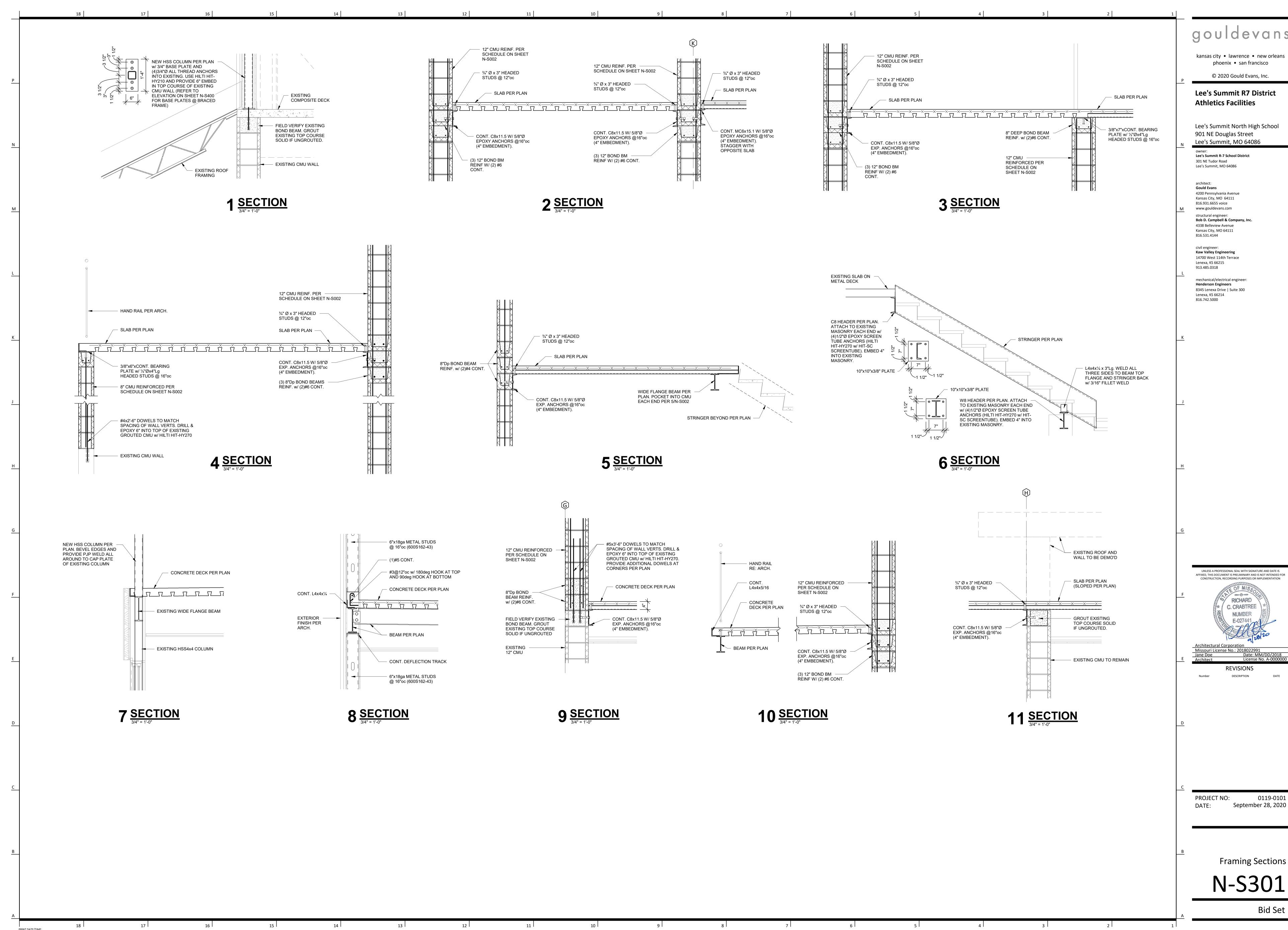
Bob D. Campbell & Company, Inc.

mechanical/electrical engineer 8345 Lenexa Drive | Suite 300

> 0119-0101 September 28, 2020

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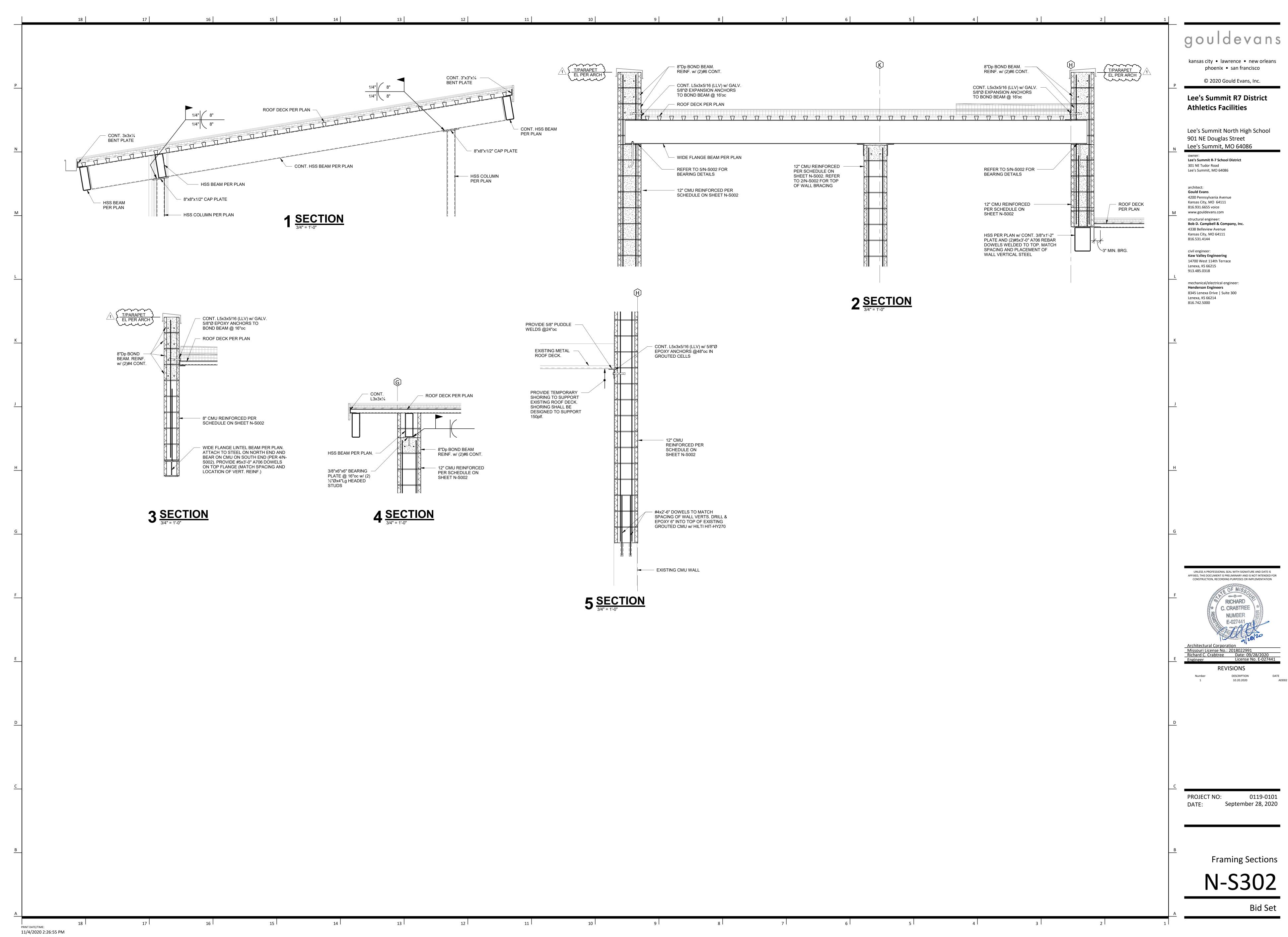


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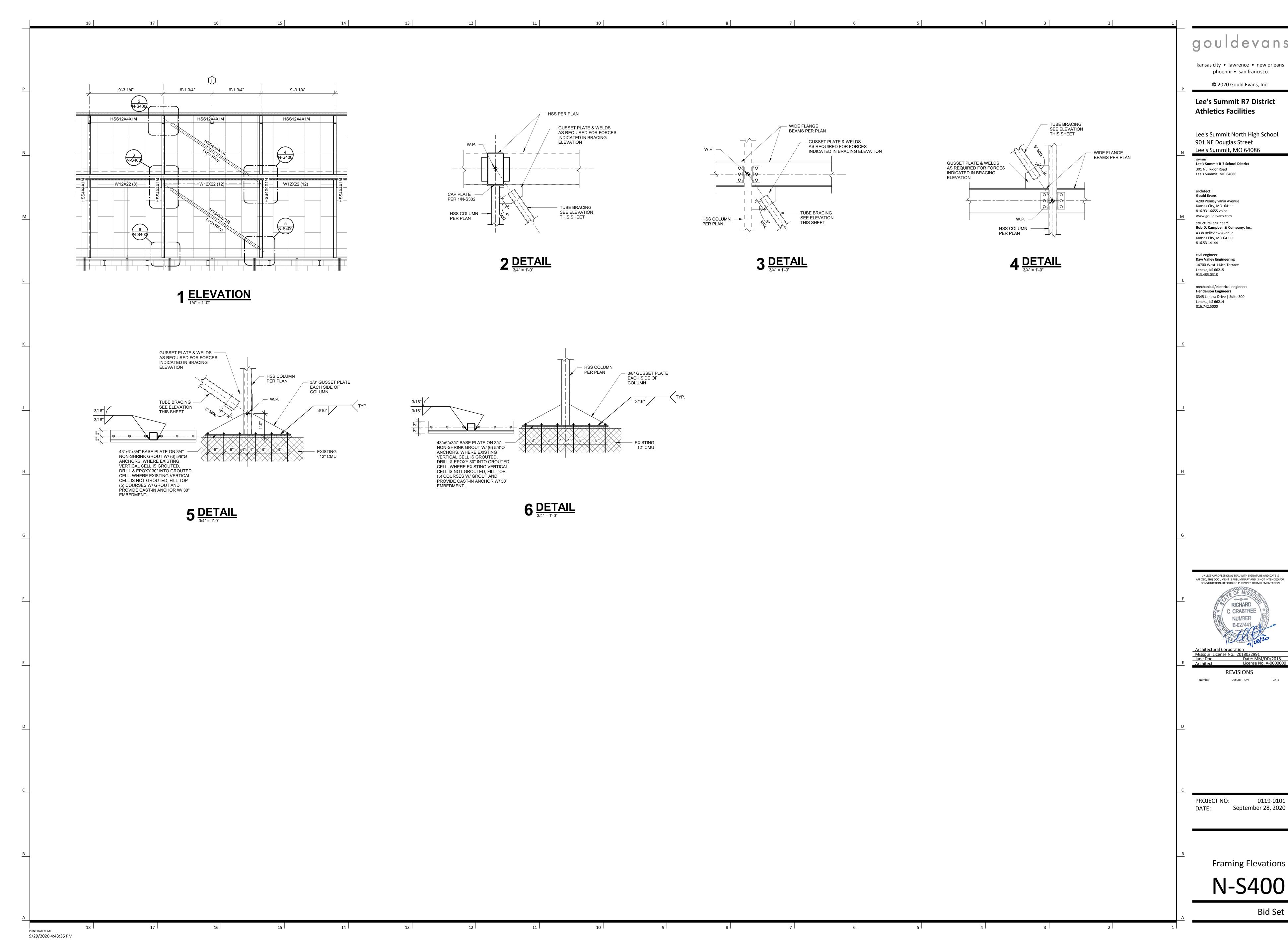
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Lee's Summit R7 District

Lee's Summit North High School

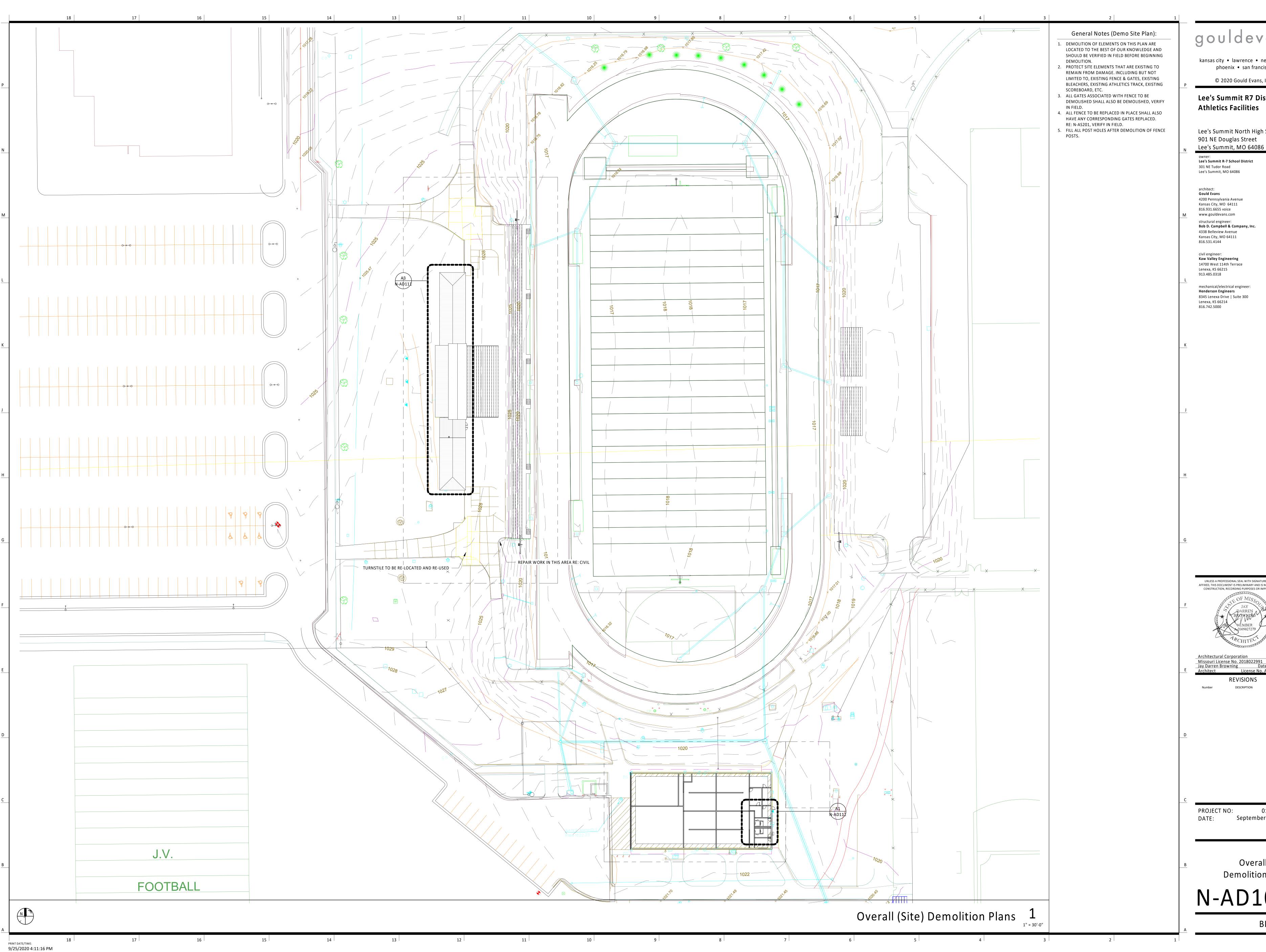
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REVISIONS

September 28, 2020

Framing Elevations



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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District 301 NE Tudor Road

4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc.

Kansas City, MO 64111 816.531.4144 civil engineer:
Kaw Valley Engineering

mechanical/electrical engineer: **Henderson Engineers** 8345 Lenexa Drive | Suite 300

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Architectural Corporation

Missouri License No. 2018022991

Jay Darren Browning Date: 09/28/2020

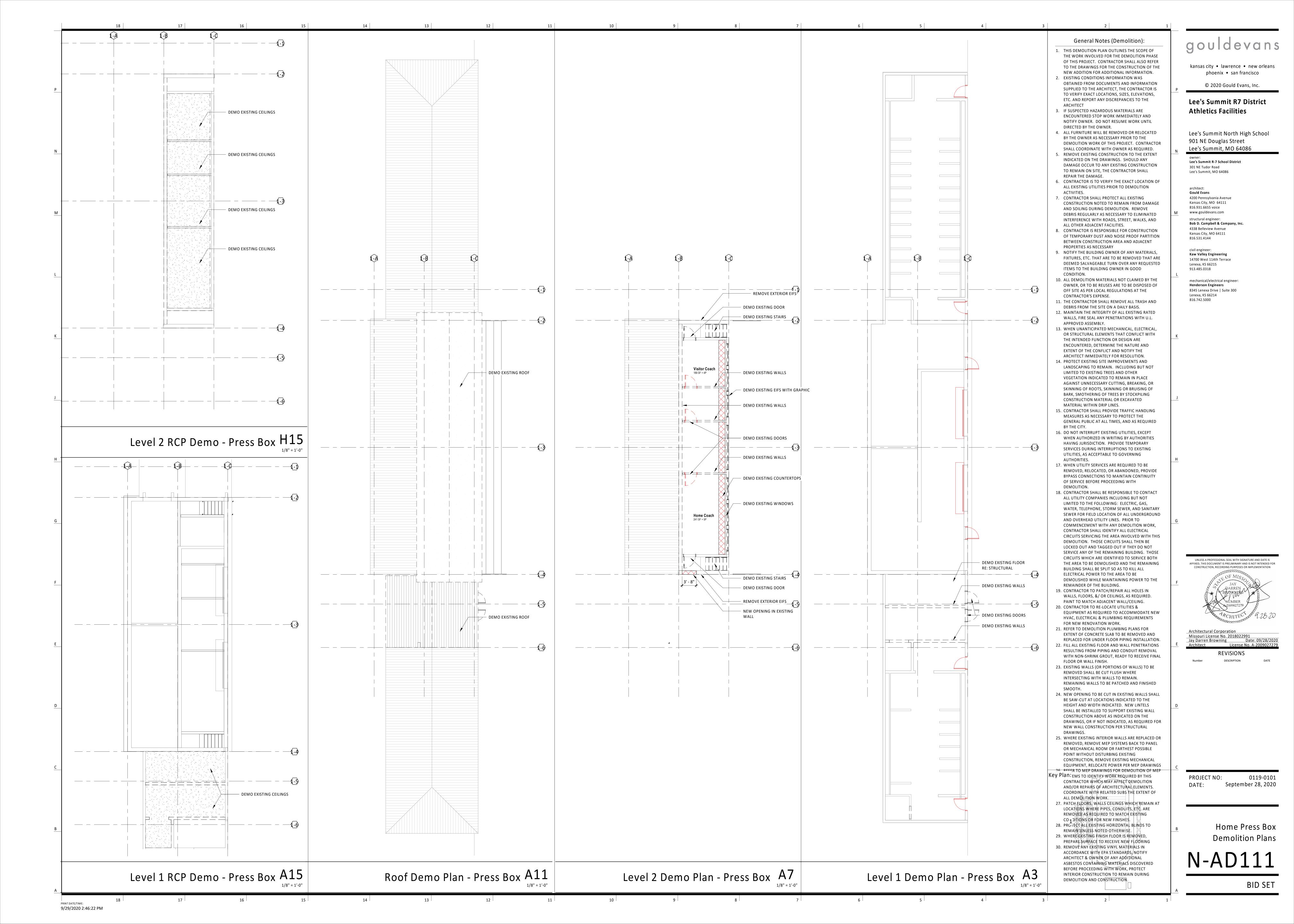
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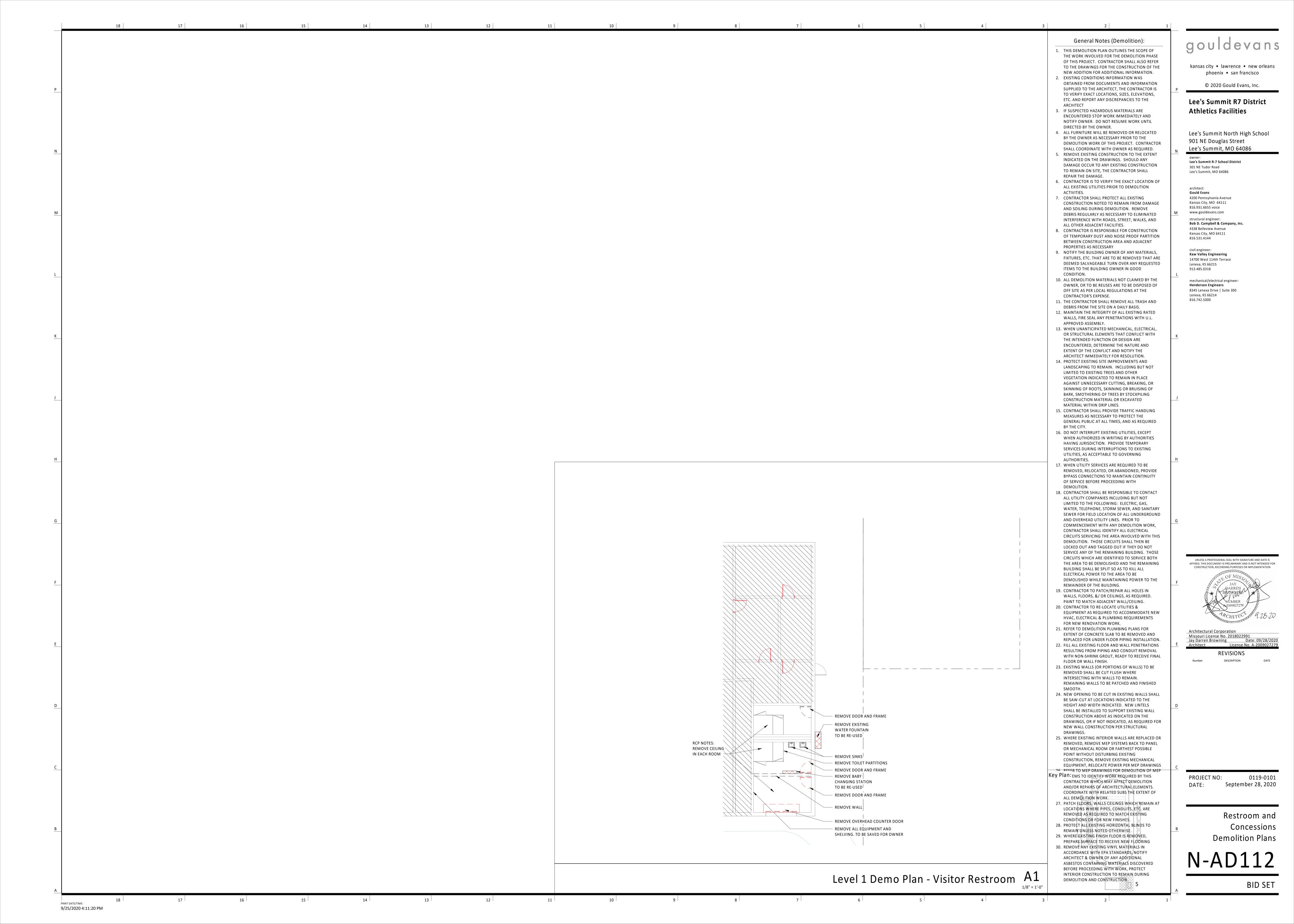
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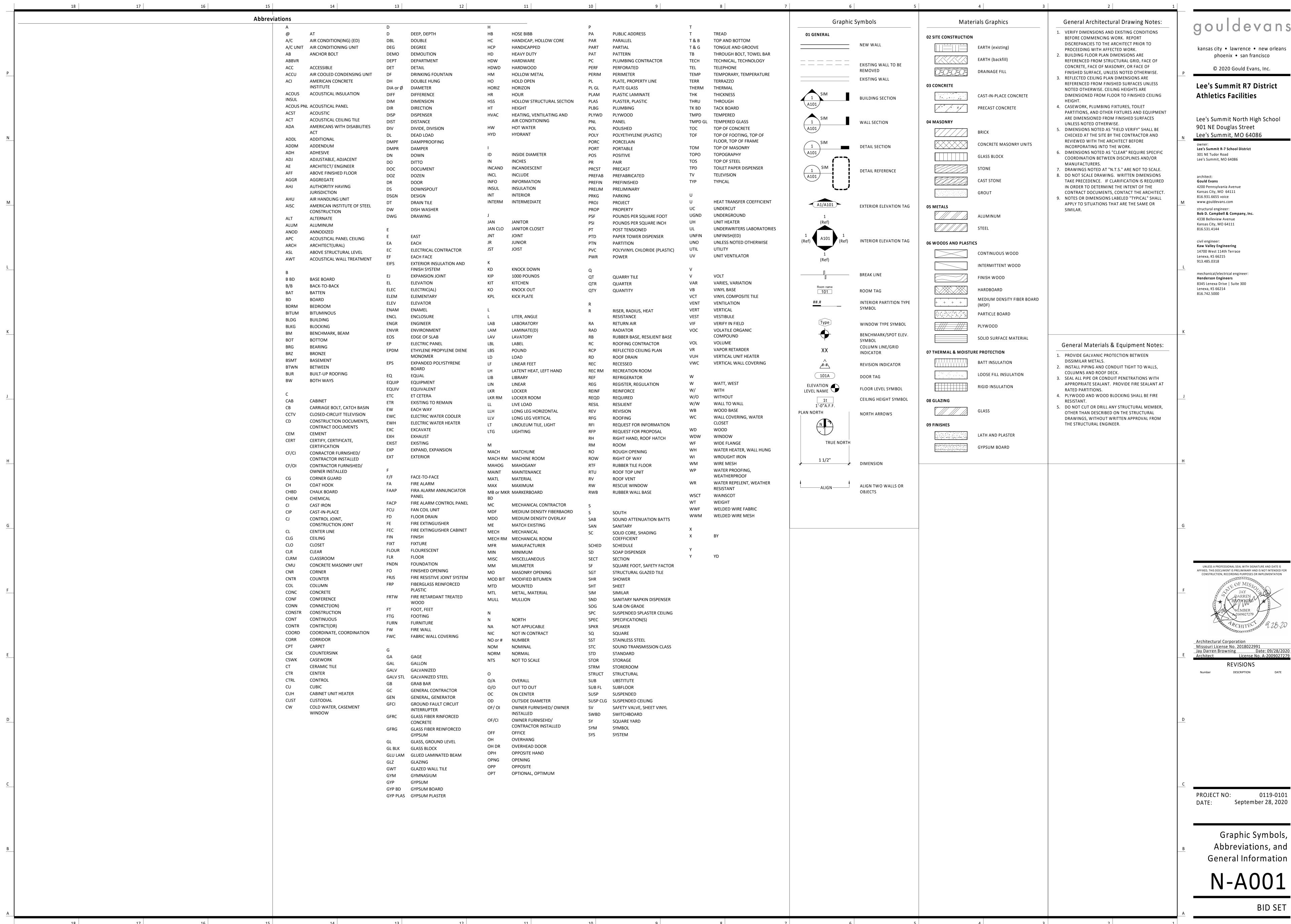
September 28, 2020

Overall (Site) **Demolition Plans** 

N-AD100

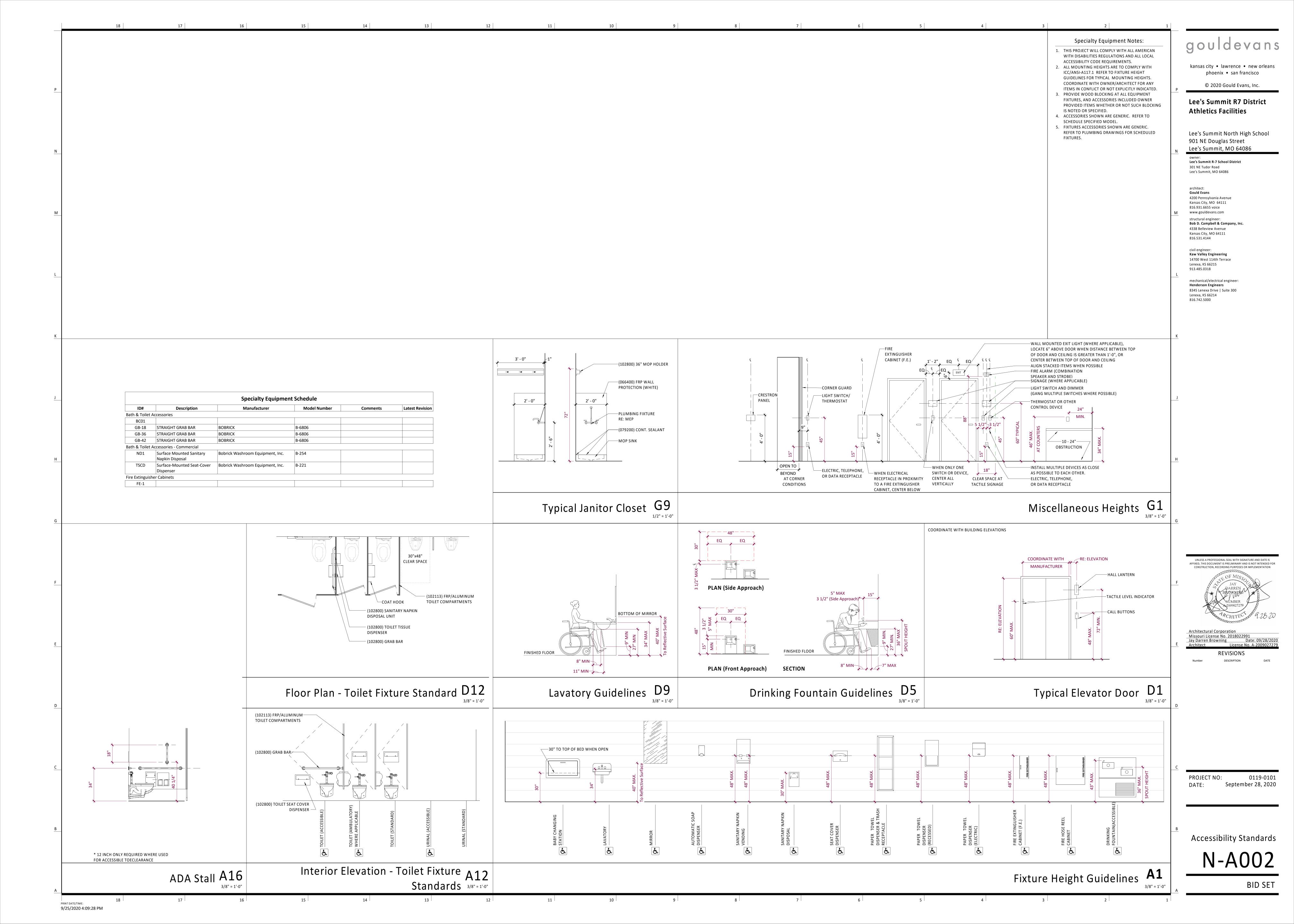


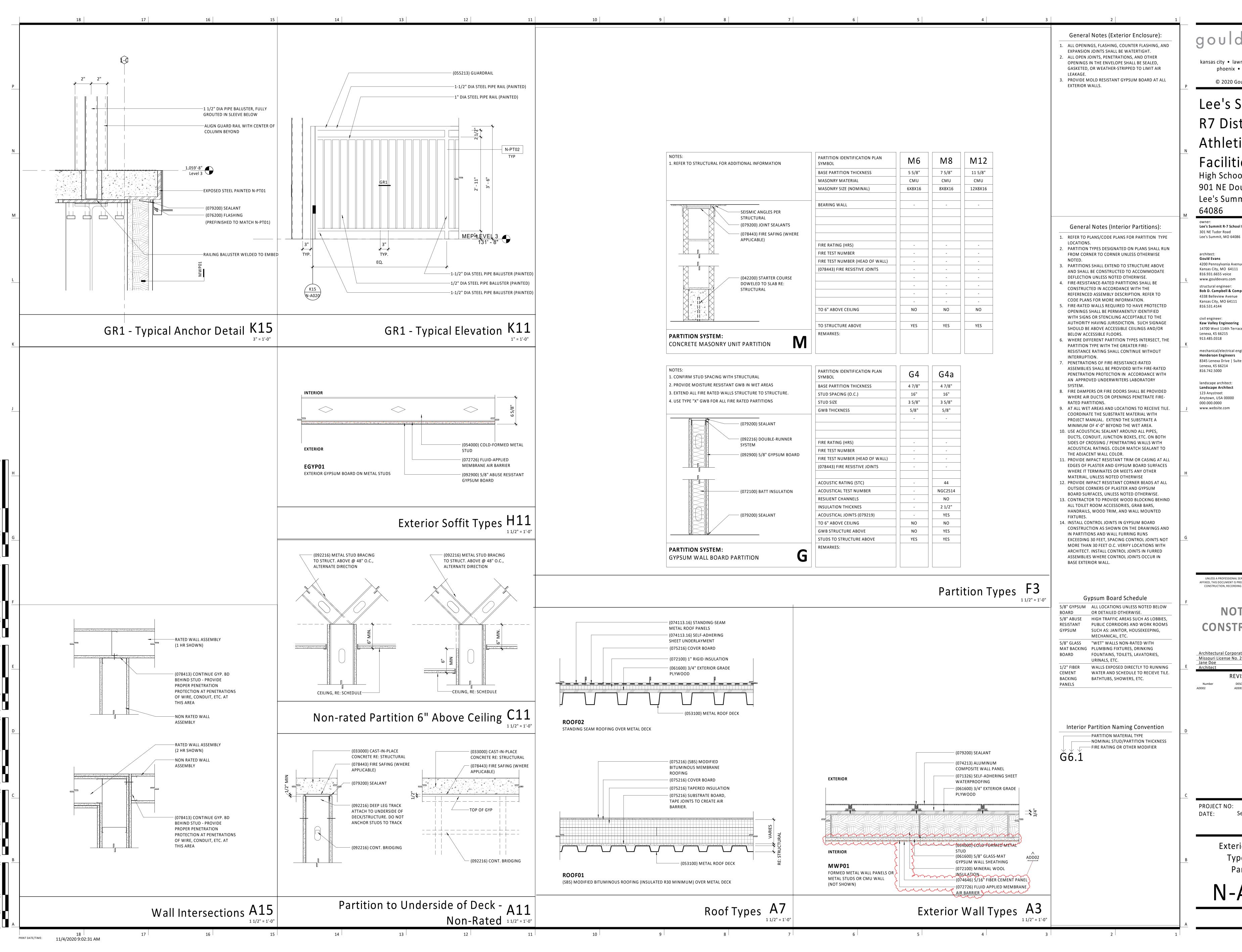




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Lee's Summit **R7** District **Athletics** 

FacilitiesNorth High School 901 NE Douglas Street Lee's Summit, MO

Lee's Summit R-7 School District 301 NE Tudor Road

Gould Evans 4200 Pennsylvania Avenue Kansas City, MO 64111

816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc

**Kaw Valley Engineering** 14700 West 114th Terrace

Lenexa, KS 66215 913.485.0318

mechanical/electrical engineer Henderson Engineers 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214 816.742.5000

landscape architect: Landscape Architect

000.000.0000 www.website.com

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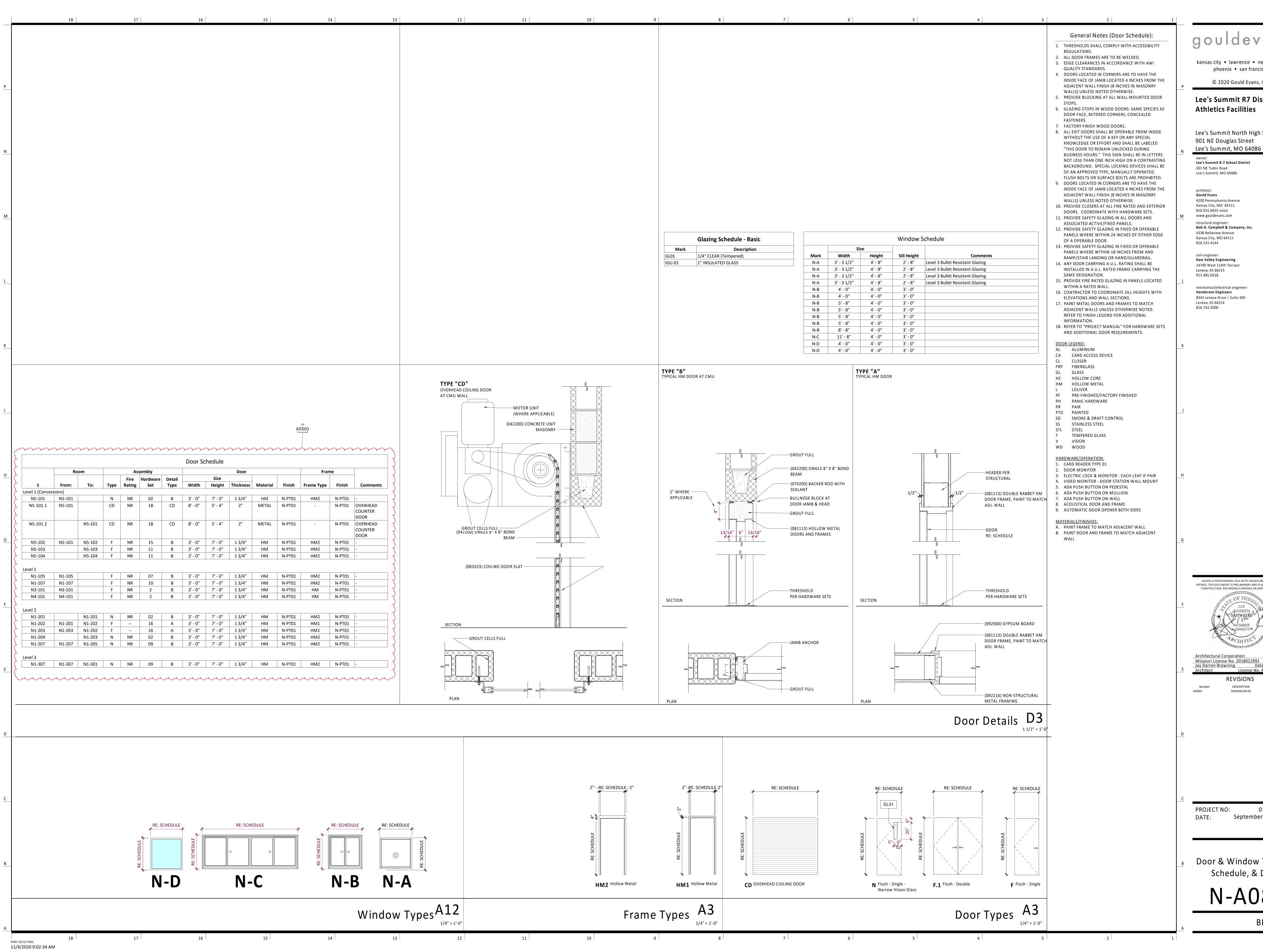
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ADDENDUM 02

REVISIONS

September 28, 2020

**Exterior Enclosure** Types & Interior **Partition Types** 



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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District 301 NE Tudor Road

4200 Pennsylvania Avenue

Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111

civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215

913.485.0318 mechanical/electrical engineer:

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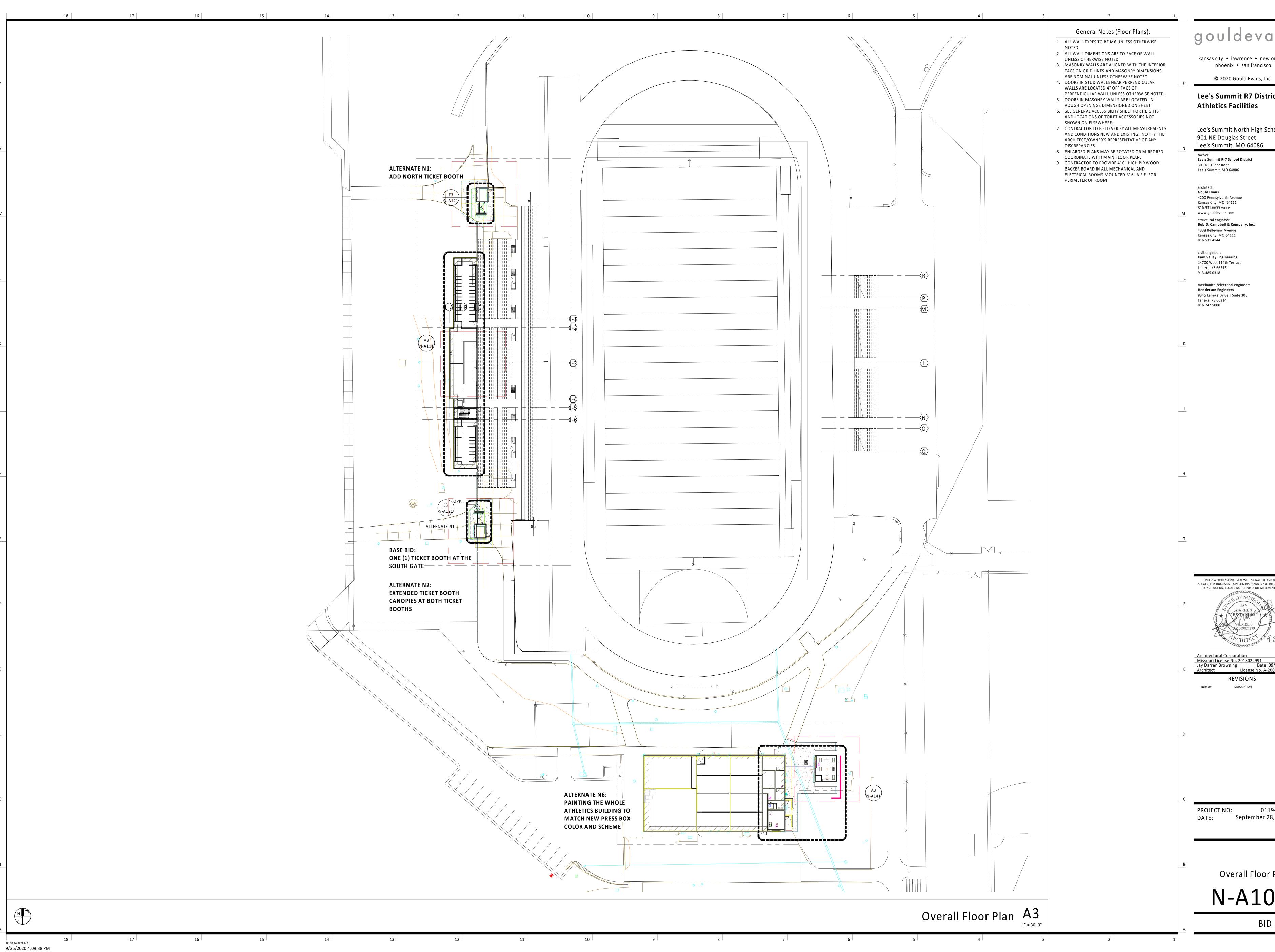
ADDENDUM 03

PROJECT NO:

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Door & Window Types, Schedule, & Details

N-A080



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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street Lee's Summit, MO 64086

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com

structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111 816.531.4144

civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215 913.485.0318

mechanical/electrical engineer: **Henderson Engineers** 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214

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Missouri License No. 2018022991

