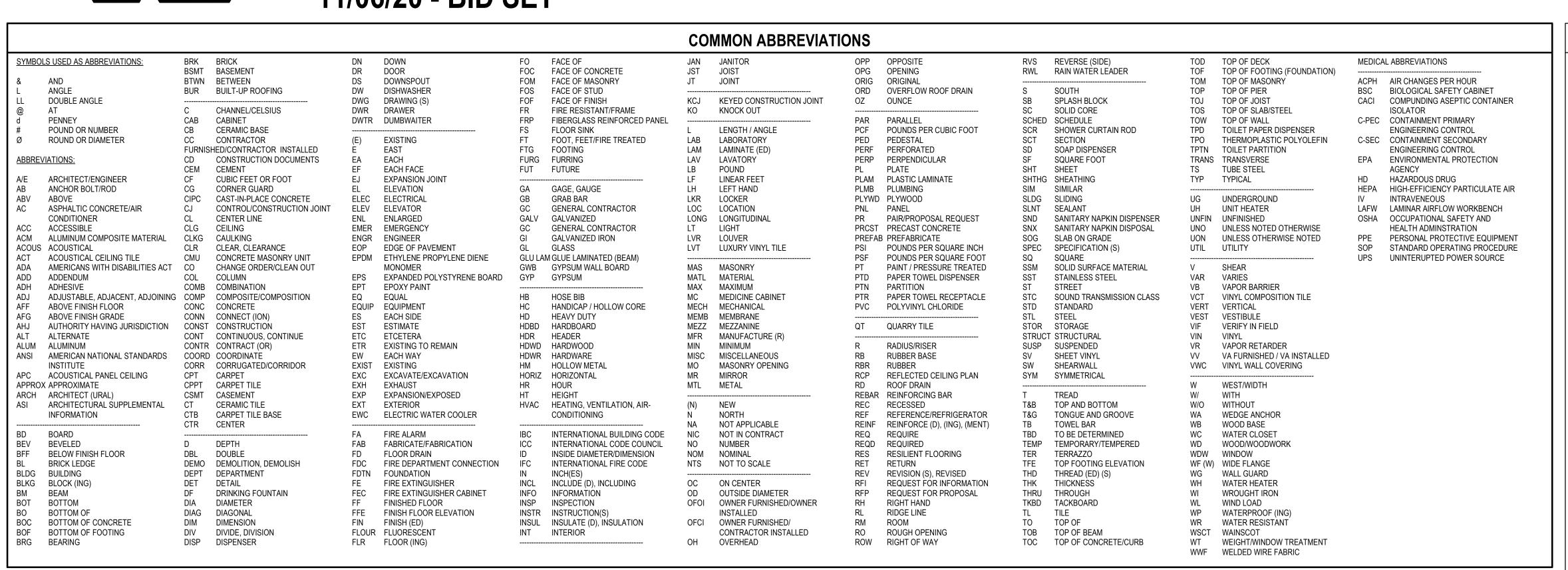


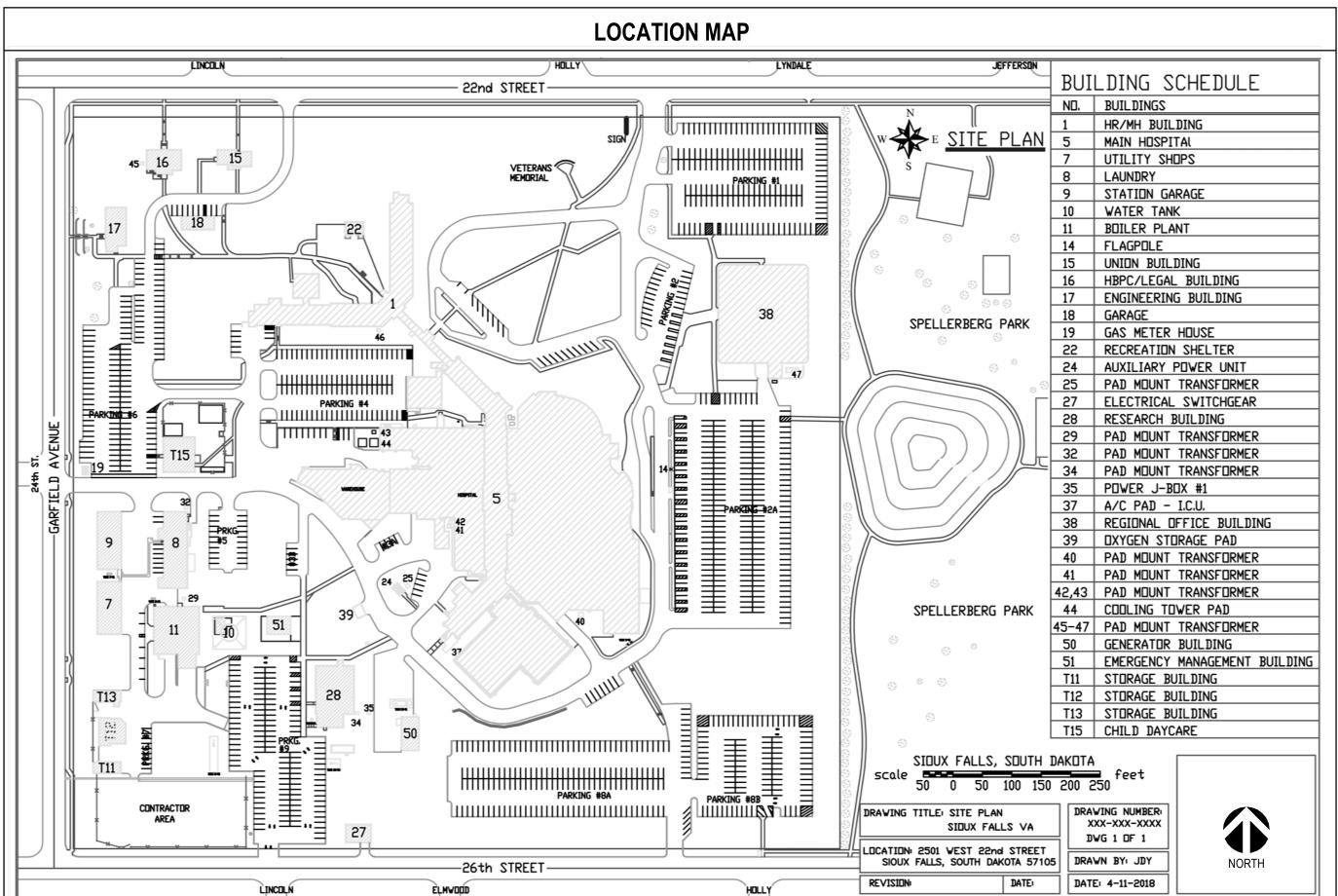
## U.S. DEPARTMENT OF VETERANS AFFAIRS ROYAL C. JOHNSON VETERANS MEMORIAL MEDICAL CENTER RENOVATE PREOPERATIVE CARE UNIT

