# Harry S. Truman Memorial Veterans' Hospital

800 Hospital Drive Columbia, MO 65201

VA Project No. 589A4-20-158

## RENOVATE WAREHOUSE FOR PANDEMIC PREPAREDNESS



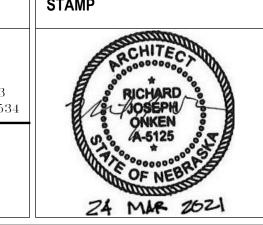
LOCATION MAP/PHOTO

NTEGRATED PROJECT TEAM APP	RATED PROJECT TEAM APPROVAL SIGNATURES	
Chief of Staff	Date	
Associate Director	Date	
Assistant Director	Date	
Associate Director of Patient Services	Date	
Executive of High Reliability	Date	
Chief of Logistics	Date	
 Infection Control	Date	
Safety Officer	Date	
 Chief Facilities Management	Date	

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ARCHITECT/ENGINEER  J. HINZ Architects, P.C.  th 200th Street	IMEG Corp. 15 Sunnen Drive, Suite 104	ice of COVER SHEET truction	Phase BID SET	RENOVATE WAREHOUSE FOR	Project Number 589A4-20-158  Building Number

03/24/2021

Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193 ncandescence life safety



U.S. Department of Veterans Affairs

**FULLY SPRINKLERED** 

Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201 G-001

Dwg. # 1 of 94

#### **ABBREVIATIONS** ANCHOR BOLT, AUGER BORING FIRE ALARM POINT OF VERTICAL CURVE PVC FLOOR DRAIN, FIRE DAMPER POLY VINYL CHLORIDE PAVEMENT FOUNDATION ACOUSTIC **ACST** FDR ADJUSTABLE RADIUS, RISER, RUBBER SHEATH FIRE EXTINGUISHER ABOVE FINISHED FLOOR RETURN AIR FIRE EXTINGUISHER CABINET AIR HANDLING UNIT RAD RADIUS FINISHED FLOOR ELEVATION **ALTERNATE** RESILIENT/RUBBER BASE FIG ALUMINUM RESINOUS EPOXY SYSTEM RIGID CONCRETE PIPE APPROX APPROXIMATE RECEPTACLE ARCHITECTURAL FLOOR, FLASHING, FLOW LINE REINFORCEMENT FLUOR FLUORESCENT **AUTOMATIC TRANSFER SWITCH** REGULATOR, REGISTER FRAME FRAME REQUIRED FTG FOOTING REVISION FIXTURE ROOF, RETURN FAN REHEAT COIL GAGE BEAM **GALVANIZED** REVOLUTIONS PER MINUTE **GROUND FAULT INTERRUPT** GFI, GFCI RESILIENT WALL COVERING **BSMT** BASEMENT GYPSUM WALL BOARD SANITARY SEWER CELSIUS GYP SEALED CONCRETE CAPACITY **SCHEDULE CENTER TO CENTER** HEIGHT, HUMIDIFIER SPLITTER DAMPER, STORM DRAIN SECTION CEILING DIFFUSER SUPPLY GRILLE CUBICAL CURTAIN TRACK HANDICAPPED SHEET CEM **HARDWARE HORIZONTAL** SIMILAR ORNER GUARD HOUR, HAND RAIL SINGLE PHASE CHILLER HOUSEKEEPING CAST IRON, COURTYARD INLET STATIC PRESSURE, SINGLE POLE **CAST IRON PIPE INTERIOR** SINGLE POLE, DOUBLE THROW CIRCULATING INSULATION, INSULATED SPECIFICATION **CONTROL JOINT** SINGLE POLE, SINGLE THROW CKT CIRCUIT IMPACT RESISTANT, INFRARED CENTERLINE IMPACT RESISTANT WALL COVERING SUPPLY REGISTER JUNCTION BOX SANITARY SEWER CEILING JANITOR CLOSET STEAM, SINGLE THROW, STREET, STAFF CORRUGATED METAL PIPE STD STANDARD CORRUGATED METAL PIPE ARCH STL STEEL KNOCK OUT CONCRETE MASONRY UNITS STRUC STRUCTURAL KILOVOLT-AMPERE SUPPORT KILOWATT CONDENSATE CNDS SUSPENDED LOUVER, LENGTH, LENGTH OF CURVE CLEANOUT SHEET VINYL COL COLUMN SWITCH, SIDEWALK LAVATORY VERTICAL COMMUNICATION LAV COMM SWITCHBOARD LUXURY VINYL TILE CONCRETE SWITCHGEAR COND CONDUCTOR METER, MEGA CONNECTION TILE,TOP,TANGENT TOP AND BOTTOM CONST CONSTRUCTION MATERIAL CONTINUOUS **TOILET ACCESSORIES** MAXIMUM TELEPHONE CONVERTER CONV TEMPERATURE, TEMPORARY NONREINFORCED CONCRETE PIPE **TERMINAL** CHAIR OR CRASH RAIL MANHOLE CONCRETE SEALER/SURFACE THREE CONDUCTOR MINIMUM, MINUTE CERAMIC TILE, CURRENT TRANSFORMER, ISC THREE POLE MILLIMETER TOP OF CENTER, COOLING TOWER RETURN MTD TRANSITION **COOLING TOWER SUPPLY** CTS MTG MOUNTING TOP OF STEEL, TOP OF STONE, TOP OF SLAB **COLD WATER** MEMBRANE WATERPROOFING **TELEVISION** CPT MULL TOP OF WALL NOT APPLICABLE DET, DTL DETAIL TYP **TYPICAL** NATIONAL ELECTRIC CODE **UNIT HEATER** DIMENSION DAMPER VENT, VOLT, VALVE NOT IN CONTRACT **VOLT AMPRE** NOM **DISTRIBUTION PANEL** VACUUM NOT TO SCALE DOWNSPOUT, STORM DRAINAGE VINYL COMPOSITION TILE STRUCTURE DOMESTIC WATER VENT VENTILATING OUTSIDE AIR VERTICAL ON CENTER VESTIBULE **OUTSIDE DIAMETER** EACH VENT STACK **OVERFLOW DRAIN** EACH FACE, EXHAUST FAN VENT THRU ROOF OPNG OPENING EXHAUST GRILLE VINYL WALL COVERING OPPOSITE **EXPANSION JOINT** OH, OVHD OVERHEAD **ELEV** ELEVATION WIDTH, WASTE, WATER, WATT, WEST, WIRE, PIPE, POLE WATER LINE STRUCTURE ELECTRIC, ELECTRICAL CLOSET ELEC PULL BOX **EMER EMERGENCY** PRE-ENGINEERED METAL BUILDING WITH **EPDM** EPDM ROOF MEMBRANE POST INDICATOR VALVE WITHOUT PLATE **EQUIP EQUIPMENT** WATER CLOSET, WHEEL CHAIR PLYWD PLYWOOD WIDTH, WINDOW DIMENSION **EACH WAY** ELECTRIC WATER COOLER WINDOW EXH EXHAUST WALL GUARD PRELIMINARY **EXIST** WATERPROOF, WEATHERPROOF EXP EXPANSION, EXPOSED POINT, POINT OF TANGENT WRB WEATHER RESISTANT BARRIER WASTE STACK, WATER SURFACE, WATERSTOP PTN PARTITION WEIGHT WELDED WIRE FABRIC

**BID SET** 

Revisions:

VA FORM 08 - 6231

## ARCHITECTURAL SYMBOLS

NOTE: NOT ALL SYMBOLS USED COLUMN NUMBER GRID LINE NEW

\_ \_ \_ \_ \_ \_ CENTER LINE DIMENSION LINE

EXISTING TO REMAIN EXISTING TO BE REMOVED

EXISTING TO REMAIN **NEW CONSTRUCTION** ROOM NAME ROOM NAME

**ROOM NUMBER** XX SP XX SP 🚤 DESIGN SF PROGRAM SF DOOR NUMBER

SYMBOL DETAIL NUMBER X-XXX/ SHEET DETAIL IS DRAWN ON

DETAIL NUMBER **ARCHITECTURAL** ELEVATION

SHEET NUMBER

**DETAIL NUMBER ARCHITECTURAL** SECTION SHEET NUMBER

ARCHITECTURAL X-XXX ELEVATION - EXTERIOR WALL / PARTITION TYPE

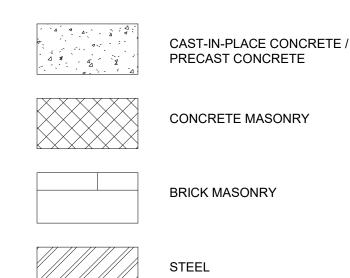
KEYNOTE - RENOVATION PLAN (U.N.O.) **KEYNOTE - DEMOLITION** PLAN

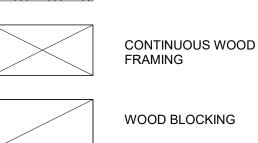
KEYNOTE - PHASING PLAN WINDOW TYPE

CEILING CODE X'-X" AFF<del>-</del> CEILING HEIGHT. ABOVE FINISH FLOOR

## MATERIAL SYMBOLS

**EARTH** 





WOOD BLOCKING

FIBROUS INSULATION

GYPSUM BOARD

ROOF INSULATION

RIGID INSULATION

## **ARCHITECTURAL GENERAL NOTES:**

1. ALL NEW CONSTRUCTION IS INDICATED BOLD OR FULL TONE.

2. ALL EXISTING CONSTRUCTION, CABINETWORK, EQUIPMENT, ETC. REMAIN IS INDICATED LIGHT OR HALF TONE. B. ALL INTERIOR WALLS WILL BE TYPE "A" CONSTRUCTION UNLESS OTHERWISE INDICATED. REFER TO SHEET G-003 FOR WALL TYPES

4. ALL METAL STUD AND GYPSUM WALLBOARD PARTITIONS ARE DIMENSIONED TO THE OUTSIDE FACE AND TO COLUMN GRID UNLESS OTHERWISE NOTED.

WHEN WALL PARTITIONS OF DIFFERENT FIRE RATING INTERSECT THE HIGHEST RATED PARTITION TAKES PRECEDENT. MAINTAIN RATING BEHIND FIRE EXTINGUISHER CABINETS, ETC.

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO CONSTRUCTION. ALL FURNITURE SHOWN HALF TONE WILL BE OWNER FURNISHED

AND OWNER INSTALLED.

REFER TO SHEET AE401 FOR LARGE SCALE PLANS AND TOILET ACCESSORIES. (TA) ALSO, REFER TO SPECIFICATION SECTION 102800 FOR ADDITIONAL TA LOCATIONS AND MOUNTING HEIGHTS. 10. REFER TO SHEET G-003 FOR TYPICAL BACKING DETAIL WITHIN

FRAMED INTERIOR WALL PARTITIONS FOR WALL-MOUNTED ITEMS

SUCH AS HANDRAILS, CORNER GUARDS ETC. 11. ALL EXISTING TO REMAIN CEILING AND WALL GRILLES, DIFFUSERS AND LIGHTS ETC. TO BE CLEANED.

MAINTAINED, REPAIRED AND EXTENDED TO STRUCTURE. 13. ALL CORRIDOR WALLS ARE REQUIRED TO BE SMOKE TIGHT, WHETHER THEY ARE FIRE RATED OR NOT. REPAIR AND EXTEND AT LEAST THE CORRIDOR SIDE OF NON-FIRE RATED CORRIDOR WALLS

TO STRUCTURE, UNLESS NOTED OTHERWISE NOTED. SEE WALL

12. VERIFY THAT THE EXISTING WALLS REQUIRING FIRE RATING ARE

TYPES SHEET. 14. REFER TO LIFE SAFETY PLANS FOR LOCATION OF REQUIRED FIRE

5. REFER TO SHEET G-003, ALONG WITH SPECIFICATION SECTIONS 092216 & 092900 FOR GYPSUM BOARD CONTROL/EXPANSION JOINT ASSEMBLIES. PROVIDE FIRE RATED EXPANSION JOINTS IN RATED FIRE RATED WALLS, REFER TO LIFE SAFETY (LS-) SERIES SHEETS FOR FIRE RATINGS.

16. REFER TO 'TEMPORARY CONSTRUCTION BARRIERS AND ENCLOSURE NOTES' FOR INFORMATION RELATED TO EXTERIOR ENCLOSURE AND PROTECTION OF EXISTING AND NEW CONSTRUCTION.

## **HAZARDOUS MAT'LS:**

CONTRACTOR SHALL COMPLY WITH THE MOST CURRENT VERSION OF OSHA'S PUBLICATION 3142-12R "LEAD IN CONSTRUCTION" (29 CFR 1926.62) FOR CONSTRUCTION ACTIVITIES THAT DISTURB LEAD-BASED PAINTED SURFACES, PAINT CONTAINING DETECTABLE LEVELS OF LEAD OR OTHER MATERIALS CONTAINING LEAD..

CONTACT THE COR TO OBTAIN MOST-CURRENT COPIES OF ASBESTOS AND LEAD BASED PAINT (LBP) REPORTS.

HAZARDOUS MATERIALS DISCLOSED IN THE ACM AND LBP REPORTS MAY NOT BE A FULL ACCOUNTING OF SUCH MATERIALS IN THE AREA OF THE FACILITY IN QUESTION. REFER TO THE VA'S ABATEMENT SPECIFICATIONS FOR HANDLING OF MATERIALS THAT WERE NOT DIRECTLY OBSERVED, BUT SHOULD BE EXPECTED BY THE ABATEMENT CONTRACTOR.

ASBESTOS CONTAINING MATERIALS (ACM) PRIOR TO ANY DEMOLITION. IF THE CONTRACTOR ENCOUNTERS MATERIAL

CONTRACTOR TO VERIFY THE ABSENCE OF

THAT COULD BE HAZARDOUS, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE GOVT. IMMEDIATELY FOR DIRECTION. ALL CONTRACTORS' PERSONNEL IN AREAS NEAR

DISTURBANCE OR ABATEMENT OF HAZARDOUS MATERIALS MUST BE NOTIFIED OF ACTIVITIES. ASBESTOS AND LEAD-BASED PAINT ABATEMENT. IF REQUIRED, SHALL BE CONDUCTED IN ACCORDANCE WITH VA SPECIFICATIONS AND ALL APPLICABLE REGULATIONS.

ABATEMENT CONTRACTORS SHALL SCHEDULE WORK IN GENERAL ACCORDANCE WITH THE PROJECT'S PHASING STRATEGY.

## FIRE PROOFING **GENERAL NOTES:**

MAINTAIN FIRE RATED CONSTRUCTION AT WALL PENETRATIONS - CONSTRUCTION IS TO CONFORM TO MANUFACTURER'S FIRE RATED / TEST ASSEMBLIES.

FIRE CAULK ALL SLEEVES AND PENETRATIONS AT FIRE WALLS / PARTITIONS AND FLOORS. CONFORM WITH THE TESTED / SUBMITTED FIRE RATED ASSEMBLY. USE RED FIRE CAULK AND LABEL WALL WITH U.L. DESIGN NUMBER. FIRE RATED WALLS SHOWN ON PLAN.

PATCH AND REPAIR ALL EXISTING FIREPROOFING ON EXISTING STRUCTURAL MEMBERS, INCLUDING THAT WHICH IS UNCOVERED NEEDING REPAIR AND THAT WHICH IS DISTURBED DURING CONSTRUCTION.

PATCH AND REPAIR ALL EXISTING FIRE CAULKING AT EXISTING RATED WALLS WHICH IS UNCOVERED NEEDING REPAIR AND THAT WHICH IS DISTURBED DURING CONSTRUCTION. RE-LABEL EXISTING WALL IF NECESSARY.

### **TEMPORARY** BARRIERS & **ENCLOSURES:**

SEE SPECIFICATION SECTION 01 56 00 "TEMPORARY BARRIERS & ENCLOSURES" FOR REQUIREMENTS RELATED TO ENCLOSURE OF CONSTRUCTION IN PROGRESS.

SEE PH-SERIES SHEETS / PHASING PLANS FOR NOTES AND INFORMATION RELATED TO TEMPORARY INTERIOR CONSTRUCTION PARTITIONS AND OVERHEAD PROTECTION DURING CONSTRUCTION.

. SEE RA-SERIES SHEETS FOR EXISTING CONDITIONS DRAWINGS AND PHOTOS. ALL ENCLOSURES AND PENETRATIONS THROUGH EXISTING 6. REFER TO SHEET AF501 FOR FIRE EXTINGUISHER CABINET DETAILS. STRUCTURE ARE TO BE MAINTAINED BY THE CONTRACTOR

> INFILTRATION OF WATER INTO THE BUILDING DURING THE COURSE OF THE PROJECT. EXTERIOR WALL ENCLOSURES SHALL BE ERECTED PRIOR TO THE START OF DEMOLITION OF THE EXISTING ROOF. ENCLOSURES SHALL BE REMOVED AS NEEDED TO ALLOW FOR ROOFING

DURING DEMOLITION AND NEW CONSTRUCTION TO PREVENT THE

DEMOLITION AND REPLACED BEFORE THE END OF EACH WORK EXISTING CONSTRUCTION TO REMAIN SHALL BE PROTECTED FROM DEMOLITION AND NEW CONSTRUCTION ACTIVITY.

PROTECTION METHODS SHALL BE APPROVED BY THE COR AT

LEAST ONE WEEK PRIOR TO INITIAL INSTALLATION.

WORK ACTIVITY

ALL ENCLOSURES MUST BE INSPECTED AND APPROVED BY THE COR BEFORE THE END OF EACH WORK DAY. UNSATISFACTORY ENCLOSURE WORK SHALL BE CORRECTED BY THE CONTRACTOR AND APPROVED BY THE COR BEFORE CESSATION OF THE DAY'S

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FIRE SUPPRESSION SYSTEM PLAN

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AN - RENOVATION	ED101
ATION	EL101
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	EP101
	EP102
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	E-400
	E-500
& DETAILS	
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IS	TD101
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## BID ITEMS & DEDUCT **ALTERNATES:**

REFER TO SECTION 01 00 00 FOR STATEMENT OF BID ITEMS A. BID ITEM #1, GENERAL CONSTRUCTION: BASE BID: Renovate

Warehouse for Pandemic Preparedness: Includes all scope communicated in the drawings and specifications. 1. Work includes general construction, alterations, walks, grading, drainage, necessary removal of existing structures and construction of certain other items. BID ITEM #2, Renovate Warehouse for Pandemic Preparedness: Includes all scope described in Bid Item #1 – excluding Bid Deduct

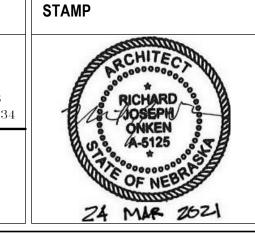
#1 described below: Work associated with new Material Lift WE01. 2. Work associated with construction and finishes for new Rooms W08 and W09 (Demolition of existing Rooms W07, W08 and W09, including plumbing, fixtures and finishes in Room W08 will be retained in Base Bid); 3. Work associated with installation of new ceilings and f inishes in Rooms W04, W05A and W06;

4. Demolition and renovation of work counters at Rooms W10A and W10C.

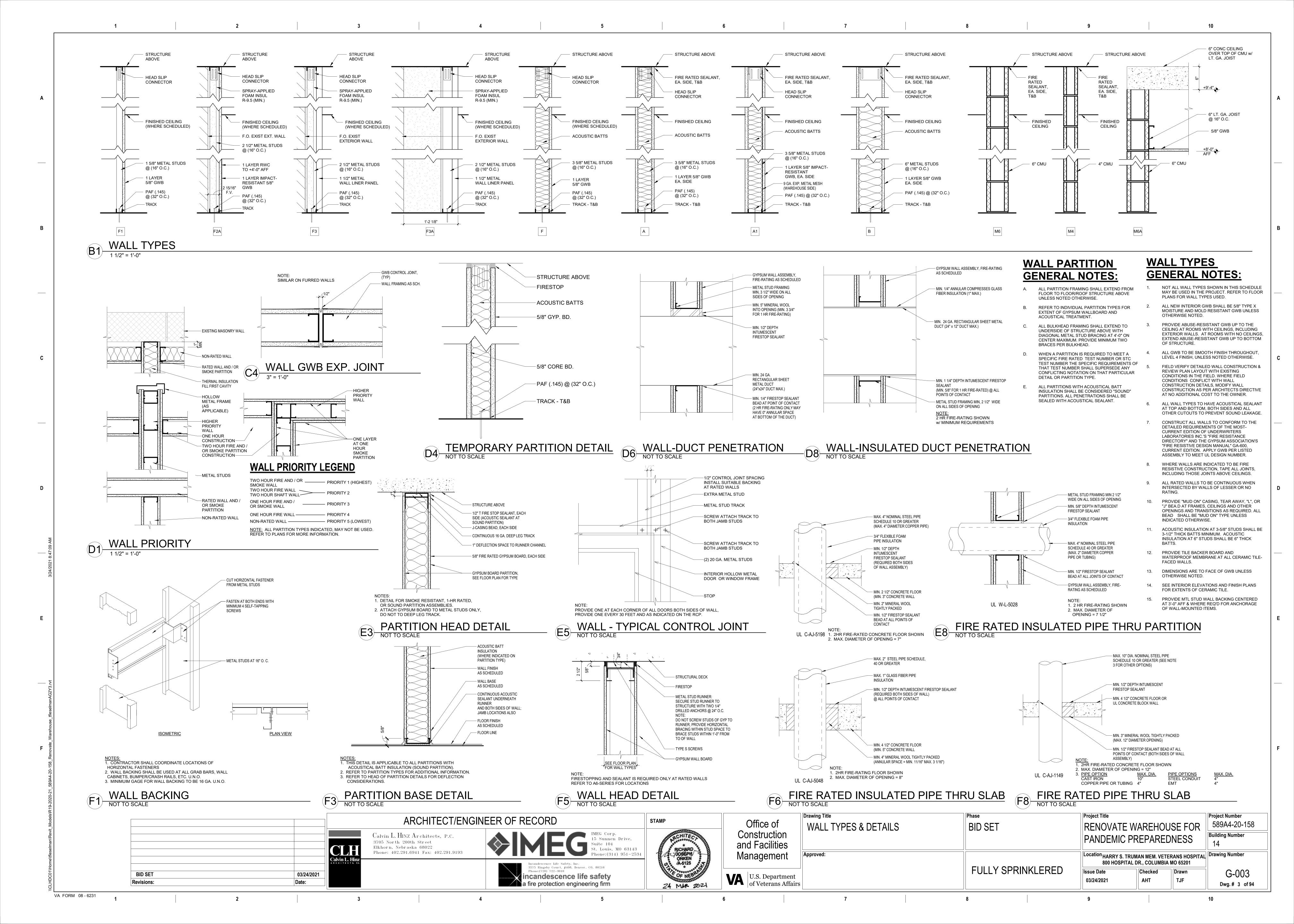
Drawing Title	Phase	Project Title	Project Number
ABBREVIATIONS, SYMBOLS, GENERAL NOTES & INDEX OF DRAWING	BID SET	RENOVATE WARI PANDEMIC PREP	589A4-20-158  Building Number  14
Approved:		Location HARRY S. TRUMAN M 800 HOSPITAL DR., CO	Drawing Number
	FULLY SPRINKLERED	1ssue Date   Chec   Chec   AH7	G-002 Dwg. # 2 of 94

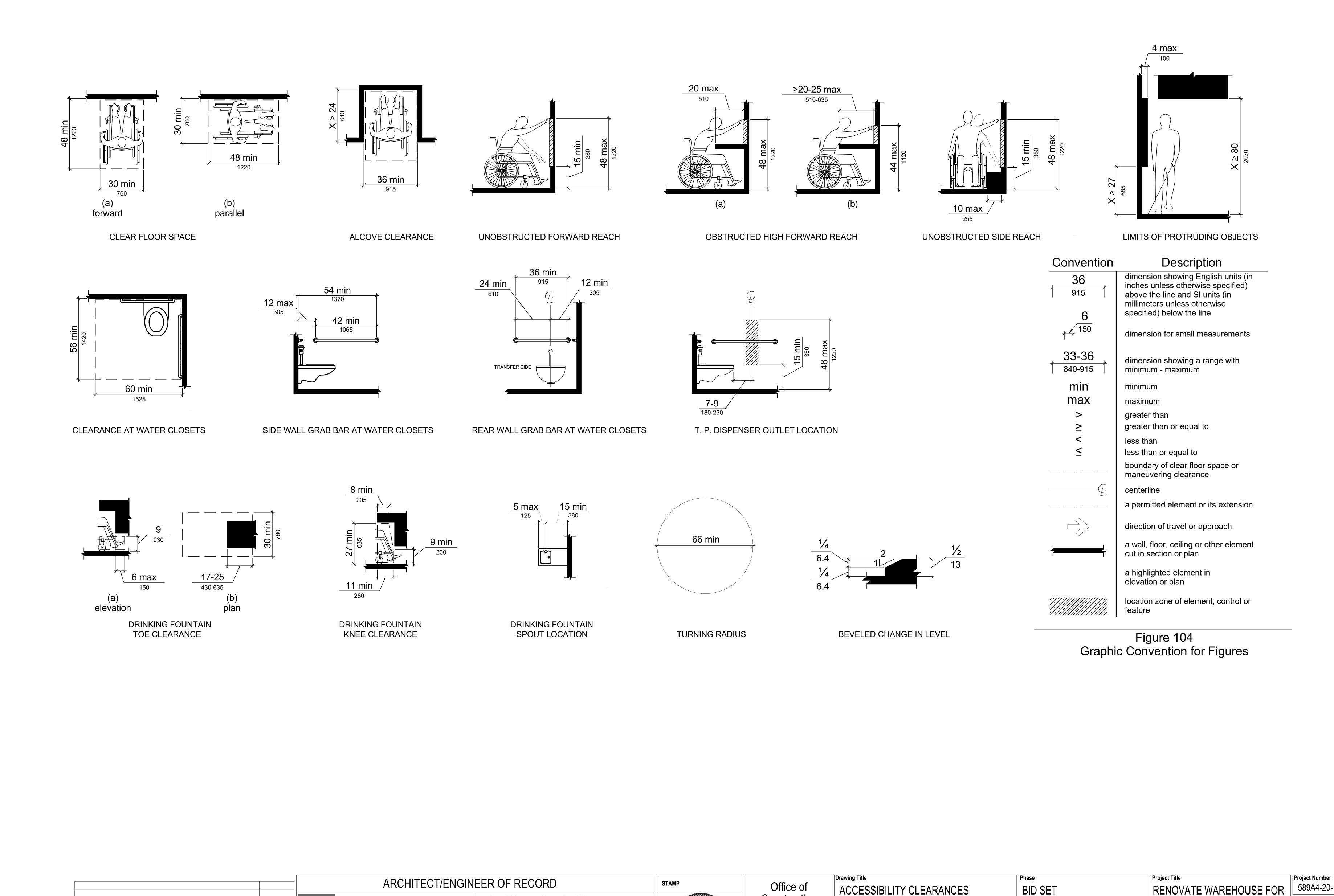
ARCHITECT/ENGINEER OF RECORD Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193 03/24/2021 fire protection engineering firm

ncandescence life safety



Office of Construction and Facilities Management U.S. Department of Veterans Affairs





VA FORM 08 - 6231

BID SET

Revisions:

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03/24/2021

U.S. Department of Veterans Affairs

Construction

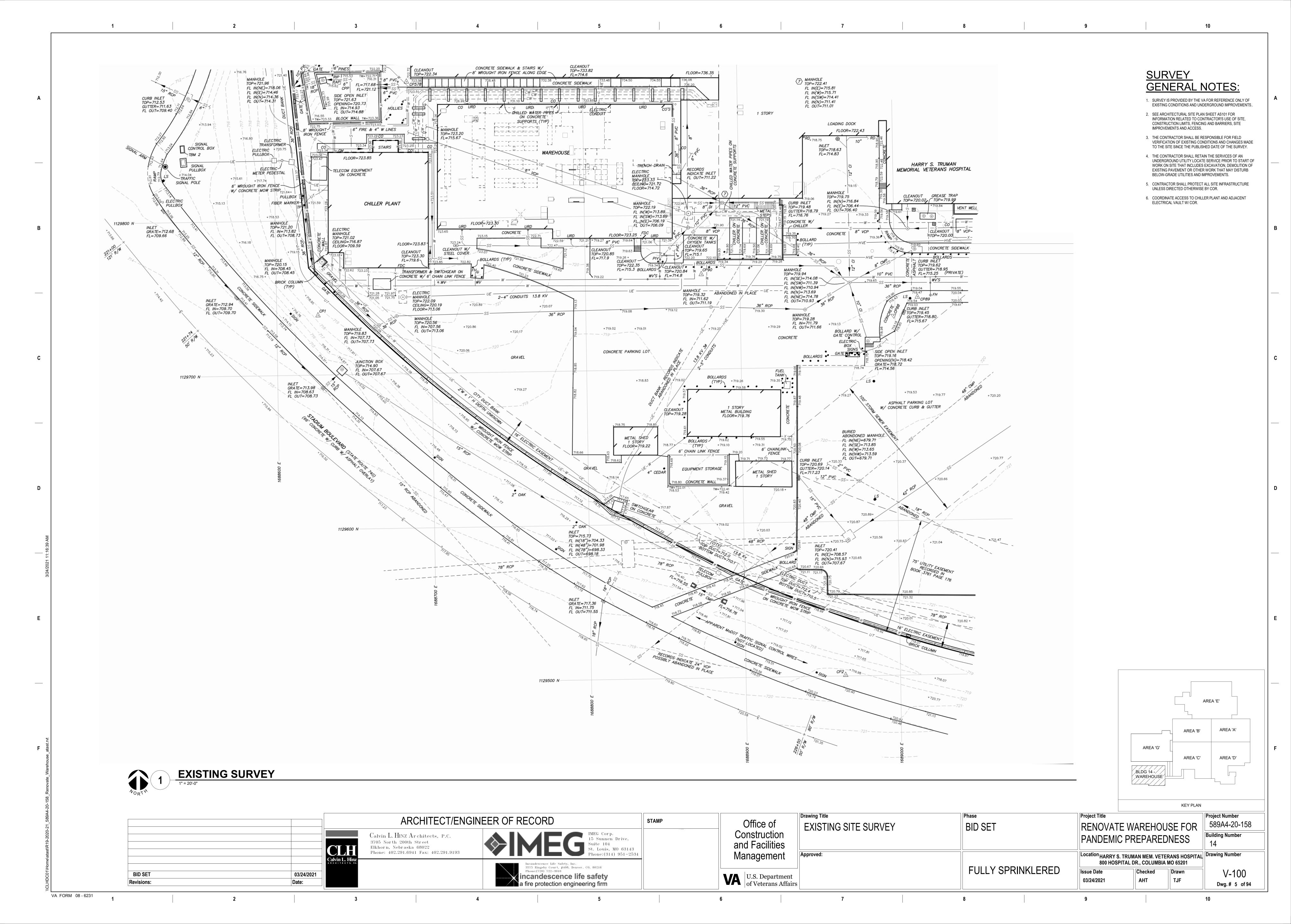
and Facilities

Management

FULLY SPRINKLERED

RENOVATE WAREHOUSE FOR **Building Number** PANDEMIC PREPAREDNESS Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201 Checked 03/24/2021

G-004 Dwg. # 4 of 94



#### **BUILDING AND LIFE SAFETY CODE ANALYSIS SUMMARY:**

THE FOLLOWING IS A SUMMARY OF THE BASIS OF DESIGN NARRATIVE THAT IS INTENDED TO DEMONSTRATE COMPLIANCE WITH APPLICABLE CODES AND STANDARDS. MORE DETAILED CODE ANALYSIS INFORMATION IS PROVIDED ON SUBSEQUENT DRAWING SHEETS AND WITHIN THE FIRE PROTECTION AND LIFE SAFETY SECTION OF THE DESIGN NARRATIVE.

THE FOLLOWING PRIMARY CODES AND STANDARDS ARE USED AS THE BASIS FOR THE DESIGN

- VA FIRE PROTECTION DESIGN MANUAL (VAFPDM; 7TH EDITION DECEMBER 2015)
- NATIONAL FIRE PROTECTION ASSOCIATION FIRE CODE (NFPA 1; 2018 EDITION) • NATIONAL FIRE PROTECTION ASSOCIATION STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS (NFPA 13; 2019 EDITION)
- NATIONAL FIRE PROTECTION ASSOCIATION NATIONAL FIRE ALARM AND SIGNALING CODE (NFPA 72, 2019 EDITION)
- NATIONAL FIRE PROTECTION ASSOCIATION LIFE SAFETY CODE (NFPA 101; 2018 EDITION) INTERNATIONAL BUILDING CODE (IBC; 2018 EDITION) \*NOTE: AS ENFORCED BY VAFPDM §1.3.

#### **BUILDING RENOVATION & RECONSTRUCTION**

THE RENOVATION OF THE EXISTING WAREHOUSE BUILDING CONSISTS OF THE MODIFICATION OF MORE THAN 50% OF THE AREA OF THE BUILDING AND THEREFORE IS CLASSIFIED AS A RECONSTRUCTION IN ACCORDANCE WITH NFPA 101 §43.5.2.3. THE RECONSTRUCTION OF THE WAREHOUSE IS SUBJECT TO THE REQUIREMENTS OF NFPA 101 §43.6 AND GENERALLY MUST COMPLY WITH BUILDING REQUIREMENTS RELATED TO NEW CONSTRUCTION, EXCEPT WHERE NOTED.

NONE OF THE ASPECTS OF THE SITE FIRE DEPARTMENT / EMERGENCY VEHICLE ACCESS ARE BEING MODIFIED AS PART OF THIS RENOVATION SCOPE OF WORK AND ARE TO REMAIN AS IS.

REQUIRED FIRE FLOW FOR THE FACILITY IS PROVIDED IN ACCORDANCE WITH NFPA 1 BASED ON THE CONSTRUCTION TYPE AND FIRE FLOW CALCULATION AREAS. BASED ON TYPE II (000) CONSTRUCTION, A FIRE AREA OF APPROXIMATELY 16,600 FT2 AND A 75% REDUCTION DUE TO THE PRESENCE OF AUTOMATIC SPRINKLERS. NFPA 1 TABLE 18.4.5.2.1 REQUIRES A FIRE FLOW OF 1000 GPM AT 20 PSI FOR 2 HOURS (NFPA 1 §18.4.5.3.2). PRELIMINARY HYDRANT FLOW TEST DATA PROVIDED BY COLUMBIA WATER AND LIGHT HAS BEEN PROVIDED NEAR THE PROJECT SITE AND INDICATES THAT THE AVAILABLE FIRE FLOW WILL BE IN EXCESS OF 5,000 GPM AT 20 PSI AND THEREFORE THE EXISTING WATER SUPPLY IS CAPABLE OF MEETING THE REQUIRE FIRE FLOW DEMAND.

SINCE THE FIRE FLOW REMAINS UNCHANGED AND THE FOOTPRINT OF THE EXISTING BUILDING REMAINS UNCHANGED AS PART OF THIS SCOPE OF WORK, NO ADDITIONAL HYDRANTS ARE REQUIRED PER NFPA 1 AND THE VAFPDM.

#### OCCUPANCY CLASSIFICATION:

OCCUPANCY CLASSIFICATION IS DETERMINED IN ACCORDANCE WITH NFPA 101 AS REQUIRED BY THE VAFPDM. THE ENTIRE WAREHOUSE IS CLASSIFIED AS AN ORDINARY HAZARD STORAGE OCCUPANCY IN ACCORDANCE WITH NFPA 101 CHAPTER 42.

THE ENTIRE BUILDING IS CLASSIFIED AS A SINGLE OCCUPANCY CONSISTING OF ORDINARY HAZARD STORAGE, AND THEREFORE NO OCCUPANCY SEPARATIONS ARE PROVIDED.

IN ACCORDANCE WITH §2.2.A OF THE VAFPDM, THERE ARE NO REQUIREMENTS FOR SEPARATION OR OPENINGS BETWEEN VA BUILDINGS WITH ALL BUILDINGS ARE FULLY SPRINKLER PROTECTED. AN EXISTING CHILLER PLANT IS LOCATED TO THE WEST AND A HOSPITAL BUILDING IS LOCATED TO THE NORTH; BOTH OF WHICH ARE PHYSICALLY SEPARATED AND SPRINKLERED THROUGHOUT. THE LARGER HOSPITAL BUILDING (BUILDING 1) LOCATED TO THE NORTH AND EAST IS PHYSICALLY CONNECTED TO THE WAREHOUSE BY A CONNECTING CORRIDOR THAT HAS AN EXISTING 2-HOUR BUILDING SEPARATION ALONG THE NORTH SIDE OF THE CONNECTING CORRIDOR TO SEPARATE THE WAREHOUSE FROM THE HOSPITAL BUILDING (BUILDING 1).

THE EXISTING WAREHOUSE BUILDING IS CONSTRUCTED OF EXTERIOR BLOCK WALLS WITH UNPROTECTED STEEL SUPPORTS AND ROOF ASSEMBLIES AND NONCOMBUSTIBLE BUILDING ELEMENTS. THEREFORE THE EXISTING BUILDING APPEARS TO MATCH TYPE II (000) CONSTRUCTION PER NFPA 220 AND TYPE II-B PER THE IBC. THE WAREHOUSE RENOVATIONS INCLUDED IN THIS SCOPE OF WORK WILL BE DONE IN A MANNER WHICH MAINTAINS THE EXISTING CONSTRUCTION TYPE AND THEREFORE, NO MODIFICATIONS TO THE EXISTING CONSTRUCTION TYPE WILL BE INCORPORATED AS PART OF THIS SCOPE OF WORK.

#### ALLOWABLE HEIGHT & AREA ANALYSIS (NFPA 101 §42.1.6 & IBC TABLES 504.3, 504.4 & 506.2)

NFPA 101 DOES NOT INCLUDE CONSTRUCTION TYPE REQUIREMENTS FOR STORAGE OCCUPANCIES AND THEREFORE §2.1-B OF THE VAFPDM REQUIRES THAT THE HEIGHT AND AREA LIMITATIONS BE IN ACCORDANCE WITH THE IBC. THE FOLLOWING SUMMARIZES THE ACTUAL AND ALLOWABLE HEIGHT, STORY, AND AREA FOR THE WAREHOUSE BUILDING IN ACCORDANCE WITH THE IBC CHAPTER 5 FOR A FULLY SPRINKLERED BUILDING OF TYPE II-B CONSTRUCTION THAT CONTAINS A GROUP S-2 OCCUPANCY.

- HEIGHT (IBC TABLE 504.3)
- ALLOWABLE: 75 FT • ACTUAL: 31 FT
- # OF STORIES (IBC TABLE 504.4):
- ALLOWABLE: 4
- ACTUAL: AREA (IBC TABLE 506.2):
- ALLOWABLE PER STORY: 78,000 FT<sup>2</sup> ACTUAL PER STORY:
- 11,742 FT<sup>2</sup> FIRST: UPPER: 3,822 FT<sup>2</sup>

#### MEZZANINES AND VERTICAL OPENINGS:

THE AREA OF THE UPPER FLOOR IS GREATER THAN 1/3 OF THE TOTAL AREA OF THE ROOMS ON THE GROUND FLOOR WHICH IT IS OPEN TO AND THEREFORE CANNOT BE CONSIDERED A MEZZANINE PER NFPA 101 §8.6.10.2.1. THEREFORE, THE UPPER FLOOR IS CONSIDERED A BUILDING STORY AND VERTICAL OPENINGS ARE PROTECTED ACCORDINGLY. IT IS IMPORTANT TO NOTE THAT THESE PLANS REFER TO THIS UPPER FLOOR AS A 'MEZZANINE' AT THE REQUEST OF THE CLIENT; HOWEVER, THIS AREA HAS BEEN DESIGNED AND ANALYZED AS A BUILDING STORY PER THE REQUIREMENTS OF NFPA 101. AS PERMITTED BY NFPA 101 §42.3.1, CONVENIENCE OPENINGS IN ACCORDANCE WITH §8.6.9.1 ARE PERMITTED WITHIN STORAGE OCCUPANCIES. AN OPEN CONVENIENCE STAIR IS PROVIDED TO CONNECT THE UPPER FLOOR WITH THE GROUND FLOOR; THE VERTICAL OPENING IS CONFIGURED AS A CONVENIENCE OPENING IN ACCORDANCE WITH NFPA 101 § 8.6.9.1. THIS PERMITS UNPROTECTED VERTICAL OPENINGS BETWEEN THE TWO STORIES, AND THEREFORE NO SHAFTS ARE REQUIRED AS LONG AS THEY ARE WITHIN THE CONVENIENCE OPENING.

#### **HAZARDOUS AREA SEPARATION:**

ALL AREAS WITHIN THE WAREHOUSE ARE THE SAME RELATIVE LEVEL OF HAZARD AND NO HAZARDOUS MATERIALS ARE ANTICIPATED TO BE STORED WITHIN THE BUILDING IN QUANTITIES THAT WOULD BE DEEMED HAZARDOUS; THEREFORE, NO HAZARDOUS AREA SEPARATIONS ARE REQUIRED IN ACCORDANCE WITH NFPA 101 §8.7 AND §42.3.2.

ALL EGRESS PROVISIONS ARE PROVIDED IN ACCORDANCE WITH NFPA 101 AND THE VAFPDM.

- OCCUPANT LOAD CALCULATIONS ARE BASED ON THE FACTORS IN NFPA 101 TABLE 7.3.1.2
- NUMBER OF EXITS AND CONFIGURATION IS PROVIDED IN ACCORDANCE WITH NFPA 101 SECTIONS 7.4 AND 7.5. AS PERMITTED BY NFPA 101 § EXIT ACCESS AND TRAVEL DISTANCE REQUIREMENTS (TRAVEL DISTANCE LIMITATIONS, COMMON PATH LIMITATIONS, AND DEAD-END CORRIDORS) ARE IN
- ACCORDANCE WITH NFPA 101 §42.2.5 AND §42.2.6. EXITS MEET THE REQUIREMENTS OF NFPA 101 SECTION 7.1.3.2 AND EGRESS COMPONENTS CONFORM TO THE TYPES AND REQUIREMENTS IN NFPA 101
- SECTION 7.2. EGRESS WIDTH AND CAPACITY IS PROVIDED BASED ON OCCUPANT LOAD, CALCULATED IN ACCORDANCE WITH NFPA 101 SECTION 7.3.3.
- EXIT DISCHARGE IS PROVIDED IN ACCORDANCE WITH NFPA 101 SECTION 7.7.
- ROOF ACCESS IS NOT REQUIRED FOR THE BUILDING ADDITION AS IT IS LESS THAN FOUR STORIES ABOVE GRADE PLANE.

#### FIRE SUPPRESSION SYSTEMS

THE EXISTING WAREHOUSE IS PROTECTED BY AN AUTOMATIC WET-PIPE SPRINKLER PROTECTION IN ACCORDANCE WITH NFPA 13 AS REQUIRED BY THE VAFPDM. THE EXISTING 4" SPRINKLER STANDPIPE RISER IS LOCATED IN THE SOUTHWEST CORNER OF THE BUILDING AND INCLUDES A BACKFLOW PREVENTER, A FLOW SWITCH, AND FIRE DEPARTMENT CONNECTION. THE EXISTING RISER ASSEMBLY AND SPRINKLER PIPING IS TO BE REUSED TO THE GREATEST EXTENT POSSIBLE AS PART OF THIS SCOPE OF WORK. MODIFICATIONS TO EXISTING PIPING WILL BE REQUIRED TO PROVIDE SPRINKLER PROTECTION ABOVE AND BELOW THE UPPER FLOOR LEVEL, IN ADDITION TO RECONFIGURATION OF THE EXISTING SPRINKLER HEADS TO ACCOMMODATE THE MODIFIED STORAGE CONFIGURATION WITHIN THE BUILDING. VA HAS PROVIDED AN INVENTORY OF ANTICIPATED STORAGE MATERIALS AND STORAGE CONFIGURATIONS THROUGHOUT THE BUILDING TO ENSURE THAT SPRINKLER PROTECTION IS APPROPRIATELY DESIGNED IN ACCORDANCE WITH NFPA 13. USER WILL UTILIZE OPEN RACK, PALLETIZED, AND BIN BOX STORAGE CONFIGURATIONS OF CLASS IV COMMODITIES WITH MAXIMUM STORAGE HEIGHTS OF 12'; MORE DETAILS OF STORAGE CONFIGURATIONS ARE INDICATED ON FIRE SUPPRESSION PLAN. HYDRANT FLOW TEST DATA HAS BEEN PROVIDED BY THE CITY OF COLUMBIA MISSOURI UTILITIES DEPARTMENT FOR VERIFICATION THAT EXISTING WATER SUPPLY IS ADEQUATE TO SUPPORT THE PROPOSED SYSTEM MODIFICATIONS...

THE EXISTING FIRE SUPPRESSION SYSTEM IS MONITORED BY THE BUILDING 1 FIRE ALARM SYSTEM TO TRANSMIT FIRE ALARM, SUPERVISORY, AND TROUBLE SIGNALS TO THE RESPONDING FIRE DEPARTMENT VIA THE HEAD-END FIRE ALARM RECEIVING EQUIPMENT LOCATED IN BUILDING 1. IT IS NOT ANTICIPATED THAT ANY MODIFICATIONS WILL BE REQUIRED FOR THE EXISTING FIRE ALARM MONITORING.

FIRE EXTINGUISHERS ARE PROVIDED THROUGHOUT THE WAREHOUSE IN ACCORDANCE WITH NFPA 10. EXTINGUISHERS HAVE BEEN SPACED BASED ON 10-LB MULTIPURPOSE DRY CHEMICAL TYPE EXTINGUISHERS WITH A MAXIMUM TRAVEL DISTANCE FROM ANY POINT ON THE FLOOR TO AN EXTINGUISHER OF 75'.

#### FIRE ALARM SYSTEM:

REQUIRED TO SUPPORT THE RENOVATIONS INCLUDED IN THIS SCOPE. BASED ON SITE INVESTIGATIONS AND AS-BUILT DOCUMENTATION. NO FIRE ALARM CONTRO UNITS ARE PRESENT WITHIN THE WAREHOUSE AND THAT THE SLC AND NAC CIRCUITS THAT SUPPORT BUILDING 14 ORIGINATE WITHIN THE HOSPI FACP IS LOCATED IN THE CHILLER PLANT IF THE EXISTING CIRCUITS FROM THE BUILDING 1 PANELS ARE NOT CAPABLE OF SUPPORTING THE ADDED/RELOCATED DEVICES WITHIN THE WAREHOUSE. ALL EXISTING DEVICES WITHIN THE BUILDING ARE TO BE REPLACED WITH NEW DEVICES, AND ADDITIONAL DEVICES ARE ADDED AS NECESSARY TO SUPPORT THE BUILDING RECONFIGURATION AS INDICATED ON THE FIRE ALARM SYSTEM SHEETS. NEW DEVICES ARE TO BE TIED INTO THE THE EXISTING NAC AND SLC CIRCUITS THAT CURRENTLY SUPPORT BUILDING 14.

BID SET	03/24/2021
Revisions:	Date:

ARCHITECT/ENGINEER OF RECORD					
Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193	<b>♦IMEG</b>	IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, MO 63143 Phone:(314) 951-2534			
	Incandescence Life Safety, Inc.				

Code/Standard

NFPA 1

NFPA 10

NFPA 13

NFPA 24

NFPA 70

NFPA 72

NFPA 80

NFPA 90A

NFPA 101

NFPA 110

**NFPA 220** 

VAFPDM

VAPSDM

INTERNATIONAL CODE COUNCIL

NATIONAL FIRE PROTECTION ASSOCIATION

U.S. DEPARTMENT OF VETERANS AFFAIRS

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Drawing Title
BUILDING AND LIFE SAFETY CO
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		PANDEMIC	PREPARE	DNESS	14
		Location HARRY S. 800 HOSPI	TRUMAN MEM. VET		Drawing Number
	FULLY SPRINKLERED	Issue Date	Checked	Drawn	LS001

FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS: NFPA 220 TYPE II (000) & IBC TYPE II-B **BUILDING ELEMENT** RATING (HOURS) (NOTE 4) SUPPORTING ONE FLOOR OR ROOF ONLY 0 STRUCTURAL FRAME SUPPORTING MORE THAN ONE FLOOR, OLUMN OR OTHER BEARING WALLS **EXTERIOR**; SEE NOTE 1 **EXTERIOR BEARING** INTERIOR BEARING INTERIOR - SUPPORTING MORE THAN ONE FLOOR, COLUMN, OR OTHER BEARING WALL WALL, COLUMNS, BEAMS, GRIDERS, TRUSSES, AND ARCHES ROOF ONLY INTERIOR - SUPPORTING ONE FLOOR OR LOOR/CEILING ASSEMBLIES ROOF/CEILING ASSEMBLIES 0 INTERIOR NONBEARING WALLS 0 **EXTERIOR NONBEARING WALLS; SEE NOTE 1** 0

FIRE-RESISTANCE RATINGS ARE BASED OFF OF IBC TABLES 601 AND 602. SEE LIFE SAFETY PLANS FOR LOCATIONS OF RATED PARTITIONS FOR ACCOMMODATION OF LIFE SAFETY CODE REQUIREMENTS. ACCORDING TO EXISTING DESIGN DRAWINGS DATED SEPTEMBER 22,2015, BLDG 26

IS OF TYPE 1-A CONSTRUCTION. THERFORE, THE RATINGS IN THIS TABLE REFLECT

THE FIRE RESISTANCE RATING OF TYPE I(332) CONTRUCTION FROM NFPA 220.

NOTE: THE FOLLOWING LEGEND IS PROVIDED FOR REFERENCE ONLY; NO NEW FIRE RESISTANCE RATED BARRIERS

ARE PROVIDED AS PART OF THIS SCOPE OF WORK.

**BUILDING & LIFE SAFETY REQUIREMENTS** 

Applicable Codes & Standards

FIRE CODE

INTERNATIONAL BUILDING CODE

MAINS AND THEIR APPURTENANCES

FIRE PROTECTION DESIGN MANUAL

NATIONAL ELECTRICAL CODE

VENTILATION SYSTEMS

LIFE SAFETY CODE

STANDARD FOR PORTABLE FIRE EXTINGUISHERS

NATIONAL FIRE ALARM AND SIGNALING CODE

STANDARD ON TYPES OF BUILDING CONSTRUCTION

STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE

STANDARD FOR FIRE DOORS AND OTHER OPENING PROTECTIVES

STANDARD FOR THE INSTALLATION OF AIR-CONDITIONING AND

STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS

PHSYICAL SECURITY DESIGN MANUAL FOR VA MISSION CRITICAL

Code/Standard Authority

NATIONAL FIRE PROTECTION ASSOCIATION

U.S. DEPARTMENT OF VETERANS AFFAIRS

U.S. DEPARTMENT OF VETERANS AFFAIRS

INTERNATIONAL CODE COUNCIL

Code/Standard Name

Code/Standard Year

2018

2018

2018

2019

2019

2020

2019

2019

2018

2018

2019

2018

7TH EDITION,

DECEMBER 2015

JANUARY 2015

LEGEND							
NEW	WALL			OP	ENINGS	DAM	PERS
PARTITION KEY RATING DESCRIPTION		NFPA 101-2018	RATING	RFRNC.	TYPE	RFRNC.	
	2 HR	BUILDING SEPARATION: FIRE BARRIER	8.2.1.3	90 MIN	8.3.3.2.2 TBL	FIRE 90 MIN	8.3.4.8 9.2.1
	2 HR	OCCUPANCY/AREA SEPARATION FIRE BARRIER	6.1.14.4.1 19.1.3.5.1	90 MIN	8.3.3.2.2 TBL	FIRE 90 MIN	8.3.4.8 9.2.1
	2 HR	HORIZONTAL EXIT (& REFUGE AREA) FIRE BARRIER	7.2.4.1.3 (1) 19.1.3.8 19.2.2.5 7.1.3.2.1	90 MIN	7.2.1.4.1 7.2.4.3.7 8.3.4 19.2.2.5, 1-4	FIRE 90 MIN	8.3.4.8 9.2.1 7.2.4.3.5
	2 HR 1 HR	VERT. OPG. (EXIT ENCLSR/SHAFT) FIRE BARRIER (2 HR = 4 OR MORE STORIES) (1 HR = LESS THAN 4 STORIES) (1/2 HR = EXIST. ENCL. IN EXIST BLD'G)	19.3.1.1-8 8.6 8.6	90 MIN 60 MIN	8.3.3.2.2 TBL 19.2.2.2 7.1.3.2 (9)	NOT ALLOWED UNLESS SERVING STAIR ONLY	N/A
	2 HR 1 HR	EXIT PASSAGEWAY (HORIZ.) FIRE BARRIER	7.2.6 19.2.2.7	90 MIN 60 MIN	8.3.3.2.2 TBL 19.2.2.2.	NOT ALLOWED	N/A
	1 HR	VERT. OPG. (SHAFT) FIRE BARRIER	19.3.1 8.6	60 MIN	8.3.3.2.2. TBL	N/A	8.6.4.5
• • • • • • • • • • • • • • • • • • • •	1 HR	HAZ./INCIDENTAL USE FIRE BARRIER	8.7.1 19.3.2.1	45 MIN	8.3.3.2.2 TBL 19.3.2.1.3	N/A	N/A
	NR- RESIST SMK	HAZ./INCIDENTAL USE SMOKE PARTITIONS (SPRINKLERED)	19.3.2.1.2	NR SELF OR AUTO CLOSING	8.7.1.3 8.4.3 19.3.2.1.3	VARIES	8.4.4
	1 HR 1/2 HR	SUBDIVIDING SPACES SMOKE BARRIER (I-2 OCCUPANCY)	8.5 19.3.7.3	20 MIN	8.3.3.2.2 TBL 8.5.4 19.3.7.8	SMOKE 90 MIN	8.5.5.3 19.3.7.3(2)
	NR	SUITE SEPARATION SMOKE PARTITION	8.4.2 19.2.5.7.1.4	*NR SELF OR AUTO CLOSING	19.3.6.3.2 8.4.3	VARIES	8.4.4 8.4.6.2
	NR- RESIST SMK	EXIT ACCESS CORRIDORS (I-2) SMOKE PARTITIONS (SPRINKLERED)	8.4.2 19.3.6.2	NR	19.3.6.3 8.4.3	VARIES	8.4.4.1 8.4.6.2 19.3.6.4.2
	NR	EXIT ACCESS CORRIDORS (B & AHC) NON-RATED PARTITIONS	21.3.6 35.3.6	NR	N/A	NONE	N/A
		l					

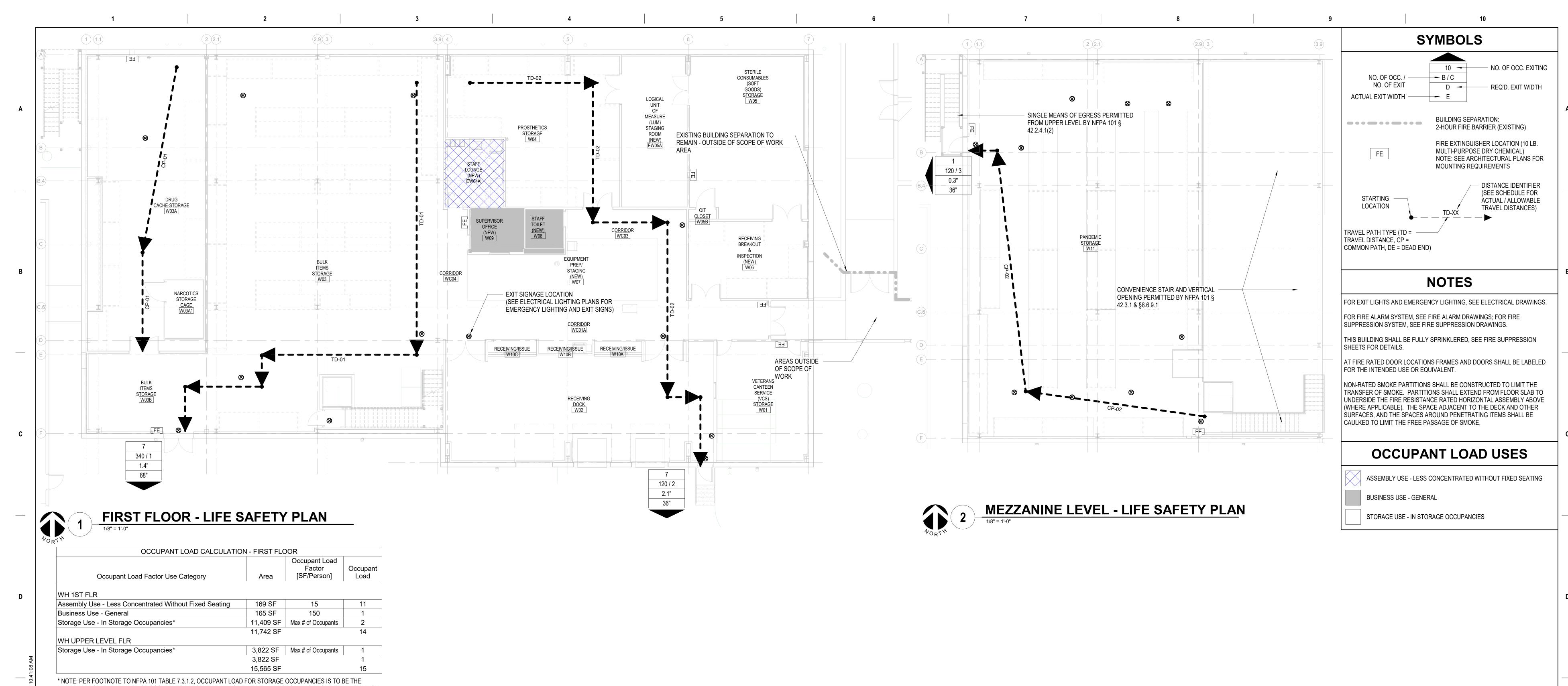
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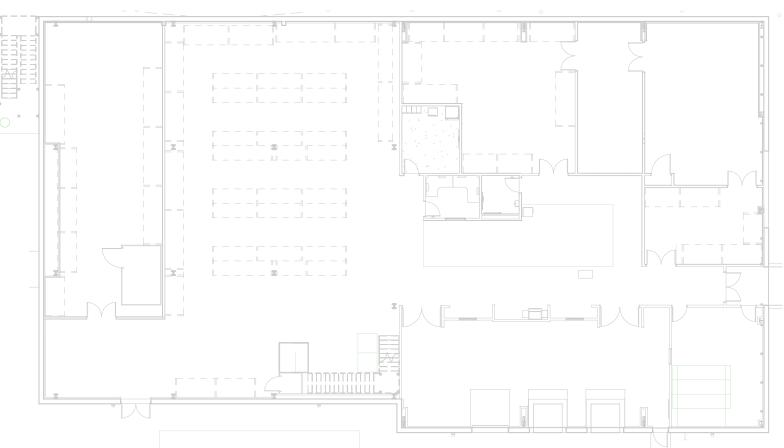
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\* NOTE: PER FOOTNOTE TO NFPA 101 TABLE 7.3.1.2, OCCUPANT LOAD FOR STORAGE OCCUPANCIES IS TO BE THE MAXIMUM PROBABLE NUMBER OF OCCUPANTS PRESENT AT ANY GIVEN TIME. DIRECTION WAS PROVIDED VIA EMAIL ON 01/29/2021 FROM VA PERSONNEL (D. SCHMIDT) THAT MAXIMUM PROBABLE NUMBER OF OCCUPANTS WITHIN BUILDING 14 AT ANY GIVEN TIME IS 15 PERSONS.

MEA	ANS OF EGRESS ARRANG	EMENT - FIRST	FLOOR
Egress Path		Egress Path	Egress Path
Name	Occupancy Classification	Length	Maximum Permitted
CP-01	Ordinary Hazard Storage	59' - 10"	100' - 0"
CP-02	Ordinary Hazard Storage	93' - 11"	100' - 0"
TD-01	Ordinary Hazard Storage	120' - 10"	400' - 0"
TD-02	Ordinary Hazard Storage	128' - 11"	400' - 0"

	Е	XIT CAPA	CITY COMPARISC	N - Level 1	
Most Restrictive Egress Component					Expected
ID	Type	Clear Width	Capacity Factor (in/Person)	Occupant Capacity	Occupant Load
1	Door	5' - 8"	0.2	340	7
2	Stair	3' - 0"	0.3	120	7
3	Stair	3' - 0"	0.3	120	1
				580	15



FIRST FLOOR - OCCUPANCY CLASSIFICATION PLAN

### OCCUPANCY CLASSIFICATION

Project Title

03/24/2021

RENOVATE WAREHOUSE FOR

800 HOSPITAL DR., COLUMBIA MO 65201

Checked

TGD

Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number

APS

PANDEMIC PREPAREDNESS

Project Number

**Building Number** 

589A4-20-158

LS101

Dwg.# 6 of 94

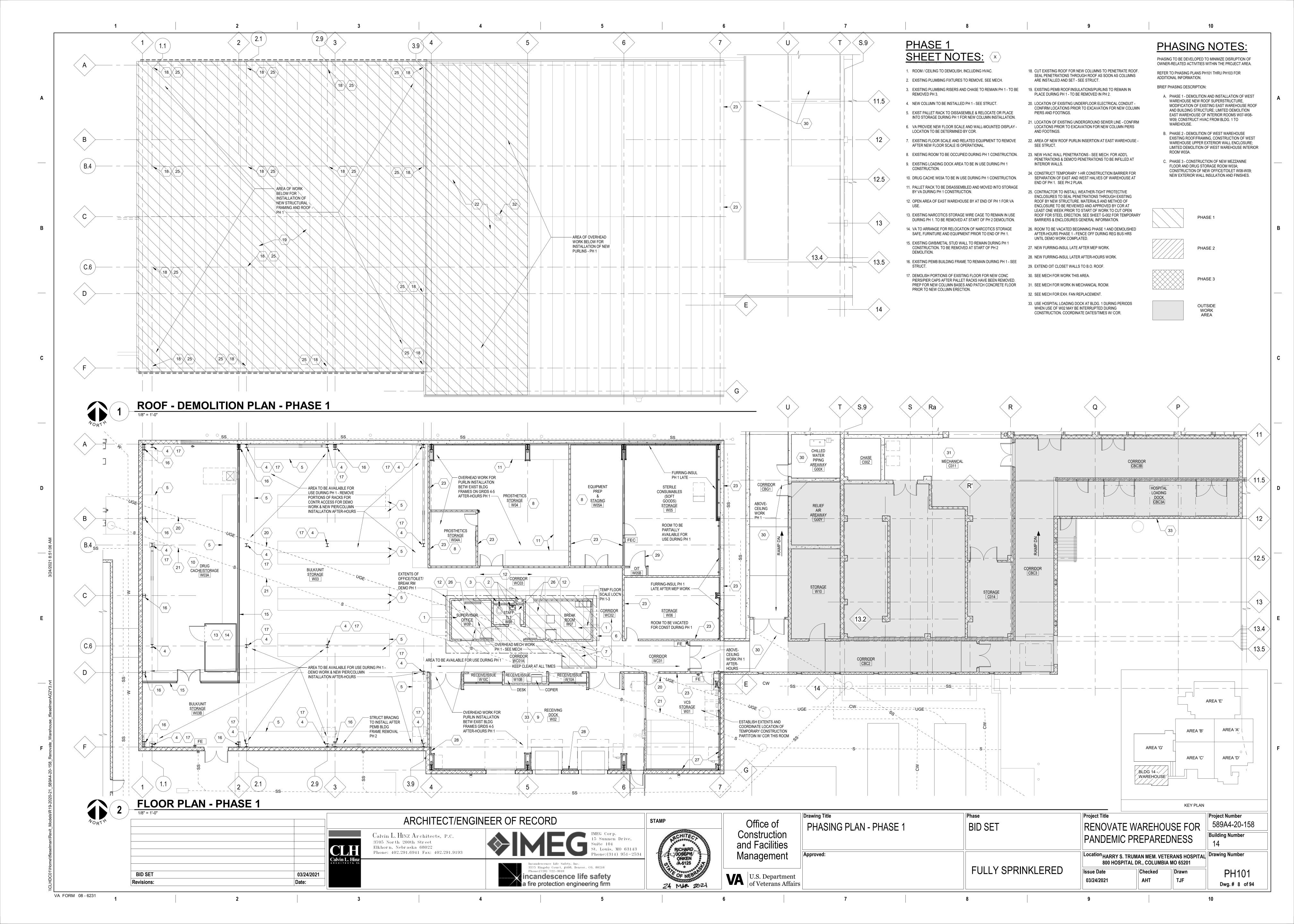
ORDINARY HAZARD STORAGE (GROUP S-2)

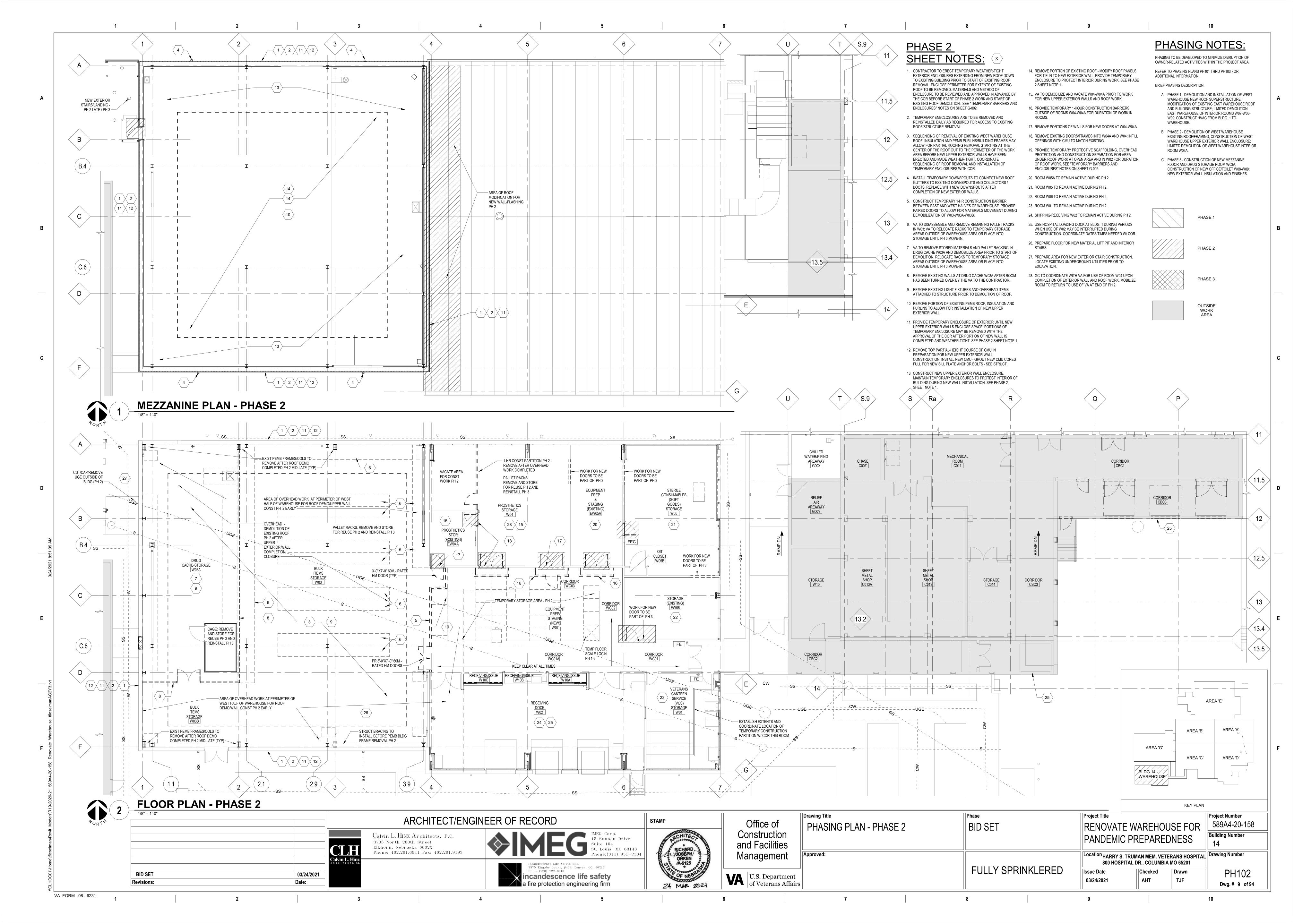
4 MEZZANINE LEVEL - OCCUPANCY CLASSIFICATION PLAN

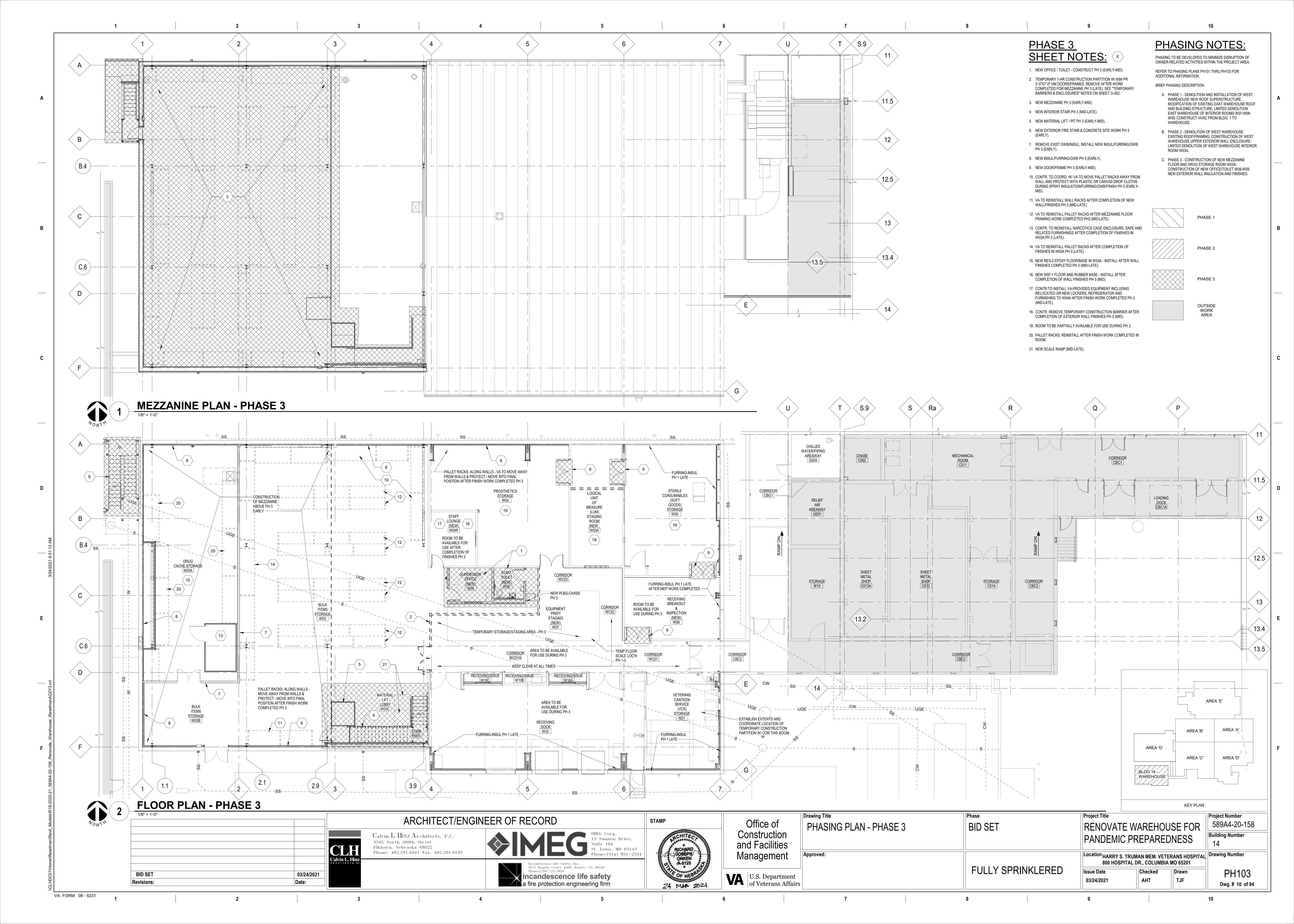
Drawing Title ARCHITECT/ENGINEER OF RECORD STAMP Office of BID SET LIFE SAFETY PLAN Construction Calvin L. HINZ Architects, P.C. 3705 North 200th Street and Facilities Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193 Management FULLY SPRINKLERED 3575 Ringsby Court, #408, Denver, CO, 80216 BID SET incandescence life safety 03/24/2021 U.S. Department of Veterans Affairs Revisions: fire protection engineering firm

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**DESIGN CRITERIA AND LOADS** STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH: 17. EXISTING CONDITIONS: AISC 341-16, INCLUDING SUPPLEMENTS 1. ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY AS TO NOT DAMAGE 0.163 g 2. ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING 0.141 SEISMIC FORCE RESISTING SYSTEM BUILDING FRAME SYSTEM WITH STEEL ORDINARY CONCENTRICALLY BRACED FRAMES 1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL ENGINEERING REPORT **EQUIVALENT LATERAL FORCE PROCEDURE**  $V = C_S \times W = 0.055 \times 517 = 29 \text{ KIPS}, EAST-WEST$  $V = C_S \times W = 0.055 \times 560 = 31 \text{ KIPS}, NORTH-SOUTH}$ SOIL PROPERTIES PER THE GEOTECHNICAL REPORT: 1.0 20 [LC: 0.9DL + 1.0WL] PER APPLICABLE BUILDING CODE 20 PSF (REDUCIBLE) 125 PSF (UNREDUCIBLE) 100 PSF (UNREDUCIBLE) 3. ALL EXCAVATIONS SHALL BE PROPERLY AND SAFELY BACKFILLED. DO NOT PLACE MAX SIMULTANEOUS VERT AND HORIZ THRUST 50 PLF APPLIED AT THE TOP OF THE RAILING OR 200 LBS IN ANY DIRECTION 1.0 1.0 16 PSF 4. EXTREME CARE SHALL BE EXERCISED WHEN EXCAVATING OR GRADING ADJACENT 48 PSF TAPERING TO 0 PSF OVER 12'-0" ALL LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IN THE COMPLETED 5. THE MOISTURE CONTENT OF ONSITE CLAYEY SOILS AT THE TIME OF COMPACTION STRUCTURE IS PROVIDED BY CONCENTRIC BRACED FRAMES IN EACH ORTHOGONAL DIRECTION. REFER TO PLANS FOR LOCATIONS. THE STEEL ROOF DECK AND MEZZANINE LEVEL COMPOSITE CONCRETE SLAB SERVE AS HORIZONTAL DIAPHRAGMS DISTRIBUTING THE LATERAL WIND AND SEISMIC FORCES TO THE VERTICAL LATERAL ELEMENTS WHICH IN TURN CARRY THE LOAD TO THE BUILDING FOUNDATIONS. 7. ALL SITE WORK SHALL BE PERFORMED UNDER THE INSPECTION OF THE SPECIAL NEITHER THE PROFESSIONAL ACTIVITIES OF THE ENGINEER, NOR THE PRESENCE OF THE ENGINEER OR THEIR EMPLOYEES AND SUBCONSULTANTS AT THE CONSTRUCTION SITE. SHALL RELIEVE THE CONTRACTOR AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING BUT NOT LIMITED TO. CONSTRUCTION MEANS. METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE CONSTRUCTION WORK IN 1. STEEL HELICAL PILES SHALL BE ACCURATELY CENTERED AT THE PROPER ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE ENGINEER AND THEIR PERSONNEL HAVE NO AUTHORITY TO EXERCISE ANY CONTROL OVER ANY CONSTRUCTION CONTRACTOR OR OTHER ENTITY OR THEIR EMPLOYEES IN CONNECTION WITH THEIR WORK OR ANY HEALTH OR SAFETY PRECAUTIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE JOBSITE SAFETY. THE ENGINEER AND THE ENGINEER'S 2. PILE DESIGN SHALL BE DESIGNED TO MEET THE SPECIFIED LOADING AS SHOWN CONSULTANTS SHALL BE MADE ADDITIONAL INSUREDS UNDER THE CONTRACTOR'S GENERAL LIABILITY INSURANCE POLICY. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY 4. HELICAL PILE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND SHOP CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR ARCHITECT. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO CONSTRUCTION, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED. OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION. 1. CONCRETE REINFORCING STEEL SHALL BE HIGH STRENGTH NEW BILLET STEEL CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL SO CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL AND ELECTRICAL DESIGN. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH ARCHITECT. TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK. THE CONTRACT DOCUMENTS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKMEN DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT OR STRUCTURAL ENGINEER SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DOES NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE 0. SEE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS FOR DETAILS. CONDITIONS, PITS, TRENCHES, PADS, DEPRESSIONS, ROOF/FLOOR OPENINGS, STAIRS, SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS. 1. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL. ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPE, INSERTS AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING. 12. NO HOLES, NOTCHES, BLOCKOUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE

BID SET

VA FORM 08 - 6231

3000 PSI CONCRETE | 4000 PSI CONCRETE OTHER SIZE 41 49 LAP LENGTHS ASSUME CLEAR SPACING BETWEEN BARS OF 2 BAR DIAMETERS, AND A MINIMUM COVER OF 1 BAR DIAMETER. FOR DEVELOPMENT LENGTHS, DIVIDE BY 1.3. TOP BARS ARE DEFINED AS HORIZONTAL BARS WITH MORE THAN 1'-0" OF FRESH CONCRETE BELOW. 4. USE LOW HYDROGEN ELECTRODES, GRADE E-90, FOR WELDING OF REINFORCING BARS

A. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM EXISTING

TAKE-OFF BY IMEG AS PERMITTED BY ACCESS RESTRICTIONS DURING DESIGN.

CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO

VERIFY EXISTING INFORMATION, DIMENSIONS AND SIZES AS REQUIRED TO

COMPLETE THEIR WORK. WHERE ACTUAL CONDITIONS CONFLICT WITH THE

DRAWINGS, THEY SHALL BE REPORTED TO THE AOR OR SEOR SO PROPER CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT OR

DEMOLITION

DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. EXISTING

ELEMENTS ARE TO BE PROTECTED TO THE FULLEST EXTENT POSSIBLE TO

**EARTHWORK** 

FOR THE VA HOSPITAL WAREHOUSE IN COLUMBIA, MISSOURI, BY CROCKETT

GEOTECHNICAL - TESTING LAB, DATED DECEMBER 31, 2020 (CROCKETT GTL

BACKFILL BEHIND RETAINING/BASEMENT WALLS BEFORE CONCRETE HAS

FLOORS ARE COMPLETELY IN PLACE AND HAVE ATTAINED 7-DAY STRENGTH

MINIMUM. BACKFILLING IS NOT PERMITTED FOR FOUNDATION WALLS UNTIL

PERMITS, AND INSTALLATION OR SHORING AND/OR SHEETING.

SHALL BE BETWEEN 2-3% ABOVE OPTIMUM MOISTURE CONTENT.

FOUNDATIONS, WALLS, SLABS, UTILITIES, ETC.

CLARIFICATIONS PRIOR TO PROCEEDING.

PLUMB: WITHIN 1°

SETTLEMENT, UNO.

INFORMATION.

AND HELIX DETAILS.

STEEL WIRE

DEFORMED BARS

WELDED WIRE REINFORCING

**OUTERMOST REINFORCING BARS:** 

#6 BARS OR LARGER

#5 BARS OR SMALLER

PILE CENTERLINE: WITHIN 3"

CONFORMING TO THE FOLLOWING STANDARDS:

ATTAINED SPECIFIED COMPRESSIVE STRENGTH. CONTRACTOR SHALL BRACE OR

PROTECT ALL WALLS BELOW GRADE FROM LATERAL LOADS UNTIL SUPPORTING

SUPPORTED SLAB TOP AND BOTTOM IS IN PLACE OR THE WALL IS ADEQUATELY

BRACED TO RESIST LATERAL LOADS. CONTRACTOR SHALL PROVIDE FOR DESIGN,

TO EXISTING STRUCTURES OR IMPROVEMENTS TO NOT DAMAGE OR UNDERMINE

AND SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER OF RECORD PRIOR

INSPECTION AGENCY. VARIATIONS IN SITE CONDITIONS AND THE GEOTECHNICAL

REPORT SHALL BE REPORTED TO THE ARCHITECT/STRUCTURAL ENGINEER FOR

STEEL HELICAL PILES

LOCATIONS AND INSTALLED PLUMB. INSTALL TO THE FOLLOWING TOLERANCES:

ON PLAN AND A DEFLECTION CRITERIA OF 1/2" DIFFERENTIAL AND 1" TOTAL

SHOWING LOCATION. TOP AND BOTTOM ELEVATIONS. DIAMETERS. DATE

INSTALLED, TYPE OF STRATA ENCOUNTERED AND ANY OTHER PERTINENT

DRAWINGS STAMPED AND CERTIFIED BY A LICENSED ENGINEER IN THE STATE

WHERE THE PROJECT IS LOCATED. SHOP DRAWINGS SHALL BE SUBMITTED FOR

PILE COMPONENTS, CORROSION PROTECTION SYSTEM, PILE TOP ATTACHMENT

REINFORCING STEEL

MINIMUM CONCRETE COVER SHALL BE PROVIDED AS FOLLOWS TO THE

NOT EXPOSED TO WEATHER OR IN CONTACT WITH GROUND

SLABS AND WALLS WITH #11 BARS OR SMALLER

EXPOSED TO WEATHER OR IN CONTACT WITH GROUND

CAST AGAINST AND PERMANENTLY IN CONTACT WITH GROUND 3"

. BAR SPLICES SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS. ALL

SPLICES SHALL BE CLASS 'B' AS DEFINED IN ACI 318. IF SPLICE LENGTH IS NOT

GIVEN ON THE DRAWINGS, PROVIDE LAP LENGTH (IN INCHES) AS FOLLOWS:

REVIEW BY THE ARCHITECT/STRUCTURAL ENGINEER AND SHALL INCLUDE HELICAL

ASTM A615, GR60

Fv = 65 KSI

Fy = 60 KSI

1 1/2"

ASTM A1064

ASTM A1064

. INSPECTION AGENCY SHALL KEEP A RECORD OR LOG OF EACH PILE AS INSTALLED

2000 PSF

1700 PSF

-2'-6" FT

270 PCF

40 PSF/FT, DRAINED

60 PSF/FT, DRAINED

360 PSF/FT OF DEPTH

-1'-0" FT BELOW EXISTING GRADE

B. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM FIELD

C. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING

DRAWINGS DATED 8/20/81 BY CAMPBELL & WIELAND, INC.

STRUCTURAL ENGINEER.

EXISTING ELEMENTS WHICH ARE TO REMAIN.

REDUCE SUCH DAMAGE TO A MINIMUM.

ALLOWABLE NET SOIL BEARING PRESSURE:

PROJECT NO. G20602).

SPREAD FOOTINGS

ACTIVE PRESSURE

AT REST PRESSURE

PASSIVE PRESSURE

SOIL BEARING

FROST DEPTH

CONTINUOUS FOOTINGS

**EQUIVALENT FLUID PRESSURE** 

COEFFICIENT OF FRICTION

**CAST-IN-PLACE CONCRETE** 

INTENDED USE	28-DAY STRENGTH (PSI)	MAX W/C RATIO	A/E	SLUMP
FOOTINGS	3000	0.45	N/A	1"-4"
FOUNDATIONS	4000	0.45	5-8%	1"-4"
SLAB-ON-GRADE	4000	0.5	N/A	4"-6"
UNLESS NOTED OTHERWISE	4000	0.45	5-8%	1"-4"

2. DRYPACK SHALL BE 1:3-1/2 PORTLAND CEMENT TO SAND WITH A MINIMUM 28-DAY STRENGTH OF

3. SLAB ON GRADE CONSTRUCTION: LOCATE SAW CUT CONTROL JOINTS ALONG COLUMN LINES WITH INTERMEDIATE JOINTS SPACED PER THE TABLE BELOW, UNO. SLAB PANELS SHALL HAVE A MAXIMUM LENGTH TO WIDTH RATIO OF 1.5:1. PROVIDE ADDITIONAL CONTROL JOINTS AT ALL RE-ENTRANT CORNERS.

THICKNESS | MAX JOINT SPACING (FT

4. CROSS REFERENCE ARCHITECTURAL AND STRUCTURAL DRAWINGS TO ASSURE PROPER DIMENSIONS AND PLACEMENT OF ALL ANCHOR BOLTS, INSERTS, NOTCHES, EDGES OF

WALLS/GRADE BEAMS AND PIERS. 5. UNO, ALL FOOTINGS SHALL BE CENTERED UNDER WALLS, PIERS OR COLUMNS.

6. DO NOT PLACE PIPES, DUCTS, REGLETS OR CHASES IN STRUCTURAL CONCRETE WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER THROUGH THE ARCHITECT.

7. NOTIFY THE ARCHITECT/STRUCTURAL ENGINEER 48 HOURS MINIMUM PRIOR TO ALL POURS. GENERAL CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SIZE. LOCATION AND HEIGHT OF MECHANICAL EQUIPMENT PADS ON CONCRETE SLAB ON STEEL DECK AND SLAB-ON-GRADE.

