

STRUCTURAL NOTES

BUILDING CODE: 2015 INTERNATIONAL BUILDING CODE AND ASCE 7-10
2015 INTERNATIONAL EXISTING BUILDING CODE.

ANY REFERENCES TO VARIOUS TRADE CODES THROUGHOUT THESE NOTES ARE TO THE YEAR OF THE CODE CITED IN THE ABOVE REFERENCE BUILDING CODE.

DESIGN LIVE LOADS

ROOF STRUCTURAL ELEMENTS SHALL BE DESIGNED FOR THE MORE CRITICAL OF THE FOLLOWING LOAD CASES:
CASE 1 30 PSF MINIMUM (NOT REDUCIBLE)
CASE 2 SNOW LOAD BASED ON 35 PSF GROUND SNOW LOAD WITH APPLICABLE DRIFT AND SLIDING LOADS

ROOF SNOW LOAD DESIGN DATA:

FLAT ROOF SNOW LOAD (P) 1 - 29.4 PSF
MINIMUM SNOW LOAD PER ASCE 7-10 - 7.3.4 (Pm) - 24 PSF
SNOW EXPOSURE FACTOR (Ce) - 1.0
SNOW LOAD IMPORTANCE FACTOR (I) - 1.2
THERMAL FACTOR (Ct) - 1.0

FLOORS: THE FLOOR AREAS HAVE BEEN DESIGNED FOR THE FOLLOWING MINIMUM LIVE LOADS. LIVE LOAD REDUCTION HAS BEEN CONSIDERED IN FLOOR AND COLUMN DESIGN.

8" WATER FILLED PIPE 51 PLF
16" WATER FILLED PIPE 160 PLF
STAIRS 100 PSF
FLOOR (TYPICAL) 100 PSF
INTERSTITIAL SPACE 40 PSF
STORAGE 125 PSF
MECHANICAL ROOMS 150 PSF

DESIGN DEAD LOADS

ROOF SELF WEIGHT + SUPERIMPOSED ACTUAL + 10 PSF
INTERSTITIAL SELF WEIGHT + SUPERIMPOSED ACTUAL + 15 PSF
FLOOR SELF WEIGHT + SUPERIMPOSED ACTUAL + 20 PSF

LATERAL LOADS

WIND LOAD ANALYSIS
RISK CATEGORY IV
ULTIMATE WIND SPEED (Vult) 120 MPH
NOMINAL WIND SPEED (Vbase) 93 MPH
WIND EXPOSURE C
INTERNAL PRESSURE COEFFICIENT +/- 0.18

SEISMIC LOAD ANALYSIS

RISK CATEGORY IV
SEISMIC IMPORTANCE FACTOR(I) 1.5
MCE SPECTRAL RESPONSE ACCELERATION PARAMETER - SHORT (Ss) 12.3%g
MCE SPECTRAL RESPONSE ACCELERATION PARAMETER - 1 second (S1) 4.3%g
SITE CLASS D
SOIL SITE COEFFICIENT (Fa / Fv) 1.6 / 2.4
DESIGN EQ SPECTRAL RESPONSE ACCEL. PARAMETER - SHORT (Sds) 0.131
DESIGN EQ SPECTRAL RESPONSE ACCEL. PARAMETER - 1 second (SD1) 0.069
SEISMIC DESIGN CATEGORY 1
BASIC SEISMIC FORCE RESISTING SYSTEM C-4 per TABLE 12.2-1 ASCE7-10
RESPONSE MODIFICATION COEFFICIENT (R) 3.5
SYSTEM OVERSTRENGTH FACTOR (O) 3.0
DEFLECTION AMPLIFICATION FACTOR (Cd) 3.0
SEISMIC RESPONSE COEFFICIENT (Cs) 0.047
BASE SHEAR (Fb) MASS x Cs
ANALYSIS PROCEDURE UTILIZED EQUIVALENT LATERAL FORCE

LATERAL ANALYSIS OF RENOVATION SHOWS THAT LATERAL MEMBER DEMAND-TO-CAPACITY RATIOS ARE INCREASED BY LESS THAN 10 PERCENT AFTER ALTERATIONS. NO REMEDIATION OF THE LATERAL SYSTEM IS REQUIRED PER IBC SECTION 403.4 EXCEPTION.

GENERAL NOTES

REFER TO THE ARCHITECTURAL, ELECTRICAL, MECHANICAL AND PLUMBING DRAWINGS FOR ADDITIONAL SLEEVES, ANCHORS, VENT OPENINGS, ETC. NOT SHOWN ON THE STRUCTURAL PLANS.

NOTIFY THE STRUCTURAL ENGINEER OF RECORD OF ANY DEVIATION FROM THE STRUCTURAL CONTRACT DOCUMENTS FOR APPROVAL (I.E. OPENINGS IN STRUCTURAL ELEMENTS SUCH AS LOAD-BEARING WALLS).

ALL MATERIALS SHALL BE IN CONFORMANCE WITH THE LATEST EDITION OF THE ASTM SPECIFICATIONS NOTED IN THE STRUCTURAL NOTES AND PROJECT SPECIFICATIONS. BASED ON THE FINAL DATE NOTED ON THE CONSTRUCTION DOCUMENTS.

THIS PROJECT HAS BEEN DESIGNED FOR THE WEIGHTS OF THE MATERIALS INDICATED ON THE DRAWINGS AND FOR THE LIVE LOADS INDICATED IN THE DESIGN DATA ABOVE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADDITIONAL SHORING AND BRACING FOR THE STRUCTURE IF ACTUAL CONSTRUCTION LOADS EXCEED THE DESIGN LOADS.

ALL DIMENSIONS AND NOTES SHALL SUPERSEDE ALL SCALE REFERENCES ON THE DRAWINGS.

ALL WORK SPECIFIED HEREIN SHALL BE INSPECTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, THE BUILDING CODE AND ALL LOCAL ORDINANCES. THE CONTRACTOR SHALL HIRE AN EXPERIENCED, QUALIFIED SPECIAL INSPECTOR TO PERFORM ALL THE REQUIRED INSPECTION WORK. ADTEK ENGINEERS WILL NOT PERFORM THE CONTINUOUS DAILY SPECIAL INSPECTIONS DURING CONSTRUCTION. ADTEK ENGINEERS MAY VISIT THE SITE TO ASCERTAIN GENERAL CONFORMANCE TO THE CONTRACT DOCUMENTS AND SUCH VISITS ARE NOT TO BE CONSTRUED AS MEETING THE DAILY SPECIAL INSPECTION REQUIREMENTS UNLESS THE ENGINEER SPECIFICALLY SO STATES IN WRITING.

NEW RTU CONNECTION TO THE CURBS AND THE CURB CONNECTIONS TO THE NEW SUPPORT FRAMING BELOW THE ROOF SHALL BE IN ACCORDANCE WITH THE RTU MANUFACTURER'S RECOMMENDATIONS.

IT IS THE INTENT OF THESE DRAWINGS FOR ALL DISCIPLINES AND SPECIFICATIONS TO PRODUCE A COMPLETE PROJECT. IN ALL CASES THE DRAWINGS AND SPECIFICATIONS MUST BE REVIEWED, PRICED, ESTIMATED, AND CONSTRUCTED IN THEIR ENTIRETY. THE DRAWINGS ARE COMPLEMENTARY TO ONE ANOTHER AND THE SPECIFICATIONS. ANYTHING SHOWN OR IMPLIED ON ANY ONE DRAWING MUST BE PROVIDED, INSTALLED AND CONNECTED AS THOUGH IT WAS SHOWN ON ALL DRAWINGS AND INCLUDED IN THE ORIGINAL PRICING. NO REQUEST FOR ADDITIONAL COST OR CHANGE ORDER WILL BE ACCEPTED BY THE OWNER FROM ANY CONTRACTOR, SUPPLIER, OR INSTALLER THAT RESULTS FROM A FAILURE TO THOROUGHLY REVIEW ALL DRAWINGS AND SPECIFICATIONS, COORDINATE WITH OTHER TRADES, OR THOROUGHLY INSPECT THE SITE TO DETERMINE ALL EXISTING CONDITIONS.

IF AN ASSUMED OR ACTUAL CONFLICT IS DISCOVERED IN THE CONTRACT DOCUMENTS, THE MORE EXPENSIVE OR HIGHER QUALITY OPTION (AS DETERMINED BY THE ARCHITECT/ENGINEER) SHALL BE ASSUMED TO APPLY UNLESS DIRECTED OTHERWISE BY THE ARCHITECT/ENGINEER.

