

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:

Gould Evans

Lee's Summit R-7 School District 4200 Pennsylvania Avenue 301 NE Tudor Road Lee's Summit, MO 64086 Kansas City, MO 64111 816.931.6655 voice www.gouldevans.com

Bob D. Campbell & Company, 4338 Belleview Avenue Kansas City, MO 64111

816.531.4144

structural engineer:

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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BID SET

0119-0101

	Index of Drawings		SITE LOCATION MAP	General Notes:	gouldeva
Volume 1 - LSHS	Volume 2 - LSNHS	Volume 3 - LSWHS		1. THE INTENT OF THE CONTRACT DOCUMENTS IS TO INCLUDE ALL ITEMS NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK BY THE	
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 SHALL BE AS BINDING AS IF REQUIRED BY ALL;	kansas city • lawrence • new phoenix • san francisc
eneral Information	01.0 General Information N-G001 Index of Drawings & General Project Notes	01.0 General Information		PERFORMANCE BY THE CONTRACTOR SHALL BE REQUIRED ONLY TO THE EXTENT CONSISTENT WITH	© 2020 Gould Evans, Inc
Index of Drawings & General Project Notes de Information	01.1 Code Information	W-G001 Index of Drawings & General Project Notes 01.1 Code Information		THE CONTRACT DOCUMENTS AND REASONABLY INFERABLE FROM THEM AS BEING NECESSARY TO PRODUCE THE INDICATED RESULTS.	Lee's Summit R7 Dist
Code Plan - Level 1	N-G100 Site Context N-G101 Code Summary - Stadium, Press Box, & Ticket Booths	W-G100 Site Context W-G101 Code Summary - Stadium & Home Press Box		2. ORGANIZATION OF THE SPECIFICATIONS INTO DIVISIONS, SECTIONS AND ARTICLES, AND ARRANGEMENT OF PRAYUNGS SHALL NOT CONTROL	Athletics Facilities
ivil Site and Dimension Plan	N-G102 Code Summary - Home Press Box & Ticket Booths N-G103 Code Summary - Athletics Building & Concessions	W-G101 Code Summary - Stadium & Home Press Box W-G102 Code Summary - Press Box W-G103 Code Summary - Visitor Concessions & South Ticket Booth		ARRANGEMENT OF DRAWINGS SHALL NOT CONTROL THE CONTRACTOR IN DIVIDING THE WORK AMONG SUBCONTRACTORS OR IN ESTABLISHING THE EXTENT	Lee's Summit North High S
Site Details Erosion Control Details	02.0 - Civil	W-G103 Code Summary - Visitor Concessions & South Ficket Booth W-G104 Code Summary - North Ticket Booth W-G200 Fire Rated Assemblies		OF WORK TO BE PERFORMED BY ANY TRADE. 3. DRAWINGS, SPECIFICATIONS, GENERAL AND	901 NE Douglas Street
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Retaining Wall Plan and Profile Utility Plan	N-C300 Grading and Erosion Control Plan N-C310 Site and Grading Plan Alternate	02.0 - Civil W-C100 Site & Dimension Plan		WRITTEN THEREON, THE FIGURES, UNLESS OBVIOUSLY INCORRECT, ARE TO GOVERN OVER	Lee's Summit R-7 School District 301 NE Tudor Road Lee's Summit, MO 64086
Storm Sewer Plan and Profile Storm Details	N-C500 Utility Plan N-C900 Detail Sheet N-C910 Detail Sheet	W-C200 Demolition and Erosion Control Plan W-C300 Grading and Erosion Control Plan		SCALED DIMENSIONS. IN THE CASE OF ANY DISCREPANCY BETWEEN THE DRAWINGS AND THE SPECIFICATIONS, THE SPECIFICATIONS ARE TO	
chitectural Site	03.1 Architectural Site	W-C500 Utility Plan W-C900 Site Details		GOVERN. IF THERE IS A DISCREPANCY BETWEEN LARGE AND SMALL SCALE DETAILS, THE LARGER	architect: Gould Evans 4200 Pennsylvania Avenue
2 Architectural Site Plan 1 Fencing 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, DRAWINGS AND GENERAL CONDITIONS. THE	Kansas City, MO 64111 816.931.6655 voice M www.gouldevans.com
ructural	N-AS201 Fencing and Hardscape Plans	03.1 Architectural Site		CONTRACTOR SHALL ADVISE THE ARCHITECT OF ANY DISCREPANCIES OR CONFLICTS BETWEEN CONTRACT	structural engineer: Bob D. Campbell & Company, Inc.
General Notes CMU Details	04.0 Structural N-S001 General Notes	W-AS001 Architectural Site Plan W-AS101 Bleacher Plans		DOCUMENTS AS SOON AS THEY ARE DISCOVERED. 4. NOTWITHSTANDING THE ABOVE, IN THE CASE OF	4338 Belleview Avenue Kansas City, MO 64111 816.531.4144
Home Press Box Plans Home Gateway Plans	N-S002 CMU Details N-S111 Press Box Plans	W-AS201 Fencing & Hardscape Plan		INCONSISTENCY BETWEEN DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT NOT CLARIFIED BY ADDENDUM OR BY ARCHITECT'S	civil engineer:
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Foundation Sections Framing Sections	N-S141 Vistior Restroom Plans N-S200 Foundation Sections	W-S002 CMU Details W-S111 Home Press Box Plans		5. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSIONS. IF DIMENSIONS APPEAR TO BE INSUFFICIENT OR INCORRECT, THE CONTRACTOR	913.485.0318 <u>L</u> mackanical (alastrical angineer)
Framing Sections Framing Sections	N-S300 Framing Sections N-S301 Framing Sections	W-S121 Visitor Restrooms/Concession Plans W-S131 North Ticket Booth Plans		SHALL REQUEST CLARIFICATION FROM THE ARCHITECT.	mechanical/electrical engineer: Henderson Engineers 8345 Lenexa Drive Suite 300
Framing Sections Framing Flourions	N-S302 Framing Sections N-S400 Framing Elevations	W-S141 South Ticket Booth Plans W-S300 Framing Sections		6. WHENEVER CONTRACT DOCUMENTS REASONABLY IMPLY MATERIALS OR INSTALLATION AS NECESSARY TO PRODUCE THE INTENDED RESULTS BUT DO NOT	Lenexa, KS 66214 816.742.5000
Framing Elevations chitectural Demolition	05.0 Architectural Demolition	W-S301 Framing Sections W-S400 Framing Elevations		TO PRODUCE THE INTENDED RESULTS, BUT DO NOT FULLY DETAIL OR SPECIFY SUCH MATERIALS, THE CONTRACTOR SHALL PROVIDE THE MATERIALS AND	
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Accessibility Standards & Mounting Heights Exterior Enclosure Types & Interior Partition Types	N-A001 Graphic Symbols, Abbreviations, and General Information	05.1 Architectural W-A001 Graphic Symbols, Abbreviations, and General Information		DESIGN INTENT ONLY. PROVIDE PRODUCTS COMPLETE WITH ACCESSORIES, TRIM, FINISH,	
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HOME PRESS BOX - HVAC PLANS HOME GATEWAY - HVAC PLANS HOME GATEWAY - HVAC PLANS	08.0 - Electrical N-E000 ELECTRICAL LEGEND AND NOTES	W-M121 VISITOR RESTROOMS & CONCESSIONS - HVAC PLANS W-M131 TICKET BOOTH - HVAC PLANS			Architectural Corporation Missouri License No. 2018022991 Jay Darren Browning Date:
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LIGHTING SCHEDULES ELECTRICAL ONE-LINE DIAGRAM	N-TN500 TECHNOLOGY DETAILS	W-TN111 HOME PRESS BOX - TECHNOLOGY PLANS W-TN121 VISITOR RESTROOMS & CONCESSIONS - TECHNOLOGY PLAN			12/20/2020
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1 HOME PRESS BOX - TECHNOLOGY PLANS 1 TECHNOLOGY HOME GATEWAY - PLAN					,,
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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.
 THE SIZE, TYPE, QUANTITY, AND LOCATION OF ALL
- 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, MO 64086

owner: **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

Architectural Corporation

Missouri License No. 2018022991

Jay Darren Browning

DESCRIPTION

REVISIONS

Number

DATE

NUMBER Date: 09/28/2020

Architect Description

REVISIONS

Number

DATE

NUMBER DATE: No. A-2009027279

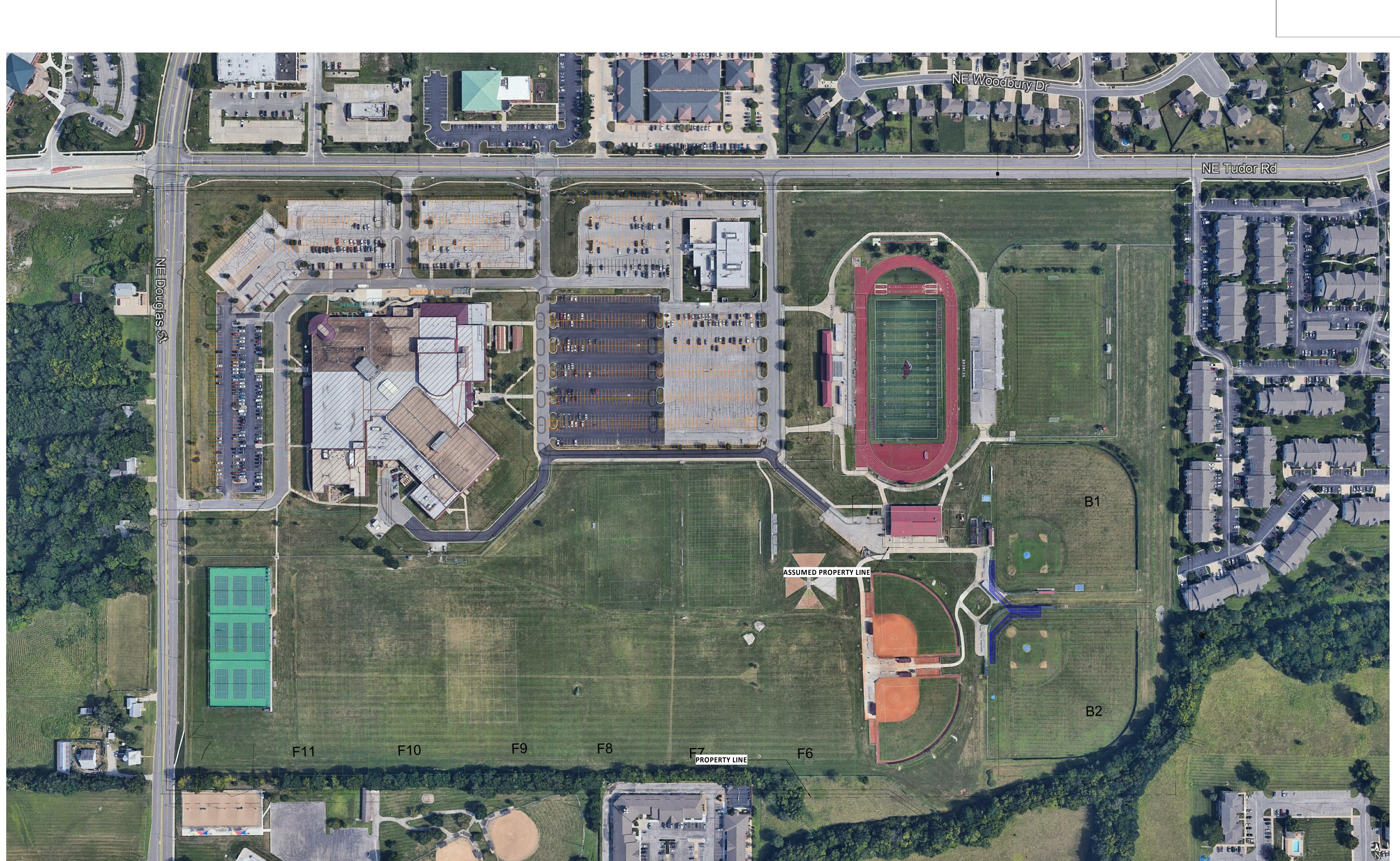
RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI
12/28/2020

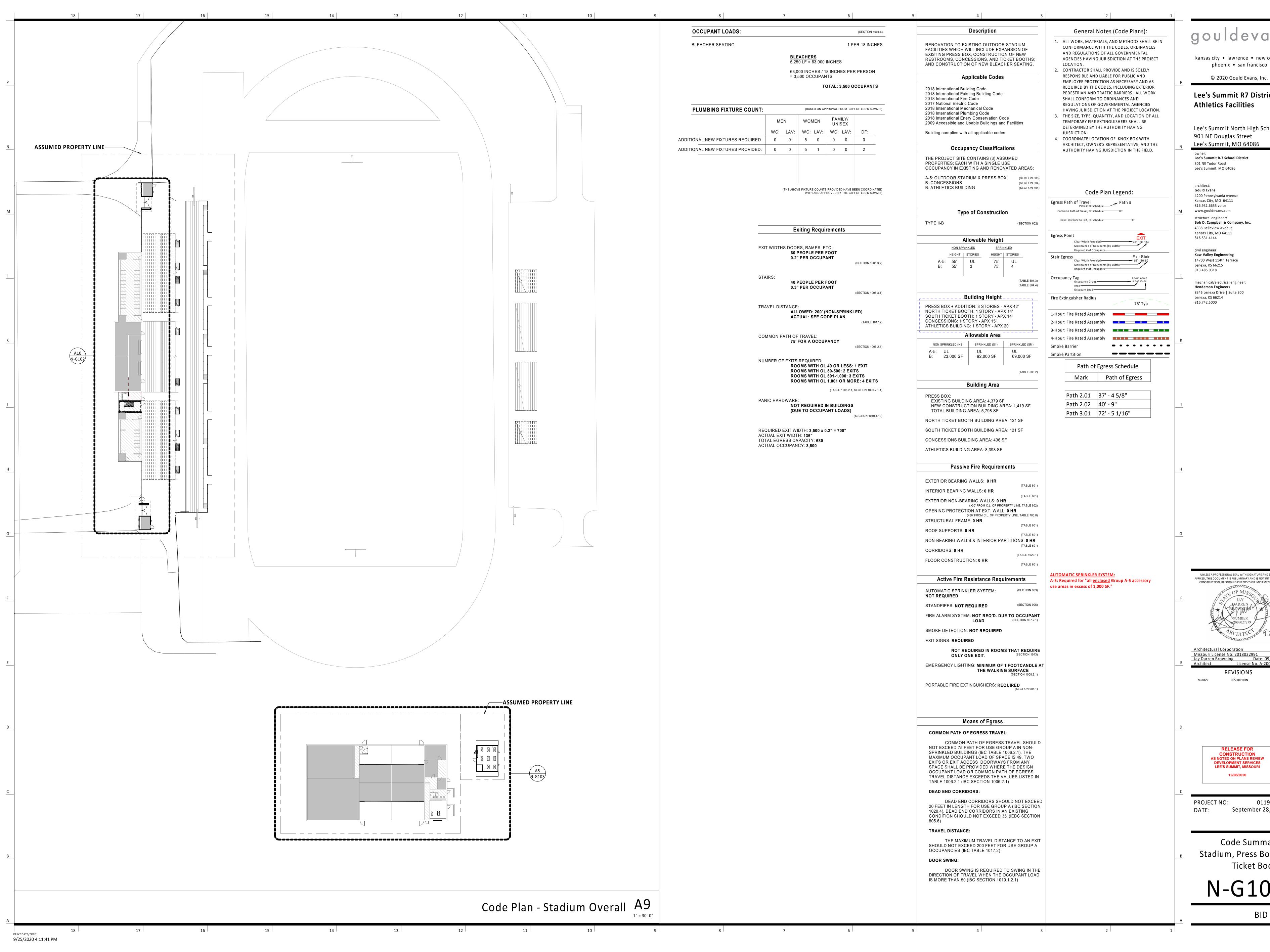
PROJECT NO: DATE:

0119-0101 September 28, 2020

Site Context

I-G100





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Lee's Summit R7 District

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

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

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

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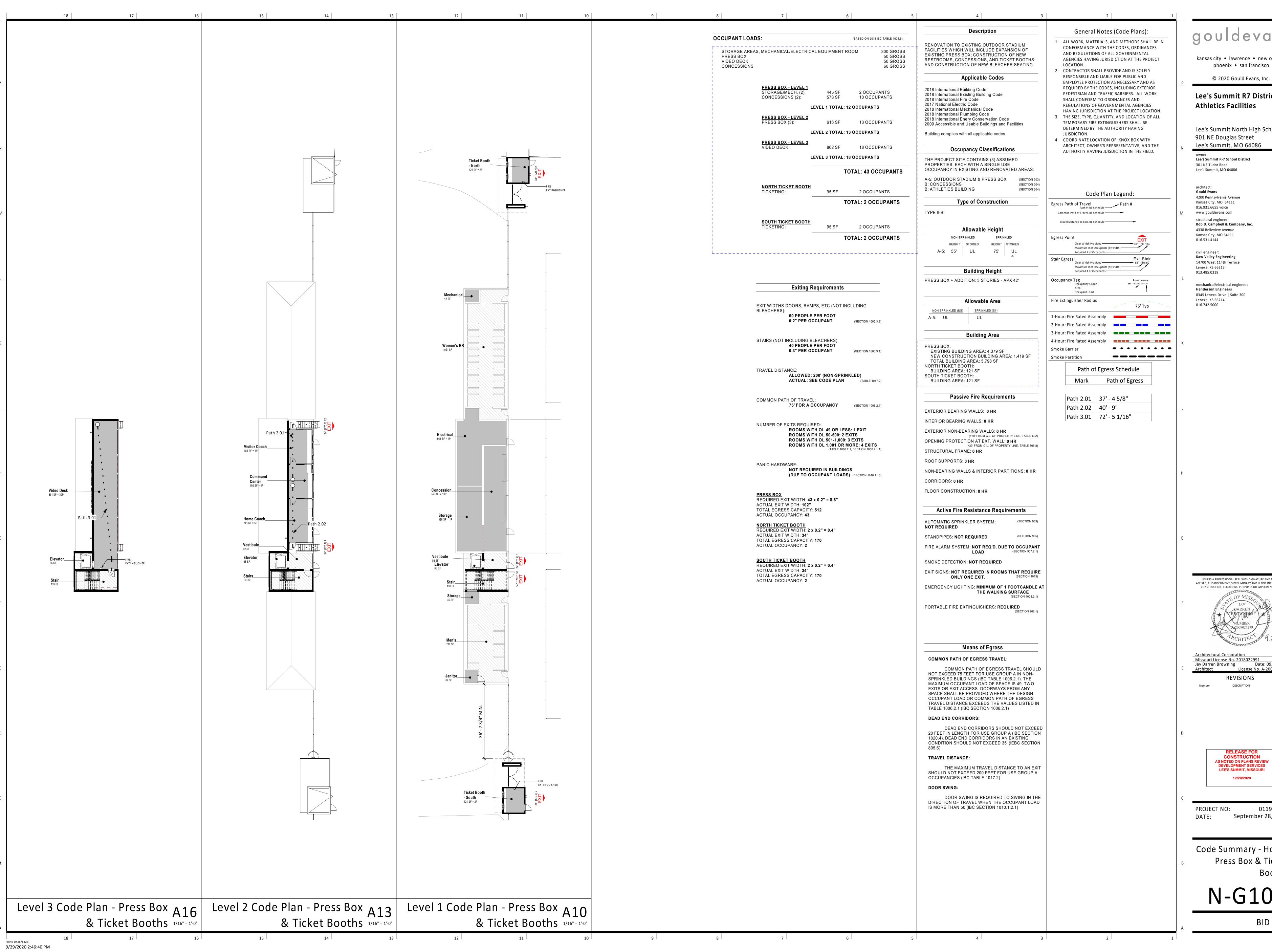
> > CONSTRUCTION **AS NOTED ON PLANS REVIEW** DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

PROJECT NO:

Code Summary -

September 28, 2020

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

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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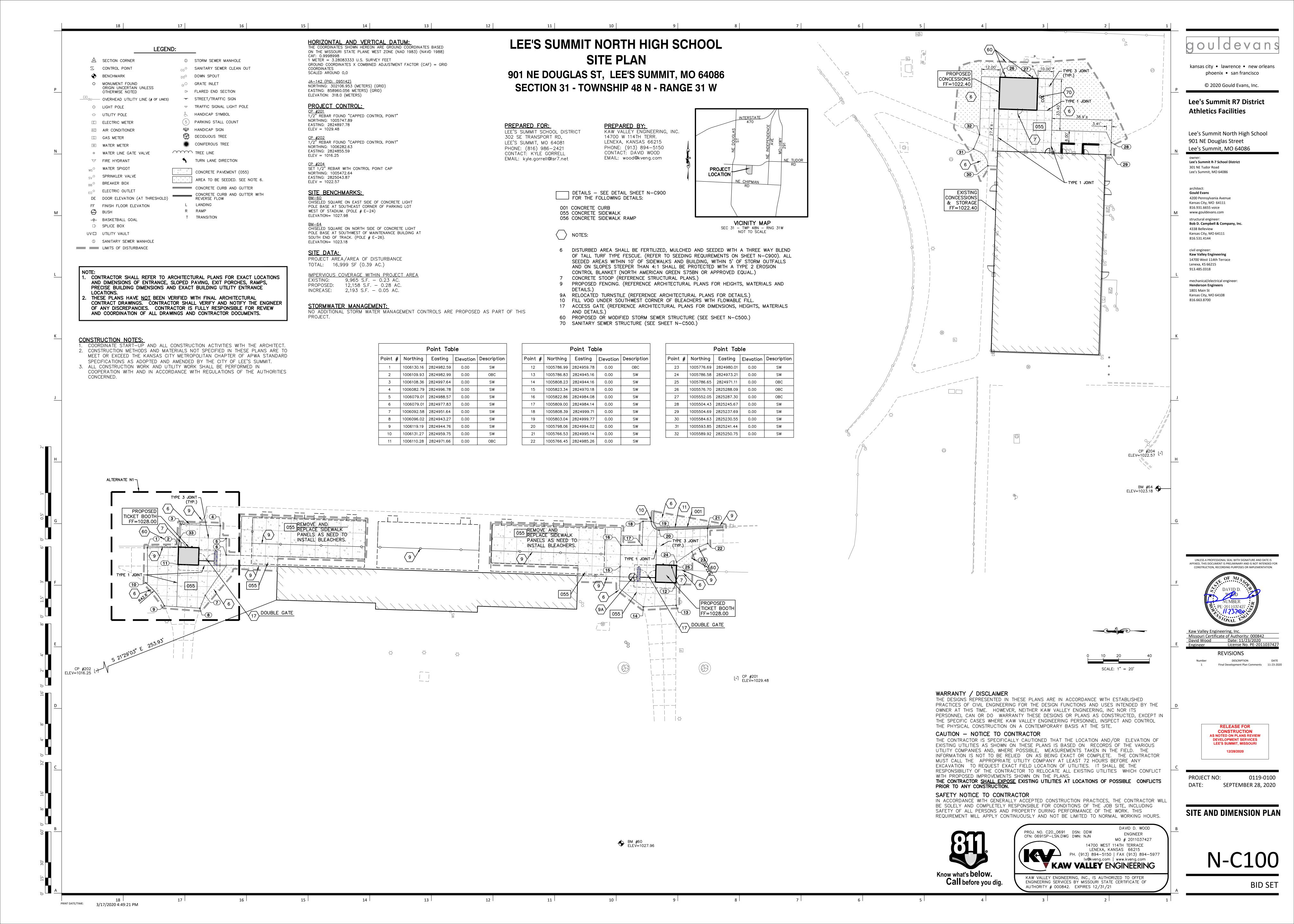
> CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

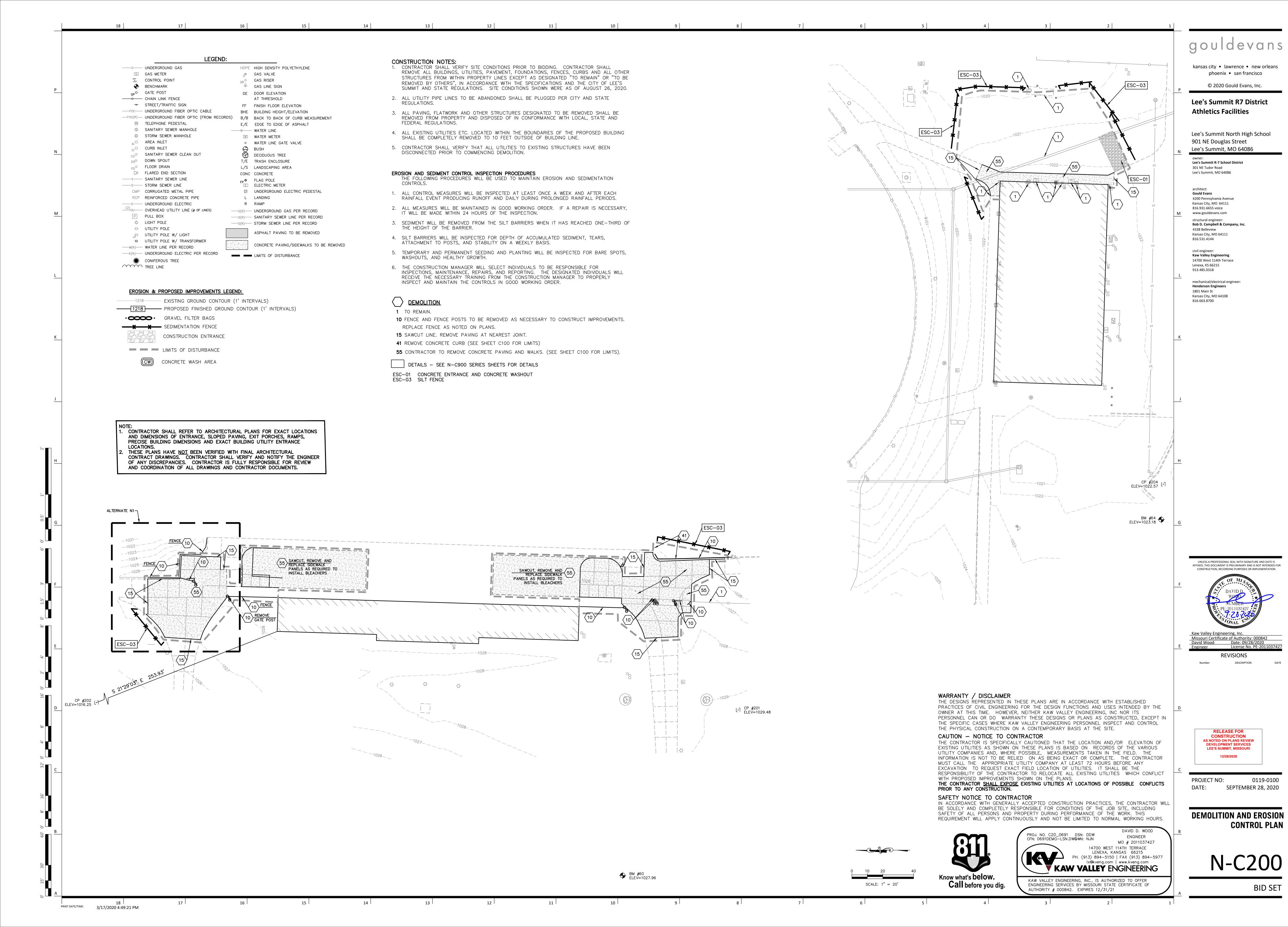
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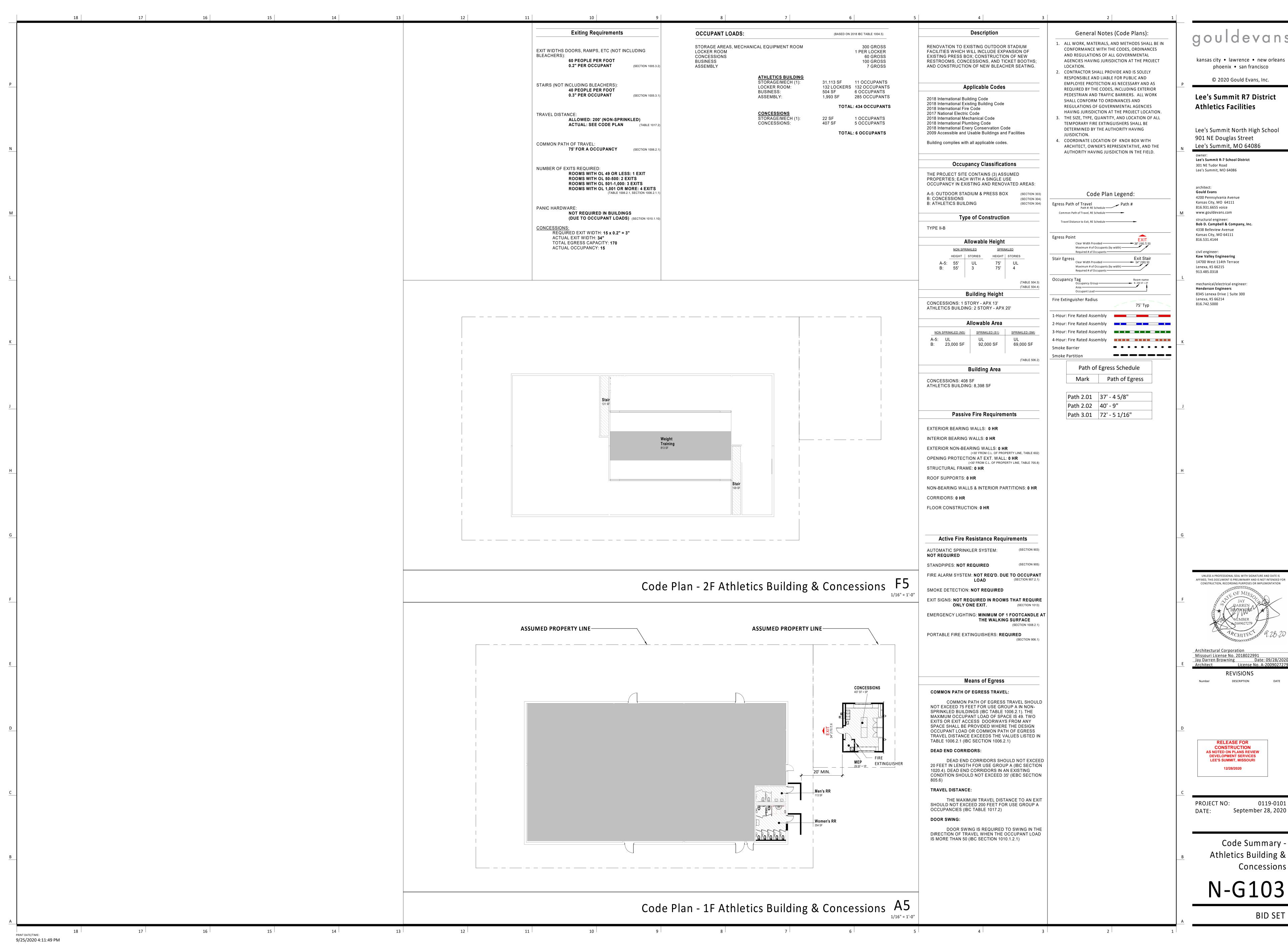
September 28, 2020

Code Summary - Home Press Box & Ticket Booths

N-G102







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Lee's Summit R7 District

Lee's Summit North High School 901 NE Douglas Street

Lee's Summit R-7 School District

4200 Pennsylvania Avenue Bob D. Campbell & Company, Inc.

Kaw Valley Engineering 14700 West 114th Terrace

mechanical/electrical engineer:

8345 Lenexa Drive | Suite 300

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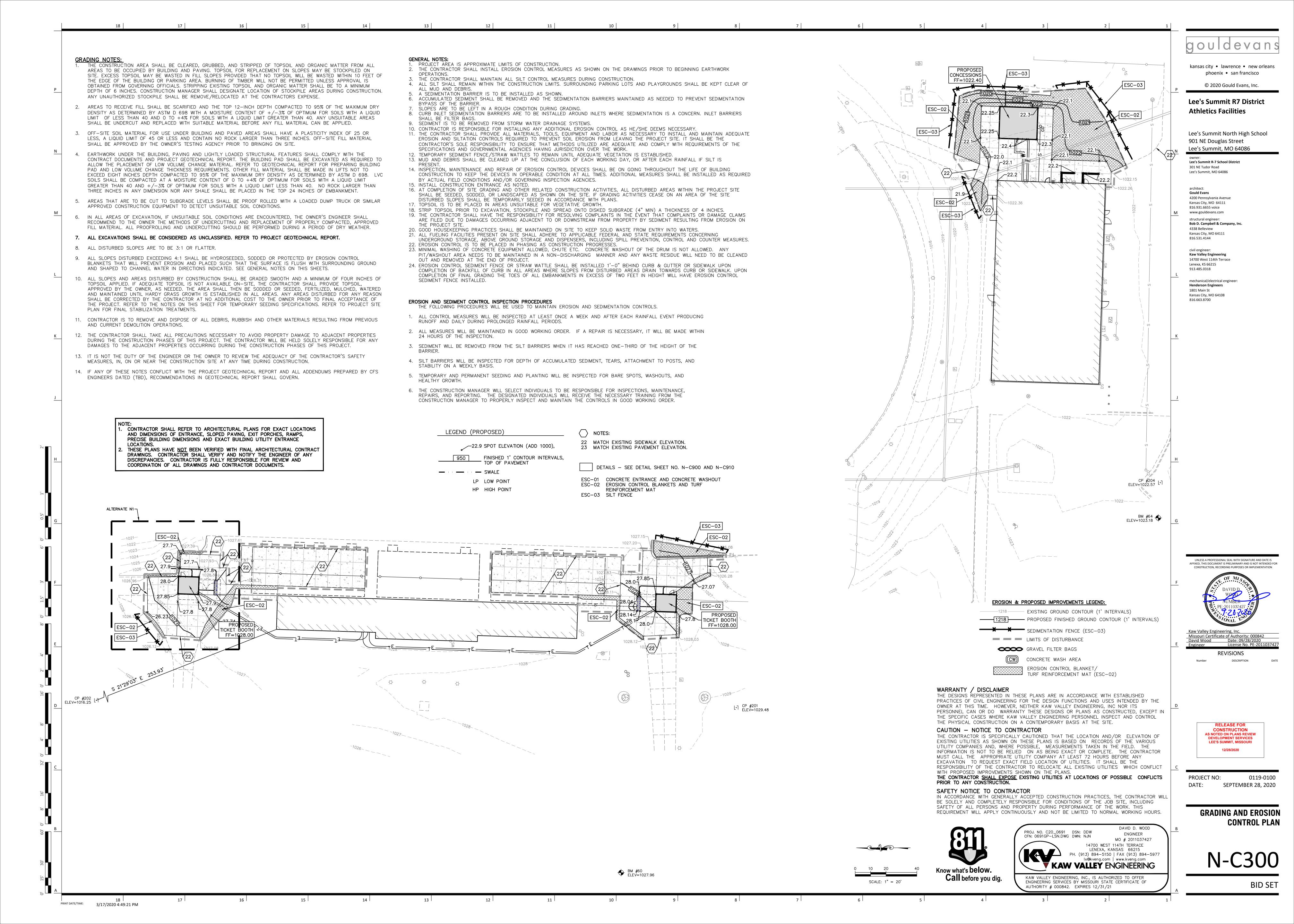
Jay Darren Browning Date: 09/28/2020 License No. A-200902727 REVISIONS

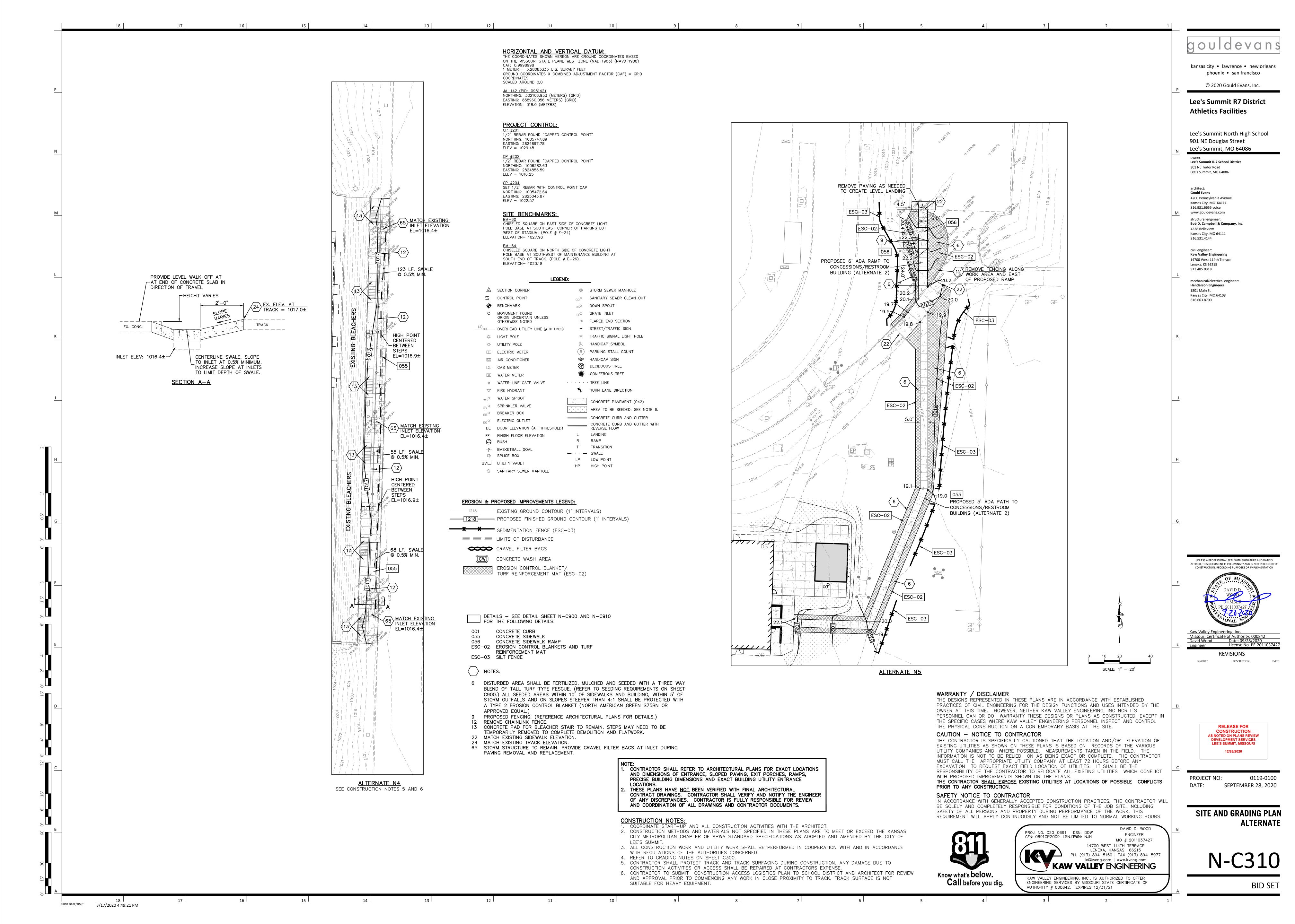
> CONSTRUCTION AS NOTED ON PLANS REVIEW LEE'S SUMMIT, MISSOURI

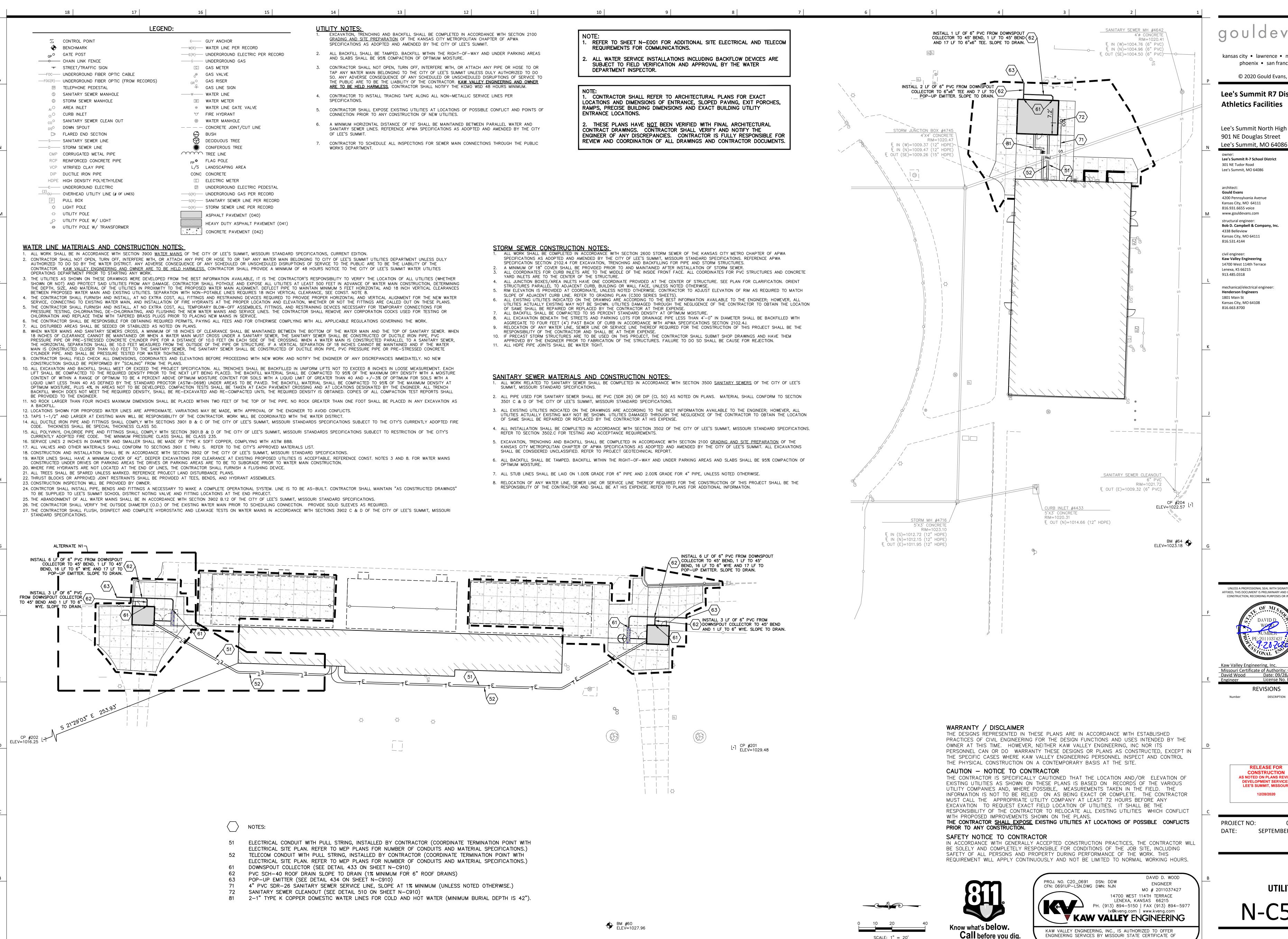
September 28, 2020

Code Summary -

Concessions







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SCALE: 1" = 20'

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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 Kansas City, MO 64111