MASONRY

MINIMUM 28-DAY COMPRESSIVE STRENGTHS FOR MASONRY CONSTRUCTION SHALL BE: DESIGN ASSEMBLY STRENGTH, f'm INDIVIDUAL CONCRETE MASONRY UNITS 2800 PSI MORTAR 1800 PSI GROUT 2000 PSI

MASONRY MATERIALS SHALL CONFORM TO THE FOLLOWING STANDARDS CONCRETE MASONRY UNITS (CMU) ASTM C90. GRADE N-1 MORTAR ASTM C270, TYPE S ASTM C476 REINFORCING STEEL ASTM A615, GR 60 PLATE AND BENT BAR ANCHORS ASTM A36 SHEET METAL ANCHORS AND TIES **ASTM A1008** WIRE MESH TIES **ASTM A1064** WIRE TIES AND ANCHORS ASTM A951 ANCHOR BOLTS ASTM A307, GRADE A

6. ANY IMPORT FILL SOIL REQUIRED SHALL HAVE A LOW POTENTIAL FOR EXPANSION 3. BAR SPLICES SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS. IF SPLICE LENGTH IS NOT GIVEN ON THE DRAWINGS, PROVIDE LAP LENGTHS (IN INCHES) AS FOLLOWS EXCEPT BARS LARGER THAN #9 SHALL BE MECHANICALLY SPLICED:

MINIMUM LAP SPLICE LENGTH				
BAR SIZE	f'm = 2000 PSI			
DAINOILL	8" CMU	10" CMU	12" CMU	
#3	12	12	12	
#4	13	12	12	
#5	20	16	13	
#6	38	29	24	

ASD (IBC 2012/2015/2018):

4. GROUT SOLID ALL JAMBS FULL HEIGHT IN LOAD BEARING MASONRY WALLS TO UNDERSIDE OF LINTEL. EXTEND GROUTED JAMB FROM FACE OF MASONRY OPENING AT LEAST EQUAL TO THE BEARING LENGTH OF THE LINTEL BEYOND THE OPENING PLUS 8 INCHES.

5. PROVIDE A MINIMUM OF 1 INCH GROUT BETWEEN MAIN REINFORCING AND/OR BOLTS AND MASONRY UNIT FACE. VERTICAL REINFORCEMENT SHALL BE CENTERED IN WALL, UNO.

COORDINATE ANY UNIDENTIFIED PIPE OR DUCT PASSING THROUGH STRUCTURAL MASONRY WALLS, UNLESS NOTED OR DETAILED SPECIFICALLY.

#### LINTELS

1. ALL CMU WALLS IN THIS PROJECT ARE NON-LOAD BEARING. REFER TO ARCHITECTURAL DRAWINGS FOR WALL LOCATIONS, THICKNESS, AND OPENING SIZES.

2. LINTELS ARE NOT REQUIRED AT OPENINGS THAT ARE 12" WIDE OR LESS AND AT LEAST 1 COURSE BELOW THE TOP OF WALL.

3. ALL LINTELS SHALL HAVE A MINIMUM OF 8" END BEARING, BEARING PLATES ARE NOT

4. ALL LINTELS IN EXISTING MASONRY WALLS SHALL CONSIST OF DOUBLE STEEL ANGLES OR STEEL PLATE, SIZED AS LISTED BELOW. REMOVE AND REPLACE (E) MASONRY AS REQUIRED TO INSTALL ANGLES WITH THE REQUIRED BEARING.

5. ANY LINTELS THAT OCCUR IN EXTERIOR WALLS SHALL BE HOT-DIP GALVANIZED.

6. LINTELS IN 6" NON-LOAD BEARING CMU SHALL BE SIZED AS FOLLOWS BELOW. CUT FIRST COURSE OF BLOCK ABOVE LINTEL AS REQUIRED TO FIT AROUND STEEL

5/16" x 5 1/2" PLATE 0'-0" < L ≤ 2'-0" 2'-0" < L < 4'-0" (2) L3 1/2x2 1/2x1/4 (LLV) 4'-0" < L < 6'-4" INVERTED WT7x13 CONTACT ENGINEER L > 6'-4"

7. LINTELS IN 12" NON-LOAD BEARING CMU TO BE SIZED AS FOLLOWS BELOW. CUT FIRST

CONTACT ENGINEER

COURSE OF BLOCK ABOVE LINTEL AS REQUIRED TO FIT AROUND STEEL 0'-0" < L < 2'-0" 5/16" x 11 1/2" PLATE 2'-0" < L < 4'-0" (2) L5x5x5/16 4'-0" < L < 6'-4" (2) L5x5x3/8

L > 6'-4"

#### POST-INSTALLED ANCHORS

1. ANCHORS SERVING AS THE BASIS OF DESIGN ARE SHOWN ON THE DRAWINGS. ACCEPTABLE ALTERNATIVE ANCHORS MAY BE SUPPLIED PROVIDED THE QUANTITY AND CONFIGURATION MATCH THE CAPACITY OF THE DESIGN ANCHOR QUANTITY AND CONFIGURATION. ANY ALTERNATES ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW. INSTALL IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS. BELOW SUMMARIZES EACH ANCHOR TYPE USED ON THE PROJECT.

MECHANICAL ANCHORS: EXPANSION ANCHORS

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
GROUTED MASONRY	HILTI KWIK BOLT 3 [ESR-1385]	DEWALT POWER STUD+ SD1 [ESR-2966] SIMPSON WEDGE-ALL [ESR-1396]
UNCRACKED CONCRETE	HILTI KWIK BOLT 3 [ESR-2302]	DEWALT POWER STUD+ SD2 [ESR-2502] RED HEAD TRUBOLT+ [ESR-2427] SIMPSON STRONG BOLT 2 [ESR-3037]
CRACKED CONCRETE	HILTI KWIK BOLT TZ [ESR-1917]	DEWALT POWER STUD+ SD2 [ESR-2502] RED HEAD TRUBOLT+ [ESR-2427] SIMPSON STRONG BOLT 2 [ESR-3037]

THREADED SCREW ANCHORS

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
GROUTED MASONRY	HILTI KWIK HUS-EZ [ESR-3056]	DEWALT WEDGE-BOLT+ [ESR-1678] SIMPSON TITEN HD [ESR-1056]
UNCRACKED CONCRETE	HILTI KWIK HUS-EZ [ESR-3027]	DEWALT POWER SCREW-BOLT+ [ESR-3889] SIMPSON TITEN HD [ESR-2713]
CRACKED CONCRETE	HILTI KWIK HUS-EZ [ESR-3027]	DEWALT POWER SCREW-BOLT+ [ESR-3889] SIMPSON TITEN HD [ESR-2713]

3. ADHESIVE ANCHORS: SHALL CONSIST OF DEFORMED REINFORCING BARS OR ASTM A193 GRADE B7 RODS, HEAVY DUTY NUTS AND WASHERS AND A TWO COMPONENT STRUCTURAL ADHESIVE. WHERE ANCHORING INTO HOLLOW MASONRY, A SCREEN TUBE SHALL BE PROVIDED.

ANCHORED INTO	BASIS OF DESIGN	ACCEPTABLE ALTERNATES
HOLLOW MASONRY	HILTI HIT-HY 270 [ESR-4143]	DEWALT AC 100+ GOLD [ESR-3200] SIMPSON SET-XP [ESR-0265]
GROUTED MASONRY	HILTI HIT-HY 270 [ESR-4143]	DEWALT AC 100+ GOLD [ESR-3200] RED HEAD A7 ACRYLIC [ESR-3951] SIMPSON SET-XP [ESR-0265]
CONCRETE	HILTI HIT-HY 200 [ESR-3187]	DEWALT AC 200+ [ESR-4027] SIMPSON SET-3G [ESR-4057]

4. CRACKED CONCRETE REPRESENTS ALL CONCRETE FOR PROJECTS LOCATED IN SEISMIC DESIGN CATEGORY C OR HIGHER, TENSILE ZONES SUCH AS BOTTOMS OF BEAMS AND SLABS, OR WHERE NOTED ON THE DRAWINGS.

#### **STEEL**

STRUCTURAL STEEL SHALL CONFORM TO AS	STM STANDARDS AS NOTED BELO	W:
WIDE FLANGE SHAPES	ASTM A992	Fy = 50 KSI
OTHER ROLLED SHAPES	ASTM A36	Fy = 36 KSI
HSS SECTIONS, SQ/RECT	ASTM A500, GR B	Fy = 46 KSI
BASE AND CONNECTION PLATES	ASTM A36	Fy = 36 KSI
ANCHOR RODS	ASTM F1554, GR 36	Fy = 36 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A325	Fv = 120 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F1852	Fv = 120 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	
HEADED STUDS	ASTM A108, TYPE B	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

2. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL

. USE TENSION-CONTROL, "TWIST-OFF", BOLTS FOR ALL HIGH STRENGTH BOLTS REQUIRING FULL TENSION AS INDICATED ON THE DRAWINGS.

4. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM F3125, GRADE A325N, UNO. FOR ALL DRAG STRUT BOLTS,

HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM F3125. GRADE A490SC.

5. STANDARD BOLT HOLES IN STEEL SHALL BE 1/16 INCH LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED,

6. BOLTS IN SLOTTED HOLES SHALL BE LOCATED IN THE CENTER OF THE HOLE AFTER FIELD ASSEMBLY IS COMPLETE,

WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM SIZE WELDS AS SPECIFIED IN AISC 360, SECTION 8. FIELD CONNECTIONS SHALL BE BOLTED TO THE GREATEST EXTENTS POSSIBLE TO MINIMIZE FIELD WELDING. SHOP

CONNECTIONS SHALL BE WELDED, UNO. WELDS INDICATED WITH A SHOP WELD SYMBOL MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. LOCATIONS OF ALL FIELD WELDS SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS. WELDS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS DETAILED TO MINIMIZE BENDING IN THE CONNECTION. 9. HEADED STUDS:

A. STUDS SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE STUD AND THE PLATE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE STUD AND THE PLATE. THE STUD SHALL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8"ø AND SMALLER AND 3/16" FOR LARGER THAN 5/8"ø. WELDING SHALL BE DONE ONLY BY QUALIFIED WELDERS APPROVED BY THE INSPECTION AGENCY.

10. REFER TO DRAWINGS FOR DETAIL OF DECK OPENINGS. REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS, ETC. FOR EXACT SIZE, LOCATION, AND COUNT OF REQUIRED OPENINGS.

11. CUTS, HOLES, OPENINGS, ETC., REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OF HOLES AND CUTS IN THE FIELD SHALL NOT BE ALLOWED. EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER. NO HOLES SHALL BE CUT IN STRUCTURAL STEEL BY OTHER TRADES UNLESS SHOWN ON STRUCTURAL DRAWINGS OR APPROVED IN WRITING BY THE STRUCTURAL ENGINEER.

#### STEEL JOISTS

1.	ATTACH STEEL JOIST TO SUPPORT AS FOLLOWS:							
	DETAILS WITH WELD INFORMATION		DETAILS WITH BOLT INFORMATION		MINIMUM END BEARING (IN)			
	JOIST	FILLET WELD WELD SIZE LENGTH (IN)		BOLT DIAMETER		OTEE!	MASONDY	
	I TPE/SERIES	WELD SIZE	LENGIH (IN)	(IN)	MATERIAL	SIEEL	WIASUNKT	
	K	1/8	1 2	1/2	A307	2 1/2	4	

WHERE WELDS OR BOLTS ARE INDICATED, WELD/BOLT TO BE INSTALLED ON BOTH SIDES OF JOIST SEAT.

DESIGN JOIST SEAT FOR 1650 LB ROLLOVER LOAD FOR K-SERIES JOIST ONLY.

3. JOISTS SHALL BE DESIGNED FOR A MAXIMUM LIVE LOAD DEFLECTION OF L/360, UNO.

4. PROVIDE BRIDGING PER SJI SPECIFICATIONS. DESIGN AND PROVIDE UPLIFT BRIDGING TO WITHSTAND A NET UPLIFT PRESSURE AS INDICATED WITHIN THE DESIGN CRITERIA AND LOADS NOTES. WHERE BRIDGING INTERFERES WITH MECHANICAL OR OTHER TRADE INSTALLATIONS, THE FABRICATOR SHALL REMOVE THE BRIDGING AFTER THE STEEL DECK IS IN PLACE AND REPLACE AS DIRECTED BY THE JOIST MANUFACTURER.

5. ERECTOR SHALL FOLLOW MANUFACTURER'S AND STEEL JOIST INSTITUTE'S GUIDELINES FOR ERECTION STABILITY AND HANDLING.

6. WHERE STEEL COLUMNS ARE NOT FRAMED IN AT LEAST TWO DIRECTIONS WITH STRUCTURAL STEEL MEMBERS. JOISTS AT COLUMN LINES SHALL BE FIELD BOLTED.

7. NO CONCENTRATED LOAD OR CONNECTION SHALL BE APPLIED TO THE JOISTS WITHOUT WRITTEN APPROVAL FROM THE JOIST MANUFACTURER, UNO.

#### STEEL DECK

- 1. DECK SIZE AND GAUGE INDICATED ON THE DRAWINGS ARE BASED ON THE FOLLOWING: A. VULCRAFT 2015 CATALOG FOR GRAVITY DESIGN LOADS AND UNSHORED CONSTRUCTION SPANS B. STEEL DECK INSTITUTE (SDI) DIAPHRAGM DESIGN MANUAL 3RD EDITION FOR DIAPHRAGM LOADS.
- 2. STEEL DECK GALVANIZING SHALL CONFORM TO ASTM A653 WITH A MINIMUM COATING OF G60.
- 3. PAINTED STEEL ROOF DECK SHALL CONFORM TO ASTM A1008, GRADE C.
- 4. ALL DECK SHALL MEET THE MINIMUM TYPE AND GAUGE INDICATED ON THE DRAWINGS, AND AS FOLLOWS

TYPE	GAUGE	lx	Sx	Fy
1.5" B (ROOF)	22	0.155	0.186	33
	20	0.201	0.234	33
	18	0.289	0.318	33
	16	0.373	0.408	33

- 5. UNLESS NOTED OTHERWISE, DECK SHALL BE FASTENED WITH 5/8" PUDDLE WELDS AT 12" OC AT ALL SUPPORTS AND EDGES. SIDE LAPS SHALL BE FASTENED WITH #10 TEK SCREWS, MINIMUM ONE AT EACH MIDSPAN. OPENING EDGES SHALL RECEIVE THE SAME WELDING AS REQUIRED AT DECK ENDS. ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS EXPERIENCED IN COLD-FORMED STEEL DECK WORK.
- PROVIDE 16 GAUGE WELD WASHERS AT PUDDLE WELD CONNECTIONS TO 24 GAUGE AND LIGHTER STEEL DECKS.
- 7. USE SUMP PANS AT ALL ROOF DRAINS. MINIMUM THICKNESS FOR SUMP PANS SHALL BE 14 GAUGE.
- 8. DO NOT PLACE PIPES, DUCTS, REGLETS OR CHASES IN COMPOSITE FLOOR SYSTEMS WITHOUT APPROVAL OF THE
- 9. DO NOT EXCEED 25 LBS PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO STEEL ROOF DECK. THIS 25 LBS LOAD AND 2'-0" SPACING INCLUDES ADJACENT MECHANICAL. ELECTRICAL. AND ARCHITECTURAL ITEMS HANGING FROM THE DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING SUPPORTED OFF STEEL FRAMING WILL NEED TO BE ADDED. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATION AND WEIGHT OF ALL THE ELEMENTS BEING HUNG.
- 10. CORRUGATED FORM DECK GAUGES SHOWN ON THE DRAWINGS ARE INTENDED TO SUPPORT THE WEIGHT OF THE WET CONCRETE PLUS A CONSTRUCTION LIVE LOAD OF 20 PSF WITHOUT INTERMEDIATE SHORING BASED ON A THREE SPAN CONTINUOUS CONDITION. DECK MANUFACTURER SHALL EVALUATE OTHER SPAN CONDITIONS FOR DEFLECTION WHICH SHALL NOT EXCEED L/180 NOR 1/8 INCH UNDER THE UNIFORMLY DISTRIBUTED CONCRETE DEAD LOAD AND NOTE AREAS WHICH WILL REQUIRE SHORING TO CONTROL DEFLECTION AND/OR MEET ALLOWABLE

#### STRUCTURAL TESTS AND INSPECTION

. UNLESS NOTED, MATERIALS SHALL CONFORM AND TESTS AND INSPECTIONS SHALL BE PERFORMED BY THE INSPECTION AGENCY WHO IS APPROVED THE ARCHITECT AND THE STRUCTURAL ENGINEER. CONTINUOUS AND PERIODIC TESTING AND INSPECTION SHALL CONFORM TO IBC CHAPTER 17, AND AS FOLLOWS:

A. DRIVEN DEEP FOUNDATIONS 1705.7 . HELICAL PILE FOUNDATIONS 1705.9 CONCRETE CONSTRUCTION 1705.3 MASONRY CONSTRUCTION 1705.4

STEEL CONSTRUCTION 1705.2 1705.6 WIND RESISTANCE 1705 11 SEISMIC RESISTANCE 1705.12, 1705.13

2. REFER TO ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR TESTING AND INSPECTION REQUIREMENTS OF NON-STRUCTURAL COMPONENTS.

3. DUTIES OF THE INSPECTION AGENCY PER IBC CHAPTER 17: A. SUBMIT A PROPOSED TESTING AND INSPECTION PROGRAM TO THE OWNER, THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF

B. PERFORM ALL TESTING AND INSPECTION REQUIRED PER APPROVED TESTING AND INSPECTION PROGRAM. FURNISH INSPECTION REPORT TO THE BUILDING OFFICIAL, THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR. THE REPORTS SHALL BE COMPLETED AND FURNISHED WITHIN 48

HOURS OF INSPECTED WORK. SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTION AGENCY'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS

AND SPECIFICATIONS.

ARCHITECT/ENGINEER OF RECORD Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193

575 Ringsby Court, #408, Denver, CO, 80216



Office of Construction and Facilities

Management

U.S. Department of Veterans Affairs

**Project Title Drawing Title** BID SET **GENERAL NOTES** RENOVATE WAREHOUSE FOR PANDEMIC PREPAREDNESS 800 HOSPITAL DR., COLUMBIA MO 65201 **FULLY SPRINKLERED** Checked Drawn

Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 03/24/2021 **MICALB** WALLEW

S-001 Dwg. # 11 of 94

**Project Number** 

**Building Number** 

589A4-20-158

Revisions:

03/24/2021 incandescence life safety

re protection engineering firm

1. 3D VIEW IS FOR REFERENCE ONLY - NOT FOR CONSTRUCTION. REFER TO PLANS, DETAILS AND SPECIFICATIONS FOR ACTUAL CONSTRUCTION REQUIREMENTS. VIEW – FOR REFERENCE ONLY

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VA FORM 08 - 6231

STRUCTURAL ABBREVIATION KEY **VIEW KEY** ABBR: DESCRIPTION: NAME LEVEL NAME
10' - 0" HEIGHT ABOVE 1 INDICATES NOTE USED TO DESCRIBE NUMBER OR POUNDS PROJECT 0' - 0" DEGREE DIAMETER SLAB DEPRESSION - INDICATES DIRECTION OF TRUE NORTH ANCHOR BOLT AHU AIR-HANDLING UNIT — PLAN OR DETAIL NUMBER ARCH ARCHITECT, -URE, -URAL — PLAN OR DETAIL NAME B.O. BOTTOM OF BEAM FLANGE WIDTH BRACE FRAME BLKG BLOCKING BM B.N. BEAM BOUNDARY NAILING — PLAN OR DETAIL SCALE B.O.F. BOTTOM OF FOOTING BOTT BP воттом BP BASE PLATE
BTWN BETWEEN
CFSF COLD FORM
CLR CLEAR
CL CENTERLINE
CMU CONCRETE
COL COLUMN
CONC CONCRETE
CONT CONTINUOL
C.P. COMPLETE
DIA DIAMETER
DIM DIMENSION
DL DEAD LOAL
DET DETAIL
DWG DRAWING
DWL DOWEL
EA EACH
EF EACH FAC
EL ELEVATIO BASE PLATE INDICATES SIMILAR DETAIL REFERENCED IN MULTIPLE LOCATIONS COLD FORM STEEL FRAMING — DETAIL REFERRED TO BY SECTION CUT CENTERLINE CONCRETE MASONRY UNIT S300 /- SHEET DETAIL IS LOCATED ON CONCRETE CONTINUOUS LINE TYPE KEY: COMPLETE JOINT PENETRATION WELD ----- NEW WORK (DARK SOLID LINE) DEAD LOAD DETAIL ----- NEW WORK UNDERGROUND OR UNDER OTHER FRAMING AND EXISTING TO BE REMOVED (DARK DASHED LINE) - EXISTING TO REMAIN EL ELEC ELEVATION (LIGHT SOLID LINE) ELECTRICAL ELEC ELECTRICAL
ELEV ELEVATOR
E.N. EDGE NAILING
EOD EDGE OF DEC
EOS EDGE OF SLA
EQ EQUAL
EQUIP EQUIPMENT
EW EACH WAY
(E) EXISTING
EXP EXPANSION
EXT EXTERIOR —— — GRID OR CENTERLINE EDGE NAILING MATERIAL LEGEND: EDGE OF DECK EDGE OF SLAB CONCRETE - CAST-IN-PLACE **CONCRETE - EXISTING** f'c CONCRETE COMI FDN FOUNDATION FIN FINISH, -ED FLR FLOOR F.N. FIELD NAILING F.O.S. FACE OF STUD CONCRETE COMPRESSIVE STRENGTH GRAVEL OR GRANULAR FILL GROUT OR DRYPACK OR SAND GAGE OR GAUGE — COLUMN DESIGNATION HIGH STRENGTH BOLT BASE PLATE MARK PIER MARK (TOP ELEVATION)
P# (+ X' - X")
PILE CAP MARK (TOP ELEVATION)
PC#(+ X' - X") LONG LEG HORIZONTAL LONG LEG VERTICAL LONG SIDE HORIZONTAL LONG SIDE VERTICAL LONGITUDINAL LIGHTWEIGHT STRUCTURAL SYMBOL LIST MACHINE BOLT MAXIMUM SYMBOL: DESCRIPTION: FLOOR OPENING NORTH NEW NOT IN CONTRACT NOT TO SCALE METAL DECK (DIRECTION) ON CENTER OPPOSITE HAND PIECE POUNDS PER CUBIC FOOT REVISION TRIANGLE - NUMBER INDICATES REVISION NUMBER PRE-ENGINEERED METAL BUILDING PENTHOUSE PLATE POUNDS PER LINEAR FOOT DRAIN/OVERFLOW PARTIAL JOINT PENETRATION WELD POUNDS PER SQUARE FOOT POUNDS PER SQUARE INCH PRESSURE TREATED DOUGLAS FIR RADIUS REINFORCING, -MENT, -ED C = X" **BEAM CAMBER** REQUIRED ROOF TOP UNIT TC WITH CLASS A FAYING SURFACE (+16' - 3") SPECIAL CONCENTRIC BRACE FRAME ABOVE ELEVATION +0' - 0" SEPARATION SIMILAR SHEATHING SNOW LOAD SEISMIC LOAD RESISTING SYSTEM BEAM BEARING ON COLUMN SLAB ON GRADE SPACE(S) SPECIFICATION(S) SQUARE STIFFENER STEEL SUPPORT OPPOSITE SIDE, UNO SYMMETRICAL TOP AND BOTTOM STEP IN FOOTING TOP OF TOP OF WALL PRE-TENSIONED BOLT TEMPERATURE EXISTING BUILDING GRID LINE BEAM FLANGE THICKNESS THICK TRANSVERSE TYPICAL UNLESS NOTED OTHERWISE - - - NEW GRID LINE VERTICAL VERIFY IN FIELD

F.O.W. FACE OF WALL FRMG FRAMING FT FOOT FOOTING FY YIELD STRESS
GA GAGE OR GAUC
GALV GALVANIZED
GB GRADE BEAM
HI HIGH
HORIZ HORIZONTAL
HSB HIGH STRENGTI
IN INCH
INT INTERIOR
JT JOINT K, KIP KILOPOUND (1,000 POUNDS) KSP KIPS PER SQUARE FOOT LB POUND LL LLH LLV LSH LSV LO LONG LT WT M.B. MANUF MANUFACTURER
MECH MECHANICAL
MEZZ MEZZANINE
MIN MINIMUM
MTL METAL N (N) NIC NTS OC OH OPNG PC PCF PEMB P.H. PLYWD PLYWOOD REQD RTU SC SCBF SCHED SCHEDULE SEP'N SLRS SOG SP SPEC SQ STIFF STL SUPPT SYM T&B T.O. T.O.S. TOP OF STEEL T.O.W. TYP VERIFY WITH ARCHITECTURAL DRAWINGS WITH WP WORK POI WORK POINT WWR WELDED WIRE REINFORCING

HEADED STUD ANCHORS ON BEAMS TOP OF STEEL FRAMING ELEVATION COLUMN BEARING ON CONCRETE PIER WELD SIZE, LENGTH & SPACING, ETC. WHERE SHOWN ONE SIDE OF SYMBOL REFERENCE LINE, IT IS TYPICAL TO OPPOSITE SIDE IF SYMBOL OCCURS

		ARCHITECT/ENGINEER OF RECORD		
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ID SET visions:	03/24/2021 Date:	Calvin L. Hinz		Incandescence Life Safety, Inc. 3575 Ringsby Court, #408, Denver, CO, 80216 Phone:(720) 722-3010  incandescence life safety a fire protection engineering firm



Drawing Title Office of Construction and Facilities Management

FULLY SPRINKLERED

GENERAL NOTES, ABBREVIATIONS

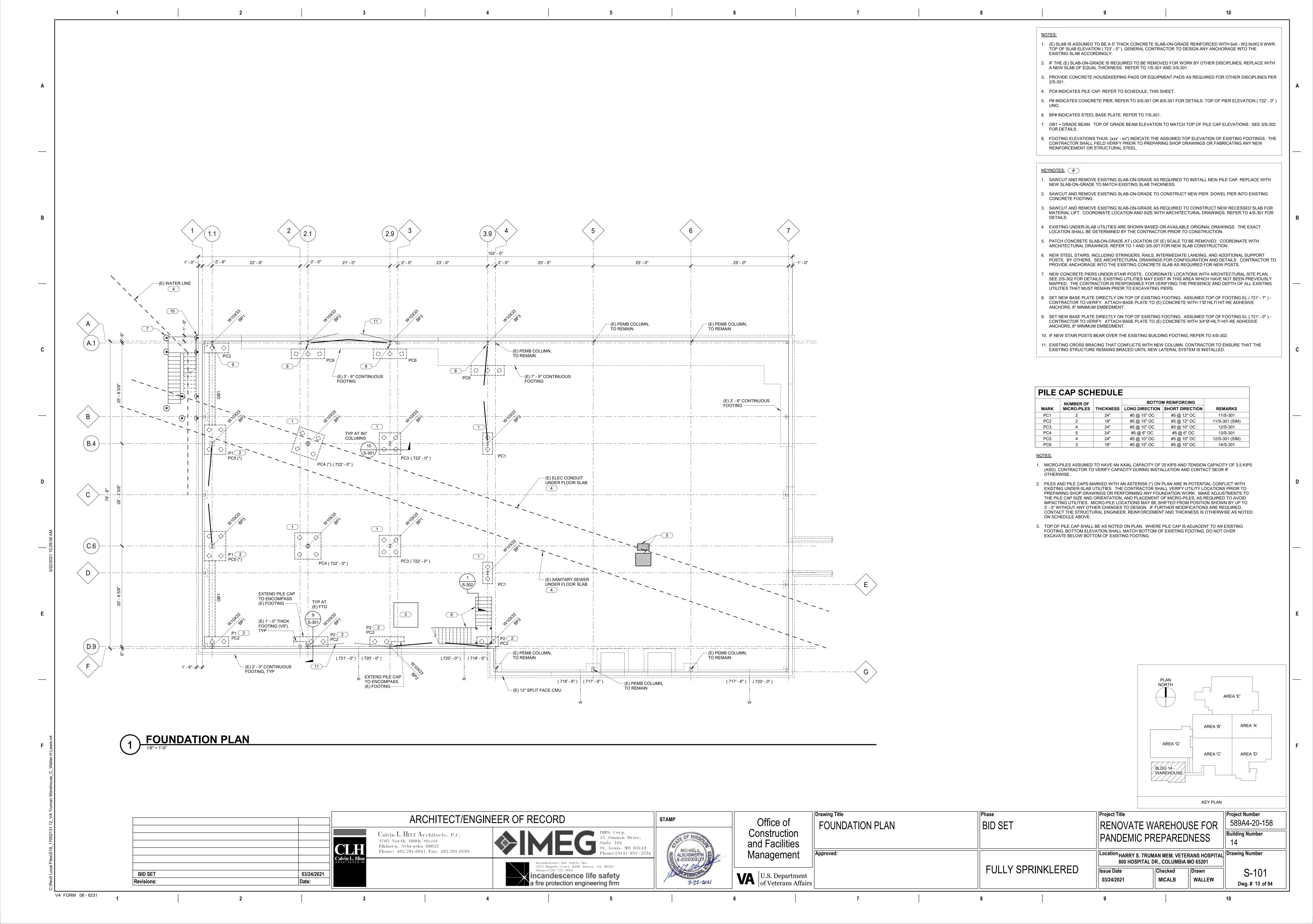
Project Title Project Number 589A4-20-158 RENOVATE WAREHOUSE FOR **Building Number** PANDEMIC PREPAREDNESS | Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL | Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201 Checked Drawn S-002 MICALB WALLEW

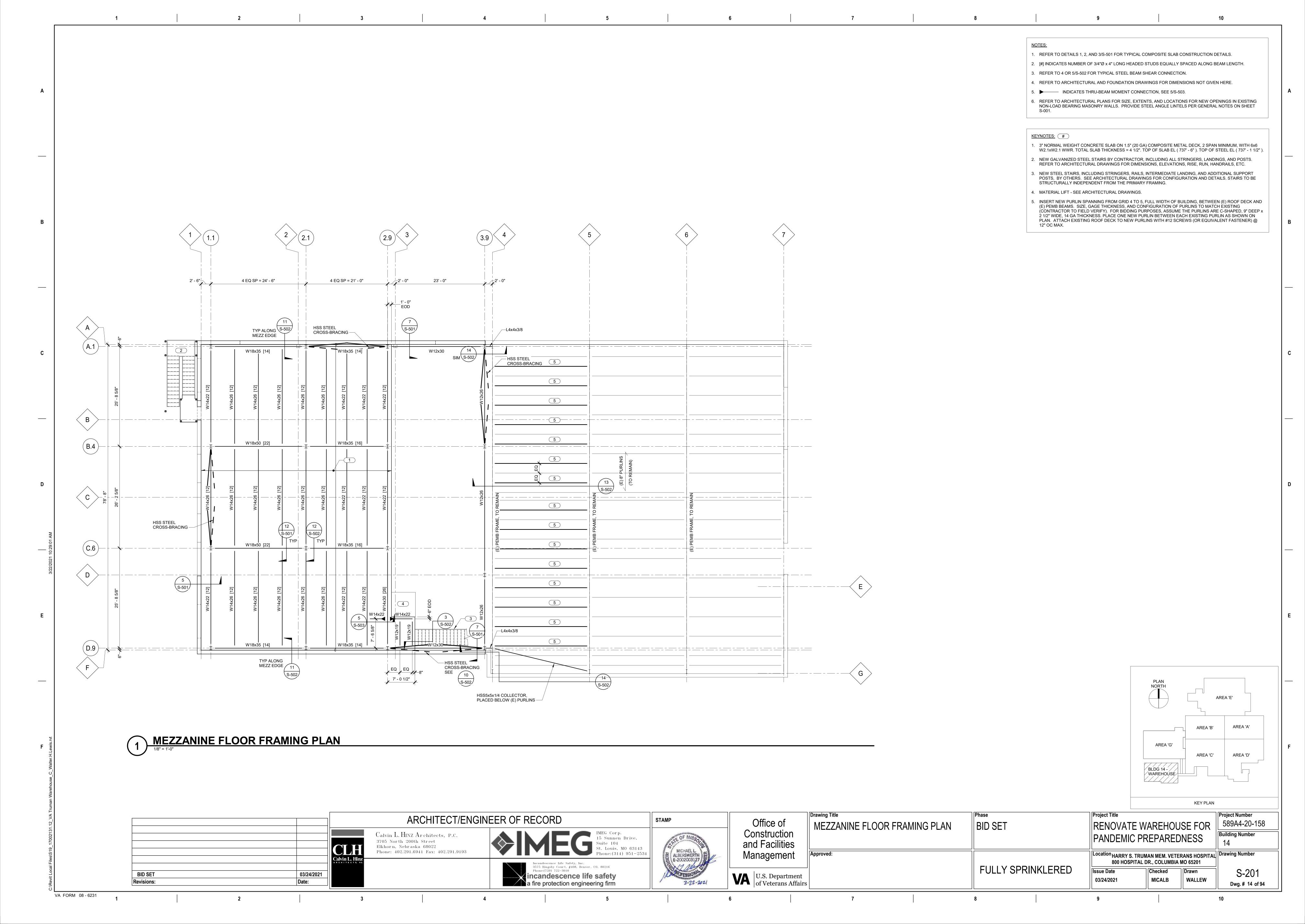
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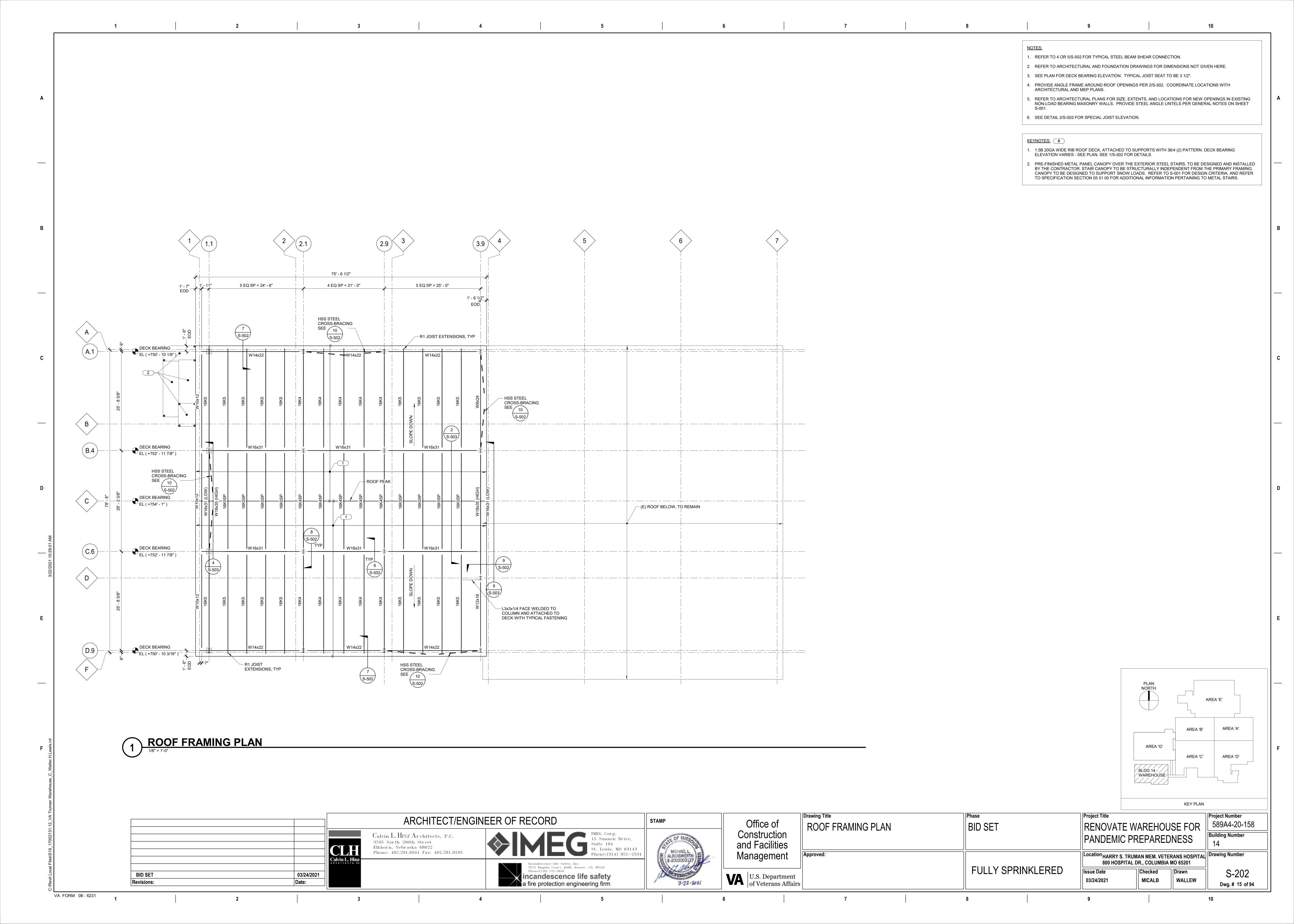
Issue Date 03/24/2021 Dwg. # 12 of 94

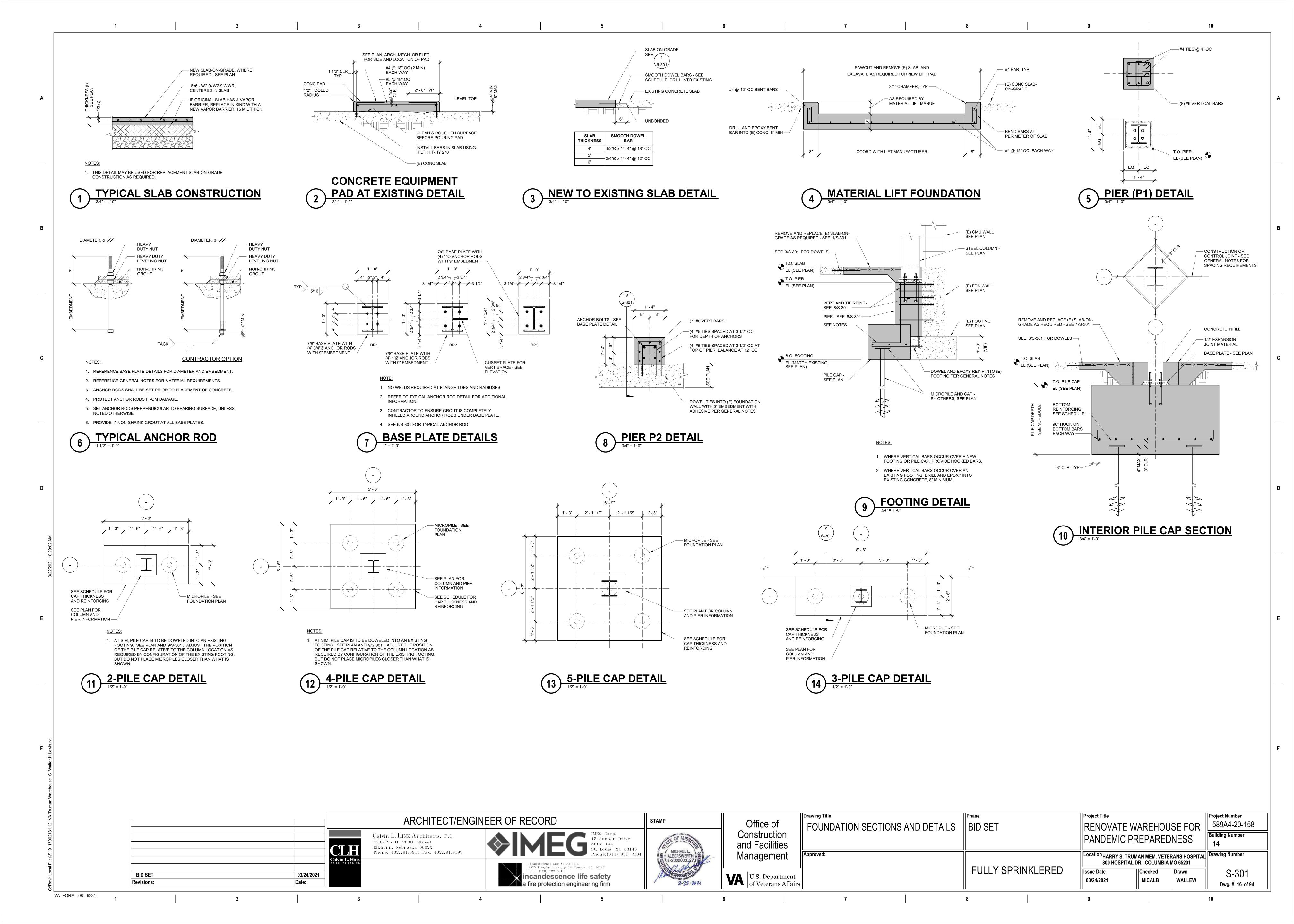
ADDITIONAL INFORMATION ABOUT WORK REQUIRED, SPECIFIC TO THE

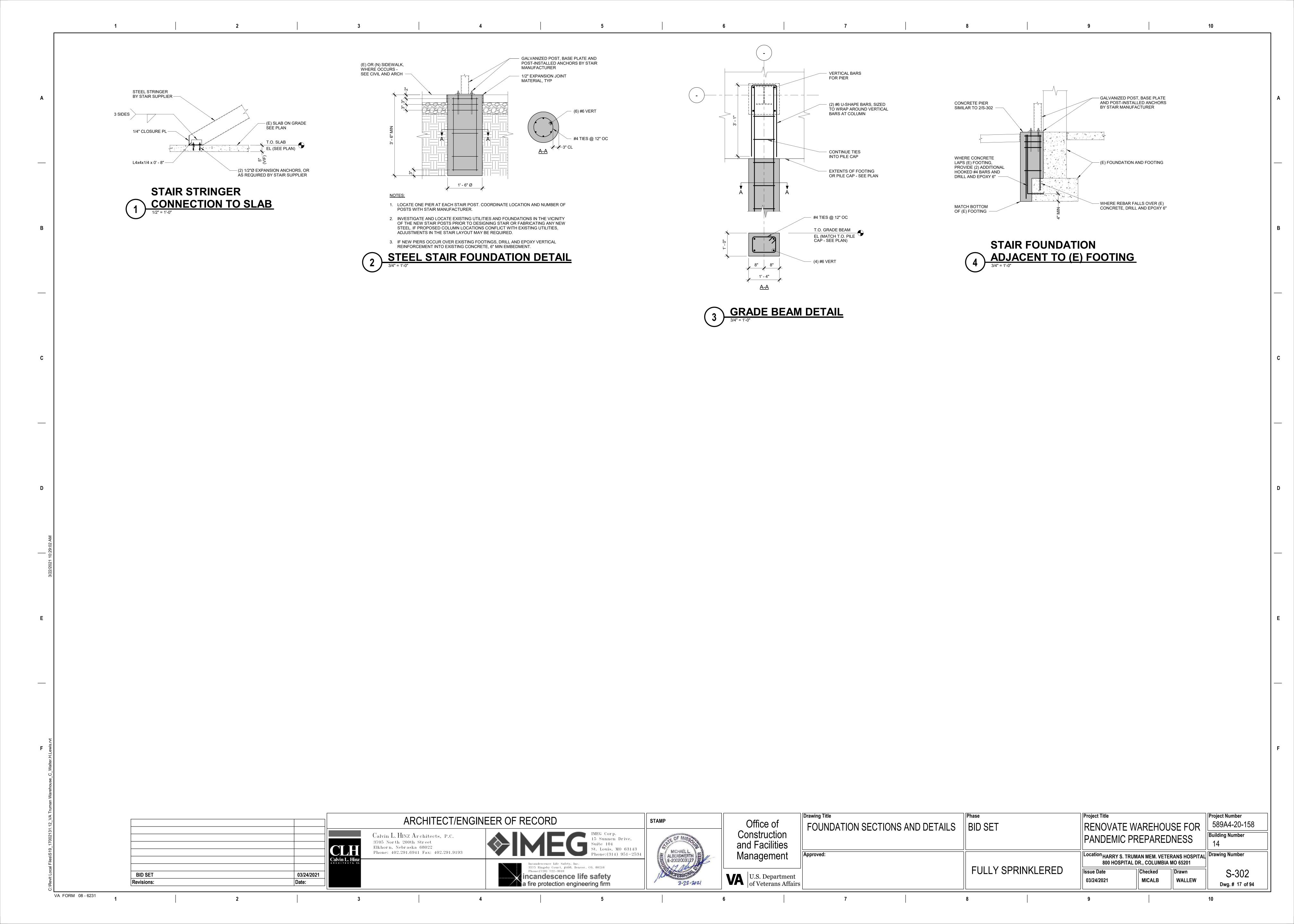
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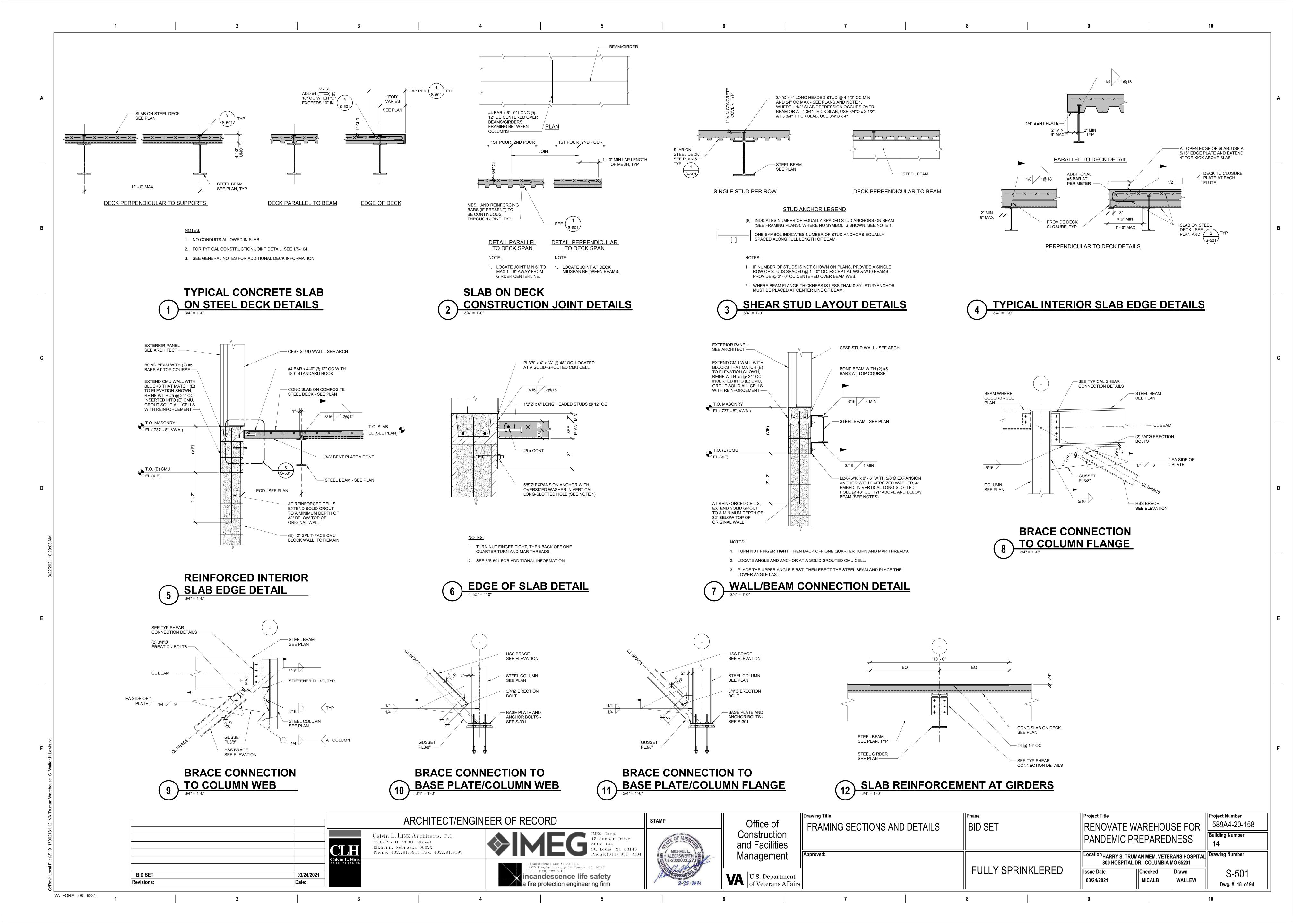


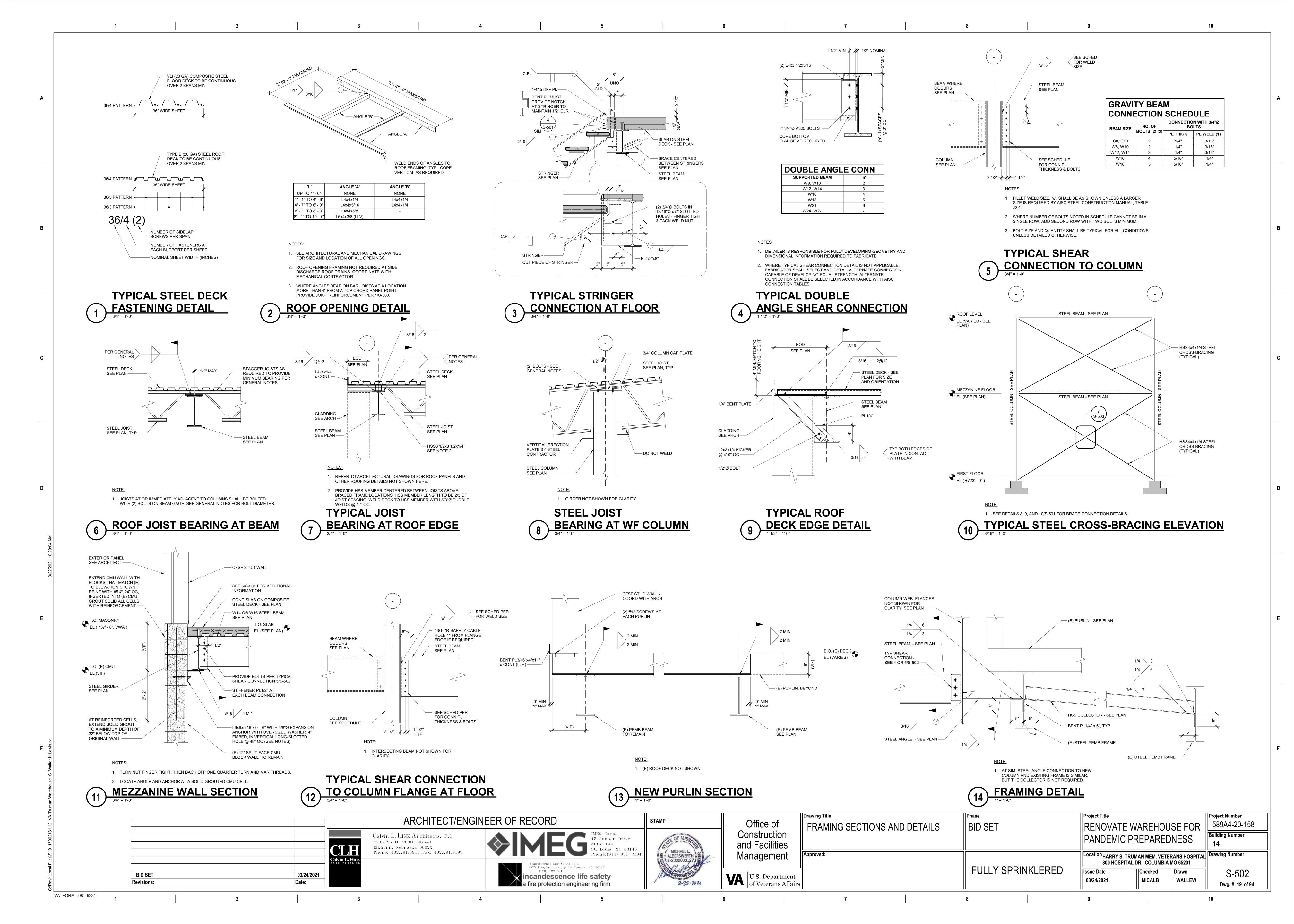


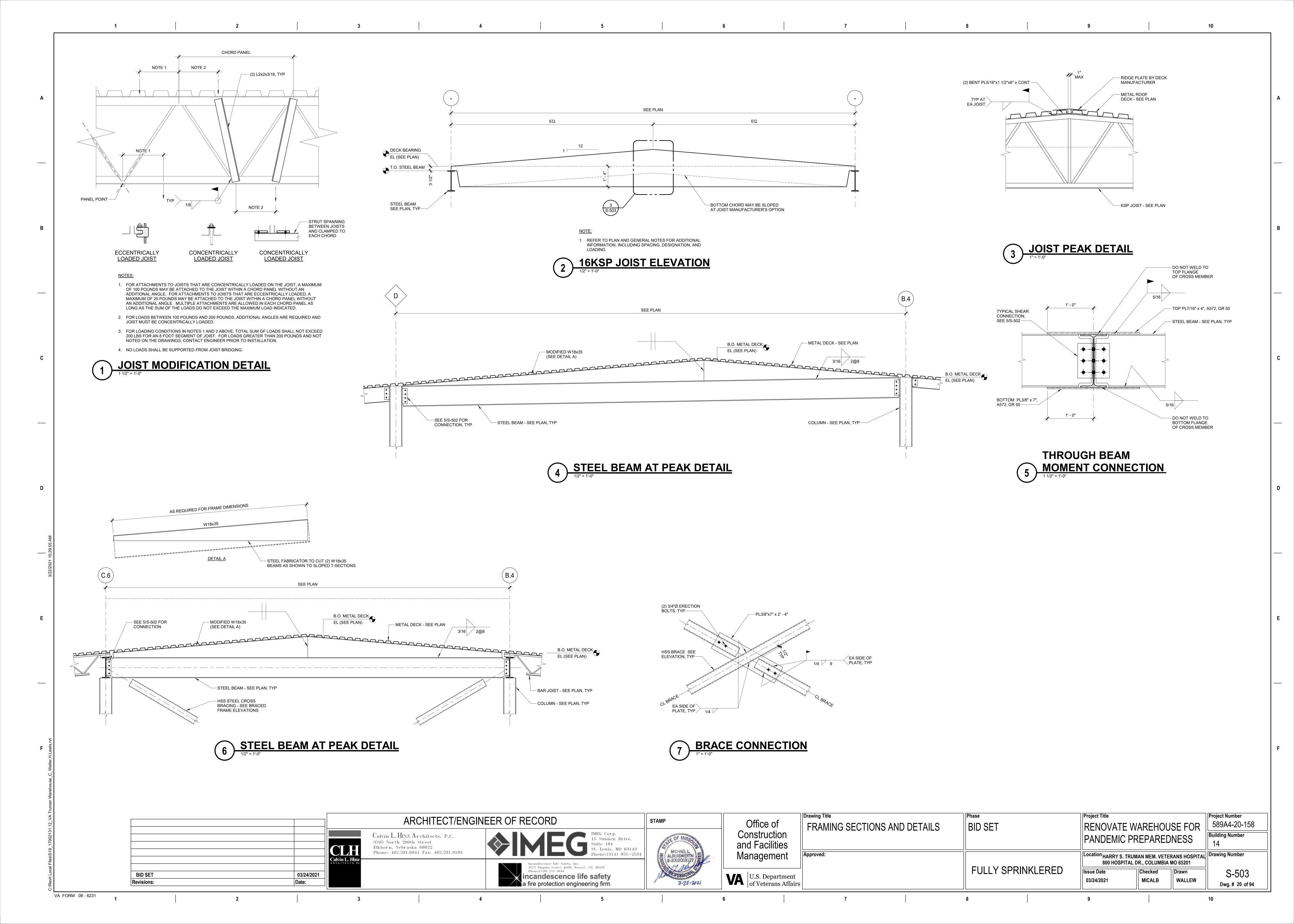


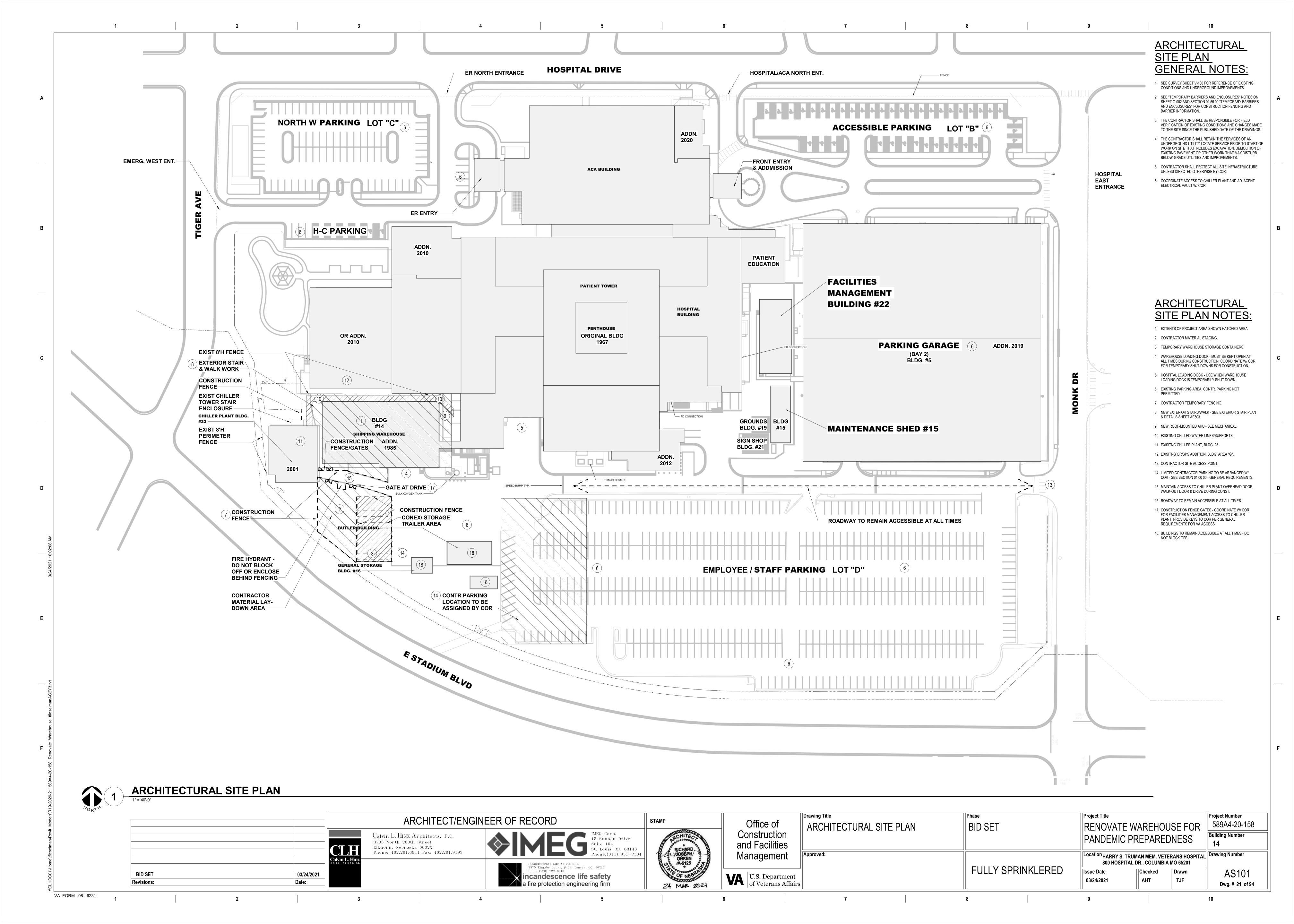


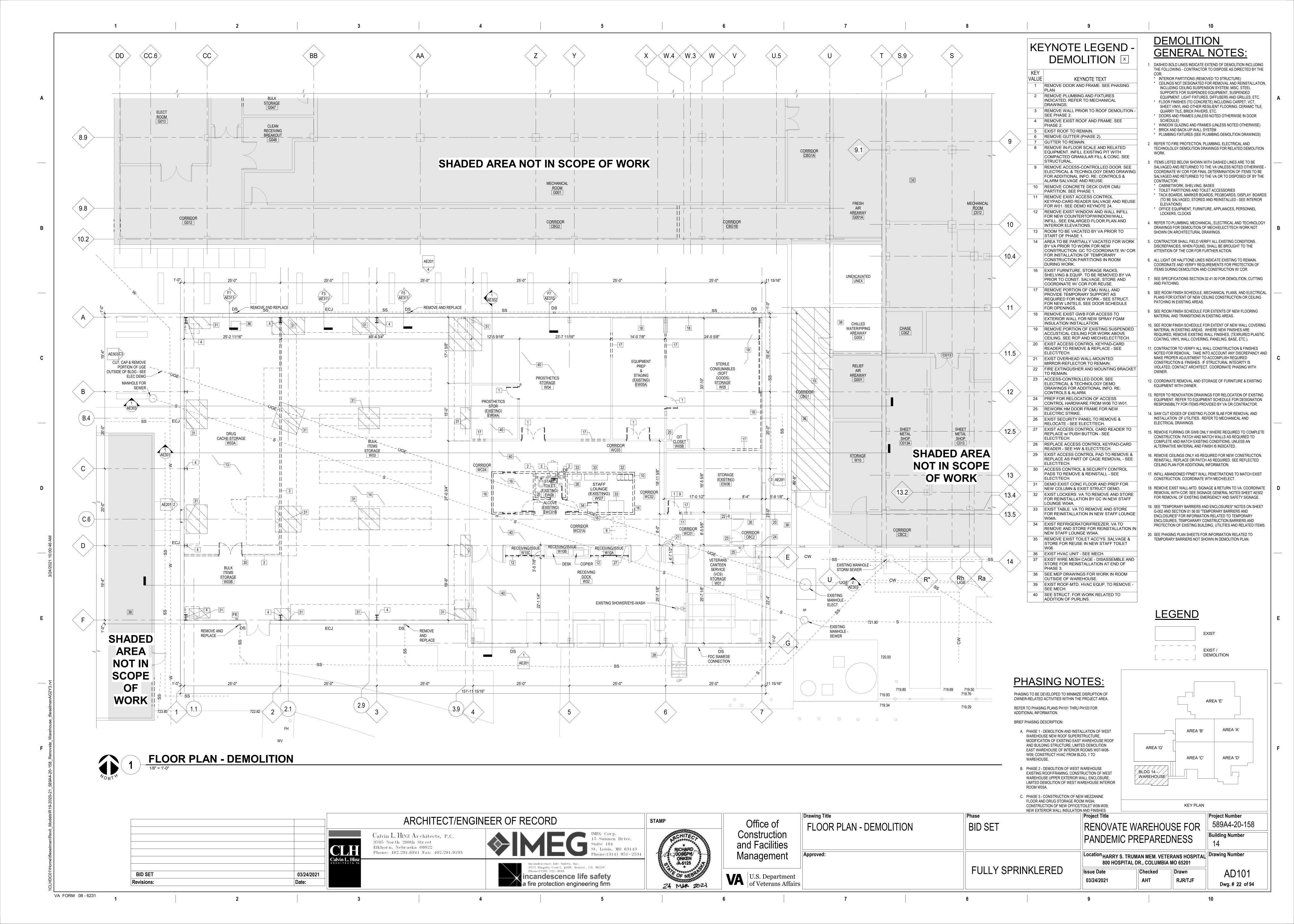


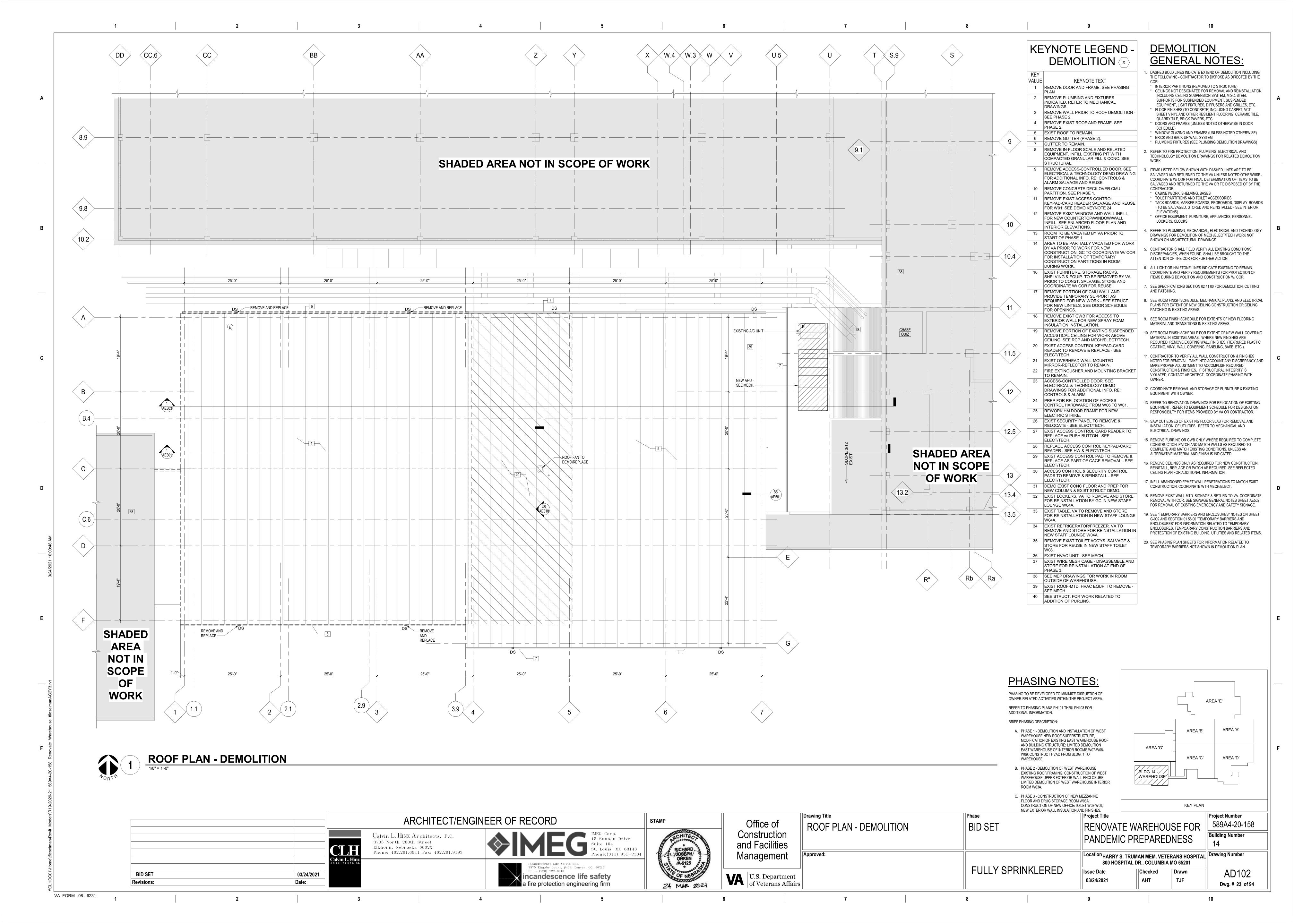


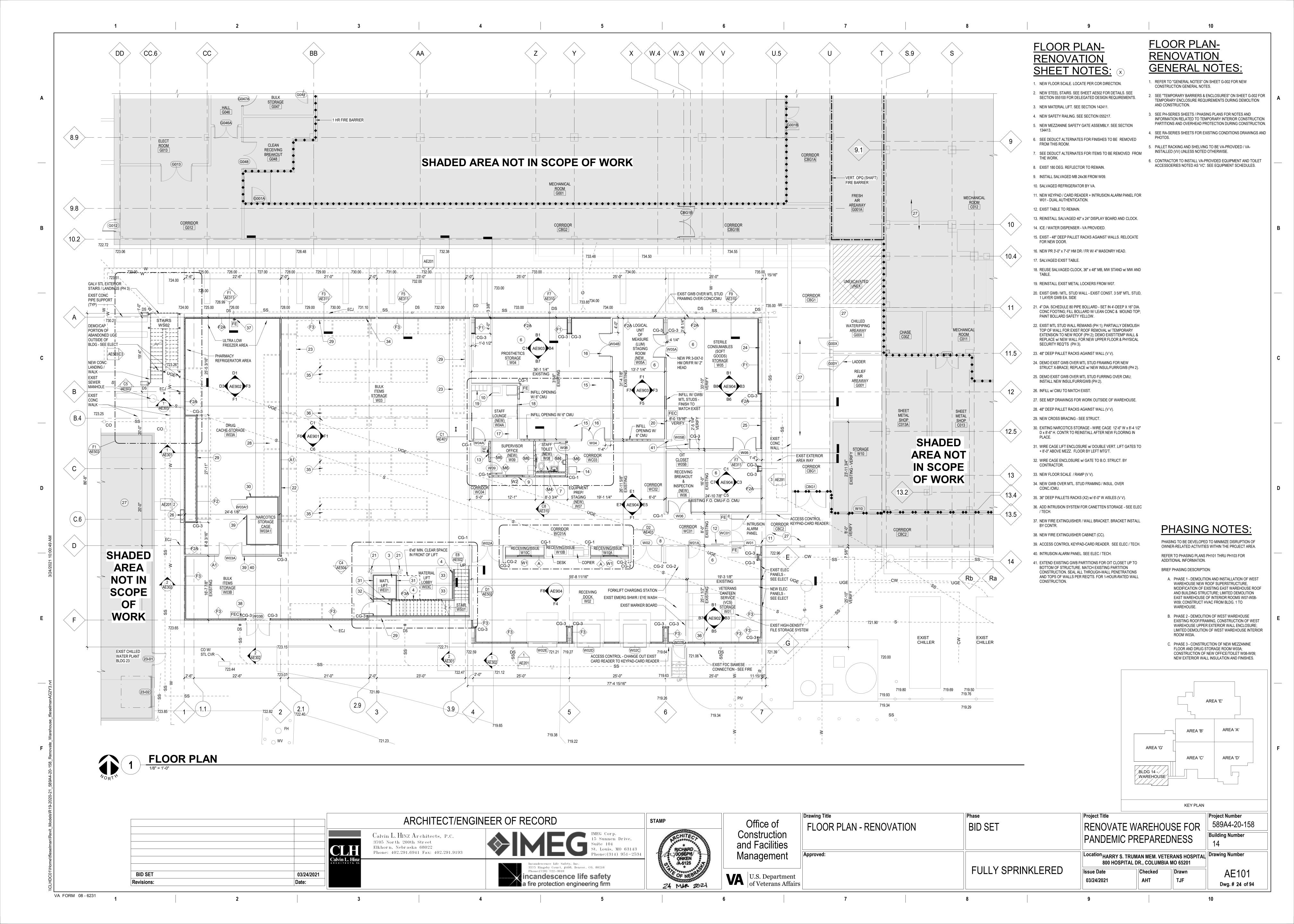


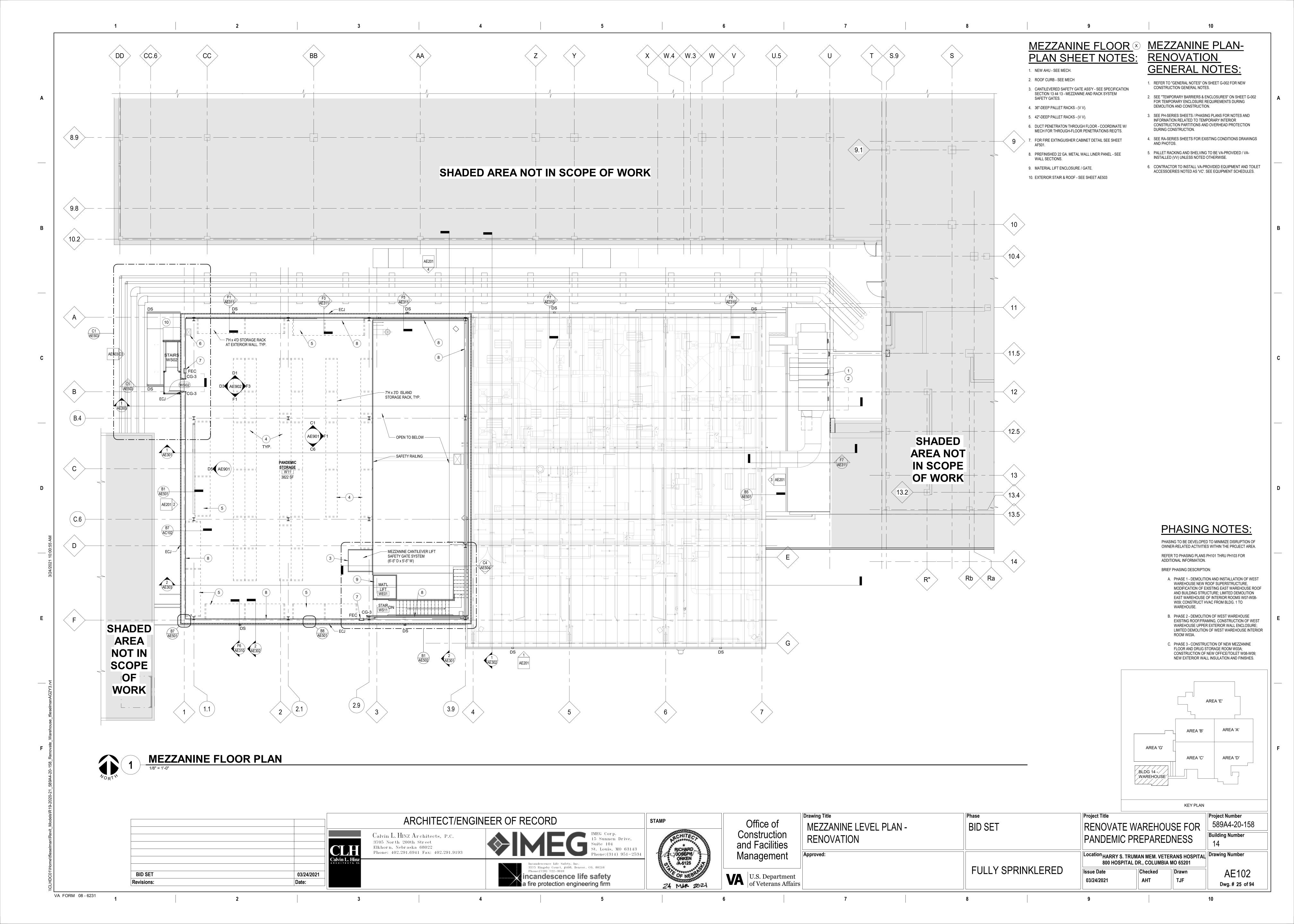


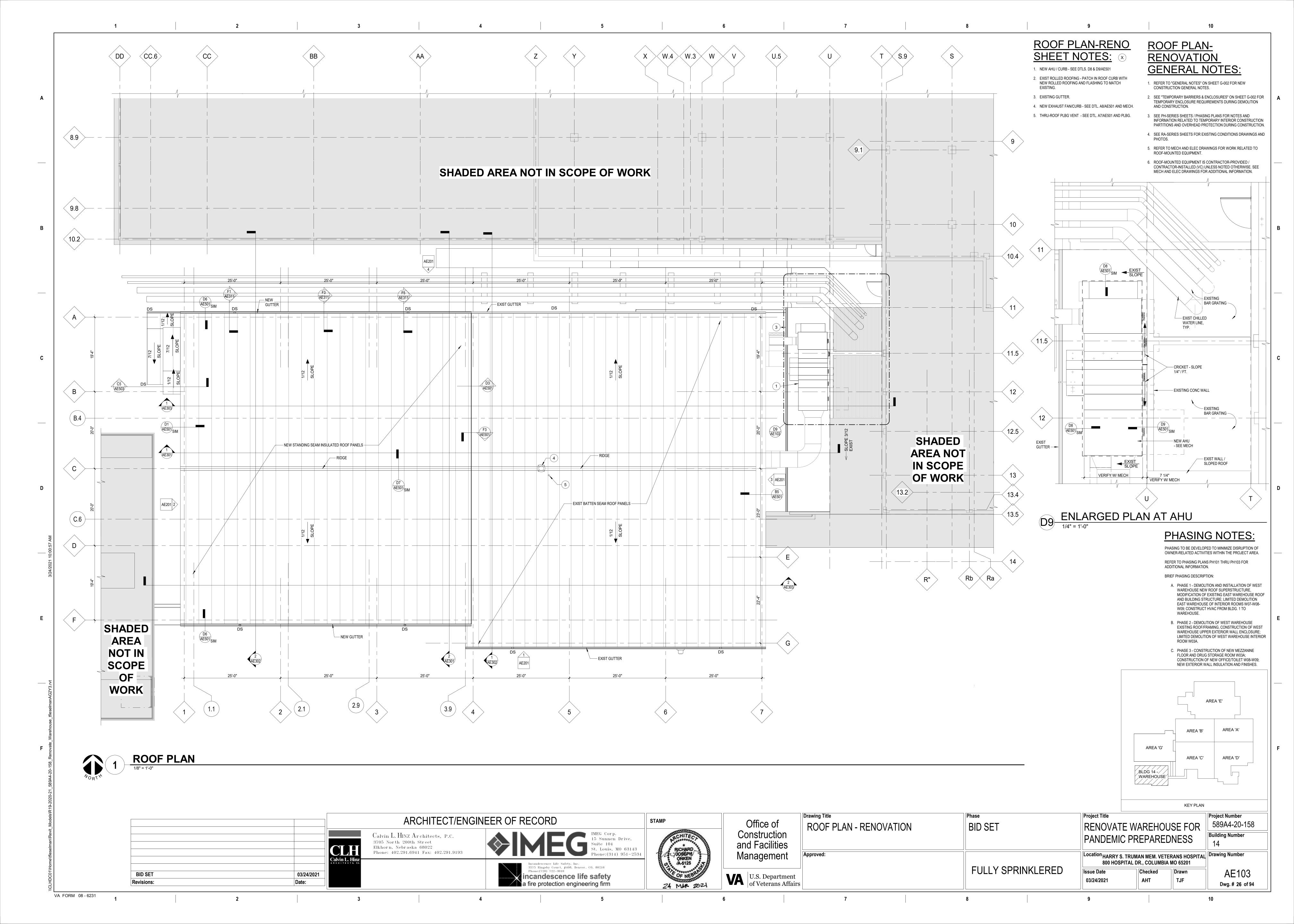


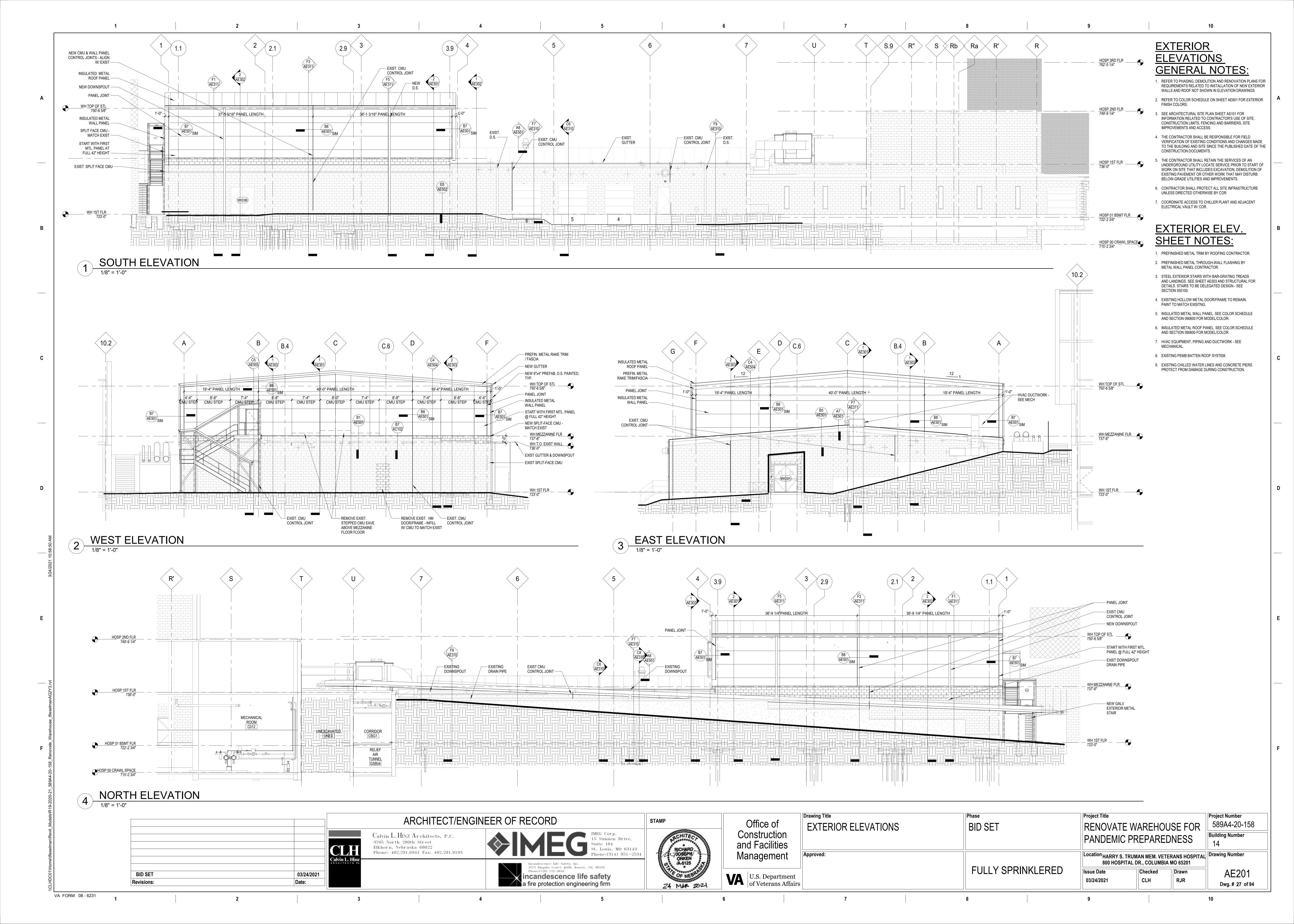


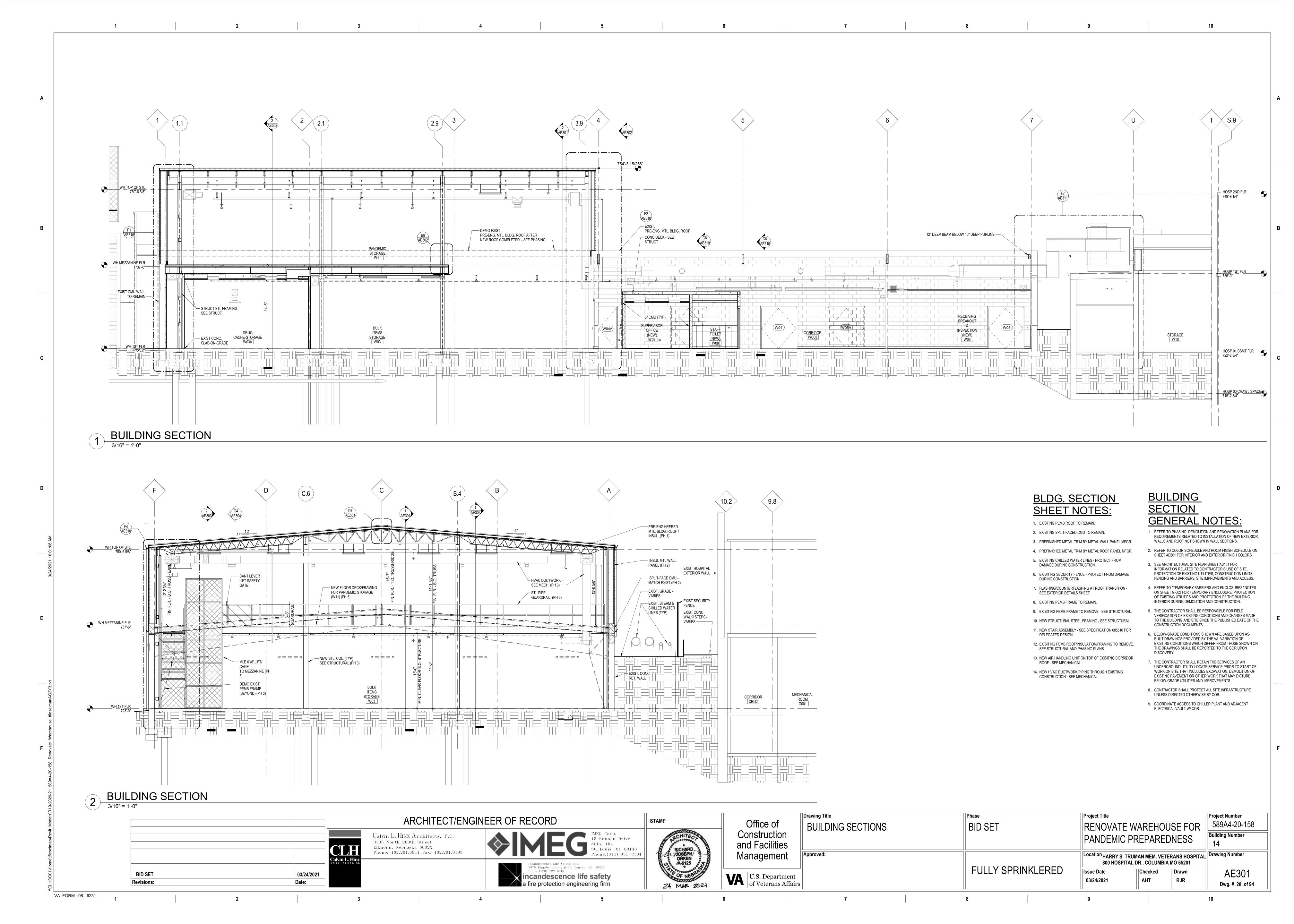


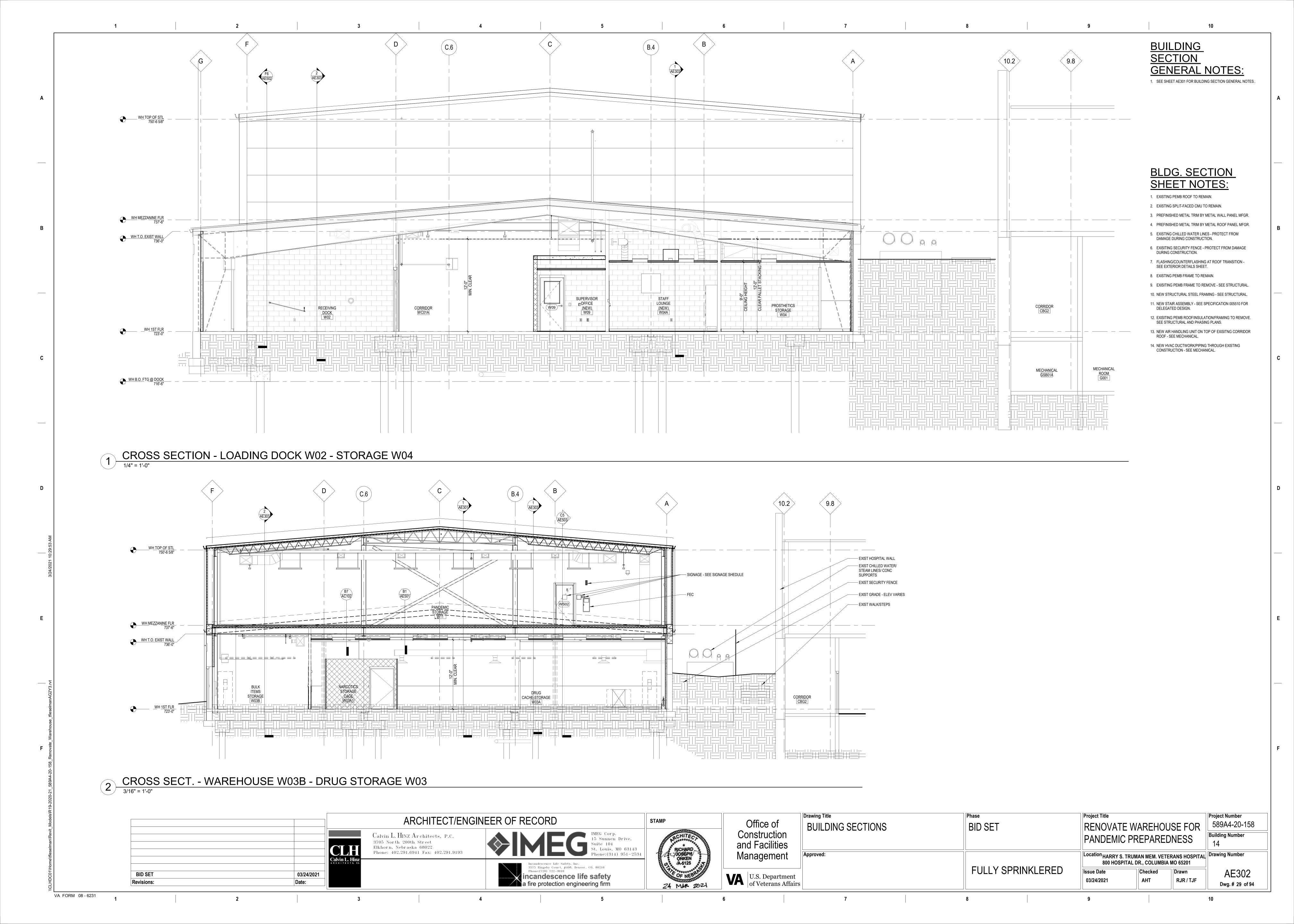


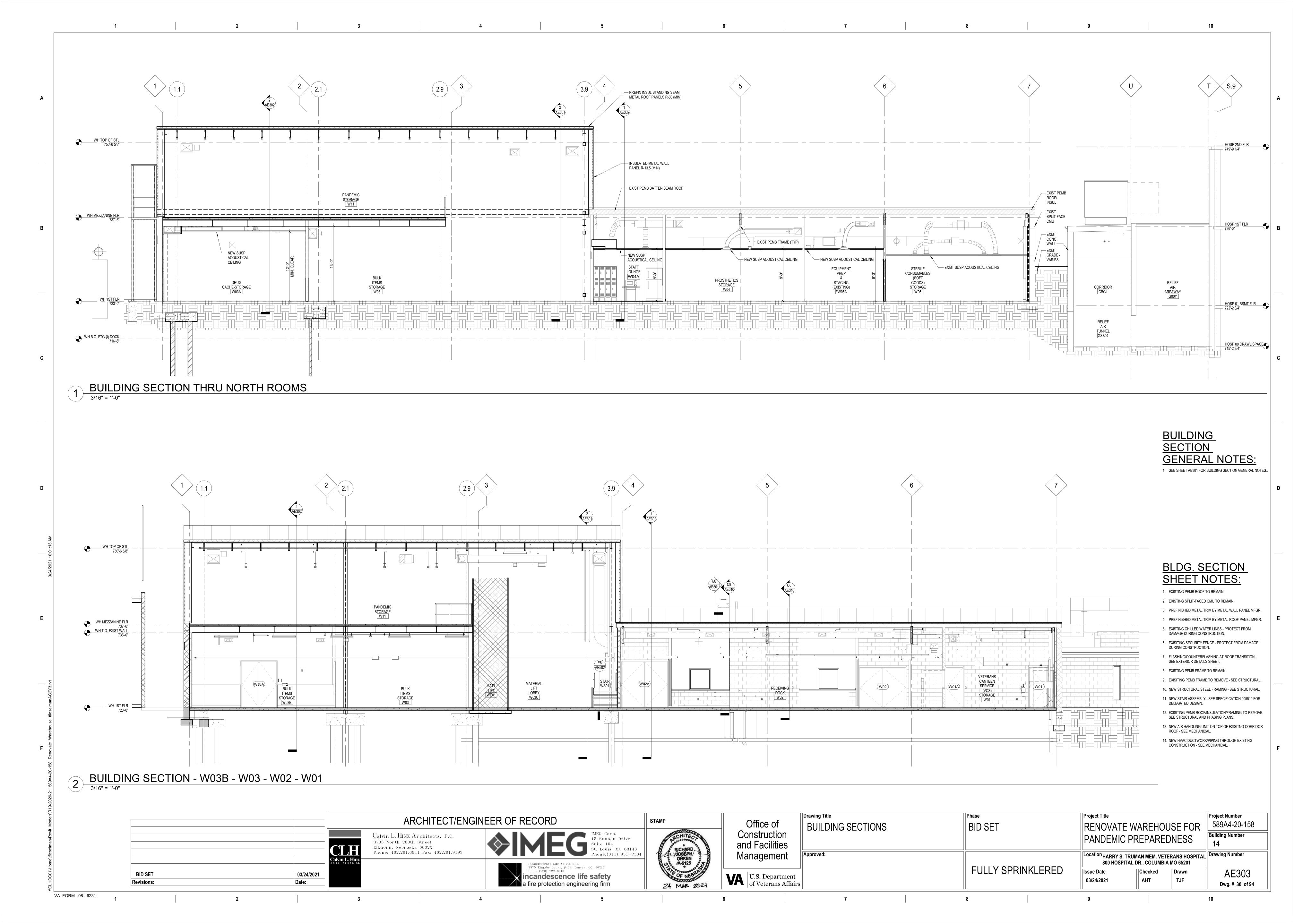


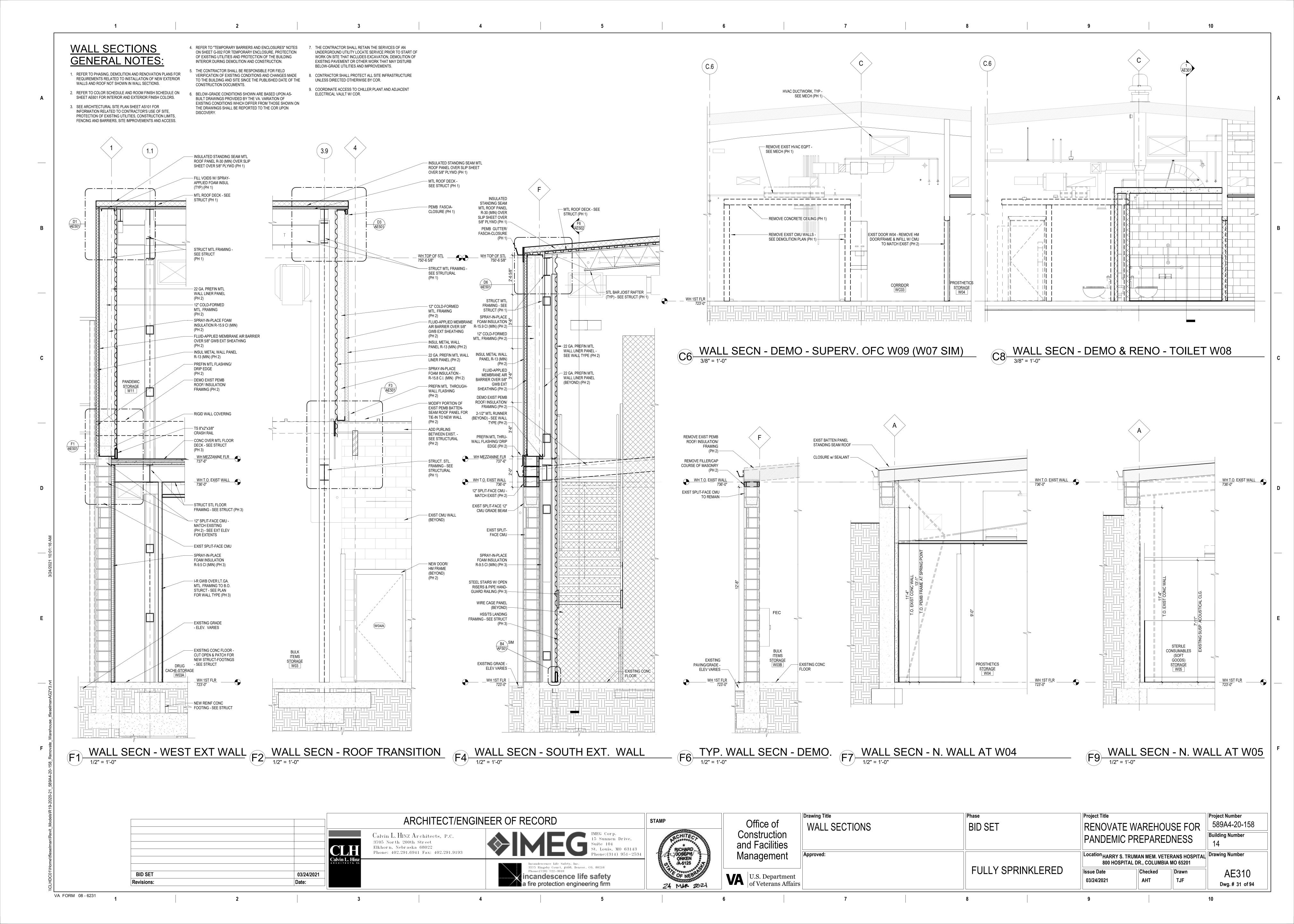












WALL SECTIONS
GENERAL NOTES:

1. SEE SHEET AE310 FOR WALL SECTIONS GENERAL NOTES.

AE311

Dwg. # 32 of 94

WALL SECNS GENERAL NOTES AE311:

FULLY SPRINKLERED

**Issue Date** 

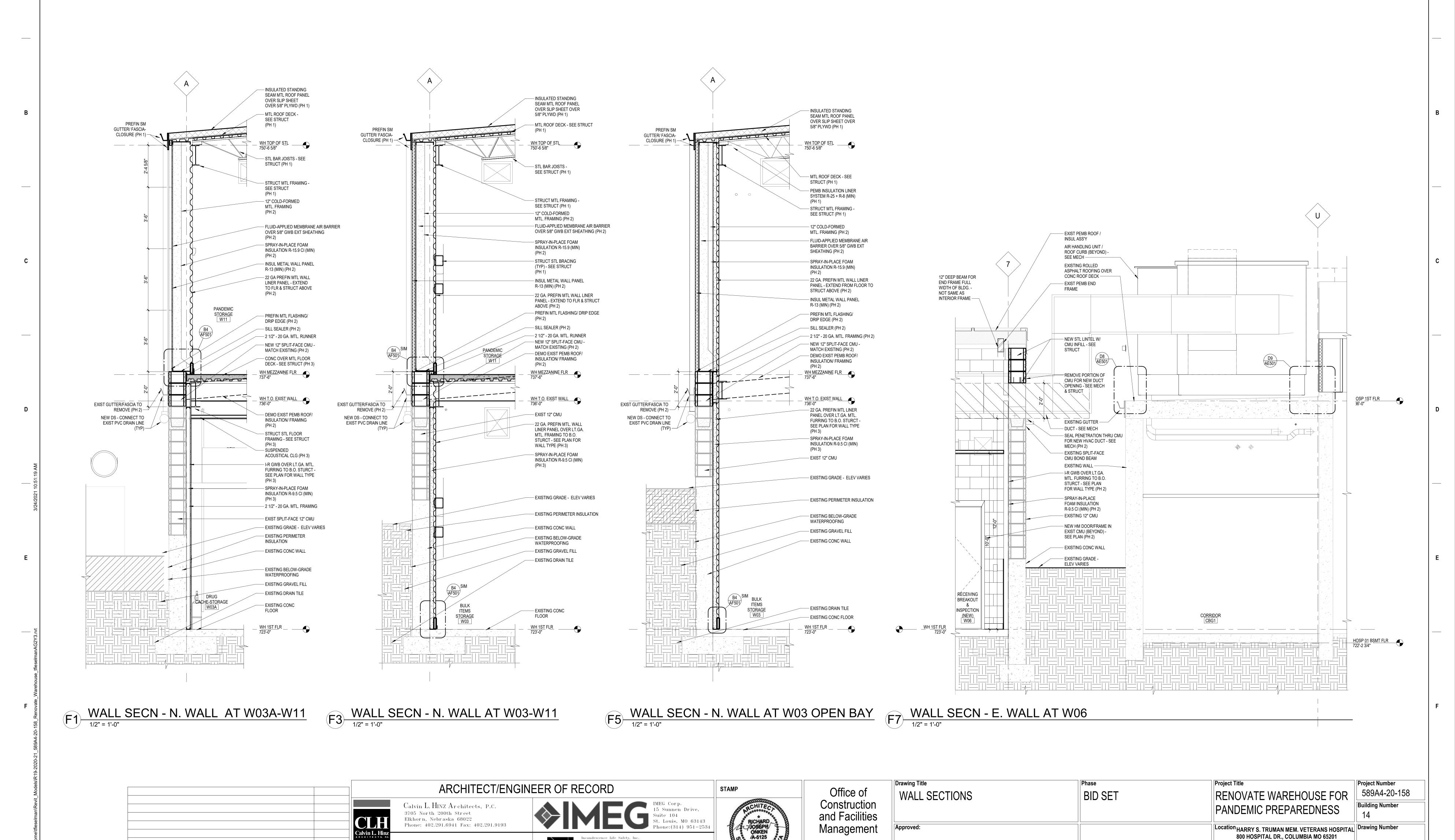
03/24/2021

Checked

AHT

Drawn

TJF



U.S. Department of Veterans Affairs

3575 Ringsby Court, #408, Denver, CO, 80216

incandescence life safety

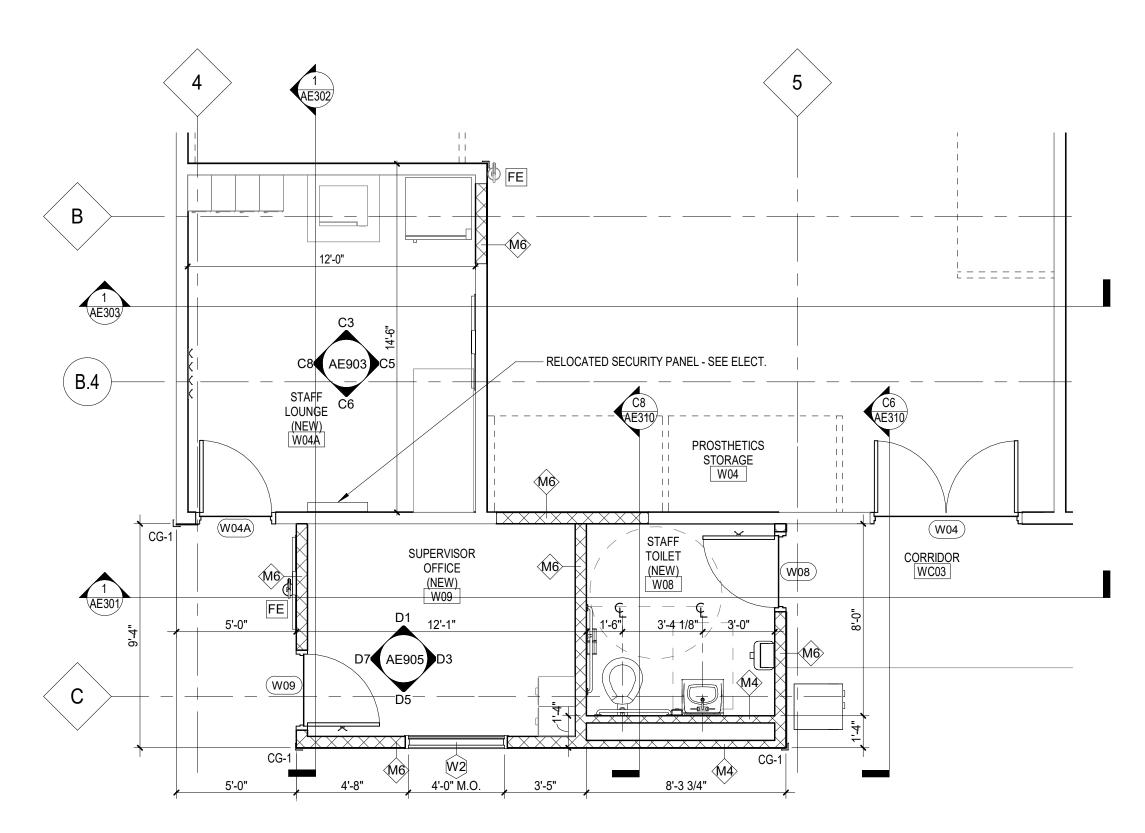
fire protection engineering firm

BID SET

Revisions:

VA FORM 08 - 6231

03/24/2021

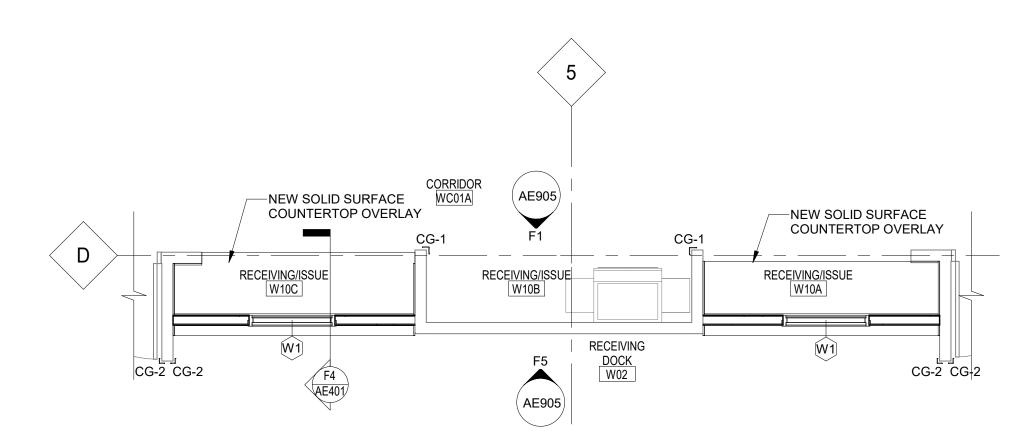


RESTROOM (W08), OFFICE (W09) & LOUNGE (W04A)

ENLARGED FLOOR PLAN

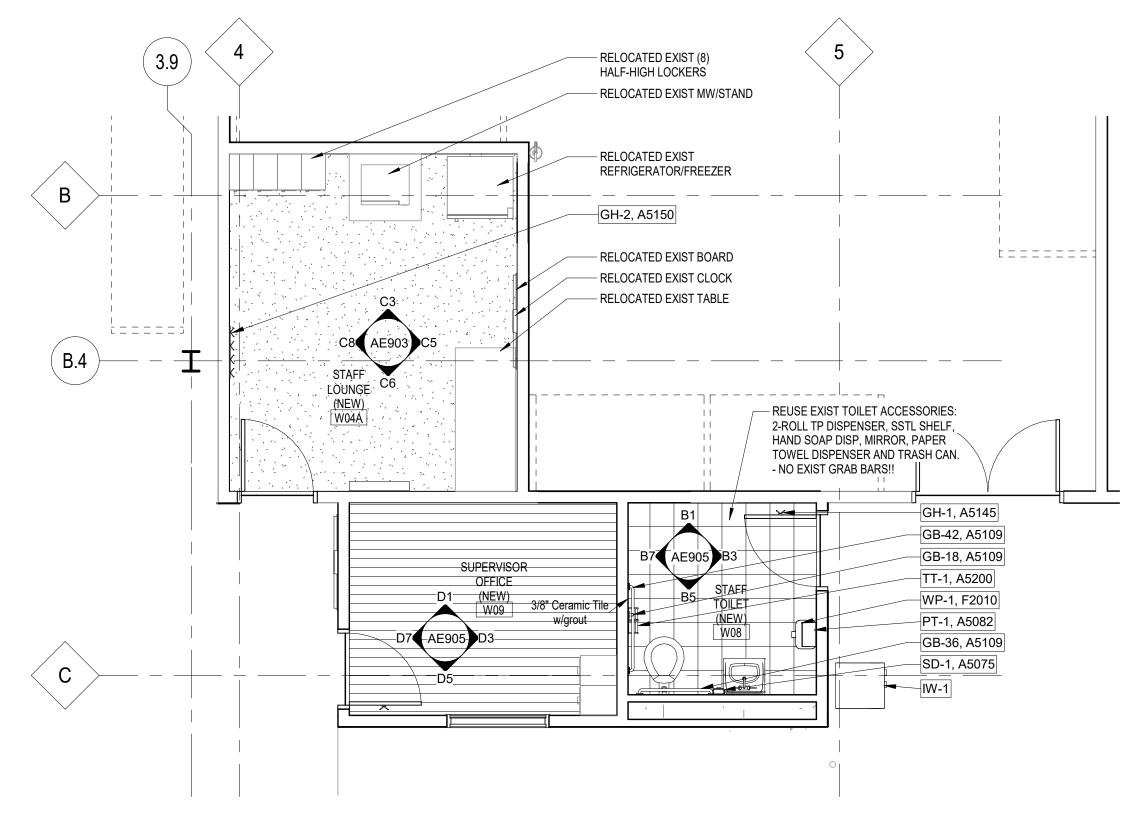
1/4" = 1'-0"

VA FORM 08 - 6231

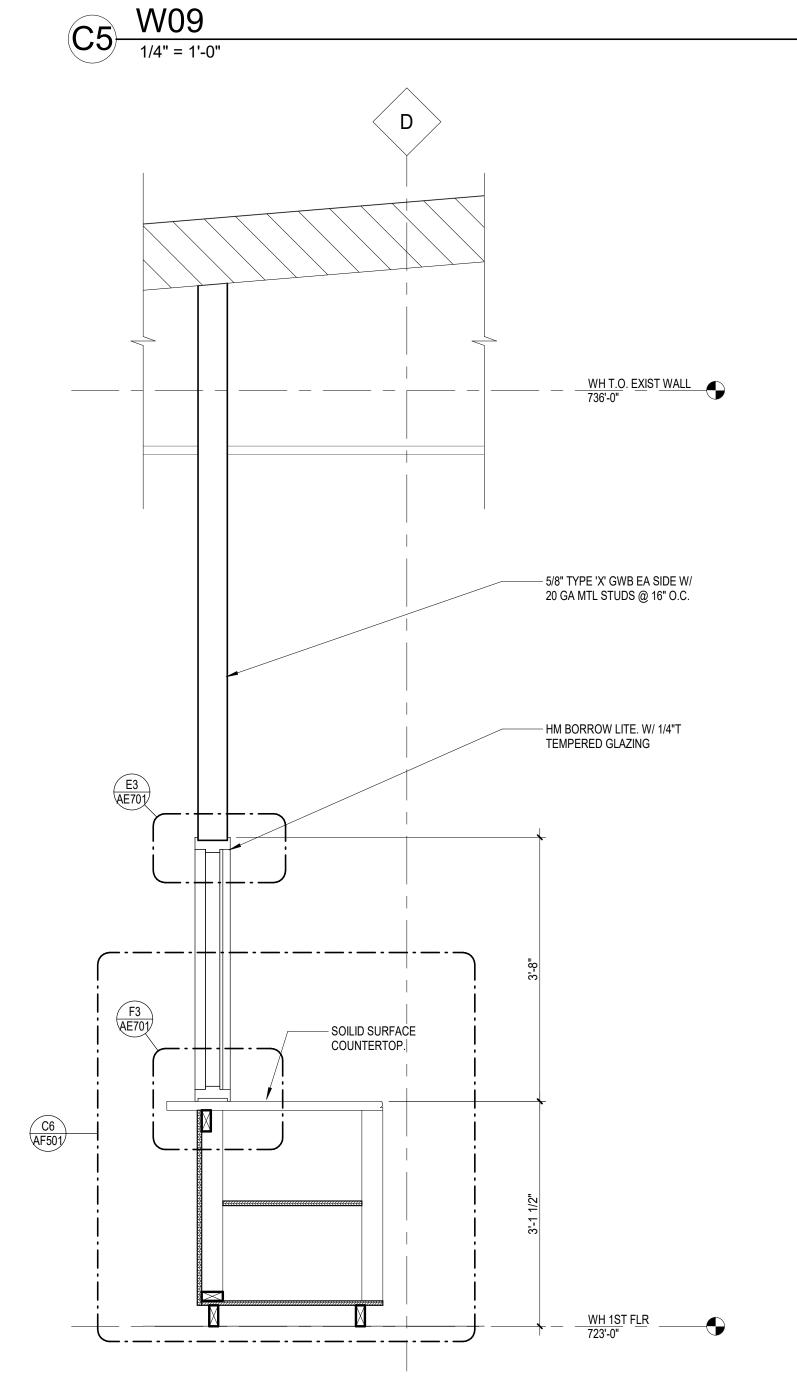


W10 WORK STATIONS ENLARGED PLAN

1/4" = 1'-0"



ENLARGED EQUIPMENT / FINISH PLAN ROOMS W04A, W08 &



F4 SECN - W10A-W10C WORK COUNTER

3/4" = 1'-0"

# LARGE-SCALE PLANS & DETAILS GENERAL NOTES:

**EQUIPMENT SCHEDULE** 

DESCRIPTION

A5145 GARMENT HOOK - DOOR-MTD.

UXXXX ICE & WATER DISPENSER
A1067 MIRROR 24"W X 36"H

A5082 PAPER TOWEL DISPENSER

R5100 REFRIGERATOR / FREEZER

A5200 TOILET TISSUE DISPENSER

A5075 SOAP DISPENSER

WP-1 F2010 WASTE PAPER BASKET

A5150 GARMENT 4 HOOK - WALL-MTD.

JSN

A5109 GRAB BAR 18" A5109 GRAB BAR 36" A5109 GRAB BAR 42" PROVIDED INSTALLED

- REFER TO PHASING, DEMOLITION AND RENOVATION PLANS FOR REQUIREMENTS RELATED TO INSTALLATION OF NEW INTERIOR WALLS AND ROOF MODIFICATIONS.
- 2. REFER TO COLOR SCHEDULE AND ROOM FINISH SCHEDULE ON SHEET AE601 FOR INTERIOR AND EXTERIOR FINISH COLORS.
- 3. REFER TO "TEMPORARY BARRIERS AND ENCLOSURES" NOTES ON SHEET G-002 FOR TEMPORARY ENCLOSURE, PROTECTION OF EXISTING UTILITIES AND PROTECTION OF THE BUILDING

INTERIOR DURING DEMOLITION AND CONSTRUCTION.

- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING CONDITIONS AND CHANGES MADE TO THE BUILDING AND SITE SINCE THE PUBLISHED DATE OF THE CONSTRUCTION DOCUMENTS.
- 5. BELOW-GRADE CONDITIONS SHOWN ARE BASED UPON AS-BUILT DRAWINGS PROVIDED BY THE VA. VARIATION OF EXISTING CONDITIONS WHICH DIFFER FROM THOSE SHOWN ON THE DRAWINGS SHALL BE REPORTED TO THE COR UPON
- 6. THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN UNDERGROUND UTILITY LOCATE SERVICE PRIOR TO START OF WORK ON SITE THAT INCLUDES EXCAVATION, DEMOLITION OF EXISTING PAVEMENT OR OTHER WORK THAT MAY DISTURB BELOW-GRADE UTILITIES AND IMPROVEMENTS.
- 7. CONTRACTOR SHALL PROTECT ALL SITE INFRASTRUCTURE UNLESS DIRECTED OTHERWISE BY COR.

# LARGE SCALE PLANS & DETAILS SHEET NOTES:

- FLOOR FINISH TRANSITION REFER TO SHEET AF501 FOR DETAILS AND ROOM FINISH SCHEDULE FOR FINISH FLOORING TO BE USED.
- 2. PLUMBING FIXTURE REFER TO PLUMBING DRAWINGS FOR FIXTURE TYPE.
- 3. TOP OF CERAMIC TILE WALL TO HAVE BULLNOSED CAP MATCHING CERAMIC TILE.

### **PHASING NOTES:**

PHASING TO BE DEVELOPED TO MINIMIZE DISRUPTION OF OWNER-RELATED ACTIVITIES WITHIN THE PROJECT AREA.

REFER TO PHASING PLANS PH101 THRU PH103 FOR ADDITIONAL INFORMATION.

BRIEF PHASING DESCRIPTION:

- A. PHASE 1 DEMOLITION AND INSTALLATION OF WEST WAREHOUSE NEW ROOF SUPERSTRUCTURE, MODIFICATION OF EXISTING EAST WAREHOUSE ROOF AND BUILDING STRUCTURE; LIMITED DEMOLITION EAST WAREHOUSE OF INTERIOR ROOMS W07-W08-W09; CONSTRUCT HVAC FROM BLDG. 1 TO
- B. PHASE 2 DEMOLITION OF WEST WAREHOUSE EXISTING ROOF/FRAMING, CONSTRUCTION OF WEST WAREHOUSE UPPER EXTERIOR WALL ENCLOSURE; LIMITED DEMOLITION OF WEST WAREHOUSE INTERIOR ROOM W03A.
- C. PHASE 3 CONSTRUCTION OF NEW MEZZANINE FLOOR AND DRUG STORAGE ROOM W03A; CONSTRUCTION OF NEW OFFICE/TOILET W08-W09; NEW EXTERIOR WALL INSULATION AND FINISHES.

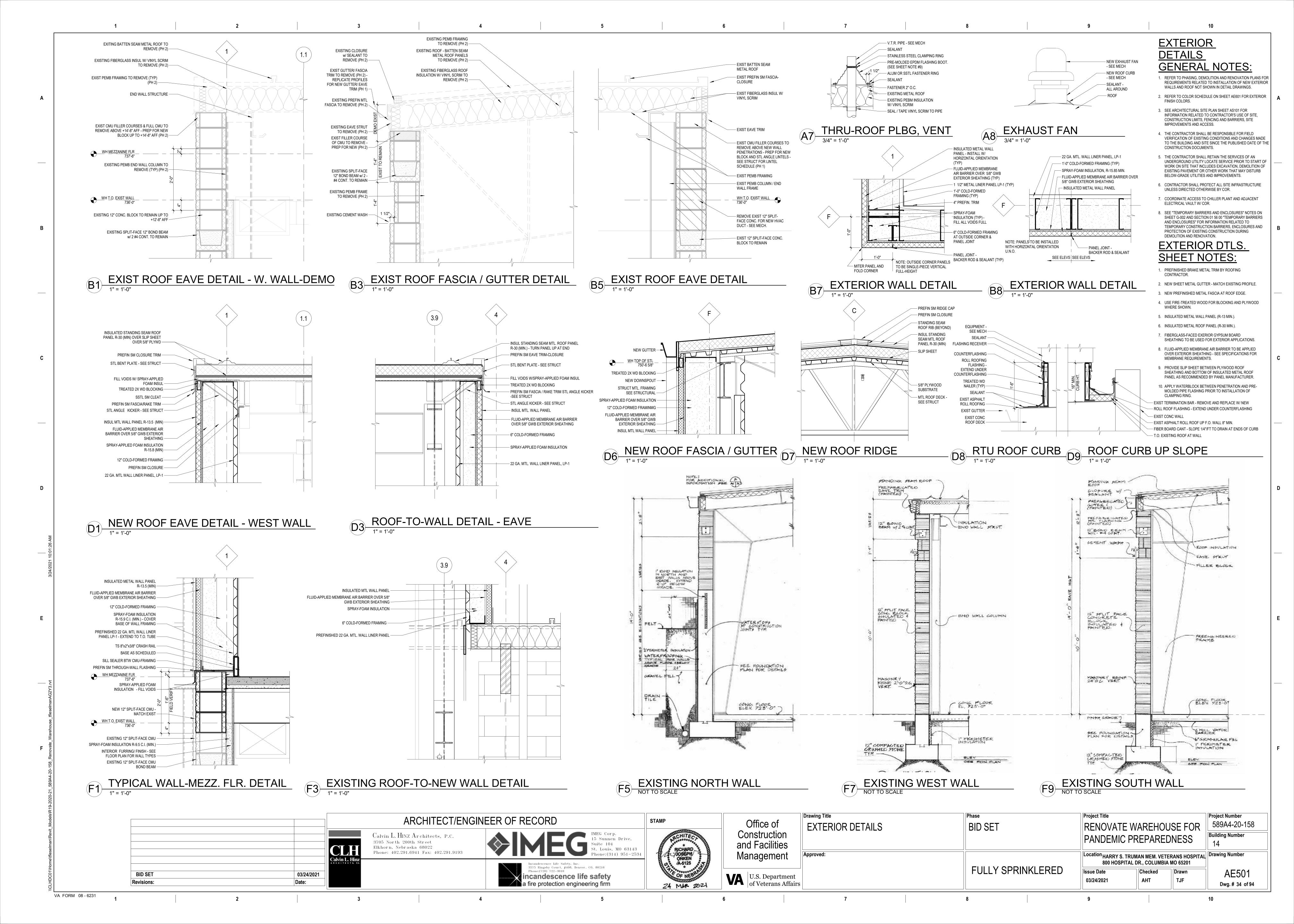
## BID ITEMS & DEDUCT ALTERNATES:

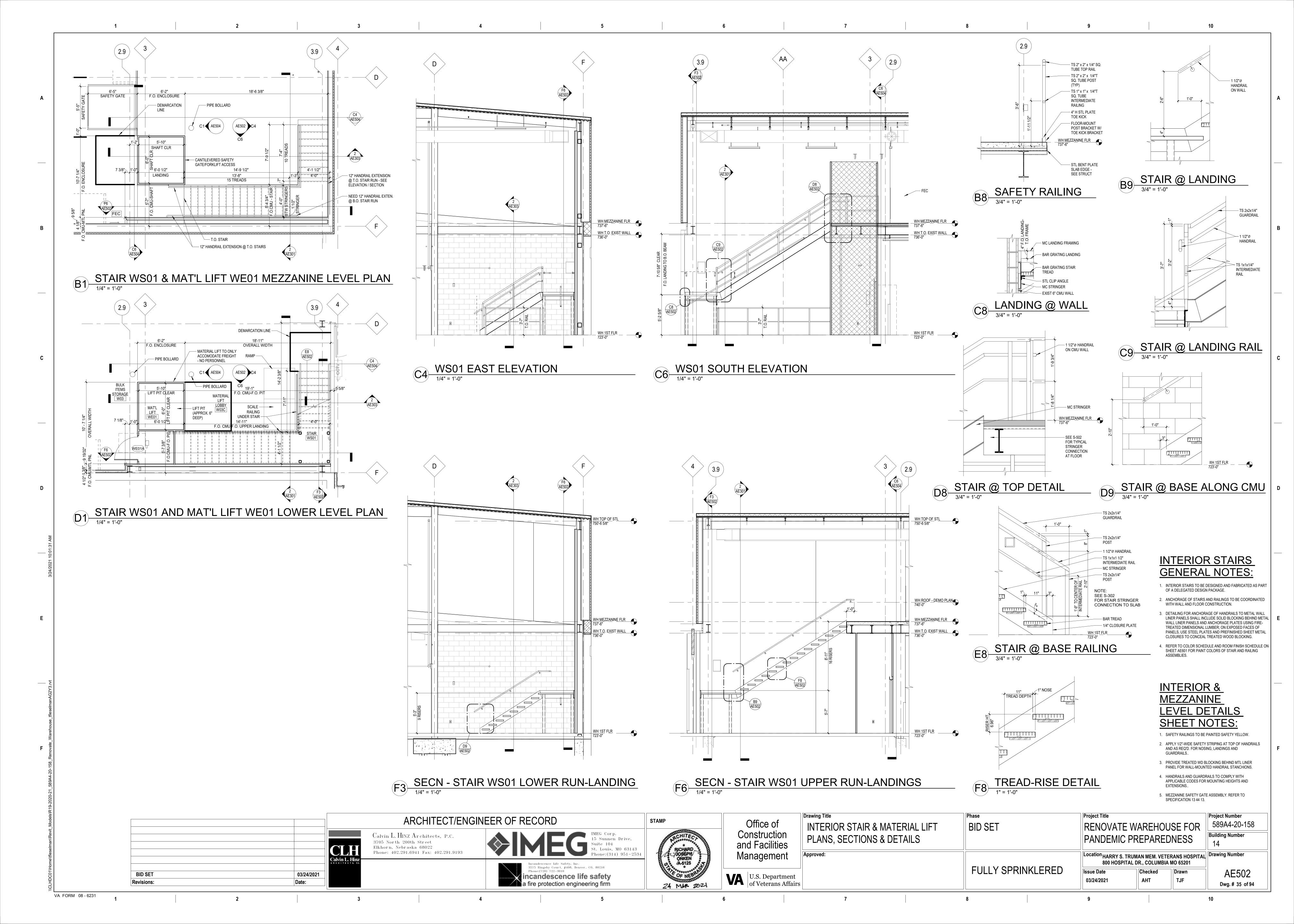
- REFER TO SECTION 01 00 00 FOR STATEMENT OF BID ITEMS
- A. BID ITEM #1, GENERAL CONSTRUCTION: BASE BID: Renovate Warehouse for Pandemic Preparedness: Includes all scope communicated in the drawings and specifications.
   1. Work includes general construction, alterations, walks, grading, drainage, necessary removal of existing structures
- and construction of certain other items.

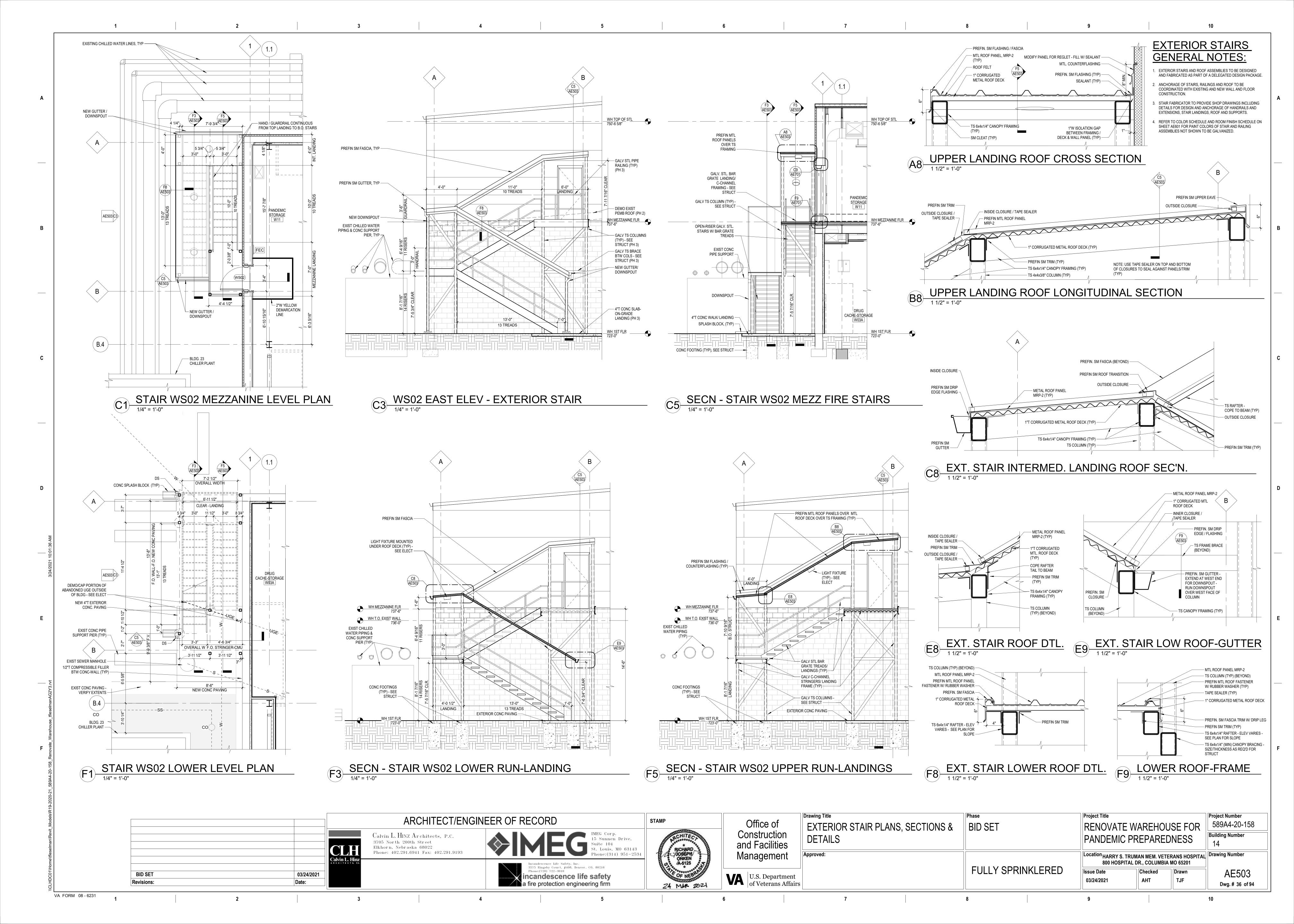
  B. BID ITEM #2, Renovate Warehouse for Pandemic Preparedness: Includes all scope described in Bid Item #1 excluding Bid Deduct #1 described below:
- Work associated with new Material Lift WE01.
   Work associated with construction and finishes for new Rooms W08 and W09 (Demolition of existing Rooms W07,
- W08 and W09, including plumbing, fixtures and finishes in Room W08 will be retained in Base Bid);

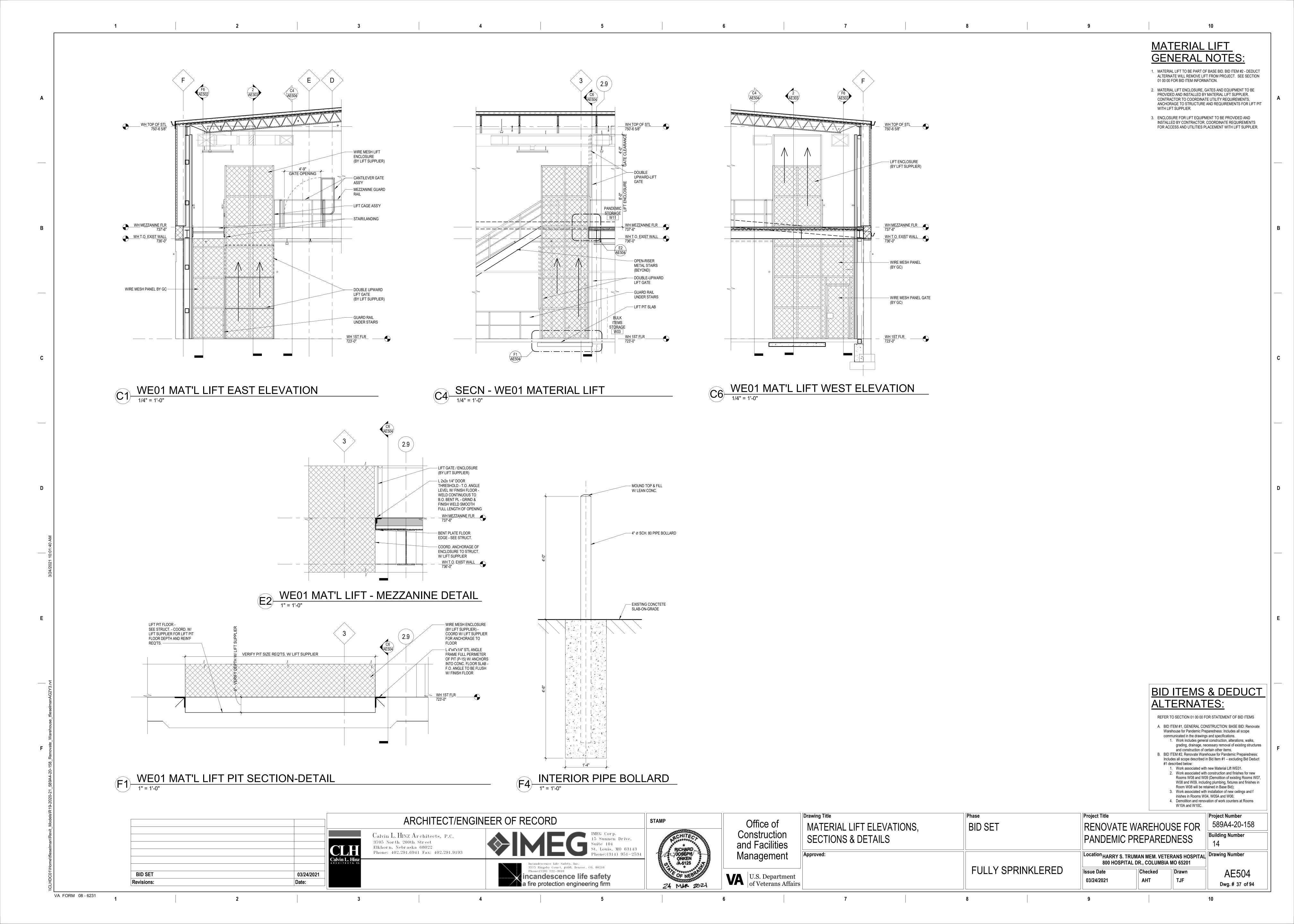
  3. Work associated with installation of new ceilings and finishes in Rooms W04, W055, and W06;
- 3. Work associated with installation of new ceilings and f inishes in Rooms W04, W05A and W06;4. Demolition and renovation of work counters at Rooms W10A and W10C.

Project Number Drawing Title Project Title ARCHITECT/ENGINEER OF RECORD STAMP Office of 589A4-20-158 BID SET LARGE SCALE PLANS & DETAILS RENOVATE WAREHOUSE FOR Construction Calvin L. HINZ Architects, P.C. **Building Number** PANDEMIC PREPAREDNESS 3705 North 200th Street and Facilities RICHARD JOSÉPH ONKEN A-5125 Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193 Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number Management 800 HOSPITAL DR., COLUMBIA MO 65201 FULLY SPRINKLERED 3575 Ringsby Court, #408, Denver, CO, 80216 AE401 Checked **BID SET** ncandescence life safety 03/24/2021 U.S. Department of Veterans Affairs 03/24/2021 AHT TJF Revisions: Dwg. # 33 of 94 fire protection engineering firm









			COLOR SCHED	ULE	
CODE AT-1	PRODUCT ACOUSTICAL CEILING TILE	MANUFACTURER (NOTED) ARMSTRONG (OR EQ)	PATTERN/COLOR MESA #681 W/ HUMIGUARD PLUS.	MISC. GRID - ARMSTRONG - PRELUDE XL	REMARKS SQUARE EDGE - TYPE 1 - 2'x2' - FOR NEW ACT
	AND GRID	,	2'x2', WHITE	FIRE GUARD 15/16", WHITE	CEILINGS
AT-2	ACOUSTICAL CEILING TILE AND GRID	ARMSTRONG (OR EQ)	CLEAN ROOM VL #868 W/ HUMIGUARD PLUS + FIREGUARD, 2'x2', WHITE	GRID - ARMSTRONG - CLEAN ROOM SYSTEMS CO-EXTRUDED ALUMINUM, 15/16", WHITE	CLEAN STORAGE ROOMS (VINYL FACE AT(SP)) - TYPE 1 - 2'x2' - FOR NEW CEILINGS
CG-1	CORNER GUARD, STL ANGLE	(EXISTING)/NEW TO MATCH EXIST	(EXISTING 3"-W) - NEW-PAINT TO MATCH EXIST COLOR	3" LEG-SGL CORNER; NEW APPLICATIONS; EXISTING RMS - SEE REMARKS	MATCH EXIST; USE AT CMU; LOCATED AT OUTSIDE CORNERS & WALL ENDS, 96" HIGH UNLESS OTHER SHOWN ON INTERIOR ELEV; FOR EXISTING ROOMS W/ NEW GUARDS PAINT TO MATCH EXIST
CG-2	CORNER GUARD, STL ANGLE	(EXISTING)	(EXISTING 2"-W) - REPAINT TO MATCH EXIST COLOR	2" LEG-DBL CORNER; EXISTING RMS - SEE REMARKS	EXIST STL ANGLE AT CMU WALL ENDS; SEE CG-1 REMARKS
CG-3	CORNER GUARD, STAINLESS STEEL	INPRO (OR EQ)	BRUSHED STAINLESS STEEL		USE AT NEW GWB WALL CORNERS; 8'-0"H
CT-1	CERAMIC TILE	DAL-TILE (OR EQ)	EXQUISITE / EQ03 MINK EQ03, MATTE FINISH, 12"X12" X 5/16"	FIELD TILE; USE W/ BULLNOSE CAP; BATHROOM WALLS	BATHROOM W08; WALL TILE OVER EXIST & NEW CMU
CT-2	CERAMIC TILE	DAL-TILE (OR EQ)	EXQUISITE / EQ03 MINK, MATTE	BULLNOSE TILE CAP TO 4'-0" AFF;	BATHROOM W08; REVIEW W/ FACILITY
CT-3	PORCELAIN FLOOR TILE & BASE	CROSSVILLE	FINISH, 3"X12"X5/16"  ECOCYCLE AMERICANA - PLYMOUTH ROCK / AV116, 12"X12"X5/16"; W/ 6"x12" COVED BASE	BATHROOM WALLS BATHROOM FLOOR; COVED BASE TILE	FES-INTERIORS  BATHROOM W08; REVIEW W/ FACILITY FES-INTERIORS
DR-1	WOOD DOORS	VT INDUSTRIES (OR EQ)	RED OAK - RIFT CUT, CLEAR FINISH	FACTORY PREFINISHED	DOORS - MATCH FACILITY MAT'L / COLOR STANDARD
GT-1	GROUT, CERAMIC WALL TILE	PAREX USA (OR EQ)	PRO EPOXY/ 00153 BUCKSKIN	WALL TILE GROUT W/ CT-1 & CT-2	BATHROOM W08 - REVIEW W/ FACILITY
GT-2	GROUT, PORCELAIN FLOOR TILE-BASE	LATICRETE	SPECTRALOCK / DUSTY GREY #60	PORCELAIN FLOOR TILE-BASE GROUT W/ CT-3	FES-INTERIORS  BATHROOM W08 - REVIEW W/ FACILITY FES-INTERIORS
HR-1	HANDRAIL	(SEE REMARKS)	(SEE REMARKS) / SAFETY YELLOW	MATCH EXISTING USED IN BACK-OF-HOUSE AEAS	FACTROY-FINISHED RAILS; T.O. RAIL 42" AFF; REVIEW W/ FACILITY FES-INTERIORS
KP-1	DOOR PROTECTION PLATE (ARMOR PLATE)	INPRO (OR EQ)	BRUSHED STAINLESS STEEL	MATCH EXISTING USED IN BLDG.; PUSH/KICK SIDE OF DOOR U.N.O.	SEE HW SCHEDULE FOR SIZE; MATCH FACILITY STD.; USE W/ HM & WD DOORS
LVT-1	LUXURY VINYL TILE	PATCRAFT (OR EQ)	1447V ENRICH / ENCOURAGE 00790 - PLANK SIZE 9.84"W X 59.06"L (25cm W X 150cm L) X 5/16"T	LIGHT BROWN-GRAY WOOD TONE; SEE SPEC FOR PLANK PATTERN	OFFICE W09 - REVIEW W/ FACILITY FES-INTERIORS
	METAL WALL LINER PANEL INSULATED METAL ROOF	BRIDGER STEEL (OR EQ) KINGSPAN (OR EQ)	7.2 STRUCTURAL / REGAL WHITE  KINGSEAM - MESA / REGAL WHITE	22 GA. RIBBED PANEL -RIBS AT 7.2" O.C.; HORIZONTAL MOUNTING 40"-WIDE PANEL (R-30 MIN) W/	EXPOSED FASTENER COLOR TO MATCH LINER PANEL CONCEALED PANEL FASENERS
	PANEL	, ,		STANDING SEAM RIBS	
	METAL ROOF PANEL	MBCI (OR EQ)	PBR / WHITE TO MATCH MRP-1	EXPOSED FASTENERS; USE PREFINISHED TRIMS FROM MFGR.	EXTERIOR STAIRS; PROVIDE EXPOSED FASTENERS IN COLOR TO MATCH ROOF PANEL
MWP-1	INSULATED METAL WALL PANEL	KINGSPAN (OR EQ)	KS SHADOWLINE / SURREY BEIGE	42"-WIDE PANEL (R-13 MIN), HORIZONTAL MOUNTING	CUT PANELS TO HEIGHT AT SOUTH-EAST-NORTH WALLS AND EAVES
MWP-2	INSULATED METAL WALL PANEL	KINGSPAN (OR EQ)	KS SHADOWLINE / SURREY BEIGE	24"-WIDE PANEL (R-13 MIN), HORIZONTAL & VERTICAL MOUNTING	HORIZ - USE AT EAST WALL BELOW COUNTERFLASHING; VERT - FOLD FOR USE AT CORNERS
P-1	PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	HARMONY ZERO VOC / WOOL	OFF-WHITE/GRAY; MPI 139, LEVEL 3	GWB WALLS - MATCH EXIST FACILITY STD.
P-1E	EPOXY PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	SKEIN SW6148 HARMONY ZERO VOC / WOOL	(SATIN); FIELD COLOR OFF-WHITE/GRAY; MPI 52, LEVEL 3	CMU WALLS - MATCH EXIST FACILITY STD.
P-2	PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	SKEIN SW6148 HARMONY ZERO VOC / REPOSE	(SEMI-GLOSS) LIGHT GRAY; MPI 52, LEVEL 3	BATHROOM WALL - MATCH EXIST FACILITY STD.
P-3	PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	GRAY SW7015  PROTECTIVE & MARINE DRY FALL / CEILING BRIGHT WHITE SW7007	(SEMI-GLOSS) BRIGHT WHITE; MPI 55, LEVEL 1 (FLAT); DRY-FALL	CEILINGS, BOTTOM OF MEZZANINE DECK AND BOTTOM OF ROOF STRUCT / DECK - MATCH
P-3E	EPOXY PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	PRO INDUSTRIAL MULTI SURFACE ACRYLIC EPOXY / CEILING BRIGHT WHITE SW7007	BRIGHT WHITE; MPI 133, LEVEL 1 (FLAT); DRY-FALL	FACILTY MAT'L/COLOR STD.  CEILINGS - MATCH FACILITY MAT'L/COLOR STD.
P-4	PAINT - INTERIOR	BENJAMIN MOORE (OR EQ)	NATURA ZERO VOC / MOUNT SAINT ANNE 1565		CMU WALLS - ACCENT WALL COLOR
P-5	PAINT - INTERIOR	BENJAMIN MOORE (OR EQ)	NATURA ZERO VOC / DOWNPOUR BLUE BM 2063-20	(SATIN); ACCENT COLOR LIGHT BLUE; MPI 52, LEVEL 3 (SATIN); ACCENT COLOR	CMU WALLS - ACCENT WALL COLOR
P-6	PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	HARMONY ZERO VOC / SOFTER TAN SW6141	LIGHT TAN; MP1 54, LEVEL 5 (SEMI-GLOSS)	HM DOOR FRAMES - INTERIOR - MATCH FACILITY STD.
P-7	PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	HARMONY ZERO VOC / PORTABELLO SW6102	LIGHT TAN; MPI 54, LEVEL 5 (SEMI-GLOSS)	HM DOORS - INTERIOR - MATCH FACILITY STD.
P-8	PAINT - INTERIOR	SHERWIN WILLIAMS (OR EQ)	HARMONY ZERO VOC / DORIAN GRAY SW7017	DARK GRAY; MPI 54, LEVEL 5 (SEMI-GLOSS)	STRUCT. STEEL COLS-BEAMS, STAIRS & RAILINGS - INTERIOR - MATCH FACILITY STD.
	EPOXY PAINT - FLOOR	EUCLID CHEMICAL (OR EQ)	DURALKOTE 240 / TBD	LIGHT GRAY; MPI 153, LEVEL 5 (SEMI-GLOSS)	EXISTING CONC FLOORS SCHEDULED TO RECEIVE EPOXY PAINT
	PAINT - WALL / CORNER PROTECTION	SHERWIN WILLIAMS (OR EQ)	HARMONY ZERO VOC / (SEE REMARKS)	(SEE REMARKS); MPI 54, LEVEL 5 (SEMI-GLOSS)	MATCH EXIST - PTD MTL CORNER GUARDS, CRASH & BUMPER RAILS; REVIEW W/ INTERIORS
	PAINT - EXTERIOR  PAINT - EXTERIOR	SHERWIN WILLIAMS (OR EQ) SHERWIN WILLIAMS (OR EQ)	PROMAR 200 ALKYD (SEE REMARKS) PROTECTIVE & MARINE ALKYD /	(SEE REMARKS); TT-P-1411 PAINT, CO-POLYMER RESIN, CEMENTITIOUS LIGHT BEIGE; MPI 94, LEVEL 5	MATCH EXIST - CMU PAINT COLOR / GLOSS LEVEL HM DOORS/FRAMES - EXTERIOR - MATCH
		` ,	BASKET BEIGE SW6143	(SEMI-GLOSS)	FACILITY STD.  FIELD-PTD METAL TRIM - MATCH PREFIN WALL
	PAINT - EXTERIOR  PAINT - EXTERIOR	SHERWIN WILLIAMS (OR EQ) SHERWIN WILLIAMS (OR EQ)	PROTECTIVE & MARINE DTM ALKYD / (SEE REMARKS) PROTECTIVE & MARINE DTM	(SEE REMARKS); MPI 94, LEVEL 5 (SEMI-GLOSS) (SEE REMARKS); MPI 94, LEVEL 5	PANEL-TRIM COLOR / GLOSS LEVEL FIELD-PTD METAL TRIM - MATCH PREFIN WALL FIELD-PTD METAL TRIM - MATCH PREFIN ROOF
	PAINT - EXTERIOR  PAINT - SAFETY RAILINGS &	SHERWIN WILLIAMS (OR EQ)	ALKYD / (SEE REMARKS)  PROTECTIVE & MARINE DTM  ALKYD / (SEE REMARKS)	(SEMI-GLOSS) BRIGHT YELLOW; MPI 54, LEVEL 5	PANEL-TRIM COLOR / GLOSS LEVEL  MEZZANINE SAFETY RAILING, INTERIOR &
	BOLLARDS  PAINT - ELECT SAFETY ITEMS	SHERWIN WILLIAMS (OR EQ)	YELLOW PROTECTIVE & MARINE / SAFETY ORANGE	(SEMI-GLOSS); MATCH FED STDS.  BRIGHT ORANGE; MPI 54, LEVEL 5 (SEMI-GLOSS); MATCH FED STDS.	EXTERIOR BOLLARDS  STRIPING AND MARKING OF CLEAR AREAS FOR ELECT PANELS & ID OF HI-VOLT'G ELECT EQPT.
RB-1	RESILIENT WALL BASE - VINYL	JOHNSONITE (OR EQ)	TRADITIONAL, MEDIUM GRAY #28 (SEE REMARKS FOR MATCHING	4" - HIGH W/ COVE - USE AT LVT/RSF/CONC FLOORS; NEW	REVIEW W/ FACILITY FES-INTERIORS FOR COLOR SELECTION WHERE ADJACENT EXIST
RES-2	RESINOUS FLOOR W/	DUR-A-FLEX	EXISTING) MATCH REPOSE GRAY SW7015	APPLICATIONS (SEE REMARKS) W/ 4" - HIGH COVE BASE DETAIL -	BASE COLOR DIFFERS  DRUG CACHE W03A; COLOR-FLECKING - SELECT FROM MEGR'S FULL RANGE OF COLORS
RSF-1	RESILIENT SHEET FLOORING	MOHAWK GROUP	TRUE HUES CR900 - DELICATE	DUR-A-GARD RUBBER SHEET FLOORING	FROM MFGR'S FULL RANGE OF COLORS  BREAK RM W04A - REVIEW COLOR SELECTION
RWC-1	RIGID WALL COVERING	INPRO (OR EQ)	GRAY/935 OR TOASTY TAUPE/825, 5' X 50' X 3mm MONTEREY / 0110	0.060"T IMPACT-RESISTANT ROLL TO 4'-0" AFF	W/ FACILITY FES-INTERIORS  PALADIUM RIGID SHEET
SC-1	CONCRETE SEALER/ HARDENER	EUCLID CHEMICAL	AQUA-CURE VOX (SEALER) + SURFLEX (HARDENER) / (TBD)	SEALER OVER DRY-SHAKE COLORED HARDENER	NEW CONC FLOOR - MEZZANINE
SS-1	SOLID SURFACE MATERIAL	CORIAN	COTTAGE LANE	THICKNESS PER DETAILS	COUNTERTOPS

ROOM		FI 005	D.4.0.		FINISH S	LLS		CEILING	DEMARKS
NUMBER	ROOM NAME	FLOOR	BASE	NORTH	EAST	SOUTH	WEST	MATERIAL	REMARKS
EW04A	PROSTHETICS STOR (EXISTING)	CONC (EXIST)	RB (EXIST)	CMU (EXIST)	CMU (EXIST)	CMU (EXIST)	CMU (EXIST)	STRUCT (EXIST)	OLD ROOM NAME - SEE W04 FOR NEW FINISHES
EW05A	EQUIPMENT PREP & STAGING (EXISTING)	EPOXY (EXIST)	COVED EPOXY (EXIST)	GWB/RWC (EXIST)	GWB/RWC (EXIST)	GWB/RWC (EXIST)	GWB/RWC (EXIST)	STRUCT (EXIST)	OLD ROOM NAME - SEE W05A
EW06 EW08	STORAGE (EXISTING) STAFF TOILET (EXISTING)	CONC (EXIST) CONC	RB (EXIST)	GWB (EXIST)/RWC	GWB/RWC CMU (EXIST)	CMU (EXIST)/RWC CMU (EXIST)	+`	STRUCT (EXIST) CONC/	OLD ROOM NAME - SEE W06 FOR NEW FINISHES OLD ROOM AREA - ROOM TO
EW09	SUPERVISOR OFFICE	(EXIST)	(EXIST)	,	CMU (EXIST)	,	,	PLASTER (EXIST) CONC/	DEMO/REPLACE  OLD ROOM AREA - ROOM TO DEMO
	(EXISTING)	(EXIST)	(EXIST)	-	-	-	-	PLASTER (EXIST) STRUCT	OLD ROOM AREA - ROOM TO DEMO
W01	VETERANS CANTEEN	CONC	RB-1	CMU (EXIST)	LP-1	LP-1	CMU (EXIST)	(EXIST) STRUCT	2"W ORANGE STRIPING TAPE -
W02	SERVICE (VCS) STORAGE RECEIVING DOCK	(EXIST) CONC (EXIST)	RB-1	P-1 CMU (EXIST)/GWB	LP-1	LP-1	P-1 ` ´	(EXIST)	ELECT PANEL CLEAR FLOOR AREA MTL WALL LINER PANEL TO B.O. STRUCT.; PAINT HM BORROW LITE
W03	BULK ITEMS STORAGE	CONC (EXIST) P-9E	RB-1	(NEW) P-1 LP-1	CMU (EXIST) P-1/ LP-1 (NEW)	LP-1	(NEW) GWB P-1/ RWC-1	STRUCT P-3 (SEE REMARKS)	FRAME P-6  CMU P-1; RWC TO 4'-0" AFF; MTL  WALL LINER PANEL TO B.O.  STRUCT.; PAINT B.O. MEZZANINE  DECK & NEW ROOF DECK/STRUCT  P-3; PAINT COLS P-8; TUBE STL
W03A	DRUG CACHE-STORAGE	RES-2	RES-2	GWB P-1/	GWB P-1/	GWB P-1/	GWB P-1/	AT-2	CRASH-BUMPER RAILS P-10 NEW EXTERIOR WALLS P-1; RWC TO
W03A1	NARCOTICS STORAGE CAGE	RES-2	-	RWC-1	RWC-1	RWC-1	/RWC-1	-	4'-0" AFF EXIST WIRE MESH CAGE TO BE REUSED; SEE W03A FOR EAST WAL FINISH OUTSIDE OF CAGE
W03B	BULK ITEMS STORAGE	CONC	RB-1	GWB P-1/	-	LP-1	LP-1	STRUCT	NEW EXTERIOR WALLS P-1; RWC TO
M/000	MATERIAL LIET, ORD.	(EXIST) P-9E		RWC-1	(055	(055	(055	,	4'-0" AFF; PAINT B.O. MEZZ. DECK P-3; PAINT STRUCT P-8; TUBE STL CRASH-BUMPER RAILS P-10
W03C	MATERIAL LIFT LOBBY	CONC (EXIST) P-9E	-	- (SEE REMARKS)	(SEE REMARKS)	(SEE REMARKS)	(SEE REMARKS)	STRUCT P-3 (SEE REMARKS)	LIFT & CAGE - PAINT P-15; ALSO SEE W03, WE01 & WS01
W04	PROSTHETICS STORAGE	CONC (EXIST) P-9E	RB-1	GWB P-1/ RWC-1	CMU (EXIST) P-1	CMU (EXIST) P-1	CMU (EXIST) P-1	AT-2	CLEAN/UNIT STORAGE REQ'TS; RWO TO 4'-0" AFF
W04A	STAFF LOUNGE (NEW)	RSF-1	RB-1	CMU (EXIST) P-1	CMU (EXIST) P-5	CMU (EXIST) P-1	CMU (EXIST) P-1	AT-1	VERIFY ACCENT WALL COLOR / WALL W/ FACILITY FES - INTERIORS
W05	STERILE CONSUMABLES (SOFT GOODS) STORAGE	CONC (EXIST)	RB (EXIST)/ RB-1	GWB (EXIST)/ RWC-1	GWB (EXIST)/ RWC-1	CMU (EXIST) P-1	GWB (EXIST)/ RWC-1	AT-2 (EXIST)	CLEAN/UNIT STORAGE REQ'TS; NEW RB-1 WHERE GWB REPLACED OR MISSING; REPAIR FINISHES TO
W05A	LOGICAL UNIT OF MEASURE (LUM) STAGING	CONC (EXIST)	RB (EXIST)/	GWB/ RWC (EXIST) P-1	GWB/ RWC (EXIST) P-1	CMU (EXIST) P-1	CMU (EXIST) P-1	AT-2	MATCH EXIST REPAIR FINISHES TO MATCH EXIST; NEW RB-1 WHERE GWB REPLACED
W05B	ROOM (NEW_ OIT CLOSET	CONC	RB-1 -	GWB (EXIST)		CMU (EXIST)			OR NONE IN PLACE  GWB P-1; EXTEND EXIST GWB
W06	RECEIVING BREAKOUT & INSPECTION (NEW)	P-9E	RB-1	P-1 CMU (EXIST) P-1	(EXIST) P-1 GWB P-1/ RWC	P-1 CMU (EXIST) P-1	P-1 CMU (EXIST) P-1	(EXIST) AT-2	WALLS TO STRUCT CLEAN/UNIT STORAGE REQ'TS; GWB/CMU P-1; RWC TO 4'-0" AFF; TUBE STL CRASH-BUMPER RAILS
W07	EQUIPMENT PREP/ STAGING (NEW)	CONC (EXIST) P-9E	RB-1	CMU P-1	-	-	-		P-10 OPEN AREA; AREA SEPARATION ID - 2"W YELLOW/BLACK STRIPING TAPE PAINT HM BORROW LITE FRAME P-6 TUBE STL CRASH-BUMPER RAILS
W08	STAFF TOILET (NEW)	CT-3	CT-3 (SEE REMAR	CMU P-2/ CT-1 - CT-2	CMU P-2/ CT-1 - CT-2	CMU P-2/ CT-1 - CT-2	CMU P-2/ CT-1 - CT-2	GWB P-3E	P-10 CT WAINSCOT TO +4'-0" AFF; CT-3 COVED BASE
W09	SUPERVISOR OFFICE (NEW)	LVT-1	KS) RB-1	CMU P-1	CMU P-4	CMU P-1	CMU P-1	AT-1	NEW ROOM; PAINT HM BORROW LITE FRAME P-6
W10 W10A	STORAGE RECEIVING/ISSUE	- CONC	- RB-1	- CMU (EXIST)	- CMU (EXIST)	- CMII	- CMU (EXIST)	STRUCT	OFF CORR CBG2 - NO WORK THIS ROOM REFINISH AREA - NEW
		(EXIST) P-9E		P-1 ` ´	P-1 `	(EXIST)/GWB (NEW) P-1	P-1 `	(EXIST)	COUNTERTOP - SEE AF101; PAINT HM BORROW LITE FRAME P-6
W10B	RECEIVING/ISSUE	CONC (EXIST) P-9E	RB-1	CMU (EXIST) P-1	CMU (EXIST) P-1	P-1	CMU (EXIST) P-1	(EXIST)	REFINISH AREA
W10C	RECEIVING/ISSUE	CONC (EXIST) P-9E	RB-1	CMU (EXIST) P-1	CMU (EXIST) P-1	CMU (EXIST)/GWB (NEW) P-1/	CMU (EXIST) P-1	STRUCT (EXIST)	REFINISH AREA - NEW COUNTERTOP - SEE AF101; PAINT HM BORROW LITE FRAME P-6
W11	PANDEMIC STORAGE	SC-1	RB-1	LP-1	-	LP-1	LP-1	STRUCT P-3 (SEE REMARKS)	FLOOR - CONC HARDENER W/ COLOR; MTL WALL LINER PANEL TO B.O. STRUCT.; PAINT B.O. ROOF
WC01	CORRIDOR	CONC (EXIST)	RB-1	CMU (EXIST) P-1	CMU (EXIST) P-1	CMU (EXIST) P-1	-	STRUCT (EXIST)	DECK & STRUCT (EX. COLUMNS) P-3 TUBE STL CRASH-BUMPER RAILS P-10
WC01A	CORRIDOR	P-9E CONC (EXIST)	RB-1	-	-	CMU (EXIST) P-1/ WD	-	STRUCT (EXIST)	
WC02	CORRIDOR	P-9E CONC (EXIST) P-9E	RB-1	-	CMU (EXIST) P-1	-	-	STRUCT (EXIST)	TUBE STL CRASH-BUMPER RAILS P-10
WC03	CORRIDOR	CONC (EXIST) P-9E	RB-1	CMU (EXIST) P-1	-	-	CMU P-1	STRUCT (EXIST)	RWC TO 4'-0" AFF; TUBE STL CRASH-BUMPER RAILS P-10
WC04	CORRIDOR	CONC (EXIST) P-9E	RB-1	CMU (EXIST) P-1	CMU P-1	-	-	STRUCT (EXIST)	TUBE STL CRASH-BUMPER RAILS P-10
WE01	MAT'L LIFT	(SEE REMAR KS)	-	(SEE REMARKS)	(SEE REMARKS)	(SEE REMARKS)	(SEE REMARKS)	STRUCT P-3 (SEE REMARKS)	WIRE CAGE/LIFT PLATFORM P-15
WE01A	MAT'L LIFT EQPT	CONC (EXIST)	RB-1	P-15 (SEE REMARKS)	P-15 (SEE REMARKS)	LP-1	P-15 (SEE REMARKS)	STRUCT P-3	WIRE CAGE/GATE P-15
WS01	STAIR	P-9E CONC (EXIST)	RB-1	-	CMU (EXIST) P-1/ LP-1	LP-1	-	STRUCT P-3	PART OF W03; PAINT STAIR & RAILING P-8; SEE W03 FOR
	STAIR	P-9E SC-1	RB-1	-	(HIGH) LP-1 (HIGH) (SEE	LP-1 (SEE	-	STRUCT	UNDERSIDE OF ROOF PART OF W03-W11; PAINT MEZZ RAILING P-15

# FINISH SCHEDULE

HEIGHT DIFFERENCES AT TRANSITIONS.

1. ALL FLOORING TRANSITIONS OCCUR AT THE CENTERLINE OF THE DOOR. FLOOR COVERINGS SHALL BE BUILT UP TO HAVE MINIMAL

- 2. REFERENCE FINISH PLAN FOR MULTIPLE FLOORING LOCATIONS & PATTERNS. REFERENCE FINISH SCHEDULE FOR MATERIALS NOT INDICATED ON PLANS.
- 3. REFERENCE SPECIFICATIONS, INTERIOR ELEVATIONS AND DETAIL DRAWINGS FOR SPECIAL MATERIALS.
- 4. SEE COLOR SCHEDULE FOR HM DOOR AND FRAME COLORS.
- 5. PAINT ALL WORKSURFACE BRACKETS COLOR OF ADJACENT SURFACE.
- 6. WHERE TRIM IS NOT SPECIFIED, CALUK ALL EXPOSED EDGES OR SEAMS OF WALL PROTECTION WITH CLEAR CAULKING.
- 7. REFER TO FINISH PLAN FOR ADDITIONAL WALL PROTECTION LOCATIONS AND HEIGHTS WHICH MAY NOT BE INDICATED ON THIS SCHEDULE OR IN INTERIOR DETAILS.
- 8. REFER TO INTERIOR ELEVATIONS FOR WALL TILE PATTERNS.
- 9. SOFFIT PAINT COLOR WILL BE APPLIED TO BOTH VERTICAL AND HORIZONTAL SURFACES. ALL SOFFITS TO BE PAINTED THE COLOR OF ADJACENT WALL U.N.O.; SPECIALTY SOFFITS WILL BE INDICATED
- IN THE REFLECTED CEILING PLAN AND FINISH SCHEDULE. 10. REFERENCE THE REFLECTED CEILING PLAN FOR CEILING HEIGHTS
- 11. ALL GYP. BD. CEILINGS TO BE PAINTED CEILING WHITE (P-3) U.N.O.

AND SOFFIT ACCENT PAINT LOCATIONS.

- 12. USE EPOXY PAINT FOR HIGH-MOISTURE AREAS.
- 13. SEE INTERIOR DETAILS FOR RIGID WALL PROTECTION MOLDINGS AND CAULKING APPLICATION.
- 14. USE DRY-FALL PAINT FOR ALL OVERHEAD PAINTING APPLICATIONS.
- 15. SEE REFLECTED CEILING PLAN GENERAL NOTES SHT. AC101 FOR ADDITIONAL INFORMATION ON PAINTING OF CEILING-SUSPENDED

# MANUFACTURER

- 1. MANUFACTURER'S TRADE NAMES AND NUMBERS USED HEREIN SERVE AS A BASIS OF DESIGN TO IDENTIFY COLORS, FINISHES, TEXTURES AND PATTERNS.
- 2. PRODUCTS OF OTHER MANUFACTURERS EQUIVALENT TO COLORS, FINISHES, TEXTURES AND PATTERNS OF MANUFACTURERS LISTED THAT MEET REQUIREMENTS OF TECHNICAL SPECIFICATIONS WILL BE ACCEPTABLE UPON APPROVAL IN WRITING BY THE CONTRACTING OFFICER'S REPRESENTATIVE (COR) FOR FINISH REQUIREMENTS.
- 3. WHERE ITEMS INCLUDE THE TERM "MATCH FACILITY STANDARD" OR SIMILAR, THE PRODUCTS LISTED ARE BASED OFF OF MANUFACTURERS CURRENTLY USED BY THE FACILITY. CONTRACTOR SHALL COORDINATE WITH THE COR AND THE FACILITY'S INTERIORS STAFF FOR APPROVAL OF SUBMITTED PRODUCTS FOR COLORS, FINISHES, TEXTURES AND PATTERNS.
- 4. THE ABOVE NOTES APPLY TO ALL SUCH INSTANCES IN THE DRAWINGS AND SPECIFICATONS FOR THIS PROJECT.

# **BID ITEMS & DEDUCT ALTERNATES**:

REFER TO SECTION 01 00 00 FOR STATEMENT OF BID ITEMS

- A. BID ITEM #1, GENERAL CONSTRUCTION: BASE BID: Renovate Warehouse for Pandemic Preparedness: Includes all scope communicated in the drawings and specifications. 1. Work includes general construction, alterations, walks, grading, drainage, necessary removal of existing structures and construction of certain other items.
- B. BID ITEM #2, Renovate Warehouse for Pandemic Preparedness: Includes all scope described in Bid Item #1 – excluding Bid Deduct #1 described below: 1. Work associated with new Material Lift WE01.
- 2. Work associated with construction and finishes for new Rooms W08 and W09 (Demolition of existing Rooms W07, W08 and W09, including plumbing, fixtures and finishes in Room W08 will be retained in Base Bid);
- 3. Work associated with installation of new ceilings and f

4.	inishes in Rooms W04, W05A and W06; Demolition and renovation of work counters at Ro W10A and W10C.

