DESIGN CRITERIA

1. STRUCTURE HAS BEEN DESIGNED TO COMPLY WITH 2020 BUILDING CODE OF NEW YORK STATE (IBC 2018) AND SUBSEQUENT REFERENCE STANDARDS.
2. RISK CATEGORY: IV
3. LIVE LOADS: LIVE LOAD REDUCTION USED AS ALLOWED PER CODE

ROOF	TYPICAL	20 PSF
FLOOR	TYPICAL MCR FLOOR	250 PSF (UNREDUCIBLE)
	UPS LOBBY FLOOR	100 PSF (UNREDUCIBLE)
	UPS ROOM	300 PSF (UNREDUCIBLE)
OTHER	HANDRAILS	MAX OF 50 PLF HORIZ PLUS 50 PLF VERT OR 200 LBS IN ANY DIRECTION, APPLIED AT TOP OF RAILING

4. MECHANICAL UNITS: THE CONTRACTOR SHALL CONFIRM THE ACTUAL MECHANICAL UNITS PURCHASED ARE OF WEIGHT AND SIZE SUCH THAT:
   a. THE UNIT WEIGHT IS LESS THAN OR EQUAL TO WEIGHT LISTED ON PLAN.
   b. THE UNIT LENGTH IS LESS THAN 15 FEET. IF UNIT LENGTH IS GREATER THAN 15 FEET, SNOW DRIFT ON ROOF SHALL BE ACCOUNTED FOR.
   c. THE TOTAL SUPERIMPOSED LOAD UNDER EACH UNIT DOES NOT EXCEED THE LIVE LOAD FOR WHICH THE FLOOR WAS DESIGNED IN THE FLOOR AREA WHERE THE UNIT IS LOCATED AS INDICATED BY THE EQUATION BELOW:

TOTAL SUPERIMPOSED LOAD UNDER UNIT =	TOTAL EQUIPMENT WEIGHT / UNIT FOOTPRINT AREA =	INDICATED SERVICE LEVEL DESIGN LIVE LOAD
TOTAL EQUIPMENT WEIGHT =	OPERATING WEIGHT OF UNIT + CONCRETE HOUSEKEEPING PAD + INTERTIA BLOCK + OTHER ANCILLARY ITEMS ASSOCIATED WITH THE EQUIPMENT	
UNIT FOOTPRINT AREA =	EFFECTIVE AREA OF UNIT OR HOUSEKEEPING PAD, WHICHEVER IS LARGER	
EFFECTIVE AREA =	(LENGTH + 6 FEET) x (WIDTH + 6 FEET)	

CONTRACTOR SHALL NOTIFY THE STRUCTURAL ENGINEER PRIOR TO CONSTRUCTION ON THE LOCATION OF ANY MECHANICAL UNITS WHERE THE SUPERIMPOSED LOAD UNDER THE UNIT EXCEEDS THE INDICATED DESIGN SIZE AND LOAD FOR THE ROOF AND/OR LIVE LOAD FOR THE FLOOR AS INDICATED ON THE PLAN.

5. SNOW:

GROUND SNOW	55 PSF
SNOW EXPOSURE FACTOR	1.0
THERMAL FACTOR	1.0
IMPORTANCE FACTOR	1.2
FLAT-ROOF SNOW	46 PSF
DESIGN SNOW	46 PSF
SEE S002 FOR SNOW DRIFT PLAN.	

6. SEISMIC:

SEISMIC DESIGN CATEGORY	C
IMPORTANCE FACTOR	1.50
SITE CLASS	D (DEFAULT)
SS	0.14 g
S1	0.051 g
SDS	0.15 g
SD1	0.081 g
SEISMIC FORCE RESISTING SYSTEM	MOMENT FRAME
RESPONSE MODIFICATION COEFFICIENT, R	3
ANALYSIS PROCEDURE	EQUIVALENT LATERAL FORCE

7. WIND:

BASIC WIND SPEED	VULT = 121MPH		
EXPOSURE CLASS	B		
INTERNAL PRESSURE COEFFICIENT, GCpi	±0.18		
MAIN WIND FORCE PRESSURE (STRENGTH LEVEL)	30.5 PSF		
COMPONENTS & CLADDING:			
ROOF COMPONENTS	ZONE 1	ZONE 2	ZONE 3
SUPPORT BEAMS (A>100 SF)	-39 PSF	-64 PSF	-87 PSF
ROOF SHEATHING (A= 50 SF)	-42 PSF	-67 PSF	-92 PSF
DECK FASTENERS (A= 10 SF)	-48 PSF	-76 PSF	-104 PSF
WALL COMPONENTS	ZONE 4	ZONE 5	
A=200 SF	-29 PSF	-43 PSF	
A=50 SF	-31 PSF	-53 PSF	
A=20 SF	-33 PSF	-61 PSF	

C & C NOTES:
   a. THE PRESSURES LISTED ARE IN ACCORDANCE IBC CBC AND ASCE 7, AND THE DESIGN FORCES USED BY THE SUBCONTRACTOR FOR A SPECIFIC APPLICATION ARE THE RESPONSIBILITY OF THE SUBCONTRACTOR.
   b. WIND PRESSURES ARE ULTIMATE DESIGN LEVEL.
   c. SEE ASCE 7 FOR ZONE DEFINITIONS AND EXTENT OF ZONES.
   d. SUBMIT DESIGN CALCULATIONS SIGNED AND SEALED BY A LICENSED ENGINEER IN THE PROJECT'S JURISDICTION FOR ANY DESIRED MODIFICATION TO THE STATED PRESSURES.
8. ALL LATERAL LOAD RESISTANCE AND STABILITY OF THE BUILDING IN THE COMPLETED STRUCTURE IS PROVIDED BY _____ IN EACH ORTHOGONAL DIRECTION. SEE PLANS FOR LOCATIONS. THE ____ SERVE AS HORIZONTAL DIAPHRAGMS DISTRIBUTING THE LATERAL FORCES TO THE VERTICAL LATERAL ELEMENTS WHICH IN TURN CARRY THE LOAD TO THE BUILDING FOUNDATIONS.[ENGR NOTE: KEEP IF HAVE STEEL IN THE PROJECT AS THIS IS REQUIRED BY THE AISC CODE OF STANDARD PRACTICE.]

GENERAL

1. DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONNEL AND PROPERTY ON AND AROUND THE JOBSITE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING, GUYS, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES. TEMPORARY BRACING, SHORING, GUYING, ETC. SHALL AVOID EXCESSIVE STRESSES AND HOLD STRUCTURAL ELEMENTS IN PLACE DURING CONSTRUCTION. THE STRUCTURE SHOULD NOT BE CONSIDERED STABLE UNTIL ALL STRUCTURAL ELEMENTS HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
2. ALL DRAWINGS AND SPECIFICATIONS ARE CONSIDERED TO BE A PART OF THE CONTRACT DOCUMENTS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCIES OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO THE START OF CONSTRUCTION SO A CLARIFICATION CAN BE ISSUED. ANY WORK THAT DEVIATES FROM OR IS PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR OWN EXPENSE AND AT NO EXPENSE TO THE OWNER OR THE DESIGN PROFESSIONALS.
3. THE CONTRACT DOCUMENTS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING ALLOWABLE CONSTRUCTION LOADS AND FOR DETERMINING SEQUENCES OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE AND SAFETY OF WORKERS DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO: FALSEWORK, FORMWORK, STAGING, BRACING, AND SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, ETC. OBSERVATION VISITS TO THE SITE BY THE ARCHITECT SHALL NOT INCLUDE INSPECTION OR APPROVAL OF THE ABOVE ITEMS AND DO NOT IN ANY WAY RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITIES FOR THE ABOVE. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN AND ENSURE THE INTEGRITY OF THE STRUCTURE AT ALL STAGES OF CONSTRUCTION.
4. ALL DIMENSIONS AND SITE CONDITIONS SHALL BE VERIFIED BY THE CONTRACTOR AT THE JOBSITE PRIOR TO BID SUBMITTAL, START OF SHOP DRAWINGS, START OF CONSTRUCTION, AND/OR FABRICATION OF MATERIALS. IF DISCREPANCIES ARE ENCOUNTERED, OR CONDITIONS DEVELOP THAT ARE NOT COVERED BY THE CONTRACT DOCUMENTS, THE ARCHITECT SHALL BE NOTIFIED FOR CLARIFICATION.
5. STRUCTURAL SUBSTITUTIONS MAY BE ALLOWED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. SUPPLIER SHALL PROVIDE SIGNED AND SEALED DESIGN CALCULATIONS OR SUITABLE PRODUCT LITERATURE FOR THE COMPONENTS. ALL PRODUCT SUBSTITUTIONS SHALL INCLUDE A CODE EVALUATION REPORT SPECIFIC TO THE BUILDING CODE LISTED IN THE DESIGN CRITERIA.
6. STRUCTURAL DRAWINGS INCLUDE DESIGN REQUIREMENTS AND DIMENSIONS FOR STRUCTURAL INTEGRITY BUT DO NOT SHOW ALL DETAIL DIMENSIONS TO FIT INTRICATE ARCHITECTURAL AND MECHANICAL DETAILS. CONTRACTOR SHALL CONSTRUCT THE WORK SO IT WILL CONFORM TO THE CLEARANCES REQUIRED BY ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DESIGN.
7. ALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED TO BE CONSTRUCTION STANDARDS. IF CLARIFICATION IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH THE WORK.
8. DO NOT SCALE DRAWINGS. PRINTED DIMENSIONS HAVE PRECEDENCE OVER SCALED DRAWINGS AND LARGE-SCALE OVER SMALL-SCALE DRAWINGS. CONTRACTOR TO DETERMINE FINAL DIMENSION WITH ARCHITECT.
9. TYPICAL DETAILS SHALL APPLY TO SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY REFERENCED. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.
10. SEE ARCHITECTURAL, ELECTRICAL, AND MECHANICAL DRAWINGS FOR DETAILS, CONDITIONS, PITS, TRENCHES, PADS, DEPRESSIONS, ROOF / FLOOR OPENINGS, TOP OF WALL ELEVATIONS, STAIRS, SLEEVES, ITEMS TO BE EMBEDDED OR ATTACHED TO STRUCTURAL ELEMENTS, ETC., NOT SHOWN ON THE STRUCTURAL DRAWINGS. FOR THESE NON-STRUCTURAL ELEMENTS SHOWN ON STRUCTURAL DRAWINGS, THEY ARE FOR GENERAL INFORMATION ONLY.
11. COORDINATE FLOOR FINISH INCLUDING, BUT NOT LIMITED TO THE "FLATNESS" AND "LEVELNESS" REQUIREMENTS, WITH THE FLOOR FINISH CONTRACTOR. PROVIDE UNDERLAYMENT / TOPPING WHERE REQUIRED TO PROVIDE A SURFACE ACCEPTABLE FOR INSTALLATION OF FLOOR FINISHES. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
12. ESTABLISH AND VERIFY ALL OPENINGS AND INSERTS FOR MECHANICAL, ELECTRICAL, AND PLUMBING WITH APPROPRIATE TRADE CONTRACTORS. OPENING SIZES AND LOCATIONS SHOWN FOR DUCTS, PIPE, INSERTS, AND OTHER PENETRATIONS WHEN SHOWN ARE FOR GENERAL INFORMATION ONLY AND SHALL BE VERIFIED PRIOR TO FORMING.
13. THE EXACT WEIGHTS, DIMENSIONS, AND LOCATIONS OF ALL MECHANICAL UNITS AND ELECTRICAL GEAR SUPPORTED ON STRUCTURAL FRAMING SHALL BE DETERMINED AND COORDINATED BY THE CONTRACTOR PRIOR TO DETAILING THE STRUCTURAL FRAMING SUPPORTING THOSE UNITS. IF THE UNIT WEIGHTS ARE GREATER THAN THE WEIGHTS SHOWN ON THE STRUCTURAL DRAWINGS, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED PRIOR TO DETAILING THE STRUCTURE. UNIT WEIGHTS, DIMENSIONS, AND LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE APPROXIMATE ONLY AND SHALL NOT BE USED FOR DETAILING THE STRUCTURE.
14. PROVIDE TEMPORARY BLOCKOUTS AND TEMPORARY OPENINGS IN THE STRUCTURE AS REQUIRED TO PERMIT INSTALLATION OF ALL WORK. BLOCKOUTS AND TEMPORARY OPENINGS SHALL BE LOCATED, CONFIGURED, DETAILED, AND INFILLED IN A MANNER THAT ALTERS NEITHER THE STRENGTH OF THE STRUCTURAL FRAMING NOR THE STRENGTH OF CONNECTIONS. INFILL ALL BLOCKOUTS AND TEMPORARY OPENINGS USING THE MATERIALS SPECIFIED FOR THE FRAMING AT THE LOCATIONS WHERE THE BLOCKOUTS AND OPENINGS OCCUR. SUBMIT DRAWINGS INDICATING THE LOCATIONS, DIMENSIONS, AND DETAILS OF ALL PROPOSED BLOCKOUTS AND OPENINGS AND DETAILS INDICATING THE MANNER IN WHICH THE BLOCKOUTS AND OPENINGS WILL BE INFILLED.
15. NO HOLES, NOTCHES, BLOCK-OUTS, ETC. ARE ALLOWED IN STRUCTURAL ELEMENTS UNLESS SPECIFICALLY DETAILED ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.
16. BEFORE SUBMITTING A PROPOSAL FOR THIS WORK, CONTRACTOR SHALL VISIT THE PREMISES AND BECOME FULLY ACQUAINTED WITH FIELD CONDITIONS, TEMPORARY CONSTRUCTION REQUIRED, QUANTITIES AND TYPE OF EQUIPMENT, ETC. THE PROPOSAL SHALL INCLUDE ALL SUMS REQUIRED TO DO THE WORK.
17. ELEMENTS SUCH AS NON-BEARING PARTITIONS, ETC. ATTACHED TO AND/OR SUPPORTED BY THE STRUCTURE SHALL TAKE INTO ACCOUNT DEFLECTIONS AND OTHER STRUCTURAL MOVEMENTS. THE STRUCTURAL FRAMING WAS DESIGNED TO LIMIT DRIFT AND DEFLECTION OF THE STRUCTURAL SYSTEM TO LESS THAN THE MAXIMUM PERMITTED DEFLECTIONS LISTED IN THE BUILDING CODE. THE CONTRACTOR SHALL COORDINATE THE WORK OF OTHER TRADES TO ACCOMMODATE THESE DEFLECTIONS AND TO ACCOMMODATE CONSTRUCTION TOLERANCES.
18. FIRE PROTECTION FOR ALL STRUCTURAL PARTS SHALL BE PROVIDED AS SPECIFIED BY THE ARCHITECTURAL DRAWINGS. UL FIRE RESISTANCE RATING RESTRAINT CLASSIFICATION AS FOLLOWS:
   a. "PRIMARY STRUCTURAL FRAME", AS DEFINED BY IBC SECTION 202 IS "RESTRAINED" EXCEPT AS INDICATED IN FOLLOWING NOTE.