Kaw Valley Engineering 14700 West 114th Terrace

mechanical/electrical enginee

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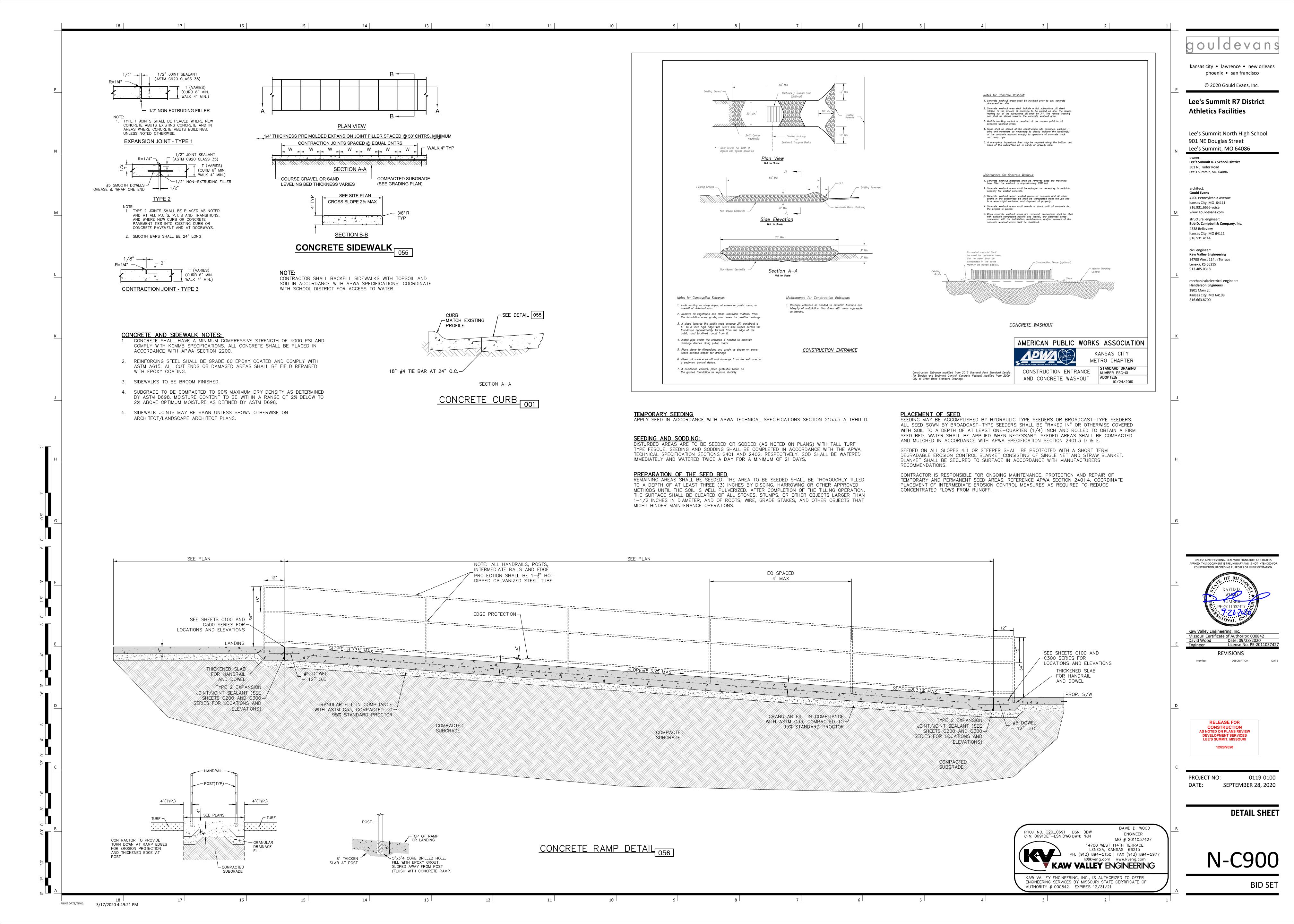
Missouri Certificate of Authority: 000842 David Wood Date: 09/28/202 License No. PE-20 **REVISIONS**

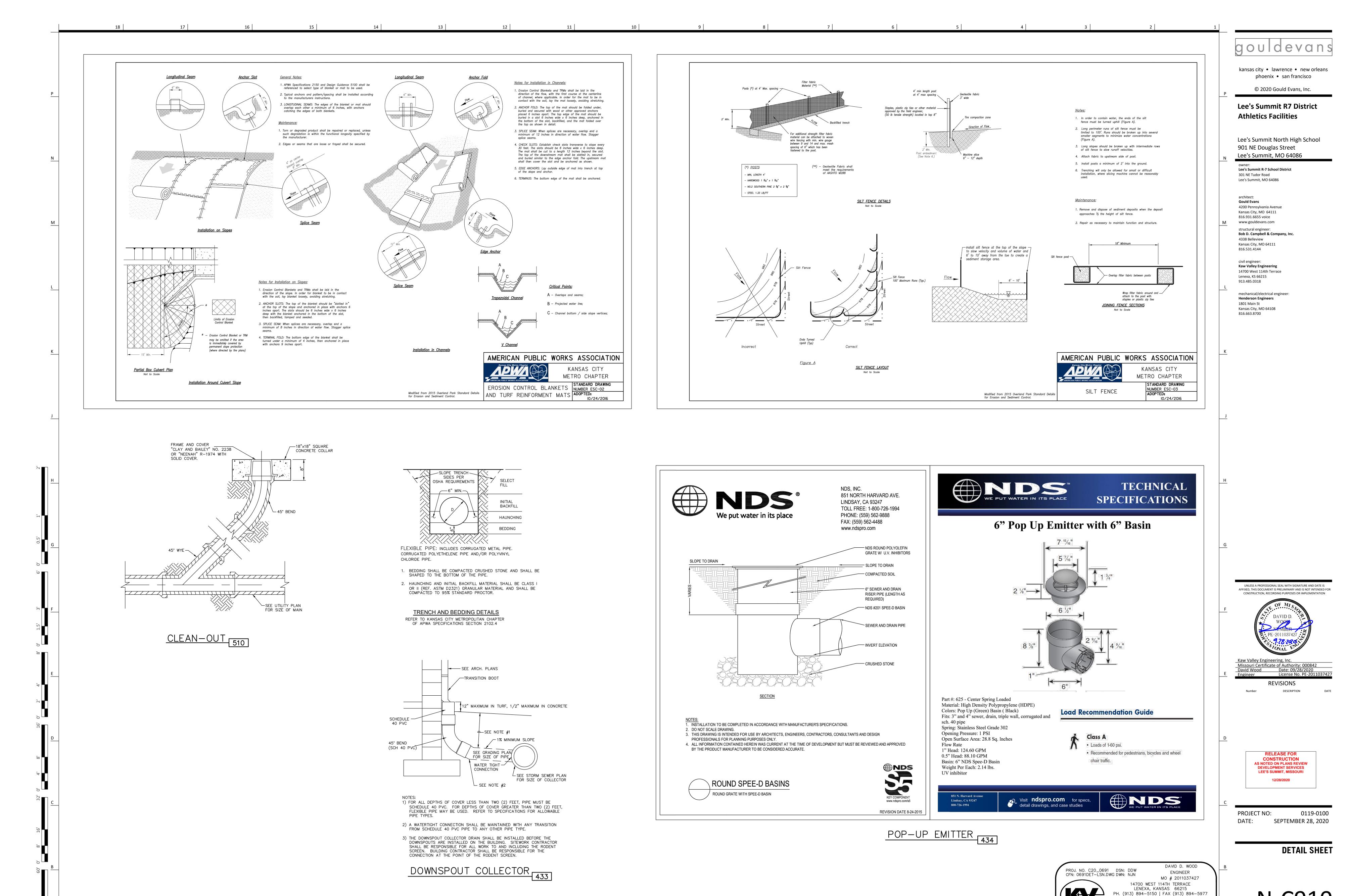
RELEASE FOR CONSTRUCTION **AS NOTED ON PLANS REVIEW** DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

SEPTEMBER 28, 2020

UTILITY PLAN

AUTHORITY # 000842. EXPIRES 12/31/21





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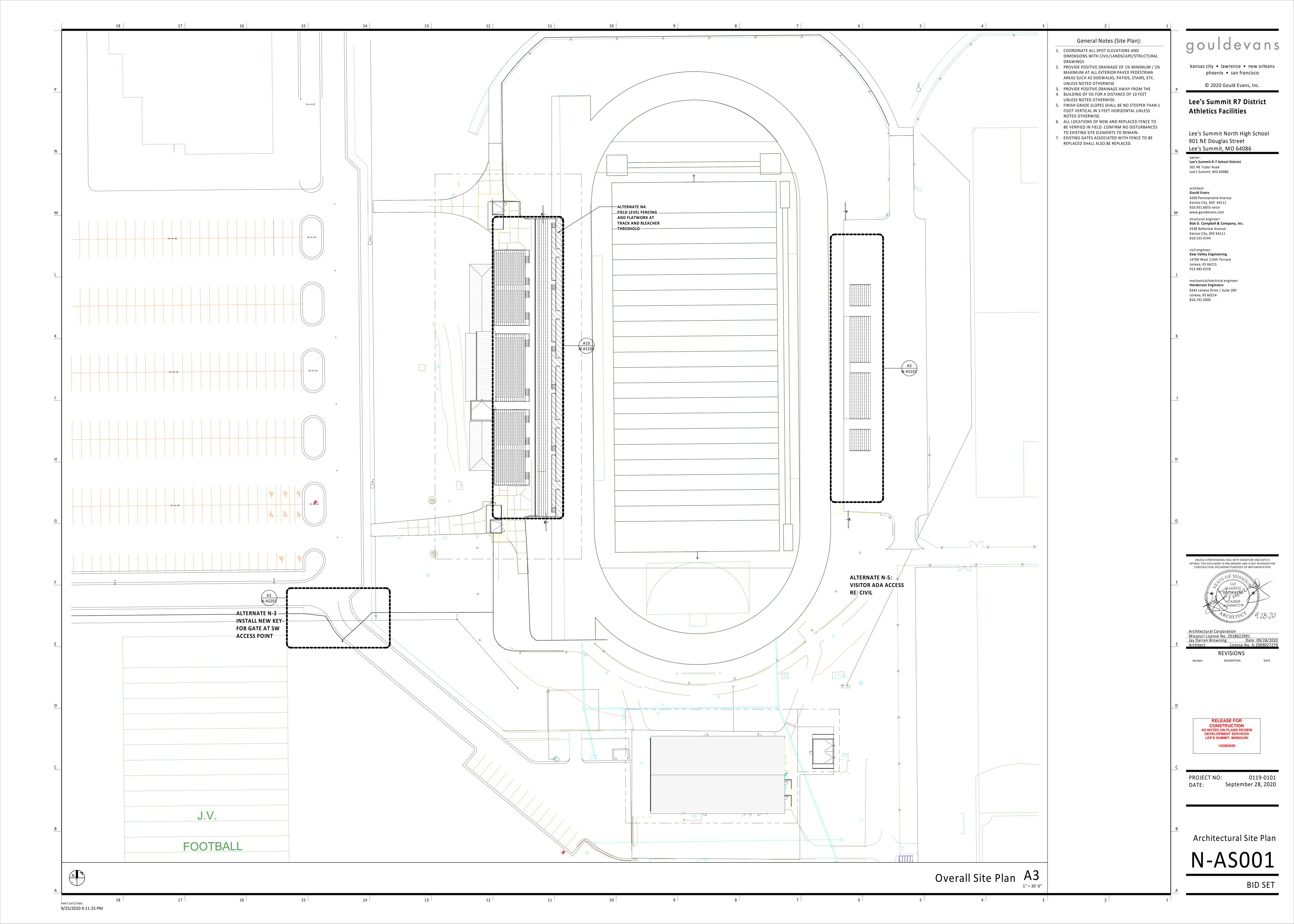
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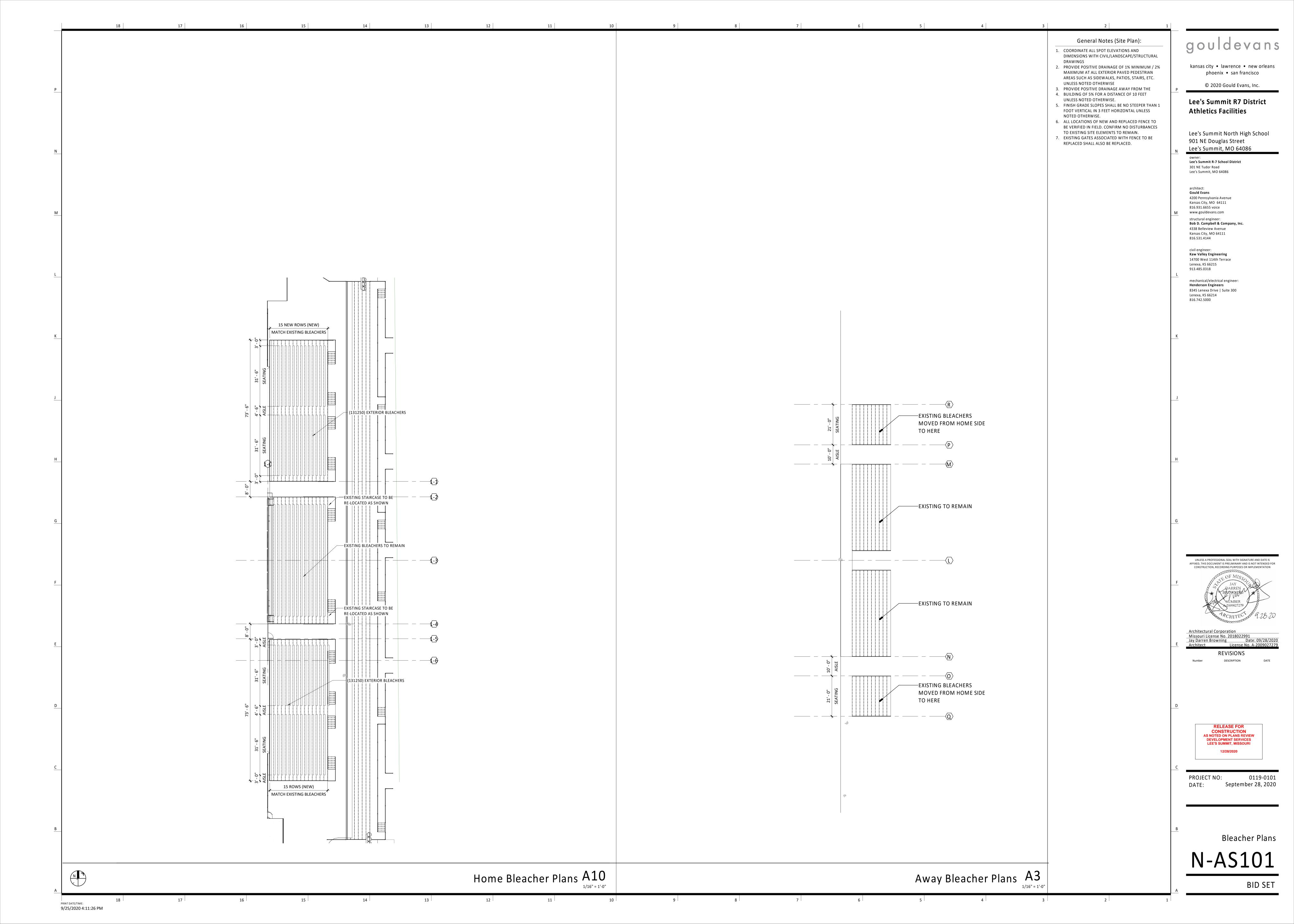
lx@kveng.com | www.kveng.com

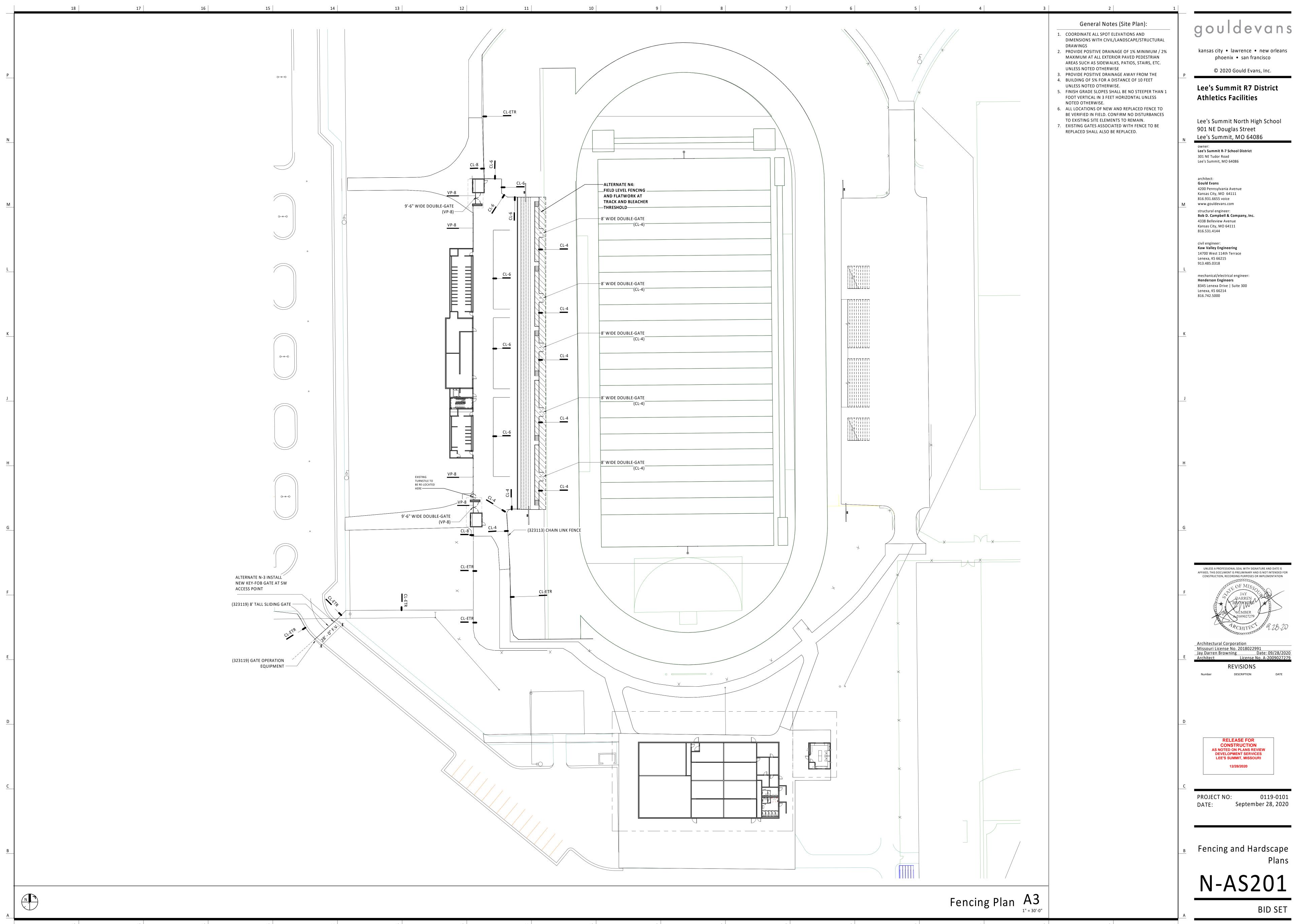
KAW VALLEY ENGINEERING

KAW VALLEY ENGINEERING, INC., IS AUTHORIZED TO OFFER ENGINEERING SERVICES BY MISSOURI STATE CERTIFICATE OF

AUTHORITY # 000842. EXPIRES 12/31/21







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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,
- 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
- Equivalent Lateral Force Procedure 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.
- F. The preceding minimum mix requirements may have water-reducing admixtures 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 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 joints 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 discontinuous at control joints except heavy top and bottom bars unless note 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
- 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

embedded 48 diameters into both members. Slope porches 1/8" per foot for

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
- 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).

loads given in the standard load tables of SJI Specs and Tables plus an additional point

- 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 fo 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.

7. Foundations

- A. The soil investigation was prepared by , the report _and the telephone number is
- B. Structural foundations consist of a network of straight shaft drilled piers (caissons) capable of safely supporting end bearing. Each pier hole shall be probed to a depth of below pier bottom and observed by the project soils engineer for suitable bearing material.
- C. Spread footings, grade beams, and retaining walls are designed to bear on engineered fill or undisturbed soil capable of safely sustaining _____ D. Retaining walls are designed for an active lateral load of _____ pcf equivalent fluid pressure.
- E. Basement walls are designed for an at rest lateral load of _____ pcf equivalent fluid pressure. See General Note for wall bracing requirements. F. Contractor shall provide for dewatering at excavations from either surface water or
- G. 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.
- H. All concrete in the structural portion retaining the backfill shall have attained its design strength prior to being backfilled. I. 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.

B. Concrete Masonry Units

Do not place concrete on frozen ground.

- 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 F. 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. Lintels over all openings up to 8'-0" wide in new and existing masonry walls no 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

Statement of Structural Special Inspections

need not be submitted.

- 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 2. 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

- 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 document package.

COMPONENTS & CLADDING ROOF UPLIFT PRESSURES ULTIMATE UPLIFT PRESSURE DIMENSION BUILDING BUILDING / ROOF TYPE ZONE 1 ZONE 2 ZONE 3 LOCATION [psf] [psf] [psf] [ft] 78.0 102.0 Press Box Roof Open Building, Monosloped Roof 4.0 ft 51.0 3.0 ft 34.0 54.0 73.0 Other Structures Enclosed Building, Flat Roof

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

. REFER TO GENERAL NOTE 2D FOR WIND LOAD DESIGN CRITERIA

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Lee's Summit R7 District

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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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> CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

PROJECT NO:

September 28, 2020

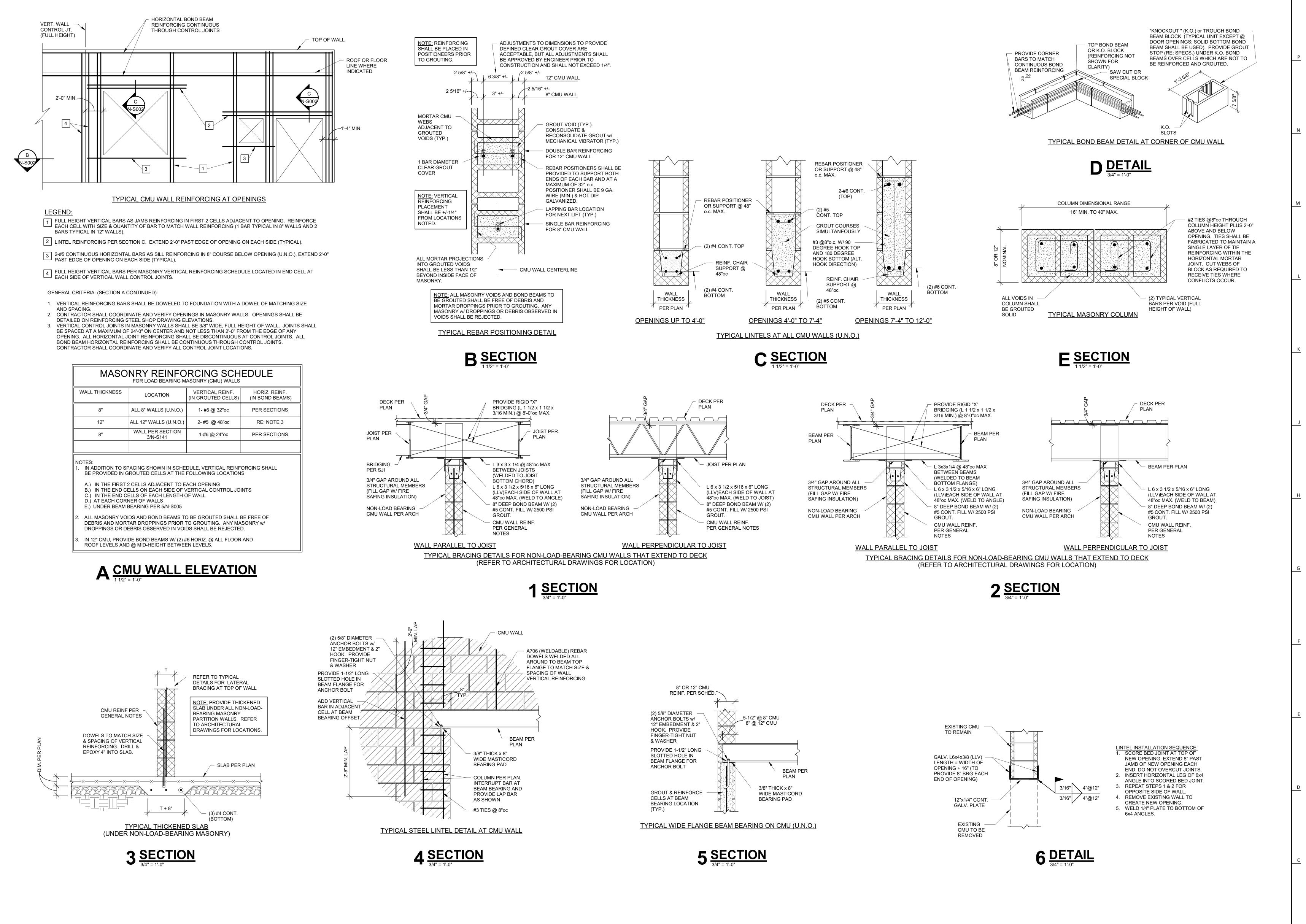
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General Notes



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

816.742.5000

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> **RELEASE FOR** CONSTRUCTION **AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES** LEE'S SUMMIT, MISSOURI

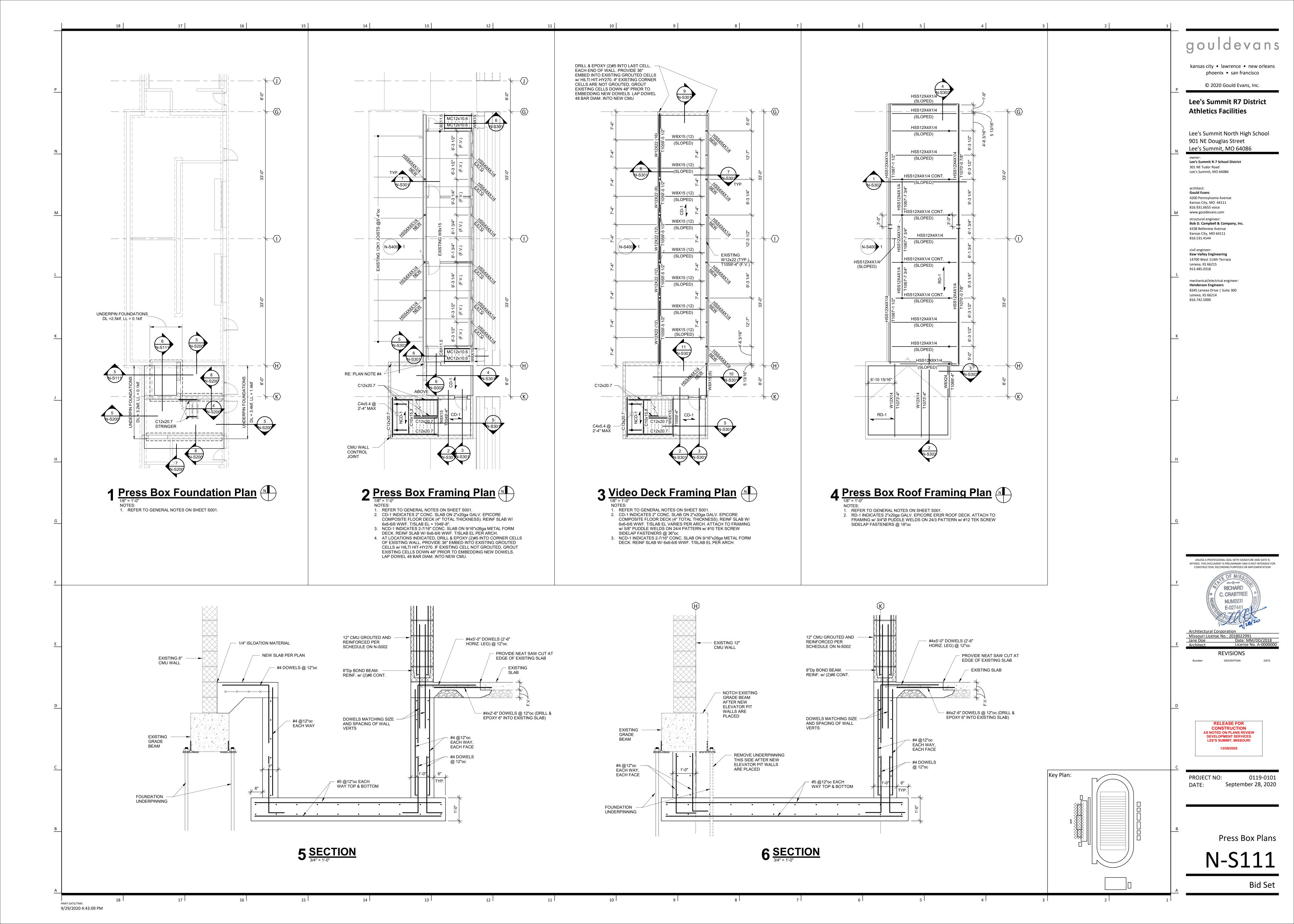
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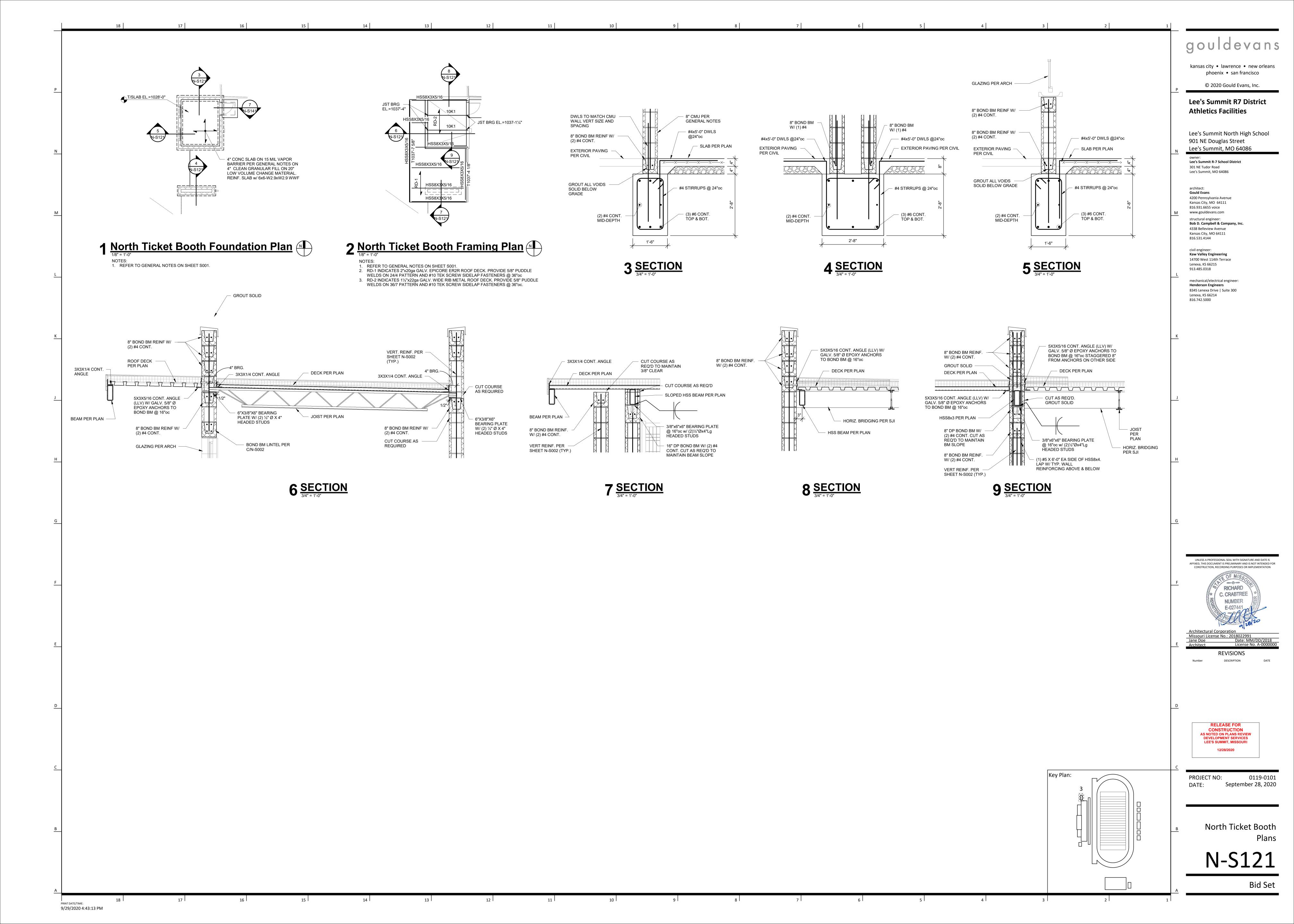
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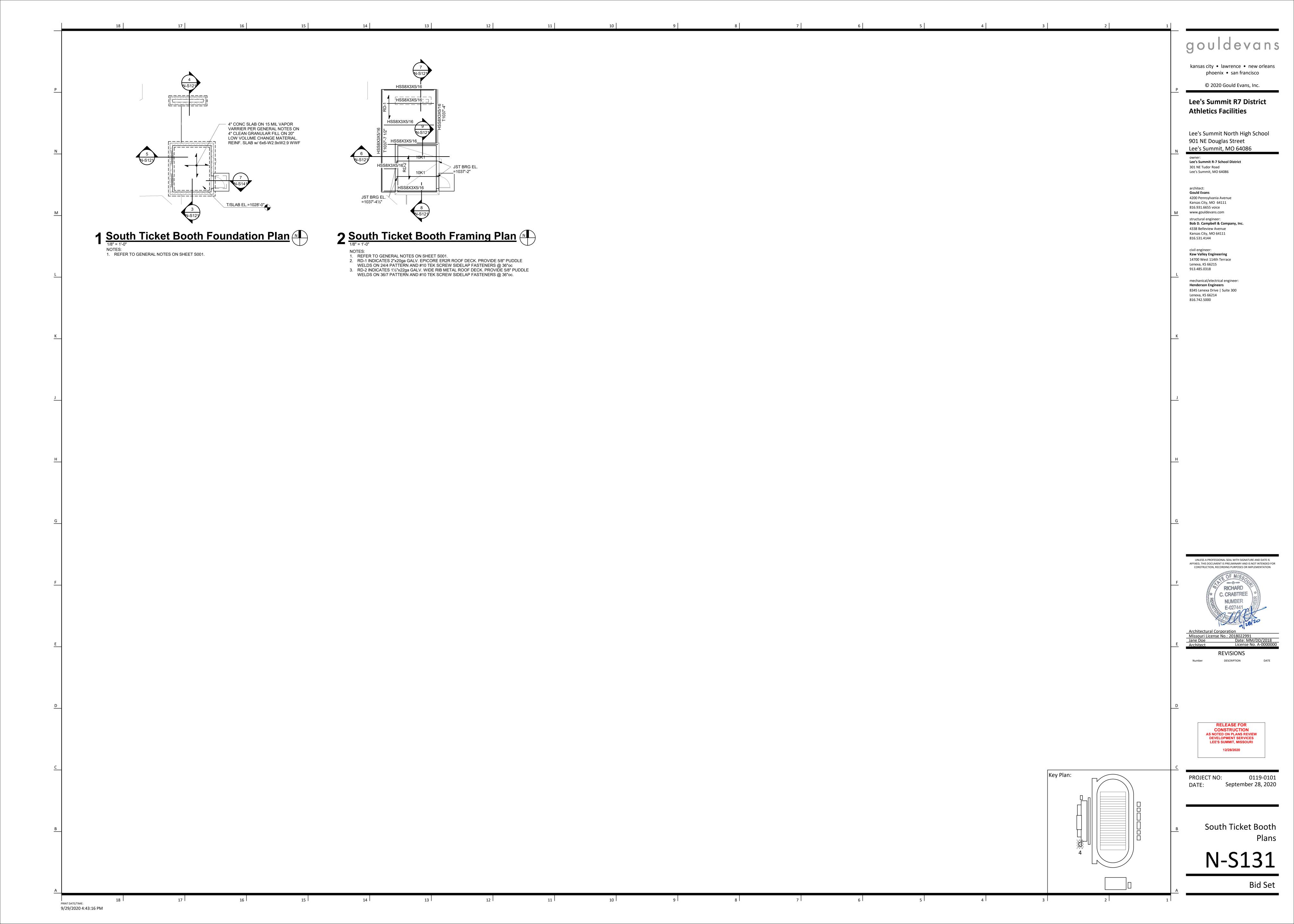
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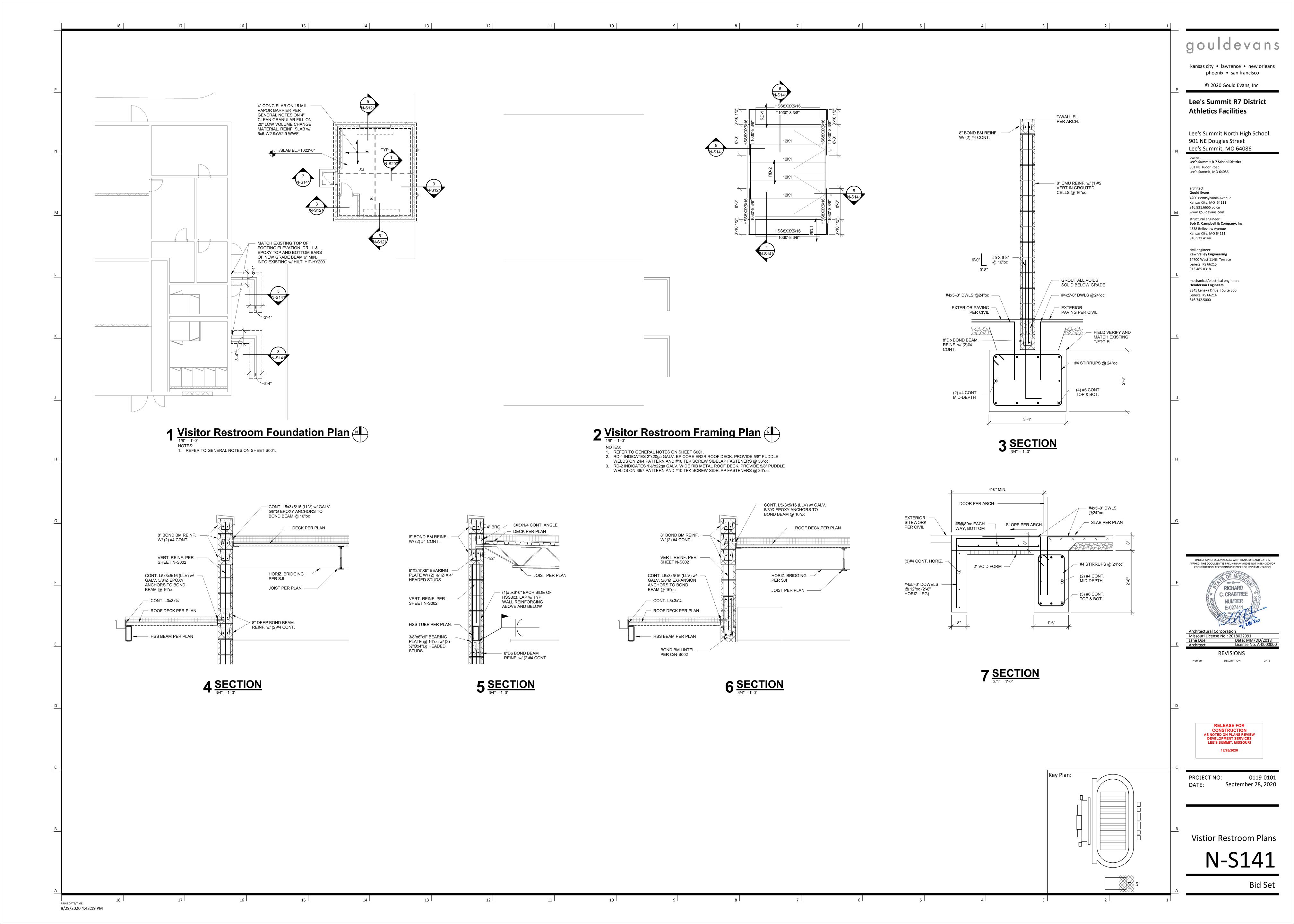
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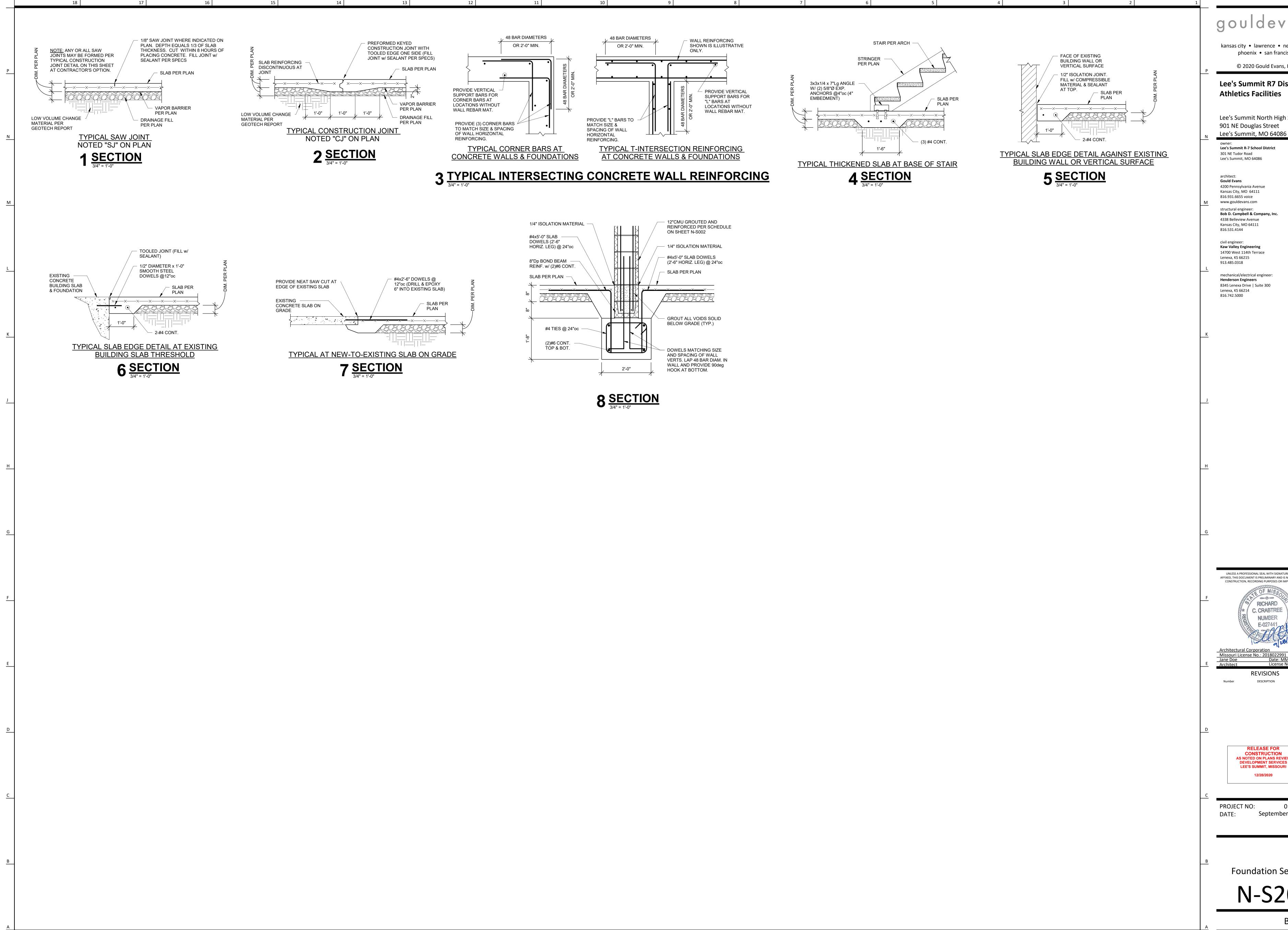
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Lee's Summit R7 District

Lee's Summit North High School

Lee's Summit R-7 School District

Kansas City, MO 64111 www.gouldevans.com Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111

