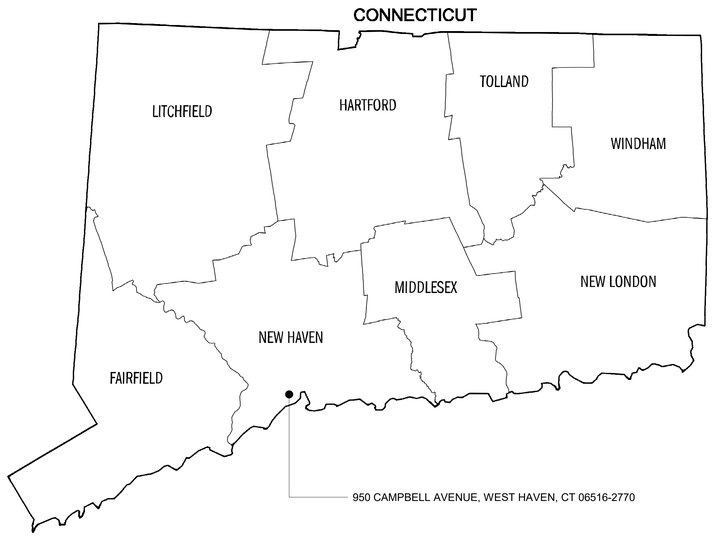
EHRM INFRASTRUCTURE UPGRADES

950 CAMPBELL AVENUE, WEST HAVEN, CT 06516-2770

PROJECT #: 689-22-700

VOLUME 2 - STRUCTURAL SHEETS

BUILDINGS WITHIN THE SCOPE OF THIS PROJECT



1 LOCATION MAP
1" = 30'-0"

2 SITE PLAN
1" = 150'-0"

PROJECT NORTH

SIGNATURE LINE

COR

PROJECT INFORMATION

CODE ANALYSIS

STATE: CONNECTICUT
COUNTY: NEW HAVEN
JURISDICTION: WEST HAVEN

OWNER: DEPARTMENT OF VETERANS AFFAIRS

ICRA CLASS REQUIREMENTS

REQUIREMENTS DEPENDENT ON EACH INDIVIDUAL ROOM LOCATION.

APPLICABLE BUILDING

BUILDING 1, 2, 2B, 3, 4, 5, 6, 11, 11A, 12, 12A, 14A, 15, 15A, 16, 16A, 21, 22, 24, 27-34, 35, 35A, 36, 36A, 41 (DATA CENTER), 42 (GENERATOR ENCLOSURE, FUEL YARD)

PROJECT DESCRIPTION

THE PROPOSED DESIGN SHALL IMPROVE, RECONFIGURE, EXPAND AND RENOVATE EXISTING SPACES FOR NEW TELECOMMUNICATION ROOMS, DATA CENTER, GENERATOR ENCLOSURE, AND FUEL YARD.

DESIGN TEAM

CIVIL

WSP USA, INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WA 98003-2600
PHONE: (206) 431-2300

MECHANICAL

SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 300
KENT, WA 98032
PHONE: (206) 590-2118

ARCHITECTURAL

SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 300
KENT, WA 98032
PHONE: (206) 590-2118

PLUMBING

SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 300
KENT, WA 98032
PHONE: (206) 590-2118

STRUCTURAL

WSP USA, INC.
33301 9TH AVENUE SOUTH
FEDERAL WAY, WA 98003-2600
PHONE: (206) 431-2300

ELECTRICAL

SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 300
KENT, WA 98032
PHONE: (206) 590-2118

FIRE PROTECTION

SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 300
KENT, WA 98032
PHONE: (206) 590-2118

BUILDING TYPES

BUILDING 01 - HEALTHCARE
BUILDING 02 - HEALTHCARE
BUILDING 2B - ADMIN
BUILDING 03 - HEALTHCARE
BUILDING 04 - ADMIN
BUILDING 05 - HEALTHCARE
BUILDING 06 - ADMIN
BUILDING 11 - ADMIN
BUILDING 11A - ADMIN
BUILDING 12 - ADMIN
BUILDING 12A - ADMIN
BUILDING 14A - ADMIN
BUILDING 15 - ADMIN
BUILDING 15A - ADMIN
BUILDING 16 - ADMIN
BUILDING 16A - ADMIN
BUILDING 21 - ADMIN
BUILDING 22 - ADMIN
BUILDING 24 - ADMIN
BUILDING 27-34 - ADMIN
BUILDING 35 - ADMIN
BUILDING 35A - ADMIN
BUILDING 36 - HEALTHCARE
BUILDING 36A - ADMIN
41 (DATA CENTER) - ADMIN
42 (GENERATOR ENCLOSURE) - ADMIN

GENERAL NOTES

1. COORDINATE WORK WITH ALL CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO DRAWINGS & SPECIFICATIONS.
2. SPECIFICATIONS SHALL SUPERSEDE DRAWINGS IN THE CASE OF ANY CONFLICTING INFORMATION. BRING TO THE AWARENESS OF AND VERIFY WITH VA COR PRIOR TO PROCEEDING.
3. THE CONTRACTOR AND ANY SUB CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH EXISTING CONDITIONS AND PROJECT REQUIREMENTS PRIOR TO SUBMITTING A BID OR BEGINNING WORK. NO ALLOWANCES WILL BE MADE ON BEHALF OF THE CONTRACTOR OR SUB-CONTRACTORS FOR FAILURE TO VISIT THE SITE.
4. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS BEFORE BEGINNING WORK. ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE COR.
5. ALL WORK SHALL BE PERFORMED WITH A HIGH-LEVEL OF WORKMANSHIP.
6. THE CONTRACTOR SHALL VERIFY ALL PRODUCT TYPES AND QUANTITIES DURING SITE WALKTHROUGH, PRIOR TO PURCHASING ANY MATERIALS, EQUIPMENT, PRODUCTS OR LABOR.
7. THE CONTRACTOR SHALL VERIFY AND COORDINATE WITH ALL INSTALLERS TO ENSURE COMPLIANCE WITH THE CONTRACT DOCUMENTS.

Revisions:	Date:

CONSULTANT/ DISCIPLINE
DISCIPLINE:

ARCHITECT/ ENGINEER OF RECORD
A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 300
KENT, WA 98032
SPEESDESIGNBUILD

STAMP
REGISTERED ARCHITECT 10000 JAMES M. KING STATE OF WASHINGTON

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

Drawing Title: COVER PAGE
Approved:
Phase: 100% CONSTRUCTION DOCUMENTS
Project Title: EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN
Project Number: 689-22-700
Building Number:
Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516
Drawing Number: G-001
Issue Date: 04/20/2026
Checked: JS/JRS
Drawn: JRS

CODES AND STANDARDS

MATERIAL SPECIFIC STANDARDS ARE LISTED IN THE RESPECTIVE MATERIAL SECTION.

1. VA SEISMIC DESIGN REQUIREMENTS, H-18-8, JULY 1ST 2023
2. 2021 INTERNATIONAL BUILDING CODE (IBC) WITH STATE AND LOCAL AMENDMENTS

DESIGN LOADS

REFERENCES:

ASCE 7-16 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES
VA STRUCTURAL DESIGN MANUAL PG-18-10 OCTOBER 1ST 2022, REVISED JULY 1, 2023

BLAST LOADS

CHARGE WEIGHTS	VA PHYSICAL SECURITY TEAM
STANDOFF REQUIREMENTS	VA PHYSICAL SECURITY & RESILIENCY DESIGN MANUAL
BLAST LOADING	UFC 3-340-02
LEVEL OF PROTECTION	VA PHYSICAL SECURITY & RESILIENCY DESIGN MANUAL AND ASCE 59-11

ALL DOOR EXTERIOR DOOR FRAMES AND CONNECTIONS SHALL BE DESIGNED FOR BLAST LOADS

DEAD LOADS

WEIGHT OF STRUCTURAL ELEMENTS AND PERMANENT FIXED EQUIPMENT.

SUPERIMPOSED DEAD LOADS

LOCATION	CATEGORY	UNIFORM LOAD (PSF)
ROOF	ROOFING MATERIALS	18
WALLS	EXTERIOR WALL SKIN	40 (LATERAL ONLY)
WALLS	PARTITIONS	15 (10 LATERAL)

LIVE AND ROOF LIVE LOADS

OCCUPANCY OR USE		UNIFORM LOAD (PSF)	CONCRETE LOAD (LBS)
CORRIDORS	FIRST FLOOR	100	
MECHANICAL ROOM		150	
OFFICE	OFFICES FILE AND COMPUTER ROOMS	80 125	
STAIRS & EXITS		100	300
ROOF		20	300

SNOW LOAD

DESIGN PARAMETER	VALUE
SNOW LOAD IMPORTANCE FACTOR, Is	1.2
GROUND SNOW LOAD, Pg	30 PSF
SNOW LOAD ON FLAT ROOFS, Pf	22.7 PSF
EXPOSURE CATEGORY	FULLY EXPOSED
SNOW LOAD EXPOSURE FACTOR, Ce	1.0
THERMAL FACTOR, Ct	1.0

WIND LOAD

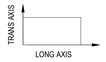
DESIGN PARAMETER	VALUE
BASIC WIND SPEED (3-SEC GUST), V	134 MPH
WIND EXPOSURE CATEGORY	B
ENCLOSURE CLASSIFICATION	ENCLOSED
INTERNAL PRESSURE COEFFICIENT	±0.18

DEFERRED SUBMITTALS

1. DEFERRED COMPONENT SUBMITTALS ARE INTENDED TO BE VENDOR DESIGNED AND HAVE NOT BEEN DESIGNED BY THE ARCHITECT/ENGINEER OF RECORD. THE COMPONENT DESIGNER IS RESPONSIBLE FOR CODE CONFORMANCE AND NECESSARY CONNECTIONS NOT CALLED OUT ON ARCHITECTURAL OR STRUCTURAL DRAWINGS.
2. DEFERRED SUBMITTALS INCLUDING CALCULATIONS MUST BE STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER. DEFERRED SUBMITTALS MUST FIRST BE SUBMITTED TO THE ENGINEER OF RECORD FOR A CURSORY REVIEW FOR LOADS IMPOSED ON THE BASIC STRUCTURE.
3. A SUBMITTAL MAY THEN BE MADE BY THE CONTRACTOR TO THE CONTRACTING OFFICER'S REPRESENTATIVE TO SUBMIT TO THE AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL.
4. THE LIST OF ITEMS FOR DEFERRED SUBMITTALS INCLUDES THE FOLLOWING ITEMS:
   - A. SEISMIC RESTRAINT FOR NON-STRUCTURAL COMPONENTS
   - B. SHADE STRUCTURE AND SHADE STRUCTURE FOUNDATION
5. SUBMITTAL MUST INCLUDE:
   - A. CALCULATIONS
   - B. A DIAGRAM SHOWING LOAD MAGNITUDES AND LOCATIONS, SEPARATED INTO DEAD, AND SEISMIC COMPONENTS - THAT ARE APPLIED TO THE PRIMARY STRUCTURE.

SEISMIC LOAD

DESIGN PARAMETER		VALUE
SEISMIC IMPORTANCE FACTOR, Ie		1.5
SITE LOCATION	LATITUDE LONGITUDE	41.282° N -72.960° E
SOIL SITE CLASS		C
MAPPED SPECTRAL ACCELERATION	SHORT PERIOD, Ss 1-SECOND PERIOD, S1	0.200 0.054
DESIGN SPECTRAL ACCELERATION	SHORT PERIOD, Sds 1-SECOND PERIOD, Sd1	0.173 0.054
SEISMIC DESIGN CATEGORY		C



PRINCIPLE BUILDING AXES (NTS)

SEISMIC SYSTEM DESIGN	BOTH DIRECTION
SEISMIC FORCE RESISTING SYSTEM	A1 - BEARING WALL SYSTEM: SPC REINF MASONRY SHEAR WALLS
RESPONSE MODIFICATION FACTOR, R OVERSTRENGTH FACTOR, Ω0 DEFLECTION AMPLIFICATION FACTOR, Cd	5 2.0 3.5
SEISMIC WEIGHT, W SEISMIC RESPONSE COEFF., Cs DESIGN BASE SHEAR, V	507 KIPS 0.052 26.4 KIPS
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE ANALYSIS

DEFLECTION LIMITS

1. DEFLECTION LIMITS OF MATERIAL STANDARDS ALSO APPLY.
2. SPAN LENGTH (L) AND WALL HEIGHT (H) ARE MEASURED IN INCHES FROM THE CENTERLINES OF SUPPORTS. THE LENGTH OF CANTILEVERED ELEMENTS MUST BE FACTORED BY 2.

ELEMENT		DEFLECTION LIMITS FOR LOAD CASE	
		LL OR SL OR WL	TOTAL: DL + LL
VERTICAL	VENEER LINTELS	L/600	L/600
	ROOFS (NOT SUPPORTING PLASTER OR STUCCO CEILINGS)	L/240	L/180
LATERAL	WALLS WITH BRITTLE FINISHES (EXCL. VENEER)	H/600	
	WALLS WITH FLEXIBLE FINISHES	H/180	
STORY DRIFT	WIND	H/500 (ELASTIC)	
	SEISMIC	0.007 H (INELASTIC)	

GENERAL CONDITIONS

1. CONFLICTS BETWEEN THE DRAWINGS AND SPECIFICATIONS MUST BE BROUGHT TO THE ATTENTION OF THE CONTRACTING OFFICER AND STRUCTURAL ENGINEER OF RECORD (SER) IN WRITTEN FORM AND RESOLVED BEFORE PROCEEDING WITH AFFECTED WORK.
2. STRUCTURAL DRAWINGS REPRESENT THE COMPLETED STRUCTURE. THE CONTRACTOR IS RESPONSIBLE FOR THE MEANS AND METHODS NECESSARY TO COMPLETE THE WORK, FOR JOB SITE SAFETY AND FOR COORDINATING WITH OTHER DISCIPLINES AS REQUIRED.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE ERECTION PROCEDURE AND SEQUENCING TO ENSURE STABILITY OF THE STRUCTURE DURING CONSTRUCTION. PROVIDE SHORING, BRACING, AND FALSEWORK AS NEEDED TO PROTECT THE STRUCTURE THROUGHOUT CONSTRUCTION.
4. ERECTION AIDS FOR FACILITATING CONSTRUCTION NOT SHOWN IN THESE DRAWINGS MUST BE REMOVED AND ELEMENTS RESTORED TO ITS ORIGINAL DESIGN INTENT SHOWN PER THESE DRAWINGS.
5. STRUCTURAL DRAWINGS SHOW GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE SPECIFIC CONDITIONS ARE NOT SHOWN, DETAILS OF SIMILAR TYPE AND CHARACTER MAY BE USED BUT REQUIRE APPROVAL FROM THE SER.
6. TYPICAL DETAILS MAY NOT BE REFERENCED FROM THE PLANS BUT APPLY FOR THE CONDITIONS AS DESCRIBED BY THE DETAIL.
7. CONTRACTOR-INITIATED CHANGES REQUIRE APPROVAL FROM THE SER.
8. FOR A CONTRACTOR REQUESTED DESIGN REVISION, THE PROPOSED ALTERNATIVE MUST BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL BY THE SER. THE SUBMITTAL MUST INCLUDE DRAWINGS, STRUCTURAL DETAILS AND RELATED CALCULATIONS, STAMPED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE JURISDICTION OF THE PROJECT LOCATION. CALCULATIONS MUST DEMONSTRATE COMPLIANCE WITH THE CODES AND DESIGN REQUIREMENTS LISTED PER THESE DRAWINGS; AND THAT THE ALTERNATIVE DESIGN DOES NOT ADVERSELY AFFECT THE STRUCTURE SHOWN IN THESE DRAWINGS.
9. CONTRACTOR MUST COORDINATE THESE DRAWINGS WITH THE DRAWINGS OF THE OTHER DISCIPLINES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION NOT SHOWN ON THE STRUCTURAL DRAWINGS. EXAMPLES INCLUDE EMBEDDED ANCHORS, SLEEVES AND INSERTS, MISCELLANEOUS ATTACHMENT DETAILS, FLOOR FINISHES, DOOR THRESHOLDS, SLOPES TO DRAINS, OPENINGS IN STRUCTURAL ELEMENTS, ETC.
10. VERIFY DIMENSIONS AND DETAILS PRIOR TO FABRICATION AND CONSTRUCTION. THIS INCLUDES COORDINATING THE SIZE AND LOCATION OF OPENINGS THROUGH STRUCTURAL ELEMENTS WITH THE RESPECTIVE SUBCONTRACTOR, AS WELL AS COORDINATING INSERTS AND ATTACHMENTS FOR USE BY OTHER TRADES.
11. NO PIPES OR DUCTS MAY BE PLACED IN STRUCTURAL MEMBERS UNLESS DETAILED BY THE STRUCTURAL PLANS OR APPROVED BY THE SER.
12. DIMENSIONS MUST NOT BE SCALED FROM THE DRAWINGS.
13. PROVIDE SUBMITTALS AND (FABRICATION, AND ERECTION, ETC.) SHOP DRAWINGS FOR THE WORK SHOWN IN THESE DRAWINGS TO THE CONTRACTING OFFICE FOR APPROVAL FROM THE SER. WORK MUST NOT PROCEED WITHOUT REVIEW AND APPROVAL BY THE SER.
14. SUBMIT A DETAILED PLAN OF THE CONSTRUCTION INCLUDING A DESCRIPTION OF DEMOLITION, CONSTRUCTION METHODS, ERECTION SEQUENCING, METHODS OF STABILIZING THE STRUCTURE, SHORING LAYOUT, ELEMENT SIZES, CONNECTIONS AND ACCESSORIES WITH SUPPORTING CALCULATIONS STAMPED AND SIGNED BY A REGISTERED PROFESSIONAL ENGINEER, TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO BEGINNING WORK.
15. SHOP DRAWINGS MUST BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. UNLESS NOTED OTHERWISE, PROVIDE SHOP DRAWINGS FOR:
    - a. DEFORMED BAR REINFORCING LAYOUT FOR CONCRETE AND MASONRY,
    - b. STRUCTURAL AND MISCELLANEOUS STEEL,
    - c. COLD-FORMED STEEL FRAMING,
    - d. ROOF METAL DECKING
1. BY SUBMITTING FOR ENGINEER'S REVIEW, THE CONTRACTOR CONFIRMS THE ACCURACY OF THE SUBMITTALS FOR DIMENSIONS, QUANTITIES, ELEMENT SIZES, CONSTRUCTION MATERIALS, FIELD MEASUREMENTS AND THAT THE CONTENTS HAVE BEEN REVIEWED FOR MEANS, METHODS, AND OPERATIONS OF CONSTRUCTION, AND FOR ITS ADHERENCE TO SAFETY PROTOCOLS AT THE SITE.
2. SHOP DRAWING REVIEW DOES NOT RELIEVE THE CONTRACTOR FROM HAVING SOLE RESPONSIBILITY FOR THE ACCURACY OF ELEMENT SIZES, DIMENSIONS AND DETAILS. SUCH REVIEW DOES NOT CONSTITUTE ACCEPTANCE BY THE ENGINEER OF THE CORRECTNESS OR ADEQUACY OF SUCH SUBMITTALS, NOR IS A WARRANTY THAT THE SUBMITTALS SATISFY THE REQUIREMENTS OF THE CONTRACT.

FOUNDATIONS

1. GROUND PREPARATION FOR THE SITE MUST BE IN ACCORDANCE WITH THE FINAL GEOTECHNICAL REPORT LISTED.

GEOTECHNICAL REPORT	
REPORT TITLE PREPARED BY PROJECT NUMBER DATED	GEOTECHNICAL ENGINEERING INVESTIGATION PROPOSED EHRM INFRASTRUCTURE UPGRADE GEOTILL ENGINEERING, INC 112452001 APRIL 17th, 2024

2. THE CONTRACTOR MUST BE FAMILIAR WITH SUBSURFACE CONDITIONS AND RELEVANT ASPECTS OF THIS REPORT BEFORE COMMENCING EXCAVATION. THE CONTRACTOR MUST RETAIN A GEOTECHNICAL ENGINEER FOR INSPECTIONS, TO VERIFY CONDITIONS, OR TO PERFORM ADDITIONAL EXPLORATION, AS NECESSARY.
3. LOCATIONS OF SUBSURFACE SITE CONDITIONS, INCLUDING BURIED UTILITIES OR OBSTRUCTIONS AND OTHER FEATURES KNOWN TO THE DESIGN TEAM ARE IDENTIFIED IN DRAWINGS. VERIFY THE EXTENT AND LOCATIONS OF SITE UTILITIES AND OBSTRUCTIONS. REPORT ANY DISCREPANCY ENCOUNTERED AS SOON AS THEY ARE KNOWN TO THE CONTRACTING OFFICER.
4. FOOTING DESIGN IS BASED ON THE FOLLOWING ALLOWABLE SOIL PROPERTIES:

SOIL PROPERTY	LOAD CASE	VALUE
BEARING CAPACITY:	SUSTAINED TRANSIENT (INCL W, E, OR BLAST)	2,500 PSF 3325 PSF
MODULUS OF SUBGRADE REACTION		125 PCI
COEFFICIENT OF FRICTION AT STRENGTH		0.30
FROST DEPTH		48"

5. EXTERIOR FOOTINGS MUST BEAR AT OR BELOW FROST DEPTH. UNLESS NOTED OTHERWISE, MINIMUM BEARING DEPTH IS 48-INCHES BELOW THE ADJACENT FINISHED GRADE.
6. ENGINEERED FILL BELOW SLABS, FOOTINGS, AND PAVEMENTS SHOULD BE COMPACTED TO DRY DENSITY OF AT LEAST 98% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D-698). THE UPPER 48" OF SOIL WILL NEED TO BE RE-COMPACTED BELOW THE SLAB-ON-GRADE PER GEOTECHNICAL REPORT. A QUALIFIED TEST LABORATORY OR AN EXPERIENCED, QUALIFIED GEOTECHNICAL ENGINEER MUST BE RETAINED TO MONITOR SOIL COMPACTION.
7. SPECIAL INSPECTION MUST BE PERFORMED DURING SITE EXCAVATION TO CONFIRM THAT EXISTING CONDITIONS COMPLY WITH CONDITIONS IN THE GEOTECHNICAL REPORT.
8. EXCAVATIONS MUST BE DEWATERED TO ALLOW FOR CASTING FOUNDATION CONCRETE IN DRY CONDITIONS.
9. USE FORMWORK TO CAST CONCRETE, SOIL FORMING CONCRETE WORK IS PROHIBITED.
10. USE A 15 MIL MIN VAPOR RETARDER AND A 4 INCH COMPACTED DRAINAGE LAYER BELOW SLABS-ON-GRADE, UNLESS NOTED OTHERWISE OR PER SPECIFIC REQUIREMENTS OF THE GEOTECHNICAL REPORT.

CAST IN PLACE CONCRETE

1. REFERENCES:
   - A. ACI 301-20 SPECIFICATIONS FOR CONCRETE CONSTRUCTION
   - B. ACI 315R-18 DETAILS AND DETAILING CONCRETE CONSTRUCTION
   - C. ACI 318-19 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
   - D. ACI 347-14 GUIDE TO FORMWORK FOR CONCRETE
1. CONCRETE WORK MUST CONFORM TO ACI 301. FORMWORK MUST CONFORM TO ACI 347.
2. MINIMUM CONCRETE PROPERTIES AT 28-DAYS PER THE FOLLOWING TABLE.