THE CONTRACTOR IS REQUIRED TO VISIT THE SITE, FAMILIARIZE THEMSELVES WITH THE LOCAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND AS ARE NECESSARY FOR CONSTRUCTION, AND CORRELATE THEIR OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. IT IS ASSUMED THAT THE CONTRACTOR HAS OBTAINED, BEFORE AWARD OF THE CONTRACT, CLARIFICATION OF ALL QUESTIONS AS TO THE INTENT OF THE CONTRACT DOCUMENTS AND OF ASSUMED OR ACTUAL CONFLICT BETWEEN TWO OR MORE ITEMS IN CONTRACT DOCUMENTS. SHOULD THE CONTRACTOR FAIL TO OBTAIN SUCH CLARIFICATION, THE ARCHITECT/ENGINEER SHALL DIRECT WORK TO PROCEED BY THE METHOD INDICATED. SPECIFIED OR REQUIRED BY CONTRACT DOCUMENTS WHICH WILL PRODUCE THE BEST RESULTS, AS JUDGED BY THE ARCHITECT/ENGINEER. SUCH DIRECTION BY THE ARCHITECT/ENGINEER SHALL NOT ENTITLE THE CONTRACTOR TO ANY CLAIM FOR EXTRA COST.

CONTRACTOR RESPONSIBILITIES

THE FOLLOWING LIST IS NOT INTENDED TO BE ALL INCLUSIVE, BUT MERELY TO PLACE EMPHASIS ON PARTICULAR ITEMS OF JOB SCHEDULING AND SAFETY.

- 1. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE PROJECT ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW, ALLOWING A MINIMUM OF TWO WEEKS FOR REVIEW BY THE PROJECT ARCHITECT AND STRUCTURAL ENGINEER.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REDESIGN OF THE STRUCTURAL SUPPORTS OF EQUIPMENT WHEN THE OPERATING WEIGHT OF THE EQUIPMENT PROVIDED (INCLUDING CURBS AND ACCESSORIES) EXCEEDS THE MAXIMUM DESIGN WEIGHTS NOTED ON THE STRUCTURAL DRAWINGS. SUBMIT STRUCTURAL CALCULATIONS AND DETAILS FOR THE REVISED EQUIPMENT SUPPORT TO THE PROJECT ARCHITECT FOR REVIEW. THE SUBMITTAL SHALL BE STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT JURISDICTION.
3. IF ACTUAL FIELD CONDITIONS VARY FROM WHAT IS SHOWN OR ASSUMED IN THE CONTRACT DOCUMENTS, THE CONTRACTOR IS REQUIRED TO PROMPTLY NOTIFY THE ARCHITECT/ENGINEER AND RECEIVE DIRECTION PRIOR TO PROCEEDING WITH THE WORK AFFECTED BY THE ACTUAL FIELD CONDITION.
4. THE CONTRACTOR SHALL NOTIFY THE PROJECT SPECIAL INSPECTOR IN ADVANCE OF WORK REQUIRING INSPECTIONS OR ON-SITE PERSONNEL. COORDINATE ADVANCE NOTIFICATION REQUIREMENTS WITH THE SPECIAL INSPECTOR.
5. IF THE CONTRACTOR ANTICIPATES A PROBLEM THAT WILL REQUIRE ASSISTANCE FROM THE PROJECT STRUCTURAL ENGINEER, THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PROVIDE THE ENGINEER WITH MINIMUM 24 HOURS NOTICE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL CONSTRUCTION IS ACCORDING TO THE SIGNED AND SEALED CONSTRUCTION DOCUMENTS AND THE REVIEWED SHOP DRAWINGS.
7. THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT JURISDICTION TO DESIGN AND DETAIL THE SUBMITTAL ITEMS NOTED IN THE DEFERRED SUBMITTALS BELOW.
8. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING BETWEEN THE STRUCTURAL AND ARCHITECTURAL DRAWINGS. IT IS NOT INTENDED THAT THE STRUCTURAL DRAWINGS BE USED INDEPENDENTLY OF THE ARCHITECTURAL DRAWINGS. ANY DISCREPANCIES, INCLUDING DIMENSIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND ENGINEER BEFORE PROCEEDING WITH THE WORK.
9. THE CONTRACTOR IS RESPONSIBLE FOR METHODS TO ENSURE CONSTRUCTION SAFETY AT THE SITE THROUGHOUT THE COURSE OF THE PROJECT CONSTRUCTION. SEE O.S.H.A. & M.O.S.H. REGULATIONS FOR CONSTRUCTION.
10. UPON STRUCTURAL COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THE SPECIAL INSPECTOR SUBMIT A LETTER OF CERTIFICATION INDICATING THAT THE STRUCTURE IS IN COMPLIANCE WITH THE PLANS, SPECIFICATIONS, CONCRETE TEST REPORTS AND CODE REQUIREMENTS. THIS LETTER MUST BE REVIEWED BY THE ARCHITECT AND ENGINEER OF RECORD BEFORE SUBMITTAL.

SUBMITTALS NOTES

- 1. SUBMIT THE SHOP DRAWINGS NOTED BELOW [IN THE SPECS] TO THE PROJECT ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW.
2. DEFERRED SUBMITTALS (DRAWINGS AND CALCULATIONS) NOTED BELOW SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE PROJECT JURISDICTION. THE ENGINEER MUST HAVE A MINIMUM OF THREE YEARS EXPERIENCE IN THE DESIGN OF THE TYPE OF STRUCTURAL COMPONENT REQUIRED FOR THE SUBMITTAL. THE ENGINEER SHALL PERFORM PERIODIC FIELD OBSERVATIONS AND ISSUE A FINAL CERTIFICATION FOR THE FINAL CONSTRUCTION OF THE STRUCTURE INCLUDED IN THEIR SUBMITTAL.
3. REPRODUCTION OF ANY PORTION OF THE STRUCTURAL CONSTRUCTION DOCUMENTS FOR USE AS SHOP DRAWINGS IS PROHIBITED.
4. IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION, PROVIDE THE REVIEWED SHOP DRAWINGS OF THE DEFERRED SUBMITTALS FOR THEIR REVIEW.

SUBMITTALS

A. STRUCTURAL STEEL
B. METAL DECK (INCLUDING SECTION PROPERTIES OF DECK)
C. ANY OPENINGS IN NEW AND EXISTING STRUCTURAL ELEMENTS (INCLUDING LOAD-BEARING MASONRY WALLS) NEED TO BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR APPROVAL.

DEFERRED SUBMITTALS

A. TEMPORARY SHORING AND BRACING FOR BUILDING ELEMENTS WITH CALCULATIONS
B. STRUCTURAL STEEL CONNECTIONS WITH CALCULATIONS

SPECIAL INSPECTIONS

SPECIAL INSPECTIONS ARE REQUIRED DURING CONSTRUCTION IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE. THE TERM SPECIAL INSPECTOR REFERS TO THE SPECIAL INSPECTING ENGINEER OF RECORD HIRED BY THE OWNER (CONTRACTOR FOR MCP) IN COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE. INSPECTIONS OF FOUNDATION SUBGRADES MUST BE CONDUCTED BY AN ADJOINING GEOTECHNICAL ENGINEER, REFERRED TO HEREIN AS THE GEOTECHNICAL INSPECTOR. SPECIAL INSPECTIONS SHALL BE PERFORMED FOR, BUT NOT LIMITED TO, THE FOLLOWING STRUCTURAL ITEMS:

- 1. STRUCTURAL STEEL ERECTION
2. METAL DECKING
3. POST-INSTALLED ANCHORS

STRUCTURAL COMPACTED FILL

STRUCTURAL FILL SHOULD BE PLACED IN 8" MAXIMUM LOOSE LIFTS AND COMPACTED TO A DRY DENSITY OF AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698).

EXISTING CONDITIONS

ALL EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED IN THE FIELD BEFORE EXCAVATION, DEMOLITION, OR CONSTRUCTION IS BEGUN. EXISTING UTILITIES SHALL BE LOCATED AND PROTECTED AS REQUIRED BY THE EXCAVATION, DEMOLITION, OR CONSTRUCTION. FIELD MEASUREMENTS SHALL BE MADE OF ADJOINING CONSTRUCTION RELATIVE TO THE PROPER INSTALLATION OF NEW WORK. ALL DISCREPANCIES SHALL BE REPORTED TO THE PROJECT ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO PROCEEDING WITH THE WORK IN THE AREA OF THE DISCREPANCY.

FIELD VERIFY ALL RELEVANT EXISTING DIMENSIONS, ELEVATIONS, AND MEMBER SIZES.

SHORING OF BUILDING STRUCTURAL MEMBERS

SHORING OF STRUCTURAL ELEMENTS SHALL BE PROVIDED AS REQUIRED TO PROTECT EXISTING CONSTRUCTION. THE SHORING DESIGN SHALL BE AS REQUIRED BY THE CONSTRUCTION. SUBMIT SHOP DRAWINGS SHOWING ACTUAL SEQUENCE AND DETAILS OF THE SHORING PROCEDURE. AS WELL AS CALCULATIONS INDICATING THAT THE EXISTING BUILDING LOADS AND CONSTRUCTION LOADS HAVE BEEN ACCOMMODATED IN THE SHORING DESIGN. SEE THE "CONTRACTOR RESPONSIBILITIES" AND "SUBMITTAL" NOTES ABOVE FOR ADDITIONAL REQUIREMENTS.