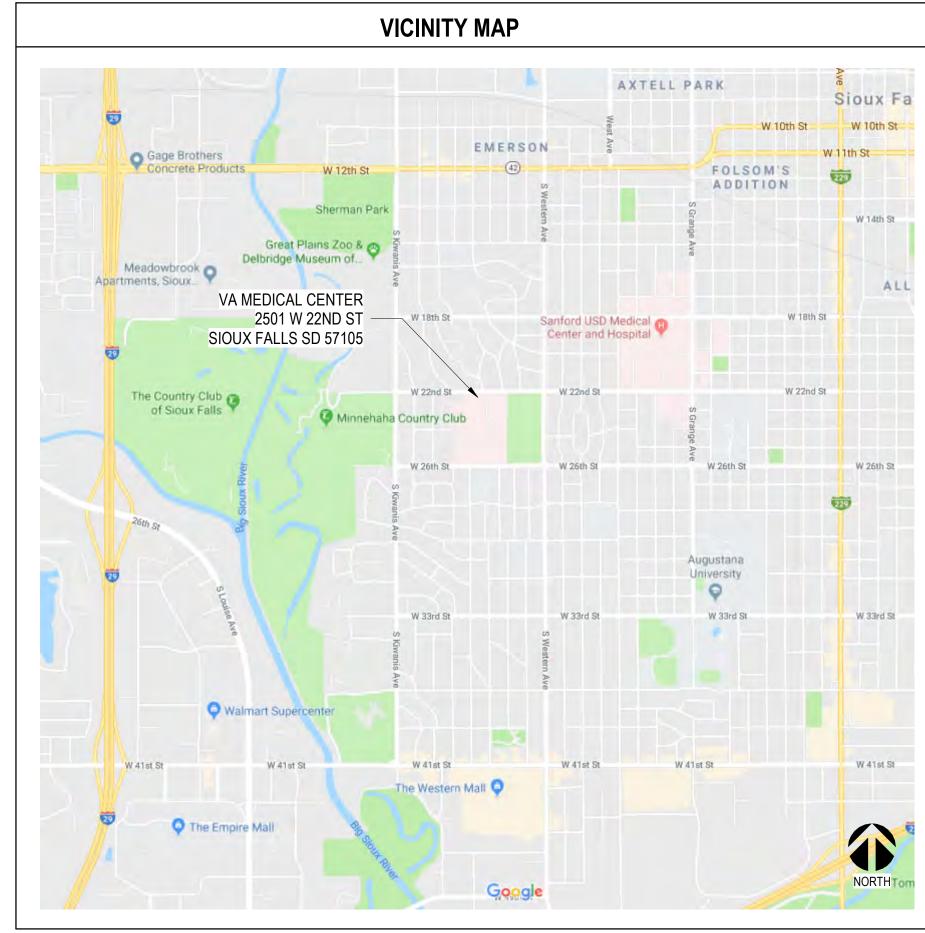


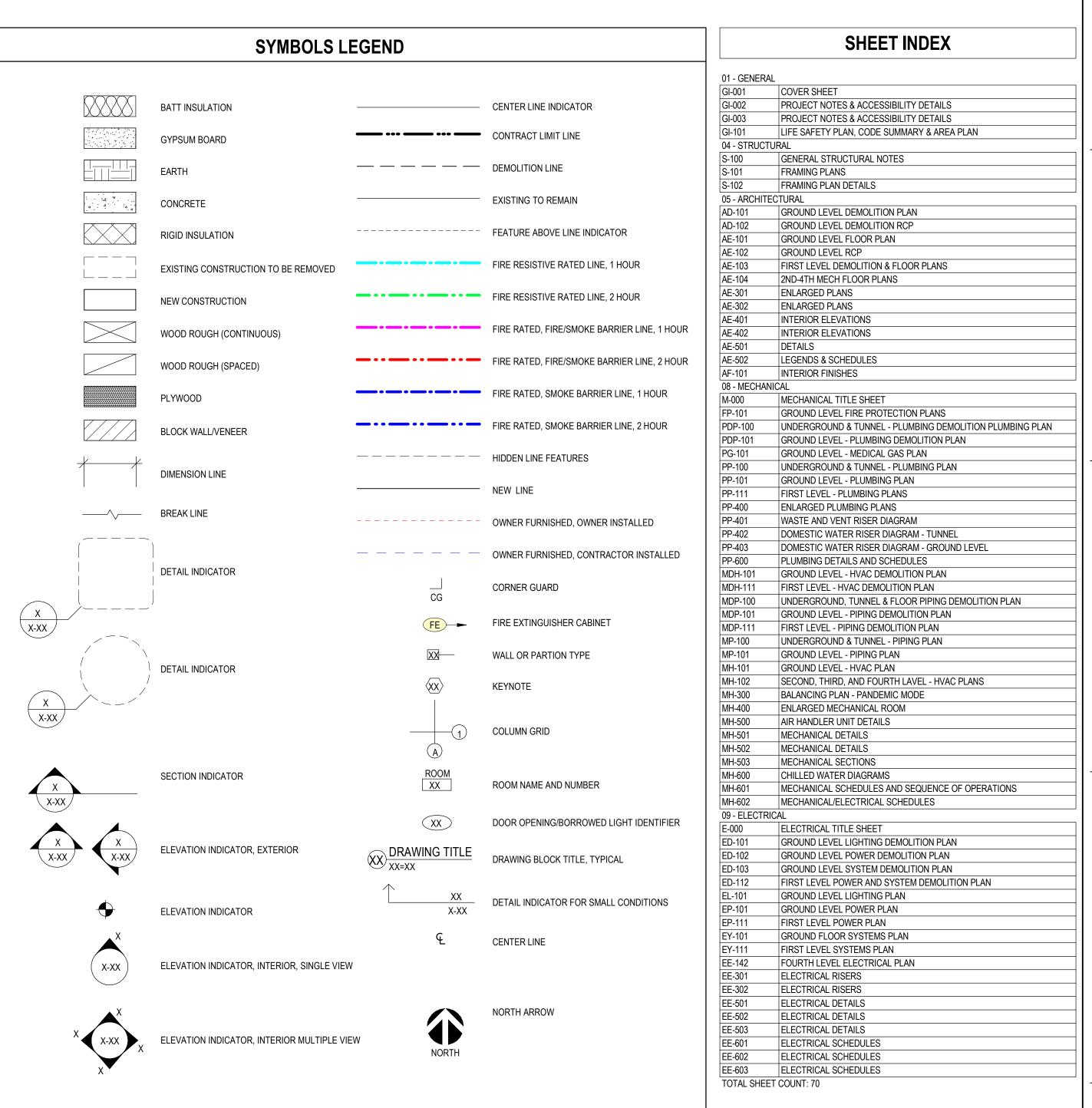
**BUILDING #5** SIOUX FALLS, SOUTH DAKOTA