Kaw Valley Engineering 14700 West 114th Terrace

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

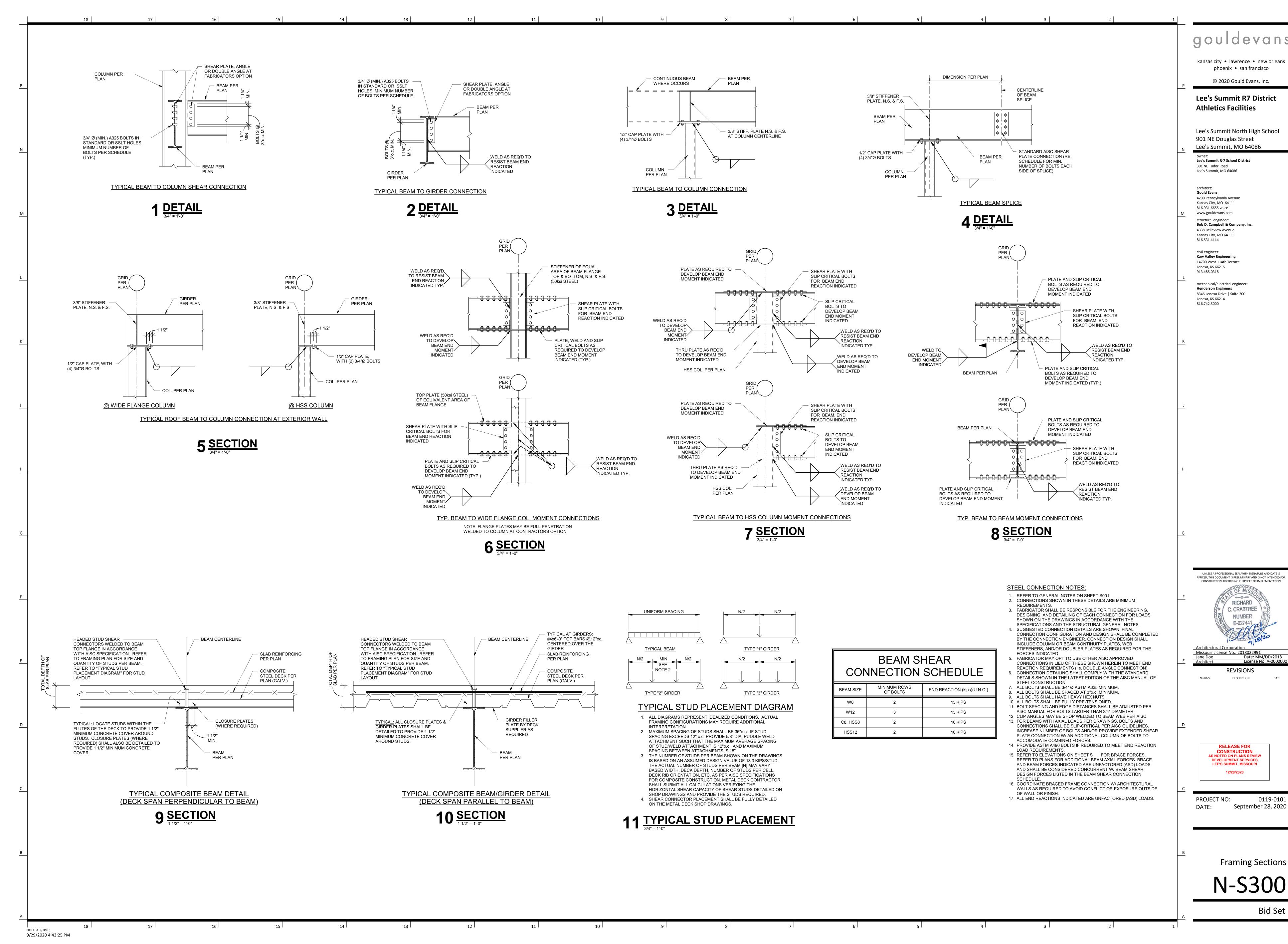
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CONSTRUCTION AS NOTED ON PLANS REVIEW

September 28, 2020

Foundation Sections



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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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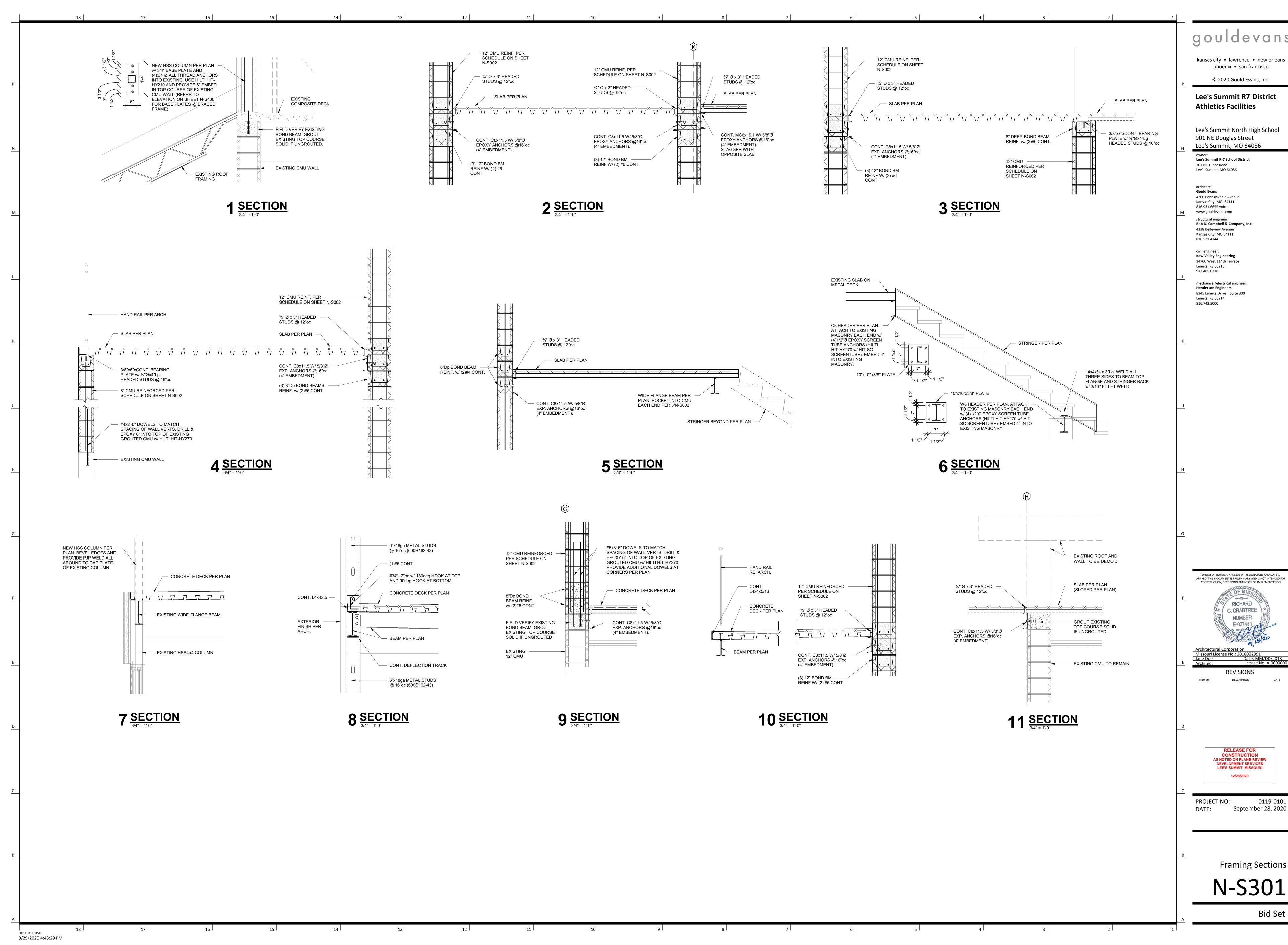
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September 28, 2020

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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

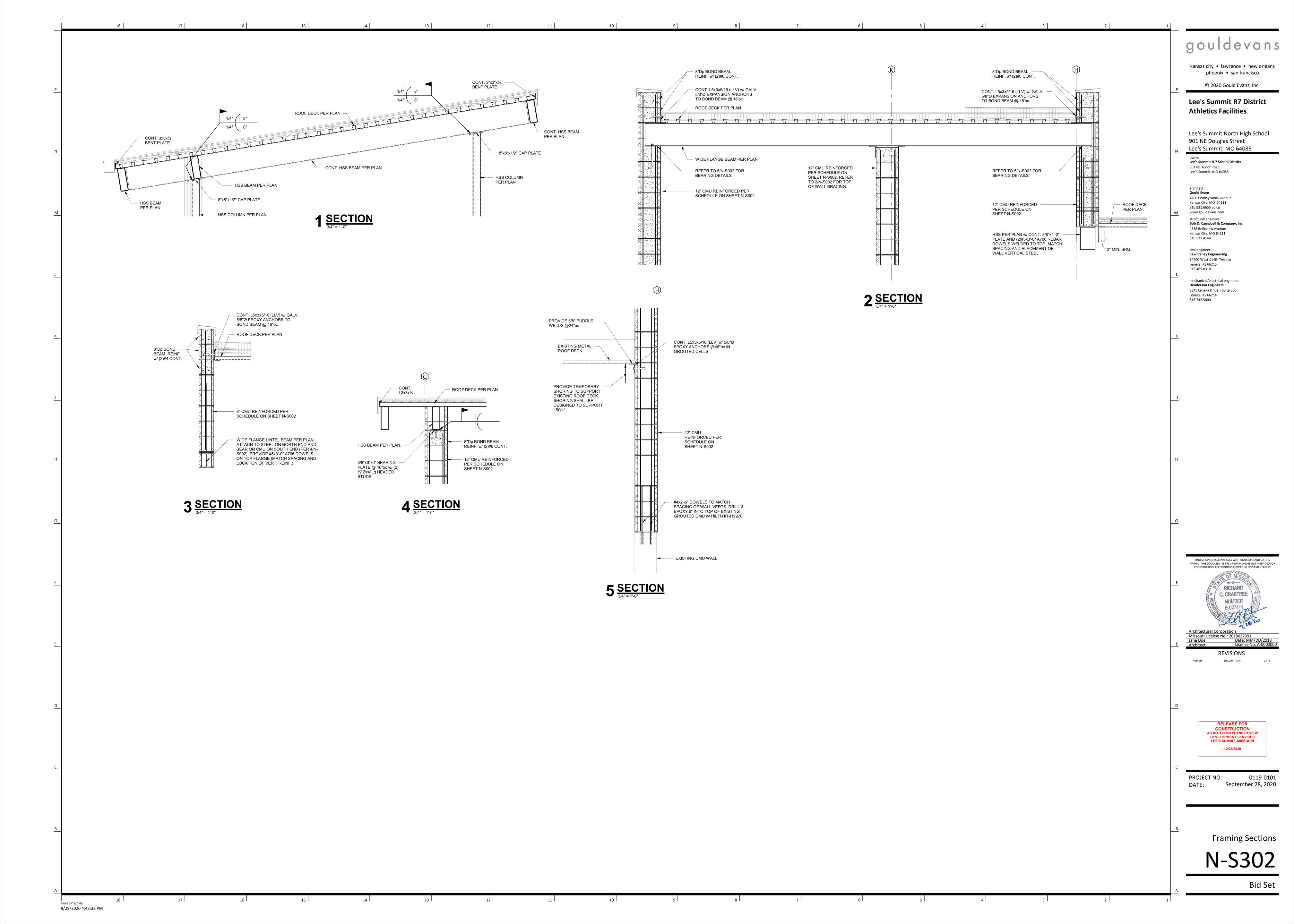
14700 West 114th Terrace

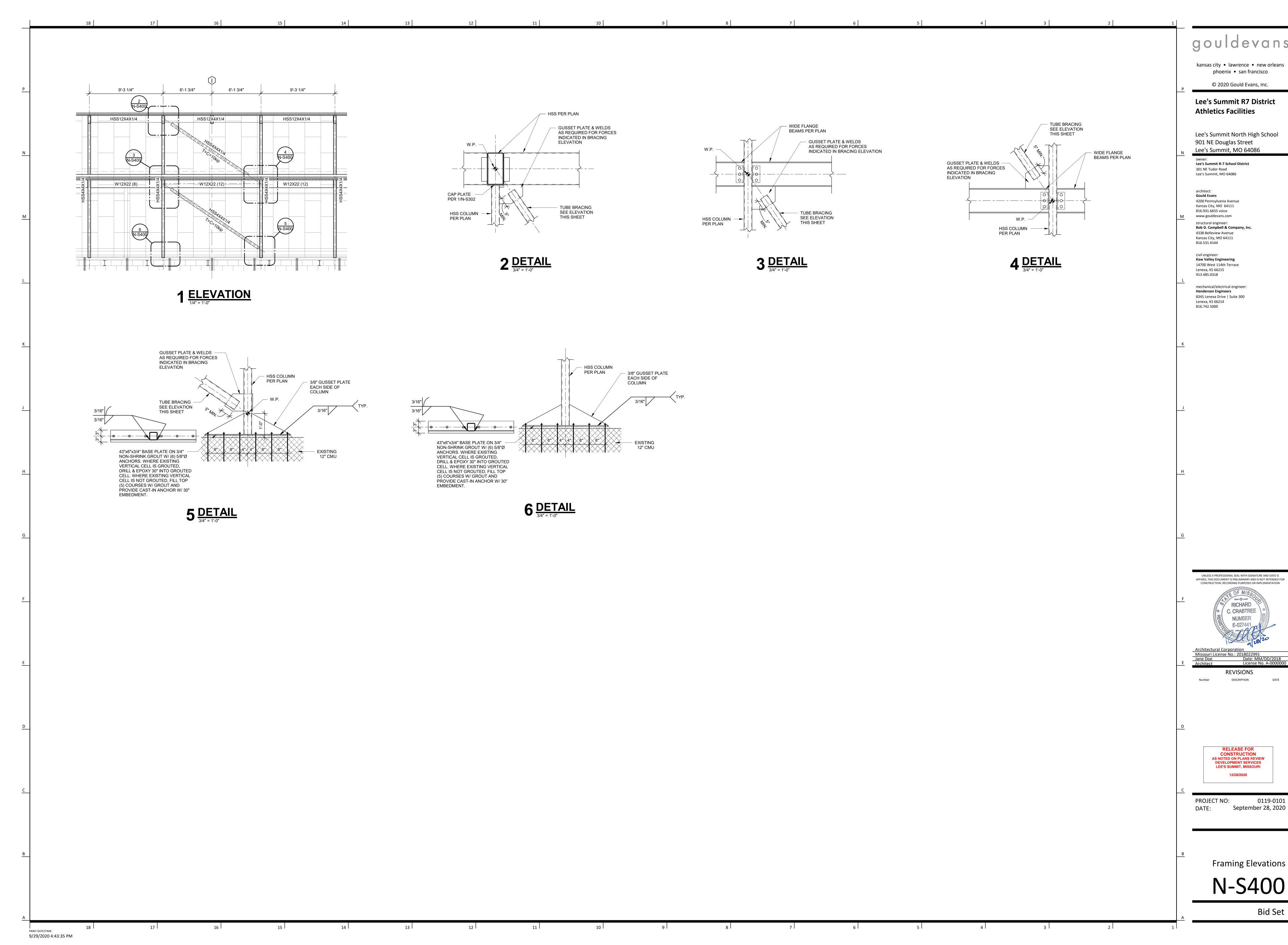
mechanical/electrical engineer: 8345 Lenexa Drive | Suite 300

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> RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

> > September 28, 2020





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Lee's Summit R7 District

Lee's Summit, MO 64086

Lee's Summit R-7 School District

Bob D. Campbell & Company, Inc.

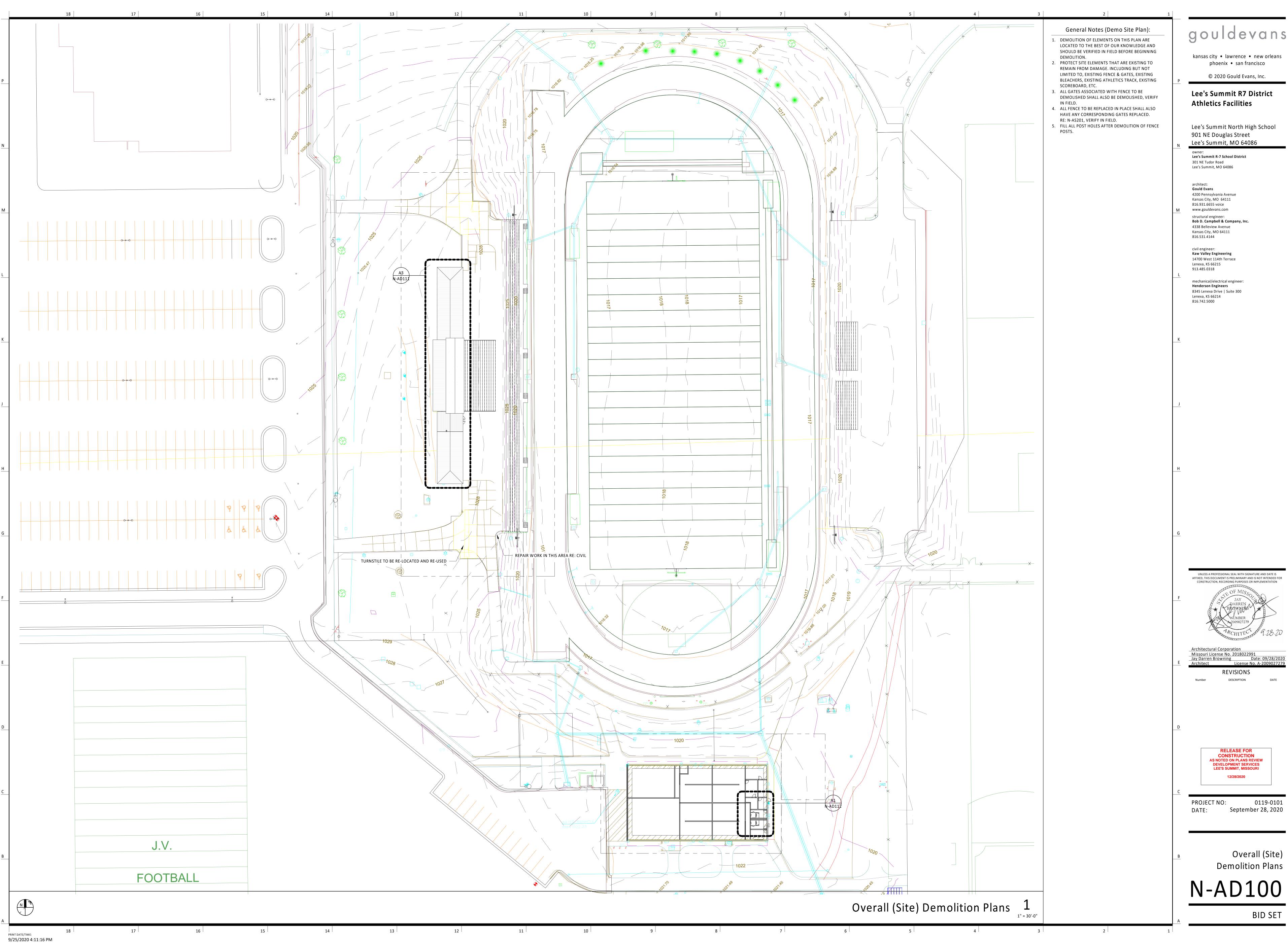
REVISIONS

CONSTRUCTION

LEE'S SUMMIT, MISSOURI

September 28, 2020

Framing Elevations



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Lee's Summit R7 District

901 NE Douglas Street Lee's Summit, MO 64086

Lee's Summit R-7 School District

mechanical/electrical engineer: 8345 Lenexa Drive | Suite 300

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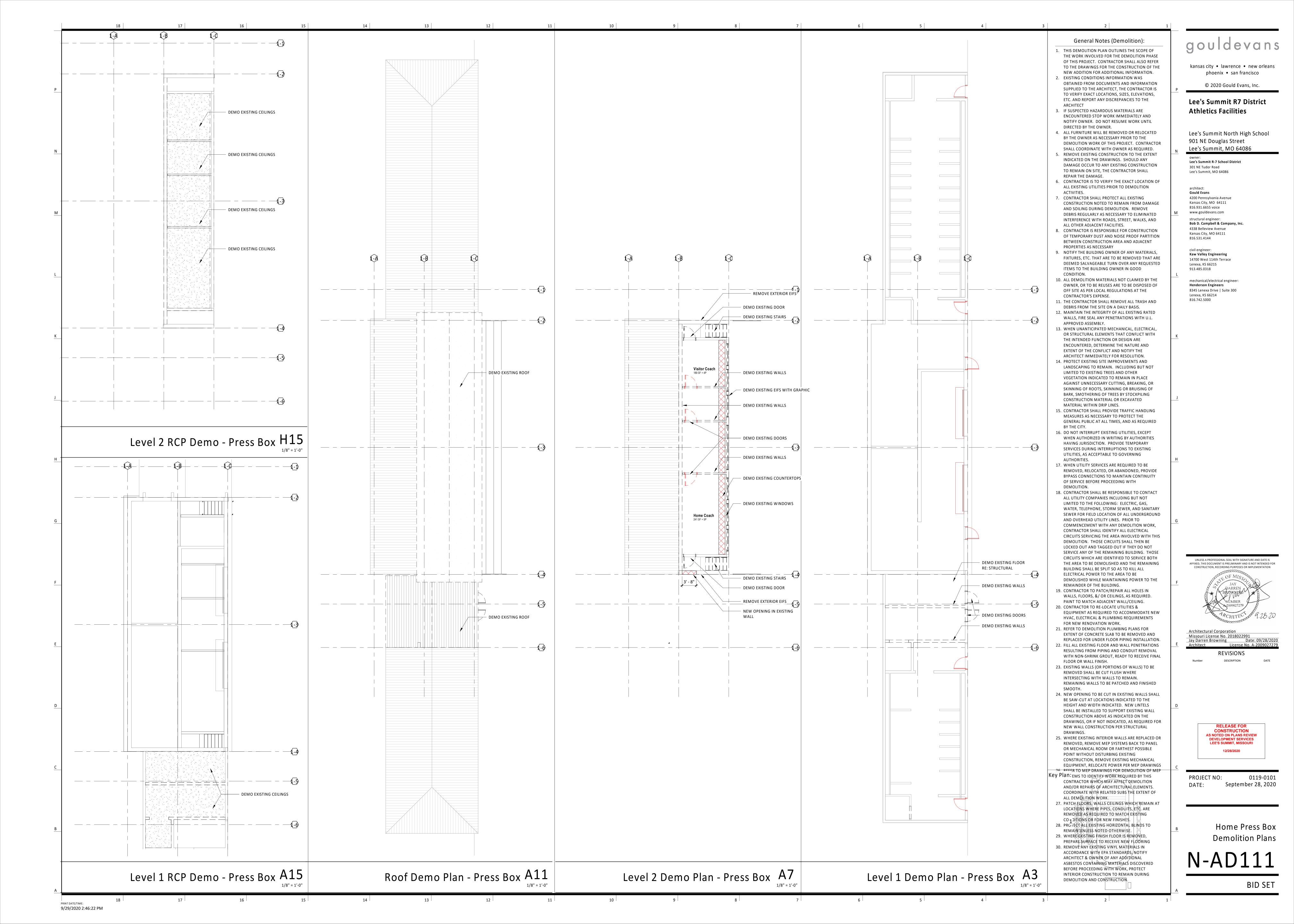
REVISIONS

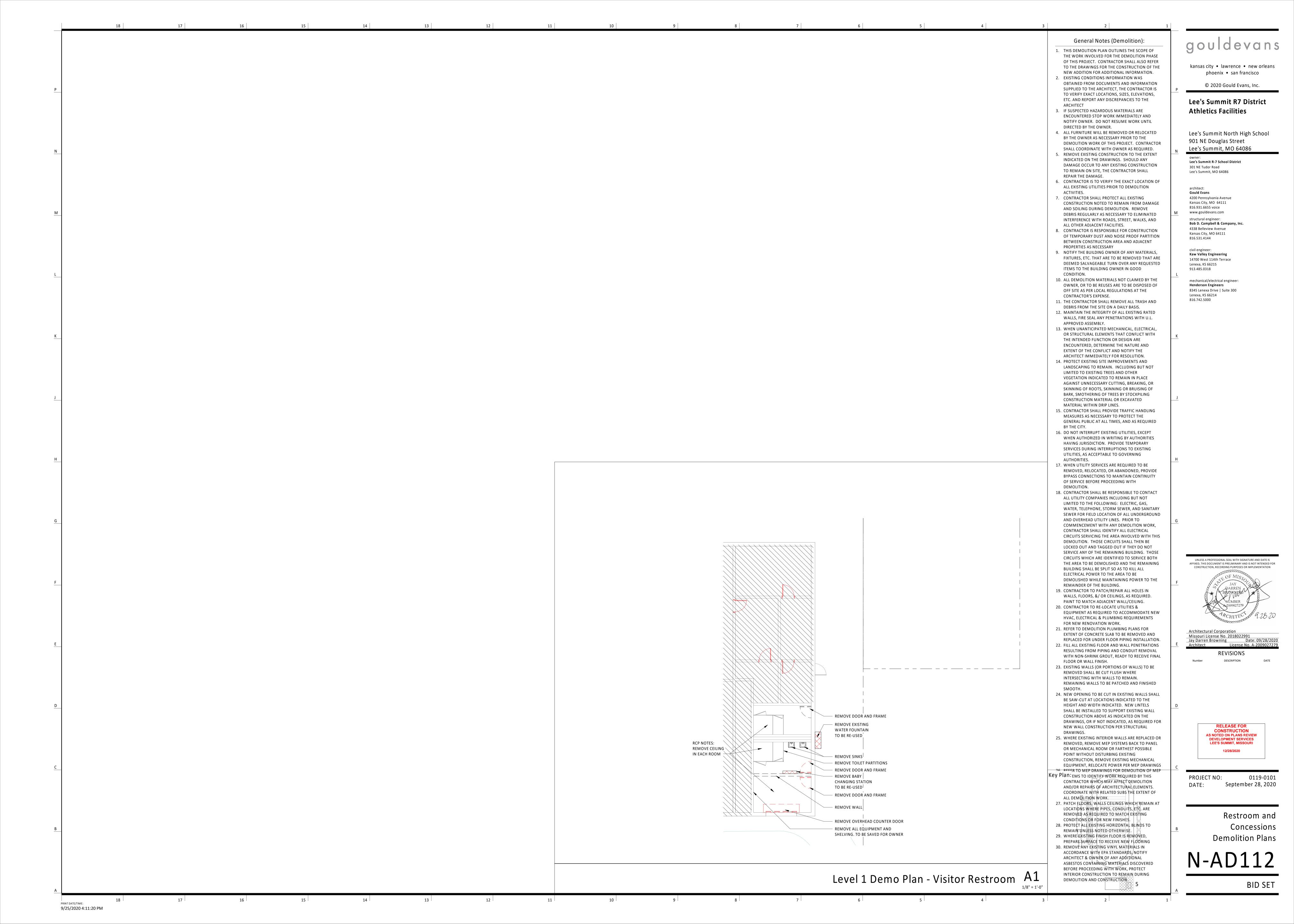
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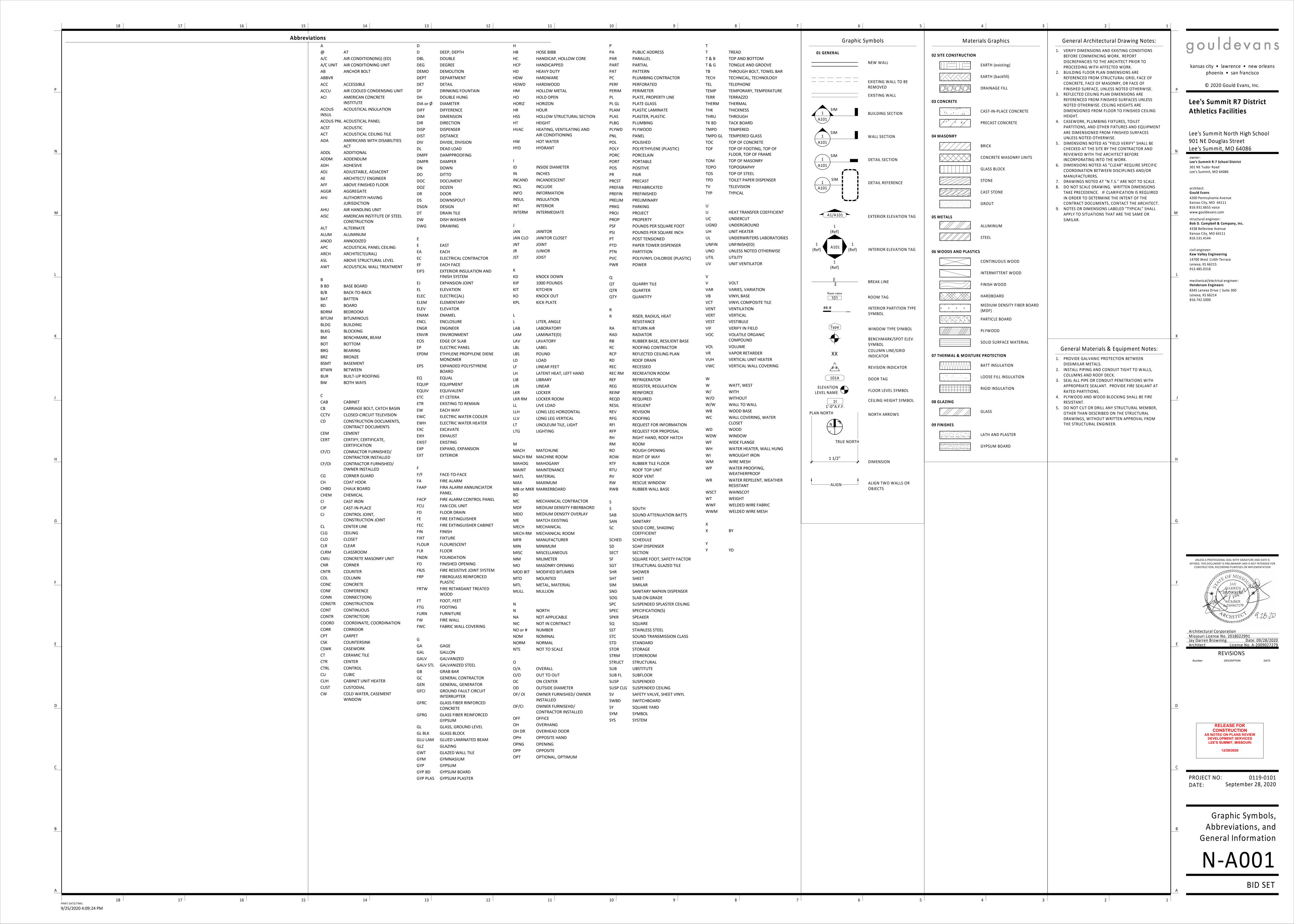
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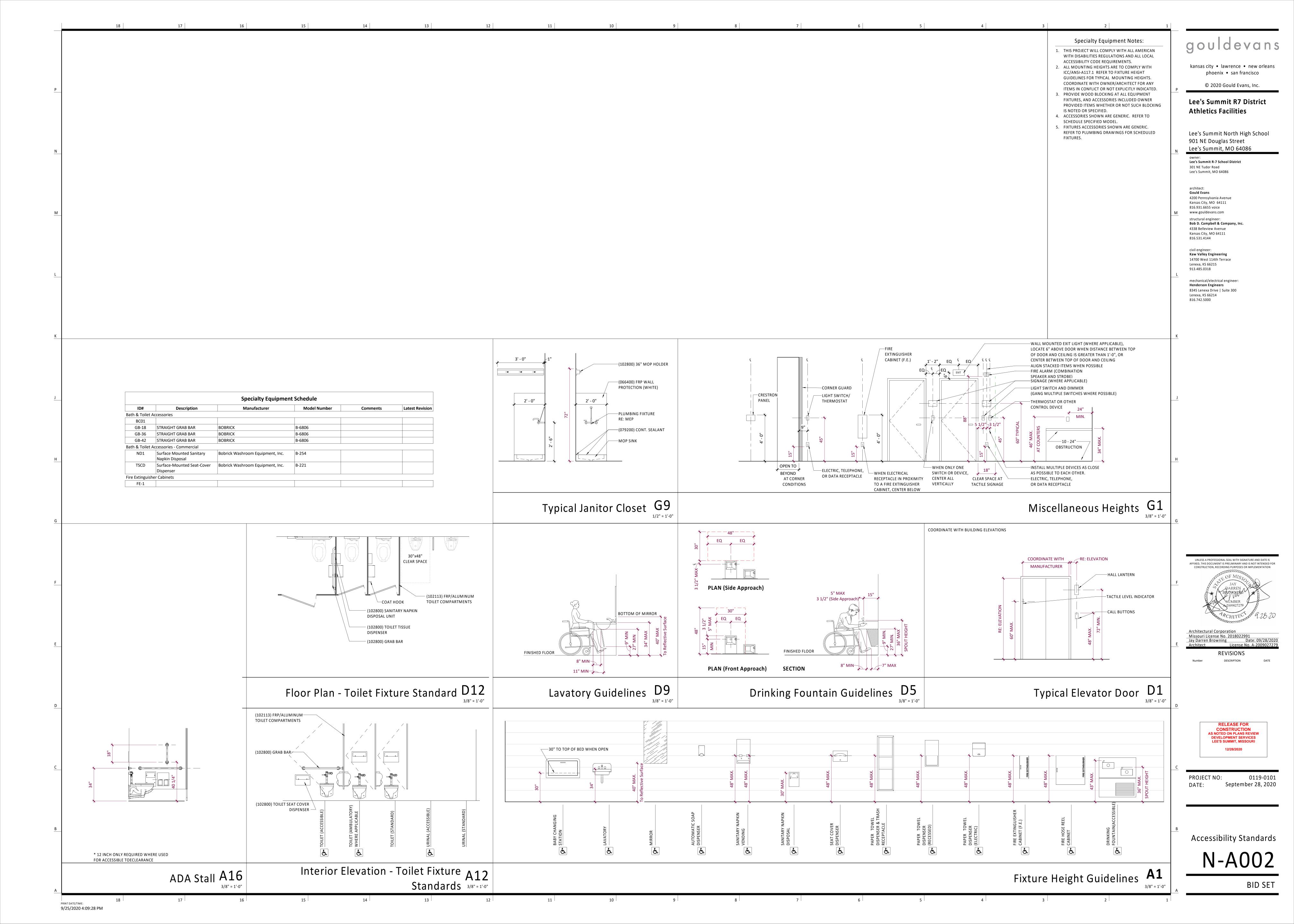
Overall (Site) **Demolition Plans**

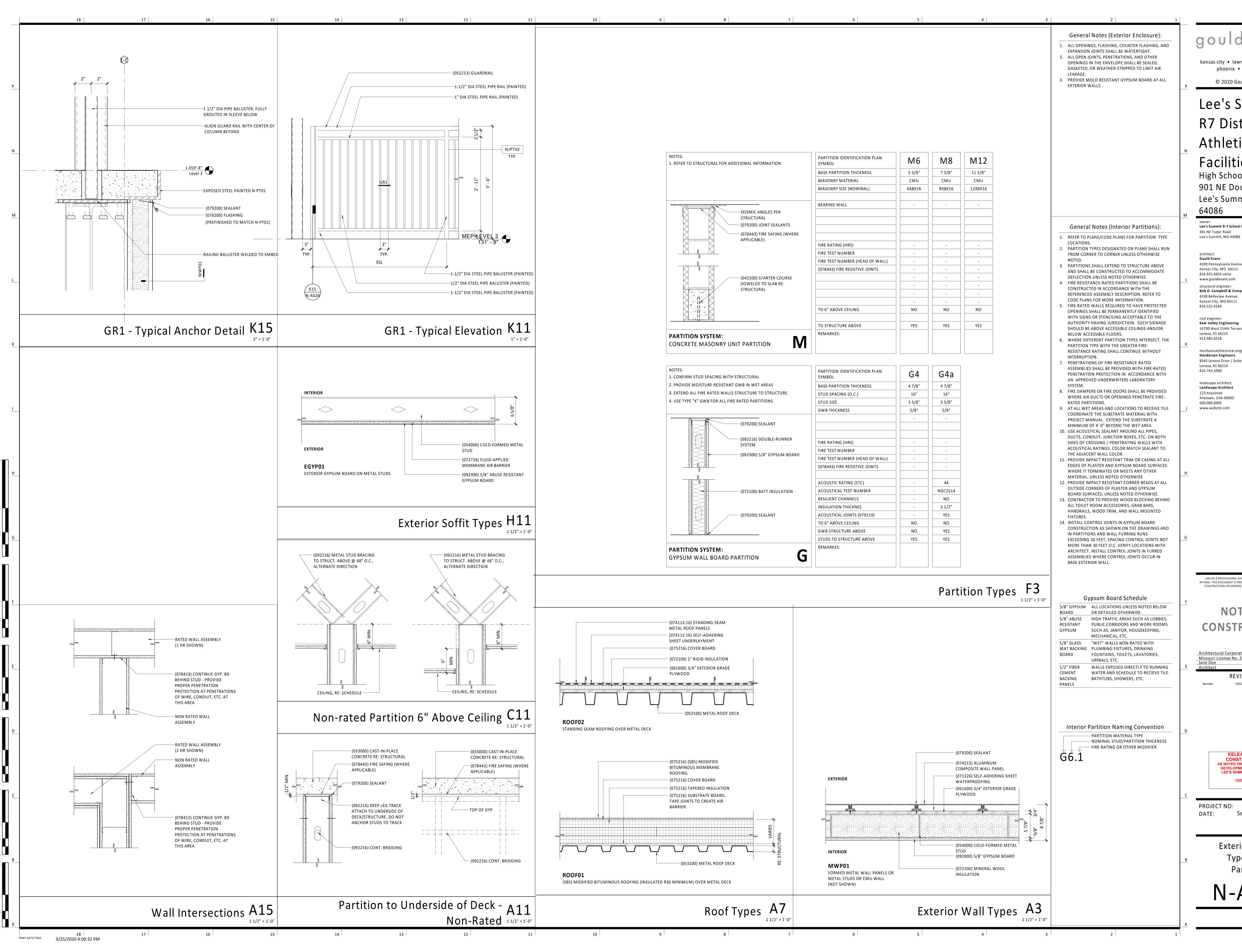
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Lee's Summit **R7** District **Athletics**

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 4338 Belleview Avenue

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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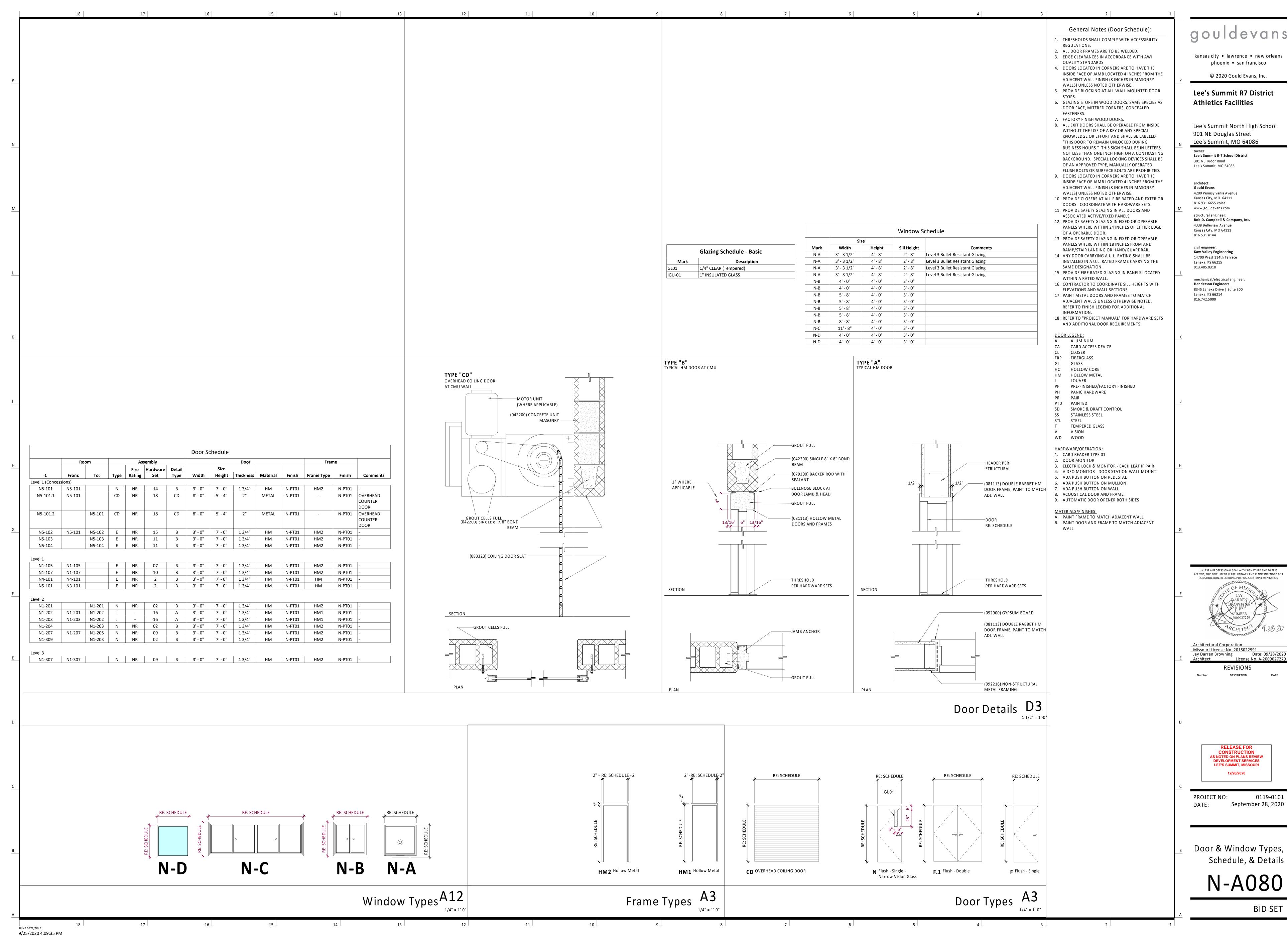
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CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

PROJECT NO:

September 28, 2020

Exterior Enclosure Types & Interior Partition Types



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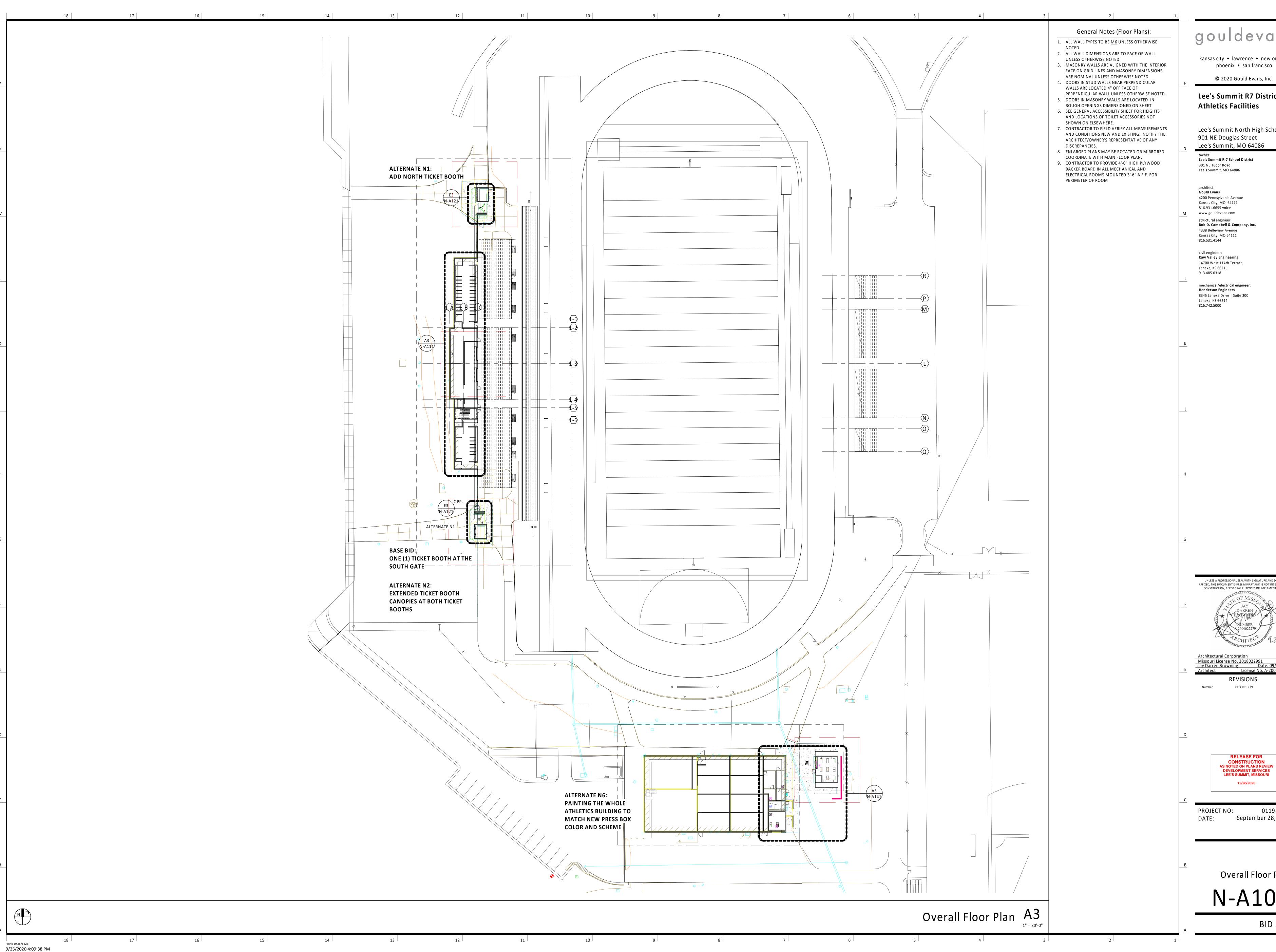
Lee's Summit North High School