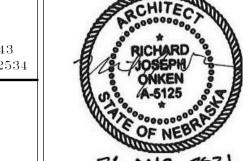
	CLH Calvin L. Hir
	Calvin L. Hir
	A K C H I I E C I 3,
03/24/2021	
Date:	

## Calvin L. HINZ Architects, P.C. 3705 North 200th Street

Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193



incandescence life safety



# Office of Construction and Facilities Management

SCHEDULE Approved:

ROOM FINISH SCHEDULE & COLOR

Drawing Title

Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number

Project Title

PANDEMIC PREPAREDNESS

AE601

Project Number

**Building Number** 

589A4-20-158

VA FORM 08 - 6231

fire protection engineering firm

U.S. Department of Veterans Affairs

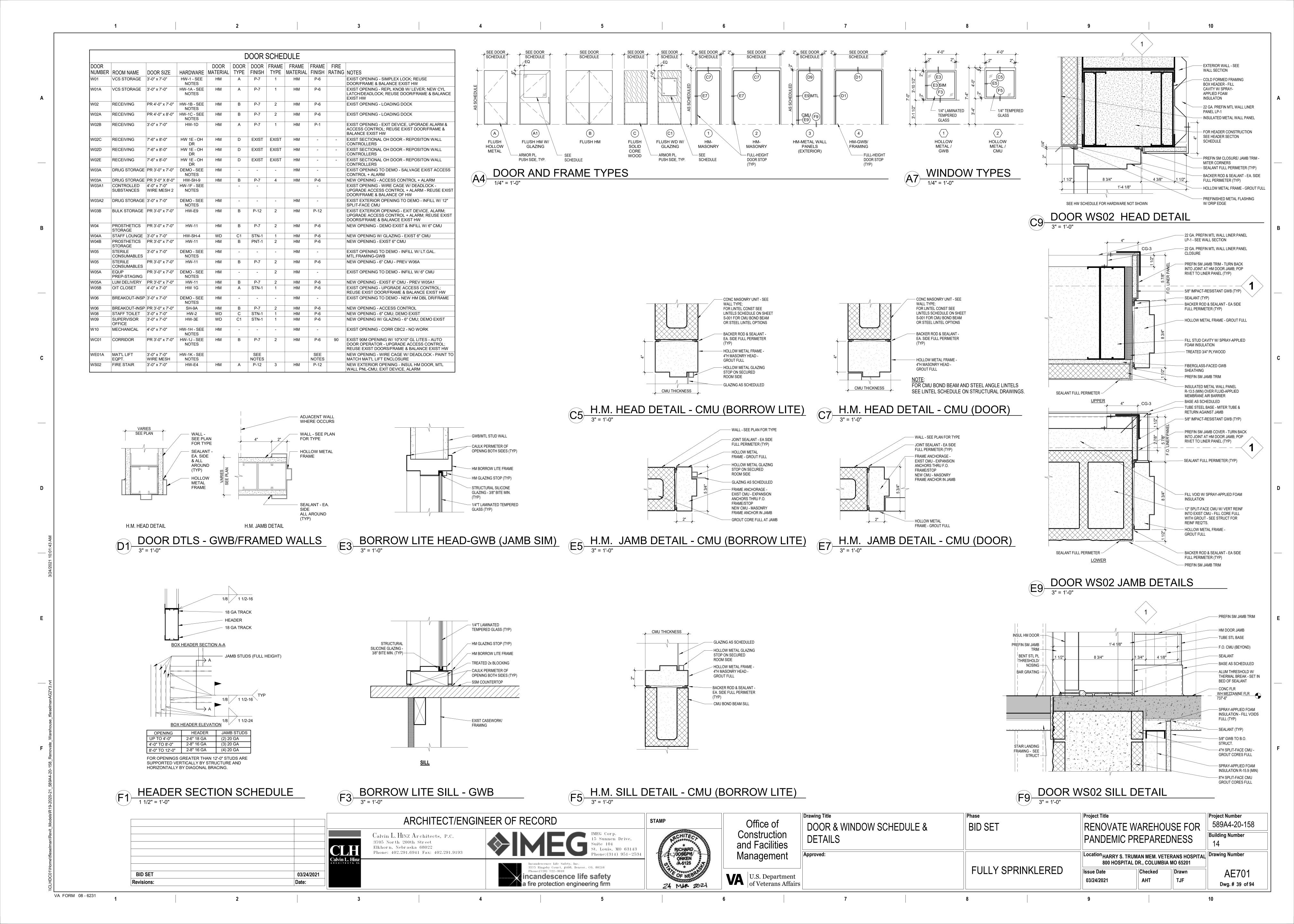
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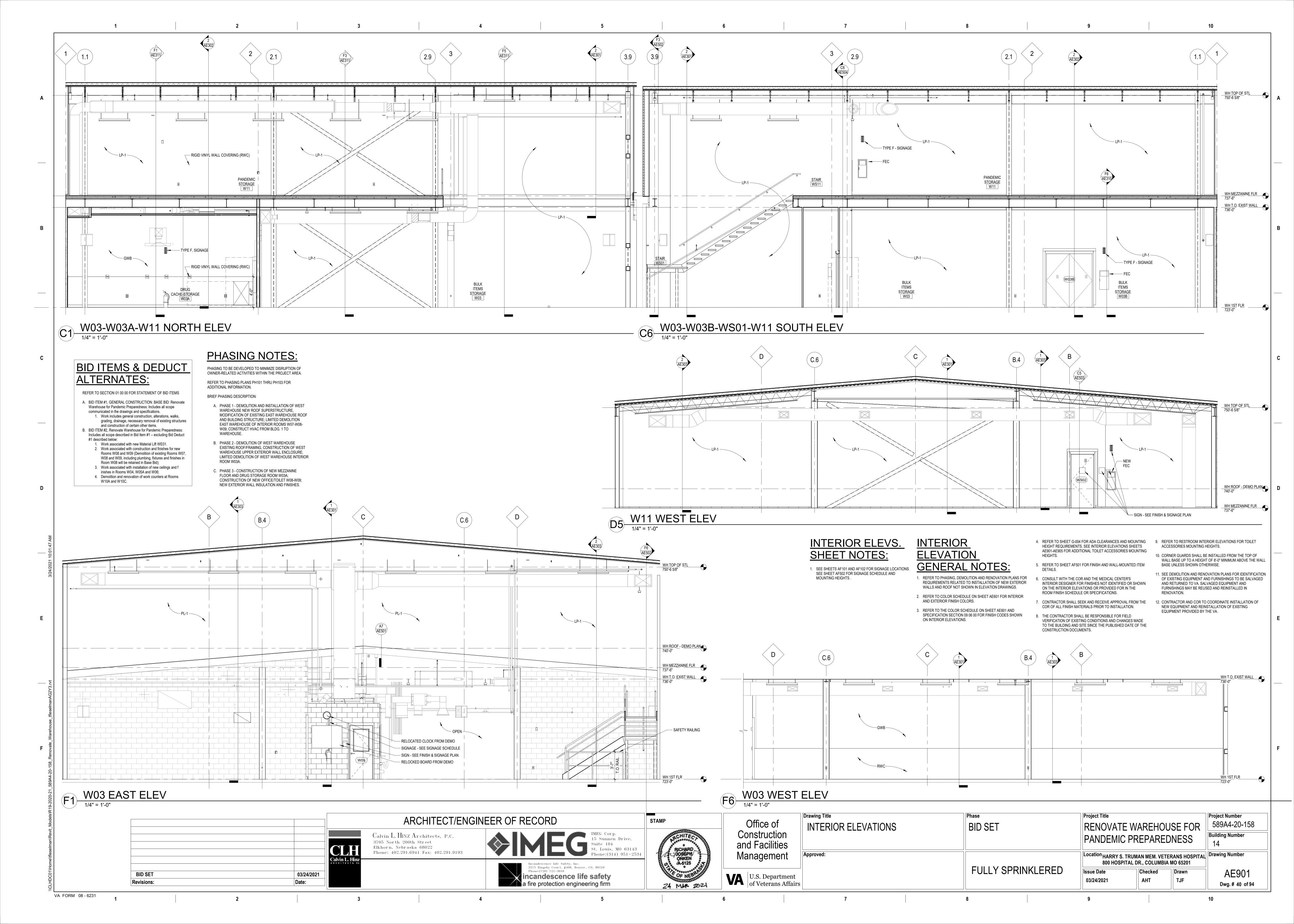
BID SET

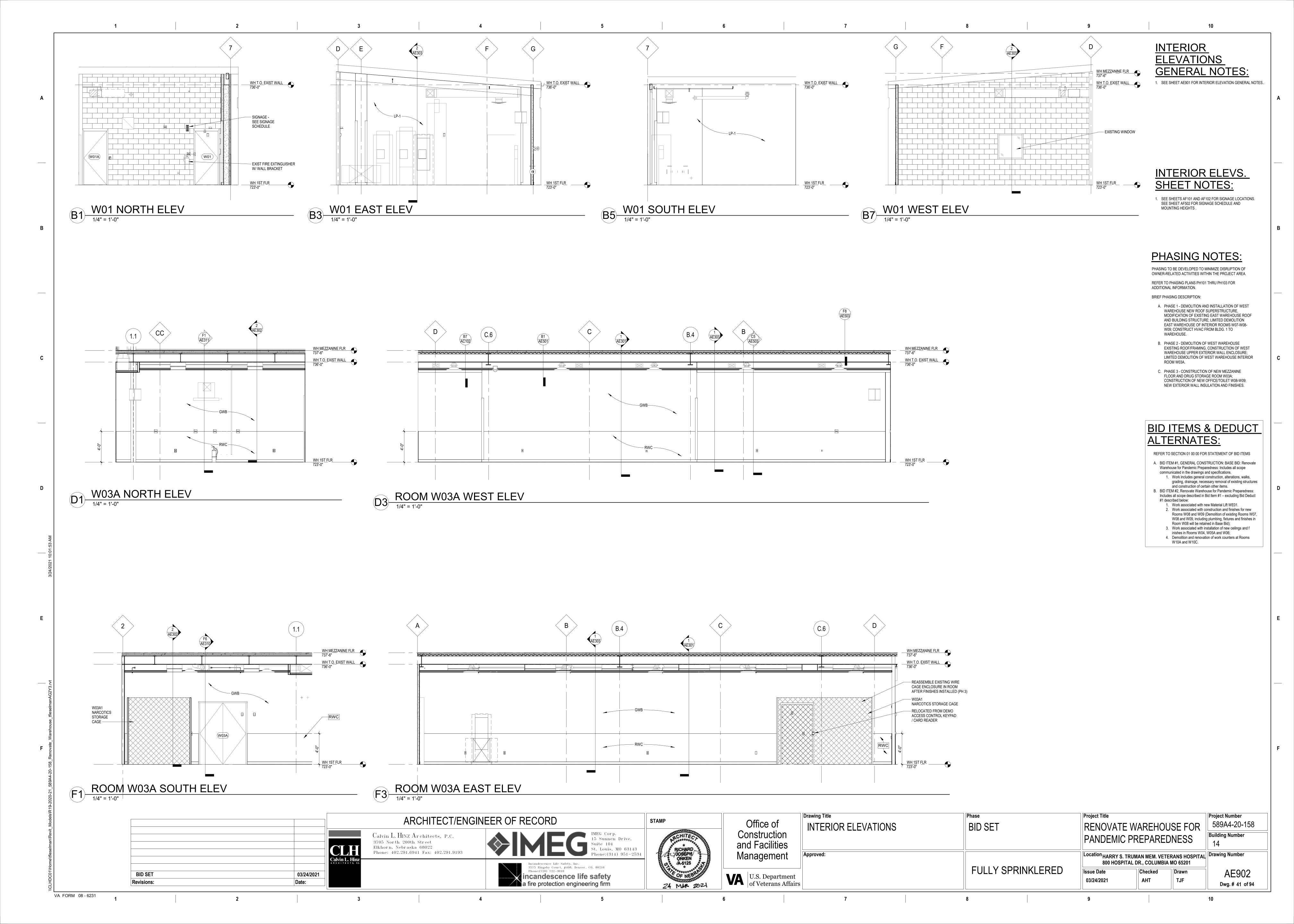
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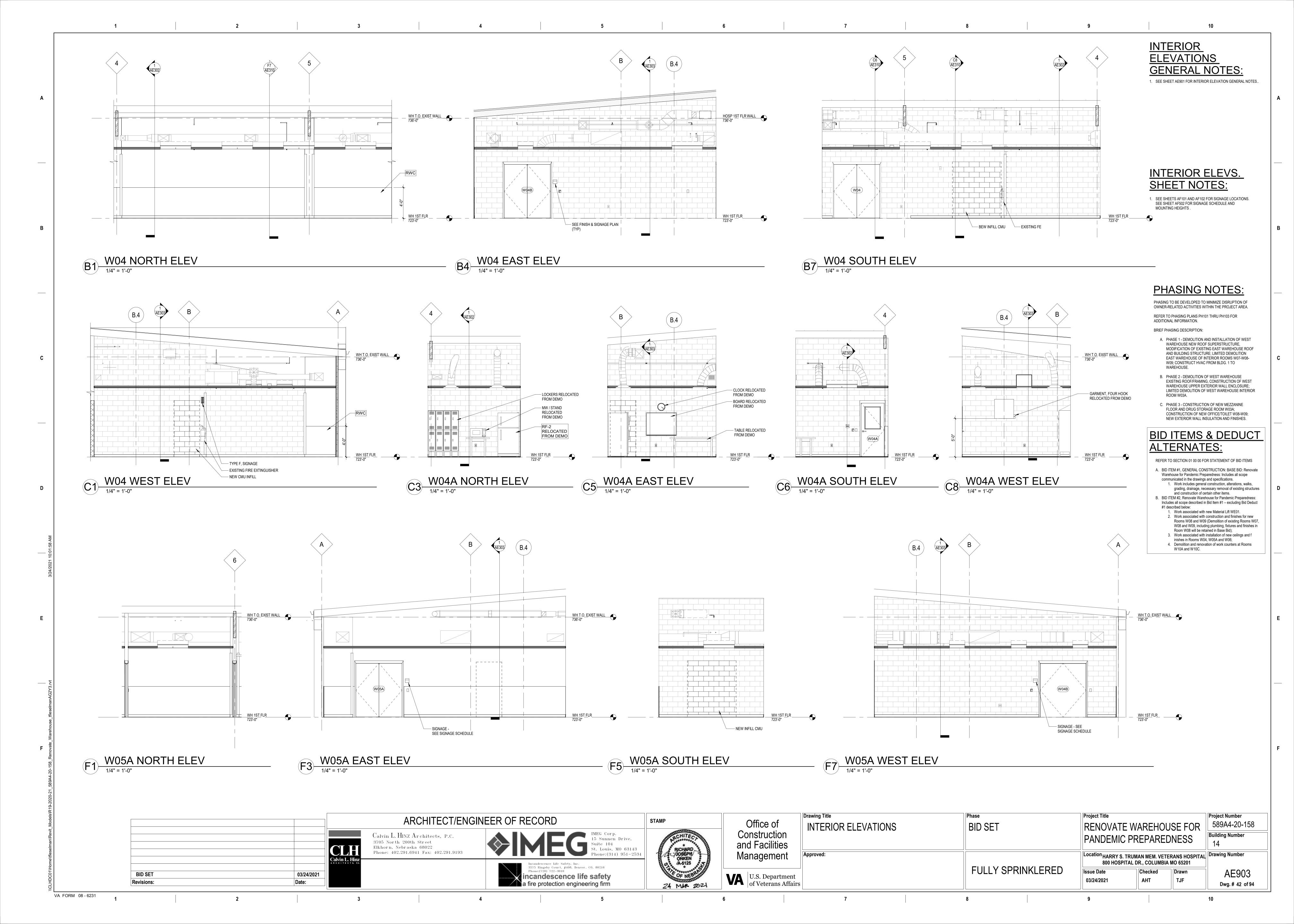
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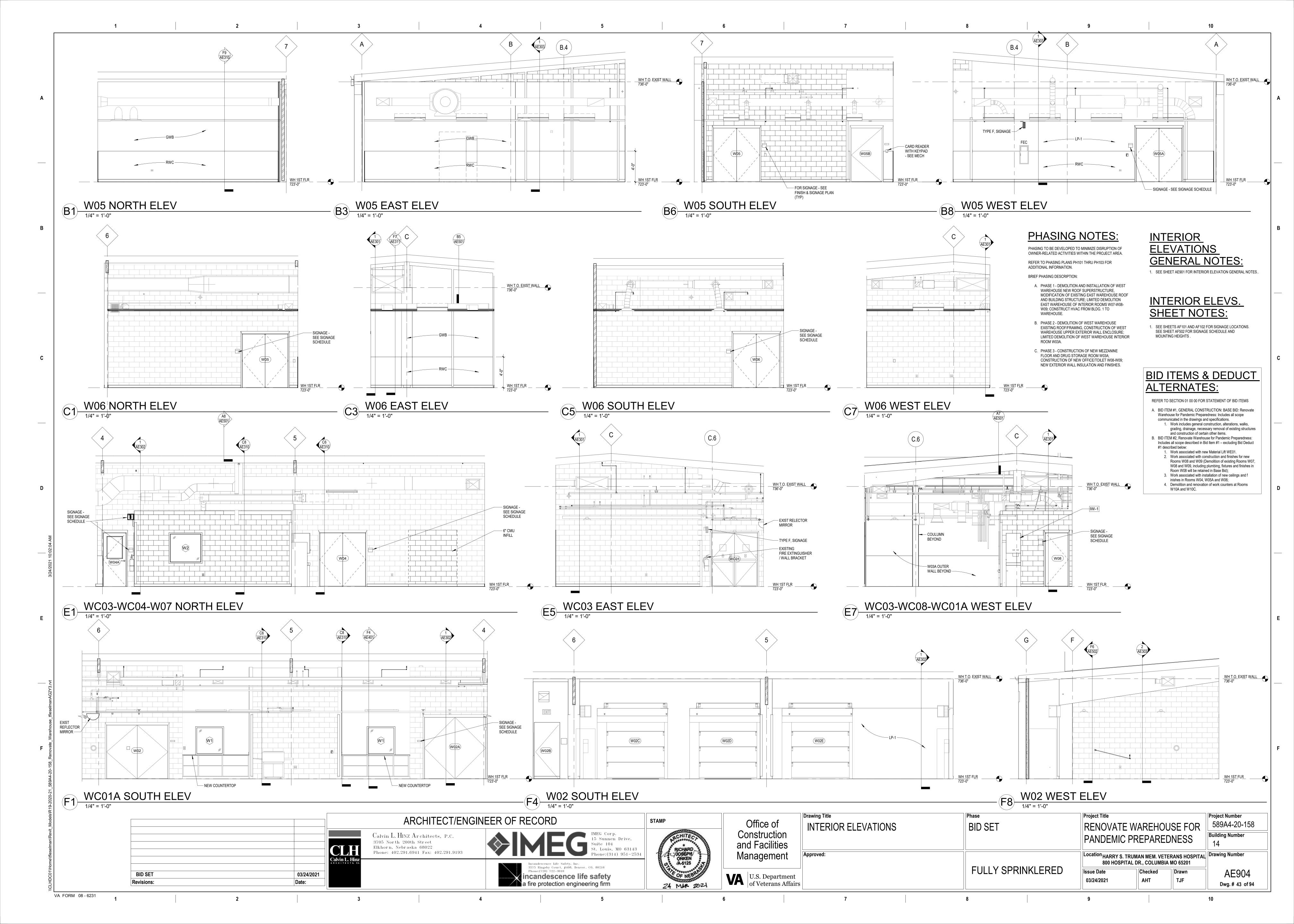
Dwg. # 38 of 94

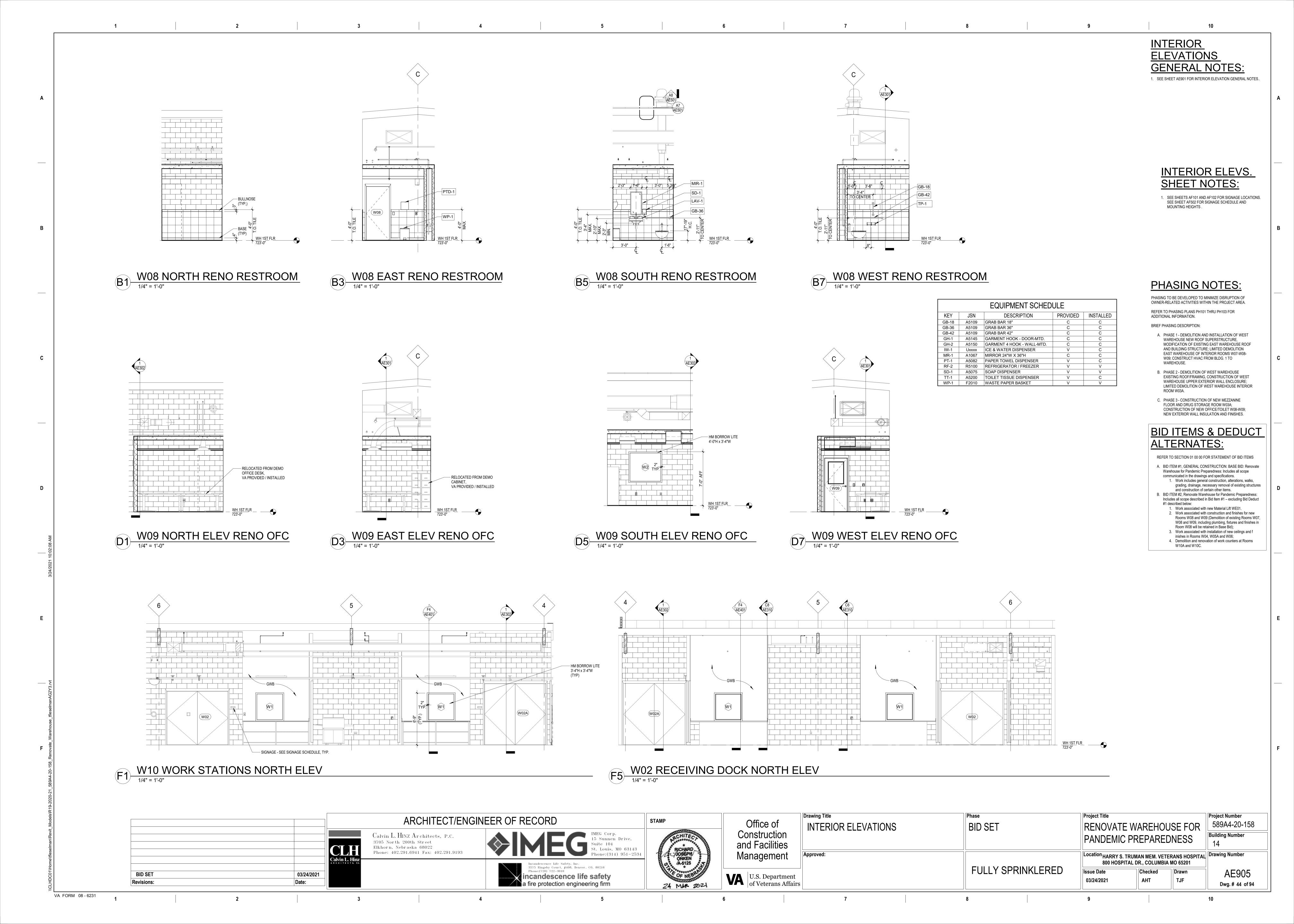


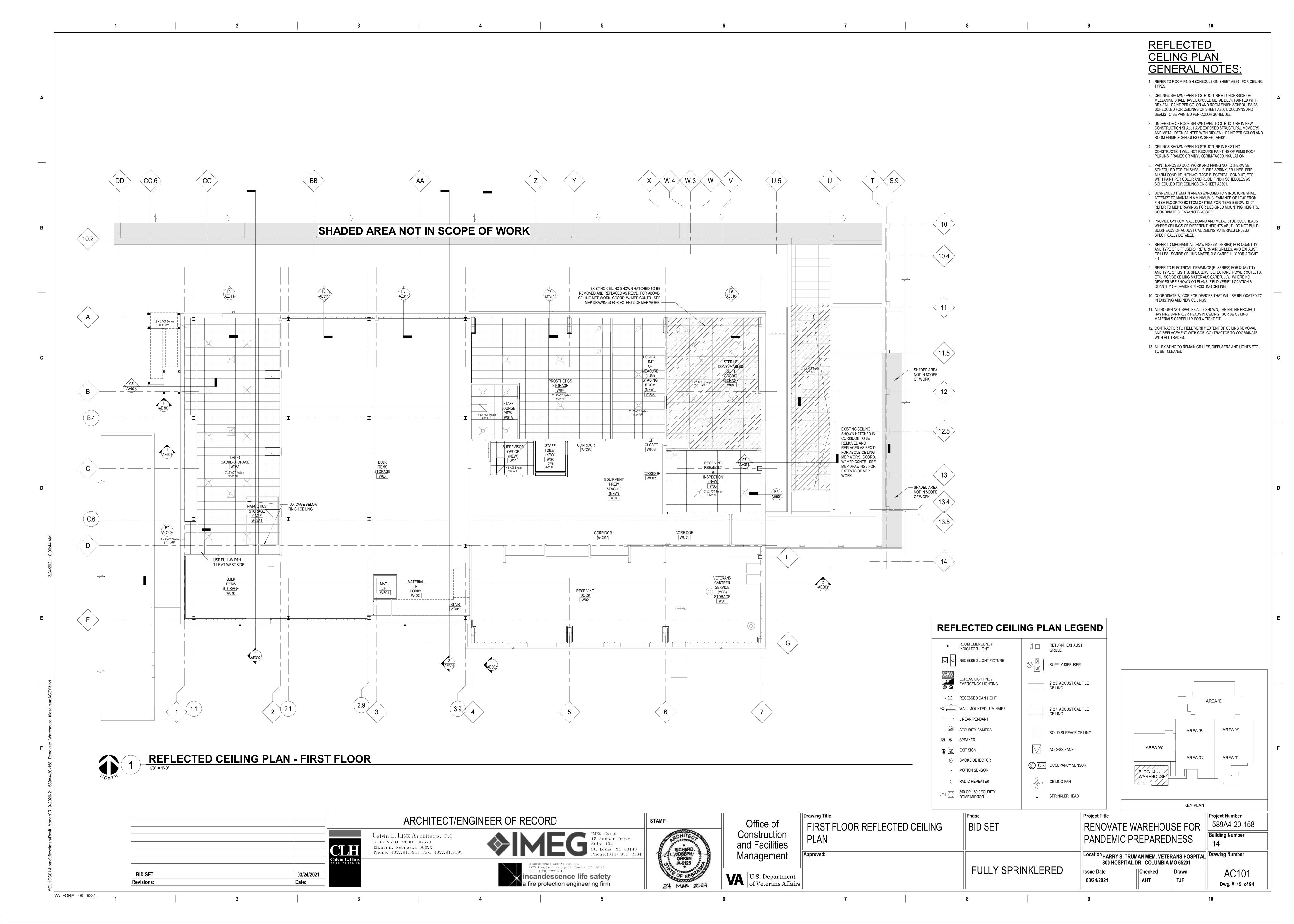


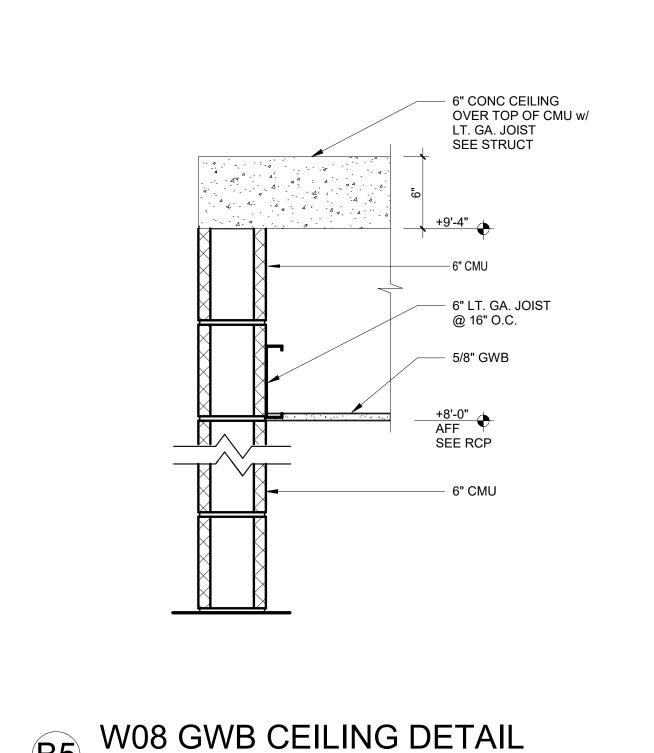










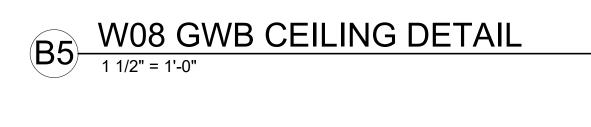


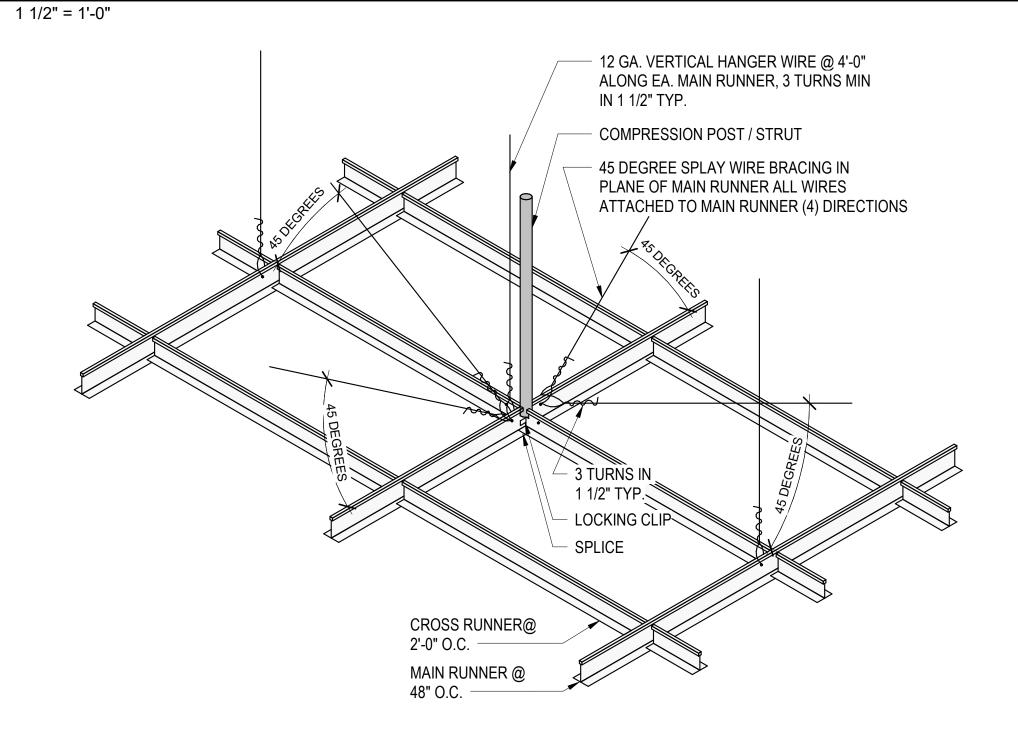
WHITEZAMINE RS
WHITEZ

CELING PLAN
GENERAL
NOTES MEZZANINE:

REFLECTED

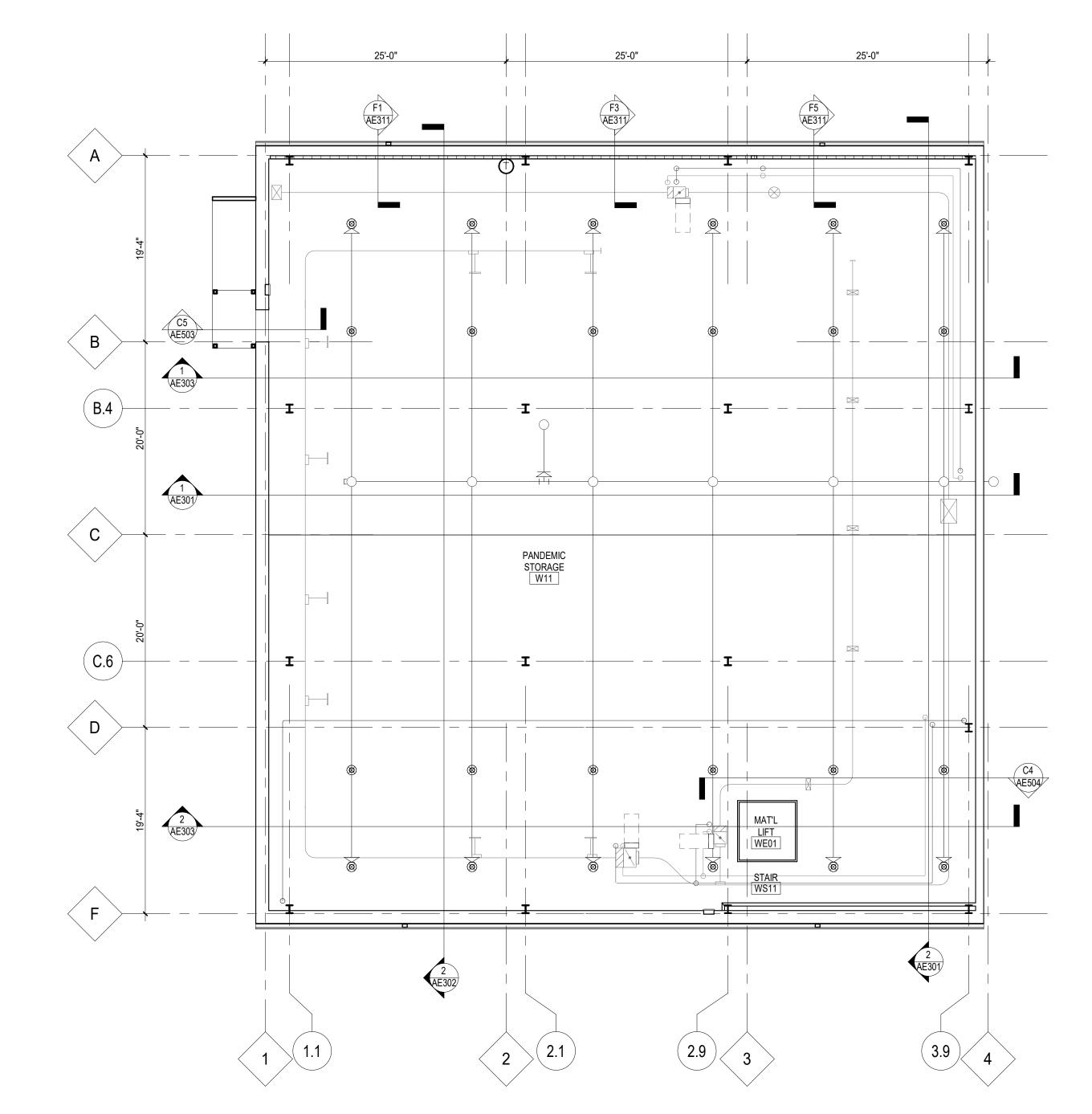
- REFER TO SHEET AC101 FOR REFLECTED CEILING PLAN GENERAL NOTES.
- REFER TO SHEET AC101 FOR REFLECTED CEILING PLAN LEGEND.
- LIGHTS, FIRE SPRINKLERS & SECURITY EQPT. SHOWN FOR REFERENCE ONLY - REFER TO FIRE, MECH, ELEC & TECH DRAWINGS FOR ASSOCIATED WORK.





LATERAL SEISMIC BRACE DETAIL FOR SUSPENDED CEILING

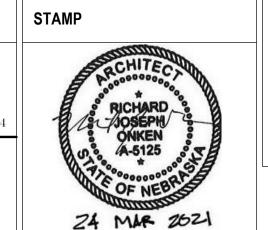
1 1/2" = 1'-0"



MEZZANINE REFLECTED CEILING PLAN

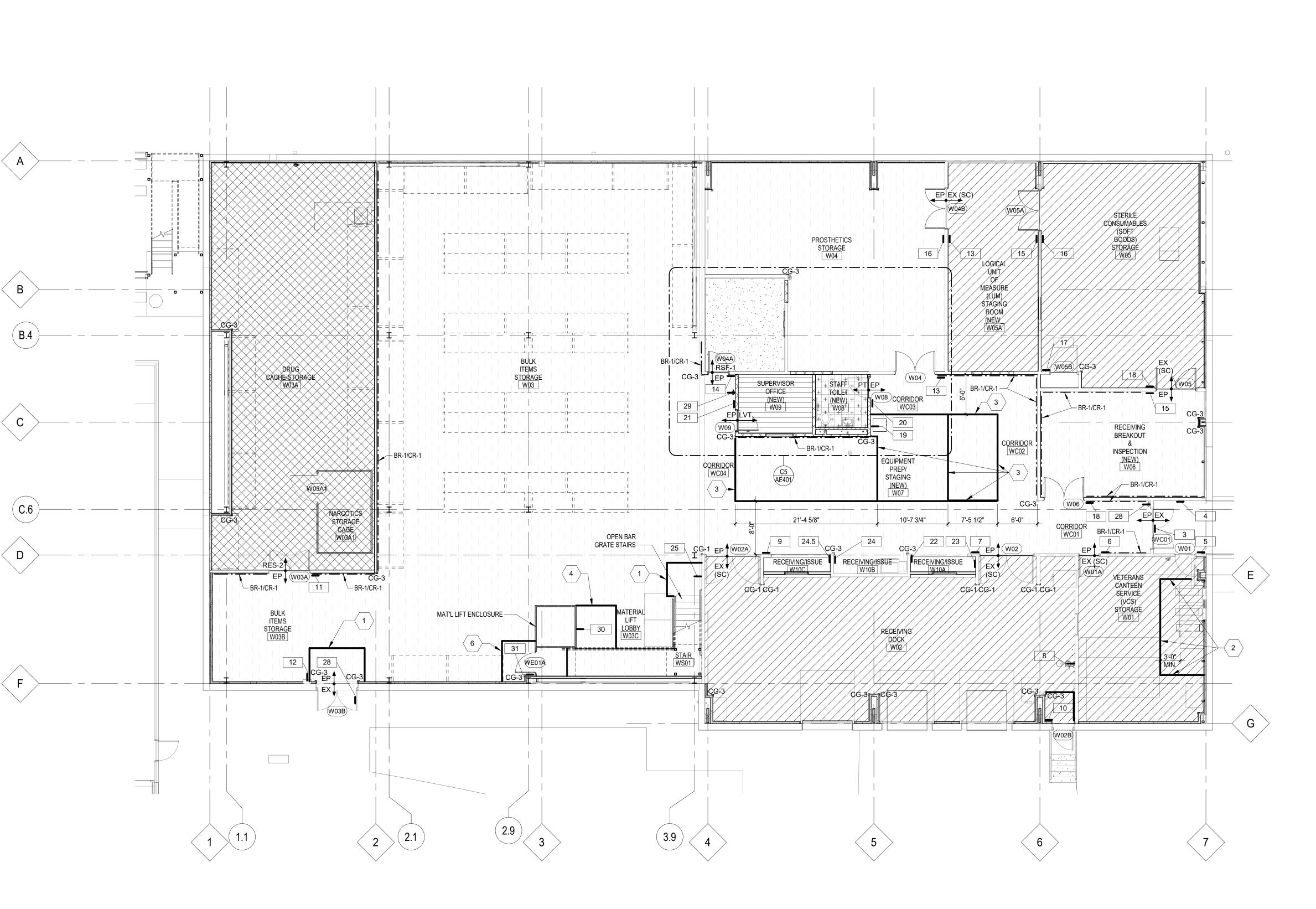
1/8" = 1'-0"

		ARCHITECT/ENG	INEER OF RECORD	
	C	Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193	IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, MO 63143 Phone:(314) 951-25	
BID SET Revisions:		L. Hinz	Incandescence Life Safety, Inc. 3575 Ringsby Court, #408, Denver, CO, 80216 Phone:(720) 722-3010  incandescence life safety a fire protection engineering firm	



Co an	Office of onstruction d Facilities anagement
VA	U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title			Project Number
RCP & MEZZ CEILING DETAILS	BID SET	RENOVAT	E WAREHO	USE FOR	589A4-20-158
		PANDEMIC PREPAREDNESS			Building Number
Approved:		Location HARRY S 800 HOSE	Drawing Number		
S S	FULLY SPRINKLERED	Issue Date 03/24/2021	Checked AHT	Drawn TJF	AC102 Dwg. # 46 of 94



# **GENERAL NOTES FINISH PLAN:**

1. REFER TO G-002 FOR GENERAL ARCHITECTURAL NOTES.

- 2. SEE SHEET AF501 FOR FLOOR TRANSITION DETAILS.
- 3. SEE SHEET AE502 FOR SIGN MOUNTING HEIGHTS AND LOCATIONS.
- 4. SEE SHEET AE601 FOR COLOR SCHEDULE AND ROOM FINISH SCHEDULE.

FINISH PLAN

- 5. FLOOR STRIPING SHOWN TO BE 2"-WIDE SELF-ADHESIVE
- TAPE. COORDINATE W/ COR FOR FACILITY STANDARD. 6. CONTR. TO COORDINATE W/ COR FOR FINAL COLORS

# LOCATIONS AND LAYOUTS OF FLOOR STRIPING.

1. 2"-WIDE YELLOW/BLACK FLOOR STRIPING TAPE TO DENOTE

- AREA TO BE KEPT CLEAR IN FRONT OF FIRE EXIT AND
- 2. 2"-WIDE ORANGE FLOOR STRIPING TAPE TO DENOTE AREA TO BE KEPT 3'-0" CLEAR IN FRONT OF ELECTRICAL
- 3. 2"-WIDE YELLOW/BLACK FLOOR STRIPING TAPE TO DENOTE AREAS FOR OPEN AREA STORAGE / AISLEWAYS TO BE KEPT
- 4. 2"-WIDE YELLOW/BLACK FLOOR STRIPING TAPE TO DENOTE AREAS TO BE KEPT CLEAR IN FRONT OF MATERIAL LIFT.
- 5. 2"-WIDE YELLOW/BLACK FLOOR STRIPING TAPE TO DENOTE AREA TO BE KEPT CLEAR IN FRONT OF CANTILEVERED
- 6. 2"-WIDE YELLOW/BLACK FLOOR STRIPING TAPE TO DENOTE AREA TO BE KEPT CLEAR IN FRONT OF MATERIAL LIFT EQUIPMENT DOOR.

# **INTERIOR FINISH** PLAN LEGEND

+ + + +

SAFETY GATE.

+ + + + + + + + + + RSF-1

EXISTING FLOOR FINISH TO REMAIN

> **EP- EPOXY PAINT** w/ NON-SLIP AGGREGATE

SC-1 - SEALED CONCRETE W/ COLORED

HARDENER SIGNAGE - SEE SIGNAGE SCHEDULE & DETAILS

BUMPER / CRASH RAIL

CG, CORNER GUARD

SEE COLOR SCHEDULE FOR FINISH CODES SEE ROOM FINISH SCHEDULE FOR FINISHES NOT IDENTIFIED ON PLAN

# BID ITEMS & DEDUCT

# **ALTERNATES**:

REFER TO SECTION 01 00 00 FOR STATEMENT OF BID ITEMS BID ITEM #1, GENERAL CONSTRUCTION: BASE BID: Renovate Warehouse for Pandemic Preparedness: Includes all scope communicated in the drawings and specifications. 1. Work includes general construction, alterations, walks, grading, drainage, necessary removal of existing structures

and construction of certain other items. B. BID ITEM #2, Renovate Warehouse for Pandemic Preparedness: Includes all scope described in Bid Item #1 – excluding Bid Deduct

- #1 described below: 1. Work associated with new Material Lift WE01. 2. Work associated with construction and finishes for new Rooms W08 and W09 (Demolition of existing Rooms W07, W08 and W09, including plumbing, fixtures and finishes in
- Room W08 will be retained in Base Bid); 3. Work associated with installation of new ceilings and f inishes in Rooms W04, W05A and W06; 4. Demolition and renovation of work counters at Rooms
- W10A and W10C.

FINISH & SIGNAGE PLAN

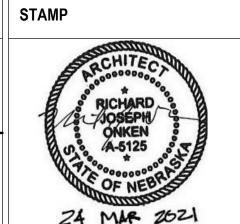
1/8" = 1'-0"

BID SET 03/24/2021 Revisions:

Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193



fire protection engineering firm



Office of Construction and Facilities Management U.S. Department of Veterans Affairs

Drawing Title

FULLY SPRINKLERED

RENOVATE WAREHOUSE FOR FIRST FLOOR FINISH & SIGNAGE PLAN | BID SET PANDEMIC PREPAREDNESS Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201

Project Title

03/24/2021

Checked

TJF

AHT

**Building Number** 

Project Number

589A4-20-158

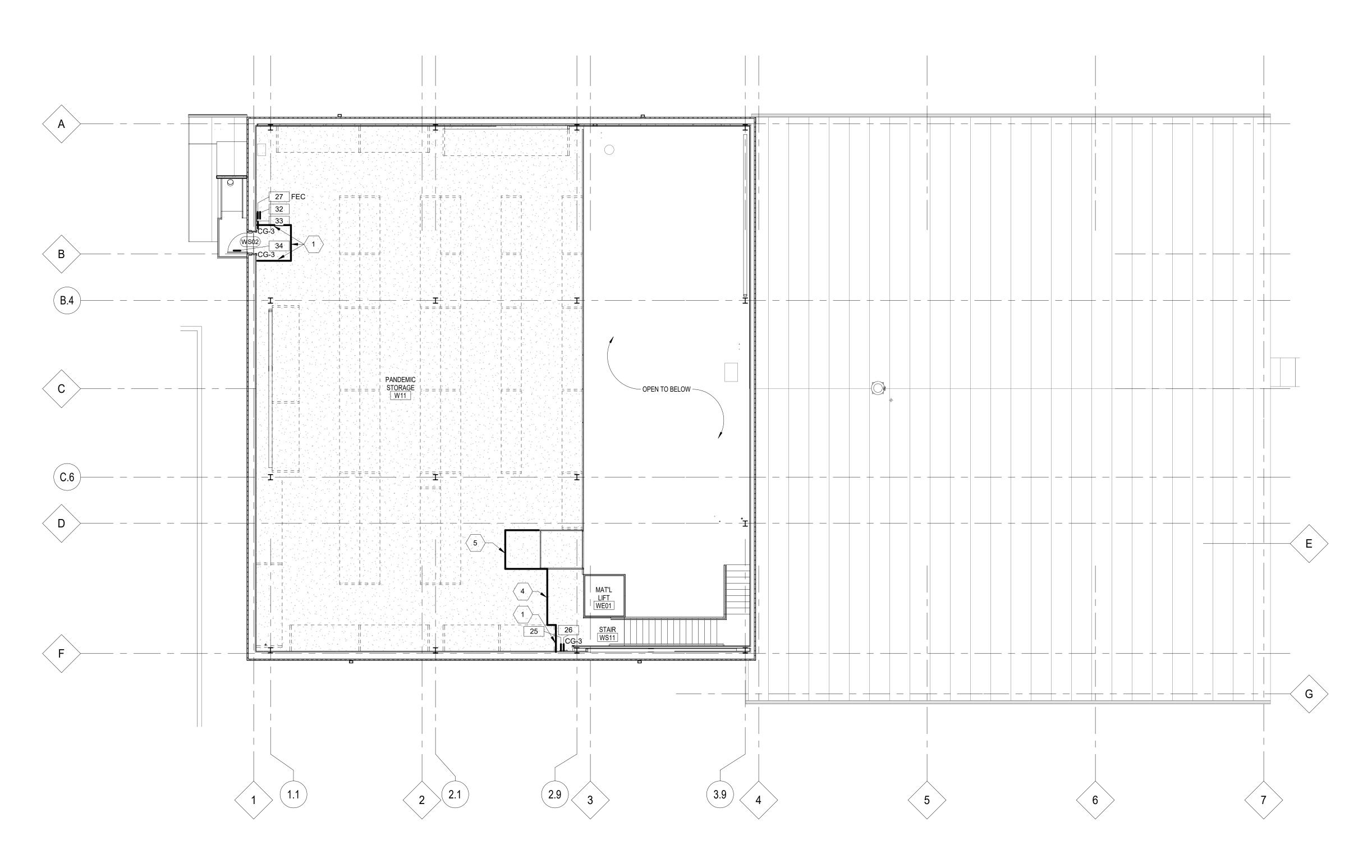
Dwg. # 47 of 94

**GENERAL NOTES FINISH PLAN:** 

1. SEE SHEET AF101 FOR FINISH PLAN GENERAL NOTES.

FINISH PLAN SHEET NOTES:

SEE SHEET AF101 FOR FINISH PLAN SHEET NOTE LEGEND.



**INTERIOR FINISH** PLAN LEGEND

PT-1

EXISTING FLOOR FINISH TO REMAIN

**EP- EPOXY PAINT** 

w/ NON-SLIP AGGREGATE SC-1 - SEALED CONCRETE W/ COLORED

SIGNAGE - SEE SIGNAGE SCHEDULE & DETAILS

BUMPER / CRASH RAIL CG, CORNER GUARD

SEE COLOR SCHEDULE FOR FINISH CODES SEE ROOM FINISH SCHEDULE FOR FINISHES NOT IDENTIFIED ON PLAN

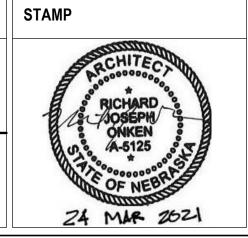
MEZZANINE FINISH & SIGNAGE PLAN

1/8" = 1'-0" 1 1 NORTH

> Calvin L. Hi BID SET 03/24/2021 Revisions:

Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193





Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

Drawing Title

BID SET MEZZANINE FINISH & SIGNAGE PLAN

FULLY SPRINKLERED

Project Title RENOVATE WAREHOUSE FOR PANDEMIC PREPAREDNESS Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201 Issue Date Checked Drawn

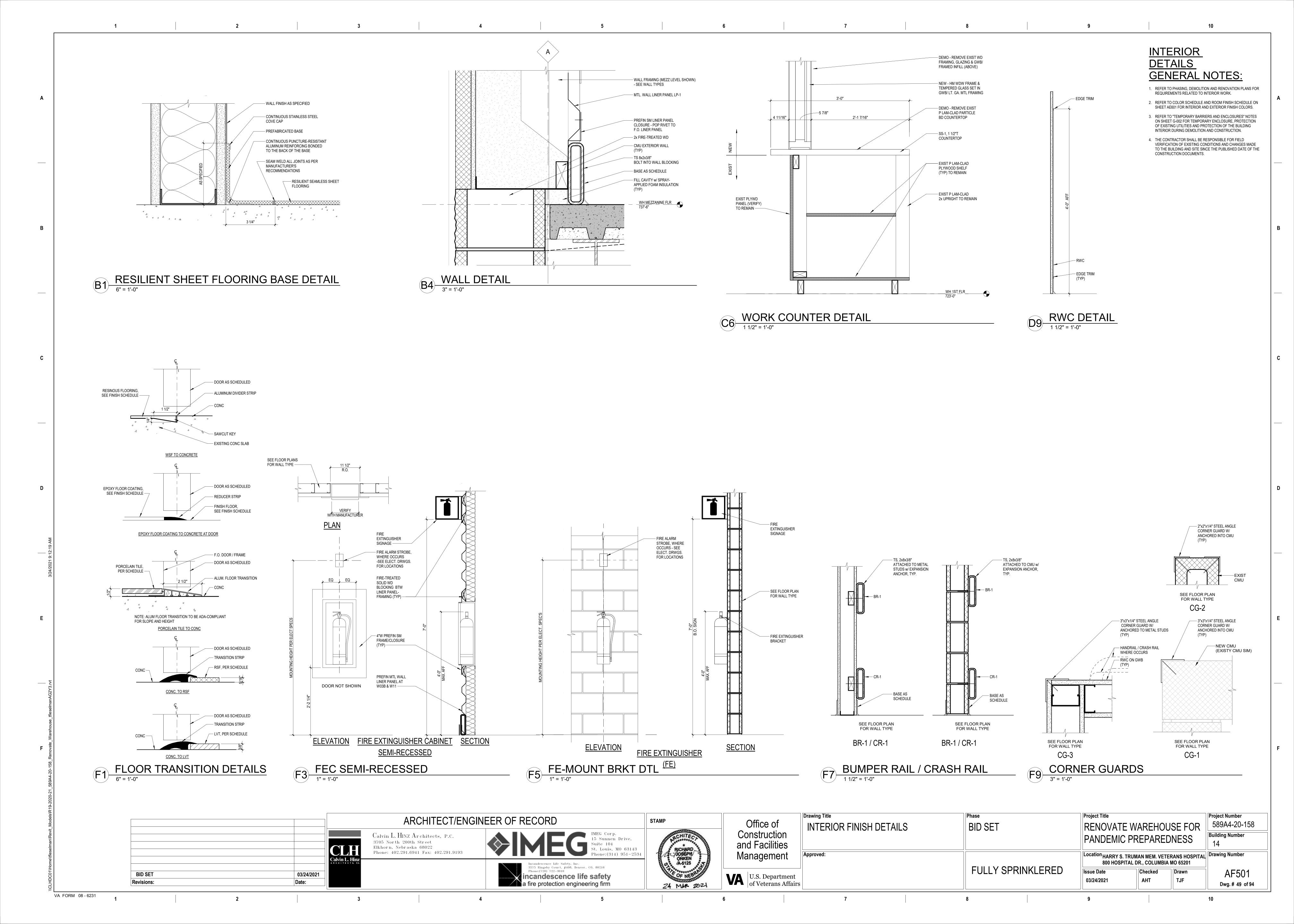
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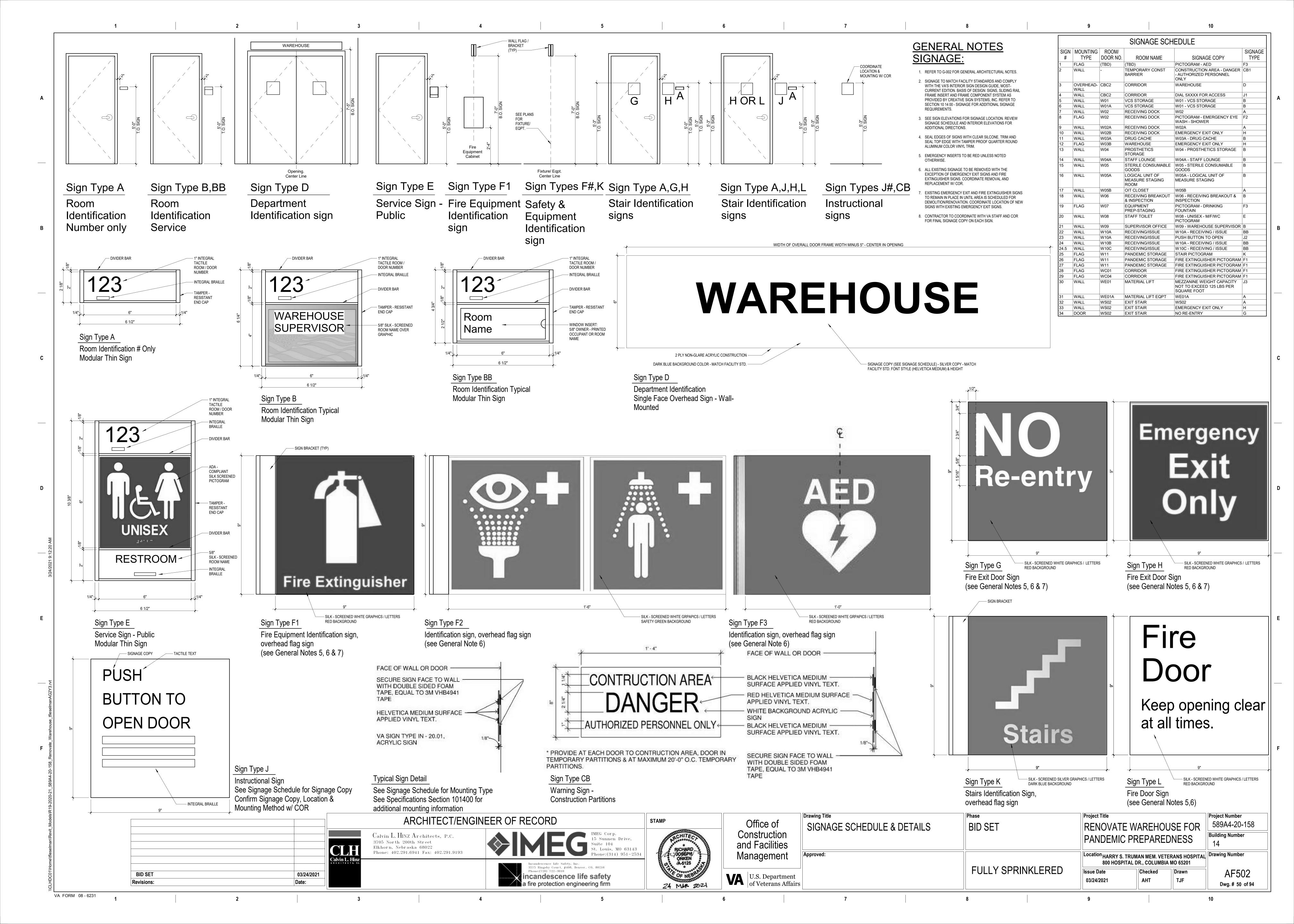
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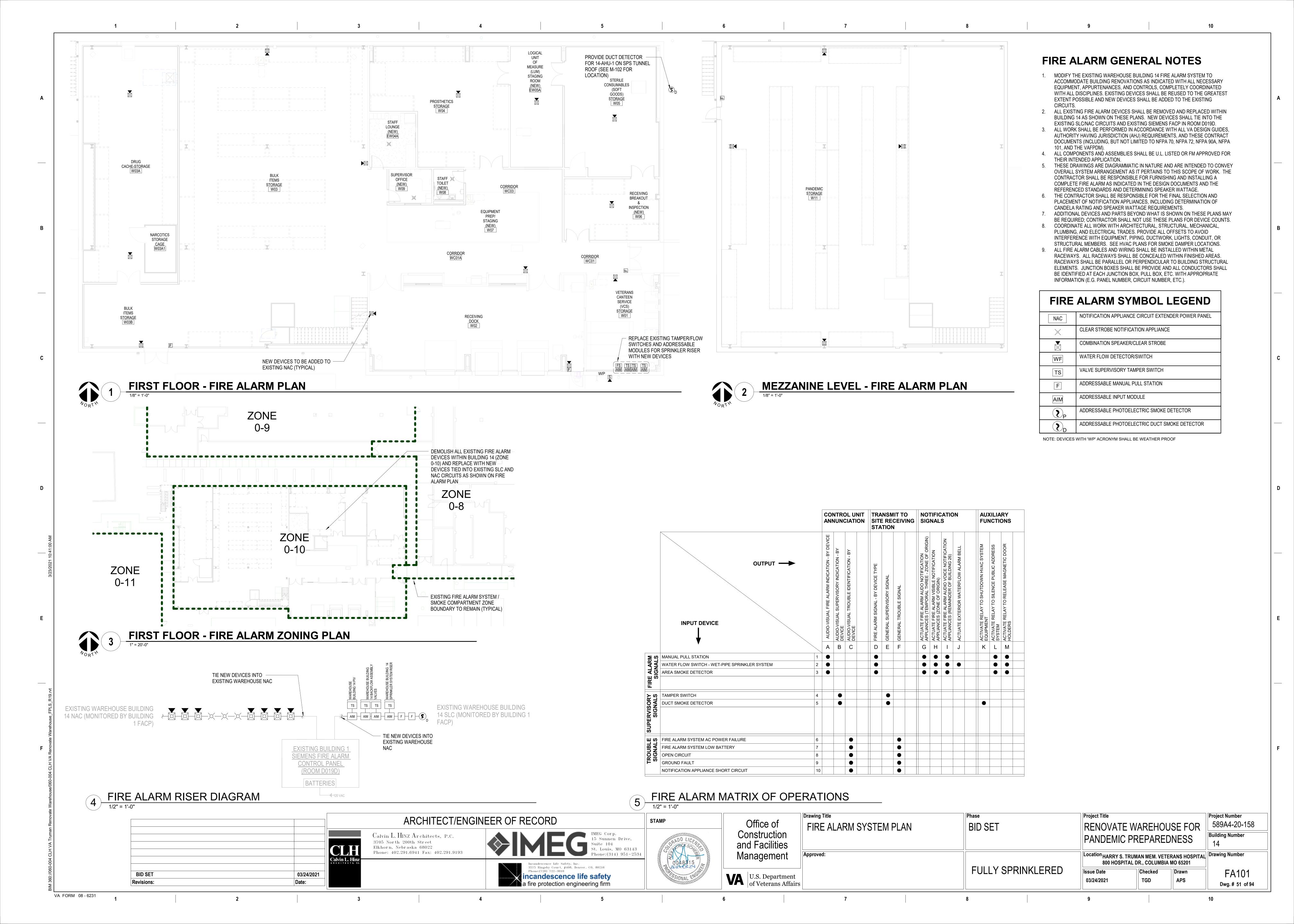
03/24/2021

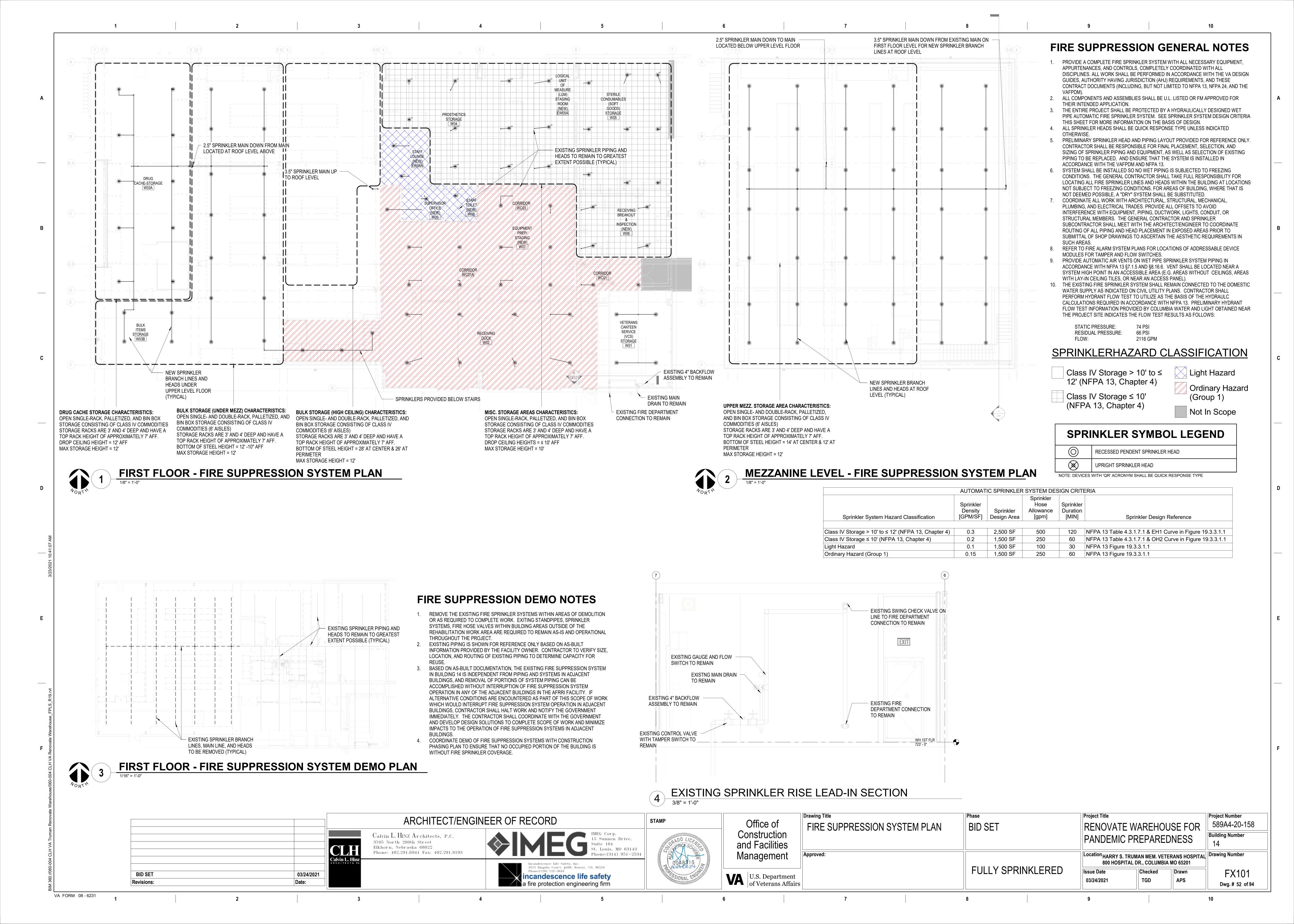
589A4-20-158 **Building Number** Dwg. # 48 of 94

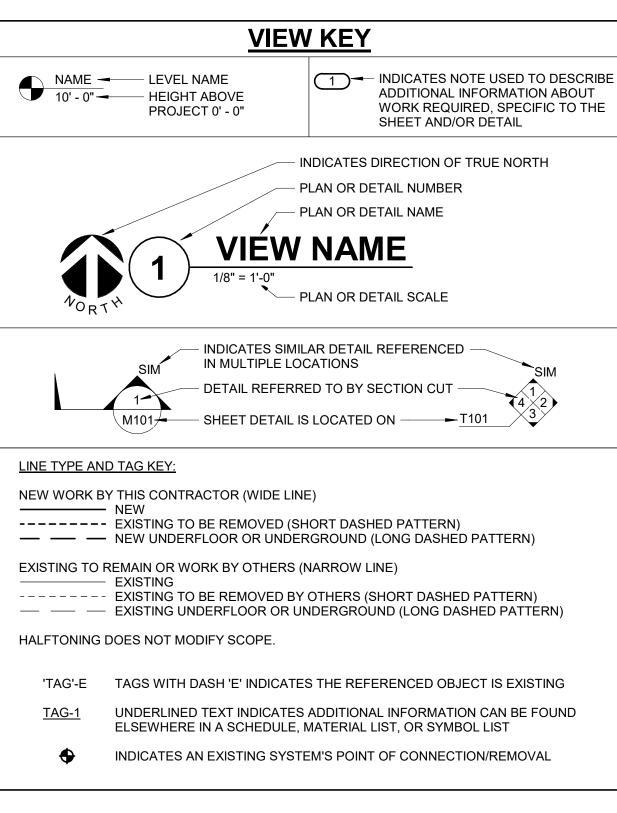
Project Number

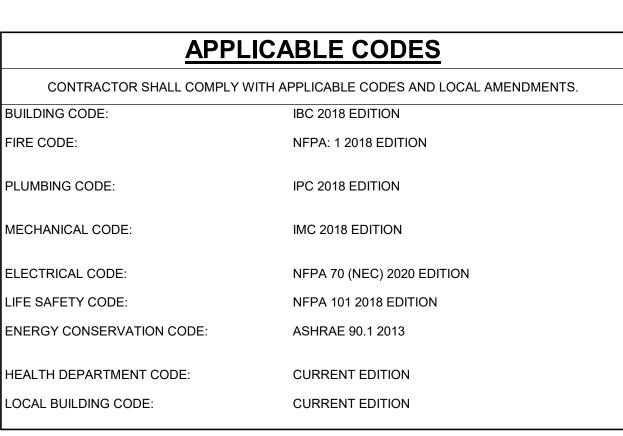


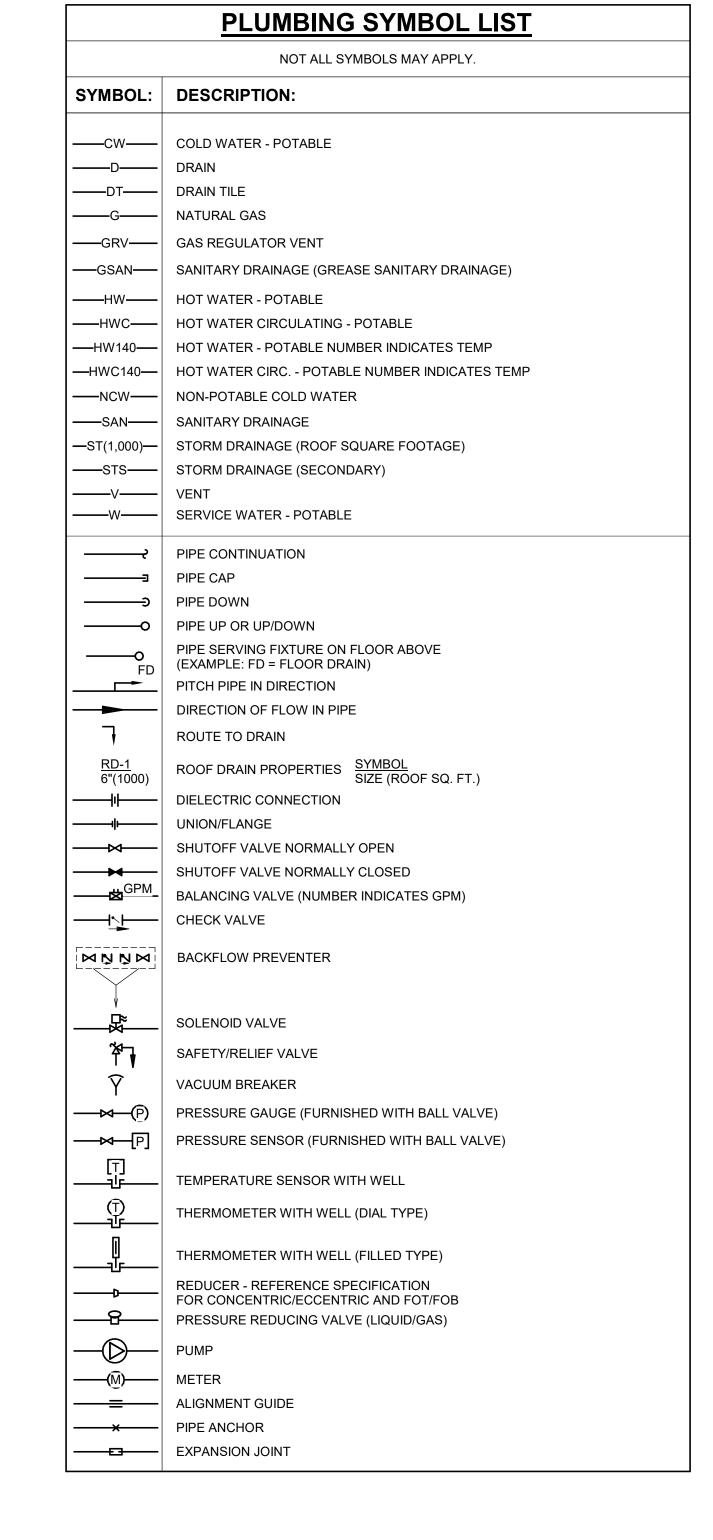












| ABBR: | DESCRIPTION:                          |
|-------|---------------------------------------|
| AD    | ACCESS DOOR                           |
| AFF   | ABOVE FINISHED FLOOR                  |
| BFP   | BACKFLOW PREVENTER                    |
| ВТ    | BATHTUB                               |
| СВ    | CATCH BASIN                           |
| CI    | CAST IRON                             |
| CO    | CLEANOUT                              |
| CS    | CLINICAL SINK                         |
| DB    | DIALYSIS BOX                          |
| DF    | DRINKING FOUNTAIN                     |
| DI    | DUCTILE IRON                          |
| Е     | EXISTING                              |
| EE    | EMERGENCY EYEWASH                     |
| ES    | EMERGENCY SHOWER                      |
| ESE   | EMERGENCY SHOWER/EYEWASH              |
| EWC   | ELECTRIC WATER COOLER                 |
| FCO   | FLOOR CLEANOUT                        |
| FD    | FLOOR DRAIN                           |
| FM    | FLOW METER                            |
| FS    | FLOOR SINK                            |
| GD    | GARBAGE DISPOSER                      |
| GI    | GREASE INTERCEPTOR                    |
| НВ    | HOSE BIBB                             |
| I.E.  | INVERT ELEVATION (FOR REFERENCE ONLY) |
| LAV   | LAVATORY                              |
| MB    | MOP BASIN                             |
| МН    | MANHOLE                               |
| MV    | MIXING VALVE                          |
| NIC   | NOT IN CONTRACT                       |
| NT    | NEUTRALIZATION TANK                   |
| os    | OIL SEPARATOR                         |
| RD    | ROOF DRAIN                            |
| SCCR  | SHORT CIRCUIT CURRENT RATING          |
| SH    | SHOWER                                |
| SK    | SINK                                  |
| SS    | SERVICE SINK                          |
| TD    | TRENCH DRAIN                          |
| TP    | TRAP PRIMER                           |
| TYP   | TYPICAL                               |
| UR    | URINAL                                |
| VTR   | VENT THROUGH ROOF                     |
| WC    | WATER CLOSET                          |
| WCO   | WALL CLEANOUT                         |
| WF    | WASH FOUNTAIN                         |
| WH    | WATER HEATER                          |
| WMF   | WASHING MACHINE FIXTURE               |
| WM    | WATER METER                           |
| WS    | WATER SOFTENER                        |
| UB    | UTILITY BOX                           |
| UNO   | UNLESS NOTED OTHERWISE                |
| YCO   | YARD CLEANOUT                         |

# **MECHANICAL RENOVATION NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND
- REPORT ANY CONFLICTS BEFORE PROCEEDING.

CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL

- 2. NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. 3. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF
- ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING 4. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF
- CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL
- EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK. 6. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING
- CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT 7. OBTAIN PERMISSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW
- SYSTEMS ARE INSTALLED. 8. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM OWNER BEFORE PARTIALLY OR COMPLETELY
- DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE. 9. DISCONNECT AND REMOVE MECHANICAL DEVICES AND EQUIPMENT SERVING EQUIPMENT THAT HAS BEEN REMOVED.

# **MECHANICAL PHASING NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE

- 1. REFER TO DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT
- THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA. 2. REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC. WITH AFFECTED ADJACENT AREAS.

5. PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

- 3. PROVIDE TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ZONE VALVES, ZONE ALARMS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF
- 4. INSTALL TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT

**PLUMBING SLOPE REQUIREMENTS: BASED ON PLUMBING CODE: [IPC-2018] SANITARY WASTE:** ≤2-1/2"ø=1/4" PER FOOT ≥3"ø = 1/8" PER FOOT

≥8"ø = 1/16" PER FOOT STORM (GRAVITY): 1/8" PER FOOT CONDENSATE AND INDIRECT DRAINAGE 1/8" PER FOOT NO SPECIFIC PITCH, PITCH TO FIXTURES SANITARY VENT: NO SPECIFIC PITCH, PITCH TO FIXTURES DOMESTIC WATER:

### **PLUMBING GENERAL NOTES:**

- 1. THE SYMBOLS AND THE MATERIAL LIST ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR SHALL VERIFY QUANTITIES AND FURNISH ALL MATERIALS REQUIRED FOR
- FULLY OPERATIONAL SYSTEMS, WHETHER SPECIFIED OR NOT. 2. CATALOG NUMBERS SHALL NOT BE CONSIDERED COMPLETE, BUT ARE GIVEN AS AN AID TO THE CONTRACTOR AND TO INDICATE THE QUALITY REQUIRED. CONTRACTOR IS RESPONSIBLE FOR A COMPLETE DESCRIPTION OF MATERIAL ON THESE DRAWINGS AND IN THE SPECIFICATIONS BEFORE ORDERING. THE DESCRIPTION OF THE MATERIAL TAKES PRECEDENCE OVER THE CATALOG NUMBER. THE FIRST MANUFACTURER LISTED IS THE
- CONTRACTOR SHALL VERIFY THAT FIXTURES SUPPLIED ARE APPROVED PER ALL APPLICABLE STATE, LOCAL AND GOVERNING AUTHORITIES.
- ALL FIXTURES SHALL CONFORM TO FEDERAL ACT S.3874 INVERT ELEVATIONS ARE FROM EXISTING DRAWINGS AND MAY NOT BE ACCURATE. VERIFY
- ALL ELEVATIONS BEFORE BEGINNING WORK.
- 6. VERIFY UNDERGROUND PIPE SIZES, INVERT ELEVATIONS, AND LOCATIONS PRIOR TO BEGINNING ANY WORK.
- REFER TO THE PLUMBING ROUGH-IN SCHEDULE FOR THE SIZES OF BRANCH PIPES TO PLUMBING FIXTURES. 8. EXISTING CONDITIONS ON DEMOLITION PLANS ARE PROVIDED TO INDICATE THE GENERAL
- SCOPE OF ITEMS TO BE REMOVED. REFER TO SPECIFICATION SECTION 22 05 05 FOR ADDITIONAL DEMOLITION INFORMATION. P.C. SHALL CUT AND PATCH EXISTING AS REQUIRED FOR NEW OR DEMOLITION WORK

#### UNLESS NOTED OTHERWISE. REFER TO SPECIFICATION SECTION 22 05 05 FOR ADDITIONAL INFORMATION.

**MECHANICAL GENERAL NOTES:** THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE
  - CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM

INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING

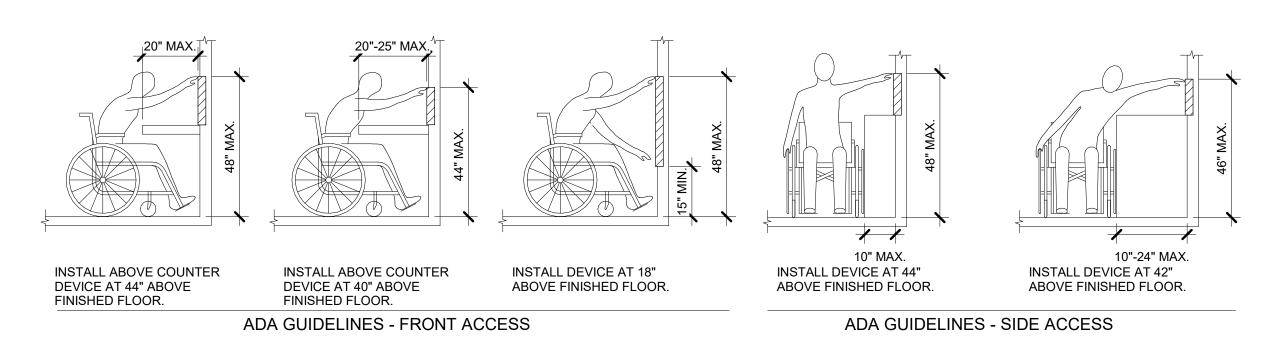
VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES

- ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. 3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO
- OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH FABRICATION OR EQUIPMENT ORDERS.
- REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER ACCESS.
- COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR EXPENSE TO OTHERS.
- 6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF

5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO

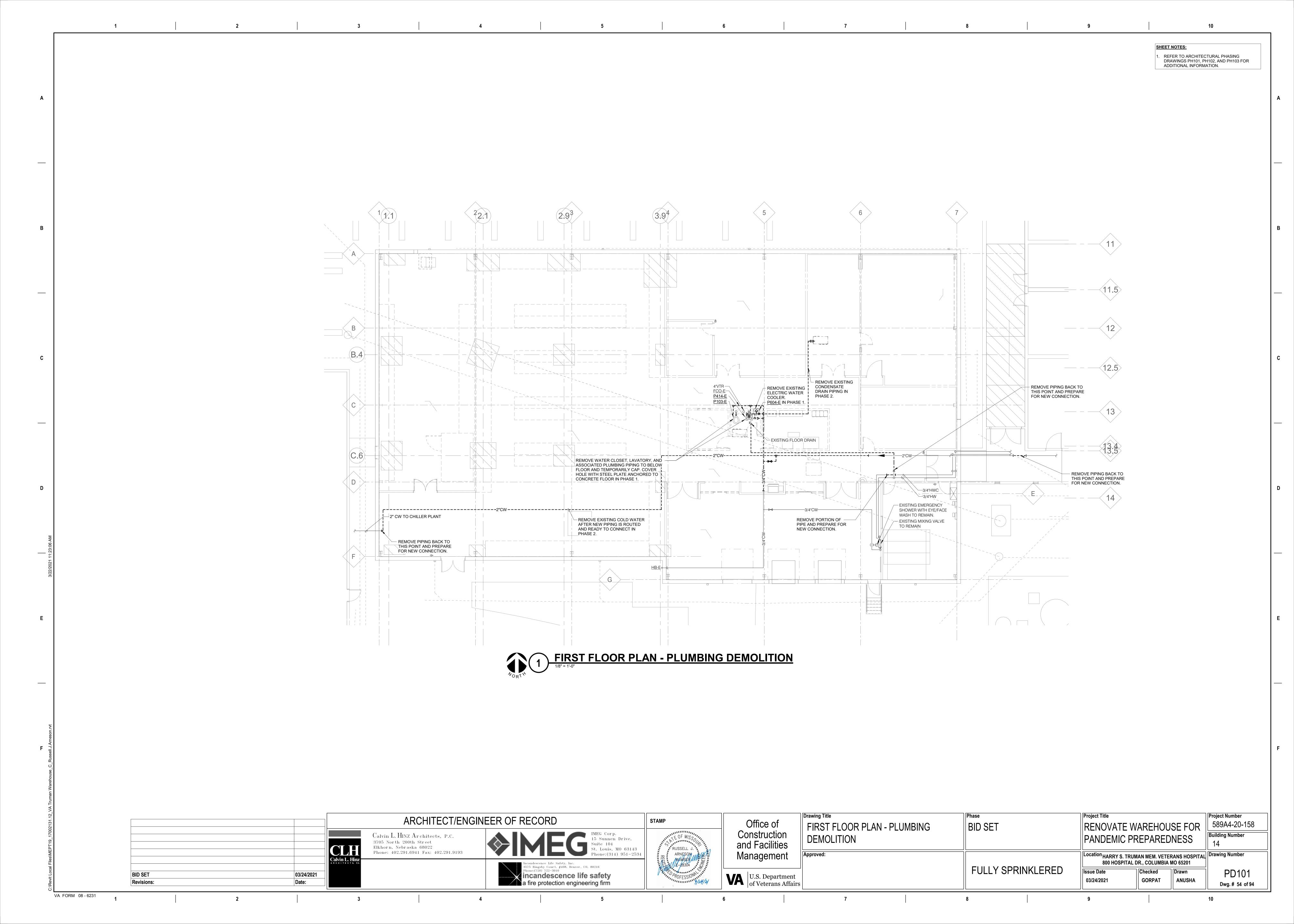
- 7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING
- MOUNTED DEVICES, OTHER THAN SPRINKLERS. 8. EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS, THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND
- . IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE
- PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS PANELS PRIOR TO BIDDING. 10. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER
- FOR OUTDOOR USE. 11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL, PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS
- WITHIN ROOMS. 12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVED OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL
- RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT. 13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS,
- PIPING, DUCTWORK, ETC. 14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES. 15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR
- STARTERS, SWITCHES, AND DISCONNECTS.
- 16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT.
- 17. DO NOT SUPPORT EQUIPMENT, PIPING, OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

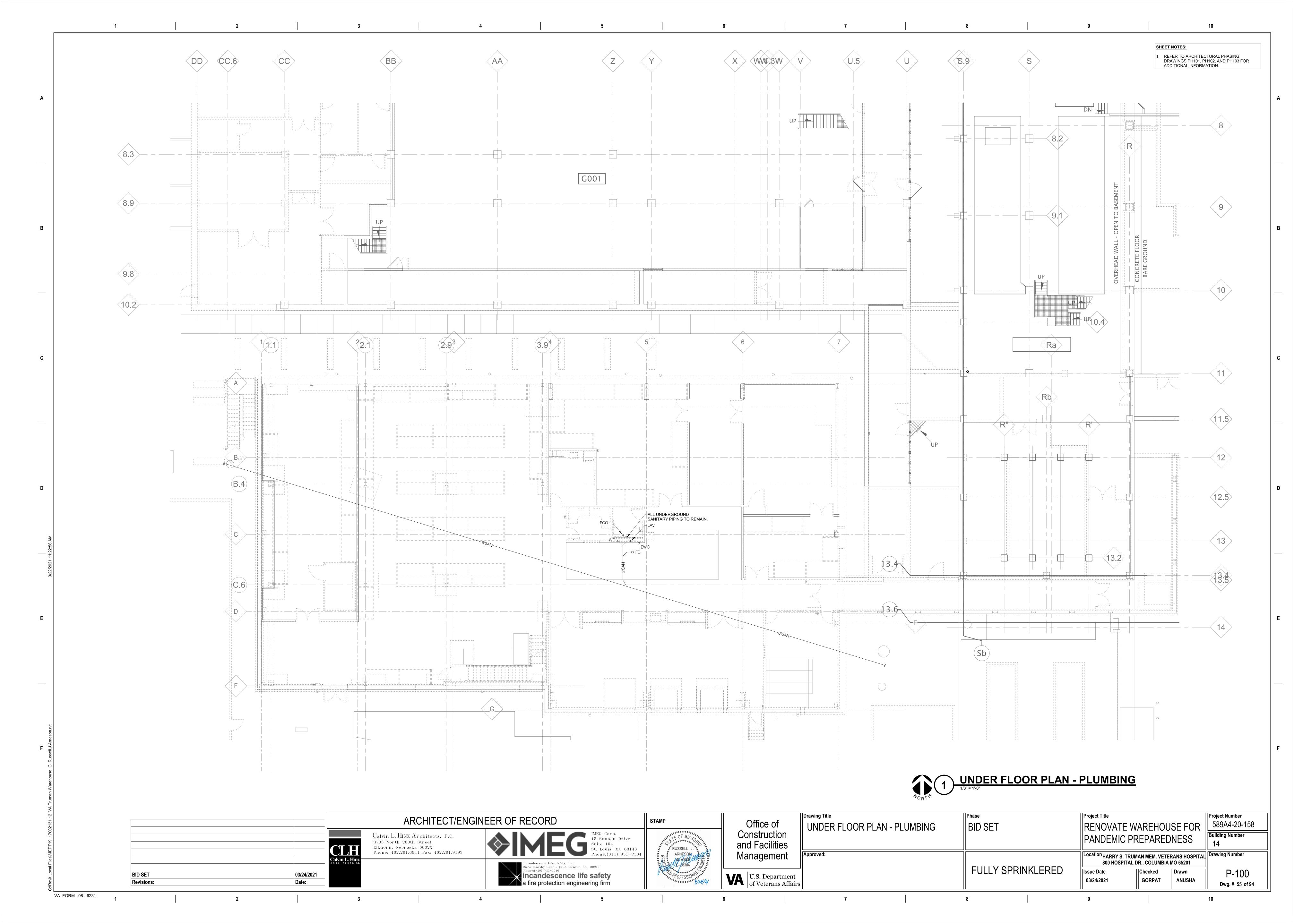
PLUMBING FIXTURE SCHEDULE WASTE PIPE VENT PIPE COLD WATER **HOT WATER** WASTE FIXTURE WATER FIXTURE | WRIST BLADE | ELECTRIC DESCRIPTION REMARKS UNITS UNITS HANDLES SENSOR WATER CLOSET, WALL HUNG P-103 N/A P-418 N/A YES LAVATORY 1.5 P-812 WATER SUPPLY BOX SERVES OWNER PROVIDED ICE/WATER DISPENSER