SUBMITTALS

1. SUBMITTALS ARE:
   a. CONCRETE MIX DESIGNS
   b. MATERIAL PRODUCT DATA FOR STRUCTURAL MATERIALS
   c. STEEL FABRICATION AND MISCELLANEOUS METALS
   d. STEEL DECK
   e. COLD FORMED STEEL FRAMING AND CONNECTIONS
2. SUBMITTALS SHALL BE REVIEWED AND COORDINATED PRIOR TO SUBMITTING TO THE ARCHITECT. EACH SHOP DRAWING SUBMITTED SHALL BE STAMPED INDICATING REVIEW BY THE CONSTRUCTION MANAGER/GENERAL CONTRACTOR AND REVIEW BY THE ARCHITECT SHALL NOT BEGIN UNTIL THIS IS COMPLETE. WORK SHALL NOT BEGIN WITHOUT REVIEW BY THE DESIGN PROFESSIONALS.
3. SUBMITTALS SHALL BE REVIEWED BY THE DESIGN PROFESSIONALS FOR GENERAL CONFORMANCE WITH DESIGN CONCEPT ONLY. NOTATIONS MADE BY THE DESIGN PROFESSIONALS ON THE SHOP DRAWINGS DO NOT RELIEVE THE CONTRACTOR FROM COMPLYING WITH THE REQUIREMENTS OF THE DRAWINGS.
4. FOR ADDITIONAL INFORMATION ON REQUIRED SUBMITTALS, SEE INDIVIDUAL MATERIAL SECTIONS.

DELEGATED DESIGN

1. DELEGATED DESIGNS PER SECTION 107.3.4.1 SHALL BE SUBMITTED TO THE BUILDING OFFICIAL AND THE DESIGN PROFESSIONALS AND REVIEWED PRIOR TO INSTALLATION.
2. DELEGATED DESIGNS ARE:
   a. STRUCTURAL STEEL CONNECTIONS
   b. EXTERIOR WALL SYSTEMS
   c. COLD FORMED STEEL FRAMING AND CONNECTIONS
   d. STAIRS, ACCESS LADDERS, HANDRAILS, GUARDRAILS, AND GRATING
3. ALL DELEGATED DESIGNS SHALL BE SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION RESPONSIBLE FOR THE PREPARATION OF THESE DOCUMENTS.
4. STAIRS:
   a. STEEL STAIRS IN STEEL FRAMED STRUCTURES SHALL BE CONFIGURED SO THE STAIR STRINGERS CONNECT TO THE WEBS OF SUPPORTING STRUCTURAL STEEL FLOOR FRAMING MEMBERS. STAIR STRINGERS MAY NOT CONNECT TO SLABS ON DECK. STAIR STRINGER AND HANGER CONNECTIONS SHALL BE CONFIGURED SO THEY CONNECT TO THE SUPPORTING STRUCTURAL STEEL IN A MANNER THAT IMPOSES NO TORSION UPON THE SUPPORTING STRUCTURAL MEMBER. WHERE STAIR HANGERS MUST FRAME ECCENTRIC TO THE SUPPORTING STEEL, SUPPLEMENTAL FRAMING SHALL BE PROVIDED AS INDICATED ON THE CONTRACT DOCUMENTS TO PREVENT TORSION ON THE SUPPORTING STEEL FRAMING.
   b. DESIGN FRAMING MEMBERS IN COMMUNICATING STAIRS AND MONUMENTAL STAIRS TO LIMIT LIVE LOAD DEFLECTION TO THE SMALLER OF L/600 OR 1/4". SIZE STAIR FRAMING MEMBERS TO PROVIDE A STAIR ASSEMBLY WITH A NATURAL FREQUENCY > 5 HERTZ AND PEAK ACCELERATION, ap/g = 0.015, AS COMPUTED PER AISC DESIGN GUIDE 11 EQUATION 2.3 USING INDOOR FOOTBRIDGE CRITERIA.
   c. SEE ARCHITECTURAL DRAWINGS FOR STEEL STAIR DETAILS. DESIGN OF FRAMING MEMBERS AND CONNECTIONS TO BE BY SPECIALTY ENGINEER, WORKING DIRECTLY WITH THE STAIR DETAILER AND FABRICATOR. WHERE SUPPORT POSTS ARE REQUIRED, PROVIDE 3'-0" SQUARE x 1'-0" THICKENED SLAB WITH (4)#5 BOTTOM AT BASE OF STAIR.
5. FACADE:
   a. DESIGN AND DETAILING OF THE FACADE SYSTEM AND CONNECTIONS TO THE STRUCTURE SHALL TAKE INTO CONSIDERATION THE FOLLOWING MOVEMENTS:
      1. ±1/2" VERTICAL DIFFERENTIAL DEFLECTION OF SLAB EDGES ON ADJACENT FLOORS
      2. ±1/2" HORIZONTAL DIFFERENTIAL DEFLECTION BETWEEN ADJACENT FLOORS
      3. DIFFERENTIAL THERMAL EXPANSION / CONTRACTION BETWEEN FACADE SYSTEM AND SUPPORTING PRIMARY STRUCTURAL SYSTEM
      4. THE FACADE SHALL NOT BE INSTALLED UNTIL AFTER THE SUPERSTRUCTURE HAS BEEN PLUMBED, ALL FRAMING CONNECTIONS HAVE BEEN INSTALLED, AND ALL SHORES AND RESHORES HAVE BEEN REMOVED.
      5. WHERE STRUCTURAL STEEL HORIZONTAL GIRTS ARE PROVIDED, THOSE GIRTS MAY BE USED ONLY TO RESIST LATERAL LOADS FROM THE FACADE. VERTICAL LOADS MAY NOT BE IMPOSED BY THE FACADE UPON THE GIRT FRAMING UNLESS THE SECTIONS AND DETAILS ON THE STRUCTURAL DRAWINGS SPECIFICALLY INDICATE THAT FACADE GRAVITY LOAD CONNECTIONS MAY BE MADE TO THE GIRTS.

EXISTING CONDITIONS / DEMOLITION

1. EXISTING CONDITIONS:
   a. EXISTING STRUCTURAL INFORMATION SHOWN WAS OBTAINED FROM EXISTING DRAWINGS DATED MAY 1ST, 1956 PROVIDED BY VETERAN AFFAIRS.
   b. ALL INFORMATION SHOWN ON THE DRAWINGS RELATIVE TO EXISTING CONDITIONS IS GIVEN AS THE BEST PRESENT KNOWLEDGE. CONTRACTOR TO VERIFY EXISTING INFORMATION, DIMENSIONS, AND SIZES AS REQUIRED TO COMPLETE THEIR WORK. WHERE ACTUAL CONDITIONS CONFLICT WITH THE DRAWINGS, THEY SHALL BE REPORTED TO THE ARCHITECT SO CLARIFICATION MAY BE MADE. MODIFICATION OF CONSTRUCTION DETAILS SHALL NOT BE MADE WITHOUT WRITTEN APPROVAL OF THE ARCHITECT.
2. EXISTING BUILDING MATERIAL PROPERTIES:
   a. EXISTING STRUCTURE IS STEEL ENCASED IN CONCRETE
   b. EXISTING STEEL ASSUMED TO HAVE MINIMUM YIELD STRENGTH OF 36KSI
   c. EXISTING CONCRETE ASSUMED TO HAVE MINIMUM f'c=4KSI
3. ALL DEMOLITION SHALL BE CARRIED OUT IN SUCH A WAY TO PREVENT DAMAGE TO EXISTING ELEMENTS WHICH ARE TO REMAIN.
4. ALL ELEMENTS WHICH ARE TO REMAIN AND WHICH ARE DAMAGED DURING DEMOLITION WORK SHALL BE REPLACED AT NO ADDED COST. CONTRACTOR SHALL PROVIDE AND BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF ADJACENT EXISTING SURFACES AND AREAS WHICH MAY BE DAMAGED AS A RESULT OF NEW WORK.
5. CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS OF EXISTING STRUCTURE AND SITES THAT ARE AFFECTED BY NEW WORK BEFORE PROCEEDING WITH FABRICATION AND CONSTRUCTION.
6. ALL CONSTRUCTION IS NEW UNLESS IDENTIFIED AS EXISTING, "(E)". THE CONTRACTOR SHALL VERIFY ALL EXISTING BUILDING INFORMATION AND SHALL NOTIFY THE ARCHITECT OF ANY DISCREPANCIES PRIOR TO FABRICATION OF ANY STRUCTURAL COMPONENT. NEW SLABS ARE TO BE AT THE SAME ELEVATIONS AS ADJACENT EXISTING SLABS UON. FOUNDATION ELEVATIONS OR COLUMN LENGTHS SHALL BE ADJUSTED WITH THE APPROVAL OF THE STRUCTURAL ENGINEER TO ACHIEVE MATCHING SLAB ELEVATIONS.
7. REINFORCING STEEL IN EXISTING CONCRETE SHALL BE LOCATED PRIOR TO INSTALLATION OF NEW OPENINGS OR CORING OF HOLES IN THE CONCRETE. REINFORCING STEEL MAY NOT BE CUT WITHOUT APPROVAL FROM THE ENGINEER.

CAST-IN-PLACE CONCRETE

1. CONCRETE MATERIALS SHALL CONFORM TO:

PORTLAND LIMESTONE CEMENT	ASTM C595, TYPE IL
PORTLAND CEMENT	ASTM C150, TYPE I
FLY ASH	ASTM C618, TYPE C OR F
SLAG CEMENT	ASTM C989
FINE AND COARSE AGGREGATE	ASTM C33
LIGHTWEIGHT AGGREGATE	ASTM C330
WATER	POTABLE
AIR-ENTRAINING ADMIXTURE	ASTM C260
WATER REDUCING ADMIXTURE	ASTM C494

2. ALL CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF ACI 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE UON.
3. AIR ENTRAINMENT:

NOMINAL MAXIMUM AGGREGATE SIZE	REQUIRED AIR CONTENT PER EXPOSURE CATEGORY	
	F1	F2
3/8"	6%	7.5%
1/2"	5.5%	7%
3/4"	5%	6%
1"	4.5%	6%

   a. ALL LIGHTWEIGHT CONCRETE SHALL HAVE 4-7% AIR ENTRAINMENT.
   b. AIR ENTRAINMENT SHALL CONFORM TO UL RATING REQUIREMENTS FOR FIRE RESISTANCE.
4. CONCRETE STRENGTHS SHALL CONFORM TO:

LOCATION	f'c AT 28 DAYS (PSI)	MAX PERMITTED W/C	EXPOSURE CLASS
LIGHTWEIGHT SLAB ON DECK*	3000	0.55	
TOPPING SLABS	3000	0.55	

* LIGHTWEIGHT CONCRETE SHALL HAVE A 115 PCF DRY UNIT WEIGHT (±3PCF). LIGHTWEIGHT AGGREGATES SHALL BE PRESOAKED AS REQUIRED IN ACCORDANCE WITH ACI 301.

5. REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE:

CONCRETE ELEMENT	REQUIRED NOMINAL MAXIMUM COARSE AGGREGATE SIZE*
ALL CONCRETE UON	1"
TOPPING SLABS LESS THAN 3" THICK	3/8"

* SMALLER NOMINAL MAXIMUM COARSE AGGREGATE SIZE SHALL BE USED WHERE REQUIRED PER ACI 318.