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September 28, 2020

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

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

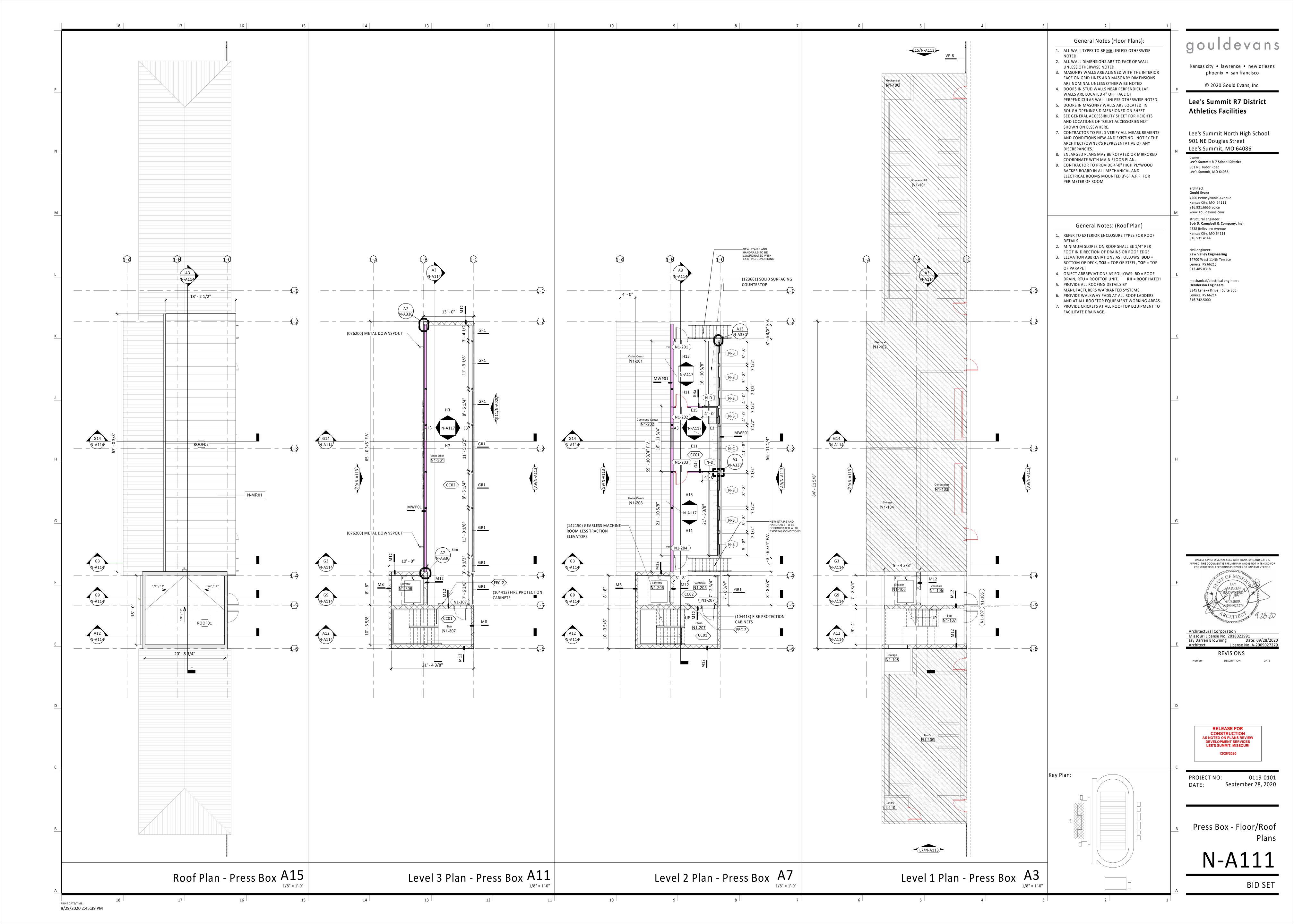


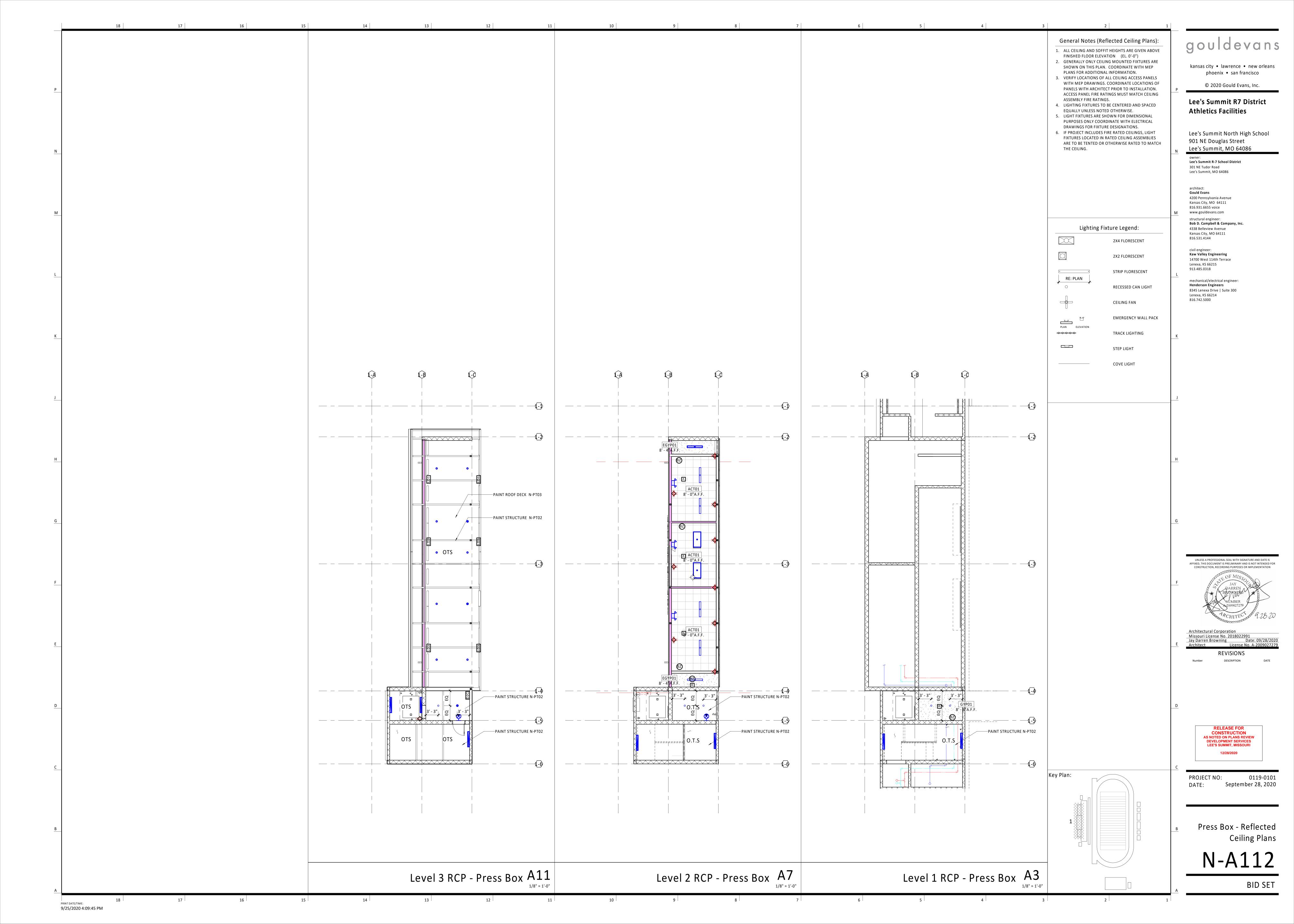
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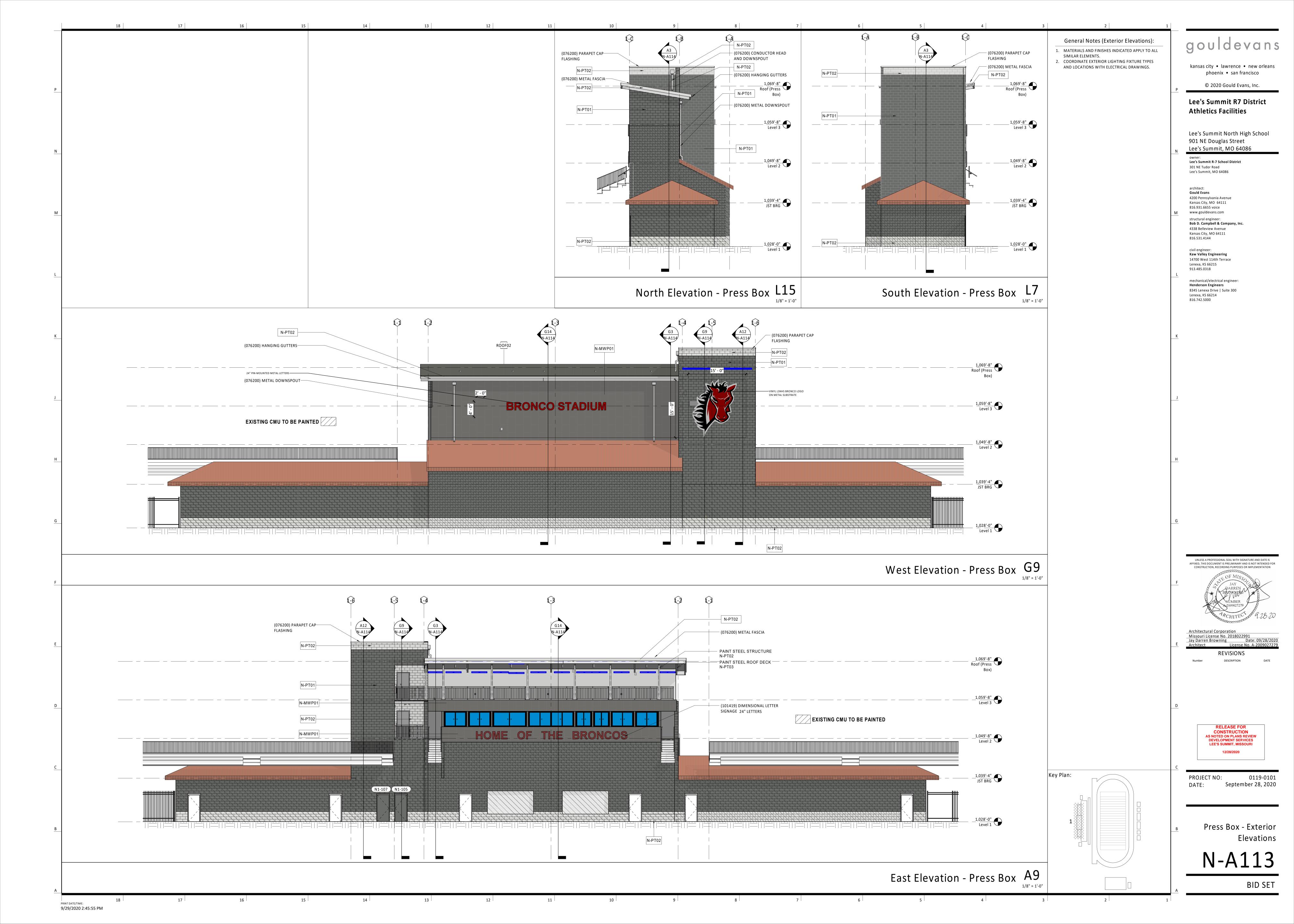
0119-0101 September 28, 2020

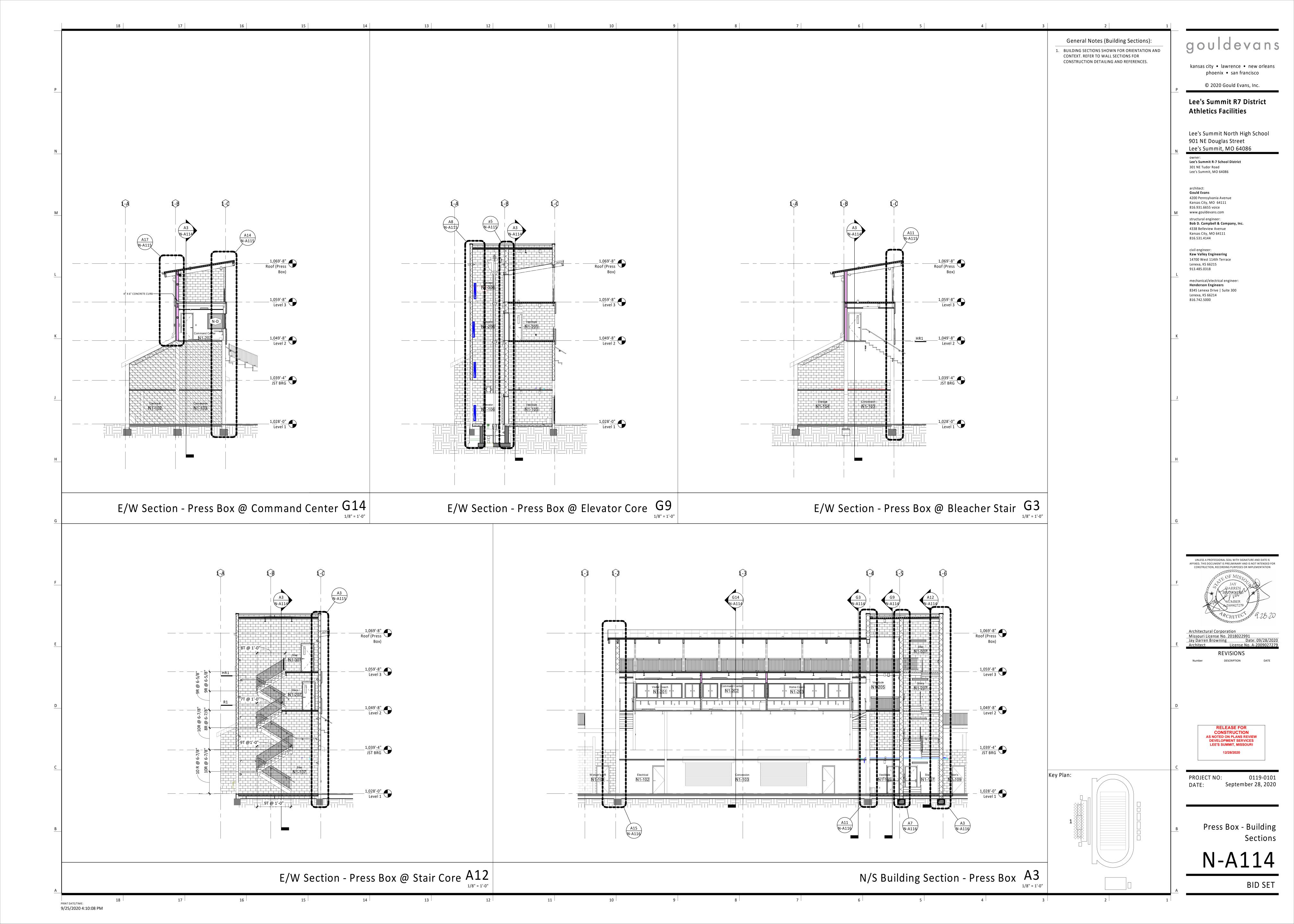
Overall Floor Plan

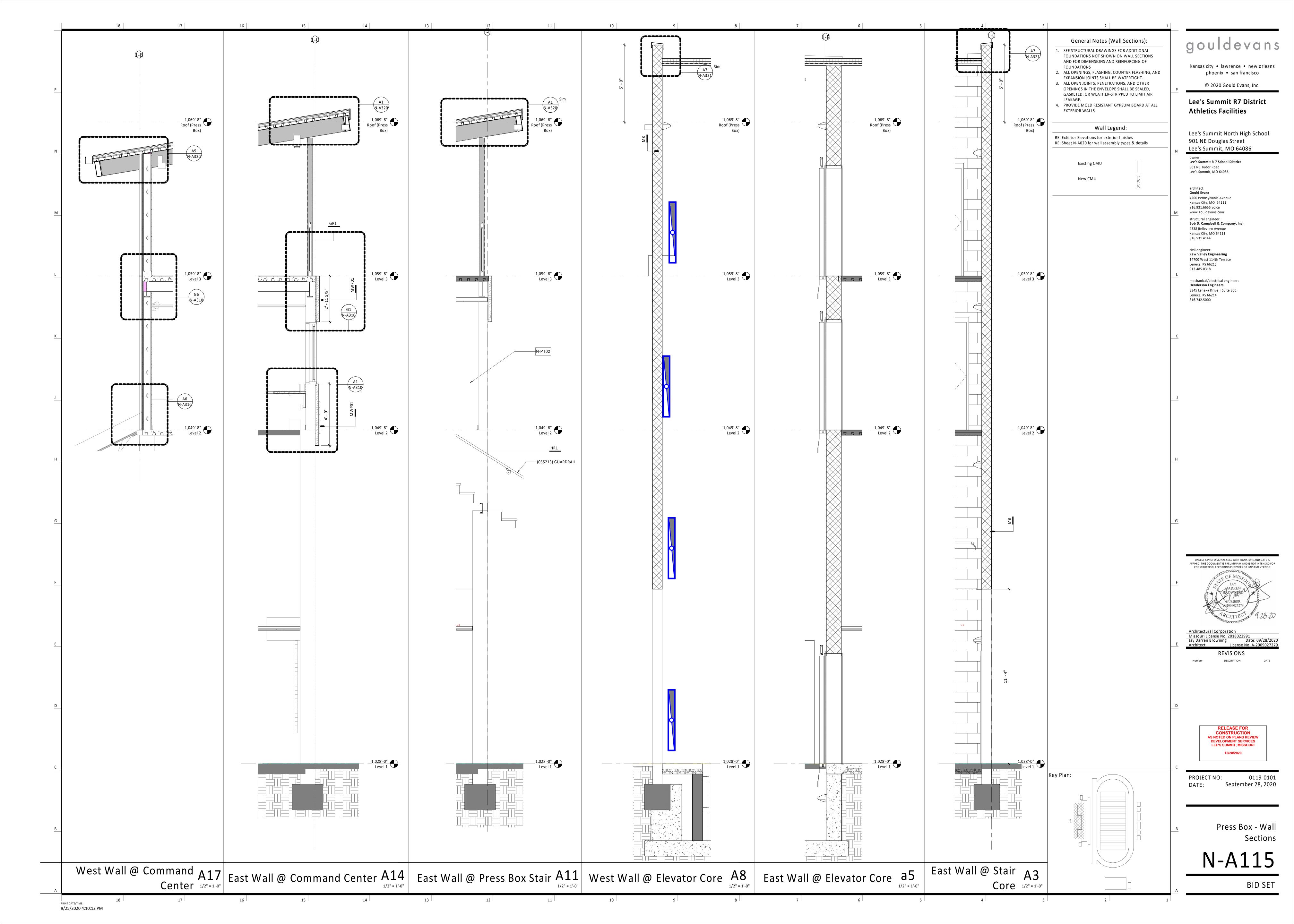
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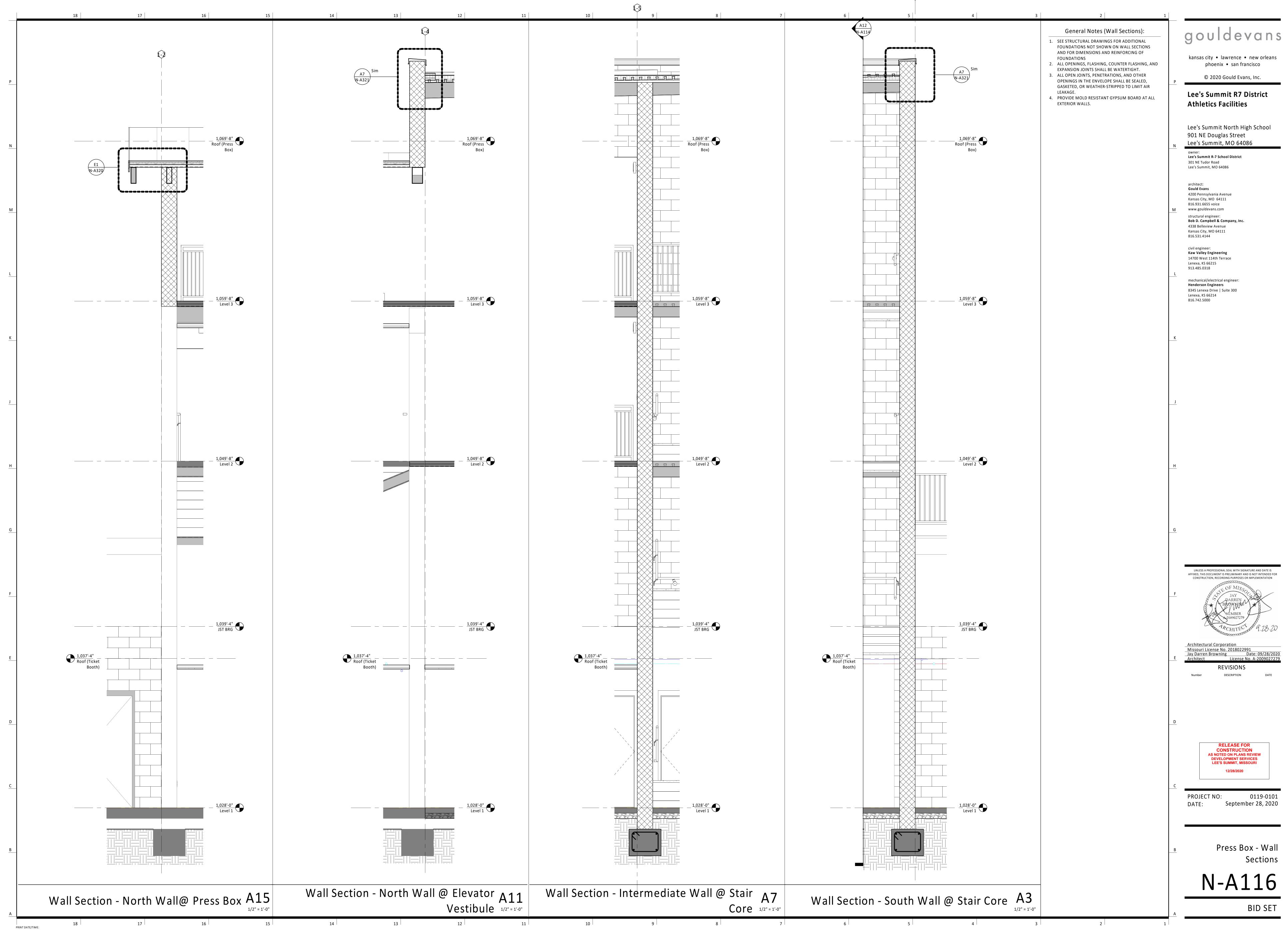












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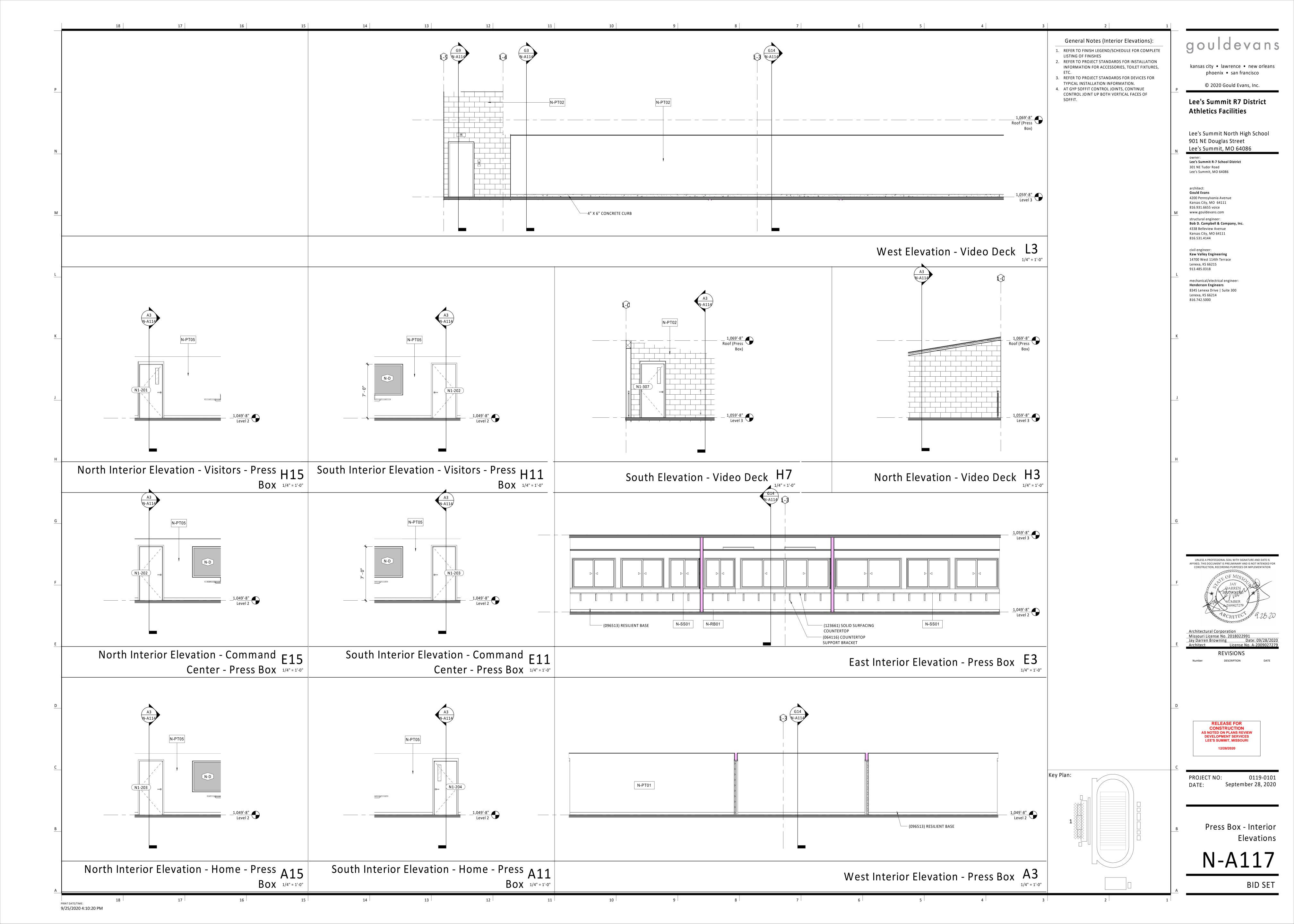


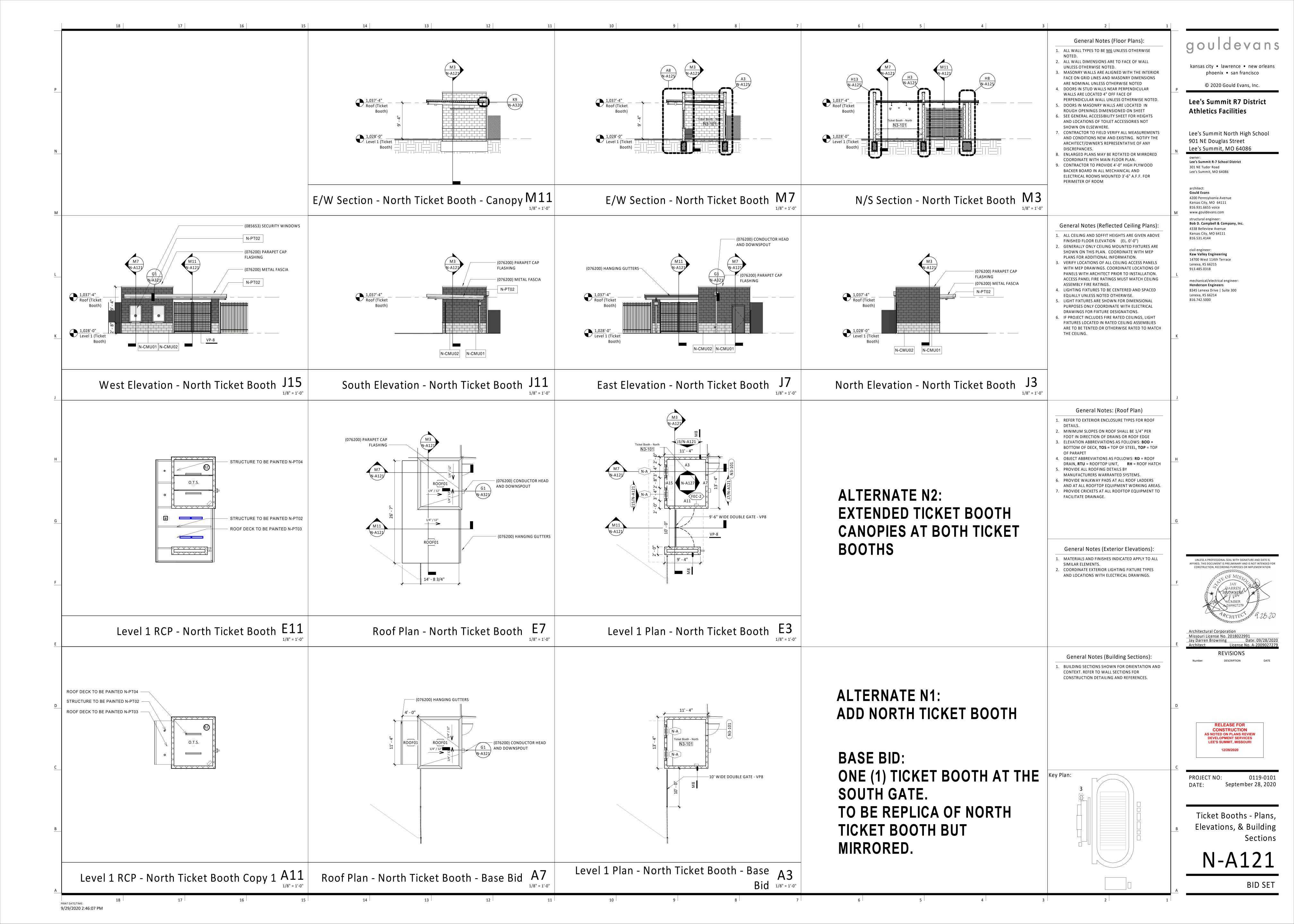
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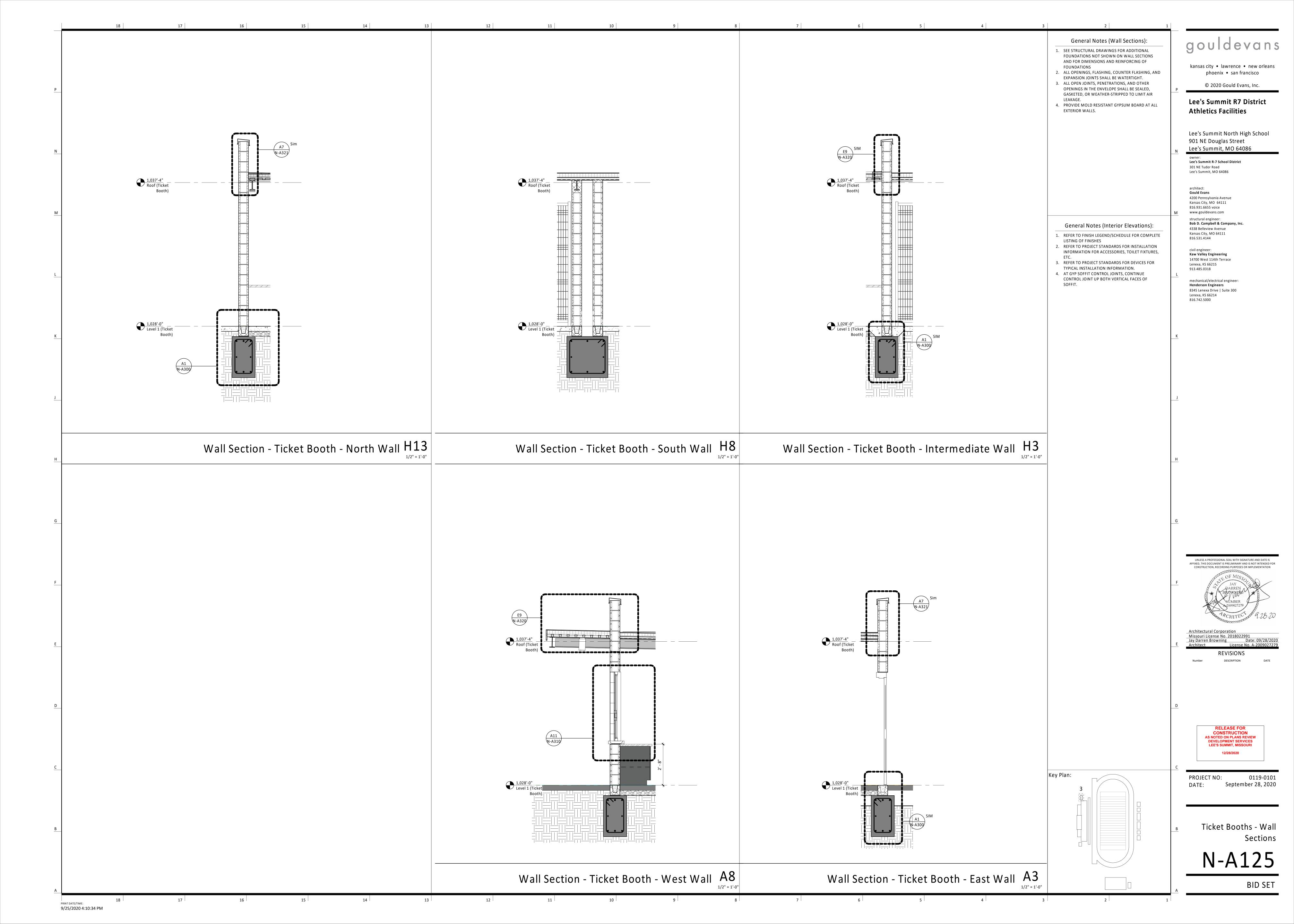
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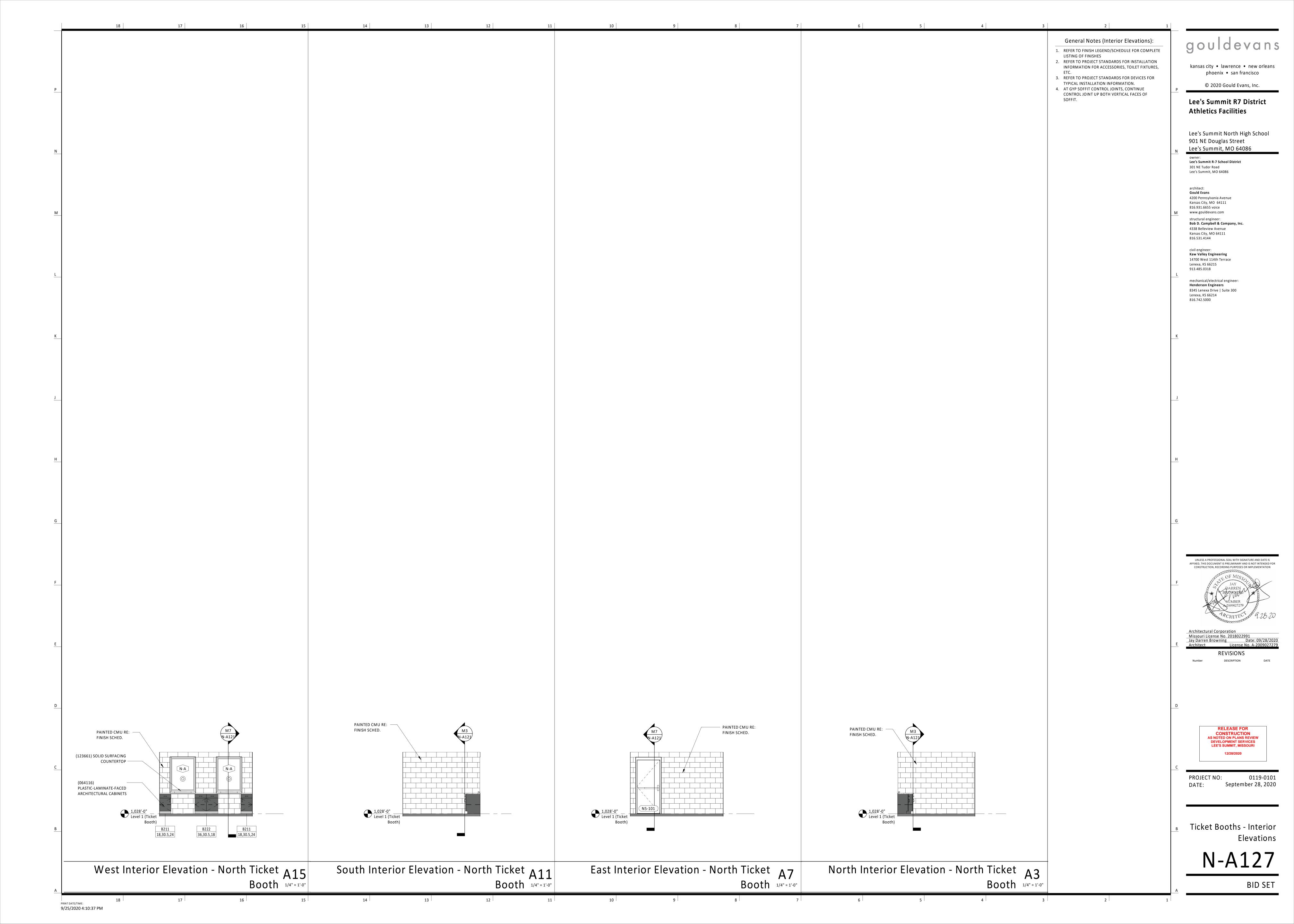
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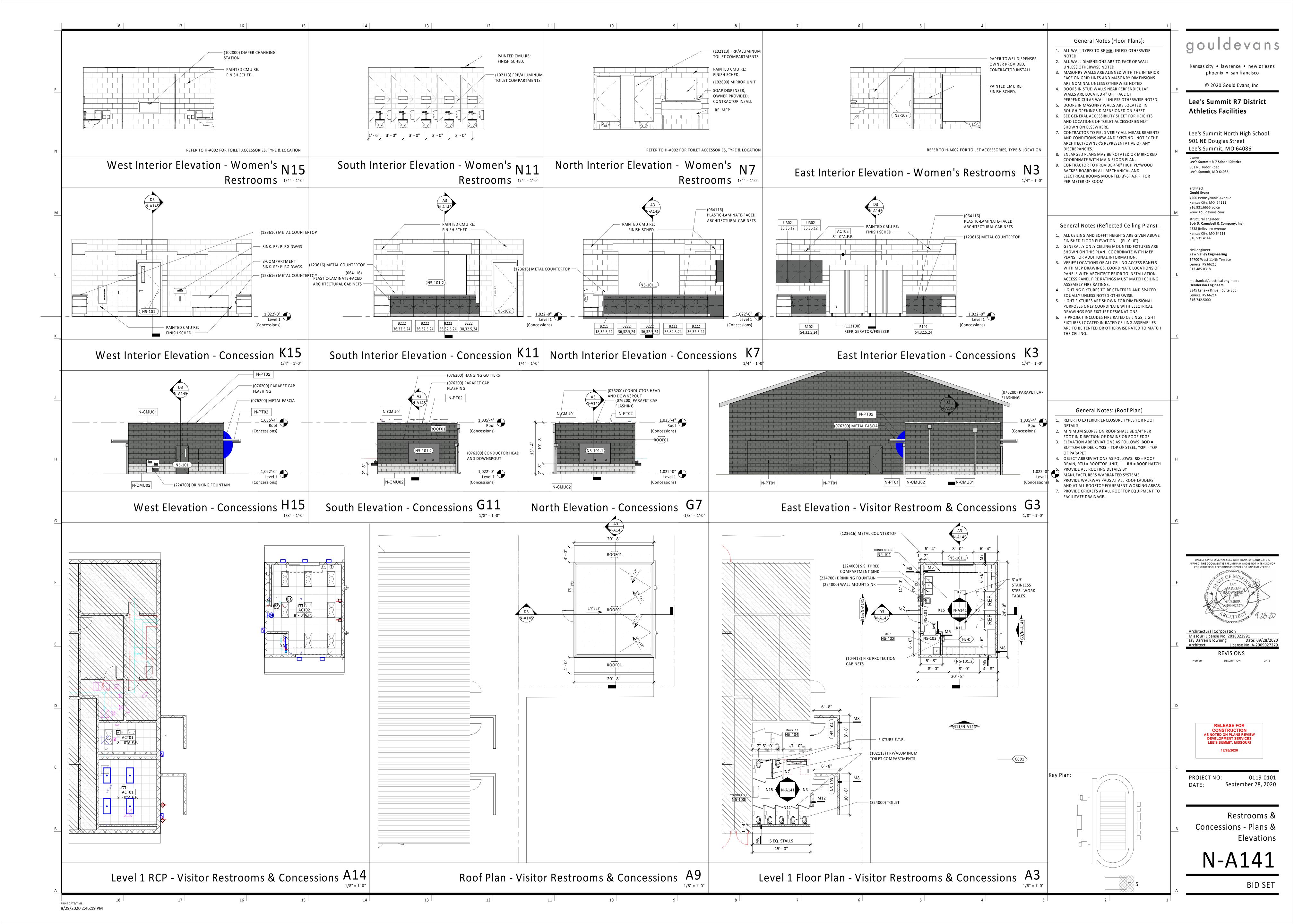
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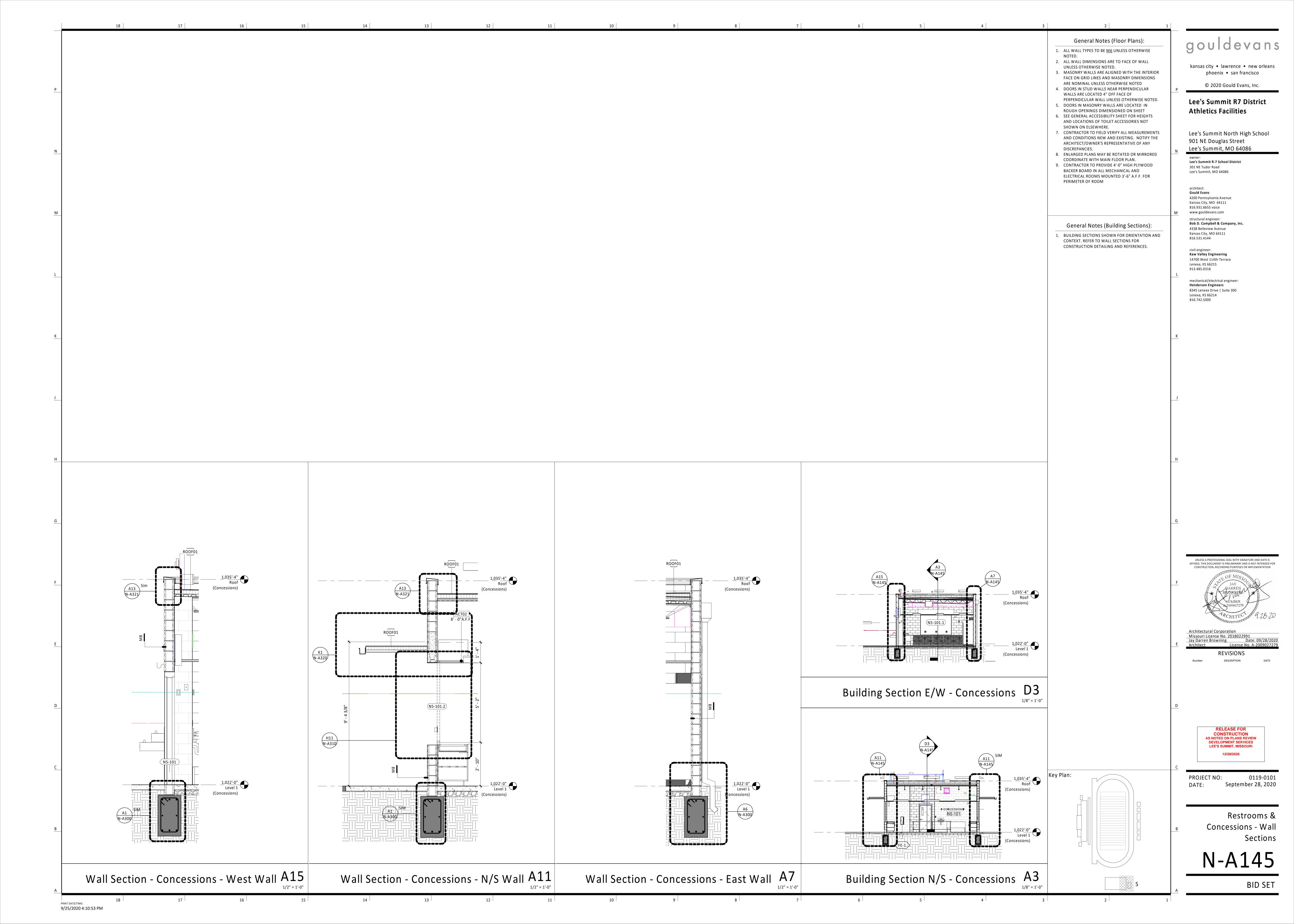