THE CONTRACTOR SHALL VERIFY THE CONDITION OF THE EXISTING STRUCTURE IN THE AREA OF THE PROPOSED SHORING. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF THE DESIGN AND REPAIR OF EXISTING STRUCTURES AND/OR FINISHES DAMAGED DURING SHORING OPERATIONS.

STRUCTURAL CONCRETE

REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60. ALL WELDED WIRE REINFORCING SHALL CONFORM TO ASTM A1064. DETAILING SHALL BE IN ACCORDANCE WITH ACI MANUAL 315 AND STANDARD 318.

CONCRETE SHALL BE NORMAL WEIGHT. CONCRETE MIX DESIGN TABLE ON THIS SHEET INDICATES DESIGN COMPRESSIVE STRENGTH AT 28 DAYS, WATER/CEMENT RATIOS, AND ENTRAINED AIR CONTENT REQUIRED.

MAXIMUM AGGREGATE SIZE FOR CONCRETE SHALL BE IN ACCORDANCE WITH THE MAXIMUM AGGREGATE SIZES IN ACI 318 AND AS FOLLOWS:

WALLS & SLABS 3/4"

ALL EXTERIOR CONCRETE AND CONCRETE EXPOSED TO WEATHER SHALL BE AIR-ENTRAINED.

CONCRETE SLUMP: 3" +/- 1"
8" AFTER ADDITION OF HRWR AT THE SITE

THE USE OF ADDITIVES SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED BY THE STRUCTURAL ENGINEER OR NOTED IN THE PROJECT SPECIFICATIONS. THE USE OF ADDITIVES CONTAINING CALCIUM CHLORIDE SHALL NOT BE PERMITTED.

PROVIDE A HIGH RANGE WATER REDUCER (HRWR OR SUPERPLASTICIZER) FOR PUMPED CONCRETE AND AS REQUIRED FOR WORKABILITY.

ALL REINFORCING STEEL MARKED "CONTINUOUS" SHALL BE LAPPED AS REQUIRED WITH CLASS B TENSION SPLICES PER ACI 315. PROVIDE CLASS B TENSION SPLICES AT WALL CORNERS AND INTERSECTIONS WITH STANDARD 90 DEGREE BENT CORNER BARS, INCLUDING CORNERS OF WALL FOOTINGS AND BOND BEAMS. LAP WELDED WIRE REINFORCING ONE FULL SQUARE AT SIDE AND END LAPS. PROVIDE CORNER LAP BARS AT ALL LONGITUDINAL FOOTING REINFORCING AS WELL AS AT ALL HORIZONTAL WALL REINFORCING.

ALL TENSION SPLICES IN THE REINFORCING STEEL, UNLESS NOTED OTHERWISE, SHALL HAVE A MINIMUM LAP DISTANCE AS SHOWN IN THE TENSION LAP SPLICE CHART IN THE GENERAL NOTES.

PROVIDE CONCRETE PROTECTION FOR REINFORCING AS FOLLOWS (UNLESS NOTED OTHERWISE):

INTERIOR SLABS: 3/4" EXTERIOR SLABS: 1-1/2" WALLS, OUTSIDE FACE: 2" INSIDE FACE: 1"

ALL CONCRETE WORK, REINFORCING PLACEMENT FORMWORK AND SHORING SHALL BE INSPECTED UNDER THE SUPERVISION OF THE BERKELEY COUNTY INSPECTOR AND THE SPECIAL INSPECTOR. CONCRETE QUALITY CONTROL, INSPECTION AND TESTING SHALL BE IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS, ACI 301 AND THE LOCAL BUILDING CODE REQUIREMENTS.

CONSTRUCTION PRACTICES:

FORMWORK DESIGN, SHORING, AND BRACING SHALL BE ACCORDING TO ACI 301. FORMWORK TOLERANCES SHALL BE PER ACI 117.

WET STICKING OF DOWELS INTO THE FOOTING WILL NOT BE ACCEPTED. DOWELS SHOULD BE PROPERLY PLACED AND TIED TO LONGITUDINAL FOOTING REINFORCING IN ACCORDANCE WITH CRSI.

THE SPECIAL INSPECTOR SHALL PERFORM A MINIMUM OF ONE CONCRETE TEST FOR EACH 50 CUBIC YARDS OF CONCRETE POURED AT THE PROJECT WITH AT LEAST ONE TEST FOR EACH DAY THAT CONCRETE IS POURED. EACH CONCRETE TEST SHALL INCLUDE A SLUMP TEST AND FIVE LABORATORY CURED TEST CYLINDERS FOR COMPRESSIVE STRENGTH TESTS. TEST TWO CYLINDERS AT 7 DAYS AFTER THE CONCRETE POUR AND TWO AT 28 DAYS WITH ONE RESERVE CYLINDER. THE SPECIAL INSPECTOR SHALL SUBMIT WRITTEN TEST REPORTS TO THE PROJECT ARCHITECT AND STRUCTURAL ENGINEER. THE ARCHITECT AND STRUCTURAL ENGINEER SHALL BE NOTIFIED OF ALL TESTS THAT DO NOT MEET THE PROJECT SPECIFICATIONS WITHIN 24 HOURS.

SLAB ON GRADE

PROVIDE A MINIMUM THICKNESS REINFORCED CONCRETE SLAB AS NOTED ON THE PLANS ON A CONTINUOUS VAPOR RETARDER/BARRIER OVER DRAINAGE COURSE. THE WELDED WIRE REINFORCING SHALL BE PLACED AT 2" BELOW THE TOP SURFACE OF THE SLAB. USE CHAIRS TO ENSURE PROPER PLACEMENT. THE DRAINAGE COURSE SHALL BE PER THE EARTHWORK SPECS OR ASTM C33, SIZE 57.

CONTRACTOR'S OPTION - PROVIDE SYNTHETIC POLYPROPYLENE REINFORCING FIBERS IN PLACE OF WELDED WIRE MESH IN THE SLAB ON GRADE. FIBERS SHALL BE ADDED AT THE CONCRETE PLANT PER THE FIBER MANUFACTURER'S RECOMMENDATIONS. CONCRETE WITH FIBER REINFORCING SHALL HAVE HIGH RANGE WATER REDUCER PER ASTM C494, TYPE F OR G.

ALL CONDUIITS/PIPES MUST BE PLACED BELOW THE CONCRETE. CONDUIT SHALL NOT BE RUN IN THE CONCRETE SLAB.

STRUCTURAL STEEL

ALL STEEL SHALL BE IN ACCORDANCE WITH THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, AISC 360-10, BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC).

ALL STEEL W SHAPES SHALL BE ASTM A992, GRADE 50. ALL ANGLES, CHANNELS, BENT PLATES, FLAT STOCK AND OTHER MISC. METAL SHAPES SHALL BE ASTM A36 UNLESS NOTED OTHERWISE. ALL CONNECTIONS SHALL BE WELDED OR BOLTED.

STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM A501 OR ASTM A433, TYPE E OR S.

HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500, GRADE CB.

ANCHOR BOLTS SHALL CONFORM TO ASTM F1554, GRADE 36

SHOP AND FIELD FASTENERS SHALL BE ASTM A325 HIGH STRENGTH BOLTS IN BEARING TYPE CONNECTIONS, UNLESS NOTED OTHERWISE.

NATURAL CAMBER OF STEEL BEAMS TO BE FABRICATED WITH CAMBER "UP". ANY ADDITIONAL CAMBER TO BE FABRICATED WITH CAMBER "UP". ERECTION OF ALL BEAMS TO BE CAMBER "UP".

PROVIDE ARCHITECTURALLY EXPOSED STEEL (AESS) WHERE INDICATED ON THE DRAWINGS PER THE AISC SPECIFICATIONS.

HOLES SHALL NOT BE CUT THROUGH BEAMS AND COLUMNS UNLESS INDICATED OR APPROVED BY THE STRUCTURAL ENGINEER.

WELDING SHALL BE DONE ONLY BY AWS CERTIFIED WELDERS. WELD IN ACCORDANCE WITH THE AWS "STANDARD CODE" FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION. USE E70XX ELECTRODES.

STRUCTURAL STEEL SURFACES CAST INTO CONCRETE AND MASONRY AND STEEL TO RECEIVE FIREPROOFING SHALL BE UNPAINTED.

PROVIDE ADEQUATE BRACING AND GUY WIRING FOR STEEL MEMBERS DURING STEEL ERECTION PRIOR TO FLOOR AND ROOF CONSTRUCTION. THE STEEL FRAME SHALL BE PLUMB WITHIN THE TOLERANCES IN THE AISC AND PROJECT SPECIFICATIONS. STEEL COLUMNS HAVE NOT BEEN DESIGNED AS SELF-SUPPORTING, AND MUST BE ADEQUATELY BRACED DURING ERECTION.