LOCATION	MIN 28-DAY COMPRESSIVE STRENGTH (PSI)	ACI 318, CH. 19 EXPOSURE CATEGORIES							
		FREEZING & THAWING	SULFATE	WATER CONTACT	CORROSION PROTECTION	MAX WATER/CEMENT RATIO	CEMENT TYPE	NOMINAL MAX AGGREGATE SIZE
FOUNDATIONS	4,500	F2	S1	W1	C1	0.45	II	1"
SLAB-ON-GROUND (EXTERIOR)	5,000	F2	S1	W2	C2	0.45	II	1"
SLAB-ON-GROUND (INTERIOR)	4,000	F0	S0	W0	C0	0.50	I OR II	1 1/2"

3. FLEXURAL STRENGTH FOR SLAB-ON-GRADE CONCRETE 650 PSI AT 90 DAYS
4. CONCRETE EXPOSED TO THE ENVIRONMENT MUST HAVE 6% +/- 1% AIR ENTRAINMENT BY VOLUME PER ASTM C260.
5. PROVIDE A MUD SLAB (MINIMUM 2 INCHES OF CONCRETE, LEVELED AT THE TOP SURFACE) UNDER SLABS AND FOOTINGS AT WET OR MUDDY GROUND SURFACES WHICH ARE UNSUITABLE FOR SUPPORTING REBAR CHAIRS, CONSTRUCTION WORKERS AND EQUIPMENT. PROVIDE WATERPROOF MEMBRANE TO TOP OF MUD SLAB AS REQUIRED.
6. HORIZONTAL CONSTRUCTION JOINTS IN SPREAD FOOTINGS, STRIP FOOTINGS, PILE CAPS, BEAMS AND SLABS ARE PROHIBITED UNLESS SHOWN ON THE DRAWINGS OR APPROVED BY THE SER.
7. THE EXTENT OF CONCRETE PLACEMENTS MUST BE LIMITED AS FOLLOWS, UNLESS NOTED OTHERWISE:
   - A. STRIP FOOTINGS AND WALLS: 60 FT (UNLESS INTERMEDIATE CONTROL JOINTS ARE PROVIDED)
   - B. SLABS-ON GROUND: 30 FT MAXIMUM LENGTH AND 900 SQ FT MAXIMUM AREA (UNLESS INTERMEDIATE CONTROL JOINTS ARE PROVIDED)
8. BEFORE CASTING THE SECOND SIDE OF A CONSTRUCTION JOINT, ROUGHEN SURFACE OF CONCRETE ELEMENTS AT CONSTRUCTION JOINTS TO A MINIMUM AMPLITUDE OF 1/4 INCH, UNLESS NOTED OTHERWISE. CLEAN AND APPLY BONDING AGENT TO THE HARDENED CONCRETE SURFACE RECEIVING FRESH CONCRETE.
9. SECTIONS AND DETAILS MAY NOT SHOW ALL REQUIRED DEFORMED BAR REINFORCEMENT FOR CLARITY. ADDITIONAL REINFORCEMENT MAY BE DESCRIBED IN PLANS, SCHEDULES, NOTES, OR OTHER DETAILS, AS APPLICABLE.
10. COORDINATE FLOOR FINISHES, SLAB SLOPES & DEPRESSIONS, FLOOR DRAINS, CURBS, CONCRETE PADS, AND OTHER CONCRETE FEATURES IDENTIFIED IN THE CONTRACT DOCUMENTS.
11. THE STRUCTURAL DRAWINGS DO NOT NECESSARILY SHOW ALL ITEMS EMBEDDED IN THE CONCRETE. COORDINATE AND PROVIDED EMBEDDED ITEMS AS SHOWN IN THE CONTRACT DOCUMENTS AND AS REQUIRED BY THE EQUIPMENT MANUFACTURERS, AS NEEDED.
12. NON-STRUCTURAL STEEL MEMBERS EMBEDDED IN CONCRETE MUST BE HOT-DIP GALVANIZED OR PAINTED. DAMAGED COATINGS OF EMBEDDED ITEMS MUST BE REPAIRED PRIOR TO CASTING CONCRETE.
13. PENETRATIONS THROUGH CONCRETE WALLS OR SLABS MUST CONFORM TO STANDARD DETAIL DRAWINGS.
14. PROVIDE 3/4" CHAMFER ON EXPOSED CONCRETE EDGES UNLESS NOTED OTHERWISE.

DEMOLITION AND SHORING

1. THE CONTRACTOR MUST VERIFY EXISTING CONDITIONS BEFORE COMMENCING ANY DEMOLITION. THE CONTRACTOR MUST VERIFY THE EXTENT AND LOCATIONS OF SITE UTILITIES. LOCATIONS OF EXISTING FOUNDATIONS AND UTILITIES KNOWN TO THE ENGINEER ARE INDICATED ON THE DRAWINGS. REPORT ANY DISCREPANCIES OR ENCOUNTERED OBSTRUCTIONS TO THE CONTRACTING OFFICER REPRESENTATIVE IMMEDIATELY.
2. THE CONTRACTOR MUST DESIGN AND INSTALL SHORING TO SUPPORT EXISTING CONSTRUCTION (VERTICALLY AND LATERALLY) AS REQUIRED AND IN A MANNER SUITABLE TO THE WORK SEQUENCES COORDINATED WITH THE OTHER DISCIPLINES. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST PREPARE A PLAN TO MONITOR DAILY THE SHORING SYSTEMS FOR MOVEMENT AND SUBMIT IT FOR REVIEW TO THE CONTRACTING OFFICER REPRESENTATIVE.
3. EXISTING STRUCTURAL MEMBERS MUST REMAIN UNLESS NOTED OTHERWISE ON THE PLANS. SAWCUTTING, IF AND WHERE USED, MUST NOT CUT EXISTING REINFORCING THAT IS TO REMAIN. DEMOLITION DEBRIS MUST NOT BE ALLOWED TO DAMAGE OR OVERLOAD THE EXISTING STRUCTURE.
4. OPENINGS THROUGH EXISTING WALLS, SLABS, AND BEAMS MUST BE ACCOMPLISHED BY SAWCUTTING OR CORING WHEREVER POSSIBLE AND AS SHOWN. WHEN SAWCUTTING, CORNERS MUST INITIALLY BE CORED TO PREVENT OVERCUTTING. SMALL ROUND OPENINGS MUST BE ACCOMPLISHED BY DRILLING, IF POSSIBLE.
5. THE CONTRACTOR MUST DESIGN AND INSTALL SHORING TO SUPPORT NEW CONSTRUCTION (VERTICALLY AND LATERALLY) UNTIL STRUCTURAL COMPONENTS HAVE BEEN CONNECTED AS SHOWN ON THE STRUCTURAL DRAWINGS.
6. THE CONTRACTOR MUST SUBMIT SHORING DRAWINGS AND CALCULATIONS STAMPED AND SIGNED BY A REGISTERED STRUCTURAL ENGINEER. DRAWINGS MUST SHOW SIZE, LAYOUT, CONNECTIONS, MATERIAL DESIGNATION, METHOD OF INSTALLATION, AND ACCESSORIES OF SHORING MEMBERS.

REINFORCING STEEL

1. REFERENCES:
   - A. ACI 301-20 SPECIFICATIONS FOR CONCRETE CONSTRUCTION
   - B. ACI SP-66-04 ACI DETAILING MANUAL
   - C. ACI 315R-18 DETAILS AND DETAILING CONCRETE CONSTRUCTION
   - D. AWS D1.4 2018 STRUCTURAL WELDING CODE – REINFORCING STEEL
2. STEEL REINFORCEMENT MUST CONFORM TO:

CONDITION	STANDARD AND GRADE	MIN YIELD (KSI)
TYPICAL DEFORMED BAR	ASTM A615 GR 60	60
WELDABLE DEFORMED BAR, OR DEFORMED BAR IN SEISMIC ELEMENTS	ASTM A706 GR 60	60

3. PROVIDE BAR SUPPORTS AND SPACERS PER ACI 315 UNLESS NOTED OTHERWISE. DEFORMED BAR REINFORCEMENT AND INSERTS MUST BE SECURED IN-PLACE PRIOR TO PLACING CONCRETE. DO NOT PLACE REBAR MATS DIRECTLY AGAINST SOIL; REBAR MATS ADJACENT TO SOIL OR OVER MUD SLABS MUST BE SUPPORTED BY CHAIRS, DO NOT LIFT INTO PLACE DURING POURING.
4. UNLESS INDICATED OTHERWISE, REINFORCEMENT BARS ARE CONTINUOUS AND MUST BE LAP SPLICED OR COUPLED WITH MECHANICAL CONNECTORS. LAP LENGTH NOTES:
   - A. SEE DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULES FOR REINFORCEMENT DETAILS.
   - B. LAP SPLICE LENGTH MUST BE USED FOR THE LARGER BAR SIZE WHEN BAR SIZE TRANSITIONS AT LAP.
   - C. OVERLAP WELDED WIRE LAYER REINFORCEMENT A LENGTH OF 1.5X WIRE DEVELOPMENT LENGTH OR ONE CROSSWIRE SPACING PLUS 2 INCHES, WHICHEVER IS LARGER.
   - D. MECHANICAL CONNECTORS MUST HAVE A MINIMUM CAPACITY OF 1.25 X YIELD STRENGTH OF THE BAR.
   - E. MECHANICAL CONNECTORS IN MEMBERS DESIGNATED AS PART OF THE SEISMIC-FORCE-RESISTING SYSTEM MUST HAVE A MINIMUM CAPACITY EQUAL TO THE TENSILE STRENGTH OF THE BAR.
5. TYPE 1 MECHANICAL CONNECTORS MUST DEVELOP 125% OF THE YIELD STRENGTH (Fy) OF THE STRONGER OF THE TWO BAR BEING SPLICED. TYPE 2 MECHANICAL CONNECTORS MUST DEVELOP THE FULL TENSILE STRENGTH OF THE STRONGER OF THE TWO BARS BEING SPLICED. WHERE MECHANICAL CONNECTORS ARE USED IN LIEU OF LAP SPLICES, PROVIDE TYPE 2 MECHANICAL CONNECTORS EXCEPT WHERE TYPE 1 ARE PERMITTED AS INDICATED.
6. HEADED DEFORMED BARS (TERMINATORS) MUST BE INTEGRALLY FORMED OR THREADED DEVICES MEETING THE REQUIREMENTS OF ACI 318, SECTION 25.4.4.1.
7. UNLESS NOTED OTHERWISE ON THE DRAWINGS:
   - A. DEFORMED BAR COVER MUST CONFORM TO SPECIFIED CONCRETE COVER REQUIREMENTS OF ACI 318.
   - B. REINFORCEMENT MUST BE CONTINUOUS THROUGH CONSTRUCTION JOINTS
   - C. APPROVAL FROM SER REQUIRED BEFORE WELDING NON-ASTM A706 Gr. 60 REINFORCEMENT
   - D. APPROVAL FROM SER REQUIRED BEFORE FIELD BENDING REINFORCEMENT PARTIALLY EMBEDDED CONCRETE
   - E. MATCH DOWELS TO THE LARGER OF MULTIPLE BAR SIZES
8. DOWELS MUST BE SECURED WITH A RIGID TEMPLATE TO ENSURE SPLICE IS LOCATED INSIDE THE CONFINED REGION (REGION ENCLOSED BY SHEAR OR HORIZONTAL REINFORCEMENT) OF CROSS-SECTION.

MASONRY

1. REFERENCES:
   - A. TMS 402-16 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES
   - B. TMS 602-16 SPECIFICATIONS FOR MASONRY STRUCTURES
2. PROVIDE INSPECTION LEVEL C FOR RC IV FOR QUALITY ASSURANCE AND SPECIAL INSPECTION AND TESTING PER TMS 602
3. CONCRETE MASONRY ASSEMBLY MUST ACHIEVE A COMPRESSIVE STRENGTH AND COMPONENT MATERIAL STRENGTH DETERMINED PER ARTICLE 1.4 B OF TMS 602. COMPRESSIVE STRENGTH MUST BE VERIFIED BEFORE CONSTRUCTION
4. PROVIDE CONCRETE MASONRY UNIT (CMU) COMPONENT MATERIAL STRENGTHS AS FOLLOWING. CONCRETE MASONRY ASSEMBLY MUST ACHIEVE THE COMPRESSIVE STRENGTH SHOWN AS DETERMINED PER ARTICLE 1.4B OF TMS 602.

ITEM	STANDARD, GRADE, AND NOTES	MIN STRENGTH (PSI)
ASSEMBLY COMPRESSIVE STRENGTH, fm		2,000
CMU BLOCK (MIN. NET AREA COMPRESSIVE 28-DAY STRENGTH)	ASTM C90, TYPE 1 (MOISTURE CONTROLLED), MEDIUM WEIGHT	2,000
MORTAR	ASTM C270, TYPE S. MASONRY CEMENT MORTAR PROHIBITED.	1,800
GROUT	GROUT SLUMP AT TIME OF GROUTING MUST BE 8 TO 11 INCHES. WATER-REDUCING ADMIXTURES MAY BE ADDED TO ACHIEVE PERMITTED SLUMP.	2,000
STEEL REINFORCEMENT	ASTM A615, GR 60 ASTM A706, GR 60 (WHERE WELDED)	60 KSI YIELD

5. COLD AND HOT WEATHER CONSTRUCTION MUST BE IN ACCORDANCE WITH ARTICLE 1.8C AND ARTICLE 1.8D RESPECTIVELY OF TMS 602.
6. LAY UP MASONRY UNITS IN RUNNING BOND, UNLESS NOTED OTHERWISE. MORTAR JOINTS MUST NOT EXCEED A THICKNESS OF 5/8 INCH.
7. PROVIDE BOND BEAM UNITS AT LAYERS WITH HORIZONTAL REINFORCEMENT, EXCEPT WHERE LINTEL SECTIONS ARE REQUIRED.
8. CONTINUOUS REINFORCING STEEL MUST BE LAP SPLICED IN ACCORDANCE WITH THE DEVELOPMENT AND LAP SPLICE LENGTHS FOR MASONRY PER THE DRAWINGS.
9. MECHANICAL SPLICES, WHERE NOTED ON DRAWINGS, MUST BE TAPERED THREADED OR UPSET THREADED BAR COUPLERS CERTIFIED TO DEVELOP 125% OF THE YIELD STRENGTH (Fy) OF THE BAR. HEADED REINFORCEMENTS BARS (TERMINATORS) MUST BE INTEGRALLY FORMED OR THREADED DEVICES PER ACI 318, SECTION 25.4.4.1, AND CAPABLE OF DEVELOPING THE FULL YIELD STRENGTH OF THE BAR.
10. VERTICAL BAR POSITIONERS MUST BE USED TO SECURE VERTICAL REINFORCING BEFORE GROUTING. CENTER VERTICAL REINFORCING IN WALL, UNLESS NOTED OTHERWISE.
11. PROVIDE VERTICAL BARS FULL HEIGHT AT WALL CORNERS, AND EACH SIDE OF DOORS, WINDOWS, AND OTHER OPENINGS. PROVIDE HORIZONTAL REINFORCEMENT ABOVE DOOR OPENINGS, ABOVE AND BELOW WINDOWS AND AT OTHER OPENINGS. EXTEND REINFORCEMENT AT LEAST ONE DEVELOPMENT LENGTH OF THE BAR BEYOND EACH SIDE OF OPENING UNLESS NOTED OTHERWISE. PROVIDE CONTINUOUS HORIZONTAL REINFORCEMENT AT CORNERS.
12. PROVIDE FINE GROUT OR COARSE GROUT BASED ON MINIMUM GROUT SPACE REQUIREMENTS OF TABLE 7 OF TMS 602.
13. GROUTING HEIGHTS GREATER THAN 5'-4" IS ONLY PERMITTED BY APPROVAL OF THE CONTRACTING OFFICER BEFORE CONSTRUCTION. SUBMIT REQUEST A MINIMUM OF TEN (10) DAYS PRIOR TO PROCEEDING WITH SITE MOBILIZATION. HIGH-LIFT GROUTING MUST BE IN ACCORDANCE WITH ARTICLE 3.5 OF TMS 602 AND SUBMITTAL MUST INCLUDE:
    - A. EXPECTED LIFT HEIGHTS AND PROCESS. LIFT MUST NOT EXCEED ONE STORY LEVEL, OR 12'-8" MAXIMUM, WHICHEVER IS LESSER.
    - B. QUALIFICATIONS OF UNIT AND GROUTING CREWS HAVING A MINIMUM OF FIVE (5) YEARS OF EXPERIENCE WITH SIMILAR HIGH-LIFT GROUTING WORK. LIST THREE PROJECTS WITH CONTACT INFORMATION OF A REFERENCE FOR EACH.
    - C. OTHER ITEMS DEEMED IMPORTANT BY THE CONTRACTOR.
14. SPACE CONTROL JOINTS AT A MAXIMUM OF 25 FEET O.C., THREE TIMES THE WALL HEIGHT, WHICHEVER IS LESSER WHEN NOT INDICATED ON THE DRAWINGS. WHEN INDICATED PER DRAWINGS, CONTROL JOINTS LOCATED BY DIMENSIONS SHOWN TAKE PRECEDENCE.
15. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE ROUGH OPENING DIMENSION AND LOCATIONS OF WINDOWS AND DOORS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR THE LOCATION, EXTENT, AND ORIENTATION OF CMU BLOCKS WITH REGARD TO COLOR AND FINISH.
16. OPENINGS FOR DUCTS AND PIPES PENETRATING MASONRY WALLS MUST BE COORDINATED PER CONTRACT DOCUMENTS. PROVIDE ADDITIONAL REINFORCEMENT AROUND PENETRATIONS THROUGH WALLS AS SHOWN.

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SDB SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 EXP. 6/30/27 STRUCTURAL STATE OF CALIFORNIA

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STRUCTURAL STEEL

1. REFERENCES:

   A. AISC 303-22 CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES
   B. AISC 360-16 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
   C. AISC 341-16 SEISMIC PROVISIONS FOR STEEL BUILDINGS
   D. AISC RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS 2014

2. STRUCTURAL STEEL WORK MUST BE PERFORMED BY AISC CERTIFIED FABRICATORS & ERECTORS.

3. STEEL CONSTRUCTION AND DESIGN AS PART A DEFERRED DESIGN SUBMITTAL MUST CONFORM TO AISC 360 AND AISC 303.

4. USE STRUCTURAL STEEL SHAPES (AS APPLICABLE PER THE DRAWINGS), WITH CROSS-SECTIONS PER ASTM A6, PER THE FOLLOWING TABLE.

SHAPE		STANDARD & GRADE	MIN YIELD (KSI)
WIDE FLANGES (W) AND TEES (WT)		ASTM A992	50
CHANNELS (C & MC) AND ANGLES (L)		ASTM A36	36
PLATE AND FLAT BAR STOCK (PL)		ASTM A36 GR 36	36
HSS	RECTANGULAR OR SQUARE ROUND	ASTM A500 GR C ASTM A500 GR B	50 46
PIPE		ASTM A53 GR B	35
OTHER STEEL		ASTM A572	50

5. PROVIDE PROTECTIVE COATING AT STEEL EXPOSED TO THE ENVIRONMENT AND WEATHER PER ARCHITECTURAL REQUIREMENTS.

6. MACHINE COLUMN ENDS AT SPLICES TO PROVIDE A FLUSH BEARING CONTACT SURFACE, UNLESS NOTED OTHERWISE.

7. EQUALLY SPACE STEEL BEAMS, NOT SPECIFICALLY DIMENSIONED ON PLAN, BETWEEN COLUMN GRID LINES OR THE INDICATED DIMENSIONED POINTS.

8. CAMBER BEAMS AS INDICATED. WHERE CAMBER IS NOT SHOWN, FABRICATE BEAMS WITH INCIDENTAL CAMBER SO THE HIGH SIDE IS PLACED UPWARD, OR OUTWARD AT WIND GIRTS.

9. CAMBER MUST BE COLD FORMED PER AISC SPECIFICATIONS AND TOLERANCES.

10. USE HIGH STRENGTH (HS) BOLTS PER ASTM F3125, GRADES AS INDICATED IN THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE.

TYPICAL HIGH STRENGTH BOLTS	STANDARD, GRADE, AND NOTES
BOLT DIAMETER BOLT ASTM F3125 GRADE BOLT FINISH/COATING	7/8 INCH DIAMETER, UNO A325, TYPE 1 UNO ASTM F2329 HDG [ASTM B695, F1136, F2833]
HEAVY HEX NUT HARDENED WASHER (CIRCULAR, BEVELED OR CLIPPED, AS REQ'D)	ASTM A563 TYPE DH' ASTM F436 TYPE 1
DIRECT TENSION INDICATING WASHERS BOLT DIAM. 1-1/2 IN AND SMALLER BOLT DIAM. UP TO 2-1/2 INCHES	ASTM F959 ASTM F2437
TENSION CONTROLLED BOLTS (USE MANUFACTURER SUPPLIED NUTS AND WASHERS)	F1852 , TYPE 1

11. SLIP-CRITICAL (SC) BOLTS MUST BE PER THE RCSC SPECIFICATION AND INSPECTED IN ACCORDANCE WITH THE IBC.

12. USE SNUG-TIGHT (ST) BOLTS PER THE RCSC WHEN SLIP-CRITICAL IS NOT IDENTIFIED IN THE DRAWINGS.

13. USE ASTM A449 BOLTS WITH ASTM F563 NUTS AND ASTM F436 HARDENED WASHERS FOR THROUGH BOLTING HSS SHAPES. BOLTS MUST BE SNUG TIGHT ONLY. PROVIDE JAMB NUT TIGHTENED AGAINST STANDARD NUT TO FASTEN CONNECTOR.

14. DIRECT TENSION INDICATING (DTI) WASHERS. IF USED FOR HIGH STRENGTH BOLTS, MUST NOT BE TIGHTENED TO A FULLY CRUSHED CONDITION. DTI MUST HAVE THE MINIMUM ACCEPTABLE NUMBER OF TAPERED GAGE REJECTIONS BETWEEN LUGS. REJECTION OF GAGE AT EACH LUG LOCATION IS CAUSE FOR REJECTION OF BOLT INSTALLATION.

15. CONTRACTOR MUST SUBMIT A BOLTING PROCEDURE PLAN TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL BY THE SER BEFORE BEGINNING WORK.

16. BOLT HOLES CUT IN THE FIELD MUST BE DRILLED, NOT BURNED. BOLT HOLES CUT IN THE SHOP MAY BE DRILLED, WATER-JET OR LASER CUT; PLASMA CUTTING HOLES NOT PERMITTED.

17. LOCATION OF EMBEDDED ELEMENTS MUST BE COORDINATED WITH CONTRACT DOCUMENTS.

18. STEEL COMPONENTS EMBEDDED IN CONCRETE OR MASONRY AT EXTERIOR LOCATIONS, EXPOSED TO EARTH, OR LOCATED IN UNCONDITIONED SPACE, MUST BE HOT-DIPPED GALVANIZED PER ASTM A123 [OR ASTM A767 FOR REINFORCEMENT].

19. AT INTERIOR CONDITIONS (NOT EXPOSED TO WEATHER) AND COMPONENTS EMBEDDED IN CONCRETE OR MASONRY MUST BE LEFT UNPAINTED.

20. ERECTION AIDS, WHICH ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR, MUST BE REMOVED AND THE AFFECTED ELEMENTS RESTORED TO ORIGINAL DESIGN INTENT. ERECTION AIDS AND OTHER ATTACHMENTS ARE NOT PERMITTED IN PROTECTED SEISMIC ZONES OF ELEMENTS WITHOUT PRIOR APPROVAL FROM THE SER.

21. NOTIFY CONTRACTING OFFICER OF ANY FABRICATION OR ERECTION ERRORS, OR DEVIATIONS. WRITTEN APPROVAL IS REQUIRED BEFORE FIELD CORRECTIONS ARE MADE.

ANCHOR RODS

1. ANCHOR RODS MUST BE ASTM F1554 GRADE 55 WITH S-1 (WELDABLE) SUPPLEMENT, UNLESS NOTED OTHERWISE.

2. PROVIDE SMOOTH ANCHOR RODS THREADED ONLY AT EACH END OF THE ANCHOR ROD. BEFORE CASTING CONCRETE, GREASE THE UPPER 2/3 LENGTH OF EACH ANCHOR ROD. IN LIEU OF GREASE, PROVIDE TWO, INDEPENDENT LAYERS OF VISQUEEN OVER UPPER 2/3 THE LENGTH OF THE ANCHOR.