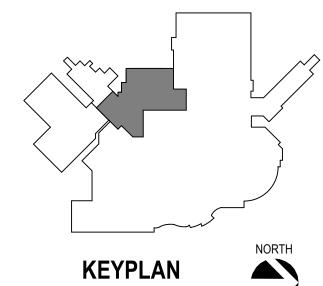
VA #438-19-101 11/06/20 - BID SET



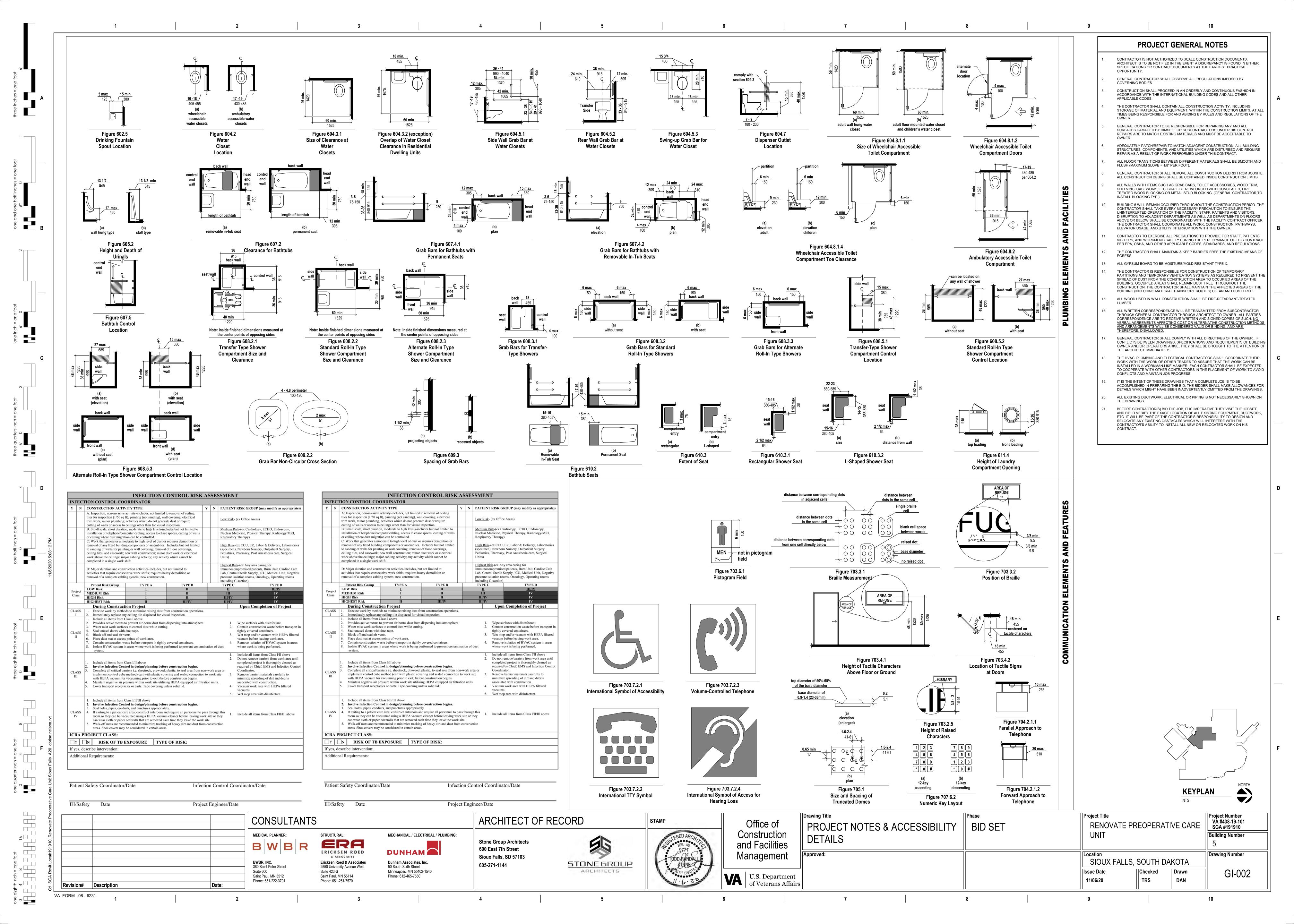


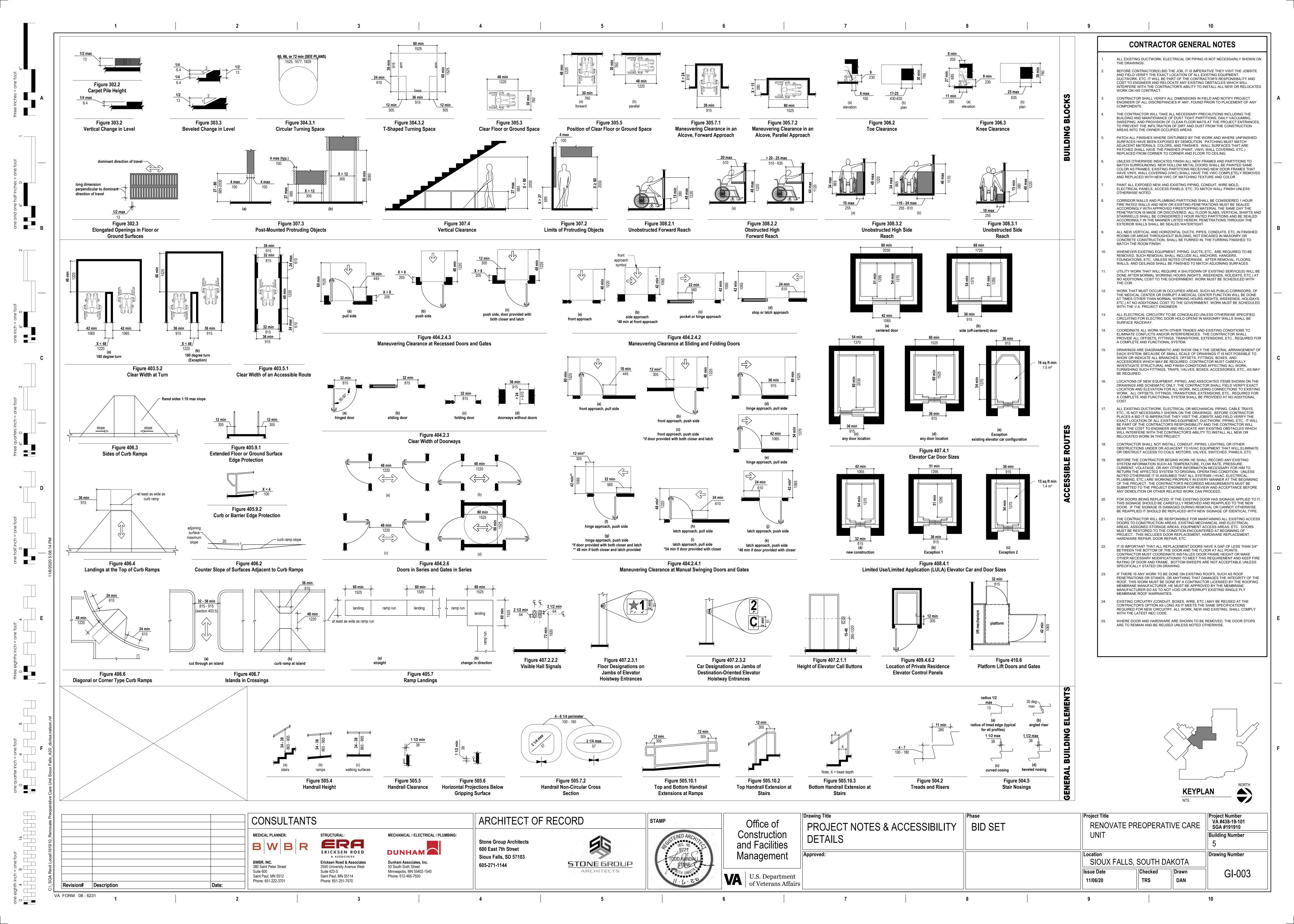


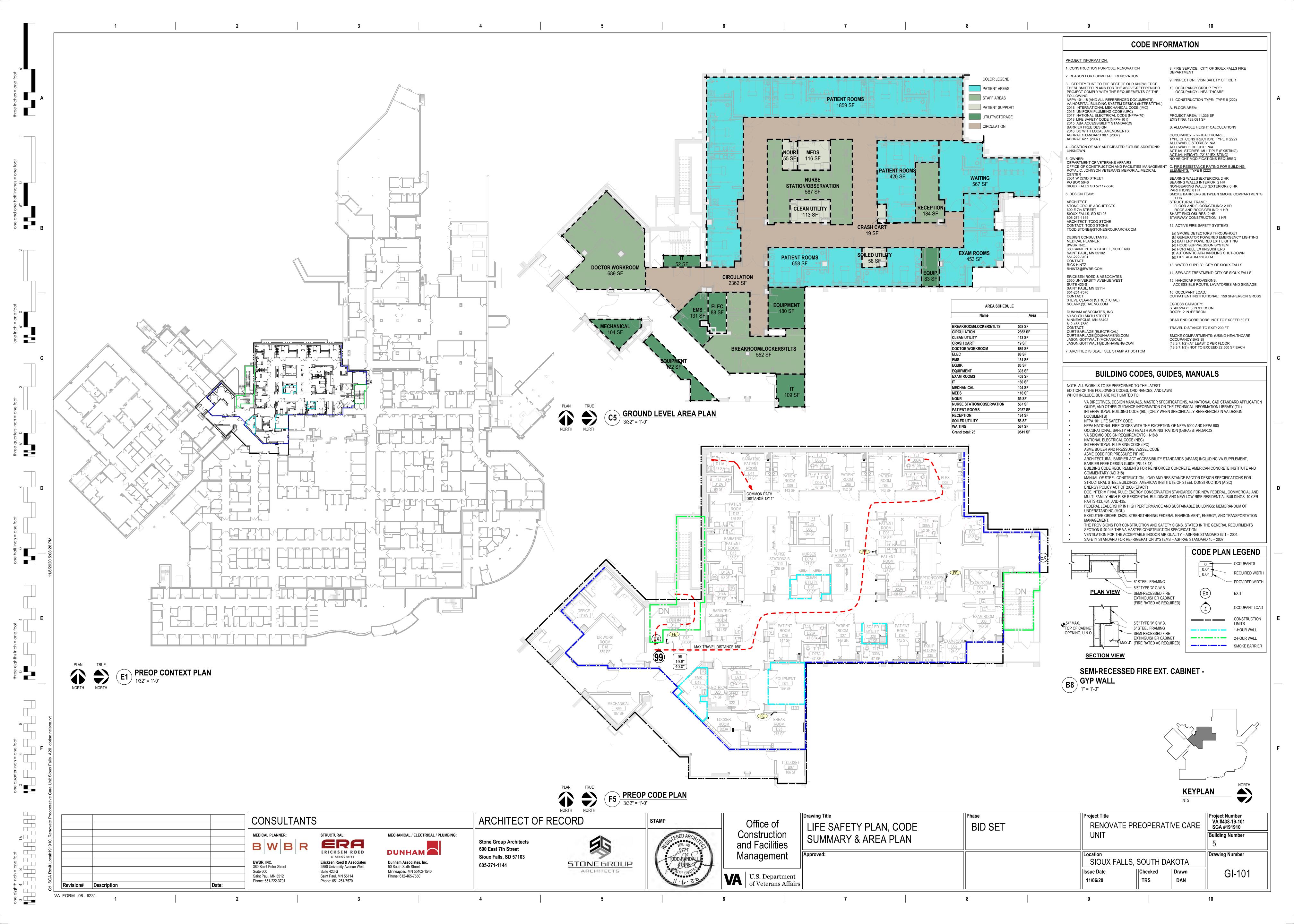




		CONSULTANTS			ARCHITECT OF RECORD		STAMP	Office of	Drawing Title COVER SHEET	Phase BID SET	Project Title  RENOVATE PREOPERATIVE CARE		Project Number VA #438-19-101 SGA #191910
		MEDICAL PLANNER:	STRUCTURAL:  ERICKSEN ROED  A ASSOCIATES  Ericksen Roed & Associates 2550 University Avenue West	MECHANICAL / ELECTRICAL / PLUMBING:  DUNHAM  Dunham Associates, Inc. 50 South Sixth Street  Minneapolio MN 55402 1540	Stone Group Architects 600 East 7th Street Sioux Falls, SD 57103 605-271-1144	STONE GROUP	TODD RANDALL STONE	Construction and Facilities Management			UNIT		Building Number 5
		BWBR, INC. 380 Saint Peter Street							Approved:		SIOUX FALLS, SOUTH DAKOTA		Drawing Number
Revision# Description	Suite 600 Saint Paul, MN 5512 Phone: 651-222-3701	Suite 423-S Minneapolis, MN 55402-1540 Saint Paul, MN 55114 Phone: 612-465-7550 Phone: 651-251-7570		ARCHITECT5	TO CO THE DAY ON THE WARMING	U.S. Department of Veterans Affairs	S		11/06/20	TRS DAN	GI-001		







GENERAL STRUCTURAL NOTES These notes supplement the Specifications. Refer to the Specifications for additional requirements. DESIGN CRITERIA: 1.1. BUILDING CODES USED FOR DESIGN: 1.1.1. IBC 2018 with Local Amendments. 