MASONRY SUPPORTED BY STEEL MEMBERS SHALL NOT BE PLACED UNTIL PERMANENT ANCHORAGE AND BRACING SYSTEMS HAVE BEEN INSTALLED AND UNTIL THE CONCRETE ON THE FLOOR DECKS HAS ATTAINED ITS DESIGN STRENGTH.

THE FABRICATOR IS RESPONSIBLE FOR THE SELECTION, DESIGN AND DETAILING OF ALL CONNECTIONS NOT FULLY DETAILED ON THE CONTRACT DOCUMENTS. TYPICAL CONNECTION DETAILS ARE INDICATED ON THE DRAWINGS FOR DESIGN INTENT ONLY. THE FABRICATOR SHALL HAVE A REGISTERED PROFESSIONAL ENGINEER PREPARE THE CONNECTION DESIGNS, AND THE DESIGNS SHALL BE SUBMITTED FOR REVIEW WITH THE SHOP DRAWINGS.

SEE THE "CONTRACTOR RESPONSIBILITIES" AND "SUBMITTAL" NOTES FOR ADDITIONAL STEEL SHOP DRAWING REQUIREMENTS.

STRUCTURAL STEEL EXPOSED TO WEATHER

ALL EXPOSED STEEL SHALL BE HOT DIPPED GALVANIZED PER ASTM A123 AFTER FABRICATION. APPLY ZINC PRIMER TO BOLTED AND WELDED CONNECTIONS IN THE FIELD.

STRUCTURAL ABBREVIATIONS

Table with 2 columns: Abbreviation and Full Name. Includes symbols like &, @, #, J, K, L, M, N, O, P, R, S, T, U, V, W, X and their corresponding full names such as AND, DEGREE, DIAMETER, NUMBER/POUNDS PLUS OR MINUS, ANCHOR BOLT, ARCHITECT, ARCHITECTURAL, AMERICAN CONCRETE INSTITUTE, etc.

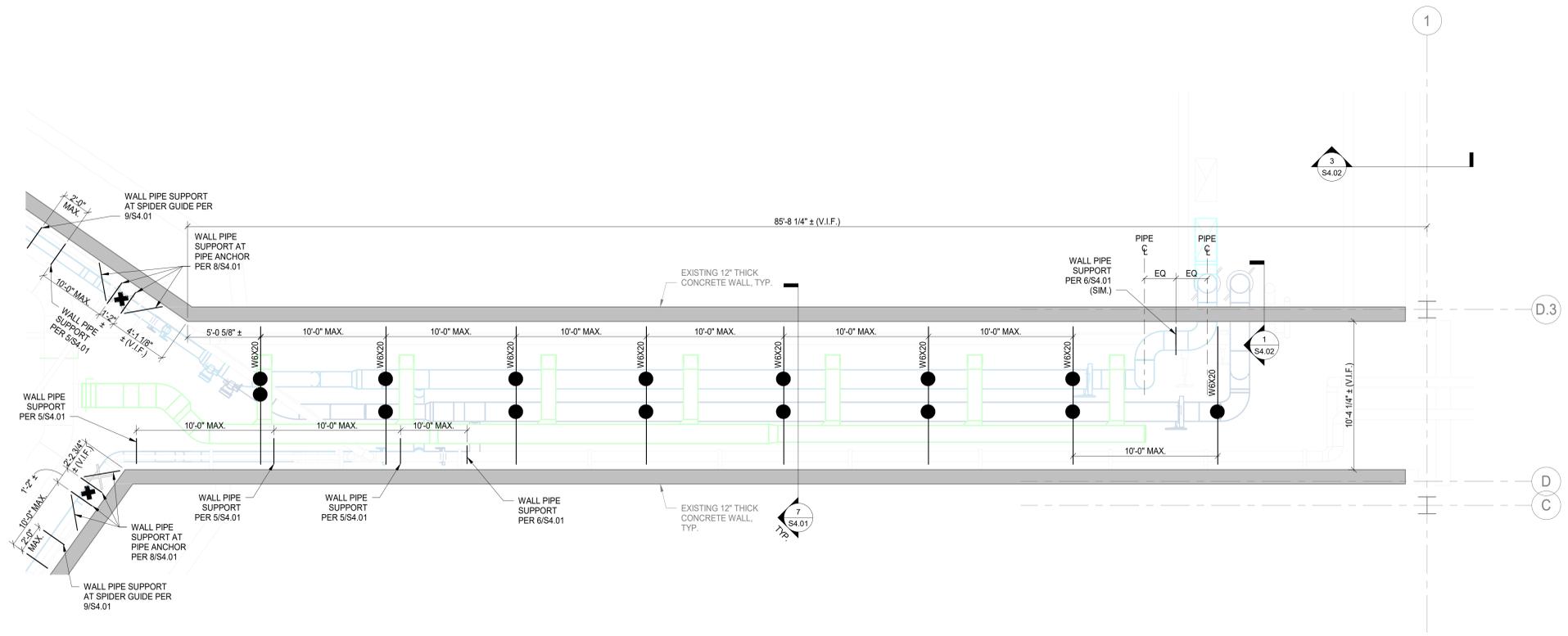
SYMBOL LEGEND

Table showing symbols for BRICK, CONCRETE, CONCRETE MASONRY UNIT, CONCRETE MASONRY UNIT (GROUTED), EARTH, EXISTING STRUCTURE, RIGID INSULATION, STEEL, COMPOSITE FLOOR, ROOF DECK, POROUS FILL, and GROUT.

CONCRETE LAP SPlice LENGTH SCHEDULE table with columns for BAR SIZE, CASE 1, and CASE 2. Values range from 1'-4" to 10'-3" for various bar sizes.

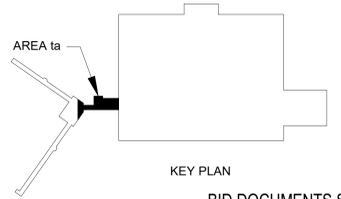
- NOTES:
1. LAP SPlice INFORMATION APPLIES TO BEAM, COLUMN, SLAB AND WALL REINFORCING BARS.
2. CASE 1&2 DEPENDS ON THE CONCRETE COVER, AND CLEAR SPACING OF BARS AS DEFINED BELOW:
CASE 1: COVER AT LEAST 1 1/2" AND CLEAR SPACING AT LEAST 3".
CASE 2: ALL OTHER CASES.
3. THIS SCHEDULE APPLIES TO 60ksi REINFORCING BARS.
4. FOR BAR DEVELOPMENT LENGTHS, DIVIDE ABOVE VALUE BY 1.3.

Project information section including CONSULTANTS, SEAL, ARCHITECT/ENGINEERS (MEP ENGINEERS and STRUCTURAL ENGINEERS), Drawing Title (STRUCTURAL NOTES), Project Title (CHILLED WATER LINE REPLACEMENT BLDG 500), Location (VAMC - Martinsburg, WV), Date (04/22/2022), Checked (CJ), Drawn (BB), and Drawing Number (S0.01, Dwg. 2 of 67). Includes logos for Office of Construction and Facilities Management and Department of Veterans Affairs.



1 BASEMENT INTERSTITIAL FRAMING PLAN - TUNNEL (AREA A)
S2.01ta SCALE: 1/4" = 1'-0"

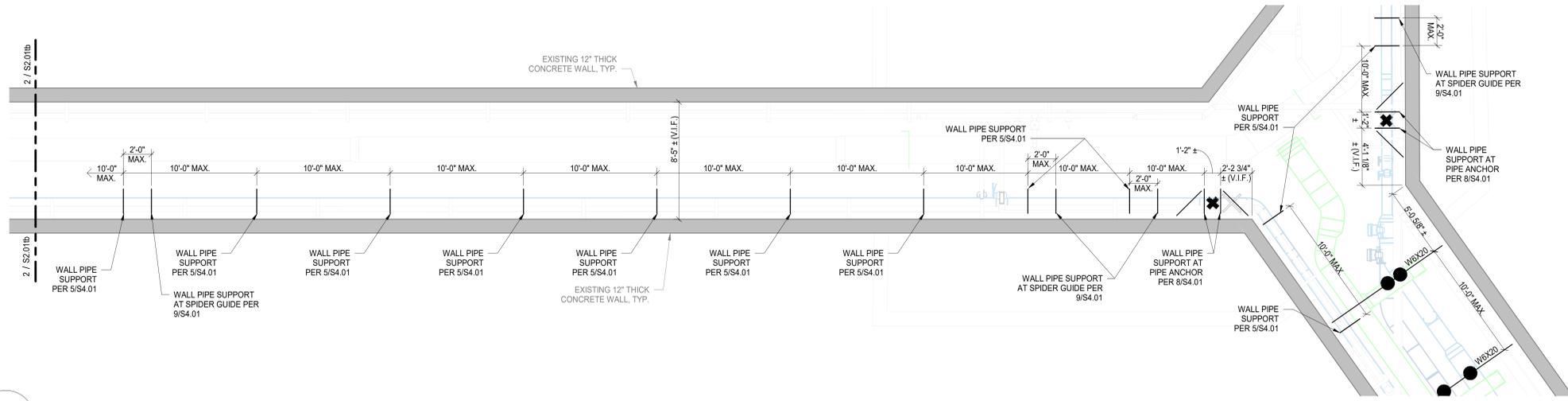
- PLAN NOTES:**
- 1. ● INDICATES THREADED ROD / PIPE COLLAR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE MECHANICAL FOR THREADED ROD / PIPE COLLAR SIZE.
 - 2. ✕ INDICATES PIPE ANCHOR SUPPORT. SEE MECHANICAL FOR LARGE PIPE ANCHOR SIZE.