3. USE TWO HEAVY HEX NUTS ON EACH END OF ANCHOR ROD. AT TOP, USE DOUBLE NUTS FOR SECURING A WASHER AND WASHER PLATE TO THE TOP SURFACE

4. WHERE AISC OVERSIZED HOLES ARE USED AT BASE PLATES PROVIDE SINGLE-PLY MINIMUM 3/8 INCH ASTM A572 GR 50 PLATE WASHERS WELDED ALL AROUND TO THE BASE PLATE.

5. USE A RIGID STEEL TEMPLATE TO LOCATE AND SECURE ANCHOR RODS BEFORE PLACING CONCRETE. TEMPLATES MUST BE REMOVED AFTER THE CONCRETE HAS HARDENED WITHOUT DAMAGING THE STRUCTURE.

6. AFTER BASE PLATE INSTALLATION, FULLY TIGHTEN ANCHOR ROD NUTS UNLESS NOTED OTHERWISE.

7. HEATING OR BENDING ANCHOR RODS IS PROHIBITED AND GROUNDS FOR REJECTION.

COLD-FORMED STEEL

1. REFERENCES:

   A. AISI S100-16 (2020) WITH S2-20 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS

   B. AISI S202-20 CODE OF STANDARD PRACTICE FOR COLD-FORMED STEEL STRUCTURAL FRAMING

   C. AISI S240-20 NORTH AMERICAN STANDARD FOR COLD-FORMED STEEL STRUCTURAL FRAMING

   D. AISI S400-20 NORTH AMERICAN STANDARD FOR SEISMIC DESIGN OF COLD-FORMED STEEL STRUCTURAL SYSTEM

   E. AWS D1.3-18 STRUCTURAL WELDING CODE – SHEET STEEL

2. CFS STRUCTURAL MEMBERS MUST MEET THE FOLLOWING MATERIAL REQUIREMENTS. PROVIDE MINIMUM PROTECTION COATING EQUAL TO G60 GALVANIZED FINISHED. (THIS TABLE DOES NOT APPLY TO METAL DECK)

MEMBER THICKNESS	STANDARD AND GRADE	MIN YIELD (KSI)
54 MIL AND THICKER	ASTM A1003 GR 50	50
43 MIL AND THINNER	ASTM A1003 GR 33	33

3. CFS FRAMING MEMBERS MUST MEET THE TYPE, SIZE AND THICKNESS AS INDICATED ON THE STRUCTURAL PLANS AND SPECIFICATIONS, AND MUST BE MANUFACTURED BY A MEMBER OF THE STEEL STUD MANUFACTURER'S ASSOCIATION (SSMA), OR PRE-APPROVED EQUAL, IN ACCORDANCE WITH SSMA ICC EVALUATION REPORT ESR-3064P.

4. FASTENING OF COMPONENTS MUST BE WITH SCREWS OR WELDS AS NOTED ON THE DRAWINGS. WELDERS MUST BE CERTIFIED FOR WELDING OF SHEET STEEL PER AWS AND WELDING MUST CONFORM TO AWS D1.3.

5. POWDER ACTUATED FASTENERS (PAF) MUST HAVE A MINIMUM SHANK DIAMETER OF 0.145 INCHES WITH A MINIMUM WASHER BEARING AREA OF 0.321 SQUARE INCHES. THE PAF MUST COMPLY WITH THE IBC AND MUST BE PROVIDED IN ACCORDANCE WITH THE MANUFACTURER'S PUBLISHED INSTRUCTIONS AND APPROVED ICC-ES REPORT OR IAPMO-ES REPORT. INSPECTION AND TESTING MUST BE PROVIDED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, GENERAL STRUCTURAL NOTES AND APPROVED ICC-ES REPORT OR IAPMO-ES REPORT.

6. FRAMING COMPONENTS MUST BE CUT TO FIT SQUARELY AGAINST ABUTTING MEMBERS. MEMBERS MUST BE HELD FIRMLY IN POSITION UNTIL PROPERLY FASTENED. SPLICES IN STUDS AND BRACES ARE NOT PERMITTED.

7. PROVIDE ACCESSORIES INCLUDING CLIPS, STRUTS, BRACES, FASTENING DEVICES, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION. BRIDGING PER MANUFACTURER'S REQUIREMENTS AND AS SHOWN IN THE STRUCTURAL DRAWINGS MUST BE IN PLACE PRIOR TO PLACING OF CONSTRUCTION LOADS. RUNS MUST BE RIGIDLY ANCHORED TO END WALLS.

8. CONTRACTOR MUST SUBMIT SHOP DRAWINGS AND CALCULATIONS STAMPED AND SIGNED BY AN SSE AND ALL SUPPORTING DESIGN DOCUMENTATION TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL BY THE SER BEFORE CONSTRUCTION BEGINS.

9. CALCULATIONS MUST DEMONSTRATE THE ADEQUACY OF THE PROPOSED MEMBERS AND CONNECTIONS FOR STRUCTURAL DESIGN CRITERIA SHOWN IN DOCUMENTS. DRAWINGS MUST SHOW CFS SIZE, THICKNESS, LAYOUT, CONNECTIONS, MATERIAL DESIGNATION, METHOD OF INSTALLATION AND ACCESSORIES. DESIGN MUST BE IN ACCORDANCE WITH AISI STANDARDS.

10. MANUFACTURED PRODUCTS DEMONSTRATING ADEQUATE CAPACITY MAY BE USED IN LIEU OF THE CONNECTORS AND MEMBERS SPECIFIED. A COPY OF THE ICC EVALUATION REPORTS OF THE PRODUCTS SELECTED MUST BE INCLUDED IN THE SUBMITTAL.

13. WHERE NOTE SPECIFICALLY CALLED OUT ONT HE DRAWINGS, CONTRACTOR MAY USE STANDARD WALL CONNECTIONS TO THE ROOF MEMBERS.

STRUCTURAL WELDING

1. REFERENCES:

   A. AWS D1.1-18 STRUCTURAL WELDING CODE – STEEL
   B. AWS D1.8-16 STRUCTURAL WELDING CODE – SEISMIC SUPPLEMENT

2. WELDING MUST BE DONE BY AWS CERTIFIED WELDERS AND PER AWS D1.1 [AND D1.8].

3. USE LOW HYDROGEN E70XX ELECTRODE WITH TENSILE STRENGTH PER AWS D1.1 AND D1.8, UNLESS NOTED OTHERWISE.

4. WELDS THAT ARE PART OF THE SEISMIC FORCE-RESISTING SYSTEM MUST HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FOOT-POUNDS AT 0° F.

5. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN USED IN THE DRAWINGS. CONTRACTOR MUST COORDINATE THE USE OF SHOP AND FIELD WELDS AS NECESSARY.

6. FILLET WELD SIZES SHOWN ON DRAWINGS INDICATE THE MINIMUM LEG SIZE REQUIRED AT THE JOINT. INCREASE WELD SIZE BY ROOT GAP DIMENSION IF A GAP EXISTS AT THE JOINT. IF THE INCLUDED ANGLE OF THE TWO CONNECTED PLATES EXCEEDS 90°, THE WELD MUST BE CONTOURED TO PROVIDE AN EFFECTIVE THROAT DIMENSION NO LESS THAN 72% OF WELD SIZE INDICATED. IF NOT SHOWN THE MINIMUM FILLET WELD SIZE AT INTERIOR LOCATIONS MUST BE NO LESS THAN 3/16 INCHES, AND NO LESS THAN 1/4 INCHES AT EXTERIOR LOCATIONS.

7. PARTIAL JOINT PENETRATION (PJP) GROOVE WELDS SHOWN ON THE DRAWINGS REFER TO EFFECTIVE THROAT THICKNESS AND MUST BE SIZED ACCORDINGLY FOR THE WELD PROCESS USED.

8. COMPLETE JOINT PENETRATION (CJP) MUST HAVE A BACKUP BAR WITH RUNOFF TABS TO ACHIEVE FULL DEPTH OVER FULL LENGTH OF WELD. BACKGOUGING THE ROOT IS REQUIRED. BACKUP BAR MUST BE REMOVED AND GROUND SMOOTH, UNLESS NOTED OTHERWISE.

9. ULTRASONICALLY TEST (UT) CJP WELDS UPON COMPLETION OF THE WELDED JOINT. PLATE THICKNESS OF 5/16-INCH OR LESS MAY USE MAGNETIC PARTICLE INSPECTION (MPI) OR EDDIE CURRENT ARRAY (ECA) TESTING.

10. QUALIFICATIONS AND WELDING PROCEDURE SPECIFICATION (WPS) PER AWS D1.1 AND D1.8 MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW BEFORE STARTING FABRICATION OR ERECTION. COPIES OF THE WPS MUST BE ON SITE AND AVAILABLE TO WELDERS AND THE SPECIAL INSPECTOR.

STEEL FLOOR AND ROOF DECK

1. REFERENCES:

   A. AISI SDI SD-22 STANDARD FOR STEEL DECK
   B. AISI S100-16 (2020) WITH S2-20 NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS
   C. AWS D1.3-18 STRUCTURAL WELDING CODE – SHEET STEEL

2. METAL FLOOR AND ROOF DECK MUST CONFORM TO THE STEEL DECK INSTITUTE (SDI) STANDARD FOR STEEL DECK.

3. METAL DECK AND ACCESSORIES MUST BE FORMED FROM STEEL SHEET CONFORMING TO ASTM A653, SS GR. 50, WITH A ZINC COATING FINISH CONFORMING TO ASTM A 525, CLASS G-60 (OR G-90 WHERE SPECIFIED). METAL DECK SURFACE USED FOR COMPOSITE CONSTRUCTION IN CONTACT WITH CONCRETE MUST BE PHOSPHATIZED OR GALVANIZED.

4. METAL DECK EXPOSED TO THE WEATHER MUST BE HOT-DIPPED GALVANIZED AFTER FABRICATION.

5. ALL DECK MUST BE INSTALLED USING 3 OR MORE SPANS. WHERE ONLY 1 OR 2 SPAN CONDITIONS ARE POSSIBLE, PROVIDE A DECK WITH SUFFICIENT SECTION PROPERTIES TO EQUAL BOTH LOAD AND DEFLECTION CONDITIONS OF THE 3 SPAN CONDITION. DECK LAPS MUST OCCUR OVER SUPPORT.

6. FLOOR DECK MUST HAVE A 3-INCH MINIMUM BEARING AND ROOF DECKING MUST HAVE A 2-INCH MINIMUM BEARING.

7. FURNISH ALL ACCESSORIES, INCLUDING REINFORCING ANGLES, CLOSURE STRIPS, POUR STOPS, AND OTHER ELEMENTS TO ADEQUATELY SUPPORT DECK GRAVITY LOADS AROUND OPENINGS TO COMPLETE INSTALLATION.

ANCHORED MASONRY VENEER

1. ANCHORED MASONRY VENEER AND ATTACHMENTS MUST CONFORM TO THE REQUIREMENTS OF IBC CHAPTER 14 AND THE PROJECT SPECIFICATIONS.

2. ANCHOR TIES AND JOINT REINFORCEMENT MUST BE HOT-DIPPED GALVANIZED PER ASTM A153, CLASS B-2 AND MUST BE MANUFACTURED BY DUR-O-WAL OR APPROVED EQUAL.

3. PROVIDE #9 GAUGE HORIZONTAL JOINT REINFORCEMENT WIRE. JOINT REINFORCEMENT MUST BE CONTINUOUS WITH BUTT SPLICES BETWEEN TIES PERMITTED.

4. ANCHOR TIES MUST BE SPACED 16" O.C. EACH WAY MAXIMUM AND MUST HAVE A LIP OR HOOK ON THE EXTENDED LEG THAT WILL ENGAGE OR ENCLOSE HORIZONTAL JOINT REINFORCEMENT WIRE. ATTACH TO BACKING PER THE FOLLOWING TABLE.

BACKING CONDITION	DUR-O-WALL VENEER TIE	ATTACHMENT TO BACKING
METAL STUDS	DA 213S	DA 807 VENEER SCREW
STRUCTURAL STEEL	DA 700	WELD DA 709 TO STEEL
CONCRETE WALL	DA 904 WITH DA 931	1/4 IN DIAM EXP ANCHOR
WOOD STUD WALL	DA 213A OR DA 431	#8 WOOD SCREWS

POST INSTALLED ANCHOR IN CONCRETE AND MASONRY

1. EXCEPT WHERE INDICATED ON THE DRAWINGS, POST-INSTALLED ANCHORS CONSIST OF THE FOLLOWING ANCHOR TYPES OR APPROVED EQUAL:

CONDITION	TYPE	ACCEPTABLE ANCHORS
CONCRETE	SCREW	HILTI KWIK HUS-EZ SCREW ANCHORS PER ICC ESR-3027 SIMPSON TITEN HD SCREW ANCHOR PER ICC ESR-2713 DEWALT WEDGE-BOLT+ PER ICC ESR-2526
	EXPANSION	HILTI KWIK-BOLT TZ2 ANCHOR PER ICC ESR-4266 SIMPSON STRONG BOLT 2 ANCHOR PER ICC ESR-3037 DEWALT POWER-STUD+ SD1 ANCHOR PER ICC ESR-2818
	ADHESIVE	HILTI HIT-HY 200 ADHESIVE ANCHOR SYSTEM PER ICC ESR-3187 SIMPSON SET-XP ADHESIVE ANCHOR SYSTEM PER ICC ESR-2508 DEWALT PE1000+ ADHESIVE ANCHOR SYSTEM PER ICC ESR-2583
SOLID-GROUTED MASONRY	SCREWS	HILTI KWIK HUS-EZ SCREW ANCHORS PER ICC ESR-3056 SIMPSON TITEN HD SCREW ANCHOR PER ICC ESR-2713 DEWALT SCREW-BOLT+ PER ICC ESR-4042
	EXPANSION	HILTI KWIK-BOLT 3 ANCHOR PER ICC ESR-1385 SIMPSON STRONG BOLT 2 ANCHOR PER UES ER-240 DEWALT POWER-STUD+ SD1 ANCHOR PER ICC ESR-2966
	ADHESIVE	HILTI HIT-HY 270 ADHESIVE SYSTEM PER ICC ESR-4143 SIMPSON SET-XP ADHESIVE SYSTEM PER IAPMO UES ER-265 DEWALT AC100+GOLD ADHESIVE SYSTEM PER ICC ESR-3200 (STEEL ANCHOR MUST BE ASTM F1554 GRADE 55 CONTINUOUSLY THREADED ROD PER DRAWINGS)

2. ANCHOR CAPACITY USED IN DESIGN MUST BE BASED ON THE TECHNICAL DATA PUBLISHED IN THE ICC APPROVAL REPORT. SUBSTITUTION REQUESTS MUST INCLUDE ICC ESR REPORT SHOWING COMPLIANCE WITH RELEVANT BUILDING CODE AND INSTALLATION CATEGORY AND BE APPROVED IN WRITING BY THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL BY THE SER PRIOR TO USE.

3. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.

4. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

5. EXISTING DEFORMED BAR REINFORCEMENT IN THE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED OTHERWISE, THE CONTRACTOR MUST LOCATE THE POSITION OF THE EXISTING REINFORCING BARS AND AVOID CUTTING.

6. DRILLING, CORING, SAW-CUTTING, ETC. INTO CONCRETE SHALL MEET THE LATEST OSHA REGULATIONS FOR SILICA DUST EXPOSURE.

SPECIAL INSPECTION AND TESTING

1. SPECIAL INSPECTION AND TESTING MUST CONFORM TO SECTION 1704 OF THE INTERNATIONAL BUILDING CODE (IBC) AS AMENDED BY H-18-8.

2. ONE OR MORE QUALIFIED SPECIAL INSPECTION & TESTING AGENCIES MUST BE EMPLOYED TO PERFORM THE NECESSARY INSPECTION OF IBC SECTION 1705, AS APPLICABLE. QUALIFICATIONS FOR SPECIAL INSPECTION AND TESTING AGENCIES AND INSPECTORS MUST BE SUBMITTED TO THE CONTRACTING OFFICER FOR REVIEW AND APPROVAL.

3. SPECIAL INSPECTOR QUALIFICATIONS MUST MEET THE REQUIREMENTS OF SPECIFICATION SECTION 01 45 35.
   - FOR STATEMENT OF SPECIAL INSPECTION SEE PROJECT SPECIFICATIONS.

5. REPORTING ON SPECIAL INSPECTION AND TESTING MUST CONFORM TO IBC SECTION 1704.5 AND BE SUBMITTED TO THE CONTRACTING OFFICER WEEKLY , OR AS REQUIRED BY THE SPECIFICATIONS.

STRUCTURAL OBSERVATIONS

1. STRUCTURAL OBSERVATIONS MUST BE PERFORMED BY THE DESIGNATED REPRESENTATIVE BY THE GOVERNMENT, FOR THE FOLLOWING:

   A. FOUNDATION: PLACEMENT OF DEFORMED BAR REINFORCEMENT, BEFORE CONCRETE.
   B. CMU WALLS: FINAL PLACEMENT OF DEFORMED BARS REINFORCEMENT AND ANCHORS PRIOR TO FINAL GROUT POUR
   C. STRUCTURAL STEEL: BEAMS AND METAL DECK

2. CONTRACTOR MUST NOTIFY CONTRACTING OFFICER 14 DAYS IN ADVANCE OF WHEN WORK IS EXPECTED TO COORDINATE THE DATE OF OBSERVATION.

3. STRUCTURAL OBSERVATION DOES NOT WAIVE THE RESPONSIBILITY OF SPECIAL INSPECTION REQUIREMENTS.

Revisions: Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 EXP. 12/31/27 STRUCTURAL STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: STRUCTURAL GENERAL NOTES

Approved:

Phase: 100% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN

Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516

Issue Date: 04/20/2026 | Checked: NRT | Drawn: JKM

Project Number: 689-22-700

Building Number:

Drawing Number: S-002

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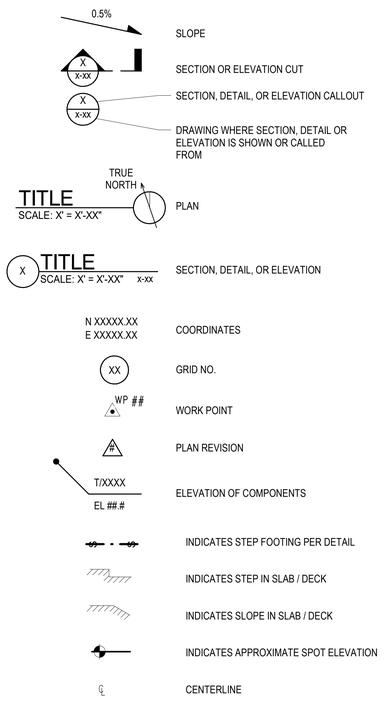
ABBREVIATIONS

&	AND
@	AT
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
APPROX	APPROXIMATE
AR	ANCHOR RODS
ARCH	ARCHITECT
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ATFP	ANTI-TERRORISM FORCE PROTECTION
BAL	BALANCE
BD	BOARD
BLDG	BUILDING
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
CFS	COLD-FORMED STEEL
CG	CENTER OF GRAVITY
CIP	CAST IN PLACE
CJ	CONTROL JOINT
CJ	CONSTRUCTION JOINT
CL	CENTERLINE
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONSTR	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
COORD	COORDINATE
CTR	CENTER
DBL	DOUBLE
DEMO	DEMOLISH
DET	DETAIL
DIA OR Ø	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DWG	DRAWING
E	EAST
EA	EACH
EF	EACH FACE
EL	ELEVATION
ELEC	ELECTRIC
EMBED	EMBEDMENT
ENGR	ENGINEER
EQ	EQUAL
EQUIV	EQUIVALENT
EW	EACH WAY
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
FD	FLOOR DRAIN
FDTN	FOUNDATION
FIN	FINISH(ED)
FIN FLR	FINISHED FLOOR
FLG	FLANGE
FLR	FLOOR
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD, FACE OF STEEL
FRMG	FRAMING
FS	FAR SIDE
FT	FOOT, FEET
FTG	FOOTING
FV	FIELD VERIFY
GA	GAGE
GALV	GALVANIZED
GWB	GYPSUM WALL BOARD
HDG	HOT-DIP GALVANIZED
HORIZ	HORIZONTAL
HS	HIGH STRENGTH
HSA	HEADED STUD ANCHOR
HT	HEIGHT
ID	INSIDE DIAMETER
IJ	ISOLATION JOINT
IN	INCH
INFO	INFORMATION
INT	INTERIOR
JBE	JOIST BEARING ELEVATION
JT	JOINT
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LF	LINEAR FEET
LL	LIVE LOAD
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGINTUDINAL
LSL	LONG SLOTTED HOLE
LSLP	LONG SLOTTED HOLE PARALLEL
LSLT	LONG SLOTTED HOLE TRANSVERSE
LT GA	LIGHT GAGE
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTL	METAL
#	NUMBER
N	NORTH
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
NOM	NOMINAL
NS	NEAR SIDE
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OF	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWDER ACTUATED FASTENERS
PCF	POUNDS PER CUBIC FOOT
PEMB	PRE-ENGINEERED METAL BUILDING
PERP	PERPENDICULAR
PH	PHASE
PL	PLATE
PLWD	PLYWOOD
PNL	PANEL
PREFAB	PREFABRICATED
PROJ	PROJECT
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POST TENSIONED
QTY	QUANTITY
R	RADIUS
REF	REFERENCE
REINF	REINFORCE, REINFORCEMENT
REQD	REQUIRED
REV	REVISION
RO	ROUGH OPENING
S	SOUTH
SC	SLIP-CRITICAL
SCHED	SCHEDULE
SECT	SECTION
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SOG	SLAB ON GRADE
SPA	SPACE, SPACING
SPEC	SPECIFICATION
SQ	SQUARE
SSL	SHORT SLOTTED HOLE
SSLP	SHORT SLOTTED HOLE PARALLEL
SSLT	SHORT SLOTTED HOLE TRANSVERSE
SST	STAINLESS STEEL
STD	STANDARD
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
SW	SHEAR WALL
SYMM	SYMMETRICAL
T&B	TOP AND BOTTOM
TEMP	TEMPORARY
THK	THICK
THRU	THROUGH
TOB	TOP OF BEAM
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOM	TOP OF MASONRY
TOS	TOP OF STEEL
TOW	TOP OF WALL
TRANSV	TRANSVERSE
TYP	TYPICAL
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VOL	VOLUME
W	WEST
WI	WITH
W/O	WITHOUT
WD	WOOD
WP	WORKING POINT
WT	WEIGHT
WTS	WELDED THREADED STUDS
WWR	WELDED WIRE REINFORCEMENT

STRUCTURAL DRAWING SYMBOLS



STRUCTURAL DRAWING LEGEND

C-1	INDICATES STEEL COLUMN PER SCHEDULE
C-24-1	INDICATES CONCRETE COLUMN PER SCHEDULE
MC-1	INDICATES MOMENT FRAME COLUMN PER SCHEDULE
GB-1	INDICATES GRADE BEAM PER SCHEDULE
G-1	INDICATES GIRDERS PER DETAILS
B-1	INDICATES BEAMS PER DETAILS
MB-1	INDICATES MOMENT FRAME BEAM PER SCHEDULE
S-1	INDICATES SLAB PER SCHEDULE
BF-1	INDICATES BRACED FRAME
SMF-1	INDICATES SPECIAL MOMENT FRAME
F3	INDICATES FOOTING MARK PER SCHEDULE
	INDICATES POUR STRIP
C1	INDICATES 48" DIAMETER x 28'-0" LONG CONCRETE CAISSON.
[XX.XX']	INDICATES ELEVATION AT TOP OF CAISSON
F#	INDICATES CONCRETE SPREAD FOOTING
CJ	INDICATED PROPSED LOCATION FOR SLAB-ON-GRADE CONTROL JOINT

Revisions: Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

STAMP

REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 STRUCTURAL STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ABRREVIATIONS AND SYMBOLS	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	Project Number: 689-22-700
Approved:	FULLY SPRINKLERED	Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	Building Number:
		Issue Date: 04/20/2026 · Checked: NRT · Drawn: JKM	Drawing Number: S-003