Jay Darren Browning Date: 09/28/2020

Architect License No. A-2009027279 REVISIONS

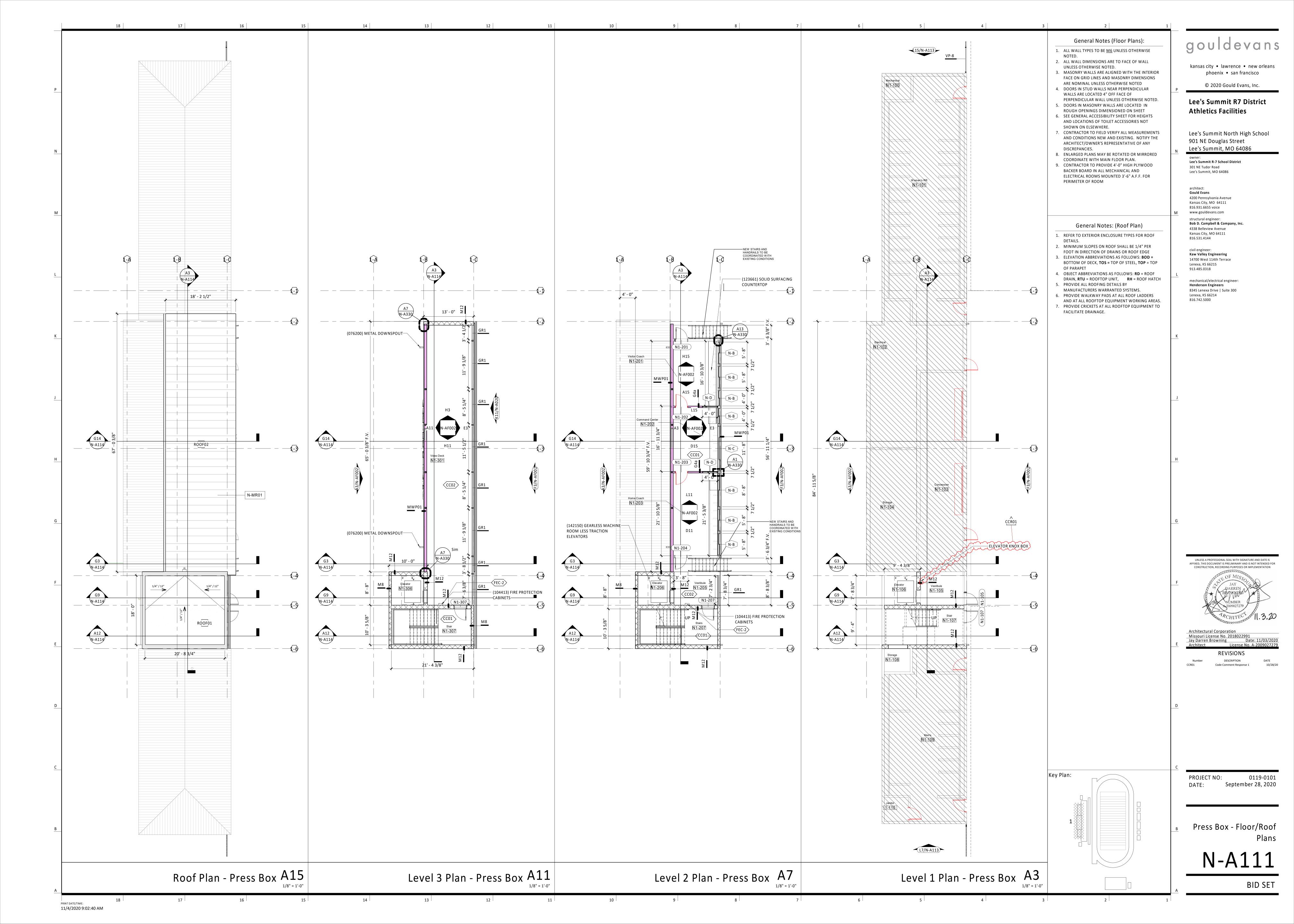
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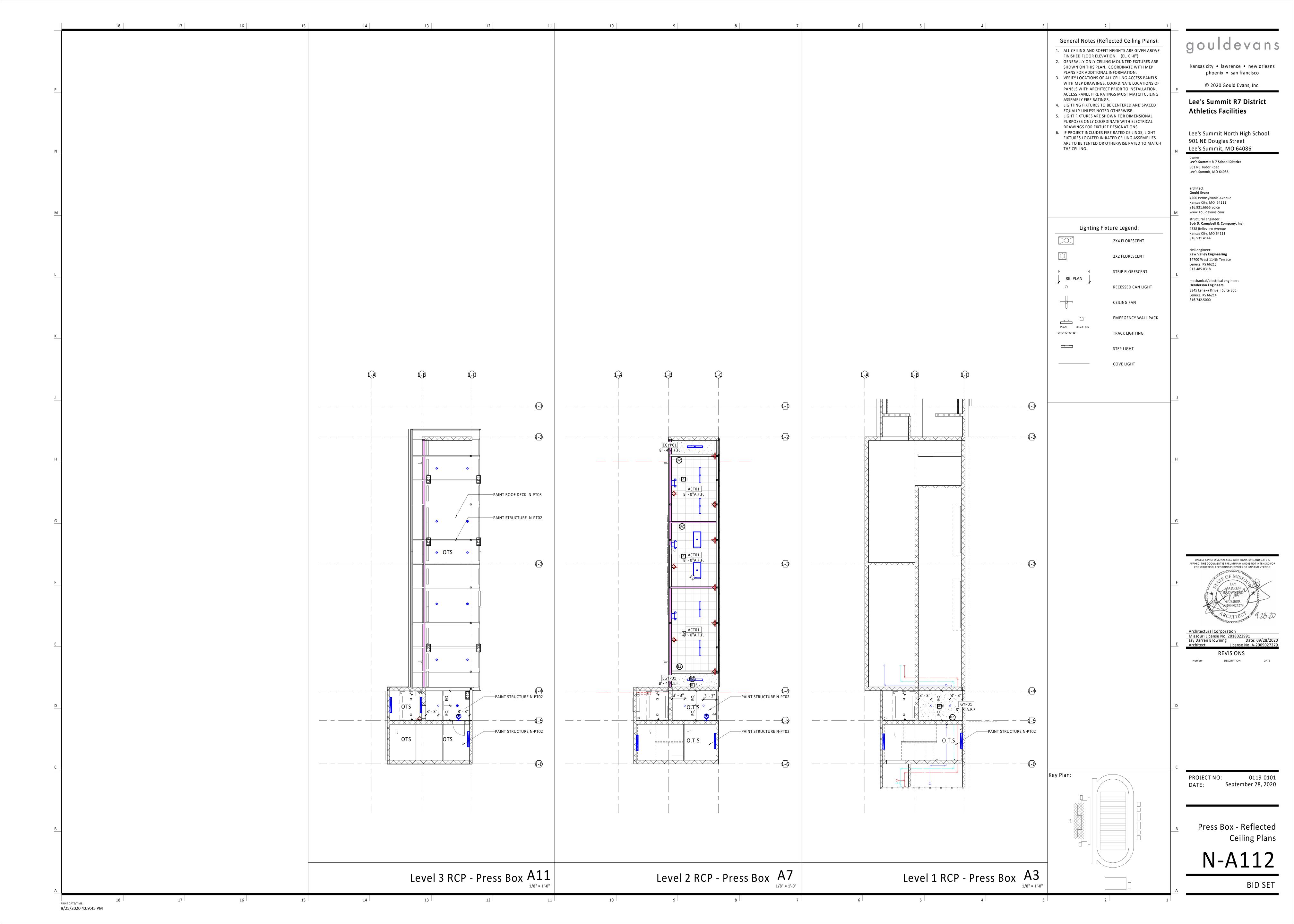
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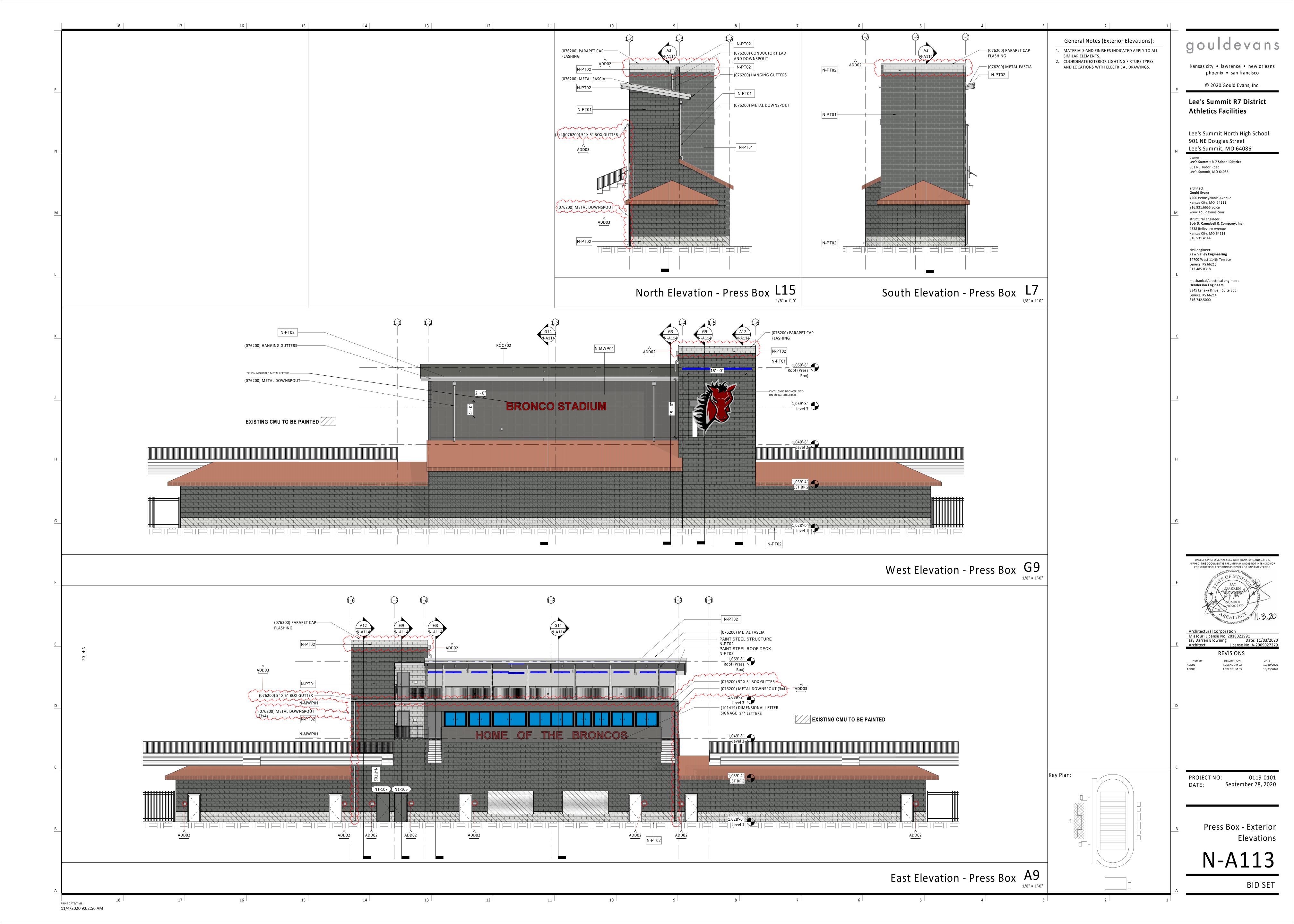
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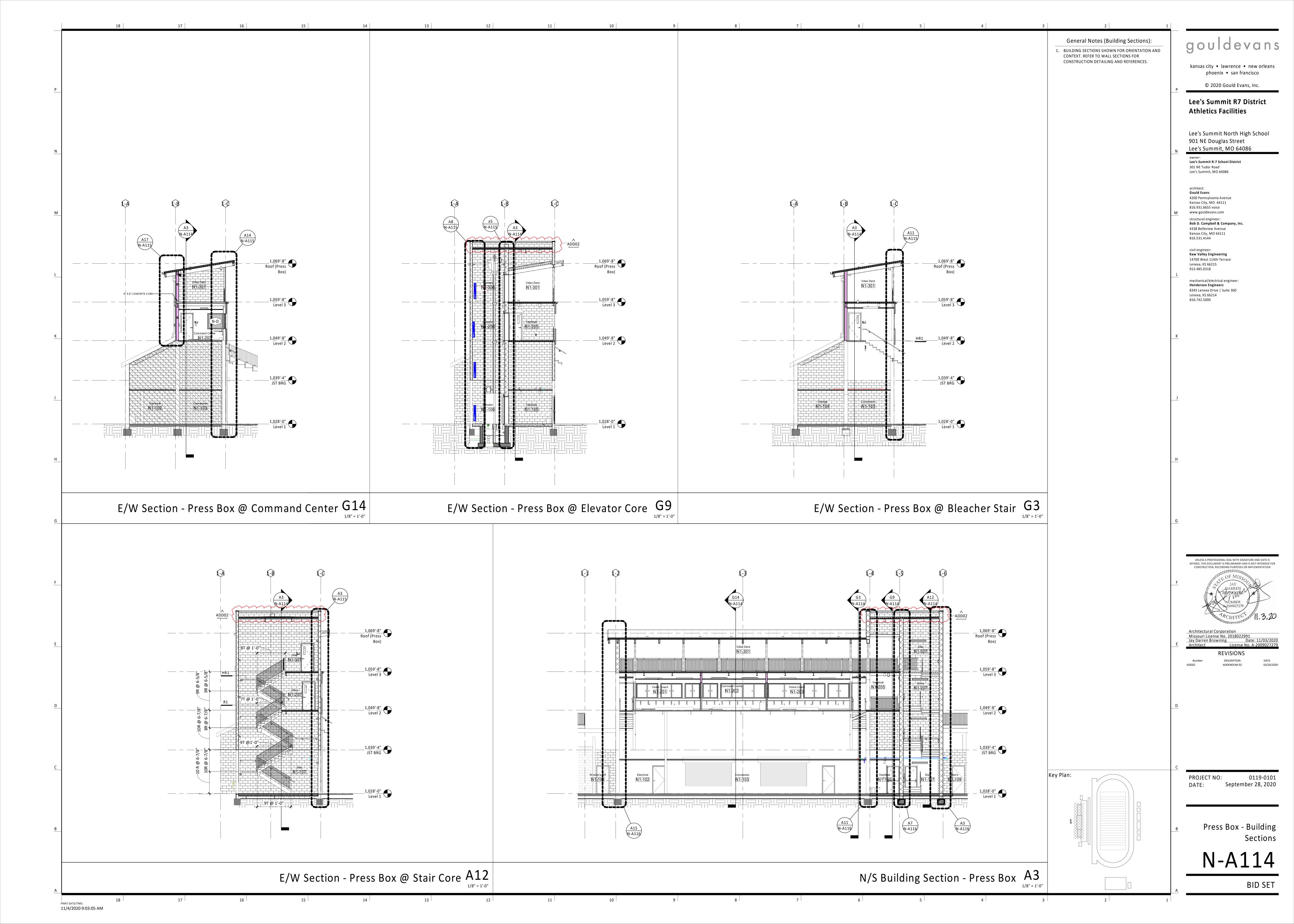
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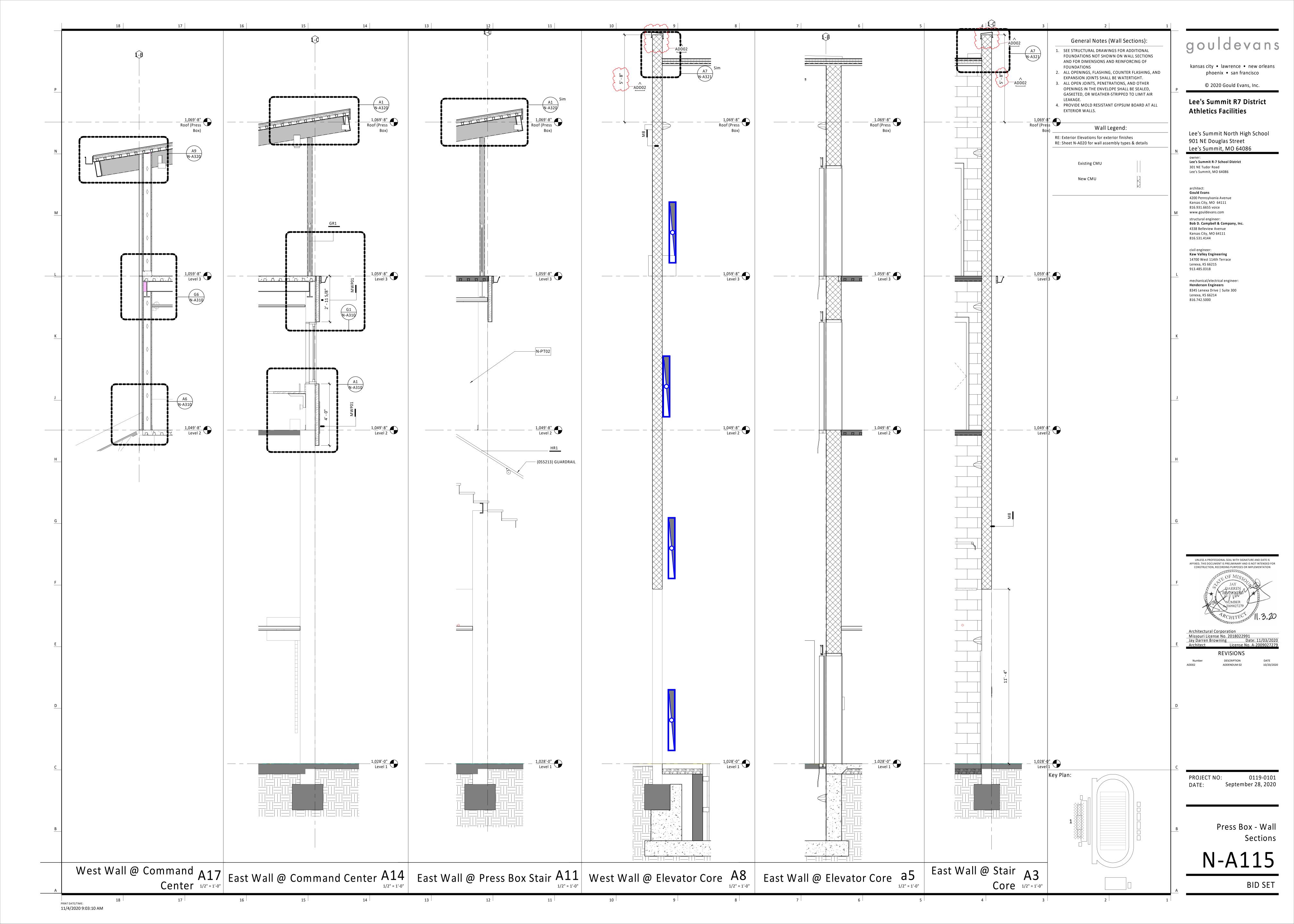
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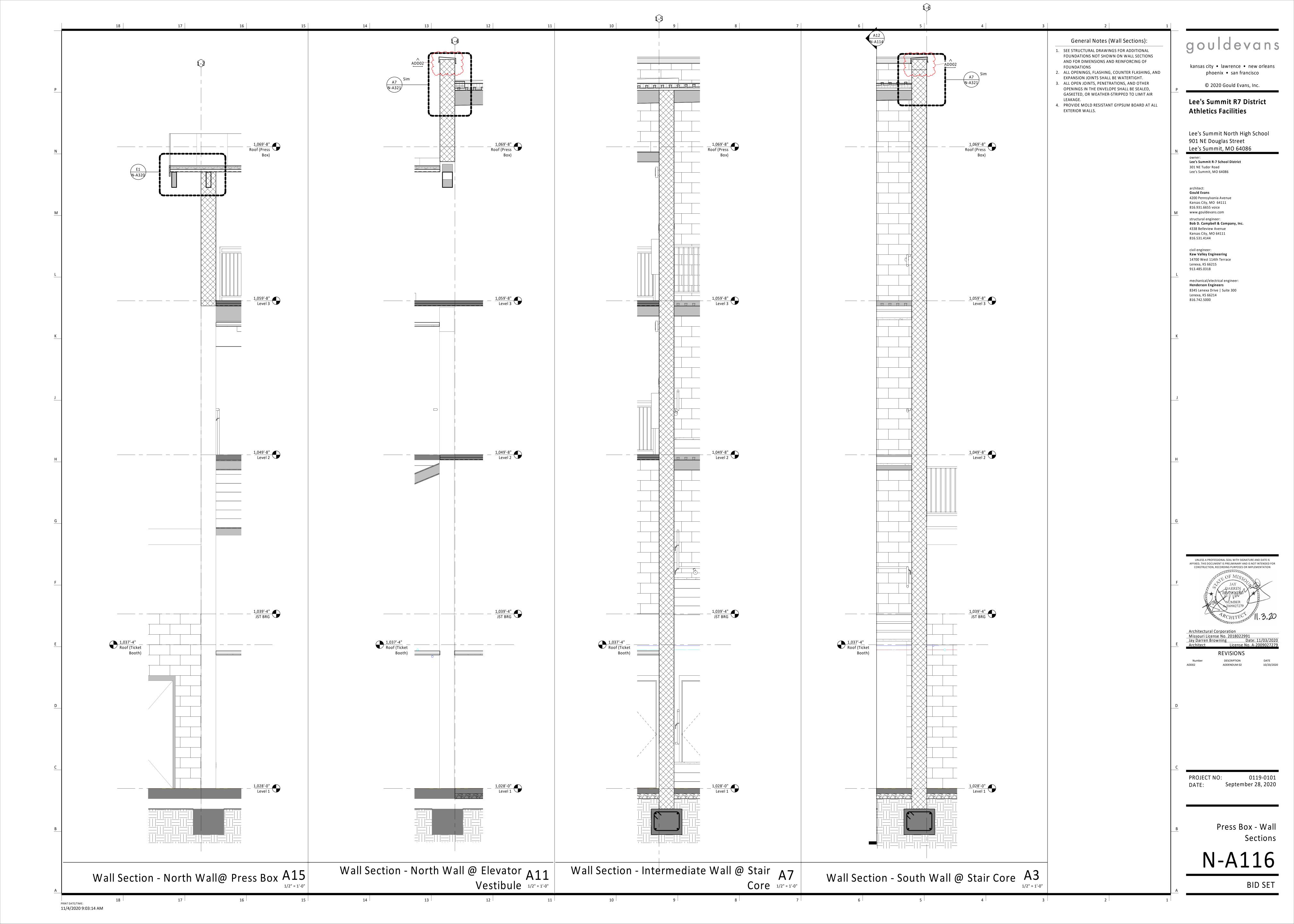


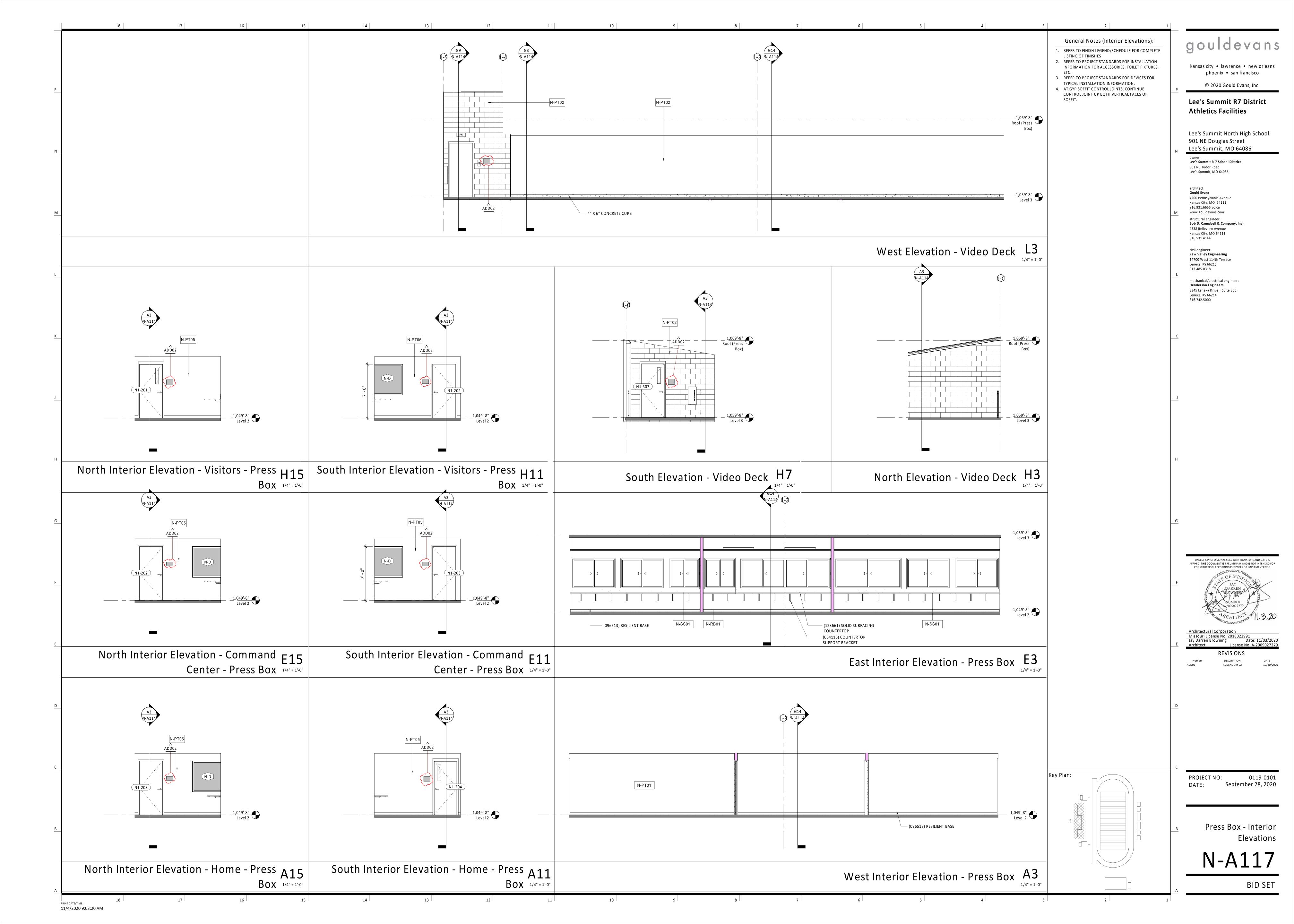


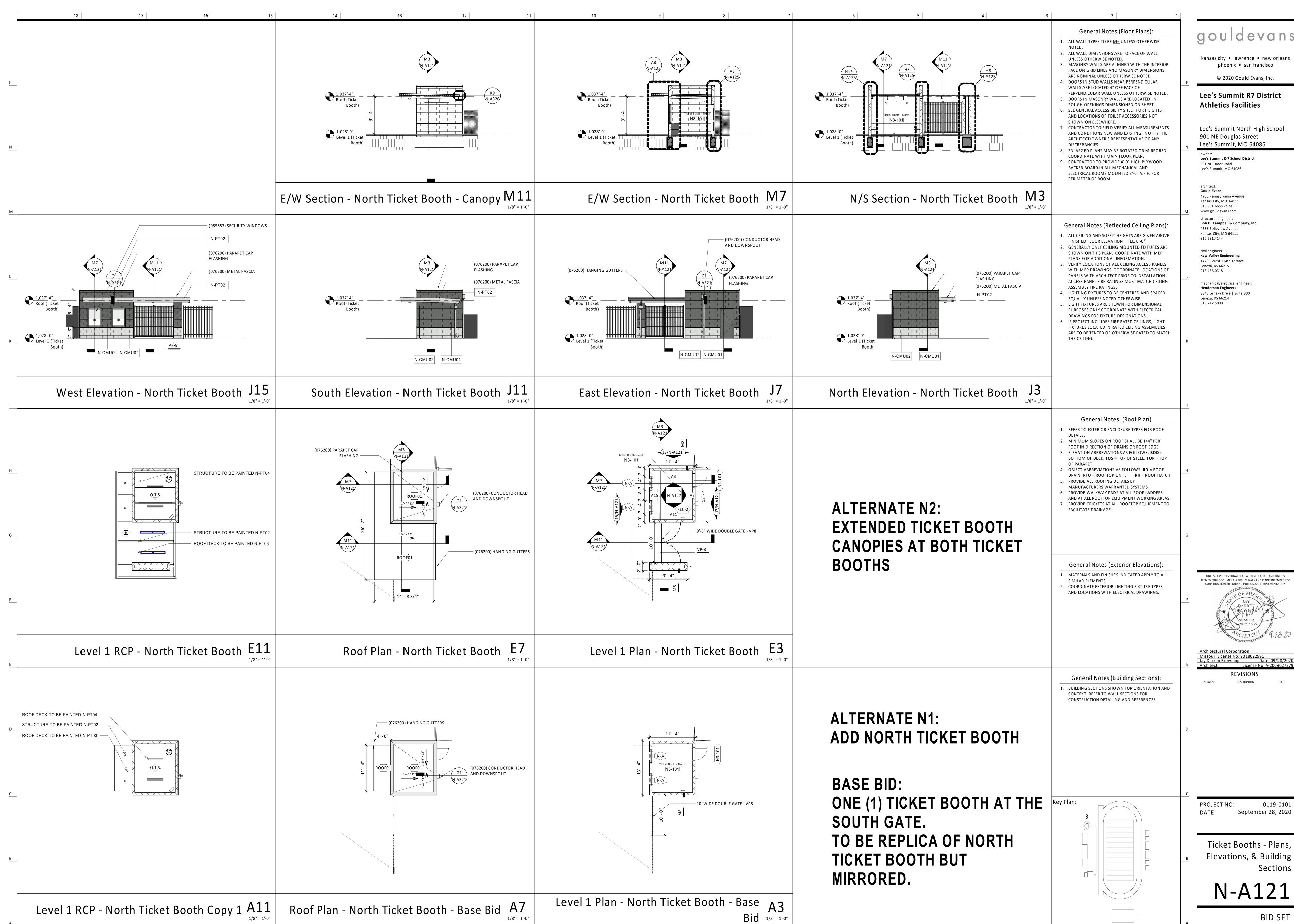












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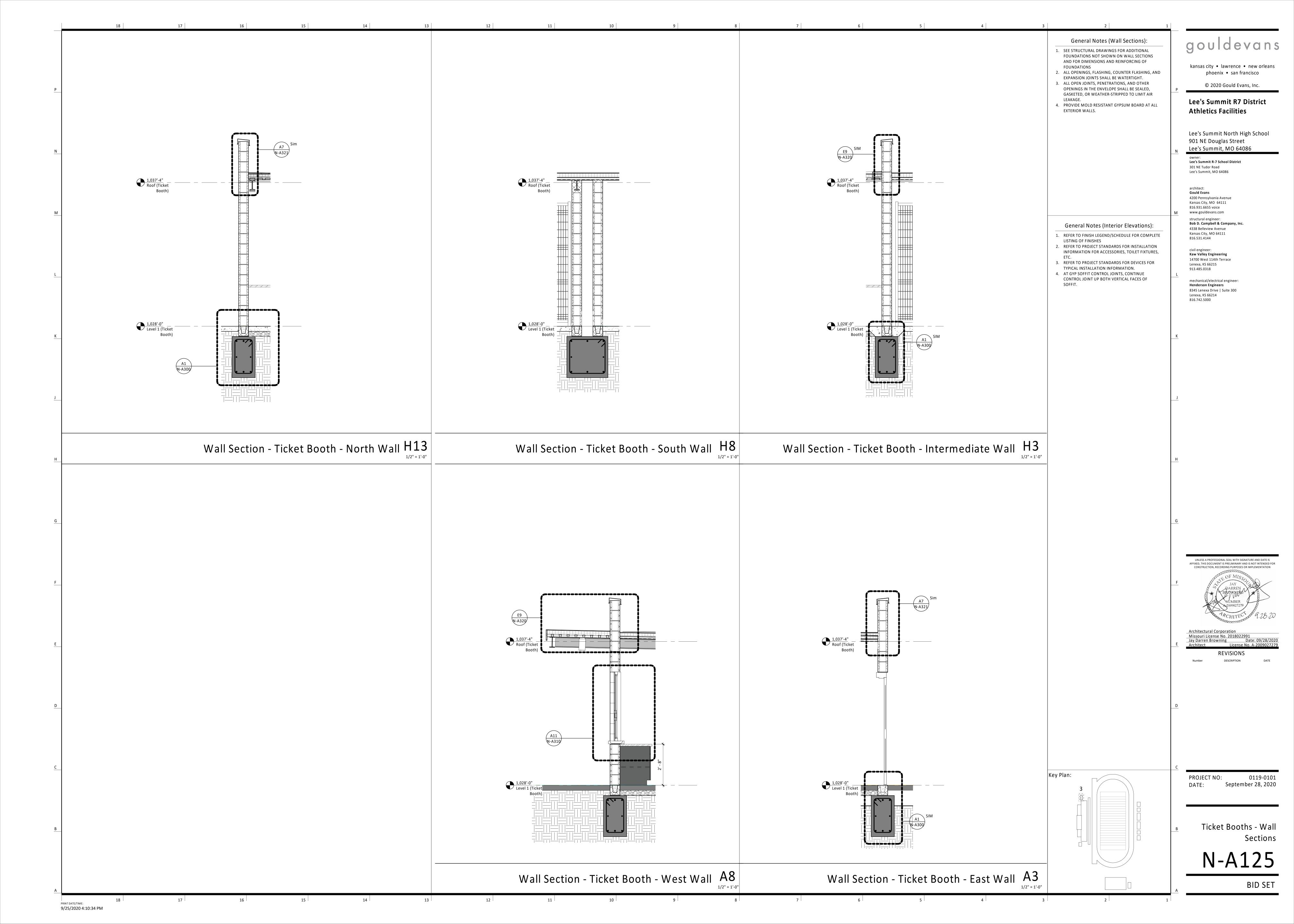
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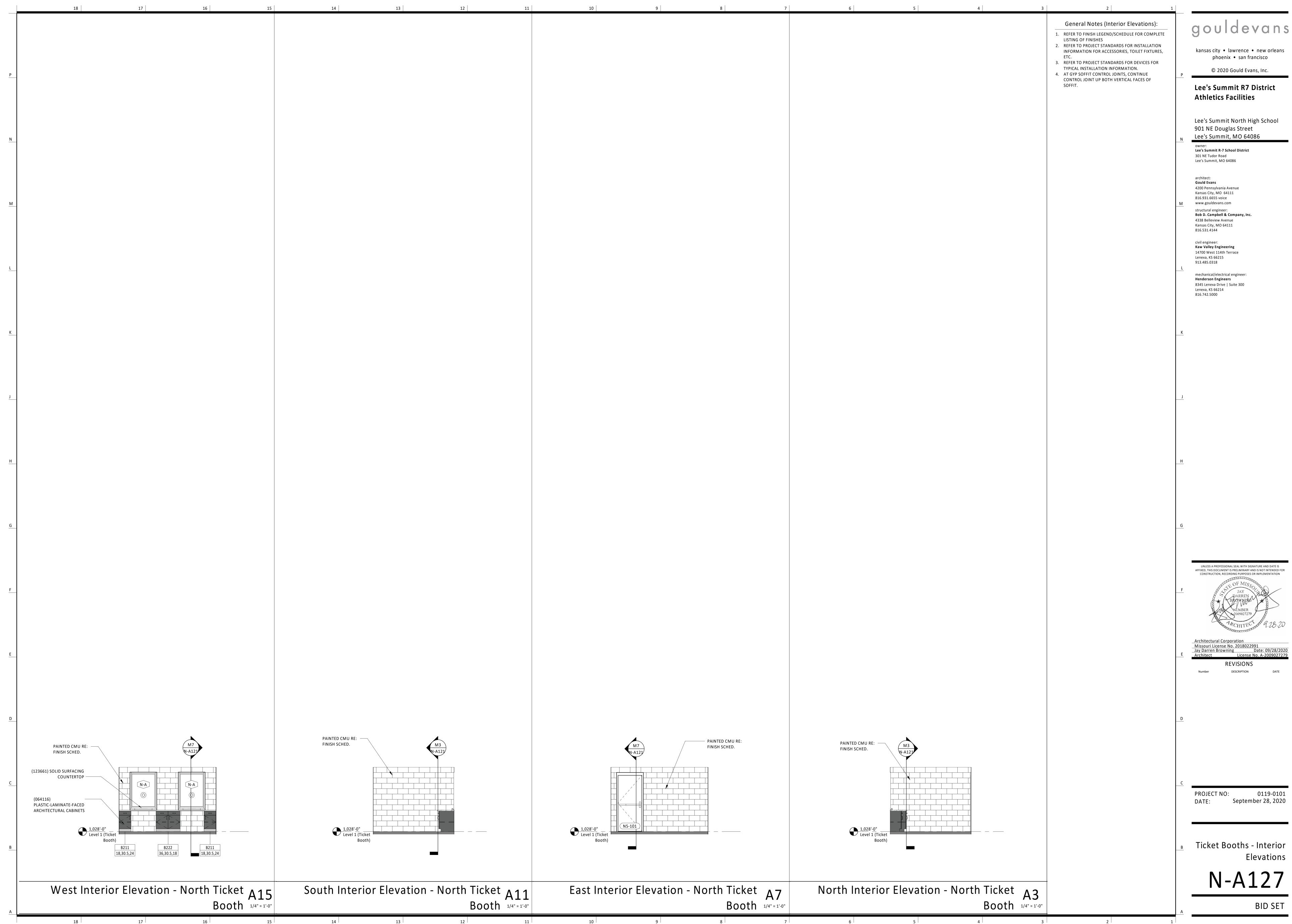
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Lee's Summit R7 District

Lee's Summit North High School



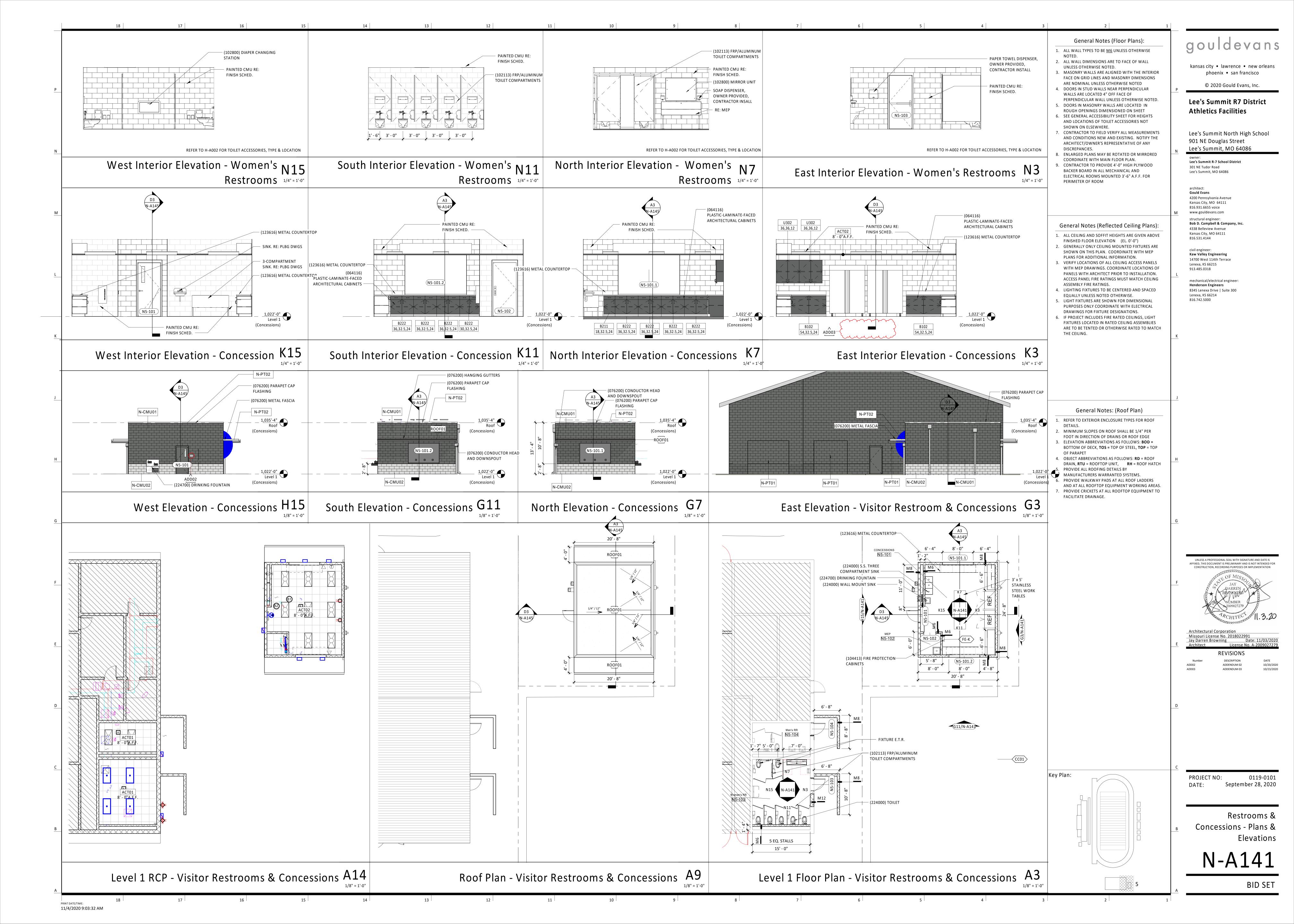


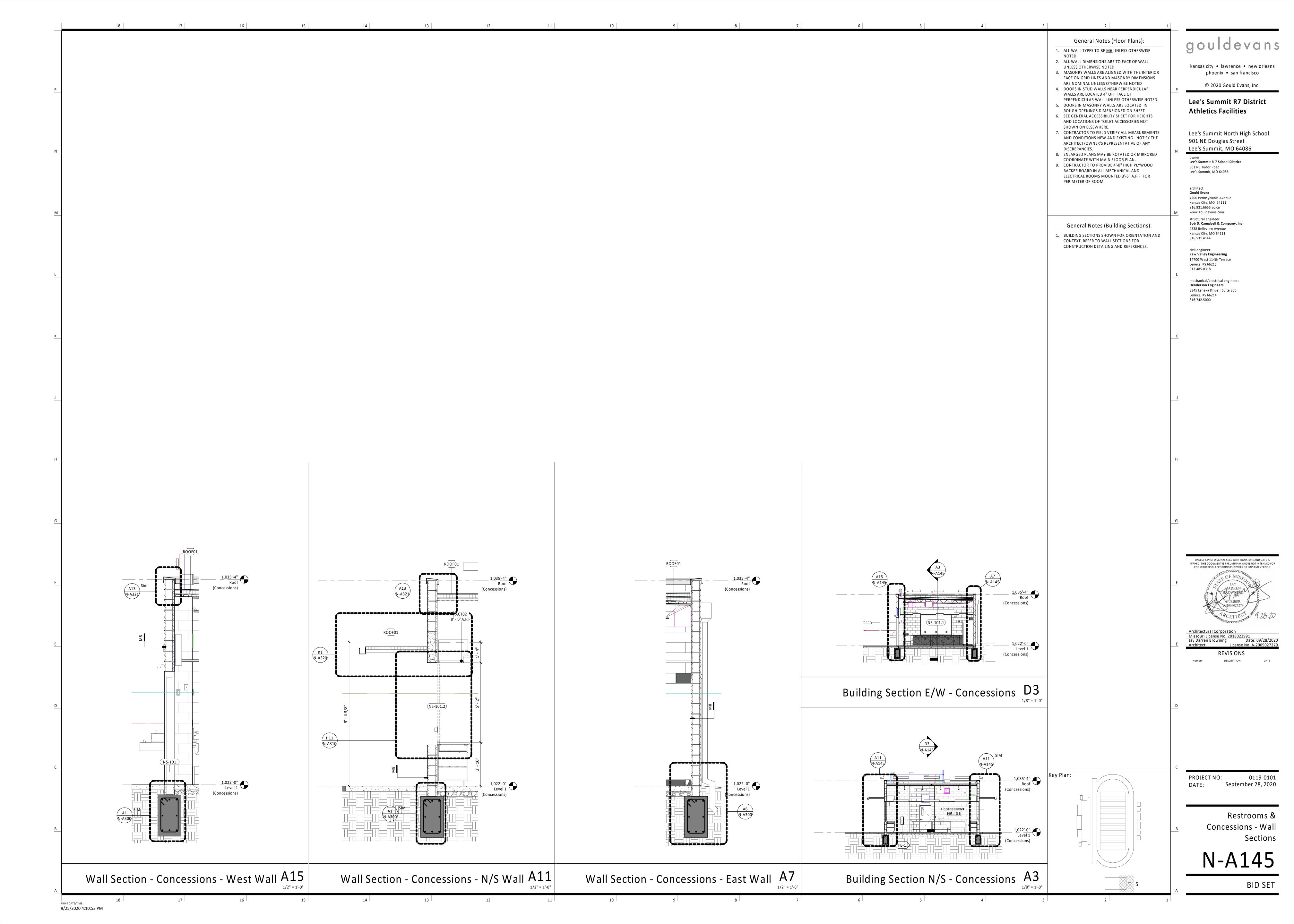
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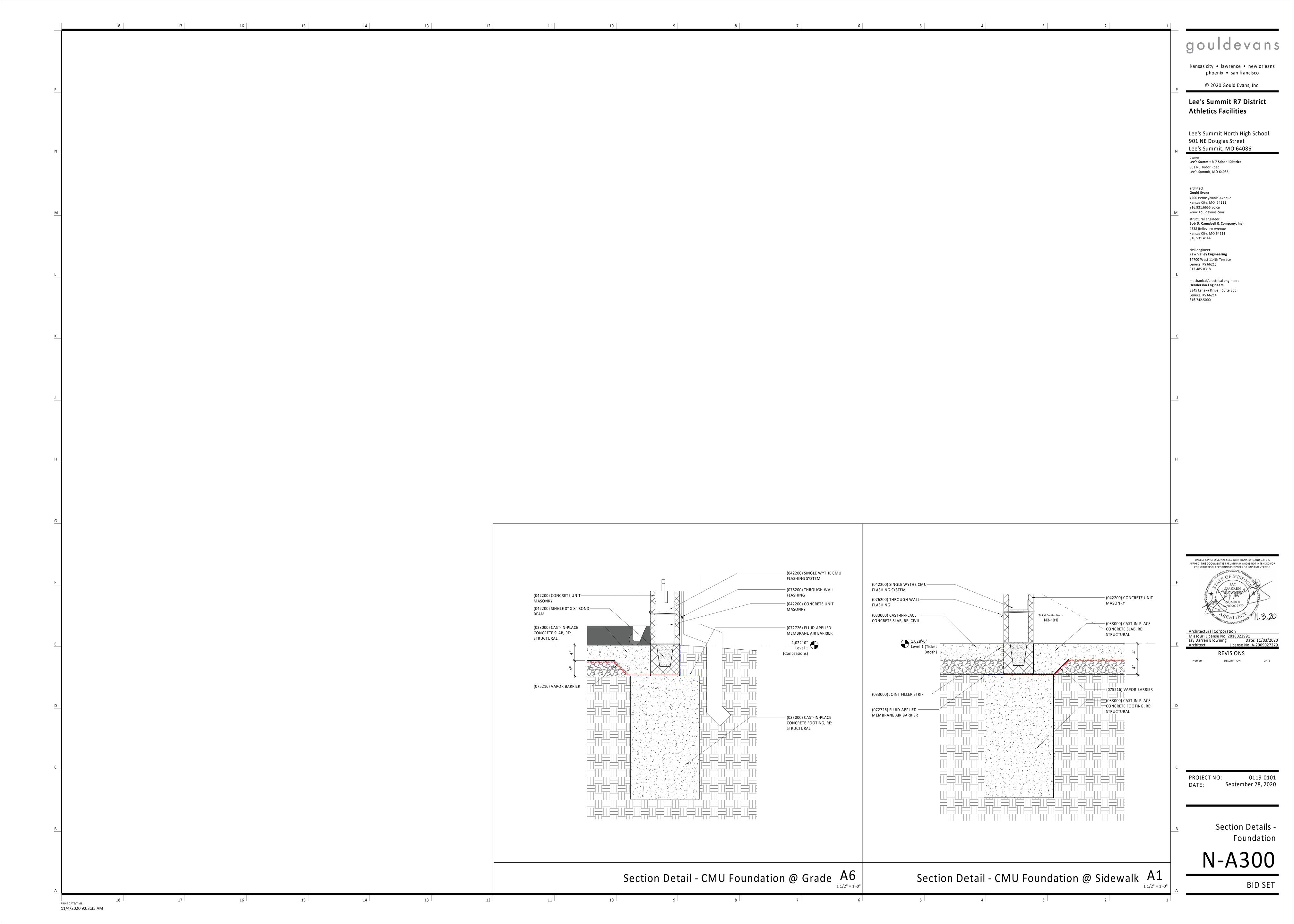
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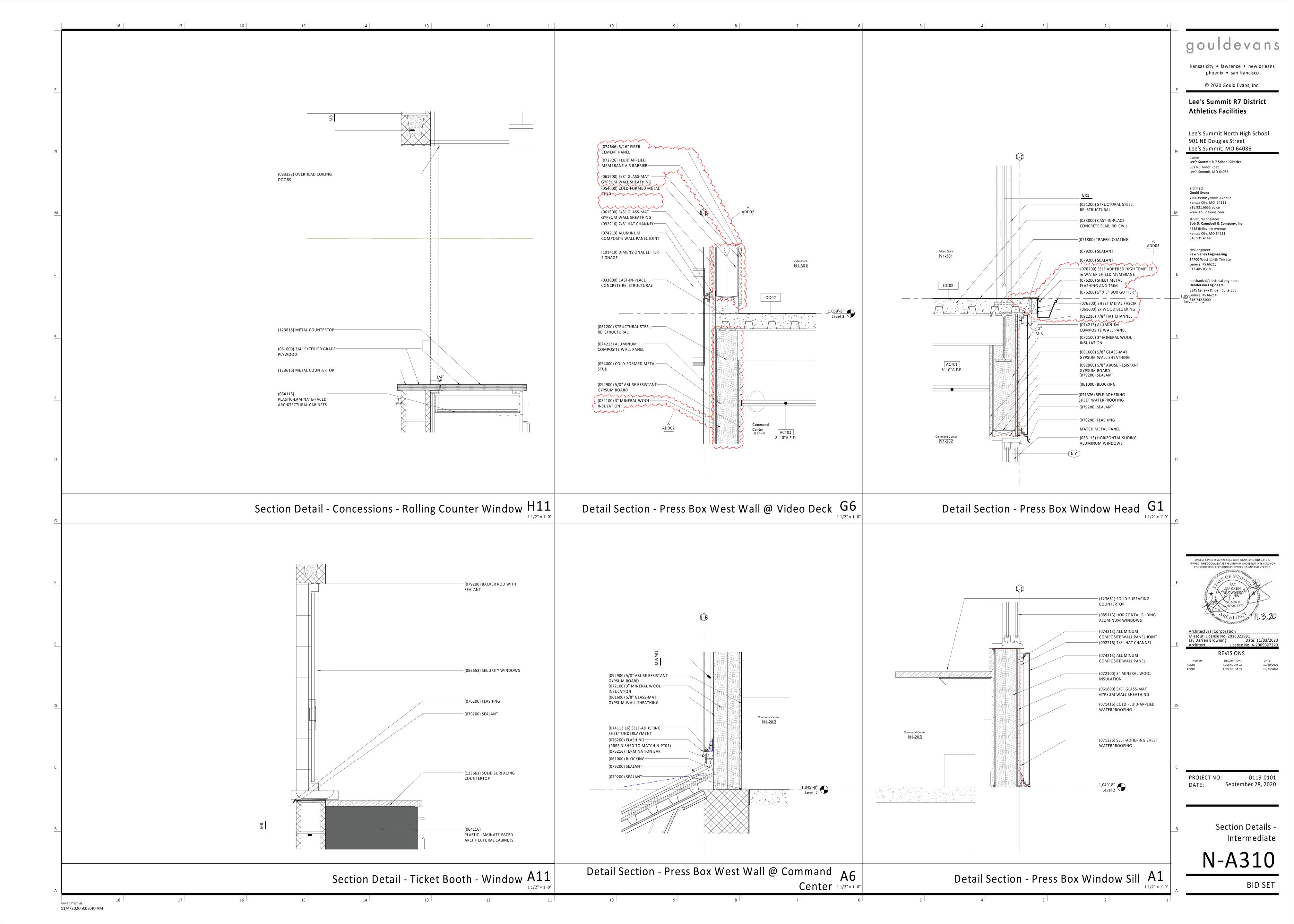
Elevations