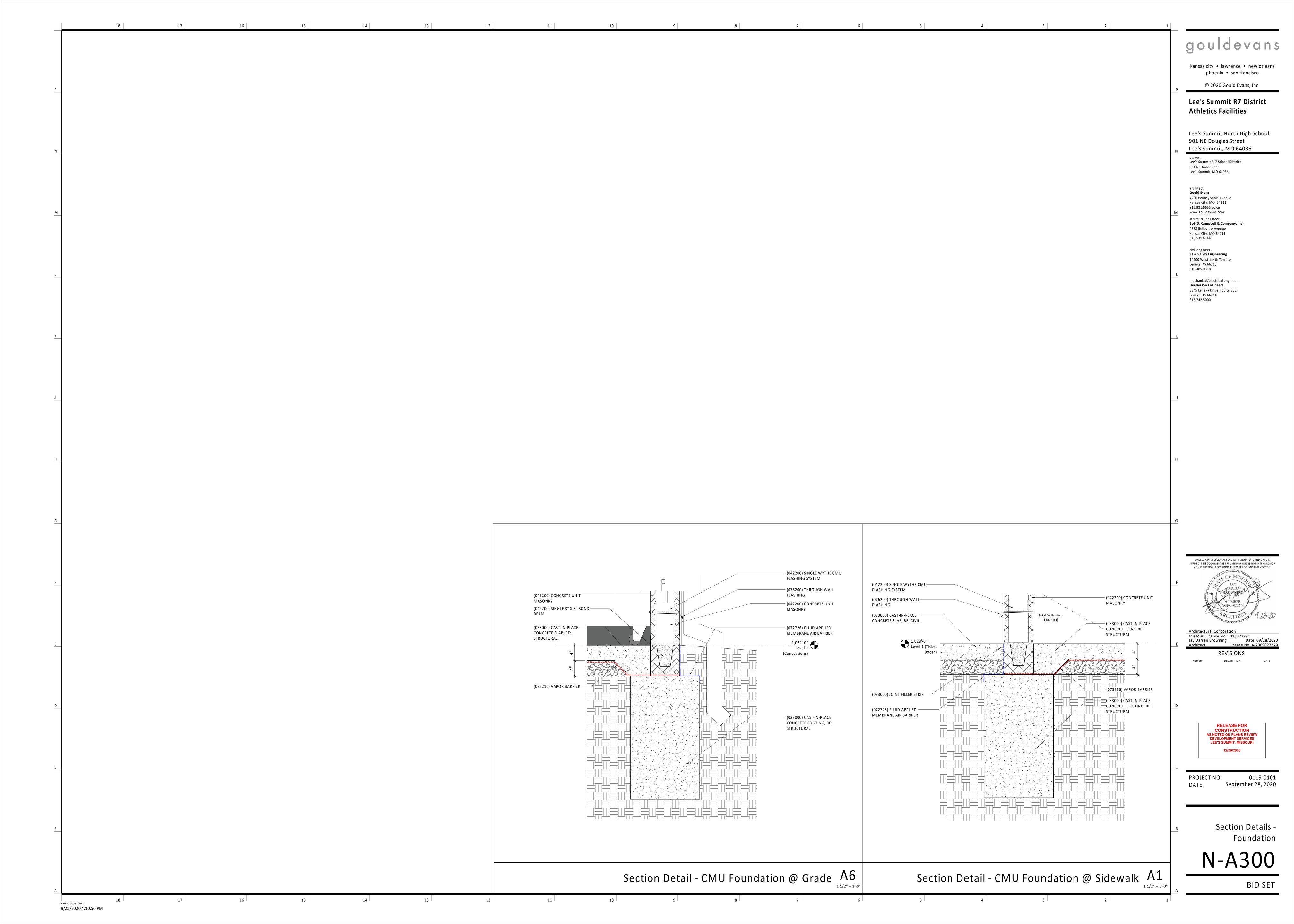


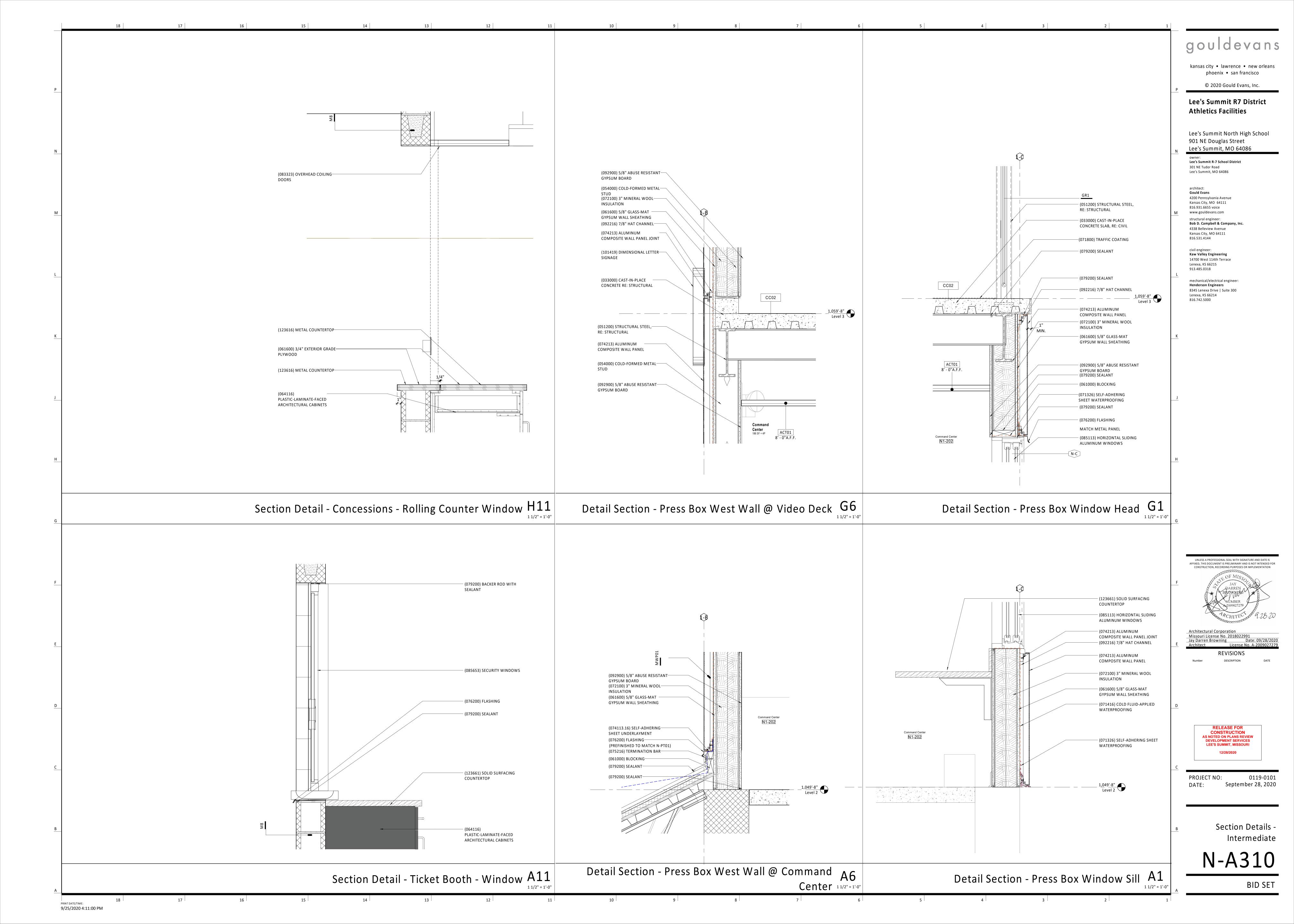


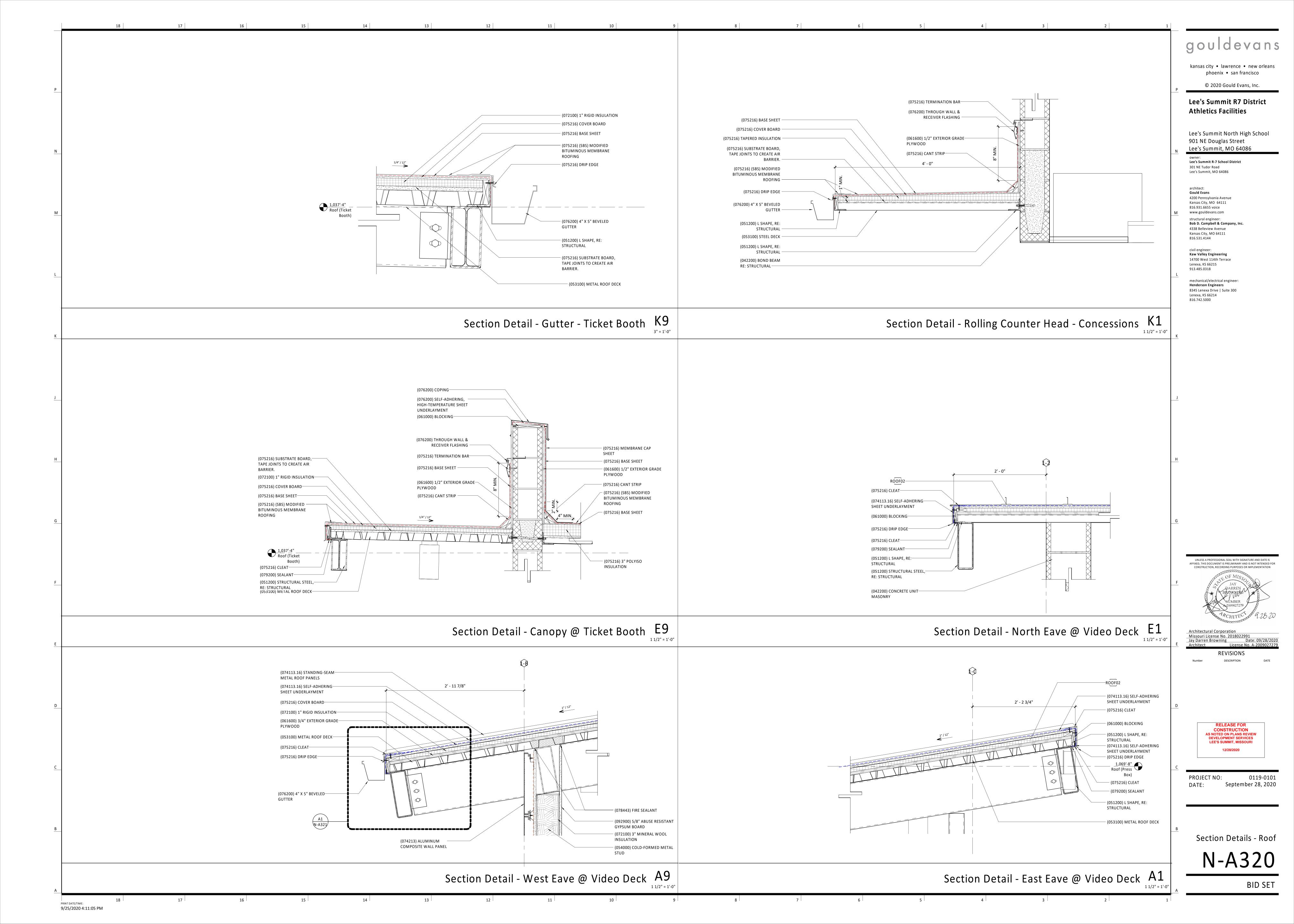


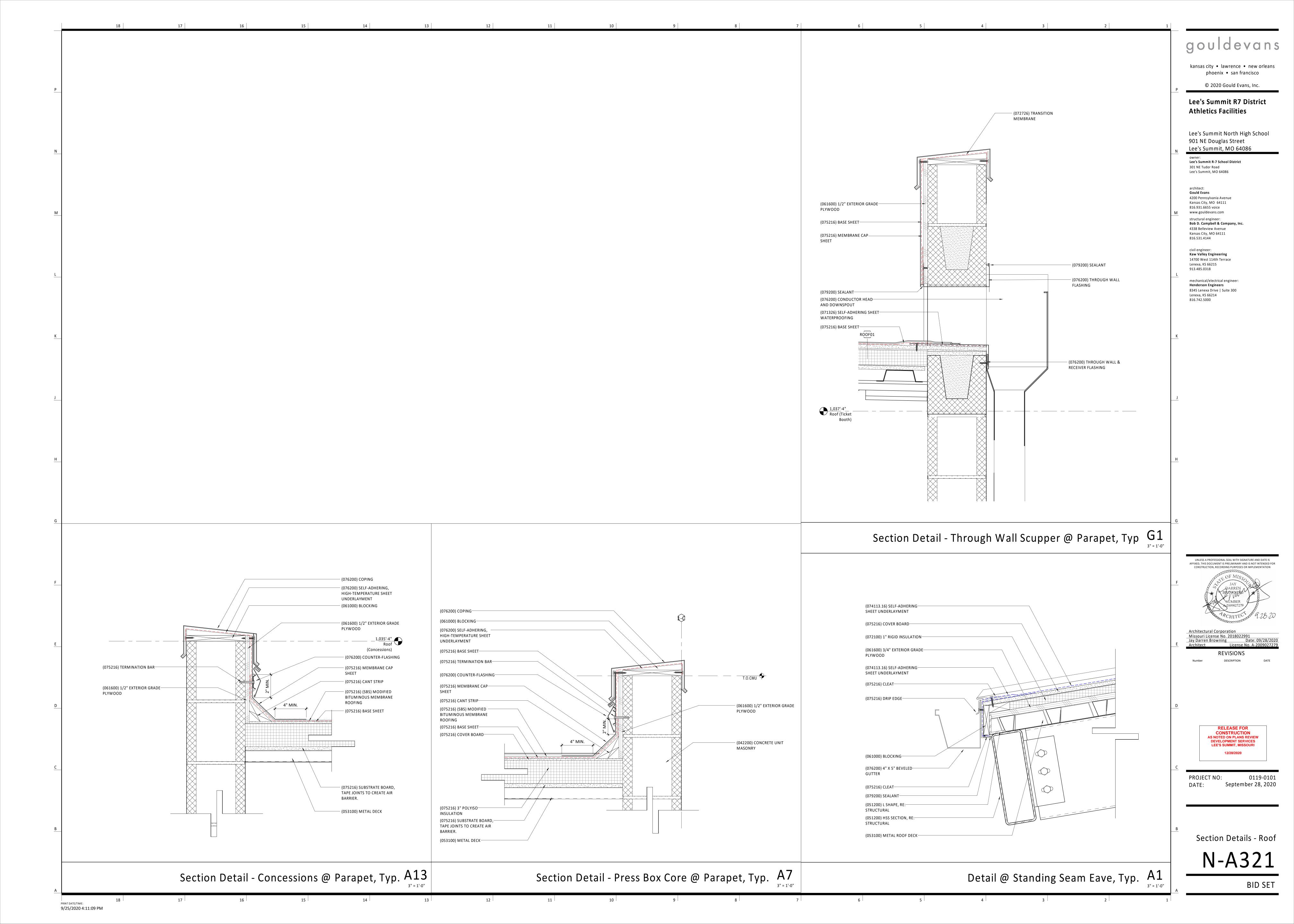


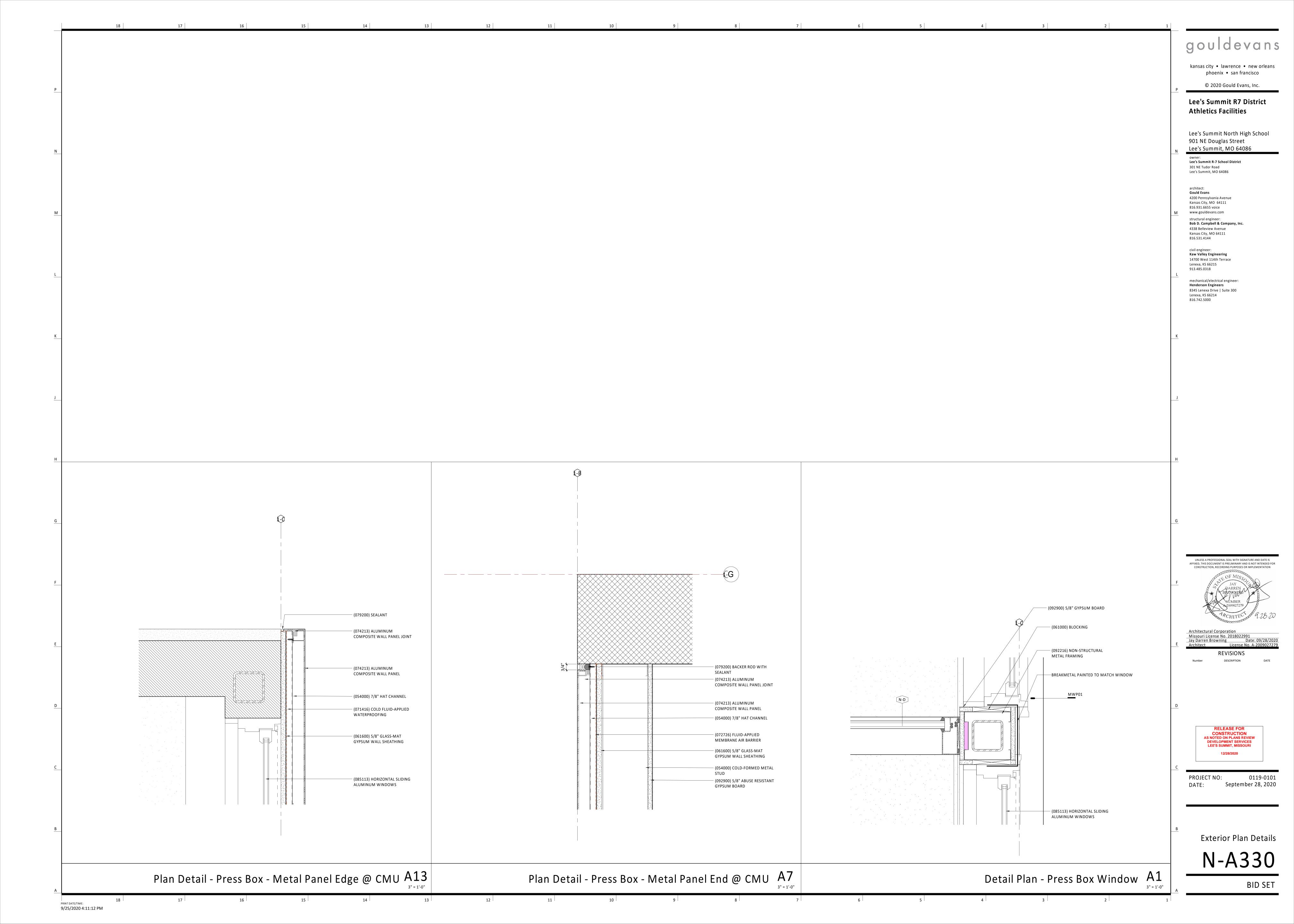


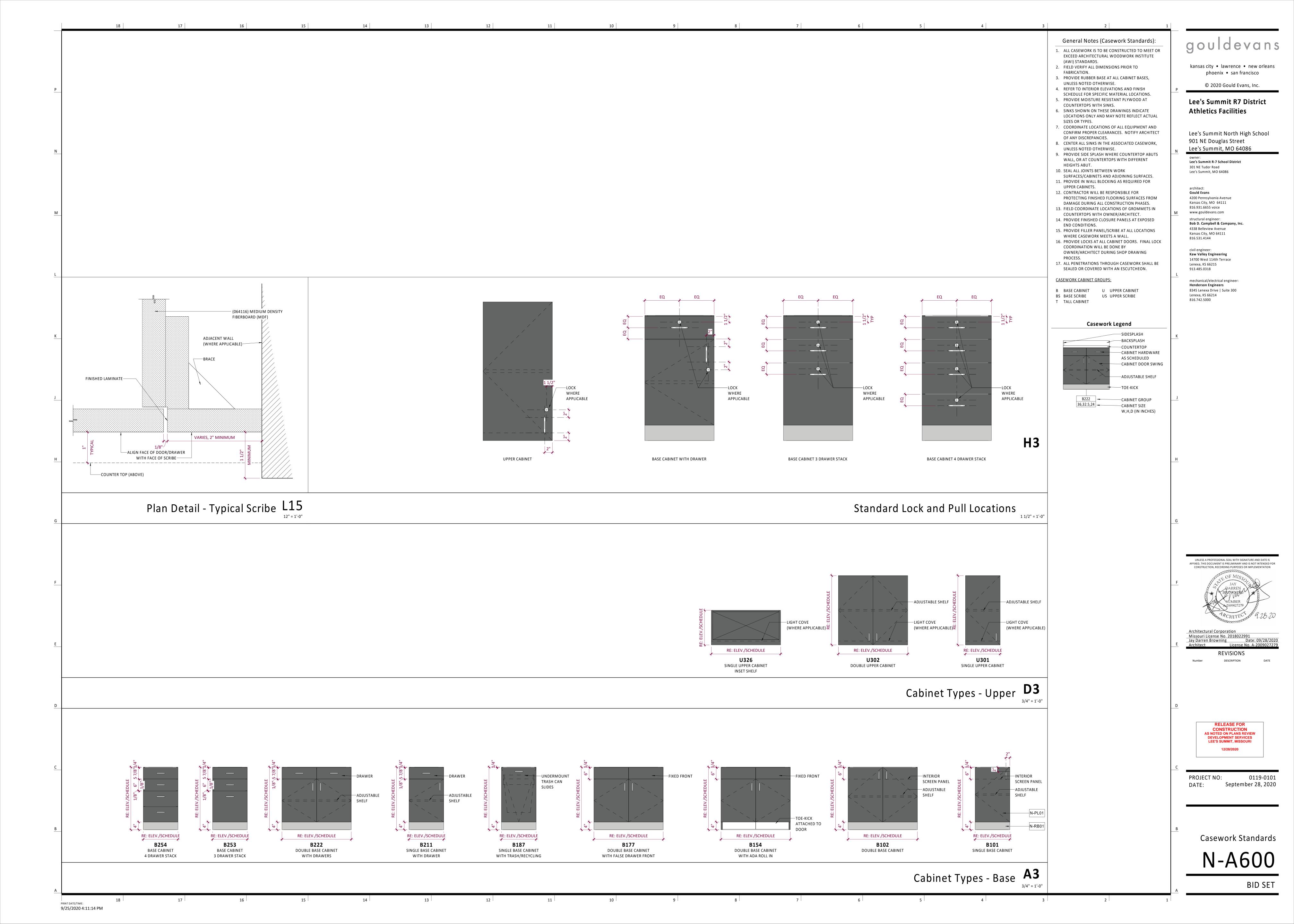


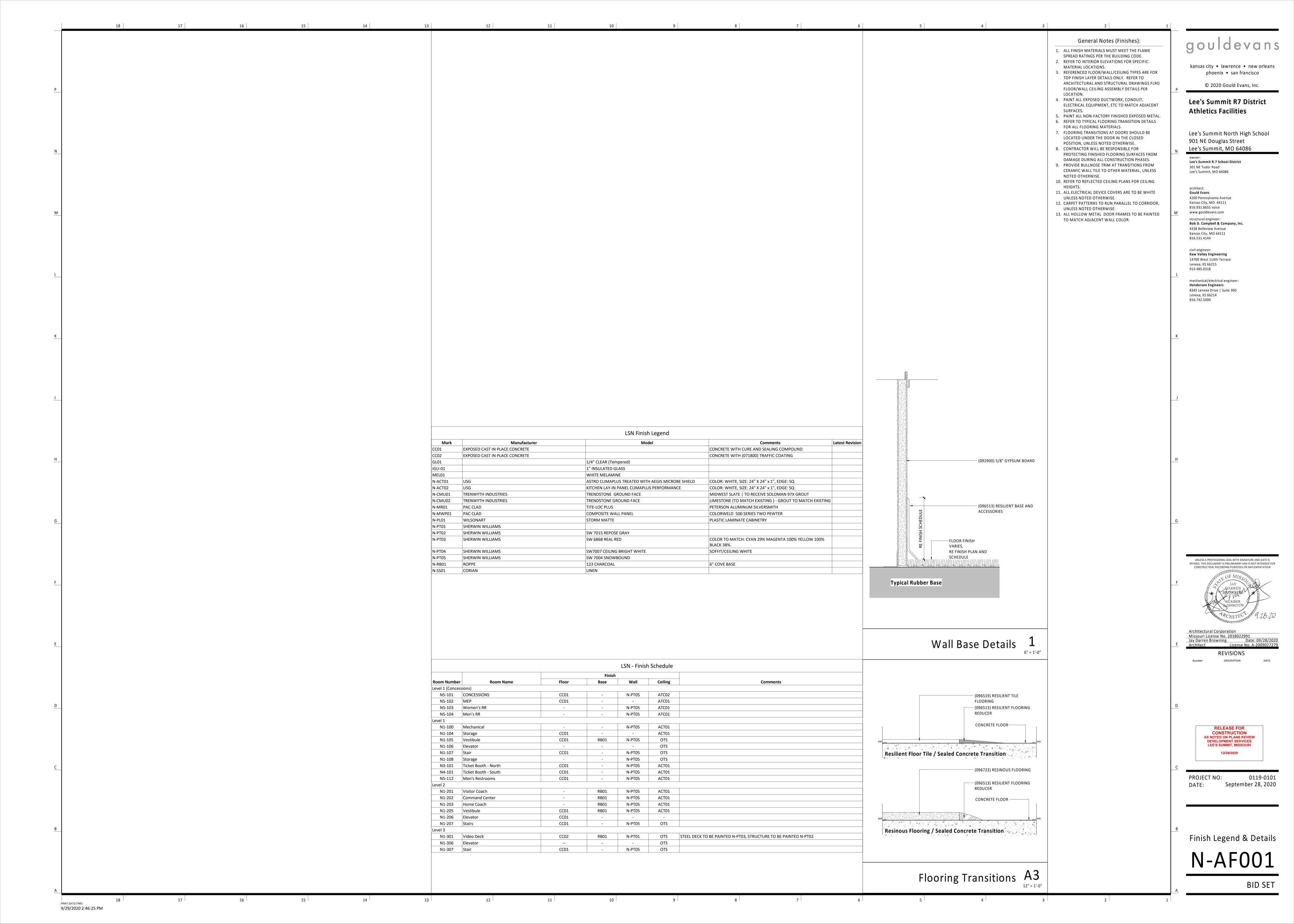












PLUMBING SYMBOLS THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED. V2.02 STANDARD MOUNTING HEIGHTS PIPING SYMBOLS PIPING LINETYPES OXYGEN OUTLET CLINIC SERVICE SINKS (RIM) NITROUS OXIDE OUTLET -----SCW---- SOFTENED COLD WATER (SCW) HOSE BIBB (CENTERLINE) MEDICAL AIR OUTLET ICE MAKER 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 — WBF — 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, N/O NORMALLY OPEN ABOVE FINISHED FLOOR (A, B, C, D, & E) O2—O2YGEN (O2) ABOVE FINISHED GRADE NOT IN CONTRACT OVERFLOW ROOF DRAIN AHU AIR HANDLING UNIT RECIRCULATION PUMP EVAC/WAGD (EV) 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 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 GALLONS PER MINUTE VARIABLE FREQUENCY INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, 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.
- 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

GPM UNLESS NOTED OTHERWISE.

DOWNSTREAM OF SHUTOFF VALVES.

28. PROVIDE WALL PIPES AT PIPING PENETRATIONS OF ELEVATED WATERPROOF FLOOR SLABS, REFER TO SPECIFICATIONS.

HOT AND COLD WATER SUPPLIES FOR MOP SINK FAUCETS

- 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

901 NE Douglas Street

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

architect:

Gould Evans

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

913.485.0318

816.742.5000

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

> 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

RELEASE FOR CONSTRUCTION **AS NOTED ON PLANS REVIEW** DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

PROJECT NO:

DATE:

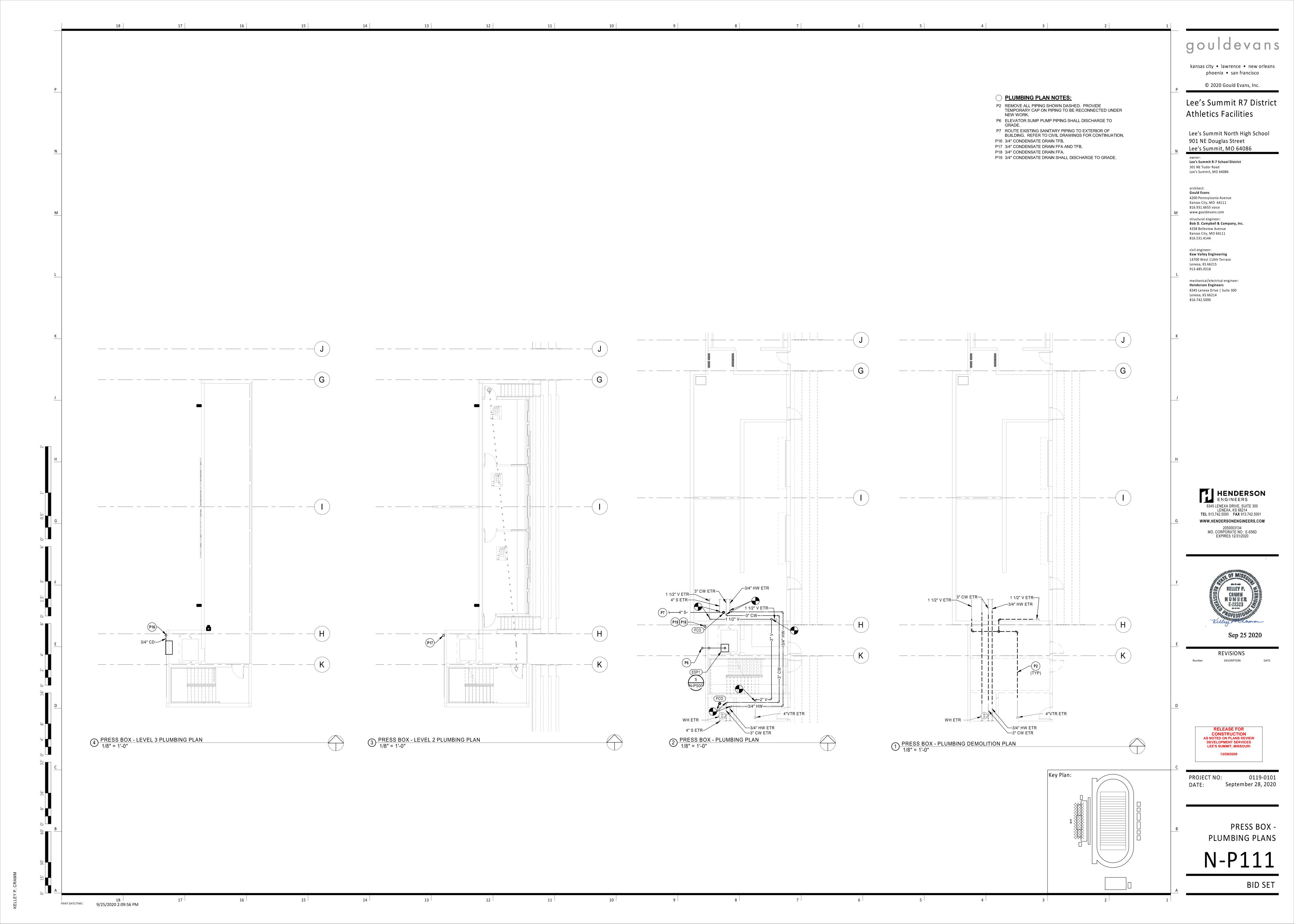
0119-0101 September 28, 2020

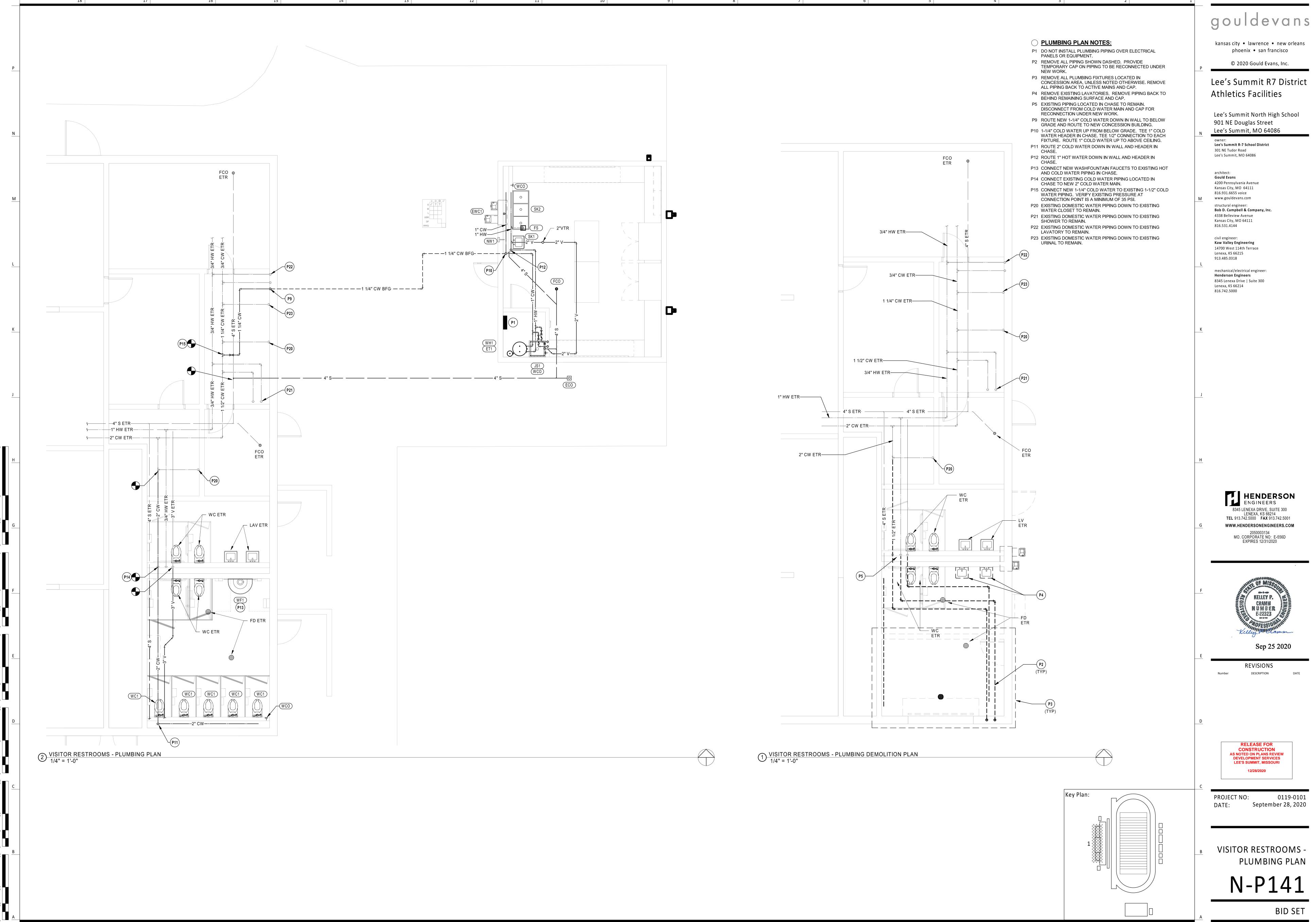
PLUMBING LEGEND AND NOTES

BID SET

Key Plan:

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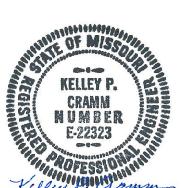




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Lee's Summit North High School

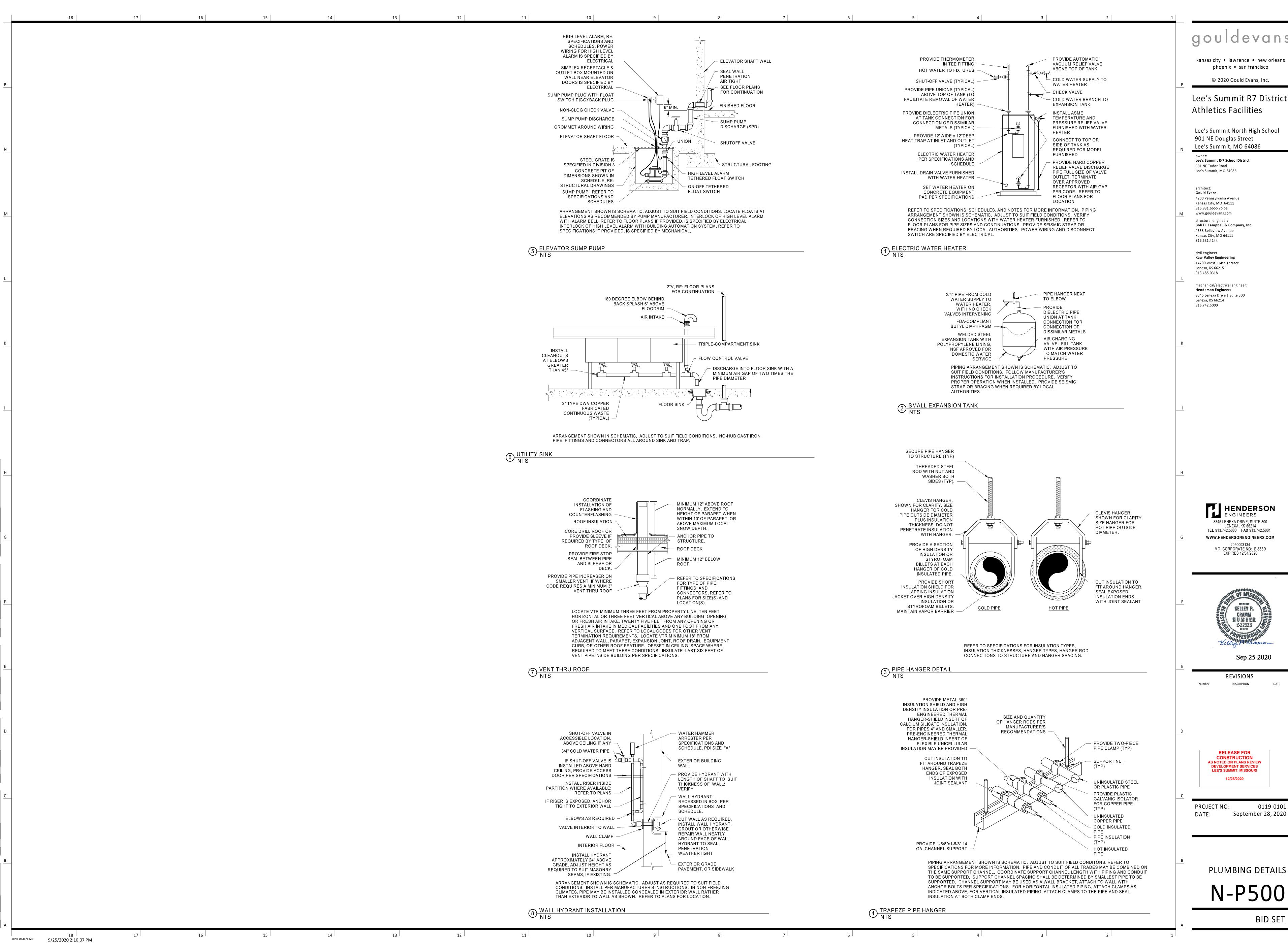
HENDERSON ENGINEERS 8345 LENEXA DRIVE, SUITE 300 LENEXA, KS 66214 TEL 913.742.5000 FAX 913.742.5001 WWW.HENDERSONENGINEERS.COM





0119-0101 September 28, 2020

PLUMBING PLAN



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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

Lee's Summit, MO 64086

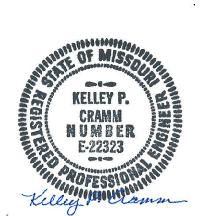
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RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW LEE'S SUMMIT, MISSOURI

PROJECT NO:

September 28, 2020

BID SET

0119-0101

ELECTRIC STORAGE WATER HEATER SCHEDULE MANUFACTURE MODEL# AREA SERVED (GALLONS) VOLTS PHASE KW (GPH) WEIGHT (LBS) NOTES WH1 A.O. SMITH #DRE-52 CONCESSION BUILDING 50 208 3 18 74 700 A NOTES: A. 100°F TEMPERATURE RISE WITH 140°F OPERATING TEMPERATURE	PLUMBING FIXTURE SCHEDULE 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 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 MOUNTING HEIGHTS. PLUMBING FIXTURE SCHEDUL
ELEVATOR SUMP PUMP SCHEDULE (3/4 HP AND SMALLER) MARK MANUFACTURER MODEL LOCATION GPM HEAD (FT.) SIZE (IN.) VOLTS PH HP NOTES ESP1 WEIL 1411-538 ELEVATOR PIT 50 21 2" 120 1 0.5 A-E NOTES: 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. 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.	PLUMBING PLAN MARK ECO EXTERIOR CLEANOUT: JAY R. SMITH # 4261L SERIES DUCO CAST I DOUBLE FLANGED HOUSING WITH HEAVY DUTY SECURED SCORIA CAST IRON COVER WITH LIFTING DEVICE AND CLEANOUT BODY W ABS PLASTIC PLUG WITH GASKET SEAL AND PUSH-ON JOINT. REF TO SPECIFICATIONS FOR INSTALLATION. EWC1 ELECTRIC WATER COOLER (ADA ACCESSIBLE): ELKAY VRCTLDDW BARRIER FREE, LEAD FREE WITH BOTTLE FILLING STATION. FRON' ACTUATOR BUTTON, STAINLESS STEEL BOWL, VANDAL RESISTAN' BUBBLER AND STAINLESS STEEL FRONT AND SIDES. NON CHILLEE FILTERED. BOTTLE FILLING STATION: ELECTRONIC SENSOR FOR TOUCHLESS ACTIVATION WITH AUTO 20-SECOND SHUT-OFF TIMEF PROVIDES 1.1-1.5 GPM WITH LAMINAR FLOW TO MINIMIZE SPLASHI TRIM: McGUIRE # LF2165CC LEAD FREE BRASS COMPRESSION AND STOP VALVE WITH RISER AND ESCUTCHEON, McGUIRE # B8872CF 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE P-TRAP AN WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON, AND SUITA CARRIER WITH STANCHIONS TO FLOOR.
PLUMBING EXPANSION TANK SCHEDULE MARK MANUFACTURER MODEL (GALLONS) SERVICE (GALLONS) SERVICE (GALLONS) SERVICE WEIGHT (LBS) NOTES ET1 AMTROL ST-5 2 0.9 WH1 22 A NOTES: A. CHARGE TANK WITH AIR TO IDENTICAL PRESSURE AS STATIC DOMESTIC WATER PRESSURE.	ELECTRICAL REQUIREMENTS: 120-VOLT, 1 FULL LOAD AMPS FCO FLOOR CLEANOUT: JAY R. SMITH, CAST IRON BODY, FLASHING FL WITH CLAMPING COLLAR, ABS PLUG, AND ADJUSTABLE, ROUND, SECURED, NICKEL BRONZE, TOP. # 4031 (-F-C), SCORIATED TOP EXPOSED, FLUSH WITH FINISHED FLOOR, APPLICATION(S), # 4031 (-F-C-Y), STAINLESS STEEL MARKER FOR INSTALLATION IN CARPE FLOOR AREA(S), # 4151 (-F-C), 1/2" RECESS FOR INSTALLATION IN 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 CLAMPING COLLAR, ADJUSTABLE 6" ROUND NICKEL BRONZE STRAINER. PROVIDE TRAP PRIMER PORT IF TRAP PRIMER IS PROVIDE TRAP PRIMER PORT IS TRAP PRIMER PORT IS TRANSFORM.
FIXTURE BRANCH CONNECTION SCHEDULE FIXTURE COLD WATER HOT WATER WASTE VENT DRINKING FOUNTAIN 1/2" FLOOR DRAIN JANITOR'S SINK 1/2" LAVATORY/HAND SINK 1/2" SINK 1/2" WATER 1/2" 1/2" 1/2" 1/2" 1/2" 2" 1 1/2" 2" 1 1/2" 2" 1 1/2" 2" 1 1/2" 2" 1 1/2" 2" 1 1/2" 2" NOTE: PIPE SIZES SHOWN ARE MINIMUM.	SEEPAGE HOLES, CLAMP COLLAR, WHITE ABS SEDIMENT BUCKETS-1/2" SQUARE NICKEL BRONZE RIM AND HALF GRATE. USE PUSH 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-CP FAUCET WITH WALL BRACE, INTEGRAL VACUUM BREAKER, PAIL HOOK, AND 3/4" MALE HOSE THREADED OUTLET. SECURE FAUCET IN WALL WITH BACKBOARI TRIM: # BP TYPE 304, 20 GAUGE, STAINLESS STEEL WALL SURROU # T-35 THREE FOOT LONG REINFORCED HOSE WITH 3/4" CHROME COUPLING AND WALL HOOK, # V-70 EXTRUDED VINYL BUMPER GUAND # T-40 24" STAINLESS STEEL MOP HANGER. NW1 NON-FREEZE WALL HYDRANT: PRIER PRODUCTS # C-634NBX1, S/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, ADJUS WALL CLAMP, BRASS BOX WITH SATIN NICKEL PLATED FINISH AN INTEGRAL ASSE 1052 DOUBLE CHECK VACUUM BREAKER.
	HAND SINK (ADA ACCESSIBLE): HAND SINK ADA ACCESSIBLE): #CHS-1716, 16-3/4"" X 15-1/2" RECTANGULAR, WALL MOUNTED, 1 GAUGE TYPE 304 STAINLESS STEEL, BACKSPLASH AND SIDE BF AND WALL MOUNTING BRACKET. FAUCET: CHICAGO FAUCET # 631-218017AB 8" BACK MOUNT FA WITH 7 1/4" – 8 3/4" ADJUSTABLE "G" SUPPLY ARMS, VANDAL RESIS #317 WRISTBLADE HANDLES, GN2A GOOSENECK SPOUT, # E61\ GPM VANDAL RESISTANT LAMINAR FLOW AERATOR, QUARTER: CERMIC CARTRIDGES. TRIM: McGUIRE # "PRODRAIN2" GRID DRAIN WITH 1-1/2" 17 GUAG TAILPIECE, McGUIRE # LF2165CCLK LEAD FREE BRASS LOOSE K COMPRESSION ANGLE STOP VALVES WITH RISERS AND ESCUT MCGUIRE # B8912CF 1-1/2" 17 GAUGE CAST CHROME PLATED BF ADJUSTABLE P-TRAP AND WASTE ARM WITH CLEANOUT PLUG A ESCUTCHEON, WALL BRACKET, PROVIDE BACKBOARD AND SEC FIXTURE TO IT, AND PLUMBEREX "PRO-EXTREME"# X-4222 INSU KIT FOR WATER AND WASTE PIPES. THERMOSTATIC MIXING VALVE: POWERS # LFG480, SOLID LEAD BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, COR RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 10 COMPLIANT, CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIAL MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 110 DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100F FOR TEMPERATURE LAVATORIES AND HAND SINKS, 100F FOR TEMPERATURE LAVATORIES AND HAND SINKS AND 120F FOR SI MOUNT BELOW THE PLUMBING FIXTURE.
	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 STAINLESS STEEL ADJUSTABLE LEGS. FAUCET: CHICAGO FAUCET #445-206578AB 3 3/8" BACK MOUN WITH 3" – 3 3/8" ADJUSTABLE "R" ARMS WITH INTEGRAL SHUT ON VANDAL RESISTANT # 369 LEVER HANDLES, L9 SWING SPOUT, FLOW OUTLET, QUARTER TURN CERAMIC CARTRIDGES. TRIM: (3) ELKAY # LK24RT GRID STRAINERS WITH LEVER HAND 1-1/2" TAILPIECE, AND 1-1/2" HARD COPPER TYPE "DWV" FABRIC INDIRECT WASTE LINE ROUTED TO FLOOR SINK. WC1 WALL-MOUNTED WATER CLOSET: AMERICAN STANDARD # 335 "AFWALL MILLENNIUM FLOWISE" WHITE VITREOUS CHINA FIXTI ELONGATED UNIVERSAL BOWL AND DIRECT-FED SIPHON JET A VALVE- SLOAN "OPTIMA – SLOAN MODEL" # 111-1.6 ES-S TMO 1 GALLON PER FLUSH, EXPOSED, CHROME-PLATED, HARD WIRE SENSOR OPERATED, DIAPHRAGM TYPE, FLUSH VALVE LESS TRANSFORMER WITH CHLORAMINE RESISTANT DIAPHRAGM AI PROTECTED ORIFICE, MANUAL OVERRIDE, ESCUTCHEON, INTE SCREWDRIVER STOP, VACUUM BREAKER, AND SWEAT ADAPTI TRIM- CHURCH # 9500SSCT WHITE OPEN-FRONT CONTOURED, PLASTIC, HEAVY DUTY, SEAT LESS COVER WITH SELF-SUSTAIN
	CHECK HINGES AND STAINLESS STEEL BOLTS. PROVIDE SUIT FIXTURE CARRIER. WCO WALL CLEANOUT: SIOUX CHIEF #873 SERIES, BRASS COUNTED PLUG, 20 GAUGE STAINLESS STEEL COVER AND SCREW. CLEATEE TO BE PROVIDED SEPARATELY. REFER TO SPECIFICATION INSTALLATION. WF1 THREE STATION LAVATORY: BRADLEY # 6951B-3 62"x18" RECT. WALL HUNG MULTI-LAV WITH INTEGRAL BACKSPLASH AND SID OF DENSIFIED SOLID SURFACE MATERIAL OF RESIN AND ALUM TRIHYDRATE WITH OTHER FILLERS, 14 GAUGE 304 STAINLESS CONSTRUCTION. ANCHOR BACKSPLASH AND HOUSING FRAMI SECURELY TO WALL. INSTALLATION SHALL CONFORM TO ADA REQUIREMENTS. INSTALL "WCO" UNDERNEATH WASTE CONN FAUCET: SLOAN "OPTIMA" # BEF-187-0.5 CENTERSET, VANDAL RESISTANT, 4" TRIM PLATE, BATTERY POWERED SENSOR OPE FAUCET WITH 0.5 GPM AERATOR. (3 TOTAL) TRIM: McGUIRE # 155A GRID DRAIN WITH TAILPIECE, McGUIRE # LF2165CCLK LEAD FREE BRASS LOOSE KEY COMPRESSION AN STOP VALVES WITH RISERS AND ESCUTCHEONS, McGUIRE # E 1-1/4" 17 GAUGE CAST CHROME PLATED BRASS ADJUSTABLE F AND WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON. THERMOSTATIC MIXING VALVE: POWERS # LFG480, SOLID LEAD BRASS OR BRONZE BODY, THERMOSTATIC WAX ELEMENT, CO RESISTANT INTERNAL PARTS, AND INTEGRAL CHECKS, ASSE 1 COMPLIANT, CAPABLE OF 1.6 GPM WITH A 20 PSI DIFFERENTIA MINIMUM FLOW RATE OF 0.25 GPM. SET TEMPERATURE TO 11 DUAL TEMPERATURE LAVATORIES AND HAND SINKS, 100F FOR TEMPERATURE LAVATORIES AND HAND SINKS, AND 120F FOR S MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED
	WHA WATER HAMMER ARRESTER: PRECISION PLUMBING PRODUCTS DRAWN COPPER BODY WITH WROUGHT COPPER FITTINGS, PIS' TYPE WITH LUBRICATED EPDM "O" RING SEALS, MEETING ASSE OR PDI WH-201. PROVIDE PDI SIZES "A" THROUGH "F" AS SHOW PLANS. PROVIDE SIZE "A" UNLESS SHOWN OTHERWISE ON THE

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FIXTURE SCHEDULE

NG FIXTURE SCHEDULE

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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

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

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EXPIRES 12/31/2020



REVISIONS

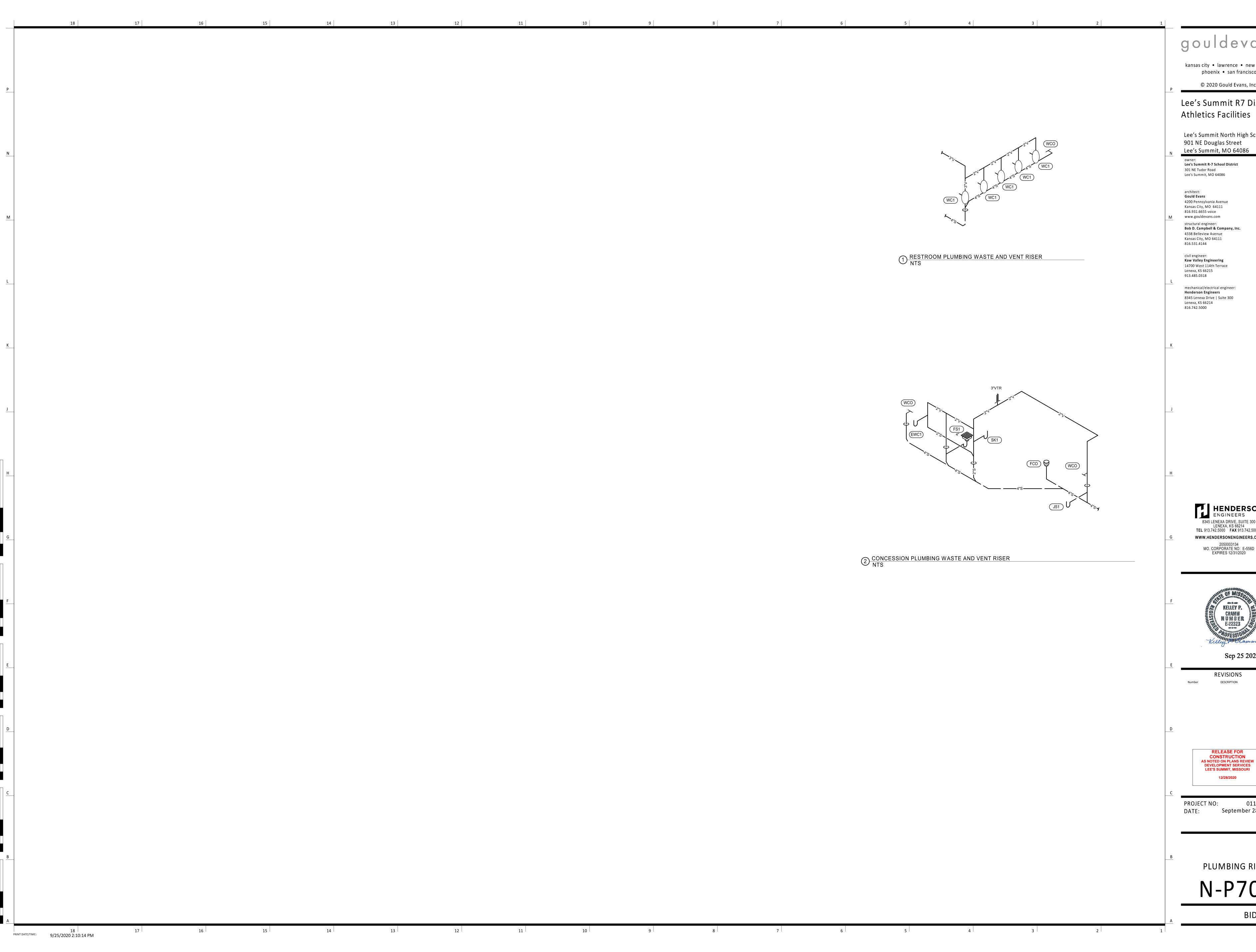
DESCRIPTION

RELEASE FOR CONSTRUCTION AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

PROJECT NO: DATE:

September 28, 2020

PLUMBING SCHEDULES



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Lee's Summit R7 District

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

Lee's Summit R-7 School District

4200 Pennsylvania Avenue

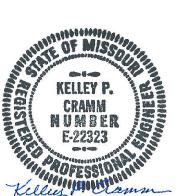
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REVISIONS



O: 0119-0101 September 28, 2020

PLUMBING RISERS

MECHANICAL SYMBOLS THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED. V2.06 HVAC DUCTWORK AND ACCESSORIES STANDARD MOUNTING HEIGHT PIPING SYMBOLS PIPING LINETYPES _____ DIRECTION OF FLOW THERMOSTATS (USER ADJUSTABLE)(TOP OF DEVICE) LINEAR SLOT DIFFUSER CONTROLS (TOP OF DEVICE) ____ CONTROL VALVE ACD—— AUXILIARY CONDENSATE DRAIN (ACD) INSULATED FLEXIBLE DUCT (MAX. 5'-0" LONG) THREE-WAY CONTROL VALVE ——NPW——— NON-POTABLE WATER (NPW) INSTALL DEVICES AT THE MOUNTING HEIGHTS SHOWN ABOVE UNO IN THE ——— SHUTOFF VALVE CONSTRUCTION DOCUMENTS. MOUNTING HEIGHTS LISTED ABOVE OR ————G———— NATURAL GAS (G) BRANCH DUCT WITH 45° RECTANGLE-ROUND ELSEWHERE IN THE CONSTRUCTION DOCUMENTS ARE AFF OR AFG TO CHECK VALVE BRANCH FITTING AND MANUAL VOLUME DAMPER BOTTOM OF DEVICE UNO. ALL DEVICES SHALL BE INSTALLED IN — G— MATURAL GAS ON ROOF (G) COMPLIANCE WITH CURRENT ADA AND LOCAL REQUIREMENTS. BALANCING VALVE WITH PRESSURE PORTS ——MPG—— MEDIUM PRESSURE NATURAL GAS (MPG) ELBOW WITH TURNING VANES ANNOTATION TRIPLE DUTY VALVE WITH PRESSURE PORTS — — MPG— — MEDIUM PRESSURE NATURAL GAS ON ROOF (MGP) MECHANICAL PLAN NOTE CALLOUT STRAINER BRANCH DUCT WITH BELL-MOUTH FITTING & FOS—FUEL OIL SUPPLY (FOS) MANUAL VOLUME CONTROL DAMPER STRAINER WITH BLOWDOWN VALVE MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR ——FOR—— FUEL OIL RETURN (FOR) FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE) RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP RELIEF / SAFETY VALVE FOV—FOV—FUEL OIL VENT (FOV) SOLENOID VALVE LIQUEFIED PETROLEUM GAS (LPG) CONNECTION POINT OF NEW WORK TO EXISTING RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN PRESSURE REDUCING VALVE ——BFW—— BOILER FEED WATER (BFW) DETAIL REFERENCE. UPPER NUMBER INDICATES DETAIL SUPPLY AIR DUCT UP GAS PRESSURE REGULATOR ——HPS—— HIGH PRESSURE STEAM SUPPLY (HPS) NUMBER LOWER NUMBER INDICATES SHEET NUMBER THERMOSTATIC MIXING VALVE — — HPC— — HIGH PRESSURE STEAM CONDENSATE (HPC) SUPPLY AIR DUCT DOWN SECTION CUT DESIGNATION PIPE ANCHOR ——LPS—— LOW PRESSURE STEAM SUPPLY (LPS) **EQUIPMENT WITH FLEXIBLE DUCT CONNECTION** ____EJ ABBREVIATIONS EXPANSION JOINT — —LPC— — LOW PRESSURE STEAM CONDENSATE (LPC) PIPE GUIDE HWP HEATING WATER PUMP A/C AIR CONDITIONING ———PD——— CONDENSATE PUMP DISCHARGE (PD) 10" (NECK SIZE) AIR COOLED CHILLER IN WC INCHES OF WATER PIPING SUPPORT AIR COOLED CONDENSING ——HWS—— HEATING HOT WATER SUPPLY (HWS) 300 CFM (CFM OF SUPPLY DIFFUSER OR REGISTER) LOUVER F&TTRAP ABOVE FINISHED CEILING LAT LEAVING AIR ——HWR——— HEATING HOT WATER RETURN (HWR) ABOVE FINISHED FLOOR TEMPERATURE 24x24 (NECK SIZE) BUCKET TRAP ABOVE FINISHED GRADE LDB LEAVING DRY BULB ——CHWS—— CHILLED WATER SUPPLY (CHWS) LOW PRESSURE AUTHORITY HAVING THERMOSTATIC TRAP 800 CFM (CFM OF EXHAUST GRILLE) JURISDICTION LEAVING WET BULB ——CHWR—— CHILLED WATER RETURN (CHR) LEAVING WATER AIR HANDLING UNIT LWT BACKFLOW PREVENTER ANALOG INPUT TEMPERATURE ——HCS—— HOT / CHILLED WATER SUPPLY (HCS) MANUAL VOLUME DAMPER MAU ANALOG OUTPUT MAKE-UP AIR UNIT PRESSURE GAUGE ACCESS PANEL MAXMAXIMUM — —HCR— — HOT / CHILLED WATER SUPPLY (HCR) AIR PRESSURE DROP MBH 1000 BTU PER HOUR SQUARE TO ROUND TRANSITION THERMOMETER AMERICAN WIRE GAUGE MOTORIZED DAMPER AWG ——CWS—— CONDENSER WATER SUPPLY (CWS) MANUFACTURER PRESSURE AND TEMPERATURE TEST PLUG BAS BUILDING AUTOMATION MIN MINIMUM ——CWR—— CONDENSER WATER RETURN (CWR) DUCT MOUNTED SMOKE DETECTOR NOT APPLICABLE SYSTEM N/A (SD=SUPPLY/RD=RETURN) BACKBONE NORMALLY CLOSED ——HPWS—— HEAT PUMP WATER SUPPLY (HPWS) BACKDRAFT DAMPER N/O NORMALLY OPEN _____ FLANGE CONNECTION ROUND DUCT TAG INDICATING DIAMETER XX" Ø BLOWDOWN NOM NOMINAL ——HPWR—— HEAT PUMP WATER RETURN (HPWR) BELOW FINISHED CEILING NOISE CRITERIA RECTANGULAR DUCT TAG INDICATING INTERNAL XX" x XX" ______ VACUUM RELIEF VALVE NF NON-FUSED BELOW FINISHED FLOOR DUCT DIMENSIONS. BFG NIC NOT IN CONTRACT BELOW FINISHED GRADE 무 AV AUTOMATIC AIR VENT REFRIGERANT DISCHARGE (HOT GAS) (RD) BFP BOILER FEED PUMP OUTSIDE AIR FLAT OVAL DUCT TAG INDICATING INTERNAL DUCT XX' / XX" BRAKE HORSEPOWER PICV PRESSURE INDEP. _____**₩**MV MANUAL AIR VENT DIMENSIONS CONTROL VALVE BINARY INPUT PROVIDE FURNISH AND INSTALL **BINARY OUTPUT** PRESSURE / VACUUM SWITCH BOTTOM OF DUCT QUANTITY RDB REFRIGERANT DISCHARGE BYPASS (RDB) RISER DESIGNATION BOTTOM OF STRUCTURE RA RETURN AIR CLEANOUT RC ROOM CRITERIA REFRIGERANT VENT (RV) BRITISH THERMAL UNIT BTU $\overline{}$ CUBIC FEET PER MINUTE RD RETURN DUCT FIRE DAMPER CHILLER RELIEF AIR RETURN FAN CLG COOLING ELBOW UP CONDENSATE PUMP RFR REFRIGERANT FIRE SMOKE DAMPER CPT RELATIVE HUMIDITY CONTROL POWER **ELBOW DOWN** TRANSFORMER ROOF HOOD ____ REVOLUTIONS PER MINUTE CRAC COMPUTER ROOM AIR RPM SMOKE DAMPER TEE UP CONDITIONING UNIT RTU ROOFTOP UNIT COMPUTER ROOM UNIT SUPPLY AIR TEE DOWN SCP COOLING TOWER STEAM CONDENSATE PUMP VOLUME DAMPER SMOKE DUCT DETECTOR CONTROL VALVE ELBOW UP WITH SHUT-OFF VALVE (SOV) SUPPLY DUCT CWP CONDENSER WATER PUMP SUPPLY FAN MOTORIZED DAMPER ELBOW DOWN WITH SHUT-OFF VALVE (SOV) CONDENSING UNIT SENSIBLE HEAT CAPACITY CHWP CHILLED WATER PUMP SOW SCOPE OF WORK TEE UP WITH SHUT-OFF VALVE (SOV) STATIC PRESSURE DECIBELS BACKDRAFT DAMPER STEAM TRAP DECIBEL AVERAGE TEE DOWN WITH SHUT-OFF VALVE (SOV) DIRECT DIGITAL CONTROL STM STEAM DDC TO BE DETERMINED DIGITAL INPUT REDUCER ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE DIMENSIONS. TEMPERATURE CONTROLS DISC DISCONNECT REFER TO DUCTWORK SPECIFICATIONS FOR DUCTWORK INSULATION AND CONTRACTOR DOWN RECIRCULATION PUMP LINER INFORMATION. TCP DUCT SILENCER TEMPERATURE CONTROL **DIRECT EXPANSION** HVAC CONTROL DEVICES P-TRAP TRANSFER FAN FXISTING EXHAUST AIR TFA TO FLOOR ABOVE (H)GAS COCK HUMIDISTAT ENTERING TFB TO FLOOR BELOW AIR TEMPERATURE TOTAL HEAT CAPACITY THERMOSTAT TOP BEAM CLAMP EXHAUST DUCT TOTAL STATIC PRESSURE TT ENTERING DRY BULB TEMPERATURE / / / TRAPEZE HANGER STATIC PRESSURE SENSOR EXHAUST FAN ΓRANSMITTAL LINETYPE LEGEND EFFICIENCY TYPICAL TEMPERATURE SENSOR ______ FLEXIBLE CONNECTION U/F EMS ENERGY MANAGEMENT UNDERFLOOR UNDERGROUND THROUGHOUT THE DRAWINGS DIFFERENT LINETYPES ARE USED IN CARBON MONOXIDE SENSOR ESP COMBINATION WITH THE SYMBOLS TO INDICATE THE STATUS OF ITEMS AS EXTERNAL STATIC U/S UNDERSLAB **PRESSURE** UH UNIT HEATER EXISTING, TO BE DEMOLISHED, TO BE INCLUDED AS PART OF NEW WORK CARBON DIOXIDE SENSOR EXISTING TO REMAIN UNLESS NOTED OTHERWISE AND/OR ITEMS WHICH ARE ANTICIPATED TO BE PROVIDED IN THE FUTURE. ENTERING WET BULB VAV VARIABLE AIR VOLUME THE STATUS OF ITEMS USING THESE LINETYPES ARE RELATIVE TO THE DIFFERENTIAL PRESSURE SENSOR VIEW IN WHICH THEY APPEAR. PHASING SHOWN IN DRAWINGS IS NOT ENTERING WATER VELOCITY FWT TEMPERATURE VFD VARIABLE FREQUENCY INTENDED TO FULLY DESCRIBE ALL NECESSARY CONSTRUCTION PHASING, FS FLOW SWITCH FCU WHICH IS DETERMINED BY THE CONTRACTOR AS PART OF THEIR FAN COIL UNIT VRF VARIABLE REFRIGERANT RESPONSIBILITIES. ANY SUCH PHASES DESCRIBED IN THE CONSTRUCTION FROM FLOOR ABOVE **HUMIDITY SENSOR** FFB FROM FLOOR BELOW DOCUMENTS ARE GENERAL AND ONLY INTENDED TO INDICATE A BROAD VRV VARIABLE REFRIGERANT ORDER FOR THE SAKE OF DESCRIBING THE PROJECT. THE FOLLOWING FINISHED FLOOR PULL STATION FINS PER INCH LINETYPES MAY BE USED ON ANY DEVICE, EQUIPMENT, NOTE, LINE, SHAPE, VOLUME FPM WITH FEET PER MINUTE REMOTE TESTING STATION WITH INDICATING LIGHT GENERAL CONTRACTOR W/O WITHOUT GPM GALLONS PER MINUTE WB WET BULB STATIC PRESSURE HOA HAND-OFF-AUTOMATIC WC WATER COLUMN EXISTING NEW WPD WATER PRESSURE DROP HORSEPOWER TEMPERATURE SENSOR HTG HEATING EXPLOSION PROOF DEMOLISH — — — — FUTURE

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

SERVICE OF EQUIPMENT AND/OR FILTER REPLACEMENT.

- 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
- 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 OUTLET NECK SIZE UNLESS OTHERWISE NOTED.
- 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.
- 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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Kansas City, MO 64111

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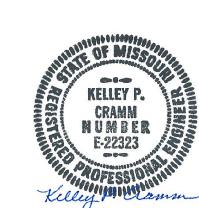
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EXPIRES 12/31/2020



REVISIONS DESCRIPTION

RELEASE FOR CONSTRUCTION **AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES** LEE'S SUMMIT, MISSOURI

PROJECT NO:

September 28, 2020

AND NOTES

MECHANICAL LEGEND

BID SET

Key Plan:

Sheet List - Mechanical

MECHANICAL LEGEND AND NOTES

MECHANICAL SCHEDULES & CONTROLS

PRESS BOX - HVAC PLANS TICKET BOOTH - HVAC PLANS VISITOR RESTROOMS - HVAC PLANS

MECHANICAL DETAILS

Sheet Number

N-M141

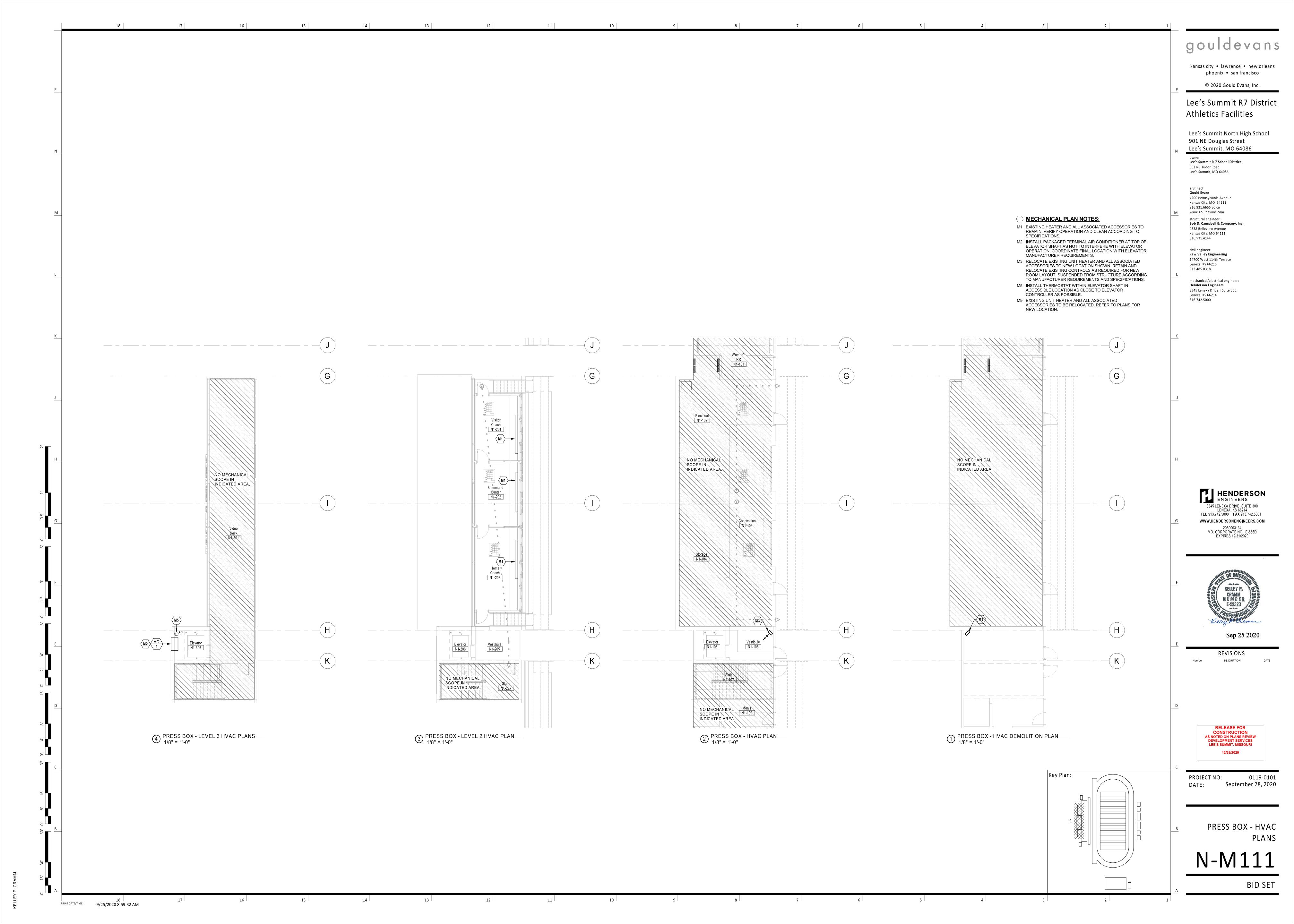
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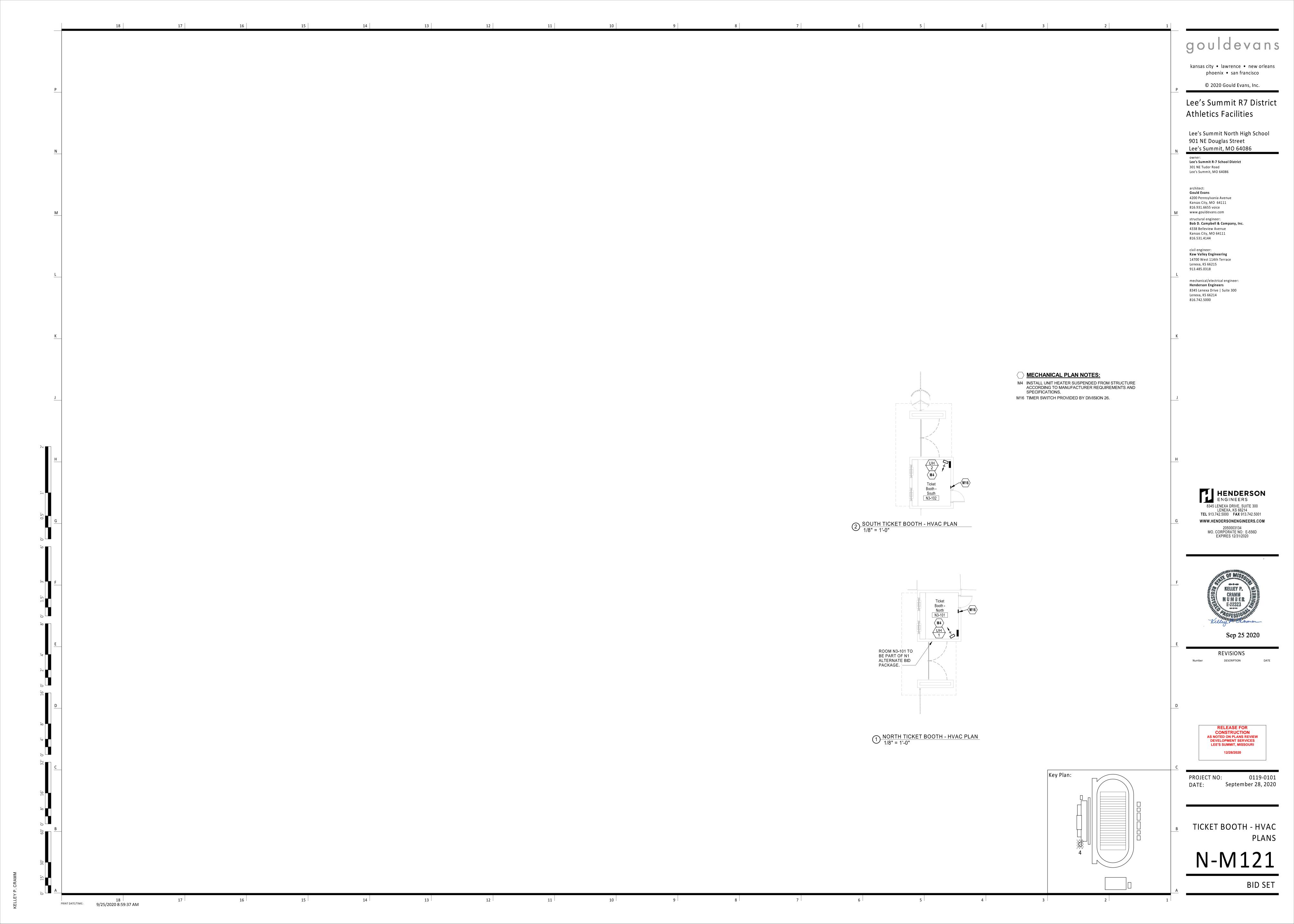
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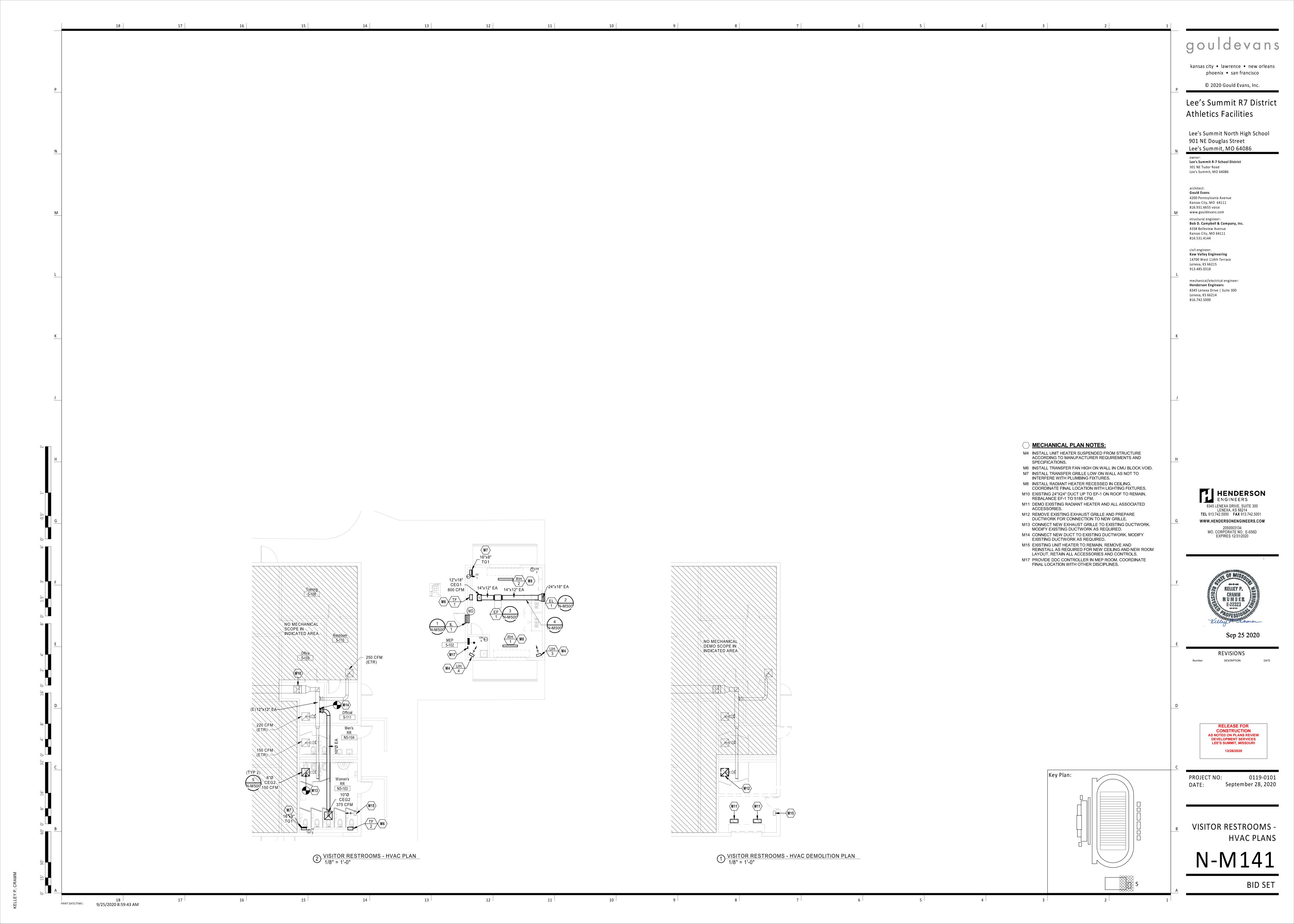
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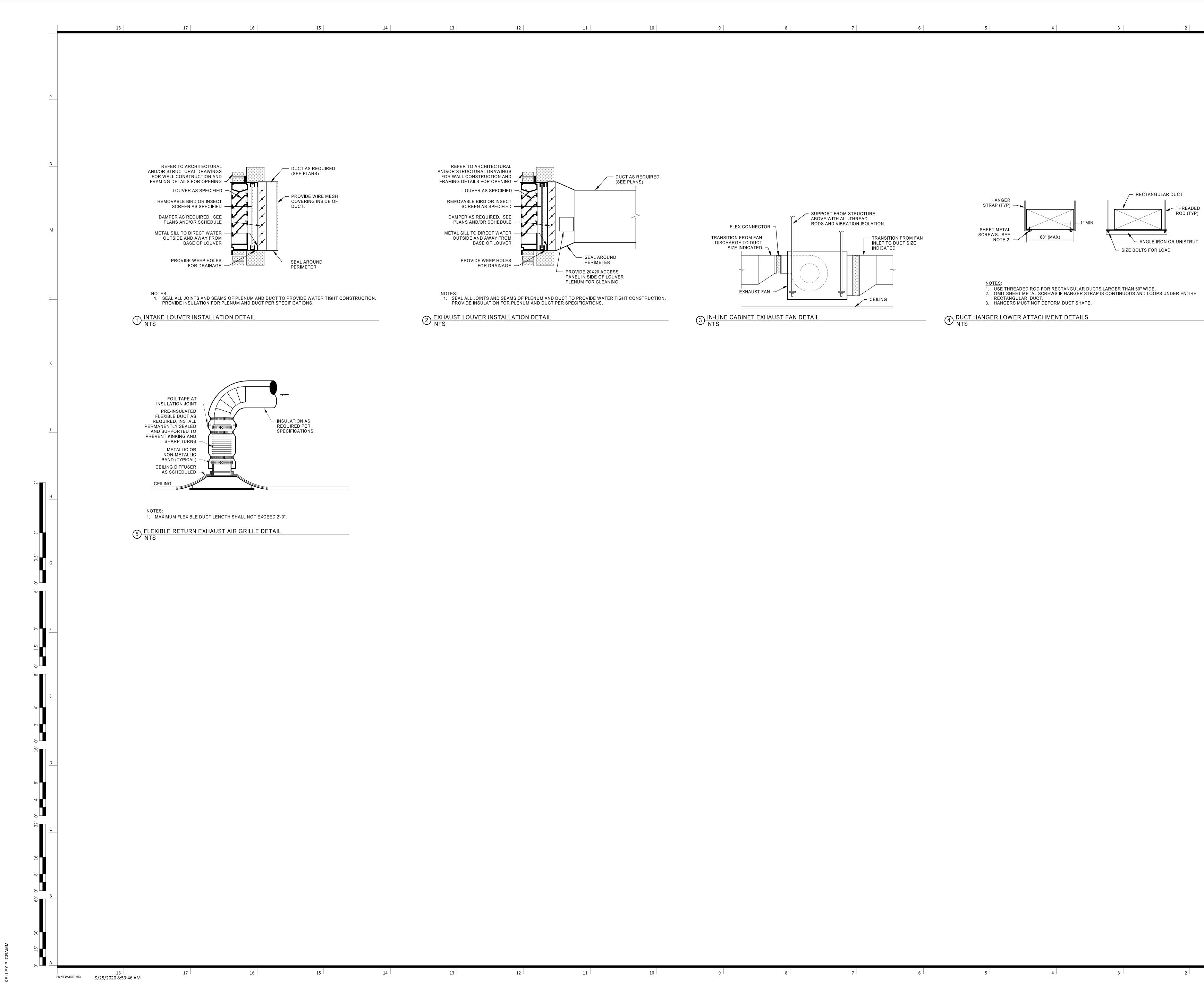
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Lee's Summit R7 District Athletics Facilities

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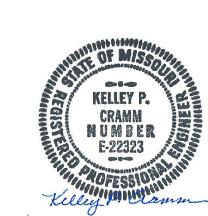
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EXPIRES 12/31/2020



Sep 25 202

REVISIONS

DESCRIPTION

RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW

DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

PROJECT NO:

0119-0101 September 28, 2020

MECHANICAL DETAILS

N-M500

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	ATER	RS	CHE	DULE	E (El	LEC	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.

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.

			GRILI	_E, REG	ISTER	AND DIFF	USER S	CHEDUL	Ε		
				CONSTRUCTION						MAX PRESS DROP (IN	
MARK	MANUFACTURER	SERVICE	MODEL	TYPE	FACE TYPE	MOUNTING LOCATION	BORDER TYPE	FACE SIZE (IN)	MAX NC	W.C.)	NOTES
CEG1	PRICE	EXHAUST	630	ALUMINIUM	LOUVERED	CEILING	SURFACE	18"x12"	30	0.08	A,B,C,D
CEG2	PRICE	EXHAUST	PDDR	ALUMINIUM	PERFORATED	CEILING	SURFACE	24"x24"	30	0.08	A,B,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.

CBF

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

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

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.

FAN SCHEDULE ELECTRICAL ESP NOM FAN DRIVE | (IN) | HP | RPM |(BELT/DIRECT) DISC TYPE WEIGHT (LBS) DESCRIPTION | MANUFACTURER | MOUNTING | EXHAUST GREENHECK INLINE SQ-100-VG 800 0.25 0.25 1154 DIRECT CONCESSION 115/1 NON-FUSED A,B,C,D

500

TRANSFER GREENHECK TF 2 WOMENS RR CBF 500 B,C,E WALL 115/1 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

0.20 0.05 1050 DIRECT

115/1

NON-FUSED

NON-FUSED

B,C,E

NOTES:

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

CONCESSION TRANSFER GREENHECK WALL

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.