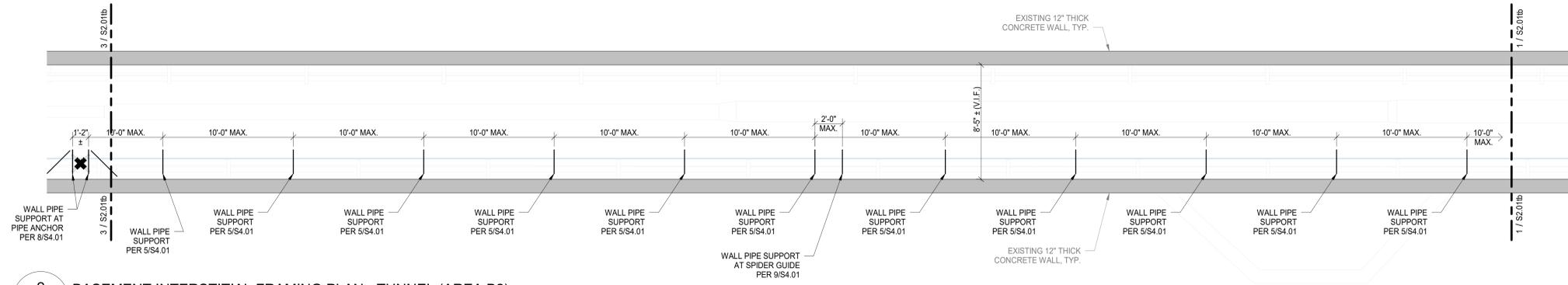
KEY PLAN
 BID DOCUMENTS SUBMISSION

Revisions: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="width: 80%;"> </td><td style="width: 20%;">Date</td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>		Date									CONSULTANTS: 	SEAL: 	ARCHITECT/ENGINEERS: MEP ENGINEERS Valley Engineering 4901 Crowe Drive Mount Crawford, VA 22841 STRUCTURAL ENGINEERS ADTEX Engineers, Inc. 150 South East Street, Suite 201 Frederick, MD 21701	Scale: AS NOTED	Drawing Title BASEMENT INTERSTITIAL FRAMING PLAN-TUNNEL - AREA a Approved: Project Director BID DOCUMENTS	Project Title CHILLED WATER LINE REPLACEMENT BLDG 500 Location VAMC - Martinsburg, WV Date 04/22/2022 Checked CJ Drawn BB	Project Number 613-16-302 Building Number 500 Drawing Number S2.01ta Dwg. 4 of 67	Office of Construction and Facilities Management 
	Date																	

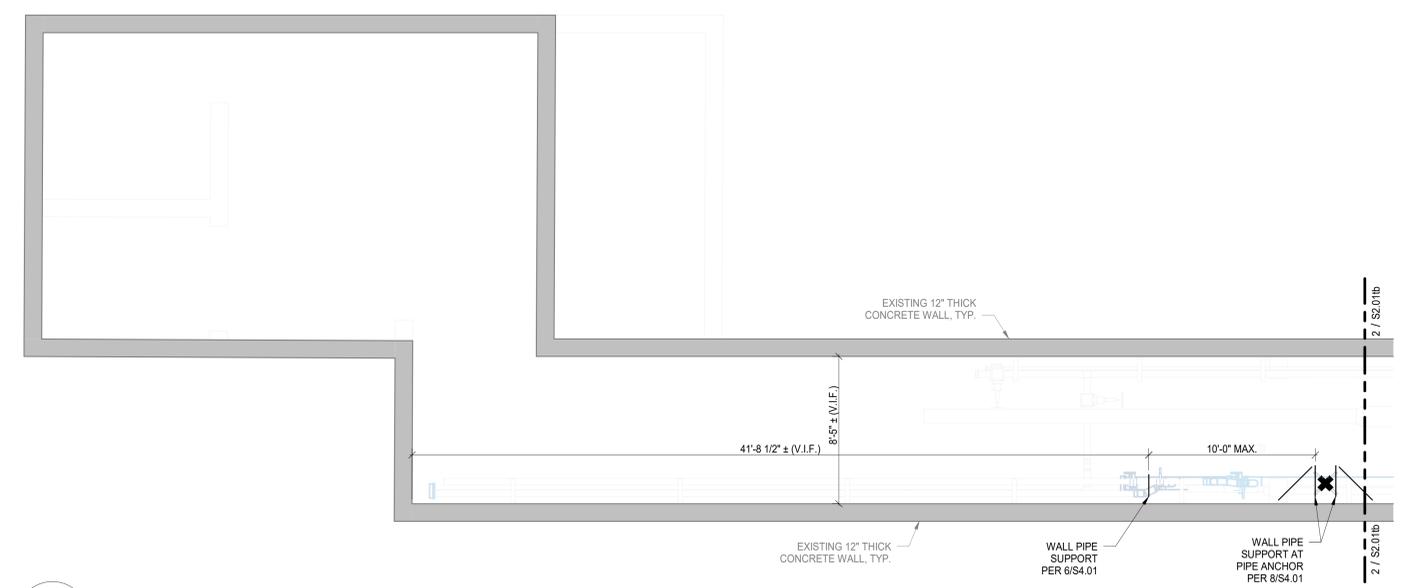
three inches = one foot
 one and one half inches = one foot
 one inch = one foot
 three quarters inch = one foot
 one half inch = one foot
 three eighths inch = one foot
 one quarter inch = one foot
 one eighth inch = one foot



1 BASEMENT INTERSTITIAL FRAMING PLAN - TUNNEL (AREA B1)
 SCALE: 1/4" = 1'-0"

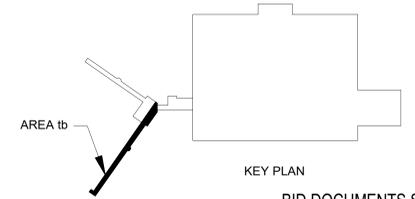


2 BASEMENT INTERSTITIAL FRAMING PLAN - TUNNEL (AREA B2)
 SCALE: 1/4" = 1'-0"



3 BASEMENT PLAN - TUNNEL - AREA b3
 SCALE: 1/4" = 1'-0"

- PLAN NOTES:**
- INDICATES THREADED ROD / PIPE COLLAR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE MECHANICAL FOR THREADED ROD / PIPE COLLAR SIZE.
 - ✱ INDICATES PIPE ANCHOR SUPPORT. SEE MECHANICAL FOR LARGE PIPE ANCHOR SIZE.



BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

ARCHITECT/ENGINEERS:

MEP ENGINEERS
 Valley Engineering
 4901 Crowe Drive
 Mount Crawford, VA 22841

STRUCTURAL ENGINEERS
 ADTEX Engineers, Inc.
 150 South East Street, Suite 201
 Frederick, MD 21701