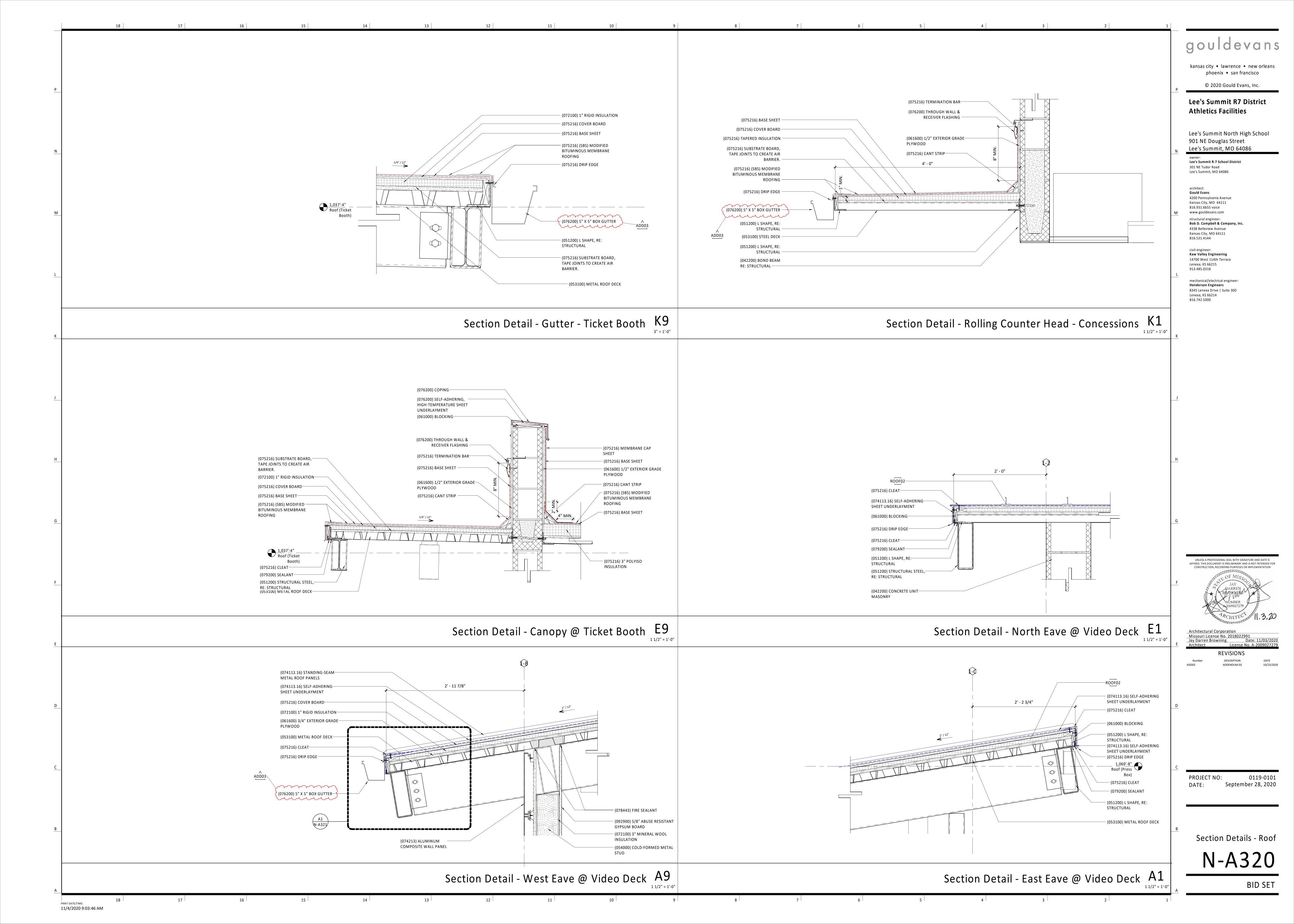
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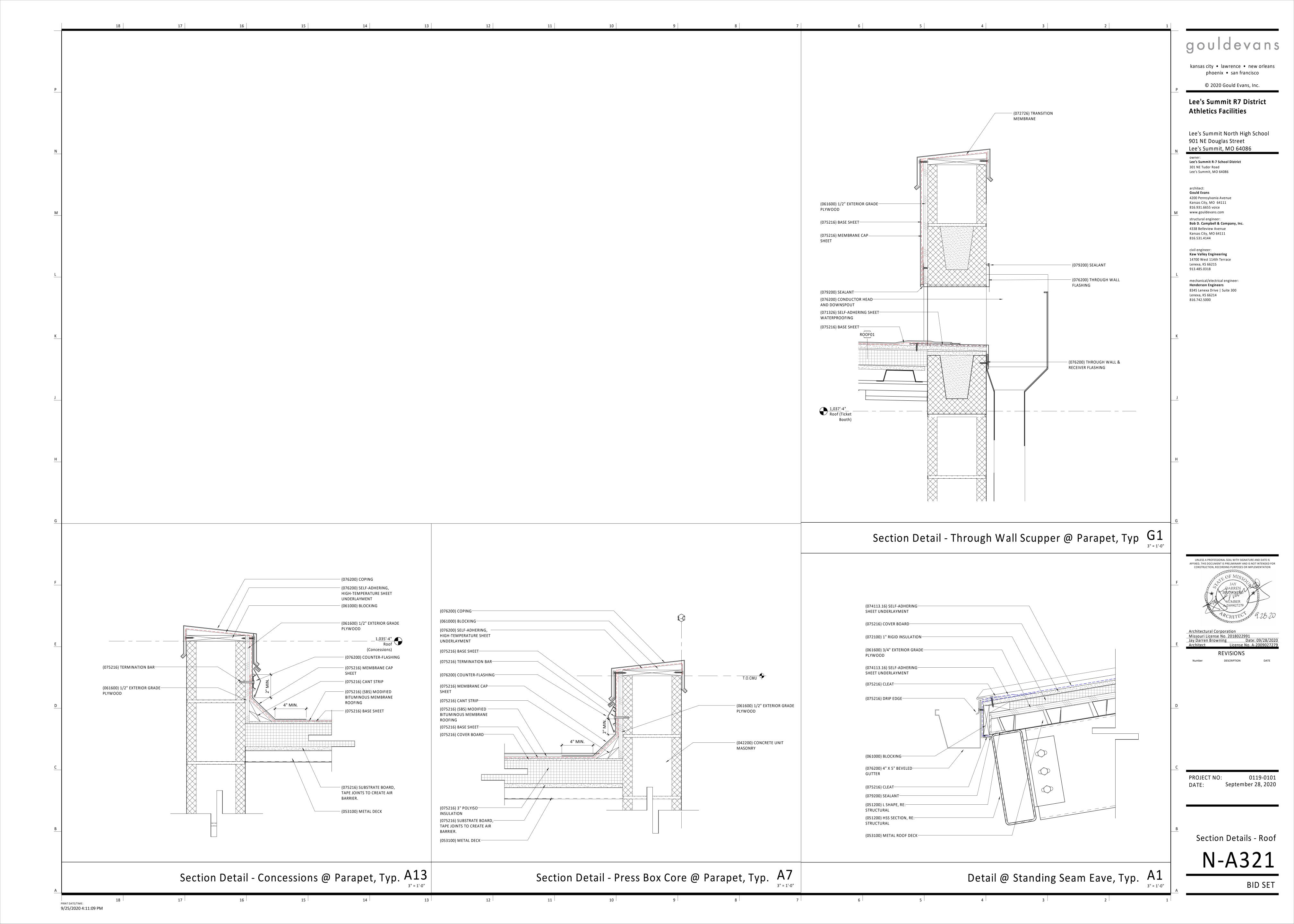


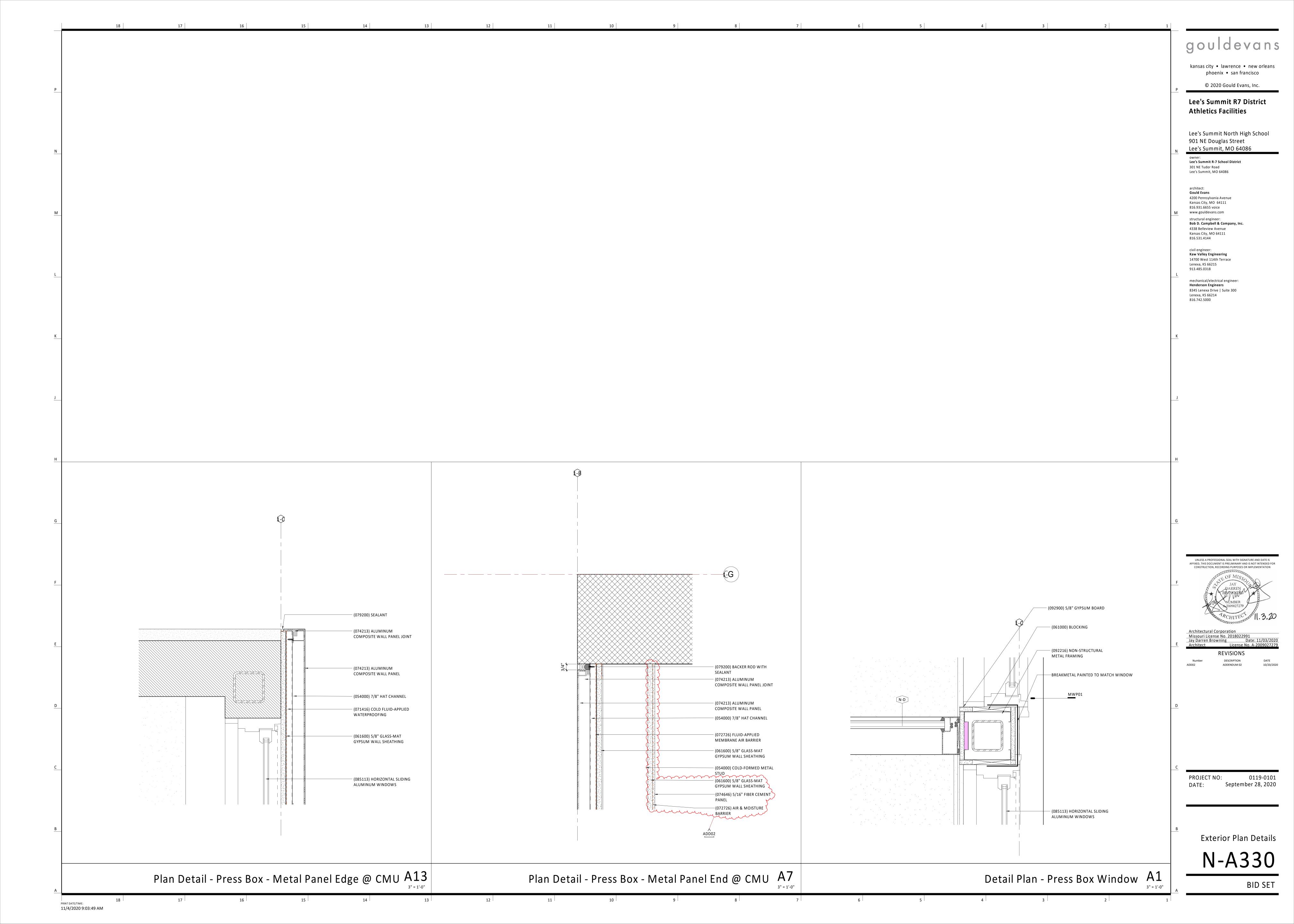


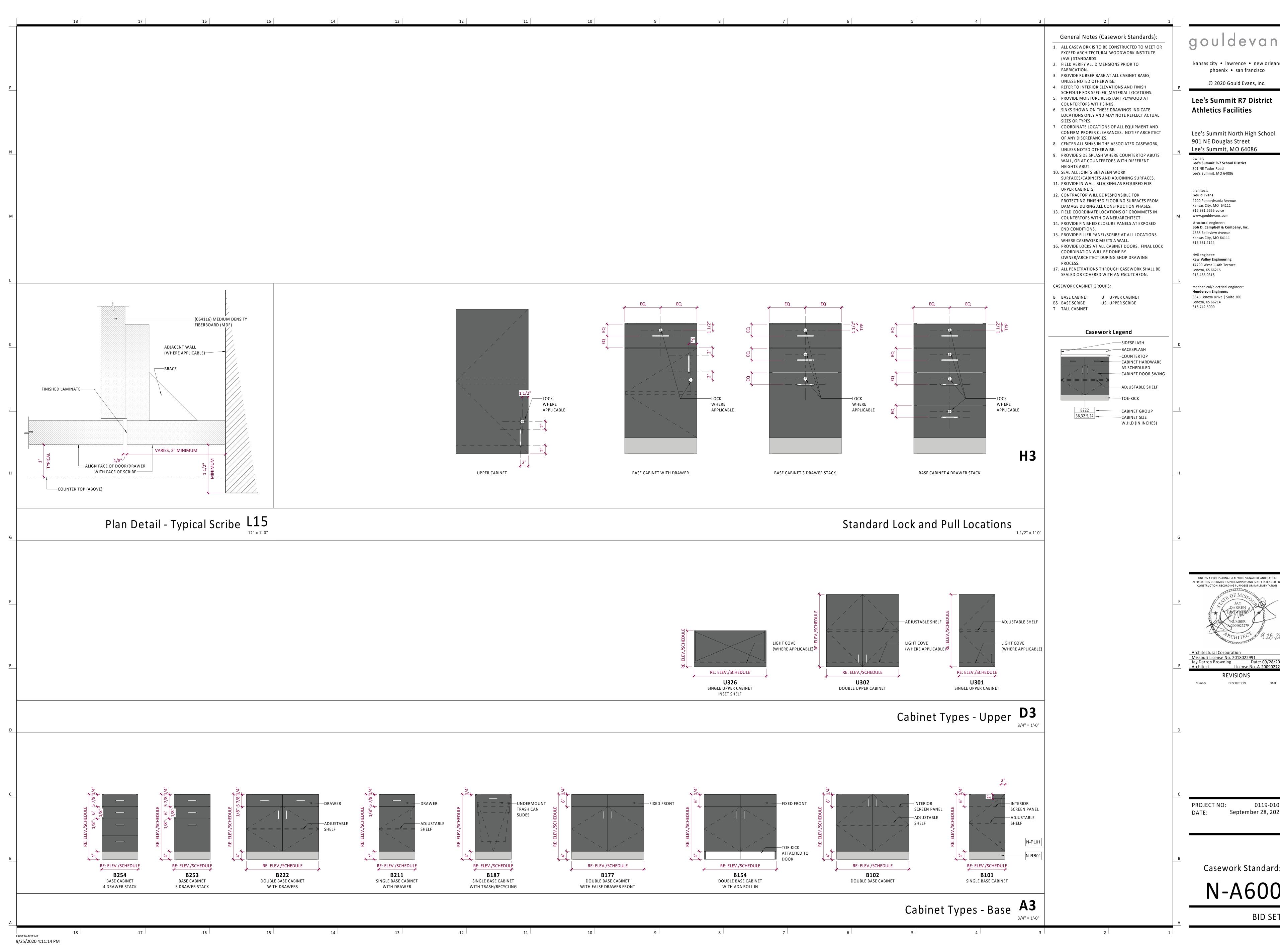












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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District

4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com

structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111

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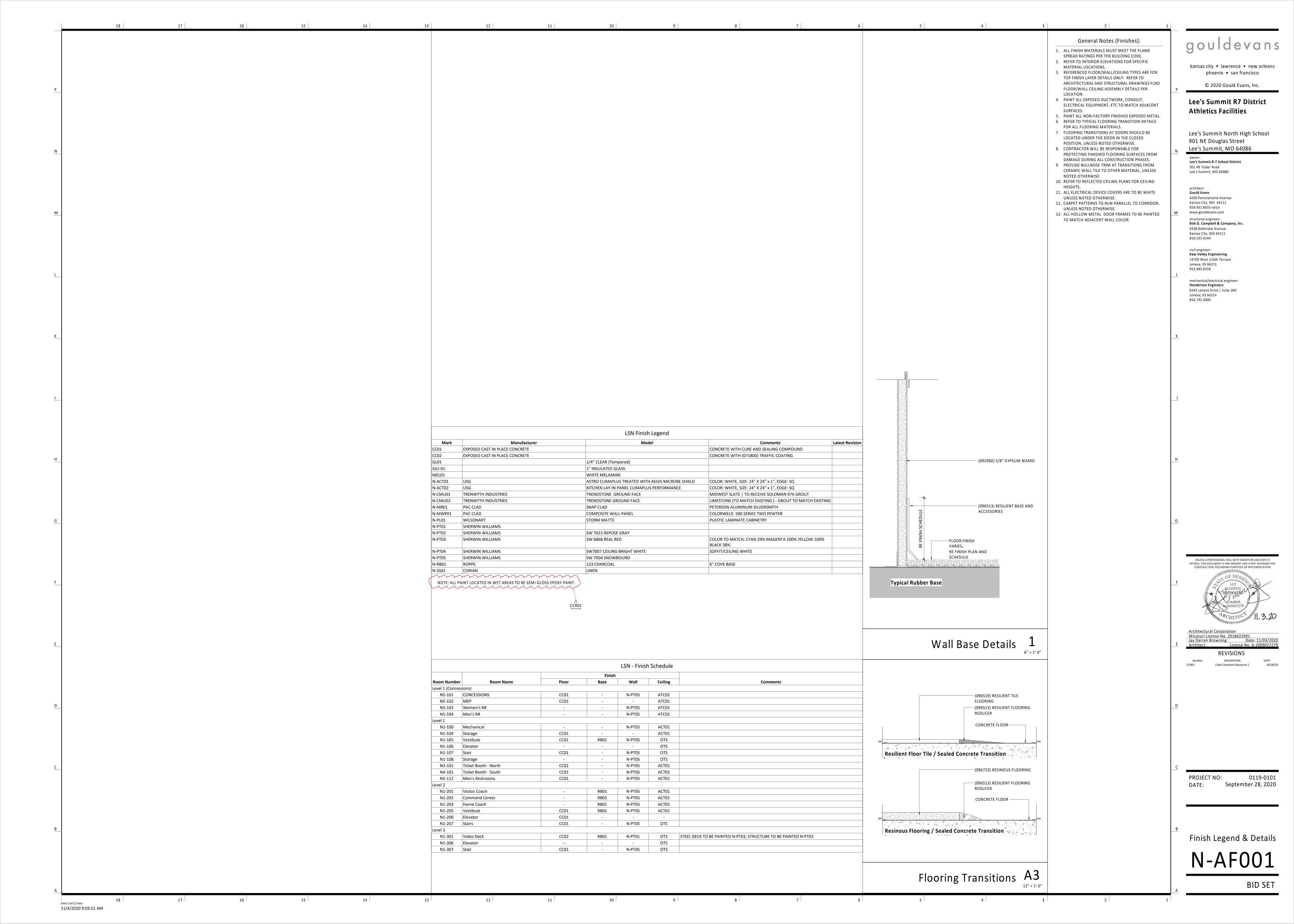
mechanical/electrical engineer: Henderson Engineers 8345 Lenexa Drive | Suite 300

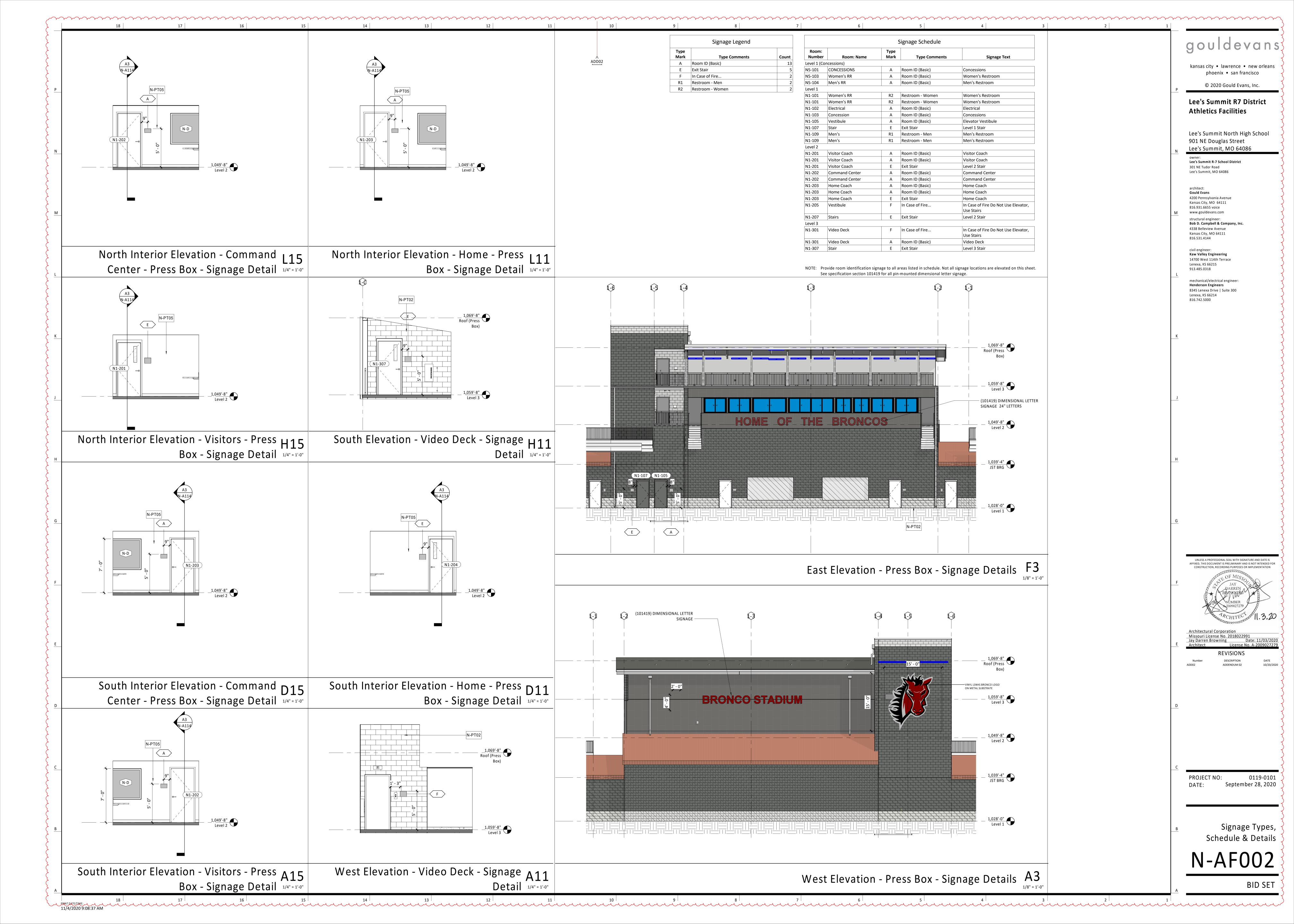


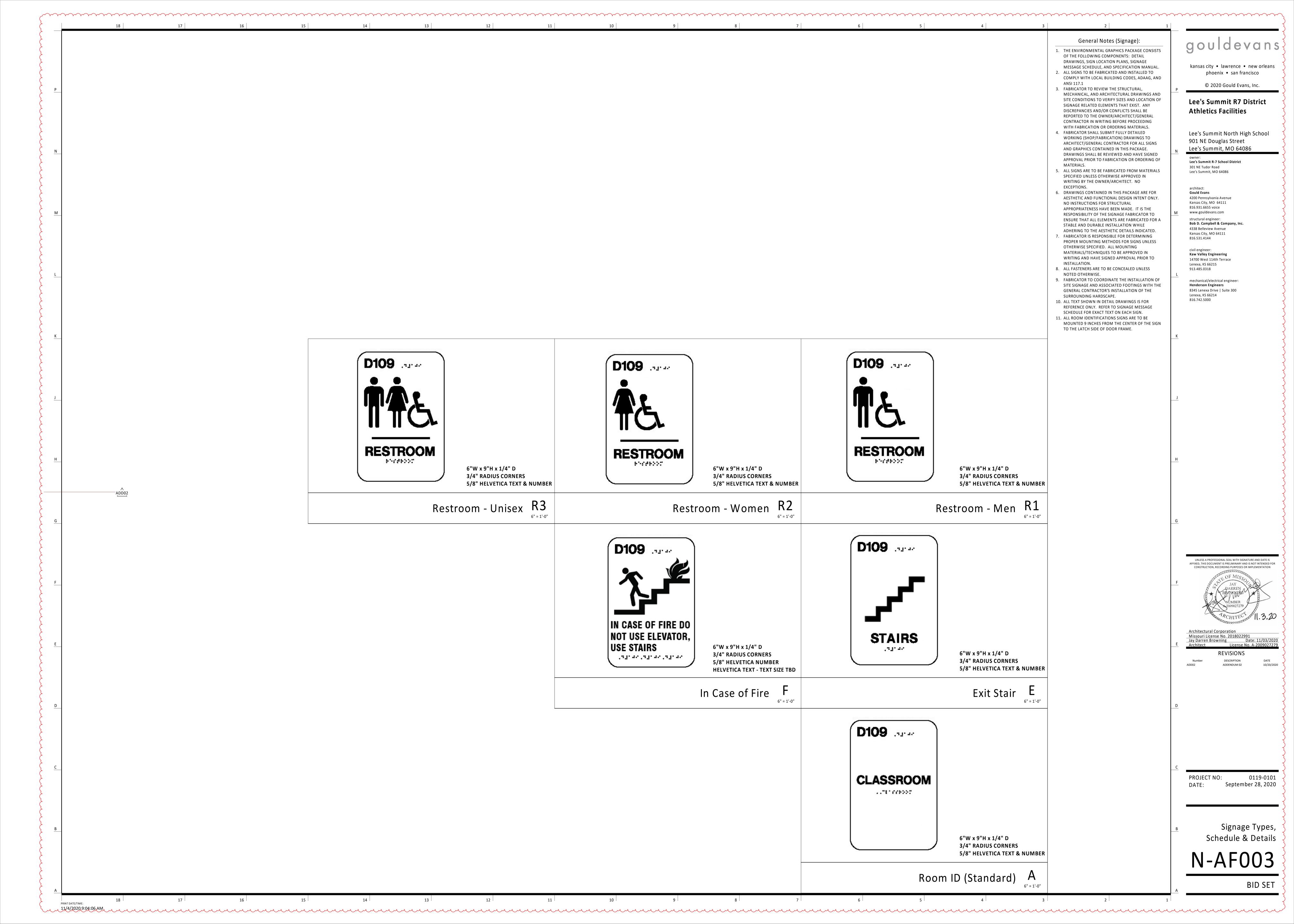
REVISIONS

September 28, 2020

Casework Standards







PLUMBING SYMBOLS THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED. V2.02 STANDARD MOUNTING HEIGHTS PIPING SYMBOLS PIPING LINETYPES OXYGEN OUTLET CLINIC SERVICE SINKS (RIM) NITROUS OXIDE OUTLET -----SCW---- SOFTENED COLD WATER (SCW) HOSE BIBB (CENTERLINE) MEDICAL AIR OUTLET ICE MAKER OUTLET BOX (CENTER OF BOX) NITROGEN OUTLET ————HWR——— DOMESTIC HOT WATER RECIRC. (HWR) JANITOR'S SINK FAUCET FITTINGS (CENTERLINE) MEDICAL VACUUM INLET \_\_\_\_ LAVATORY OR SINK STANDARD HEIGHT (RIM) FLOOR SINK (FS), SIZE & TYPE TRAP PRIMER LINE (T) ADA ACCESSIBLE (RIM) CHILD HEIGHT (RIM) 24" FLOOR DRAIN (FD), SIZE & TYPE SOIL PIPING - ABOVE FLOOR (S) NON FREEZE WALL HYDRANT (AFG TO CENTERLINE) ROOF DRAIN (RD), SIZE & TYPE SHOWER HEAD WASTE PIPING - ABOVE FLOOR (W) BALL VALVE MEN (CENTERLINE) WOMEN (CENTERLINE) — W— WASTE PIPING - BELOW FLOOR (W) CONTROL VALVE SHOWER VALVE GREASE WASTE - ABOVE FLOOR (GW) → SHUTOFF VALVE STANDARD HEIGHT - MEN (CENTERLINE) STANDARD HEIGHT - WOMEN (CENTERLINE) — GW — GREASE WASTE - BELOW FLOOR (GW) CHECK VALVE ADA ACCESSIBLE (CENTERLINE) 38" TO 48" BALANCING VALVE WITH PRESSURE PORTS CGWV——CGWV——COMBINATION GREASE WASTE AND VENT (CGWV) SURGEON'S SCRUB-UP SINK (FRONT RIM) WATER METER TUB VALVE STANDARD HEIGHT (CENTERLINE) ST——ST——— STORM DRAIN - ABOVE FLOOR (ST) STRAINER ADA ACCESSIBLE CENTER BETWEEN GRAB BAR AND TUB RIM STRAINER WITH BLOWOFF — — ·ST· — — STORM DRAIN - BELOW FLOOR (ST) STANDARD HEIGHT (RIM) RELIEF/SAFETY VALVE OST—OST—OVERFLOW STORM DRAIN - ABOVE FLOOR (OST) ADA ACCESSIBLE (RIM) CHILD HEIGHT (RIM) SOLENOID VALVE — VBG — VENT BELOW GRADE (VBG) WASHING MACHINE OUTLET BOX (RIM) PRESSURE REDUCING VALVE — VBF — VENT BELOW FLOOR (VBF) WATER CLOSET ─────────── GAS PRESSURE REGULATOR ID——— INDIRECT DRAIN (ID) STANDARD HEIGHT (RIM) ADA ACCESSIBLE (TOP OF SEAT) 17" TO 19" THERMOSTATIC MIXING VALVE CONDENSATE DRAIN - HIGH EFFICIENCY RTU (CDH) CHILD HEIGHT (RIM) PIPE ANCHOR CD—CD—CONDENSATE DRAIN (CD) WATER COOLER OR DRINKING FOUNTAIN STANDARD HEIGHT (SPOUT) EXPANSION JOINT ———ACD——— AUXILIARY CONDENSATE DRAIN (ACD) ADA ACCESSIBLE (SPOUT) CHILD HEIGHT (SPOUT) BACKFLOW PREVENTER PRESSURE GAUGE ————G———— NATURAL GAS (G) THERMOMETER — — -G- — NATURAL GAS ON ROOF (G) INSTALL PLUMBING FIXTURES AT THE MOUNTING HEIGHTS SHOWN ABOVE UNO IN THE ARCHITECTURAL DRAWINGS OR ELSEWHERE IN THE — UNION ———MPG——— MEDIUM PRESSURE NATURAL GAS (MPG) CONSTRUCTION DOCUMENTS. FINAL APPROVAL OF LOCATIONS BY ARCHITECT. MOUNTING HEIGHTS LISTED ABOVE, OR ELSEWHERE IN THE FLANGE CONNECTION — MPG — MEDIUM PRESSURE NATURAL GAS ON ROOF (MPG) CONSTRUCTION DOCUMENTS, ARE AFF, UNO. ALL DEVICES SHALL BE INSTALLED IN COMPLIANCE WITH CURRENT ADA AND LOCAL HOSE BIBB (HB) NPW—NON-POTABLE WATER (NPW) REQUIREMENTS. NON-FREEZING WALL HYDRANT (NW) LIQUEFIED PETROLEUM GAS (LPG) ANNOTATION MANUAL / AUTOMATIC AIR VENT OR VACUUM RELIEF WATER SERVICE (WS) PLUMBING PLAN NOTE CALLOUT FP FIRE PROTECTION (FP) — PRESSURE / VACUUM SWITCH ———PD——— CONDENSATE PUMP DISCHARGE (PD) PLUMBING EQUIPMENT DESIGNATION. (CONTRACTOR CLEANOUT FURNISHED AND INSTALLED). REFER TO PLUMBING FIXTURE VENT PIPING (V) OR EQUIPMENT SCHEDULES ACID WASTE - ABOVE FLOOR (AW) WALL CLEANOUT (WCO) EQUIPMENT DESIGNATION (OWNER FURNISHED, — — AW — — ACID WASTE - BELOW FLOOR (AW) CONTRACTOR INSTALLED) FLOOR CLEANOUT (FCO) ACID VENT (AV) EXTERIOR CLEANOUT (ECO) MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR ——GWS——— GRAY WATER (GWS) FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE) ELBOW UP CA——CA——COMPRESSED AIR (CA) ELBOW DOWN CONNECTION POINT OF NEW WORK TO EXISTING ———MA——— MEDICAL AIR (MA) ——MV—— MEDICAL VACUUM (VE) DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL TEE DOWN NUMBER LOWER NUMBER INDICATES SHEET NUMBER HE—HE—HELIUM (HE) ELBOW UP WITH SHUT-OFF VALVE (SOV) INSTRUMENT AIR (IA) SECTION CUT DESIGNATION ELBOW DOWN WITH SHUT-OFF VALVE (SOV) INSTRUMENT VACUUM (IV) ABBREVIATIONS TEE UP WITH SHUT-OFF VALVE (SOV) N2—N2—NITROGEN (N2) TEE DOWN WITH SHUT OFF VALVE (SOV) ADA AMERICANS WITH MINIMUM N2O NITROUS OXIDE (N20) DISABILITIES ACT NORMALLY CLOSED WATER HAMMER ARRESTER (WHA) WITH PDI SIZES, ABOVE FINISHED FLOOR N/O NORMALLY OPEN (A, B, C, D, & E) O2—O2YGEN (O2) ABOVE FINISHED GRADE NOT IN CONTRACT OVERFLOW ROOF DRAIN AHU AIR HANDLING UNIT EVAC/WAGD (EV) RECIRCULATION PUMP PDI ACCESS PANEL PLUMBING DRAINAGE BUILDING AUTOMATION INSTITUTE P-TRAP ———CO2——— CARBON DIOXIDE (CO2) PHASE PRV PRESSURE REDUCING BELOW FINISHED FLOOR BELOW FINISHED GRADE POLYVINYL CHLORIDE BOTTOM OF PIPE ———VE——— MEDICAL VACUUM EXHAUST (VE) BOTTOM OF STRUCTURE REINFORCED CONCRETE BTU BRITISH THERMAL UNIT TRAP PRIMER WITH DISTRIBUTION UNIT ———DA——— DENTAL AIR (DA) CONDENSATE PUMP ROOF DRAIN CPVC CHLORINATED POLYVINYL RPM REVOLUTIONS PER ———DV——— DENTAL VACUUM (DV) CHI ORIDE ROOFTOP UNIT COPPER FILTERED WATER (FW1) SQUARE FEET DUCTILE IRON FILTERED WATER W/ SCALE INHIBITOR (FW2) DRAINAGE FIXTURE UNIT STAINLESS STEEL DFU SANITARY SEWER, SOIL DOWNSPOUT ———DA——— REVERSE OSMOSIS (RO) FXISTING TDH TOTAL DYNAMIC HEAD EMS ENERGY MANAGEMENT ROR—ROR—REVERSE OSMOSIS REMINERALIZATION (ROR) TO FLOOR ABOVE EXISTING TO REMAIN TFB TO FLOOR BELOW LINETYPE LEGEND TYP TYPICAL ELECTRIC WATER COOLER UNDERWRITERS FLOOR DRAIN THROUGHOUT THE DRAWINGS DIFFERENT LINETYPES ARE USED IN FROM FLOOR ABOVE LABORATORIES, INC. UNO COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS UNLESS NOTED FROM FLOOR BELOW EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK FINISHED FLOOR OTHERWISE UPS AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. FLOW LINE UNINTERRUPTIBLE THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE POWER SUPPLY FULL LOAD AMPS VITRIFIED CLAY PIPE VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT FLOOR INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, GALLONS PER MINUTE VARIABLE FREQUENCY GPM VFD WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR HEAD, HUB DRAIN RESPONSIBILITIES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION HERTZ VENT STACK DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD VTR VENT THROUGH ROOF INVERT ELEVATION ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING IN WC INCHES OF WATER COLUMN W/ LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, JUNCTION BOX WITHOUT WATER COLUMN J-BOX JUNCTION BOX WASTE STACK KW KILOWATT WSFU WATER SUPPLY FIXTURE MAU MAKE-UP AIR UNIT NEW MAX MAXIMUM **EXISTING** -MBH 1000 BTU PER HOUR WVS WASTE VENT STACK DEMOLISH — — — — FUTURE MH MANHOLE

**GENERAL NOTES:** 

- . PROVIDE A CONSTRUCTION RECORD SET OF "AS-BUILT" DOCUMENTS TO THE ARCHITECT REFLECTING ANY VARIANCES OF INSTALLED PIPING LOCATIONS OR EQUIPMENT CONTRARY TO THE CONSTRUCTION DOCUMENTS, REFER TO SPECIFICATIONS.
- 2. DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF THE WORK. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY THE ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- 3. PROVIDE TO THE ARCHITECT A COPY OF INSPECTION REPORTS AND APPROVAL CERTIFICATES FROM LOCAL AND STATE INSPECTIONS, REFER TO SPECIFICATIONS.
- 4. INSTALLATION SHALL COMPLY WITH LEGALLY CONSTITUTED CODES AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION AND ALSO MEET ALL REQUIREMENTS OF THE LANDLORD. OBTAIN A COPY OF THE LANDLORD'S REQUIREMENTS AND REVIEW PRIOR TO SUBMITTING BID.
- 5. PLANS AND SPECIFICATIONS GOVERN WHERE THEY EXCEED CODE REQUIREMENTS.
- 6. VERIFY LOCATION AND DEPTH OF UTILITIES AT POINTS OF CONNECTION BEFORE START OF PIPING INSTALLATION.
- 7. REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF PLUMBING FIXTURES.
- 8. DO NOT SCALE FLOOR PLANS FOR EXACT HORIZONTAL LOCATION OF PIPE ROUTING.
- 9. INSTALL CONCEALED PIPING TIGHT TO THE STRUCTURE AND AS HIGH AS POSSIBLE.
- 10. VALVES SHALL BE LINE SIZE UNLESS OTHERWISE NOTED.

11. INSTALL EXPOSED PIPING, WHERE NECESSARY, IN FINISHED

- AREAS TIGHT TO THE STRUCTURE, WALL OR CEILING AND AS HIGH AS POSSIBLE. INSTALL PIPING PARALLEL AND / OR PERPENDICULAR TO WALLS. 12. INSTALL VALVES AND APPURTENANCES A MAXIMUM OF 24"
- ABOVE CEILING IN ACCESSIBLE LOCATION WITHIN 24" OF ACCESS DOORS OR ACCESSIBLE CEILING TILES. PROVIDE PIPE AND FITTINGS TO INSTALL VALVES AND APPURTENANCES AT REQUIRED HEIGHT AND WITHIN 24" OF ACCESS DOORS OR ACCESSIBLE CEILING TILES.
- 13. INSTALL NO PLASTIC PIPE OF ANY KIND ABOVE SLAB INSIDE OR UNDER THE BUILDING. INSTALL NO PLASTIC PIPE IN THE CEILING RETURN AIR PLENUM.
- 14. COORDINATE ALL WORK WITH OTHER TRADES AND CONTRACTORS.
- 15. COORDINATE PIPING INSTALLATION WITH STRUCTURAL GRADE BEAMS, FOOTINGS, COLUMN PIERS, ETC. SLEEVE PIPING THROUGH GRADE BEAMS, FOOTING, ETC, WHERE REQUIRED AND AS NOTED ON PLANS. COORDINATE SLEEVE INSTALLATIONS WITH THE ARCHITECT, STRUCTURAL ENGINEER, STRUCTURAL CONTRACTOR AND GENERAL CONTRACTOR BEFORE CONCRETE IS INSTALLED.
- 16. CLEAN FAUCET AERATORS AND PIPE STRAINERS PRIOR TO TURNING BUILDING OVER TO THE OWNER.
- 17. PROVIDE TRAP PRIMERS WHERE REQUIRED BY LOCAL AUTHORITIES.
- 18. COORDINATE PIPE ROUTING AWAY FROM ELECTRICAL PANELS. DO NOT INSTALL PIPING OVER ELECTRICAL PANELS.
- 19. PAINT ALL EXPOSED GAS AND WATER PIPING USING RUST INHIBITOR PAINT. PAINT AND COLOR SHALL BE COORDINATED WITH THE ARCHITECT AND / OR OWNER.
- 20. COORDINATE ALL ROOF PENETRATIONS WITH OTHER TRADES. MAINTAIN 10' MINIMUM CLEARANCE FROM ALL AIR INTAKES. MAINTAIN 2' CLEARANCE FROM ALL OTHER EQUIPMENT.
- 21. INSULATE PIPING ROUTED IN EXTERIOR BUILDING WALLS WITH
- MINIMUM 2" BATT INSULATION TO PREVENT FREEZING. 22. PROVIDE "HEAVY-DUTY" NO-HUB COUPLINGS ON SANITARY PIPING 3" AND LARGER. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT AND PIPING

SPECIALTIES" FOR MORE INFORMATION.

GPM UNLESS NOTED OTHERWISE.