1.2. STRUCTURAL TESTS AND SPECIAL INSPECTIONS: 1.2.1. Special inspections shall be performed by an independent testing agency according to IBC Chapter 17. Section 1704.2.5 - Fabricators Section 1705.2 and Table 1705.2.3 - Steel Construction Table 1705.3 - Post-installed Anchors 1.2.2. Qualifications of special inspectors and frequency of tests and inspections shall be as defined in CASE 962C - Guideline for International Building Code-Mandated Special Inspections and Tests and Quality 1.2.3. The Engineer will provide periodic observation to assure conformance with design intent of the construction documents. These observations are not meant to fulfill the requirements of special inspections. 1.2.4. Special inspections of the following items are not within the scope of the structural drawings. Contact the Architect or design professionals with these responsibilities for information about these items. Sprayed Fire-resistant Materials Mastic and Intumescent Fire-resistant Coatings Smoke Control 1.2.5. In addition to the special inspections required elsewhere in these drawings, the project specifications, and contract documents, camber shall be verified in a minimum of 10% of all members requiring camber. If, in the opinion of the EOR and Testing Agency, this testing discloses a large ratio (10% or more) of unacceptable cambers, the required percentage of tested cambers may be increased by the EOR to 100% at no expense to the owner. For steel beams and trusses, the fabrication tolerances for camber shall be as defined in AISC 303 "Code of Standard Practice for Steel Buildings and Bridges" (latest edition). 