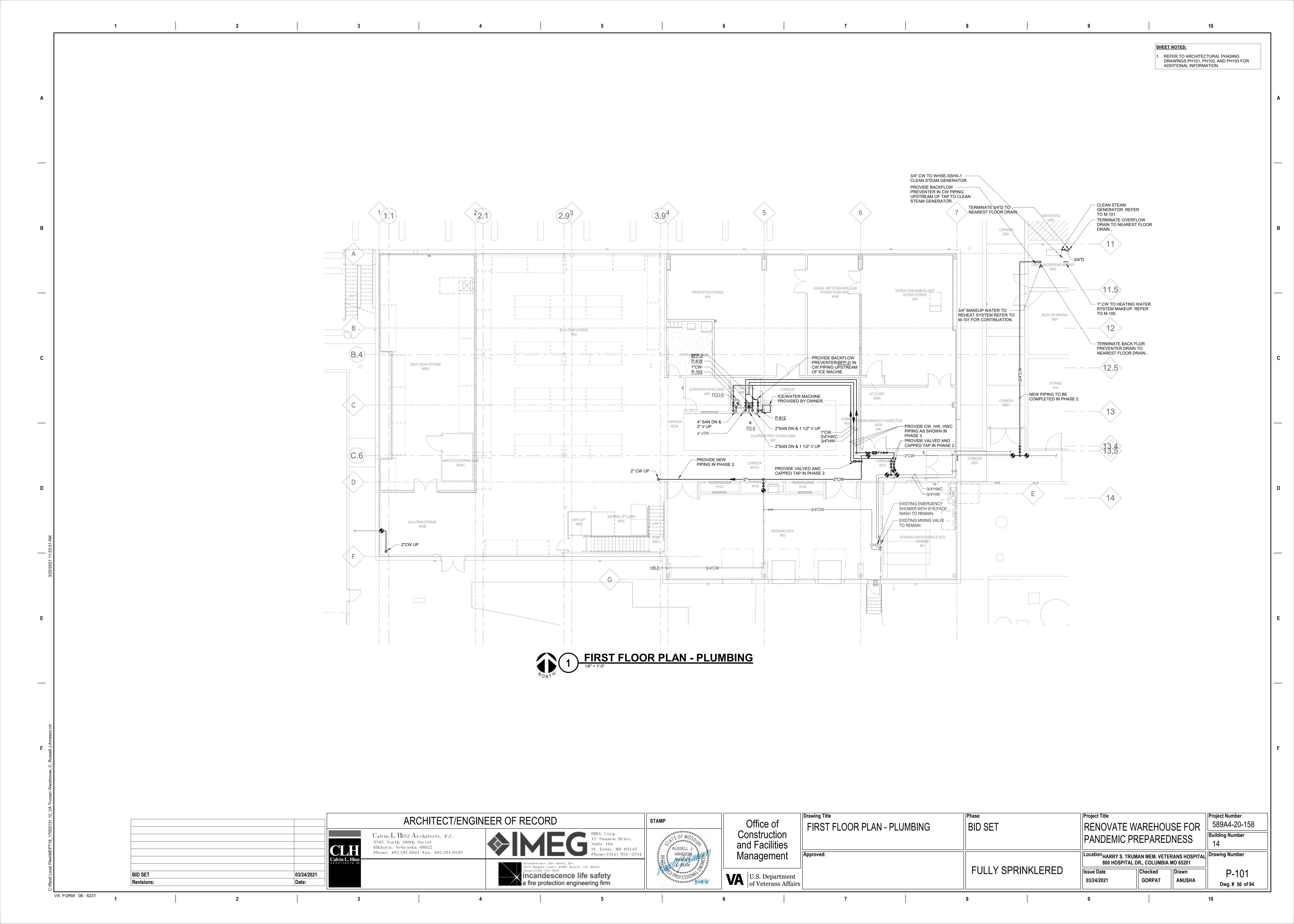


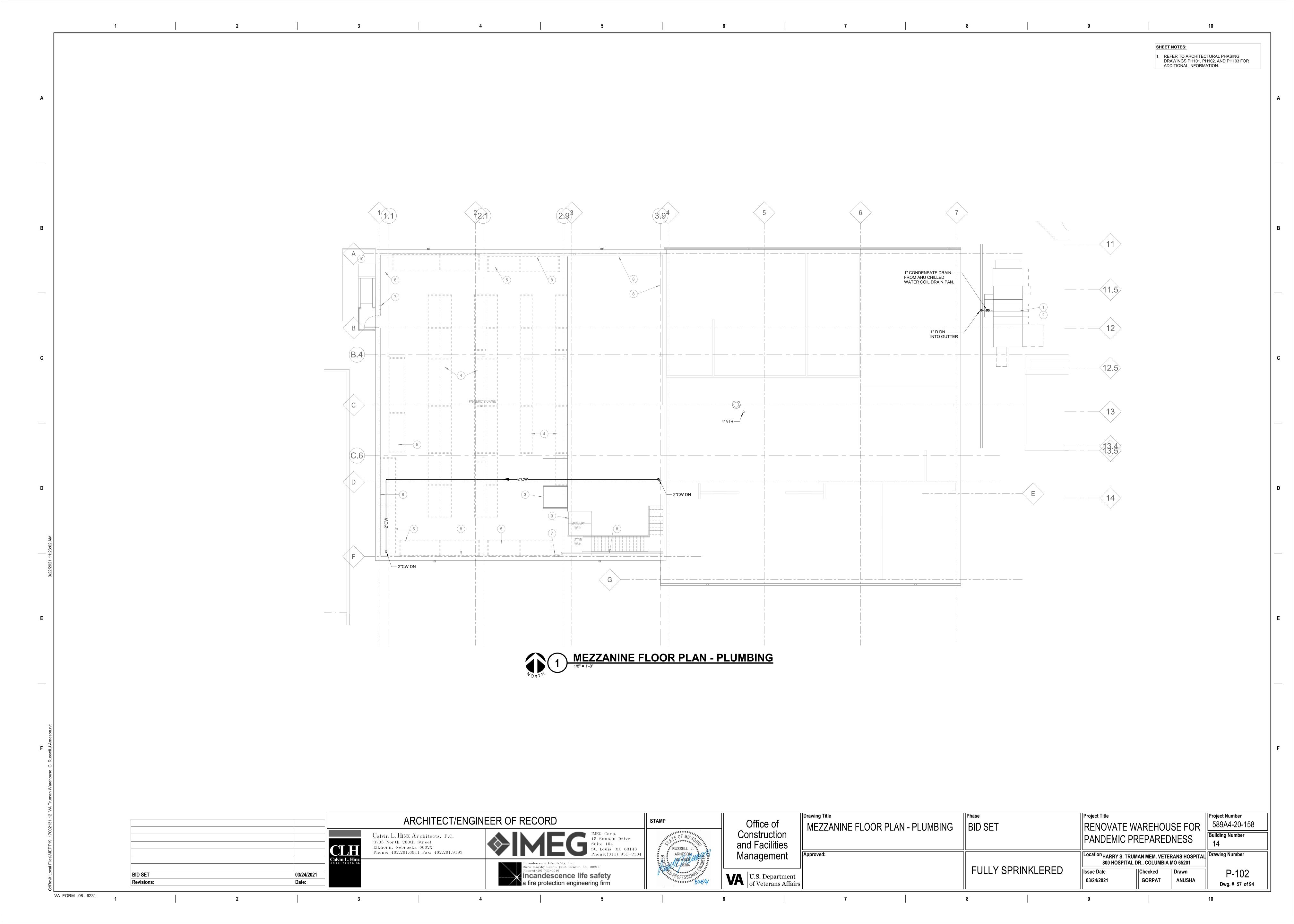
# **ADA STANDARDS FOR ACCESSIBLE DESIGN**

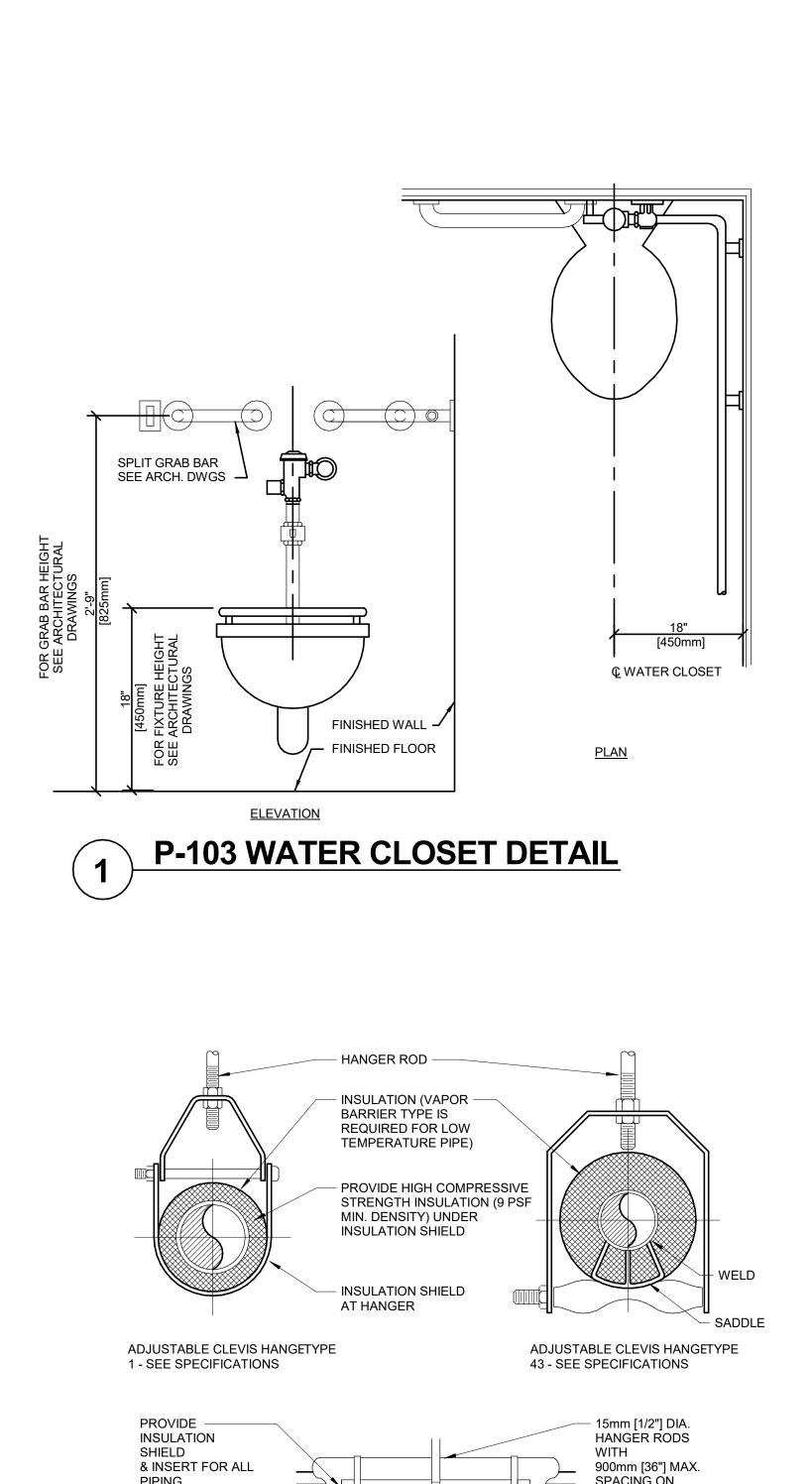
|            |            |                | ARCHITECT/ENGI   | NEER OF RECORD   | STAMP  | Office of                           | Drawing Title PLUMBING COVERSHEET | Phase<br>BID SET  | Project Title | REHOUSE FOR   | Project Number 589A4-20-158 |
|------------|------------|----------------|--|--|--|-------------------------------------|-----------------------------------|-------------------|---------------|---|-----------------------------|
|            |            | CLH            | Calvin L. HINZ Architects, P.C.<br>3705 North 200th Street<br>Elkhorn, Nebraska 68022<br>Phone: 402,291,6941 Fax: 402,291,9193 | IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, M0 63143  | RUSSELL J.   | Construction and Facilities         |                                   |                   | PANDEMIC PRE  | PAREDNESS   | Building Number             |
| BID SET    | 03/24/2021 | Calvin L. Hinz | THORE. TO C. COTTON TO C. COTTO TO C.  | Incandescence Life Safety, Inc. 3575 Ringsby Court, #408, Denver, CO, 80216 Phone:(720) 722-3010 Incandescence life safety | ARNESON MUMBER MUMBER  PROFFESSION PROFFES | Wanagement                          | Approved:                         | FULLY SPRINKLERED |               | N MEM. VETERANS HOSPITAL<br>, COLUMBIA MO 65201<br>hecked Drawn | P-000                       |
| Revisions: | Date:      |                |  | a fire protection engineering firm   | 10/ESSI0 1888/14/24  | U.S. Department of Veterans Affairs | $\mathbf{S}$                      |                   | 03/24/2021    | GORPAT ANUSHA   | Dwg. # 53 of 94             |

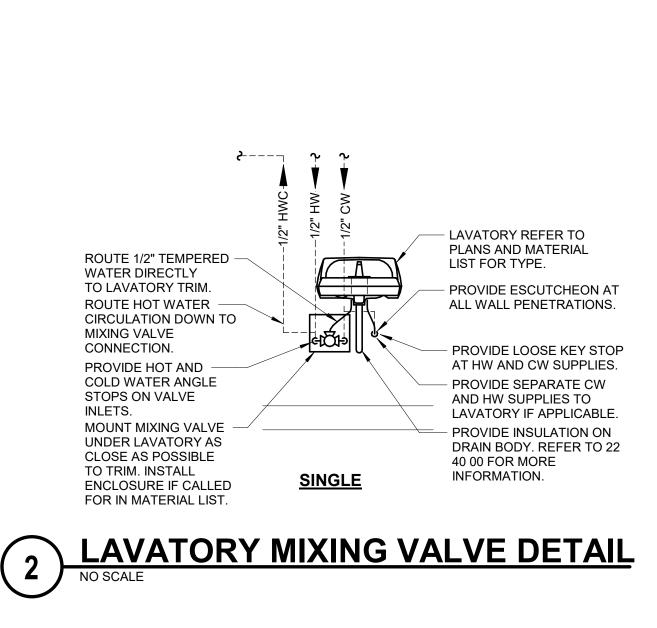


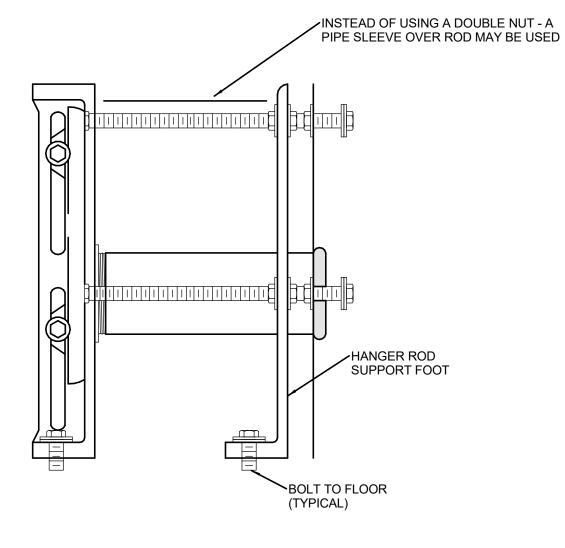




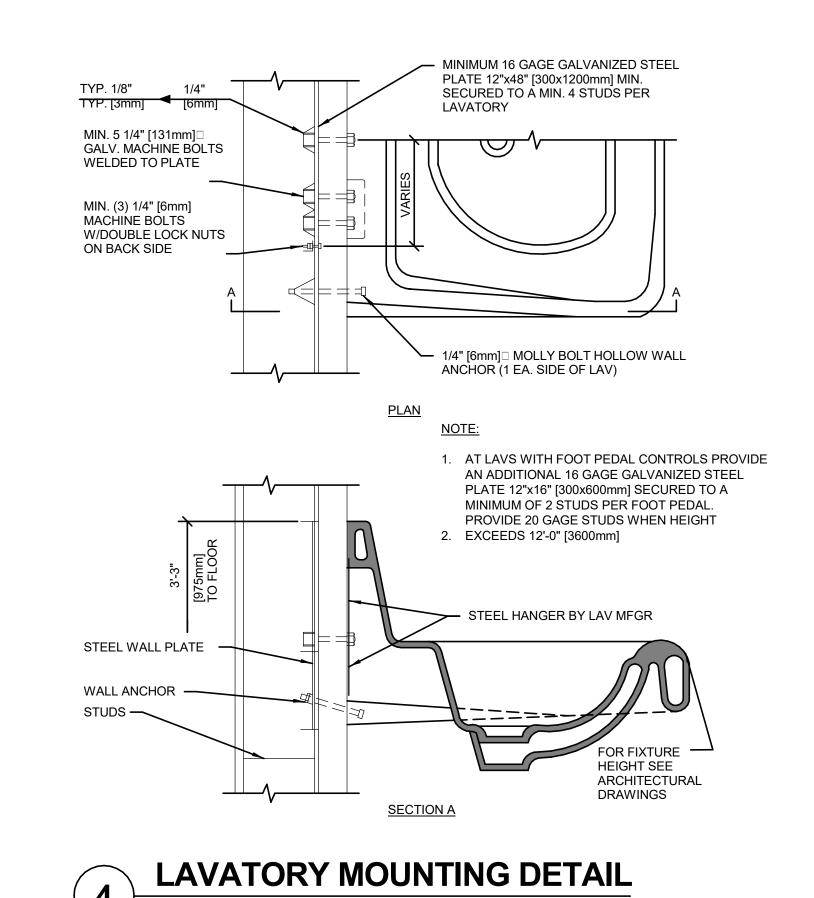


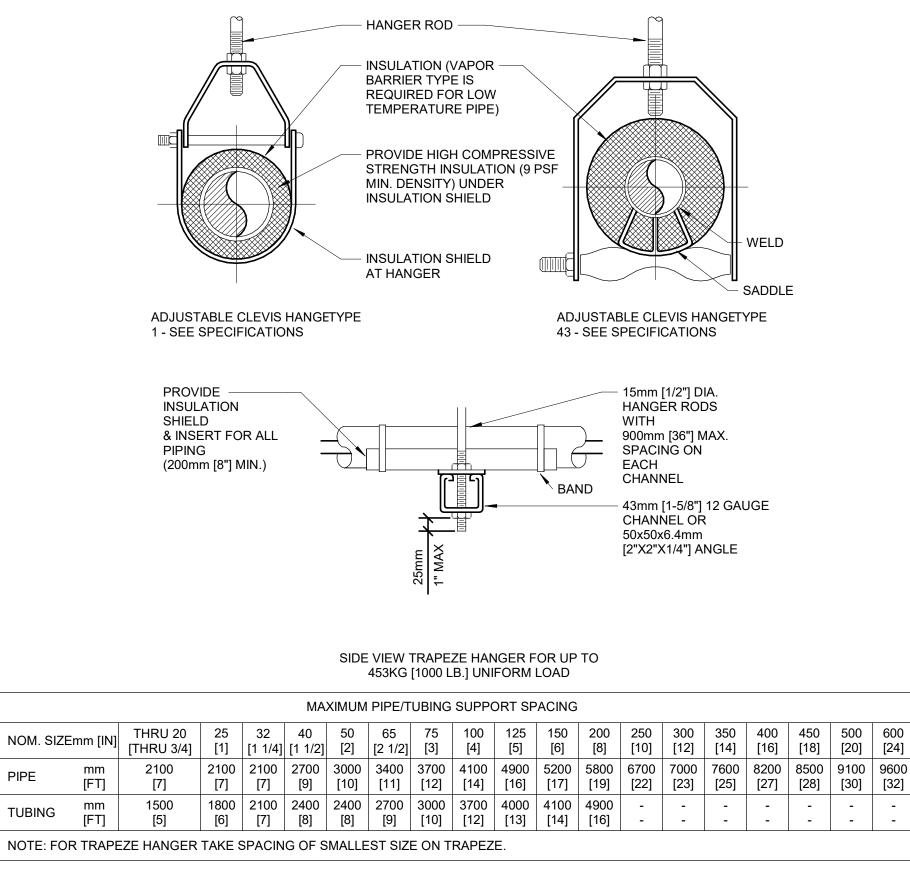


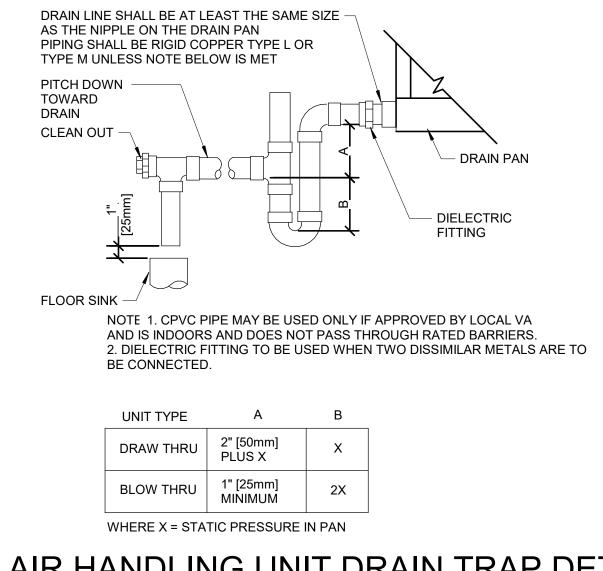








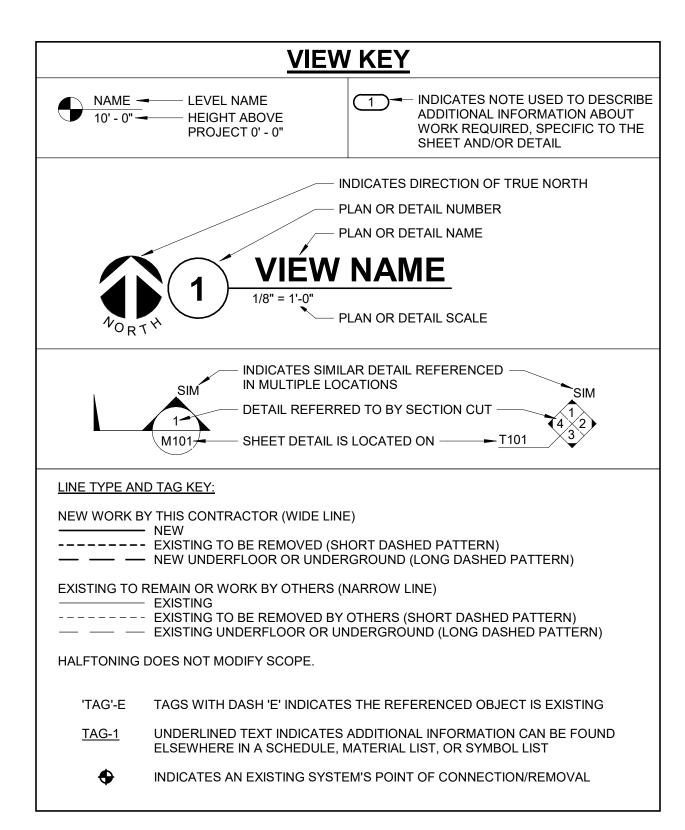




| 6   | AIR HANDLING UNIT DRAIN TRAP DETAIL |
|-----|-------------------------------------|
| (0) |                                     |

| Calvin L. Hinz Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193  Calvin L. Hinz Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193  Calvin L. Hinz Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193  Calvin L. Hinz Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193  Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9 | ISE FOR   589A4-20          | JUSE FOF     | WAREHO!           | RENOVATE    | =T              | Phase<br>  BID SE | DETAILS | Drawing Title PLUMBING DE | Office of                           | STAMP                      | INEER OF RECORD  | ARCHITECT/ENGIN         |                     |                    |  |
|--|-----------------------------|--------------|-------------------|-------------|-----------------|-------------------|---------|---------------------------|-------------------------------------|----------------------------|--|-------------------------|---------------------|--------------------|--|
| Calvin L. Hinz 3575 Ringsby Court, #408, Denver, CO, 80216 Phone:(720) 722-3010  INTAINAGE INTERPORT INTAINAGE IN THE STRUMENT INTAINAGE IN THE STRUMENT INTAINAGE IN THE STRUMENT INTAINAGE IN THE STRUMENT I | NESS Building Number 14     | EDNESS       | PREPARE           | PANDEMIC F  | <b>-</b> '      |                   |         |                           | and Facilities                      | RUSSELL J.                 | IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, M0 63143 Phancy (214) 051, 2524 | 3705 North 200th Street | CLF                 |                    |  |
| Phone: (720) 722-3010   Sept.   Chee   | MO 65201                    | BIA MO 65201 | AL DR., COLUMBIA  | 800 HOSPITA | V CDDINIZI EDED |                   |         | Approved:                 | Management                          | = -U • ,// /////////////// | Incandescence Life Safety, Inc. 3575 Ringsby Court, #408, Denver, CO, 80216      |                         |                     |                    |  |
| Revisions:  U.S. Department of Veterans Affairs  O3/24/2021  | Drawn P-30 ANUSHA Dwg. # 58 |              | Checked<br>GORPAT |             | I SPRINKLERED   | FULL              |         | rs                        | U.S. Department of Veterans Affairs | PROFESSION 1/24/24         | incandescence life safety a fire protection engineering firm                     |                         | 03/24/2021<br>Date: | BID SET Revisions: |  |

:\Revit Local Files\MEPT19\_17002131.12\_VA Truman Warehouse\_C\_Russe



| APPLICABLE CODES               |                                       |  |  |  |  |  |  |
|--------------------------------|---------------------------------------|--|--|--|--|--|--|
| CONTRACTOR SHALL COMPLY WITH A | PPLICABLE CODES AND LOCAL AMENDMENTS. |  |  |  |  |  |  |
| BUILDING CODE:                 | IBC 2018 EDITION                      |  |  |  |  |  |  |
| FIRE CODE:                     | NFPA: 1 2018 EDITION                  |  |  |  |  |  |  |
| PLUMBING CODE:                 | IPC 2018 EDITION                      |  |  |  |  |  |  |
| MECHANICAL CODE:               | IMC 2018 EDITION                      |  |  |  |  |  |  |
| ELECTRICAL CODE:               | NFPA 70 (NEC) 2020 EDITION            |  |  |  |  |  |  |
| LIFE SAFETY CODE:              | NFPA 101 2018 EDITION                 |  |  |  |  |  |  |
| ENERGY CONSERVATION CODE:      | ASHRAE 90.1 2013                      |  |  |  |  |  |  |
| HEALTH DEPARTMENT CODE:        | CURRENT EDITION                       |  |  |  |  |  |  |
| LOCAL BUILDING CODE:           | CURRENT EDITION                       |  |  |  |  |  |  |

| ——cs——                                 | CONDENSER WATER SUPPLY  |
|--|---|
|  |   |
| ——CS15——                               | CLEAN STEAM - NUMBER INDICATES PRESSURE IN PSIG.  |
| ——CWR——                                | CHILLED WATER RETURN  |
| ——CWS——                                | CHILLED WATER SUPPLY  |
| ——DPP——                                | DRAIN   |
| —HWR—                                  | HEATING WATER RETURN  |
| —HWS—                                  | HEATING WATER SUPPLY  |
| —LCS—                                  | LOW PRESSURE CLEAN STEAM  |
| ——LPC——                                | LOW PRESSURE CONDENSATE   |
| ——LPS——                                | LOW PRESSURE STEAM  |
| —LWR—                                  | LOOP WATER RETURN   |
| LWS                                    | LOOP WATER SUPPLY   |
| ——PC——                                 | PUMPED CONDENSATE   |
| ——PD——                                 | PUMPED DISCHARGE  |
| RWR                                    | REHEAT WATER RETURN   |
| RWS                                    | REHEAT WATER SUPPLY   |
| ——SV——                                 | SAFETY RELIEF VENT  |
|  | PIPE CAP  |
|  |   |
|  | PIPE DOWN   |
|  | PIPE UP OR UP/DOWN  |
|  | PITCH PIPE IN DIRECTION   |
|  | DIRECTION OF FLOW IN PIPE   |
| ——  ——                                 | DIELECTRIC CONNECTION   |
|  | UNION/FLANGE  |
| ——⋈——                                  | SHUTOFF VALVE NORMALLY OPEN   |
| <b>─</b>                               | SHUTOFF VALVE NORMALLY CLOSED   |
| <del></del>                            | THROTTLING VALVE  |
| ——벌——                                  | BALANCING VALVE (NUMBER INDICATES GPM)  |
|  | AUTOMATIC BALANCING VALVE   |
| —ф—                                    | MIXING VALVE  |
| ——ৡ——                                  | CONTROL VALVE (THREE-WAY)   |
| •                                      |   |
| ——ऄ——                                  | CONTROL VALVE (TWO-WAY)   |
| ——₩——                                  | SOLENOID VALVE  |
|  | CHECK VALVE   |
| -                                      |   |
| —————————————————————————————————————— |   |
|  | BACKFLOW PREVENTER  |
|  |   |
|  | BACKFLOW PREVENTER  |
|  | BACKFLOW PREVENTER  SAFETY/RELIEF VALVE   |
|  | BACKFLOW PREVENTER  |
|  | BACKFLOW PREVENTER  SAFETY/RELIEF VALVE   |
|  | BACKFLOW PREVENTER  SAFETY/RELIEF VALVE  PRESSURE REDUCING VALVE (LIQUID/GAS)  PRESSURE REDUCING VALVE (STEAM)  |
|  | BACKFLOW PREVENTER  SAFETY/RELIEF VALVE  PRESSURE REDUCING VALVE (LIQUID/GAS)  PRESSURE REDUCING VALVE (STEAM)  TRIPLE DUTY VALVE (ANGLE TYPE)  |
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**MECHANICAL SYMBOL LIST** 

NOT ALL SYMBOLS MAY APPLY

SYMBOL: DESCRIPTION:

——CR—— CONDENSER WATER RETURN

# **MECHANICAL SYMBOL LIST** NOT ALL SYMBOLS MAY APPLY. SYMBOL: DESCRIPTION: DIRECTION OF AIR FLOW The state of the s MANUAL VOLUME DAMPER RISE IN DIRECTION OF AIR FLOW → D ∤ DROP IN DIRECTION OF AIR FLOW SUPPLY/OUTSIDE AIR DUCT SECTION RETURN AIR DUCT SECTION EXHAUST/RELIEF AIR DUCT SECTION 4-WAY DIFFUSER WITH BLANKOFF IN ONE DIRECTION AIR TERMINAL PROPERTIES SYMBOL NECK SIZE/CFM TERMINAL AIR BOX (REFER TO SCHEDULE) TERMINAL AIR BOX w/REHEAT COIL (REFER TO SCHEDULE) H HUMIDIFIER OPPOSED BLADE DAMPER (REFER TO SCHEDULE) PARALLEL BLADE DAMPER (REFER TO SCHEDULE) DIFFERENTIAL PRESSURE SENSOR HUMIDISTAT SENSOR HUMIDISTAT / SENSOR CARBON MONOXIDE SENSOR CARBON DIOXIDE SENSOR OCCUPANCY SENSOR PRESSURE SENSOR/MONITOR PRESSURE SENSOR (DUCT MOUNTED) (T) THERMOSTAT/SENSOR TEMPERATURE SENSOR THERMOSTAT/SENSOR WITH HEAVY DUTY ENCLOSURE TEMPERATURE SENSOR WITH WELL THERMOMETER WITH WELL (DIAL TYPE) THERMOMETER WITH WELL (FILLED TYPE) ─ XX-Y | AIRFLOW MEASUREMENT SYMBOL XX - AHU SYMBOL Y - SEQUENTIAL NUMBER FLOW SWITCH FS FLOW SENSOR STEAM TRAP (REFER TO SCHEDULE) F&T STEAM TRAP (REFER TO SCHEDULE) INVERTED BUCKET STEAM TRAP (REFER TO SCHEDULE) ALIGNMENT GUIDE PIPE ANCHOR EXPANSION JOINT EJ-# #.#" IS THE EXPANSION TRAVEL INCHES **—(**M)**—** | METER

#### **MECHANICAL RENOVATION NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED

- TO PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.
- 1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS BEFORE PROCEEDING.
- NOT ALL EXISTING DUCTWORK AND PIPING IS SHOWN. VERIFY EXISTING CONDITIONS BEFORE STARTING WORK. NOTIFY ENGINEER OF ANY CONFLICTS WITH NEW WORK. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS.
- CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO
- WHERE EXISTING MECHANICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, PIPING, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING MECHANICAL
- SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK. PROVIDE TEMPORARY CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. MAINTAIN ACCESS TO EXISTING MECHANICAL INSTALLATIONS THAT
- 7. OBTAIN PERMISSION FROM OWNER BEFORE SHUTTING DOWN ANY SYSTEM FOR ANY REASON. MAINTAIN SERVICE TO ALL COMPONENTS THAT ARE TO REMAIN UNTIL NEW SYSTEMS ARE INSTALLED
- 8. MAINTAIN EXISTING SYSTEM IN SERVICE UNTIL NEW SYSTEM IS COMPLETE AND READY FOR TIE IN AND SWITCHOVER. DRAIN SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM OWNER BEFORE PARTIALLY OR COMPLETELY
- DRAINING SYSTEM. MAKE CHANGEOVER TO NEW SYSTEMS WITH MINIMUM OUTAGE. 9. DISCONNECT AND REMOVE MECHANICAL DEVICES AND EQUIPMENT SERVING EQUIPMENT THAT HAS BEEN REMOVED.

### **MECHANICAL PHASING NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, FIRE PROTECTION, PLUMBING, MEDICAL GAS, VENTILATION, PIPING AND TEMPERATURE

- 1. REFER TO DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY DRAWINGS DO NOT DEPICT
- THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA. REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC.
- WITH AFFECTED ADJACENT AREAS. PROVIDE TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ZONE VALVES, ZONE ALARMS, ETC. AS NEEDED TO MAINTAIN SERVICE TO ALL AREAS DURING ALL PHASES OF
- 4. INSTALL TEMPORARY DUCTWORK, PIPING, SHUTOFF VALVES, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT . PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

# MECHANICAL ABBREVIATION KEY

|            | WECHANICAL ADDREVIATION RET         |
|------------|-------------------------------------|
| ABBR:      | DESCRIPTION:                        |
| AD         | ACCESS DOOR                         |
| AFF        | ABOVE FINISHED FLOOR                |
| С          | COMMON                              |
| CO         | CLEANOUT                            |
| CFSD       | CONTROL/FIRE/SMOKE DAMPER           |
| DPG (0-2") | DIFFERENTIAL PRESSURE GAUGE (RANGE) |
| DPS        | DIFFERENTIAL PRESSURE SWITCH        |
| EA         | EXHAUST/RELIEF AIR                  |
| ECFSD      | EXISTING CONTROL FIRE SMOKE DAMPER  |
| EFD        | EXISTING FIRE DAMPER                |
| EFSD       | EXISTING FIRE SMOKE DAMPER          |
| EP         | ELECTRICAL TO PNEUMATIC VALVE       |
| ESD        | EXISTING SMOKE DAMPER               |
| FD         | FIRE DAMPER                         |
| FOB        | FLAT ON BOTTOM                      |
| FOT        | FLAT ON TOP                         |
| FSD        | FIRE/SMOKE DAMPER                   |
| MA         | MIXED AIR                           |
| MV         | MIXING VALVE                        |
|            |                                     |

#### **PIPING GENERAL NOTES:**

1. THE SIZE OF BRANCH PIPING TO TERMINAL HEATING DEVICES AND COILS SHALL BE 3/4" **UNLESS NOTED OTHERWISE** 2. PIPE DRAIN LINES FROM EQUIPMENT TO NEAREST FLOOR DRAIN.

# **VENTILATION GENERAL NOTES:**

1. UNLESS NOTED OTHERWISE. THE SIZE OF EACH BRANCH DUCT TO A TERMINAL AIR BOX (TAB) SHALL MATCH THE INLET SIZE UNLESS THE BRANCH IS GREATER THAN 6FEET IN

LENGTH, IN WHICH CASE THE BRANCH DUCT SHALL BE AS SHOWN ON PLANS..

- UNLESS NOTED OTHERWISE, THE SIZE OF EACH BRANCH DUCT TO AN AIR TERMINAL SHALL MATCH THE INLET SIZE. 3. ALIGN TEMPERATURE SENSORS WITH LIGHT SWITCHES AND WHEN IN CLOSE PROXIMITY TO
- EACH OTHER. PROVIDE ACCESS DOORS AT ALL DUCT MOUNTED EQUIPMENT. 5. EXISTING AIR INLET AND OUTLET CFM SHOWN ON DRAWINGS ARE FROM EXISTING DRAWINGS, AND ARE FOR REFERENCE ONLY.

## **MECHANICAL GENERAL NOTES:**

THESE NOTES APPLY TO ALL MECHANICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, PLUMBING, VENTILATION, PIPING AND TEMPERATURE CONTROL.

- 1. DRAWINGS SHOWING LOCATIONS OF EQUIPMENT, DUCTWORK, PIPING, ETC. ARE DIAGRAMMATIC AND MAY NOT ALWAYS REFLECT EXACT INSTALLATION CONDITIONS. DRAWINGS SHOW THE GENERAL ARRANGEMENT OF DUCTWORK, PIPING, EQUIPMENT, ETC., AND MAY NOT INCLUDE ALL OFFSETS AND FITTINGS REQUIRED FOR COMPLETE INSTALLATION. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING
- CONSTRUCTION AND THE WORK OF OTHERS WILL PERMIT. 2. DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS AND CLEARANCES FROM
- ARCHITECTURAL, STRUCTURAL, SUBMITTALS, AND OTHER APPROPRIATE DRAWINGS OR PHYSICALLY AT SITE. REVIEW ALL DRAWINGS, INCLUDING THOSE OF OTHER TRADES. 3. COORDINATE ALL WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION TO PROVIDE CLEARANCES REQUIRED FOR OPERATION, MAINTENANCE, CODE COMPLIANCE, AND TO VERIFY NON-INTERFERENCE WITH OTHER WORK. DO NOT FABRICATE PRIOR TO
- WITH FABRICATION OR EQUIPMENT ORDERS. 4. REVIEW SPACE REQUIREMENTS OF EQUIPMENT SPECIFIED OR SUBSTITUTED AND MAKE

VERIFICATION OF NECESSARY CLEARANCES FOR ALL TRADES. BRING ANY INTERFERENCES OR CONFLICTS TO THE ATTENTION OF THE ARCHITECT/ENGINEER BEFORE PROCEEDING

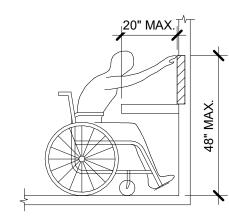
- REASONABLE ACCOMMODATIONS IN LAYOUT AND POSITIONING TO PROVIDE PROPER 5. ANY CHANGES REQUIRED TO ELIMINATE CONFLICTS OR THAT RESULT FROM A FAILURE TO
- COORDINATE SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COST OR
- 6. EACH CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ELECTRICAL
- CHANGES REQUIRED FOR EQUIPMENT PROPOSED THAT DIFFERS FROM THE BASIS OF
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY AUDIO/VISUAL, AND OTHER MECHANICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED DEVICES, OTHER THAN SPRINKLERS.
- EACH CONTRACTOR IS RESPONSIBLE FOR DAMAGE CAUSED BY THEIR ACTIONS TO WALLS, FLOORS, CEILINGS, AND ROOFS. THE CONTRACTOR WHOSE WORK CAUSES DAMAGE IS RESPONSIBLE FOR PATCHING TO MATCH ORIGINAL CONSTRUCTION, FIRE RATING, AND
- 9. IN AREAS WITH DRYWALL CEILINGS COORDINATE LOCATIONS OF ACCESS PANELS WITH THE GC FOR ACCESS TO VALVES, DUCTWORK ACCESSORIES, DAMPERS, ETC. COORDINATE PANEL TYPE AND COLOR WITH ARCHITECT. NOTIFY THE GC OF THE REQUIRED ACCESS
- PANELS PRIOR TO BIDDING. 10. SEAL ALL FLOOR, WALL, AND ROOF PENETRATIONS AIRTIGHT WHERE CONDUITS, PIPING, AND DUCTS PENETRATE. PENETRATIONS THROUGH EXTERIOR WALLS AND ROOF SHALL BE SEALED AIRTIGHT WITH WATERPROOFING MATERIALS RECOMMENDED BY MANUFACTURER
- FOR OUTDOOR USE. 11. CAULK ALL PIPE AND DUCT PENETRATIONS OF FULL HEIGHT NON-FIRE RATED WALL.
- PARTITION, FLOOR, AND ROOF ASSEMBLIES. THIS IS ESSENTIAL TO PREVENT NOISE TRANSMISSION FROM ONE ROOM TO ANOTHER AND TO PROVIDE THE DESIRED NC LEVELS
- 12. WHERE PIPES AND DUCTS ARE SHOWN TO PENETRATE FLOORS, PROVIDE SLEEVEL OPENINGS WITH THE TOP EDGE RAISED ABOVE FLOOR SURFACE IN ACCORDANCE WITH ALL RELEVANT SPEC SECTIONS. SEAL SLEEVE PERIMETER TO BE WATERTIGHT. 13. EQUIPMENT SIZES AND SERVICE CLEARANCE REQUIREMENTS VARY AMONG DIFFERENT MANUFACTURERS. CONSULT APPROVED SHOP DRAWINGS FOR EQUIPMENT SIZES AND
- REQUIRED SERVICE CLEARANCES. COORDINATE WITH LAYOUT OF EQUIPMENT PADS, PIPING, DUCTWORK, ETC. 14. DO NOT BLOCK TUBE PULL OR EQUIPMENT SERVICE CLEARANCES.
- 15. MAINTAIN MINIMUM 3'-6" CLEARANCE IN FRONT OF ALL ELECTRICAL PANELS, MOTOR STARTERS, SWITCHES, AND DISCONNECTS.

CRACKED CONCRETE APPROVED IN ACCORDANCE WITH SPECIFICATIONS.

16. PROVIDE CONCRETE EQUIPMENT PAD FOR ALL FLOOR MOUNTED EQUIPMENT. PAD SHALL EXTEND MINIMUM 6" BEYOND ALL SIDES OF EQUIPMENT. 17. DO NOT SUPPORT EQUIPMENT. PIPING. OR DUCTWORK FROM METAL DECKING OR OTHER NON-STRUCTURAL BUILDING ELEMENTS. ANCHORS EMBEDDED IN CONCRETE SHALL BE

# TAB POST-CONSTRUCTION NOTES:

- AFTER CONSTRUCTION ACTIVITIES ARE COMPLETE, TESTING, ADJUSTING (TAB) AND BALANCING CONTRACTOR SHALL BALANCE AIR HANDLING UNITS AND EXHAUST FANS AS REQUIRED TO ACHIEVE THE AIRFLOW VALUES SHOWN ON THE CONSTRUCTION DRAWINGS.
- TAB CONTRACTOR SHALL COMPILE AND SUBMIT COPIES OF THE FINAL POST-CONSTRUCTION TAB REPORT AS REQUIRED BY SECTION 23 05 93. THE FINAL POST CONSTRUCTION REPORT SHALL INCLUDE ALL ITEMS REQUIRED IN THE
- SPECIFICATIONS.



N.C.

NIC

N.O.

OA

PS

SCCR

SD

TAB

TD

TYP

UNO

NORMALLY CLOSED

NOT IN CONTRACT

NORMALLY OPEN

PRESSURE SWITCH

SHORT CIRCUIT CURRENT RATING

DOOR UNDERCUT BY OTHERS (1" TYPICAL)

OUTSIDE AIR

RETURN AIR SUPPLY AIR

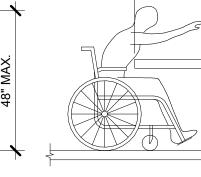
SMOKE DAMPER

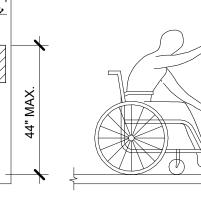
TERMINAL AIR BOX

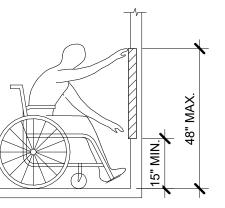
**UNLESS NOTED OTHERWISE** 

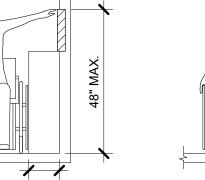
TRANSFER DUCT

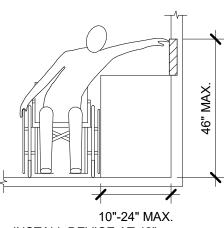
TYPICAL











INSTALL ABOVE COUNTER DEVICE AT 44" ABOVE FINISHED FLOOR.

INSTALL ABOVE COUNTER DEVICE AT 40" ABOVE FINISHED FLOOR.

ADA GUIDELINES - FRONT ACCESS

**INSTALL DEVICE AT 18"** ABOVE FINISHED FLOOR.

**INSTALL DEVICE AT 44"** ABOVE FINISHED FLOOR.

RENOVATE WAREHOUSE FOR

800 HOSPITAL DR., COLUMBIA MO 65201

Checked

**JASSNE** 

PANDEMIC PREPAREDNESS

INSTALL DEVICE AT 42" ABOVE FINISHED FLOOR.

**Project Number** 

**Building Number** 

589A4-20-158

M-000

Dwg. # 59 of 94

ADA GUIDELINES - SIDE ACCESS

Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number

Drawn

**ANUSHA** 

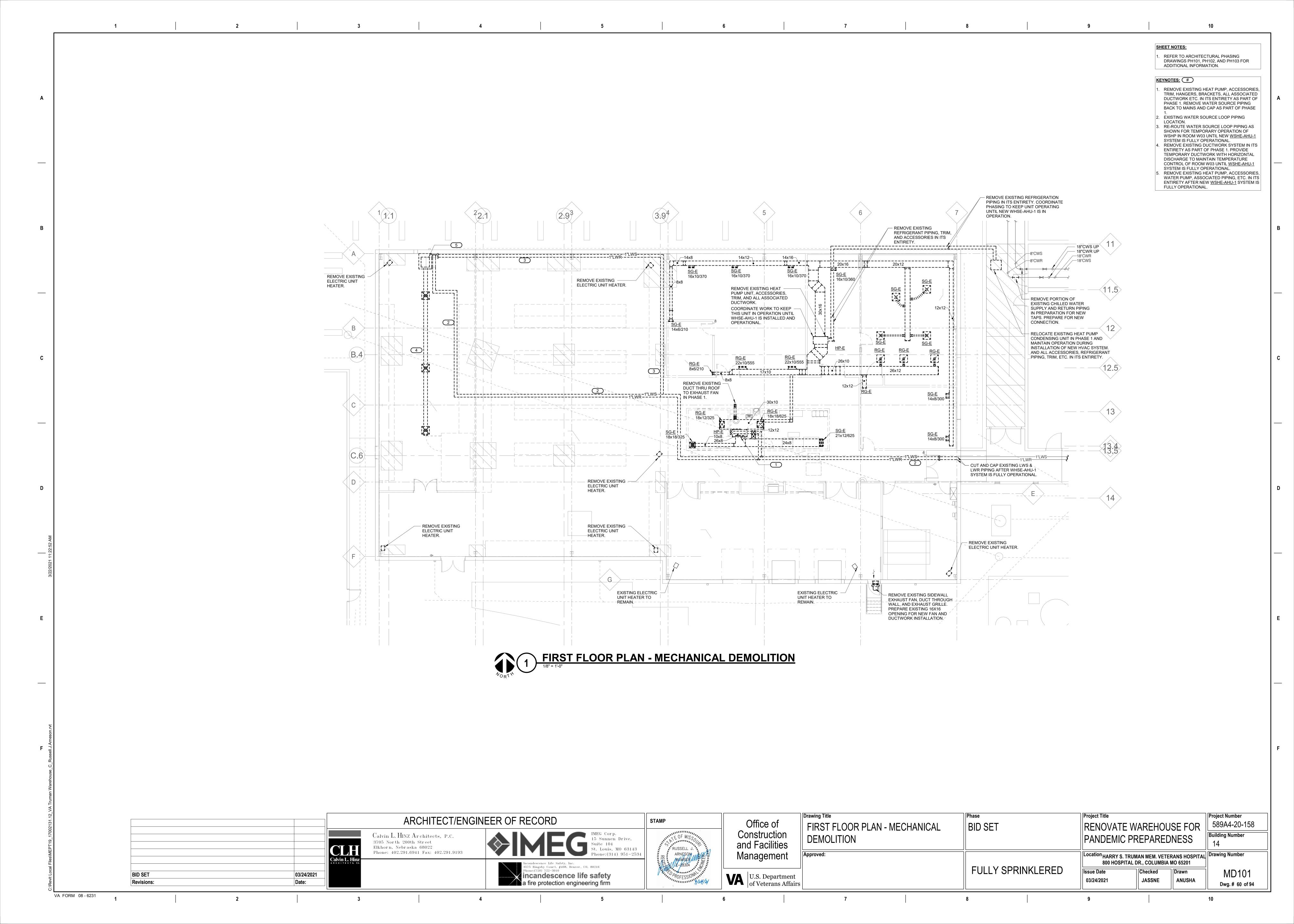
# **ADA STANDARDS FOR ACCESSIBLE DESIGN**

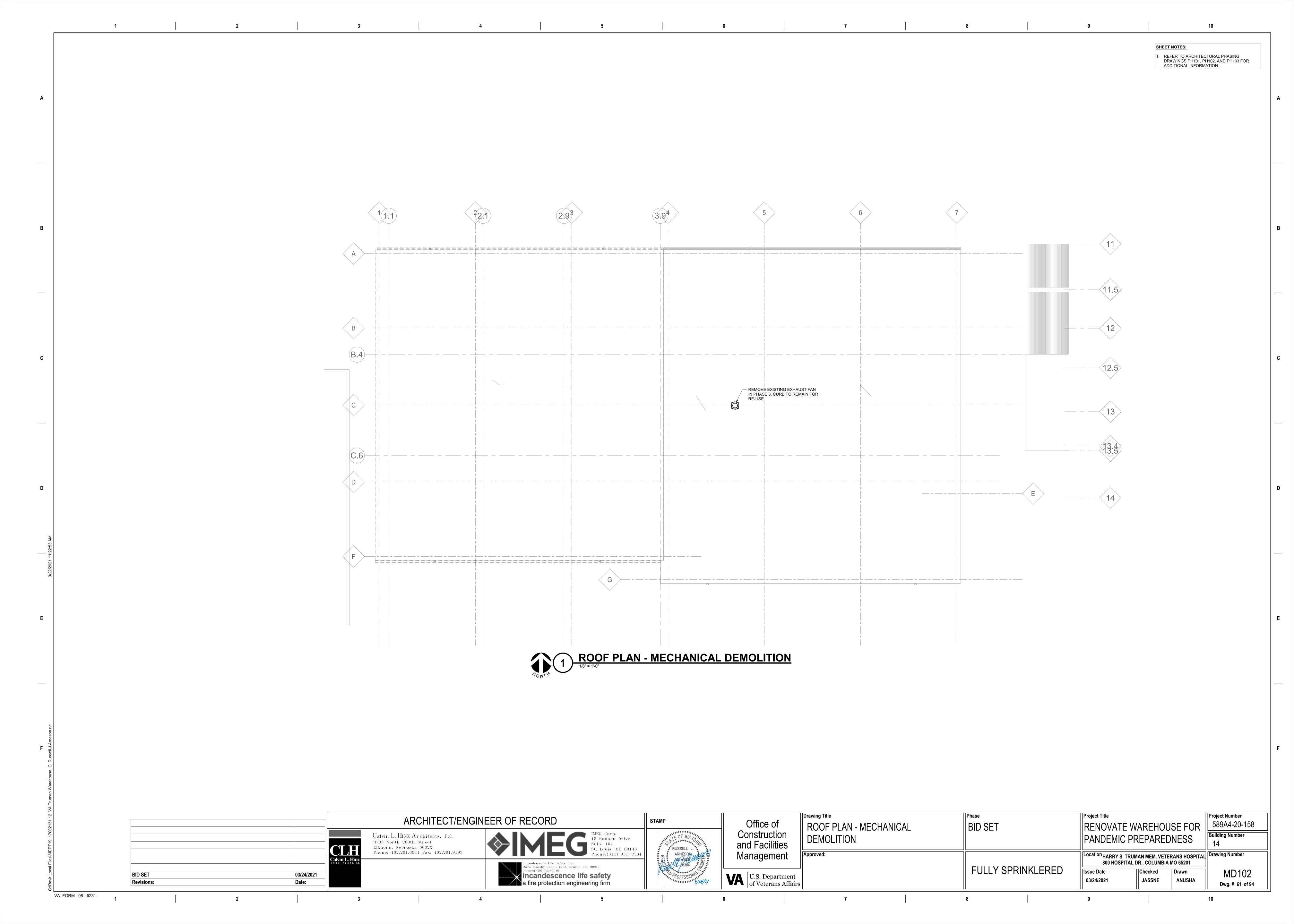
**Project Title** 

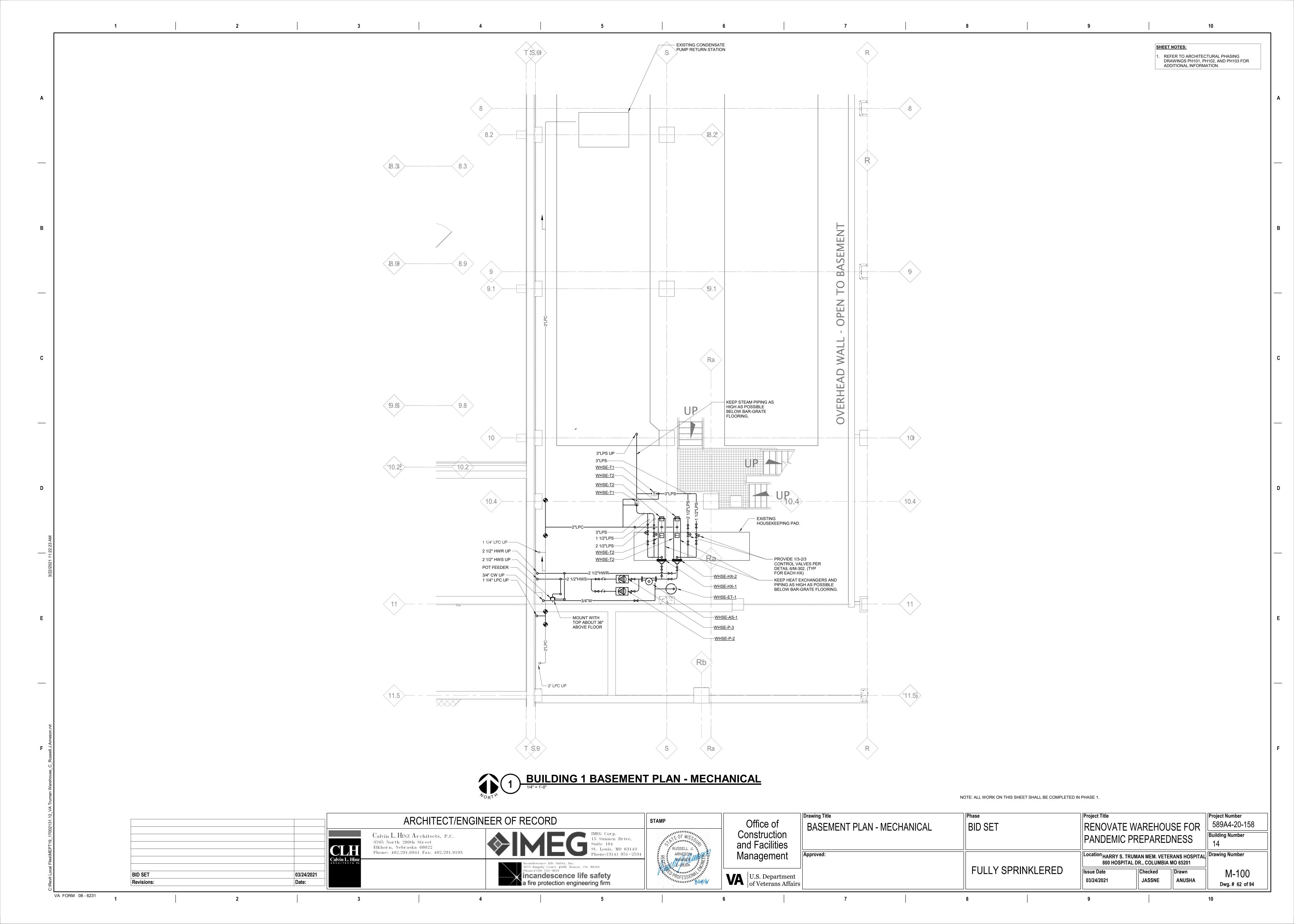
03/24/2021

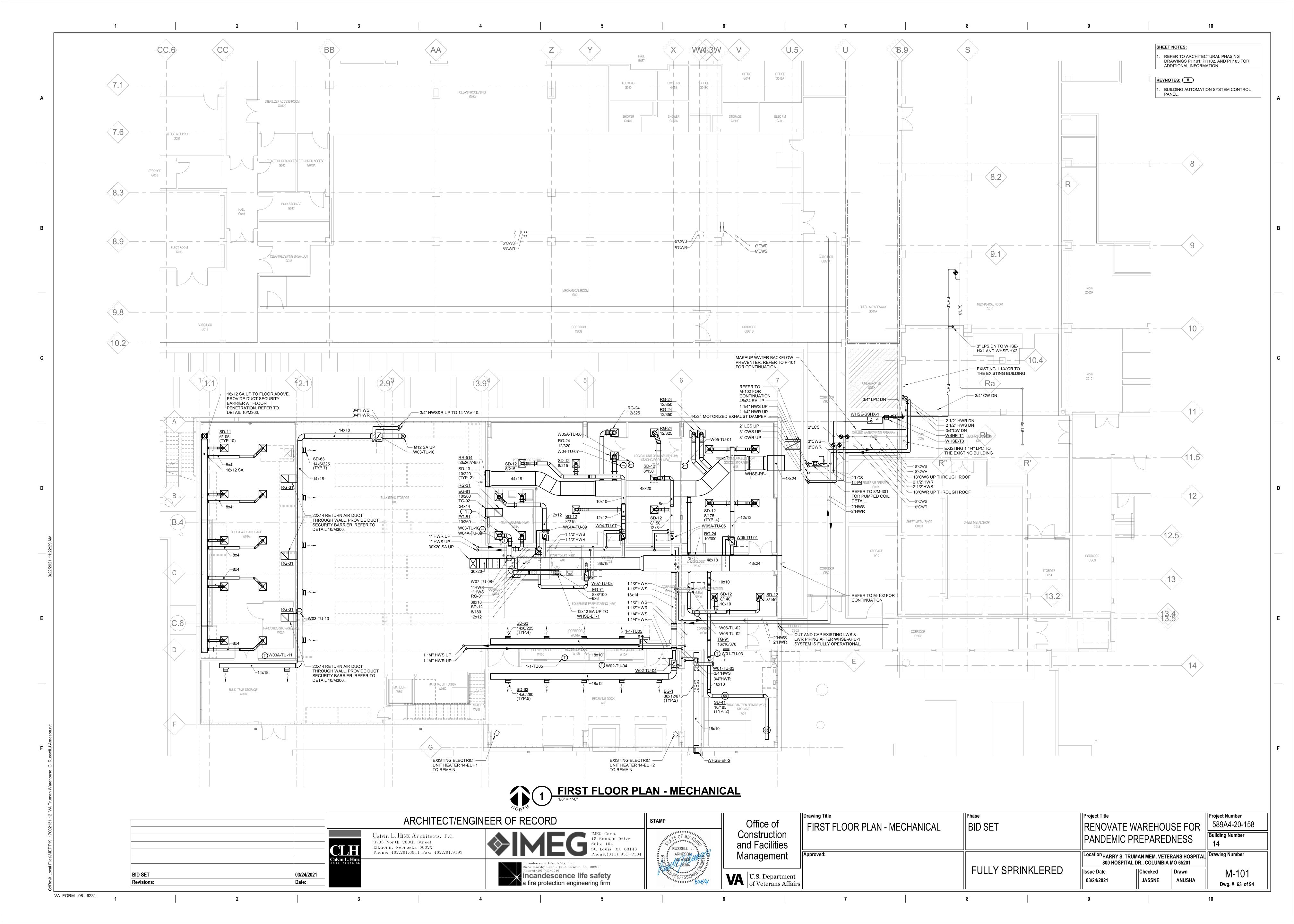
Drawing Title ARCHITECT/ENGINEER OF RECORD **STAMP** Office of MECHANICAL COVERSHEET BID SET Construction Calvin L. HINZ Architects, P.C. 3705 North 200th Street and Facilities Elkhorn, Nebraska 68022 RUSSELL J Phone: 402.291.6941 Fax: 402.291.9193 ARNESON Management Ringsby Court, #408, Denver, CO, 80216 **FULLY SPRINKLERED** ncandescence life safety BID SET 03/24/2021 U.S. Department of Veterans Affairs fire protection engineering firm

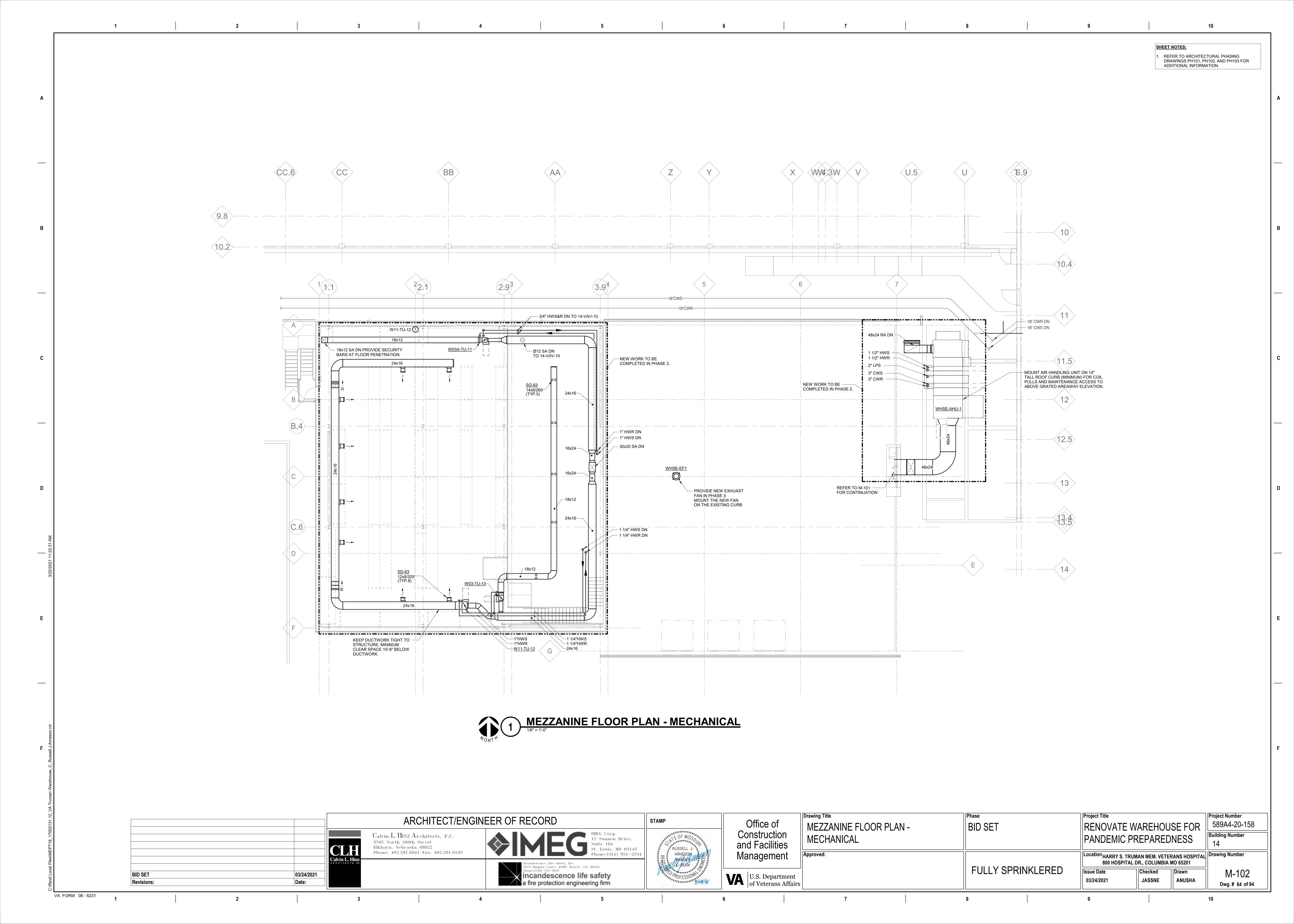
Revisions:

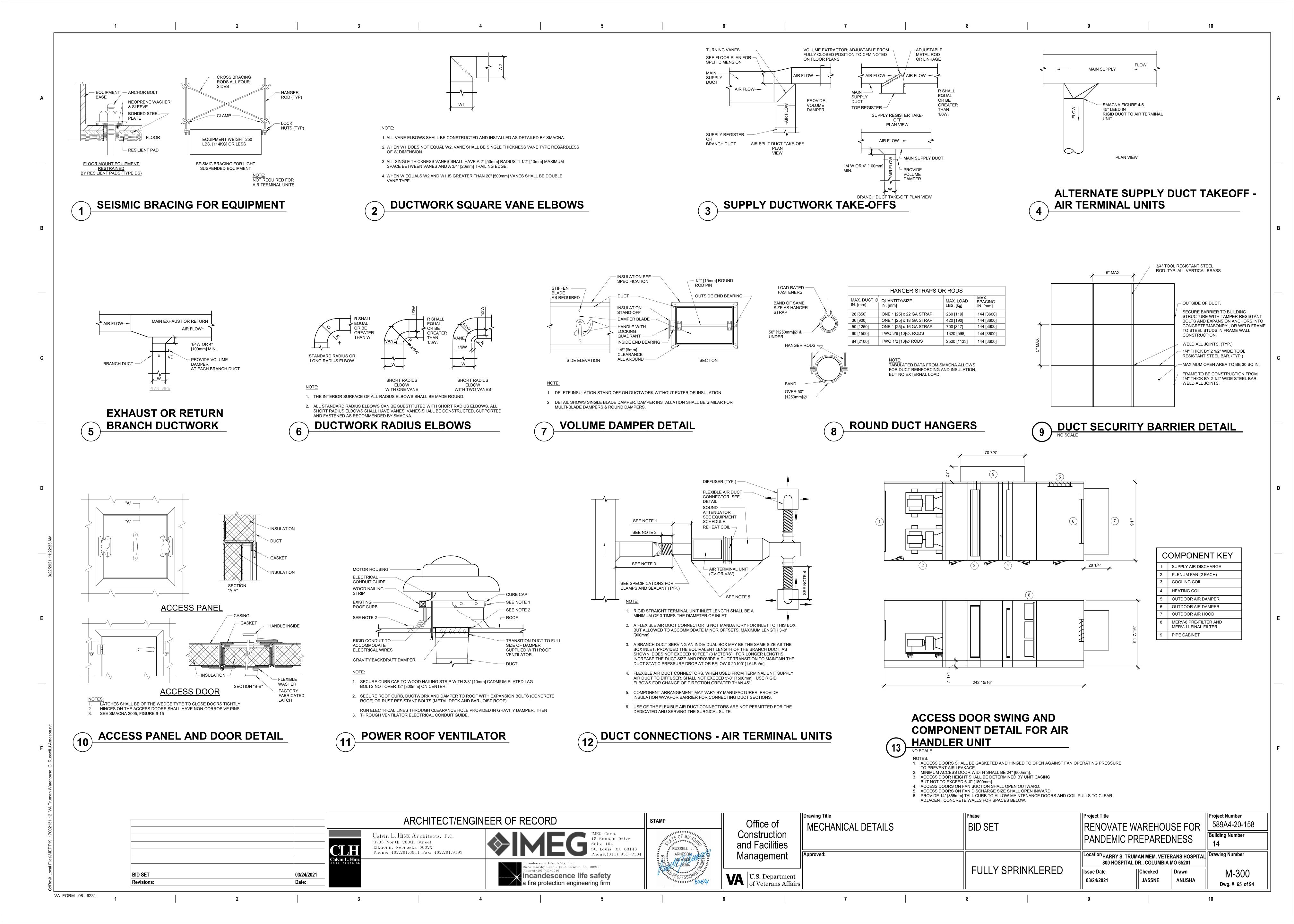


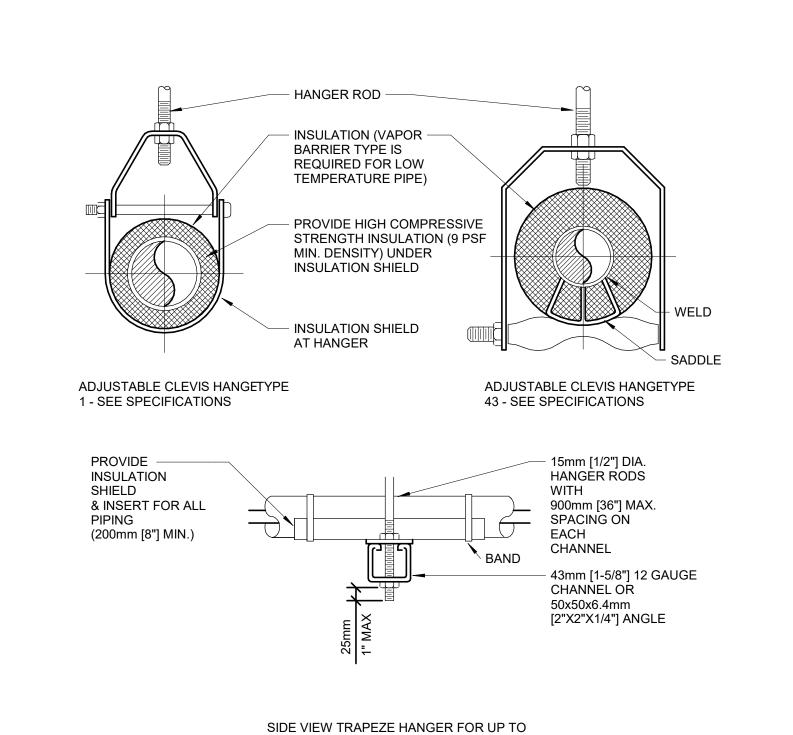












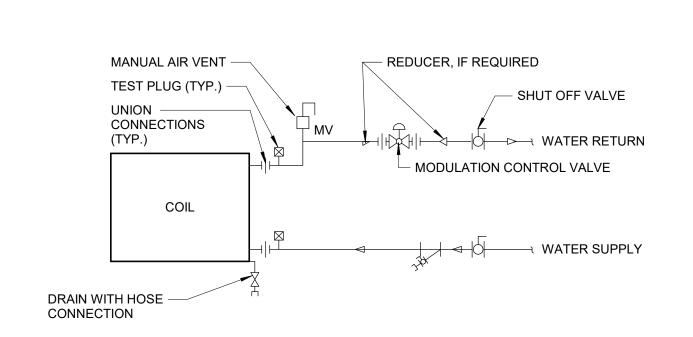


[5] [6] [7] [8] [8] [9] [10] [12] [13] [14] [16]

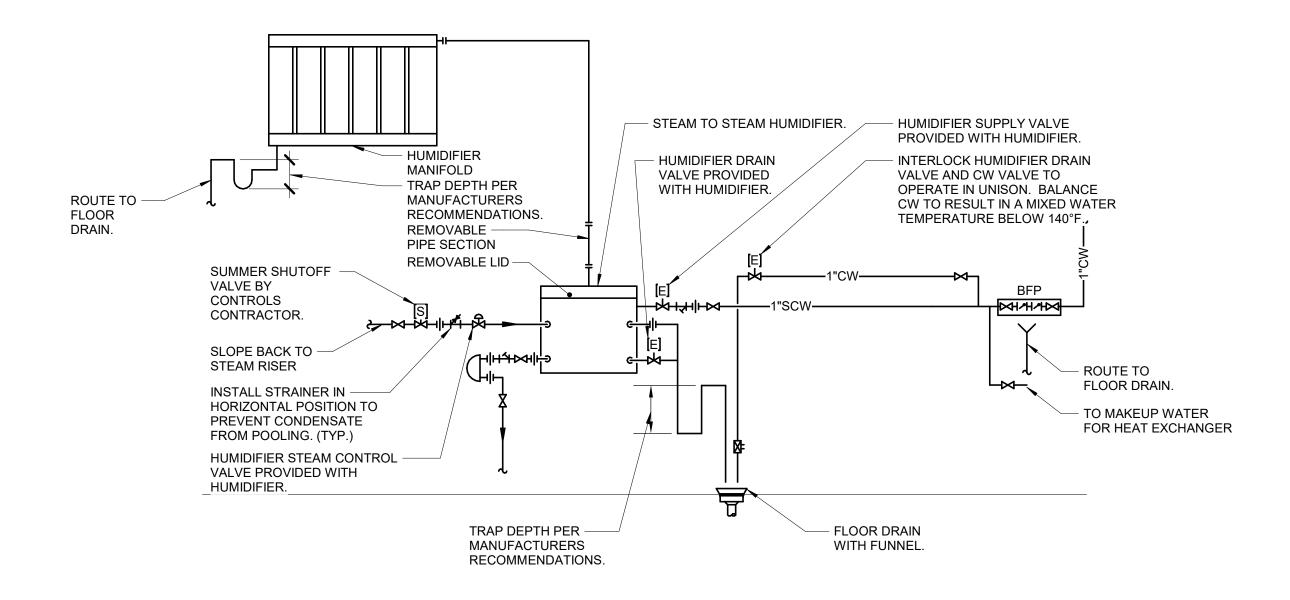
453KG [1000 LB.] UNIFORM LOAD

MAXIMUM PIPE/TUBING SUPPORT SPACING

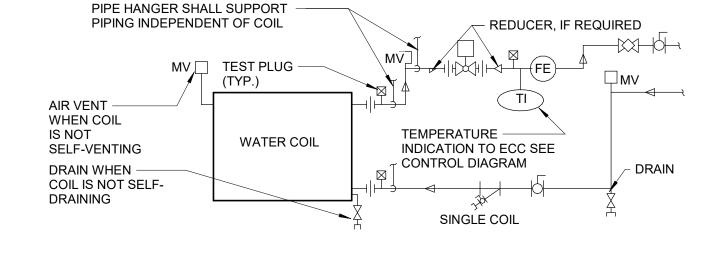
mm [FT]



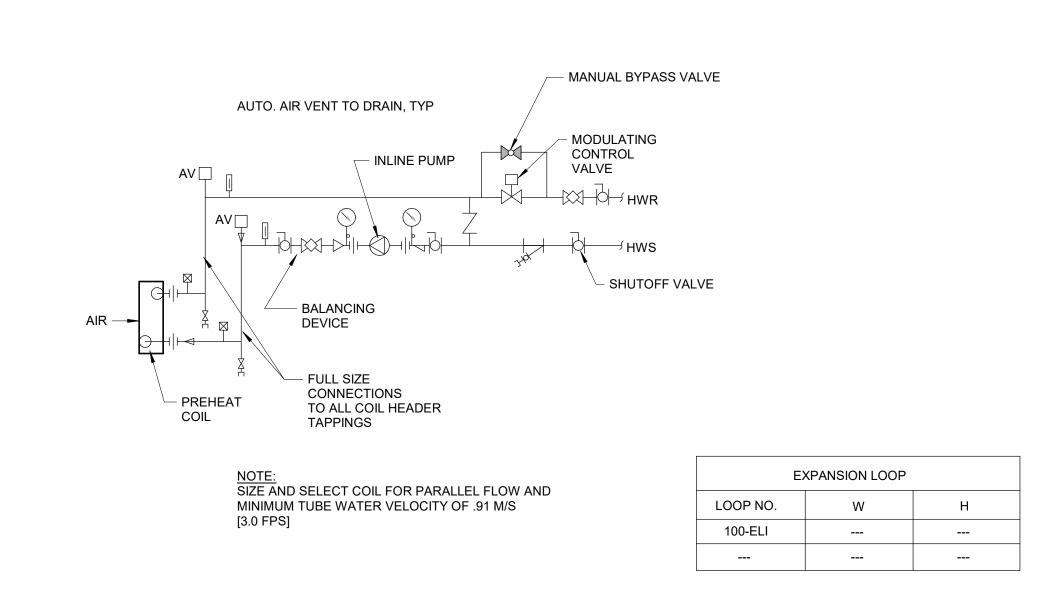
# TERMINAL UNIT WATER COILS PIPING CONNECTIONS



# 4 HUMIDIFIER (STEAM TO STEAM) DETAIL NO SCALE

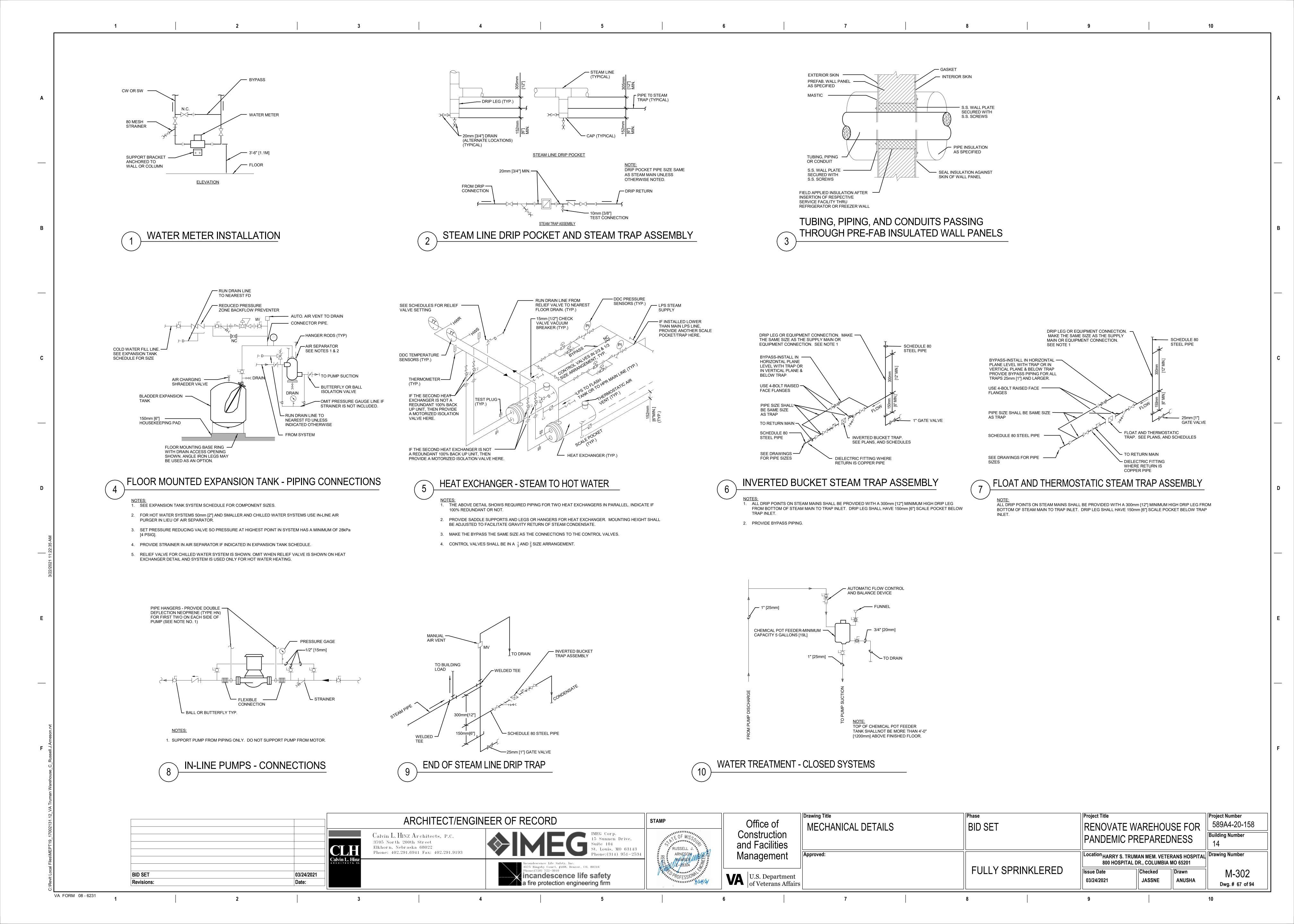


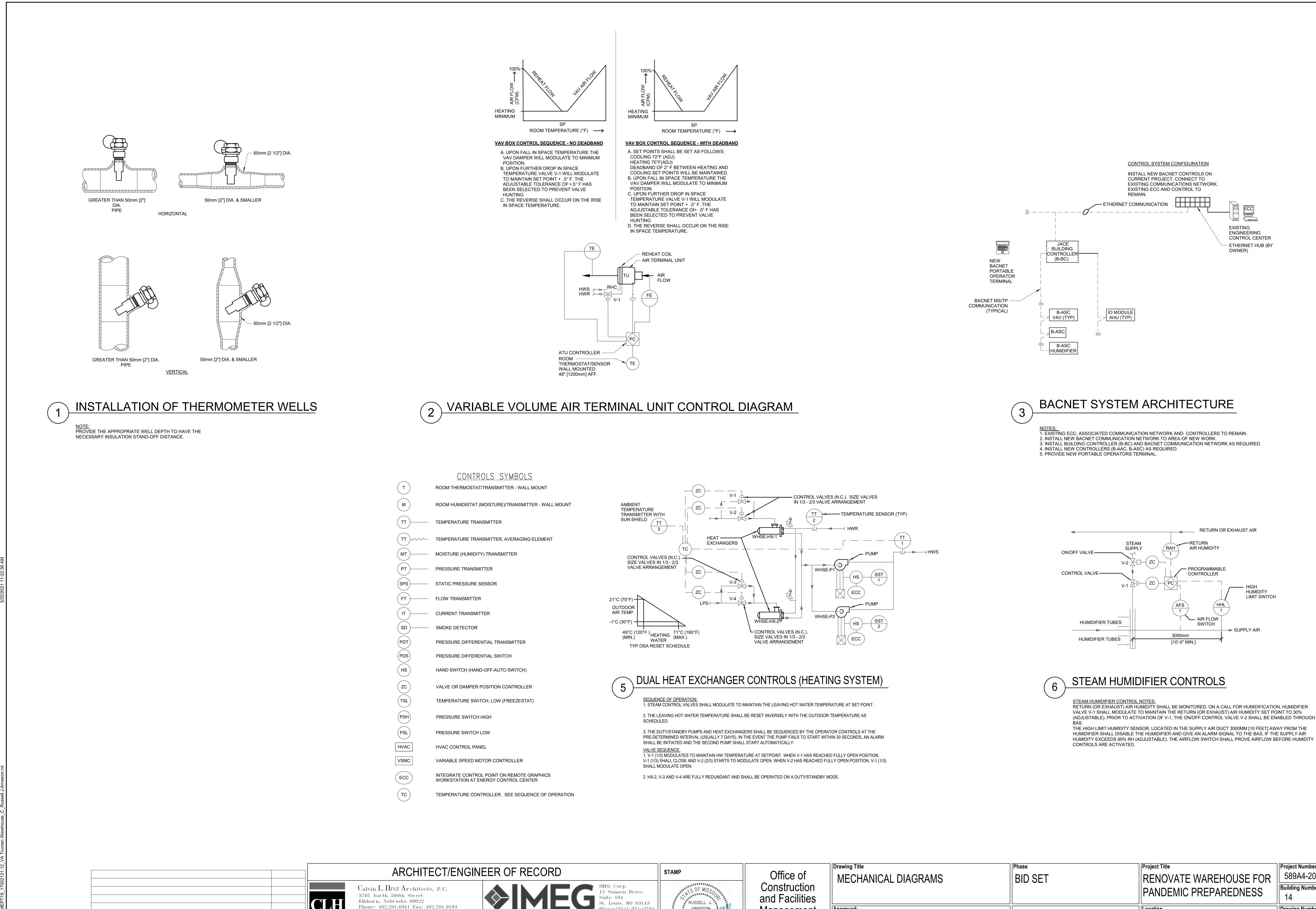
# AHU WATER COILS - PIPING CONNECTIONS NOTES: 1. CHILLED WATER COIL CONTROL VALVE SHALL BE PRESSURE INDEPENDANT TYPE (PICV).