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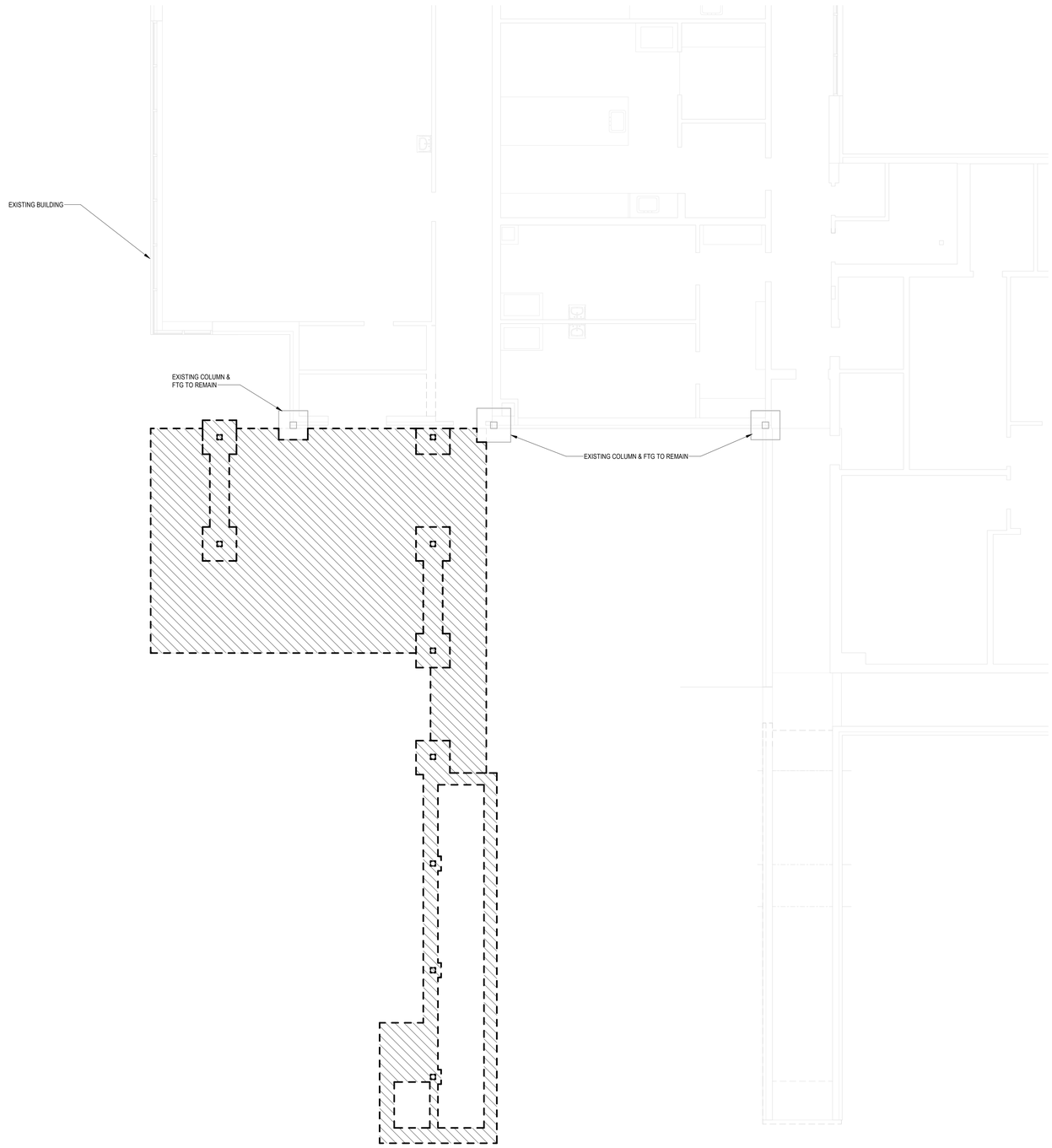
PLAN NOTES:

1. FIELD VERIFY SIZE AND LOCATION OF EXISTING STRUCTURES TO BE DEMOLISHED.

LEGEND

EXISTING STRUCTURES INCLUDING: FOUNDATIONS, WALLS, COLUMNS, AND SLABS TO BE DEMOLISHED. REFERENCE ARCH SHEETS FOR DEMO DETAILS - COORDINATE FINAL DETAILS WITH ARCH



F1 DEMOLITION PLAN
3/16" = 1'-0"

PROJECT NORTH

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
EXP. 12/31/26
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title DEMOLITION PLAN	**Phase** 100% CONSTRUCTION DOCUMENTS	**Project Title** EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	**Project Number** 689-22-700
Approved:	FULLY SPRINKLERED	**Location** VA CT WEST HAVEN 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	**Building Number**
		Issue Date 04/20/2026 / **Checked** NRT / **Drawn** JKM	**Drawing Number** SD101

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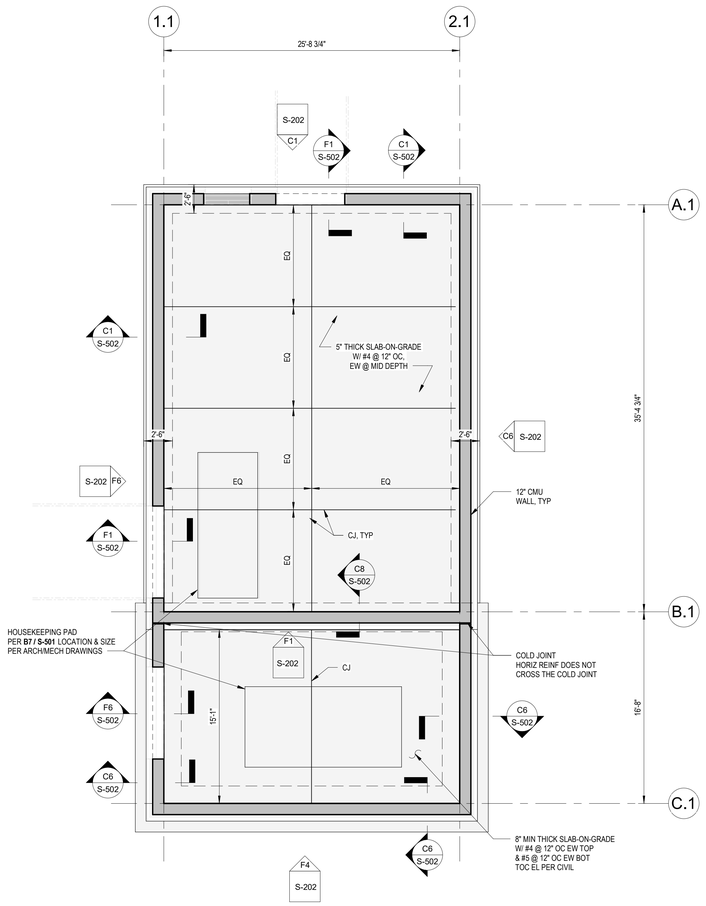
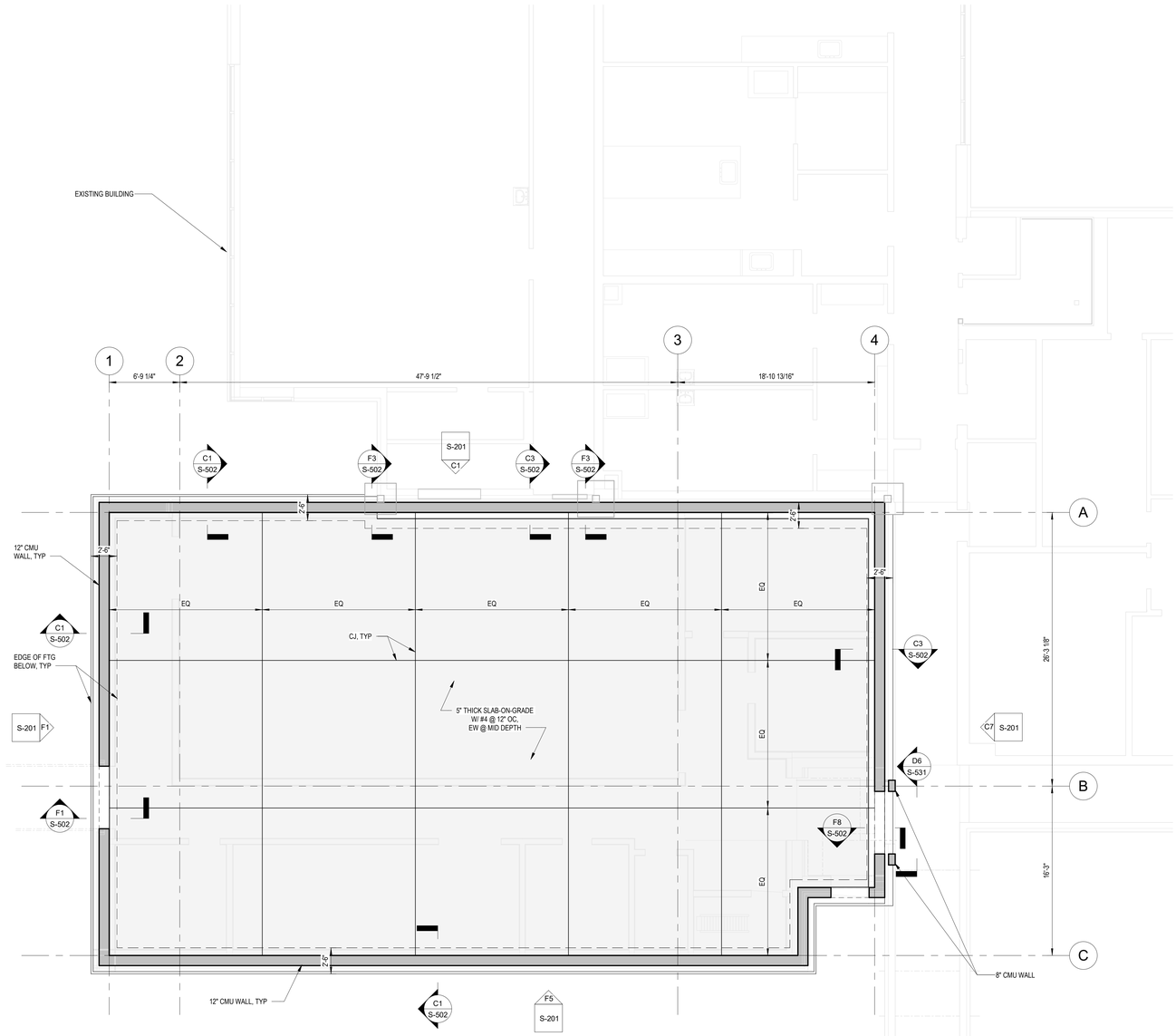
VA FORM 08 - 6231

PLAN NOTES:

1. FOR FOUNDATION DETAILS, SEE SHEETS S-501 & S-502.
2. FOR SLAB-ON-GRADE DESIGN SEE **B1 / S-501**





F1 FOUNDATION PLAN
3/16" = 1'-0"

PROJECT NORTH

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

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Drawing Title FOUNDATION PLAN	**Phase** 100% CONSTRUCTION DOCUMENTS	**Project Title** EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	**Project Number** 689-22-700
Approved:	FULLY SPRINKLERED	**Location** VA CT WEST HAVEN 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	**Building Number**
		Issue Date 04/20/2026 / **Checked** NRT / **Drawn** JKM	**Drawing Number** S-101

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VA FORM 08 - 6231

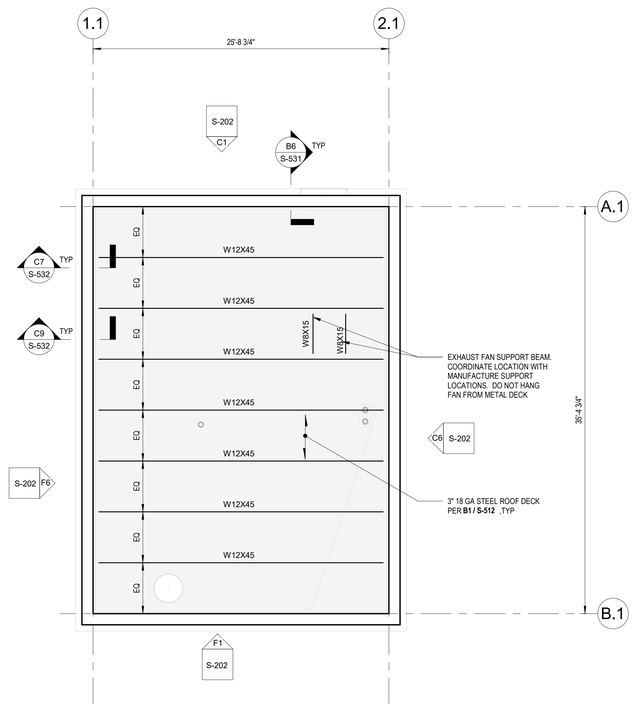
PLAN NOTES:

1. METAL DECK SHALL BE LAID IN A MINIMUM THREE-SPAN CONDITION WHERE POSSIBLE.
2. ROOF TOS EL = 15'-0" AFF
3. IF NOT DIMENSIONED ON PLAN, BEAMS SHALL BE INSTALLED AT EQUAL SPACING.
4. FOR BEAM END CONNECTOR REQUIREMENTS, REFER TO TYPICAL STEEL DETAILS ON SHEET S-511.
5. CONTRACTOR SHALL COORDINATE SIZES AND LOCATIONS OF MEP PENETRATIONS WITH EACH TRADE'S APPROVED SHOP DRAWINGS TO ENSURE FULL COORDINATION FOR ADDITIONAL STRUCTURAL REQUIREMENTS AT OPENINGS.

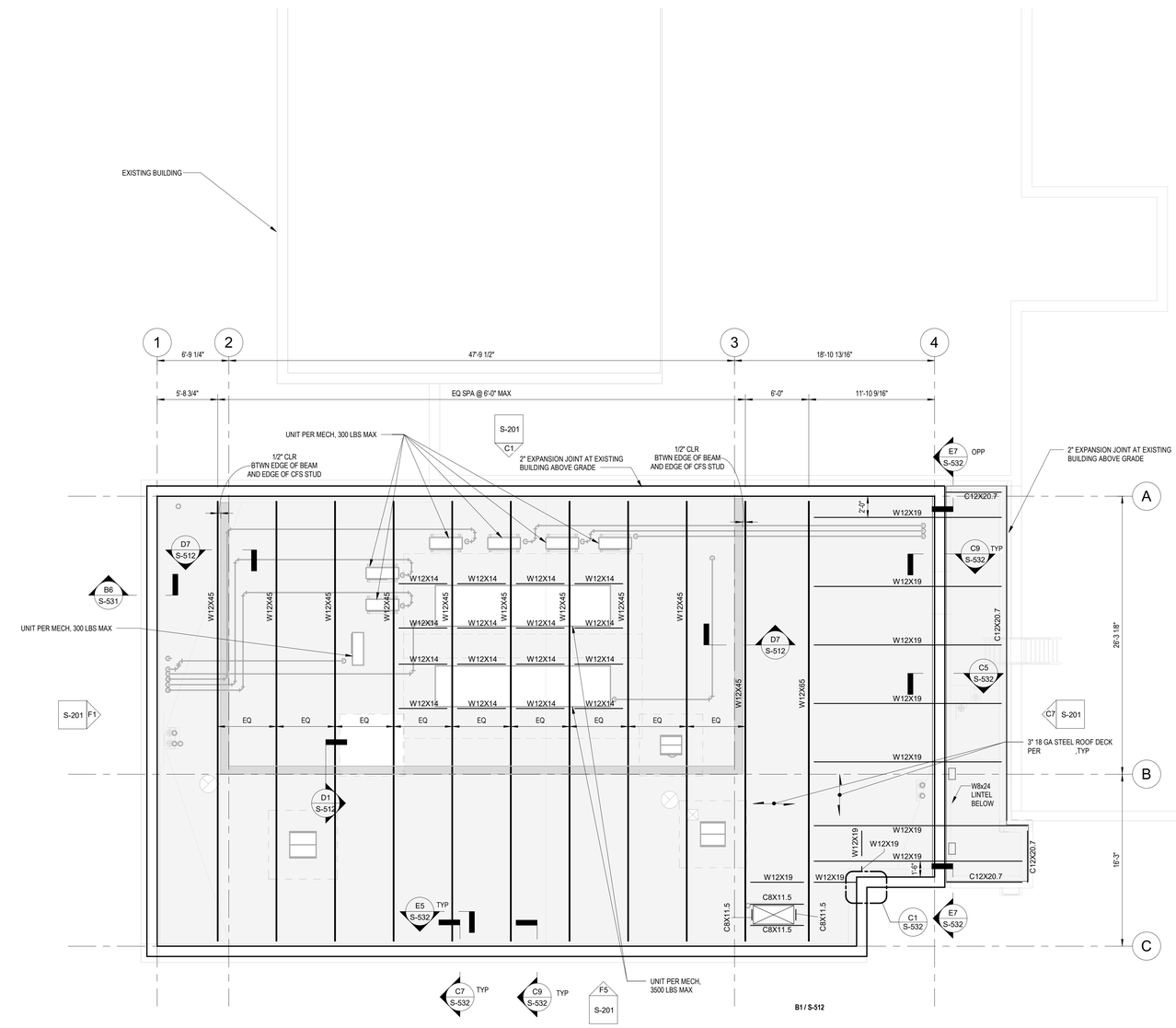
LEGEND

NON-BEARING WALL BELOW WITH TOP CONN PER **B7 / S-512**

NON-BEARING WALLS BELOW WITH TOP CONN PER **D1 / S-512** AND **D7 / S-512**



F1 ROOF PLAN
3/16" = 1'-0"



PROJECT NORTH

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CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
Exp. 6/30/26
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
ROOF PLAN

Approved:

Phase
100% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN

Location
VA CT WEST HAVEN
950 CAMPBELL AVENUE, WEST HAVEN, CT 06516

Issue Date 04/20/2026
Checked NRT
Drawn JKM

Project Number 689-22-700
Building Number DATA CENTER
Drawing Number S-111

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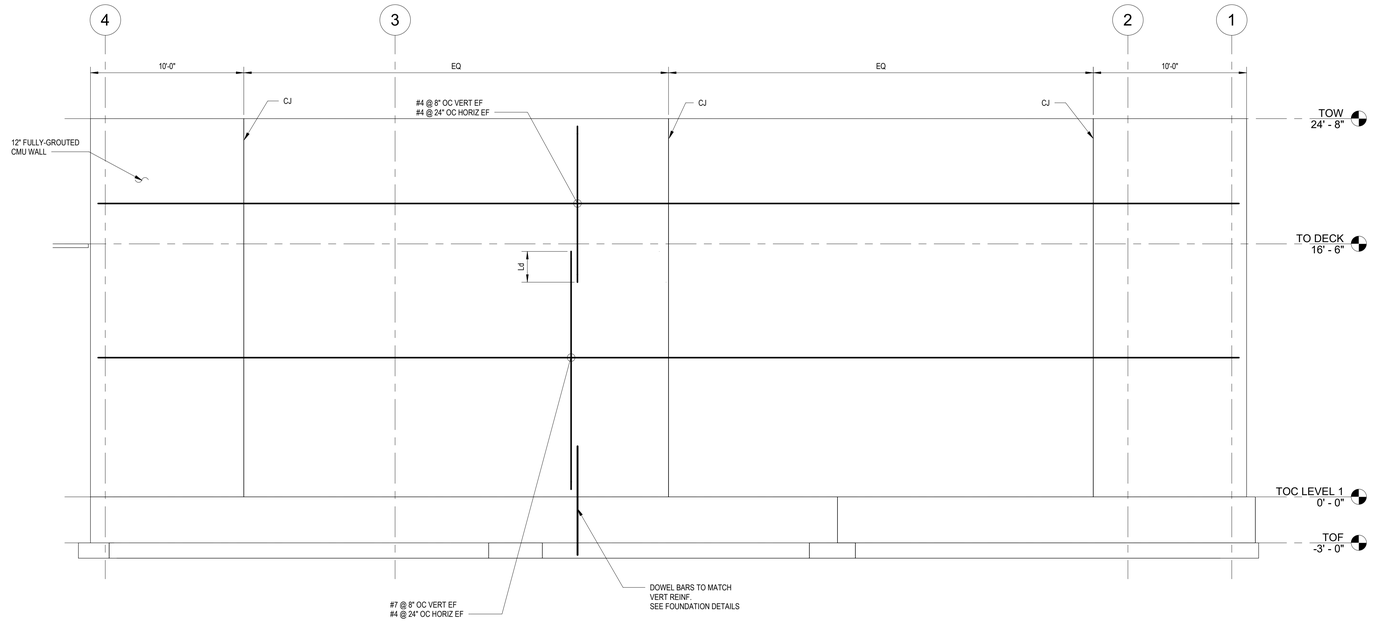
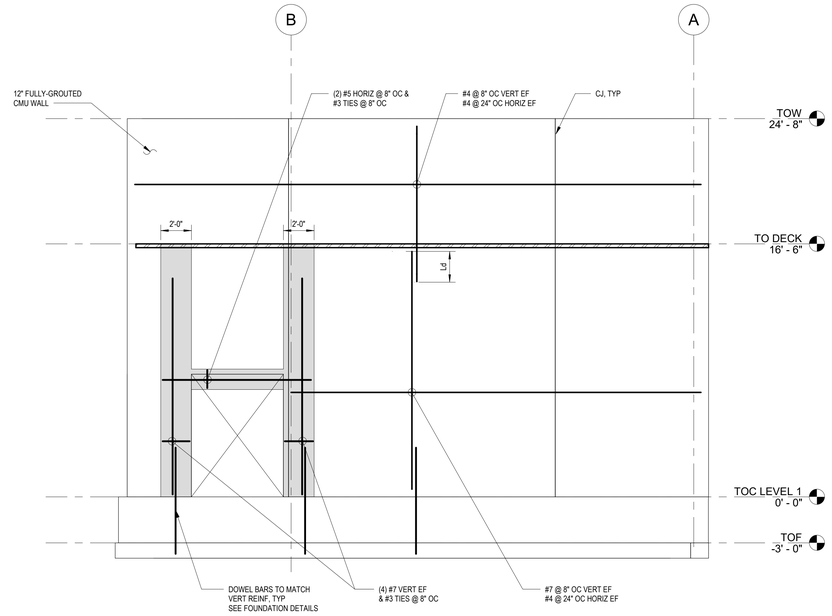


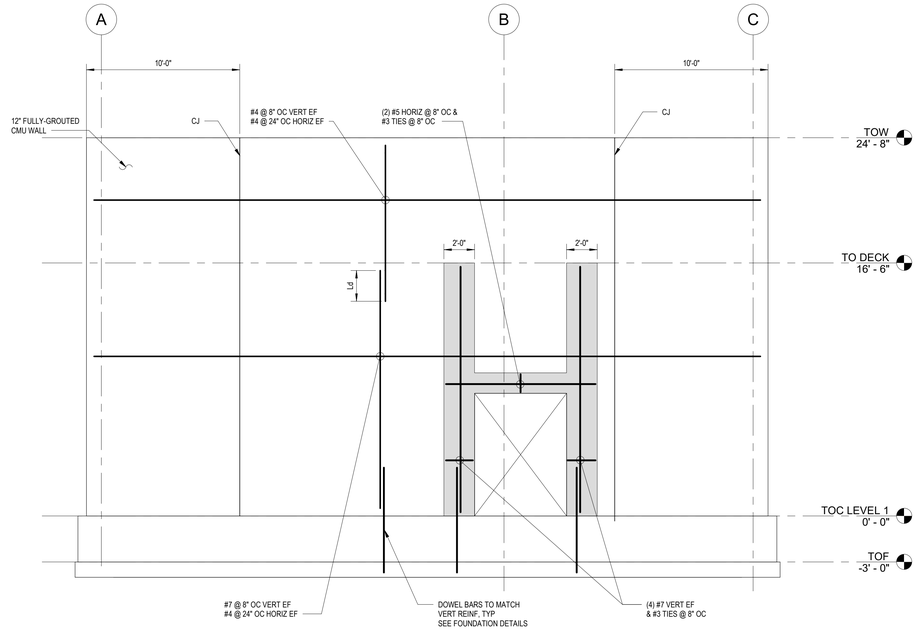
C1 WALL ELEVATION AT GRID A
1/4" = 1'-0"



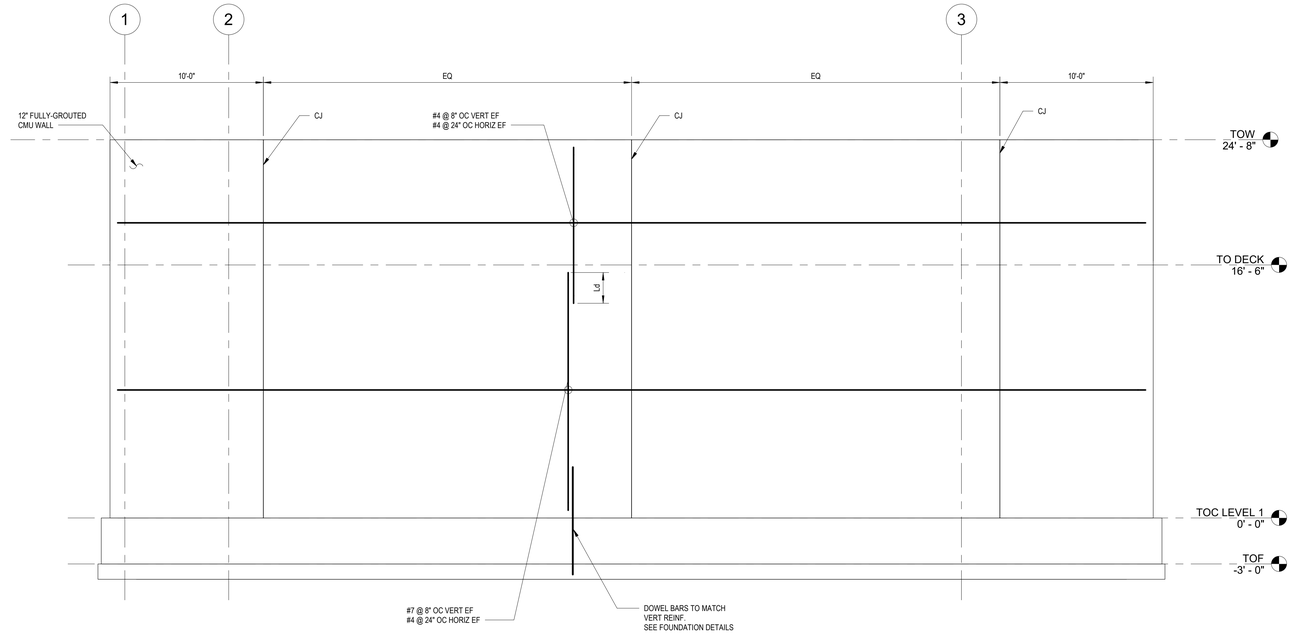
C7 WALL ELEVATION AT GRID 4
1/4" = 1'-0"

STRUCTURAL ELEVATIONS NOTES:

1. JAMB AND LINTEL REINFORCEMENT REPLACES AND IS NOT IN ADDITION TO TYPICAL REINFORCEMENT.
2. REFER TO SHEET **S-531** FOR TYPICAL CMU WALL DETAILS.