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 WITH INTEGRAL BACKDRAFT DAMPER. PROVIDE WITH INTEGRAL 24 V MOTOR OPERATED DAMPER.

INTERLOCK MOTOR-OPERATED DAMPER WITH EXHAUST FAN.

PACKAGED TERMINAL AIR CONDITIONING UNIT SCHEDULE (COOLING ONLY)

			SUPPL	Y FAN	COOLIN	NG COIL	СО	MPRES	SOR		ELECTRIC	AL	
				NOM	REFR	TH						STARTER	
MARK	MANUFACTURER	MODEL	CFM	HP	TYPE	(MBH)	LRA	QTY	V/PH	MCA	DISC TYPE	TYPE	NOTES
AC 1	FRIEDRICH	PDE12K	400	0.09	R-410A	12.0	21.5	1	208/1	5.1	NON-FUSED	INTEGRAL	A,B,C,D,E,F,G

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.

NOTES:

CONDENSER CAPACITIES BASED ON 100 °F EAT. PROVIDE MERV 8. PLEATED THROWAWAY AIR FILTERS.

PROVIDE FACTORY MOUNTED DISCONNECT SWITCH INSTALLED ON SERVICE SIDE OF UNIT.

STARTERS FOR ALL MOTORS SHALL BE FURNISHED INTEGRAL WITH UNIT. PROVIDE WITH CONDUIT KIT AND JUNCTION BOX FOR HARDWIRING.

PROVIDE WITH WALL MOUNTED THERMOSTAT. PROVIDE WITH WALL SLEEVE.

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. When in Transfer Mode: The unit shall be on.

OPERATING MODES

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)

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

The units shall be in heating mode when the zone temperature (Z-T) falls below space temperature setpoint.

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 mounted thermostat.

ELECTRIC UNIT HEATER (UH-1,2)

OPERATING MODES

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

PACKAGED TERMINAL AIR CONDITIONER (AC-1)

OPERATING MODES STANDBY MODE:

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

The unit shall be in cooling mode when the zone temperature (Z-T) falls below 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

When in Standby Mode: The unit shall remain off.

When in Heating 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.

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

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

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

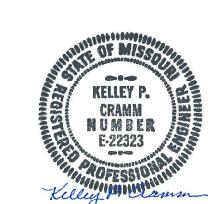
www.gouldevans.com structural engineer: Bob D. Campbell & Company, Inc. 4338 Belleview Avenue Kansas City, MO 64111 816.531.4144

> 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

> > MO. CORPORATE NO: E-556D EXPIRES 12/31/2020



REVISIONS DESCRIPTION

CONSTRUCTION **AS NOTED ON PLANS REVIEW** DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

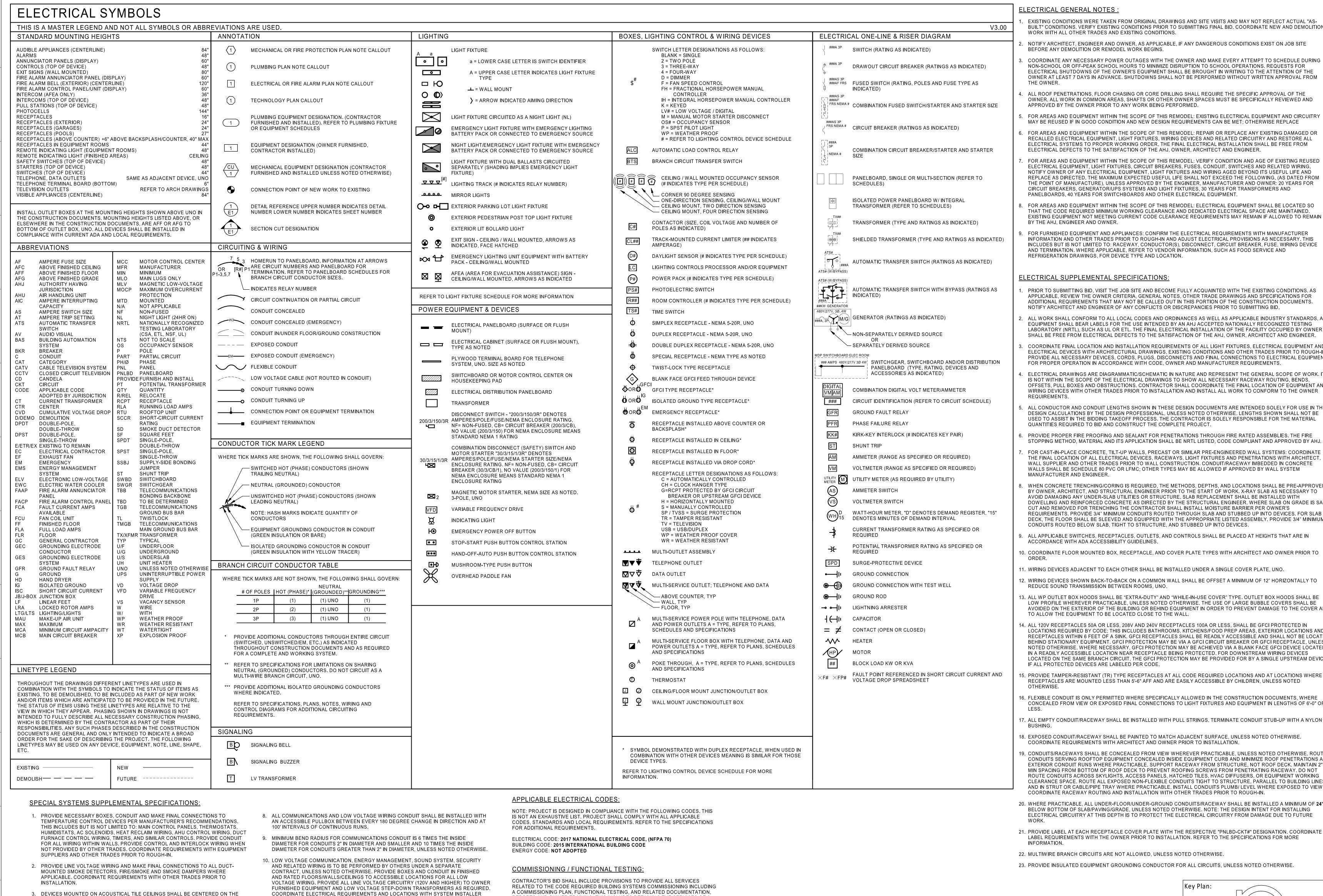
PROJECT NO:

September 28, 2020

MECHANICAL SCHEDULES & CONTROLS

BID SET

PRINT DATE/TIME: 9/25/2020 8:59:51 AM



ELECTRICAL GENERAL NOTES

- 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
- 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

- 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 CLEARANCE SPACE. ROUTE ALL EXPOSED NON-FLEXIBLE CONDUITS TIGHT TO STRUCTURE, PARALLEL TO BUILDING LINES AND IN STRUT OR CABLE/PIPE TRAY WHERE PRACTICABLE. INSTALL CONDUITS PLUMB/ LEVEL WHERE EXPOSED TO VIEW. COORDINATE RACEWAY ROUTING AND INSTALLATION WITH OTHER TRADES PRIOR TO ROUGH-IN.
- 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

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

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> > MO. CORPORATE NO: E-556D

EXPIRES 12/31/2020



REVISIONS DESCRIPTION

CONSTRUCTION **AS NOTED ON PLANS REVIEW** DEVELOPMENT SERVICES LEE'S SUMMIT, MISSOURI

PROJECT NO:

September 28, 2020

ELECTRICAL LEGEND

AND NOTES

BID SET

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

WHERE APPLICABLE. 12. LOW VOLTAGE CABLE SHEATH LABELS AND RELATED MANUFACTURER INFO SHALL REMAIN APPARENT IN ALL EXPOSED APPLICATIONS. PROTECT ALL EXPOSED CABLING FROM PAINTING AND OVERSPRAY (INCLUDES CABLE NOT ROUTED IN CONDUIT AND THAT

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

14. CONDUITS FOR COMMUNICATIONS OUTLETS SERVING ELEVATOR EQUIPMENT ROOMS, FACP, AND SIMILAR CRITICAL EQUIPMENT AS DESIGNATED BY THE OWNER SHALL BE

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

REPORTS AND OWNER TRAINING. THIS INCLUDES RETAINING THE SERVICES OF A 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

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OWNER AND OTHER TRADES PRIOR TO ROUGH-IN.

CONTRACTOR AND OWNER PRIOR TO ROUGH-IN.

TILE, UNO.

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

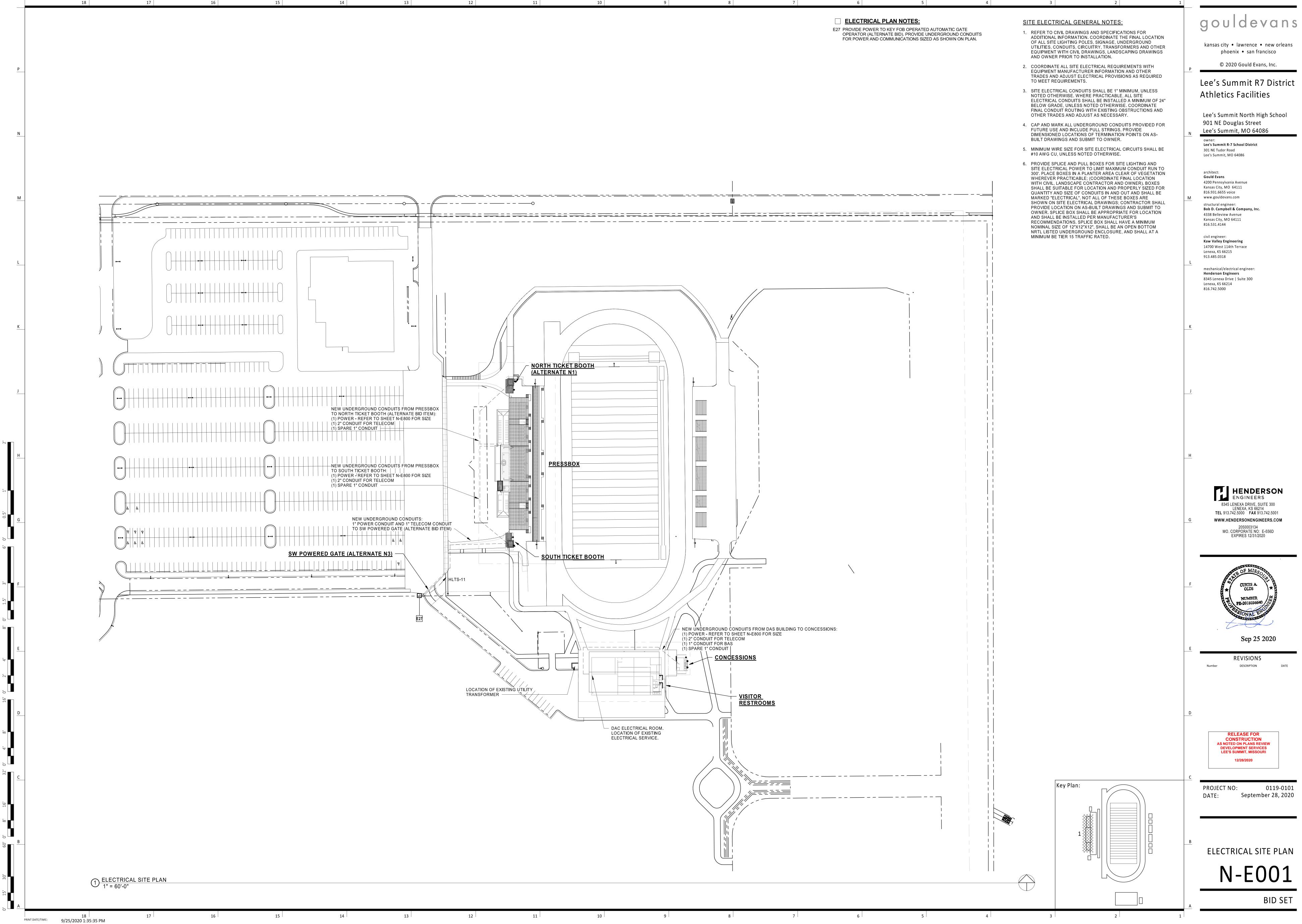
CONDUITS AND SLEEVES, UNLESS NOTED OTHERWISE.

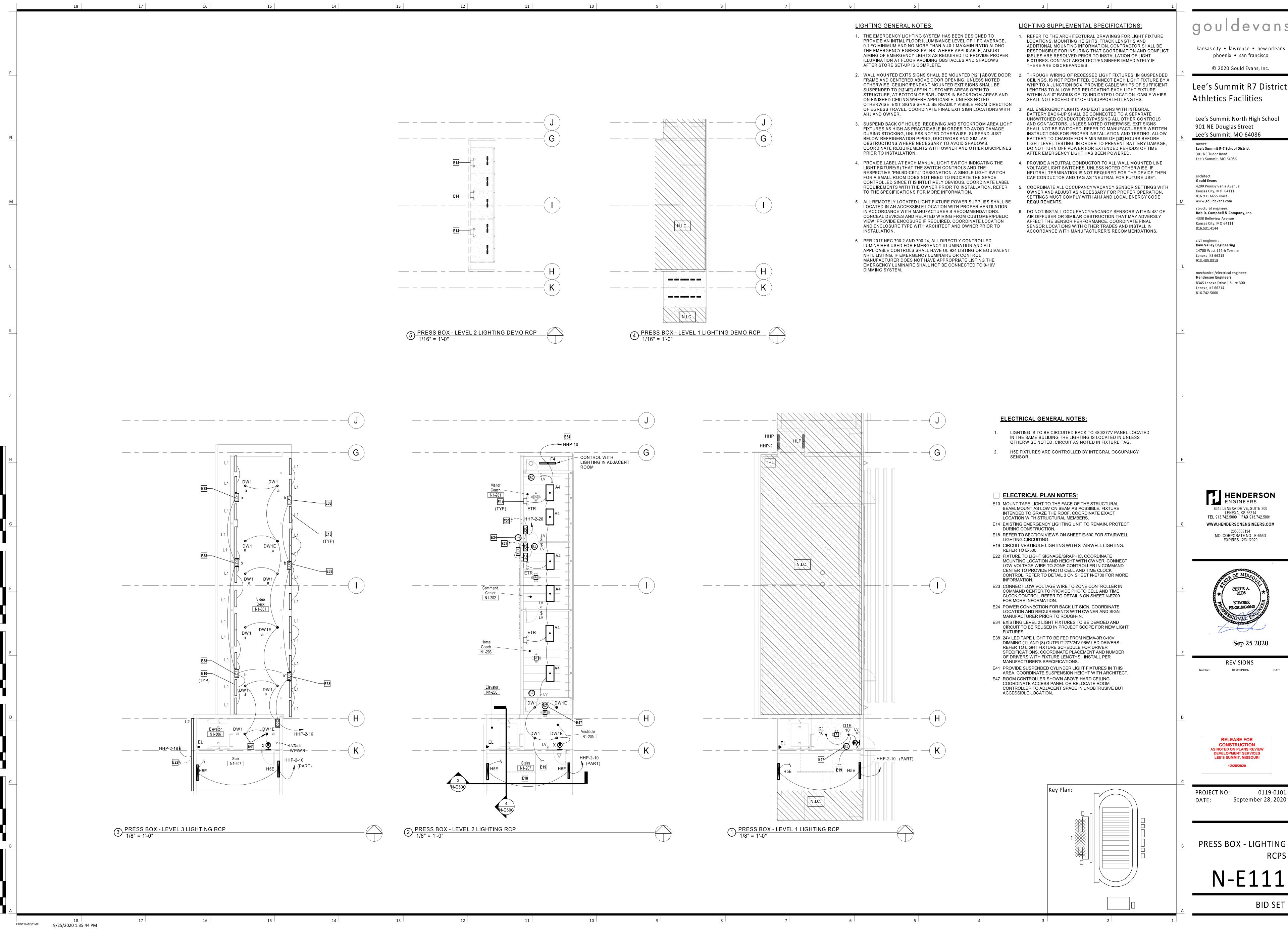
OR NEAREST ACCESSIBLE CEILING SPACE.

IS IN CABLE TRAY).

12

CONSTRUCTION DOCUMENTS, CODE AND MANUFACTURER'S INSTRUCTIONS.

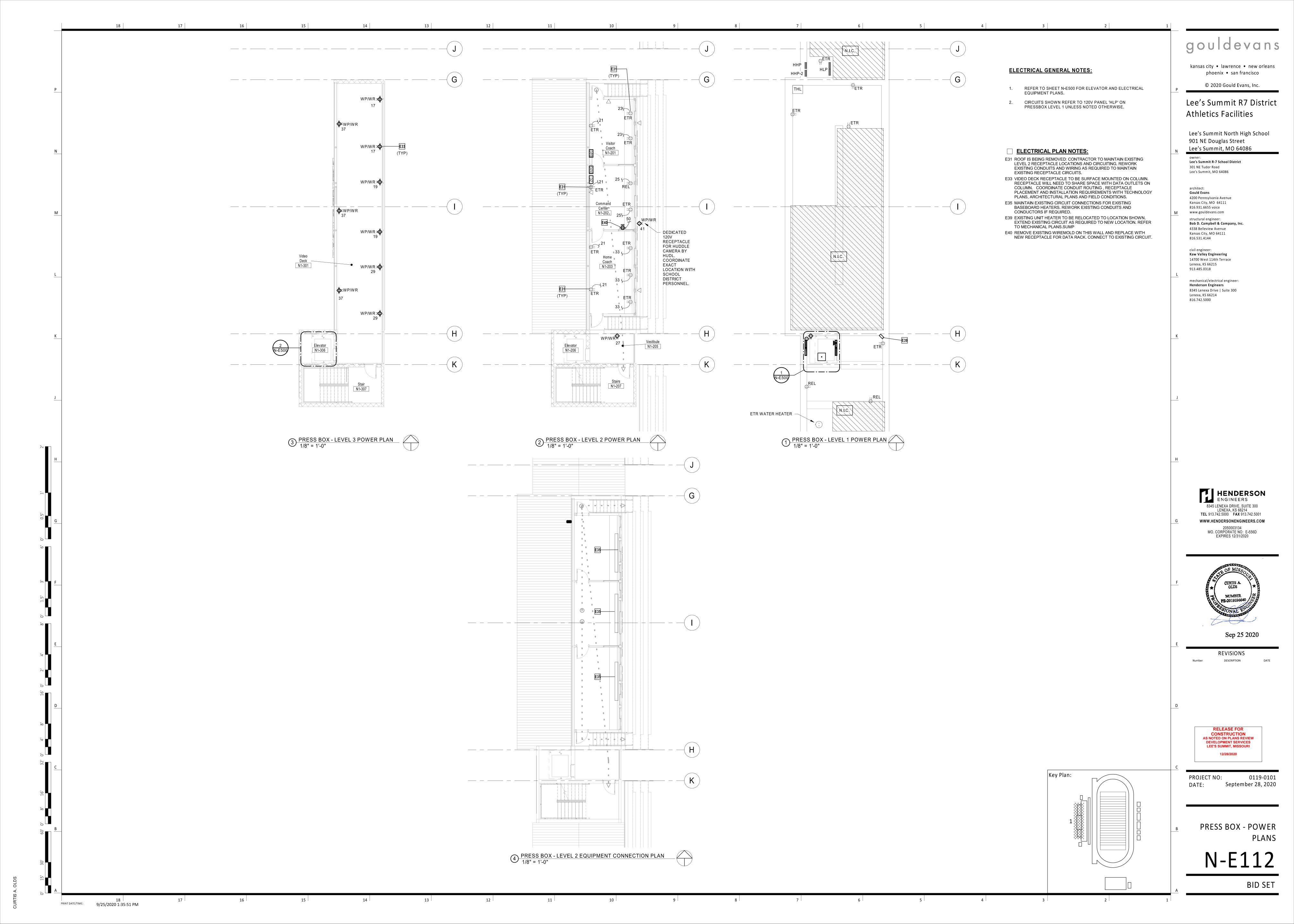


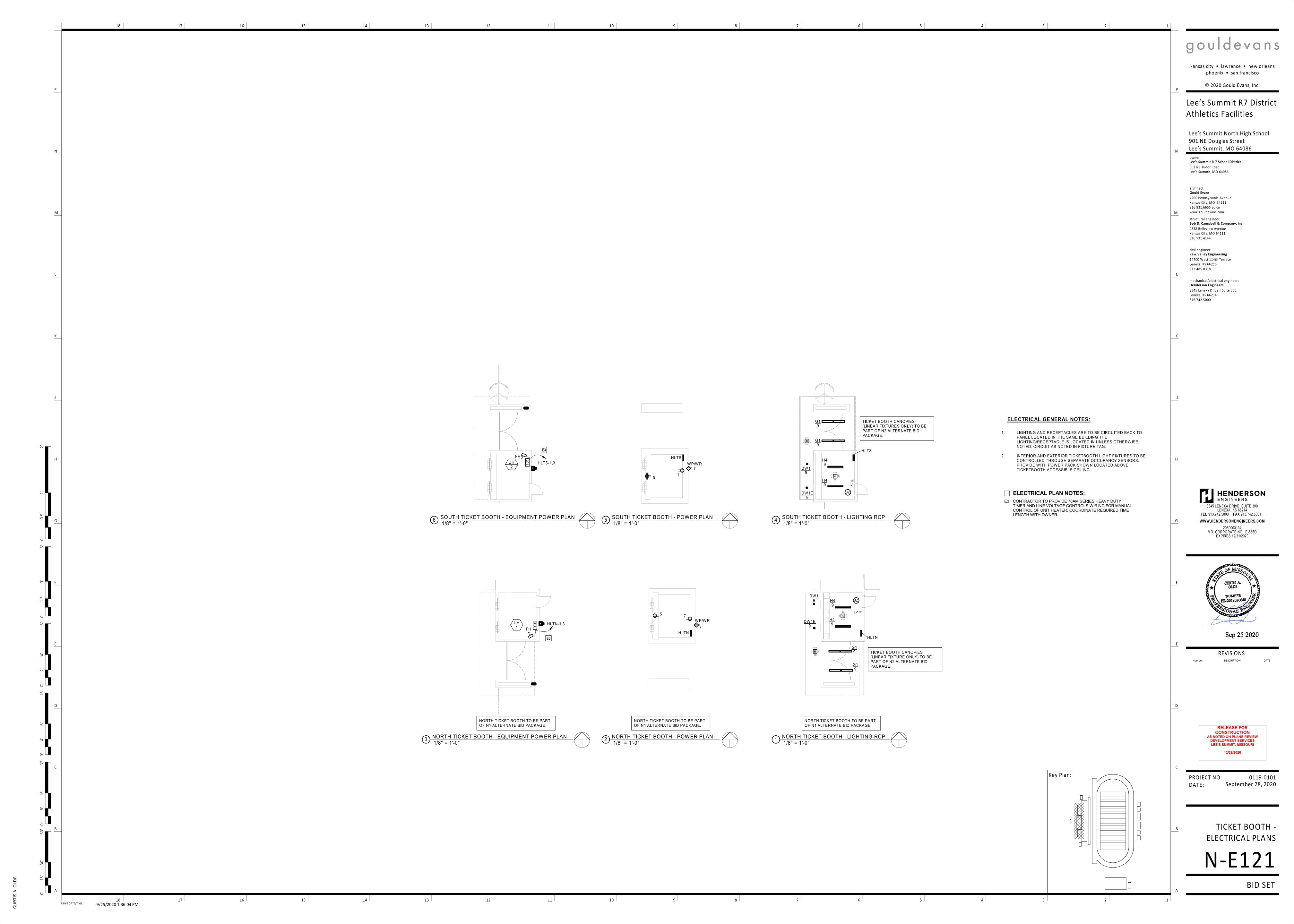


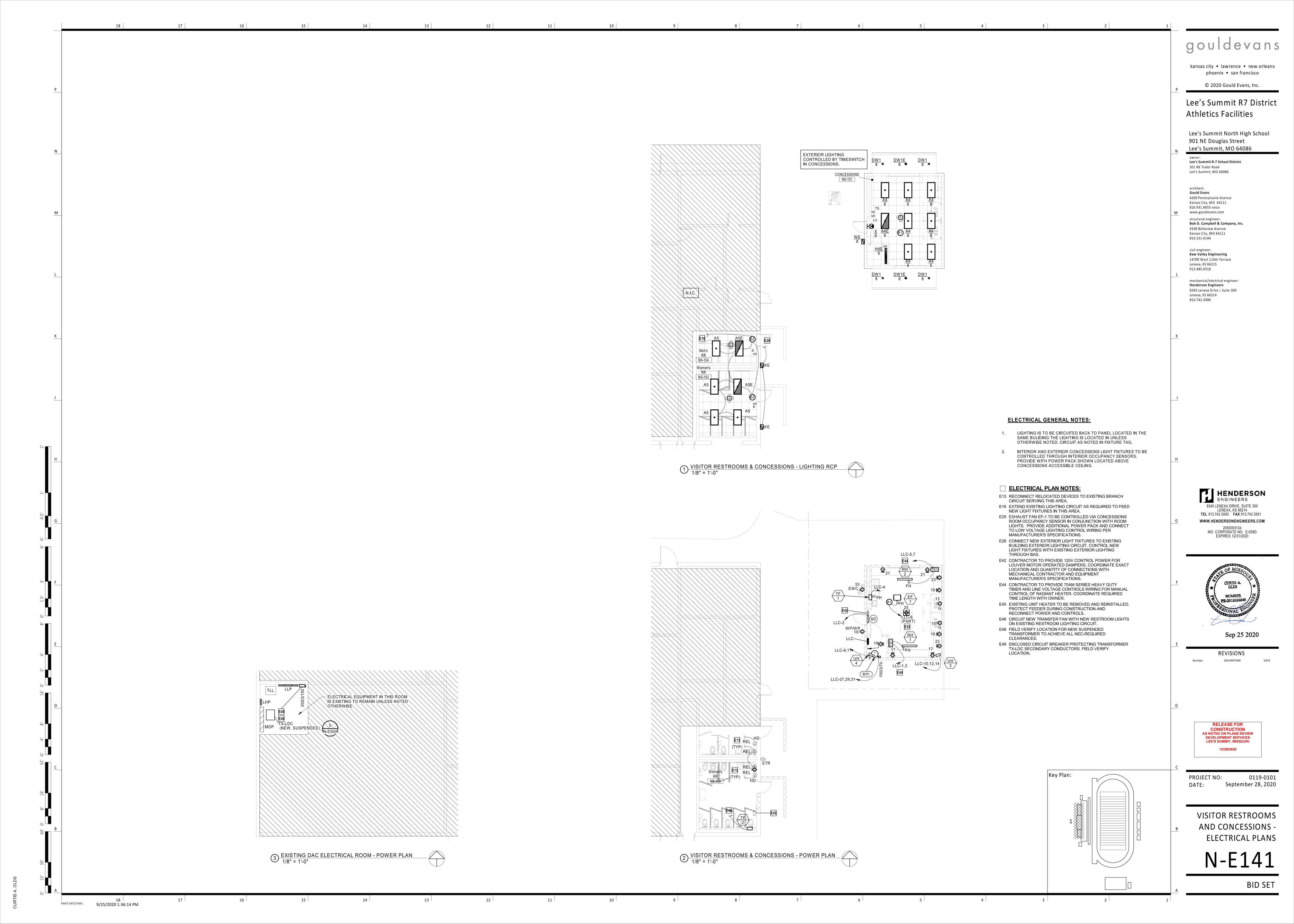
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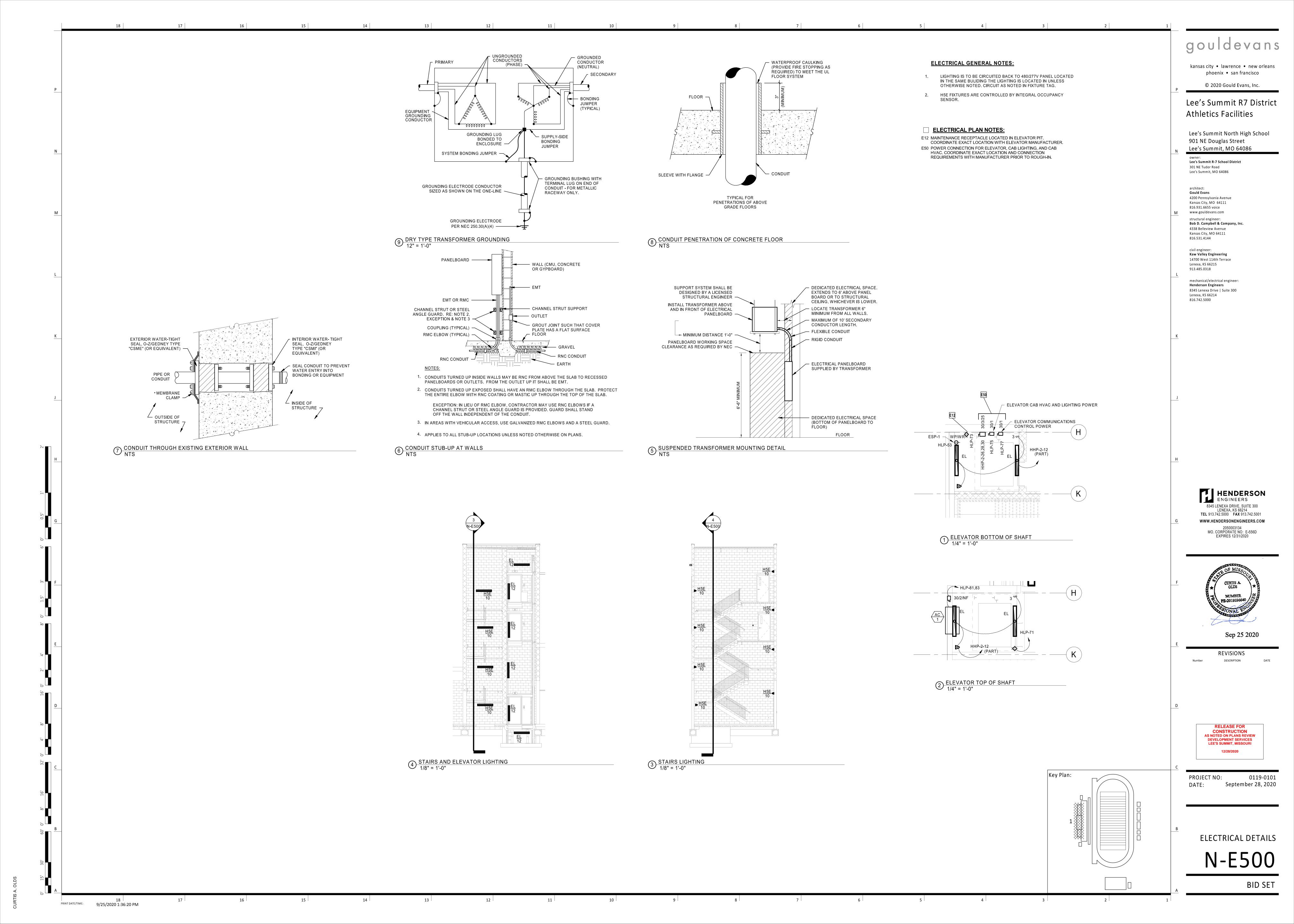
Lee's Summit R7 District

Lee's Summit North High School









BUS A MAIN VOLT	MELBOARD: LLC (NE MPS: 225A SIZE/TYPE: 150A M.C.B. S/PHASE: 208Y/120 V 3P/4W LIED BY: MDP VIA TX-LDC	W)					AIG AIG SE MG	ULT C C RATE C RATE RVES DUNTIF	NG: F : C NG: S	ULLY R	ATED % MINIMUN SION E						EQUIPMENT GR	OUND BUS
																	LINE-SIDE LUGS: ME	ECHANICAL
CKT NO.	DESCRIPTION		DAD NOTES	SIZE	BKR AMP		PHASE A		PHAS B	Ε	PHA C			SIZE	NOTES	LOAD TYPE		CKT NO.
1	RH-1 (2KW)		U	12	15	2	1000	50	1000		1		1 20	12		Z	PWR - MOTORIZED LOUVERS	2
3	DIL O (OKM)			40	45				1000	150	4000	F70	1 15	12		M	TF-1	4
5	RH-2 (2KW)		U	12	15	-	1000	148	1		1000	573	1 20	12 12		L M L	LTG - CONCESSIONS INTERIOR & EF LTG - CONCESSIONS EXTERIOR	F-1 6 8
9	UH-4 (3KW)		U	12	20	2	1000	140	1500	1667]		1 20	12		<u> </u>	ETG - CONCESSIONS EXTERIOR	10
11			Ŭ	'-	20	-			1000	1007	1500	1667	3 20	12		Н	UH-3 (5KW)	12
13	RCPT - FRIDGE 1		Z GF	12	20	1	1200 1	667]				1	. –			(2.2.2.)	14
15	RCPT - FRIDGE 2		Z GF	12	20	1	1		1200	0			1 20				SPARE	16
17	RCPT - WINDOW 1		K	12	20	1					360	0	1 20				SPARE	18
19	RCPT - GENERAL AND EXTERIO		K	12	20	1	720	0	000		1		1				EQUIPPED SPACE	20
21	RCPT - WINDOW 2		R	12	20	1			360	0	000		1				EQUIPPED SPACE	22
23	RCPT - GENERAL 2 RCPT - FLOOR		K R	12 12	20	1	360	0	1		360	0	1				EQUIPPED SPACE EQUIPPED SPACE	24
25 27	RCP1-FLOOR		R	12	20		300	U	6000	0]		1				EQUIPPED SPACE	26 28
29	 WH-1		н	4	70	3			0000	U	6000	0	1				EQUIPPED SPACE	30
31	, vvii i		''	"	'		6000	0]		0000		1				EQUIPPED SPACE	32
33	EWC WATER COOLER		Z	12	20	1			250	0			1				EQUIPPED SPACE	34
35	SPARE				20	1					0	0	1				EQUIPPED SPACE	36
37	SPARE				20	1	0	0]				1				EQUIPPED SPACE	38
39	SPARE				20	1			0	0			1				EQUIPPED SPACE	40
41	SPARE				20	1					0	0	1				EQUIPPED SPACE	42
			TOTA	LOAD	(VA):		12145 V	4	12127	VA	1146	0 VA						
			ТОТА	AMPS	:		102 A		102 <i>F</i>	4	95	Α						
LOAD		NNECTED LOAD	DEMAND FACTOR	NEC	DEMA	ND	PANELBOA	RD NO	DTES								PANELBOARD TOTALS	
		0 VA	100%		0 VA												TOTAL CONNECTED LOAD	35731 VA
		0 VA	0%		0 VA		1											
		3000 VA	100%		3000 V		4										TOTAL NEC LOAD	35767 VA
		521 VA	125%		351 VA		+										TOTAL CONNECTED CURRENT	99 A
		720 VA 150 VA	100% 100%		720 VA 150 VA		+										TOTAL NEC DEMAND CURRENT	
		000 VA	100%		000 VA		+										TOTAL NEG DEWIAND GURKENT	99 A
		2700 VA	100%		700 VA		1											
		0 VA	100%		0 VA		1											
SIGN	DISPLAY (D)	0 VA	125%		0 VA]											
		440 VA	90%		296 VA		1											
		200 VA	125%		250 VA		1											
		0 VA	125%		0 VA		4											
LIKAC	K LIGHTING	0 VA	100%		0 VA													

PANELBOARD: HLT	N (NEW)								ULT CURREI CRATED:	NT:		ER TO (-LINE			EQUIPMENT	GROUND BUS
BUS AMPS: 100A									RATED.			4 +10% N		A I I I I A				
MAIN SIZE/TYPE: 50A M.C.B.									RVES:			RTH TICI	KEI	ROOTH				
VOLTS/PHASE: 120/208 V 1P/3W									OUNTING:			RFACE						
SUPPLIED BY: HLP								LO	CATION:		Tick	et Booth	- No	orth N3-101				
																	LINE-SIDE LUGS:	MECHANICAL
CKT DESCRIPTION NO.		LOAD N	NOTES		BKR F		I	PHASE A		Р	PHASE B		Р	BKR WIRE	NOTES	LOAD TYPE	DESCRIPTION	CKT NO.
1 UH-1 (3KW)		H H		12	20 2)	1500		0				1	20			SPARE	2
3		''		'-		_	1000			1500		0	<u> </u>				SPARE	4
5 RCPT - TICKET WINDOW	1	R		12	20	1	360		0				1				SPARE	6
7 RCPT - GENERAL		R		12	20					360		0	1				EQUIPPED SPACE	8
9 LTG - NORTH TICKET BO	OTH	L		12	20 '	1	394		0		1		1				EQUIPPED SPACE	10
11 SPARE					20	1		·		0		0	1				EQUIPPED SPACE	12
			TOTAL L	LOAD	(VA):		2	254 VA		18	860 VA							
			TOTAL A	AMPS:				21 A			18 A							
LOAD TYPE	CONNECTED		MAND CTOR	NEC	DEMAN	ID PA	NELBC	DARD N	OTES								PANELBOARD TOTALS	
EXISTING LOAD (E)	0 VA	10	00%		0 VA												TOTAL CONNECTED LOAD	4114 VA
COOLING (C)	0 VA)%		0 VA												TOTAL CONNECTED LOAL	4114 VA
HEATING (H)	3000 VA		00%		000 VA												TOTAL NEC LOAD	4213 VA
LIGHTING (L)	394 VA		25%		93 VA												TOTAL CONNECTED CURRENT	- 20 A
RECEPTACLES (R)	720 VA		00%		20 VA													
MOTORS (M)	0 VA		00%		0 VA												TOTAL NEC DEMAND CURRENT	20 A
SUPPLEMENTAL HEAT (U)	0 VA		00%		0 VA													
MISC EQUIP (Z)	0 VA		00%		0 VA													
REFRIGERATION (F) SIGN/DISPLAY (D)	0 VA 0 VA		00% 25%		0 VA 0 VA													
KITCHEN (K)	0 VA		00%		0 VA 0 VA													
LARGEST MOTOR	0 VA		25%		0 VA 0 VA													
SHOW WINDOW (W)	0 VA		25%		0 VA													
TRACK LIGHTING	0 VA		00%		0 VA													

PANELBOARD: HLT	S (NEW)					FAULT C AIC RAT	CURRENT: REFER ED: FULLY F					EQUIPMENT GF	ROUND BUS
BUS AMPS: 100A						AIC RAT		0% MINIMUM					
MAIN SIZE/TYPE: 50A M.C.B.						SERVES		TICKET BOOTH					
VOLTS/PHASE: 208Y/120 V 3P/4W						MOUNTI	NG: SURFAC	E					
SUPPLIED BY: TO BE DETERMINE	ΕD					LOCATION	ON: Ticket Bo	ooth - South N3-102					
												LINE-SIDE LUGS: M	ECHANICAL
CKT DESCRIPTION	l _I	.OAD	NOTES	WIRE	BKR P	PHASE	PHASE	PHASE	PBKR	WIRE NOTES	LOAD	DESCRIPTION	СКТ
NO.		YPE		SIZE		A	B	C		SIZE	TYPE		NO.
1 UH-2 (3KW)		Н		12	20 2	1500 0			1 20			SPARE	2
3							1500 0		1 20			SPARE	4
5 RCPT - WINDOW 1		R		12	20 1			180 0	1 20			SPARE	6
7 RCPT - GENERAL AND EX	TERIOR	R		12	20 1	360 0			1			EQUIPPED SPACE	8
9 LTG - SOUTH TICKET BOO		L		12	20 1		394 0		1			EQUIPPED SPACE	10
11 PWR - AUTOMATIC GATE	OPENER	Z		6	20 1			1164 0	1			EQUIPPED SPACE	12
			TOTAL	LOAD	(VA):	1860 VA	1894 VA	1344 VA					
			TOTAL	AMPS:		16 A	16 A	11 A					
LOAD TYPE	CONNECTED	DE	MAND	NEC	DEMAND	PANELBOARD N	OTES					PANELBOARD TOTALS	
	LOAD		CTOR										
EXISTING LOAD (E)	0 VA	1	100%		0 VA							TOTAL CONNECTED LOAD	5098 VA
COOLING (C)	0 VA		0%		0 VA							TOTAL CONNECTED LOAD	5098 VA
HEATING (H)	3000 VA		100%		00 VA							TOTAL NEC LOAD	5197 VA
LIGHTING (L)	394 VA		125%	1	93 VA							TOTAL CONNECTED CURRENT	14 A
RECEPTACLES (R)	540 VA		100%		40 VA								
MOTORS (M)	0 VA		100%		0 VA							TOTAL NEC DEMAND CURRENT	14 A
SUPPLEMENTAL HEAT (U)	0 VA		100%		0 VA								
MISC EQUIP (Z)	1164 VA		100%		64 VA								
REFRIGERATION (F)	0 VA		100%		O VA								
SIGN/DISPLAY (D) KITCHEN (K)	0 VA 0 VA		125% 100%		0 VA 0 VA	_							
LARGEST MOTOR	0 VA		125%		0 VA 0 VA								
SHOW WINDOW (W)	0 VA		125%		0 VA 0 VA								

PANELBOARD LEGEND
ABBREVIATIONS V1.00
AF 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-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. V VERIFY EXISTING 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. Z CORRECT/REPAIR EXISTING HAZARD TO MAKE CODE COMPLIANT INSTALLATION.
NOT ALL ABBREVIATIONS ARE USED.