Scale:
 AS NOTED

Drawing Title
BASEMENT INTERSTITIAL FRAMING PLAN-TUNNEL - AREA b

Approved: Project Director

BID DOCUMENTS

Project Title
CHILLED WATER LINE REPLACEMENT BLDG 500

Location
 VAMC - Martinsburg, WV

Date
 04/22/2022

Checked
 CJ

Drawn
 BB

Project Number
 613-16-302

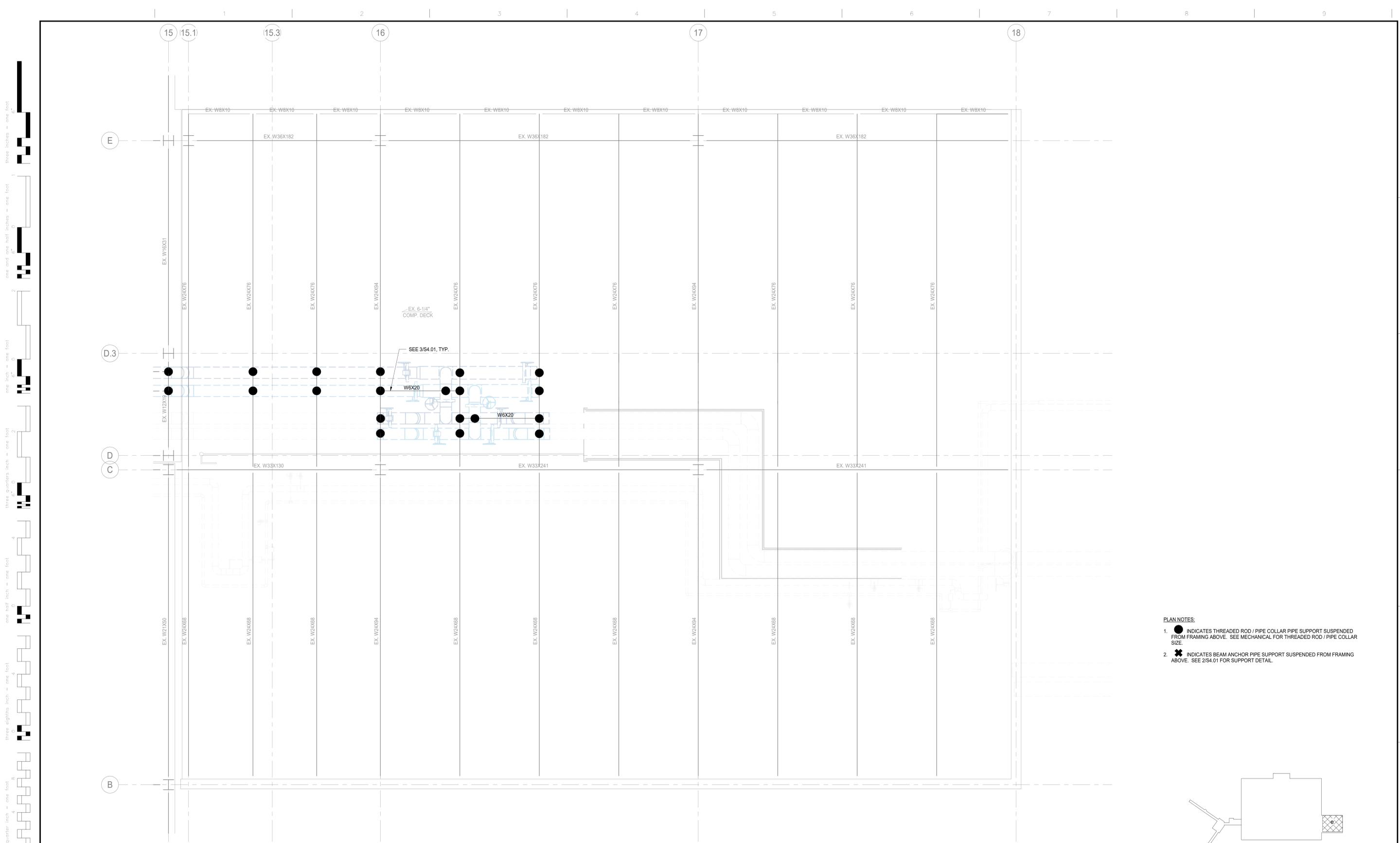
Building Number
 500

Drawing Number
S2.01tb

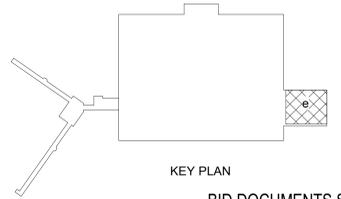
Dwg. 5 of 67

Office of
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Department of
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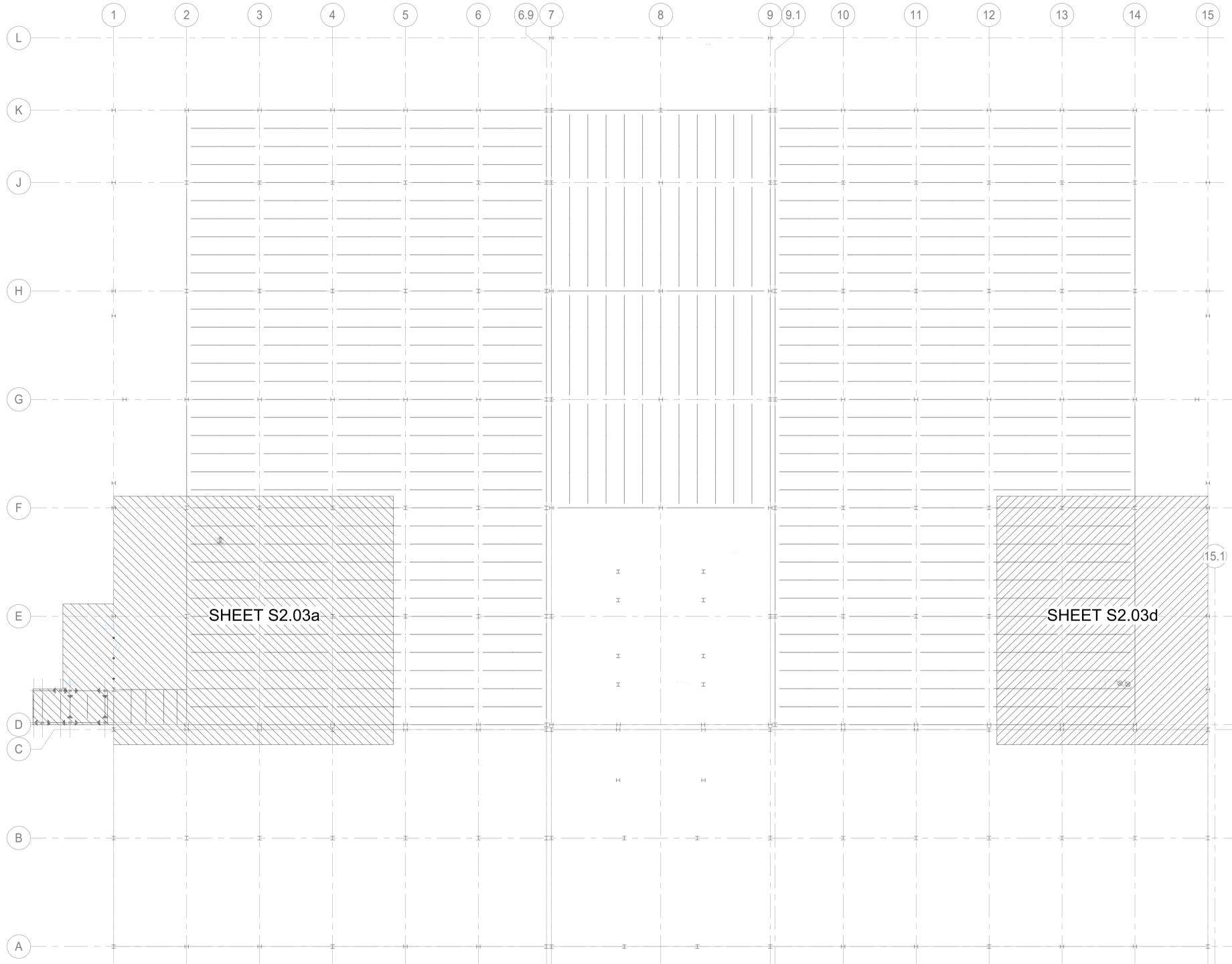
- PLAN NOTES:**
- INDICATES THREADED ROD / PIPE COLLAR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE MECHANICAL FOR THREADED ROD / PIPE COLLAR SIZE.
 - ✱ INDICATES BEAM ANCHOR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE 2/S4.01 FOR SUPPORT DETAIL.



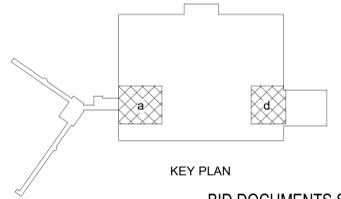
1 FIRST FLOOR FRAMING PLAN (AREA E)
S2.02e SCALE: 1/4" = 1'-0"

Revisions: _____ Date _____ VA FORM 05-6231	CONSULTANTS: 	SEAL:  04/22/2022	ARCHITECT/ENGINEERS: MEP ENGINEERS Valley Engineering 4501 Crane Drive Mount Crawford, VA 22841 STRUCTURAL ENGINEERS ADTEX Engineers, Inc. 150 South East Street, Suite 201 Frederick, MD 21701	Scale: AS NOTED	Drawing Title FIRST FLOOR FRAMING PLAN-e	Project Title CHILLED WATER LINE REPLACEMENT BLDG 500	Project Number 613-16-302 Building Number 500	Office of Construction and Facilities Management
	Approved: Project Director BID DOCUMENTS	Location VAMC - Martinsburg, WV	Date 04/22/2022	Checked CJ	Drawn BB	Drawing Number S2.02e Dwg. 11 of 67	Department of Veterans Affairs	