- 23. PROVIDE TRANSITION ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON SANITARY, WASTE AND VENT PIPE AT SLAB ON GRADE. SEE DIVISION 22 SPECIFICATION SECTION "SANITARY DRAINAGE AND VENT PIPING AND SPECIALTIES" FOR MORE INFORMATION.
- 24. PROVIDE TRANSITION ADAPTER COUPLINGS FOR CONNECTION OF PVC DWV TO CAST IRON STORM PIPE AT SLAB ON GRADE. SEE DIVISION 22 SPECIFICATION SECTION "STORM DRAINAGE
- PIPING AND SPECIALTIES" FOR MORE INFORMATION. 25. FLOW CONTROL VALVES SHALL BE SIZE 1/2" AND SET AT 0.5
- 26. WATER HAMMER ARRESTORS SHALL BE SIZE "A" UNLESS NOTED OTHERWISE.
- 27. PROVIDE VERTICAL LIFT SPRING LOADED CHECK VALVES IN

HOT AND COLD WATER SUPPLIES FOR MOP SINK FAUCETS

- DOWNSTREAM OF SHUTOFF VALVES. 28. PROVIDE WALL PIPES AT PIPING PENETRATIONS OF ELEVATED
- WATERPROOF FLOOR SLABS, REFER TO SPECIFICATIONS.
- 29. VERIFY EXISTING EQUIPMENT, INCLUDING ACCESSORIES, IS NOT DAMAGED AND IS IN GOOD WORKING ORDER. REPORT ANY DEFICIENCIES TO THE ARCHITECT.
- 30. PROVIDE SIZE AND LENGTH OF HOT WATER FIXTURE SUPPLY PIPE FROM CIRCULATED HOT WATER BRANCH OR MAIN TO TERMINATION OF HOT WATER FIXTURE SUPPLY PIPE AT EACH FIXTURE PER 2015 INTERNATIONAL ENERGY CONSERVATION CODE, TABLE C404.3.1. FOR 1/2" HOT WATER FIXTURE SUPPLY PIPE SIZE TO INDIVIDUAL LAVATORIES, PROVIDE MAXIMUM LENGTH OF TWO FEET. FOR 1/2" HOT WATER FIXTURE SUPPLY PIPE SIZE TO INDIVIDUAL SINKS, PROVIDE MAXIMUM LENGTH OF 43 FEET. FOR 3/4" HOT WATER FIXTURE SUPPLY PIPE SIZE

TO INDIVIDUAL SINKS, PROVIDE MAXIMUM LENGTH OF 21 FEET

### **GENERAL DEMOLITION NOTES:**

- 1. PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- 2. EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- 3. OWNER RETAINS RIGHTS OF SALVAGE FOR EQUIPMENT AND FIXTURES TO BE REMOVED. COORDINATE WITH THE OWNER THE EQUIPMENT AND FIXTURES TO BE SALVAGED AND THE LOCATION FOR STORAGE. AVOID DAMAGE TO EQUIPMENT, FIXTURES AND DEVICES DURING DEMOLITION WORK AND DURING TRANSPORT TO OWNER'S DESIGNATED STORAGE
- 4. REMOVE ITEMS SHOWN HEAVY LINED AND/OR CROSSHATCHED AND/OR NOTED TO BE REMOVED.
- 5. AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN FOR NEW INSTALLATION. REPAIR ANY DAMAGE CAUSED DURING WORK AT NO EXTRA COST TO THE OWNER.
- 6. SEAL ALL PENETRATIONS THROUGH FLOORS, WALLS, CEILINGS AND ROOFS WHERE PLUMBING COMPONENTS ARE REMOVED AND WHERE THE EXISTING PENETRATION IS NOT USED FOR THE NEW INSTALLATION. REPAIR SURFACES TO MATCH ADJACENT AREAS.
- 7. INSTALL PERMANENT CAPS WHERE PIPING IS REMOVED AND THE EXISTING TAPS ARE NOT USED FOR THE NEW INSTALLATION. INSTALL TEMPORARY CAPS WHERE PIPING IS REMOVED AND THE EXISTING TAPS WILL BE USED FOR THE NEW INSTALLATION TO PROTECT THE INTERIOR SURFACES UNTIL NEW PIPING IS INSTALLED.
- REMOVE PIPE HANGERS, PIPE SUPPORTS AND EQUIPMENT SUPPORTS WHERE PIPING OR EQUIPMENT IS REMOVED AND THE EXISTING HANGERS AND SUPPORTS ARE NOT USED FOR THE NEW INSTALLATION.
- 9. VERIFY THAT EXISTING EQUIPMENT TO REMAIN IS OPERATING PROPERLY. NOTIFY THE ARCHITECT, ENGINEER AND/OR OWNER OF ANY DAMAGED AND/OR MALFUNCTIONING COMPONENTS.
- 10. WHERE SHUTDOWN OF EXISTING ACTIVE PIPING SYSTEMS IS REQUIRED DURING DEMOLITION PHASE OF WORK IN PREPARATION FOR NEW TIE-IN PHASE OF WORK, COORDINATE WITH THE OWNER AND MINIMIZE DOWNTIME. VERIFY EXISTING SYSTEMS, EQUIPMENT, AND COMPONENTS WILL BE PROVIDED WITH BACKUP SERVICE WHERE REQUIRED. NOTIFY OWNER A MINIMUM OF SEVEN (7) DAYS PRIOR TO INTERRUPTION OF SERVICE.

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Lee's Summit R7 District

Athletics Facilities Lee's Summit North High School

Lee's Summit, MO 64086 Lee's Summit R-7 School District 301 NE Tudor Road

901 NE Douglas Street

architect: Gould Evans 4200 Pennsylvania Avenue

Lee's Summit, MO 64086

Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111

civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215 913.485.0318

816.531.4144

mechanical/electrical engineer: Henderson Engineers 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214 816.742.5000

> **HENDERSON** ENGINEERS 8345 LENEXA DRIVE, SUITE 300 LENEXA KS 66214 TEL 913.742.5000 FAX 913.742.5001 WWW.HENDERSONENGINEERS.COM

> > MO. CORPORATE NO: E-556D

EXPIRES 12/31/2020



REVISIONS DESCRIPTION

PROJECT NO:

DATE:

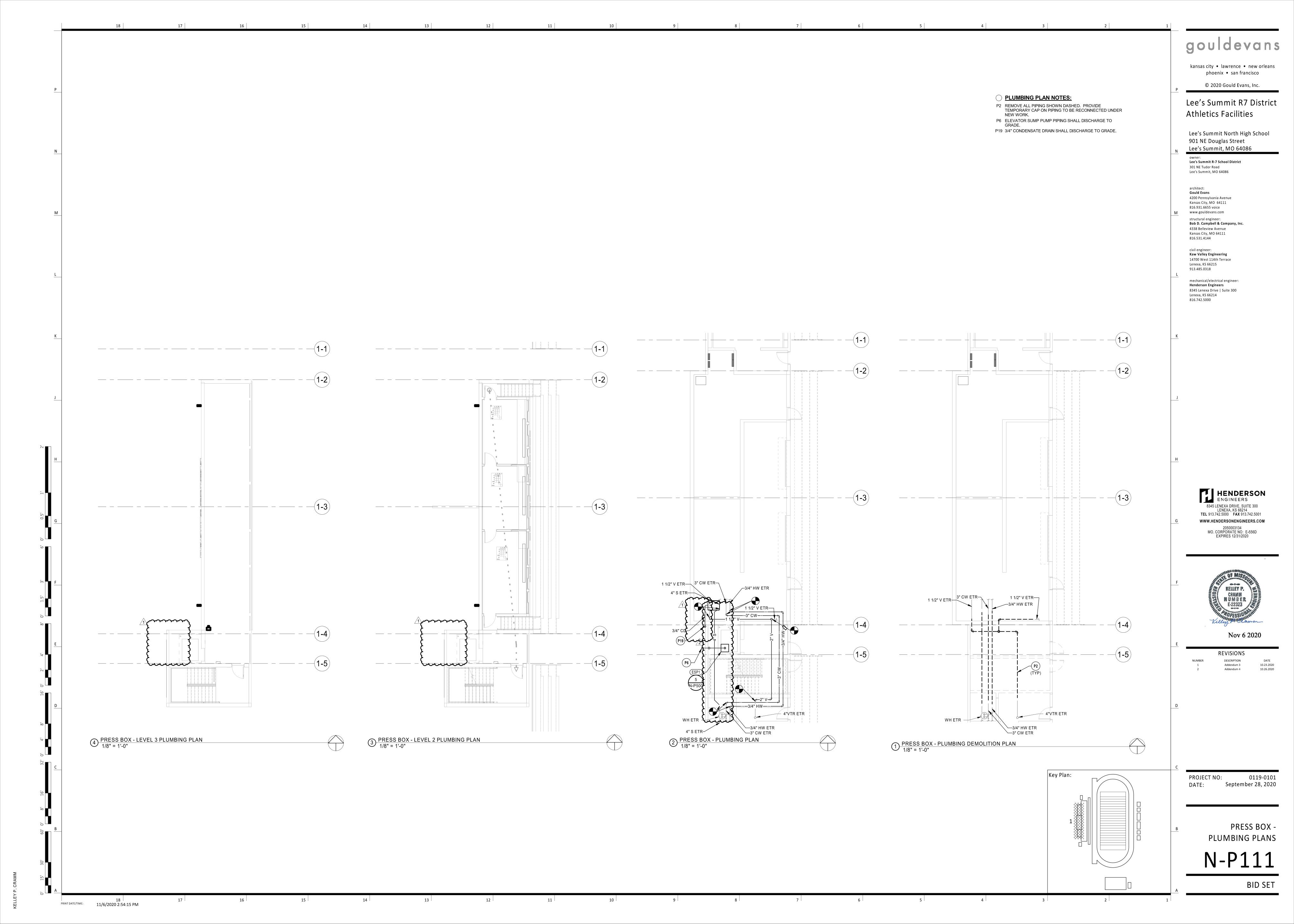
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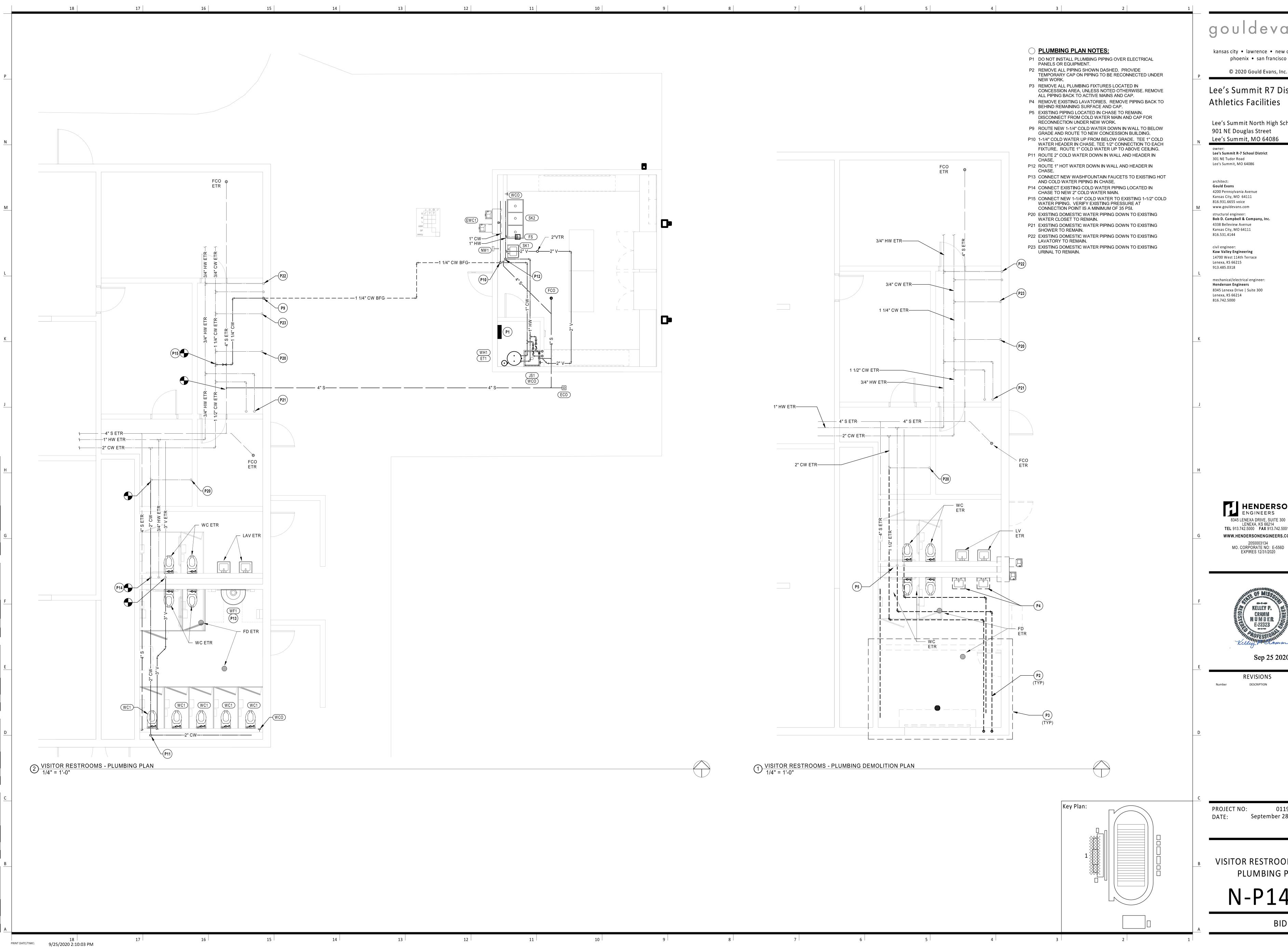
PLUMBING LEGEND AND NOTES

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Lee's Summit R7 District

Lee's Summit North High School

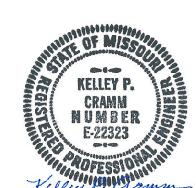
Lee's Summit R-7 School District

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mechanical/electrical engineer: **Henderson Engineers** 8345 Lenexa Drive | Suite 300

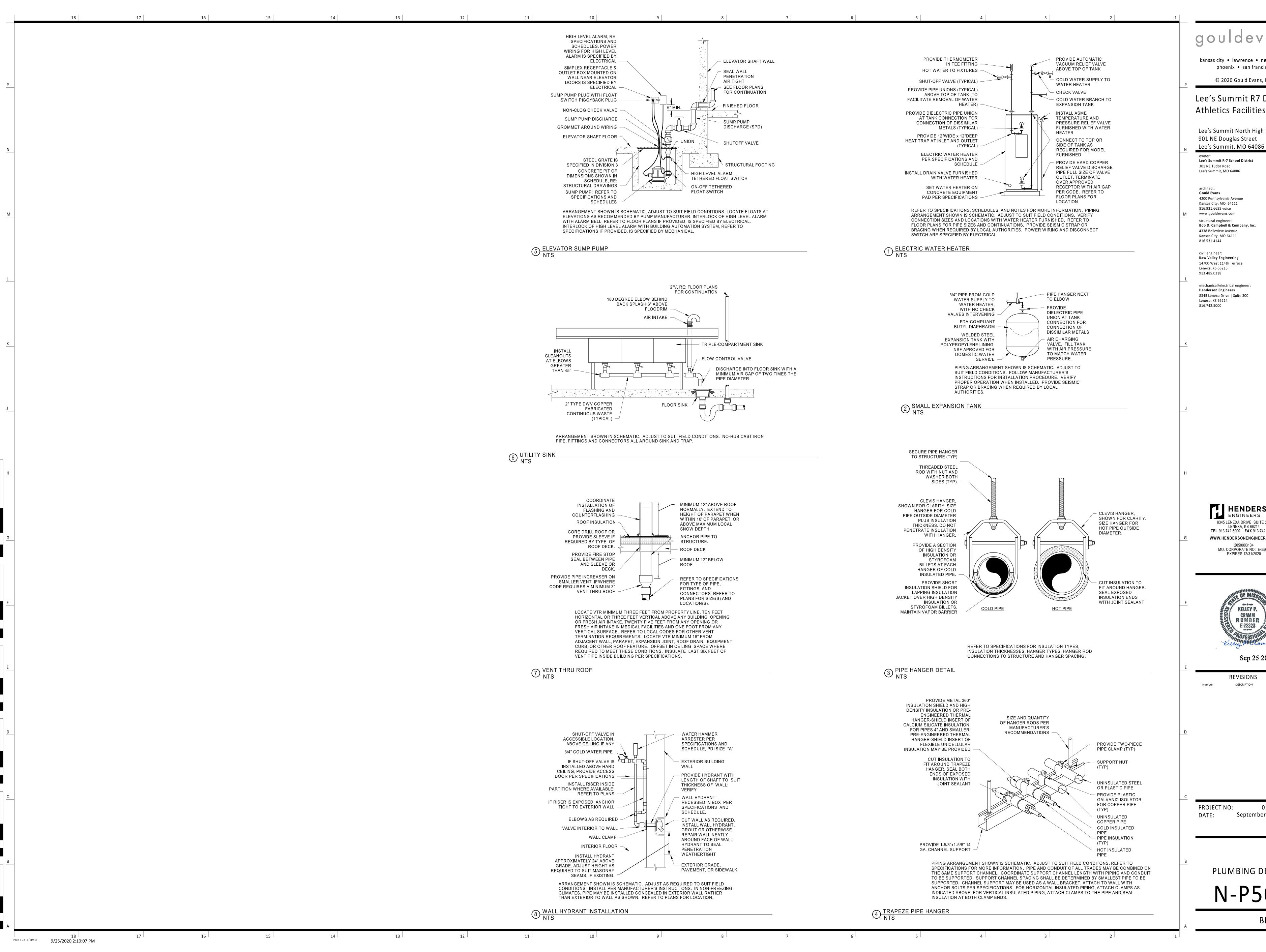
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VISITOR RESTROOMS -PLUMBING PLAN



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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District 301 NE Tudor Road

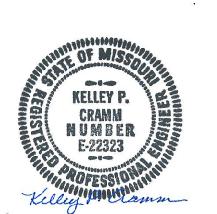
architect: Gould Evans 4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc.

civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215

mechanical/electrical engineer: Henderson Engineers 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214

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REVISIONS DESCRIPTION

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PLUMBING DETAILS

18   17   16   15	14   13   12   11   10   9   8   7   6	5   4   3   2
	ELECTRIC STORAGE WATER HEATER SCHEDULE	PLUMBING FIXTURE SCHEDULE
	MARK         R         MODEL#         AREA SERVED         TANK SIZE (GALLONS)         ELECTRICAL DATA (GPH)         RECOVERY (GPH)         WEIGHT (LBS)         NOTES           WH1         A.O. SMITH         #DRE-52         CONCESSION BUILDING         50         208         3         18         74         700         A	FIXTURES IN THIS SCHEDULE OR THEIR APPROVED EQUIVALENT ARE PROVIDED BY THE PLUMBING CONTRACTOR. SUBMIT SHOP DRAWINGS ON EACH OF THESE ITEMS. REFER TO SPECIFICATIONS FOR FURTHER
	NOTES:	INFORMATION AND INSTALLATION REQUIREMENTS. VERIFY ROUGH-IN REQUIREMENTS WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE PLUMBING FIXTURE
	A. 100°F TEMPERATURE RISE WITH 140°F OPERATING TEMPERATURE	PLUMBING FIXTURE SCHEDUL
		PLUMBING PLAN MARK DESCRIPTION
	ELEVATOR SUMP PUMP SCHEDULE (3/4 HP AND SMALLER)  MARK MANUFACTURER MODEL LOCATION GPM HEAD (FT.)  DISCHARGE SIZE (IN.) VOLTS PH HP NOTES	ECO EXTERIOR CLEANOUT: JAY R. SMITH # 4261L SERIES DUCO CAST IF DOUBLE FLANGED HOUSING WITH HEAVY DUTY SECURED SCORIA CAST IRON COVER WITH LIFTING DEVICE AND CLEANOUT BODY WI ABS PLASTIC PLUG WITH GASKET SEAL AND PUSH-ON JOINT. REFETO SPECIFICATIONS FOR INSTALLATION.
	ESP1 WEIL 1411-538 ELEVATOR PIT 50 21 2" 120 1 0.5 A-E  NOTES:	EWC1 ELECTRIC WATER COOLER (ADA ACCESSIBLE): ELKAY VRCTLDDW: BARRIER FREE, LEAD FREE WITH BOTTLE FILLING STATION. FRONT ACTUATOR BUTTON, STAINLESS STEEL BOWL, VANDAL RESISTANT
	A. PROVIDE WEIL #8245 FLOAT SWITCH WITH POWER CORD AND PIGGYBACK PLUG.  B. PROVIDE WITH WEIL #8341K1015 HIGH LEVEL ALARM WITH AUXILIARY CONTACT, REFER TO SPECIFICATIONS.  C. PROVIDE 2" DISCHARGE PIPING, SHUTOFF VALVE AND ZOELLER #30-0030 FLAPPER NON-CLOG CHECK VALVE.	BUBBLER AND STAINLESS STEEL FRONT AND SIDES. NON CHILLED FILTERED. BOTTLE FILLING STATION: ELECTRONIC SENSOR FOR TOUCHLESS ACTIVATION WITH AUTO 20-SECOND SHUT-OFF TIMER PROVIDES 1.1-1.5 GPM WITH LAMINAR FLOW TO MINIMIZE SPLASHII TRIM: McGUIRE # LF2165CC LEAD FREE BRASS COMPRESSION ANG
	D. REFER TO DETAIL FOR MORE INSTALLATION INFORMATION. E. INSTALL IN 24"SQUARE x 24" DEEP SUMP PIT LOCATED IN ELEVATOR PIT, SEE ARCHITECTURAL DRAWINGS.	STOP VALVE WITH RISER AND ESCUTCHEON, McGUIRE # B8872CF 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TRAP ANI WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON, AND SUITA CARRIER WITH STANCHIONS TO FLOOR.
	PLUMBING EXPANSION TANK SCHEDULE	FCO FLOOR CLEANOUT: JAY R. SMITH, CAST IRON BODY, FLASHING FLA WITH CLAMPING COLLAR, ABS PLUG, AND ADJUSTABLE, ROUND, SECURED, NICKEL BRONZE, TOP. # 4031L (-F-C), SCORIATED TOP F
	MARK MANUFACTURER MODEL (GALLONS) SERVICE WEIGHT (LBS) NOTES	EXPOSED, NICKEL BRONZE, 10F. # 4031L (-F-C), SCORIATED 10F F EXPOSED, FLUSH WITH FINISHED FLOOR, APPLICATION(S), # 4031L (-F-C-Y), STAINLESS STEEL MARKER FOR INSTALLATION IN T FLOOR AREA(S), # 4151 (-F-C), 1/8" RECESS FOR INSTALLATION IN FLOOR AREA(S), # 4191 (-F-C), 1/2" RECESS FOR INSTALLATION IN
	ET1         AMTROL         ST-5         2         0.9         WH1         22         A           NOTES:	TERRAZZO AND SIMILAR POURED FLOOR AREA(S). REFER TO SPECIFICATIONS FOR INSTALLATION.  FD-1 FLOOR DRAIN: JAY R .SMITH # 2005L (-A), CAST IRON BODY AND
	A. CHARGE TANK WITH AIR TO IDENTICAL PRESSURE AS STATIC DOMESTIC WATER PRESSURE.	CLAMPING COLLAR, ADJUSTABLE 6" ROUND NICKEL BRONZE STRAINER. PROVIDE TRAP PRIMER PORT IF TRAP PRIMER IS PROVI ON THE DRAWINGS. USE PUSH-ON JOINT OF OUTLET SIZE AS SHOW ON PLANS.
	FIXTURE BRANCH CONNECTION SCHEDULE	FS FLOOR SINK: JAY R. SMITH # 3101L (-12), 6" DEEP CAST IRON BODY IN ACID RESISTING ENAMELED INTERIOR, ANCHOR FLANGE WITH SEEPAGE HOLES, CLAMP COLLAR, WHITE ABS SEDIMENT BUCKET, 8-1/2" SQUARE NICKEL BRONZE RIM AND HALF GRATE. USE PUSH-COUNT OF OUT ET SIZE AS SHOWN ON PLANS
	FIXTURE COLD WATER HOT WATER WASTE VENT DRINKING FOUNTAIN 1/2" 2" 1 1/2" FLOOR DRAIN 2" 2" 2"	JOINT OF OUTLET SIZE AS SHOWN ON PLANS.  JS1  JANITOR'S SINK: STERN-WILLIAMS # MTB-2424, 24" x 24" x 10" HIGH TERRAZZO BASIN WITH INTEGRAL STAINLESS STEEL DRAIN BODY. FAUCET: CHICAGO FAUCET # 897-PL HOOK, AND 24" MALE HOSE.
	JANITOR'S SINK       1/2"       1/2"       3"       2"         LAVATORY/HAND SINK       1/2"       1/2"       2"       1 1/2"         SINK       1/2"       1/2"       2"       2"	INTEGRAL VACUUM BREAKER, PAIL HOOK, AND 3/4" MALE HOSE THREADED OUTLET. SECURE FAUCET IN WALL WITH BACKBOARD. TRIM: # BP TYPE 304, 20 GAUGE, STAINLESS STEEL WALL SURROUN # T-35 THREE FOOT LONG REINFORCED HOSE WITH 3/4" CHROME COUPLING AND WALL HOOK, # V-70 EXTRUDED VINYL BUMPER GUA
	WATER CLOSET (FLUSH VALVE) 1 1/4" 4" 2"  NOTE: PIPE SIZES SHOWN ARE MINIMUM.	AND # T-40 24" STAINLESS STEEL MOP HANGER.  NW1 NON-FREEZE WALL HYDRANT: PRIER PRODUCTS # C-634NBX1, SA NICKEL PLATED BRASS 1" MALE INLET BY 3/4" FEMALE INLET, 3/4"
		THREADED HOSE CONNECTION, LOOSE KEY HANDLE, HYDRANT LENGTH AS REQUIRED FOR INSTALLED WALL THICKNESS, ADJUST WALL CLAMP, BRASS BOX WITH SATIN NICKEL PLATED FINISH AND INTEGRAL ASSE 1052 DOUBLE CHECK VACUUM BREAKER.
		SK1 HAND SINK (ADA ACCESSIBLE): HAND SINK ADA ACCESSIBLE): EL #CHS-1716, 16-3/4"" X 15-1/2" RECTANGULAR, WALL MOUNTED, 18 GAUGE TYPE 304 STAINLESS STEEL, BACKSPLASH AND SIDE BRACAND WALL MOUNTING BRACKET.
		FAUCET: CHICAGO FAUCET # 631-218017AB 8" BACK MOUNT FAUC WITH 7 1/4" – 8 3/4" ADJUSTABLE "G" SUPPLY ARMS, VANDAL RESISTA #317 WRISTBLADE HANDLES, GN2A GOOSENECK SPOUT, # E61VP GPM VANDAL RESISTANT LAMINAR FLOW AERATOR, QUARTER TU CERAMIC CARTRIDGES.
		TRIM: McGUIRE # "PRODRAIN2" GRID DRAIN WITH 1-1/2" 17 GUAGE TAILPIECE, McGUIRE # LF2165CCLK LEAD FREE BRASS LOOSE KEY COMPRESSION ANGLE STOP VALVES WITH RISERS AND ESCUTCH McGUIRE # B8912CF 1-1/2" 17 GAUGE CAST CHROME PLATED BRAS
		ADJUSTABLE P-TRAP AND WASTE ARM WITH CLEANOUT PLUG AN ESCUTCHEON, WALL BRACKET, PROVIDE BACKBOARD AND SECU FIXTURE TO IT, AND PLUMBEREX "PRO-EXTREME"# X-4222 INSULA KIT FOR WATER AND WASTE PIPES.
		THERMOSTATIC MIXING VALVE: POWERS # LFG480, SOLID LEAD F BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, CORR RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1070 COMPLIANT, CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL A
		MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110F F DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100F FOR SIN TEMPERATURE LAVATORIES AND HAND SINKS AND 120F FOR SINK MOUNT BELOW THE PLUMBING FIXTURE.
		SK2 SINK: ELKAY # WNSF-83454, THREE 15" x 24" x 14" DEEP COMPARTMENTS, LEFT AND RIGHT DRAINBOARDS, 8" HIGH BACKSPLASH, 14 GAUGE TYPE 304 STAINLESS STEEL, AND 16 GAUSTAINLESS STEEL ADJUSTABLE LEGS.
		FAUCET: CHICAGO FAUCET #445-206578AB 3 3/8" BACK MOUNT FA WITH 3" – 3 3/8" ADJUSTABLE "R" ARMS WITH INTEGRAL SHUT OFF, VANDAL RESISTANT # 369 LEVER HANDLES, L9 SWING SPOUT, # E FLOW OUTLET, QUARTER TURN CERAMIC CARTRIDGES.
		TRIM: (3) ELKAY # LK24RT GRID STRAINERS WITH LEVER HANDLE 1-1/2" TAILPIECE, AND 1-1/2" HARD COPPER TYPE "DWV" FABRICAT INDIRECT WASTE LINE ROUTED TO FLOOR SINK.  WC1 WALL-MOUNTED WATER CLOSET: AMERICAN STANDARD # 3351.10
		"AFWALL MILLENNIUM FLOWISE" WHITE VITREOUS CHINA FIXTURE ELONGATED UNIVERSAL BOWL AND DIRECT-FED SIPHON JET ACT VALVE- SLOAN "OPTIMA – SLOAN MODEL" # 111-1.6 ES-S TMO 1.6 GALLON PER FLUSH, EXPOSED, CHROME-PLATED, HARD WIRED,
		SENSOR OPERATED, DIAPHRAGM TYPE, FLUSH VALVE LESS TRANSFORMER WITH CHLORAMINE RESISTANT DIAPHRAGM AND PROTECTED ORIFICE, MANUAL OVERRIDE, ESCUTCHEON, INTEGF SCREWDRIVER STOP, VACUUM BREAKER, AND SWEAT ADAPTER
		TRIM- CHURCH # 9500SSCT WHITE OPEN-FRONT CONTOURED, SO PLASTIC, HEAVY DUTY, SEAT LESS COVER WITH SELF-SUSTAINING CHECK HINGES AND STAINLESS STEEL BOLTS. PROVIDE SUITABL FIXTURE CARRIER.
		WCO WALL CLEANOUT: SIOUX CHIEF #873 SERIES, BRASS COUNTERSUPLUG, 20 GAUGE STAINLESS STEEL COVER AND SCREW. CLEANOTEE TO BE PROVIDED SEPARATELY. REFER TO SPECIFICATIONS FINSTALLATION.
		WF1 THREE STATION LAVATORY: BRADLEY # 6951B-3 62"x18" RECTANG WALL HUNG MULTI-LAV WITH INTEGRAL BACKSPLASH AND SIDE P OF DENSIFIED SOLID SURFACE MATERIAL OF RESIN AND ALUMINU TRIHYDRATE WITH OTHER FILLERS, 14 GAUGE 304 STAINLESS STE
		CONSTRUCTION. ANCHOR BACKSPLASH AND HOUSING FRAMEW SECURELY TO WALL. INSTALLATION SHALL CONFORM TO ADA REQUIREMENTS. INSTALL "WCO" UNDERNEATH WASTE CONNECTED FAUCET: SLOAN "OPTIMA" # EBF-187-0.5 CENTERSET, VANDAL
		RESISTANT, 4" TRIM PLATE, BATTERY POWERED SENSOR OPERA FAUCET WITH 0.5 GPM AERATOR. (3 TOTAL) TRIM: McGUIRE # 155A GRID DRAIN WITH TAILPIECE, McGUIRE # LF2165CCLK LEAD FREE BRASS LOOSE KEY COMPRESSION ANGI
		STOP VALVES WITH RISERS AND ESCUTCHEONS, McGUIRE # B88 1-1/4" 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-T AND WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON. THERMOSTATIC MIXING VALVE: POWERS # LFG480, SOLID LEAD
		BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, CORF RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 107 COMPLIANT, CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL A MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110F DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100F FOR S
		TEMPERATURE LAVATORIES AND HAND SINKS, 100F FOR SINTEMPERATURE LAVATORIES AND HAND SINKS, 100F FOR SINTEMPER
		WHA WATER HAMMER ARRESTER: PRECISION PLUMBING PRODUCTS, I DRAWN COPPER BODY WITH WROUGHT COPPER FITTINGS, PISTO TYPE WITH LUBRICATED EPDM "O" RING SEALS, MEETING ASSE 10 OR PDI WH-201. PROVIDE PDI SIZES "A" THROUGH "F" AS SHOWN
		PLANS. PROVIDE SIZE "A" UNLESS SHOWN OTHERWISE ON THE PL

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### NG FIXTURE SCHEDULE

## BING FIXTURE SCHEDULE

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Lee's Summit R7 District **Athletics Facilities** 

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Lee's Summit, MO 64086

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architect:

Gould Evans

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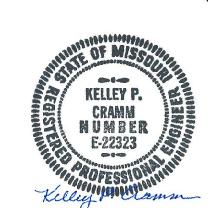
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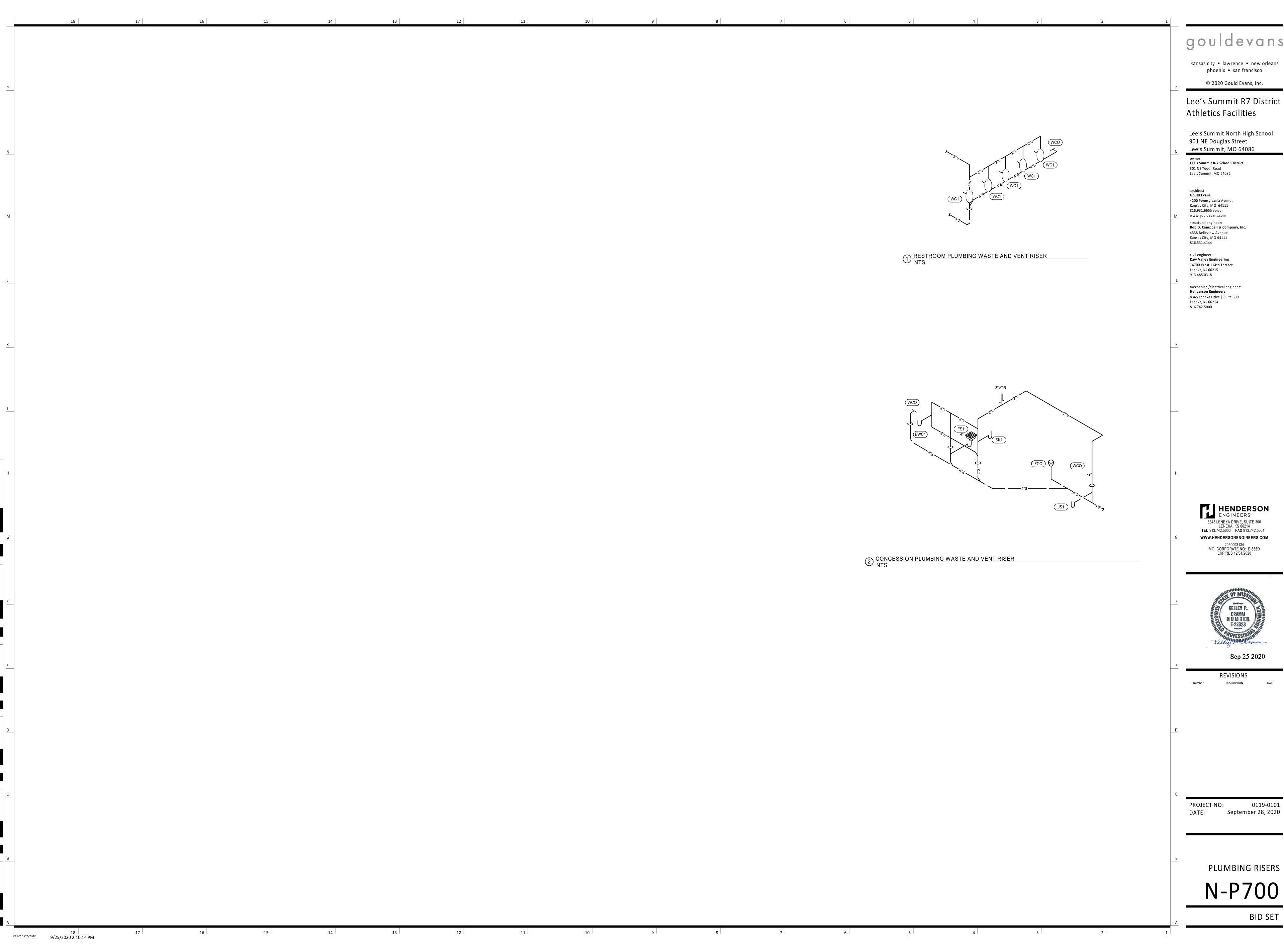
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PLUMBING SCHEDULES



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Lee's Summit R-7 School District

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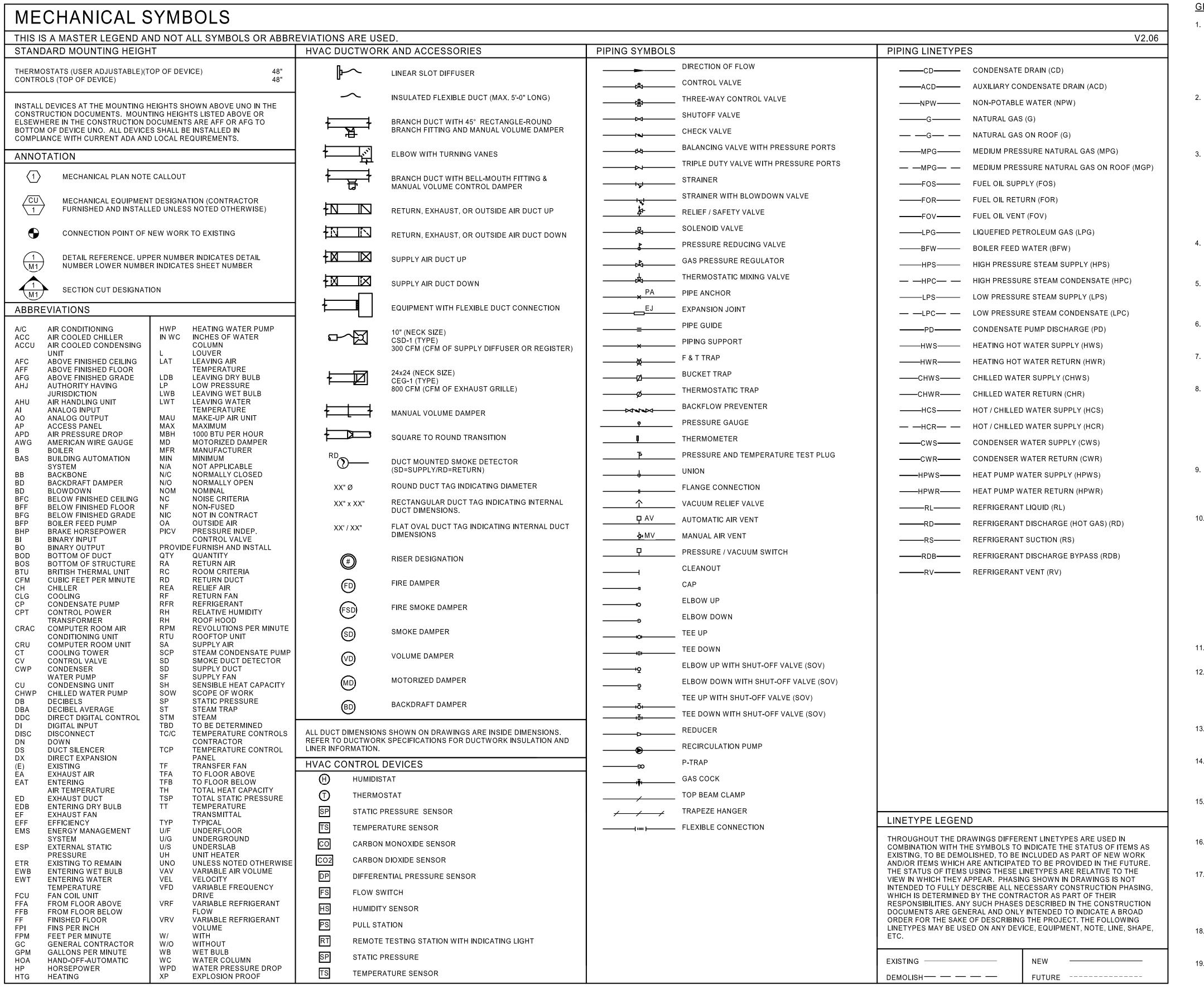
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REVISIONS

NO: 0119-0101 September 28, 2020



#### **GENERAL NEW NOTES**

- PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS OF THE PROJECT. REVIEW THE GENERAL NOTES, SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL REQUIREMENTS WHICH MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT, ENGINEER AND/OR OWNER OF CONFLICTS OR DISCREPANCIES PRIOR TO SUBMISSION OF BID.
- 2. EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT EXACT "AS-BUILT" CONDITIONS. FIELD VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BIDS. COORDINATE NEW WORK AND DEMOLITION WITH OTHER DISCIPLINES AND EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
- 3. COORDINATE THE INSTALLATION OF THE MECHANICAL SYSTEMS WITH OTHER TRADES TO ENSURE A NEAT AND ORDERLY INSTALLATION. INSTALL DUCTWORK AND PIPING AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE INSTALLATION OF DUCTWORK AND PIPING TO AVOID CONFLICTS WITH ELECTRICAL PANELS, LIGHTING FIXTURES. ETC. ANY MODIFICATIONS REQUIRED DUE TO LACK OF COORDINATION WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO EXTRA COST TO THE OWNER.
- 4. WHERE SHUTDOWN OF EXISTING SYSTEMS IS REQUIRED DURING NEW WORK, COORDINATE SHUTDOWN TIME AND DURATION WITH THE OWNER TO MINIMIZE DOWNTIME. NOTIFY OWNER SEVEN (7) DAYS PRIOR TO INTERRUPTION OF SERVICE.
- 5. DURING INSTALLATION OF NEW WORK, AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN. REPAIR DAMAGE CAUSED DURING CONSTRUCTION AT NO EXTRA COST TO THE OWNER.
- 6. PROVIDE TEMPORARY BARRIERS TO CONTAIN DUST AND DEBRIS RESULTING FROM THE PERFORMANCE OF THE WORK TO THE AREA WHERE WORK IS BEING PERFORMED.
- 7. ALL MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL PLANS SHALL BE PROVIDED BY DIVISION 23 UNLESS OTHERWISE NOTED.
- 8. NEW MECHANICAL EQUIPMENT, DUCTWORK AND PIPING ARE SHOWN AT APPROXIMATE LOCATIONS. FIELD MEASURE FINAL DUCTWORK AND PIPING LOCATIONS PRIOR TO FABRICATION AND MAKE ADJUSTMENTS AS REQUIRED TO FIT THE DUCTWORK AND PIPING WITHIN THE AVAILABLE SPACE. VERIFY THAT FINAL EQUIPMENT LOCATIONS MEET MANUFACTURER'S RECOMMENDATIONS REGARDING SERVICE CLEARANCE AND PROPER AIRFLOW CLEARANCE AROUND EQUIPMENT.
- 9. REFER TO ARCHITECTURAL DRAWINGS FOR RELATED CONSTRUCTION DETAILS AS APPLICABLE TO THE HVAC SYSTEM. VERIFY CHASES AND PENETRATIONS SHOWN ON ARCHITECTURAL DRAWINGS THAT ARE INTENDED FOR DUCTWORK AND PIPING MEET REQUIREMENTS.
- 10. INDOOR AIR QUALITY MEASURES: PROTECT INSIDE OF (INSTALLED AND DELIVERED) DUCTWORK AND HVAC UNITS FROM EXPOSURE TO DUST, DIRT, PAINT AND MOISTURE. REPLACE INSULATION THAT HAS BECOME WET AT ANY TIME DURING CONSTRUCTION, DRYING THE INSULATION IS NOT ACCEPTABLE. SEAL ANY TEARS OR JOINTS OF INTERNAL FIBERGLASS INSULATION. REMOVE DEBRIS FROM CEILING/RETURN AIR PLENUM INCLUDING DUST. AN INDEPENDENT. PROFESSIONAL DUCT CLEANING COMPAN SHALL VACUUM CLEAN ANY DUCTWORK CONNECTED TO HVAC UNITS THAT WERE OPERATED DURING THE CONSTRUCTION PERIOD AFTER NEW FILTERS ARE INSTALLED AND PRIOR TO TURNING SYSTEM OVER TO THE OWNER. THE INTERNAL SURFACES AND ASSOCIATED COILS OF ANY HVAC UNITS THAT WERE OPERATED SHALL ALSO BE CLEANED.
- 11. INSTALL DUCTWORK AND PIPING PARALLEL TO BUILDING COLUMN LINES UNLESS OTHERWISE SHOWN OR NOTED.
- 12. OVERHEAD HANGERS AND SUPPORTS FOR EQUIPMENT, DUCTWORK AND PIPING SHALL BE FASTENED TO BUILDING JOISTS OR BEAMS. DO NOT ATTACH HANGERS AND SUPPORTS TO THE ABOVE FLOOR SLAB OR ROOF EXCEPT WHERE CONCRETE INSERTS IN CONCRETE SLABS ARE ALLOWED BY THE SPECIFICATIONS.
- 13. COORDINATE LOCATION OF EQUIPMENT SUPPORTS WITH LOCATION OF EQUIPMENT ACCESS PANELS/DOORS TO ENABLE
- 14. SEAL PENETRATIONS THROUGH THE BUILDING COMPONENTS IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS. FIREPROOF PENETRATIONS THROUGH FIRE RATED COMPONENTS IN ACCORDANCE WITH U.L. REQUIREMENTS

SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.