F1 WALL ELEVATION AT GRID 1
1/4" = 1'-0"



F5 WALL ELEVATION GRID C
1/4" = 1'-0"

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ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
EXP. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title STRUCTURAL WALL ELEVATIONS	**Phase** 100% CONSTRUCTION DOCUMENTS	**Project Title** EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	**Project Number** 689-22-700
Approved:	FULLY SPRINKLERED	**Location** VA CT WEST HAVEN 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	**Building Number**
		Issue Date 04/20/2026 · **Checked** NRT · **Drawn** JKM	**Drawing Number** S-201

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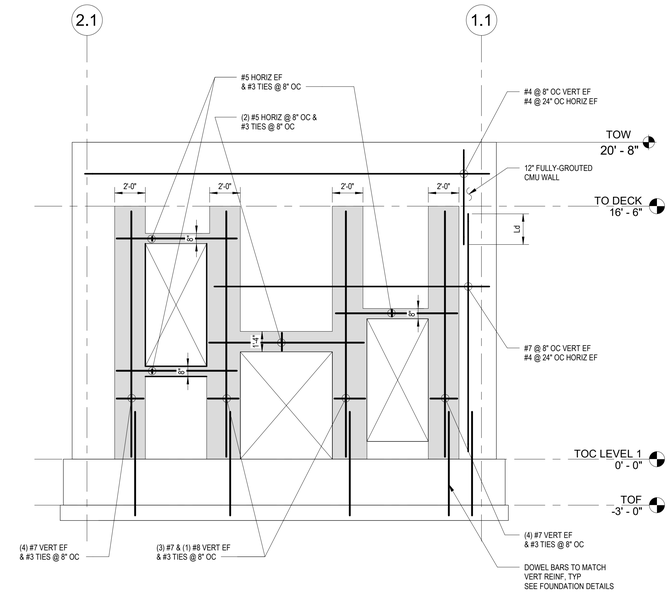
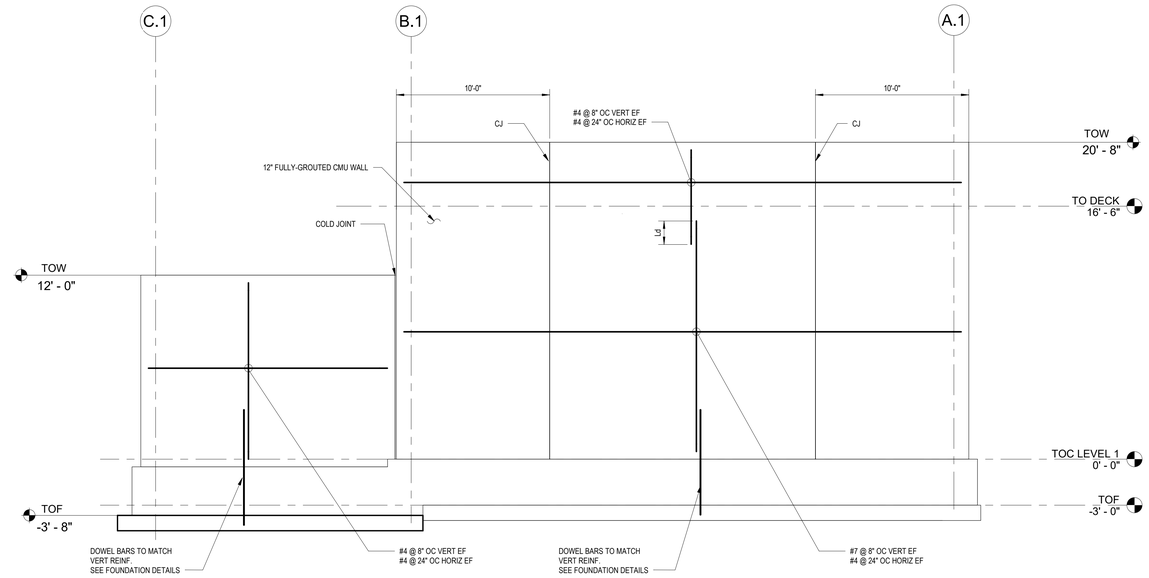


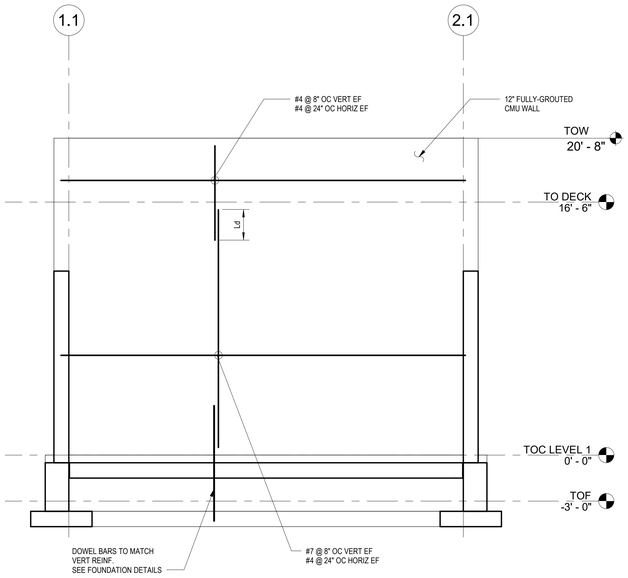
C1 WALL ELEVATION AT GRID A.1
1/4" = 1'-0"



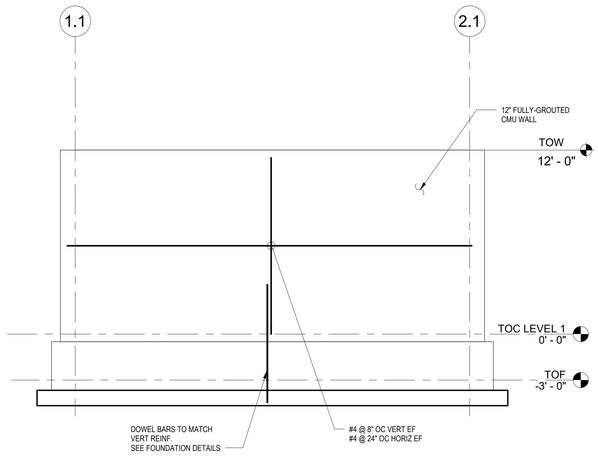
C6 WALL ELEVATION AT GRID 2.1
1/4" = 1'-0"

STRUCTURAL ELEVATIONS NOTES:

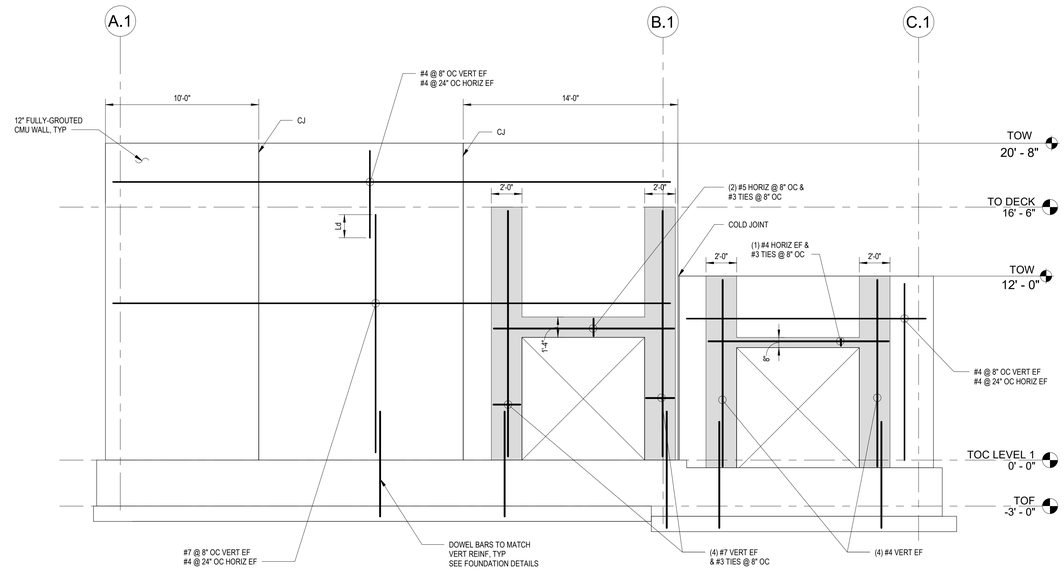
1. JAMB AND LINTEL REINFORCEMENT REPLACES AND IS NOT IN ADDITION TO TYPICAL REINFORCEMENT.
2. REFER TO SHEET **S-531** FOR TYPICAL CMU WALL DETAILS.



F1 WALL ELEVATION
1/4" = 1'-0"



F4 WALL ELEVATION AT GRID C.1
1/4" = 1'-0"



F6 WALL ELEVATION AT GRID 1.1
1/4" = 1'-0"

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CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
STRUCTURAL WALL ELEVATIONS	100% CONSTRUCTION DOCUMENTS	EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	689-22-700
			Building Number
Approved:	FULLY SPRINKLERED	Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	Drawing Number: S-202
		Issue Date: 04/20/2026 · Checked: NRT · Drawn: JKM	

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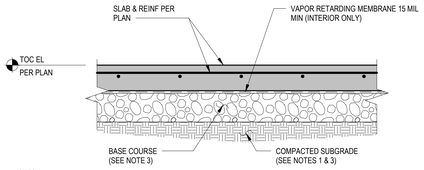
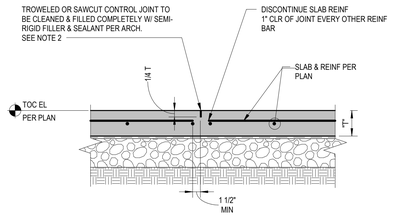


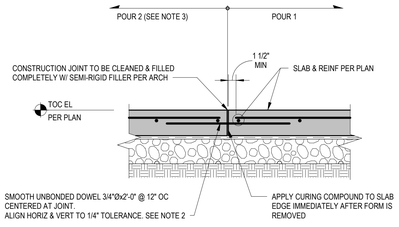
NOTES:
1. SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.
2. SEE PLANS FOR LOCATION OF COLUMN BLOCKOUTS, JOINTS AND SLAB DEPRESSIONS.
3. 6" MIN SAND AND GRAVEL BASE COURSE UNO IN GEOTECHNICAL REPORT. COMPACT SUBGRADE PER GEOTECHNICAL REPORT.

B1 TYP SLAB-ON-GRADE WITH SINGLE LAYER REINFORCEMENT
1" = 1'-0"



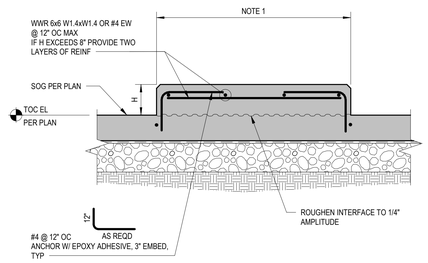
NOTES:
1. LOCATE CONTROL JOINTS PER PLAN.
2. SAWCUT JOINTS AFTER PEAK HEAT OF HYDRATION BUT NO LATER THAN 12 HOURS AFTER CONCRETE HAS BEEN MIXED.
3. FOR SLAB SUBGRADE SEE TYPICAL SLAB-ON-GRADE DETAIL.

B3 SLAB CONTROL JOINT
1" = 1'-0"



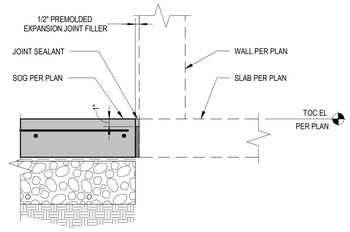
NOTES:
1. LOCATE CONSTRUCTION JOINTS PER PLAN.
2. OPTION: PLASTIC SLEEVES MAY BE CAST IN POUR 1 (SPEED DOWEL OR SIMILAR) SO DOWELS MAY BE INSTALLED AFTER EDGE FORM REMOVAL.
3. DELAY POUR 2 MINIMUM 24 HOURS AFTER POUR 1.
4. FOR SLAB SUBGRADE SEE TYPICAL SLAB-ON-GRADE DETAIL.

B5 SLAB CONSTRUCTION JOINT
1" = 1'-0"

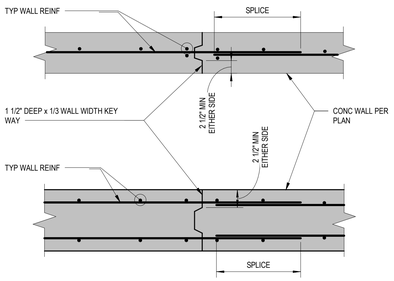


NOTES:
1. COORDINATE DIMENSION WITH EQUIPMENT FOOTPRINT AND MECHANICAL DETAILS.
2. PROVIDE INSERT AS REQUIRED BY ARCHITECTURAL AND MECHANICAL DRAWINGS.
3. 4"≤H≤12"

B7 HOUSEKEEPING PAD DETAIL
1" = 1'-0"

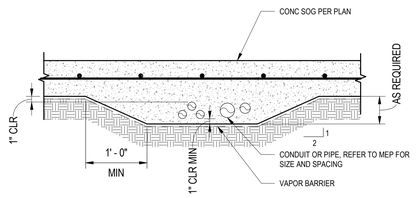


B9 TYP SLAB ISOLATION JOINT
1 1/2" = 1'-0"

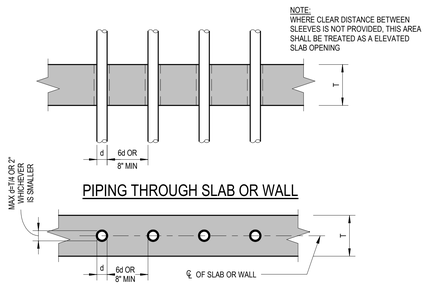


NOTE:
OBTAIN APPROVAL OF ENGINEER FOR LOCATION OF CONSTRUCTION JOINTS.

C1 WALL CONSTRUCTION JOINTS
1" = 1'-0"



C3 TYPICAL SOG SLAB CONSTRUCTION AT CONDUIT
1" = 1'-0"



C5 PIPING & CONDUIT AT SLAB OR WALL
1" = 1'-0"

SIZE	Ld	Ldt	Lb	Lbt	Ldh
#4	19	25	25	32	9
#5	24	31	31	40	12
#6	28 (43)	37 (55)	37 (55)	48 (72)	14
#7	42 (62)	54 (81)	54 (81)	70 (105)	17
#8	47 (71)	62 (92)	62 (92)	80 (120)	19
#9	54 (80)	70 (104)	70 (104)	90 (136)	21
#10	60 (90)	78 (117)	78 (117)	102 (153)	24
#11	67 (100)	87 (130)	87 (130)	113 (170)	27

f'c = 4,000 psi
fy = 60,000 psi

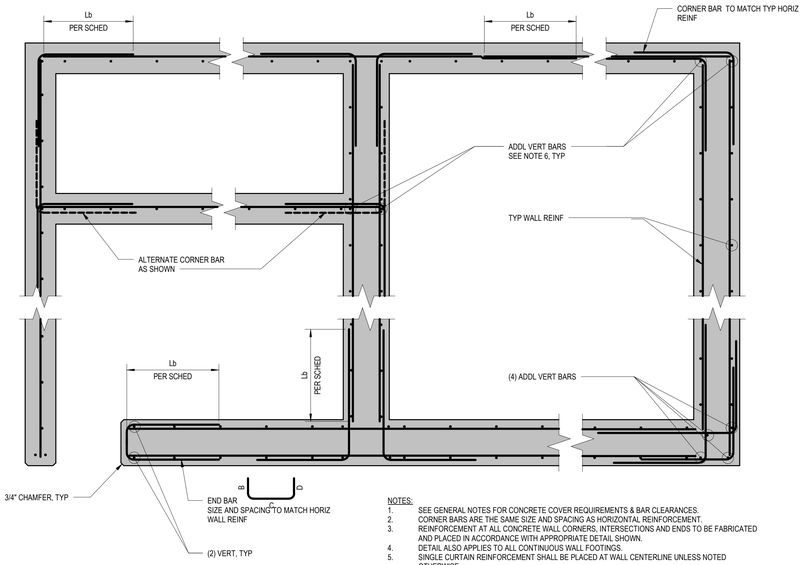
SIZE	Ld	Ldt	Lb	Lbt	Ldh
#4	18	23	23	30	9
#5	22	29	28	38	11
#6	27 (40)	35 (52)	35 (52)	45 (68)	13
#7	39 (59)	51 (76)	51 (76)	66 (99)	16
#8	45 (67)	58 (87)	58 (87)	76 (113)	18
#9	50 (75)	65 (98)	65 (98)	85 (128)	20
#10	56 (84)	73 (109)	73 (109)	94 (142)	22

f'c = 4,500 psi
fy = 60,000 psi

NOTES:
1. USE THE LENGTH IN THESE SCHEDULES, UNLESS NOTED OTHERWISE.
2. USE LENGTH IN ( ) WHEN BAR COVER IS db OR LESS OR BAR CLEAR SPACING IS 2db OR LESS.
3. TOP BAR IS HORIZONTAL BAR WITH MORE THAN 12" OF FRESH CONCRETE CAST BELOW IT.

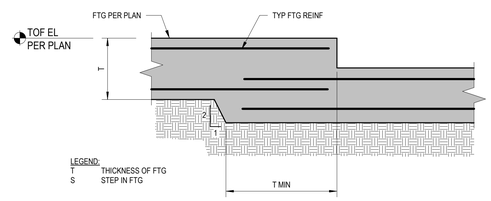
ABBREVIATIONS
db = BAR DIAMETER
Ld = TENSION DEVELOPMENT LENGTH
Ldt = TENSION DEVELOPMENT LENGTH FOR A TOP BAR
Lb = CLASS B LAP SPLICE LENGTH, 1.3Ld
Lbt = CLASS B LAP SPLICE LENGTH FOR A TOP BAR, 1.3 Ldt
Ldh = TENSION DEVELOPMENT LENGTH FOR A STANDARD HOOK
f'c = CONCRETE COMPRESSIBLE STRENGTH AT 28 DAYS
fy = BAR YIELD STRENGTH

C7 DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULES - CONCRETE
1/2" = 1'-0"

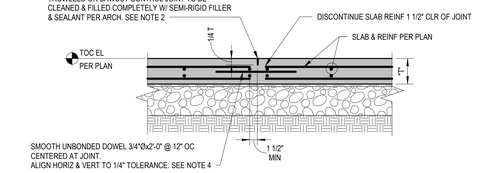


NOTES:
1. SEE GENERAL NOTES FOR CONCRETE COVER REQUIREMENTS & BAR CLEARANCES.
2. CORNER BARS ARE THE SAME SIZE AND SPACING AS HORIZONTAL REINFORCEMENT.
3. REINFORCEMENT AT ALL CONCRETE WALL CORNERS, INTERSECTIONS AND ENDS TO BE FABRICATED AND PLACED IN ACCORDANCE WITH APPROPRIATE DETAIL SHOWN.
4. DETAIL ALSO APPLIES TO ALL CONTINUOUS WALL FOOTINGS.
5. SINGLE CURTAIN REINFORCEMENT SHALL BE PLACED AT WALL CENTERLINE UNLESS NOTED OTHERWISE.
6. VERTICAL REINFORCEMENT SHOWN IS ADDITIONAL IF TYPICAL VERTICAL REINFORCEMENT IS NOT IN PROPER LOCATION.
7. 90° STANDARD HOOK MAY BE SUBSTITUTED FOR CORNER BARS. USE 90° STANDARD HOOK FOR EMBEDMENT LESS THAN 24" PAST FACE OF WALL.