6. "ROUGH JOINTS" ARE JOINTS ROUGHENED TO AN AMPLITUDE OF 1/4" AND FREE AND CLEAN OF LAITANCE. PROVIDE ROUGH JOINTS AT ALL CONSTRUCTION JOINTS UON.
7. CONSTRUCTION JOINTS IN SLAB ON DECK SHALL BE LOCATED AS FOLLOWS:
   a. JOINTS PERPENDICULAR TO THE DECK SPAN SHALL BE LOCATED MIDWAY BETWEEN ADJACENT PARALLEL BEAMS.
   b. JOINTS PARALLEL TO GIRDERS SHALL BE LOCATED 4 FEET AWAY FROM THE GIRDERS.
   c. JOINTS PERPENDICULAR TO GIRDERS SHALL BE LOCATED NO FARTHER THAN 'S'/2 FROM ONE END OF THE GIRDER WHERE 'S' IS THE DIMENSION BETWEEN ADJACENT BEAMS FRAMING TO THE GIRDER.
8. INSTALLATION OF ELECTRICAL CABLE, CONDUIT, AND PIPING IN OR THROUGH CONCRETE COLUMNS AND WALLS IS PROHIBITED UNLESS APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO INSTALLATION. INSTALLATION OF PIPING IN CAST-IN-PLACE CONCRETE IS PROHIBITED UNLESS APPROVED BY STRUCTURAL ENGINEER PRIOR TO INSTALLATION. DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING PROPOSED PLACEMENT OF ELECTRICAL CABLE AND CONDUIT IN SLABS. THOSE DRAWINGS SHALL SHOW SIZES AND DIMENSIONED LOCATIONS OF ALL CABLE AND CONDUIT.
9. ELECTRICAL CABLE AND CONDUIT (HEREAFTER REFERRED TO AS CONDUIT) MAY BE INSTALLED IN SLABS ON DECK SUBJECT TO THE FOLLOWING CONSTRAINTS:
   a. CONDUIT SHALL BE NO LARGER THAN 1 1/2" MAXIMUM OUTSIDE DIAMETER.
   b. PARALLEL CONDUITS SHALL BE INSTALLED IN A SINGLE LAYER AND SHALL BE SPACED NO CLOSER THAN 3".
   c. CONDUIT RUNNING PERPENDICULAR OR SKEWED TO THE DECK SPAN MAY BE INSTALLED DIRECTLY ON TOP OF THE DECK. CONDUIT RUNNING PARALLEL TO THE DECK SPAN SHALL BE INSTALLED 1" CLEAR ABOVE THE TOP OF THE DECK.
   d. REQUIRED MINIMUM CLEAR COVER BETWEEN TOP OF SLAB AND TOP OF CONDUIT EQUALS 1".
   e. ONLY ONE LAYER OF CONDUIT MAY CROSS OVER ANOTHER LAYER OF CONDUIT AT ANY LOCATION.
   f. INSTALLATION OF CONDUIT ON TOP OF THE CONTINUOUS WELDED WIRE FABRIC SLAB REINFORCING STEEL IS NOT PERMITTED.
   g. LOCATIONS WHERE MULTIPLE CONDUITS EXIST VERTICALLY FROM THE SLAB SHALL BE TREATED AS A MULTIPLE SLAB OPENING AND ADDITIONAL REINFORCING STEEL SHALL BE PROVIDED AROUND THE EFFECTIVE SLAB OPENING AS REQUIRED.
   h. COORDINATED DRAWINGS SHALL BE SUBMITTED FOR REVIEW SHOWING THE PROPOSED LOCATIONS OF ALL SLAB-EMBEDDED ELECTRICAL CONDUIT. THESE DRAWINGS SHALL SHOW "DRAWN TO SCALE" CONDUIT RUNS, LOCATIONS, AND DIMENSIONS WHERE GROUPED CONDUITS EXIT THE SLABS ALONG WITH LOCATIONS AND DIMENSIONS OF SLAB-EMBEDDED ELECTRICAL BOXES.
   i. INSTALLATION OF CONDUIT IN PARKING LEVEL SLABS AND SLABS EXPOSED TO WEATHER IS NOT PERMITTED.
10. NO LOADS SHALL BE PLACED ON STRUCTURAL CONCRETE SLABS ON DECK WITHIN 7 DAYS AFTER CONCRETE IS PLACED.
11. AFTER CONCRETE IS PLACED, IN NO CASE SHALL THE SUPERIMPOSED CONSTRUCTION LOADS BE GREATER THAN SPECIFIED DESIGN LIVE LOADS UNLESS THE WORK IS SHORED.
12. NOTIFY THE ARCHITECT 48 HOURS MINIMUM PRIOR TO ALL POURS.
13. CONTRACTOR SHALL SURVEY ALL CONCRETE WORK WITHIN 48 HOURS OF PLACING CONCRETE TO ENSURE PLACEMENT IS IN ACCORDANCE WITH PROJECT REQUIREMENTS.
14. CORING OF CONCRETE IS NOT PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER. SUBMIT LOCATIONS OF PROPOSED CONCRETE CORES.
15. REINFORCING STEEL SHALL NOT BE DAMAGED WHEN DRILLING CONCRETE.
16. ADHERE TO ACI 305R AND ACI 306R FOR HOT AND COLD WEATHER CONCRETE CONSTRUCTION.
17. DRYPACK AND GROUT SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 7000 PSI.
18. THE PROPOSED MATERIALS AND MIX DESIGN SHALL BE FULLY DOCUMENTED AND REVIEWED BY THE TESTING AND INSPECTION AGENCY. RESPONSIBILITY FOR OBTAINING THE REQUIRED DESIGN STRENGTH IS THE CONTRACTOR'S. SUBMIT TEST DATA ON EACH PROPOSED MIX FOR REVIEW IN ACCORDANCE WITH THE APPLICABLE CODE. MIX DESIGNS SUBMITTED WITHOUT THE REQUIRED TEST DATA WILL BE RETURNED WITHOUT REVIEW.
19. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS, LOCATIONS, AND DETAILS OF ALL ARCHITECTURAL FEATURES IN THE CONCRETE. SEE ARCHITECTURAL DRAWINGS AND PROJECT SPECIFICATIONS FOR REQUIREMENTS FOR ALL CONCRETE FINISHES.

STEEL

1. STRUCTURAL STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "DETAILING FOR STEEL CONSTRUCTION" AND FABRICATED AND ERECTED IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS".
2. STRUCTURAL STEEL SHALL CONFORM TO ASTM STANDARDS AS NOTED BELOW:

WIDE FLANGE SHAPES	ASTM A992	Fy=50 KSI
WIDE FLANGE SHAPES, HIGH-STRENGTH WHERE NOTED	ASTM A913, GR 65	Fy=65 KSI
OTHER ROLLED SHAPES	ASTM A36	Fy=36 KSI
HSS SECTIONS, ROUND	ASTM A500, GR C	Fy=46 KSI
HSS SECTIONS, SQ/RECT	ASTM A500, GR C	Fy=50 KSI
BASE AND CONNECTION PLATES	ASTM A36 A572	Fy=36 50 KSI
ANCHOR RODS	ASTM F1554, GR 36 55	Fy=36 55 KSI
HIGH STRENGTH BOLTS	ASTM F3125, GR A325 A490	Fv=120 150 KSI
HIGH STRENGTH TWIST-OFF BOLTS	ASTM F3125, GR F1852 F2280	Fv=120 150 KSI
HEAVY HEX NUTS	ASTM A563	
WASHERS	ASTM F436	
HEADED STUD ANCHORS (HSA)	ASTM A108, TYPE B	
ELECTRODES FOR ARC WELDING	AWS 5.1, E70XX	

3. HIGH STRENGTH BOLTS SHALL BE INSTALLED IN ACCORDANCE WITH AISC "SPECIFICATIONS FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS". SEE DETAILS FOR BOLT SIZE AND MATERIAL ASTM DESIGNATION.
4. ALL BOLTED CONNECTIONS SHALL BE GRADE A325N BEARING TYPE BOLTS UON. ALL BOLTS SHALL BE INSTALLED TO A MINIMUM SNUG TIGHT CONDITION UON.
5. FULLY TENSIONED HIGH STRENGTH BOLTS AND SLIP CRITICAL HIGH STRENGTH BOLTS SHALL USE TENSION-CONTROL "TWIST-OFF" BOLTS OR BE INSTALLED USING THE TURN OF THE NUT METHOD.
6. EXCEPT WHERE DETAILED OTHERWISE, FABRICATOR SHALL SELECT LRFD BOLTED (OR WELDED EQUIVALENT) SIMPLE SHEAR CONNECTIONS PER AISC 360 PART 10 TO SUPPORT LOADS INDICATED ON THE STRUCTURAL DRAWINGS. WHEN LOADS ARE NOT SHOWN, CONNECTION SHALL SUPPORT 60% OF THE TOTAL UNIFORM LOAD CAPACITY FOR EACH GIVEN BEAM SIZE AND SPAN AS LISTED IN AISC 360 TABLE 3-6. FOR COMPOSITE MEMBERS, CONNECTION SHALL SUPPORT 80% OF THE TOTAL UNIFORM LOAD CAPACITY FOR EACH BEAM SIZE AND SPAN.
7. BEAM REACTIONS GIVEN ON THE CONTRACT DOCUMENTS SHALL SUPERSEDE THE PREVIOUS NOTE. IN NO CASE SHALL THE CONNECTIONS BE DESIGNED FOR AN LRFD END REACTION LESS THAN 15 KIPS.
8. FIELD CONNECTIONS SHALL BE WELDED OR BOLTED. SHOP CONNECTIONS SHALL BE WELDED UON. WELDS INDICATED WITH A SHOP WELD SYMBOL MAY BE MADE IN THE FIELD WITH THE APPROVAL OF THE STRUCTURAL ENGINEER. LOCATIONS OF ALL FIELD WELDS SHALL BE CLEARLY SHOWN ON THE SHOP DRAWINGS. WELDS SHALL BE DESIGNED TO BE FULLY EQUIVALENT IN STRENGTH TO BOLTED CONNECTIONS DETAILED TO MINIMIZE BENDING IN THE CONNECTION.
9. WELD LENGTHS INDICATED ON THE DRAWINGS ARE THE NET EFFECTIVE LENGTH REQUIRED. WHERE WELD LENGTH IS NOT SPECIFIED, PROVIDE WELD ALONG ENTIRE INTERSECTION OF THE JOINED PARTS. WHERE FILLET WELD SYMBOL IS GIVEN WITHOUT INDICATION OF SIZE, USE MINIMUM WELD SIZE AS SPECIFIED IN AISC 360, TABLE J2.4.
10. ALL WELDING OF STRUCTURAL STEEL SHALL BE PERFORMED BY CERTIFIED WELDERS WITH EXPERIENCE AND CERTIFICATION IN THE TYPES OF WELDING INDICATED. WELDERS SHALL HAVE BEEN RECENTLY QUALIFIED AS PRESCRIBED IN "QUALIFICATION PROCEDURES" OF THE AMERICAN WELDING SOCIETY (AWS).
11. HEADED STUD ANCHORS (HSA): SHALL BE INSTALLED IN ACCORDANCE WITH AWS D1.1 AND SHALL BE AUTOMATICALLY END WELDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS IN SUCH A MANNER AS TO PROVIDE COMPLETE FUSION BETWEEN THE END OF THE HSA AND THE STEEL SHAPE. THERE SHOULD BE NO POROSITY OR EVIDENCE OF LACK OF FUSION BETWEEN THE WELDED END OF THE HSA AND THE STEEL SHAPE. THE HSA SHALL DECREASE IN LENGTH DURING WELDING APPROXIMATELY 1/8" FOR 5/8"Ø AND SMALLER AND 3/16" FOR LARGER THAN 5/8"Ø.
12. MINIMUM HORIZONTAL CONCRETE COVER FOR HSA TO BE 2".
13. BEAMS SHALL BE CAMBERED UPWARD WHERE SHOWN ON THE DRAWINGS. WHERE NO UPWARD CAMBER IS INDICATED, ANY MILL CAMBER SHALL BE DETAILED UPWARD IN THE BEAMS.
14. SPLICING OF STEEL MEMBERS WHERE NOT DETAILED ON THE DRAWINGS IS PROHIBITED WITHOUT THE PRIOR APPROVAL OF THE STRUCTURAL ENGINEER AS TO LOCATION, TYPE OF SPLICE, AND CONNECTION TO BE MADE.
15. PROVIDE ONE SHOP COAT OF PAINT ON ALL STRUCTURAL STEEL NOT COVERED WITH CONCRETE, FIREPROOFING, MASONRY, OR AT CONTACT SURFACES AT HIGH STRENGTH BOLTS.
16. ALL STEEL EXPOSED TO WEATHER OR AS NOTED ON PLAN SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 G60. ABRADED AREAS TO BE TOUCHED UP WITH COLD GALVANIZING COMPOUND IN ACCORDANCE WITH ASTM A780.
17. ALL GALVANIZED HOLLOW SECTIONS SHALL HAVE WELDED CAP PLATES TO SEAL EXPOSED ENDS.
18. CUTS, HOLES, OPENINGS, ETC. REQUIRED IN STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES SHALL BE SHOWN ON THE SHOP DRAWINGS. BURNING OR TORCHING OF HOLES, CUTS, AND OTHER FIELD MODIFICATIONS SHALL NOT BE ALLOWED, EXCEPT BY WRITTEN AUTHORIZATION FROM THE STRUCTURAL ENGINEER.
19. SEE ARCHITECTURAL, MECHANICAL, ELECTRICAL, ETC. FOR MISCELLANEOUS STEEL NOT DETAILED SPECIFICALLY ON THE STRUCTURAL DRAWINGS.
20. GROUT FOR BASE AND BEARING PLATES SHALL BE A NON-SHRINK, NON-METALLIC PRODUCT. MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE 7000 PSI. INSTALL GROUT PRIOR TO APPLYING SIGNIFICANT LOADING TO MEMBER.
21. THE STRUCTURAL STEEL FABRICATOR SHALL FURNISH SHOP DRAWINGS OF ALL STRUCTURAL STEEL FOR REVIEW AND APPROVAL BEFORE FABRICATION.
22. ALL WELDING ELECTRODES SHALL BE E70XX UON.

STEEL DECK

1. MATERIAL, DETAILING, DESIGN, MANUFACTURE, AND ERECTION OF STEEL DECKS SHALL BE IN ACCORDANCE WITH THE STEEL DECK INSTITUTE (SDI) SPECIFICATION.
2. DECK SIZE AND GAUGE INDICATED ON THE DRAWINGS ARE BASED ON THE FOLLOWING:
   a. CURRENT VERSION OF VULCRAFT VERCO CATALOG FOR GRAVITY DESIGN LOADS AND UNSHORED CONSTRUCTION SPANS
   b. SDI DIAPHRAGM DESIGN MANUAL 4 FOR DIAPHRAGM LOADS
3. PROVIDE MINIMUM DECK BEARING AND LAP LENGTHS PER MANUFACTURER'S RECOMMENDATIONS.
4. FOR PENETRATIONS LESS THAN OR EQUAL TO 12"Ø OR 12"x12", FRAMING OF OPENINGS FOR OTHER TRADES SHALL BE THE RESPONSIBILITY OF THE TRADES INVOLVED. HOLES LOCATED AND DIMENSIONED ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE DECK ERECTOR. SEE STRUCTURAL FRAMING DETAILS FOR ANY OPENING EXCEEDING LIMITS NOTED.
5. SUBMIT SHOP DRAWINGS SHOWING DECKING LAYOUT, DECK GAUGE, DECK DIRECTION, FASTENERS, AND FASTENING PATTERN FOR REVIEW AND APPROVAL.
6. FURNISH DECKING IN MINIMUM LENGTHS TO ACHIEVE 3-SPAN CONDITION UON.
7. ROOF DECK:
   a. ALL ROOF DECK SHALL BE GALVANIZED TO CONFORM TO ASTM A653 WITH A MINIMUM COATING OF G60.
   b. ALL ROOF DECK SHALL BE PRIME PAINTED GRAY TO CONFORM TO ASTM A1008.
   c. DO NOT EXCEED 25 LBS PER HANGER AND A MINIMUM SPACING OF 2'-0" ON CENTER WHEN ATTACHING TO ROOF DECK. THIS 25 LBS LOAD AND 2'-0" SPACING INCLUDE ADJACENT MECHANICAL, ELECTRICAL, AND ARCHITECTURAL ITEMS HANGING FROM THE DECK. IF THE HANGER RESTRICTIONS CANNOT BE ACHIEVED, SUPPLEMENTAL FRAMING SUPPORTED OFF STEEL FRAMING WILL NEED TO BE ADDED. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING LOCATION AND WEIGHT OF ALL THE ELEMENTS BEING HUNG WITH STRUCTURAL ENGINEER UON.
   d. DECK MANUFACTURER SHALL FURNISH ALL RIDGE AND VALLEY PLATES, SUMP PANS, DRAIN PLATES, AND OTHER ACCESSORIES REQUIRED FOR A COMPLETE INSTALLATION.
8. COMPOSITE DECK:
   a. ALL FLOOR DECK SHALL BE GALVANIZED TO CONFORM TO ASTM A653 WITH A MINIMUM COATING OF G60.
   b. CONDUITS SHALL NOT BE PLACED IN SLAB ON DECK WITHOUT COORDINATION WITH THE STRUCTURAL ENGINEER UON.
   c. COORDINATE ALL PENETRATIONS, EMBEDS, AND RECESSES IN COMPOSITE DECK WITH THE STRUCTURAL ENGINEER UON.
   d. COMPOSITE DECK HAS BEEN DESIGNED FOR THE UNSHORED CLEAR SPAN. CONCRETE FILL THICKNESS SHOWN ON FRAMING PLANS AND DETAIL SHEETS IS A MINIMUM THICKNESS. CONTRACTOR TO PROVIDE CONCRETE FILL REQUIRED TO COMPENSATE FOR BEAM AND DECK DEFLECTIONS AND TO MAINTAIN SURFACE TOLERANCES SPECIFIED. DO NOT INSTALL MORE THAN 1" OF ADDITIONAL CONCRETE WITHOUT NOTIFYING STRUCTURAL ENGINEER.
   e. DECK MANUFACTURER SHALL PROVIDE ALL CLOSURE PLATES AND POUR STOPS NOT PROVIDED BY THE STEEL FABRICATOR.