1.3. DESIGN LOADS: 1.3.1. Risk Category: From IBC Table 1604.5 4. STEEL: Risk Category . . . . . . . . . IV 1.3.2. DESIGN LIVE LOADS: Mechanical . . . . . . . . . . . . 150 PSF 1.3.3. WIND LOAD: Ultimate Design Wind Speed: . . . 126 MPH Exposure Classification: . . . . . B Internal Pressure Coeff: . . . . +0.18 . . . . . -0.18 Wind pressures used for the design of exterior components and cladding shall be calculated by a professional engineer registered in the state where the project is located. Calculations shall be submitted for review. 1.3.4. SNOW LOAD: Ground Snow Load: . . . . . . . . 40 PSF Flat Roof Snow Load: . . . . . . . 34 PSF Snow Exposure Factor: . . . . . . 1.0 Snow Load Importance Factor: . . . 1.2 Roof Thermal Factor: . . . . . . 1.0 Roof Slope Factor: . . . . . . . 1.0 1.3.5. SEISMIC LOADS: Importance Factor: . . . . . . . 1.5 Seismic Design Category: . . . . A Site Class: . . . . . . . . . . . . D Mapped Spectral Response Coefficients SS: . . . . . . . . . . . . 0.091 g S1: . . . . . . . . . . . . 0.035 g Design Spectral Response Coefficients SDS: . . . . . . . . . . . . 0.097 g SD1: . . . . . . . . . . . . 0.057 g DESIGN STRENGTHS: 2.1. STRUCTURAL STEEL: FY = 50 KSI ASTM A992 Wide Flange Sections: Rect. Hollow Structural Shapes: FY = 50 KSI ASTM A500 C Other Shapes or Plates FY = 36 KSI ASTM A36 ASTM A325/A490 Welding Electrodes: FY = 70 KSI E70XX