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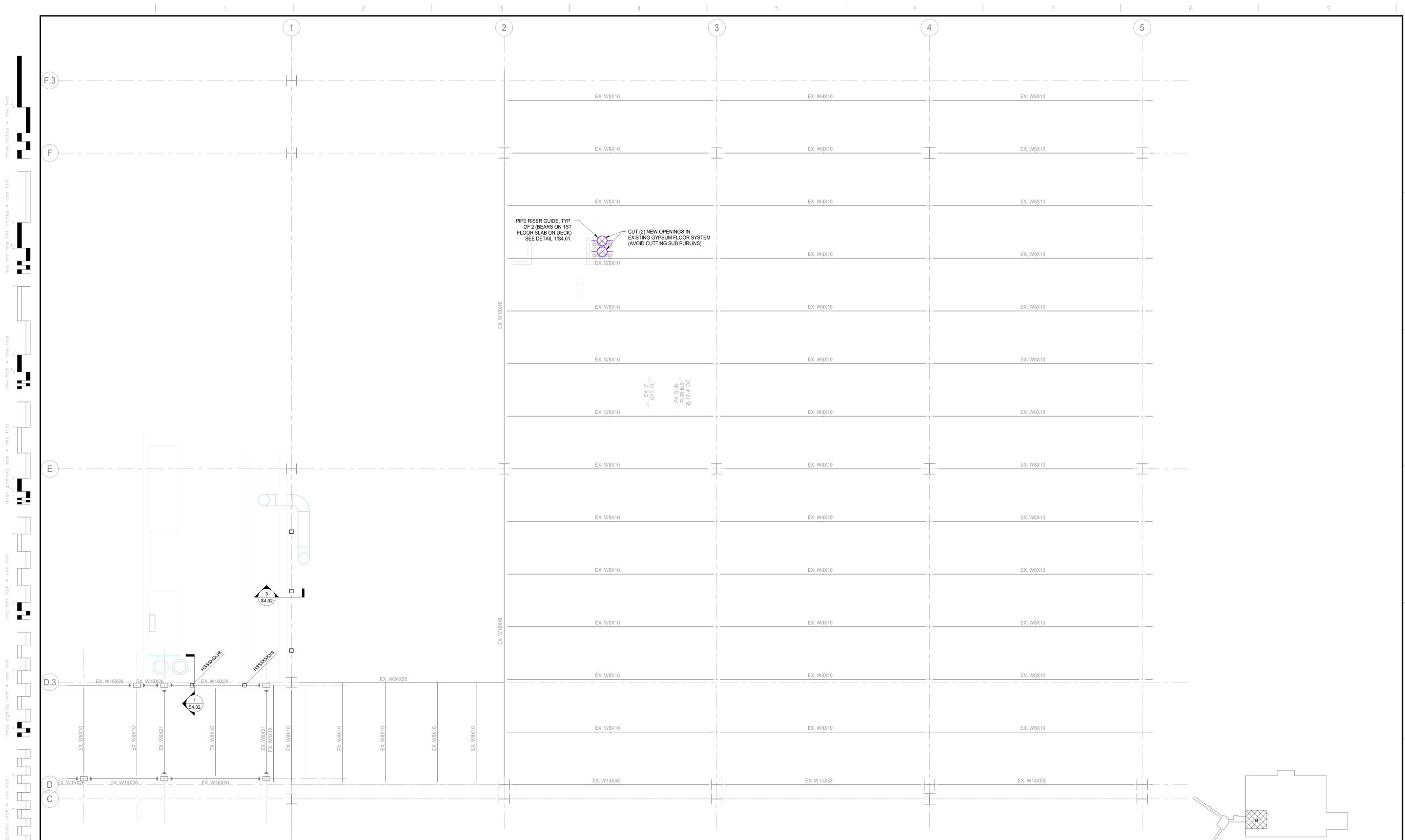


1 FIRST FLOOR INTERSTITIAL FRAMING PLAN (OVERALL)
 S2.03 SCALE: 1/16" = 1'-0"

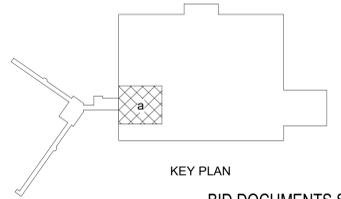


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Revisions: _____ Date _____ Date	CONSULTANTS: 	SEAL:  04/22/2022	ARCHITECT/ENGINEERS: MEP ENGINEERS Valley Engineering 4901 Crowe Drive Mount Crawford, VA 22841 STRUCTURAL ENGINEERS ADTEX Engineers, Inc. 150 South East Street, Suite 201 Frederick, MD 21701	Scale: AS NOTED	Drawing Title FIRST FLOOR INTERSTITIAL FRAMING PLAN (OVERALL)	Project Title CHILLED WATER LINE REPLACEMENT BLDG 500	Project Number 613-16-302 Building Number 500	Office of Construction and Facilities Management
	Approved: Project Director BID DOCUMENTS		Location VAMC - Martinsburg, WV	Date 04/22/2022	Checked CJ	Drawn BB	Drawing Number S2.03 Dwg. 12 of 67	Department of Veterans Affairs



1 FIRST FLOOR INTERSTITIAL FRAMING PLAN (AREA A)
S2.03a SCALE: 1/4" = 1'-0"



KEY PLAN
 BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

 22631
 STATE OF VIRGINIA
 PROFESSIONAL ENGINEER
 04/22/2022

ARCHITECT/ENGINEERS:

MEP ENGINEERS Valley Engineering 4901 Crowe Drive Mount Crawford, VA 22841	STRUCTURAL ENGINEERS ADTEX Engineers, Inc. 150 South East Street, Suite 201 Frederick, MD 21701
---	--

Scale: AS NOTED

Drawing Title
FIRST FLOOR INTERSTITIAL FRAMING PLAN-a

Approved: Project Director
BID DOCUMENTS

Project Title
CHILLED WATER LINE REPLACEMENT BLDG 500

Location
 VAMC - Martinsburg, WV

Date
 04/22/2022

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 CJ

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 BB

Project Number
 613-16-302

Building Number
 500

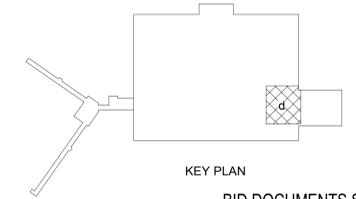
Drawing Number
S2.03a

Dwg. 13 of 67

Office of Construction and Facilities Management
 Department of Veterans Affairs



1 FIRST FLOOR INTERSTITIAL FRAMING PLAN (AREA D)
S2.03d SCALE: 1/4" = 1'-0"



KEY PLAN
 BID DOCUMENTS SUBMISSION

Revisions:	Date

CONSULTANTS:

SEAL:

ARCHITECT/ENGINEERS:

MEP ENGINEERS
 Valley Engineering
 4901 Crowe Drive
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STRUCTURAL ENGINEERS
 ADTEX Engineers, Inc.
 150 South East Street, Suite 201
 Frederick, MD 21701

Scale: AS NOTED

Drawing Title
FIRST FLOOR INTERSTITIAL FRAMING PLAN-d

Approved: Project Director

BID DOCUMENTS

Project Title
CHILLED WATER LINE REPLACEMENT BLDG 500

Location
 VAMC - Martinsburg, WV

Date
 04/22/2022

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Project Number
 613-16-302

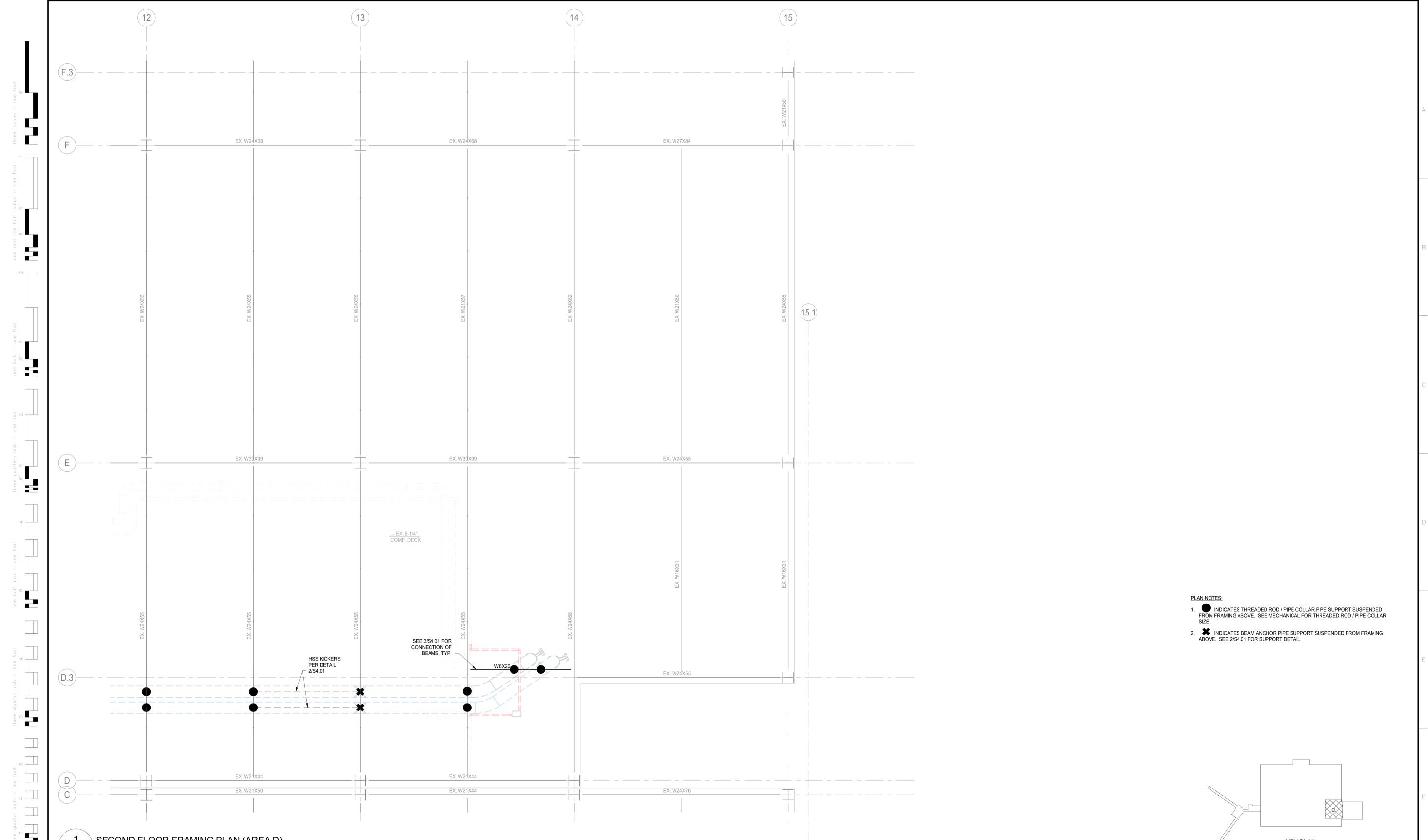
Building Number
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Drawing Number
S2.03d