- 15. COORDINATE THE EXACT MOUNTING SIZE AND FRAME TYPE OF DIFFUSERS, REGISTERS AND GRILLES WITH THE SUPPLIER TO MEET THE CEILING, WALL AND DUCT INSTALLATION REQUIREMENTS.
- 16. ADJUST LOCATION OF CEILING DIFFUSERS, REGISTERS AND GRILLES AS REQUIRED TO ACCOMMODATE FINAL CEILING GRID AND LIGHTING LOCATIONS.
- 17. PAINT PORTIONS OF DUCTWORK AND INSULATION THAT ARE EXPOSED TO VIEW BY THE INSTALLATION OF DIFFUSERS, REGISTERS, AND GRILLES IN CEILINGS OR WALLS FLAT BLACK. PORTIONS INCLUDE BOTH THE INTERIOR OF UNLINED DUCTWORK AND THE EXTERIOR OF DUCTWORK AND
- 18. DUCTWORK CROSSING FIRE RATED WALLS OR OTHER FIRE RATED ASSEMBLIES SHALL BE MINIMUM 26 GAUGE SHEET
- 19. LOCATE AND SET THERMOSTATS AT LOCATIONS SHOWN ON PLANS. VERIFY EXACT LOCATIONS WITH ARCHITECT PRIOR TO INSTALLATION. INSTALL DEVICES WITH TOP OF DEVICE AT MAXIMUM 48" AFF TO MEET ADA REQUIREMENTS UNLESS NOTED OTHERWISE ON PLANS. PROVIDE INSULATED BACKING FOR THERMOSTATS MOUNTED ON EXTERIOR BUILDING WALLS. INSTALL WIRING IN CONDUIT PROVIDED BY DIVISION 26. AT A MINIMUM, PROVIDE CONDUIT IN THE WALL FROM THE JUNCTION BOX TO 6" ABOVE THE CEILING.
- 20. COORDINATE THE LOCATION AND ELEVATION OF WALL-MOUNTED DEVICES WITH PRESENTATION BOARDS, DISPLAY CABINETS, SHELVES OR OTHER COMPONENTS SHOWN ON THE ARCHITECTURAL DRAWINGS THAT ARE TO BE INSTALLED UNDER OTHER DIVISIONS. CONTRACTOR WILL NOT BE REIMBURSED FOR RELOCATION OF WALL-MOUNTED DEVICES CAUSED BY A LACK OF COORDINATION.
- 21. PROVIDE A MANUAL BALANCING DAMPER IN EACH DUCT TAKEOFF FROM SUPPLY, RETURN, OUTDOOR AND EXHAUST

AIR DUCTS.

- 22. BRANCH DUCTWORK TO AIR OUTLETS SHALL BE SAME SIZE AS
- 23. REFER TO SPECIFICATIONS FOR DUCTWORK AND PIPING INSULATION REQUIREMENTS. DUCT SIZES ON MECHANICAL PLANS INDICATE CLEAR INSIDE AIRFLOW DIMENSIONS, INCREASE SHEET METAL SIZES ACCORDINGLY TO ACCOUNT FOR THICKNESS OF DUCT LINER.

OUTLET NECK SIZE UNLESS OTHERWISE NOTED.

- 24. RIGIDLY SUSPEND UNIT HEATER FROM STRUCTURE WITH SUPPORTING ANGLES AND ALL-THREAD HANGING RODS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 25. PROVIDE WALL MOUNTED LOUVERS AND DAMPERS WITH SUITABLE MOUNTING FRAME TO MATCH WALL CONSTRUCTION. COORDINATE WITH ARCHITECTURAL DRAWINGS.
- 26. PROVIDE A NEW SET OF AIR FILTERS IN UNITS PRIOR TO TESTING, ADJUSTING AND BALANCING AND BEFORE TURNING SYSTEM(S) OVER TO OWNER.
- 27. FIELD VERIFY THAT THE EXISTING EQUIPMENT INCLUDING ACCESSORIES BEING REUSED FOR THIS PROJECT IS NOT DAMAGED AND IS IN GOOD WORKING ORDER. REPORT ANY DEFICIENCIES TO THE OWNER OR ARCHITECT. SUBMIT TO THE OWNER AND ARCHITECT A WRITTEN REPORT DESCRIBING TESTS PERFORMED TO VERIFY OPERATION AND RESULTS OF
- 28. CLEAN EXISTING EQUIPMENT AND EQUIPMENT COMPONENTS BEING REUSED FOR THIS PROJECT. PROVIDE NEW FILTERS FOR EXISTING AIR HANDLING EQUIPMENT PRIOR TO STARTUP OF EQUIPMENT. NEW FILTERS SHALL BE COMPATIBLE WITH THE EXISTING EQUIPMENT AND EQUAL IN PERFORMANCE TO THE EXISTING FILTERS AT NEW CONDITION UNLESS OTHERWISE NOTED. CLEAN STRAINERS IN PIPING SYSTEMS PRIOR TO STARTING PUMPS.
- 29. CLEAN THE EXTERIOR OF EXISTING COILS TO BE REUSED FOR THIS PROJECT. VACUUM BRUSH THE COIL IN THE DIRECTION OF THE FINS AND CLEAN THE COILS WITH COIL CLEANING FLUID. COMB ANY FINS BENT TO PROVIDE A STRAIGHT SURFACE FOR AIRFLOW.
- 30. LUBRICATE EXISTING EQUIPMENT BEING REUSED FOR THIS PROJECT IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. OBTAIN INSTRUCTIONS FROM MANUFACTURER IF THEY ARE NOT AVAILABLE AT THE SITE.

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Lee's Summit R7 District Athletics Facilities

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

Lee's Summit, MO 64086

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architect:

civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215 913.485.0318

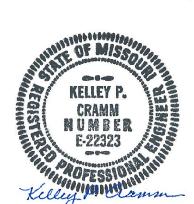
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> HENDERSON ENGINEERS 8345 LENEXA DRIVE, SUITE 300 LENEXA KS 66214 TEL 913.742.5000 FAX 913.742.5001 WWW.HENDERSONENGINEERS.COM

> > MO. CORPORATE NO: E-556D

EXPIRES 12/31/2020



REVISIONS DESCRIPTION

PROJECT NO: September 28, 2020

MECHANICAL LEGEND AND NOTES

BID SET

Key Plan:

**Sheet List - Mechanical** 

MECHANICAL LEGEND AND NOTES

VISITOR RESTROOMS - HVAC PLANS

MECHANICAL SCHEDULES & CONTROLS

PRESS BOX - HVAC PLANS TICKET BOOTH - HVAC PLANS

MECHANICAL DETAILS

Sheet Number

N-M141

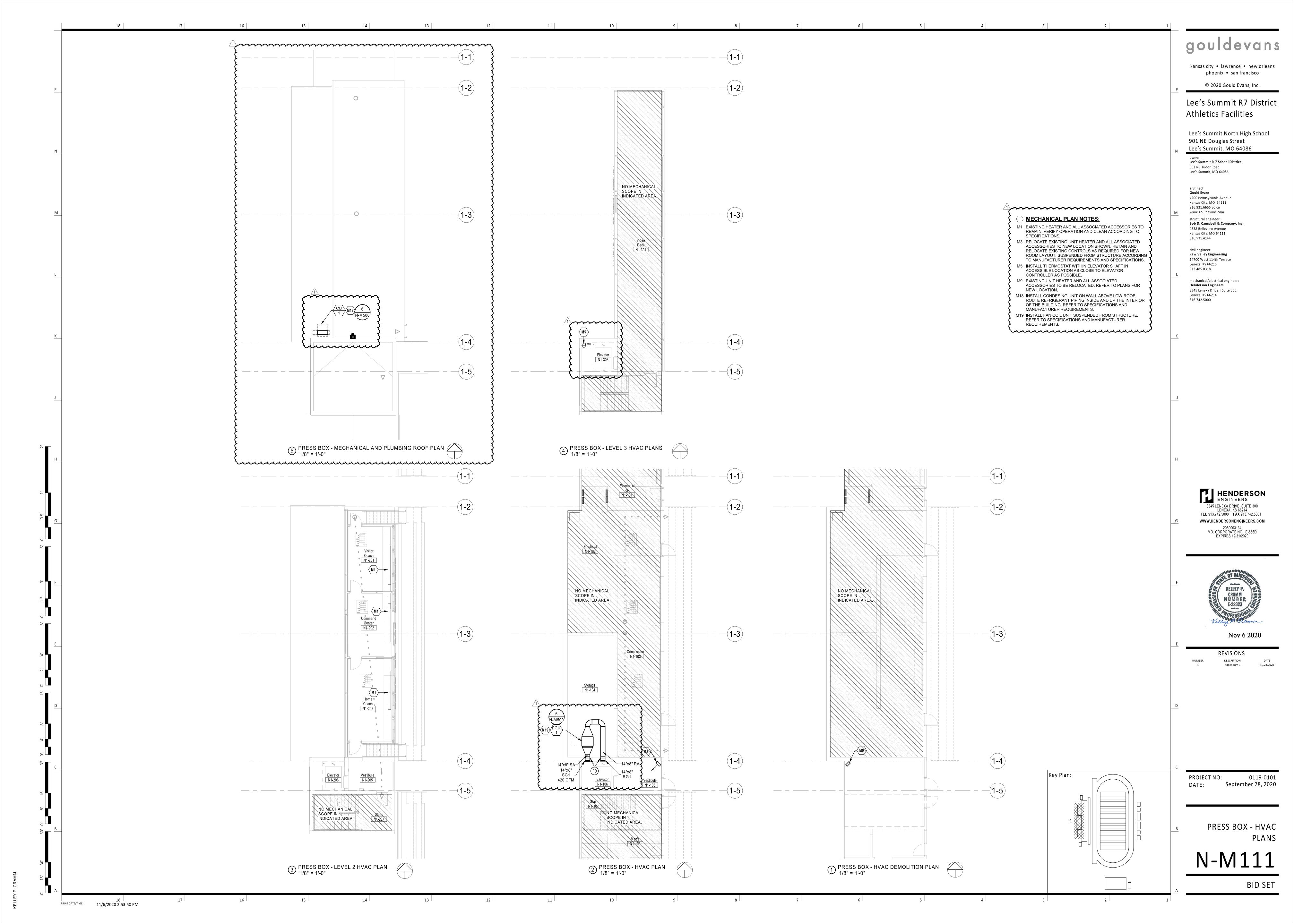
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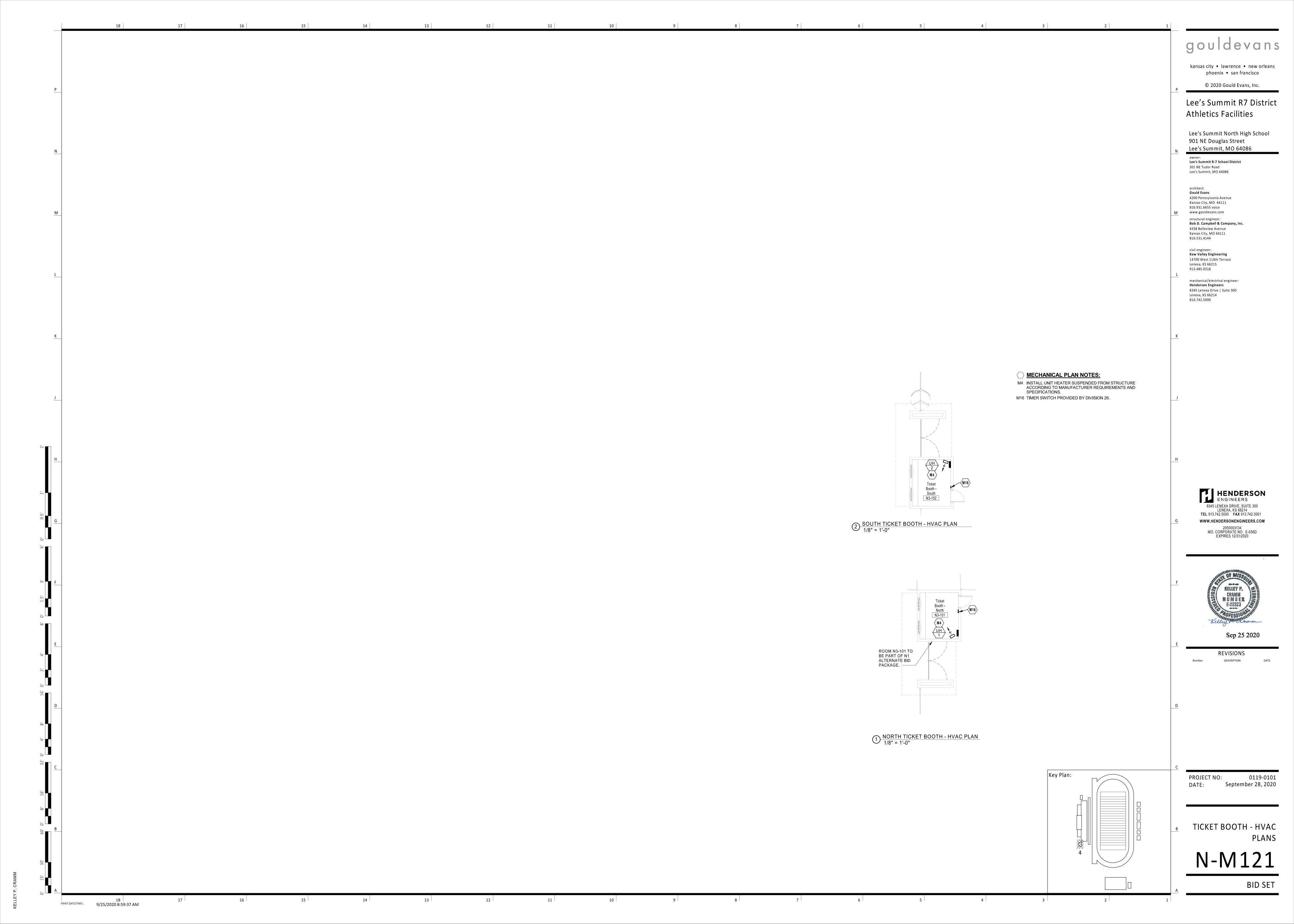
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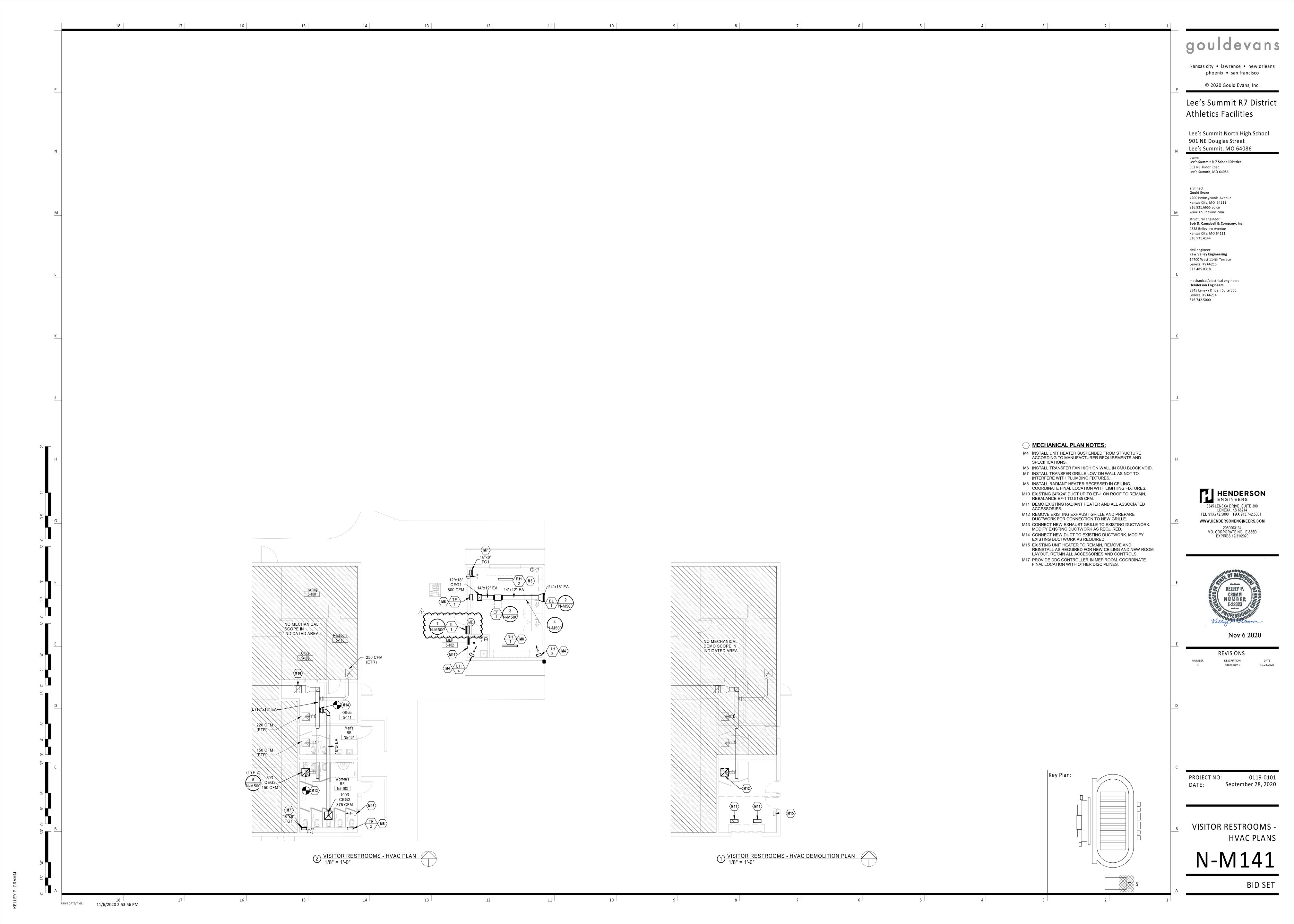
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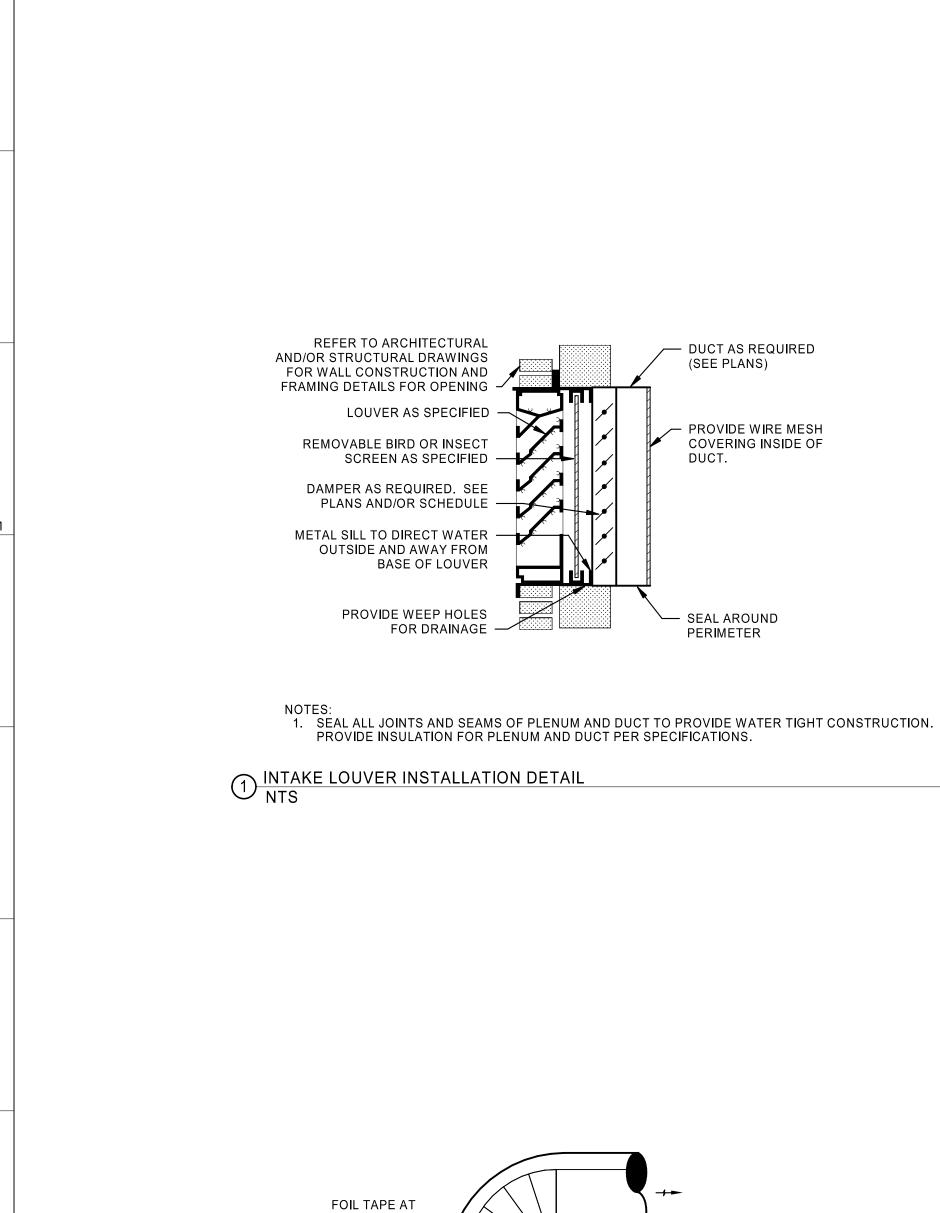
Sheet Name

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**INSULATION JOINT** 

FLEXIBLE DUCT AS

REQUIRED, INSTALL

AND SUPPORTED TO PREVENT KINKING AND

PERMANENTLY SEALED

PRE-INSULATED

SHARP TURNS

BAND (TYPICAL)

AS SCHEDULED →

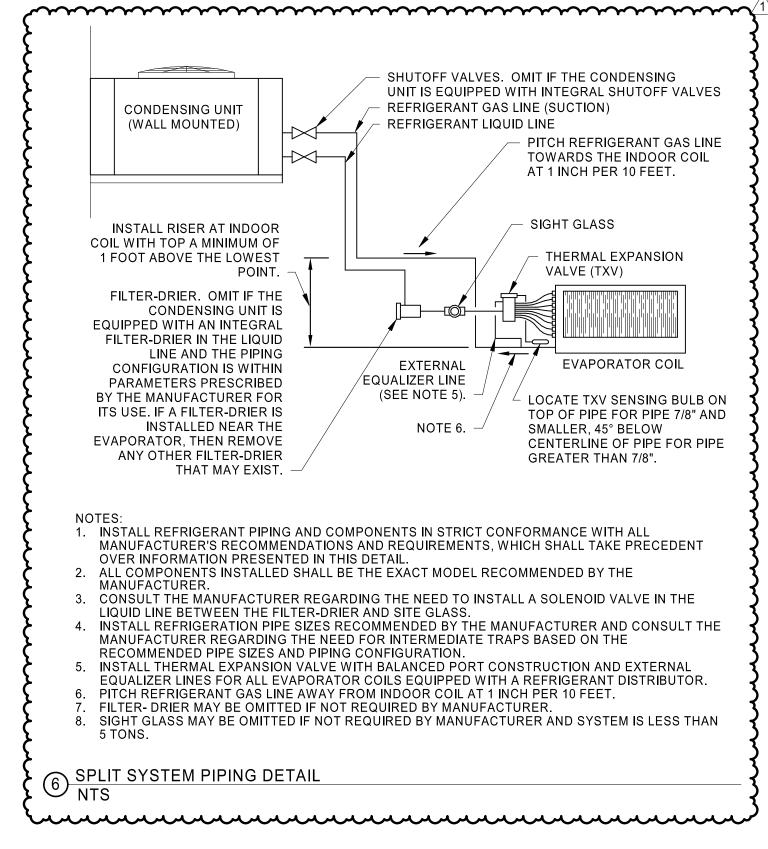
1. MAXIMUM FLEXIBLE DUCT LENGTH SHALL NOT EXCEED 2'-0".

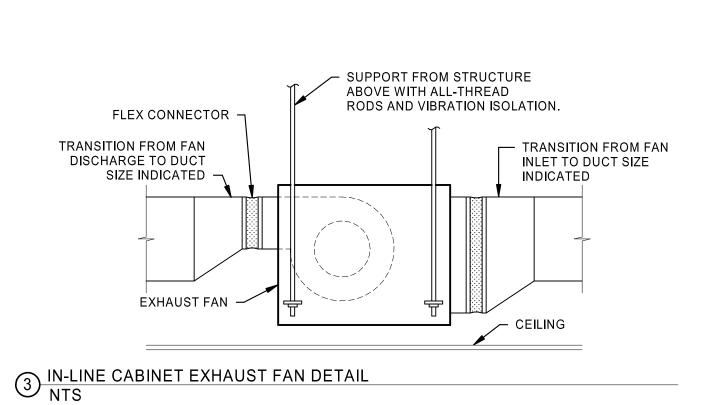
5 FLEXIBLE RETURN EXHAUST AIR GRILLE DETAIL NTS

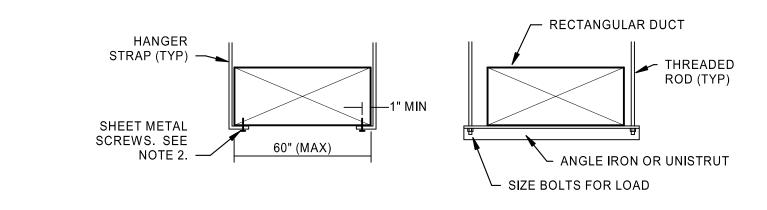
**CEILING DIFFUSER** 

METALLIC OR NON-METALLIC INSULATION AS

REQUIRED PER SPECIFICATIONS.







 USE THREADED ROD FOR RECTANGULAR DUCTS LARGER THAN 60" WIDE.
 OMIT SHEET METAL SCREWS IF HANGER STRAP IS CONTINUOUS AND LOOPS UNDER ENTIRE RECTANGULAR DUCT. 3. HANGERS MUST NOT DEFORM DUCT SHAPE.

4 DUCT HANGER LOWER ATTACHMENT DETAILS NTS

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Lee's Summit R7 District Athletics Facilities

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

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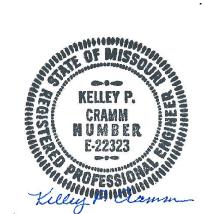
Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111 816.531.4144

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Nov 6 2020

REVISIONS NUMBER DESCRIPTION Addendum 3

PROJECT NO:

September 28, 2020

MECHANICAL DETAILS

**BID SET** 

REFER TO ARCHITECTURAL

REMOVABLE BIRD OR INSECT SCREEN AS SPECIFIED —

DAMPER AS REQUIRED. SEE

PLANS AND/OR SCHEDULE -

OUTSIDE AND AWAY FROM

METAL SILL TO DIRECT WATER

PROVIDE WEEP HOLES

2 EXHAUST LOUVER INSTALLATION DETAIL NTS

BASE OF LOUVER

FOR DRAINAGE -

LOUVER AS SPECIFIED

AND/OR STRUCTURAL DRAWINGS

FOR WALL CONSTRUCTION AND

FRAMING DETAILS FOR OPENING -

— DUCT AS REQUIRED

(SEE PLANS)

- SEAL AROUND

PERIMETER

- PROVIDE 20X20 ACCESS

PLENUM FOR CLEANING

1. SEAL ALL JOINTS AND SEAMS OF PLENUM AND DUCT TO PROVIDE WATER TIGHT CONSTRUCTION. PROVIDE INSULATION FOR PLENUM AND DUCT PER SPECIFICATIONS.

PANEL IN SIDE OF LOUVER

## RADIANT HEATER SCHEDULE (ELECTRIC)

MARK	LOCATION	MANUFACTURER	MODEL	MOUNTING TYPE	SIZE (L" x W")	INPUT (W)	VOLTS	PHASE	NOTES
RH 1	CONCESSION	QMARK	HRK42020	SURFACE	5.5"x46"	2000 W	208 V	1	A,B
RH 2	CONCESSION	QMARK	HRK42020	SURFACE	5.5"x46"	2000 W	208 V	1	A,B

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

DIVISION 26 TO PROVIDE SINGLE TIMER SWITCH TO CONTROL 2 RADIANT HEATERS. DIVISION 26 TO PROVIDE LINE VOLTAGE THROUGH TIMER SWITCH TO UNITS.

		UI	NIT HE	EATER	R S	CHE	DULI	E (EL	EC	TR	IC)	
				MIN OUT	NOM	MIN NO OF		MOTOR	THROW	'		
MARK	AREA SERVED	MANUFACTURER	MODEL	(MBH)	(KW)	STAGES	CFM	HP	(FT)	V/PH	DISC TYPE	NOTES
UH 1	TICKET BOOTH NORTH	QMARK	MUH03-81	10.2	3.0	1	350	0.01	12	208/1	NON-FUSED	A,C,D,E,F,G
UH 2	TICKET BOOTH SOUTH	QMARK	MUH03-81	10.2	3.0	1	350	0.01	12	208/1	NON-FUSED	A,C,D,E,F,G
UH 3	CONCESSION	QMARK	MUH05-81	17.0	5.0	2	350	0.01	12	208/3	NON-FUSED	A,B,E,F
UH 4	MEP	QMARK	MUH03-81	10.2	3.0	1	350	0.01	12	208/1	NON-FUSED	A,B,E,F

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED.

#### NOTES:

- MOUNT 8 FEET ABOVE FINISHED FLOOR WITHOUT OBSTRUCTING AIRFLOW.
- PROVIDE WITH WALL MOUNTED THERMOSTAT. DIVISION 26 TO PROVIDE TIMER SWITCH.
- DIVISION 26 TO PROVIDE LINE VOLTAGE THROUGH TIMER SWITCH TO UNIT. PROVIDE NECESSARY MOUNTING BRACKET AND ACCESSORIES FOR HORIZONTAL DISCHARGE MOUNTING.
- PROVIDE FACTORY MOUNTED DISCONNECT SWITCH INSTALLED ON SERVICE SIDE OF UNIT. PROVIDE WITH FACTORY MOUNTED THERMOSTAT.

THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

$\sim\sim$	$\sim\sim\sim$	~~~~~	~~~~~	~~~~~	· · · · · · · · · · · · · · · · · · ·	~~~~~~	$\sim\sim\sim$	~~~~~	~~~	~~~~~	~~~~~
			GRIL	LE, REG	SISTER	AND DIFF	USER S	CHEDULI	E		
MADIC	MANUEACTURER	050/405	MODEL	CONSTRUCTION		MOUNTINGLOGATION	DODDED TVDE	54.05.0175 (INI)	MAYNO	MAX PRESS DROP (IN	NOTEO
MARK CEG1	MANUFACTURER PRICE	SERVICE EXHAUST	MODEL 630	TYPE ALUMINIUM	FACE TYPE LOUVERED	MOUNTING LOCATION CEILING	BORDER TYPE SURFACE	FACE SIZE (IN) 18"x12"	MAX NC	W.C.) 0.08	NOTES A,B,C,D
CEG2	PRICE	EXHAUST	PDDR	ALUMINIUM	PERFORATED	CEILING	SURFACE	24"x24"	30	0.08	A,B,D
RG1	PRICE	RETURN	630	ALUMINIUM	LOUVERED	WALL	SURFACE	REFER TO PLANS	30	0.05	A,C,D
SG1	PRICE	SUPPLY	630	ALUMINIUM	LOUVERED	WALL	SURFACE	REFER TO PLANS	30	0.08	A,C,D
TG1	PRICE	TRANSFER	630	ALUMINIUM	LOUVERED	WALL	SURFACE	REFER TO PLANS	30	0.08	A.B.C.D

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

NECK SIZE SHOWN ON DRAWINGS. PROVIDE BRANCH DUCT TO MATCH NECK SIZE UNLESS OTHERWISE SHOWN ON DRAWINGS.

BAKED ENAMEL FINISH, WHITE TO MATCH CEILING COLOR.

FRONT BLADES PARALLEL TO LONG DIMENSION. FRAME TYPE TO MATCH CEILING/WALL CONSTRUCTION, COORDINATE WITH ARCHITECTURAL REFLECTED CEILING/WALL PLAN.

DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.

						FAN S	CH	ED	UL	E				
		SERVICE					ESP	NOM	FAN	DRIVE	ELEC <sup>-</sup>	TRICAL		
MARK	LOCATION	DESCRIPTION	MANUFACTURER	MOUNTING	MODEL	CFM	(IN)	HP	RPM	(BELT/DIRECT)	V/PH	DISC TYPE	WEIGHT (LBS)	NOTES
EF 1	CONCESSION	EXHAUST	GREENHECK	INLINE	SQ-100-VG	800	0.25	0.25	1154	DIRECT	115/1	NON-FUSED	45	A,B,C,D
TF 1	CONCESSION	TRANSFER	GREENHECK	WALL	CBF	500	0.20	0.05	1050	DIRECT	115/1	NON-FUSED	17	B,C,E

CBF 500 0.20 0.05 1050 DIRECT TF 2 WOMENS RR TRANSFER GREENHECK WALL NON-FUSED 115/1 B,C,E MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO

### NOTES:

PROVIDE RUBBER IN SHEAR ISOLATION AND ALL-THREAD HANGING RODS.

PROVIDE FACTORY MOUNTED DISCONNECT SWITCH. PROVIDE WITH MANUFACTURER'S FAN SPEED CONTROLLER FOR BALANCING PURPOSES.

PROVIDE WITH MANUFACTURER'S ELECTRONICALLY COMMUTATED (EC) MOTOR. PROVIDE WITH WALL MOUNTED TEMPERATURE SENSOR.

				LOU	VER S	CHED	ULE				
MARK	AREA SERVED	SERVICE	MANUFACTURER	MODEL	WIDTH (IN)	LENGTH (IN)	CFM	MIN FREE AREA (SF)	MAX VEL (FPM)	MAX APD (IN W.C.)	NOTES
IL 1	CONCESSIONS	INTAKE	GREENHECK	ESD-635	24"	24"	800 CFM	1.59	500 FPM	0.01 in-wg	A,B,C,E,F
EL 1	CONCESSIONS	EXHAUST	GREENHECK	ESD-635	24"	18"	800 CFM	1.11	720 FPM	0.05 in-wg	A,B,C,D

MODEL NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND MODEL NUMBERS ONLY. REVIEW THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS TO DETERMINE THE EXACT MATERIAL AND ACCESSORIES TO BE ORDERED.

SUSPEND FAN COIL UNIT FROM STRUCTURE IN HORIZONTAL POSITION WITH ALL -THREAD ROD AND SPRING VIBRATION ISOLATION (2" MINIMUM DEFLECTION).

PROVIDE AUXILIARY DRAIN PAN WITH [FLOOD DETECTOR SWITCH TO SHUT OFF UNIT WHEN WATER IS PRESENT IN DRAIN PAN.] [AUXILIARY DRAIN PROVIDED BY PLUMBING CONTRACTOR.]

ROUTE CONDENSATE DRAIN PIPING FROM UNIT TO NEAREST FLOOR DRAIN AND TERMINATE WITH CODE-APPROVED AIR GAP.

PROVIDE CUSTOM COLOR FINISH ON CONDENSING UNIT. COORDINATE COLOR WITH ARCHITECT

#### THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN. NOTES:

PROVIDE 1/2" MESH ALUMINUM BIRD SCREEN.

PROVIDE ANNODIZED FINISH WITH COLOR SELECTED BY ARCHITECT.. FRAME TYPE SHALL MATCH WALL CONSTRUCTION, COORDINATE WITH ARCHITECT.

PROVIDE WALL MOUNTING BRACKET FOR CONDENSING UNIT.

		SI	<sup>2</sup> LI I	S	15	ΙĿ	MH	FAN C	OIL	UNI	I SC	HE	DU	LE	(HE	=A I	PU	MP)		
			SUPF	PLY FAN			CO	OLING COIL		HEAT	PUMP HEA	ATING CO	)IL			ELECTRI	ICAL			
MARK	MANUFACTURER	MODEL		ESP N		TH (MBH)	SH (MBH) (	°F DB) (°F WE	REFR TYPE	MIN OUT (MBH)	AMBIENT (DB)	EAT (°F DB)	HTG LAT	V/PH	MCA N	MOCP DIS	SC TYPE	STARTER TYPE	WEIGHT (LBS)	NOTES
CU 1	MITSUBISHI	PEAD-A12/PUZ-A12	420	0.20	J.01	12.0	10.0	80.0 67.0	R-410A	10.5	5 °F	55 °F	85 °F	208/1	11	28 NON	N-FUSED	INTEGRAL	58	A-L
		NOT BE CONSIDERED RMINE THE EXACT MA														I THE COM	IPLETE D	ESCRIPTION	I, NOTES AN	ט

#### SEQUENCE OF OPERATIONS MISCELLANEOUS EQUIPMENT

### **EXHAUST FAN (EF-1)**

### **OPERATING MODES**

OCCUPIED MODE: The unit shall be in occupied mode when the room light switch is turned on.

**UNOCCUPIED MODE:** The unit shall be in unoccupied mode for all periods when the room light switch is turned off.

**COMPONENT CONTROL LOOPS:** The unit shall be controlled by the room lighting controls system. A 2 position motorized damper at the intake louver shall be linked with the exhaust fan.

The unit shall run continuously. 2 position motorized damper at intake louver shall be open. When in unoccupied mode:

The unit shall be off. 2 position motorized damper at intake louver shall be closed.

#### TRANSFER FAN (TF-1,2) OPERATING MODES

When in occupied mode:

STANDBY MODE: The units shall be in standby mode when the zone temperature (Z-T) is above space temperature setpoint of 50 F.

The units shall be in transfer mode when the zone temperature (Z-T) falls below space temperature setpoint of 50 F. **COMPONENT CONTROL LOOPS:** The units shall operate as an independent system. Each unit shall be controlled by a wall mounted thermostat located

within the respective plumbing chase. When in Standby Mode: The unit shall remain off.

> The unit shall be on. The unit shall remain on until space temperature as sensed by the wall mounted thermostat is above space temperature setpoint of 50 F.

### **ELECTRIC UNIT HEATER (UH-3,4)**

When in Transfer Mode:

OPERATING MODES **STANDBY MODE:** The units shall be in standby mode when the zone temperature (Z-T) is above space temperature setpoint.

The units shall be in heating mode when the zone temperature (Z-T) falls below space temperature setpoint. COMPONENT CONTROL LOOPS The units shall operate as an independent system. The units shall be controlled by a wall mounted thermostat located

within each respective space. When in Standby Mode: The units shall remain off.

When in Heating Mode:

The units shall be on. The units shall stage/cycle heater as required to maintain temperature setpoint of 68 F as sensed by the wall

#### **ELECTRIC UNIT HEATER (UH-1,2) OPERATING MODES**

mounted thermostat.

STANDBY MODE: The unit shall be in standby mode when the timer switch is off.

**HEATING MODE:** 

The unit shall be in heating mode when the timer switch is on. COMPONENT CONTROL LOOPS The units shall operate as an independent system. The units shall be controlled by a timer switch located within each

respective room. When in Standby Mode:

The unit shall remain off. When in Heating Mode:

The units shall be on. The units shall stage/cycle heater as required to maintain temperature setpoint of 68 F as sensed by the integral

#### $\downarrow$ SPLIT SYSTEM FAN COIL UNIT (FCU-1)

**OPERATING MODES** 

STANDBY MODE: The unit shall be in standby mode when the zone temperature (Z-T) does not call for heating or cooling.

COOLING MODE:
The unit shall be in cooling mode when the zone temperature (Z-T) falls below space temperature setpoint.

The unit shall be in heating mode when the zone temperature (Z-T) is above space temperature setpoint. COMPONENT CONTROL LOOPS

The unit shall operate as an independent system. The unit shall be controlled by a wall mounted thermostat located within the space. When in Standby Mode:

The unit shall remain off. When in Cooling Mode:

The unit shall be on. The unit shall stage/cycle cooling as required to maintain space temperature setpoint of 80 F as sensed by the wall mounted thermostat.

When in Heating Mode: The unit shall be on.

The unit shall stage/cycle heating as required to maintain space temperature setpoint of 68 F as sensed by the wall mounted thermostat.

#### RADIANT HEATER (RH-1.2)

**OPERATING MODES STANDBY MODE:** 

The units shall be in standby mode when the timer switch is off. **HEATING MODE:** 

The units shall be in heating mode when the timer switch is on. COMPONENT CONTROL LOOPS The units shall operate as an independent system. The units shall be controlled by a single timer switch located within

the room. When in Standby Mode:

The unit shall remain off. When in Heating Mode: The unit shall be on.

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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School

Lee's Summit R-7 School District 301 NE Tudor Road

901 NE Douglas Street

Lee's Summit, MO 64086

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structural engineer:

Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111 816.531.4144 civil engineer:

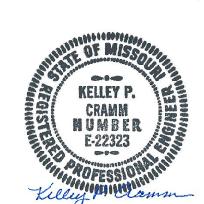
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REVISIONS

DESCRIPTION Addendum 3

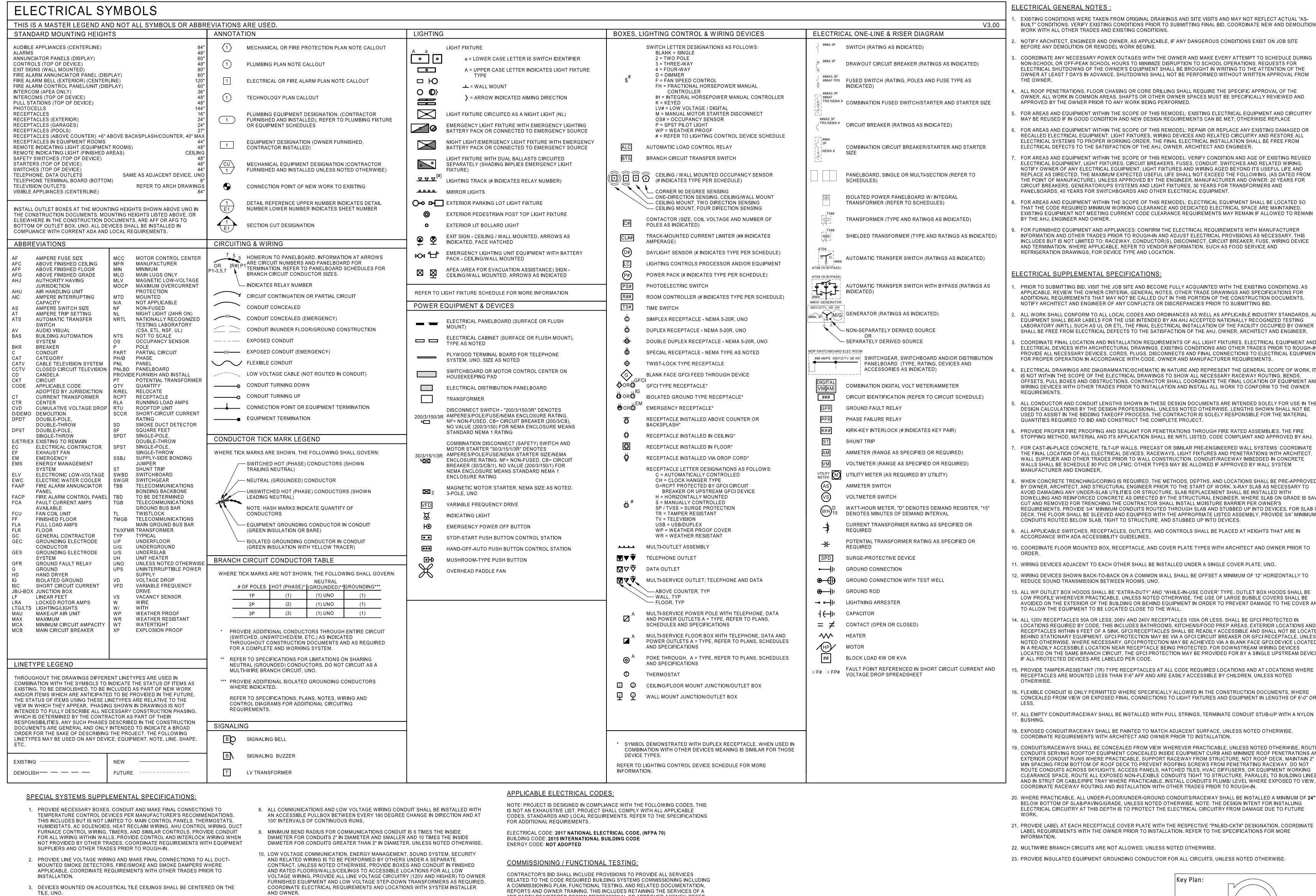
PROJECT NO:

September 28, 2020

MECHANICAL SCHEDULES & CONTROLS

**BID SET** 

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EXISTING CONDITIONS WERE TAKEN FROM ORIGINAL DRAWINGS AND SITE VISITS AND MAY NOT REFLECT ACTUAL "AS-BUILT" CONDITIONS. VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING FINAL BID. COORDINATE NEW AND DEMOLITION WORK WITH ALL OTHER TRADES AND EXISTING CONDITIONS.

NOTIFY ARCHITECT, ENGINEER AND OWNER, AS APPLICABLE, IF ANY DANGEROUS CONDITIONS EXIST ON JOB SITE BEFORE ANY DEMOLITION OR REMODEL WORK BEGINS.

COORDINATE ANY NECESSARY POWER OUTAGES WITH THE OWNER AND MAKE EVERY ATTEMPT TO SCHEDULE DURING NON-SCHOOL OR OFF-PEAK SCHOOL HOURS TO MINIMIZE DISRUPTION TO SCHOOL OPERATIONS. REQUESTS FOR ELECTRICAL SHUTDOWNS OF THE OWNER'S EQUIPMENT SHALL BE BROUGHT IN WRITING TO THE ATTENTION OF THE OWNER AT LEAST 7 DAYS IN ADVANCE. SHUTDOWNS SHALL NOT BE PERFORMED WITHOUT WRITTEN APPROVAL FROM

THE OWNER. ALL ROOF PENETRATIONS, FLOOR CHASING OR CORE DRILLING SHALL REQUIRE THE SPECIFIC APPROVAL OF THE OWNER. ALL WORK IN COMMON AREAS, SHAFTS OR OTHER OWNER SPACES MUST BE SPECIFICALLY REVIEWED AND

FOR AREAS AND EQUIPMENT WITHIN THE SCOPE OF THIS REMODEL: EXISTING ELECTRICAL EQUIPMENT AND CIRCUITRY MAY BE REUSED IF IN GOOD CONDITION AND NEW DESIGN REQUIREMENTS CAN BE MET; OTHERWISE REPLACE

FOR AREAS AND EQUIPMENT WITHIN THE SCOPE OF THIS REMODEL: REPAIR OR REPLACE ANY EXISTING DAMAGED OR RECALLED ELECTRICAL EQUIPMENT, LIGHT FIXTURES, WIRING DEVICES AND RELATED CIRCUITRY AND RESTORE ALL ELECTRICAL SYSTEMS TO PROPER WORKING ORDER. THE FINAL ELECTRICAL INSTALLATION SHALL BE FREE FROM ELECTRICAL DEFECTS TO THE SATISFACTION OF THE AHJ, OWNER, ARCHITECT AND ENGINEER.