one eighth inch = one foot 0 4 8 16

2.2. COLD-FORMED STEEL: See ASTM A1003. 54 mil (16 Gage) and Heavier: FY = 50 KSI 43 mil (18 Gage) and Lighter: FY = 33 KSI 2.3. MASONRY: Assembly Compressive Strength: f'm = 2,000 PSI f'g = 3,000 PSI, 8-11 in Slump Masonry Grout: Deformed Bars: FY = 60 KSI ASTM A615 3. CONCRETE: 3.1. REFERENCES: ACI 315 ACI Detailing Manual ACI 318 Building Code Requirements for Reinforced Concrete CRSI MSP Manual of Standard Practice AWS D1.4 Structural Welding Code - Reinforcing Steel CRSI Recommended Practice for Placing Reinforcing Bars PCI Design Handbook: Precast and Prestressed Concrete 3.2. ANCHORING TO CONCRETE 3.2.1. Headed studs shall be Nelson H4L or S3L with Fu = 65 ksi, or approved equal, unless noted otherwise. 3.2.2. Deformed bar anchors shall be Nelson D2L with FY = 70 ksi or approved equal, unless noted otherwise. 3.2.3. Post-installed anchors shall be installed by qualified personnel in accordance with the Manufacturer's Printed Installation Instructions. 3.2.4. Expansion anchors shall not be loaded until concrete has achieved a minimum age of 7 days. Adhesive anchors shall not be loaded until concrete achieved a minimum age of 21 days. 3.2.5. Expansion anchors shall be Hilti Kwik Bolt TZ or approved equal, unless noted otherwise. Embedment shall be as follows unless noted otherwise: Diameter Embedment Diameter Embedment 5/8" 2" 4" 3 1/4" 3/4" 4 3/4" 3.2.6. Anchor capacity is dependent upon spacing between adjacent anchors and proximity of anchors to edge of concrete. Install anchors in accordance with spacing and edge clearances indicated on the drawings. 3.2.7. Contractor shall verify the location of reinforcing bars and/or prestressing tendons via GPR, X-

Ray, or other means before drilling anchor holes.

Steel Construction Manual, 14th Edition

4.2.1. All beams shall be marked and erected with

poured concrete or will receive welded studs.

section using an electric arc welding gun.

4.3.2. The fabricator shall submit engineering

4.2.3. The top and bottom of all steel columns that

are in bearing shall be finished to a common plane.

4.2.4. All headed studs are to be welded to the steel

4.3.1. Connections shall be as shown on the drawings.

in the drawings to the Engineer for review. These

4.3.3. All beam reactions, axial forces, and moments

4.3.4. All bolts shall be either A325 or A490 high

are to be considered reversible.

Where connections are not explicitly detailed, fabricator

shall design the connections in accordance with AISC 360

calculations for all connections not explicitly detailed

submittals shall be signed and stamped by a professional

engineer registered in the state where the project is

act concurrently unless noted otherwise. Beam reactions

act in gravity direction while axial and moment forces

strength bolts. Use no more than two bolt diameters, one

drawings. Fabricator may substitute ASTM F1852 N for A325

grade per diameter, skip one size between diameters.

4.3.5. All high strength bolts shall be installed in

N bolts. Weld metal used shall be 70 KSI.

qualified by testing.

snug-tightened joints unless noted otherwise on the

4.3.6. All welding shall be performed by AWS qualified

4.3.7. All welded joints shall be prequalified or

4.2.2. Do not prime structural steel members that will

receive spray-applied fireproofing. Do not prime surfaces

of structural steel members that will be in contact with

Reinforcing steel shall not be damaged.

4.1. REFERENCES:

4.2. STRUCTURAL STEEL:

4.3. CONNECTIONS:

located.

using LRFD methods.

natural camber upwards.

4.4.5. Material thickness: DESIGNATION NOMINAL THICKNESS MINIMUM THICKNESS 0.0346" 0.0329" 33 mils 0.0451" 43 mils 0.0428" 0.0566" 0.0538" 54 mils 0.0713" 0.0677" 68 mils 0.1017" 0.0966" 97 mils 118 mils 0.1242" 0.1180" 4.4.6. Prefabricated panels shall be square, with components attached in a manner as to prevent racking and to minimize distortion while lifting. 4.4.7. Framing fabricator shall ensure alignment of

punchouts for installation of lateral bracing when shop or field cutting studs to length. 4.4.8. Tracks shall be securely anchored to the supporting structure as shown on the drawings.

4.3.8. When welded connections are shown in the

4.3.9. Do not prime surfaces of structural steel

4.4.1. All framing members shall be formed from

corrosion-resistant steel, corresponding to the

4.4.2. Install all framing members per requirements

4.4.3. All studs and/or joists and accessories shall

Cold-Formed Steel Framing - Product Data.