F1 TYP HORIZ REINF PLACING DETAIL FOR CONCRETE WALLS AND STEM WALLS
3/4" = 1'-0"

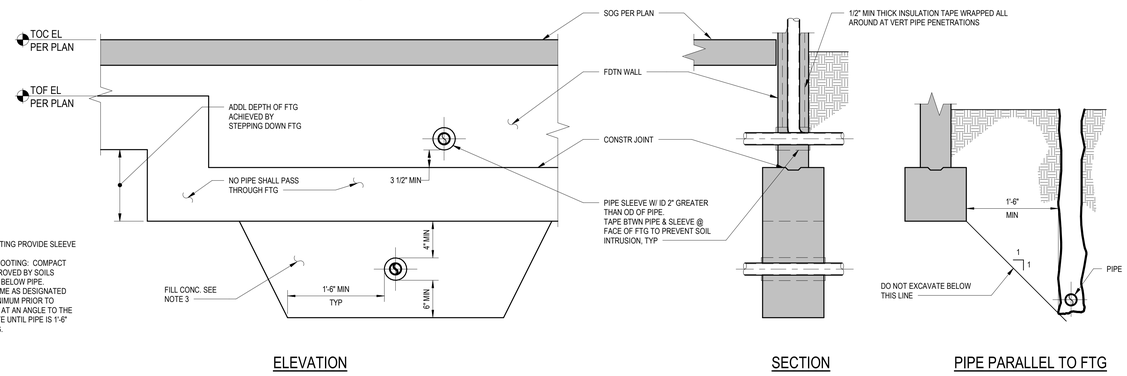


D5 STEPPED FOOTING DETAIL
1" = 1'-0"



NOTES:
1. LOCATE CONTROL JOINTS PER PLAN.
2. SAWCUT JOINTS AFTER PEAK HEAT OF HYDRATION BUT NO LATER THAN 12 HOURS AFTER CONCRETE HAS BEEN MIXED.
3. FOR SLAB SUBGRADE SEE TYPICAL SLAB-ON-GRADE DETAIL.
4. OPTION: PLASTIC SLEEVES MAY BE CAST IN POUR 1 (SPEED DOWEL OR SIMILAR) SO DOWELS MAY BE INSTALLED AFTER EDGE FORM REMOVAL.

D7 TYP SLAB CONTROL JOINT DOUBLE LAYER REINFORCEMENT
1" = 1'-0"



NOTES:
1. FOR PIPES 3'-0" OR LESS BELOW FOOTING PROVIDE SLEEVE AND FILL CONCRETE AS SHOWN.
2. FOR PIPES MORE THAN 3'-0" BELOW FOOTING: COMPACT BACKFILL OVER PIPE TO 90% AS APPROVED BY SOILS ENGINEER, OR STEP DOWN FOOTING BELOW PIPE.
3. FILL CONCRETE STRENGTH TO BE SAME AS DESIGNATED FOR FOOTINGS. PLACE 24 HOURS MINIMUM PRIOR TO FOOTING CONCRETE. WHERE PIPE IS AT AN ANGLE TO THE FOUNDATION, EXTEND FILL CONCRETE UNTIL PIPE IS 1'-6" MINIMUM BEYOND FACE OF FOOTING.

F5 TYPICAL PIPE PENETRATION AT FOOTING
1" = 1'-0"

Revisions:	Date:

CONSULTANT
ENGINEERING DISCIPLINE:
WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD
A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032
SPEESDESIGNBUILD

STAMP
REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 STRUCTURAL STATE OF CALIFORNIA
Exp. 6/30/27

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

Drawing Title: TYPICAL CONCRETE DETAILS
Approved:
Phase: 100% CONSTRUCTION DOCUMENTS
FULLY SPRINKLERED
Project Title: EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN
Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516
Issue Date: 04/20/2026
Checked: NRT
Drawn: JKM
Project Number: 689-22-700
Building Number:
Drawing Number: S-501

Autodesk Docs://689-22-700 VA CT West Haven EHRM UG WAREHOUSE A CENTER-STR.rvt
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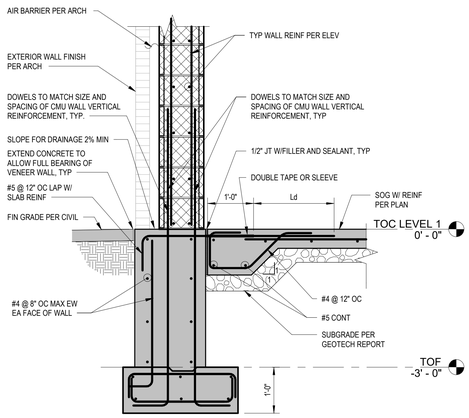
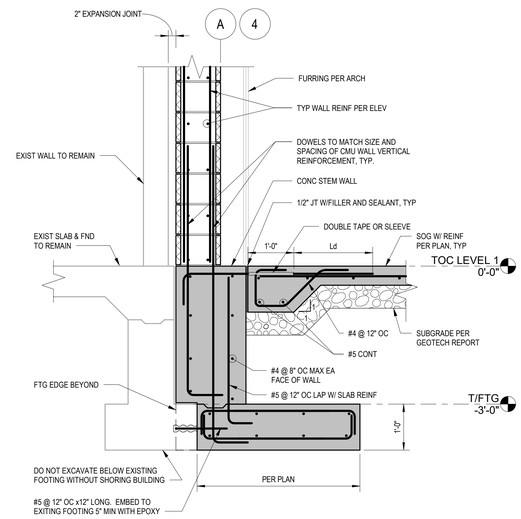
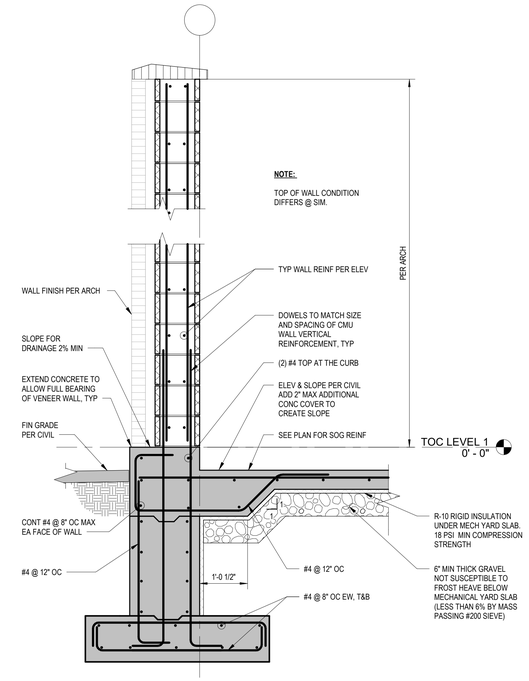


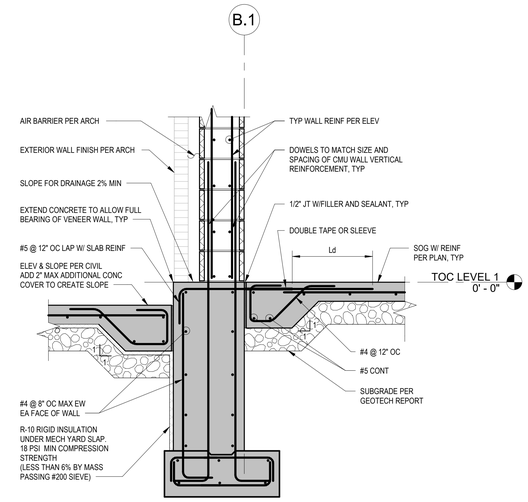
C1 TYP CMU WALL FOOTING
3/4" = 1'-0"



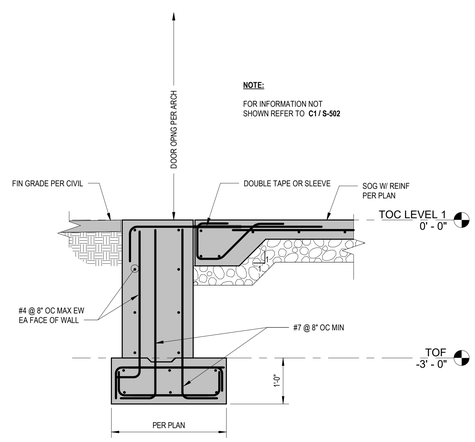
C3 WALL FOOTING AGAINST EXIST WALL FOOTING
3/4" = 1'-0"



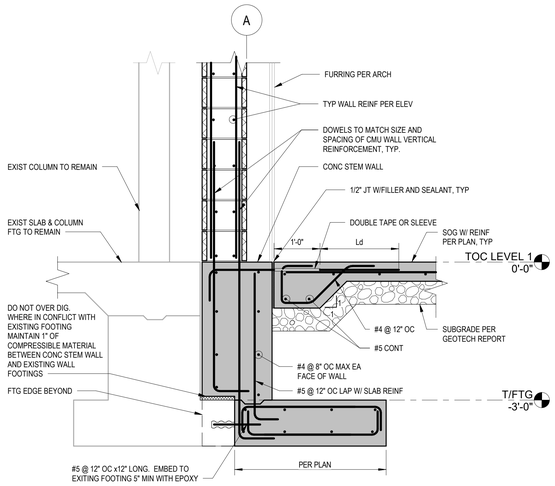
C6 MECHANICAL YARD WALL SECTION
3/4" = 1'-0"



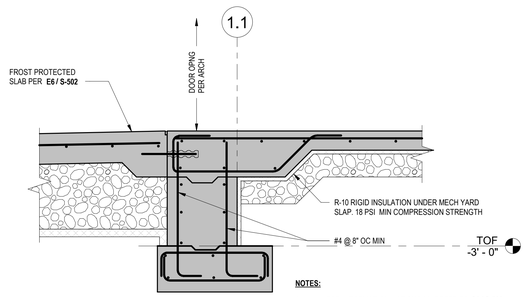
C8 WALL FOOTING AT MECH YARD
3/4" = 1'-0"



F1 TYP CMU WALL FOOTING AT DOOR
3/4" = 1'-0"

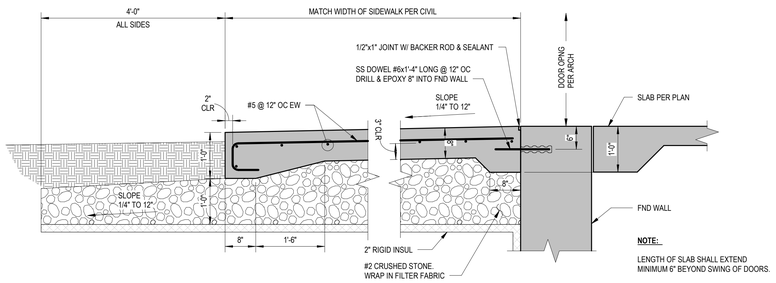


F3 WALL FOOTING AGAINST EXIST COLUMN FOOTING
3/4" = 1'-0"

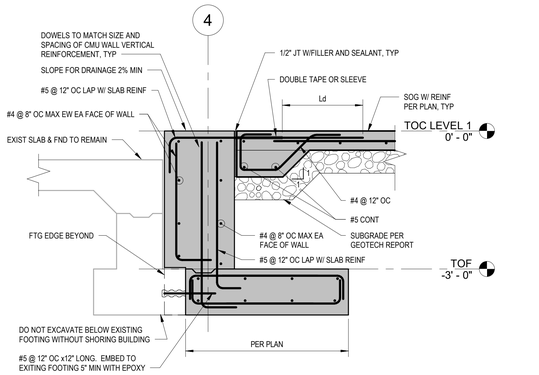


NOTES:
1. FOR INFORMATION NOT SHOWN REFER TO C6 / S-502
2. INCREASE IN FOOTING THICKNESS TO ALLOW HOOK DEVELOPMENT LENGTH OF JAMB REINFORCEMENT

F6 MECH YARD WALL SECTION AT DOOR
3/4" = 1'-0"



E6 TYP FROST PROTECTED SLAB AT ENTRANCE
3/4" = 1'-0"



F8 WALL FOOTING AGAINST EXIST WALL FOOTING AT DOOR
3/4" = 1'-0"

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
EXP. 12/31/2027
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
CONCRETE FOUNDATION DETAILS	100% CONSTRUCTION DOCUMENTS	EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	689-22-700
Approved:	FULLY SPRINKLERED	Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	Building Number
		Issue Date: 04/20/2026 · Checked: NRT · Drawn: JKM	Drawing Number: S-502

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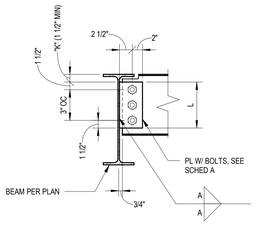
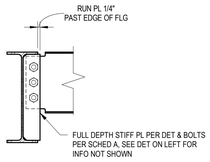


TYPICAL BEAM TO BEAM



ALL BEAM TO BEAMS WITH SAME DEPTH OR W12 BEAMS AND LARGER BEAMS

NOTES:
1. SEE BOLT **B4 / S-511** FOR BOLTS, PLATES, COPES, AND WELD A. REFER TO AISC FOR k DISTANCE.
2. BOLTS IN CONNECTIONS OF BEAM TO BEAM/GIRDER MAY BE SNUG TIGHT UNLESS SPECIFICALLY CALLED OUT AS SLIP CRITICAL (SC).

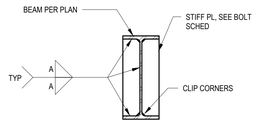
B1 TYPICAL SHEAR TAB CONNECTION
1" = 1'-0"

TABLE A

BEAM SECTION	MAXIMUM REACTION					TOP COPE ONLY		TOP & BOTTOM COPE	
	MIN NUMBER OF BOLTS REQUIRED 7/8"Ø A325(F1852) UNLESS NOTED OTHERWISE	MAX ASD REACTION Rn/Ω (KIPS)	MAX LRFD REACTION φRn (KIPS)	A36 PLATE THICKNESS (INCH)	WELD SIZE A (INCH)	Fy (BEAM) = 50 KSI		Fy (BEAM) = 50 KSI	
						MIN WEB THICKNESS (INCH)	MAX COPE LENGTH (INCH)	MIN WEB THICKNESS (INCH)	MAX COPE LENGTH (INCH)
C8,MC8,W8,W10	2	22	33	3/8	1/4	0.25	4	0.25	-
C12,MC12,W12,W14	3	39	58			0.25	4	0.25	2 1/2
W16	4	52	78			0.25	5	0.26	3
W18	5	65	97			0.25	9	0.27	5
W21	6	78	117			0.25	11	0.30	6
W24	7	91	137			0.25	14	0.29	11
W27,W30	8	104	156			0.25	16	0.28	14
W33, W36	9	116	174			0.25	16	0.27	14

NOTES:
1. BEAMS SHALL HAVE STANDARD ROUND HOLES (STD) AND SHEAR TAB PLATES MAY HAVE HORIZONTAL SHORT SLOTTED HOLES (HSSH) IF NOT SLIP CRITICAL.
2. PROVIDE THE MINIMUM QUANTITY OF BOLTS SHOWN IN TABLE A.
3. MAXIMUM COPE DEPTH SHALL BE 2" FOR DEPTHS UP TO W18 AND 3" FOR BEAMS W21 OR GREATER. CHANNELS (C AND MC) BE COPED WITHOUT PRIOR APPROVAL FROM THE STRUCTURAL ENGINEER.
4. COPED BEAMS SHALL BE CHECKED FOR MINIMUM WEB THICKNESS AND MAXIMUM COPE LENGTH PER TABLE A.

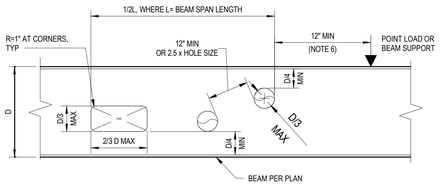
B4 TYPICAL BOLT SCHEDULE
1" = 1'-0"



FULL DEPTH STIFFENER

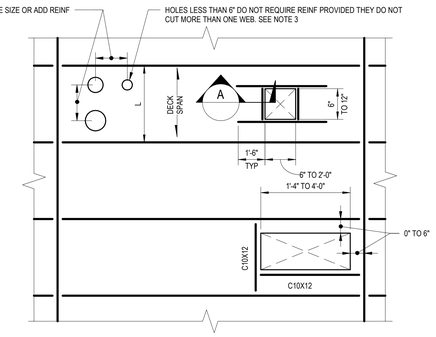
NOTES:
1. REFER TO TYPICAL BOLT SCHEDULE **B4 / S-511** FOR WELD SIZE A
2. STIFFENERS SHALL BE FULL DEPTH, UNLESS NOTED OTHERWISE REFERENCING DETAILS. PARTIAL DEPTH STIFFENERS ARE NOT PERMITTED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER.

B8 TYPICAL STIFFENER PLATES
1" = 1'-0"



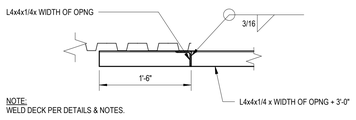
NOTES:
1. CONTRACTOR SHALL COORDINATE SIZES AND LOCATIONS OF ALL BEAM PENETRATIONS WITH MECHANICAL, ELECTRICAL AND FIRE PROTECTION DRAWINGS. ALL PENETRATIONS LARGER THAN 2"Ø SHALL BE SHOWN ON SHOP DRAWINGS OR SKETCHES AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. FIELD CUTTING IS NOT PERMITTED WITHOUT APPROVAL.
2. OPENINGS MAY OCCUR IN HALF OF BEAM LENGTH ONLY.
3. NO CUTTING SHALL OCCUR IN TOP OR BOTTOM QUARTER OF BEAM DEPTH.
4. ADJACENT OPENINGS SHALL BE SPACED AT THE LESSER OF 12" OR 2.5 x LARGER OPENING SIZE, EDGE TO EDGE.
5. MAXIMUM SIZES OF OPENINGS SHALL BE D/3 DIA OR 2/3D WIDE x D/3 HIGH.
6. NO OPENINGS SHALL OCCUR WITHIN 12" OF AN INCOMING BEAM CONNECTION OR POINT LOAD ON BEAM.
7. REQUIRED OPENINGS NOT MEETING ABOVE CRITERIA SHALL BE SUBMITTED TO ENGINEER FOR REINFORCING DESIGN.

D1 BLOCKOUTS IN BEAM WEB
1" = 1'-0"



NOTES:
1. INSTALL REINFORCEMENT BEFORE CUTTING HOLES.
2. CONTRACTOR SHALL COORDINATE OPENING SIZE AND LOCATION WITH MECHANICAL AND ELECTRICAL CONTRACTORS.
3. THE OPENING NOTED REQUIRES A CLEAR SPACING FROM ADJACENT OPENINGS OF THREE TIMES THE MAXIMUM OPENING DIMENSION. IF THE REQUIRED LAYOUT CANNOT CONFORM TO THESE REQUIREMENTS, REINFORCE THE GROUP AS A SINGLE COMBINED PENETRATION.

PLAN



NOTE:
WELD DECK PER DETAILS & NOTES.

SECTION A

F4 ROOF DECK OPNG LESS THAN 4'-0"
1" = 1'-0"

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

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REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 EXP. 6/30/27 STRUCTURAL STATE OF CALIFORNIA

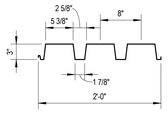
Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	TYPICAL STRUCTURAL STEEL DETAILS
Approved:	
Phase	100% CONSTRUCTION DOCUMENTS
	FULLY SPRINKLERED
Project Title	EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN
Location	VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516
Issue Date	04/20/2026
Checked	NRT
Drawn	JKM
Project Number	689-22-700
Building Number	
Drawing Number	S-511

Autodesk Docs://689-22-700 VA CT West Haven EHRM UI Upgrades Phs 1/689-22-700 VA CENTER-STR.rvt
5/7/2026 2:50:45 PM

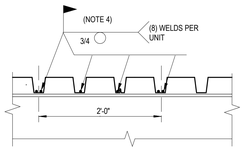
VA FORM 08 - 6231



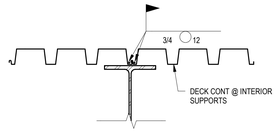
DECK	GA (MIL)	+S (IN_3/FT)	-S (IN_3/FT)	I (IN_4/FT)	SIDE LAP CONNECTION
PLN 24 OR EQUAL	18	0.652	0.735	1.267	PUNCHLOK II @ 18 "OC
-	-	-	-	-	-

NOTES:
1. DECK SHALL BE CONTINUOUS FOR AT LEAST 2 SPANS.
2. 3/4"Ø ARC SPOT (PUDDLE) WELDS SHALL BE 1/2"Ø EFFECTIVE.
3. 4" MIN BEARING ON PERPENDICULAR SUPPORTS.
4. DECK SHALL BE 50 KSI

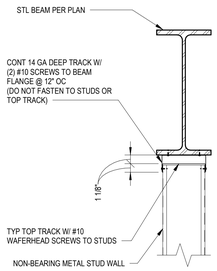
B1 TYPICAL STEEL DECK - ROOF
1" = 1'-0"



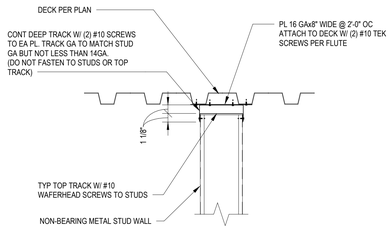
WELDING AT ALL SUPPORTS PERPENDICULAR TO FLUTES



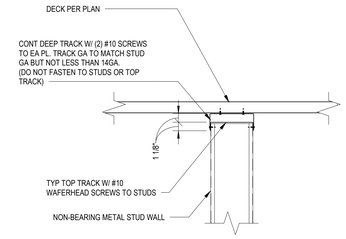
WELDING AT ALL SUPPORTS PARALLEL TO FLUTES



B5 TYP NON-BEARING WALL DEFLECTION TRACK TO BEAM
1 1/2" = 1'-0"

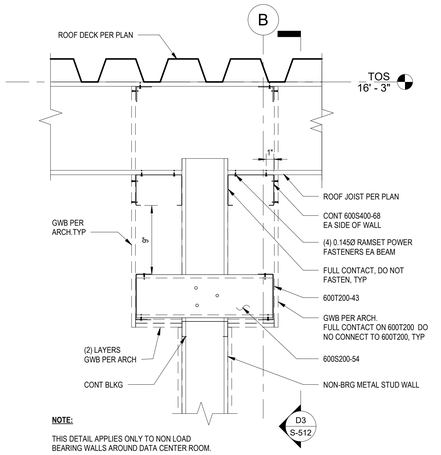


WALL PARALLEL TO DECK FLUTES



WALL PERPENDICULAR TO DECK FLUTES

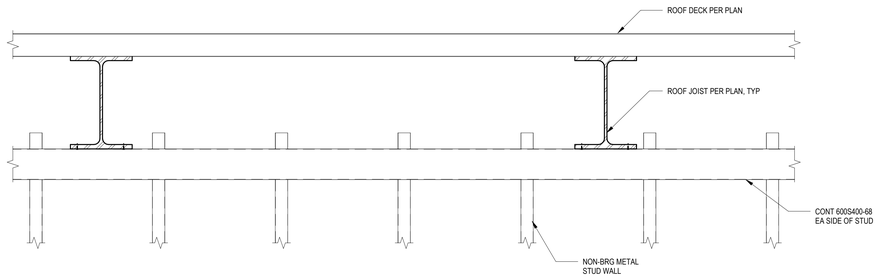
B7 TYP NON-BEARING WALL DEFLECTION TRACK TO DECK
1 1/2" = 1'-0"



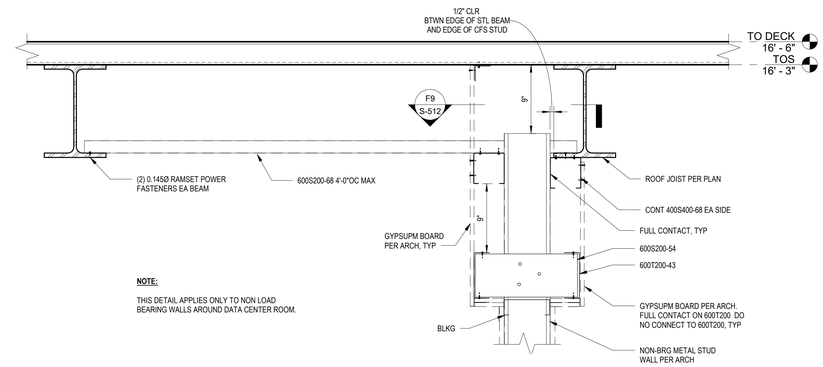
NOTE:

THIS DETAIL APPLIES ONLY TO NON LOAD BEARING WALLS AROUND DATA CENTER ROOM.