BUS A MAIN VOLTS	NELBOARD: HLP AMPS: 225A SIZE/TYPE: 150A M.C.B. S/PHASE: 208Y/120 V 3P/4W LIED BY: HHP VIA THL	(EXISTING	i)				FAULT C AIC RAT AIC RAT SERVES MOUNTI LOCATIO	ING: FCA + : PRES NG: SURF	Y RATED 10% MINIM S BOX				EQUIPMENT GR LINE-SIDE LUGS: ME	
CKT	DESCRIPTION		OAD	NOTES		BKR P	PHASE	PHASE	Р	HASE	P BKR WIRE NOTES		DESCRIPTION	CK-
NO.	EX - 6 RECEPTACLES H10		YPE		SIZE	20 1	A 1080 720	В		С	AMP SIZE	TYPE	EX - 4 RCPT ELEC RM	NO 2
3	EX - 4 RECEPTACLES H10					20 1	1000 120	720 720			1 20		EX - 4 RCPT H108,109	4
5	EX - 2 RECEPTACLES LAV	ÁTORIES				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 1250		1050	1 20		EX - HAND DRYER H108 NW	10
11 13	EX - HAND DRYER H102 EX - HAND DRYER H102					20 1	1250 500	7	1250	1250	1 20 1 20	-	EX - HAND DRYER H108 SW EX - HAND DRYER H108 SE	12 14
15	EX - 2 RECEPTACLES H10	2				20 1	1230 300	360 500			1 20		EX - TM2 & JCI	16
17	RCPT - VIDEO DECK NORT		R	R	12	20 1		000 000	720	540	1 20		EX - POWER FOR SECURITY	18
19	RCPT - VIDEO DECK CENT		R	R	12	20 1	720 1000]			1 20		EX - 3 RCPT CONCESSION	20
21	EX - RCPT LEVEL 2 PRESS	BBOX WEST	R		EX	20 1	1	720 1000			2 50		EX - COFFEE URN NORTH	22
23	EX - RCPT VISITOR COACI		R		EX	20 1			360	1000				24
25	EX - RCPT COMMAND CE		R		12	20 1	360 1000	400			2 50		EX - COFFEE URN SOUTH	26
27	RCPT - PRESSBOX LVL2 V		R	R R	12	20 1		180 360	720	500	1 50		EX - HOT COCOA DISP NORTH	28
29 31	RCPT - VIDEO DECK SOOT		R	K	12	20 1	500 500	7	120	500	1 20		EX - HOT COCOA DISP NORTH	30
33	EX - RCPT HOME COACH	1 0	R		12	20 1	300 300	540 500			1 20	+	EX - NACHO WARMER 4 RCPT	34
35	EX - POPCORN				1.2	20 1		3.3 300	500	750	1 20	+	EX - HOT DOG GRILL NORTH	36
37	RCPT - VIDEO DECK WES	TWALL	R	R	12	20 1	1080 750				1 20		EX - HOT DOG GRILL SOUTH	38
39	EX - ICE CUBE CONCESSI					20 1	,	800 1000)		1 20		EX - 2 RCPT N&S BUN WARMER	40
41	RCPT - COMMAND CTR HI	JDL CAM	R	R	12	20 1		7	180	500	1 20		EX - POPCORN POPPER S	42
43	EX - REFRIG EAST H106					20 1	1000 0	1000			1 20		SPARE	44
45	EX - REFRIG WEST H106					20 1		1000 540		F 4 0	1 20		EX - FIELD OUTLETS 1	46
47 49	EX - FREEZER EAST H106 EX - FREEZER WEST H106					20 1	800 540	7	800	540	1 20 EX	R	EX - FIELD OUTLETS 2 RCPT - PRESSBOX CMD DATARACK	48 (50
51	EQUIPPED SPACE	,				1	000 340	0 0			1 20 LX	T N	SPARE	52
53	RCPT - ESP1 SUMP PUMP		М	N	12	20 1		0	1176	360	1 20		EX - 2 RCPT CONCESSION U/C N&S	
55	EX - SOUTH OH DOOR					20 1	500 360			1	1 20		EX - RCPT CONCESSION U/C CENTE	ER 56
57	EX - NORTH OH DOOR					20 1		500 540			1 20		SPARE	58
59	EX - 2 RCPT OUTSIDE CON					20 1		٦	360	360	1 20		EX - RCPT - PRESBOX SOUTH,EAST	
61	EX - GFI NORTH END BLEA	ACHERS				20 1	180 250	E00 250			1 20 1 20		EX - LTG CONTACTOR CONTROL PO EX - HEAT CONT CONTROL POWER	
63 65	EX - LOAD EX - GFI FIELD COMM BOX	/ NI				20 1		500 250	180		1 20		EX - HEAT CONT CONTROL POWER	64
67	HLTN		LR	N	OL	50 2	2254]	100		-			68
69	- 112114		- '`	.,			2204	1860						70
71	RCPT - ELEV TOP OF SHA	FT	R	N	12	20 1			180	0	1		EQUIPPED SPACE	72
73	RCPT - ELEVATOR PIT MT		R	N	12	20 1	180 0			-	1		EQUIPPED SPACE	74
75	PWR - ELEVATOR CAB HV		Z	N,LO	12	20 1		250 0			1		EQUIPPED SPACE	76
77	PWR - ELEVATOR COMMS	3	Z	N	12	20 1		٦	250	0	1		EQUIPPED SPACE	78
79	SPARE AC-1 ELEVATOR COOLING	`	_	N	10	20 1 15 2	0 0	530 0			1		EQUIPPED SPACE EQUIPPED SPACE	80
81 83	AC-1 ELEVATOR COOLING	,	С	IN IN	10			530 0	530	0	1		EQUIPPED SPACE	82 84
- 00	1			T							1		EQUITED OF NOE	01
				TOTAL	LOAD	(VA):	18024 VA	15870 VA	14	086 VA				
				TOTAL	AMPS:		152 A	135 A		117 A				
LOAD	TYPE	CONNECTED		EMAND	NEC	DEMAND	PANELBOARD NO	OTES					PANELBOARD TOTALS	
EVICT	ING LOAD (E)	LOAD 34650 VA		ACTOR 100%	21	650 VA								
	ING (C)	1061 VA		0%		0 VA	_						TOTAL CONNECTED LOAD	47981 V
	ING (H)	3000 VA		100%		00 VA	_						TOTAL NEC LOAD	47313 V
LIGHT	ΓING (L)	394 VA		125%	4	93 VA								
RECE	PTACLES (R)	7200 VA		100%		200 VA							TOTAL CONNECTED CURRENT	133 A
	DRS (M)	0 VA		100%		0 VA							TOTAL NEC DEMAND CURRENT	131 A
	LEMENTAL HEAT (U)	0 VA		100%		0 VA	_							
	EQUIP (Z) IGERATION (F)	500 VA 0 VA		100%		00 VA 0 VA	_							
	DISPLAY (D)	0 VA		125%		0 VA 0 VA	_							
	HEN (K)	0 VA		100%		0 VA 0 VA	_							
	EST MOTOR	1176 VA		125%		70 VA								
	V WINDOW (W)	0 VA		125%		0 VA								
	K LIGHTING (0 VA		100%		0 VA								

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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

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

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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



REVISIONS DESCRIPTION

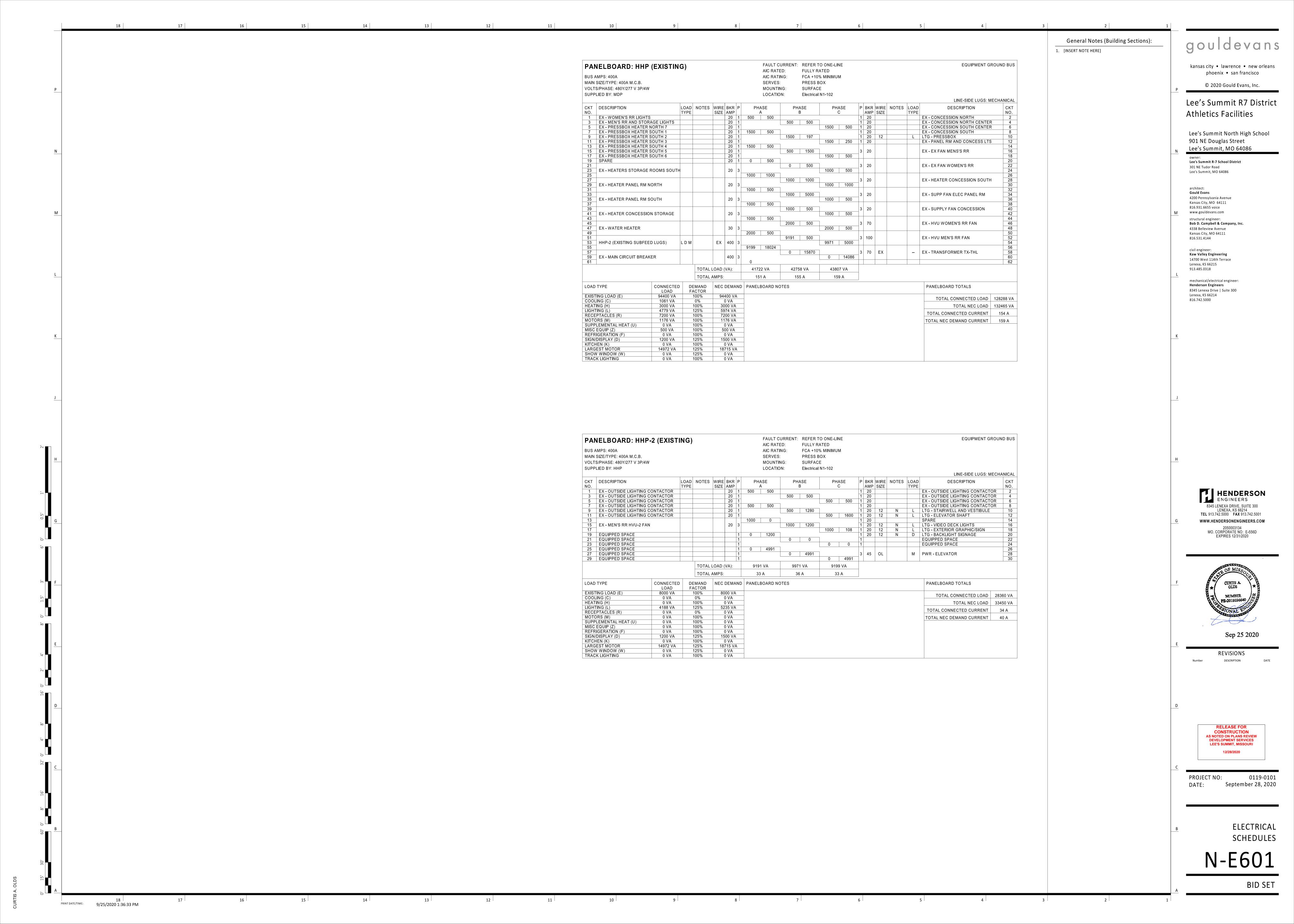
RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI 12/28/2020

PROJECT NO: DATE:

0119-0101 September 28, 2020

> ELECTRICAL SCHEDULES

BID SET



			STAND-ALONE LOW-VOLTAGE LIGHTING CONTROL SYSTEMS			
2) (1 4 5 6 1			STAND-ALONE LOW-VOLTAGE OCCUPANCY SENSORS	201/504.05		
SYMBOL TAG	MANUFACTURER MODEL/SERIES	ALTERNATE MANUFACTURER	DEVICE DESCRIPTION	COVERAGE	VOLTAGE	NOTES
IAG	LEGRAND	ACUITY, COOPER	CEILING MOUNT DUAL TECHNOLOGY OCCUPANCY SENSOR.	(W X D) PIR MAJOR 36' Ø	24	NOTES
<u> </u>	DT-300	HUBBELL, LEVITON	360 DEGREE COVERAGE, LOW VOLTAGE, ISOLATED RELAY.	PIR MINOR 25' Ø	24	
$((\widehat{ \underbrace{ \mathbb{A}}}))$	D1-300	HUBBELL, LEVITON	300 DEGREE COVERAGE. LOW VOLTAGE. ISOLATED RELAT.	ULT 36' x 36'		
$((\widehat{\underline{\mathbb{B}}}))$	LEGRAND	ACUITY, COOPER	CEILING/WALL MOUNT PASSIVE INFRARED OCCUPANCY SENSOR.	MAJOR 50' Ø	24	
	CB-100	HUBBELL	90 DEGREE COVERAGE. LOW VOLTAGE. GASKETED AND WATERTIGHT.	MINOR 25' Ø		
			RATED FOR -40 DEGREES FAHRENHEIT.			
			STAND-ALONE LOW-VOLTAGE PHOTOELECTRIC SWITCHES			
YMBOL	MANUFACTURER	ALTERNATE				
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION	I 	VOLTAGE	NOTES
PC	LEGRAND EM-24D2	ACUITY HUBBELL LEVITON	EXTERIOR LOW-VOLTAGE PHOTOELECTRIC SWITCH. FACE SENSOR NORTH AND ORIE VERTICALLY. 0-15 FC.	:NT	24	
		LLVIIOIV	STAND-ALONE LOW-VOLTAGE POWER PACKS			
SYMBOL	MANUFACTURER	ALTERNATE	THE PROPERTY OF THE PROPERTY AND THE PRO			
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION		VOLTAGE	NOTES
	LEGRAND	ACUITY, COOPER	POWER PACK FOR LOW VOLTAGE OCCUPANCY SENSORS. 20A LOAD. (1) RELAY. MAN	UAL-	120/	
BZ	BZ-250	HUBBELL, LEVITON	AND AUTO-ON MODES. HOLD-ON AND -OFF INPUTS. LOAD: 16A AT 120V OR 277V. OUTPUT: 225mA AT 24V. PLENUM RATED.		277	
(Pd)	LEGRAND	ACUITY, COOPER	POWER PACK FOR LOW VOLTAGE OCCUPANCY SENSORS. 20A LOAD. (2) RELAYS. MA	NUAL-	120/	
(B1)	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) RELA		120/	
	LMRC-212	HUBBELL, LEVITON	MANUAL AND AUTO-ON MODES. HOLD-ON AND -OFF INPUTS. LOAD: 16A AT 120V OR 27	77V.	277	
			OUTPUT: 225mA AT 24V. PLENUM RATED.			
			0-10V DIMMING CONTROL. STAND-ALONE LOW-VOLTAGE SWITCHES			
YMBOL	MANUFACTURER	ALTERNATE				
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION		VOLTAGE	NOTES
	LEGRAND	ACUITY, COOPER	MOMENTARY 1-BUTTON DECORATOR SWITCH FOR MANUAL ON/OFF CONTROL OF STA	AND-	24	
\$ LV	DCC2	HUBBELL, LEVITON	ALONE LOW-VOLTAGE OCCUPANCY SENSORS. INTEGRAL LED ILLUMINATES WHEN LOON.	OAD IS		
. D	LEGRAND	ACUITY, COOPER	4-BUTTON LOW VOLTAGE SWITCH FOR ON/OFF AND DIMMING CONTROL OF 2 RELAYS		24	
\$ ^D	LMSW-104	HUBBELL, LEVITON				
			AUXILIARY NETWORK LIGHTING EQUIPMENT			
SYMBOL	MANUFACTURER	ALTERNATE	AOVIEW HELLMONY FIGHTING FACILIMENT			
TAG	MODEL/SERIES	MANUFACTURER	DEVICE DESCRIPTION		VOLTAGE	NOTES
	LEGRAND	ACUITY, CRESTRON	ZONE CONTROLLER. ASTRONOMIC TIMECLOCK. 99 LIGHTING GROUPS. BACNET MS/TF)	120/	
ZC	LMCZ-301	ETC, HUBBELL	COMPATIBLE. (2) RJ45 PORTS. SURFACE MOUNTED. PLENUM RATED. PROVIDE DLM 24	¥V	277	
			POWER BOOSTERS AS REQUIRED PER SYSTEM DESIGN.			
NERAL NO						

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

CONDUCTORS INCLUDING NEUTRALS, MC CABLE IS NOT ALLOWED).

TO OTHER

FIXTURE RUNS.

- 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__ TO SWITCHES FIXTURE | -WHIP (TYPICAL)

4 LIGHTING STANDARD LUMINAIRE WIRING NTS



UNIVERSAL MOUNT LED EXIT SIGN.

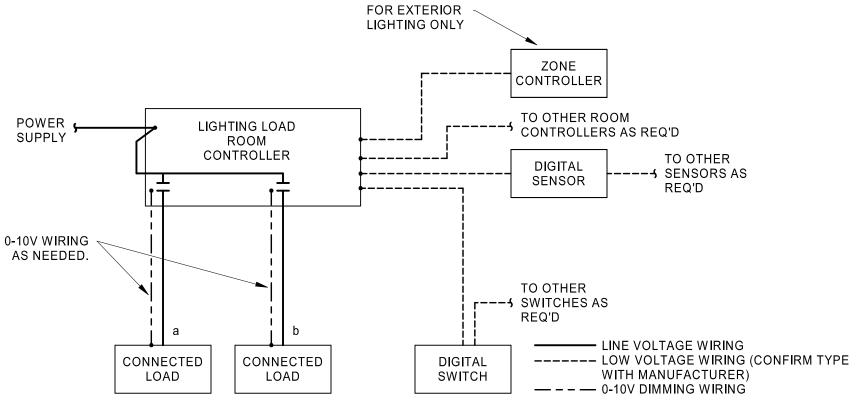
LIGHT FIXTURE SCHEDULE GENERAL NOTES:

- 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 AN ALTERNATE BID FOR OWNER FURNISHED LIGHT
- 3. THE PARTY SUPPLYING THE LIGHT FIXTURES IS RESPONSIBLE FOR SUPPLYING THE PROPER QUANTITY OF LIGHT FIXTURES.

LIGHT FIXTURE SCHEDULE SUPPLEMENTAL SPECIFICATIONS:

FIXTURES.

- 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.
- 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.



HE WILLIAMS

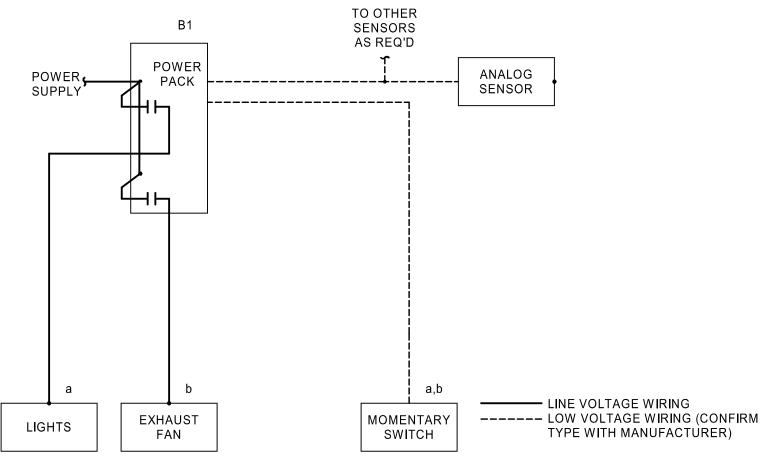
1. REFER TO LIGHTING CONTROL DEVICE SCHEDULE FOR DEVICE AND EQUIPMENT SPECIFICATIONS.

INTEGRAL

LED

- 2. QUANTITY OF RELAYS SHOWN IS GENERIC. REFER TO PLANS, LIGHTING CONTROL DEVICE SCHEDULE, AND SHOP DRAWINGS FOR FINAL QUANTITY PER ROOM CONTROLLER.
- 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 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. 5. PROVIDE SYSTEM COMMISSIONING AS REQUIRED PER ENERGY CODE.

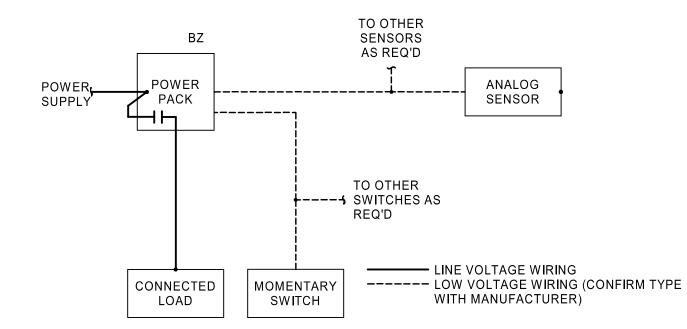
3 ROOM CONTROLLER DETAIL - ON/OFF OR ON/OFF/0-10V DIMMING CONTROL NTS



DIAGRAMS FOR INSTALLATION.

- 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
- 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
- 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



- 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.
- 5. PROVIDE SYSTEM COMMISSIONING AS REQUIRED PER ENERGY CODE.

OCCUPANCY SENSOR DETAIL - SINGLE POWER SUPPY AND SWITCH NTS

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

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DESCRIPTION

REVISIONS



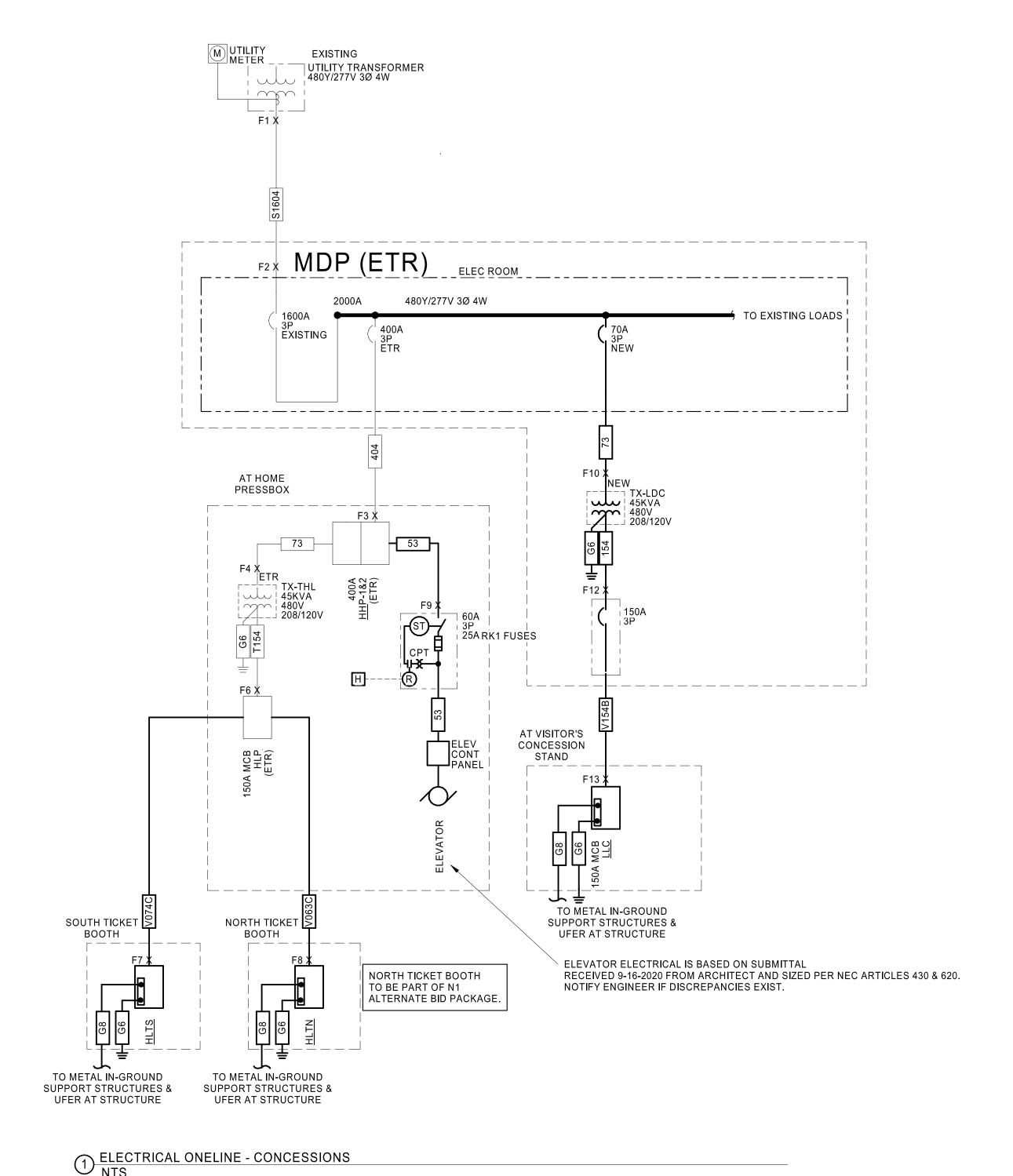
PROJECT NO:

September 28, 2020

LIGHTING SCHEDULES

BID SET

9/25/2020 1:36:38 PM



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

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) LIGHTING (L) (PER NEC-220) 5.30 125% 6.63 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

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.
- INSTALL FEEDERS OVERHEAD AS HIGH AS PRACTICABLE AND ORTHOGONALLY ALONG BUILDING STRUCTURE, UNLESS NOTED OTHERWISE. COORDINATE FINAL ROUTING WITH OTHER TRADES.
- 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
- SCCR = 65,000AMAX 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 " 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.

CONSTRUCTION:

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
- 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
- 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

SPACE UTILITY METER AND SERVICE DISCONNECT,

- 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
- THE DEVICE. E. AIC/SCCR RATING AT EACH EXISTING SWITCHBOARD/PANELBOARD.

ONE-LINE DIAGRAM SUPPLEMENTAL SPECIFICATIONS:

- 1. 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.
- 4. 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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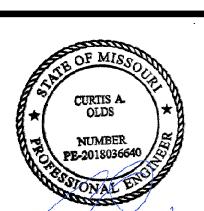
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EXPIRES 12/31/2020



REVISIONS DESCRIPTION

RELEASE FOR CONSTRUCTION **AS NOTED ON PLANS REVIEW DEVELOPMENT SERVICES** LEE'S SUMMIT, MISSOURI

PROJECT NO: September 28, 2020

12/28/2020

ELECTRICAL ONE-LINE

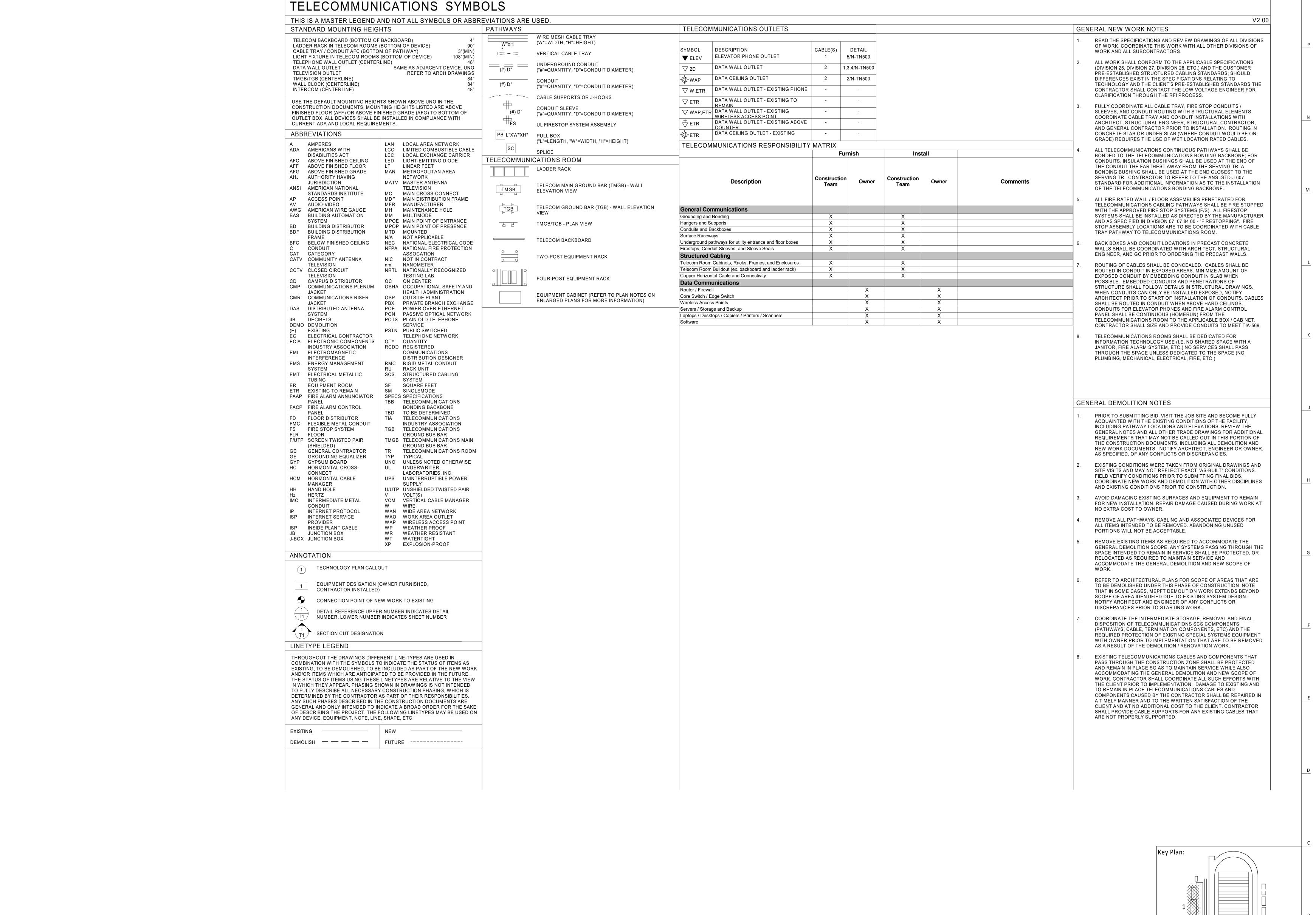
DIAGRAM

BID SET

Short-Circuit and V	onage brop	Caicu	lation	5																				
Distances are for calculation purposes only and shall no	t be used for contractor takeoffs	nor bidding - Contra	actor shall notify	/ Engineer of any field	d condition that results	s in a change of ²	10% or greate	r circuit distand	ce															
The following calculations are based on the "P	oint-by-Point" method where:															VOLTA	GE DROP (3Ø):						
$ISC(2) = ISC(1) \times M(1)$	M = 1/(1+f)		F	Feeder: f (3Ø)	= <u>1.732 x L x lsc</u>		XFMR:	f (3Ø) = <u>II</u>	P(sca)x Vp x 1.73 x	: %Z	IS(sca)=	Vp x M x IP(sc	<u>a)</u>			%V	D= ((R x cos	s(arccos(pf)) + X	x sin (arcco	os(pf))) x L/#	x I x 1.73) / [
ISC (1) = short circuit current at fault point 1					CxE			1	100,000 x KVA			Vs				VOLTA	GE DROP (1Ø):						
ISC (2) = short circuit current at fault point 2			F	Feeder: f (1Ø))= <u>2 x L x lsc</u> C x E		XFMR:	-	<u>P(sca)x Vp_x %Z</u> I00,000 x KVA							%V	D= ((R x cos	s(arccos(pf)) + X	x sin(arccos	s(pf))) x 2 x L	/# x I) / E			
IP = Primary short circuit current																								
Vp = Primary voltage																								
IS= Secondary short circuit current																	%VD CUM	l= Cumulative Vo	oltage Drop	from Fault P	oint 1 to Fau	It Point #		
Vs= Secondary voltage																	R	R= resistance in o	ohms per LF	=				
L = Length of circuit	E = Line to I																Х	<= reactances in	ohms per L	F				
C = "C" Factor from Bussman table w	/here "C" = 1 / impedance per lir	ear foot																						
Feeder Types =																								
•																								
NM - Non Magnetic Conduit, M - Magnetic Cor	nduit, FB - Feeder Busway, PB -	Plug-in Busway, TX	: - Transformer																					
NM - Non Magnetic Conduit, M - Magnetic Con		Plug-in Busway, TX	: - Transformer				T					Conductor		T		Tranci	ormor				1		System Voltaç	ge: 480Y/277V - 3 pha
NM - Non Magnetic Conduit, M - Magnetic Con	Source	Source Isc		Feeder	J.O. to and D. at Photo	Conductor 'C'	Busway 'C'	L-L Voltage	Circuit Load Po		Builden	Conductor	Arceas (pf)		D	Transi		0		f	M	Fault	Voltage	Cumulative Faul
NM - Non Magnetic Conduit, M - Magnetic Confunction Fault Point Bus/Feeder Description	Source	Source Isc	uit Matarial	Feeder Quantity of Paralle	el Sets and Bus/ Phas eutral Size	Conductor 'C' Value	Busway 'C' Value	L-L Voltage (E)	Circuit Length (L) Load Po Factor			Reactance	Arccos (pf)	Туре	Degree Rise		ormer mr Existing Xfmr Z		Tap Setting	f	M	Current	Voltage	
NM - Non Magnetic Conduit, M - Magnetic Cond	Source (Fault Phase	Source Isc (amps) Cond Type/	uit TX Material	Feeder Quantity of Paralle					Length Load Po		Resistance		Arccos (pf) (Radians)	Туре	Degree Rise	Now Y	mr Existing	. Voltage	Setting	f		Current (amps)	Voltage Drop (%VD)	Cumulative Faul Voltage Drop Poin
NM - Non Magnetic Conduit, M - Magnetic Cond	Source (Fault Phase	Source Isc (amps) Cond Type/	uit TX Material econdary of the	Feeder Quantity of Paralle & Ne utility transformer	eutral Size	Se Value			Length Load Po		Resistance	Reactance		- Type	Degree Rise	Now Y	mr Existing	. Voltage	Setting	f - 6X Motor C		Current	Voltage Drop (%VD)	Cumulative Faul Voltage Drop Poin (%VD) (F#)
Fault Point (F#) 1 Utility Service Point	Source (Fault Phase	Source Isc (amps) Cond Type/	uit TX Material econdary of the	Feeder Quantity of Paralle & Ne utility transformer		Se Value			Length Load Po	(pf) (Amperage	Resistance	Reactance		Туре	Degree Rise	Now Y	mr Existing	. Voltage	Setting	f + 6X Motor C		Current (amps)	Voltage Drop (%VD)	Cumulative Faul Voltage Drop Poin (%VD) (F#)
Fault Point (F#) 1 Utility Service Point Motor Contribution	Source (Fault Point) Phase	Source Isc (amps) Cond Type/ 51,742 at the source Source Isc (amps) Type/	uit TX Material econdary of the nnected full load CU	Feeder Quantity of Paralle & Ne utility transformer d motor amps (include	eutral Size es compressors) on th	Nalue ne system	Value	(E)	Length (L)	(pf) (Amperage	Resistance (R)	Reactance (X)	(Radians)	- Type	Degree Rise	Now Y	mr Existing	. Voltage	Setting		ontribution =	Current (amps) 54622	Voltage Drop (%VD)	Cumulative Faul Voltage Drop (%VD) (F#)
Fault Point (F#) 1 Utility Service Point Motor Contribution 2 MDP	Source (Fault Phase Point)	Source Isc (amps) Cond Type/ 51,742 at the source 480 The cor 54622 M	uit TX Material econdary of the nected full load CU CU	Feeder Quantity of Paralle & Ne utility transformer d motor amps (include 5 Set(s) of	eutral Size es compressors) on the 400 kcmil	Nalue ne system 20566	Value	(E) 480	Length (L) Factor 60 0.9	(pf) (Amperage	Resistance (R) 0.000035	Reactance (X) 0.000049	(Radians) 0.451027	- Type	Degree Rise	Now Y	mr Existing	. Voltage	Setting	0.115	ontribution =	Current (amps) 54622 48988	Voltage Drop (%VD)	Cumulative Voltage Drop (%VD) Faul Poin (F#)
Fault Point (F#) 1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2	Source (Fault Point) Phase S 1 3 2 3	Source Isc (amps) Cond Type/ 51,742 at the source 480 The cord 54622 M 48988 M	uit TX Material econdary of the nected full load CU CU CU	Feeder Quantity of Paralle & Ne utility transformer d motor amps (include 5 Set(s) of 2 Set(s) of	eutral Size es compressors) on the 400 kcmil 3/0 AWG	Nalue Ne system 20566 12844	Value	(E) 480 480	Length (L) Factor 60 0.9 500 0.9	(pf) (Amperage	0.000035 0.000079	Reactance (X) 0.000049 0.000052	(Radians) 0.451027 0.451027	- Type	Degree Rise	Now Y	mr Existing	. Voltage	Setting	0.115 3.441	0.90 0.23	Current (amps) 54622 48988 11032	Voltage Drop (%VD) -0.14% -1.69%	Cumulative Voltage Drop (%VD) -0.14% 2 -1.83% Faul Poin (F#) 7 -1.83%
Fault Point (F#) 1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL	Source (Fault Point) Phase S 1 3 2 3 3 3	Source Isc (amps) Cond Type/ 51,742 at the sr 480 The cor 54622 M 48988 M 11032 M	uit TX Material econdary of the nected full load CU CU CU	Feeder Quantity of Paralle & Ne utility transformer d motor amps (include 5 Set(s) of 2 Set(s) of	eutral Size es compressors) on the 400 kcmil 3/0 AWG	Nalue Ne system 20566 12844	Value	480 480 480 480	Length (L) Factor 60 0.9 500 0.9	(pf) (Amperage 600 200 56	0.000035 0.000079	Reactance (X) 0.000049 0.000052	(Radians) 0.451027 0.451027	Туре	Rise	kVA New XI	mr Existing Xfmr Z	. Voltage S	Setting	0.115 3.441 0.105	0.90 0.23 0.91	Current (amps) 54622 48988 11032 9987	Voltage Drop (%VD) -0.14% -1.69%	Cumulative Voltage Drop (%VD) Faul Poin (F#) -0.14% 2 -1.83% 3 -1.89% 4
Fault Point (F#) Bus/Feeder Description 1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL 5 TX-THL	Source (Fault Point) 1 3 2 3 3 3 4 3	Source Isc (amps) Cond Type/ 51,742 at the so 480 The cor 54622 M 48988 M 11032 M 9987 TX	uit TX Material econdary of the nected full load CU CU CU	Feeder Quantity of Paralle & Ne e utility transformer d motor amps (include 5 Set(s) of 2 Set(s) of 1 Set(s) of	eutral Size es compressors) on the 400 kcmil 3/0 AWG 4 AWG	Nalue Ne system 20566 12844 3806	 	480 480 480 480 480	60 0.9 500 0.9 10 0.9	(pf) (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	Туре	Rise	kVA New XI	mr Existing Xfmr Z	. Voltage S	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) Faul Poin (F#) -0.14% 2 -1.83% 3 -1.89% 4 -1.89% 5
Fault Point (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 3 2 3 3 3 4 3 5 3	Source Isc (amps) Cond Type/ 51,742 at the second Type/ 480 The cor 54622 M 48988 M 11032 M 9987 TX 2254 M	uit TX Material econdary of the nected full load CU CU CU	Feeder Quantity of Paralle & Ne e utility transformer d motor amps (include 5 Set(s) of 2 Set(s) of 1 Set(s) of 1 Set(s) of	es compressors) on the 400 kcmil 3/0 AWG 4 AWG 1/0 AWG	Nalue Nalue Nalue 20566 12844 3806 8925	 	480 480 480 480 480 208	60 0.9 500 0.9 10 0.9 20 0.9	(pf) (Amperage) 600 200 56 120 20	0.000035 0.000079 0.000310	Reactance (X) 0.000049 0.000052 0.000060 0.000055	(Radians) 0.451027 0.451027 0.451027 0.451027	Туре	Rise	kVA New XI	mr Existing Xfmr Z	. Voltage S	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% -6
Fault Point (F#) 1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL 5 TX-THL 6 HLP 7 HTLS	Source (Fault Point) 1 3 2 3 3 3 4 3 5 3 6 3	Source Isc (amps) Cond Type/ 51,742 at the simulation Amplification Ampl	uit TX Material econdary of the nected full load CU	Feeder Quantity of Paralle & Ne tutility transformer motor amps (include 5 Set(s) of 2 Set(s) of 1 Set(s) of 1 Set(s) of 1 Set(s) of 1 Set(s) of	es compressors) on the 400 kcmil 3/0 AWG 4 AWG 1/0 AWG 1 AWG	Nalue Na	 	480 480 480 480 480 208 208	60 0.9 500 0.9 10 0.9 20 0.9 270 0.9	(pf) (Amperage 600 200 56 120 20 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	Туре	Rise	kVA New XI	mr Existing Xfmr Z	. Voltage S	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% -2.15% -2.91% Faul Poin (F#) Faul Poin (F#) Faul Poin (F#) 6 Faul Poin (F#) 5 6 Faul Poin (F#) 6 7
Fault Point (F#) 1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL 5 TX-THL 6 HLP 7 HTLS 8 HTLN	Source (Fault Point) 1 3 2 3 3 3 4 3 5 3 6 3 6 1	Source Isc (amps) Cond Type/ 51,742 at the side A8988 M 11032 M 9987 TX 2254 M 2163 M 2163 M	uit TX Material econdary of the econdary of the cu	Feeder Quantity of Paralle & Ne tutility transformer motor amps (include 5 Set(s) of 2 Set(s) of 1 Set(s) of	es compressors) on the 400 kcmil 3/0 AWG	Nalue Ne system 20566 12844 3806 8925 7293 5907		480 480 480 480 480 208 208 208	60 0.9 500 0.9 10 0.9 20 0.9 270 0.9 200 0.9	(pf) (Amperage 600 200 56 120 20 20 18	0.000035 0.000079 0.000310 0.000120 0.000160 0.000200	Reactance (X) 0.000049 0.000052 0.000060 0.000055 0.000057	(Radians) 0.451027 0.451027 0.451027 0.451027 0.451027 0.451027	Туре	Rise	kVA New XI	mr Existing Xfmr Z	. Voltage S	Setting	0.115 3.441 0.105 9.225 0.042 0.667 0.704	0.90 0.23 0.91 0.10 0.96 0.60 0.59	Current (amps) 54622 48988 11032 9987 2254 2163 1298 1269	Voltage Drop (%VD) -0.14% -1.69% -0.06% -0.26% -0.76% -0.79%	Cumulative Voltage Drop (%VD) -0.14% -0.14% -1.83% -1.89% -1.89% 5 -2.15% 6 -2.91% 7
Fault Point (F#) 1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL 5 TX-THL 6 HLP 7 HTLS 8 HTLN 9 ELEVATOR	Source (Fault Point) Phase S S S S S S S S S S S S S S S S S S S	Source Isc (amps) Cond Type/ 51,742 at the source Isc 480 The core 54622 M 48988 M 11032 M 9987 TX 2254 M 2163 M 2163 M 11032 M	uit TX Material econdary of the inected full load CU	Feeder Quantity of Paralle & Ne e utility transformer d motor amps (include 5 Set(s) of 2 Set(s) of 1 Set(s) of	es compressors) on the 400 kcmil 3/0 AWG AWG AWG 1/0 AWG 1 AWG 2 AWG 6 AWG	Nalue Ne system 20566 12844 3806 8925 7293 5907 2425		480 480 480 480 208 208 208 208 480	60 0.9 500 0.9 10 0.9 20 0.9 270 0.9 200 0.9 100 0.8	(pf) (Amperage 600 200 56 120 20 20 18	0.000035 0.000079 0.000310 0.000120 0.000160 0.000200 0.000490	Reactance (X) 0.000049 0.000052 0.000060 0.000055 0.000057 0.000064	(Radians) 0.451027 0.451027 0.451027 0.451027 0.451027 0.451027 0.643501	Туре	Rise	kVA New XI	Existing Xfmr Z	. Voltage S	Setting	0.115 3.441 0.105 9.225 0.042 0.667 0.704 1.642	0.90 0.23 0.91 0.10 0.96 0.60 0.59 0.38	Current (amps) 54622 48988 11032 9987 2254 2163 1298 1269 4176	Voltage Drop (%VD) -0.14% -1.69% -0.06% -0.26% -0.76% -0.79% -0.28%	Cumulative Voltage Drop (%VD) -0.14% -1.83% -1.89% -1.89% 5 -2.15% 6 -2.91% 7 -2.94% 8 -2.11% 9
Fault Point (F#) 1 Utility Service Point Motor Contribution 2 MDP 3 HHP & HHP-2 4 TO TX-THL 5 TX-THL 6 HLP 7 HTLS 8 HTLN 9 ELEVATOR 10 TO TX-LDC	Source (Fault Point) 1 3 2 3 3 3 4 3 5 3 6 3 6 1 3 3 2 3	Source Isc (amps) Cond Type/ 51,742 at the second Type/ 480 The cor 54622 M 48988 M 11032 M 9987 TX 2254 M 2163 M 2163 M 11032 M 48988 NM	uit TX Material econdary of the nected full load CU	Feeder Quantity of Paralle & Ne e utility transformer d motor amps (include 5 Set(s) of 2 Set(s) of 1 Set(s) of	es compressors) on the 400 kcmil 3/0 AWG AWG AWG 1/0 AWG 1 AWG 2 AWG 6 AWG	Nalue Ne system 20566 12844 3806 8925 7293 5907 2425		480 480 480 480 208 208 208 208 480 480	60 0.9 500 0.9 10 0.9 20 0.9 270 0.9 200 0.9 100 0.8	(pf) (Amperage 600 200 56 120 20 20 18	0.000035 0.000079 0.000310 0.000120 0.000160 0.000200 0.000490	Reactance (X) 0.000049 0.000052 0.000060 0.000055 0.000057 0.000064	(Radians) 0.451027 0.451027 0.451027 0.451027 0.451027 0.451027 0.643501	ETR TP-1	150	kVA New XI	Existing Xfmr Z	Voltage S	Setting	0.115 3.441 0.105 9.225 0.042 0.667 0.704 1.642 0.693	0.90 0.23 0.91 0.10 0.96 0.60 0.59 0.38 0.59	Current (amps) 54622 48988 11032 9987 2254 2163 1298 1269 4176 28935	Voltage Drop (%VD) -0.14% -1.69% -0.06% -0.26% -0.76% -0.79% -0.28%	Cumulative Voltage Drop (%VD) -0.14% -1.83% -1.89% -2.15% -2.91% -2.94% -2.11% 9 -0.23% -1.89 -0.23% -1.89 -0.23% -1.89 -1.89% -1.89% -2.11% -1.89% -2.11% -1.89% -2.11% -1.89% -1.89% -1.89% -1.89% -2.11% -1.89% -1.89% -1.89% -2.11% -1.89%

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9/25/2020 10:06:14 AM

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Lee's Summit R7 District Athletics Facilities

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MO. CORPORATE NO: E-556D

EXPIRES 12/31/2020

REVISIONS

DESCRIPTION

RELEASE FOR
CONSTRUCTION
AS NOTED ON PLANS REVIEW
DEVELOPMENT SERVICES
LEE'S SUMMIT, MISSOURI

12/28/2020

PROJECT NO: 0

DATE:

O: 0119-0101 September 28, 2020

AND NOTES

1-TN00C

TECHNOLOGY LEGEND