FOR AREAS AND EQUIPMENT WITHIN THE SCOPE OF THIS REMODEL: VERIFY CONDITION AND AGE OF EXISTING REUSED ELECTRICAL EQUIPMENT, LIGHT FIXTURES, CIRCUIT BREAKERS, FUSES, CONDUIT, SWITCHES AND RELATED WIRING. NOTIFY OWNER OF ANY ELECTRICAL EQUIPMENT, LIGHT FIXTURES AND WIRING AGED BEYOND ITS USEFUL LIFE AND REPLACE AS DIRECTED. THE MAXIMUM EXPECTED USEFUL LIFE SHALL NOT EXCEED THE FOLLOWING, (AS DATED FROM THE POINT OF MANUFACTURE), UNLESS APPROVED BY THE ENGINEER, MANUFACTURER AND OWNER: 20 YEARS FOR CIRCUIT BREAKERS, GENERATOR/UPS SYSTEMS AND LIGHT FIXTURES, 30 YEARS FOR TRANSFORMERS AND PANELBOARDS, 40 YEARS FOR SWITCHBOARDS AND OTHER ELECTRICAL EQUIPMENT

FOR AREAS AND EQUIPMENT WITHIN THE SCOPE OF THIS REMODEL: ELECTRICAL EQUIPMENT SHALL BE LOCATED SO THAT THE CODE REQUIRED MINIMUM WORKING CLEARANCE AND DEDICATED ELECTRICAL SPACE ARE MAINTAINED. EXISTING EQUIPMENT NOT MEETING CURRENT CODE CLEARANCE REQUIREMENTS MAY REMAIN IF ALLOWED TO REMAIN BY THE AHJ, ENGINEER AND OWNER.

. FOR FURNISHED EQUIPMENT AND APPLIANCES: CONFIRM THE ELECTRICAL REQUIREMENTS WITH MANUFACTURER INFORMATION AND OTHER TRADES PRIOR TO ROUGH-IN AND ADJUST ELECTRICAL PROVISIONS AS NECESSARY, THIS INCLUDES BUT IS NOT LIMITED TO: RACEWAY, CONDUCTOR(S), DISCONNECT, CIRCUIT BREAKER, FUSE, WIRING DEVICE AND TERMINATION. WHERE APPLICABLE, REFER TO VENDOR INFORMATION, SUCH AS FOOD SERVICE AND REFRIGERATION DRAWINGS, FOR DEVICE TYPE AND LOCATION.

**ELECTRICAL SUPPLEMENTAL SPECIFICATIONS:** 

PRIOR TO SUBMITTING BID, VISIT THE JOB SITE AND BECOME FULLY ACQUAINTED WITH THE EXISTING CONDITIONS. AS APPLICABLE, REVIEW THE OWNER CRITERIA, GENERAL NOTES, OTHER TRADE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS. NOTIFY ARCHITECT AND ENGINEER OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO SUBMITTING BID.

ALL WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES AS WELL AS APPLICABLE INDUSTRY STANDARDS. ALI EQUIPMENT SHALL BEAR LABELS FOR THE USE INTENDED BY AN AHJ ACCEPTED NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL), SUCH AS UL OR ETL. THE FINAL ELECTRICAL INSTALLATION OF THE FACILITY OCCUPIED BY OWNER SHALL BE FREE FROM ELECTRICAL DEFECTS TO THE SATISFACTION OF THE AHJ, OWNER, ARCHITECT AND ENGINEER. COORDINATE FINAL LOCATION AND INSTALLATION REQUIREMENTS OF ALL LIGHT FIXTURES, ELECTRICAL EQUIPMENT AND ELECTRICAL DEVICES WITH ARCHITECTURAL DRAWINGS, EXISTING CONDITIONS AND OTHER TRADES PRIOR TO ROUGH-IN. PROVIDE ALL NECESSARY DEVICES. CORDS. PLUGS, DISCONNECTS AND FINAL CONNECTIONS TO ELECTRICAL EQUIPMENT

FOR PROPER OPERATION IN ACCORDANCE WITH CODE, OWNER AND MANUFACTURER REQUIREMENTS. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC/SCHEMATIC IN NATURE AND REPRESENT THE GENERAL SCOPE OF WORK. IT IS NOT WITHIN THE SCOPE OF THE ELECTRICAL DRAWINGS TO SHOW ALL NECESSARY RACEWAY ROUTING. BENDS. OFFSETS, PULL BOXES AND OBSTRUCTIONS. CONTRACTOR SHALL COORDINATE THE FINAL LOCATION OF EQUIPMENT AND WIRING DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION AND INSTALL ALL WORK TO CONFORM TO THE OWNER

ALL CONDUCTOR AND CONDUIT LENGTHS SHOWN IN THESE DESIGN DOCUMENTS ARE INTENDED SOLELY FOR USE IN THE DESIGN CALCULATIONS BY THE DESIGN PROFESSIONAL, UNLESS NOTED OTHERWISE. LENGTHS SHOWN SHALL NOT BE EED TO ASSIST IN THE BIDDING TAKEOFF PROCESS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE MATERIAL

QUANTITIES REQUIRED TO BID AND CONSTRUCT THE COMPLETE PROJECT. PROVIDE PROPER FIRE PROOFING AND SEALANT FOR PENETRATIONS THROUGH FIRE RATED ASSEMBLIES. THE FIRE

STOPPING METHOD, MATERIAL AND ITS APPLICATION SHALL BE NRTL LISTED, CODE COMPLIANT AND APPROVED BY AHJ. FOR CAST-IN-PLACE CONCRETE, TILT-UP WALLS, PRECAST OR SIMILAR PRE-ENGINEERED WALL SYSTEMS: COORDINATE THE FINAL LOCATION OF ALL ELECTRICAL DEVICES, RACEWAYS, LIGHT FIXTURES AND PENETRATIONS WITH ARCHITECT WALL SUPPLIER AND OTHER TRADES PRIOR TO WALL CONSTRUCTION. CONDUIT/RACEWAY IMBEDDED IN CONCRETE WALLS SHALL BE SCHEDULE 80 PVC OR LFMC; OTHER TYPES MAY BE ALLOWED IF APPROVED BY WALL SYSTEM

WHEN CONCRETE TRENCHING/CORING IS REQUIRED, THE METHODS, DEPTHS, AND LOCATIONS SHALL BE PRE-APPROVED BY OWNER. ARCHITECT, AND STRUCTURAL ENGINEER PRIOR TO THE START OF WORK, X-RAY SLAB AS NECESSARY TO AVOID DAMAGING ANY UNDER-SLAB UTILITIES OR STRUCTURE. SLAB REPLACEMENT SHALL BE INSTALLED WITH DOWELLING AND REINFORCED CONCRETE AS DIRECTED BY THE STRUCTURAL ENGINEER. WHERE SLAB ON GRADE IS SAW-CUT AND REMOVED FOR TRENCHING THE CONTRACTOR SHALL INSTALL MOISTURE BARRIER PER OWNER'S REQUIREMENTS. PROVIDE 3/4" MINIMUM CONDUITS ROUTED THROUGH SLAB AND STUBBED UP INTO DEVICES. FOR SLAB ON DECK, THE FLOOR SHALL BE SLEEVED AND EQUIPPED WITH THE APPROPRIATE LISTED ASSEMBLY. PROVIDE 3/4" MINIMUM CONDUITS ROUTED BELOW SLAB, TIGHT TO STRUCTURE, AND STUBBED UP INTO DEVICES.

ALL APPLICABLE SWITCHES, RECEPTACLES, OUTLETS, AND CONTROLS SHALL BE PLACED AT HEIGHTS THAT ARE IN ACCORDANCE WITH ADA ACCESSIBILITY GUIDELINES.

10. COORDINATE FLOOR MOUNTED BOX, RECEPTACLE, AND COVER PLATE TYPES WITH ARCHITECT AND OWNER PRIOR TO

WIRING DEVICES ADJACENT TO EACH OTHER SHALL BE INSTALLED UNDER A SINGLE COVER PLATE, UNO.

2. WIRING DEVICES SHOWN BACK-TO-BACK ON A COMMON WALL SHALL BE OFFSET A MINIMUM OF 12" HORIZONTALLY TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS, UNO.

3. ALL WP OUTLET BOX HOODS SHALL BE "EXTRA-DUTY" AND "WHILE-IN-USE COVER" TYPE. OUTLET BOX HOODS SHALL BE LOW PROFILE WHEREVER PRACTICABLE, UNLESS NOTED OTHERWISE. THE USE OF LARGE BUBBLE COVERS SHALL BE AVOIDED ON THE EXTERIOR OF THE BUILDING OR BEHIND EQUIPMENT IN ORDER TO PREVENT DAMAGE TO THE COVER AND TO ALLOW THE EQUIPMENT TO BE LOCATED CLOSE TO THE WALL.

4. ALL 120V RECEPTACLES 50A OR LESS, 208V AND 240V RECEPTACLES 100A OR LESS, SHALL BE GFCI PROTECTED IN LOCATIONS REQUIRED BY CODE; THIS INCLUDES BATHROOMS, KITCHENS/FOOD PREP AREAS, EXTERIOR LOCATIONS AND RECEPTACLES WITHIN 6 FEET OF A SINK. GFCI RECEPTACLES SHALL BE READILY ACCESSIBLE AND SHALL NOT BE LOCATED BEHIND STATIONARY EQUIPMENT. GFCI PROTECTION MAY BE VIA A GFCI CIRCUIT BREAKER OR GFCI RECEPTACLE, UNLESS NOTED OTHERWISE. WHERE NECESSARY, GFCI PROTECTION MAY BE ACHIEVED VIA A BLANK FACE GFCI DEVICE LOCATED IN A READILY ACCESSIBLE LOCATION NEAR RECEPTACLE BEING PROTECTED. FOR DOWNSTREAM WIRING DEVICES LOCATED ON THE SAME BRANCH CIRCUIT, THE GFCI PROTECTION MAY BE PROVIDED FOR BY A SINGLE UPSTREAM DEVICE IF ALL PROTECTED DEVICES ARE LABELED PER CODE.

15. PROVIDE TAMPER-RESISTANT (TR) TYPE RECEPTACLES AT ALL CODE REQUIRED LOCATIONS AND AT LOCATIONS WHERE RECEPTACLES ARE MOUNTED LESS THAN 5'-6" AFF AND ARE EASILY ACCESSIBLE BY CHILDREN, UNLESS NOTED

16. FLEXIBLE CONDUIT IS ONLY PERMITTED WHERE SPECIFICALLY ALLOWED IN THE CONSTRUCTION DOCUMENTS, WHERE

CONCEALED FROM VIEW OR EXPOSED FINAL CONNECTIONS TO LIGHT FIXTURES AND EQUIPMENT IN LENGTHS OF 6'-0" OR

7. ALL EMPTY CONDUIT/RACEWAY SHALL BE INSTALLED WITH PULL STRINGS. TERMINATE CONDUIT STUB-UP WITH A NYLON

18. EXPOSED CONDUIT/RACEWAY SHALL BE PAINTED TO MATCH ADJACENT SURFACE, UNLESS NOTED OTHERWISE. COORDINATE REQUIREMENTS WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.

19. CONDUITS/RACEWAYS SHALL BE CONCEALED FROM VIEW WHEREVER PRACTICABLE, UNLESS NOTED OTHERWISE. ROUTE CONDUITS SERVING ROOFTOP EQUIPMENT CONCEALED INSIDE EQUIPMENT CURB AND MINIMIZE ROOF PENETRATIONS AND EXTERIOR CONDUIT RUNS WHERE PRACTICABLE. SUPPORT RACEWAY FROM STRUCTURE, NOT ROOF DECK. MAINTAIN 2" MIN SPACING FROM BOTTOM OF ROOF DECK TO PREVENT ROOFING SCREWS FROM PENETRATING RACEWAY. DO NOT ROUTE CONDUITS ACROSS SKYLIGHTS, ACCESS PANELS, HATCHED TILES, HVAC DIFFUSERS, OR EQUIPMENT WORKING

20. WHERE PRACTICABLE, ALL UNDER-FLOOR/UNDER-GROUND CONDUITS/RACEWAY SHALL BE INSTALLED A MINIMUM OF **24"** \_\_\_\_\_ BELOW BOTTOM OF SLAB/PAVING/GRADE, UNLESS NOTED OTHERWISE, NOTE: THE DESIGN INTENT FOR INSTALLING ELECTRICAL CIRCUITRY AT THIS DEPTH IS TO PROTECT THE ELECTRICAL CIRCUITRY FROM DAMAGE DUE TO FUTURE

21. PROVIDE LABEL AT EACH RECEPTACLE COVER PLATE WITH THE RESPECTIVE "PNLBD-CKT#" DESIGNATION. COORDINATE LABEL REQUIREMENTS WITH THE OWNER PRIOR TO INSTALLATION. REFER TO THE SPECIFICATIONS FOR MORE

22. MULTIWIRE BRANCH CIRCUITS ARE NOT ALLOWED, UNLESS NOTED OTHERWISE.

23. PROVIDE INSULATED EQUIPMENT GROUNDING CONDUCTOR FOR ALL CIRCUITS, UNLESS NOTED OTHERWISE.

|Key Plan:

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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street Lee's Summit, MO 64086

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

Gould Evans 4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc 4338 Belleview Avenue Kansas City, MO 64111 816.531.4144

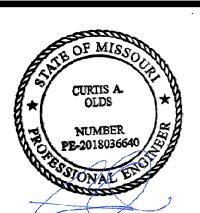
Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215 913.485.0318

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> HENDERSON ENGINEERS 8345 LENEXA DRIVE, SUITE 300 LENEXA, KS 66214 **TEL** 913.742.5000 **FAX** 913.742.5001 WWW.HENDERSONENGINEERS.COM

> > MO. CORPORATE NO: E-556D

EXPIRES 12/31/2020



REVISIONS DESCRIPTION

PROJECT NO: September 28, 2020

AND NOTES

ELECTRICAL LEGEND

3RD PARTY REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY. REFER TO THE LATEST ADOPTED EDITION OF THE APPLICABLE ENERGY CODE FOR MORE INFORMATION. CONTRACTOR SHALL COMPLETE ALL RELATED COMMISSIONING REQUIREMENTS PRIOR TO FINAL INSPECTIONS IN ACCORDANCE WITH THE

OWNER AND OTHER TRADES PRIOR TO ROUGH-IN.

CONDUITS AND SLEEVES, UNLESS NOTED OTHERWISE.

CONTRACTOR AND OWNER PRIOR TO ROUGH-IN.

4. PROVIDE BOX AND [3/4"] CONDUIT FROM EACH THERMOSTAT LOCATION TO

MECHANICAL EQUIPMENT, (FLUSH MOUNT BOX WHEREVER PRACTICABLE).

COORDINATE LOCATION OF ALL THERMOSTAT BOXES WITH MECHANICAL/CONTROLS

5. PROVIDE BOXES AND CONDUITS FOR THE FIRE PROTECTION SYSTEM LOW VOLTAGE

MINIMUM, PROVIDE [3/4"] CONDUIT, UNLESS NOTED OTHERWISE, COORDINATE

REQUIREMENTS AND LOCATIONS WITH SYSTEM INSTALLER AND FIRE ALARM

6. AT A MINIMUM, PROVIDE EXTRA DEEP, DOUBLE GANG COMMUNICATION OUTLET

WIRING AS REQUIRED. THIS INCLUDES EXPOSED WIRING LESS THAN 96" AFF. AT A

BOXES, (FLUSH MOUNTED WHEREVER PRACTICABLE), WITH SINGLE-GANG PLASTER RING AND [1"] CONDUIT STUBBED-UP CONCEALED TO ACCESSIBLE CEILING SPACE,

UNLESS NOTED OTHERWISE. PROVIDE SURFACE MOUNTED DATA BOXES WITHIN CABINETRY, AND SELECT OTHER LOCATIONS AS INDICATED ON THE DRAWINGS.

COORDINATE TELEPHONE/DATA BOX AND CONDUIT LOCATIONS AND SIZES WITH

7. PROVIDE NYLON BUSHINGS FOR ALL COMMUNICATIONS AND LOW VOLTAGE WIRING

9/25/2020 1:35:28 PM

OR NEAREST ACCESSIBLE CEILING SPACE.

WHERE APPLICABLE.

IS IN CABLE TRAY).

11. ALL LOW VOLTAGE CLASS 2 OR 3 WIRING NOT IN CONDUIT SHALL BE PLENUM RATED

12. LOW VOLTAGE CABLE SHEATH LABELS AND RELATED MANUFACTURER INFO SHALL

REMAIN APPARENT IN ALL EXPOSED APPLICATIONS. PROTECT ALL EXPOSED CABLING

13. CABLES SHALL BE ROUTED THROUGH THE BUILDING CABLE TRAY/RACEWAY SYSTEM,

14. CONDUITS FOR COMMUNICATIONS OUTLETS SERVING ELEVATOR EQUIPMENT ROOMS,

CONTINUOUS ("HOMERUN") FROM OUTLET TO SERVING COMMUNICATIONS ROOM.

FACP, AND SIMILAR CRITICAL EQUIPMENT AS DESIGNATED BY THE OWNER SHALL BE

UNLESS NOTED OTHERWISE. EXPOSED CABLING SHALL NOT BE ROUTED IN AREAS EXPOSED TO STRUCTURE UNLESS SPECIFICALLY PERMITTED BY THE OWNER. IN AREAS WHERE EXPOSED CABLES ARE ALLOWED, IT SHALL BE INSTALLED IN A NEAT AND

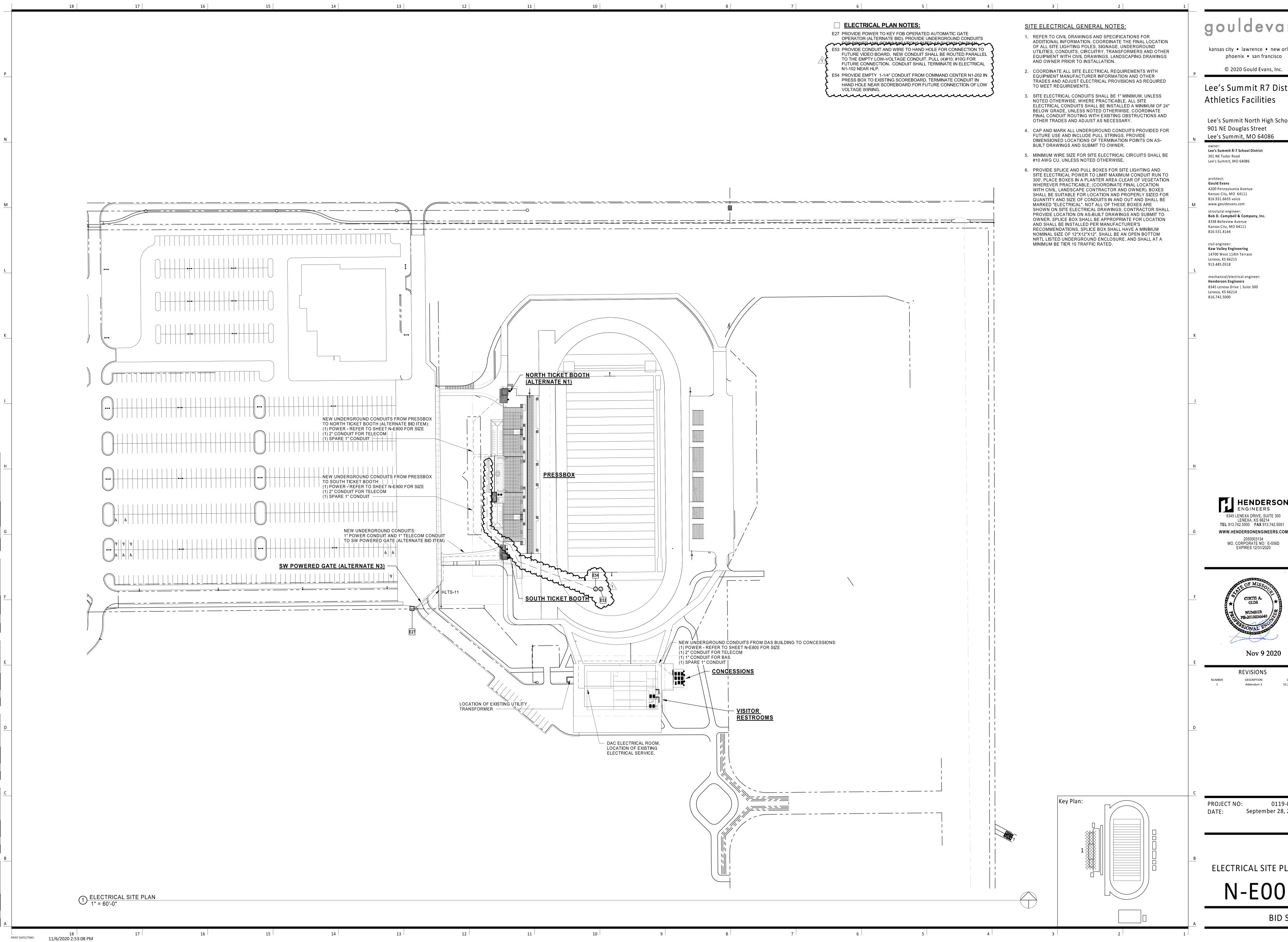
WORKMAN LIKE MANNER IN ACCORDANCE WITH THE OWNER'S REQUIREMENTS. WHERE

REQUIRED, PROVIDE CONDUIT TO ROUTE LOW VOLTAGE CABLING TO THE CABLE TRAY

FROM PAINTING AND OVERSPRAY (INCLUDES CABLE NOT ROUTED IN CONDUIT AND THAT

12

CONSTRUCTION DOCUMENTS, CODE AND MANUFACTURER'S INSTRUCTIONS.



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Lee's Summit R7 District

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District

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> HENDERSON ENGINEERS 8345 LENEXA DRIVE, SUITE 300 LENEXA, KS 66214 TEL 913.742.5000 FAX 913.742.5001

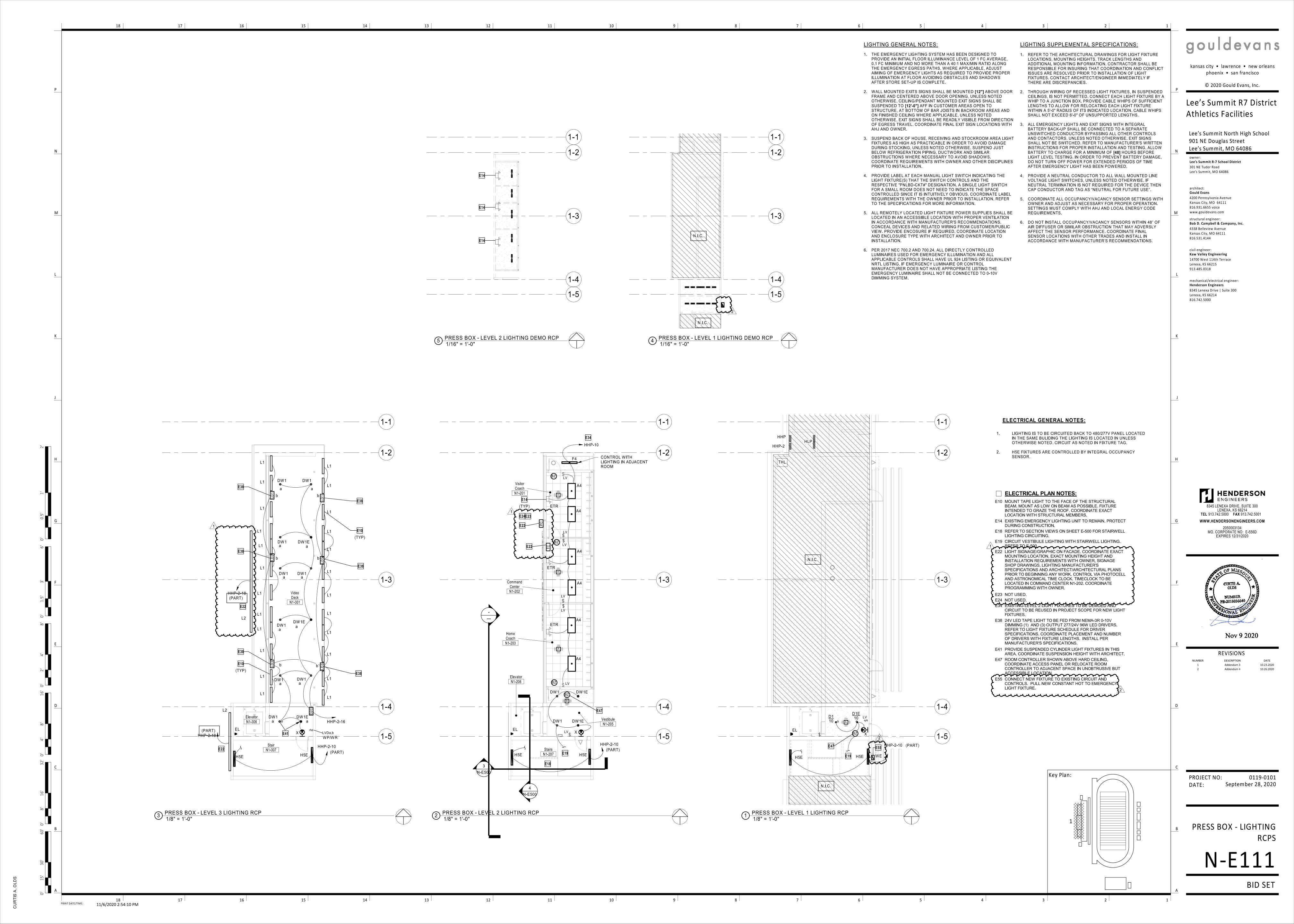


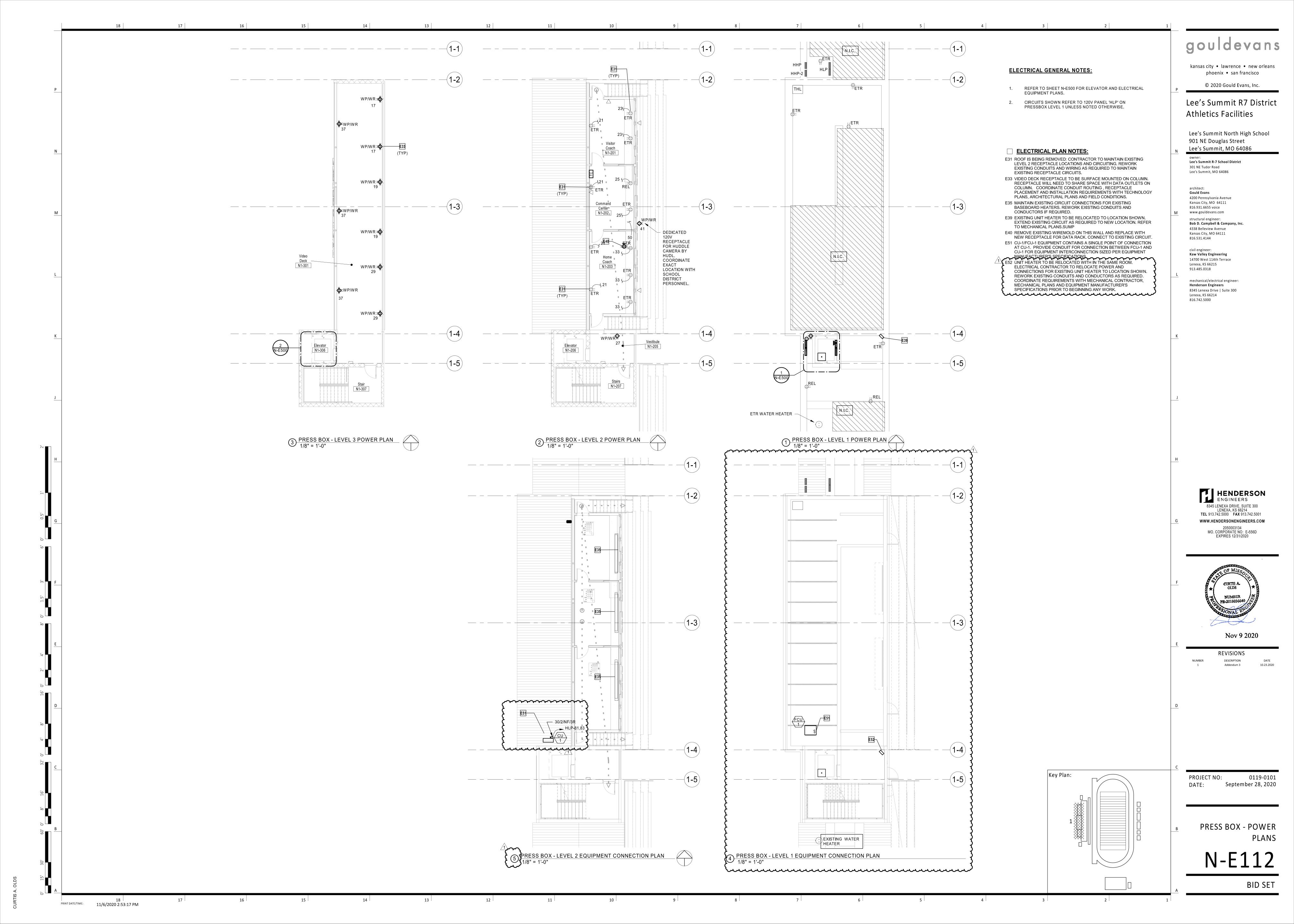
REVISIONS

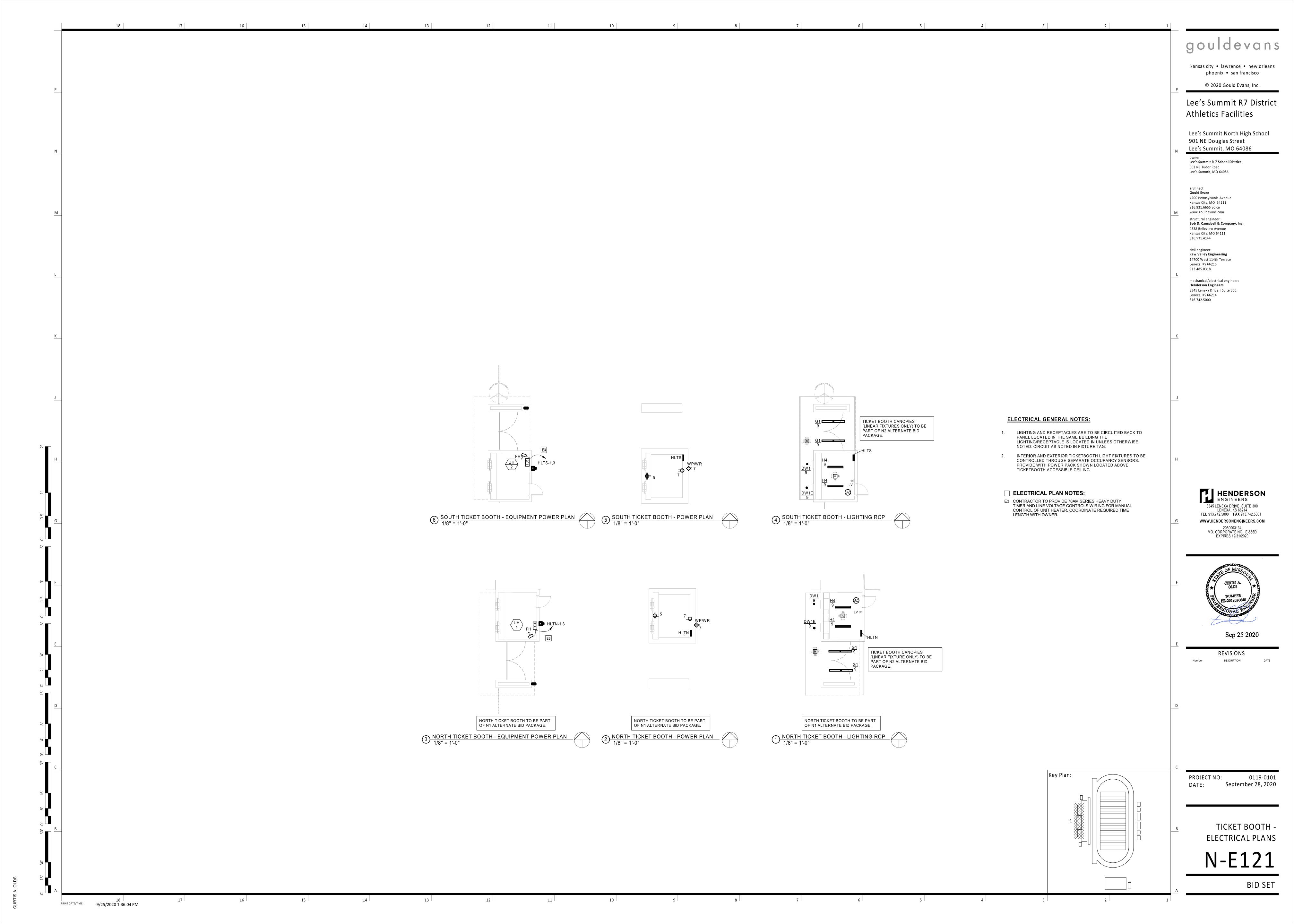
September 28, 2020

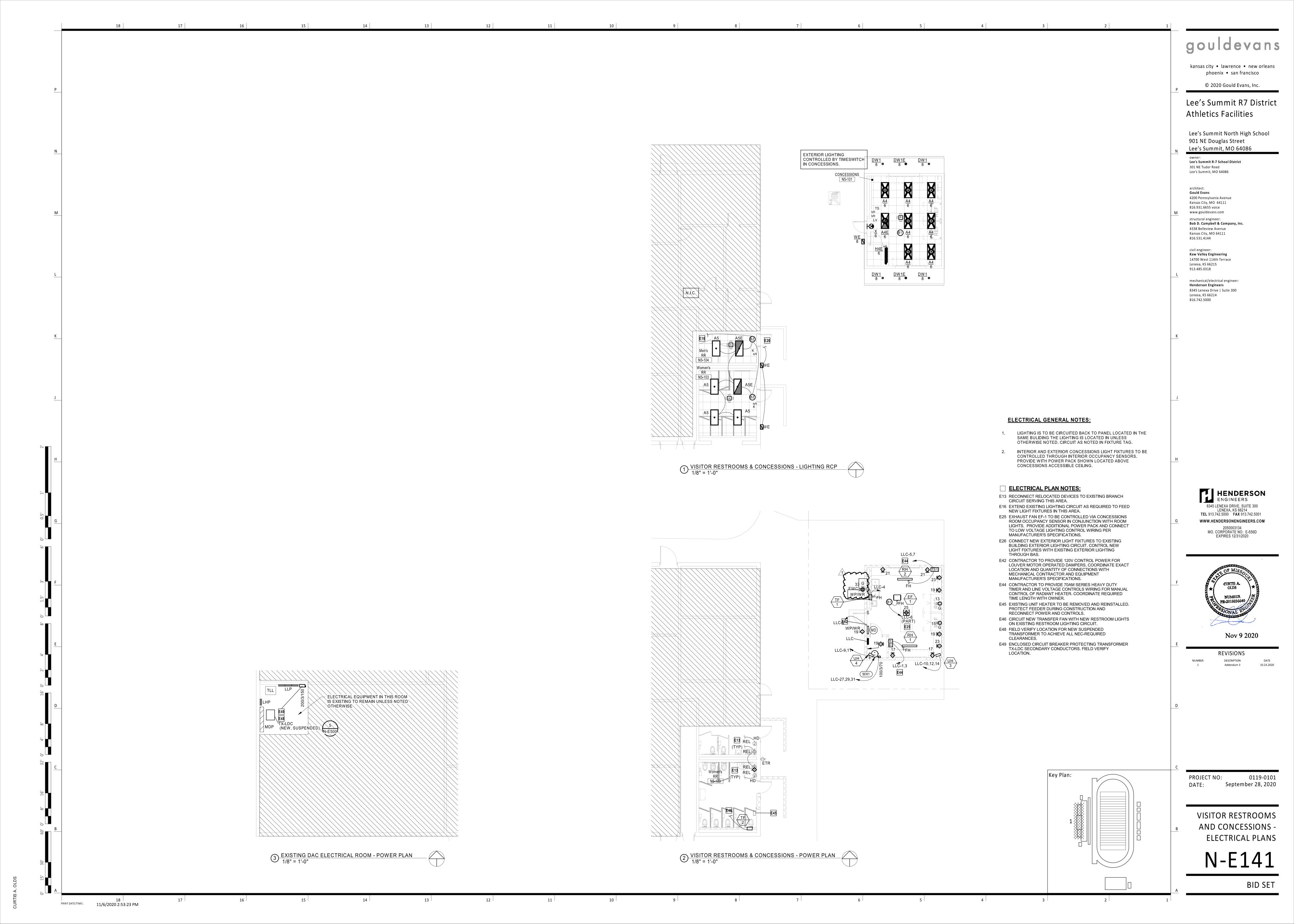
ELECTRICAL SITE PLAN

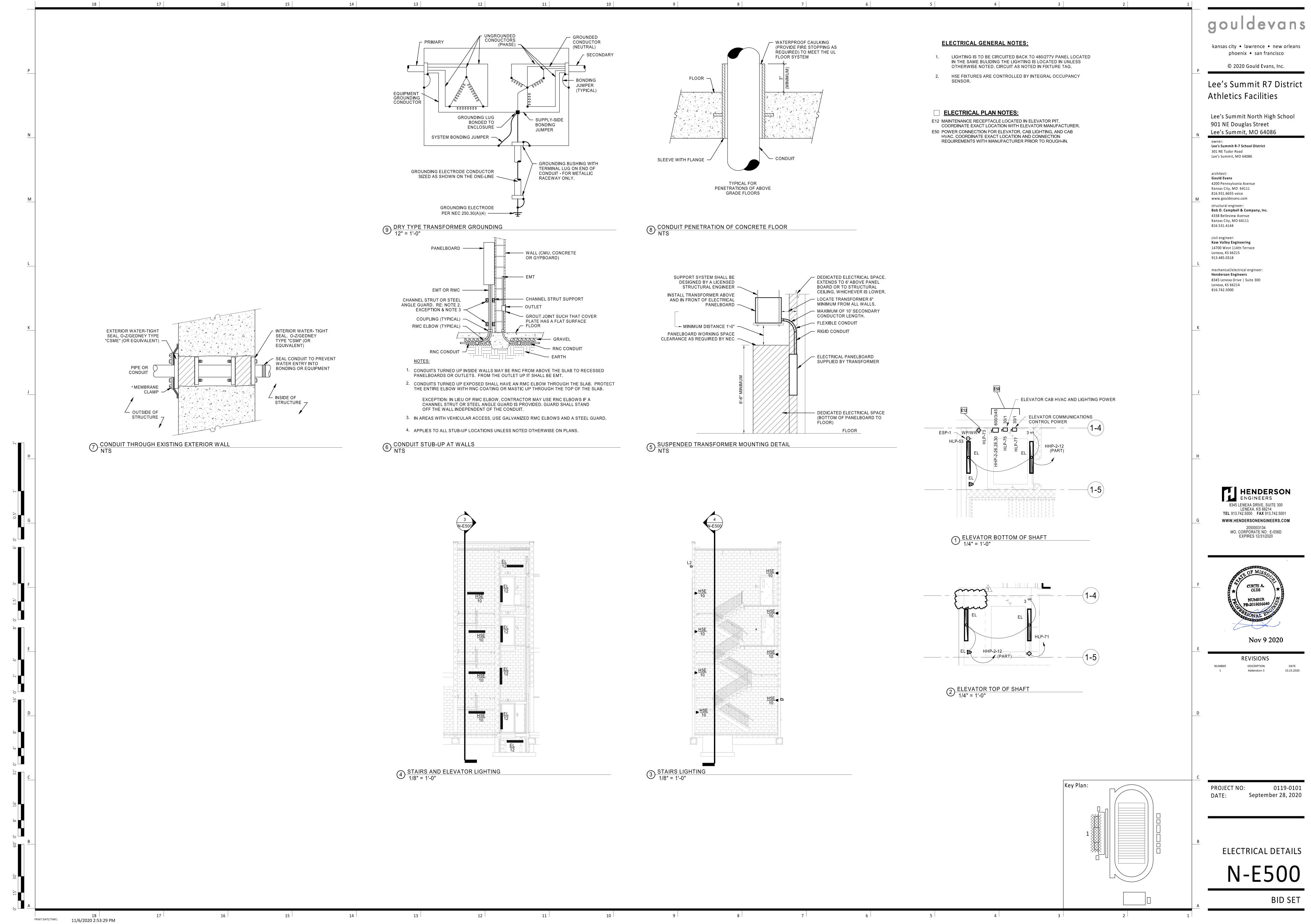
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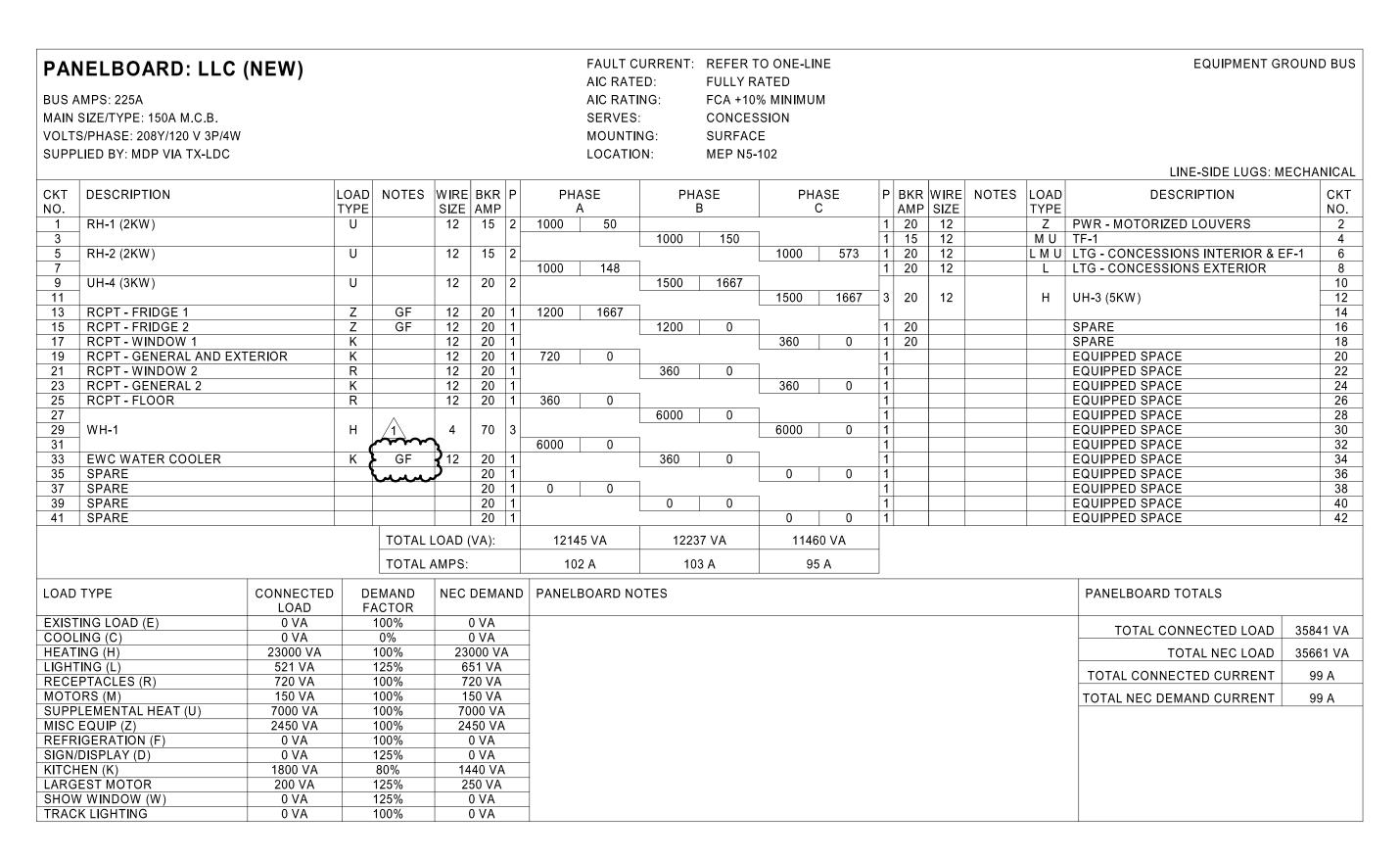