D1 NON-BEARING WALL VERTICAL SLIP CONN @ DATA CENTER ROOM
1 1/2" = 1'-0"



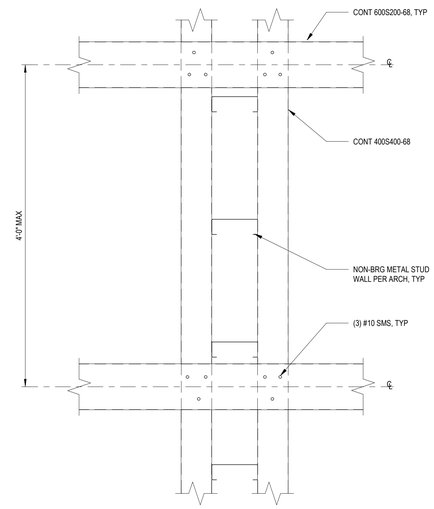
D3 SECTION - SLIP CONN
1 1/2" = 1'-0"



NOTE:

THIS DETAIL APPLIES ONLY TO NON LOAD BEARING WALLS AROUND DATA CENTER ROOM.

D7 NON-BEARING WALL VERTICAL SLIP CONNECTION @ DATA CENTER ROOM
1 1/2" = 1'-0"



F9 PLAN VIEW - SLIP CONN
1 1/2" = 1'-0"

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032

SPEESDESIGNBUILD

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REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 EXP. 6/30/27 STRUCTURAL STATE OF CALIFORNIA

Office of Construction and Facilities Management

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Drawing Title TYPICAL STRUCTURAL STEEL DETAILS	**Phase** 100% CONSTRUCTION DOCUMENTS	**Project Title** EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	**Project Number** 689-22-700
			Building Number
Approved:	FULLY SPRINKLERED	**Location** VA CT WEST HAVEN 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	**Drawing Number** S-512
		Issue Date 04/20/2026 · **Checked** NRT · **Drawn** JKM	

Autodesk Docs://689-22-700 VA CT West Haven EHRM Upgrades/VA CENTER-STR.rvt
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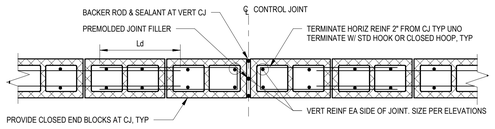
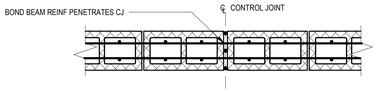
NOTE

1. ALIGN BOND BEAM CONTROL JOINTS WITH WALL CONTROL JOINTS.
2. COCNRETE BLOCK SHOWN. (BRICK SIMILAR)

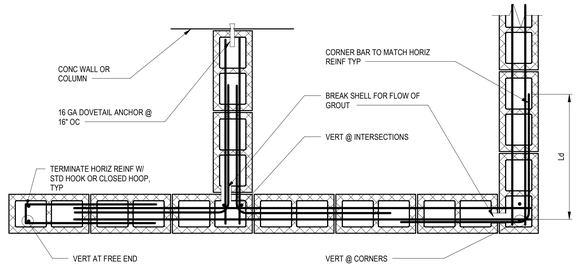


TYPICAL BOND BEAM



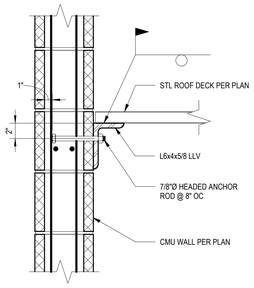
BOND BEAM AT FLOOR AND ROOF

B1 CONTROL JOINT AT CMU WALL
1" = 1'-0"

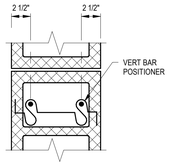


AT FREE END AT INTERSECTION AT CORNER

B3 TYP HORIZ REINF PLACING DETAIL - CMU
1" = 1'-0"



B6 DECK SUPPORT DETAIL AT ROOF
1 1/2" = 1'-0"



12" CMU

NOTE:
VERTICAL BAR POSITIONERS REQUIRED WHEN REINFORCEMENT IS AT FACE OF WALL OR IN TWO LAYERS

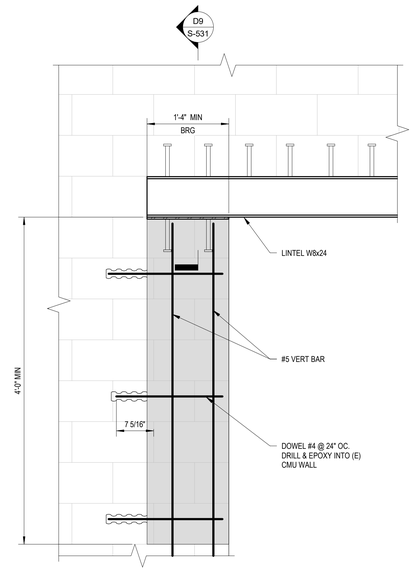
C1 VERT REINF BAR POSITIONER
1 1/2" = 1'-0"

DEVELOPMENT AND LAP SPLICE LENGTH SCHEDULE - CMU f'm=2,000 PSI, f'y=60,000 PSI			
BAR	Ld, Lsp CENTERED REINFORCING	Ld, Lsp EDGE REINFORCING	Le HOOK EMBEDMENT
#4	12"	22"	7"
#5	13"	35"	9"
#6	24"	54"	10"
#7	33"	63"	12"
#8	50"	72"	15"

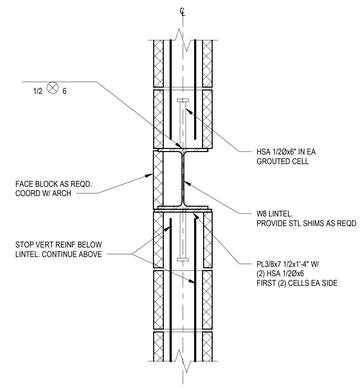
NOTES:

1. TO USE THE TABULATED LENGTHS FOR LAP SPLICES, ON CENTER SPACING TO SPLICED REINFORCEMENT SHALL NOT EXCEED THE MAXIMUM OF Ld/5 OR 8". SPLICES SHALL BE STAGGERED SUCH THAT THE CLEAR SPACING TO ADJACENT SPLICES SHALL NOT BE LESS THAN THE MINIMUM MASONRY COVER DESCRIBED IN 2. AND 3. BELOW.
2. DEVELOPMENT LENGTHS FOR CENTERED CONDITIONS ARE BASED ON BARS CENTERD IN AN 12" CMU WALL.
3. DEVELOPMENT LENGTHS FOR EDGE CONDITIONS ARE BASED ON MINIMUM BAR COVER OF 2".

C3 DEVELOPMENT AND LAP SPLICE LENGTH - CMU
1" = 1'-0"

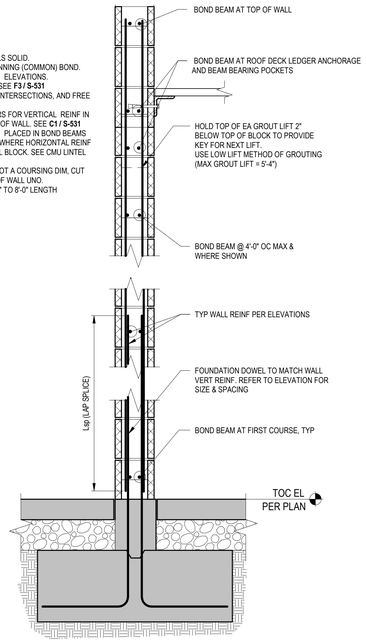


D6 TYPICAL CMU WALL OPENING REINFORCEMENT
1" = 1'-0"

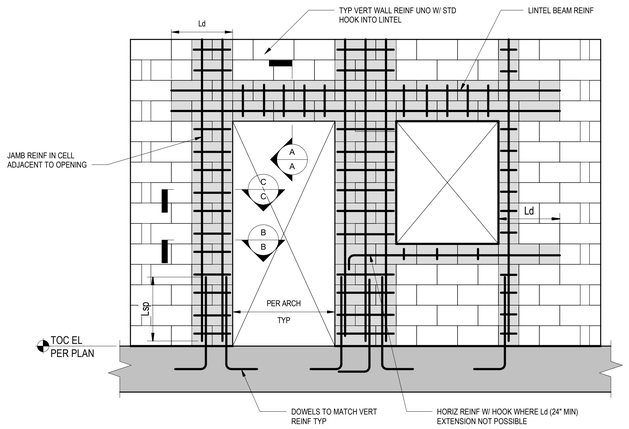


D9 TYPICAL CMU WALL OPENING REINFORCEMENT
1 1/2" = 1'-0"

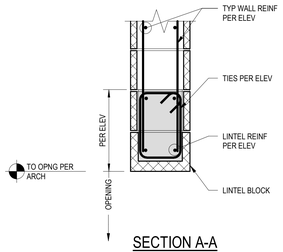
NOTES:
1. GROUT REINFORCED CELLS SOLID.
2. CMU SHALL BE LAID IN RUNNING (COMMON) BOND.
3. REFER TO ARCH FOR CMU ELEVATIONS.
4. FOR REINF AT OPENINGS SEE **F3 / S-531**
5. FOR REINF AT CORNERS, INTERSECTIONS, AND FREE END SEE **B3 / S-531**
6. PROVIDE BAR POSITIONERS FOR VERTICAL REINF IN TWO LAYERS OR AT FACE OF WALL. SEE **C1 / S-531**
7. HORIZONTAL REINF TO BE PLACED IN BOND BEAMS EXCEPT OVER OPENINGS WHERE HORIZONTAL REINF IS TO BE PLACED IN LINTEL BLOCK. SEE CMU LINTEL SCHEDULE.
8. WHERE TOP OF WALL IS NOT A COURSING DIM, CUT 2ND COURSE FROM TOP OF WALL UNO.
9. SPLICE VERT REINF IN 6'-0" TO 8'-0" LENGTH



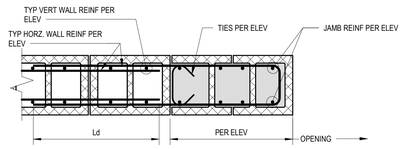
F1 TYP CMU WALL REINF AND SCHEDULE
1" = 1'-0"



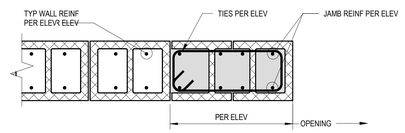
F3 TYPICAL EXTERIOR CMU WALL OPENING REINFORCEMENT
1/2" = 1'-0"



SECTION A-A



SECTION B-B @ HORZ REINF.



SECTION C-C @ TIES

Revisions:	Date:

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ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

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Office of Construction and Facilities Management

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Drawing Title	Phase	Project Title	Project Number
TYPICAL CMU WALL DETAILS	100% CONSTRUCTION DOCUMENTS	EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	689-22-700
Approved:	FULLY SPRINKLERED	Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	Building Number
		Issue Date: 04/20/2026; Checked: NRT; Drawn: JKM	Drawing Number: S-531

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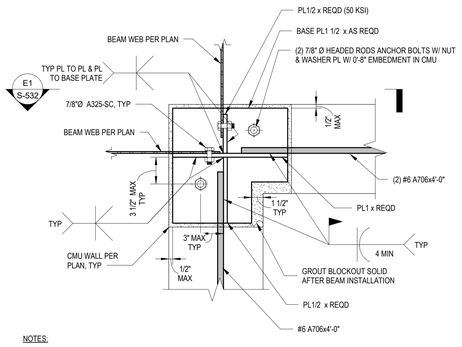
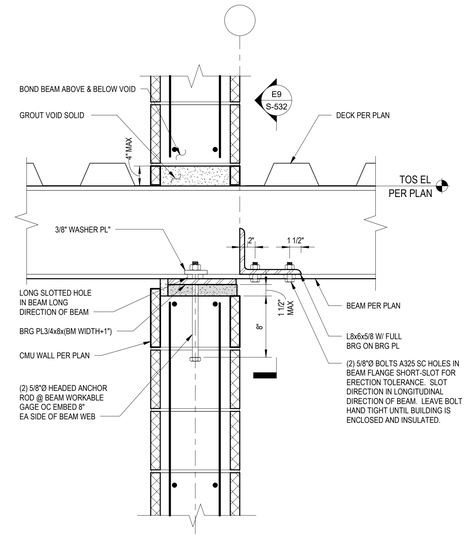


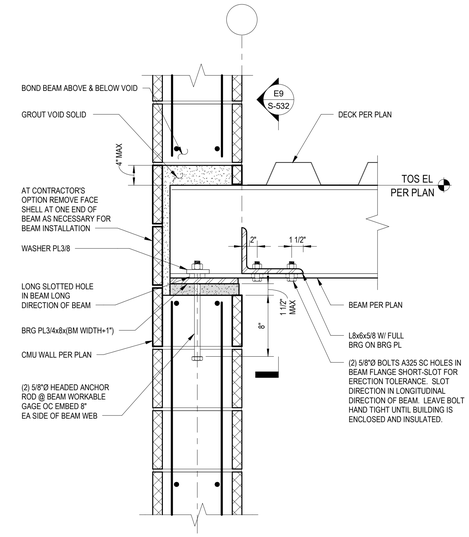
NOTES:

1. FOR INFORMATION NOT SHOWN REFER TO
2. SEE **B4 / S-511** FOR BOLTING SPACING AND EDGE DISTANCES NOT SHOWN.

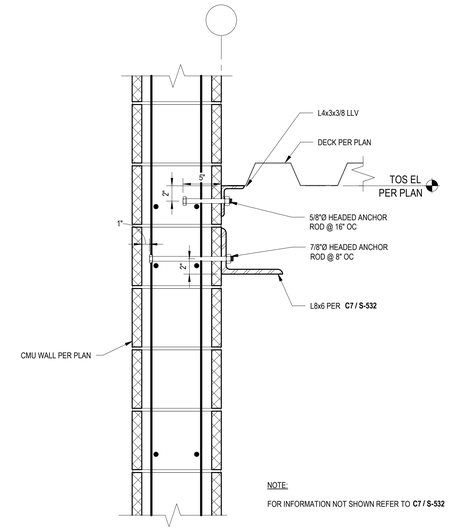
C1 WALL TO BEAM DRAG CONNECTION - PLAN
1 1/2" = 1'-0"



C5 BEAM POCKET AT ROOF CANTILEVER
1 1/2" = 1'-0"



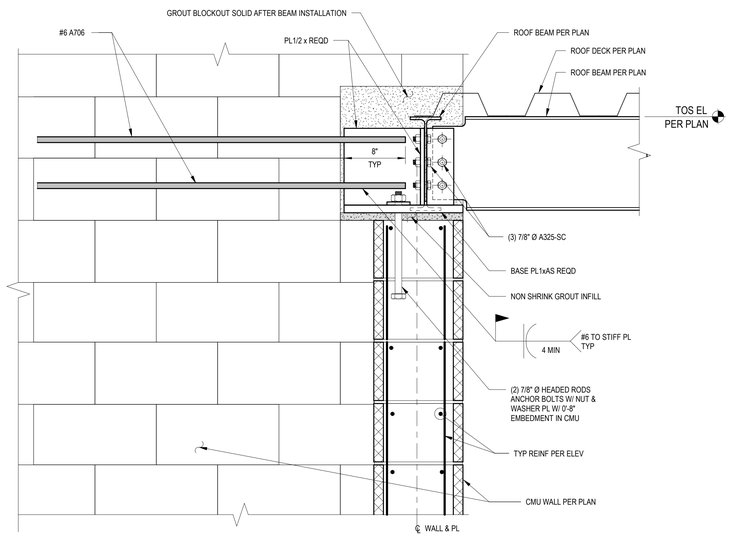
C7 BEAM POCKET AT ROOF
1 1/2" = 1'-0"



NOTE:

FOR INFORMATION NOT SHOWN REFER TO **C7 / S-532**

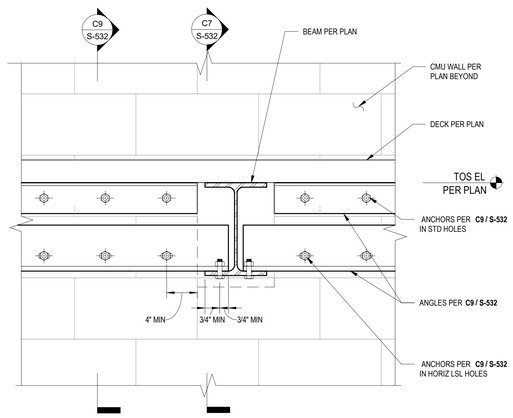
C9 DECK PARALLEL TO WALL SUPPORT
1 1/2" = 1'-0"



NOTE:

SEE **B4 / S-511** FOR BOLTING SPACING AND EDGE DISTANCES NOT SHOWN.

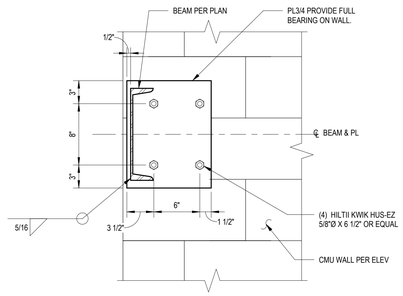
E1 WALL TO BEAM DRAG CONNECTION - SECTION
1 1/2" = 1'-0"



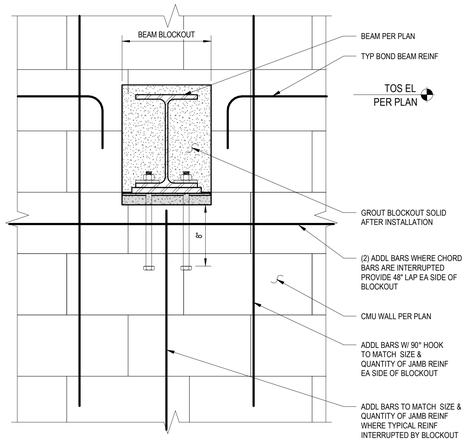
NOTE:

FOR INFORMATION NOT SHOWN REFER TO **C9 / S-532**

E5 DECK PARALLEL TO WALL SUPPORT
1 1/2" = 1'-0"



E7 CHANNEL TO CMU WALL CONNECTION
1 1/2" = 1'-0"



E9 BEAM BLOCKOUT
1 1/2" = 1'-0"

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
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SDB SPEESDESIGNBUILD

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Exp. 12/31/2027

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TYPICAL CMU WALL DETAILS

Approved:

Phase
100% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED

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EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN

Location
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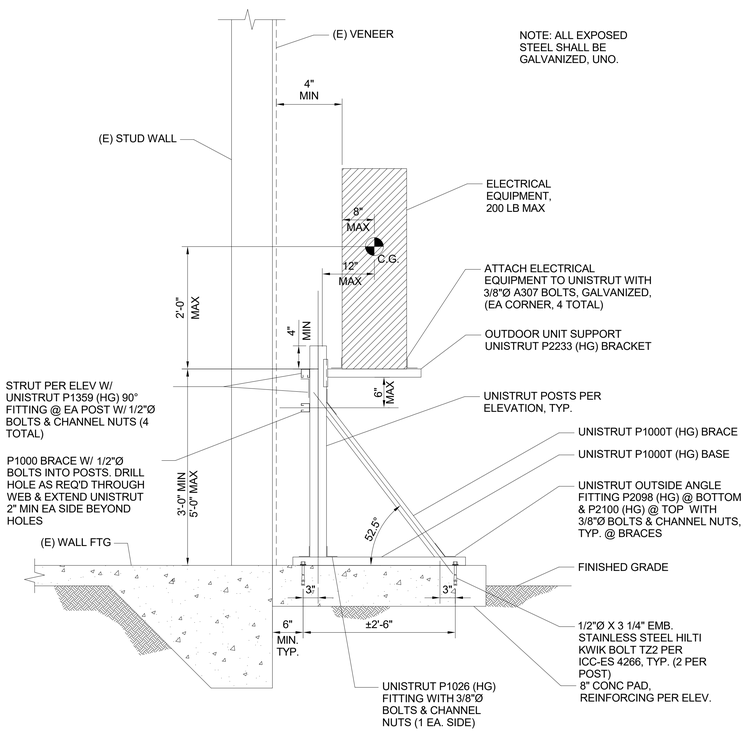
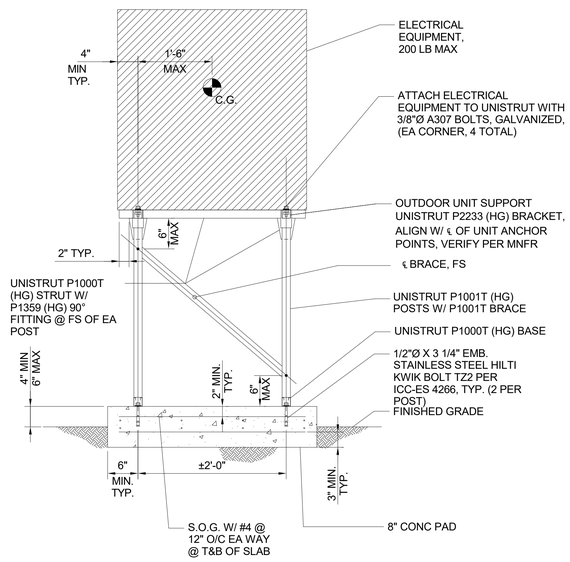
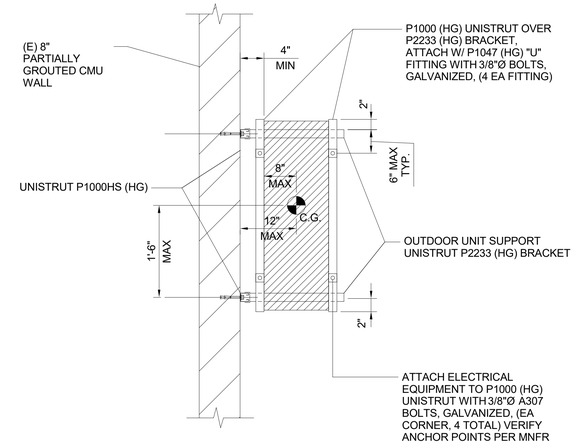


NOTE: ALL EXPOSED STEEL SHALL BE GALVANIZED, UNO.

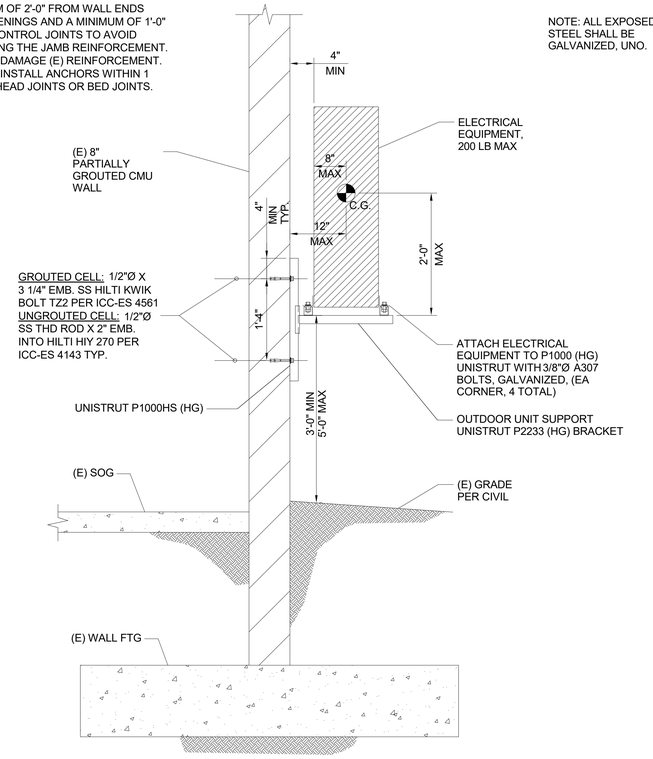
F1 SMALL EQUIPMENT FRAME AT STUD WALL (WEIGHT = 200 LBS MAX)
SCALE: NTS





TOP VIEW
SCALE: N.T.S.