# PREHEAT COIL (HOT WATER) - PIPING CONNECTIONS

|                    |                     | ARCHITECT/ENG   | GINEER OF RECORD  | STAMP  | Office of                          | Drawing Title  MECHANICAL DETAILS | Phase<br>BID SET  | Project Title RENOVATE WAREHOUSE FOR  | Project Number 589A4-20-15 |
|--------------------|---------------------|---|---|--|------------------------------------|-----------------------------------|-------------------|---|----------------------------|
|                    |                     | Calvin L. HINZ Architects, P.C.<br>3705 North 200th Street<br>Elkhorn, Nebraska 68022 | IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, MO, 63143                          | RUSSELL J.   | Construction and Facilities        |                                   |                   | PANDEMIC PREPAREDNESS   | Building Number            |
|                    | Calvin L. H         | Phone: 402.291.6941 Fax: 402.291.9193   | Phone: (314) 951-2534  Incandescence Life Safety, Inc.                              | ARNESON  ARNESON  MUMBER  ARNESON  LILI  ARNESON  MUMBER  ARNESON  ARNESON  MUMBER  ARNESON  ARNESON | Management                         | Approved:                         |                   | Location HARRY S. TRUMAN MEM. VETERANS HOSPITA<br>800 HOSPITAL DR., COLUMBIA MO 65201 | Drawing Number             |
| BID SET Revisions: | 03/24/2021<br>Date: |   | Phone: (720) 722-3010  incandescence life safety a fire protection engineering firm | POFESSIONA 114/24  | U.S. Department of Veterans Affair | es l                              | FULLY SPRINKLERED | Issue Date Checked Drawn ANUSHA   | M-30′<br>Dwg. # 66 o       |





VA FORM 08 - 6231

**BID SET** 

**Revisions:** 

03/24/2021

andescence Life Safety, Inc. 5 Ringsby Court, #408, Denver, CO, 80216

ncandescence life safety

fire protection engineering firm

**VA** U.S. Department of Veterans Affairs

Management

FULLY SPRINKLERED

589A4-20-158 PANDEMIC PREPAREDNESS Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201

---- HIGH

HUMIDITY LIMIT SWITCH

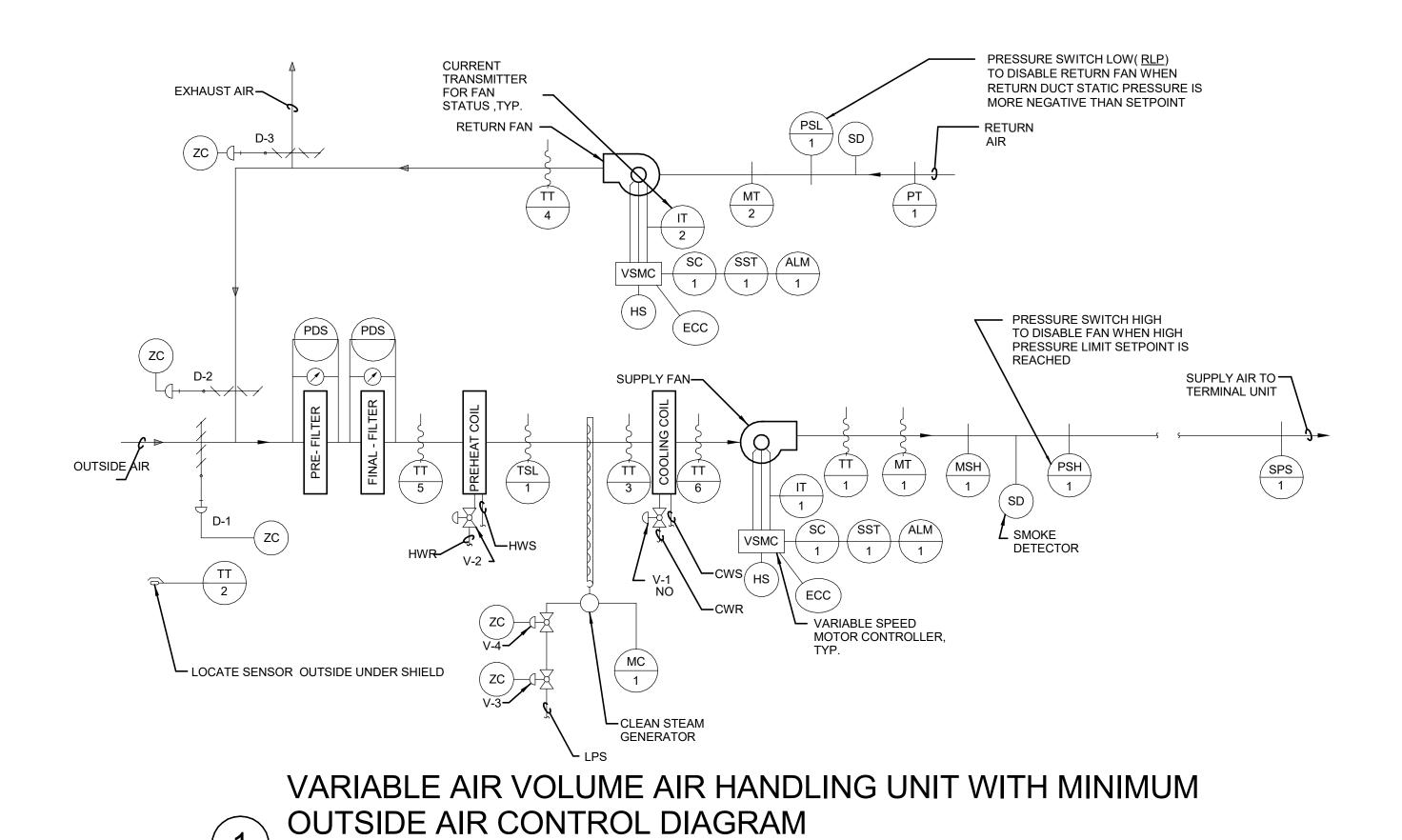
> **Building Number** M-400

Project Number

03/24/2021

Checked **JASSNE ANUSHA** 

Dwg. # 68 of 94



# SEQUENCE OF OPERATION FOR VARIABLE AIR VOLUME AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR

#### 1. GENERAL

UNIT IS NORMALLY STARTED AND STOPPED REMOTELY AT THE ECC. H-O-A SWITCH SHALL BE KEPT IN THE "AUTO" POSITION. "HAND" AND "OFF" POSITIONS SHALL BE USED ONLY FOR MAINTENANCE. WHEN THE UNIT IS "OFF" D-1 AND D-3 SHALL BE FULLY CLOSED. WHEN THE UNIT IS "ON" D-1 SHALL BE FULLY OPEN. D-2 AND D-3 SHALL MODULATE IN ACCORDANCE WITH THE FOLLOWING SEQUENCE:

#### 2. TEMPERATURE CONTROL

- SUPPLY AIR TEMPERATURE, SENSED BY TT-1, SHALL BE MAINTAINED AT SETPOINT VIA DIGITAL CONTROL PANEL BY MODULATING V-1 OR D-2 AND D-3 OR V-2 IN SEQUENCE.
- 2.2 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS ABOVE 75°F (ADJ) [23.8°C], THE DIGITAL CONTROL PANEL SHALL PREVENT THE MODULATION OF D-2 AND D-3 AND SHALL ASSUME THE MINIMUM OUTSIDE AIR POSITION (D-2 FULLY OPENED AND D-3 FULLY CLOSED). THE DIGITAL CONTROL PANEL SHALL MODULATE V-1 TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY
- 2.3 WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS BETWEEN 65°F [18.3°C] AND THE SUPPLY AIR TEMPERATURE SENSED BY TT-1, DAMPER D-2 SHALL FULLY CLOSE AND D1 AND D3 SHALL BE FULLY OPEN (MAXIMUM OUTSIDE AIR POSITION). THE DIGITAL CONTROL PANEL SHALL MODULATE V-1 TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1.
- WHEN THE TEMPERATURE OF THE OUTSIDE AIR, SENSED BY TT-2, IS BELOW THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1, DAMPERS D-1, D-2 AND D-3 SHALL MODULATE TO MAINTAIN THE SCHEDULED SUPPLY AIR TEMPERATURE. IF D-2 IS OPEN AND D-3 IS CLOSED TO MINIMUM OUTSIDE AIR, V-2 SHALL MODULATE OPEN TO MAINTAIN THE SUPPLY AIR TEMPERATURE, SENSED BY TT-1.

## 3. AIR FLOW CONTROL

- THE SUPPLY AIR FLOW SHALL BE CONTROLLED BY THE DIGITAL CONTROL PANEL MODULATING THE SUPPLY FAN VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN 1.5" [37mm] OF DUCT STATIC PRESSURE (FIELD ADJUSTABLE), SENSED BY SPS-1. RESET STATIC PRESSURE BASED ON ACTUAL BUILDING LOAD BY POLLING ALL ATU.
- 3.2 THE DIGITAL CONTROL PANEL, USING TOTAL SUPPLY AIR AND RETURN AIR FLOW SIGNALS, SHALL RESET THE RETURN AIR FAN VSMC TO MAINTAIN A CONSTANT AIR FLOW DIFFERENCE BETWEEN THE SUPPLY AIR AND THE RETURN AIR EQUAL TO MINIMUM OUTSIDE AIR.
- USING HIGH PRESSURE SENSOR SPS-2 LOCATED AT THE SUPPLY FAN DISCHARGE, SHALL PREVENT THE SUPPLY FAN FROM DEVELOPING OVER 3" [75mm] OF STATIC PRESSURE (FIELD ADJUSTABLE). IF STATIC PRESSURE AT SPS-2 DOES EXCEED 3" [75mm] THE SUPPLY AIR FAN SHALL STOP. SPS-2 SHALL BE HARDWIRED TO THE SUPPLY FAN VSMC AND UNIT SHALL BE SHUTDOWN IN HAND,AUTO OR BYPASS MODE. SPS-2 WILL REQUIRE MANUAL RESET AT THE DEVICE.

#### 4. HUMIDITY CONTROL

- 4.1 WHEN THE DIGITAL CONTROL PANEL IS NOT CALLING FOR HUMIDITY, SENSED BY RETURN AIR HUMIDITY MT-2, 2-WAY "ON-OFF" CONTROL VALVE V-3 SHALL REMAIN CLOSED. WHEN THE DIGITAL CONTROL PANEL IS CALLING FOR HUMIDITY, V-3 SHALL REMAIN OPEN.
- 4.2 RETURN AIR HUMIDITY SHALL BE MAINTAINED AT OR ABOVE MINIMUM SETPOINT OF 35% RH (ADJ) VIA DIGITAL CONTROL PANEL (DCP) BY MODULATING CONTROL VALVE V-4 TO MAINTAIN THE DESIRED HUMIDITY. THE DCP SHALL OVERRIDE THIS CONTROL TO MAINTAIN A MAXIMUM SUPPLY AIR HUMIDITY OF 80% AS SENSED BY MT-1. DCP SHALL CLOSE VALVE V-3 WHENEVER THE SUPPLY FAN IS OFF.

## 5. FREEZE PROTECTION

5.1 IF THE AIR TEMPERATURE AS SENSED BY TT-3 FALLS BELOW 45°F [7°C], AN ALARM SIGNAL SHALL INDICATE AT THE DCP AND ECC. IF THIS TEMPERATURE FALLS BELOW 40°F [4.4°C], AS SENSED BY THE TSL THE SUPPLY AND RETURN FANS SHALL SHUT DOWN AND A CRITICAL ALARM SHALL INDICATE AT THE DIGITAL CONTROL PANEL AND ECC. TSL SHALL BE HARDWIRED TO THE SUPPLY FAN UFD AND UNIT SHALL BE SHUTDOWN IN HAND, AUTO OR BYPASS MODE. TSL WILL REQUIRE MANUAL RESET AT THE DEVICE.

## 6. <u>AUTOMATIC SHUTDOWN/RESTART</u>

- 6.1 WHEN SMOKE IS DETECTED BY DUCT SMOKE DETECTOR, SD, THE SUPPLY AND RETURN FANS SHALL SHUT "OFF" AND AN ALARM SIGNAL SHALL BE TRANSMITTED TO THE FIRE ALARM SYSTEM. ALL SMOKE DAMPERS IN THE SUPPLY AND RETURN DUCTS SHALL CLOSE.
- 6.2 EXHAUST FANS SERVING AREA OF THE SUPPLY FAN SHALL CONTINUE TO RUN. SUPPLY AND RETURN FANS SHALL RESTART AND SMOKE DAMPERS SHALL OPEN WHEN FIRE ALARM CIRCUIT IS

## 7. EMERGENCY CONSTANT SPEED OPERATION

7.1 UPON FAILURE OF THE VSMC, THE SUPPLY AND RETURN FANS SHALL BE STARTED/STOPPED MANUALLY AT THE DIGITAL CONTROL PANEL OR THE ECC THROUGH THE BY-PASS STARTER. FANS SHALL THEN BE OPERATED AT CONSTANT SPEED.

SYSTEM INPUTS SYSTEM SOFTWARE/CONTROL BUILDING: VA TRUMAN WAREHOUSE OUTPUTS VAV AIR HANDLER SYSTEM COMPONENT: RETURN AIR TEMPERATURE RETURN AIR HUMIDITY MIXED AIR TEMPERATURE PRE-HEAT TEMPERATURE **OUTSIDE AIR TEMPERATURE** RETURN LOW PRESSURE RETURN FAN STATUS SUPPLY FAN STATUS STATIC PRESSURE HIGH LIMIT SUPPLY FAN VSMC ALARM RETURN FAN VSMC ALARM RETURN FAN VSMC FULL COMMUNICATION SUPPLY FAN VSMC **OUTSIDE AIR DAMPER** RETURN AIR DAMPER EXHAUST AIR DAMPER PRE-HEAT VALVE V-2 COOLING VALVE V-1 AO-10 V-4 STEAM HUMIDIFIER VALVE **RETURN FAN START/STOP** SUPPLY FAN START/STOP STEAM ISOLATION VALVE

> POINTS LIST FOR VAV AIR HANDLING UNIT WITH MINIMUM OUTSIDE AIR

ARCHITECT/ENGINEER OF RECORD Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193 5 Ringsby Court, #408, Denver, CO, 80216 ncandescence life safety **BID SET** 03/24/2021

STAMP RUSSELL J

Office of Construction and Facilities Management

Project Title Project Number Drawing Title 589A4-20-158 BID SET RENOVATE WAREHOUSE FOR MECHANICAL DIAGRAMS **Building Number** PANDEMIC PREPAREDNESS Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201 **FULLY SPRINKLERED** M-401 Checked **ANUSHA** 

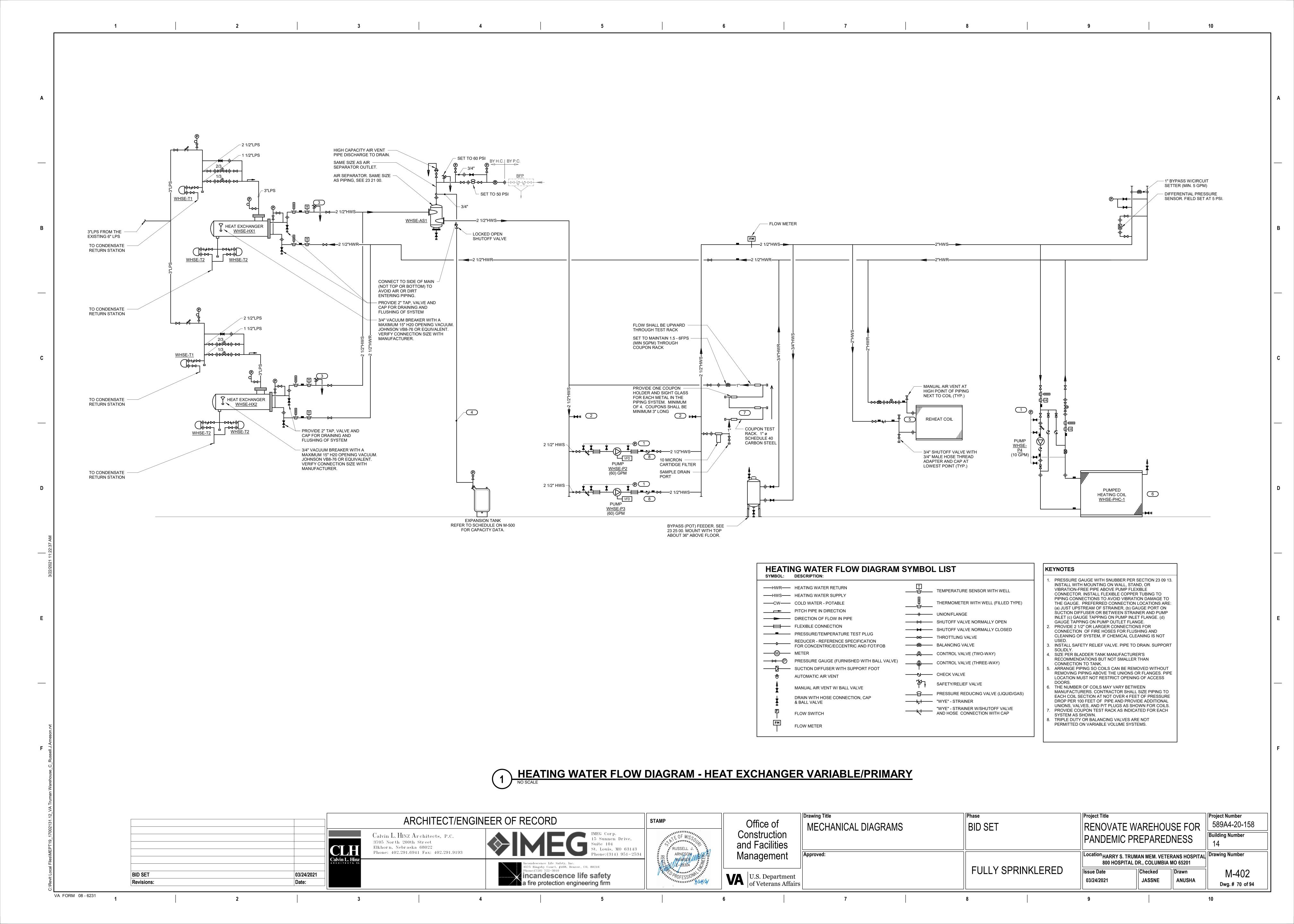
VA FORM 08 - 6231

**Revisions:** 

fire protection engineering firm

U.S. Department of Veterans Affairs

03/24/2021 **JASSNE**  Dwg. # 69 of 94



|                           |      |      |         |         | HVAC DESIGN      | NUATA    |       |        |         |               |          |          |
|---------------------------|------|------|---------|---------|------------------|----------|-------|--------|---------|---------------|----------|----------|
|                           |      |      | SUMN    | 1ER     |                  |          |       | WINT   | ER      |               | LOWEST   | AVERAGE  |
| DESIGN CONDITIONS         | TE   | :MP  | WET BUI | LB TEMP | % HUMIDITY       | TE       | MP    | DEWPOI | NT TEMP | % HUMIDITY    | ANNUAL [ | DEWPOINT |
|                           | °F   | [°C] | °F      | [°C]    | 70 HOIVIIDH I    | °F       | [°C]  | °F     | [°C]    | /6 HUIVIIDITT | °F       | [°C]     |
| OUTDOOR DESIGN CONDITIONS | 94.2 | [35] | 76.4    | [ 25 ]  | 44.9             | 2.8      | [-16] | -4.9   | [-21]   | 66.7          | -3.8     | [-20]    |
|                           |      |      |         | INI     | DOOR AREA DESIGN | CONDITIO | NS    |        |         |               |          |          |
| LOUNGE                    | 72   | [22] | 62.7    | [17]    | 60               | 67       | [19]  | 34.6   | [1]     | 30            |          |          |
| WAREHOUSE - BULK STORAGE  | 72   | [22] | 62.7    | [ 17 ]  | 60               | 67       | [19]  | 34.6   | [1]     | 30            |          |          |
| WAREHOUSE - FINE STORAGE  | 72   | [22] | 62.7    | [17]    | 60               | 67       | [19]  | 34.6   | [1]     | 30            |          |          |
| WAREHOUSE - OFFICE        | 72   | [22] | 62.7    | [17]    | 60               | 67       | [19]  | 34.6   | [1]     | 30            |          |          |

|             |                 |                            |                      |       |          |      |         |                          |         |            |        | FAN SCHED                           | ULE  |         |       |         |         |       |          |      |           |         |      |               |                     |                     |
|-------------|-----------------|----------------------------|----------------------|-------|----------|------|---------|--------------------------|---------|------------|--------|-------------------------------------|------|---------|-------|---------|---------|-------|----------|------|-----------|---------|------|---------------|---------------------|---------------------|
|             |                 |                            | SYSTEM               | AID F | LOW      | т.   | TSP     |                          |         |            |        | FAN                                 |      |         |       |         |         |       |          |      | MOTOR ELE | CTRICAL |      |               |                     |                     |
| MARK        | LOCATION        | AREA AND/OR<br>BLDG SERVED | AND/OR               | AIR   | -LOVV    | l    | 3P      | T) (DE                   | NUMBER  | \\\ (155)  | 01.400 | ARRANGEMENT, ROTATION,              | DIAM | ETER    | MIN % | DDI) /E | FAN MAX | NO    | MINAL PO | NER  | DUAGE     | VOLT    | DDM  | ODEED CONTROL | CONTROL<br>SEQUENCE | REMARKS             |
|             |                 | BLDG SERVED                | SERVICE              | CFM   | [L/s]    | IN   | [Pa]    | TYPE                     | OF FANS | WHEEL      | CLASS  | AND DISCHARGE                       | IN   | [mm]    | EFF   | DRIVE   | RPM     | BHP   | HP       | [kW] | PHASE     | VOLT    | RPM  | SPEED CONTROL | SEQUENCE            |                     |
| WHSE-SF1    | WHSE-AHU1       | WAREHOUSE                  | WHSE-AHU-1           | 13500 | [ 6400 ] | 6.4  | [1600]  | PLENUM                   | 2       | AIRFOIL    | II     | ARR 3, CW ROTATION,<br>TH DISCHARGE | 20   | [ 500 ] | 60%   | DIRECT  | 1314    | 10.25 | 15       | [11] | 3         | 460     | 1750 | VARIABLE      |                     | SELECTION CRITERIA  |
| WHSE-SF1    | WHSE-AHU1       | WAREHOUSE                  | WHSE-AHU-1           | 11250 | [ 5300 ] | 4.9  | [1200]  | PLENUM                   | 2       | AIRFOIL    | II     | ARR 3, CW ROTATION,<br>TH DISCHARGE | 20   | [ 500 ] | 60%   | DIRECT  | 1314    | 10.25 | 15       | [11] | 3         | 460     | 1750 | VARIABLE      |                     | OPERATING CONDITION |
| WHSE-RF1    | B309 CEILING    | WAREHOUSE                  | WHSE-AHU-1           | 11250 | [ 5300 ] | 1    | [ 250 ] | MIXED FLOW               | 1       | MIXED FLOW | I      | ARR 4, INLINE, HORIZ.<br>DISCHARGE  | 27   | [ 680 ] | 60%   | DIRECT  | 950     | 3.13  | 5        | [4]  | 3         | 460     | 1750 | VARIABLE      |                     | SELECTION CRITERIA  |
| WHSE-RF1    | B309 CEILING    | WAREHOUSE                  | WHSE-AHU-1           | 9000  | [ 4200 ] | 1    | [ 250 ] | MIXED FLOW               | 1       | MIXED FLOW | I      | ARR 4, INLINE, HORIZ.<br>DISCHARGE  | 27   | [ 680 ] | 60%   | DIRECT  | 950     | 3.13  | 5        | [4]  | 3         | 460     | 1750 | VARIABLE      |                     | OPERATING CONDITION |
| WHSE-EF1    | ROOF            | WAREHOUSE                  | TOILET/<br>BREAKROOM | 620   | [290]    | 0.75 | [190]   | DOWNBLAST<br>CENTRIFUGAL | 1       | BIW        | I      | N/A                                 | 10   | [ 250 ] | 50%   | DIRECT  | 1705    | 0.2   | 0.25     | []   | 1         | 120     | 1725 | CONSTANT      |                     | NOTE 2              |
| WHSE-EF2    | WALL            | WAREHOUSE                  | FORKLIFT             | 1300  | [610]    | 0.75 | [ 190 ] | SIDEWALL                 | 1       | BIW        | I      | N/A                                 | 16.5 | [ 410 ] | 50%   | DIRECT  | 1200    | 0.275 | 0.334    | []   | 1         | 120     | 1725 | VARIABLE      |                     |                     |
| NOTES:      |                 |                            |                      |       |          |      |         |                          |         |            |        |                                     |      |         |       |         |         |       |          |      |           |         |      |               |                     |                     |
| 1. ALL SELE | CTIONS ARE BASI | ED ON AN ALTITU            | DE OF 760            |       |          |      |         |                          |         |            |        |                                     |      |         |       |         |         |       |          |      |           |         |      |               |                     |                     |
| 2. PROVIDE  | CURB ADAPTER 1  | TO FIT EXISTING            | 14"X14" CURB.        |       |          |      |         |                          |         |            |        |                                     |      |         |       |         |         |       |          |      |           |         |      |               |                     |                     |

|            |                               |                            |                          |                 |                  |     |          |          |      |                |          |                | CLEA      | N STEA | AM GENI       | ERATOR  | R SCHE | DULE |           |            |        |         |          |         |                     |        |         |                   |
|------------|-------------------------------|----------------------------|--------------------------|-----------------|------------------|-----|----------|----------|------|----------------|----------|----------------|-----------|--------|---------------|---------|--------|------|-----------|------------|--------|---------|----------|---------|---------------------|--------|---------|-------------------|
|            |                               |                            |                          |                 |                  | ,   | WATER CO | NDITIONS |      | DDODUGE        | D OTEANA | BB0B1105       | D OTE ANA |        | STEAM PF      | RESSURE |        |      |           |            |        |         |          |         | TRAP                |        |         |                   |
| MARK       | LOCATION                      | AREA AND/OR<br>BLDG SERVED | SYSTEM AND/OR<br>SERVICE | TYPE            | SOURCE OF MAKEUP | FLC | OW       | EV       | VT   | PRODUCE<br>FLC |          | PRODUCE<br>PRE |           | ENTICO | ONTROL<br>LVE | ENT I   |        |      | CC        | NTROL VALV | E      |         | TRAP#    | # TRAPS | SIZE [MM]<br>INCHES | CAPACI | TY EACH | REMARKS           |
|            |                               |                            |                          |                 |                  | GPM | [L/s]    | °F       | [°C] | LBS/HR         | kg/HR    | PSIG           | [kPa]     | PSIG   | [kPa]         | PSIG    | [kPa]  | Cv   | SIZE [MM] | SIZE[IN]   | LBS/HR | [kg/HR] |          |         | IIVOITEO            | LBS/HR | [kg/HR] |                   |
| WHSE-SSHX1 | CHILLED WATER<br>AREAWAY G00X | WAREHOUSE                  | HUMIDIFICATION           | STEAM-<br>STEAM | CW               | 0.2 | [0.]     | 50       | [10] | 79.2           | [ 36 ]   | 1              | [7]       | 15     | [100]         | 5       | [35]   |      |           |            | 80     | []      | WHSE-T-3 | 1       | [1]                 | 150    | [68]    | 1.5 SAFETY FACTOR |

|           |                         |                  |                   |     |        |    |             |     |      |      | EXPA     | NSION TAI | NK SCHEDU | JLE    |           |       |         |          |         |         |        |           |         |       |             |         |
|-----------|-------------------------|------------------|-------------------|-----|--------|----|-------------|-----|------|------|----------|-----------|-----------|--------|-----------|-------|---------|----------|---------|---------|--------|-----------|---------|-------|-------------|---------|
|           |                         | SYSTEM           |                   |     | SYSTEM |    | SYSTEM TEMP |     |      |      | RECHARGE |           | OPERATING |        | ATER FILL |       |         | MIN VOLU | ME TANK | MIN BLA | ADDER  | PIPE SIZE | TO TANK |       | KE-UP       |         |
| MARK      | LOCATION                | AND/OR           | TYPE              | VOL | LUME   |    | MIN         | N   | MAX  | PRES | SSURE    | PRE       | SSURE     | RELIEF | VALVE     | AT TA | ANK     |          |         | VOLU    | JME    | 0         |         | WATER | R FILL SIZE | REMARKS |
|           |                         | SERVICE          |                   | GAL | [L]    | °F | [°C]        | °F  | [°C] | PSIG | [kPa]    | PSIG      | [kPa]     | PSIG   | [kPa]     | PSIG  | [kPa]   | GAL      | [L]     | GAL     | [L]    | IN        | [mm]    | IN    | [mm]        |         |
| WHSE-ET-1 | B1 C11 PIPE<br>BASEMENT | HEATING<br>WATER | VERT<br>DIAPHRAGM | 150 | [570]  | 60 | [16]        | 160 | [71] | 55   | [380]    | 125       | [ 860 ]   | 95     | [660]     | 50    | [ 350 ] | 10       | [38]    | 10      | [ 38 ] | 1         | [ 25 ]  | 0.75  | [19]        |         |
|           |                         |                  |                   |     | []     |    |             |     |      |      | []       |           | []        |        | []        |       | []      |          | []      |         | []     |           | []      |       | []          |         |

|            |                |                |                                 |             |            |                |    |      |      | STEA  | AM HUN | <b>IIDIFEF</b> | RSCHE | DULE        |          |          |           |            |        |         |                 |        |        |         |         |
|------------|----------------|----------------|---------------------------------|-------------|------------|----------------|----|------|------|-------|--------|----------------|-------|-------------|----------|----------|-----------|------------|--------|---------|-----------------|--------|--------|---------|---------|
|            |                | SYSTEM         |                                 | AID I       | TI (O) (A) |                |    | EA   | AT   |       |        | LAT            |       |             |          |          | S         | TEAM       |        |         | CONTROL         |        | TRAP   |         |         |
| MARK       | LOCATION       | AND/OR         | HUMIDIFIER TYPE                 | AIR         | FLOW       | # OF MANIFOLDS | [  | Ob   | DEWI | POINT | %RH    | DEW            | POINT | SOURCE      | PRESS EN | NT VALVE | PRESS ENT | DISPERSION | FLC    | WC      | CONTROL<br>TYPE | MARK   | CAPA   | CITY    | REMARKS |
|            |                | SEVICE         |                                 | CFM         | [L/s]      |                | °F | [°C] | °F   | [°C]  | %KП    | °F             | [°C]  |             | PSIG     | [kPa]    | PSIG      | [kPa]      | LBS/HR | [kg/HR] | '''             | IVIARK | LBS/HR | [kg/HR] |         |
| WHSE-SH1   | WHSE-AHU-1     | WHSE-AHU-1     | UNIT-MOUNTED DISPERSION TUBE    | 6075        | [ 2900 ]   | 1              | 55 | [13] | 30.8 | [-1]  | [60]   | 41.1           | [5]   | CLEAN STEAM | 2        | [14]     | 0         | []         | 79.2   | [ 36 ]  |                 |        | 80     | [36]    |         |
| NOTES:     |                |                |                                 |             |            |                |    |      |      |       |        |                |       |             |          |          |           |            |        |         |                 |        |        |         |         |
| 1. COORDII | NATE DISPERSIO | N PANEL SIZE W | ITH AIR HANDLING UNIT WHSE-AHU- | -1 DIMENSIO | ONS.       |                |    |      |      |       |        |                |       |             |          |          |           |            |        |         |                 |        |        |         |         |

|          |                         |                            |                             |              |     |       |     |         | S          | TEAM T | O WATE | ER HEA | ΓEXCH | ANGER         | SCHED   | ULE           |      |           |            |        |         |         |           |        |         |                   |
|----------|-------------------------|----------------------------|-----------------------------|--------------|-----|-------|-----|---------|------------|--------|--------|--------|-------|---------------|---------|---------------|------|-----------|------------|--------|---------|---------|-----------|--------|---------|-------------------|
|          |                         |                            |                             |              |     |       |     | WATER C | CONDITIONS | 3      |        |        |       | STEAM P       | RESSURE |               |      |           |            |        |         |         | TRA       | AP     |         |                   |
| MARK     | LOCATION                | AREA AND/OR<br>BLDG SERVED | SYSTEM<br>AND/OR<br>SERVICE | TYPE         | FL  | OW    | E   | WT      | L          | WT     | W      | PD .   |       | ONTROL<br>LVE |         | HEAT<br>ANGER |      | C         | ONTROL VAL | VE     |         | TRAP#   | SIZE [MM] | CAPA   | ACITY   | REMARKS           |
|          |                         |                            | SERVICE                     |              | GPM | [L/s] | °F  | [°C]    | °F         | [°C]   | FT     | [kPa]  | PSIG  | [kPa]         | PSIG    | [kPa]         | Cv   | SIZE [MM] | SIZE[IN]   | LBS/HR | [kg/HR] |         | INCHES    | LBS/HR | [kg/HR] |                   |
| WHSE-HX1 | B1 C11 PIPE<br>BASEMENT | WAREHOUSE                  | REHEAT WATER                | SHELL & TUBE | 55  | [4]   | 120 | [49]    | 160        | [71]   | 5      | [15]   | 15    | [100]         | 5       | [35]          | 7.3  | 20        | 0.75       | 375    | [3]     | WHSE-T2 | 2         | 2500   | [1100]  | 1/3 CONTROL VALVE |
| WHSE-HX1 |                         |                            |                             |              |     |       |     |         |            |        |        |        |       |               |         |               | 14.5 | 25        | 1          | 745    |         |         |           |        |         | 2/3 CONTROL VALVE |
| WHSE-HX2 | B1 C11 PIPE<br>BASEMENT | WAREHOUSE                  | REHEAT WATER                | SHELL & TUBE | 55  | [4]   | 120 | [49]    | 160        | [71]   | 5      | [15]   | 15    | [100]         | 5       | [35]          | 7.3  | 20        | 0.75       | 375    | [3]     | WHSE-T2 | 2         | 2500   | [1100]  | 1/3 CONTROL VALVE |
| WHSE-HX2 |                         |                            |                             |              |     |       |     |         |            |        |        |        |       |               |         |               | 14.5 | 25        | 1          | 745    |         |         |           |        |         | 2/3 CONTROL VALVE |

|          |                     |              | AIR SEPAR            | ATOR SO | CHEDULI | E   |       |          |       |                         |         |
|----------|---------------------|--------------|----------------------|---------|---------|-----|-------|----------|-------|-------------------------|---------|
|          |                     | SYSTEM       |                      |         |         |     | AIF   | SEPARATO | )R    |                         |         |
| MARK     | LOCATION            | AND/OR       | TYPE                 | SIZ     | ZE IN   | FLO | OW    | W        | PD    |                         | REMARKS |
|          |                     | SERVICE      |                      | IN      | [mm]    | GPM | [L/s] | FT       | [kPa] | BUILT-IN STRAINER REQ'D |         |
| WHSE-AS1 | B1 C11 PIPEBASEMENT | REHEAT WATER | FULL FLOW TANGENTIAL | 2.5     | [63]    | 60  | [4]   | 2        | [6]   | YES                     |         |
|          |                     |              |                      |         | []      |     | []    |          | []    |                         |         |

|         |              |                            |                          |        |       |     |       |      | PUM        | P SCHE  | DULE     |       |        |       |           |         |         |        |           |         |         |              |
|---------|--------------|----------------------------|--------------------------|--------|-------|-----|-------|------|------------|---------|----------|-------|--------|-------|-----------|---------|---------|--------|-----------|---------|---------|--------------|
|         |              | ADEA AND (0D               | 0)(07514.41)[0.0]        |        |       |     |       | CIRC | CULATING F | LUID    |          |       |        |       |           |         |         | ELECTR | ICAL MOTO | )R      |         |              |
| MARK    | LOCATION     | AREA AND/OR<br>BLDG SERVED | SYSTEM AND/OR<br>SERVICE | TYPE   | CLUID | FL  | OW    | HE   | EAD        | NPSH AV | /AILABLE | TEMPE | RATURE | SP GR | MIN % EFF | NOMINAL | POWER   | DUACE  | VOLT      | MAY DDM | SPEED   | DEMARKS      |
|         |              | BLDG SLIVED                | OLIVIOL                  |        | FLUID | GPM | [L/s] | FT   | [kPa]      | FT      | [kPa]    | °F    | [°C]   | 3P GR |           | HP      | [kW]    | PHASE  | VOLT      | MAX RPM | CONTROL | REMARKS      |
| WHSE-P1 |              |                            |                          |        |       |     | []    |      | []         |         | []       |       |        |       |           |         | []      |        |           |         |         | NOT USED     |
| WHSE-P2 | B1 C11 PIPE  | B14                        | REHEAT WATER             | INLINE | WATER | 60  | [4]   | 60   | [ 960 ]    |         | N/A      | 160   | [71]   | 1.0   | 50        | 3       | [2]     | 3      | 460       | 1800    | VFD     | DUTY/STANDBY |
| WHSE-P3 | B1 C11 PIPE  | B14                        | REHEAT WATER             | INLINE | WATER | 60  | [4]   | 60   | [ 960 ]    |         | N/A      | 160   | [71]   | 1.0   | 50        | 3       | [2]     | 3      | 460       | 1800    | VFD     | DUTY/STANDBY |
| WHSE-P4 | CBG1 CEILING | WHSE-AHU-1                 | PREHEAT WATER            | INLINE | WATER | 10  | [1]   | 25   | [ 400 ]    |         | N/A      | 160   | [71]   | 1.0   | N/A       | 0.1667  | [ .10 ] | 1      | 115       | 3300    | NONE    |              |

| A DIZ  | 7,05            |      | AIR F   |      | A \/     | MAX   | APD    | MOUNITING    | PANEL      | FRAME SIZE     | NE         | CK SIZE       | NO | DAMPED | EINHOLL   | DEMARKO |
|--------|-----------------|------|---------|------|----------|-------|--------|--------------|------------|----------------|------------|---------------|----|--------|-----------|---------|
| MARK   | TYPE            | CFM  | I       | CFM  | 4X       | IN WG | [Del   | MOUNTING     | INL v. INL | [mana v mana]  | INL v. INL | [mana v mana] | NC | DAMPER | FINISH    | REMARKS |
| DC 04  | DEDECDATED      |      | [L/s]   |      | [L/s]    |       | [Pa]   | OFILINO      | IN x IN    | [mm x mm]      | IN x IN    | [mm x mm]     | 40 | NONE   | \A/I IITE |         |
| RG-21  | PERFORATED      | 60   | [28]    | 100  | [47]     | 0.088 | 22.000 | CEILING      | 24 x 24    | [ 600 x 600 ]  | 6 DIAM     | [ 152 DIAM ]  | 13 | NONE   | WHITE     |         |
| RG-22  | PERFORATED      | 110  | [52]    | 170  | [80]     | 0.088 | 22.000 | CEILING      | 24 x 24    | [ 600 x 600 ]  | 8 DIAM     | [ 203 DIAM ]  | 13 | NONE   | WHITE     |         |
| RG-23  | PERFORATED      | 170  | [80]    | 250  | [120]    | 0.088 | 22.000 | CEILING      | 24 x 24    | [ 600 x 600 ]  | 10 DIAM    | [ 254 DIAM ]  | 14 | NONE   | WHITE     |         |
| RG-24  | PERFORATED      | 240  | [110]   | 400  | [190]    | 0.088 | 22.000 | CEILING      | 24 x 24    | [ 600 x 600 ]  | 12 DIAM    | [ 305 DIAM ]  | 12 | NONE   | WHITE     |         |
| RG-25  | PERFORATED      | 320  | [150]   | 500  | [240]    | 0.087 | 22.000 | CEILING      | 24 x 24    | [ 600 x 600 ]  | 14 DIAM    | [ 356 DIAM ]  | 14 | NONE   | WHITE     |         |
| RG-26  | PERFORATED      | 420  | [200]   | 700  | [ 330 ]  | 0.087 | 22.000 | CEILING      | 24 x 24    | [ 600 x 600 ]  | 16 DIAM    | [ 406 DIAM ]  | 16 | NONE   | WHITE     |         |
| RG-31  | PERFORATED      | 100  | [47]    | 1100 | [ 520 ]  | 0.100 | 25.000 | CEILING      | 24x24      | [ 600 x 600 ]  | 22x22      | [ 560 x560 ]  | 25 | NONE   | WHITE     |         |
| RR-51  | RETURN REGISTER | 130  | [61]    | 210  | [99]     | 0.078 | 20.000 | WALL         | 10 x 10    | [ 254 x 254 ]  | 8 x 8      | [ 203 x 203 ] | 13 | OBD    | WHITE     |         |
| RR-52  | RETURN REGISTER | 200  | [94]    | 330  | [160]    | 0.078 | 20.000 | WALL         | 12 x 12    | [ 305 x 305 ]  | 10 x 10    | [ 254 x 254 ] | 15 | OBD    | WHITE     |         |
| RR-53  | RETURN REGISTER | 270  | [ 130 ] | 440  | [210]    | 0.078 | 20.000 | WALL         | 14 x 14    | [356 x 356]    | 12 x 12    | [ 305 x 305 ] | 17 | OBD    | WHITE     |         |
| RR-54  | RETURN REGISTER | 250  | [ 120 ] | 610  | [ 290 ]  | 0.082 | 21.000 | WALL         | 16 x 16    | [ 406 x 406 ]  | 14 x 14    | [ 356 x 356 ] | 18 | OBD    | WHITE     |         |
| RR-55  | RETURN REGISTER | 320  | [ 150 ] | 810  | [ 380 ]  | 0.082 | 21.000 | WALL         | 18 x 18    | [457 x 457]    | 16 x 16    | [ 406 x 406 ] | 19 | OBD    | WHITE     |         |
| RR-56  | RETURN REGISTER | 90   | [42]    | 160  | [76]     | 0.078 | 20.000 | WALL         | 10 x 8     | [ 254 x 203 ]  | 8 x 6      | [ 203 x 152]  | 12 | OBD    | WHITE     |         |
| RR-57  | RETURN REGISTER | 140  | [66]    | 240  | [110]    | 0.078 | 20.000 | WALL         | 14 x 8     | [356 x 203]    | 12 x 6     | [ 305 x 152 ] | 14 | OBD    | WHITE     |         |
| RR-58  | RETURN REGISTER | 210  | [ 99 ]  | 350  | [ 170 ]  | 0.078 | 20.000 | WALL         | 20 x 8     | [ 508 x 203 ]  | 18 x 6     | [ 457 x 152 ] | 16 | OBD    | WHITE     |         |
| RR-59  | RETURN REGISTER | 190  | [90]    | 320  | [ 150 ]  | 0.078 | 20.000 | WALL         | 14 x 10    | [356 x 254]    | 12 x 8     | [ 305 x 203 ] | 15 | OBD    | WHITE     |         |
| RR-510 | RETURN REGISTER | 220  | [100]   | 360  | [ 170 ]  | 0.078 | 20.000 | WALL         | 14 x 12    | [ 356 x 305 ]  | 12 x 10    | [ 305 x 254 ] | 16 | OBD    | WHITE     |         |
| RR-511 | RETURN REGISTER | 330  | [ 160 ] | 560  | [ 260 ]  | 0.078 | 20.000 | WALL         | 20 x 12    | [ 508 x 305 ]  | 18 x 10    | [ 457 x 254 ] | 17 | OBD    | WHITE     |         |
| RR-512 | RETURN REGISTER | 360  | [ 170 ] | 850  | [ 400 ]  | 0.082 | 21.000 | WALL         | 26 x 14    | [660 x 356]    | 24 x 12    | [ 600 x 305 ] | 20 | OBD    | WHITE     |         |
| RR-513 | RETURN REGISTER | 460  | [ 220 ] | 1260 | [ 590 ]  | 0.095 | 24.000 | WALL         | 32 x 14    | [ 813 x 356 ]  | 30 x 12    | [ 762 x 305 ] | 24 | OBD    | WHITE     |         |
| RR-514 | RETURN REGISTER | 1000 | [ 470 ] | 9000 | [ 4200 ] | 0.100 | 25.000 | WALL         | 56x32      | [ 1425 x 815 ] | 54x30      | [1375 x 3765] | 25 | OBD    | WHITE     |         |
| RG-61  | DRUM LOUVER     | 100  | [47]    | 200  | [94]     | 0.091 | 23.000 | DUCT MOUNTED | 12 x 8     | [ 305 x 203 ]  | 10 x 6     | [ 254 x 152 ] | 19 | NONE   | WHITE     |         |
| RG-62  | DRUM LOUVER     | 80   | [38]    | 150  | [71]     | 0.091 | 23.000 | DUCT MOUNTED | 14 x 6     | [ 356 x 152 ]  | 12 x 4     | [ 305 x 102 ] | 15 | NONE   | WHITE     |         |
| RG-63  | DRUM LOUVER     | 150  | [71]    | 290  | [ 140 ]  | 0.091 | 23.000 | DUCT MOUNTED | 16 x 8     | [ 406 x 203 ]  | 14 x 6     | [ 356 x 152 ] | 18 | NONE   | WHITE     |         |
| RG-64  | DRUM LOUVER     | 290  | [ 140 ] | 580  | [ 270 ]  | 0.091 | 23.000 | DUCT MOUNTED | 22 x 10    | [ 560 x 254 ]  | 20 x 8     | [ 508 x 203 ] | 21 | NONE   | WHITE     |         |
| RG-65  | DRUM LOUVER     | 450  | [210]   | 900  | [ 420 ]  | 0.091 | 23.000 | DUCT MOUNTED | 22 x 14    | [560 x 2356]   | 20 x 12    | [ 508 x 305 ] | 23 | NONE   | WHITE     |         |
| RG-66  | DRUM LOUVER     | 670  | [ 320 ] | 1370 | [ 650 ]  | 0.091 | 23.000 | DUCT MOUNTED | 32 x 14    | [ 813 x 356 ]  | 30 x 12    | [762 x 305]   | 25 | NONE   | WHITE     |         |
| RG-67  | DRUM LOUVER     | 550  | [ 260 ] | 1650 | [780]    | 0.091 | 23.000 | DUCT MOUNTED | 38 x 14    | [ 965 x 356 ]  | 36 x 12    | [ 914 x 305 ] | 25 | NONE   | WHITE     |         |
| EG-71  | PERFORATED      | 170  | [80]    | 250  | [120]    | 0.088 | 22.000 | CEILING      | 24 x 24    | [ 600 x 600 ]  | 10 DIAM    | [ 254 DIAM ]  | 14 | NONE   | WHITE     |         |
| EG-81  | PERFORATED      | 170  | [80]    | 250  | [120]    | 0.088 | 22.000 | CEILING      | 24 x 24    | [600 x 600]    | 10 DIAM    | [ 254 DIAM ]  | 14 | NONE   | WHITE     |         |
| TG-91  | RETURN REGISTER | 250  | [120]   | 610  | [290]    | 0.082 | 21.000 | WALL         | 16 x 16    | [ 406 x 406 ]  | 14 x 14    | [ 356 x 356 ] | 18 | OBD    | WHITE     |         |
| TG-92  | RETURN REGISTER | 350  | [120]   | 1000 | [290]    | 0.082 | 21.000 | WALL         | 24 x 16    | [406 x 406]    | 22 x 14    | [ 356 x 356 ] | 18 | OBD    | WHITE     |         |

| AAPAR TYPE   |       |                 |      |         | LOW  |          | │ MAX | ( APD  |              | PANEL   | /FRAME SIZE  | NE      | CK SIZE     |    |        |        |         |
|--|-------|-----------------|------|---------|------|----------|-------|--------|--------------|---------|--------------|---------|-------------|----|--------|--------|---------|
| Description  | MARK  | TYPE            |      |         |      |          |       |        | MOUNTING     | IN x IN | [mm x mm]    | IN      | [mm ]       | NC | DAMPER | FINISH | REMARKS |
| LOLVERED FACE   70   133   280   1130   0.100   285   CELING   24 x 24   [800 x 600]   10 a   [254 a]   22   NONE   WHITE  | SD-11 | LOUVERED FACE   |      |         |      |          | 0.080 |        | CEILING      | 24 x 24 | [600 x 600]  | 6 ø     | [152 ø]     | 19 | NONE   | WHITE  |         |
| Description   Column   Description   Descr | SD-12 | LOUVERED FACE   | 70   |         | 280  |          | 0.100 |        | CEILING      | 24 x 24 | [600 x 600]  | 8 ø     | [203 ø]     | 23 | NONE   | WHITE  |         |
| SD-15   LOUVERED FACE   220   [100]   640   300]   0.090   [23]   CEILING   24 x 24   (600 x 600)   14 a   (356 a)   21   NONE   WHITE   | SD-13 | LOUVERED FACE   | 110  |         | 380  |          | 0.090 |        | CEILING      | 24 x 24 | [600 x 600]  | 10 ø    | [254 ø]     | 22 | NONE   | WHITE  |         |
| SD-16   LOLVERED FACE   280   120   740   130   740   130   0.100   225   CELING   24 x 24   1600 x 600   16 o   | SD-14 | LOUVERED FACE   | 160  |         | 470  | [220]    | 0.080 |        | CEILING      | 24 x 24 | [600 x 600]  | 12 ø    | [305 ø ]    | 19 | NONE   | WHITE  |         |
| ROUND   110   [S2]   500   [240]   0.080   20]   DUCT MOUNTED   18 e   [457 e]   10 e   [254 e]   41   NONE   WHITE  | SD-15 | LOUVERED FACE   | 220  | [100]   | 640  | [300]    | 0.090 | [23]   | CEILING      | 24 x 24 | [600 x 600]  | 14 ø    | [356 ø ]    | 21 | NONE   | WHITE  |         |
| SD-42   ROUND   160   [76]   760   [360]   0.080   [20]   DUCT MOUNTED   22 e   [559 e]   12 e   [305 e]   42   NONE   WHITE   | SD-16 | LOUVERED FACE   | 250  | [ 120 ] | 740  | [ 350 ]  | 0.100 | [25]   | CEILING      | 24 x 24 | [600 x 600]  | 16 ø    | [406 ø ]    | 22 | NONE   | WHITE  |         |
| ROUND   220   [100]   1000   1470   0.080   20   DUCT MOUNTED   26 8   [660 0]   14 0   [356 0]   43   NONE   WHITE  | SD-41 | ROUND           | 110  | [52]    | 500  | [240]    | 0.080 | [20]   | DUCT MOUNTED | 18 ø    | [457 ø ]     | 10 ø    | [254 ø ]    | 41 | NONE   | WHITE  |         |
| SD-44   ROUND   280   [130]   1300   [610]   0.080   [20]   DUCT MOUNTED   29 ø   [737 e]   16 ø   [406 e]   44   NONE   WHITE   | SD-42 | ROUND           | 160  | [76]    | 760  | [ 360 ]  | 0.080 | [20]   | DUCT MOUNTED | 22 ø    | [559 ø ]     | 12 ø    | [305 ø ]    | 42 | NONE   | WHITE  |         |
| SD-45   ROUND   350   [170]   1500   [710]   0.080   [20]   DUCT MOUNTED   33 ø   [838 e]   18 ø   [457 e]   42   NONE   WHITE   | SD-43 | ROUND           | 220  | [ 100 ] | 1000 | [470]    | 0.080 | [20]   | DUCT MOUNTED | 26 ø    | [660 ø ]     | 14 ø    | [356 ø ]    | 43 | NONE   | WHITE  |         |
| ROUND   440   [210]   2000   [940]   0.080   [20]   DUCT MOUNTED   36 ø   [914 o]   20 ø   [508 ø]   45   NONE   WHITE   | SD-44 | ROUND           | 280  | [ 130 ] | 1300 | [610]    | 0.080 | [20]   | DUCT MOUNTED | 29 ø    | [737 ø ]     | 16 ø    | [406 ø ]    | 44 | NONE   | WHITE  |         |
| SD-51 SUPPLY REGISTER 80 [38] 120 [57] 0.100 [25] WALL 8 x 8 [203 x 203] 6 x 6 [152 x 152] 25 OBD WHITE  | SD-45 | ROUND           | 350  | [ 170 ] | 1500 | [710]    | 0.080 | [20]   | DUCT MOUNTED | 33 ø    | [838 ø ]     | 18 ø    | [457 ø ]    | 42 | NONE   | WHITE  |         |
| SD-52 SUPPLY REGISTER 80 [38] 160 [76] 0.090 [23] WALL 12 x8 [305 x 203] 10 x6 [254 x 152] 25 OBD WHITE  SD-53 SUPPLY REGISTER 130 [61] 350 [170] 0.080 [20] WALL 14 x 10 [356 x 254] 12 x 8 [305 x 203] 26 OBD WHITE  SD-54 SUPPLY REGISTER 200 [94] 500 [240] 0.100 [25] WALL 14 x 12 [356 x 305] 12 x 10 [305 x 254] 26 OBD WHITE  SD-55 SUPPLY REGISTER 400 [190] 700 [330] 0.080 [20] WALL 18 x 12 [508 x 305] 18 x 10 [457 x 254] 26 OBD WHITE  SD-56 SUPPLY REGISTER 360 [170] 700 [330] 0.070 [18] WALL 18 x 18 [457 x 457] 16 x 16 [406 x 406] 27 OBD WHITE  SD-57 SUPPLY REGISTER 560 [260] 1100 [520] 0.070 [18] WALL 22 x 22 [560 x 560] 20 x 20 [508 x 508] 28 OBD WHITE  SD-58 SUPPLY REGISTER 1250 [590] 3000 [1400] 0.100 [25] WALL 32 x 32 [813 x 813] 30 x 30 [762 x 762] 36 OBD WHITE  SD-61 DRUM LOUVER 100 [47] 200 [94] 0.090 [23] DUCT MOUNTED 12 x 8 [305 x 203] 14 x 6 [356 x 152] 18 NONE WHITE  SD-63 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE  SD-64 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [568 x 305] 23 NONE WHITE  SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [568 x 305] 23 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [568 x 305] 23 NONE WHITE   | SD-46 | ROUND           | 440  | [210]   | 2000 | [ 940 ]  | 0.080 | [20]   | DUCT MOUNTED | 36 ø    | [914 ø ]     | 20 ø    | [508 ø ]    | 45 | NONE   | WHITE  |         |
| SD-53 SUPPLY REGISTER 130 [61] 350 [170] 0.080 [20] WALL 14 x 10 [356 x 254] 12 x 8 [305 x 203] 26 OBD WHITE   | SD-51 | SUPPLY REGISTER | 80   | [38]    | 120  | [ 57 ]   | 0.100 | [25]   | WALL         | 8 x 8   | [203 x 203]  | 6 x 6   | [152 x 152] | 25 | OBD    | WHITE  |         |
| SD-54 SUPPLY REGISTER 200 [94] 500 [240] 0.100 [25] WALL 14 x 12 [356 x 305] 12 x 10 [305 x 254] 26 OBD WHITE  SD-55 SUPPLY REGISTER 400 [190] 700 [330] 0.080 [20] WALL 18 x 12 [508 x 305] 18 x 10 [457 x 254] 26 OBD WHITE  SD-56 SUPPLY REGISTER 360 [170] 700 [330] 0.070 [18] WALL 18 x 18 [457 x 457] 16 x 16 [406 x 406] 27 OBD WHITE  SD-57 SUPPLY REGISTER 560 [260] 1100 [520] 0.070 [18] WALL 22 x 22 [560 x 560] 20 x 20 [508 x 508] 28 OBD WHITE  SD-58 SUPPLY REGISTER 1250 [590] 3000 [1400] 0.100 [25] WALL 32 x 32 [813 x 813] 30 x 30 [762 x 762] 36 OBD WHITE  SD-61 DRUM LOUVER 100 [47] 200 [94] 0.090 [23] DUCT MOUNTED 12 x 8 [305 x 203] 10 x 6 [254 x 152] 19 NONE WHITE  SD-62 DRUM LOUVER 80 [38] 150 [71] 0.090 [23] DUCT MOUNTED 14 x 6 [356 x 152] 12 x 4 [305 x 102] 15 NONE WHITE  SD-63 DRUM LOUVER 150 [71] 300 [140] 0.090 [23] DUCT MOUNTED 16 x 8 [406 x 203] 14 x 6 [356 x 152] 18 NONE WHITE  SD-64 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE  SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE   | SD-52 | SUPPLY REGISTER | 80   | [38]    | 160  | [76]     | 0.090 | [23]   | WALL         | 12 x 8  | [305 x 203]  | 10 x 6  | [254 x 152] | 25 | OBD    | WHITE  |         |
| SD-55 SUPPLY REGISTER 400 [190] 700 [330] 0.080 [20] WALL 18 x 12 [508 x 305] 18 x 10 [457 x 254] 26 OBD WHITE  SD-56 SUPPLY REGISTER 360 [170] 700 [330] 0.070 [18] WALL 18 x 18 [457 x 457] 16 x 16 [406 x 406] 27 OBD WHITE  SD-57 SUPPLY REGISTER 560 [260] 1100 [520] 0.070 [18] WALL 22 x 22 [560 x 560] 20 x 20 [508 x 508] 28 OBD WHITE  SD-58 SUPPLY REGISTER 1250 [590] 3000 [1400] 0.100 [25] WALL 32 x 32 [813 x 813] 30 x 30 [762 x 762] 36 OBD WHITE  SD-61 DRUM LOUVER 100 [47] 200 [94] 0.090 [23] DUCT MOUNTED 12 x 8 [305 x 203] 10 x 6 [254 x 152] 19 NONE WHITE  SD-62 DRUM LOUVER 80 [38] 150 [71] 0.090 [23] DUCT MOUNTED 14 x 6 [356 x 152] 12 x 4 [305 x 102] 15 NONE WHITE  SD-63 DRUM LOUVER 150 [71] 300 [140] 0.090 [23] DUCT MOUNTED 16 x 8 [406 x 203] 14 x 6 [356 x 152] 18 NONE WHITE  SD-64 DRUM LOUVER 290 [140] 600 [280] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE  SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE  | SD-53 | SUPPLY REGISTER | 130  | [61]    | 350  | [ 170 ]  | 0.080 | [20]   | WALL         | 14 x 10 | [356 x 254]  | 12 x 8  | [305 x 203] | 26 | OBD    | WHITE  |         |
| SD-56 SUPPLY REGISTER 360 [170] 700 [330] 0.070 [18] WALL 18 x 18 [457 x 457] 16 x 16 [406 x 406] 27 OBD WHITE  SD-57 SUPPLY REGISTER 560 [260] 1100 [520] 0.070 [18] WALL 22 x 22 [560 x 560] 20 x 20 [508 x 508] 28 OBD WHITE  SD-58 SUPPLY REGISTER 1250 [590] 3000 [1400] 0.100 [25] WALL 32 x 32 [813 x 813] 30 x 30 [762 x 762] 36 OBD WHITE  SD-61 DRUM LOUVER 100 [47] 200 [94] 0.090 [23] DUCT MOUNTED 12 x 8 [305 x 203] 10 x 6 [254 x 152] 19 NONE WHITE  SD-62 DRUM LOUVER 80 [38] 150 [71] 0.090 [23] DUCT MOUNTED 14 x 6 [356 x 152] 12 x 4 [305 x 102] 15 NONE WHITE  SD-63 DRUM LOUVER 150 [71] 300 [140] 0.090 [23] DUCT MOUNTED 16 x 8 [406 x 203] 14 x 6 [356 x 152] 18 NONE WHITE  SD-64 DRUM LOUVER 290 [140] 600 [280] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE  SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE   | SD-54 | SUPPLY REGISTER | 200  | [ 94 ]  | 500  | [240]    | 0.100 | [25]   | WALL         | 14 x 12 | [356 x 305]  | 12 x 10 | [305 x 254] | 26 | OBD    | WHITE  |         |
| SD-57 SUPPLY REGISTER 560 [260] 1100 [520] 0.070 [18] WALL 22 x 22 [560 x 560] 20 x 20 [508 x 508] 28 OBD WHITE  SD-58 SUPPLY REGISTER 1250 [590] 3000 [1400] 0.100 [25] WALL 32 x 32 [813 x 813] 30 x 30 [762 x 762] 36 OBD WHITE  SD-61 DRUM LOUVER 100 [47] 200 [94] 0.090 [23] DUCT MOUNTED 12 x 8 [305 x 203] 10 x 6 [254 x 152] 19 NONE WHITE  SD-62 DRUM LOUVER 80 [38] 150 [71] 0.090 [23] DUCT MOUNTED 14 x 6 [356 x 152] 12 x 4 [305 x 102] 15 NONE WHITE  SD-63 DRUM LOUVER 150 [71] 300 [140] 0.090 [23] DUCT MOUNTED 16 x 8 [406 x 203] 14 x 6 [356 x 152] 18 NONE WHITE  SD-64 DRUM LOUVER 290 [140] 600 [280] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE  SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE  | SD-55 | SUPPLY REGISTER | 400  | [ 190 ] | 700  | [ 330 ]  | 0.080 | [20]   | WALL         | 18 x 12 | [508 x 305]  | 18 x 10 | [457 x 254] | 26 | OBD    | WHITE  |         |
| SD-58 SUPPLY REGISTER 1250 [590] 3000 [1400] 0.100 [25] WALL 32 x 32 [813 x 813] 30 x 30 [762 x 762] 36 OBD WHITE  SD-61 DRUM LOUVER 100 [47] 200 [94] 0.090 [23] DUCT MOUNTED 12 x 8 [305 x 203] 10 x 6 [254 x 152] 19 NONE WHITE  SD-62 DRUM LOUVER 80 [38] 150 [71] 0.090 [23] DUCT MOUNTED 14 x 6 [356 x 152] 12 x 4 [305 x 102] 15 NONE WHITE  SD-63 DRUM LOUVER 150 [71] 300 [140] 0.090 [23] DUCT MOUNTED 16 x 8 [406 x 203] 14 x 6 [356 x 152] 18 NONE WHITE  SD-64 DRUM LOUVER 290 [140] 600 [280] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE  SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE   | SD-56 | SUPPLY REGISTER | 360  | [ 170 ] | 700  | [ 330 ]  | 0.070 | [18]   | WALL         | 18 x 18 | [457 x 457]  | 16 x 16 | [406 x 406] | 27 | OBD    | WHITE  |         |
| DRUM LOUVER   100   [47]   200   [94]   0.090   [23]   DUCT MOUNTED   12 x 8   [305 x 203]   10 x 6   [254 x 152]   19   NONE   WHITE  | SD-57 | SUPPLY REGISTER | 560  | [ 260 ] | 1100 | [ 520 ]  | 0.070 | [18]   | WALL         | 22 x 22 | [560 x 560]  | 20 x 20 | [508 x 508] | 28 | OBD    | WHITE  |         |
| DRUM LOUVER 80 [38] 150 [71] 0.090 [23] DUCT MOUNTED 14 x 6 [356 x 152] 12 x 4 [305 x 102] 15 NONE WHITE  SD-63 DRUM LOUVER 150 [71] 300 [140] 0.090 [23] DUCT MOUNTED 16 x 8 [406 x 203] 14 x 6 [356 x 152] 18 NONE WHITE  SD-64 DRUM LOUVER 290 [140] 600 [280] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE  SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE  SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE   | SD-58 | SUPPLY REGISTER | 1250 | [ 590 ] | 3000 | [ 1400 ] | 0.100 | [ 25 ] | WALL         | 32 x 32 | [813 x 813]  | 30 x 30 | [762 x 762] | 36 | OBD    | WHITE  |         |
| DRUM LOUVER 150 [71] 300 [140] 0.090 [23] DUCT MOUNTED 16 x 8 [406 x 203] 14 x 6 [356 x 152] 18 NONE WHITE SD-64 DRUM LOUVER 290 [140] 600 [280] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE  | SD-61 | DRUM LOUVER     | 100  | [ 47 ]  | 200  | [ 94 ]   | 0.090 | [23]   | DUCT MOUNTED | 12 x 8  | [305 x 203]  | 10 x 6  | [254 x 152] | 19 | NONE   | WHITE  |         |
| SD-64 DRUM LOUVER 290 [140] 600 [280] 0.090 [23] DUCT MOUNTED 22 x 10 [560 x 254] 20 x 8 [508 x 203] 21 NONE WHITE SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE   | SD-62 | DRUM LOUVER     | 80   | [38]    | 150  | [71]     | 0.090 | [23]   | DUCT MOUNTED | 14 x 6  | [356 x 152]  | 12 x 4  | [305 x 102] | 15 | NONE   | WHITE  |         |
| SD-65 DRUM LOUVER 450 [210] 900 [420] 0.090 [23] DUCT MOUNTED 22 x 14 [560 x 2356] 20 x 12 [508 x 305] 23 NONE WHITE   | SD-63 | DRUM LOUVER     | 150  | [71]    | 300  | [ 140 ]  | 0.090 | [23]   | DUCT MOUNTED | 16 x 8  | [406 x 203]  | 14 x 6  | [356 x 152] | 18 | NONE   | WHITE  |         |
| SD-66 DRUM LOUVER 670 [320] 1300 [610] 0.090 [23] DUCT MOUNTED 32 x 14 [813 x 356] 30 x 12 [762 x 305] 25 NONE WHITE   | SD-64 | DRUM LOUVER     | 290  | [ 140 ] | 600  | [ 280 ]  | 0.090 | [23]   | DUCT MOUNTED | 22 x 10 | [560 x 254]  | 20 x 8  | [508 x 203] | 21 | NONE   | WHITE  |         |
|  | SD-65 | DRUM LOUVER     | 450  | [210]   | 900  | [420]    | 0.090 | [23]   | DUCT MOUNTED | 22 x 14 | [560 x 2356] | 20 x 12 | [508 x 305] | 23 | NONE   | WHITE  |         |
| SD-67 DRUM LOUVER 550 [260] 1650 [780] 0.090 [23] DUCT MOUNTED 38 x 14 [965 x 356] 36 x 12 [914 x 305] 25 NONE WHITE   | SD-66 | DRUM LOUVER     | 670  | [ 320 ] | 1300 | [610]    | 0.090 | [23]   | DUCT MOUNTED | 32 x 14 | [813 x 356]  | 30 x 12 | [762 x 305] | 25 | NONE   | WHITE  |         |
|  | SD-67 | DRUM LOUVER     | 550  | [ 260 ] | 1650 | [ 780 ]  | 0.090 | [23]   | DUCT MOUNTED | 38 x 14 | [965 x 356]  | 36 x 12 | [914 x 305] | 25 | NONE   | WHITE  |         |

|                | ARCHITECT/ENGI   | NEER OF RECORD  |
|----------------|--|---|
| CLH            | Calvin L. HINZ Architects, P.C.<br>3705 North 200th Street<br>Elkhorn, Nebraska 68022<br>Phone: 402.291.6941 Fax: 402.291.9193 | IMEG Corp. 15 Sunnen D Suite 104 St. Louis, MO Phone: (314) |
| Calvin L. Hinz |  | Incandescence Life Safety, Inc.                             |

| RECORD   | STAMP               |
|--|---------------------|
| IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, MO 63143 Phone:(314) 951-2534   | RUSSELL J.  ARNESON |
| Incandescence Life Safety, Inc. 3575 Ringsby Court, #408, Denver, CO, 80216 Phone:(720) 722-3010  incandescence life safety a fire protection engineering firm | PROFESSIONA 1/14/14 |

|   | Office of<br>Construction<br>and Facilities<br>Management |
|---|---|
| L | LIA U.S. Department                                       |

| Drawing Title        | PI |
|----------------------|----|
| MECHANICAL SCHEDULES | F  |
|                      |    |
|                      |    |
| Approved:            |    |
|                      |    |
|                      |    |

SEE DETAIL FOR DAMPER IN BRANCH DUCT SERVING EACH DIFFUSER.
 PROVIDE SQUARE TO ROUND...

| <br>              |                        |                |               |                 |
|-------------------|------------------------|----------------|---------------|-----------------|
| Phase             | Project Title          |                |               | Project Number  |
| BID SET           | RENOVATE W             | AREHOU         | SE FOR        | 589A4-20-158    |
|                   | PANDEMIC PR            | REPARED        | NESS          | Building Number |
|                   | 17 (IVBEIVIIO I I      |                |               | 14              |
|                   | Location HARRY S. TRUM |                | KANS HUSPITAL | Drawing Number  |
|                   | 800 HOSPITAL D         | R., COLUMBIA I | WIO 63201     |                 |
| FULLY SPRINKLERED | Issue Date             | Checked        | Drawn         | M-500           |

| _  | 800 HOSPITAL DR., COLUMBIA MO 65201 |         |        |           |  |  |  |  |  |
|----|-------------------------------------|---------|--------|-----------|--|--|--|--|--|
| :D | Issue Date                          | Checked | Drawn  | $\exists$ |  |  |  |  |  |
|    | 03/24/2021                          | JASSNE  | ANUSHA |           |  |  |  |  |  |
|    |                                     |         |        | <u> </u>  |  |  |  |  |  |

M-500 Dwg. # 71 of 94

VA FORM 08 - 6231

**BID SET** 

Revisions:

03/24/2021

VA U.S. Department of Veterans Affairs

AIR HANDLING UNIT SCHEDULE EXHAUST FAN PREFILTER MARK FILTER AREA AND/OR HUMIDIFIER RELIEF FAN FILTER MIN OA REMARKS FAN MARK MARK MARK MARK CFM [L/s] CFM [L/s] 13500 [6400] 12450 [5900] WHSE-SF-1 WHSE-RF-1 WHSE-AHU-1 CORRIDOR CBG1... WAREHOUSE MODULAR ROOFTOP CHILLED WATER COOLING COIL SCHEDULE CHILLED WATER MAX FACE VELOCITY TOTAL CAPACITY | SENSIBLE CAPACITY LOCATION WPD REMARKS SELECTION CRITERIA OPERATING CONDITION THE COOLING COIL FIN SPACING SHALL NOT EXCEED 132 FINS PER FOOT [400 FINS PER METER]. AIR FILTER SCHEDULE CARTRIDGES HOUSING LOCATION AREA AND/OR BLDG SERVED AND/OR CHANGEOVER SIZE MARK **RATING** ARRANGEMENT REMARKS SERVICE SIDE WHSE-PF-1 | MER PENTHOUSE 14 WAREHOUSE 14-AHU1 0.25 13500 0.65 [600 x 600 x 50] SELECTION CRITERIA 20X20X2 WHSE-PF-1 | MER PENTHOUSE 14 WAREHOUSE SIDE OPERATING CONDITION [600 x 600 x 50] WHSE-FF-1 MER PENTHOUSE 14 WAREHOUSE [600 x 600 x 300] SELECTION CRITERIA 20X20X2 WHSE-FF-1 MER PENTHOUSE 14 WAREHOUSE 11250 0.73 [600 x 600 x 300] OPERATING CONDITION 20X20X2 HOT WATER HEATING COIL SCHEDULE **HOT WATER** MAX FACE AREA AND/OR VELOCITY CAPACITY AND/OR APPLICATION MARK % GLYCOL REMARKS **BLDG SERVED** SELECTION CRITERIA WAREHOUSE WHSE-AHU-1 WAREHOUSE WHSE-AHU-1 6075 [ 2900 ] OPERATING CONDITION WHSE-AHU-1 WHSE-AHU-1 WHSE-RHC4 WHSE-AHU-1 WHSE-RHC5 1-1-TU05 WC01A WHSE-AHU-1 REHEAT 900 [420] WHSE-RHC6 300 WHSE-AHU-1 WHSE-RHC7 WHSE-AHU-1 REHEAT 520 [ 250 ] WHSE-RHC8 WHSE-AHU-1 WHSE-AHU-1 WHSE-RHC12 112.3 [380] 7.5 [.5] 160 [71] [] .5 [130] 55.0 [13] 95.0 [35] 48.6 [170] 3.2 [.2] 160 [71] 120 [49] 5 [15] 0 ---SINGLE DUCT AIR TERMINAL UNIT SCHEDULE AIR FLOW AREA AND/OR ADDITIONAL SOUND PERIMETER REHEAT SYSTEM AIR CONTROL CONTROL LOCATION ROOM ATTUNATION SUPPLEMENTAL HEAT REMARKS MAX HANDLING TYPE SEQUENCE SERVED REQUIRED LINK HW ELEC NONE [L/s] CFM [L/s] CFM W05-TU-01 W05 W05 WHSE-AHU-1 NONE 5 DEGREE DEADBAND X NONE W06-TU-02 W06 W06 WHSE-AHU-1 [ 140 ] 135 NONE 5 DEGREE DEADBAND X NONE W01 WHSE-AHU-1 5 DEGREE DEADBAND X NONE W02-TU-04 NONE W02 WHSE-AHU-1 [420] 405 5 DEGREE DEADBAND X 5 DEGREE DEADBAND X NONE WC01A-TU-05 WC01A WC01A WHSE-AHU-1 [ 420 ] 405 NONE W05A-TU-06 5 DEGREE DEADBAND X W05A WHSE-AHU-1 135 NONE W04-TU-07 5 DEGREE DEADBAND X WHSE-AHU-1 W04 235 W07-TU-08 5 DEGREE DEADBAND X NONE WHSE-AHU-1 W04A 5 DEGREE DEADBAND X NONE W04A-TU-09 W04 WHSE-AHU-1 W03-TU-10 710 5 DEGREE DEADBAND X NONE W03 WHSE-AHU-1 W11-TU-11 1025 5 DEGREE DEADBAND X NONE W11 W03A WHSE-AHU-1 [ 480 ] 460 VAV WHSE-AHU-1 2600 1170 VAV 5 DEGREE DEADBAND X NONE W11 [ 1200 ] W11 W11 WHSE-AHU-1 H 1125 [530] 505 [ 240 ] 5 DEGREE DEADBAND X NONE AIR TERMINAL UNIT SIZING SCHEDULE MAXIMUM SOUND POWER LEVEL (Re: 10 -12 WATTS) HOT WATER HEATING COIL MIN ALLOWABLE | MAX ALLOWABLE FOR BOX DISCHARGE AT MAXIMUM INLET DUCT STATIC DUCT INLET SIZE MAX APD AIR FLOW AIR FLOW SIZE REMARKS OCTAVE BANDS MAX WPD PIPE RUNOUT SIZ... 
 CFM
 [L/s]
 IN
 [mm]
 IN WG
 [Pa]
 2 | 3 | 4 | 5 [°C] [ 150 ] 0.4 [230] [ 180 ] 0.4 0.75 [ 230 ] G 350 [170] 1050 [500] 0.75 
 H
 500
 [240]
 1500
 [710]
 12
 [300]
 0.4
 [100]

 I
 750
 [350]
 2250
 [1100]
 14
 [350]
 0.4
 [100]
 68 3.5 [13] 4 [12] 0.75 [19] ----J | 1000 | [470] | 3000 | [1400] | 16 | [400] | 0.4 | [100] | 73 | 68 | 66 55 [13] 140 [60] 4.5 [17] 4 [12] 1. INLET STATIC BASED ON ARI 885-98. 2. THIS SCHEDULE IS USED WITH THE TERMINAL UNIT SCHEDULE. 3. CONTROL SEQUENCE SHALL BE AS INDICATED ON THE AIR TERMINAL UNIT SCHEDULE. 4. PROVIDE SOUND ATTENUATION AFTER-SECTION AS REQUIRED TO MEET ROOM NC LEVEL. ELECTRIC UNIT HEATER SCHEDULE **FAN MOTOR** AIR FLOW POWER MIN CAPACITY AREA AND/OR BLDG MARK LOCATION TYPE REMARKS SERVED HP CFM L/S °F | [°C] BTUH [W] PHASE VOLT 500 [240] 65 [18] 17100 [5000] 0.1 WHSE-EUH-1 14 RECEIVING DOCK HORIZONTAL COIL RESISTANCE EXISTING WHSE-EUH-2 W02 14 RECEIVING DOCK HORIZONTAL COIL RESISTANCE 500 [240] 65 17100 [ 5000 ] 460 0.1 [75] EXISTING 120 Project Title Project Number Drawing Title ARCHITECT/ENGINEER OF RECORD STAMP Office of 589A4-20-158 BID SET MECHANICAL SCHEDULES RENOVATE WAREHOUSE FOR Construction Calvin L. HINZ Architects, P.C. **Building Number** PANDEMIC PREPAREDNESS 3705 North 200th Street and Facilities Elkhorn, Nebraska 68022 RUSSELL J Phone: 402.291.6941 Fax: 402.291.9193 Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number Management 800 HOSPITAL DR., COLUMBIA MO 65201 andescence Life Safety, Inc. '5 Ringsby Court, #408, Denver, CO, 80216 FULLY SPRINKLERED M-501 Checked ncandescence life safety **VA** U.S. Department of Veterans Affairs **BID SET** 03/24/2021 03/24/2021 **JASSNE ANUSHA Revisions:** fire protection engineering firm Dwg. # 72 of 94 VA FORM 08 - 6231

| ELEC           | TRICAL           | SYMBOL LIST                             |
|----------------|------------------|---|
| SYMBOL:        | SPEC<br>SECTION: | DESCRIPTION:                            |
| ₩              | 26 27 26         | DUPLEX RECEPTACLE, 125V                 |
| <b>₩</b>       | 26 27 26         | DUPLEX GFI RECEPTACLE, 125V             |
| W <del>¥</del> | 26 27 26         | DUPLEX GFI WEATHERPROOF RECEPTACLE 125V |
| U <b>⊕</b>     | 26 27 26         | DUPLEX RECEPTACLE, USB CHARGING         |
| <b>-</b> ₩     | 26 27 26         | QUAD RECEPTACLE, 125V                   |

|       | ELECTRICAL ABBREVIATION KEY |
|-------|-----------------------------|
| ABBR: | DESCRIPTION:                |
| AFF   | ABOVE FINISHED FLOOR        |
| С     | CONDUIT                     |
| GFI   | GROUND FAULT INTERRUPTER    |
| N.C.  | NORMALLY CLOSED             |
| NIC   | NOT IN CONTRACT             |
| N.O.  | NORMALLY OPEN               |
| SV    | SOLENOID VALVE              |
| TYP   | TYPICAL                     |
| UNO   | UNLESS NOTED OTHERWISE      |

| <u>A</u> P                | PLICABLE CODES                                  |
|---------------------------|---|
| CONTRACTOR SHALL COMP     | PLY WITH APPLICABLE CODES AND LOCAL AMENDMENTS. |
| BUILDING CODE:            | IBC 2018 EDITION                                |
| FIRE CODE:                | NFPA: 1 2018 EDITION                            |
| PLUMBING CODE:            | IPC 2018 EDITION                                |
| MECHANICAL CODE:          | IMC 2018 EDITION                                |
| ELECTRICAL CODE:          | NFPA 70 (NEC) 2020 EDITION                      |
| LIFE SAFETY CODE:         | NFPA 101 2018 EDITION                           |
| ENERGY CONSERVATION CODE: | ASHRAE 90.1 2013                                |
| HEALTH DEPARTMENT CODE:   | CURRENT EDITION                                 |
| LOCAL BUILDING CODE:      | CURRENT EDITION                                 |

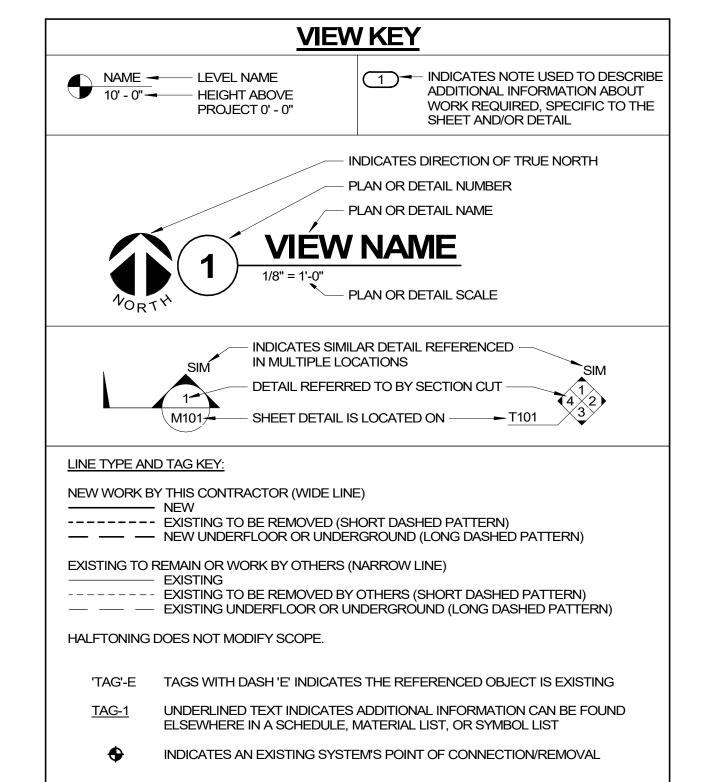
VA FORM 08 - 6231

| <u> </u>              | ELECTR           | ICAL SYMBOL LIST  |
|-----------------------|------------------|---|
| SYMBOL:               | SPEC<br>SECTION: | DESCRIPTION:  |
| S                     | 26 09 23         | SWITCH - SINGLE POLE                                    |
| <b>s</b> <sub>3</sub> | 26 09 23         | SWITCH - THREE WAY                                      |
| D <sub>D</sub>        | 26 09 23         | DIMMER - LED  |
| D <sub>O</sub>        | 26 09 23         | DIMMER - WALL DIMMER<br>OCCUPANCY SENSOR                |
| PO                    | 26 09 23         | PHOTOCELL   |
| ⊚ <sub>D</sub>        | 26 09 23         | OCCUPANCY SENSOR - DUAL TECHNOLOGY                      |
| ⊚ <sub>HA</sub>       | 26 09 23         | OCCUPANCY SENSOR - HIGH BAY AISLE<br>COVERAGE           |
| ⊚ <sub>HB</sub>       | 26 09 23         | OCCUPANCY SENSOR - HIGH BAY                             |
| s <sub>o</sub>        | 26 09 23         | SWITCH - OCCUPANCY SENSOR<br>WALL SWITCH                |
|                       | 26 09 23         | OCCUPANCY SENSOR - PASSIVE INFRARED 360 DEGREE COVERAGE |
|                       | 26 09 23         | OCCUPANCY SENSOR - ULTRASONIC 360<br>DEGREE COVERAGE    |
| OC U                  | 26 09 23         | OCCUPANCY SENSOR - ULTRASONIC - WALL MOUNTED            |
| SW                    | 26 09 23         | WALL CONTROL STATION                                    |
| TC                    | 26 09 23         | TIME SWITCH   |

|  | ELEC        | TRICAL           | SYMBOL LIST                      |
|--|-------------|------------------|----------------------------------|
| SYMBOL:                                  | TAG:        | SPEC<br>SECTION: | DESCRIPTION:                     |
|  |             |                  | LINEAR LUMINAIRES                |
|  |             |                  | TROFFER                          |
| 0  |             |                  | DOWNLIGHT LUMINAIRE              |
|  | REFER TO LU |                  | INDUSTRIAL LUMINAIRE             |
| 오보                                       | SCHED       | ULE              | WALL BRACKET LUMINAIRE           |
| $\otimes$                                |             |                  | SINGLE FACE EXIT SIGN            |
| $\otimes$                                |             |                  | DOUBLE FACE EXIT SIGN            |
| 48 48 48 48 48 48 48 48 48 48 48 48 48 4 |             |                  | WALL/CEILING EMERGENCY EXIT SIGN |
| 4_                                       |             |                  | EMERGENCY UNIT                   |

|             | <b>ELECTRICAL EQUIPMENT TAGS</b>                        |                          |
|-------------|---|--------------------------|
| TAG:        | DESCRIPTION:  | RELATED<br>SPECIFICATION |
| MCC-#       | MOTOR CONTROL CENTER                                    | EXISTING                 |
| <u>MX-#</u> | MANUAL SWITCH, REFER TO DISCONNECT AND STARTER SCHEDULE | 26 24 19                 |
| SPD-#       | SURGE PROTECTION DEVICE                                 | 26 43 13                 |

|          | LUMINAIRE SYMBOL KEY       |
|----------|----------------------------|
| SYMBOL:  | DESCRIPTION:               |
| <b>◎</b> | EMERGENCY BRANCH LUMINAIRE |



### CONDUIT INSTALLATION SCHEDULE THE FOLLOWING SCHEDULE SHALL BE ADHERED TO UNLESS THEY CONSTITUTE A VIOLATION OF APPLICABLE CODES OR ARE NOTED OTHERWISE ON THE DRAWINGS. THE INSTALLATION OF RMC CONDUIT WILL BE PERMITTED IN PLACE OF ALL CONDUIT SPECIFIED IN THIS SCHEDULE. REFER TO CONDUIT AND BOXES SPECIFICATION 25 05 33 FOR ADDITIONAL INFORMATION. INSTALLATION TYPE FEEDERS: SWITCHBOARDS, DISTRIBUTION PANELS, PANELBOARDS, MOTOR CONTROL CENTERS, ETC. BRANCH CIRCUITS: LIGHTING, RECEPTACLES, CONTROLS, ETC. MECHANICAL EQUIPMENT FEEDERS: PUMPS, CHILLERS, AIR HANDLING UNITS, ETC. FLOOR MOUNTED EQUIPMENT FEEDERS: PUMPS, ETC. (INCLUDE NO MORE THAN 6 FEET OF LFMC TO PUMP) CONTROLS (LIGHTING, POWER, BUILDING AUTOMATION, ETC.) FINISHED SPACES / CONCEALED WET AND DAMP LOCATIONS: (CONDUIT, BOXES, FITTINGS, INSTALLED AND EQUIPPED TO PREVENT WATER ENTRY) INTERIOR LOCATIONS: CONCEALED INTERIOR LOCATIONS: EXPOSED

## **ELECTRICAL RENOVATION NOTES:**

THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED

- TO, LIGHTING, POWER, AND SYSTEMS.1. EXISTING CONDITIONS ARE SHOWN BASED ON INFORMATION OBTAINED FROM FIELD SURVEYS, EXISTING BUILDING DOCUMENTS, AND STAFF. VERIFY EXISTING CONDITIONS AND
- REPORT ANY CONFLICTS BEFORE PROCEEDING.

  2. NOT ALL EXISTING EQUIPMENT, LUMINAIRES, AND CONDUIT ARE SHOWN. VERIFY EXISTING CONDITIONS AND REPORT ANY CONFLICTS WITH NEW WORK BEFORE STARTING WORK.
- FIELD VERIFY THE AVAILABLE CLEARANCES FOR CABLE TRAY, BUSWAY AND CONDUITS
  BEFORE FABRICATION. RISES AND DROPS MAY BE NECESSARY BECAUSE OF EXISTING
  FIELD CONDITIONS.
   FACH CONTRACTOR SHALL FIELD VERIEV ACCESSIBILITY TO THE AREA OF HIS/HER WORK.
- 4. EACH CONTRACTOR SHALL FIELD VERIFY ACCESSIBILITY TO THE AREA OF HIS/HER WORK AND SHALL NOTIFY THE GENERAL CONTRACTOR PRIOR TO BIDDING IF OTHER UTILITIES ARE REQUIRED TO BE REMOVED OR RELOCATED TO ALLOW ACCESS TO HIS/HER AREA OF
- WORK.

  5. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR CUTTING, REMOVAL AND PATCHING OF ROOFS, WALLS, AND FLOORS ASSOCIATED WITH WORK BY ALL CONTRACTORS. CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING.
- CONTRACTORS SHALL NOTIFY THE GC OF AFFECTED AREAS PRIOR TO BIDDING.

  6. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS, CEILING TILES, AND CEILING GRIDS ASSOCIATED WITH AREAS OF WORK BY ALL CONTRACTORS. NOTIFY THE GENERAL CONTRACTOR OF AFFECTED AREAS PRIOR TO BIDDING.
- 7. WHERE EXISTING ELECTRICAL SYSTEMS ARE LOCATED IN AREAS THAT CONFLICT WITH NEW EQUIPMENT, PIPING, OR DUCTWORK TO BE INSTALLED, EACH CONTRACTOR SHALL EITHER ARRANGE NEW EQUIPMENT, CONDUIT, OR DUCTWORK IN SUCH A FASHION THAT IT DOES NOT CONFLICT WITH EXISTING SYSTEMS, OR REWORK EXISTING ELECTRICAL SYSTEMS TO ALLOW FOR INSTALLATION OF NEW EQUIPMENT, PIPING, OR DUCTWORK.

## **ELECTRICAL PHASING NOTES:**

THESE NOTES APPLY TO ALL ELECTRICAL SHEETS AND TRADES, INCLUDING BUT NOT LIMITED TO, LIGHTING, POWER, AND SYSTEMS.
REFER TO ARCHITECTURAL DRAWINGS FOR GENERAL DESCRIPTION OF PHASES. REFER TO ARCHITECT'S INSTRUCTIONS FOR MORE DETAILS AND PHASING SCHEDULES AND FOR CONCURRENT WORK. MECHANICAL, ELECTRICAL AND TECHNOLOGY DRAWINGS DEPICT THE INTENT OF THE FINAL DESIGN. THE MECHANICAL, ELECTRICAL, AND TECHNOLOGY

- DRAWINGS DO NOT DEPICT THE MEANS AND METHODS TO MEET THE REQUIREMENTS OF THE PHASING CRITERIA.