Member depth in 100th's of an inch

Flange width in 100th's of an inch

Material thickness in mils

4.4.4. Member designations is as follows:

600 S 162 - 54

and tolerances listed in AISI Standard S200-07: North

be of the type, size, gauge and spacing as shown on the

in AISI Standard S201-07: North American Standard for

Member designation (S=Stud or joist, T=Track)

Example: 600S162-54 = 6" stud with 1 5/8"

flange and thickness of 54 mils

drawings, and shall be conform to the requirements listed

American Standard for Cold-Formed Steel Framing - General

members in areas that will be welded.

process or preparation.

requirements of ASTM A1003.

4.4. COLD-FORMED STEEL

Provisions.

drawings, it is not the intent to specify the specific

4.4.9. Complete, uniform, and level bearing support shall be provided for the bottom track.

4.4.10. Abutting length of track shall each be securely anchored to a common structural element, and butt-welded.

4.4.11. Temporary bracing, where required, shall be provided until erection is completed.

4.4.12. Studs

4.4.12.1. All framing components shall be cut squarely for attachment to perpendicular members, or as required for an angular fit against abutting members. Wall studs shall be seated tight into tracks with maximum 1/8" gap.

4.4.12.2. Provide a minimum of two studs at the end of each wall.

4.4.12.3. Torch cutting of cold-formed members is not allowed. All field cutting must be performed by sawing or

4.4.12.4. Splices in studs shall not be permitted.

4.4.12.5. Notching or coping of cold-formed steel members is not allowed unless detailed in these drawings.

4.4.12.6. Studs shall be plumbed, aligned and securely attached to flanges of both upper and lower tracks.

4.4.13. Headers

> 4.4.13.1. All headers or built-up beams shall consist of unpunched framing members.

4.4.14. Connections

4.4.14.1. Fastening of components shall be by welding or screwing. Wire tying of components shall not be permitted. All welds shall be touched up with zinc-rich

4.4.14.2. Self-drilling tapping screw fasteners shall comply with ASTM C1513. Replacement with a larger screw is acceptable provided the minimum spacing and edge distances requirements are fulfilled. Provide ITW Buildex "TEKS" screws or approved equal.

4.4.14.3. Minimum spacing and edge distance for screw fasteners is 3 x d where d = nominal screw diameter.

4.4.14.4. Screw fasteners shall protrude through the steel member with a minimum of three exposed threads. The installation of screw fasteners shall not cause a permanent separation between connected materials.

4.4.14.5. Notify the engineer if the screw fasteners become stripped from installation.

4.4.14.6. P.A.F. = Powder Actuated Fasteners. Provide Hilti X-U 0.157" x 1" embed or approved equal.

4.4.14.7. Welding of connections must be performed in accordance with AWS D1.3 Structural Welding Code - Sheet

4.4.14.8. The minimum weld throat thickness shall meet or exceed the base steel thickness of the thinnest connected

5. MISCELLANEOUS: 5.1. VERIFICATIONS:

5.1.1. The General Contractor shall verify all

respective Subcontractors.

5.1.2. Structural steel supplier and erector are responsible for providing deck reinforcement or framing as shown on typical structural details for mechanical roof openings. See mechanical drawings for quantities, sizes and locations. The cost of structural redesign fees shall be borne by the Mechanical Contractor for equipment and/or opening changes made after structural documents have been issued.

openings sizes, pad sizes, and locations with the

5.2. CORE DRILLING:

5.2.1. All core drilling shall be done by the Mechanical and Electrical Subcontractors for their own work under the supervision of the General Contractor. No reinforcing steel shall be cut. Verify location of reinforcing steel before core drilling. Do not core through beams or columns. The maximum core hole through slabs shall be 12". If these requirements cannot be met, contact the Engineer.

5.3. NEW WORK IN CONJUNCTION WITH EXISTING CONSTRUCTION:

5.3.1. VERIFICATION: The Contractor shall verify, by field check, all sizes, dimensions, elevations, locations, etc. of elements of the existing construction which are relative to the new construction.

5.3.2. DIMENSIONS: All dimensions involving new Work tying into or governed by existing construction shall be field checked by the Contractor and furnished to the Subcontractors prior to fabrication of any Work. The verified dimensions shall appear and be noted as such on the first shop drawing submitted.

5.3.3. ASSUMPTIONS: The Engineer has made assumptions concerning the soundness of the existing buildings and these assumptions are that this building was designed and constructed in conformity with good design and construction practices. The Contractor shall take extraordinary precautions concerning preservation of the building during demolition and new construction Work. Further, the Contractor shall agree to assume all responsibility for the preservation of this property.

5.3.4. NOTIFICATION: The Contractor shall notify the Architect/Engineer immediately of any discrepancies between construction documents and actual field conditions.

5.3.5. HOLES: All holes through existing construction shall be core drilled or saw cut.

5.3.6. NEW OPENINGS IN EXISTING SLABS: New openings in existing slabs shall be cut in such a manner as to minimize cutting existing slab reinforcement. The slab shall not be overcut unless approved by the Engineer.

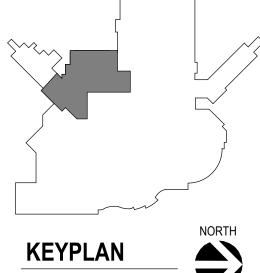
5.4. GENERAL:

5.4.1. These drawings do not include necessary components for construction safety.

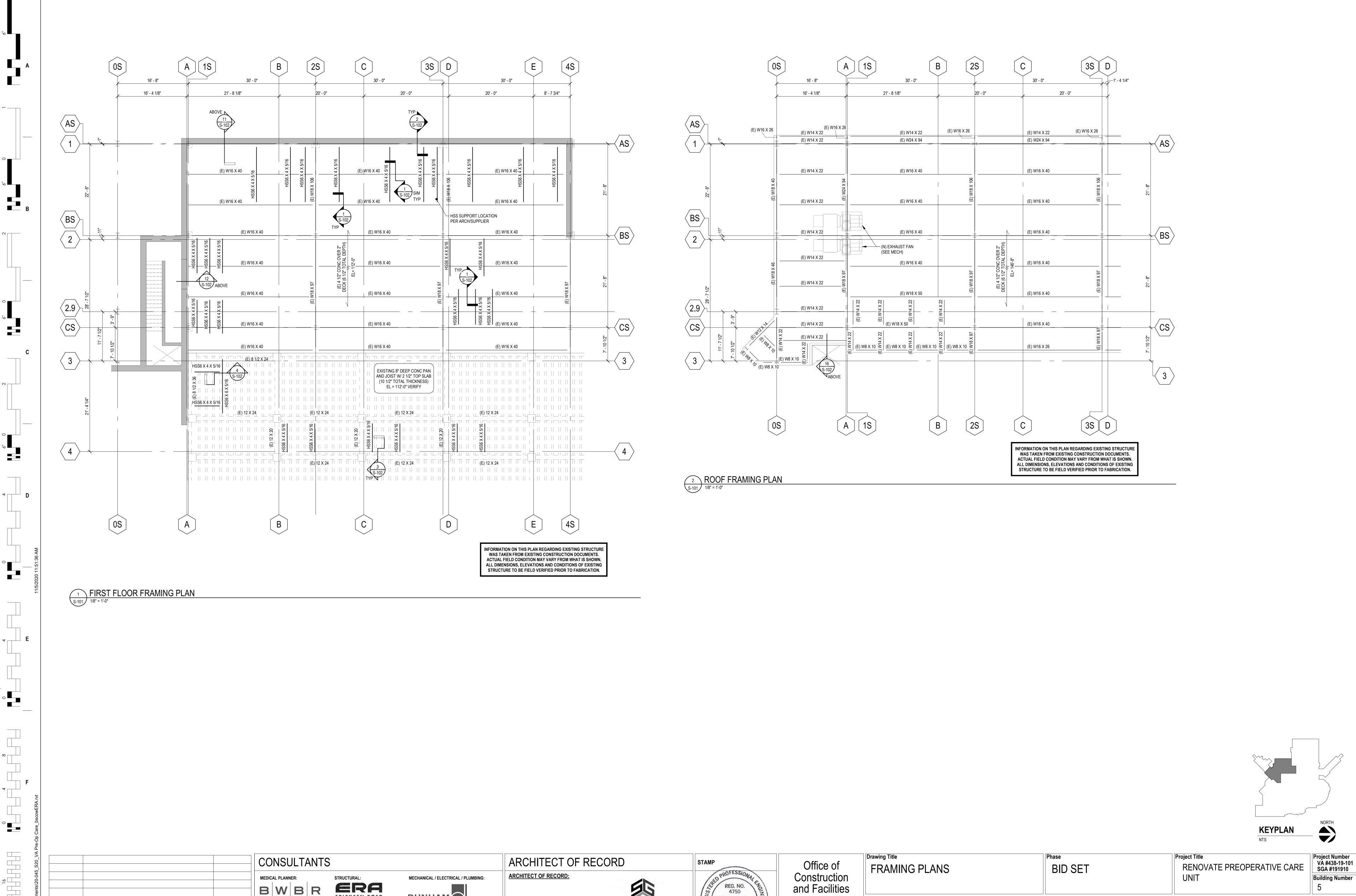
5.4.2. The structural design is based only on the building in its completed state. Contractors and their subs shall take whatever precautions are necessary to withstand all horizontal and vertical loadings that may be encountered during the construction prior to completion of the building.

5.4.3. During construction, the Contractor may encounter existing conditions which are not now known or are at variance with project documentation (Discovery). Such conditions may interfere with new construction or required protection and/or support of existing Work during construction, or may consist of damage or deterioration to structural materials or components which could jeopardize the structural integrity of the building(s).

5.4.4. The Contractor shall notify the Engineer of all Discoveries that the Contractor believes may interfere with proper execution of the Work or jeopardize the structural integrity of the building(s) prior to proceeding with Work related to such Discoveries.



**()** Drawing Title **Project Title Project Number** CONSULTANTS ARCHITECT OF RECORD VA #438-19-101 Office of RENOVATE PREOPERATIVE CARE GENERAL STRUCTURAL NOTES **BID SET ARCHITECT OF RECORD:** Construction UNIT STRUCTURAL: **MECHANICAL / ELECTRICAL / PLUMBING:** MEDICAL PLANNER: 狐 ERA and Facilities REG. NO BWB 4750 **DUNHAM** ERICKSEN ROED MICHAEL A. Management **Drawing Number** DeSUTTER SIOUX FALLS, SOUTH DAKOTA Ericksen Roed & Associate STONE GROUP SOUTH 50 South Sixth Street 2550 University Avenue West 2550 University Avenue West DAKOTA ARCHITECTS Minneapolis, MN 55402-1540 Checked Drawn S-100 Suite 423-S U.S. Department of Veterans Affairs Saint Paul, MN 55114 Saint Paul, MN 55114 Phone: 612-465-7550 BAS BES Phone: 651-251-7570 Phone: 651-251-7570 Revision# Description ERA 2020045-00 VA FORM 08 - 6231



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STONE GROUP

AREHITEET5

REG. NO.

4750

MICHAEL A.
DeSUTTER
SOUTH 11.06.
DAKOTA

Management

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

Drawing Number

S-101

Location

11/06/2020

SIOUX FALLS, SOUTH DAKOTA

Checked

BAS

Drawn

BES

one eighth inch = one foot

0 4 8 16

Revision# Description

VA FORM 08 - 6231

STRUCTURAL:

Suite 423-S

ERA

ERICKSEN ROED

& ASSOCIATES

Ericksen Roed & Associates

2550 University Avenue West

Saint Paul, MN 55114

Phone: 651-251-7570 ERA 2020045-00

MEDICAL PLANNER:

BWBR

**BWBR, INC.** 2550 University Avenue West

Suite 423-S

Saint Paul, MN 55114

Phone: 651-251-7570

MECHANICAL / ELECTRICAL / PLUMBING:

DUNHAM 🕋

**Dunham Associates, Inc.** 50 South Sixth Street Minneapolis, MN 55402-1540 Phone: 612-465-7550