POST-INSTALLED ANCHORS

1. BASIS OF DESIGN ANCHORS:

INSTALLATION CONDITION	ANCHOR TYPE
EXPANSION ANCHORS INTO CONCRETE	HILTI KWIK BOLT TZ2 (ESR-4266)
SCREW ANCHORS > 1/4"Ø INTO CONCRETE	HILTI KWIK HUS-EZ (ESR-3027)
ADHESIVE ANCHORS INTO CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 AND HIT-Z ROD (ESR-4868)or HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 AND HAS-E THREADED ROD (ESR-4868) or HILTI SAFE-SET SYSTEM w/ HIT-RE 500 V3 AND HAS-E THREADED ROD (ESR-3814) FOR ALL ADHESIVE ANCHORS, HOLES SHALL BE HAMMER DRILLED AND HOLES MAY BE DRY OR WATER SATURATED.
EXPANSION ANCHORS INTO GROUTED CMU	HILTI KWIK TZ2 (ESR-4561)
ADHESIVE DOWELING FOR ANCHORING REINFORCING BARS INTO (E) CONCRETE	HILTI SAFE-SET SYSTEM w/ HIT-HY 200 V3 ADHESIVE (ESR-4868) or HILTI SAFE-SET SYSTEM w/ HIT-RE 500 V3 ADHESIVE (ESR-3814)
POWDER-ACTUATED FASTENERS (PAF's) IN CONCRETE	HILTI X-U FASTENERS (ESR-2269)

2. ALTERNATIVE ANCHORS MAY BE USED IF APPROVED IN WRITING BY THE STRUCTURAL ENGINEER. THE CONTRACTOR SHALL SUBMIT CALCULATIONS SIGNED AND SEALED BY AN ENGINEER LICENSED IN THE PROJECT'S JURISDICTION VERIFYING PROPOSED ALTERNATIVE ANCHORS WILL PROVIDE THE SAME OR GREATER LOAD-CARRYING CAPACITY AS THE SPECIFIED ANCHORS. THE CONTRACTOR SHALL SUBMIT EVALUATION REPORTS. EACH ANCHOR CONFIGURATION SHALL BE EVALUATED AND COMPARED TO THE SPECIFIED ANCHOR.
3. CRACKED CONCRETE IS ASSUMED FOR ALL ANCHORAGE DESIGN CONDITIONS UNLESS IT CAN BE DEMONSTRATED THROUGH ENGINEERING ANALYSIS THAT THE CONCRETE REMAINS UNCRACKED DURING THE GOVERNING ULTIMATE LOAD STATE.
4. POST-INSTALLED ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS.
5. THE CONTRACTOR SHALL ARRANGE FOR AN ANCHOR MANUFACTURER 'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR EACH SPECIFIED ANCHOR TYPE. THE STRUCTURAL ENGINEER SHALL RECEIVE DOCUMENTATION VERIFYING ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS HAVE BEEN TRAINED PRIOR TO COMMENCEMENT OF INSTALLING ANCHORS.
6. INSTALLATION OF ADHESIVE ANCHORS SHALL BE PERFORMED BY PERSONNEL CERTIFIED BY AN APPROVED CERTIFICATION PROGRAM. CERTIFICATION SHALL INCLUDE WRITTEN AND PERFORMANCE TESTS IN ACCORDANCE WITH THE ACI/CRSI ADHESIVE ANCHOR INSTALLER CERTIFICATION PROGRAM OR EQUIVALENT. THE ACCEPTABILITY OF CERTIFICATIONS OTHER THAN THE ACI/CRSI ADHESIVE INSTALLER CERTIFICATION WILL BE DETERMINED BY THE STRUCTURAL ENGINEER.
7. CONCRETE SHALL HAVE ACHIEVED DESIGN STRENGTH PRIOR TO INSTALLING POST-INSTALLED ANCHORS. ADHESIVE ANCHORS SHALL BE INSTALLED IN CONCRETE THAT HAS CURED FOR A MINIMUM OF 21 DAYS.
8. ANCHOR CAPACITY IS DEPENDENT UPON SPACING BETWEEN ANCHORS AND PROXIMITY OF ANCHORS TO EDGES OF CONCRETE OR MASONRY. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.

5. REINFORCING STEEL CLEARANCES HAVE BEEN PROVIDED	-	X	AISC 341: TABLE J9.1	-
6. COMPOSITE STEEL MEMBERS HAVE REQUIRED SIZE	-	X	AISC 341: TABLE J9.1	-
7. REINFORCING BAR WELDING:				
a. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706	-	X	AWS D1.4	-
b. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND	-	X	ACI 318: 26.6.4	-
c. INSPECTS ALL OTHER WELDS	X	-	-	-
8. INSPECT ANCHORS CAST IN CONCRETE	-	X	ACI 318: 17.8.2	-
9. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS:				
a. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS	X	-	ACI 318: 17.8.2.4	-
b. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a	-	X	ACI 318: 17.8.2	-
10. VERIFY USE OF REQUIRED DESIGN MIX	-	X	ACI 318: CH 19, 26.4.2, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3
11. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE	X	-	ASTM C172, ASTM C31, ACI 318: 26.5, 26.12	1907.10
12. INSPECT CONCRETE AND SHOTCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	X	-	ACI 318: 26.5	1908.6, 1908.7, 1908.8
13. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES	-	X	ACI 318: 26.5.3-26.5.5	1908.9
14. INSPECT PRESTRESSED CONCRETE FOR:				
a. APPLICATION OF PRESTRESSING FORCES; AND	X	-	ACI 318: 26.11.2	-
b. GROUTING OF BONDED PRESTRESSING TENDONS	X	-	-	-
15. INSPECT ERECTION OF PRECAST CONCRETE MEMBERS	X	-	ACI 318: 26.9	-
16. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO STRESSING OF TENDONS IN POST-TENSIONED CONCRETE AND PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS AND STRUCTURAL SLABS	-	X	ACI 318: 26.11.2	-
17. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED	-	X	ACI 318: 26.11.2(b)	-

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - FABRICATION			
1. FABRICATION FACILITY	-	-	X
2. CONNECTION ERECTION AND ASSEMBLY	X	X	-
3. PRETENSIONED AND SLIP-CRITICAL BOLTS/JOINTS USING TURN-OF-NUT METHOD WITHOUT MATCHMAKING OF CALIBRATED WRENCH METHODS OF INSTALLATION	X	X	-
4. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
5. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X
6. SHEAR STUD PLACEMENT	X	X	-

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - ERECTION			
1. STRUCTURAL STEEL ERECTION	X	X	-
2. CONNECTION ERECTION AND ASSEMBLY	X	X	-
3. PRETENSIONED AND SLIP-CRITICAL BOLTS/JOINTS USING TURN-OF-NUT METHOD WITHOUT MATCHMAKING OF CALIBRATED WRENCH METHODS OF INSTALLATION	X	X	-
4. SINGLE PASS FILLET WELDS 5/16" OR LESS	X	X	X
5. ALL OTHER WELDS INCLUDING COMPLETE AND PARTIAL PENETRATION WELDS	X	X	X
6. SHEAR STUD PLACEMENT	X	X	-
7. BEAM CAMBER (IN-PLACE)	X	-	-

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL PRIOR TO BOLTING - MINIMUM INSPECTION				
1. MANUFACTURER'S CERTIFICATIONS AVAILABLE FOR FASTENER MATERIALS	O	P	TABLE C-N5.6-1	2.1, 9.1
2. FASTENERS MARKED IN ACCORDANCE WITH ASTM REQUIREMENTS	O	O	TABLE C-N5.6-1	6.5.1
3. CORRECT FASTENERS SELECTED FOR THE JOINT DETAIL (GRADE, TYPE, BOLT LENGTH IF THREADS ARE TO BE EXCLUDED FROM THE SHEAR PLANE)	O	O	TABLE C-N5.6-1	2.3.2, 2.7.2, 9.1
4. CORRECT BOLTING PROCEDURE SELECTED FOR JOINT DETAIL	O	O	TABLE C-N5.6-1	4, 8
5. CONNECTING ELEMENTS, INCLUDING THE APPROPRIATE FAYING SURFACE CONDITION AND HOLE PREPARATION, IF SPECIFIED, MEET APPLICABLE REQUIREMENTS	O	O	TABLE C-N5.6-1	TABLE 6.1(2)
6. PRE-INSTALLATION VERIFICATION TESTING BY INSTALLATION PERSONNEL OBSERVED AND DOCUMENTED FOR FASTENER ASSEMBLIES AND METHODS USED	P[1]	O[1]	TABLE C-N5.6-1	3, 9.1, 9.3
7. PROTECTION STORAGE PROVIDED FOR BOLTS, NUTS, WASHERS, AND OTHER FASTENER COMPONENTS	O	O	TABLE C-N5.6-1	2.2, 8, 9.1

[1] DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORTS NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER BOLTING - MINIMUM INSPECTION				
1. DOCUMENT ACCEPTANCE OR REJECTION OF BOLTED CONNECTIONS	P	P	TABLE C-N5.6-3	N/A

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL PRIOR TO WELDING - MINIMUM INSPECTION				
1. WELDING PROCEDURE SPECIFICATIONS (WPS) AVAILABLE	P	P	TABLE C-N5.4-1	6.3
2. MANUFACTURER CERTIFICATES FOR WELDING CONSUMABLES AVAILABLE	P	P	TABLE C-N5.4-1	6.2
3. MATERIAL IDENTIFICATION	O	O	TABLE C-N5.4-1	6.2
4. WELDER IDENTIFICATION	O	O	TABLE C-N5.4-1	6.4 (WELDER QUALIFICATION)
5. FIT-UP OF GROOVE WELDS (INCLUDING JOINT GEOMETRY)	O	O	TABLE C-N5.4-1	
a. JOINT PREPARATION	O	O	TABLE C-N5.4-1	6.5.2
b. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)	O	O	TABLE C-N5.4-1	5.22
c. CLEANLINESS (CONDITION OF STEEL SURFACE)	O	O	TABLE C-N5.4-1	5.14
d. TACKING (TACK WELD QUALITY AND LOCATION)	O	O	TABLE C-N5.4-1	5.17
e. BACKING TYPE AND FIT (IF APPLICABLE)	O	O	TABLE C-N5.4-1	5.9, 5.21.1.1
6. FIT-UP OF CJP GROOVE WELDS OF HSS T-, Y- & K--JOINTS WITHOUT BACKING (INCLUDING JOINT GEOMETRY)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
a. JOINT PREPARATION	P/O[1]	O	TABLE C-N5.4-1	9.11.2
b. DIMENSIONS (ALIGNMENT, ROOT OPENING, ROOT FACE, BEVEL)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
c. CLEANLINESS (CONDITION OF STEEL SURFACE)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
d. TACKING (TACK WELD QUALITY AND LOCATION)	P/O[1]	O	TABLE C-N5.4-1	9.11.2
7. CONFIGURATION AND FINISH OF ACCESS HOLES	O	-	TABLE C-N5.4-1	6.5.2, 5.16 (& SEE AISC 360 SECT. J1.6)
8. FIT-UP OF FILLET WELDS	P/O[1]	O	TABLE C-N5.4-1	
a. DIMENSIONS (ALIGNMENT, GAPS AT ROOT)	P/O[1]	O	TABLE C-N5.4-1	5.21.1
b. CLEANLINESS (CONDITION OF STEEL SURFACES)	P/O[1]	O	TABLE C-N5.4-1	5.14
c. TACKING (TACK WELD QUALITY AND LOCATION)	P/O[1]	O	TABLE C-N5.4-1	5.17
9. CHECK WELDING EQUIPMENT	O	O	TABLE C-N5.4-1	6.2, 5.10