Lee's Summit R7 District

Lee's Summit North High School

0119-0101

**BID SET** 



IEL	LBOARD: HLTI	N (NEW)								JLT CURRE RATED:	NT:		ER TO C		LINE			EQUIPMENT GRO	OUND BUS
MDC	2. 4004																		
	S: 100A									RATING:			\ +10% M						
	TYPE: 50A M.C.B.									RVES:			RTH TICK	KETE	воотн				
S/PH	IASE: 120/208 V 1P/3W								МО	UNTING:		SUF	RFACE						
LIED	BY: HLP								LO	CATION:		Tick	et Booth	- Nor	th N3-101				
																		LINE-SIDE LUGS: ME	CHANICAI
DES	SCRIPTION		LOAD	NOTES	WIRE	BKR	P	F	PHASE		ı	PHASE		P	BKR WIRE	NOTES	LOAD	DESCRIPTION	СКТ
			TYPE		SIZE			•	Α			В			AMP SIZE		TYPE		NO.
UH.	I-1 (3KW)		Н		12	20		1500		0					20			SPARE	2
	( )										1500		0	1				SPARE	4
RC	PT - TICKET WINDOW	1	R		12	20	1	360		0		· · · · · · · · · · · · · · · · · · ·		1	20			SPARE	6
RC	PT - GENERAL		R		12	20	1				360		0	1				EQUIPPED SPACE	8
	G - NORTH TICKET BOO	OTH	L		12	20		394		0				1				EQUIPPED SPACE	10
SP	ARE					20	1				0		0	1				EQUIPPED SPACE	12
				TOTAL	LOAD (	VA):		2	254 VA		1	860 VA							
				TOTAL	AMPS:				21 A			18 A							
TYP	PE	CONNECTED		MAND CTOR	NEC	DEM	AND	PANELBO	ARD N	OTES								PANELBOARD TOTALS	
ING	LOAD (E)	0 VA	1	100%		O VA												TOTAL CONNECTED LOAD	4114 VA
ING		0 VA		0%		O VA												TOTAL CONNECTED LOAD	4114 VA
ING (		3000 VA		100%		00 V												TOTAL NEC LOAD	4213 VA
ING		394 VA		125%		93 VA												TOTAL CONNECTED CURRENT	20 A
	CLES (R)	720 VA		100%		20 VA	١												
RS (		0 VA		100%		O VA												TOTAL NEC DEMAND CURRENT	20 A
	ENTAL HEAT (U)	0 VA		100%		AV 0													
	JIP (Z)	0 VA		100%		AV 0													
	RATION (F)	0 VA		100%		AV 0		4											
	PLAY (D)	0 VA		125%		AV 0		-											
EN (		0 VA		100% 125%		O VA		-											
	MOTOR NDOW (W)	0 VA 0 VA		125% 125%		0 VA 0 VA		-											
								-											
	GHTING	0 VA		100%		O VA													

PANELBOARD: HLT BUS AMPS: 100A MAIN SIZE/TYPE: 50A M.C.B. VOLTS/PHASE: 208Y/120 V 3P/4' SUPPLIED BY: TO BE DETERMIN	W			FAULT C AIC RATI AIC RATI SERVES MOUNTII LOCATIO	ING: FCA +109 : SOUTH T NG: SURFAC	ATED % MINIMUM TICKET BOOTH						EQUIPMENT G	
CKT DESCRIPTION NO.  1 UH-2 (3KW) 3 5 RCPT - WINDOW 1 7 RCPT - GENERAL AND E 9 LTG - SOUTH TICKET BC 11 PWR - AUTOMATIC GAT	TY  F  XTERIOR  F  OTH  L	R	WIRE BKR P 12 20 2 1 12 20 1 12 20 1 16 20 1 1 LOAD (VA):	PHASE A 1500 0 0 1860 VA 16 A	PHASE B 1500 0 394 0 1894 VA 16 A	PHASE C  180 0  1164 0  1344 VA  11 A	P 1 1 1 1 1 1 1 1	20 20 20 20	WIRE	NOTES	LOAD	DESCRIPTION  SPARE SPARE SPARE SPARE EQUIPPED SPACE EQUIPPED SPACE EQUIPPED SPACE	CKT NO. 2 4 6 8 10 12
EXISTING LOAD (E) COOLING (C) HEATING (H) LIGHTING (L) RECEPTACLES (R) MOTORS (M) SUPPLEMENTAL HEAT (U) MISC EQUIP (Z) REFRIGERATION (F) SIGN/DISPLAY (D) KITCHEN (K) LARGEST MOTOR SHOW WINDOW (W) TRACK LIGHTING	CONNECTED LOAD  0 VA 0 VA 3000 VA 394 VA 540 VA 0 VA	DEMAND FACTOR 100% 0% 100% 125% 100% 100% 100% 100% 100% 125% 100% 125% 100%	0 VA 0 VA 3000 VA 493 VA 540 VA 0 VA 0 VA 1164 VA 0 VA 0 VA 0 VA 0 VA 0 VA	PANELBOARD NO	DTES							TOTAL CONNECTED LOAD TOTAL NEC LOAD TOTAL CONNECTED CURRENT TOTAL NEC DEMAND CURRENT	5098 VA 5197 VA 14 A 14 A

ARC FAULT CIRCUIT INTERRUPTER.  C## CIRCUIT VIA LIGHTING CONTACTOR #.  CL CIRCUIT VIA CURRENT LIMITING DEVICE.  D DISCONNECT CIRCUITRY FOR REMOVED LOAD, UPDATE CIRCUIT DIRECTORY TO SPARE AND TURN OFF.  EM EMERGENCY LIGHTING HANDLE-ON CLAMP.  EX EXISTING.  F FUTURE LOAD; NOTE AS SPARE AND TURN OFF.  FA RED/HANDLE-ON CLAMP.  GF GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA).  GFEP GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA).  HT PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE.  IG ISOLATED GROUND CIRCUIT.  L## LIGHTING CONTROL SCHEME NUMBER.  LCK HANDLE PADLOCKABLE-OFF DEVICE.  LO HANDLE-ON CLAMP.  N PROVIDE NEW CIRCUIT BREAKER.  OL REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM.  PS POWER-SWITCHING CIRCUIT BREAKER.  R REUSE EXISTING CIRCUIT BREAKER.  R REUSE EXISTING CIRCUIT BREAKER FOR NEW/REVISED LOAD.  RP CIRCUIT VIA RELAY PANEL.  ST SHUNT TRIP CIRCUIT BREAKER.  V VERIFY EXISTING LOAD AND UPDATE DIRECTORY, IF UNUSED, NOTE AS SPARE AND TURN OFF.  VD BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IN AND TURN DISTALLATION.	PA	NELBOARD LEGEND
C# CIRCUIT VIA LIGHTING CONTACTOR #. CL CIRCUIT VIA CURRENT LIMITING DEVICE. D DISCONNECT CIRCUITRY FOR REMOVED LOAD, UPDATE CIRCUIT DIRECTORY TO SPARE AND TURN OFF. EM EMERGENCY LIGHTING HANDLE-ON CLAMP. EX EXISTING. F FUTURE LOAD; NOTE AS SPARE AND TURN OFF. FA RED/HANDLE-ON CLAMP. GF GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA). GFEP GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA). HT PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE. IG ISOLATED GROUND CIRCUIT. L# LIGHTING CONTROL SCHEME NUMBER. LCK HANDLE PADLOCKABLE-OFF DEVICE. LO HANDLE-ON CLAMP. N PROVIDE NEW CIRCUIT BREAKER. OL REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM. PS POWER-SWITCHING CIRCUIT BREAKER. PSE EMERGENCY POWER-SWITCHING CIRCUIT BREAKER. R REUSE EXISTING CIRCUIT BREAKER FOR NEW/REVISED LOAD. RP CIRCUIT VIA RELAY PANEL. ST SHUNT TRIP CIRCUIT BREAKER. V VERIFY EXISTING LOAD AND UPDATE DIRECTORY, IF UNUSED, NOTE AS SPARE AND TURN OFF. VD BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST GROUND WIRE SIZE PER CODE. PROVIDE LUG ADAPTORS IF REQUIRED.	ABBRE	EVIATIONS V1.00
2 CONNECTIVE AIR EXISTING HAZARD TO MARE CODE COMPEIANT INSTALLATION.	C#CD EMX FAFEP HG L#CO NOLSER RPT V	CIRCUIT VIA LIGHTING CONTACTOR #. CIRCUIT VIA CURRENT LIMITING DEVICE. DISCONNECT CIRCUITRY FOR REMOVED LOAD, UPDATE CIRCUIT DIRECTORY TO SPARE AND TURN OFF. EMERGENCY LIGHTING HANDLE-ON CLAMP. EXISTING. FUTURE LOAD; NOTE AS SPARE AND TURN OFF. RED/HANDLE-ON CLAMP. GROUND-FAULT CIRCUIT INTERRUPTER TYPE CIRCUIT BREAKER (5 mA). GROUND FAULT EQUIPMENT PROTECTION BREAKER (30 mA). PROVIDE HANDLE-TIE FOR MULTI-WIRE BRANCH CIRCUIT PER CODE. ISOLATED GROUND CIRCUIT. LIGHTING CONTROL SCHEME NUMBER. HANDLE PADLOCKABLE-OFF DEVICE. HANDLE-ON CLAMP. PROVIDE NEW CIRCUIT BREAKER. REFER TO ELECTRICAL ONE-LINE/RISER DIAGRAM. POWER-SWITCHING CIRCUIT BREAKER. EMERGENCY POWER-SWITCHING CIRCUIT BREAKER. REUSE EXISTING CIRCUIT BREAKER FOR NEW/REVISED LOAD. CIRCUIT VIA RELAY PANEL. SHUNT TRIP CIRCUIT BREAKER. VERIFY EXISTING LOAD AND UPDATE DIRECTORY, IF UNUSED, NOTE AS SPARE AND TURN OFF. BRANCH CIRCUITRY HAS BEEN UPSIZED TO REDUCE VOLTAGE DROP. ADJUST

US A IAIN OLT:	NELBOARD: HLP AMPS: 225A SIZE/TYPE: 150A M.C.B. S/PHASE: 208Y/120 V 3P/4W LIED BY: HHP VIA THL	(EXISTIN	G)					FAULT CU AIC RATED AIC RATIN SERVES: MOUNTING LOCATION	G: FCA PRE G: SUR	ER TO ONE LY RATED +10% MINI SS BOX .FACE trical N1-102	MUM					EQUIPMENT G LINE-SIDE LUGS: N		
KT IO.	DESCRIPTION		LOAD TYPE	NOTES		BKR F AMP	PH	ASE	PHASE B		PHASE C		WIRE SIZE	NOTES	LOAD TYPE	DESCRIPTION		CKT NO.
1	EX - 6 RECEPTACLES H10	3 104	1111		SIZE	20 1	1080	720	Б			1 20	JIZL			EX - 4 RCPT ELEC RM		2
3	EX - 4 RECEPTACLES H10					20 1	1000	, 20	720 72	.0		1 20				EX - 4 RCPT H108,109		<del>-</del> -
5	EX - 2 RECEPTACLES LAV					20 1				360	720	1 20				EX - 4 RCPT WOMEN RR		6
7	EX - HAND DRYER H102					20 1	1250	1250				1 20				EX - HAND DRYER H108 NE		8
9	EX - HAND DRYER H102					20 1			1250 125			1 20				EX - HAND DRYER H108 NW		10
11	EX - HAND DRYER H102					20 1				125	0 1250					EX - HAND DRYER H108 SW		12
13	EX - HAND DRYER H102					20 1	1250	500				1 20				EX - HAND DRYER H108 SE		14
15	EX - 2 RECEPTACLES H10				40	20 1			360 50		540	1 20				EX - TM2 & JCI		16
17	RCPT - VIDEO DECK NOR		R	R	12	20 1	700	4000		720	540	1 20				EX - POWER FOR SECURITY		18
19	RCPT - VIDEO DECK CENT EX - RCPT LEVEL 2 PRESS		R	R	12 EX	20 1	720	1000	720 100	00		1 20 2 50				EX - 3 RCPT CONCESSION EX - COFFEE URN NORTH		20 22
21 23	EX - RCPT VISITOR COAC		R R		EX	20 1 20 1	_		720   100	360	1000	$ \begin{vmatrix} 2 \end{vmatrix}$				EX - COFFEE ORN NORTH	-	24
25 25	EX - RCPT COMMAND CE		R		12	20 1	360	1000			/ 1000	2 50				EX - COFFEE URN SOUTH		26
27	RCPT - PRESSBOX LVL2 V		R	R	12	20 1	- 000	1000	180 36	50						EX GOTTEE GIVIN GOOTTI		28
<del>2</del> 9	RCPT - VIDEO DECK SOU		R	R	12	20 1			100   00	720	500	1 50				EX - HOT COCOA DISP NORTH		30
31	RCPT - PRESSBOOTH FAN					20 1	500	500				1 20				EX - HOT COCOA DISP SOUTH		32
33	EX - RCPT HOME COACH		R		12	20 1		'	540 50	0		1 20				EX - NACHO WARMER 4 RCPT		34
35	EX - POPCORN					20 1		_	'	500	750	1 20				EX - HOT DOG GRILL NORTH		36
37	RCPT - VIDEO DECK WES		R	R	12	20 1	1080	750				1 20				EX - HOT DOG GRILL SOUTH		38
39	EX - ICE CUBE CONCESSI					20 1			800   100			1 20				EX - 2 RCPT N&S BUN WARMER		40
1	RCPT - COMMAND CTR H	JDL CAM	R	R	12	20 1				180	500	1 20				EX - POPCORN POPPER S		42
13	EX - REFRIG EAST H106					20 1	1000	0	1000			1 20				SPARE		44
5	EX - REFRIG WEST H106					20 1			1000 54		540	1 20				EX - FIELD OUTLETS 1		46
.7	EX - FREEZER EAST H106					20 1	000	<b>540</b>		800	540	1 20	FV			EX - FIELD OUTLETS 2 RCPT - PRESSBOX CMD DATARAC	17	48
19 51	EX - FREEZER WEST H106	)				20 1	800	540	0 0			1 20	EX			SPARE	n	50 52
53	RCPT - ESP1 SUMP PUMP		М	N	12	20 1	_		0   0	117	6 360	1 20				EX - 2 RCPT CONCESSION U/C N&S	<u> </u>	54
55	EX - SOUTH OH DOOR		IVI	IN	12	20 1	500	360		117	0   300	1 20				EX - RCPT CONCESSION U/C CENT		56
57	EX - NORTH OH DOOR					20 1			500 54	.0		1 20				SPARE		58
59	EX - 2 RCPT OUTSIDE COI	NCESSION				20 1				360	360	1 20				EX - RCPT - PRESBOX SOUTH,EAS	Т	60
61	EX - GFI NORTH END BLE					20 1	180	250				1 20				EX - LTG CONTACTOR CONTROL P		
63	EX - LOAD					20 1			500 25	0		1 20				EX - HEAT CONT CONTROL POWE	₹	64
65	EX - GFI FIELD COMM BOX	( N				20 1				180	0	1				EQUIPPED SPACE		66
67	HLTN		LR	N	OL	50 2	2254	0				1				EQUIPPED SPACE		68
39					1				1860 0			1				EQUIPPED SPACE		70
71	RCPT - ELEV TOP OF SHA		R	N	12	20 1	400			180	0	1				EQUIPPED SPACE		72
73	RCPT - ELEVATOR PIT MT		R	N	12	20 1	180	0	250 0			1				EQUIPPED SPACE		74 76
75 77	PWR - ELEVATOR CAB HV		Z	N,LO	12 12	20 1 20 1		L	250 0	250	) 0	1				EQUIPPED SPACE EQUIPPED SPACE		78
<u> </u>	SPARE O O O O O	,	2	000	12	20 1 20 1	0	0		230	, , ,	1				EQUIPPED SPACE		80
31	FCU-1/CU1 ELEVATOR CC	OLING	Č	N	12	20 2	<b>7</b>		1144 0			1				EQUIPPED SPACE		82
33						-	Ή 🐧			114	4 0	1				EQUIPPED SPACE		84
J				TOTAL			1802	4 \/ \	16484 VA	1	14700 VA		•					
				TOTAL			155		140 A		123 A							
חער	TYPE	CONNECTED	ן ח	EMAND				BOARD NOT		<u> </u>						PANELBOARD TOTALS		
		LOAD	F	ACTOR			- I AINLLI	JOAND NOT								TARLEDOAND TOTALS		
	ING LOAD (E) ING (C)	34650 VA 2288 VA		100% 0%		650 VA 0 VA	-									TOTAL CONNECTED LOAD	49208	8 <u>V</u> A
	ING (H)	3000 VA		100%		00 VA										TOTAL NEC LOAD	47313	 3 \/∆
	ring (L)	394 VA		125%		93 VA												
	PTACLES (R)	7200 VA		100%		00 VA										TOTAL CONNECTED CURRENT	137	_A
ОТС	DRS (M)	0 VA		100%	(	AV C										TOTAL NEC DEMAND CURRENT	131	Α
	LEMÈNTAL HEAT (U)	0 VA		100%		AV C												
	EQUIP (Z)	500 VA		100%		00 VA												
	IGERATION (F)	0 VA		100%		AV C												
	DISPLAY (D)	0 VA		125%		AVC												
	HEN (K)	0 VA		100%		70 VA	_											
	EST MOTOR	1176 VA		125%		70 VA	_											
	V WINDOW (W)	0 VA		125%	1	AV C												

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Lee's Summit R7 District **Athletics Facilities** 

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit, MO 64086

Lee's Summit R-7 School District 301 NE Tudor Road

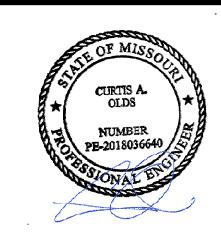
Lee's Summit, MO 64086 architect:

**Gould Evans** 4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111 816.531.4144

> civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215 913.485.0318

mechanical/electrical engineer: **Henderson Engineers** 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214 816.742.5000

> HENDERSON ENGINEERS 8345 LENEXA DRIVE, SUITE 300 LENEXA, KS 66214 TEL 913.742.5000 FAX 913.742.5001 WWW.HENDERSONENGINEERS.COM 2050003134 MO. CORPORATE NO: E-556D EXPIRES 12/31/2020



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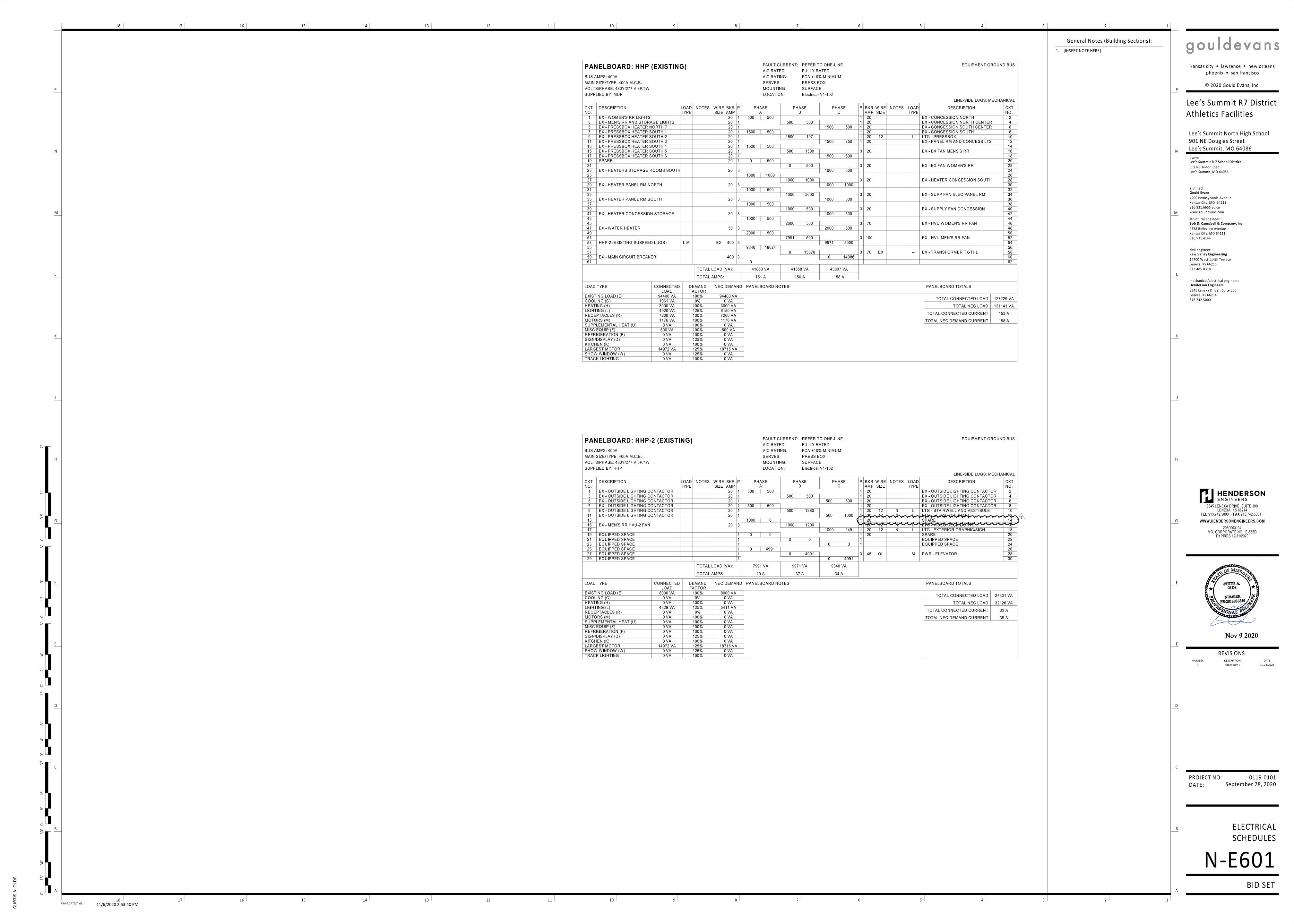
	REVISIONS	
BER	DESCRIPTION Addendum 3	DATE 10.23.2020

PROJECT NO:

September 28, 2020

ELECTRICAL SCHEDULES

BID SET



			STAND-ALONE LOW-VOLTAGE OCCUPANCY SENSORS			
SYMBOL	MANUFACTURER	ALTERNATE		COVERAGE		
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION	(WXD)	VOLTAGE	NOTES
	LEGRAND	ACUITY, COOPER	CEILING MOUNT DUAL TECHNOLOGY OCCUPANCY SENSOR.	PIR MAJOR 36' Ø	24	
((A))	DT-300	HUBBELL, LEVITON	360 DEGREE COVERAGE. LOW VOLTAGE. ISOLATED RELAY.	PIR MINOR 25' Ø		
$\overline{\mathbb{Z}}$				ULT 36' x 36'		
$((\widehat{\underline{\mathbb{B}}}))$	LEGRAND	ACUITY, COOPER	CEILING/WALL MOUNT PASSIVE INFRARED OCCUPANCY SENSOR.	MAJOR 50' Ø	24	
` <del>`</del>	CB-100	HUBBELL	90 DEGREE COVERAGE. LOW VOLTAGE. GASKETED AND WATERTIGHT.	MINOR 25' Ø		
			RATED FOR -40 DEGREES FAHRENHEIT.			
			STAND ALONG LOW VOLTAGE BUOTOFI FOTDIC SWITCHES			
YMBOL	MANUFACTURER	ALTERNATE	STAND-ALONE LOW-VOLTAGE PHOTOELECTRIC SWITCHES			
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION		VOLTAGE	NOTES
	LEGRAND	ACUITY	EXTERIOR LOW-VOLTAGE PHOTOELECTRIC SWITCH, FACE SENSOR NORTH AND ORIENT		24	
PC	EM-24D2	HUBBELL	VERTICALLY, 0-15 FC.			
	Z.W Z 152	LEVITON	VERTIFICATION OF			
		1	STAND-ALONE LOW-VOLTAGE POWER PACKS			
SYMBOL	MANUFACTURER	ALTERNATE				
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION		VOLTAGE	NOTES
	LEGRAND	ACUITY, COOPER	POWER PACK FOR LOW VOLTAGE OCCUPANCY SENSORS. 20A LOAD. (1) RELAY. MANUAL-		120/	
$\overline{}$	BZ-250	HUBBELL, LEVITON	AND AUTO-ON MODES. HOLD-ON AND -OFF INPUTS. LOAD: 16A AT 120V OR 277V.		277	
(BZ)			OUTPUT: 225mA AT 24V. PLENUM RATED.			
(B1)	LEGRAND	ACUITY, COOPER	POWER PACK FOR LOW VOLTAGE OCCUPANCY SENSORS. 20A LOAD. (2) RELAYS. MANUAL		120/	
	C SERIES	HUBBELL, LEVITON	AND AUTO-ON MODES. HOLD-ON AND -OFF INPUTS. LOAD: 16A AT 120V OR 277V.		277	
			OUTPUT: 225mA AT 24V. PLENUM RATED.			
			CONTRACTOR TO PROVIDE CORRECT VOLTAGE FOR APPLICATION.			
D2C	LEGRAND	ACUITY, COOPER	ROOM CONTROLLER FOR LOW VOLTAGE OCCUPANCY SENSORS. 20A LOAD. (2) RELAY.		120/	
DZC	LMRC-212	HUBBELL, LEVITON	MANUAL AND AUTO-ON MODES. HOLD-ON AND -OFF INPUTS. LOAD: 16A AT 120V OR 277V.		277	
			OUTPUT: 225mA AT 24V. PLENUM RATED.			
			0-10V DIMMING CONTROL.			
N/44DQ1	MANUEACTURER	AL TERMATE	STAND-ALONE LOW-VOLTAGE SWITCHES			
SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION		VOLTAGE	NOTES
.,,,	LEGRAND	ACUITY, COOPER	MOMENTARY 1-BUTTON DECORATOR SWITCH FOR MANUAL ON/OFF CONTROL OF STAND-		24	
\$ LV	DCC2	HUBBELL, LEVITON	ALONE LOW-VOLTAGE OCCUPANCY SENSORS. INTEGRAL LED ILLUMINATES WHEN LOAD IS	S		
Ъ		,	ON.			
\$ D	LEGRAND	ACUITY, COOPER	4-BUTTON LOW VOLTAGE SWITCH FOR ON/OFF AND DIMMING CONTROL OF 2 RELAYS.		24	
\$ -	LMSW-104	HUBBELL, LEVITON				
			AUXILIARY NETWORK LIGHTING EQUIPMENT			
YMBOL	MANUFACTURER	ALTERNATE	ACALEAN RETWONN LIGHTING EQUI MENT			
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION		VOLTAGE	NOTES
	LEGRAND	ACUITY, CRESTRON	ZONE CONTROLLER. ASTRONOMIC TIMECLOCK. 99 LIGHTING GROUPS. BACNET MS/TP		120/	
ZC	LMCZ-301	ETC, HUBBELL	COMPATIBLE. (2) RJ45 PORTS. SURFACE MOUNTED. PLENUM RATED. PROVIDE DLM 24V		277	
			POWER BOOSTERS AS REQUIRED PER SYSTEM DESIGN.			
		•			'	
NERAL NO	TES:					
CCUPANO	CY SENSOR LAYOUT DES	SIGNED FROM BASIS-OF-I	DESIGN COVERAGE PATTERNS. IF SUBMITTING ALTERNATE PER 'EQUIVALENT MANUFACTUF	RER'		
COLUMN. A	ADJUST SENSOR QUANT	ITIES AND LOCATIONS P	ER MANUFACTURER-SPECIFIC SPACING CRITERIA.			
,	HOP DRAWINGS FOR EN	IGINEER AND ARCHITECT	FREVIEW THAT INCLUDE PRODUCT CUTSHEETS AND PROJECT-SPECIFIC LAYOUTS. LAYOUTS	S		
•	UDE SENSOR LOCATION	NS, HEIGHTS, ORIENTATIO	ON, AND COVERAGE AREAS. SHOW COORDINATION WITH ALL OTHER CEILING DEVICES			
PROVIDE S	BUT NOT LIMITED TO H	VAC SUPPLY AND RETUR	RN GRILLES, SPRINKLERS, LIGHT FIXTURES, AND OTHER OWNER-PROVIDED CEILING MOUNT	ED		
PROVIDE S MUST INCL		CURITY CAMERAS, PROJE	CTORS, ETC. (SENSORS MAY BE ADVERSELY AFFECTED IF LOCATED TOO CLOSE TO OTHER	₹		
PROVIDE S MUST INCL INCLUDING			AND SCHEDULES WHEN APPLICABLE.			
PROVIDE S MUST INCL INCLUDING DEVICES S	UCH AS SPEAKERS, SEC	O PROVIDE SCHEMATICS	ADATE OF ANY LIGHT ENTURE PRIONS			
PROVIDE S MUST INCL INCLUDING DEVICES S CEILING M	UCH AS SPEAKERS, SEC DUNTED DEVICES). ALSC		ARATE OF ANY LIGHT FIXTURE PRICING.			
PROVIDE S MUST INCL INCLUDING DEVICES S CEILING MI	UCH AS SPEAKERS, SEC OUNTED DEVICES). ALSO CONTROLS PRICING SHA	ALL BE COMPLETELY SEP	EVICES WITH THE ARCHITECT.			
PROVIDE S MUST INCL INCLUDING DEVICES S CEILING M LIGHTING C	UCH AS SPEAKERS, SEC DUNTED DEVICES). ALSO CONTROLS PRICING SHA LOR(S) FOR ALL WALL A	ALL BE COMPLETELY SEP ND CEILING MOUNTED D				
PROVIDE S MUST INCL INCLUDING DEVICES S CEILING MI LIGHTING ( VERIFY CO ALL WALL S	UCH AS SPEAKERS, SEC DUNTED DEVICES). ALSO CONTROLS PRICING SHA LOR(S) FOR ALL WALL A SWITCH AND CEILING SE	ALL BE COMPLETELY SEP ND CEILING MOUNTED D	EVICES WITH THE ARCHITECT. ADJUSTABLE TIME DELAY RANGE OF 0-30 MIN, UNO. CONFIRM SENSOR SETTINGS WITH			
PROVIDE S MUST INCL NCLUDING DEVICES S CEILING M LIGHTING ( /ERIFY CO ALL WALL S SEQUENCE	UCH AS SPEAKERS, SEC DUNTED DEVICES). ALSO CONTROLS PRICING SHA LOR(S) FOR ALL WALL A SWITCH AND CEILING SE E OF OPERATIONS AND O	ALL BE COMPLETELY SEP ND CEILING MOUNTED D NSORS SHALL HAVE AN A DWNER PRIOR TO SYSTE	EVICES WITH THE ARCHITECT. ADJUSTABLE TIME DELAY RANGE OF 0-30 MIN, UNO. CONFIRM SENSOR SETTINGS WITH			
PROVIDE S MUST INCL NCLUDING DEVICES S CEILING M LIGHTING C VERIFY CO LL WALL S ROVIDE C	UCH AS SPEAKERS, SECOUNTED DEVICES). ALSO CONTROLS PRICING SHALOR(S) FOR ALL WALL ASWITCH AND CEILING SEE OF OPERATIONS AND COPIES OF OPERATION A	ALL BE COMPLETELY SEP ND CEILING MOUNTED D NSORS SHALL HAVE AN DWNER PRIOR TO SYSTE ND MAINTENANCE INSTR	EVICES WITH THE ARCHITECT. ADJUSTABLE TIME DELAY RANGE OF 0-30 MIN, UNO. CONFIRM SENSOR SETTINGS WITH M COMMISSIONING.			
ROVIDE S MUST INCL NCLUDING DEVICES S CEILING M IGHTING ( 'ERIFY CO ILL WALL S SEQUENCE ROVIDE C	UCH AS SPEAKERS, SECOUNTED DEVICES). ALSO CONTROLS PRICING SHALOR(S) FOR ALL WALL ASWITCH AND CEILING SEE OF OPERATION AND COPIES OF OPERATION AND CONDUCTOR	ALL BE COMPLETELY SEP ND CEILING MOUNTED D NSORS SHALL HAVE AN DWNER PRIOR TO SYSTE ND MAINTENANCE INSTR	EVICES WITH THE ARCHITECT.  ADJUSTABLE TIME DELAY RANGE OF 0-30 MIN, UNO. CONFIRM SENSOR SETTINGS WITH  M COMMISSIONING.  RUCTIONS FOR ALL DEVICES TO OWNER.  DOCATIONS PER NEC REQUIREMENTS.			

			LIG	HT F	<b>IXTUF</b>	RE SC	CHED	ULE	
TYPE	MANUFACTURER	MODEL /1	ARBROWED EQUIVALENTS	LAMPING / LIGHT SOURCE	DIMMING TYPE	VOLTAGE	INPUT WATTS	INPUT VA	DESCRIPTION NOTES
A4	HE WILLIAMS	50-*CEILING*-2-4-L33-80-35-AF12125-DI -UNV		LED 80CRI	0-10V	UNV	25	28	2'x4' RECESSED LED TROFFER FOR CONCESSIONS. 3300 LUMEN. 3500K.
A4E	HE WILLIAMS	50-*CEILING*-2-4-L33-80-35-AF12125-EN 10W-DIM-UNV	<u>v</u> -	LED 80CRI	0-10V	UNV	25	28	SAME AS A4 WITH INTEGRAL 10W BATTERY BACK UP TO OPERATE FOR A MINIMUM OF 90 MINUTES.
A5	HE WILLIAMS	50-G-2-4-L33-80-35-AF12125-DIM-UNV	COLUMBIA LIGHTING LLT24 SERIES LITHONIA LIGHTING GTL SERIES	LED 80CRI	0-10V	UNV	48	52	2'x4' RECESSED LED TROFFER FOR RESTROOMS. 5900 LUMEN. 3500K.
A5E	HE WILLIAMS	50-G-2-4-L33-80-35-AF12125-EM/10W-D M-UNV	-	LED 80CRI	0-10V	UNV	48	52	SAME AS A5 WITH INTEGRAL 10W BATTERY BACK UP TO OPERATE FOR A MINIMUM OF 90 MINUTES.
D1	COOPER LIGHTING	LDS4B-20-D010-EU4B-102035-4LBCS-1- INISH	CALIBER COMMERCIAL 4SFK/4SFL2X SERIES GOTHAM EVO SERIES ACUITY BRANDS INDY LLP4/LLPRM4 SERIES	LED 80CRI	0-10V	UNV	21	24	4" ROUND SHALLOW WET LOCATION DOWNLIGHTWITH HB26 BAR HANGAR. 2000 LUMEN. 3500K
D1E	COOPER LIGHTING	LDS4B-20-D010-EU4B-102035-4LBCS-1- INISH	-	LED 80CRI	0-10V	UNV	21	24	SAME AS D1 WITH REMOTE EMERGENCY DRIVER TO OPERATE A MINIMUM OF 90 MINUTES
DW1	COOPER LIGHTING	LSR2B-15-WFL55-80-35-D010-CANOPY	HUBBELL LIGHTING PRESCOLITE LTC-3RDW GOTHAM 4" INCITO SERIES LITHONIA LIGHTING LDN4CYL SERIES	LED 80CRI	0-10V	UNV	18	20	4.5" SURFACE MOUNTED WET LOCATION LISTED DOWNLIGHT. 1500 LUMEN. 3500K. 54° BEAM.
DW1E	COOPER LIGHTING	LSR2B-15-WFL55-80-35-D010-CANOPY	-	LED 80CRI	0-10V	UNV	18	20	SAME AS DW1 WITH REMOTE EMERGENCY DRIVER TO OPERATE A MINIMUM OF 90 MINUTES
EL	HE WILLIAMS	96-4-L62-80-35-HIAFR-EM/10W-WET/1-D V-UNV	COLUMBIA LIGHTING LXEM LITHONIA LIGHTING FEM LED SERIES	LED 80CRI	0-10V	UNV	45	50	4' LINEAR. WET LOCATION LISTED. 6200 LUMEN. 4000K
F4	FOCAL POINT	FSM4L-FL-625LF-UNV-LD1-TF-COLOR-	LITECONTROL MOD 4 RECESSED LED 4L-R-D SERIES 3G LIGHTING 3G-4LRLI-WC PINNACLE ARCHITECTURAL LIGHTING EDGE EV4D SERIES MARK ARCHITECTURAL LIGHTING SLOT 4 SERIES	LED 80CRI	0-10V	UNV	26	29	4' WALL MOUNTED RECESSED LINEAR RECESSED FIXTURE FOR GYP CEILINGS. 625 LM/FT. 4000K
G1	LUMENWERX	VIAWETASYS-PYC-HLO-LED-80-500-354 -UNV-D1-1-GSM-TF-*COLOR*	LITECONTROL MOD 4 PENDANT LED 4L-P-D SERIES AXIS LIGHTING - WET BEAM 4 LED SURFACE SERIES	LED 80CRI	0-10V	UNV	30	33	6' RECESSED LINEAR WITH 500 LM/FT AND ASYMMETRICAL DISTRIBUTION. SUITABLE FOR WET LOCATION.
H4	HE WILLIAMS	75L-4-L50-8-35-AF12125-DIM-UNV	COLUMBIA LIGHTING MPS SERIES LITHONIA LIGHTING ZL1D SERIES	LED 80CRI	0-10V	UNV	32	36	4' WALL MOUNTED LINEAR SUSPENDED/WALL MOUNTED FIXTURE
H4E	HE WILLIAMS	75L-4-L50-8-35-AF12125-EM/10WLP-DIN UNV	-	LED 80CRI	0-10V	UNV	32	36	SAME AS H4 WITH INTEGRAL10W BATTERY BACK UP TO OPERATE FOR A MINIMUM OF 90 MINUTES.
H5E	HE WILLIAMS	75L-4-L50-8-35-AF12125-EM/10WLP-DIN UNV- OCCWS-FSP-211-L2-120/277		LED 80CRI	0-10V	UNV	32	36	SAME AS H4 WITH INTEGRAL OCCUPANCY SENSOR AND 10W BATTERY BACK UP TO OPERATE FOR A MINIMUM OF 90 MINUTES.
L1	LUMINII	VWP-4-L60-7-30-TFT-FINISH-SDGL-DIM- NV DRIVER: PS010V-96-24-LIN	GENLED ACOLYTE RIBBONLYTE 6.0 CALI LLED 8000 SERIES QTRAN SW24/5.0 SERIES	LED 80CRI	0-10V	UNV	9	10	WET LOCATION RATED 24V LED TAPE LIGHT WITH REMOTE DAMP LOCATION RATED 96WATT, 277 - 24V LED DRIVER. NARROW DISTRIBUTION. 3500K. 706 LUMEN/FT. 9 W/FT. PROVIDE CHANNEL AND ADDITIONAL WET LOCATION RATED FITTINGS FOR A FULLY FUNCTIONING TAPE LIGHTING SYSTEM.
L2	LUMENPULSE	LOGASHRAE-277-48-35K-WWRF-UMAS DIM-ETE	KIM LIGHTING INT SERIES	LED 80CRI	0-10V	UNV	5	6	WET LOCATION RATED LINEAR GRADING FAÇADE FIXTURE WITH ASYMMETRICAL DISTRIBUTION AND ADJUSTABLE STANDOFF ARM MOUNT. 5W/FT. PROVIDE END-TO-END CONTINUOUS MOUNTING TO MATCH LENGTH OF SIGN.
WE		IST-AF-600-LED-E1-T4FT-XX-8030-CBP	ELCAST LIGHTING 1495 SERIES LITHONIA LIGHTING WDGE2 LED SERIES FC LIGHTING FC1030 SERIES	LED 80CRI	0-10V		33	36	EXTERIOR WALL PACK FIXTURE WITH 90 MINUTE BATTERY BACK-UP
Х	THE WILLIAMS	EXIT CASERIES (	DUAL-LITE LE SERIES LITHONIA LE SERIES	INTEGRAL LED	-	UNV	3	5	UNIVERSAL MOUNT LED EXIT SIGN.

### LIGHT FIXTURE SCHEDULE GENERAL NOTES:

- 1. ALL LIGHT FIXTURES AND RELATED COMPONENTS SHALL BE PROVIDED BY THE CONTRACTOR, UNLESS NOTED
- OTHERWISE. 2. ALL LIGHT FIXTURES AND RELATED COMPONENTS SHALL BE PROVIDED BY THE CONTRACTOR AS PART OF THE BASE BID, UNLESS NOTED OTHERWISE, CONTRACTOR SHALL PROVIDE
- 3. THE PARTY SUPPLYING THE LIGHT FIXTURES IS RESPONSIBLE FOR SUPPLYING THE PROPER QUANTITY OF LIGHT FIXTURES.

FIXTURES.

AN ALTERNATE BID FOR OWNER FURNISHED LIGHT

### LIGHT FIXTURE SCHEDULE SUPPLEMENTAL SPECIFICATIONS:

- 1. ANY PROPRIETARY, SOLE-SOURCED LIGHT FIXTURE LISTED IN THE LIGHT FIXTURE SCHEDULE SHALL BE UNIT PRICED ONLY. NO PACKAGING OR LOT PRICING OF THESE LIGHT FIXTURES SHALL BE ALLOWED. UNIT PRICES SHALL BE CLEARLY IDENTIFIED ON THE BID FORM.
- 2. PACKAGING OF LIGHT FIXTURES WILL NOT BE CONSIDERED OR APPROVED. REPRESENTATIVE AGENTS SHALL BE ALLOWED TO OFFER MINI-LOT PRICING (MLP) FOR LIGHT FIXTURES AS ALLOWED IN ELECTRICAL SPECIFICATIONS.
- 3. LIGHTING CONTROLS PRICING, INCLUDING BUT NOT LIMITED TO THOSE REFERENCED IN ELECTRICAL SPECIFICATIONS, SHALL BE COMPLETELY SEPARATE OF ANY LIGHT FIXTURE PRICING. ANY LIGHTING CONTROLS PRICING THAT IS SUBMITTED WITH LIGHT FIXTURE PRICING (UNIT OR MINI-LOT) WILL BE IMMEDIATELY REJECTED IN ITS ENTIRETY.
- 4. CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE AND MATERIAL SHALL NOT BE ORDERED BY MANUFACTURER AND CATALOG NUMBERS ONLY. FIRST READ THE COMPLETE DESCRIPTION, NOTES AND SPECIFICATIONS IN CONJUNCTION WITH THE CATALOG NUMBER TO DETERMINE THE MATERIAL AND ACCESSORIES TO BE ORDERED. THE MANUFACTURERS LISTED ARE THE BASIS FOR THE DESIGN.
- 5. FOR SUBSTITUTIONS: PROVIDE PHOTOMETRIC CALCULATIONS AND OTHER NECESSARY INFORMATION FOR ENGINEER REVIEW. REFER TO SPECIFICATIONS FOR MORE INFORMATION.
- 6. COORDINATE LIGHT FIXTURE MOUNTING HARDWARE AND TRIMS NEEDED TO SUIT CEILING CONDITIONS. LIGHT FIXTURES NEAR OR IN CONTACT WITH INSULATION SHALL COMPLY WITH CODE. MAINTAIN 3" MINIMUM WORKING CLEARANCE BETWEEN NON-IC RATED LIGHT FIXTURE HOUSINGS AND INSULATION ON ALL ADJACENT DUCTWORK, PIPING, WALLS, AND CEILINGS.
- 7. STRIP LIGHT FIXTURES SUBJECT TO DAMAGE, INCLUDING THOSE MOUNTED ON EQUIPMENT MEZZANINES, STORAGE, RECEIVING AND STOCKROOM AREAS, SHALL BE PROVIDED WITH WIRE GUARDS, PROTECT-A-LAMP COVERS OR EQUIVALENT SHIELDED OR SHATTERPROOF LAMPS/LIGHT SOURCES. COORDINATE REQUIREMENTS AND AFFECTED LIGHT FIXTURES WITH OWNER.

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Lee's Summit R7 District

Athletics Facilities

Lee's Summit North High School 901 NE Douglas Street Lee's Summit, MO 64086

Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086

architect: Gould Evans 4200 Pennsylvania Avenue Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111

civil engineer: Kaw Valley Engineering 14700 West 114th Terrace Lenexa, KS 66215

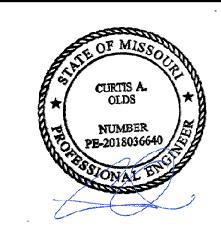
913.485.0318

816.531.4144

mechanical/electrical engineer: Henderson Engineers 8345 Lenexa Drive | Suite 300 Lenexa, KS 66214 816.742.5000

> HENDERSON ENGINEERS 8345 LENEXA DRIVE, SUITE 300 LENEXA, KS 66214
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EXPIRES 12/31/2020



Nov 9 2020

	REVISIONS	
NUMBER	DESCRIPTION	DATE
1	Addendum 3	10.23.2020

PROJECT NO: 0119-0101 September 28, 2020

LIGHTING SCHEDULES

# **LIGHTING CONTROL SEQUENCE OF OPERATIONS:**

## GENERAL NOTE: CONFIRM ALL SENSOR TIME DELAYS WITH OWNER PRIOR TO FINAL PROGRAMMING.

- Emergency Lighting: Emergency egress lighting is powered from emergency battery ballasts and drivers integral to fixtures designated as emergency. Upon loss of power, all lights designated as emergency shall turn on at full emergency battery back-up output.
- Security Lighting: Night lights, labeled "NL" in building corridor for security purposes: Lighting control type: Occupancy and Vacancy Sensors
- Corridor, Cafeteria and Gymnasium occupancy sensors set to time out after 30 minutes Offices and Classrooms sensors set to time out after 20 minutes
- Back of house room type sensors set to time out after 20 minutes All lighting controls in project scope are stand-alone type.
- POWER PACK BZ
- 1. Manual Control: Occupant can manually control lights via local switch(es). 2. Occupancy: Occupant must manually turn on lights. 3. Vacancy: After 20 minutes, all controlled loads shall turn off.
- 1. Manual Control: Occupant can manually control lights and exhaust fan together via local switch(es). 2. Occupancy: Occupant must manually turn on lights and exhaust fan. 3. Vacancy: After 20 minutes, all controlled loads shall turn off.
- ROOM CONTROLLER D2C
  - 1. Manual Control: Occupant can manually control lights and dim via local switch(es). Switches shall dim in separate zones as designated as 'a', 'b' etc on plans.
- 2. Occupancy: Occupant must manually turn on lights. 3. Vacancy: After 20 minutes, all controlled loads shall turn off.
- SIGNAGE LIGHTING
- 1. Automatic Control: Fixtures illuminating signs and backlit signage shall be turned on via single photocell and turned off via astronomical timeclock. Route through BAS. 2. Coordinate additional programing requirements with owner.