NOTE:
1. ANCHORS MUST BE INSTALLED A MINIMUM OF 2'-0" FROM WALL ENDS AND OPENINGS AND A MINIMUM OF 1'-0" FROM CONTROL JOINTS TO AVOID DAMAGING THE JAMB REINFORCEMENT.
2. DO NOT DAMAGE (E) REINFORCEMENT.
3. DO NOT INSTALL ANCHORS WITHIN 1 1/4" OF HEAD JOINTS OR BED JOINTS.



NOTE: ALL EXPOSED STEEL SHALL BE GALVANIZED, UNO.

F7 SMALL EQUIPMENT ANCHORAGE AT CMU WALL (WEIGHT = 200 LBS MAX)
SCALE: NTS

Revisions:	Date:

CONSULTANT
ENGINEERING DISCIPLINE:
WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD
A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032
SPEESDESIGNBUILD

STAMP
REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 STRUCTURAL STATE OF CALIFORNIA

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

Drawing Title	Phase	Project Title	Project Number
MECHANICAL ANCHORAGE DETAILS	100% CONSTRUCTION DOCUMENTS	EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	689-22-700
Approved:	FULLY SPRINKLERED	Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	Building Number
		Issue Date: 04/20/2026; Checked: NRT; Drawn: JKM	Drawing Number: S-541

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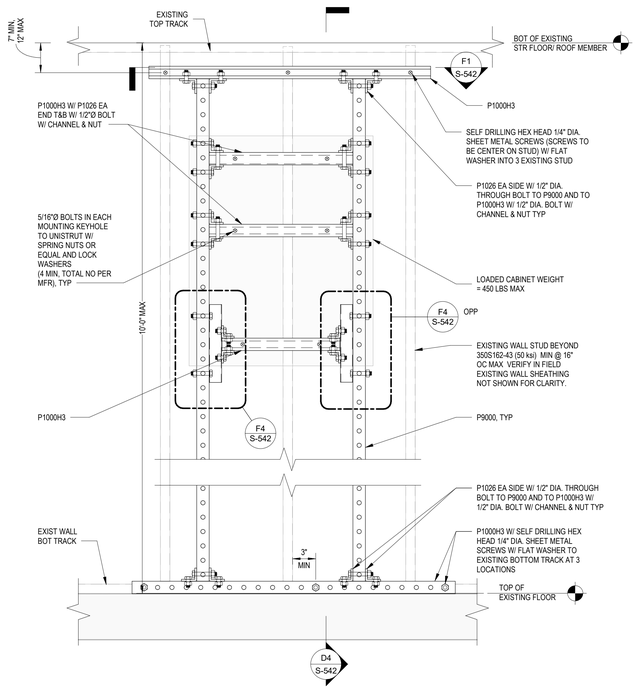
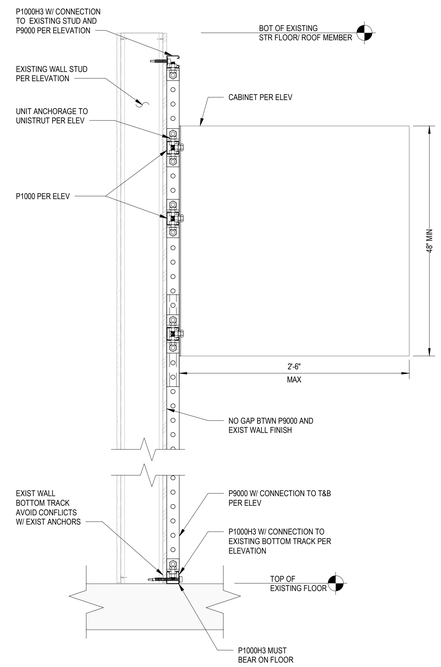


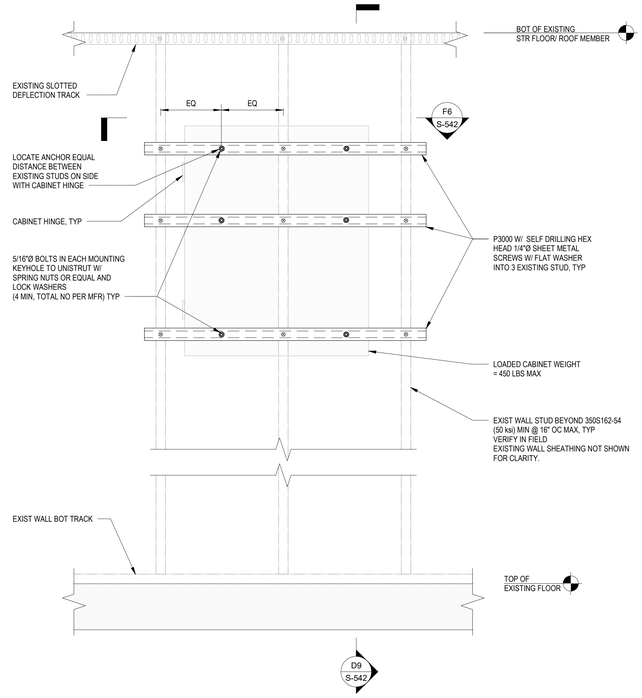
NOTES:

1. UNISTRUT TO BE UNPUNCHED UNLESS NOTED OTHERWISE ON THE DETAILS.
2. PROVIDE UNISTRUT ENDCAPS AND CHANNEL CAPPING STRIP FOR EXPOSED UNISTRUT.
3. THE CABINET SHALL BE PLACED ON INTERIOR WALLS ONLY.
4. SEISMIC DESIGN CRITERIA:
   S_{DS} = 1.194g MAXIMUM
   I_P = 1.5 MAXIMUM
5. SHEET METAL SCREWS SHALL BE ELCO DRIL-FLEX SELF DRILLING STRUCTURAL SCREW.

D1 ELEVATION - CABINET MOUNTED TO LOAD BEARING CFS FRAMED WALL
1 1/2" = 1'-0"



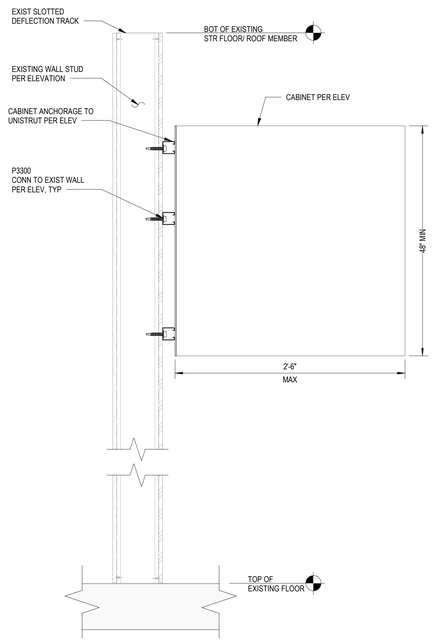
D4 SECTION - CABINET MOUNTED TO LOAD BEARING CFS FRAMED WALL
1 1/2" = 1'-0"



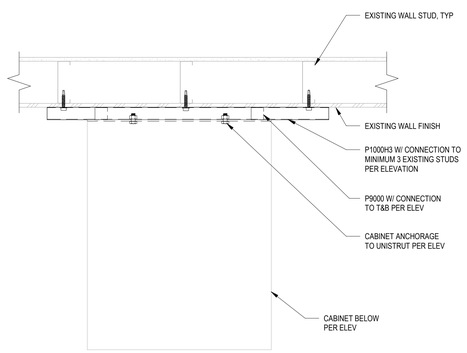
NOTES:

1. UNISTRUT TO BE UNPUNCHED UNLESS NOTED OTHERWISE ON THE DETAILS.
2. PROVIDE UNISTRUT ENDCAPS AND CHANNEL CAPPING STRIP FOR EXPOSED UNISTRUT.
3. THE CABINET SHALL BE PLACED ON INTERIOR WALLS ONLY.
4. SEISMIC DESIGN CRITERIA:
   S_{DS}= 1.194g MAXIMUM
   I_P = 1.5 MAXIMUM
5. NON-BEARING WALLS ARE NOT SUPPORTING THE FLOOR OR ROOF MEMBERS ABOVE. IF CONDITION NOT KNOWN USE DETAILS FOR LOAD BEARING WALLS.
6. SHEET METAL SCREWS SHALL BE ELCO DRIL-FLEX SELF DRILLING STRUCTURAL SCREW.

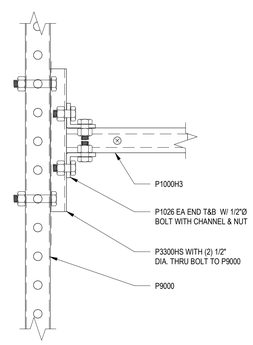
D6 ELEVATION - CABINET MOUNTED TO NON-LOAD BEARING CFS FRAMED WALL
1 1/2" = 1'-0"



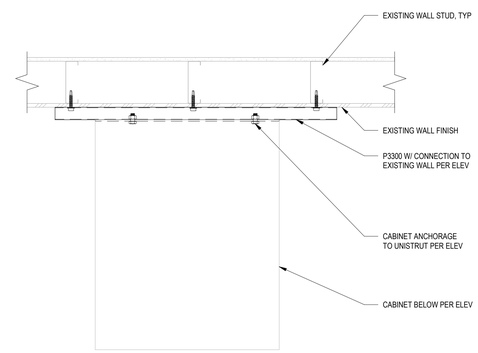
D9 SECTION - CABINET MOUNTED TO NON-LOAD BEARING CFS FRAMED WALL
1 1/2" = 1'-0"



F1 PLAN - CABINET MOUNTED TO LOAD BEARING CFS FRAMED WALL
1 1/2" = 1'-0"



F4 DETAIL
3" = 1'-0"



F6 PLAN - CABINET MOUNTED TO NON-LOAD BEARING CFS FRAMED WALL
1 1/2" = 1'-0"

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032
SDB SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER DANTE VALDEZ No. 5752 STRUCTURAL STATE OF CALIFORNIA
Exp. 12-31-2027

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
TYPICAL DETAILS-CABINET TO CFS FRAMED WALL	100% CONSTRUCTION DOCUMENTS	EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	689-22-700
			Building Number
Approved:	FULLY SPRINKLERED	Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	Drawing Number: S-542
		Issue Date: 04/20/2026 · Checked: NRT · Drawn: JKM	

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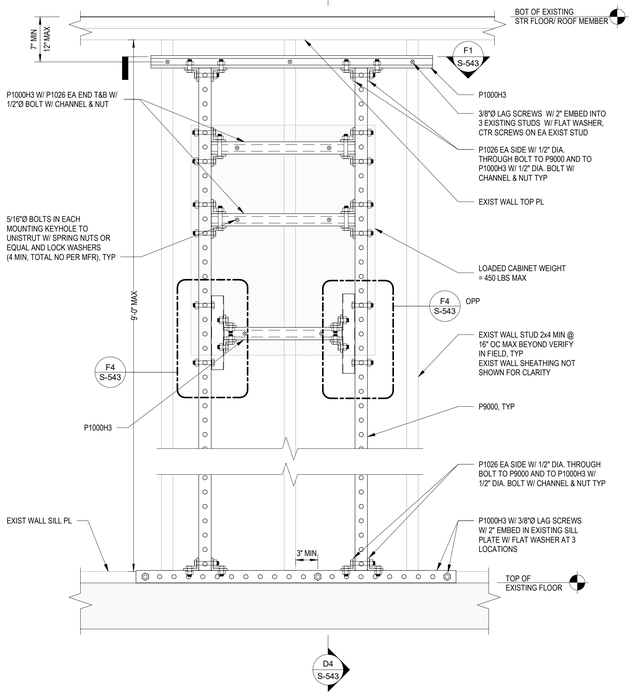
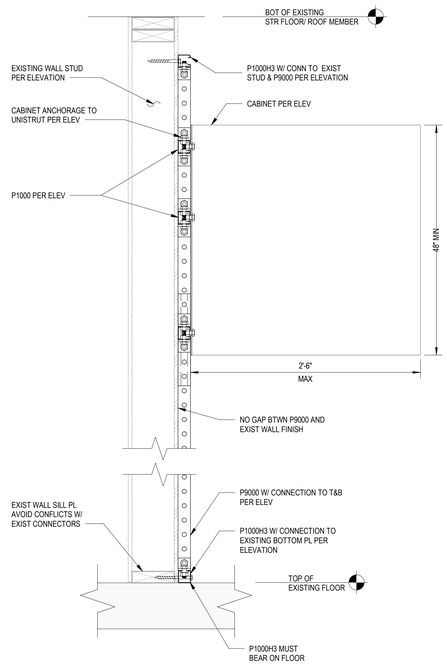


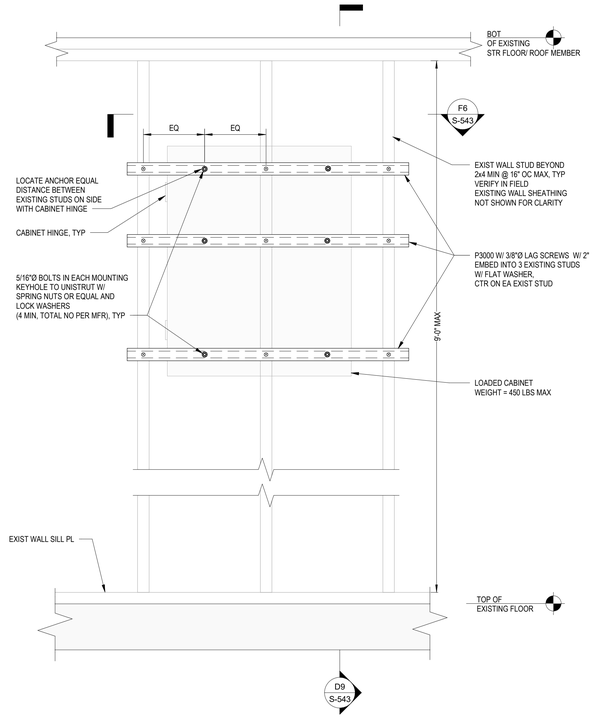
NOTES:

1. UNISTRUT TO BE UNPUNCHED UNLESS NOTED OTHERWISE ON THE DETAILS.
2. PROVIDE UNISTRUT ENDCAPS AND CHANNEL CAPPING STRIP FOR EXPOSED UNISTRUT.
3. THE CABINET SHALL BE PLACED ON INTERIOR WALLS ONLY. CONTRACTOR TO VERIFY EXISTING WALL STUD SIZE AND GRADE.
4. PROVIDE 3/16" DIA. PILOT HOLE FOR 3/8" DIA. LAG SCREWS.
5. SEISMIC DESIGN CRITERIA:
   S_{DS}= 1.194g MAXIMUM
   Ip = 1.5 MAXIMUM

D1 ELEVATION - CABINET MOUNTED TO LOAD BEARING WOOD FRAMED WALL
1 1/2" = 1'-0"



D4 SECTION - CABINET MOUNTED TO LOAD BEARING WOOD FRAMED WALL
1 1/2" = 1'-0"



NOTES:

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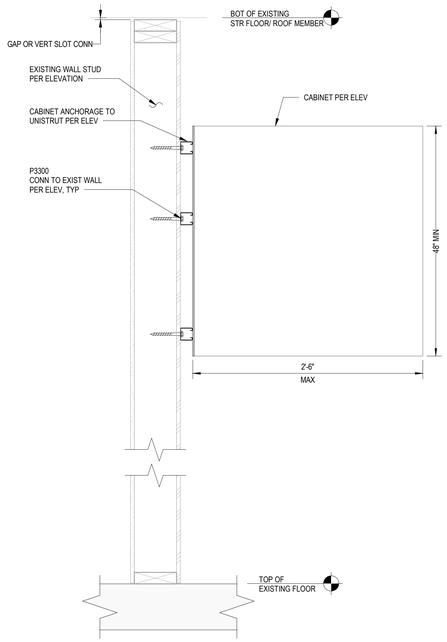
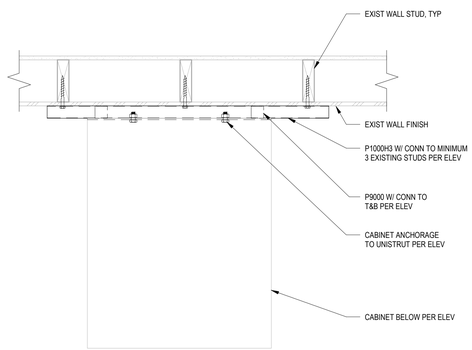
2. PROVIDE UNISTRUT ENDCAPS AND CHANNEL CAPPING STRIP FOR EXPOSED UNISTRUT.
3. THE CABINET SHALL BE PLACED ON INTERIOR WALLS ONLY. CONTRACTOR TO VERIFY EXISTING WALL STUD SIZE AND GRADE.
4. PROVIDE 3/16" DIA. PILOT HOLE FOR 3/8" DIA. LAG SCREWS.
5. SEISMIC DESIGN CRITERIA:
   S_{DS}= 1.194g MAXIMUM
   Ip = 1.5 MAXIMUM
6. NON-BEARING WALLS ARE NOT SUPPORTING THE FLOOR OR ROOF MEMBERS ABOVE. IF CONDITION NOT KNOWN USE DETAILS FOR LOAD BEARING WALLS.

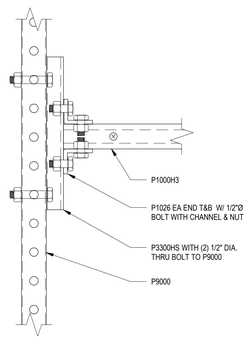
D6 ELEVATION - CABINET MOUNTED TO NON-LOAD BEARING WOOD FRAMED WALL
1 1/2" = 1'-0"



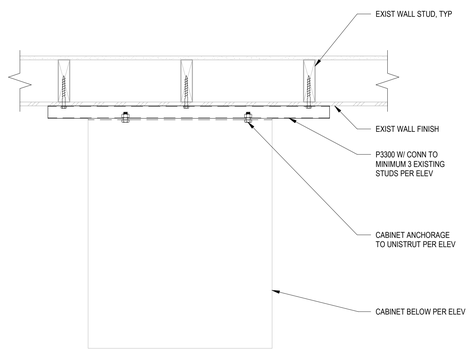
D9 SECTION - CABINET MOUNTED TO NON-LOAD BEARING WOOD FRAMED WALL
1 1/2" = 1'-0"



F1 PLAN - CABINET MOUNTED TO LOAD BEARING WOOD FRAMED WALL
1 1/2" = 1'-0"



F4 ELEVATION
3" = 1'-0"



F6 PLAN - CABINET MOUNTED TO NON-LOAD BEARING WOOD FRAMED WALL
1 1/2" = 1'-0"

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
FAX: (206) 431-2250

ARCHITECT/ENGINEER OF RECORD

A/E:
SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032
SDB SPEESDESIGNBUILD

STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
EXP. 6/30/27
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: TYPICAL DETAILS-CABINET TO WOOD FRAMED WALL

Approved:

Phase: 100% CONSTRUCTION DOCUMENTS

FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN

Location: VA CT WEST HAVEN
950 CAMPBELL AVENUE, WEST HAVEN, CT 06516

Issue Date: 04/20/2026
Checked: NRT
Drawn: JKM

Project Number: 689-22-700

Building Number:

Drawing Number: S-543

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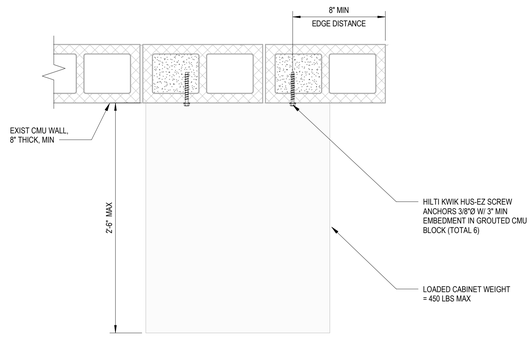
NOTES:

1. ANCHORS INTO CONCRETE TO BE EITHER STAINLESS STEEL OR GALVANIZED.
2. DO NOT DRILL THROUGH EXISTING REINFORCEMENT

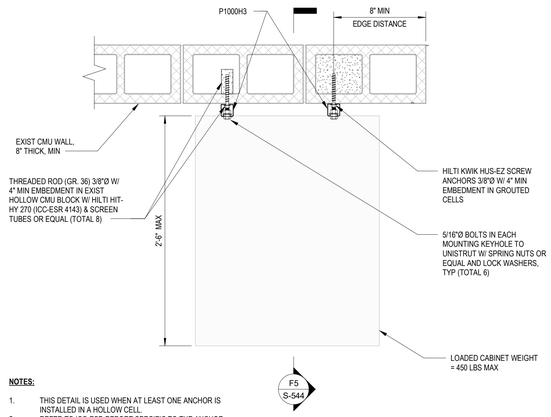
F1 PLAN - CABINET SUPPORT AT EXISTING CONCRETE WALL
1 1/2" = 1'-0"



NOTES:

1. USE HOLLOW CMU WALL DETAIL IF NOT ALL ANCHORS INSTALLED IN GROUTED CELLS.
2. REFER TO ICC-ESR REPORT SPECIFIC TO THE ANCHOR FOR ACCEPTABLE INSTALLATION.
3. DO NOT DRILL THROUGH EXISTING REINFORCEMENT.

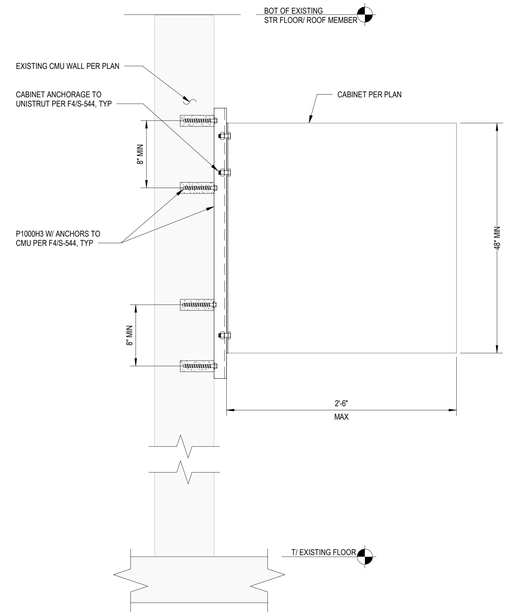
F3 PLAN - CABINET SUPPORT AT GROUTED CELLS OF EXISTING CMU WALL
1 1/2" = 1'-0"



NOTES:

1. THIS DETAIL IS USED WHEN AT LEAST ONE ANCHOR IS INSTALLED IN A HOLLOW CELL.
2. REFER TO ICC-ESR REPORT SPECIFIC TO THE ANCHOR FOR ACCEPTABLE INSTALLATION.
3. DO NOT DRILL THROUGH EXISTING REINFORCEMENT.

F4 PLAN - CABINET SUPPORT AT HOLLOW CELLS OF EXISTING CMU WALL
1 1/2" = 1'-0"



F5 SECTION - CABINET SUPPORT AT HOLLOW CELLS OF EXISTING CMU WALL
1 1/2" = 1'-0"

Revisions:	Date:

CONSULTANT

ENGINEERING DISCIPLINE:

WSP USA Inc.
1201 Pacific Ave,
Suite 550
Tacoma WA, 98402
TEL: (206) 431-2300
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A/E:

SPEES DESIGN BUILD
23830 PACIFIC HIGHWAY S. SUITE 203
KENT, WA 98032
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STAMP

REGISTERED PROFESSIONAL ENGINEER
DANTE VALDEZ
No. 5752
STRUCTURAL
STATE OF CALIFORNIA

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	Phase	Project Title	Project Number
TYPICAL DETAILS-CABINET TO CONCRETE AND CMU WALL	100% CONSTRUCTION DOCUMENTS	EHRM INFRASTRUCTURE UPGRADES - WEST HAVEN	689-22-700
Approved:	FULLY SPRINKLERED	Location: VA CT WEST HAVEN, 950 CAMPBELL AVENUE, WEST HAVEN, CT 06516	Building Number
		Issue Date: 04/20/2026 · Checked: NRT · Drawn: JKM	Drawing Number: S-544

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