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL DURING WELDING - MINIMUM INSPECTION				
1. USE OF QUALIFIED WELDERS	O	O	TABLE C-N5.4-2	6.4
2. CONTROL AND HANDLING OF WELDING CONSUMABLES	O	O	TABLE C-N5.4-2	6.2
a. PACKAGING	O	O	TABLE C-N5.4-2	5.3.1
b. EXPOSURE CONTROL	O	O	TABLE C-N5.4-2	5.3.2 (FOR SMAW), 5.3.3 (FOR SAW)
3. ENVIRONMENT CONDITIONS	O	O	TABLE C-N5.4-2	
a. WIND SPEED WITHIN LIMITS	O	O	TABLE C-N5.4-2	5.11.1
b. PRECIPITATION AND TEMPERATURE	O	O	TABLE C-N5.4-2	5.11.2
4. WPS FOLLOWED	O	O	TABLE C-N5.4-2	6.3.3, 6.5.2, 5.5, 5.20
a. SETTINGS ON WELDING EQUIPMENT	O	O	TABLE C-N5.4-2	
b. TRAVEL SPEED	O	O	TABLE C-N5.4-2	
c. SELECTED WELDING MATERIALS	O	O	TABLE C-N5.4-2	
d. SHIELDING GAS TYPE/FLOW RATE	O	O	TABLE C-N5.4-2	
e. PREHEAT APPLIED	O	O	TABLE C-N5.4-2	5.6, 5.7
f. INTERPASS TEMPERATURE MAINTAINED (MIN/MAX)	O	O	TABLE C-N5.4-2	
g. PROPER POSITION (F, V, H, OH)	O	O	TABLE C-N5.4-2	
h. INTERMIX OF FILLER METALS AVOIDED UNLESS APPROVED	O	O	TABLE C-N5.4-2	
5. WELDING TECHNIQUES	O	O	TABLE C-N5.4-2	6.5.2, 6.5.3, 5.23
a. INTERPASS AND FINAL CLEANING	O	O	TABLE C-N5.4-2	5.29.1
b. EACH PASS WITHIN PROFILE LIMITATIONS	O	O	TABLE C-N5.4-2	
c. EACH PASS MEETS QUALITY REQUIREMENTS	O	O	TABLE C-N5.4-2	

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE	AWS D1.1 CLAUSES
STRUCTURAL STEEL AFTER WELDING - MINIMUM INSPECTION				
1. WELDS CLEANED	O	O	TABLE C-N5.4-3	5.29.1
2. SIZE, LENGTH AND LOCATION OF WELDS	P	P	TABLE C-N5.4-3	6.5.1
3. WELDS MEET VISUAL ACCEPTANCE CRITERIA	P[2]	P[2]	TABLE C-N5.4-3	6.5.3
a. CRACK PROHIBITION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(1)
b. WELD/BASE-METAL FUSION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(2)
c. CRATER CROSS-SECTION	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(3)
d. WELD PROFILES	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(4), 5.24
e. WELD SIZE	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(6)
f. UNDERCUT	P[2]	P[2]	TABLE C-N5.4-3	TABLE 6.1(7)
g. POROSITY	P[2]	P[2]		TABLE 6.1(8)
4. ARC STRIKES	P	P	TABLE C-N5.4-3	5.28
5. K-AREA[3]	P[2]	P[2]	TABLE C-N5.4-3	N/A
6. WELD ACCESS HOLES IN ROLLED HEAVY SHAPES AND BUILT-UP HEAVY SHAPES	P	P	TABLE C-N5.4-3	5.16, 6.5.2 (& SEE AISC 360 SECT. J1.6)
7. BACKING REMOVED AND WELD TABS REMOVED (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	5.9, 5.30
8. REPAIR ACTIVITIES	P	P[2]	TABLE C-N5.4-3	6.5.3, 5.25
9. DOCUMENT ACCEPTANCE OR REJECTION OF WELDED JOINT OR MEMBER	P	P	TABLE C-N5.4-3	6.5.4, 6.5.5
10. PLACEMENT OF REINFORCING OR CONTOURING FILLET WELDS (IF REQUIRED)	P[2]	P[2]	TABLE C-N5.4-3	6.5.4, 6.5.5

[1] FOLLOWING PERFORMANCE OF THIS INSPECTION TASK FOR TEN WELDS TO BE MADE BY A GIVEN WELDER, WITH THE WELDER DEMONSTRATING UNDERSTANDING OF REQUIREMENTS AND POSSESSION OF THE SKILLS TO VERIFY THESE ITEMS, THE PERFORM DESIGNATION OF THIS TASK SHALL BE REDUCED TO OBSERVE, AND THE WELDER SHALL PERFORM THIS TASK. SHOULD THE INSPECTOR DETERMINE THE WELDER HAS DISCONTINUED PERFORMANCE OF THIS TASK, THE TASK SHALL BE RETURNED TO PERFORM UNTIL SUCH TIME AS THE INSPECTOR HAS RE-ESTABLISHED ADEQUATE ASSURANCE THE WELDER WILL PERFORM THE INSPECTION TASKS LISTED.
[2] DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORT NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.
[3] WHEN WELDING OF DOUBLER PLATES, CONTINUITY PLATES OR STIFFENERS HAS BEEN PERFORMED IN THE K-AREA, VISUALLY INSPECT THE WEB K-AREA FOR CRACKS WITHIN 3 " OF THE WELD. THE VISUAL INSPECTION SHALL BE PERFORMED NO SOONER THAN 48 HOURS FOLLOWING COMPLETION OF THE WELDING.

VERIFICATION AND INSPECTION TASK	QC	QA	MATERIAL STD REFERENCE
STRUCTURAL STEEL - OTHER INSPECTION TASKS REQUIRED BY AISC 341			
1. RBS REQUIREMENTS, IF APPLICABLE	P[1]	P[1]	-
2. CONTOUR AND FINISH	P[1]	P[1]	-
3. DIMENSIONAL TOLERANCES	P[1]	P[1]	-
4. PROTECTED ZONE - NO HOLES AND UNAPPROVED ATTACHMENTS MADE BY FABRICATOR OR ERECTOR, AS APPLICABLE	P[1]	P[1]	-

[1] DOCUMENT - THE INSPECTOR SHALL PREPARE REPORTS INDICATING THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE REPORTS NEED NOT PROVIDE DETAILED MEASUREMENTS FOR JOINT FIT-UPS, WPS SETTINGS, COMPLETED WELDS, OR OTHER INDIVIDUAL ITEMS LISTED IN THE TABLES. FOR SHOP FABRICATION, THE REPORT SHALL INDICATE THE PIECE MARK OF THE PIECE INSPECTED. FOR FIELD WORK, THE REPORT SHALL INDICATE THE REFERENCE GRID LINES AND FLOOR OR ELEVATION INSPECTED. WORK NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS AND WHETHER THE NONCOMPLIANCE HAS BEEN SATISFACTORILY REPAIRED SHALL BE NOTED IN THE INSPECTION.

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
STRUCTURAL DECKING				
1. DECK PLACEMENT AND ATTACHMENT	X	X	-	-

TESTING, INSPECTIONS, AND OBSERVATIONS

1. THE STRUCTURAL ENGINEER DOES NOT PROVIDE INSPECTIONS OF CONSTRUCTION. STRUCTURAL ENGINEER MAY MAKE PERIODIC OBSERVATIONS OF THE CONSTRUCTION. SUCH OBSERVATIONS SHALL NOT REPLACE REQUIRED INSPECTIONS BY THE GOVERNING AUTHORITIES OR SERVE AS "SPECIAL INSPECTIONS" AS MAY BE REQUIRED BY CHAPTER 17 OF THE INTERNATIONAL BUILDING CODE.
2. SEE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS OR SPECIFICATIONS FOR TESTING AND INSPECTION REQUIREMENTS OF NON-STRUCTURAL COMPONENTS.
3. DUTIES OF THE INSPECTION AGENCY PER IBC CHAPTER 17:
   a. SUBMIT A PROPOSED TESTING AND INSPECTION PROGRAM TO THE OWNER, THE ARCHITECT AND THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL AT LEAST TWO WEEKS PRIOR TO COMMENCEMENT OF WORK.
   b. PERFORM ALL TESTING AND INSPECTION REQUIRED PER APPROVED TESTING AND INSPECTION PROGRAM.
   c. FURNISH INSPECTION REPORT TO THE BUILDING OFFICIAL, THE OWNER, THE ARCHITECT, STRUCTURAL ENGINEER AND THE GENERAL CONTRACTOR. THE REPORTS SHALL BE COMPLETED AND FURNISHED WITHIN 48 HOURS OF INSPECTED WORK.
   d. SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE SPECIAL INSPECTION AGENCY'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
4. SPECIAL INSPECTIONS AND TESTS ARE REQUIRED FOR MATERIALS AND SYSTEMS REQUIRED TO BE INSTALLED IN ACCORDANCE WITH ADDITIONAL MANUFACTURER'S INSTRUCTIONS THAT PRESCRIBE REQUIREMENTS NOT CONTAINED IN CHAPTER 17 OF THE IBC OR IN STANDARDS REFERENCED BY THE IBC. THESE ITEMS INCLUDE:
   a. POST-INSTALLED ANCHORS - INSPECTION
5. THE FOLLOWING WORK SHALL BE INSPECTED BY THE SPECIAL INSPECTOR UNLESS SPECIFICALLY WAIVED BY THE BUILDING OFFICIAL.

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	MATERIAL STD REFERENCE	IBC REFERENCE
CONCRETE CONSTRUCTION				
1. INSPECT REINFORCEMENT, AND VERIFY PLACEMENT	-	X	ACI 318: CH 20, 25.2, 25.3, 26.2.1-26.6.3	1908.4
2. MATERIAL IDENTIFICATION OF REINFORCING (TYPE/GRADE)	-	X	AISC 341: TABLE J9.1	-
3. REINFORCING STEEL HAS NOT BEEN REBENT IN THE FIELD	-	X	AISC 341: TABLE J9.1	-
4. REINFORCING STEEL HAS BEEN TIED AND SUPPORTED AS REQUIRED	-	X	AISC 341: TABLE J9.1	-

Revisions:	**Date:**

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	GENERAL NOTES
Phase	100% CONSTRUCTION DOCUMENTS
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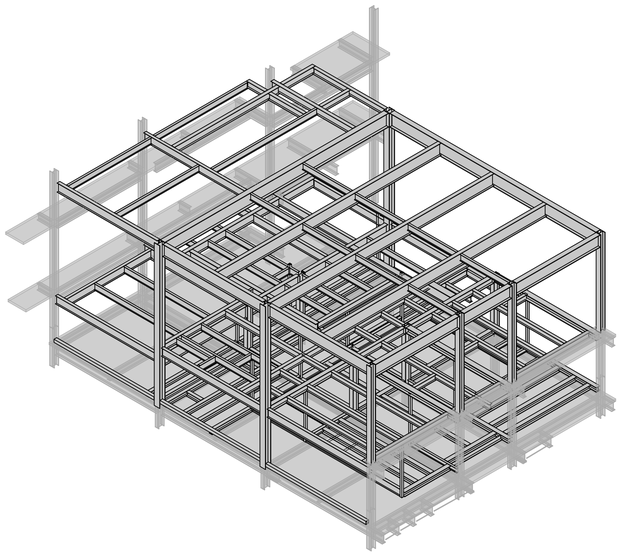
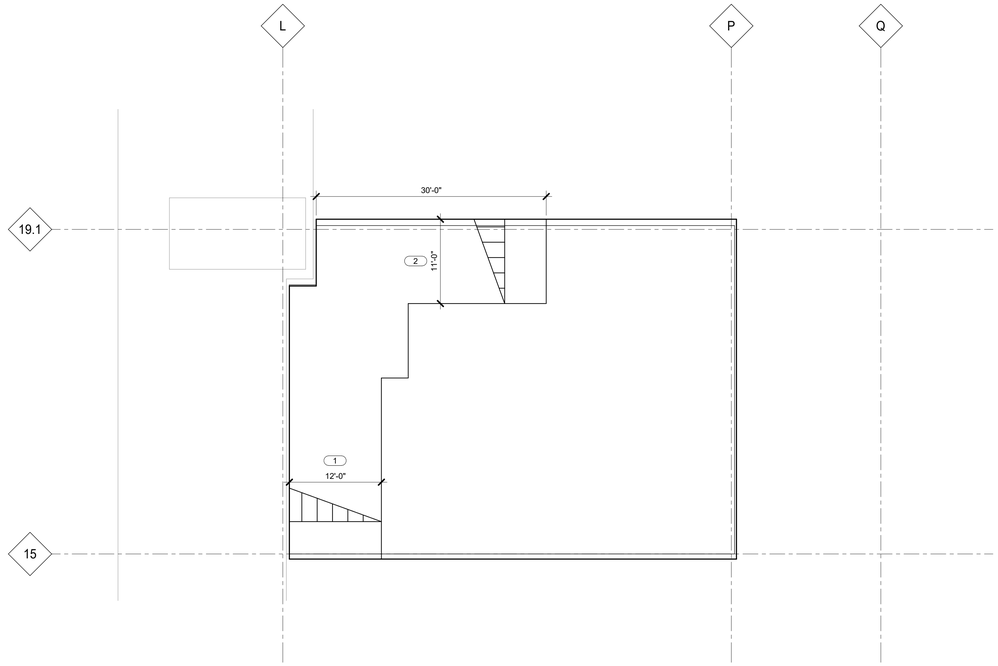


1 3D VIEW



2 SNOW DRIFT MAP
1/8" = 1'-0"

LOAD SHEET NOTES:

1. MINIMUM BALANCE SNOW LOADING:
   46 PSF ENTIRE ROOF
   RAMP UP TO PEAK DRIFT LOAD OVER DISTANCE SHOWN ON PLAN.
2. ROOF LIVE LOAD: 20 PSF (REDUCIBLE)

KEYNOTES: (#)

1. 62 PSF DRIFT SNOW LOAD.
2. 57 PSF DRIFT SNOW LOAD.