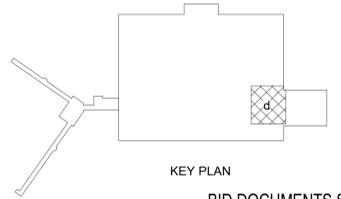
Dwg. 14 of 67

Office of Construction and Facilities Management

Department of Veterans Affairs



- PLAN NOTES:**
- INDICATES THREADED ROD / PIPE COLLAR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE MECHANICAL FOR THREADED ROD / PIPE COLLAR SIZE.
 - ✕ INDICATES BEAM ANCHOR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE 2/S4.01 FOR SUPPORT DETAIL.



1 SECOND FLOOR FRAMING PLAN (AREA D)
S2.04d SCALE: 1/4" = 1'-0"

Revisions:	Date

CONSULTANTS:

SEAL:

ARCHITECT/ENGINEERS:

MEP ENGINEERS
 Valley Engineering
 4901 Creech Drive
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 150 South East Street, Suite 201
 Frederick, MD 21701

Scale:
 AS NOTED

Drawing Title
SECOND FLOOR FRAMING PLAN-d

Approved: Project Director
BID DOCUMENTS

Project Title
**CHILLED WATER LINE
 REPLACEMENT BLDG 500**

Location
 VAMC - Martinsburg, WV

Date
 04/22/2022

Checked
 CJ

Drawn
 BB

Project Number
 613-16-302

Building Number
 500

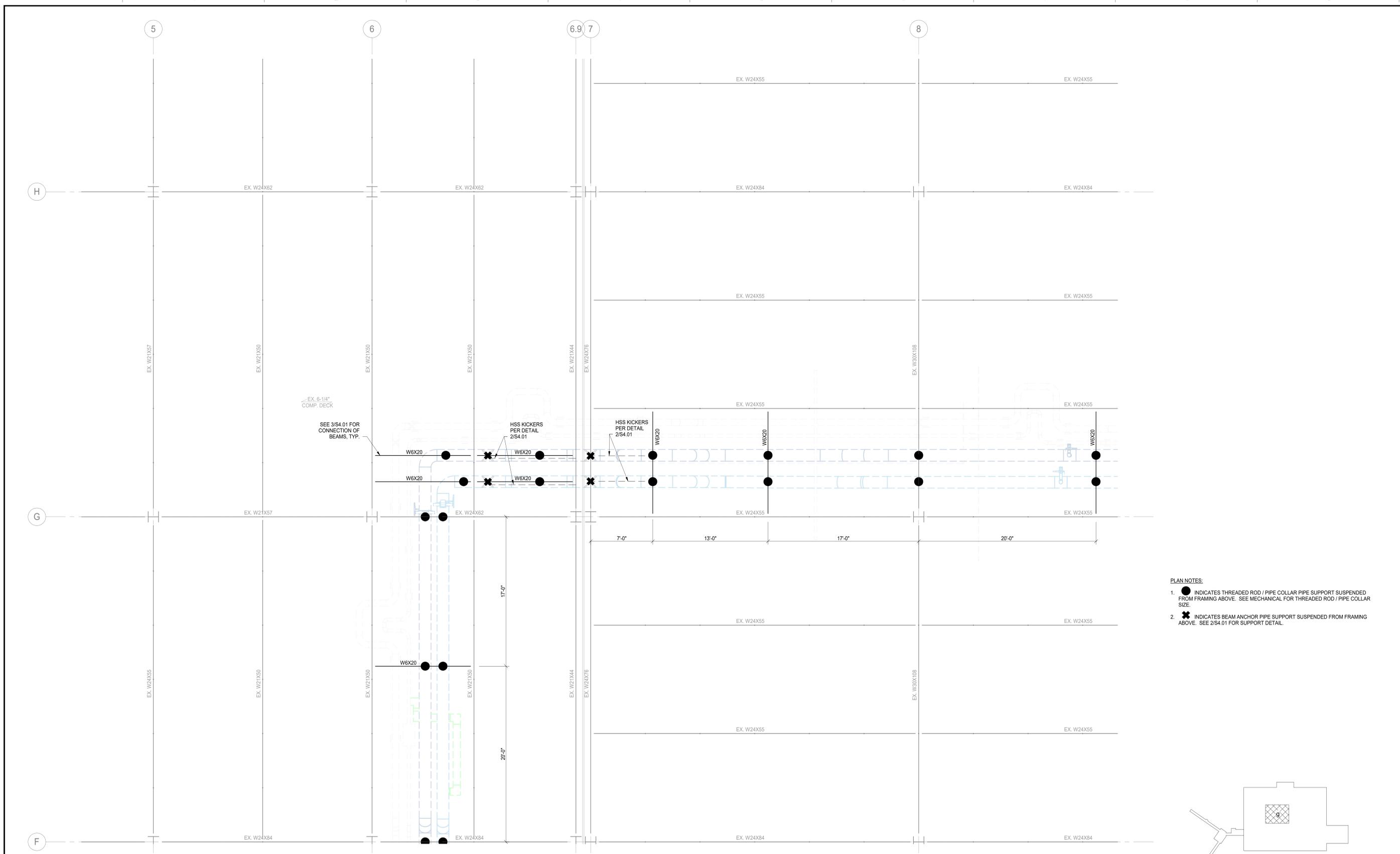
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Dwg. 19 of 67

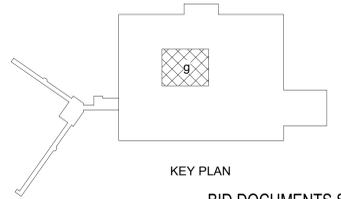
Office of
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Department of
 Veterans Affairs

one eighth inch = one foot
 one quarter inch = one foot
 three eighths inch = one foot
 one half inch = one foot
 three quarters inch = one foot
 one inch = one foot
 one and one half inch = one foot
 two inches = one foot
 three inches = one foot
 four inches = one foot
 six inches = one foot
 one foot = one foot



- PLAN NOTES:**
- INDICATES THREADED ROD / PIPE COLLAR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE MECHANICAL FOR THREADED ROD / PIPE COLLAR SIZE.
 - ✱ INDICATES BEAM ANCHOR PIPE SUPPORT SUSPENDED FROM FRAMING ABOVE. SEE 2/S4.01 FOR SUPPORT DETAIL.



1 SECOND FLOOR FRAMING PLAN (AREA G)
 S2.04g SCALE: 1/4" = 1'-0"

Revisions:	Date

CONSULTANTS:

SEAL:

ARCHITECT/ENGINEERS:

MEP ENGINEERS
 Valley Engineering
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 Mount Crawford, VA 22841

STRUCTURAL ENGINEERS
 ADTEX Engineers, Inc.
 150 South East Street, Suite 201
 Frederick, MD 21701

Scale: AS NOTED

Drawing Title
SECOND FLOOR FRAMING PLAN-g

Approved: Project Director
BID DOCUMENTS

Project Title
CHILLED WATER LINE REPLACEMENT BLDG 500

Location
 VAMC - Martinsburg, WV

Date
 04/22/2022

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Project Number
 613-16-302

Building Number
 500

Drawing Number
S2.04g

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