  REVIEW PROJECT PHASING PLANS TO COORDINATE DEMOLITION WORK, OUTAGES, ETC.
- WITH AFFECTED ADJACENT AREAS.
  3. PROVIDE TEMPORARY LIGHTING, POWER, SYSTEMS, ETC. AS NEEDED TO MAINTAIN

5. PHASE DEMOLITION WORK TO MINIMIZE DOWNTIME.

SERVICE TO ALL AREAS DURING ALL PHASES OF PROJECT.

4. INSTALL TEMPORARY LIGHTING, CIRCUITS, ETC. AS NECESSARY TO KEEP ALL OCCUPIED SPACES OPERATIONAL THROUGHOUT ALL PHASES OF THE PROJECT

# **ELECTRICAL GENERAL NOTES:**

- ##-### INDICATES ELECTRICAL EQUIPMENT DEFINED IN ELECTRICAL SCHEDULES OR SPECIFICATION. REFER TO DRAWINGS CONTAINING ELECTRICAL SCHEDULES. PERMANENT NAMEPLATE SHALL MATCH FINAL EQUIPMENT NOMENCLATURE, NOT ELECTRICAL EQUIPMENT TAG NAME, REFER TO SPECIFICATIONS.
- 2. **{L###}** INDICATES THE LIGHTING SEQUENCE OF OPERATION FOR THE SPACE. REFER TO THE LIGHTING SEQUENCE OF OPERATION MATRIX ON SHEET E-400.
- "NL" INDICATES LUMINAIRE IS UNSWITCHED FOR NIGHT LIGHT.
   REFER TO SHEET E-400 FOR LIGHTING CONTROL ONE-LINE DIAGRAM.
- REFER TO SHEET E-400 FOR LIGHTING CONTROL ONE-LINE DIAGRAM.
   REFER TO SHEET E-400 FOR LUMINAIRE SCHEDULE.
   { L##} DENOTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE. REFER TO
- DESIGN INTENT AND MAY NOT REPRESENT EVERY DEVICE. PROVIDE MANUFACTURER SPECIFIC FLOOR PLAN LAYOUTS SHOWING LOCATION, ORIENTATION, AND COVERAGE AREA OF EACH CONTROL DEVICE, SENSOR, AND CONTROLLER/INTERFACE. AREAS REQUIRING MULTIPLE SENSOR DEVICES FOR APPROPRIATE COVERAGE, SUBMIT SPECIFIC MANUFACTURER-APPROVED SENSOR LAYOUT AS AN OVERLAY DIRECTLY ON THE PROJECT DRAWINGS, EITHER IN PRINT OR APPROVED ELECTRONIC FORM.

7. VACANCY/OCCUPANCY SENSOR LAYOUT: SENSORS ARE SHOWN ON THE PLANS FOR

F1 = FIXTURE TAG
1 = CIRCUIT NUMBER
a = SWITCH DESIGNATION

SHEET E-400.

LUMINAIRE KEY:

NAIRE a = SWITCH DESIGNATION NL = SUBSCRIPT (IF APPLICABLE)

\*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: F1/1/a/NL

DEVICE KEY:

DEVICE A = MOUNTING (IF APPLICABLE)

\*IF LABEL IS ORIENTED HORIZONTALLY A SLASH WILL SEPARATE THIS INFORMATION. EX: A / 1

ELECTRICAL MOUNTING SUBSCRIPT KEY:

A MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH

# **ELECTRICAL INSTALLATION NOTES:**

- THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
   CIRCUIT NUMBERS ARE SHOWN FOR CIRCUIT IDENTIFICATION. CIRCUITING SHALL AGREE WITH NUMBERING ON THE PANEL PROVIDED. COMMON NEUTRALS MAY NOT BE USED FOR BRANCH CIRCUITS. BALANCE THE LOAD ON PANEL AS EVENLY AS POSSIBLE BETWEEN EACH
- PHASE.

  3. LIFE SAFETY AND EQUIPMENT BRANCH WIRING FOR FEEDERS AND BRANCH CIRCUITS
  SHALL BE ROUTED IN SEPARATE RACEWAY, JUNCTION BOXES, PULL BOXES, AND CABINETS.
  WIRING FOR FACH RRANCH SHALL BE INDEPENDENT FROM OTHER RRANCHES INCLUDING
- WIRING FOR EACH BRANCH SHALL BE INDEPENDENT FROM OTHER BRANCHES, INCLUDING THE NORMAL BRANCH.

  4. FLUSH MOUNT ALL LIGHTING CONTROL DEVICES AT +42" FROM FLOOR (CENTERLINE
- DIMENSION), EXCEPT WHERE OTHERWISE NOTED. DEVICES MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.

  5. FLUSH MOUNT ALL DUPLEX RECEPTACLES AND TECHNOLOGY OUTLETS AT +18" FROM FLOOR (CENTERLINE DIMENSION), EXCEPT WHERE OTHERWISE NOTED. RECEPTACLES AND
- OUTLETS MAY BE SURFACE MOUNTED WHEN CONDUIT IS SPECIFIED EXPOSED.

  6. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO DIVISION 7 FOR ADDITIONAL INFORMATION
- AND REQUIREMENTS SPECIFIC TO FIRESTOPS. REFER TO DIVISION 7 FOR ADDITIONAL INFORMATION AND REQUIREMENTS SPECIFIC TO FIRESTOPPING.

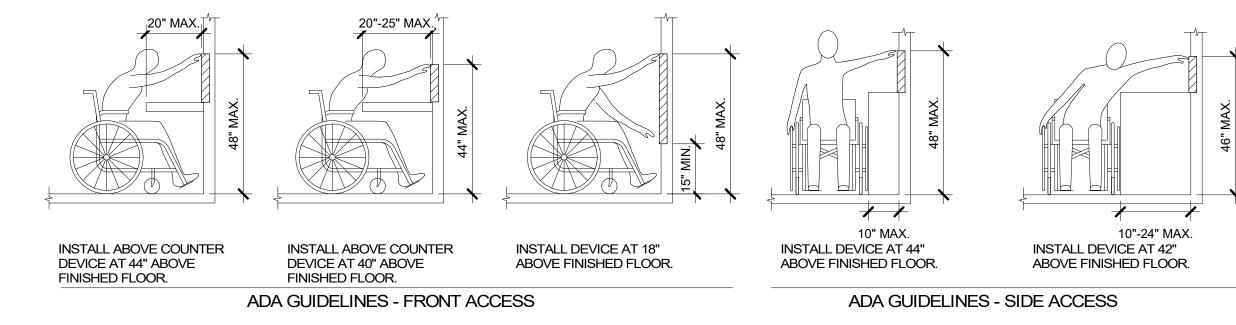
  7. CONTRACTOR SHALL COORDINATE THE LOCATION OF ALL CEILING MOUNTED DEVICES AND EQUIPMENT WITH LUMINAIRES. SPRINKLER. AND CEILING DIFFUSERS. CENTER ALL DEVICES
- IN CEILING TILE PATTERN. SMOKE DETECTORS AND OCCUPANCY/VACANCY SENSORS SHALL BE LOCATED NO CLOSER THAN 3 FEET TO AN AIR SUPPLY DIFFUSER OR RETURN GRILLE.
  8. ELECTRICAL AND TECHNOLOGY EQUIPMENT SHALL BE MOUNTED TO AVOID IMPEDANCE OF, OPERATION OF, AND/OR ACCESS TO ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF ELECTRICAL AND TELECOMMUNICATIONS EQUIPMENT, ON EQUIPMENT

SUPPLIED BY ANOTHER CONTRACTOR, SHALL BE APPROVED IN ADVANCE BY THE OTHER

- CONTRACTOR.

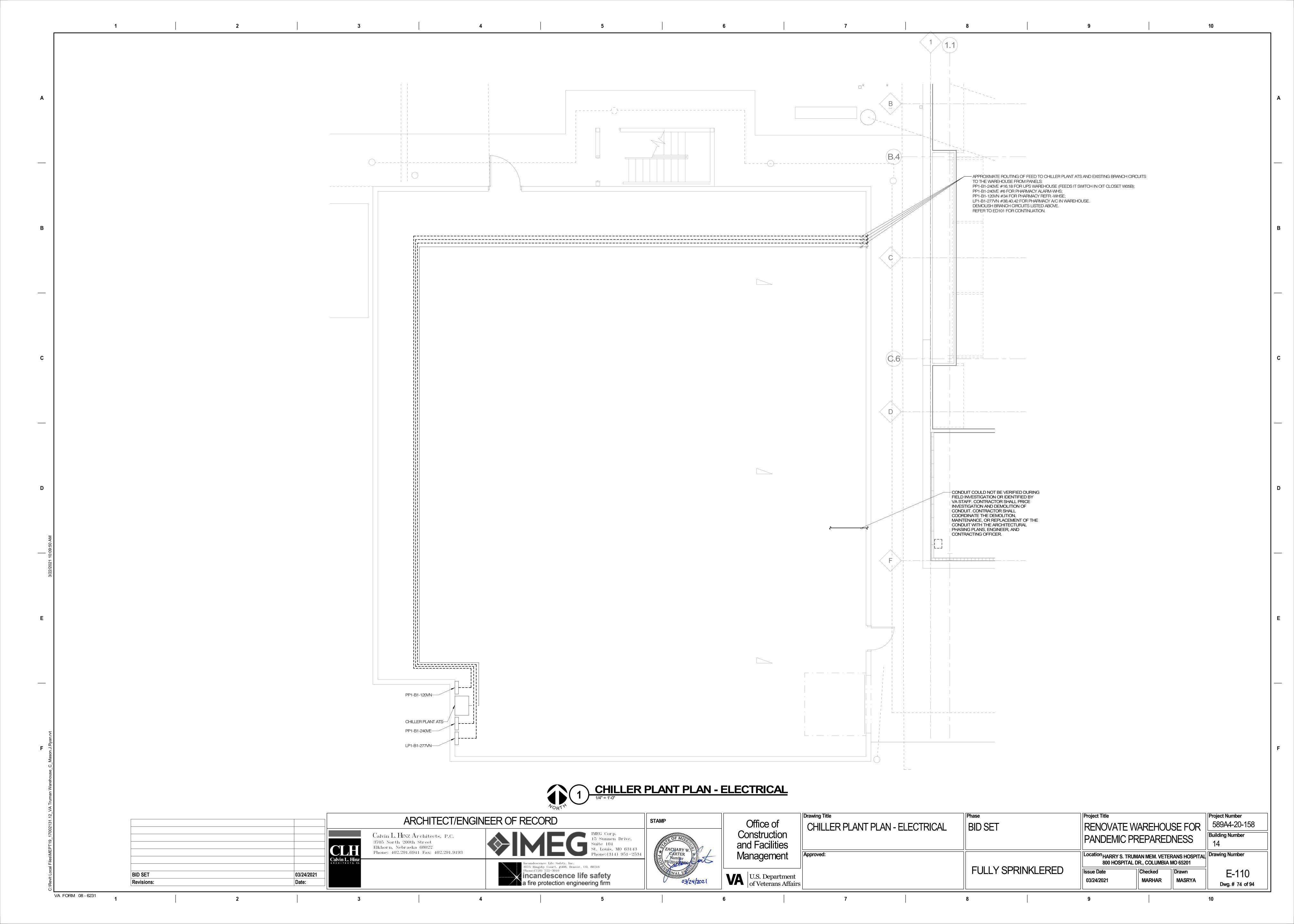
  9. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
- 10. ALL WELDING SHALL BE ACCORDING TO AMERICAN WELDING SOCIETY STANDARDS. CONTRACTOR SHALL FURNISH TO THE ARCHITECT/ENGINEER CERTIFICATES QUALIFYING EACH WELDER, PRIOR TO START OF WORK. THE ARCHITECT/ENGINEER RESERVES THE RIGHT TO REQUIRE QUALIFYING DEMONSTRATION, AT THE CONTRACTOR'S EXPENSE, OF
- ANY WELDERS ASSIGNED TO THE JOB.

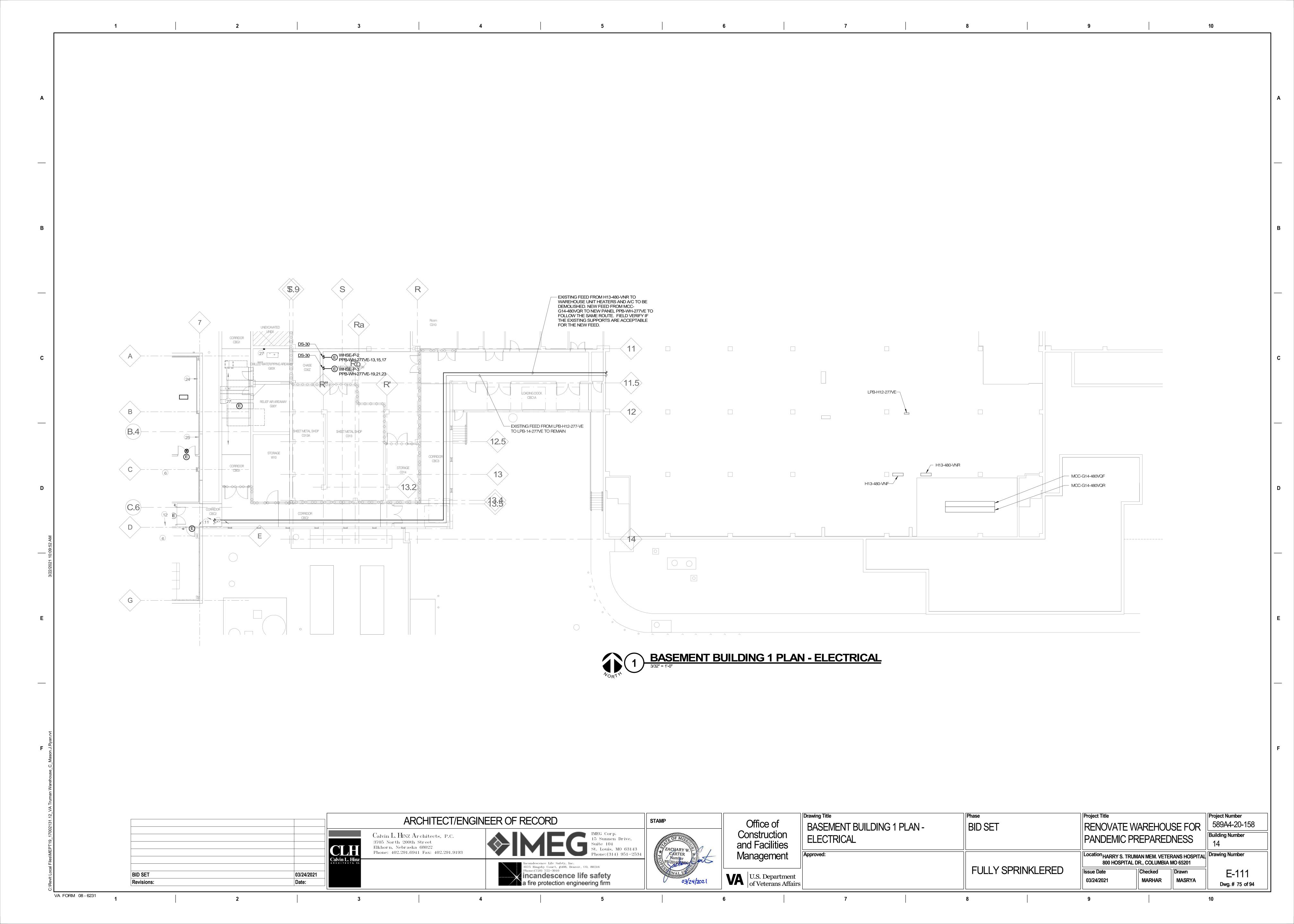
  11. CONTRACTOR SHALL REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF ELECTRICAL WORK. CONTRACTOR SHALL REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR.
- REFER TO ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL, TECHNOLOGY
  AUDIO/VISUAL, AND OTHER ELECTRICAL PLANS FOR EXACT LOCATIONS OF ALL CEILING
  MOUNTED DEVICES, OTHER THAN SPRINKLERS.
- 13. ELECTRICAL INDENTIFICATION. REFER TO APPROPRIATE SPECIFICATION SECTION 26 05 11 FOR COLOR/LABEL REQUIREMENTS FOR CONDUIT, BOX, CABLE/WIRE, AND EQUIPMENT.

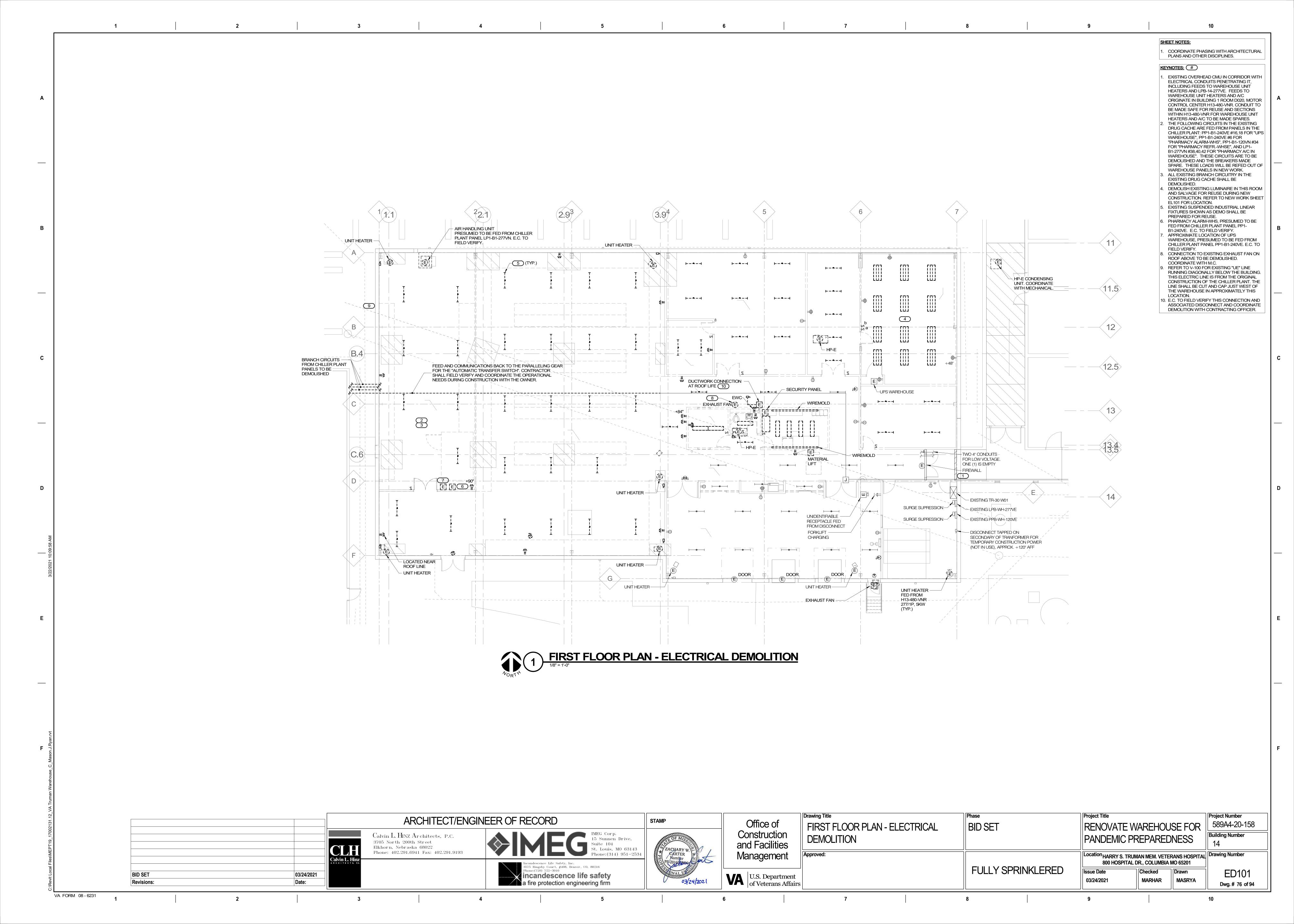


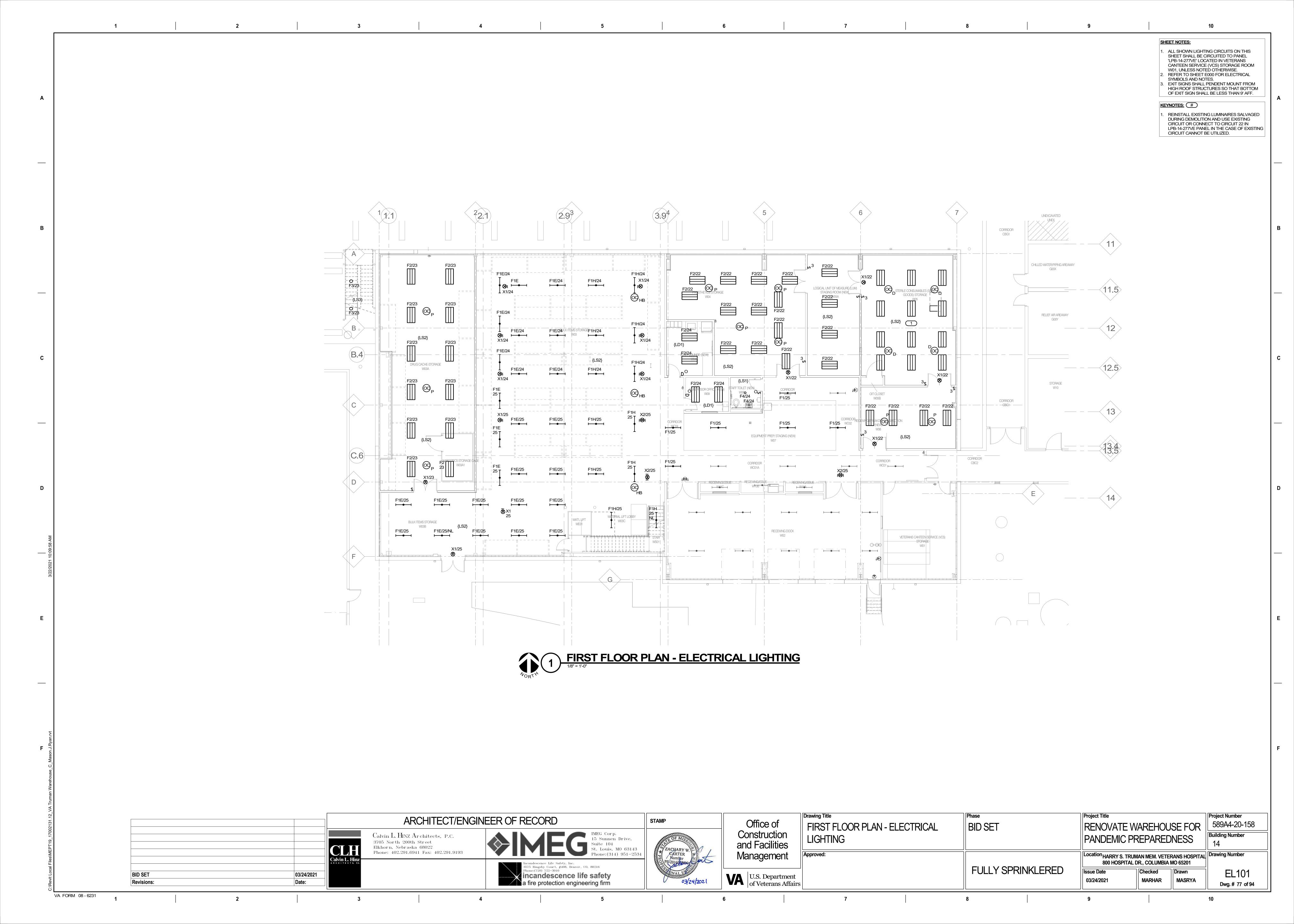
# ADA STANDARDS FOR ACCESSIBLE DESIGN

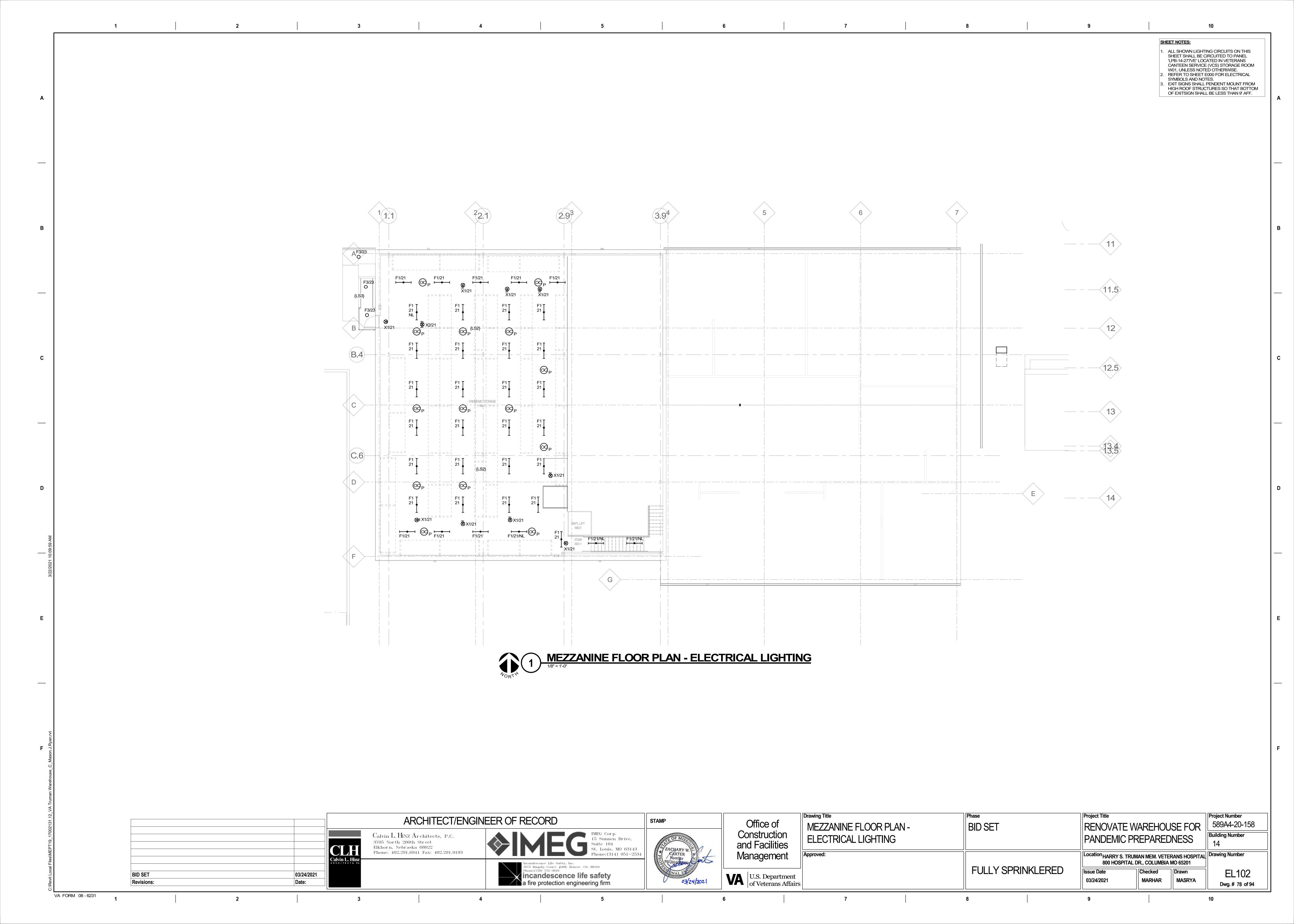
|                    |                     |   |  |               |                                    |                                      |                    | NOTO IDEE       | <del>// ( / / / / / / / / / / / / / / / / / </del> |                             |
|--------------------|---------------------|---|--|---------------|------------------------------------|--------------------------------------|--------------------|-----------------|--|-----------------------------|
|                    |                     | ARCHITECT/ENG   | SINEER OF RECORD   | STAMP         | Office of                          | Drawing Title  ELECTRICAL COVERSHEET | Phase<br>BID SET   | Project Title   | AREHOUSE FOR                                       | Project Number 589A4-20-158 |
|                    |                     | Calvin L. HINZ Architects, P.C.<br>3705 North 200th Street<br>Elkhorn, Nebraska 68022 | IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, MO 63143  | ZACHARY W.    | Construction and Facilities        | LLLOTTIO L OOVLI COLLLI              | DID OL 1           | PANDEMIC PR     |  | Building Number             |
|                    |                     | Phone: 402.291.6941 Fax: 402.291.9193  Calvin L. Hinz  ARCHITECTS, P.C.               | Phone: (314) 951-2534  Incandescence Life Safety, Inc. 3575 Ringsby Court, #408, Denver, CO, 80216 | PE-2016ghpang | Management                         | Approved:                            | FULLY SPRINKLERED  | 800 HOSPITAL DI | AN MEM. VETERANS HOSPITAL<br>R., COLUMBIA MO 65201 |                             |
| BID SET Revisions: | 03/24/2021<br>Date: |   | incandescence life safety a fire protection engineering firm                                       | 03/24/2021    | U.S. Department of Veterans Affair | es l                                 | FULLI SPRIINKLERED |                 | Checked Drawn MARHAR MASRYA                        | E-000<br>Dwg. # 73 of 94    |

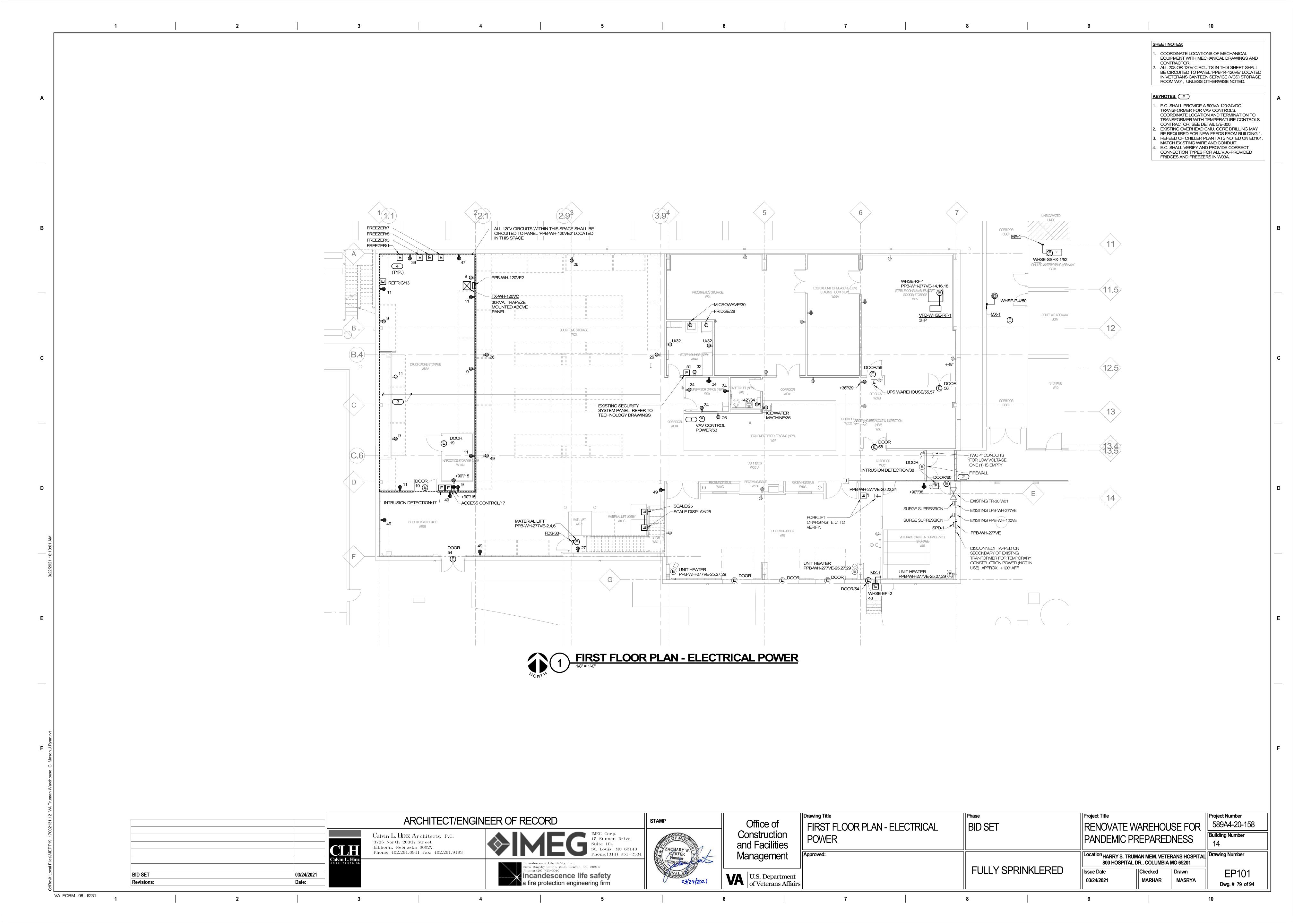


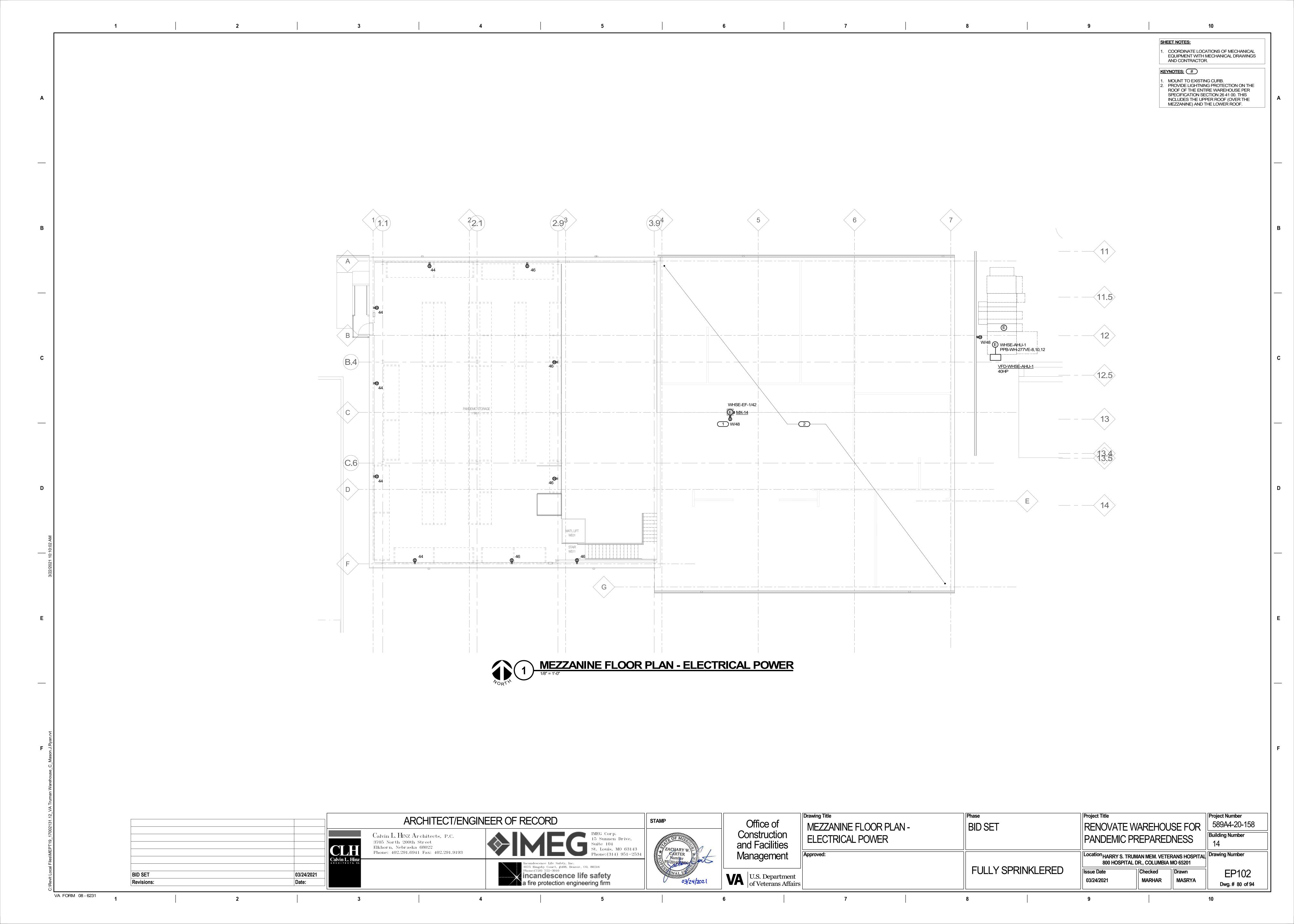


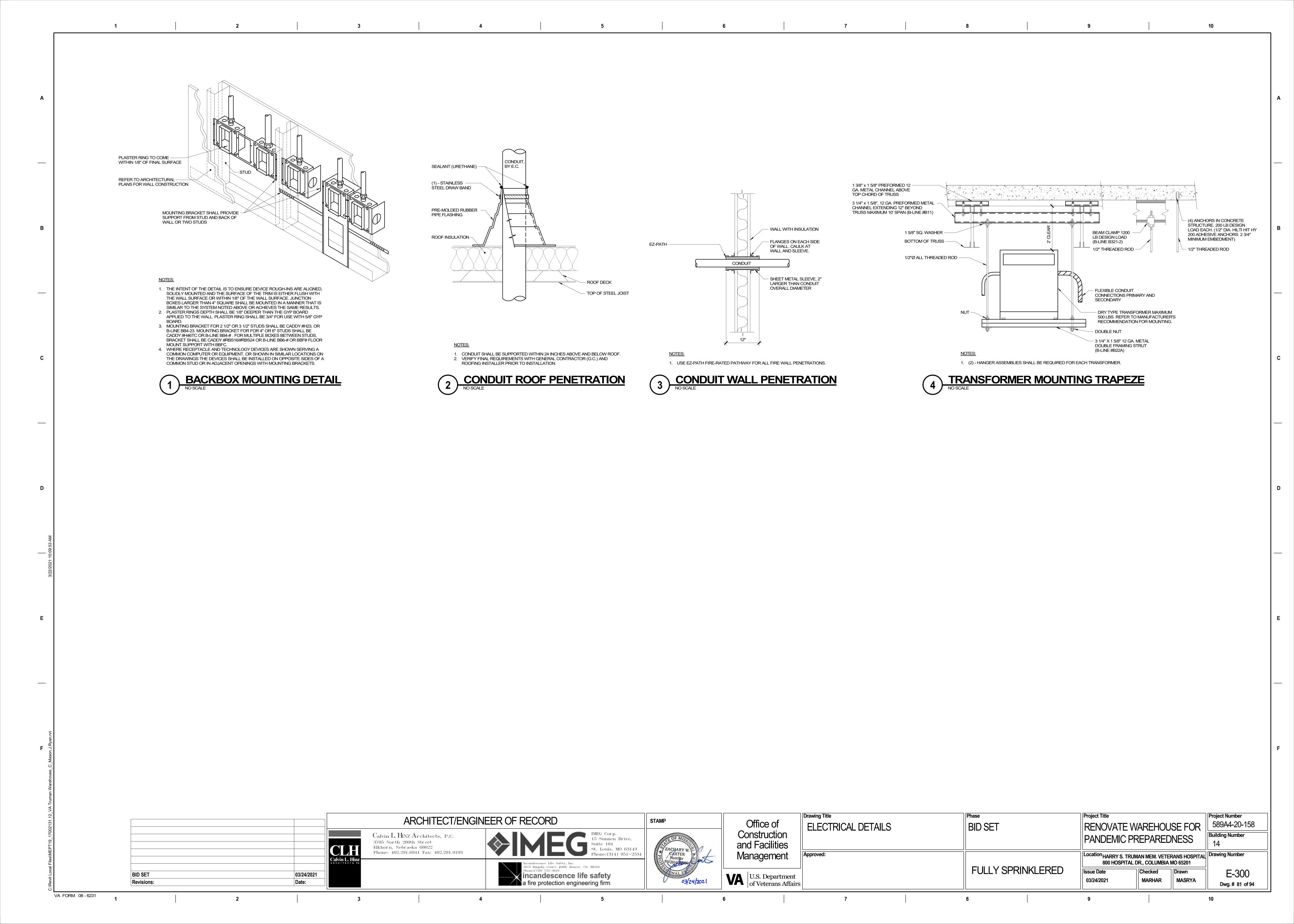






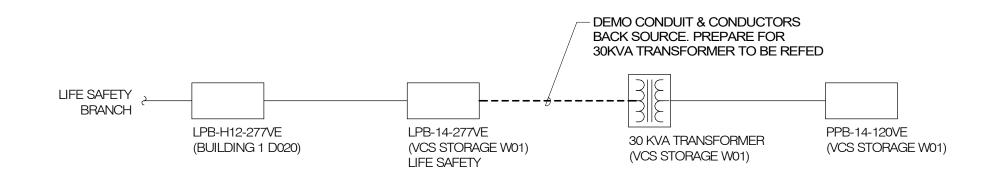






| <b>STARTER TYPE:</b> |                             |                 | ACCES    | SSORIES &          | OPTIONS | <u>S:</u>    |           |                |                         |                                |  |  |
|----------------------|-----------------------------|-----------------|----------|--------------------|---------|--------------|-----------|----------------|-------------------------|--------------------------------|--|--|
| PWM - PULSE WIDT     | PWM - PULSE WIDTH MODULATED |                 |          |                    |         | RIES         |           | TA - TWO       | CONVERTIBLE             | AUXILIARY CONTACTS             |  |  |
| 12PWM - 12 PULSE     | PWM                         |                 | 11)      | NCLUDES *          | ITEMS)  |              |           | ISO - ISOL     | ATION TRANS             | FORMER                         |  |  |
| 18PWM - 18 PULSE     | PWM                         |                 | *MA - I  | MANUAL SP          | EED ADJ | USTMENT      | -         | *SHZ - SK      | IP FREQUENC             | Y CAPABILITY                   |  |  |
| LINE DISCONNECT:     |                             |                 | *ET - E  | LECTRONIC          | THERM   | AL OVERI     | OADS      | RSS - REM      | MOTE START-S            | STOP                           |  |  |
| DS - DISCONNECT S    | SWITCH                      |                 | *CT - C  | CONTROL T          | RANSFOR | RMER, FU     | SED, 120\ | / RDR - REI    | MOTE DRIVE R            | UN                             |  |  |
| FDS - FUSED DISCO    | NNECT SWI                   | TCH             | *HA - F  | HAND-OFF-A         | UTO DO  | OR SWITC     | CH        | RFT - REN      | MOTE FAULT T            | RIP                            |  |  |
| CB - CIRCUIT BREA    | KER                         |                 | TO - M   | ELTING THE         | ERMAL O | VERLOAD      | S         | LR - INPU      | LR - INPUT LINE REACTOR |                                |  |  |
|                      |                             |                 | MOL -    | MULTIPLE N         | OTOR C  | VERLOAD      | )S        | HAR - PAS      | SSIVE HARMON            | NIC FILTER                     |  |  |
|                      |                             |                 |          |                    |         |              |           |                |                         |                                |  |  |
|                      |                             |                 | <u>'</u> |                    |         |              | DRIVE     |                |                         |                                |  |  |
| ITEM                 | LINE<br>DISC.               | DRIVE<br>BYPASS | SCCR     | CIRCUIT<br>VOLTAGE | POLES   | HP<br>RATING | TYPE      | TORQUE<br>TYPE | ENCLOSURE               | REQUIRED ACCESSORIES & OPTIONS |  |  |
| VFD-WHSE-RF-1        | DS                          | 3<br>CONTACT    | 100 kA   | 460 V              | 3       | 3            | PWM       | VARIABLE       | NEMA 3R                 | REFER TO<br>SPECIFICATIONS     |  |  |
| VFD-WHSE-AHU-1       | DS                          | 3<br>CONTACT    | 100 kA   | 460 V              | 3       | 40           | PWM       | VARIABLE       | NEMA 3R                 | REFER TO<br>SPECIFICATIONS     |  |  |

| TRANSFOR          | RMER S        | CHE  | DULE      |                  |             |        |          |      |    |                      |                    |
|-------------------|---------------|------|-----------|------------------|-------------|--------|----------|------|----|----------------------|--------------------|
| TYPE:             |               |      |           |                  |             |        |          |      |    | ACCESSORI            | ES & OPTIONS       |
| K1 - DOE 2016 DRY | / TYPE        |      |           | А                | UT - AUTOT  | RANSF  | ORMER    |      |    | AL - ALUMIN          | UM WINDINGS        |
| K4 - K4 RATED DR' | Y TYPE        |      |           | В                | B - BUCK BO | OOST   |          |      |    | CU - COPPE           | R WINDINGS         |
| K13 - K13 RATED D | RY TYPE       |      |           | L                | IQ - LIQUID | FILLED |          |      |    | RS - EPOXY           | RESIN ENCAPSULATED |
| HM - HARMONIC M   | IITIGATING    |      |           |                  |             |        |          |      |    | FL - FILTERE         | D                  |
| PE - NEMA PREMIL  | JM EFFICIENC  | Y    |           |                  |             |        |          |      |    | NV - NON-VE          | NTILATED           |
|                   |               |      |           |                  |             |        |          |      |    | NL - 200% R          | ATED NEUTRAL       |
|                   |               |      |           |                  |             |        |          |      |    | EL - ELECTR          | OSTATIC SHIELD     |
|                   |               |      |           |                  |             |        |          |      |    |                      |                    |
| ·                 |               |      |           | MAX.             | PRIMA       | ARY    | SECONE   | DARY |    |                      |                    |
| ITEM              | KVA<br>RATING | TYPE | ENCLOSURE | TEMP.<br>RISE C. | VOLTS       | PH     | VOLTS    | PH   |    | CCESSORIES &<br>TONS | COMMENTS           |
| TX-WH-120VC       | 30 kVA        | K-1  |           | 115              | 480         | 3      | 208Y/120 | 3    | CU |                      |                    |



LIFE SAFETY

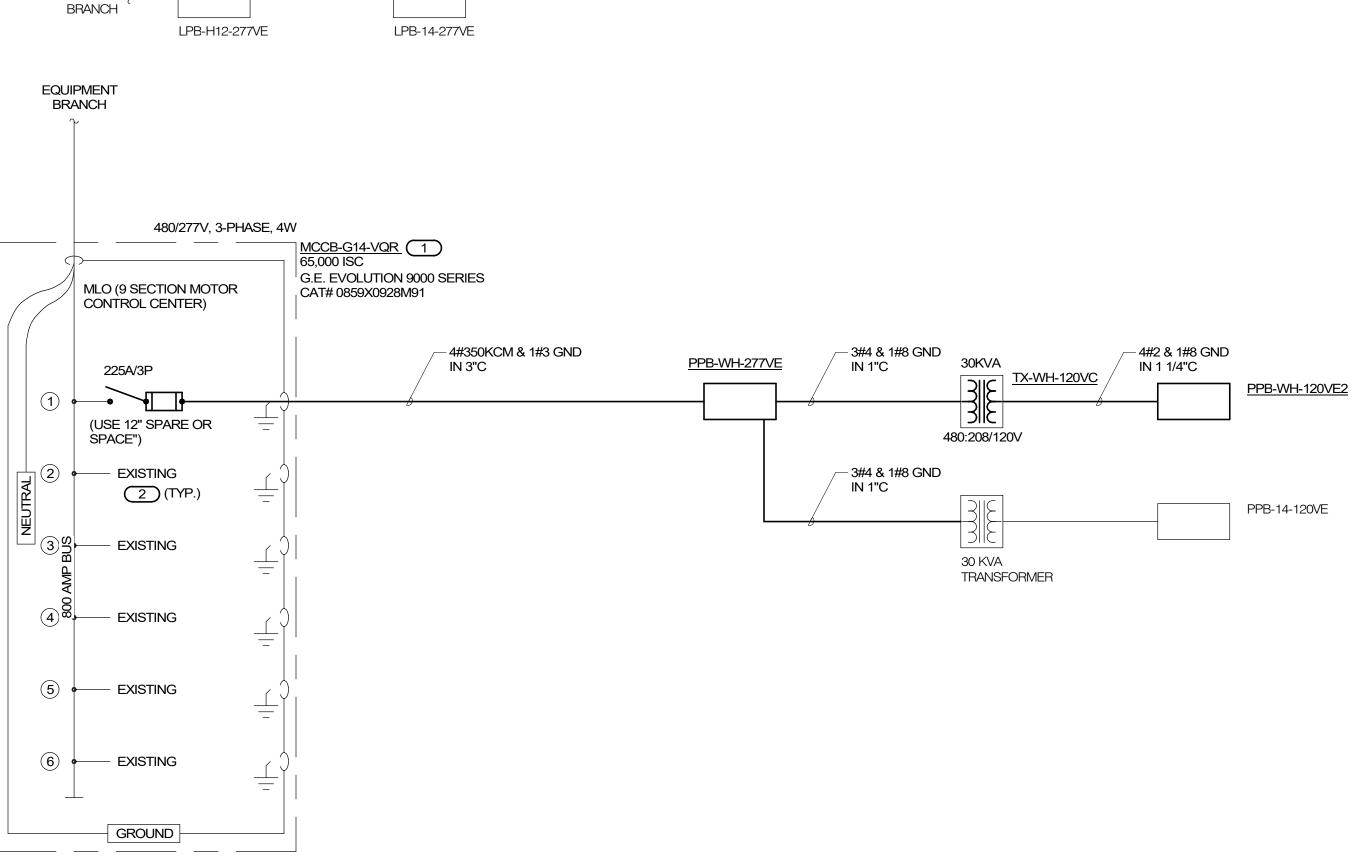
# ELECTRICAL ONE-LINE - DEMOLITION NO SCALE

1. AIC RATINGS LISTED FOR EQUIPMENT ARE MINIMUM REQUIREMENTS FOR BUS BRACING AND DEVICE RATING. ALL EQUIPMENT SHALL BE FULLY RATED UNLESS SPECIFICALLY NOTED AS SERIES RATED.

ONE LINE DIAGRAM NOTES

- 2. INDICATES DIRECT CONNECTION OF GROUND CONDUCTOR TO GROUND BUS.

  SUBSCRIPT "I" INDICATES DIRECT CONNECTION OF ISOLATED GROUND CONDUCTOR TO ISOLATED GROUND BUS.
- INDICATES O.Z. GEDNEY OR EQUAL GROUND BUSHING BONDED TO GROUND BUS WITH CONDUCTOR SIZED TO MAXIMUM FEEDER GROUND CAPACITY.
- 5 CONDUCTOR AND CONDUIT SIZES ON THE LINE AND LOAD SIDES OF ALL NON-FUSIBLE DISCONNECT SWITCHES SHALL BE IDENTICAL UNLESS NOTED OTHERWISE.
- 6. 3E INDICATES POTENTIAL TRANSFORMER, SIZE AS SPECIFIED.



# **ELECTRICAL ONE-LINE - NEW**

KEY NOTES: #

- 1. ELECTRICAL CONTRACTOR SHALL INSTALL THE NEW FEED WITHIN A SPARE OR SPACE WITHIN THE MOTOR CONTROL CENTER. REORGANIZATION OF THE MOTOR CONTROL CENTER SHALL BE PROVIDED TO ACCOMMODATE THE FEED. ELECTRICAL CONTRACTOR SHALL METER MULTIPLE ANTICIPATED SECTIONS OF THE NEW BREAKER. THE NEW LOAD SHALL BE PLACED ON THE SECTION AVAILABLE TO ACCOMMODATE THE NEW LOAD AS TO NOT OVERLOAD THE BUSSING.
- 2. NOT ALL EXISTING BREAKERS, MOTOR CONTROLS, OR SPACES ARE INDICATED. THESE SHALL BE FIELD VERIFIED.

| FV - FULL VOLT | TAGE     |             | *TA - TWO CO       | NVERTIBL | E AUXILIA    | ARY EI · | <ul> <li>ELECTRICAL IN</li> </ul> | NTERLOCK (2)-N.O. & (2)-N                                |
|----------------|----------|-------------|--------------------|----------|--------------|----------|-----------------------------------|--|
| YD - WYE - DEL | _TA      |             | S/N - INSULAT      | ED NEUTF | RAL ASSE     | MBLY SS  | - START-STOP                      | PUSHBUTTON IN DOOR                                       |
| RE - REVERSIN  | NG       |             |                    |          |              | HL       | - HANDLE PADL                     | _OCK HASP  |
| TW - 2 SPEED,  | 2 WINDIN | IG          |                    |          |              |          |                                   |  |
| SW - 2 SPEED,  | 1 WINDIN | lG          |                    |          |              |          |                                   |  |
| RV - REDUCED   | VOLTAG   | E AUTOXFMR  |                    |          |              |          |                                   |  |
| SS - SOLID STA | ATE      |             |                    |          |              |          |                                   |  |
| MS - MANUAL S  | STARTER  |             |                    |          |              |          |                                   |  |
| MX - MANUAL S  | SWITCH   |             |                    |          |              |          |                                   |  |
| FS - FUSED SW  |          |             |                    |          |              |          |                                   |  |
|                |          |             |                    |          |              |          |                                   |  |
|                |          | NECT TYPE & |                    |          | STAI         | RTER     |                                   |  |
| TAG NAME       | TYPE     | RATING      | CIRCUIT<br>VOLTAGE | POLES    | NEMA<br>SIZE | TYPE     | ENCLOSURE                         | REQUIRED ACCESSORIE OPTIONS                              |
| MX-1           |          | 30 A        | 120 V              | 1        | 0            | MX       |                                   | RP, 115 VOLT PILOT LIGH<br>CIRCUIT                       |
| MX-14          |          | 30 A        | 120 V              | 1        | 0            | MX       |                                   | RP, 115 VOLT PILOT LIGH<br>CIRCUIT                       |
| FDS-30         | FU       | 30 A        | 480 V              | 3        |              |          |                                   | E.C. TO COORDINATE FU<br>SIZE WITH APPROVED<br>EQUIPMENT |
| DS-30          | NF       | 30 A        | 480 V              | 3        |              |          |                                   | REFER TO SPECIFICATION                                   |

| •  | ) DOOR:   | DISTRIBUTION:  |                                 |                           |                                 | IWIDTH:                    |                                  |         | (L/L) LE   |                    |                      |               |   | 19 .156" ACRY                    |                                    |
|--|---|--|---------------------------------|---------------------------|---------------------------------|----------------------------|----------------------------------|---------|--|--------------------|----------------------|---------------|---|----------------------------------|------------------------------------|
|  | FA - FLAT ALUMINUM  | II - ANSI/IES TYPE   |                                 |                           |                                 |                            | IARROW                           | SPOT    | A125'  |                    |                      |               |   | DIFFUSE CLE                      | EAR                                |
| F  | FS - FLAT STEEL   | III - ANSI/IES TYPE  | 3 DISTF                         | RIBUTION                  | N SP - S                        | SPOT                       |                                  |         | B - BAFI   | FLE/LOU            | VER                  |               | N - NONE                                  |                                  |                                    |
| F  | RA - REGRESSED ALUMINUN   | /I IV - ANSI/IES TYPE  | 4 DIST                          | RIBUTION                  | N MD - N                        | MEDIUM                     |                                  |         | C - CLE  | AR ALZA            | ιK                   |               | P - POLYC                                 | ARBONATE                         |                                    |
| F  | RS - REGRESSED STEEL  | V - ANSI/IES TYPE  | 5 DISTR                         | RIBUTION                  | ا WD - ۱                        | WIDE                       |                                  |         | F - FRO  | STED AC            | CRYLIC               |               | R - HIGH I                                | MPACT DR AC                      | RYLIC                              |
| F  | FINISH:   |  |                                 |                           | VWD -                           | - VERY V                   | VIDE                             |         | G - TEM  | PERED              | GLASS                |               | SS - SEMI-                                | SPECULAR C                       | LEAR                               |
| F  | PAF - PAINT AFTER   |  |                                 |                           | WW -                            | WALL W                     | /ASH                             |         | K - KSH  | 12 .125" .         | ACRYLIC              | 2             | O - OTHER                                 | R (SEE DESCR                     | RIPTION)                           |
| (  | CFSA - COLOR-FINISH SELEC   | CTION BY ARCHITEC  | CT                              |                           |                                 |                            |                                  |         |  |                    |                      |               | [DESIGN S                                 | SPECIFIC BLAN                    | NKS]                               |
| MTG)   | MOUNTING:   | RE - RECESSED  |                                 |                           |                                 |                            |                                  |         | (WATT)   | PER:               | FIX - F              | IXTURE        | , FT - FOOT, L                            | _AMP                             |                                    |
| (  | CL - CEILING SURFACE  | SP - SUSPENDED   |                                 |                           |                                 |                            |                                  |         | (TYPE)   | LED                |                      |               | RGB - COL                                 | OR CHANGIN                       | IG LED                             |
|  | CV - COVE   | SU - SURFACE   |                                 |                           |                                 |                            |                                  |         | LED - LI   | GHT EM             | ITTING E             | DIODE         | RGBW - C                                  | OLOR CHANG                       | ING +                              |
| F  | FR - FLANGED RECESSED   | UC - UNDER CABIN   | NET                             |                           |                                 |                            |                                  |         | TLED - 1   | TUBULAI            | R LED LA             | AMP           | RGBA - CC                                 | DLOR CHANGI                      | NG +                               |
| F  | P - PERIMETER   | WL - WALL  |                                 |                           |                                 |                            |                                  |         | OLED -   | ORGANI             | C LED                |               | RLED - RE                                 | TROFIT LED                       |                                    |
| F  | PL - POLE   | O - OTHER (SEE D   | ESCRIP                          | TION)                     |                                 |                            |                                  |         | DLED - I   | DYNAMI             | C TUNAE              | BLE LED       | WLED - WA                                 | ARM DIM LED                      |                                    |
| TYPE)  | ) DRIVER:   |  |                                 | •                         |                                 |                            |                                  |         | 1  |                    |                      |               |   |                                  |                                    |
| C  | 0-10V - 0-10V DIMMING   | EB - ELECTRONIC  |                                 |                           | HL - H                          | IIGH/LO\                   | N (100%                          | /50%)   |  |                    |                      |               | MV - MULT                                 | I-VOLTAGE                        |                                    |
|  | DALI - DIGITAL  | ELV - ELECTRONIC   | C LOW V                         | OLTAGE                    | LINE -                          | - LINE V                   | OLTAGE                           |         |  |                    |                      |               | REM - REM                                 | ИОТЕ                             |                                    |
|  | DMX - DIGITAL MULTIPLEX   |  |                                 |                           |                                 |                            | EVEL SW                          |         | 3  |                    |                      |               |   | R (SEE DESCR                     | RIPTION)                           |
|  | OG NUMBER SHALL NOT BE  |  |                                 |                           |                                 |                            |                                  |         |  |                    |                      |               |   |                                  |                                    |
|  | RIPTION AND THE SPECIFICA<br>RED. THE FIRST MANUFACTI   |  |                                 |                           |                                 | CATALO                     | U NUME                           | sek 101 | JE I ERMIÎ   | NE IHE I           | =XACT N              | IA I ERIA     | AL AND ACCES                              | SSUKIES IUE                      | 5 <b>L</b>                         |
|  |   |  | REFER                           |                           |                                 |                            |                                  |         |  |                    |                      |               |   |                                  |                                    |
| REFER<br>NTERI   | R TO SPECIFICATION SECTION<br>IOR CORRELATED COLOR TI<br>RIOR CORRELATED COLOR T  | EMPERATURE 3500F   | 1 00 AND<br>K, COLO             | R RENDI                   | ERING I                         | NDEX (C                    | CRI) AT C                        | OR ABO  | /E 80, UNI   | LESS NO            | TED OT               | HERWIS        | SE.<br>ISE.                               |                                  |                                    |
| REFER<br>NTERI   | IOR CORRELATED COLOR TI   | EMPERATURE 3500F   | 1 00 AND<br>K, COLO             | R RENDI                   | ERING I                         | NDEX (C<br>INDEX (         | CRI) AT C                        | OR ABO  | /E 80, UNI   | LESS NO<br>ILESS N | TED OT               | HERWIS        | D   | DRIVE                            | ER T                               |
| REFER<br>NTERI<br>EXTER  | IOR CORRELATED COLOR TI   | EMPERATURE 3500I<br>FEMPERATURE 4000   | 1 00 ANE<br>K, COLO<br>OK, COLO | R RENDI                   | ERING I                         | DIMEN                      | CRI) AT CCRI) AT C               | OR ABO  | VE 80, UNI VE 70, UN WA  | LESS NO            | OTED OT              | LEI           | D ABSOLUTE LUMENS                         |                                  |                                    |
| REFER<br>NTERI<br>EXTER  | IOR CORRELATED COLOR TI<br>RIOR CORRELATED COLOR T<br>DESCRIPTI   | EMPERATURE 35001<br>FEMPERATURE 4000   | 1 00 AND<br>K, COLO<br>OK, COLO | R RENDI<br>DR REND<br>MTG | ERING II                        | DIMEN W                    | CRI) AT CCRI) AT C               | OR ABO  | VE 80, UNIVE 70, | ATT PER            | OTED OT OTED OT TYPE | LEI<br>QTY    | D ABSOLUTE LUMENS (MIN)                   | VOLTS                            | TYPE                               |
| REFER<br>NTERI<br>EXTER  | IOR CORRELATED COLOR TI   | EMPERATURE 35001<br>FEMPERATURE 4000<br>ION<br>MEL FINISH,<br>MOUNT AT 12'-6"  | 1 00 ANE<br>K, COLO<br>OK, COLO | R RENDI                   | ERING II                        | DIMEN                      | CRI) AT CCRI) AT C               | OR ABO  | VE 80, UNI VE 70, UN WA  | LESS NO            | OTED OT              | LEI           | D ABSOLUTE LUMENS                         |                                  | TYPE 0-10V                         |
| REFER<br>NTERI<br>EXTER  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FIX   | EMPERATURE 35001 FEMPERATURE 4000  ION MEL FINISH, MOUNT AT 12'-6" ERWISE. XTURE WITH  | 1 00 AND<br>K, COLO<br>OK, COLO | R RENDI<br>DR REND<br>MTG | ERING II                        | DIMEN W                    | NSIONS H 4 1/4"                  | OR ABO  | VE 80, UNIVE 70, | ATT PER            | OTED OT OTED OT TYPE | LEI<br>QTY    | D ABSOLUTE LUMENS (MIN)                   | VOLTS                            | <b>TYPE</b> 0-10\                  |
| REFER<br>NTERI<br>EXTER  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH  | EMPERATURE 35001 FEMPERATURE 4000  MEL FINISH, MOUNT AT 12'-6" ERWISE.  XTURE WITH ENSOR FOR   | L/L                             | MTG                       | ERING II                        | DIMEN  W 4 1/16"           | NSIONS H 4 1/4"                  | OR ABO  | WAANSI WATTS   | ATT PER FIX        | TYPE  LED            | LEI QTY       | ABSOLUTE LUMENS (MIN)                     | <b>VOLTS</b> 277 V               | <b>TYPE</b> 0-10\                  |
| REFER<br>NTERI<br>EXTER<br>ITEM<br>F1  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FIX INTEGRAL OCCUPANCY SE SALVAGE/REUSE. MOUNT  | EMPERATURE 35001<br>FEMPERATURE 4000<br>MEL FINISH,<br>MOUNT AT 12'-6"<br>ERWISE.<br>XTURE WITH<br>ENSOR FOR<br>AT +12'-6" UNLESS  | L/L                             | MTG                       | ERING II DERING  L 4'-0"        | DIMEN  W 4 1/16"           | NSIONS  H 4 1/4"                 | OR ABO  | WAANSI WATTS   | ATT PER FIX        | TYPE  LED            | LEI QTY       | ABSOLUTE LUMENS (MIN)                     | <b>VOLTS</b> 277 V               | 0-10V                              |
| REFER<br>NTERI<br>EXTER<br>ITEM<br>F1  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FI INTEGRAL OCCUPANCY SE SALVAGE/REUSE. MOUNT NOTED OTHERWISE.  SAME AS F1, WITH HIGHER MOUNTED AT +27'-0" UNLES  | EMPERATURE 35001 FEMPERATURE 4000  ION MEL FINISH, MOUNT AT 12'-6" ERWISE.  XTURE WITH ENSOR FOR AT +12'-6" UNLESS   | L/L<br>O                        | MTG SP                    | ERING II DERING  L 4'-0"        | DIMEN  W 4 1/16"           | NSIONS  H 4 1/4"                 | OR ABO  | WA ANSI WATTS 35 W   | TT PER FIX         | TYPE LED             | LEI QTY 1     | ABSOLUTE LUMENS (MIN) 3800                | <b>VOLTS</b> 277 V 277 V         | 0-10\<br>0-10\                     |
| REFER<br>NTERI<br>EXTER<br>ITEM<br>=1  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FI; INTEGRAL OCCUPANCY SE SALVAGE/REUSE. MOUNT NOTED OTHERWISE.  SAME AS F1, WITH HIGHER MOUNTED AT +27'-0" UNLES OTHERWISE.  | EMPERATURE 35001 FEMPERATURE 4000  ION  MEL FINISH, MOUNT AT 12'-6" ERWISE.  XTURE WITH ENSOR FOR AT +12'-6" UNLESS  LUMEN PACKAGE. SS NOTED   | L/L<br>O                        | MTG SP SP                 | ERING II DERING  L 4'-0"        | DIMEN  W  4 1/16"  4 1/16" | NSIONS  H 4 1/4"                 | OR ABO  | WA ANSI WATTS 35 W   | TT PER FIX FIX     | TYPE LED  LED        | LEI QTY 1     | ABSOLUTE LUMENS (MIN)  3800  7000         | VOLTS<br>277 V<br>277 V          | 0-10\<br>0-10\<br>0-10\            |
| REFER<br>NTERI<br>EXTER<br>ITEM<br>F1  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FI; INTEGRAL OCCUPANCY SE SALVAGE/REUSE. MOUNT NOTED OTHERWISE.  SAME AS F1, WITH HIGHER MOUNTED AT +27'-0" UNLES OTHERWISE.  RECESSED VOLUMETRIC T ACRYLIC DIFFUSER.   | EMPERATURE 35001 FEMPERATURE 4000  MEL FINISH, MOUNT AT 12'-6" ERWISE.  XTURE WITH ENSOR FOR AT +12'-6" UNLESS ELUMEN PACKAGE. SS NOTED  | L/L O                           | MTG SP SP RE              | ERING II DERING  L 4'-0"  4'-0" | DIMEN  W 4 1/16"           | NSIONS  H 4 1/4"  4 1/4"         | DIA.    | WA ANSI WATTS 35 W 60 W  | PER FIX FIX        | TYPE LED  LED        | LEI QTY 1 1   | ABSOLUTE LUMENS (MIN) 3800 3800 7000 4600 | VOLTS 277 V 277 V 277 V          | 0-10\\ 0-10\\ 0-10\\ 0-10\\        |
| REFER<br>NTERI<br>EXTER<br>ITEM<br>F1<br>F1<br>F1<br>F1<br>F1<br>F1  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FI: INTEGRAL OCCUPANCY SE SALVAGE/REUSE. MOUNT NOTED OTHERWISE.  SAME AS F1, WITH HIGHER MOUNTED AT +27'-0" UNLES OTHERWISE.  RECESSED VOLUMETRIC T   | EMPERATURE 35001 FEMPERATURE 4000 EMPERATURE 4 | L/L O                           | MTG SP SP                 | ERING II DERING  L 4'-0"  4'-0" | DIMEN  W  4 1/16"  4 1/16" | NSIONS  H 4 1/4"                 | OR ABO  | WA ANSI WATTS 35 W 60 W  | TT PER FIX FIX     | TYPE LED  LED        | LEI QTY 1     | ABSOLUTE LUMENS (MIN)  3800  7000         | VOLTS<br>277 V<br>277 V          | TYPE                               |
| REFER<br>NTERI<br>EXTER<br>ITEM<br>F1<br>F1<br>F1<br>F1<br>F1<br>F1  | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FIX INTEGRAL OCCUPANCY SE SALVAGE/REUSE. MOUNT NOTED OTHERWISE.  SAME AS F1, WITH HIGHER MOUNTED AT +27'-0" UNLES OTHERWISE.  RECESSED VOLUMETRIC T ACRYLIC DIFFUSER.  CIRCULAR OR RECTANGUL MOUNT EXTERIOR CANOPY OUTDOOR/WET RATED. CA CORROSION-RESISTANT H FROSTED LENS. 85 CRI. 400 OPEN RECESSED DOWNLIG SPECULAR PARABOLIC SEI | EMPERATURE 35001 FEMPERATURE 4000 EMPERATURE 4 | L/L O                           | MTG SP SP RE              | ERING II DERING  L 4'-0"  4'-0" | DIMEN  W  4 1/16"  4 1/16" | NSIONS  H 4 1/4"  4 1/4"         | DIA.    | WA ANSI WATTS 35 W 60 W  | PER FIX FIX        | TYPE LED  LED        | LEI QTY 1 1   | ABSOLUTE LUMENS (MIN) 3800 3800 7000 4600 | VOLTS 277 V 277 V 277 V          | 0-10\\ 0-10\\ 0-10\\ 0-10\\ 0-10\\ |
| REFERNTERIEXTERIESTERiesteries | DESCRIPTI 4' INDUSTRIAL, BAKED ENA DIFFUSE FROSTED LENS. M A.F.F. UNLESS NOTED OTH EXISTING 4' INDUSTRIAL FIX INTEGRAL OCCUPANCY SE SALVAGE/REUSE. MOUNT NOTED OTHERWISE.  SAME AS F1, WITH HIGHER MOUNTED AT +27'-0" UNLES OTHERWISE.  RECESSED VOLUMETRIC T ACRYLIC DIFFUSER.  CIRCULAR OR RECTANGUL MOUNT EXTERIOR CANOPY OUTDOOR/WET RATED. CA CORROSION-RESISTANT H FROSTED LENS. 85 CRI. 400 OPEN RECESSED DOWNLICE                       | EMPERATURE 35001 FEMPERATURE 4000 EMPERATURE 4 | L/L O O O                       | MTG SP SP RE SU           | ERING II DERING  L 4'-0"  4'-0" | DIMEN  W  4 1/16"  4 1/16" | NSIONS  H 4 1/4"  4 1/4"  5 1/2" | DIA.    | WA ANSI WATTS 35 W 60 W 27 W   | PER FIX FIX FIX    | TYPE LED  LED  LED   | LEI QTY 1 1 1 | ABSOLUTE LUMENS (MIN) 3800 7000 4600 3500 | VOLTS 277 V  277 V  277 V  277 V | 0-10\\ 0-10\\ 0-10\\ 0-10\\        |

LED LUMINAIRE SCHEDULE

TEST & DIAGNOSTICS OF INVERTER AND

|   | ING SEQUENCE OF OPERATION  |
|---|--|
| 2.[#B] PUSH<br>SWITCHING<br>COORDINAT<br>3.[Z#] DENO<br>ASSOCIATE<br>4.a = SWITC<br>5.VERIFY AN<br>ZONES PER<br>7.VERIFY AN | OTES THE LIGHTING SEQUENCE OF OPERATIONS FOR THIS SPACE. BUTTON REFERS TO SCENE QUANTITY. CONTROL STATION SHALL BE CAPABLE OF [RAISE/LOWER AND] ON/OFF FOR MULTIPLE SCENES AS INDICATED ON SHEETS AND THE LIGHTING SEQUENCE OF OPERATIONS {L##}. 'E QUANTITIES OF BUTTONS FOR CONTROL STATIONS WITH LIGHTING CONTROL MANUFACTURER. TES LIGHTING CONTROL ZONE. PROVIDE SEPARATE CONTROL OF EACH CONTROLLED ZONE. LUMINAIRES D WITH THE SAME ZONE SHALL OPERATE TOGETHER WITHIN THE SAME PROGRAMMED SCENE. 'SH DESIGNATION FOR LIGHTING CONTROL ID COORDINATE ALL TIME CLOCK SETTINGS WITH OWNER PRIOR TO FINAL PROGRAMMING. ID COORDINATE ALL PUSH BUTTON WALL DEVICES AND QUANTITIES OF INDIVIDUAL BUTTONS WITH SCENES AN LOCATION. ID COORDINATE ALL PUSH BUTTON QUANTITIES AND SCENE NAMES WITH OWNER PRIOR TO SUBMITTING ITEMPLATE TO MANUFACTURER. |
| PLAN ID   | LIGHTING SWITCHED  |
| {LD1}   | Sequence: Dimmed lights are vacancy controlled in this space.  ON: The lights turn on using wall controller.  ADJUST: The dimming luminaires are raised / lowered using a controller.  OFF: After the space has been vacant for 15 minutes, the lights will automatically turn off or via manual switch.   |
| {LS1}   | Sequence: Switched lights are controlled in this space. ON: The lights turn on by occupancy sensor or switch. OFF: After the space has been vacant for 15 minutes, the lights will automatically reduce to 50%. Lights turn off via time clock or via manual switch after hours.   |
| {LS2}   | Sequence: Aisle and open area lighting are controlled in this space. Each aisle shall be an independent zone. ON: The aisle and open area lights turn 100% on by ceiling occupancy sensor.  OFF: After the space has been vacant for 15 minutes, the lights will automatically reduce to 50%. Lights turn off via time clock or switch in Supervisor Office W09.   |
|   |  |

|                             | NOTE:       | ALL DISCONN        | ECTS (EXCEPT       | MANUAL    | STARTER      | RS) SI | HALL | . BE HEAVY DU | ITY TYPE.  |
|-----------------------------|-------------|--------------------|--------------------|-----------|--------------|--------|------|---------------|--|
| DISCONNECT                  | TVDE.       |                    | ACCECCODIE         | C O ODTIO | NO           |        |      |               |  |
| DISCONNECT TYPE: FU - FUSED |             |                    | SA - STANDAR       |           |              |        | DE   | DUASE LOSS I  | PROTECTION (5 HP OR  |
| NF - NON-FUS                | SED         |                    | *CT - CONTRO       |           |              |        |      |               | RMAL OVERLOADS (1  |
| CB - CIRCUIT                |             |                    | *EO - ELECTR       |           |              |        |      |               | CTOR SWITCH IN DOOR  |
| CB - CIRCOIT                | DINLANLIN   |                    | *HA - HAND-OI      |           | •            |        |      |               | PILOT LIGHT IN DOOR  |
| STARTER TY                  | PE:         |                    | *RP - RED (RU      |           |              |        |      | . ,           | LE AUXILIARY CONTACTS                                      |
| FV - FULL VO                |             |                    | *TA - TWO CO       |           |              |        |      |               | ITERLOCK (2)-N.O. & (2)-N.C.                               |
| YD - WYE - DI               |             |                    |                    |           |              |        |      |               | PUSHBUTTON IN DOOR   |
| RE - REVERS                 | ING         |                    |                    |           |              |        | HL - | HANDLE PADL   | OCK HASP   |
| TW - 2 SPEE                 | D, 2 WINDIN | lG                 |                    |           |              |        |      |               |  |
| SW - 2 SPEE                 | D, 1 WINDIN | NG                 |                    |           |              |        |      |               |  |
| RV - REDUCE                 | D VOLTAG    | E AUTOXFMR         |                    |           |              |        |      |               |  |
| SS - SOLID S                | TATE        |                    |                    |           |              |        |      |               |  |
| MS - MANUAL                 | STARTER     |                    |                    |           |              |        |      |               |  |
| MX - MANUAL                 | SWITCH      |                    |                    |           |              |        |      |               |  |
| FS - FUSED S                | WITCH       |                    |                    |           |              |        |      |               |  |
|                             |             |                    |                    |           |              |        |      |               |  |
|                             |             | NECT TYPE & RATING |                    |           | STAF         | RTER   |      |               |  |
| TAG NAME                    | TYPE        | RATING             | CIRCUIT<br>VOLTAGE | POLES     | NEMA<br>SIZE | TYF    | PΕ   | ENCLOSURE     | REQUIRED ACCESSORIES & OPTIONS                             |
| MX-1                        |             | 30 A               | 120 V              | 1         | 0            | M      | X    |               | RP, 115 VOLT PILOT LIGHT<br>CIRCUIT                        |
| MX-14                       |             | 30 A               | 120 V              | 1         | 0            | M      | X    |               | RP, 115 VOLT PILOT LIGHT<br>CIRCUIT                        |
| FDS-30                      | FU          | 30 A               | 480 V              | 3         |              |        |      |               | E.C. TO COORDINATE FUSE<br>SIZE WITH APPROVED<br>EQUIPMENT |
| DS-30                       | NF          | 30 A               | 480 V              | 3         |              |        |      |               | REFER TO SPECIFICATIONS                                    |

|                    |   |                     | ARCHITECT/ENGI  | NEER OF RECORD   | STAMP                       | Office of                           | Drawing Title  ELECTRICAL DIAGRAMS A | AND  | Phase<br>BID SET  | Project Title                       | WARFHOLE                               |                           | Project Number<br>589A4-20-158 |
|--------------------|---|---------------------|---|--|-----------------------------|-------------------------------------|--------------------------------------|------|-------------------|-------------------------------------|--|---------------------------|--------------------------------|
|                    |   |                     | Calvin L. HINZ Architects, P.C.<br>3705 North 200th Street<br>Elkhorn, Nebraska 68022 | IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, MO 63143  | ZACHARY W                   | Construction and Facilities         | SCHEDULES                            | u 10 |                   | PANDEMIC                            |  |                           | Building Number                |
|                    |   |                     | Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193                         | Phone: (314) 951–2534  Incandescence Life Safety, Inc.  3575 Ringsby Court, #408 Denver, CO, 80216 | CARTER Number PE-20160 page | Management                          | Approved:                            |      |                   | Location HARRY S. TF<br>800 HOSPITA | RUMAN MEM. VETER<br>AL DR., COLUMBIA N | RANS HOSPITAL<br>NO 65201 | Drawing Number                 |
| BID SET Revisions: |   | 03/24/2021<br>Date: |   | Phone: (720) 722-3010  incandescence life safety  a fire protection engineering firm               | 03/24/2021                  | U.S. Department of Veterans Affairs |                                      |      | FULLY SPRINKLERED | Issue Date<br>03/24/2021            | Checked<br>MARHAR                      | Drawn<br>MASRYA           | E-400<br>Dwg. # 82 of 94       |
| 1                  | 2 |                     | 3   | 4   5  |                             | 6                                   | 7                                    |      | 8                 | 9                                   |  |                           | 10                             |

VA FORM 08 - 6231

PPB-WH-277VE **EXISTING PANEL: PPB-WH-120VE MOUNTING:** SURFACE MAIN: 225 A MLO **MOUNTING:** SURFACE MAIN: 100 A MCB **ENCLOSURE**: BOLT-ON **ENCLOSURE**: BOLT-ON SOLID NEUTRAL SOLID NEUTRAL **VOLTS**: 480/277 Wye **VOLTS:** 120/208 Wye FED FROM: EXIST. 30 KVA TRANSFORMER PHASE: 3 FED FROM: ROOM D022, MCC-G14-480VQR PHASE: 3 WIRE: 4 WIRE: 4 LOCATION: VETERANS CANTEEN SERVICE (VCS) STORAGE W01 **LOCATION**: RM W01 **SCCR:** 14,000 EXISTING GE A-SERIES II PANELBOARD. PANEL IS RENAMED FROM PPB-14-120VE TO PPB-WH-120VE. E.C. TO VERIFY ALL CIRCUITS AND DEMOLISH AND MAKE SPARES WHERE APPLICABLE. E.C. TO PROVIDE UPDATED, TYPED PANEL SCHEDULE. NO EMPTY SPACES SHALL BE LEFT IN THIS PANEL WITHOUT A 20A/1P OCPD SIZE E CKT CKT E WIRE SIZE OCPD Y NO. LOAD DESCRIPTION H N G P AMPS LOAD DESCRIPTION AMPS P H N G NO. Y E CKT \*O 1 EXISTING TR-30 W01 70 A 3 -- - 5.91 2.03 | 12 | 12 | 12 | 3 | 20 A | MATERIAL LIFT RM WE01A LOAD DESCRIPTION -- 1 | BATTERY CHARGER (BLUE) -- - -- 1 20 A RECEPT COPYING MACHINE 20 A RECEPT RM 102-3-4-5-9 -- 3 RECEPT RM 101 06 6.41 -- -- -- -- -- -- -- -- -- -- --70 A 3 -- -- 5.32 6.41 \*O 7 TX-WH-120VC -- 5 RECEPT RM 106-7-8 1 20 A RECEPT RM 101-3 -- 7 EXH FAN'S 101 20 A DOCK LT'S LOAD 20 A WATER HEATER -- 9 EXH FAN'S 104 12 12 12 3 20 A WHSE-RF-1 RM W05 13 WHSE P-2 CORRDIOR CBG1 -- 11 CORRIDOR RECEPTS 1 20 A SECURITY SYST. , -- -- -- -- ---- 13 UNIT + D.HT RM 107 3 20 A BATTERY CHARGER (BLUE) 19 WHSE P-3 CORRDIOR CBG1 -- | 17 | DUCT + HEATER RM 104 - 3 20 A BATTERY CHARGER (BLUE) -- 21 W-05 SPARE W. WALL 25 SCALE, SCALE DISPLAY RM W03C 20 A 1 12 12 12 0.36 0.72 -- 23 W-05 RCPT W. WALL + NW 10 10 10 1 20 A RCPT BULK ITEM STOR. W03, W03A 26 20 A | 1 | 12 | 12 | 12 | 0.36 | 0.72 | | | 10 | 10 | 1 | 20 A | RCPT BULK ITEM STOR. W03, W | 20 A | 1 | 12 | 12 | 12 | 0.18 | 1 | | 12 | 12 | 12 | 1 | 20 A | FRIDGE STAFF LOUNGE W04A 27 RCPT LIFT EQUP'T WE01A -- 31 SPARE 29 RCPT OIT CLOSET W05B -- 33 SPARE - 31 PHARMACY FREEZER -- 35 SPACE 12 12 12 1 20 A RCPTS RM WC01A, W08, W09 - 33 PHARMACY FREEZER -- 37 SPACE - 35 COVID FRZR 0 1.3 12 12 12 1 20 A ICE/WATER MACHINE RM WC03 -- 39 SPACE -- 37 COVID FRZR | 12 | 12 | 12 | 1 | 20 A | RCPT, INTRUSION DET. RM W01 20 A 1 12 12 12 12 0.18 0.83 12 12 12 1 20 A WHSE-EF-2 RM W01 -- 41 SPACE 39 RECEPTS DRUG STOR W03A 0 0.67 12 12 12 1 20 A WHSE-EF-1 ROOF 41 SPD **Total Load:** 29.24 kVA | 27.55 kVA | 26.90 kVA 10 10 10 1 20 A RCPTS PANDEMIC STORAGE W11 44 **Total Amps:** 105.92 99.82 97.11 10 10 10 1 20 A RCPTS PANDEMIC STORAGE W11 46 0.18 | 0.36 | 12 | 12 | 12 | 1 | 20 A | RCPTS ROOF 47 RECEPTS DRUG STOR W03A LOAD SUMMARY 49 RCPTS STORAGE W03,W03B,W03C | 20 A | 1 | 12 | 12 | 12 | 0.9 | 1 | 12 | 12 | 12 | 1 | 20 A | WHSE-P-4 CORRIDOR CBG1 LOAD CLASSIFICATION CONNECTED LOAD | DEMAND FACTOR | ESTIMATED DEMAND 20 A 1 12 12 12 0.9 1 12 12 12 12 0.9 1 12 12 12 12 12 12 14 20 A WHSE-P-4 CORRIDOR CBG1

20 A 1 12 12 12 12 12 12 12 12 12 14 20 A WHSE-SSHX-1. G00X

20 A 1 12 12 12 12 12 12 12 12 14 20 A EXTERIOR DOOR W02B, W03B TOTALS\* 51 SYSTEM PANEL RM W04A 35.93 kVA 53 VAV CONTROL POWER, W07 35.46 kVA 100.00% 35.46 kVA TOTAL CONNECTED LOAD: 83.69 kVA 55 UPS WAREHOUSE OIT CLOSET 12.3 kVA 90.65% 11.15 kVA TOTAL ESTIMATED DEMAND LOAD: 81.04 kVA TOTAL CONNECTED AMPS: 100.66 A 20 A 1 12 12 12 0.5 0.5 12 12 12 1 20 A DOOR W01 59 WHSE-AHU-1 CONTROLS **TOTAL ESTIMATED DEMAND AMPS:** 97.5 A **Total Load:** 5.91 kVA 6.48 kVA 6.19 kVA \*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL **Total Amps:** 49.25 54.36 51.94 CIRCUIT KEY NOTES: \*O = REFER TO ONE-LINE FOR WIRE SIZE, \*Z = 4#4 & 1#8 GND IN 1 1/2"C. LOAD CLASSIFICATION CONNECTED LOAD | DEMAND FACTOR | ESTIMATED DEMAND 100.00% 3 kVA 100.00% 5.8 kVA TOTAL CONNECTED LOAD: 18.58 kVA 5.8 kVA **PPB-WH-120VE2** Receptacles 9.78 kVA 100.00% 9.78 kVA TOTAL ESTIMATED DEMAND... 17.08 kVA **TOTAL CONNECTED AMPS:** 51.57 A MAIN: 100 A MCB **MOUNTING: SURFACE** TOTAL ESTIMATED DEMAND... 47.4 A **VOLTS**: 120/208 Wye **ENCLOSURE:** BOLT-ON SOLID NEUTRAL \*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL FED FROM: TX-WH-120VC PHASE: 3 **CIRCUIT KEY NOTES:** LOCATION: DRUG CACHE-STORAGE W03A WIRE: 4 SCCR: 10,000 **EXISTING PANEL: LPB-WH-277VE** NOTES: **MOUNTING:** SURFACE MAIN: 100 A MCB ENCLOSURE: BOLT-ON **SOLID NEUTRAL VOLTS:** 480/277 Wye FED FROM: LPB-H12-277VE PHASE: 3 WIRE SIZE OCPD ВС WIRE: 4 E CKT **LOCATION**: RM W01 H N G P AMPS LOAD DESCRIPTION LOAD DESCRIPTION Y NO. AMPS P H N G NO. Y 
 AMPS
 P
 H
 N
 G
 P
 AMPS
 LC

 20 A
 1
 12
 12
 1.44
 0
 - - - 1
 20 A
 SPARE

 20 A
 1
 12
 12
 1.44
 0
 - - - 1
 20 A
 SPARE

 20 A
 1
 12
 12
 1.44
 0
 - - - 1
 20 A
 SPARE

 20 A
 1
 12
 12
 1.44
 0
 - - - 1
 20 A
 SPARE

 20 A
 1
 12
 12
 12
 0.9
 0
 - - - 1
 20 A
 SPARE

 20 A
 1
 12
 12
 12
 0.9
 0
 - - - 1
 20 A
 SPARE

 20 A
 1
 12
 12
 12
 12
 1
 1
 20 A
 SPARE

 1 FREEZER RM W03A 3 FREEZER RM W03A 6 ---5 FREEZER RM W03A NOTES: EXISTING GE A-SERIES II PANELBOARD. PANEL IS RENAMED FROM PPB-14-120VE TO PPB-WH-120VE. E.C. TO VERIFY ALL CIRCUITS AND DEMOLISH AND MAKE 8 --10 --12 --7 FREEZER RM W03A SPARES WHERE APPLICABLE. E.C. TO PROVIDE UPDATED, TYPED PANEL SCHEDULE. 9 RCPTS RM W03A 11 RCPTS RM W03A 13 REFRIG. RM W03A, W03A1 14 -- | 15 SECURITY RCPTS RM W03A 17 ACCSS CTRL, INT DET RM W03A 18 --SIZE OCPD OCPD SIZE A B E CKT CKT E 
 AMPS
 P
 H
 N
 G
 P
 AMPS
 LOAD DESCRIPTION

 50 A
 3
 - - 0
 0
 - - 3
 30 A
 SPARE

 - - - - - 0
 0
 - - - - - 

 20 A
 1
 - - 0
 0
 - - 1
 20 A
 LTS X-RAY 109 - SUB STORE 104

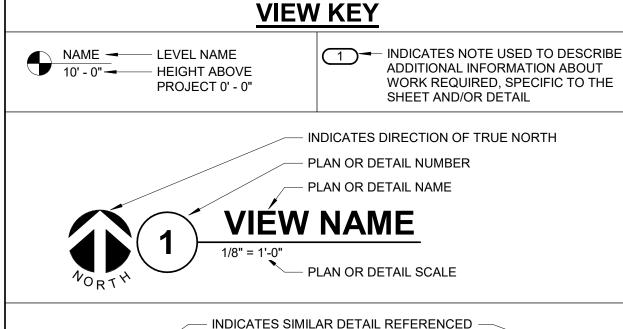
 20 A
 1
 - - 0
 0
 - - 1
 20 A
 LTS X-RAY 109 - SUB STORE 104

 20 A
 1
 - - 0
 0
 - - 1
 20 A
 LTS DRUG 102 + 103

 20 A
 1
 - - 0
 0
 - - 1
 20 A
 LTS REC. 111 + FORM 112

 20 A
 1
 - - 0
 0
 - - - 1
 20 A
 BATT CHAR.

 - <t 19 DOOR W03A, W03A1 Y NO. LOAD DESCRIPTION LOAD DESCRIPTION AMPS P H N G H N G P AMPS NO. Y -- 1 SPARE -- 21 SPACE -- 23 SPACE -- 25 SPACE -- **7** LTS - 101 MEN STOR. -- 27 SPACE -- 29 SPACE -- 9 LTS - OUTSIDE DOOR 10 --12 ---- 31 SPACE -- 11 LTS - CORR 110 -- 33 SPACE -- 13 LTS - CORR 113 -- 35 SPACE -- 15 **SPARE** -- 37 SPACE -- 39 SPACE -- 41 SPACE **Total Load:** 5.32 kVA 3.06 kVA 2.70 kVA **Total Amps:** 44.79 25.96 22.50 -- 27 SPARE -- 29 SPARE LOAD SUMMARY -- 31 UNKNOWN LOAD CLASSIFICATION CONNECTED LOAD DEMAND FACTOR ESTIMATED DEMAND TOTALS\* -- 33 --8.56 kVA 8.56 kVA 100.00% 2.52 kVA 100.00% 2.52 kVA TOTAL CONNECTED LOAD: 11.08 kVA Receptacles TOTAL ESTIMATED DEMAND LOAD: 11.08 kVA **Total Load:** 1.27 kVA | 2.37 kVA | 1.62 kVA **Total Amps:** 4.59 8.74 6.03 **TOTAL CONNECTED AMPS:** 30.76 A **TOTAL ESTIMATED DEMAND AMPS:** 30.8 A LOAD SUMMARY \*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL. LOAD CLASSIFICATION CONNECTED LOAD | DEMAND FACTOR | ESTIMATED DEMAND **CIRCUIT KEY NOTES:** TOTALS\* 5.256 kVA 100.00% 5.256 kVA **TOTAL CONNECTED LOAD:** 5.26 kVA TOTAL ESTIMATED DEMAND... 5.206 kVA **TOTAL CONNECTED AMPS:** 6.32 A **TOTAL ESTIMATED DEMAND...** 6.3 A \*TOTAL DEMAND CALCS SUBTRACT ANY REDUNDANT LOAD AND THE SMALLER OF ANY NONCOINCIDENT HVAC LOADS. THIS CALC IS DONE AT EACH PANEL. **CIRCUIT KEY NOTES: Project Title Project Number** Drawing Title ARCHITECT/ENGINEER OF RECORD Office of 589A4-20-158 BID SET **ELECTRICAL SCHEDULES** RENOVATE WAREHOUSE FOR Construction Calvin L. HINZ Architects, P.C. **Building Number** PANDEMIC PREPAREDNESS 3705 North 200th Street and Facilities Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193 Location HARRY S. TRUMAN MEM. VETERANS HOSPITA Management Drawing Number Approved: Calvin L. H 800 HOSPITAL DR., COLUMBIA MO 65201 5 Ringsby Court, #408, Denver, CO, 80216 **FULLY SPRINKLERED** E-500 Checked ncandescence life safety **BID SET** 03/24/2021 U.S. Department of Veterans Affairs 03/24/2021 MARHAR **MASRYA Revisions:** fire protection engineering firm Dwg. # 83 of 94 VA FORM 08 - 6231



 INDICATES SIMILAR DETAIL REFERENCED — IN MULTIPLE LOCATIONS 

LINE TYPE AND TAG KEY:

NEW WORK BY THIS CONTRACTOR (WIDE LINE)

---- EXISTING TO BE REMOVED (SHORT DASHED PATTERN) — — NEW UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN)

EXISTING TO REMAIN OR WORK BY OTHERS (NARROW LINE)

---- EXISTING TO BE REMOVED BY OTHERS (SHORT DASHED PATTERN) — — EXISTING UNDERFLOOR OR UNDERGROUND (LONG DASHED PATTERN) HALFTONING DOES NOT MODIFY SCOPE.