STRUCTURAL ABBREVIATION KEY

ABBR:	DESCRIPTION:	ABBR:	DESCRIPTION:
#	NUMBER OR POUNDS	KSF	KIPS PER SQUARE FOOT
@	AT	KSI	KIPS PER SQUARE INCH
°	DEGREE	L	LENGTH
ø	DIAMETER	LBS	POUNDS
(E)	EXISTING	LL	LIVE LOAD
A.B.	ANCHOR BOLT	LLH	LONG LEG HORIZONTAL
ARCH	ARCHITECT, -URE, -URAL	LLV	LONG LEG VERTICAL
B.O.	BOTTOM OF	LONG.	LONGITUDINAL
bf	BEAM FLANGE WIDTH	LSH	LONG SIDE HORIZONTAL
BF	BRACE FRAME	LSV	LONG SIDE VERTICAL
BM	BEAM	LT WT	LIGHTWEIGHT
B.N.	BOUNDARY NAILING	MAX	MAXIMUM
BOTT	BOTTOM	MECH	MECHANICAL
BTWN	BETWEEN	MANUF	MANUFACTURER
CFSF	COLD FORM STEEL FRAMING	MIN	MINIMUM
CGS	CENTER OF GRAVITY OF THE TENDON	NIC	NOT IN CONTRACT
CJP	COMPLETE JOINT PENETRATION WELD	NTS	NOT TO SCALE
CLR	CLEAR	OC	ON CENTER
CL	CENTERLINE	OH	OPPOSITE HAND
CMU	CONCRETE MASONRY UNIT	OPNG	OPENING
COL	COLUMN	OSB	ORIENTED STRAND BOARD
CONC	CONCRETE	PCF	POUNDS PER CUBIC FOOT
CONN	CONNECTION	P.H.	PENTHOUSE
CONST	CONSTRUCTION	PJP	PARTIAL JOINT PENETRATION WELD
CONT	CONTINUOUS	PL	PLATE
COORD	COORDINATION	PLF	POUNDS PER LINEAR FOOT
DIA	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DL	DEAD LOAD	PSI	POUNDS PER SQUARE INCH
DET	DETAIL	PT	POST-TENSION, -ED, -ING
DWG	DRAWING	R	RADIUS
DWL	DOWEL	REINF	REINFORCING, -MENT, -ED
EA	EACH	REQD	REQUIRED
EF	EACH FACE	RTU	ROOF TOP UNIT
EFF	EFFECTIVE	SC	SLIP CRITICAL
EL	ELEVATION	SCHED	SCHEDULE
ELEC	ELECTRICAL	SFRS	SEISMIC FORCE-RESISTING SYSTEM
EMBED	EMBEDMENT	SIM	SIMILAR
E.N.	EDGE NAILING	SL	SNOW LOAD
EOD	EDGE OF DECK	S.M.S.	SHEET METAL SCREW
EOS	EDGE OF SLAB	SP	SPACE(S)
EQ	EQUAL	SPECS	SPECIFICATION(S)
EQUIP	EQUIPMENT	SQ	SQUARE
ETC	ETCETERA	STIFF	STIFFENER
EW	EACH WAY	STL	STEEL
EXP	EXPANSION	SYM	SYMMETRICAL
EXT	EXTERIOR	T&B	TOP AND BOTTOM
f'c	CONCRETE COMPRESSIVE STRENGTH	T.O.	TOP OF
FDN	FOUNDATION	TC	PRE-TENSIONED BOLT
F.N.	FIELD NAILING	TEMP	TEMPERATURE
FT	FOOT	tf	BEAM FLANGE THICKNESS
FTG	FOOTING	THK	THICK
Fy	YIELD STRESS	TRANS	TRANSVERSE
GA	GAGE OR GAUGE	TYP	TYPICAL
GALV	GALVANIZED	UON	UNLESS OTHERWISE NOTED
GLB	GLULAM BEAM	VERT	VERTICAL
GT	GIRDER TRUSS	VIF	VERIFY IN FIELD
HORIZ	HORIZONTAL	W/	WITH
HSA	HEADED STUD ANCHOR	WP	WORK POINT
HSB	HIGH STRENGTH BOLT	WT	WEIGHT
JT	JOINT	WWR	WELDED WIRE REINFORCING
K, KIP	KILOPOUND (1,000 POUNDS)		

3 ABBREVIATIONS
1 : 1

LEVEL	CURRENT USAGE (AREA UNDER DATA CENTER)	ASSUMED LIVE LOAD (PSF)	REDUCIBLE? (Y/N)
MCR ROOF	ROOF	20PSF ROOF LL/SNOW LOAD	Y
MCR FLOOR (6TH FL)	DATA CENTER	250	N
LOWER MCR FLOOR	UPS ROOM/MECHANICAL/PLATFORM	300/100/40	N/N/Y
LOW ROOF	NO OCCUPANCY	20	Y
5TH FL	OPEN TO BELOW	N/A	N/A
4TH FL	HOSPITAL (LAB & OFFICE)	100	Y
3RD FL	HOSPITAL (LAB)	100	Y
2ND FL	HOSPITAL (LAB & OFFICE)	100	Y
1ST FL	HOSPITAL (PATIENT ROOM & OFFICE)	100	Y
GROUND FL	CANTEEN / DINNING HALL	100	N
BASEMENT FL	HOSPITAL (LAB & OFFICE)	100	Y

4 EXISTING FLOOR LOAD SCHEDULE
NO SCALE

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SDB SPEESDESIGNBUILD

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title
PLAN NOTES & LOAD SCHEDULE

Approved:

Phase
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FULLY SPRINKLERED

Project Title
EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA

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VA NY SYRACUSE
800 IRVING AVE., SYRACUSE, NY 13210

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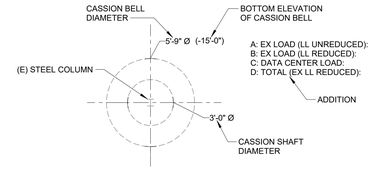
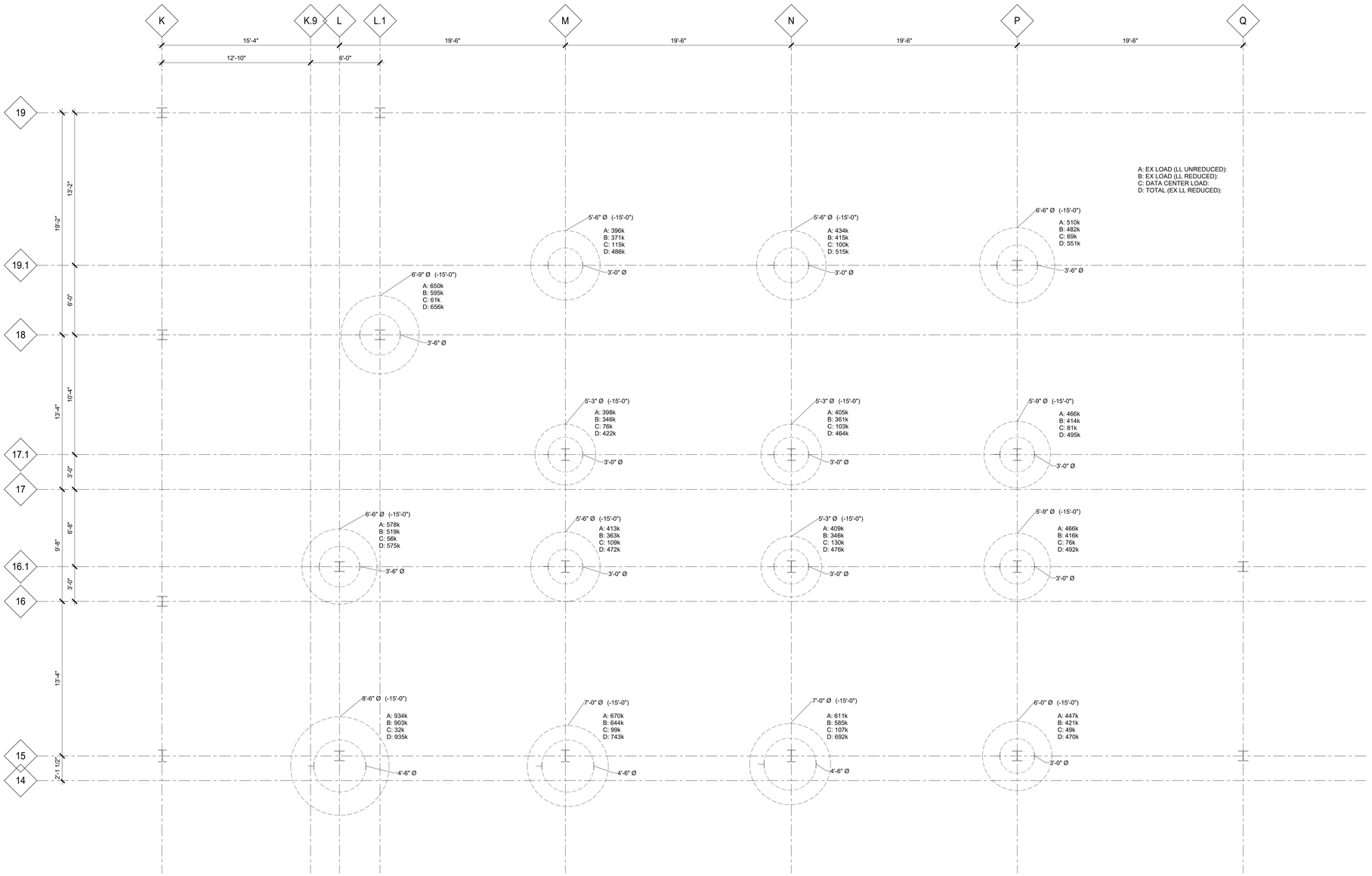
CASSION KEY PLAN

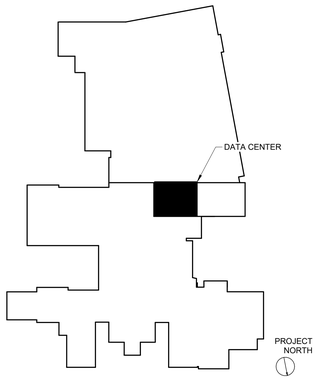




1 EXISTING CAISSON LOADING PLAN

1/4" = 1'-0"

NOTE:
1. ALL LOAD ON PLAN ARE SERVICE LOAD
2. ALLOWABLE SOIL BEARING CAPACITY AT THE BOTTOM OF THE CAISSON IS 20 KSF.



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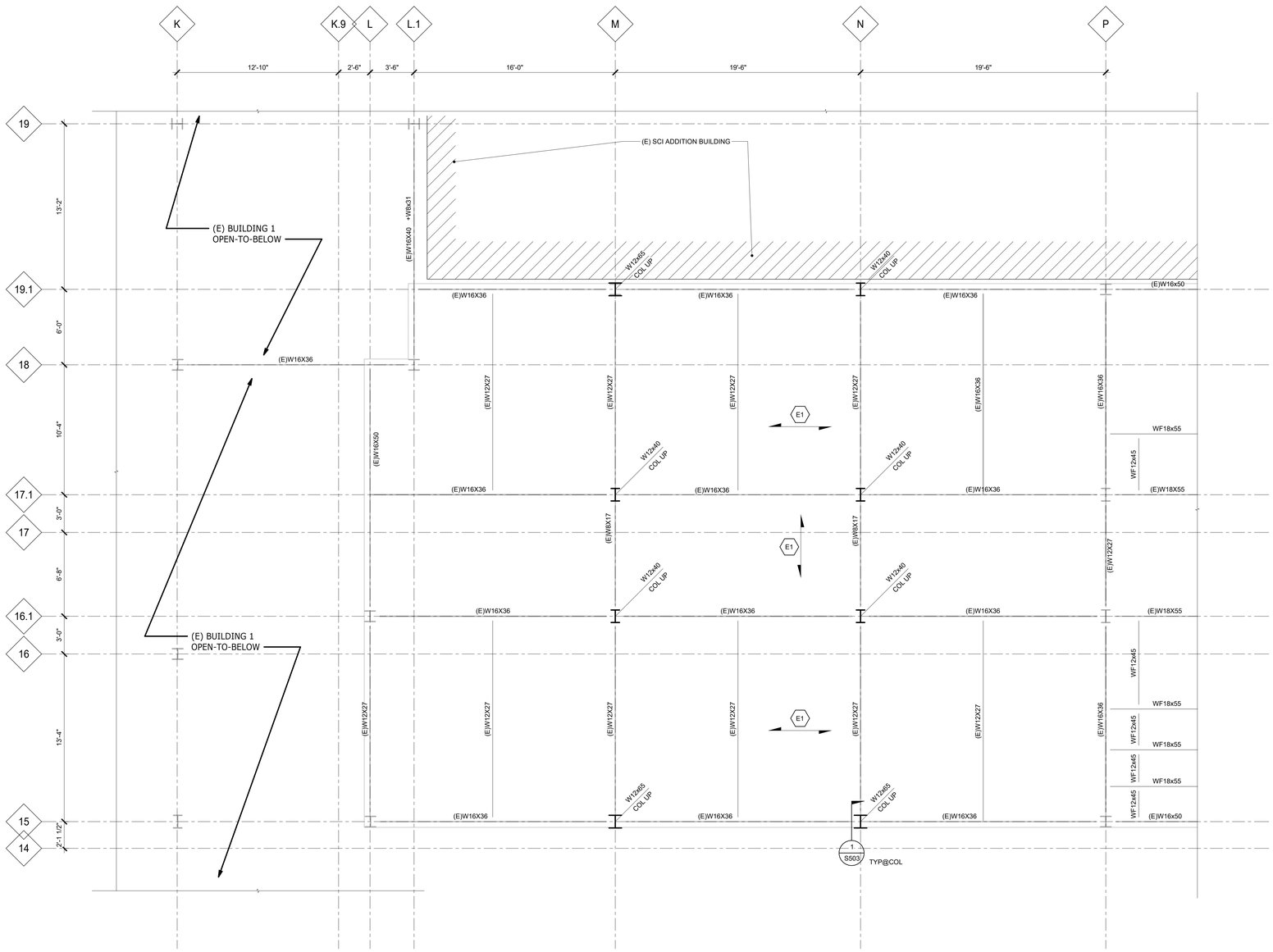


EXISTING SLAB SCHEDULE

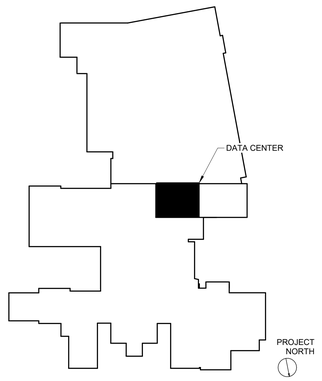
MARK	CONCRETE THICKNESS	REMARKS
E1	4 1/2"	REINFORCED CONCRETE

STEEL FLOOR FRAMING NOTES:

1. EL (0'-0") REFERED TO GROUND FLOOR ELEVATION. REFER TO ARCHITECTURAL DRAWINGS FOR ACTURAL DATUM.
2. TOP OF SLAB EL (72'-8") UON.
3. SEE THIS SHEET FOR EXISTING SLAB SCHEDULE.
4. SEE GENERAL NOTES AND TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
5. BEAMS TO BE EQUALLY SPACED BETWEEN SUPPORTS UON.
6. INFILL EXISTING TR SHAFT #9 PER DETAIL 14/S500, SEE ARCH DWG FOR SCOPE AND LOCATION

1 PARTIAL EXISTING LOW ROOF FRAMING PLAN

1/4" = 1'-0"



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STEEL DECK SCHEDULE

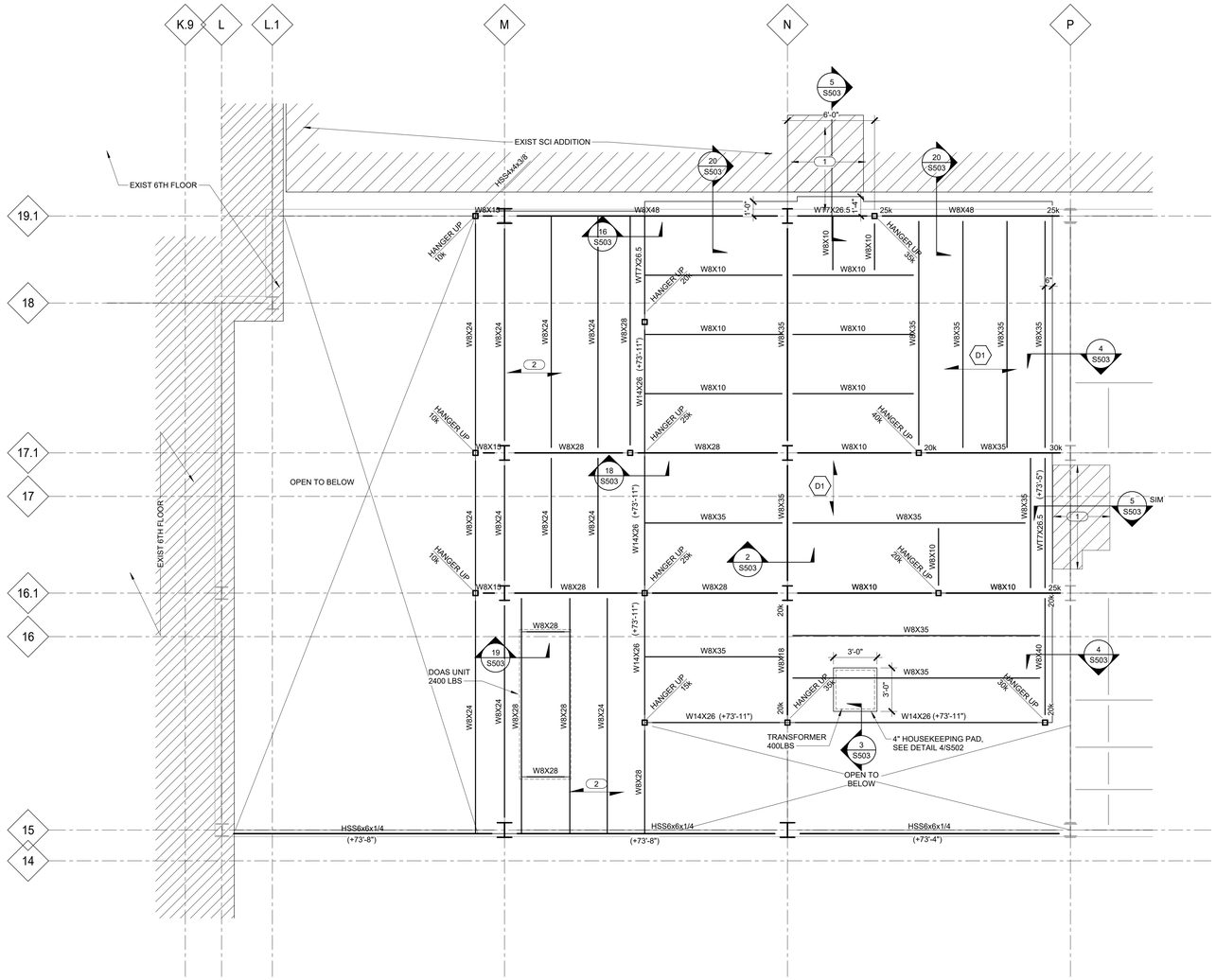
MARK	DECK	GAUGE	CONCRETE	MAIN ATTACHMENT	SIDELAP FASTENERS	FASTENING PATTERN	REMARKS
D1	2"	18 GAUAGE	3 1/4" ABOVE FLUTE (5 1/4" TOTAL THICKNESS)	HILTI X-ENP-19-L15 PINS	HILTI S-SLC 02 M HWH SIDELAP SCREWS	36/4	

STEEL FLOOR FRAMING NOTES:

1. EL (0'-0") REFERED TO GROUND FLOOR ELEVATION. REFER TO ARCHITECTURAL DRAWINGS FOR ACTURAL DATUM.
2. TOP OF SLAB EL(73'-7") UON.
3. TOP OF STEEL (73'-5") UON.
4. SEE THIS SHEET FOR DECK SCHEDULE.
5. SEE GENERAL NOTES AND TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
6. BEAMS TO BE EQUALLY SPACED BETWEEN SUPPORTS UON.
7. SEE TYPICAL FLOOR OPENING DETAILS. NOTE: NOT ALL OPENINGS MAY BE SHOWN. GENERAL CONTRACTOR TO COORDINATE FINAL OPENING LOCATIONS AND DIMENSIONS WITH MEP CONTRACTOR AND ARCH.
8. GENERAL CONTRACTOR SHALL COORDINATE ALL SLAB OPENINGS AT STAIRS AND ELEVATORS.
9. PROVIDE (2)#5x6'-0"@6", CENTERED IN CONCRETE SLAB AT EVERY RE-ENTRANT CORNERS - TYP.
10. REFER TO 8, 9, 10, 11/S500 FOR TYPICAL BEAM CONNECTION DETAIL.
11. REFER TO 3, 4/S501 FOR TYPICAL MOMENT CONNECTION DETAILS.
12. REFER TO 2/S500 FOR TYPICAL METAL DECK FASTENING DETAIL.
13. REFER TO 6/S501 & 2/S502 FOR TYPICAL STAIR AND RAMP ON FOAM DETAILS.
14. REFER TO 14/S501 FOR TYPICAL SLAB INFILL DETAIL.
15. REFER TO 3/S502 FOR TYPICAL OPENING IN EXISTING MASONRY WALL DETAIL.
16. REFER TO 4/S502 FOR TYPICAL EQUIPMENT PAD DETAIL.

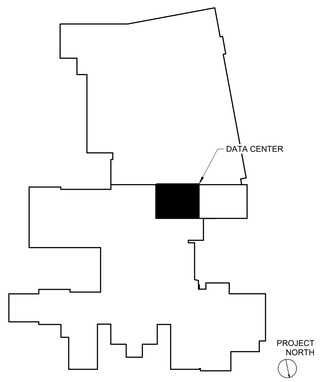
KEYNOTES: (#)

1. TOPPING SLAB TYPE 1 SEE DETAIL 2/S502.
2. INDICATES 1/4" A36 SLIP-RESISTANCE DIAMOND STEEL PLATE.
   TOP OF PLATE ELEV = 73'-7"
   TOP OF STEEL ELEV = 73'-6 3/4"



1 PARTIAL LOWER MCR FRAMING PLAN

1/4" = 1'-0"



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EXISTING SLAB SCHEDULE

MARK	CONCRETE THICKNESS	REMARKS
E1	4 1/2"	REINFORCED CONCRETE

STEEL DECK SCHEDULE

MARK	DECK	GAUGE	CONCRETE	MAIN ATTACHMENT	SIDELAP FASTENERS	FASTENING PATTERN	REMARKS
D1	2"	18 GAUGE	3 1/4" ABOVE FLUTE (5 1/4" TOTAL THICKNESS)	HILTI X-ENP-19-L15 PINS	HILTI S-SLC 02 M HWH SIDELAP SCREWS	36/4	

STEEL FLOOR FRAMING NOTES:

1. EL (0'-0") REFERED TO GROUND FLOOR ELEVATION. REFER TO ARCHITECTURAL DRAWINGS FOR ACTURAL DATUM.
2. TOP OF SLAB EL(80'-11") UON.
3. TOP OF STEEL (80'-5 3/4") UON.
4. SEE THIS SHEET FOR DECK SCHEDULE.
5. BEAMS NOT INDICATING NUMBER OF REQUIRED SHEAR STUDS SHALL HAVE STUDS PLACED ALONG BEAMS AT A MAX SPACING OF 1'-0". PROVIDE 3/4"Ø x4" HSA UON.
6. SEE GENERAL NOTES AND TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
7. BEAMS TO BE EQUALLY SPACED BETWEEN SUPPORTS UON.
8. SEE TYPICAL FLOOR OPENING DETAILS. NOTE: NOT ALL OPENINGS MAY BE SHOWN. GENERAL CONTRACTOR TO COORDINATE FINAL OPENING LOCATIONS AND DIMENSIONS WITH MEP CONTRACTOR AND ARCH.
9. GENERAL CONTRACTOR SHALL COORDINATE ALL SLAB OPENINGS AT STAIRS AND ELEVATORS.
10. PROVIDE (2)#5x6'-0"@6", CENTERED IN CONCRETE SLAB AT EVERY RE-ENTRANT CORNERS - TYP
11. REFER TO 8, 9, 10, 11/S500 FOR TYPICAL BEAM CONNECTION DETAIL.
12. REFER TO 3, 4/S501 FOR TYPICAL MOMENT CONNECTION DETAILS.
13. REFER TO 2/S500 FOR TYPICAL METAL DECK FASTENING DETAIL.
14. REFER TO 6/S501 & 2/S502 FOR TYPICAL STAIR AND RAMP ON FOAM DETAILS.
15. REFER TO 14/S501 FOR TYPICAL SLAB INFILL DETAIL.
16. REFER TO 3/S502 FOR TYPICAL OPENING IN EXISTING MASONRY WALL DETAIL.
17. REFER TO 4/S502 FOR TYPICAL EQUIPMENT PAD DETAIL.

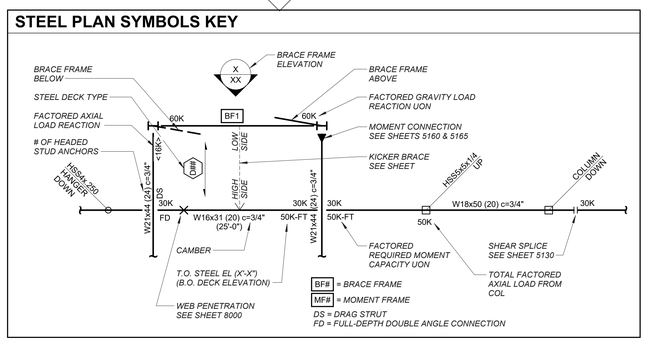
KEYNOTES: (#)

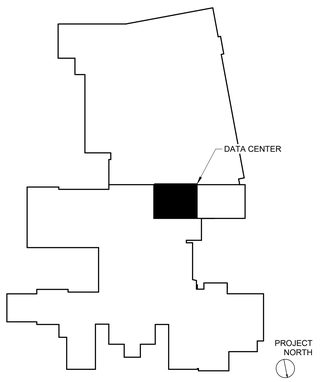
1. TOPPING SLAB TYPE 1 SEE DETAIL 2/S502.
2. (2)#5x6'-0"@6" CENTERED IN CONCRETE SLAB AT EVERY RE-ENTRANT CORNERS, TYP.

1 MCR FLOOR FRAMING PLAN (EXIST 6TH FLOOR)

1/4" = 1'-0"

STEEL PLAN SYMBOLS KEY





Revisions:	Date:

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STATE OF NEW YORK
JOHN M. COSENZA
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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: PARTIAL 6TH FRAMING PLAN	Phase: 100% CONSTRUCTION DOCUMENTS
Approved:	FULLY SPRINKLERED

Project Title: EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA	Project Number: 528A7-22-700
	Building Number: 001
Location: VA NY SYRACUSE, 800 IRVING AVE., SYRACUSE, NY 13210	Drawing Number: S201
Issue Date: 08/22/2025 / Checked: EB / Drawn: GRB	