1 PROVIDE SUFFICIENT LENGTH TO MOVE CENTER OF LUMINAIRE IN A RADIUS OF THE LOCATION SHOWN ON THE PLANS.
RMC OR EMT (UNLESS TYPE MC CABLE IS ALLOWED BY

SPECIFICATIONS. IF MORE THAN 4 CURRENT CARRYING

HOME RUN TO \_PANELBOARD\_\_\_ RMC OR EMT

FIXTURE TO SWITCHES

1/2" FIXTURE

WHIP (TYPICAL)

CONDUCTORS INCLUDING NEUTRALS, MC CABLE IS NOT ALLOWED).

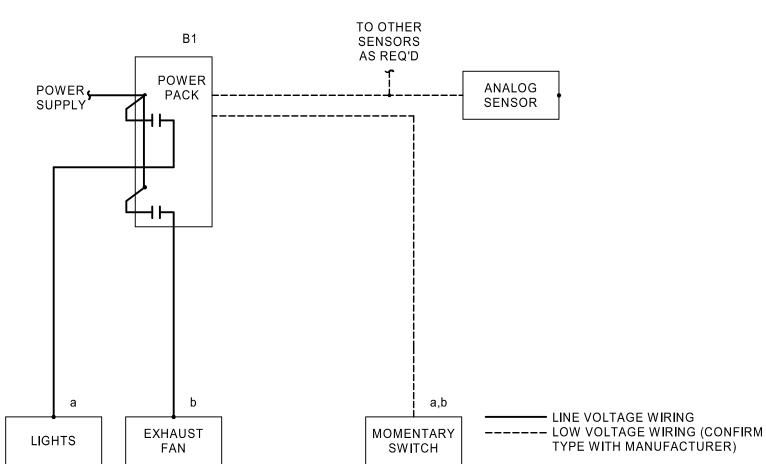
TO OTHER

FIXTURE RUNS.

4 LIGHTING STANDARD LUMINAIRE WIRING NTS

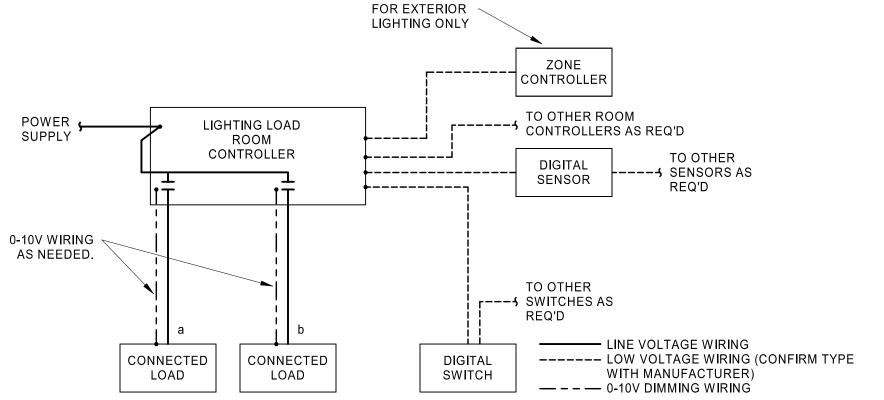
RUNS.

11/6/2020 2:53:44 PM



- 1. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR DEVICE AND EQUIPMENT SPECIFICATIONS.
- 2. PROVIDE QUANTITY OF POWER PACKS AS REQUIRED BY MANUFACTURER TO SUPPORT QUANTITY OF SENSORS INDICATED ON PLANS.
- 3. DETAIL IS DIAGRAMMATIC AND IS BASED ON WATTSTOPPER. THIS REPRESENTS THE GENERAL SCOPE OF WORK AND LOCATION OF DEVICES IN RELATION TO EACH OTHER ALONG THE POWER CIRCUIT. DIAGRAMS MAY BE DIFFERENT FOR ALLOWED EQUIVALENT MANUFACTURERS. ELECTRICAL CONTRACTOR SHALL COORDINATE FULL SYSTEM REQUIREMENTS WITH SELECTED MANUFACTURER. PROVIDE ALL PARTS AND PIECES REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. REFER TO FINAL APPROVED MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING DIAGRAMS FOR INSTALLATION.
- 4. CIRCUITING SHOWN ON THE PLAN CORRESPONDS TO THE LIGHTING CONTROL INTENT. IF CIRCUITING IS CHANGED IN THE FIELD, ENSURE THAT SYSTEM PROGRAMMING WITH REVISED CIRCUITING MEETS THE ORIGINAL LIGHTING CONTROL INTENT. UPDATE LIGHTING CONTROL PANEL SCHEDULES IN RECORD DRAWINGS.

OCCUPANCY SENSOR DETAIL - MULTIPLE POWER SUPPLIES AND SWITCHES NTS



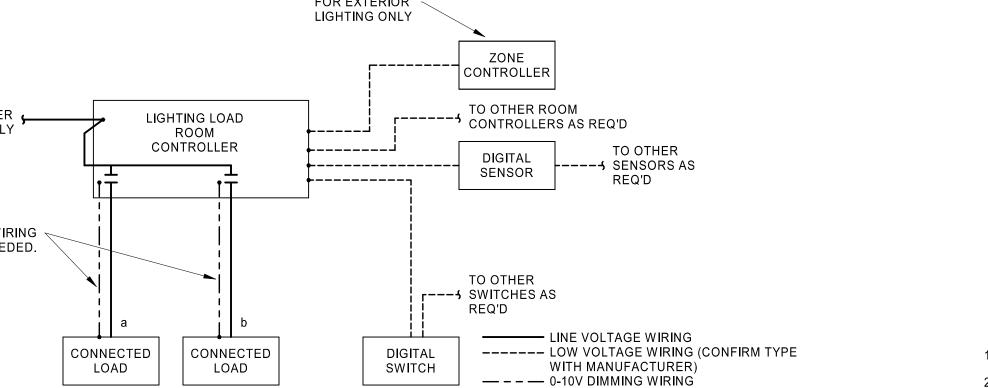
## NOTES:

- 1. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR DEVICE AND EQUIPMENT SPECIFICATIONS. 2. QUANTITY OF RELAYS SHOWN IS GENERIC. REFER TO PLANS, LIGHTING CONTROL DEVICE SCHEDULE, AND SHOP DRAWINGS FOR FINAL
- QUANTITY PER ROOM CONTROLLER. 3. DETAIL IS DIAGRAMMATIC AND IS BASED ON LEGRAND. THIS REPRESENTS THE GENERAL SCOPE OF WORK AND LOCATION OF DEVICES IN RELATION TO EACH OTHER ALONG THE POWER CIRCUIT. DIAGRAMS MAY BE DIFFERENT FOR ALLOWED EQUIVALENT MANUFACTURERS. ELECTRICAL CONTRACTOR SHALL COORDINATE FULL SYSTEM REQUIREMENTS WITH SELECTED MANUFACTURER. PROVIDE ALL PARTS AND PIECES REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. REFER TO FINAL APPROVED MANUFACTURER'S INSTALLATION
- 4. CIRCUITING SHOWN ON THE PLAN CORRESPONDS TO THE LIGHTING CONTROL INTENT. IF CIRCUITING IS CHANGED IN THE FIELD, ENSURE THAT SYSTEM PROGRAMMING WITH REVISED CIRCUITING MEETS THE ORIGINAL LIGHTING CONTROL INTENT. UPDATE LIGHTING CONTROL PANEL SCHEDULES IN RECORD DRAWINGS.
- 5. PROVIDE SYSTEM COMMISSIONING AS REQUIRED PER ENERGY CODE.

INSTRUCTIONS AND WIRING DIAGRAMS FOR INSTALLATION.

ISOLITE RL SERIES LITHONIA LE SERIES HE WILLIAMS EXIT SERIES 

3 ROOM CONTROLLER DETAIL - ON/OFF OR ON/OFF/0-10V DIMMING CONTROL NTS



1. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR DEVICE AND EQUIPMENT SPECIFICATIONS.

| MOMENTARY |

SWITCH

- 2. PROVIDE QUANTITY OF POWER PACKS AS REQUIRED BY MANUFACTURER TO SUPPORT QUANTITY OF SENSORS
- INDICATED ON PLANS. 3. DETAIL IS DIAGRAMMATIC AND IS BASED ON WATTSTOPPER. THIS REPRESENTS THE GENERAL SCOPE OF WORK AND LOCATION OF DEVICES IN RELATION TO EACH OTHER ALONG THE POWER CIRCUIT. DIAGRAMS MAY BE DIFFERENT FOR ALLOWED EQUIVALENT MANUFACTURERS. ELECTRICAL CONTRACTOR SHALL COORDINATE FULL SYSTEM REQUIREMENTS WITH SELECTED MANUFACTURER. PROVIDE ALL PARTS AND PIECES REQUIRED FOR A FULLY FUNCTIONAL SYSTEM. REFER TO FINAL APPROVED MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WIRING

TO OTHER

SENSORS

AS REQ'D

TO OTHER

---⊀ SWITCHES AS REQ'D

ANALOG

SENSOR

----- LOW VOLTAGE WIRING (CONFIRM TYPE

WITH MANUFACTURER)

LINE VOLTAGE WIRING

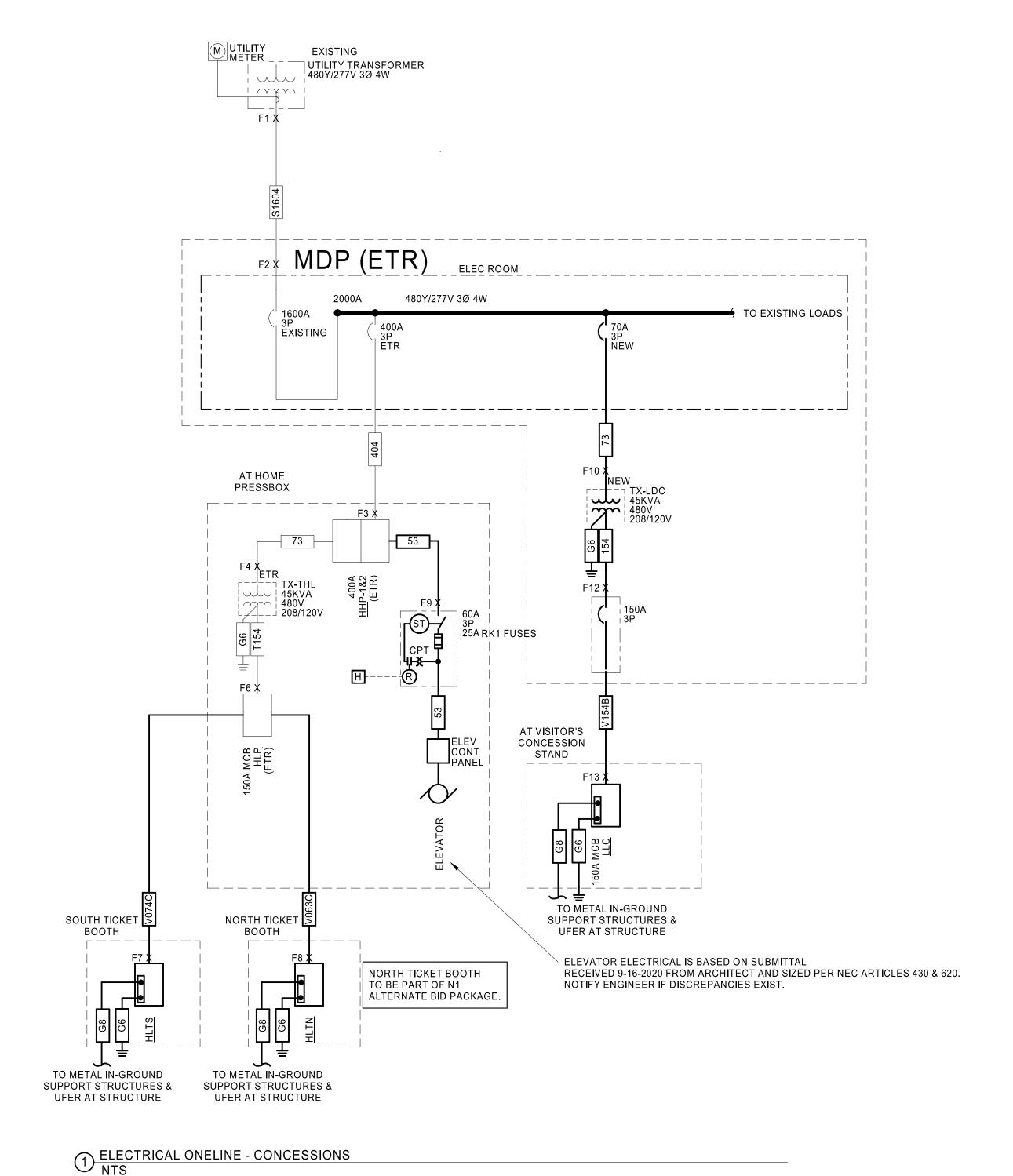
- DIAGRAMS FOR INSTALLATION. 4. CIRCUITING SHOWN ON THE PLAN CORRESPONDS TO THE LIGHTING CONTROL INTENT. IF CIRCUITING IS CHANGED IN THE FIELD, ENSURE THAT SYSTEM PROGRAMMING WITH REVISED CIRCUITING MEETS THE ORIGINAL LIGHTING CONTROL INTENT. UPDATE LIGHTING CONTROL PANEL SCHEDULES IN RECORD DRAWINGS.
- 5. PROVIDE SYSTEM COMMISSIONING AS REQUIRED PER ENERGY CODE.

PACK

CONNECTED

LOAD

OCCUPANCY SENSOR DETAIL - SINGLE POWER SUPPY AND SWITCH NTS



**Short-Circuit and Voltage Drop Calculations** 

11 TX-LDC

PRINT DATE/TIME: 9/25/2020 1:36:42 PM

12 DISC-TX-LDC

LOAD SUMMARY (MDP) OCCUPANCY TYPE: SERVICE DESCRIPTION: SQUARE FOOTAGE: 0 480Y/277 V LOAD TYPE CONNECTED DEMAND | NEC DEMAND LOAD KVA **FACTOR** KVA EXISTING PEAK UTILITY (@ 0.9 pf) N/A 125% 493.06 COOLING (C) 1.06 0% 0.00 26.00 100% 26.00 HEATING (H) 5.30 125% 6.63 LIGHTING (L) (PER NEC-220) RECEPTACLES (R) 7.92 7.92 100% 1.53 1.53 MOTORS (M) 100% SUPPLEMENTAL HEAT (U) 7.00 100% 7.00 3.20 MISC EQUIP (Z) 100% 3.20 REFRIGERATION (F) 0.00 100% 0.00 SIGN/DISPLAY (D) 1.20 125% 1.50 1.30 1.44 KITCHEN (K) 90% 14.97 18.72 LARGEST MOTOR 125% SHOW WINDOW (W) 0.00 125% 0.00 0.00 0.00 TRACK LIGHTING 100% 0.00 0.00 EXISTING LOAD TO BE DELETED 100% TOTAL LOAD 69.62 566.84 KVA TOTAL AMPACITY 83.74 AMPS 681.81 SERVICE AMPACITY AMPS 1600.00 SPARE CAPACITY AMPS 918.19 \*PER UTILITY COMPANY BILLING PEAK DEMAND OF: 355.00 KW November 2018

DOE 150 45 3.51 208

18.763 0.05 3379

0.030 0.97 3280 -0.11%

ELECTRICAL UTILITY CONTACT NOTE:

UTILITY COMPANY: EVERGY ENERGY
UTILITY CONTACT: RON DEJARNETTE
EMAIL: RON.DEJARNETTE@EVERGY.COM

FAULT CURRENT GENERAL NOTE (UTILITY VALUE):

THE MAXIMUM AVAILABLE 3-PHASE SYMMETRICAL FAULT CURRENT VALUE AT THE UTILITY TRANSFORMER SECONDARY/POINT OF SERVICE IS 51,742 A BASED ON PRELIMINARY INFORMATION PROVIDED BY THE UTILITY BASED ON EMAIL FROM UTILITY CONTACT ON 9/4/2020.

### OVERCURRENT PROTECTIVE DEVICE

COORDINATION STUDY GENERAL NOTE 1. CONTRACTOR SHALL PROVIDE AN OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY TO DETERMINE THE CORRECT SETTINGS FOR THE ADJUSTABLE TRIP CIRCUIT BREAKERS, TO ENSURE SELECTIVE COORDINATION AND TO DOCUMENT ARC-FLASH HAZARDS. CODE REQUIRED EMERGENCY AND LEGALLY REQUIRED STANDBY SYSTEMS SHALL BE SELECTIVELY COORDINATED WITH ALL SUPPLY-SIDE OVERCURRENT PROTECTIVE DEVICES (APPLIES TO BOTH THE NORMAL AND EMERGENCY POWER SOURCES). PROVIDE ALL NECESSARY AS-BUILT INFORMATION REQUIRED FOR COMPLETION OF THE STUDY TO THE ENGINEER DOING THE STUDY. PROVIDE SUBMITTALS INDICATED WITHIN THE SPECIFICATIONS TO OWNER AND ARCHITECT/ENGINEER TO CONFIRM STUDY HAS BEEN COMPLETED. CONTRACTOR SHALL INCLUDE THE COST FOR THIS WORK IN THEIR BID. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

2. THE OWNER SHALL FURNISH INDICATED PORTIONS OF THE ELECTRICAL DISTRIBUTION EQUIPMENT TO THE CONTRACTOR FOR INSTALLATION. THE OWNER WILL ALSO PROVIDE THE OVERCURRENT PROTECTIVE DEVICE COORDINATION STUDY TO THE CONTRACTOR. THE OWNER FURNISHED COORDINATION STUDY SHALL INCLUDE THE CORRECT SETTINGS FOR THE ADJUSTABLE TRIP CIRCUIT BREAKERS, ENSURE SELECTIVE COORDINATION AND DOCUMENT ARC-FLASH HAZARDS. CODE REQUIRED EMERGENCY AND LEGALLY REQUIRED STANDBY SYSTEMS SHALL BE SELECTIVELY COORDINATED WITH ALL SUPPLY-SIDE OVERCURRENT PROTECTIVE DEVICES, (APPLIES TO BOTH THE NORMAL AND EMERGENCY POWER SOURCES). THE CONTRACTOR SHALL PROVIDE NECESSARY AS-BUILT INFORMATION TO COMPLETE THE STUDY.

### FEEDER SCHEDULE:

SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNO. NUMBER DESIGNATIONS PRECEDED BY "A" INDICATE THAT THE SIZE IS BASED ON ALUMINUM (AL) WIRE. AL CONDUCTOR SIZES ARE BASED ON XHHW-2 INSULATION, UNO. ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS, UNO. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

FEEDER TAG	FEEDER DESCRIPTION
53	(3)#8, (1)#10 G, 3/4" C
73	(3)#4, (1)#8 G, 1" C
154	(4)#1/0, (1)#6 G, 1-1/2" C
404	(2) 2" C, EACH W/ (4)#3/0, (1)#3 G
G6	#6 COPPER GROUND, 3/4" C
G8	#8 COPPER GROUND, 3/4" C
S1604	(5) 3" C, EACH W/ (4)-400 kcmil
T154	(4)#1/0, (1)#6 SSBJ, 1-1/2" C
V063C	(3)#2, (1)#4 G, 1-1/4" C
V074C	(4)#1, (1)#4 G, 1-1/2" C
V154B	(4)#3/0, (1)#4 G, 2" C

ONE-LINE DIAGRAM GENERAL NOTES:

- 1. THE INFORMATION SHOWN IN THE SHORT-CIRCUIT AND VOLTAGE DROP CALCULATIONS SCHEDULE IS SHOWN FOR CALCULATION PURPOSES ONLY. CONTRACTOR SHALL NOT USE THE CONDUIT TYPES, CONDUCTOR TYPES, SIZES, QUANTITIES OR LENGTHS FOR TAKEOFFS OR BIDDING PURPOSES. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CONFLICTS BETWEEN THIS SCHEDULE AND OTHER PORTIONS OF THE CONSTRUCTION DOCUMENTS. CONTRACTOR SHALL NOTIFY ENGINEER OF AS-BUILT CONDITIONS THAT CONSTITUTE A CHANGE FROM WHAT IS SHOWN BELOW; THIS INCLUDES CONDUCTOR LENGTHS DIFFERING BY MORE THAN 10%.
- 2. REFER TO THE SHORT-CIRCUIT AND VOLTAGE DROP CALCULATIONS TABLE ON THIS SHEET. AVAILABLE FAULT CURRENT INFORMATION IS LISTED UNDER THE "FAULT CURRENT" COLUMN. VOLTAGE DROP VALUES ARE LISTED UNDER THE "CUMULATIVE VOLTAGE DROP" COLUMN. THE AIC/SCCR RATING OF THE EQUIPMENT SHALL NOT BE LESS THAN THE AVAILABLE 3-PHASE SYMMETRICAL FAULT CURRENT. ALL SERIES RATED EQUIPMENT SHALL BE PROPERLY LISTED AND LABELED PER CODE.
- 3. FEEDER NUMBER DESIGNATIONS PRECEDED BY "V" INDICATE THAT THE CONDUCTORS ARE UP-SIZED DUE TO VOLT-DROP CONSIDERATIONS. PROVIDE LUG ADAPTERS AS NEEDED IN ORDER TO PROPERLY LAND CONDUCTORS AT TERMINATION(S).
- 4. FEEDER SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNLESS NOTED OTHERWISE. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. NUMBER DESIGNATIONS PRECEDED BY "A" INDICATE THAT THE SIZE IS BASED ON ALUMINUM (AL) WIRE. AL CONDUCTOR SIZES ARE BASED ON XHHW-2 INSULATION, UNLESS NOTED OTHERWISE. AL WIRE MAY BE SUBSTITUTED FOR CU FEEDERS AS ALLOWED BY CODE, SPECIFICATIONS AND OWNER, UNLESS NOTED OTHERWISE. AT CONTRACTOR'S OPTION, CU WIRE MAY BE SUBSTITUTED FOR AL, UNLESS NOTED OTHERWISE. ALL CONDUCTOR SIZES ARE BASED ON 75 DEG C RATED TERMINATIONS, UNLESS NOTED OTHERWISE. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 5. BRANCH CIRCUIT SIZES ARE BASED ON COPPER (CU) THHN/THWN-2 INSULATION, UNLESS NOTED OTHERWISE. CONDUIT SIZES SHOWN ARE APPROPRIATE FOR SCHEDULE 40 PVC, EMT, GRS, IMC AND RMC; ADJUST SIZE AS NEEDED FOR OTHER RACEWAY TYPES. ALL CONDUCTOR SIZES ARE BASED ON 60 DEG C RATED TERMINATIONS, UNLESS NOTED OTHERWISE. FOR ANY OTHER CONDITIONS MODIFY SIZES PER CODE. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- 6. INSTALL FEEDERS OVERHEAD AS HIGH AS PRACTICABLE AND ORTHOGONALLY ALONG BUILDING STRUCTURE, UNLESS NOTED OTHERWISE. COORDINATE FINAL ROUTING WITH OTHER TRADES.
- 7. CIRCUIT BREAKERS RATED 1200A OR HIGHER SHALL HAVE APPROPRIATE DOCUMENTATION AND METHOD TO REDUCE CLEARING TIME IN ORDER TO REDUCE ARC FLASH ENERGY PER CODE. PROVIDE ELECTRONIC TRIP UNIT WITH INSTANTANEOUS TRIP AND ENERGY-REDUCING MAINTENANCE SWITCH WITH LOCAL STATUS INDICATOR FOR COMPLIANCE. PROVIDE PROVISIONS TO INTERFACE WITH OWNER ALARM/MONITORING SYSTEM TO INDICATE MAINTENANCE SWITCH STATUS.
- 8. PROVIDE A PERMANENT LABEL ON FRONT OF EQUIPMENT ENCLOSURE; REFER TO SPECIFICATIONS FOR LABEL REQUIREMENTS. LABEL SHALL READ AS FOLLOWS (INCLUDE RESPECTIVE NAMES IN BLANKS):

  SERVICE EQUIPMENT LABEL:

EXAMPLE: 208Y/120V, 60HZ 800A

SCCR = 65,000A MAX AVAILABLE FAULT CURRENT = 58,815A CALCULATED: 01/01/2018

PANELBOARD/SWITCHBOARD LABEL:

LINE 1: PANELBOARD "\_\_\_\_\_" SUPPLIED BY UPSTREAM
LINE 2: PANELBOARD/SWITCHBOARD "\_\_\_\_\_"

LINE 3: LOCATED IN "\_\_\_\_\_" SUPPLIES DOWNSTREAM
LINE 4: PANELBOARD "\_\_\_\_\_" SUPPLIES DOWNSTREAM
LINE 5: PANELBOARD(S) "\_\_\_\_\_"

TRANSFORMERS LABEL:
LINE 1: TRANSFORMER "\_\_\_\_\_" SUPPLIED BY UPSTREAM
LINE 2: PANELBOARD/SWITCHBOARD "\_\_\_\_\_"
LINE 3: LOCATED IN "\_\_\_\_\_"
LINE 4: TRANSFORMER "\_\_\_\_\_" SUPPLIES DOWNSTREAM
LINE 5: PANELBOARD(S) "\_\_\_\_\_"

## ONE-LINE DIAGRAM GENERAL NOTES:

- 1. COORDINATE WORK WITH ARCHITECTURAL PHASING DRAWINGS TO PROPERLY STAGE TRANSITION TO PROVIDE POWER TO EXISTING, NEW AND TEMPORARY LOADS. MONITOR LOADS ON DISTRIBUTION SYSTEM TO MAKE SURE SHIFTING OF LOADS DOES NOT OVERLOAD ELECTRICAL EQUIPMENT.
- 2. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL VERIFY THE EXISTING AIC/SCCR RATING OF EACH PANELBOARD/SWITCHBOARD. ALL NEW AND EXISTING OVER-CURRENT PROTECTION DEVICES (CIRCUIT BREAKERS AND FUSES) MUST HAVE AN AIC/SCCR RATING EXCEEDING THE AVAILABLE FAULT CURRENT AT THAT POINT IN THE SYSTEM. NOTIFY THE OWNER AND THE ENGINEER IF THE EXISTING
- 3. VERIFY THE INTEGRITY OF THE EXISTING GROUNDING ELECTRODE SYSTEM AND THAT THE NEUTRAL AND GROUND ARE PROPERLY BONDED TOGETHER AT THE POINT OF SERVICE ENTRANCE. NOTIFY THE LANDLORD, OWNER AND THE ENGINEER OF ANY EXISTING DEFICIENCIES.

EQUIPMENT DOES NOT COMPLY WITH THIS REQUIREMENT.

- 4. AS APPLICABLE, OBTAIN THE FOLLOWING INFORMATION IN REGARD TO THE EXISTING ELECTRICAL SERVICE AND DISTRIBUTION SYSTEM AND REPORT FINDINGS TO THE ENGINEER FOR ANALYSIS PRIOR TO BEGINNING CONSTRUCTION:
- A. AVAILABLE FAULT CURRENT DELIVERED BY THE UTILITY COMPANY AT THE POINT OF SERVICE. INCLUDE THE
- AVAILABLE FAULT CURRENT DELIVERED TO THE TENANT SPACE BY THE LANDLORD'S DISTRIBUTION SYSTEM.

  B. PROVIDE A PLAN SKETCH OF THE LANDLORD'S DISTRIBUTION EQUIPMENT LOCATION RELATIVE TO THE ENTIRE BUILDING. INCLUDE THE LOCATION OF TENANT SPACE UTILITY METER AND SERVICE DISCONNECT,
- RELEVANT FEEDER ROUTING AND LENGTHS.

  C. PROVIDE A SKETCH OF THE ONE-LINE SHOWING THE PATH FROM THE UTILITY TRANSFORMER TO THE LANDLORD EQUIPMENT TO THE TENANT SPACE. INCLUDE FEEDER CONDUCTOR MATERIAL, (AL OR CU), NUMBER AND SIZE OF CONDUCTORS, GROUND, LENGTH, CONDUIT SIZE AND
- CONDUIT TYPE.

  D. TYPE OF SERVICE DISCONNECT OVER-CURRENT PROTECTION DEVICE, (FUSE OR CIRCUIT BREAKER), AMPERE RATING OF THE DEVICE AND AIC/SCCR RATING OF
- AMPERE RATING OF THE DEVICE AND AIC/SCCR RATI
  THE DEVICE.

  E. AIC/SCCR RATING AT EACH EXISTING
  SWITCHBOARD/PANELBOARD.

## ONE-LINE DIAGRAM SUPPLEMENTAL SPECIFICATIONS:

- GROUNDING ELECTRODE SYSTEM SHALL BE PER LOCAL REQUIREMENTS AND SHALL NOT BE LESS STRINGENT THAN THAT SPECIFIED IN THE CONSTRUCTION DOCUMENTS.
- 2. PROVIDE PROPERLY SIZED LUGS FOR ALL EQUIPMENT, CIRCUIT BREAKERS, AND OTHER ELECTRICAL DEVICES TO ACCOMMODATE INSTALLED CONDUCTORS. A LARGER FRAME, OVERSIZED LUGS OR NON-STANDARD PRODUCT MAY BE REQUIRED IN SOME INSTANCES. UTILIZE PIN ADAPTERS ONLY IF NECESSARY AND ONLY AS ALLOWED BY MANUFACTURER AND AHJ.
- 3. PROVIDE ANY AVAILABLE SPACE IN SWITCHBOARDS/PANELBOARDS WITH BUSSING.
- PROVIDE (4) EMPTY 1" CONDUITS WITH PULL STRINGS FROM EACH RECESSED PANELBOARD UP TO ACCESSIBLE CEILING SPACE. CAP AND LABEL CONDUITS FOR FUTURE USE.
- 5. PROVIDE TYPED FINAL CIRCUIT DIRECTORY FOR ALL PANELBOARDS TO REFLECT ACTUAL AS-BUILT CONDITIONS. COORDINATE FINAL ROOM NAMES, NUMBERS AND DESCRIPTIONS WITH OWNER PRIOR TO COMPLETION. CIRCUIT DESCRIPTIONS SHALL BE PER CODE AND SHALL BE DISTINGUISHABLE FROM ALL OTHERS.

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Lee's Summit R7 District

Lee's Summit North High School

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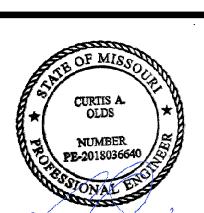
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2050003134
MO. CORPORATE NO: E-556D

EXPIRES 12/31/2020



Sep 25 2020

REVISIONS r description d

PROJECT NO:

September 28, 2020

ELECTRICAL ONE-LINE

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BID SET

DIAGRAM

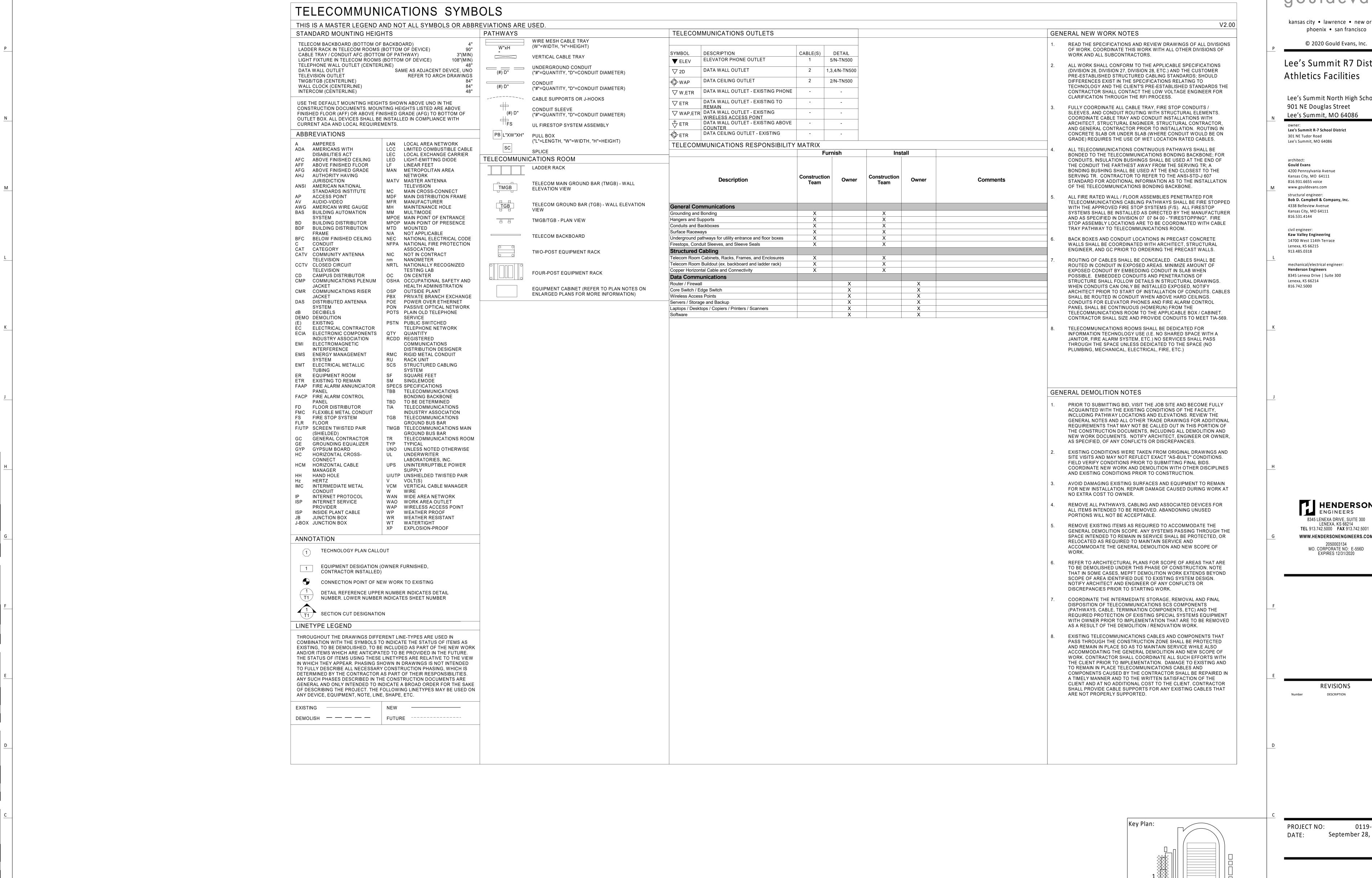
The following calculations are based on the '	'Point-by-Point" meth	nod where:																		VOLTAGE DROP (3	Ø):							
$ISC(2) = ISC(1) \times M(1)$		M= 1/(1+	-f)		Feeder:	f (3Ø) =	1.732 x L x lsc		XFMR:	f (3Ø) =	IP(sca)x Vp	x 1.73 x %Z		IS(sca)= <u>\</u>	Vp x M x IP(sca	<u>a)</u>				%VD= ((R x cos	arccos(pf)) + X	x sin (arccos	s(pf))) x L/# x l	l x 1.73) / E				
ISC (1) = short circuit current at fault point 1							CxE				100,000 x K	VΑ		`	Vs					VOLTAGE DROP (1	Ø):							
ISC (2) = short circuit current at fault point 2					Feeder:	f (1Ø)=	2 x L x Isc		XFMR:	f (1Ø)=	IP(sca)x Vp	<u>x %Z</u>								%VD= ((R x cos	arccos(pf)) + X	x sin(arccos	s(pf))) x 2 x L/#	‡ x I) / E				
							CxE				100,000 x K	VA																
IP = Primary short circuit current																												
Vp = Primary voltage																												
IS= Secondary short circuit current																				%VD CUM=	Cumulative Vo	oltage Drop f	from Fault Poi	nt 1 to Faul	It Point #			
Vs= Secondary voltage																				R=	resistance in o	ohms per LF	:					
L = Length of circuit		E = Line	to line volts																	X=	reactances in	ohms per LF	F					
C = "C" Factor from Bussman table	where "C" = 1 / imp	edance pe	r linear foot																									
Feeder Types =																												
Feeder Types = NM - Non Magnetic Conduit, M - Magnetic C	onduit, FB - Feeder I	Busway, P	B - Plug-in Bu	usway, TX - Tra	ansformer																							
NM - Non Magnetic Conduit, M - Magnetic C		1	B - Plug-in Bu	usway, TX - Tra		eeder					Circuit				Conductor					Transformer					Foult		ge: 480Y/277V	T
NM - Non Magnetic Conduit, M - Magnetic C		1	Source Isc		Fe	eeder	Sets and Bus/ Phase		Busway 'C'				Circuit Load	Resistance	Conductor	Arccos (pf)		Degree		Transformer New Xfmr   Existing	Secondary	Tan	- - f	M	Fault Current	Voltage	Cumulative Voltage Drop	F
NM - Non Magnetic Conduit, M - Magnetic C  ult   Bus/Feeder Description	onduit, FB - Feeder I  Source (Fault Point)	1		Conduit	Fe	tity of Parallel	Sets and Bus/ Phase iral Size	Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Length		Circuit Load (Amperage)	Resistance (R)	Conductor Reactance (X)	Arccos (pf) (Radians)	Туре	Degree Rise	kVA	Transformer  New Xfmr Existing Z Xfmr Z	Secondary Voltage	Tap Setting	f	М	Fault Current (amps)			F
NM - Non Magnetic Conduit, M - Magnetic C  ault  bint Bus/Feeder Description	Source (Fault	1	Source Isc (amps)	Conduit Type/ TX	Fe	tity of Parallel & Neu					Length			Resistance (R)	Reactance		- Туре	Degree Rise	kVA	New Xfmr Existing	Voltage	Setting	f 6X Motor Cor		Current	Voltage Drop (%VD)	Cumulative Voltage Drop	F
NM - Non Magnetic Conduit, M - Magnetic C  ault oint Bus/Feeder Description F#)	Source (Fault	1	Source Isc (amps)	Conduit Type/ TX 2 at the second	Fe Material Quant dary of the utility tra	tity of Parallel & Neu ansformer		e Value			Length			Resistance (R)	Reactance		Туре	Degree Rise	kVA	New Xfmr Existing	Voltage	Setting	f 6X Motor Cor		Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop	F
NM - Non Magnetic Conduit, M - Magnetic C  ault  oint  F#)  1 Utility Service Point	Source (Fault	1	Source Isc (amps)	Conduit Type/ TX 2 at the second	Material Quant dary of the utility tra ed full load motor ar	tity of Parallel & Neu ansformer	tral Size	e Value			Length			Resistance (R) 0.000035	Reactance		Туре	Degree Rise	kVA	New Xfmr Existing	Voltage	Setting	f 6X Motor Cor 0.115		Current (amps)	Voltage Drop (%VD)	Cumulative Voltage Drop	F
ault oint Bus/Feeder Description  1 Utility Service Point Motor Contribution	Source (Fault	1	Source Isc (amps) 51,742	Conduit Type/ TX 2 at the second	Material Quant  dary of the utility tra ed full load motor ar  CU 5	tity of Parallel & Neu ansformer mps (includes	compressors) on the	Value e system		(E)	Length (L)	Factor (pf)	(Amperage)	(R)	Reactance (X)	(Radians)	- Туре	Degree Rise	kVA	New Xfmr Existing	Voltage	Setting		ntribution =	Current (amps) 54622	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	F
ault oint Bus/Feeder Description  1 Utility Service Point Motor Contribution  2 MDP	Source (Fault Point)	1	Source Isc (amps) 51,742 480 54622	Conduit Type/ TX 2 at the second The connecte M	Material Quant  dary of the utility tra ed full load motor at  CU 5  CU 2	tity of Parallel & Neu ansformer mps (includes Set(s) of	compressors) on the	e system 20566		(E) 480	Length (L)	Factor (pf)	(Amperage) 600	(R) 0.000035	Reactance (X) 0.000049	(Radians) 0.451027	Туре	Degree Rise	kVA	New Xfmr Existing	Voltage	Setting	0.115	ntribution =	Current (amps) 54622 48988	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)	F
NM - Non Magnetic Conduit, M - Magnetic C  ault oint F#)  1 Utility Service Point Motor Contribution  2 MDP  3 HHP & HHP-2	Source (Fault Point)	1	Source Isc (amps) 51,742 480 54622 48988	Conduit Type/ TX 2 at the second 3 The connecte M M	Material Quant  dary of the utility tra ed full load motor ar  CU 5  CU 2	tity of Parallel & Neu ansformer mps (includes Set(s) of Set(s) of	compressors) on the 400 kcmil 3/0 AWG	e system 20566 12844		(E) 480 480	Length (L)  60  500	0.9 0.9	(Amperage) 600 200	0.000035 0.000079	Reactance (X)  0.000049 0.000052	(Radians)  0.451027  0.451027	Type  ETR TP-1	Degree Rise	kVA	New Xfmr Existing	Voltage	Setting	0.115 3.441	0.90 0.23	Current (amps) 54622 48988 11032	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD) -0.14% -1.83%	F
Ault oint F#)  Bus/Feeder Description  Utility Service Point  Motor Contribution  MDP  HHP & HHP-2  TO TX-THL	Source (Fault Point)  1 2 3	1	Source Isc (amps) 51,742 480 54622 48988 11032	Conduit Type/ TX  2 at the second  The connecte  M  M  M	Material Quant  dary of the utility tra ed full load motor ar  CU 5  CU 2  CU 1	tity of Parallel & Neu ansformer mps (includes Set(s) of Set(s) of	compressors) on the 400 kcmil 3/0 AWG	e system 20566 12844		480 480 480	Length (L)  60  500	0.9 0.9	(Amperage) 600 200	0.000035 0.000079	Reactance (X)  0.000049 0.000052	(Radians)  0.451027  0.451027		Rise		New Xfmr Existing	Voltage	Setting	0.115 3.441 0.105	0.90 0.23 0.91	Current (amps)  54622  48988  11032  9987	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD)  -0.14% -1.83% -1.89%	F
ault oint F#)  1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL 5 TX-THL	Source (Fault Point)  1 2 3	1	Source Isc (amps)  51,742  480  54622  48988  11032  9987	Conduit Type/ TX  2 at the second The connecte M M M TX	Material Quant  dary of the utility tra ed full load motor ar  CU 5  CU 2  CU 1  CU 1	tity of Parallel & Neu ansformer mps (includes Set(s) of Set(s) of Set(s) of	compressors) on the 400 kcmil 3/0 AWG AWG	e system 20566 12844 3806		480 480 480 480 480	60 500 10	0.9 0.9 0.9	(Amperage)  600 200 56	0.000035 0.000079 0.000310	Reactance (X)  0.000049  0.000052  0.000060	(Radians)  0.451027  0.451027  0.451027		Rise		New Xfmr Existing	Voltage	Setting	0.115 3.441 0.105 9.225	0.90 0.23 0.91 0.10	Current (amps)  54622  48988  11032  9987  2254	Voltage Drop (%VD) -0.14% -1.69% -0.06%	Cumulative Voltage Drop (%VD) -0.14% -1.83% -1.89%	F
ault oint F#)  1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL 5 TX-THL 6 HLP	Source (Fault Point)  1 2 3 4 5	1	Source Isc (amps)  51,742  480  54622  48988  11032  9987  2254	Conduit Type/TX 2 at the second 3 The connecte M M M TX M	Material Quant  dary of the utility tra ed full load motor ar  CU 5  CU 2  CU 1  CU 1  CU 1	ansformer mps (includes Set(s) of Set(s) of Set(s) of	compressors) on the 400 kcmil 3/0 AWG 4 AWG 1/0 AWG	e system 20566 12844 3806 8925		480 480 480 480 480 208	60 500 10	0.9 0.9 0.9 0.9	(Amperage)  600 200 56 120	0.000035 0.000079 0.000310 0.000120	Reactance (X)  0.000049  0.000052  0.000060	(Radians)  0.451027  0.451027  0.451027  0.451027		Rise		New Xfmr Existing	Voltage	Setting	0.115 3.441 0.105 9.225 0.042	0.90 0.23 0.91 0.10 0.96	Current (amps)  54622  48988  11032  9987  2254  2163	Voltage Drop (%VD) -0.14% -1.69% -0.06%	Cumulative Voltage Drop (%VD) -0.14% -1.83% -1.89% -2.15%	F
Ault oint F#)  Bus/Feeder Description  Utility Service Point Motor Contribution  MDP  HHP & HHP-2  TX-THL  HLP  HTLS	Source (Fault Point)  1 2 3 4 5 6	1	Source Isc (amps)  51,742  480  54622  48988  11032  9987  2254  2163	Conduit Type/TX  2 at the second The connecte M M M TX M M M M TX M M	Material Quant  dary of the utility tra ed full load motor at CU 5 CU 2 CU 1  CU 1 CU 1 CU 1 CU 1	tity of Parallel & Neu ansformer mps (includes Set(s) of Set(s) of Set(s) of Set(s) of	compressors) on the 400 kcmil 3/0 AWG 4 AWG  1/0 AWG 1 AWG	e system 20566 12844 3806 8925 7293		480 480 480 480 480 208 208	60 500 10 20 270	0.9 0.9 0.9 0.9 0.9	(Amperage)  600 200 56  120 20	0.000035 0.000079 0.000310 0.000120 0.000160	Reactance (X)  0.000049 0.000052 0.000060  0.000055 0.000057	(Radians)  0.451027  0.451027  0.451027  0.451027		Rise		New Xfmr Existing	Voltage	Setting	0.115 3.441 0.105 9.225 0.042 0.667	0.90 0.23 0.91 0.10 0.96 0.60	Current (amps)  54622  48988  11032  9987  2254  2163  1298	Voltage Drop (%VD)  -0.14% -1.69% -0.06%  -0.26% -0.76%	Cumulative Voltage Drop (%VD)  -0.14% -1.83% -1.89% -1.89% -2.15% -2.91%	F

12

11

1 Set(s) of 1/0 AWG

12 | 3 | 3280 | M | CU | 1 | Set(s) of | 3/0 | AWG



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September 28, 2020

TECHNOLOGY LEGEND AND NOTES

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