UNDERLINED TEXT INDICATES ADDITIONAL INFORMATION CAN BE FOUND ELSEWHERE IN A SCHEDULE, MATERIAL LIST, OR SYMBOL LIST

'TAG'-E TAGS WITH DASH 'E' INDICATES THE REFERENCED OBJECT IS EXISTING

INDICATES AN EXISTING SYSTEM'S POINT OF CONNECTION/REMOVAL

|        | CONTRACTOR ABBREVIATION KEY              |
|--------|--|
| ABBR:  | DESCRIPTION:                             |
| A.C.   | ASBESTOS ABATEMENT CONTRACTOR            |
| A.T.C. | AUTOMATIC TEMPERATURE CONTROL CONTRACTOR |
| C.C.   | CIVIL CONTRACTOR                         |
| C.M.   | CONSTRUCTION MANAGER                     |
| E.C.   | ELECTRICAL CONTRACTOR                    |
| F.P.C. | FIRE PROTECTION CONTRACTOR               |
| G.C.   | GENERAL CONTRACTOR                       |
| H.C.   | HEATING CONTRACTOR                       |
| M.C.   | MECHANICAL CONTRACTOR                    |
| P.C.   | PLUMBING CONTRACTOR                      |
| S.C.   | SECURITY CONTRACTOR                      |
| T.C.   | TECHNOLOGY CONTRACTOR                    |
| T.C.C. | TEMPERATURE CONTROLS CONTRACTOR          |
| V.C.   | VENTILATION CONTRACTOR                   |

|       | TECHNOLOGY ABBREVIATION KEY          |
|-------|--------------------------------------|
| ABBR: | DESCRIPTION:                         |
| AFF   | ABOVE FINISHED FLOOR                 |
| BFC   | BELOW FINISHED CEILING               |
| С     | CONDUIT                              |
| J-BOX | JUNCTION BOX                         |
| SIM   | SIMILAR                              |
| TYP   | TYPICAL                              |
| UNO   | UNLESS NOTED OTHERWISE               |
| +#    | MOUNTING HEIGHT ABOVE FINISHED FLOOR |
| TR-#  | TELECOMMUNICATIONS ROOM              |

| SYMBOL:         | EQUIPMENT<br>LIST ABBREV.: | DESCRIPTION:   | NOTE             |
|-----------------|----------------------------|--|------------------|
| ₩AP             | SC-IO-C                    | CEILING INFORMATION OUTLET, DATA COMMUNICATION ONLY, WIRELESS ACCESS POINT   | 1.               |
| # #<br><b>V</b> | SC-IO-W                    | WALL INFORMATION OUTLET, COMBINATION TELEPHONE/DATA COMMUNICATION  | 1.               |
| lacksquare      | SC-IO-W                    | WALL INFORMATION OUTLET, WALL TELEPHONE COMMUNICATION  | 1.               |
| RI<br><b>W</b>  | SC-RI-W                    | WALL INFORMATION OUTLET, ROUGH-IN ONLY   | 1.               |
| <b>□</b> #      | N/A                        | CARD ACCESS READER; LETTER INDICATES AS FOLLOWS M = MOUNT C - CEILING D - DESK F- FLUSH H - HIDDEN M - MULLION P - PEDESTAL R - RACK S - SURFACE W - WALL  | <sup>S:</sup> 4. |
|                 |                            | T = TECHNOLOGY/TYPE B - BARCODE F - ELEVATOR FLOOR CALL H - ELEVATOR HALL CALL M - MAG STRIP P = PROXIMITY S - SMART CARD T - TOKEN  |                  |
| #               | AC-CR1-W                   | CARD ACCESS READER WITH KEYPAD; LETTER INDICATE<br>AS FOLLOWS:<br>M = MOUNT<br>C - CEILING D - DESK F- FLUSH H - HIDDEN M - MULLION<br>P - PEDESTAL R - RACK S - SURFACE W - WALL                                    | S2.              |
| <b>E</b> #      | AC-EDH                     | ELECTRONIC LOCK; LETTER INDICATES AS FOLLOWS: M = MOUNT C - CEILING D - DESK F - FLUSH H - HIDDEN M-MULLION P - PEDESTAL R - RACK S - SURFACE W - WALL   | 2.               |
| #<br>#          | AC-PB                      | T = TECHNOLOGY/TYPE D - DEADBOLT H - HYBRID L - LATCH SET M - MAGNATIC S - STRIKE PUSH BUTTON; LETTER INDICATES AS FOLLOWS: M = MOUNT C-CEILING D-DESK F-FLUSH H-HIDDEN M-MULLION P-PEDESTAL R-RACK S-SURFACE W-WALL | 2.               |
| #<br>#          | AC-DC                      | T = TECHNOLOGY/TYPE B-BELL PUSH D-DURESS P-PANIC R-DOOR RELEASE X-REQUEST-FOR-EXIT DOOR CONTACT; LETTER INDICATES AD FOLLOWS: M = MOUNT S - SURFACE R - RECESSED   | 4.               |
|                 |                            | T = TECHNOLOGY/TYPE<br>M = MAGNETIC REED   |                  |
| ##              | AC-MD                      | MOTION DETECTOR; LETTER INDICATES AD FOLLOWS: M = MOUNT C-CEILING D-DESK F-FLUSH H-HIDDEN M-MULLION P-PEDESTAL R-RACK S-SURFACE W-WALL   | 2.               |
|                 |                            | T = TECHNOLOGY/TYPE D-DUAL TECHNOLOGY IR-INFRARED M-MICROWAVE U-ULTRASONIC X-REQUEST-FOR-EXIT  |                  |

| SYMBOL:      | EQUIPMENT<br>LIST ABBREV.: | DESCRIPTION:   | NOTE:    |
|--------------|----------------------------|--|----------|
| CCTV 4       | N/A                        | VIDEO SURVEILLANCE CAMERA WITH LENS, WALL MOUN<br>OR CEILING MOUNT | IT<br>3. |
| <u>s</u>     | PA-S-C                     | FACILITY PAGING SPEAKER (CEILING)                                  |          |
| S            | N/A                        | FACILITY PAGING SPEAKER (WALL) EXISTING                            | 4.       |
| Н            | N/A                        | FACILITY PAGING HORN (WALL) EXISTING                               | 4.       |
| VC           | N/A                        | FACILITY PAGING VOLUME CONTROL (WALL) EXISTING                     | 4.       |
| AA           | <u>ID-AA-W</u>             | INTRUSION DETECTION AUDIBLE ALARM (WALL)                           | 2., 4.   |
| IKP          | <u>ID-IKP-W</u>            | INTRUSION DETECTION SECURITY KEYPAD (WALL)                         | 2., 4.   |
| WIDTH X      | HEIGHT                     | CABLE TRAY, CHANNEL TRAY, BASKET<br>TRAY                           |          |
| WIDTH X      | (HËIGHT                    | LADDER RACK  |          |
| DIAMETERØ C  |                            | CONDUIT  |          |
| <del>-</del> |                            | CONDUIT DOWN   |          |
|              |                            | CONDUIT UP OR UP/DOWN  |          |
| <u> </u>     |                            | CONDUIT SLEEVE   |          |
| 5            |                            | CONTINUATION   |          |

# GENERAL NOTES:

- ALL SYMBOLS AND ABBREVIATIONS LISTED MAY NOT BE APPLICABLE TO THIS PROJECT. REFER TO THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE FOR MORE COMPLETE
- DESCRIPTION AND ITEMS. ALL SYMBOLS AND ABBREVIATIONS REFER TO TECHNOLOGY SHEETS ONLY AS DEFINED ON THE SHEET INDEX. REFER TO THE GENERAL TECHNOLOGY NOTES FOR ADDITIONAL
- ALL SYMBOLS LISTED ABOVE ARE FOR REFERENCE ONLY. REFER TO PLANS AND LINE TYPE KEY FOR NEW, EXISTING TO REMAIN AND TO BE REMOVED ITEMS FOR ADDITIONAL

### TECHNOLOGY SYMBOL NOTES:

"C#" INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION. REFER TO HORIZONTAL CABLE SCHEDULE ON SHEET T-500 FOR ADDITIONAL INFORMATION. SYMBOL SUBSCRIPT INDICATES DEVICE TYPE. REFER TO GENERAL TECHNOLOGY

REFER TO RISERS ON SHEET(S): T-400.

EQUIPMENT SCHEDULE ON T-500 FOR ADDITIONAL INFORMATION. REFER TO CLOSED CIRCUIT (CCTV) INDIVIDUAL CAMERA REQUIREMENTS SCHEDULE ON T-500 AND CAMERA TYPE SCHEDULE ON T-500 FOR ADDITIONAL INFORMATION. SYMBOL SUBSCRIPT INDICATES FLOOR NUMBER-CAMERA NUMBER. A CAMERA HEIGHT IDENTIFIES THE HEIGHT FROM THE FLOOR TO THE CENTER OF THE CAMERA LENS. NO HEIGHT REFERS TO MOUNTING THE CAMERA ON THE CEILING. REFER TO THE INDIVIDUAL CAMERA SCHEDULE AND THE INDIVIDUAL CAMERA TYPE SCHEDULE FOR ADDITIONAL INFORMATION. REFER TO LINE TYPE KEY FOR NEW, EXISTING TO REMAIN, OR DEMO LINE TYPE.

| CABLE COLOR DESIGNATIONS |                       |  |  |  |
|--------------------------|-----------------------|--|--|--|
| RED                      | FIRE ALARM SYSTEM     |  |  |  |
| BLUE                     | DATA                  |  |  |  |
| WHITE                    | VOICE                 |  |  |  |
| NEON GREEN               | NURSE CALL SYSTEM     |  |  |  |
| GREEN                    | (OIT) (WI FI)         |  |  |  |
| PINK                     | GUEST WI FI (BIOMED)  |  |  |  |
| ORANGE                   | TELEMETRY             |  |  |  |
| BROWN                    | GET WELL NETWORK (TV) |  |  |  |
| PURPLE                   | SECURITY              |  |  |  |

#### **SUGGESTED MATRIX OF RESPONSIBILITY** ECHNOLOGY ROUGH-IN, REFER TO T-SERIES E.C. 3. 4. GENERAL TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR DEFINITION INFORMATION OUTLET FACEPLATES, T-SERIES JACKS, AND TERMINATIONS CONDUIT SLEEVES (WHEN SHOWN ON T-SERIES E.C. E.C. DRAWINGS) CONDUIT SLEEVES (NOT SHOWN BUT 2. 4. REQUIRED FOR PROPER INSTALLATION OF SYSTEM) TELECOMMUNICATION SYSTEMS T-SERIES ROUGH-IN TELECOMMUNICATION EQUIPMENT, T-SERIES CABLING, AND TERMINATIONS LADDER RACK GROUNDING LUGS ON TECHNOLOGY T-SERIES EQUIPMENT CONNECTION OF TECHNOLOGY T-SERIES E.C. E.C. BONDING SYSTEM TO THE ELECTRICAL GROUND SYSTEM LINE VOLTAGE POWER (+120V OR E-SERIES GREATER) LINE VOLTAGE POWER (NOT SHOWN

## SUGGESTED MATRIX OF RESPONSIBILITY NOTES

ARCH SPEC

T-SERIES

T-SERIES

E.C.

BUT REQUIRED FOR PROPER

HARDWARE POWER SUPPLIES

LOW VOLTAGE CABLING FOR

TECHNOLOGY SYSTEMS

LINE VOLTAGE POWER FOR DOOR

CABLE HANGERS AND SUPPORTS OR

OTHER CABLE ROUTING METHODS

(OTHER THAN CONDUIT AND CABLE

INSTALLATION OF SYSTEM)

- LOCATIONS OF TELECOMMUNICATIONS ROUGH-INS SHALL BE INDICATED BY THE INFORMATION OUTLET SYMBOLS ON THE DRAWINGS. REFER TO THE TECHNOLOGY SYMBOL LIST FOR
- ADDITIONAL INFORMATION. BASED ON THE INHERENT DIFFERENCES IN PRODUCTS FROM VARIOUS MANUFACTURERS, ALL
- REQUIRED EQUIPMENT MAY NOT BE SHOWN ON THE DRAWINGS FOR ALL ACCEPTABLE MANUFACTURERS.
- INCLUDES BACKBOXES AND CONDUIT REQUIRED FOR THE TECHNOLOGY SYSTEMS INSTALLATION. THE E.C. SHALL BASE THE BID ON THE BASIS OF DESIGN SHOWN ON THE CONTRACT DOCUMENTS.
- ALL CHANGES TO THE SLEEVES, BACKBOXES, CONDUITS, AND POWER REQUIRED BECAUSE OF THE T.C.'S SELECTION OF AN ALTERNATE ACCEPTABLE MANUFACTURER OR FROM SYSTEM CONFIGURATIONS THAT ARE LEFT TO THE CHOICE OF THE CONTRACTOR SHALL BE INCLUDED IN THE T.C.'S BID. THIS BID SHALL INCLUDE INSTALLATION BY A LICENSED ELECTRICIAN.
- UNLESS TRADE RULES DICTATE OTHERWISE. FURNISHED AS PART OF THE EQUIPMENT WHEN POSSIBLE, OR FURNISHED TO THE E.C. FOR INSTALLATION IN THE FIELD.

# **TECHNOLOGY GENERAL NOTES:**

- ###-### INDICATES GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ITEM LABELED AS
- "EQUIPMENT LIST ABBREVIATION" 2. REFER TO GENERAL TECHNOLOGY EQUIPMENT SCHEDULE AND SPECIFICATIONS FOR FULL DESCRIPTIONS AND MANUFACTURERS OF ALL DEVICES.
- TECHNOLOGY MOUNTING SUBSCRIPT KEY:
- MOUNT AT +6" TO CENTERLINE ABOVE COUNTER OR BACKSPLASH
- MOUNT ORIENTED HORIZONTALLY MOUNT IN CASEWORK
- MOUNT IN MODULAR FURNITURE MOUNT IN SURFACE RACEWAY
- A SLASH IS USED BETWEEN TWO SUBSCRIPTS, E.G., A/H.

## **TECHNOLOGY INSTALLATION NOTES:**

- 1. THE COMPLETE INSTALLATION SHALL BE IN ACCORDANCE WITH THE ADA STANDARDS FOR ACCESSIBLE DESIGN. REFER TO THE ADA GUIDELINES FOR ALL CONFIGURATION DETAILS ON THIS PAGE FOR ADDITIONAL INFORMATION.
- 2. CONCEAL ALL CONDUIT IN WALLS, PARTITIONS, ABOVE CEILING, IN FLOOR SLAB, ETC. UNLESS OTHERWISE INDICATED ON THE PLANS OR IN THE SPECIFICATIONS. CONDUIT IN MECHANICAL ROOMS AND STORAGE ROOMS WITHOUT CEILINGS MAY BE EXPOSED ON
- BUILDING STRUCTURE. BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. "THRU-THE-WALL" BOXES SHALL NOT BE
- ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER. 4. VERIFY ALL FURNITURE, MODULAR FURNITURE, AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL PLANS, ELEVATIONS, AND REVIEWED SHOP DRAWINGS. PRIOR TO MAKING
- THE ACTUAL TELECOMMUNICATIONS INSTALLATION, ADJUST OUTLETS OR CONNECTION LOCATIONS TO ACCOMMODATE FURNITURE AND/OR EQUIPMENT. TELECOMMUNICATIONS EQUIPMENT SHALL BE MOUNTED TO ALLOW ACCESS TO
- ELECTRICAL AND MECHANICAL EQUIPMENT. ALL MOUNTING OF TELECOMMUNICATION DEVICES ON EQUIPMENT SUPPLIED BY ANOTHER CONTRACTOR SHALL BE APPROVED IN ADVANCE BY THE OTHER CONTRACTOR. 6. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL
- OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THIS CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS.
- 7. ALL MATERIALS USED TO SEAL PENETRATIONS OF FIRE RATED WALLS AND FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARDS FOR FIRE TESTS OF THROUGH-PENETRATION FIRESTOPS. REFER TO <u>DIVISION 7</u> FOR ADDITIONAL INFORMATION
- AND REQUIREMENTS SPECIFIC TO FIRESTOPPING. REMOVE AND REINSTALL ALL CEILING TILES AS REQUIRED FOR THE EXECUTION OF TELECOMMUNICATIONS WORK THAT IS OUTSIDE THE CONTRACT LIMITS OF CONSTRUCTION. REPLACE CEILING TILES WITH IDENTICAL MATERIAL WHERE DAMAGED BY THIS CONTRACTOR.

|                | TECHNOLOGY SHEET INDEX                    |
|----------------|---|
| T-000          | TECHNOLOGY COVERSHEET                     |
| TD101          | FIRST FLOOR PLAN - TECHNOLOGY DEMOLITION  |
| T-101          | FIRST FLOOR PLAN - TECHNOLOGY             |
| T-102          | MEZZANINE FLOOR PLAN - TECHNOLOGY         |
| T-300          | TECHNOLOGY DETAILS                        |
| T-400          | TECHNOLOGY ROOM ENLARGEMENTS AND DIAGRAMS |
| T-500          | TECHNOLOGY SCHEDULES                      |
| GRAND TOTAL: 7 |   |

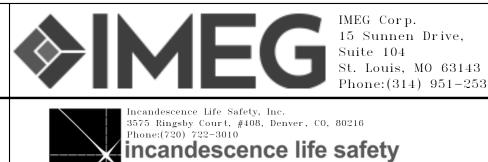
**BID SET** 03/24/2021 Revisions:

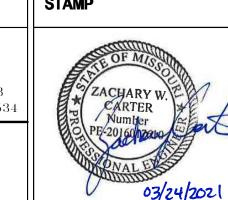
VA FORM 08 - 6231

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ARCHITECT/ENGINEER OF RECORD

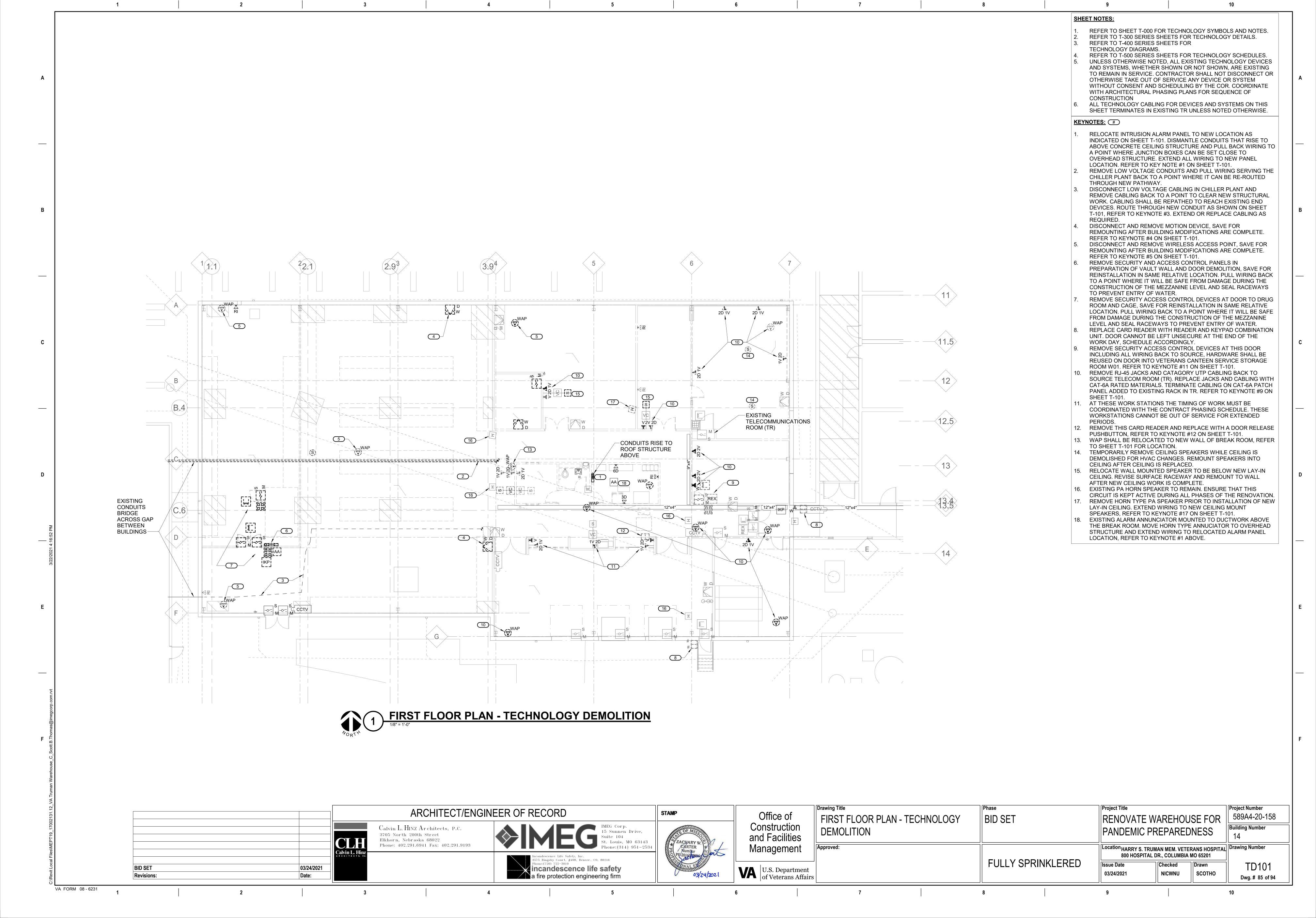


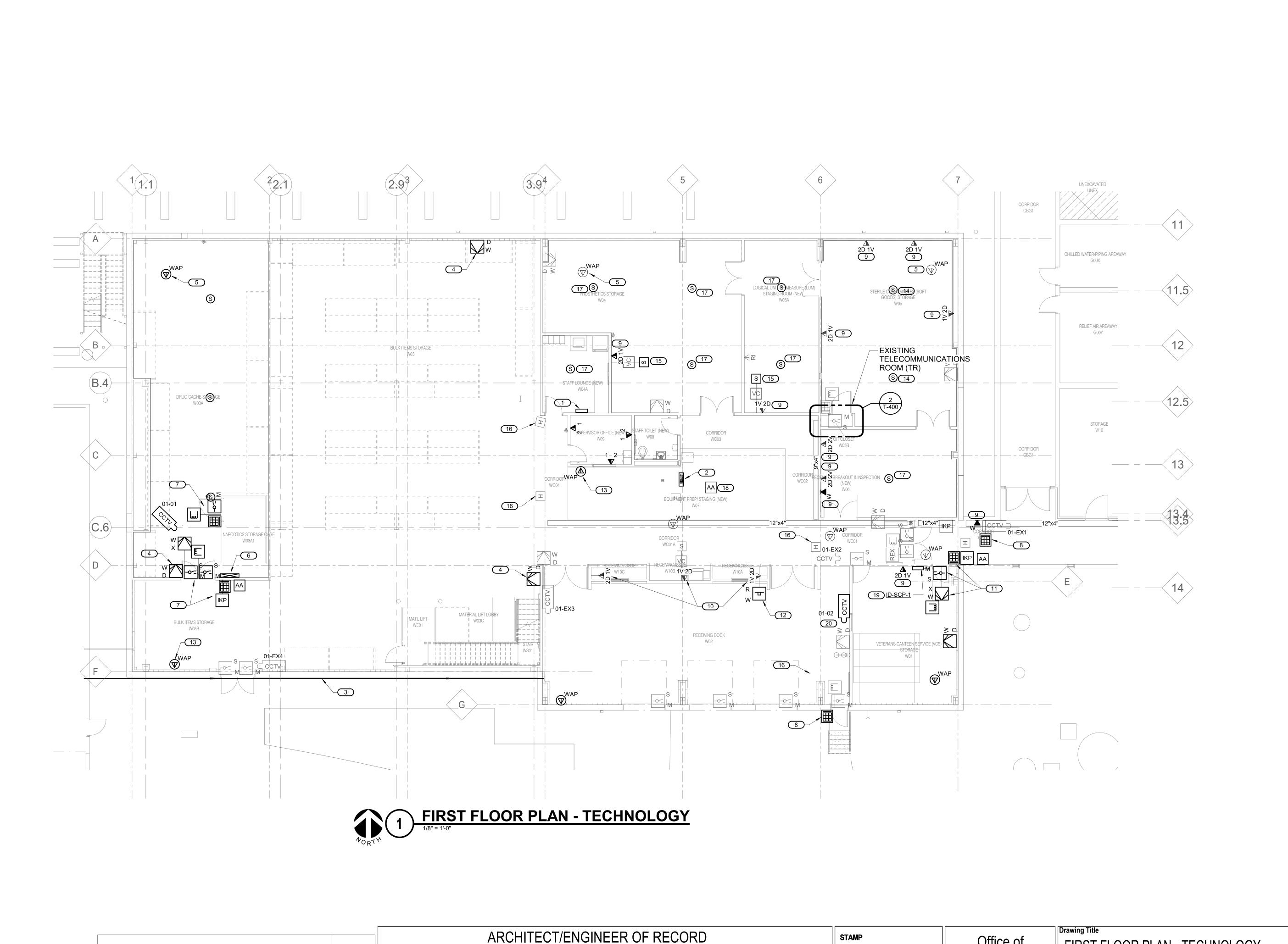


Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

| Prawing Title         | Phase             | Project Title                            |                   |                 | Project Number           |
|-----------------------|-------------------|--|-------------------|-----------------|--------------------------|
| TECHNOLOGY COVERSHEET | BID SET           | RENOVATE W                               | AREHOU            | SE FOR          | 589A4-20-158             |
|                       |                   | PANDEMIC PR                              | REPARED           | NESS            | Building Number<br>14    |
| Approved:             |                   | Location HARRY S. TRUM<br>800 HOSPITAL D |                   | VANS HOSFITAL   | Drawing Number           |
|                       | FULLY SPRINKLERED | 03/24/2021                               | Checked<br>NICWNU | Drawn<br>SCOTHO | T-000<br>Dwg. # 84 of 94 |





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Office of

Construction

and Facilities

Management

U.S. Department of Veterans Affairs

**SHEET NOTES:** 

- REFER TO SHEET T-000 FOR TECHNOLOGY SYMBOLS AND
- REFER TO T-300 SERIES SHEETS FOR TECHNOLOGY DETAILS. REFER TO T-400 SERIES SHEETS FOR TECHNOLOGY DIAGRAMS.
- REFER TO T-500 SERIES SHEETS FOR TECHNOLOGY SCHEDULES. UNLESS NOTED OTHERWISE, ALL EXISTING TECHNOLOGY DEVICES AND SYSTEMS, WHETHER SHOWN OR NOT SHOWN, ARE EXISTING TO REMAIN IN SERVICE. CONTRACTOR SHALL NOT DISCONNECT OR OTHERWISE TAKE OUT OF SERVICE ANY DEVICE OR SYSTEM WITHOUT CONSENT AND SCHEDULING BY THE COR. COORDINATE WITH ARCHITECTURAL PHASING PLANS FOR SEQUENCE OF CONSTRUCTION.
- ALL TECHNOLOGY CABLING FOR DEVICES AND SYSTEMS ON THIS SHEET SHALL TERMINATE IN EXISTING TR UNLESS NOTED OTHERWISE. ALL NETWORK CABLING MUST BE REPLACED WITH NEW CAT-6A UTP CABLE. PROVIDE NEW TERMINATIONS ON NEW CAT-6A PATCH PANELS IN TR. MOUNT NEW PATCH PANELS IN AVAILABLE SPACE OF EXISTING 2-POST RACK.

### KEYNOTES: #

- RELOCATE SECURITY ALARM PANEL TO LOCATION SHOWN. RECONFIGURE CONDUITS THAT WERE CONNECTED AT FORMER LOCATION. EXTEND AND RECONNECT ALL WIRING SERVING EXISTING SECURITY DEVICES LOCATED THROUGHOUT THE WAREHOUSE. PROVIDE JUNCTION BOXES AS REQUIRED.
- FORMER LOCATION OF SECURITY INTRUSION ALARM PANEL, REFER TO KEYNOTE #1 ON SHEET TD-101. PROVIDE NEW JUNCTION BOX MOUNTED TO EXISTING CONDUITS, J-BOX SHALL BE MOUNTED HIGH AS POSSIBLE BUT NOT LESS THAN 12'-0" AFF.
- PROVIDE 1-1/2" EMT CONDUIT FOR NEW ROUTING OF LOW VOLTAGE CABLING THAT SERVES CHILLER PLANT. ALL ETHERNET UTP CABLING SHALL BE NEW PULLED FROM EXISTING TR. RECONNECT ALL EXISTING DEVICES IN CHILLER PLANT. PAINT CONDUIT WHITE WITH APPROVED PAINT TO MATCH EXISTING BUILDING COLOR.
- REMOUNT EXISTING MOTION DEVICE IN SAME RELATIVE LOCATION AFTER NEW STRUCTURE IS COMPLETE. RECONNECT ALL WIRING AS PREVIOUSLY INSTALLED.
- REMOUNT AND RECONNECT WIRELESS ACCESS POINT TO NEW LAY-IN CEILING. REUSE EXISTING BISQUIT STYLE JACK HOUSING AND COIL 15' OF NEW CAT-6A UTP NETWORK CABLING FOR LOCATION ADJUSTMENTS. TIE TO OVERHEAD STRUCTURE WITH VELCRO STRAPS.
- REMOUNT AND RECONNECT SECURITY ALARM AND ACCESS CONTROL PANELS. PULL NEW CAT 6A NETWORK CABLING AS APPLICABLE. RE-PULL AND RECONNNECT EXISTING WIRING SERVING DOOR CONTROL AND MONITORING DEVICES. ROUTE ALL CABLING THROUGH EXISTING CONDUITS. PROVIDE NEW J-HOOK PATHWAY ACROSS BOTTOM OF NEW MEZZANINE LEVEL
- FLOOR STRUCTURE. REMOUNT AND RECONNECT ALL SECURITY DEVICES IN SAME RELATIVE LOCATION AS PREVIOUSLY INSTALLED.
- REPLACE EXISTING CARD READER WITH NEW READER WITH KEYPAD. RECONNECT ALL WIRING AS NECESSARY, COORDINATE WITH THE VA SECURITY DIRECTOR FOR PROGRAMMING AND ACCESS PREFERENCES.
- EXISTING INFORMATION OUTLET LOCATION SHALL HAVE NEW CAT-6A CABLING AND CAT-6A JACKS INSTALLED. FACEPLATE MAY BE REUSED IF NOT DAMAGED. TERMINATE CABLING ON NEW CAT-6A PATCH PANEL IN EXISTING RACK, REFER TO DETAIL 3/T-400.
- 10. AT THESE WORK STATIONS THE TIMING OF WORK MUST BE COORDINATED WITH THE CONTRACT PHASING SCHEDULE. THESE WORKSTATIONS CANNOT BE OUT OF SERVICE FOR EXTENDED PERIODS.
- 11. REINSTALL CARD READER, REX MOTION DETECTOR AND SURFACE MOUNT DOOR CONTACTS, REMOVED FROM DOOR TO ROOM W06, AT THIS LOCATION. PULL NEW CABLING TO EXISTING DOOR CONTROLLER AND MODIFY SYSTEM PROGRAMMING AS REQUIRED. CONNECT NEW ELECTRIC LOCK AND SURFACE MOUNTED DOOR CONTACTS. COORDINATE WITH ARCHITECTURAL DOOR HARDWARE SPECIFICATIONS.
- 12. PROVIDE A DOOR RELEASE PUSHBUTTON TO OPEN THE MAIN WAREHOUSE DOOR. MOUNT BUTTON IN AN INCONSPICUOUS LOCATION AS DIRECTED BY COR. BUTTON SHALL BE +46" AFF. THIS BUTTON REPLACES A CARD READER REMOVED IN DEMOLITION, REFER TO KEYNOTE #12 ON SHEET TD101. REMOUNT WAP TO WALL APPROXIMATELY 10'-0" AFF. PROVIDE 90
- DEGREE WALL BRACKET TO MOUNT WAP IN HORIZONTAL ORIENTATION. BRACKET SHALL BE OBERON #1011-00-WH OR APPROVED EQUAL.
- 14. REMOUNT EXISTING CEILING SPEAKER AFTER MECHANICAL WORK IS COMPLETE AND CEILING IS RESTORED, REFER TO KEYNOTE #14 ON SHEET TD101.
- RECONFIGURE SURFACE RACEWAY AND RECONNECT AS PREVIOUSLY INSTALLED. 16. EXISTING PA HORN SPEAKER TO REMAIN. EXTEND THIS CIRCUIT

15. REMOUNT WALL SPEAKER BELOW NEW LAY-IN CEILING HEIGHT.

- TO NEW CEILING MOUNTED SPEAKERS IS STORE ROOMS RECEIVING NEW LAY-IN CEILINGS, REFERENCE KEYNOTE #17 BELOW.
- 17. PROVIDE NEW FLUSH MOUNT SPEAKER MOUNTED IN NEW LAY-IN CEILING, COORDINATE WITH NEW CEILING INSTALLATION AND PHASING. CONNECT TO CIRCUIT SERVING PA SYSTEM SPEAKERS IN ADJACENT SPACES.
- 18. REMOUNT HORN TYPE ALARM ANNUNCIATOR TO OVERHEAD STRUCTURE, REFER TO KEYNOTE #18 ON SHEET TD101. EXTEND WIRING TO RELOCATED ALARM PANEL, REFERENCE KEYNOTE #1.
- MOUNT INTRUSION DETECTION SYSTEM CONTROL PANEL HIGH ON WALL AT +84" TO BOTTOM OF PANEL. CONNECT KEYPAD STATION AND ANNUCIATION DEVICE IN CORRIDOR. CONNECT MOTION DEVICE IN THIS ROOM.
- 20. MOUNT CAMERA ON WALL AT APPROX. 9'-0" AFF. PROVIDE 4" OCTAGONAL J-BOX. PROVIDE 3/4" EMT CONDUIT WITH BUSHING STUBBED UP TO STRUCTURE. ROUTE UTP CABLING TO TR VIA J-HOOKS AND CABLE TRAYS.

Project Number **Project Title** 589A4-20-158 RENOVATE WAREHOUSE FOR **Building Number** PANDEMIC PREPAREDNESS Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201

Checked 03/24/2021 NICWNU SCOTHO

BID SET

**FULLY SPRINKLERED** 

FIRST FLOOR PLAN - TECHNOLOGY

Dwg. # 86 of 94

T-101

**Revisions:** 

03/24/2021

**BID SET** 

VA FORM 08 - 6231

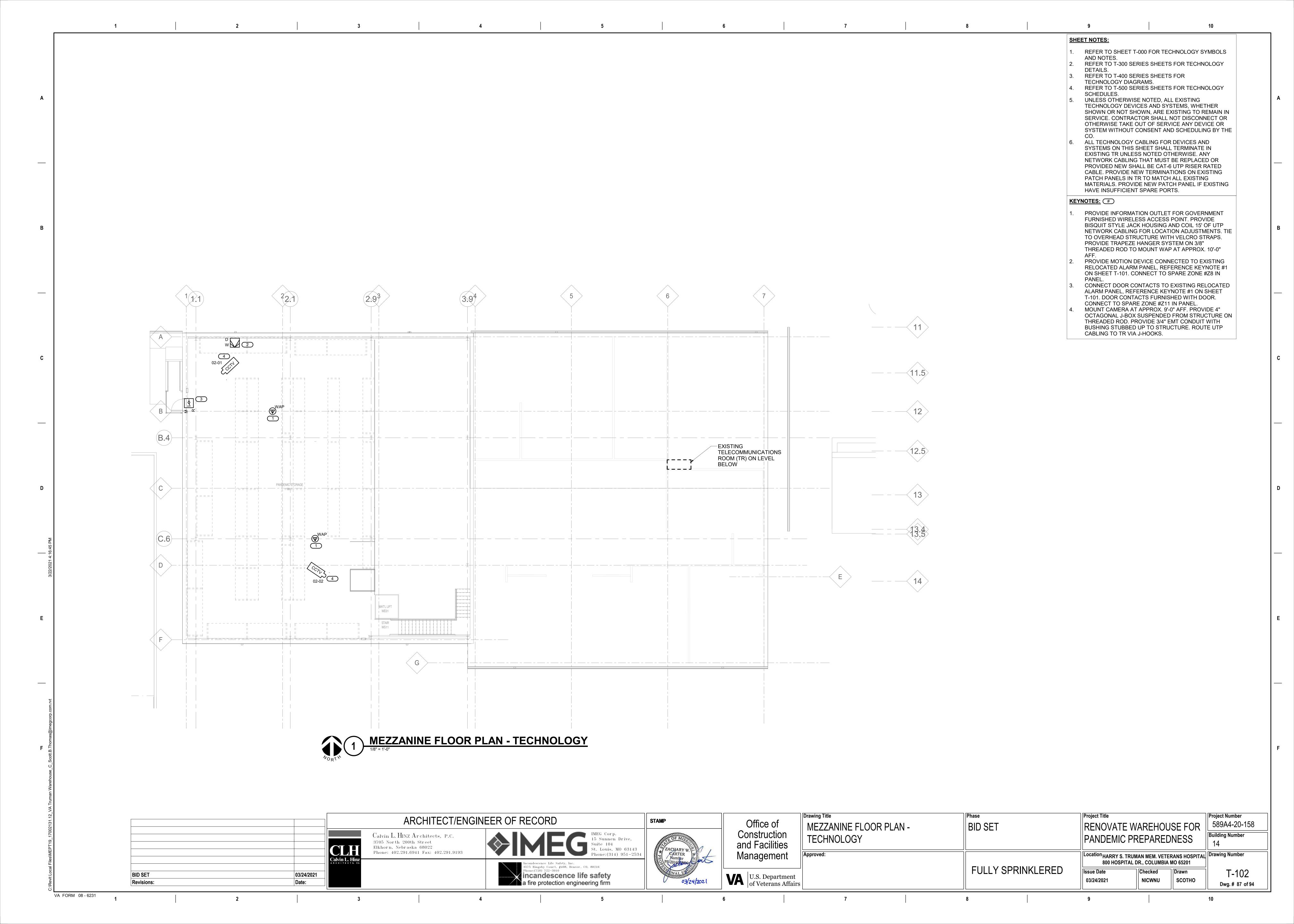
Calvin L. H

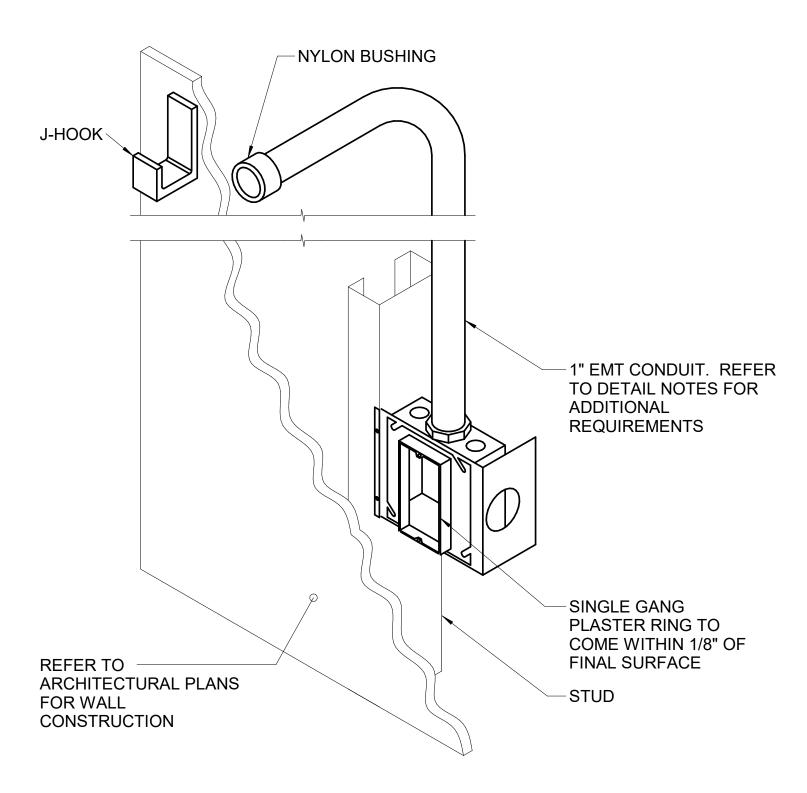
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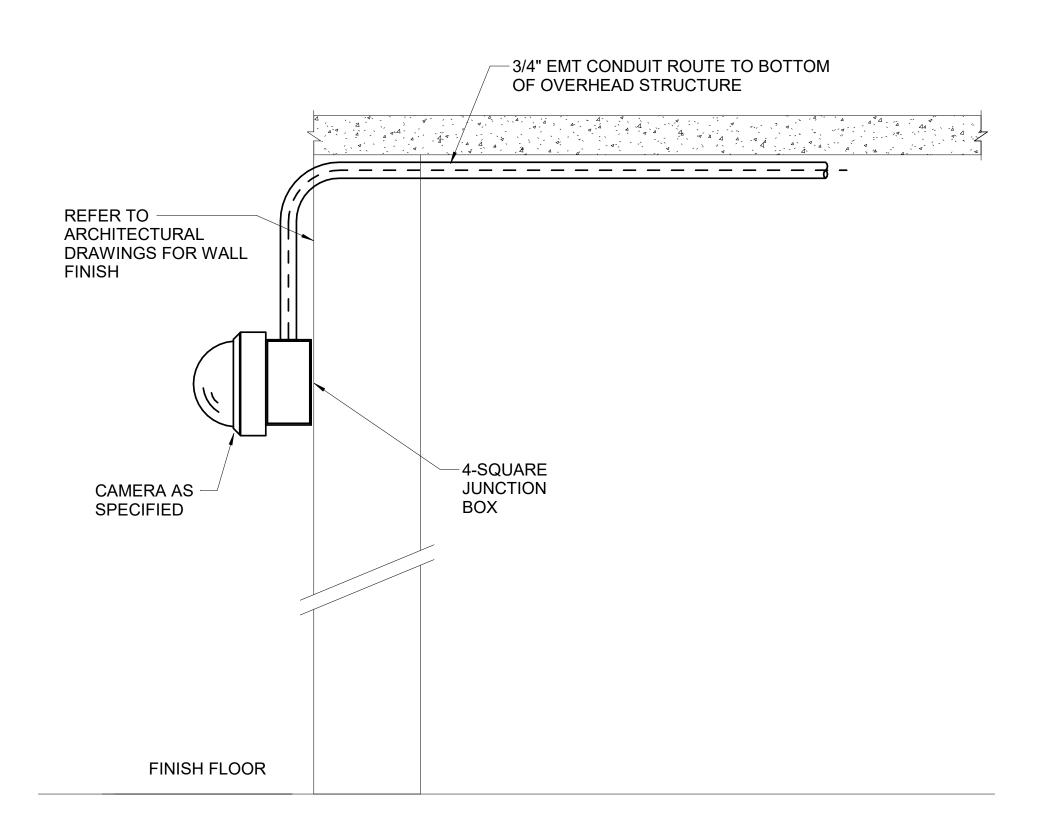


# **TECHNOLOGY ROUGH-IN MOUNTING DETAIL**

1. 1" EMT CONDUIT SHALL STUB UP TO NEAREST ACCESSIBLE CEILING AND TERMINATE ORIENTED HORIZONTALLY AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-HOOK ROUTE. CONDUIT RUN SHALL NOT CONTAIN MORE THAN 180 DEGREES OF BEND BETWEEN ACCESSIBLE JUNCTION BOXES OR BETWEEN JUNCTION BOX AND END OF CONDUIT.

2. WHERE CONDUIT STUB IS LOCATED IN A ROOM WITH AN ACCESSIBLE CEILING AND IS NOT REQUIRED TO RUN TO CABLE ROUTE LOCATED OUTSIDE THE ROOM, STUB MUST TERMINATE ABOVE THE ACCESSIBLE CEILING WITH A 90-DEGREE BEND AT THE TOP ORIENTED IN TO THE ROOM AT THE HEIGHT OF THE ASSOCIATED CABLE TRAY OR J-

HOOK ROUTE IN THE ROOM. 3. ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF THE CONDUIT. 4. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR TECHNOLOGY ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP REQUIREMENTS.



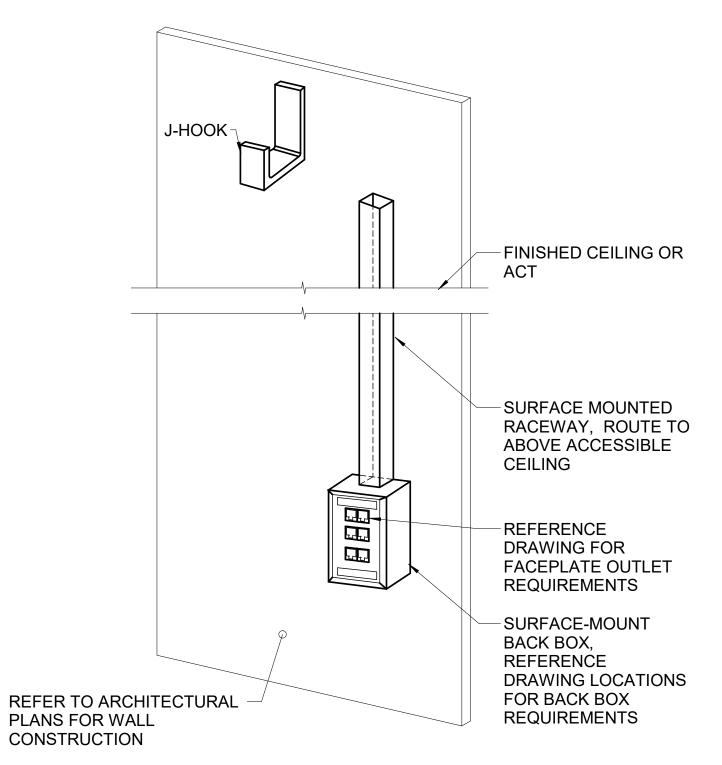
# INTERIOR WALL MOUNTED CAMERA ROUGH-IN DETAIL

- 1. COORDINATE EXACT LOCATION ON SITE WITH WORK BY OTHER TRADES TO ENSURE DESIRED VIEWING AREA AND SERVICE ACCESS AFTER COMPLETION OF PROJECT AND TO MINIMIZE ANY POSSIBLE DAMAGE TO INSTALLED CAMERA OR ASSOCIATED CABLING.
- 2. INSTALLING CONTRACTOR SHALL FURNISH AND INSTALL FIRESTOP MATERIALS FOR CAMERA ROUGH-INS PER PROJECT REQUIREMENTS. REFER TO SPECIFICATIONS FOR FIRESTOP

Calvin L. H

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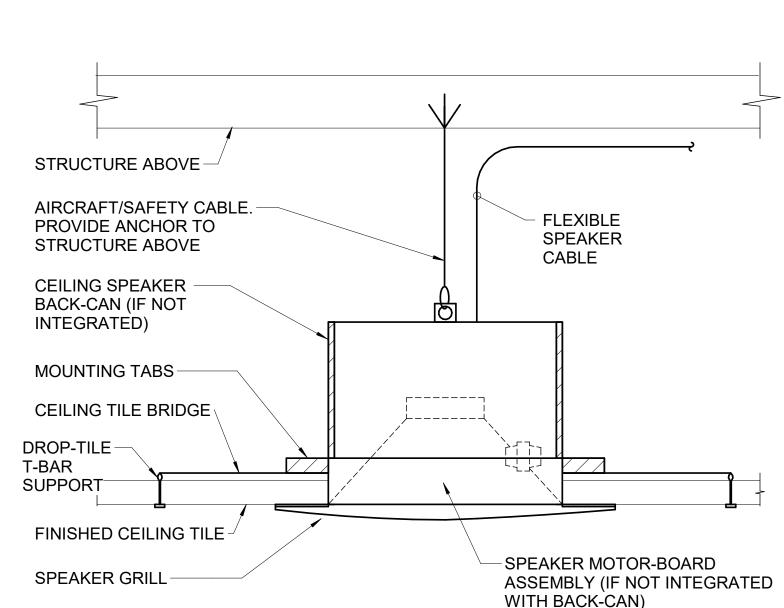
3. CAMERA MOUNTING ACCESSORY SHALL BE FROM THE SAME MANUFACTURER OF THE CAMERA AND APPROVED BY THE MANUFACTURER FOR USE WITH THE SPECIFIC MODEL NUMBER OF CAMERA INSTALLED. CONTRACTOR SHALL INSTALL CAMERA MOUNTING ACCESSORY AND CAMERA PER MANUFACTURER'S INSTRUCTIONS.



# **TECHNOLOGY ROUGH-IN SURFACE MOUNT RACEWAY DETAIL**

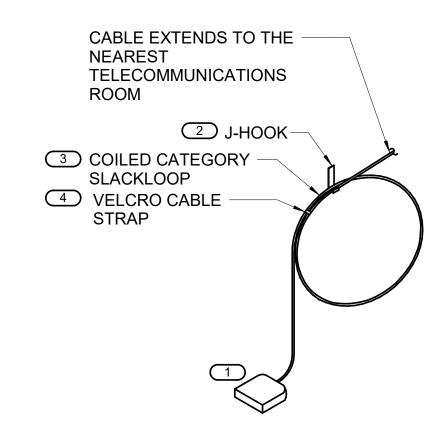
- 1. WIREMOLD RACEWAY SHALL STUB UP TO NEAREST ACCESSIBLE CEILING AND TERMINATE ORIENTED AT THE HEIGHT OF THE
- ASSOCIATED CABLE TRAY OR J-HOOK ROUTE. 2. ALL STUBS MUST BE FITTED WITH A NYLON BUSHING ON EACH END OF

THE WIREMOLD.



# **CEILING SPEAKER MOUNTING DETAIL**

1. WHERE SUPPORTS ATTACH TO METAL ROOF DECKING, EXCLUDING CONCRETE ON METAL DECKING, DO NOT EXCEED 25 LBS. PER HANGAR AND A MINIMUM SPACING OF 2'-0" ON CENTER. THIS 25 LB. LOAD AND 2'-0" SPACING INCLUDE ELECTRICAL AND MECHANICAL ITEMS HANGING FROM DECK.



# ABOVE CEILING INFORMATION OUTLET DETAIL

- 1. THIS DIAGRAM MAY NOT REPRESENT THE QUANTITY OF CABLES TO EACH INFORMATION OUTLET JUNCTION BOX. REFER TO THE DRAWINGS AND THE INFORMATION OUTLET SCHEDULE ON T-500 FOR ADDITIONAL INFORMATION.
- 2. ALL DEVICES ARE INSTALLED ABOVE THE CEILING UNLESS OTHERWISE NOTED.

KEYNOTES: #

- 1. 1 OR 2-PORT PLENUM RATED SURFACE MOUNTED BOX, SUPPORT FROM J-HOOK. REFER TO THE INFORMATION OUTLET SCHEDULE AND GENERAL TECHNOLOGY EQUIPMENT LIST FOR ADDITIONAL INFORMATION.
- 2. MOUNT A DEDICATED J-HOOK TO THE NEAREST CEILING SUBSTRUCTURE, COLUMN, JOIST, OR WALL ABOVE THE CEILING AS SHOWN ON THE DRAWINGS. PROVIDE THE PROPER SUPPORT WHEN HANGING FROM THE CEILING SUBSTRUCTURE OR COLUMN WALL OR
- 3. PROVIDE MINIMUM OF 15' SLACK LOOP FOR POSSIBLE DEVICE LOCATION ADJUSTMENTS. MAINTAIN THE MANUFACTURERS BEND RADIUS FOR SLACKLOOP SIZE.
- 4. PROVIDE AND INSTALL A VELCRO CABLE STRAP ON THE SLACKLOOP APPROXIMATELY EVERY 6" ALONG THE SLACKLOOP. A MINIMUM OF THREE (3) STRAPS WILL BE INSTALLED.

WITH BACK-CAN)

#### Drawing Title Project Title Project Number 589A4-20-158 TECHNOLOGY DETAILS BID SET RENOVATE WAREHOUSE FOR **Building Number** PANDEMIC PREPAREDNESS Location HARRY S. TRUMAN MEM. VETERANS HOSPITAL Drawing Number 800 HOSPITAL DR., COLUMBIA MO 65201 **FULLY SPRINKLERED** Drawn T-300 Checked 03/24/2021 NICWNU SCOTHO Dwg. # 88 of 94

ARCHITECT/ENGINEER OF RECORD Calvin L. HINZ Architects, P.C. 3705 North 200th Street Elkhorn, Nebraska 68022 Phone: 402.291.6941 Fax: 402.291.9193

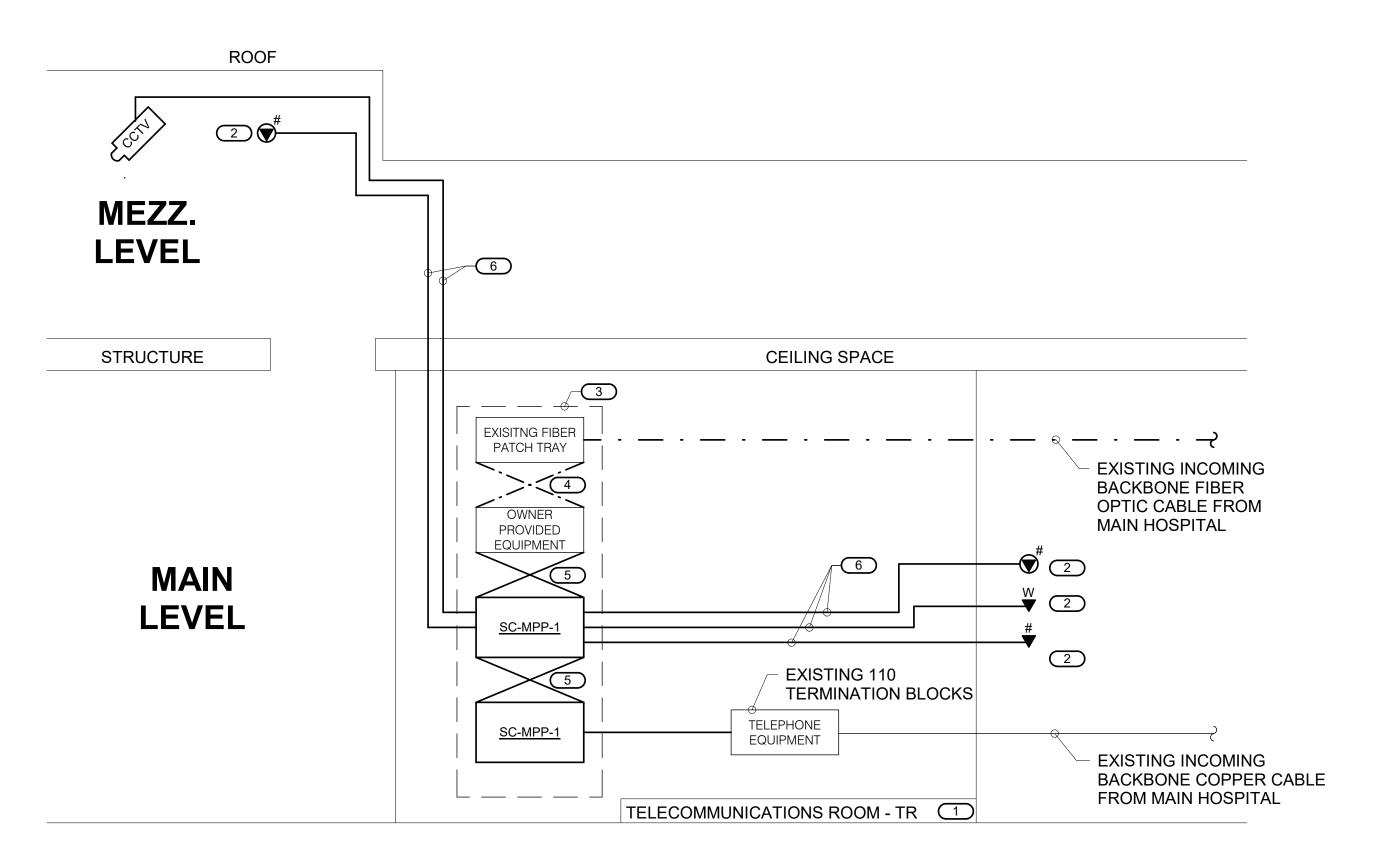
andescence Life Safety, Inc. 5 Ringsby Court, #408, Denver, CO, 80216

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Office of Construction and Facilities Management

U.S. Department of Veterans Affairs

ncandescence life safety **BID SET** 03/24/2021 fire protection engineering firm **Revisions:** 



# LOCAL TELECOMMUNICATIONS ROOM RISER DIAGRAM

NOTES:

1. THIS RISER IS DIAGRAMMATIC AND MAY NOT SHOW ACTUAL ROUTING OR QUANTITIES OF MATERIALS SHOWN. THIS RISER IS SHOWN FOR CLARIFICATION OF CONNECTION(S), LOCATIONS AND CABLE TYPE. ALL INFORMATION OUTLETS ARE TYPICAL OF THE OUTLETS IN THE AREA SHOWN. REFER TO FLOOR PLANS FOR MORE SPECIFIC ROUTING INFORMATION. REFER TO SPECIFICATIONS FOR ADDITIONAL

REQUIREMENTS.

2. REFER TO FLOOR PLANS FOR QUANTITY OF CABLES AND JACKS TO BE INSTALLED AT EACH INFORMATION OUTLIET.

KEYNOTES: #

1. REFER TO FLOOR PLANS FOR TELECOMMUNICATIONS ROOM LOCATIONS.

2. # INDICATES VOICE/DATA FACEPLATE CONFIGURATION. REFER TO THE HORIZONTAL CABLE SCHEDULE

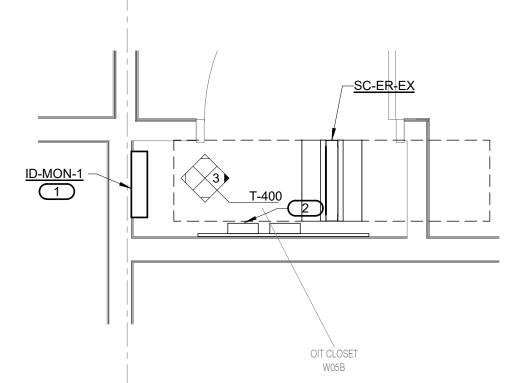
ON T-000 FOR ADDITIONAL INFORMATION.

EXISTING EQUIPMENT RACK OR CABINET.
 EXISTING OPTICAL FIBER PATCH CABLES.

5. RJ-45 TO RJ45 CATEGORY 6A UTP PATCH CORDS, REFER TO SPECIFIATIONS.

6. 4-PAIR, CATEGORY 6A, UNSHIELDED TWISTED PAIR CABLE, REFER TO SPECIFICATIONS.





# 2

# DATA ROOM ENLARGEMENT - FIRST FLOOR - WAREHOUSE TR

NOTES:

1. NOT ALL EQUIPMENT AND DEVICES ARE SHOWN, ROOM IS RELATIVELY CROWDED. COORDINATE WITH VA OIT DIRECTOR FOR EXACT MOUNTING LOCATION OF ANY NEW EQUIPMENT.

KEYNOTES:

 MOUNT LYNX ALARM SYSTEM MONITORING DEVICE TO WALL IN EXISTING TR. CONNECT TO ALL EXISTING AND NEW SECURITY SYSTEMS PANELS LOCATED WITHIN THE WAREHOUSE, TOTAL OF THREE, TO PROVIDE ANNUCIATION AT THE MAIN SECURITY OFFICE. CONNECT ETHERNET OUTPUT TO AVAILABLE SWITCH PORT PER VA OIT DIRECTION. PROVIDE WIRING TO MONITORED DEVICES PER MANUFACTURERS INSTRUCTIONS.
 EXISTING PLYWOOD BACKBOARD WITH 110 TELEPHONE TERMINATION BLOCKS TO REMAIN. MODIFY WIRING FOR TELEPHONE OUTLETS AS REQUIRED. SC-MPP-1
SC-HWM-1
SC-MPP-1
SC-MPP-1
SC-MPP-1

# **EQUIPMENT RACK ELEVATION -**

# WAREHOUSE TR NO SCALE

NOTE

 THIS DETAIL IS DIAGRAMMATIC AND DOES NOT SHOW ALL EXISTING ITEMS LOCATED WITHIN THE RACK. THIS ELEVATION IS SHOWN FOR GENERAL LOCATIONS OF NEW RACK EQUIPMENT.
 COORDINATE WITH COR AND OIT STAFF FOR PREFERRED MOUNTING LOCATION OF ALL NEW MATERIAL.

KEYNOTES: #

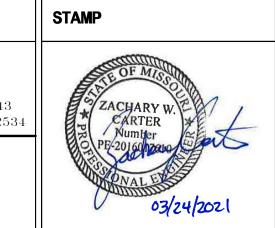
 EXISTING PATCH PANELS AND SWITCHING EQUIPMENT. ALL DEMOLISHED CAT-5E OR CAT-6 JACKS AND CABLING SHALL BE COMPLETELY REMOVED, DO NOT ABANDON ANY MATERIALS IN PLACE.
 SPACE FOR FUTURE EQUIPMENT.

|            |            | Calvin I |
|------------|------------|----------|
|            |            |          |
| BID SET    | 03/24/2021 |          |
| Revisions: | Date:      |          |

VA FORM 08 - 6231

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Incandescence life safety
a fire protection engineering firm

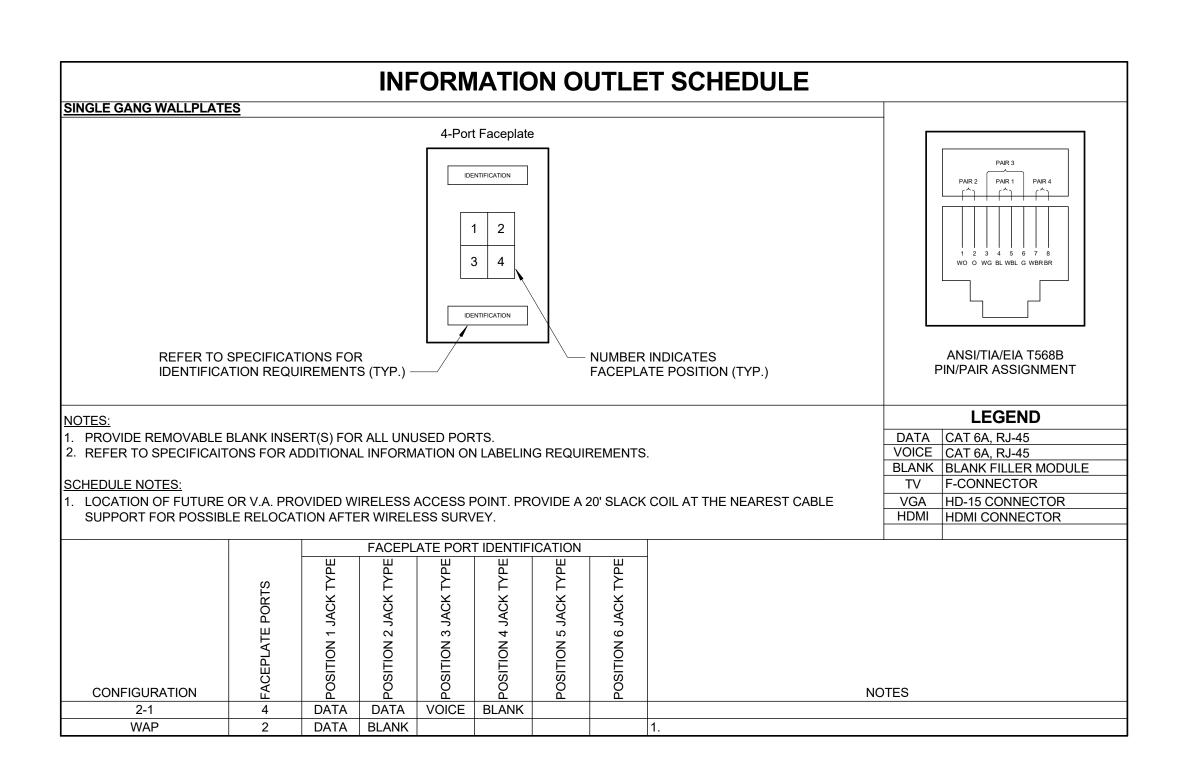


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|----------|---|--|
| VA       | U.S. Department<br>of Veterans Affairs                |  |

| TECHNOLOGY ROOM ENLARGEMENTS AND DIAGRAMS | Phase<br>BID SET  | Project Title RENOVATE WARRENDEMIC PR                                | Project Number 589A4-20-158  Building Number 14 |  |                       |
|---|-------------------|--|---|--|-----------------------|
| Approved:                                 | FULLY SPRINKLERED | Location HARRY S. TRUM<br>800 HOSPITAL D<br>Issue Date<br>03/24/2021 | R., COLUMBIA N                                  |  | T-400 Dwg. # 89 of 94 |

| CAMERA   C   |            |      |       |        |            |                  |                      |               |                   |                   | CC                    | TV (                  | CAN           | IER | A TY    | Έ    | SCH    | HED   | ULE                |                                       |              |                           |     |              |                  |                 |        |
|--|------------|------|-------|--------|------------|------------------|----------------------|---------------|-------------------|-------------------|-----------------------|-----------------------|---------------|-----|---------|------|--------|-------|--------------------|---------------------------------------|--------------|---------------------------|-----|--------------|------------------|-----------------|--------|
| COMPRESSION CODEC CAMERA TYPE CODE FIXED CAMERA 1/3" 1/2.5 |            |      |       |        |            |                  | CAI                  | MERA          |                   |                   |                       |                       |               |     |         | LENS |        |       |                    |                                       | ΕN           | NCLOS                     | JRE |              |                  |                 |        |
| CAMERA TYPE CODE PTZ CAMERA FIXED CAMERA 1/3" 1/2" 1/2" 1/2" 1/2" 1/2" 1/2" 1/2" 1/2   |            |      |       |        |            | SENSIT           | IVITY TYPE           |               |                   |                   |                       | EATU                  | RES           |     |         | FE   | ATURE: | S     | TYF                | Έ                                     | М            | DUNT                      |     | FE           |                  |                 |        |
|  | RA TYPE CO | CAME | D CAN | 1/2.5" | HORIZONTAL | <br>YNAMIC LOW L | MINIMUM ILLUMINATION | SHUTTER SPEED | COMPRESSION CODEC | MAXIMUM FRAME RAT | DAY/NIGHT<br>INFRARED | DIGITAL ZOOM WIRELESS | TCP/IP<br>CCD | CMO | FOCAL L |      | TO Z   | X/NIC | URFACE MOUNTED DOM | NDAN I MOUN I ED DOM<br>ILING PENDANT | WALL PENDANT | WALL MOUNT<br>CEILING MOU |     | INDOOR (NEMA | OUTDOOR (NEMA3R) | BASIS OF DESIGN | NOTES: |

|         | INDIVIDUAL CAMERA (CCTV) REQUIREMENTS SCHEDULE |               |          |       |                          |                |               |               |       |  |  |
|---------|--|---------------|----------|-------|--------------------------|----------------|---------------|---------------|-------|--|--|
|         |  |               | ROUGH-IN |       | CAMER<br>TORAG<br>LATION | E              | RECO<br>RESOL |               |       |  |  |
| CAMERA# | CAMERA TYPE<br>CODE                            | ROUGH-IN ONLY | NOTES    | CODEC | FRAME RATE               | PERCENT MOTION | H. RESOLUTION | V. RESOLUTION | NOTES |  |  |
| 01-01   | CAM1   |               |          | H.264 | 30                       | 5              | 1920          | 1080          |       |  |  |
| 01-02   | CAM1   |               |          | H.264 | 20                       | 15             | 1920          | 1080          |       |  |  |
| 01-EX1  | CAM1   |               |          | H.264 | 20                       | 40             | 1920          | 1080          |       |  |  |
| 01-EX2  | CAM1   |               |          | H.264 | 20                       | 40             | 1920          | 1080          |       |  |  |
| 01-EX3  | CAM1   |               |          | H.264 | 20                       | 15             | 1920          | 1080          |       |  |  |
| 01-EX4  | CAM1   |               |          | H.264 | 20                       | 15             | 1920          | 1080          |       |  |  |
| 02-01   | CAM1   |               |          | H.264 | 20                       | 15             | 1920          | 1080          |       |  |  |
| 02-02   | CAM1   |               |          | H.264 | 20                       | 30             | 1920          | 1080          |       |  |  |



# VA TECHNOLOGY EQUIPMENT SCHEDULE

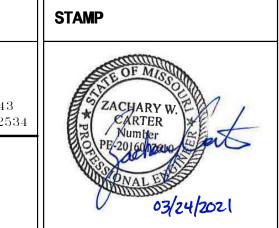
THE EQUIPMENT LIST ABBREVIATIONS AND THE GENERAL TECHNOLOGY EQUIPMENT SCHEDULE ARE FOR THE CONVENIENCE OF THE CONTRACTOR. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF QUANTITIES AND SHALL FURNISH ALL MATERIAL REQUIRED, WHETHER SPECIFIED OR NOT, TO PRODUCE A SATISFACTORY WORKING SYSTEM.

CATALOG NUMBERS ARE NOT TO BE CONSIDERED COMPLETE BUT ARE GIVEN ONLY TO AID THE CONTRACTOR IN THE SEARCH FOR MATERIAL. NO MATERIAL SHALL BE ORDERED BY MANUFACTURER AND CATALOG NUMBER ONLY. EACH CONTRACTOR SHALL FIRST READ THE COMPLETE DESCRIPTION OF THE MATERIAL ON THESE DRAWINGS AND SPECIFICATIONS. THE FIRST MANUFACTURER LISTED IS THE BASIS OF DESIGN. "STANDARD COLOR" INDICATES FACTORY FINISH AVAILABLE AT NO ADDITIONAL CHARGE.

| EQUIPMENT LIST ABBREVIATION | EQUIPMENT LIST DESCRIPTION  | EQUIPMENT LIST MANUFACTURER AND MODEL  |
|-----------------------------|---|--|
| AC-CR1-W                    | ACCESS CONTROL AUTHORIZATION DEVICE, CARD READER WITH KEYPAD. FIPS 201 COMPLIANT, TRIMS TO SINGLE GANG BACKBOX.   | HID<br>RK40-H  |
| AC-DC                       | ACCESS CONTROL DOOR CONTACT. FLUSH MOUNTED IN NEW DOORS, SURFACE MOUNTED FOR EXISTING DOORS.  | OR APPROVED EQUAL PROVIDED BY DOOR VENDOR OR                                       |
| AC-EDH                      | ACCESS CONTROL ELECTRONIC LOCK DEVICE.  | RELOCATED EXISTING EXISTING TO REMAIN OR FURNISHED BY                              |
|                             |   | OTHER  |
| AC-MD                       | INTRUSION DETECTION MOTION SENSOR.  | BOSCH BLUE LINE<br>DETECTOR<br>ISC-CDL1-WA15HE<br>BRACKET<br>B328                  |
|                             |   | OR APPROVED EQUAL  |
| AC-PB                       | ACCESS CONTROL PUSH BUTTON REQUEST TO EXIT (REX) DEVICE. WITH TIME DELAY RELAY FUNCTION ADJUSTABLE FROM 0-100 SECONDS.  | SECURITRON<br>EEB2   |
| ID-AA-W                     | INTRUSION DETECTION ALARM AUDIBLE ANNUNCIATOR.  | OR APPROVED EQUAL<br>HONEYWELL<br>747  |
|                             |   | OR APPROVED EQUAL  |
| ID-IKP-W                    | INTRUSION DETECTION KEYPAD.   | BOSCH<br>KEYPAD<br>D1255<br>BACKBOX<br>D55   |
|                             |   | OR APPROVED EQUAL  |
| ID-MON-1                    | LYNX ALARM SYSTEM MONITORING DEVICE. WALL MOUNT. 4-DIFFERENT ALERTS, ETHERNET CONNECTED, TCP/IP COMMUNICATION, CONNECTION TO SERVER EVERY 5 MINUTES FOR STATUS REPORT, RS-232 AND USB PORT, LED INDICATORS, +120VDC FROM POWER SUPPLY.                              | LYNX SYSTEMS<br>950-LYNX-4i-3  |
| ID-SCP-1                    | INTRUSION DETECTION ALARM CONTROL PANEL WITH POWER SUPPLY, BATTERY BACK-UP, CHARGING CIRCUIT AND A KEYED METAL LOCK ON DOOR WITH TAMPER SWITCH. PROVIDE ANY MISCILLANEOUS WIRING HARNESS AND MANAGEMENT FOR A COMPLETE ASSEMBLED AND TESTED UNIT.                   | BOSCH<br>CONTROLLER<br>3512<br>ENCLOSURE<br>D8108A                                 |
| PA-S-C                      | PA SYSTEM SPEAKER, CEILING MOUNT, 8" DRIVER WITH ROUND METAL PERFORATED BAFFLE PAINTED WHITE. INTEGRAL 70VOLT TRANSFORMER WITH MULTIPLE TAPS.   | OR APPROVED EQUAL QUAM SOLUTION 1 SPEAKER C10X/BU/WS BAFFLE BR8WS BACKBOX ERD8U    |
|                             |   | OR APPROVED EQUAL  |
| SC-ER-EX                    | EQUIPMENT RACK, STANDARD 19" TIA-EIA MOUNTING RAILS, 45 RACK MOUNTING UNITS.  | EXISTING TO REMAIN   |
| SC-HWM-1                    | HORIZONTAL WIRE MANAGER, 1 RU.  | LEGRAND ORTRONICS<br>OR-SHMC2RU  |
|                             |   | OR APPROVED EQUAL  |
| SC-IO-C                     | INFORMATION OUTLET FOR WIRELESS ACCESS POINT. MODULAR SURFACE MOUNT JACK HOUSING WITH RJ-45 CAT-6A RATED JACKS. REFER TO DETAIL 3/T-300 FOR ADDITIONAL INFORMATION  | LEGRAND ORTRONICS<br>HOUSING<br>WP3502IV<br>JACK (CAT-6A, RJ-45)<br>TJ6A-36 (BLUE) |
| SC-IO-W                     | INFORMATION OUTLET, WALL MOUNT, COVERPLATE AS INDICATED ON DRAWINGS, REFER  |  |
|                             | TO INFORMATION OUTLET DETAILS ON T-300 FOR ADDITIONAL INFORMATION.  "#"INDICATES INFORMATION OUTLET FACEPLATE CONFIGURATION AS INDICATED ON THE   | ,  |
|                             | PLANS. REFER TO INFORMATION OUTLET DETAILS ON T-300 FOR ADDITIONAL INFORMATION  | TJ6A-36 (BLUE) OR APPROVED FQUAL   |
|                             | INSTALL INFORMATION OUTLET IN A 4" SQUARE BACKBOX WITH A SINGLE GANG PLASTER RING INSTALL A 1" FMT CONDUIT ROUTE CONDUIT TO J-HOOK WIREWAY AND ROUTE TO   |  |
| SC-MPP-1                    | RING. INSTALL A 1" EMT CONDUIT, ROUTE CONDUIT TO J-HOOK WIREWAY AND ROUTE TO EXISTING TR. CABLE OUTLET WITH CAT 6A CABLE.  PATCH PANEL. CAT-6A, 48 PORTS WITH LABEL FIELDS, PORT NUMBERING AND REAR CABLE MANAGEMENT BAR. RJ-45 PORTS WITH 110 STYLE IDC PUNCH DOWN | LEGRAND ORTRONICS<br>SP6AU48   |

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| BID SET    | 03/24/2021 |      |
| Revisions: | Date:      |      |

| ARCHITECT/ENGINEER OF RECORD   |   |  |  |  |  |  |  |  |  |
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| vin L. HINZ Architects, P.C.<br>5 North 200th Street<br>norn, Nebraska 68022<br>ne: 402.291.6941 Fax: 402.291.9193 | IMEG Corp. 15 Sunnen Drive, Suite 104 St. Louis, M0 63143 Phone:(314) 951-2534  |  |  |  |  |  |  |  |  |
|  | Incandescence Life Safety, Inc. 3575 Ringsby Court, #408, Denver, CO, 80216 Phone:(720) 722-3010 incandescence life safety a fire protection engineering firm |  |  |  |  |  |  |  |  |



| Co<br>an | Office of onstruction d Facilities anagement |  |
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| VA       | U.S. Department<br>of Veterans Affairs       |  |

| Drawing Title TECHNOLOGY SCHEDULES |                   | Project Title RENOVATE W                 | /AREHOU           | SE FOR          | Project Number 589A4-20 |
|------------------------------------|-------------------|--|-------------------|-----------------|-------------------------|
|                                    |                   | PANDEMIC PF                              | REPARED           | NESS            | Building Numb           |
| Approved:                          |                   | Location HARRY S. TRUN<br>800 HOSPITAL I | Drawing Numb      |                 |                         |
|                                    | FULLY SPRINKLERED | 1ssue Date<br>03/24/2021                 | Checked<br>NICWNU | Drawn<br>SCOTHO | T-5                     |