Autodesk Docs://528A7-22-700 VA Syracuse EHRM Infrastructure Upgrades/VASY_01_ST_IMEG.rvt
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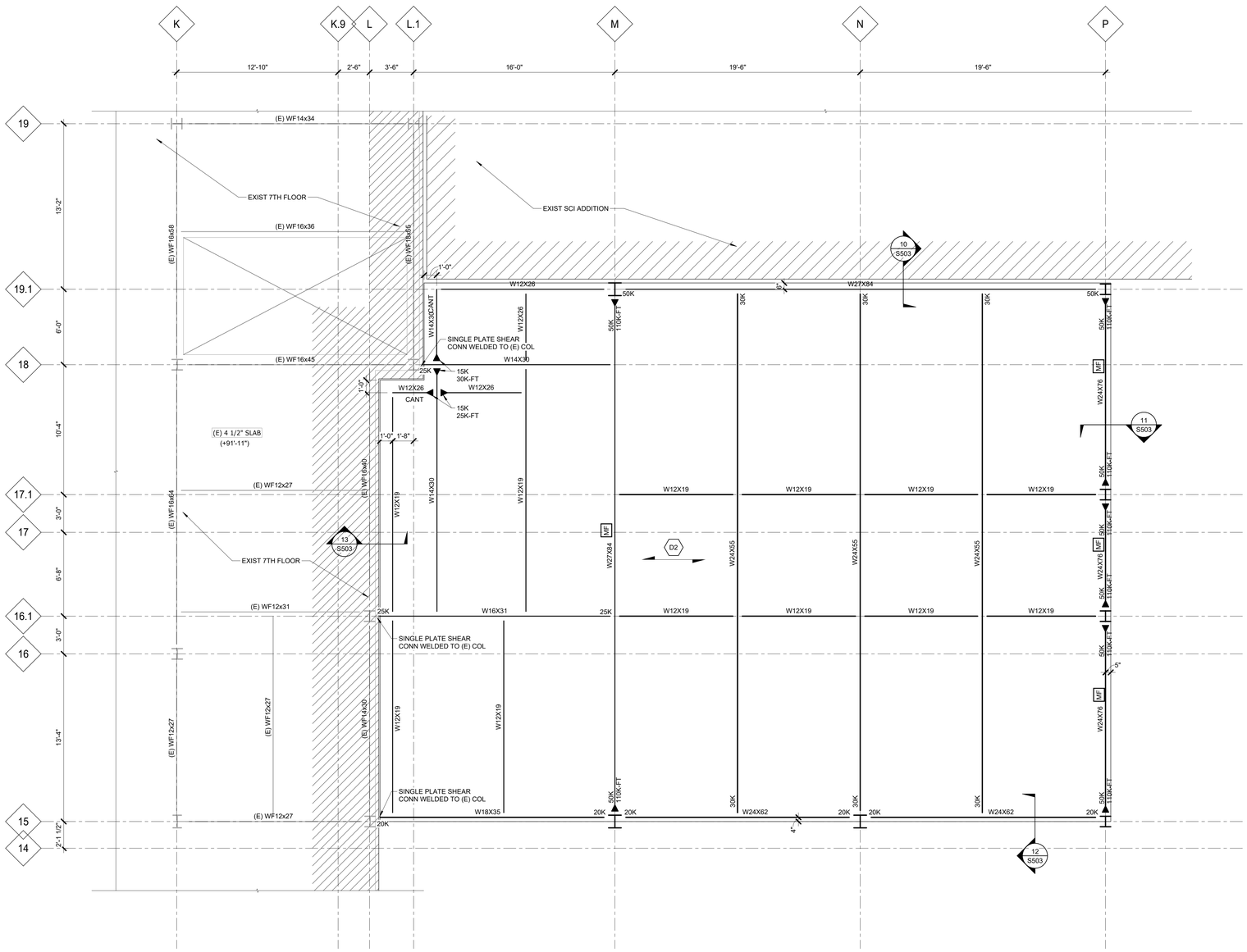


STEEL DECK SCHEDULE

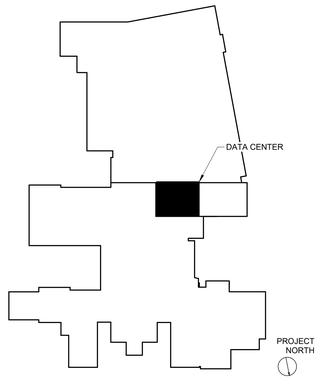
MARK	DECK	GAUGE	CONCRETE	MAIN ATTACHMENT	SIDELAP FASTENERS	FASTENING PATTERN	REMARKS
D2	3"	22 GAUAGE	N/A	HILTI X-ENP-19-L15 PINS	HILTI S-SLC 02 M HWH SIDELAP SCREWS	24/4	

STEEL FLOOR FRAMING NOTES:

1. EL (0'-0") REFERED TO GROUND FLOOR ELEVATION. REFER TO ARCHITECTURAL DRAWINGS FOR ACTURAL DATUM.
2. TOP OF STEEL (97'-10") UON.
3. SEE THIS SHEET FOR DECK SCHEDULE.
4. BEAMS NOT INDICATING NUMBER OF REQUIRED SHEAR STUDS SHALL HAVE STUDS PLACED ALONG BEAMS AT A MAX SPACING OF 1'-0". PROVIDE 3/4"Ø¥4" HSA UON.
5. SEE GENERAL NOTES AND TYPICAL DETAILS FOR ADDITIONAL INFORMATION.
6. BEAMS TO BE EQUALLY SPACED BETWEEN SUPPORTS UON.
7. SEE TYPICAL FLOOR OPENING DETAILS. NOTE: NOT ALL OPENINGS MAY BE SHOWN. GENERAL CONTRACTOR TO COORDINATE FINAL OPENING LOCATIONS AND DIMENSIONS WITH MEP CONTRACTOR AND ARCH.
8. GENERAL CONTRACTOR SHALL COORDINATE ALL SLAB OPENINGS AT STAIRS AND ELEVATORS.
9. REFER TO 8, 9, 10, 11/S500 FOR TYPICAL BEAM CONNECTION DETAIL.
10. REFER TO 3, 4/S501 FOR TYPICAL MOMENT CONNECTION DETAILS.
11. REFER TO 2/S500 FOR TYPICAL METAL DECK FASTENING DETAIL.
12. REFER TO 6/S501 & 2/S502 FOR TYPICAL STAIR AND RAMP ON FOAM DETAILS.
13. REFER TO 14/S501 FOR TYPICAL SLAB INFILL DETAIL.
14. REFER TO 3/S502 FOR TYPICAL OPENING IN EXISTING MASONRY WALL DETAIL.
15. REFER TO 4/S502 FOR TYPICAL EQUIPMENT PAD DETAIL.

1 DATA CENTER ROOF FRAMING PLAN

1/4" = 1'-0"



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SDB SPEESDESIGNBUILD

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: DATA CENTER ROOF FRAMING PLAN	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA	Project Number: 528A7-22-700
Approved:	FULLY SPRINKLERED	Location: VA NY SYRACUSE, 800 IRVING AVE., SYRACUSE, NY 13210	Building Number: 001
		Issue Date: 08/22/2025 / Checked: EB / Drawn: GRB	Drawing Number: S202

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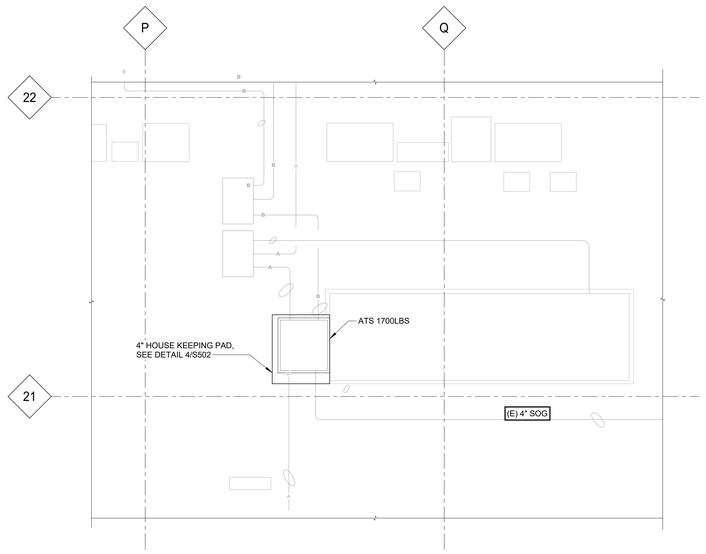
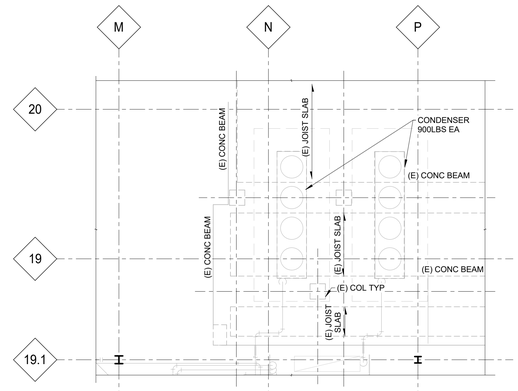
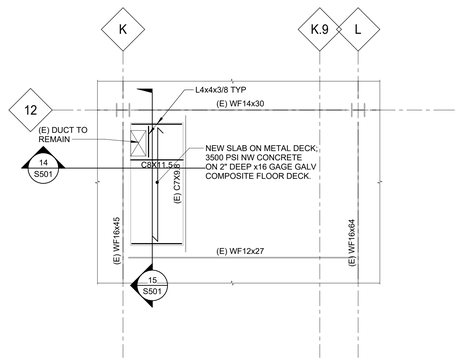


1 PARTIAL EXISTING SCI BASEMENT PLAN
1/4" = 1'-0"



2 PARTIAL EXISTING SCI ROOF PLAN
1/8" = 1'-0"



3 TYPICAL EXISTING SHAFT INFILL PLAN
1/4" = 1'-0"

Revisions:	Date:

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Office of
Construction
and Facilities
Management

VA U.S. Department of Veterans Affairs

Drawing Title DATA CENTERPARTIAL EXISTING PLANS	**Phase** 100% CONSTRUCTION DOCUMENTS
Approved:	FULLY SPRINKLERED

Project Title EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA

Location VA NY SYRACUSE
800 IRVING AVE., SYRACUSE, NY 13210

Issue Date	Checked	Drawn
08/22/2025	EB	GRB

Project Number 528A7-22-700

Building Number 001

Drawing Number S203

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VA Syracuse EHRM
Infrastructure
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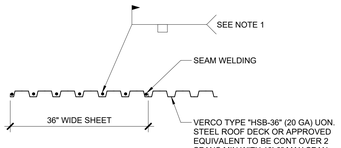
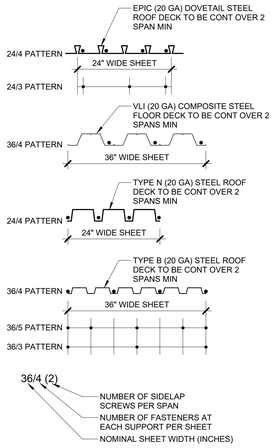


NOTE:

1. PROVIDE 1/2"Ø EFFECTIVE PUDDLE WELD AT EACH SUPPORT (7 WELDS PER SHEET).

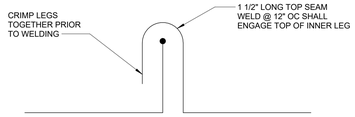
1 TYPICAL TYPE "HSB" STEEL DECK DETAIL

3/4" = 1'-0"
S_S-200



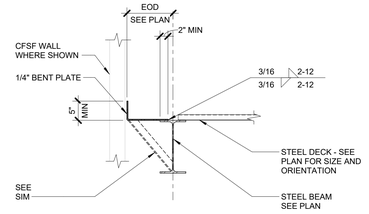
2 TYPICAL STEEL DECK FASTENING DETAIL

3/4" = 1'-0"
S_S-201



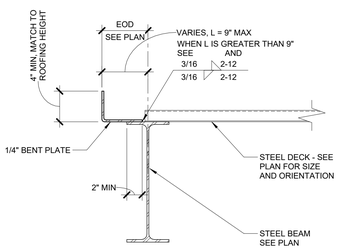
3 SEAM WELD DETAIL

1" = 1'-0"
S_S-206



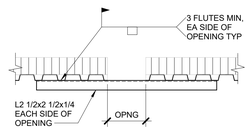
4 BENT PLATE EDGE DETAIL

3/4" = 1'-0"
S_S-207



5 TYPICAL ROOF DECK EDGE DETAIL

1 1/2" = 1'-0"
S_S-208

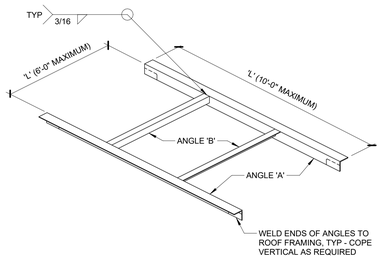


NOTES:

1. PROVIDE THIS DETAIL FOR OPENINGS 4" TO 12" MAXIMUM DIMENSION WHERE NO CURB IS REQUIRED AND NO EQUIPMENT IS SUPPORTED.
2. FOR OPENING LOCATION AND SIZE, SEE PLAN, ARCH AND MECHANICAL OR ELECTRICAL.
3. FOR LARGER OPENINGS THAN INDICATED, WHERE EQUIPMENT IS SUPPORTED, OR WHERE CURB IS REQUIRED, PROVIDE FRAMING PER UON.
4. ALL OPENINGS SHALL BE AS SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED BY THE STRUCTURAL ENGINEER.

6 ROOF OPENING DETAIL

3/4" = 1'-0"
S_S-213



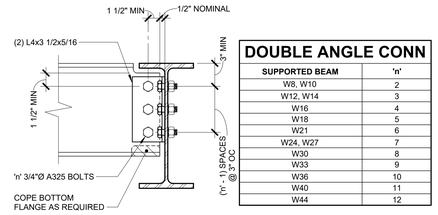
'L'	ANGLE 'A'	ANGLE 'B'
UP TO 1'-0"	NONE	NONE
1'-1" TO 4'-6"	L4x4x1/4	L4x4x1/4
4'-7" TO 6'-0"	L4x4x5/16	L4x4x1/4
6'-1" TO 8'-0"	L4x4x3/8	-
8'-1" TO 10'-0"	L6x4x3/8 (LLV)	-

NOTES:

1. SEE ARCHI AND MECHANICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS.
2. ROOF OPENING FRAMING NOT REQUIRED AT SIDE DISCHARGE ROOF DRAINS. COORDINATE WITH MECHANICAL CONTRACTOR.

7 ROOF OPENING DETAIL

3/4" = 1'-0"
S_S-214



DOUBLE ANGLE CONN	
SUPPORTED BEAM	'n'
W8, W10	2
W12, W14	3
W16	4
W18	5
W21	6
W24, W27	7
W30	8
W33	9
W36	10
W40	11
W44	12

NOTES:

1. DETAILER IS RESPONSIBLE FOR FULLY DEVELOPING GEOMETRY AND DIMENSIONAL INFORMATION REQUIRED TO FABRICATE.
2. WHERE TYP SHEAR CONNECTION DETAIL IS NOT APPLICABLE, FABRICATOR SHALL SELECT AND DETAIL ALTERNATE CONNECTION CAPABLE OF DEVELOPING EQUAL STRENGTH. ALTERNATE CONNECTION SHALL BE SELECTED IN ACCORDANCE WITH AISC CONNECTION TABLES.

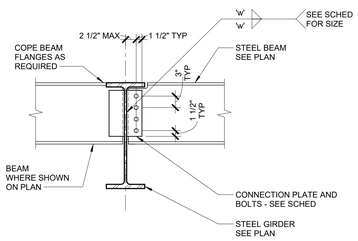
8 TYPICAL DOUBLE ANGLE SHEAR CONNECTION

1 1/2" = 1'-0"
S_S-600

GRAVITY BEAM CONNECTION SCHEDULE						
BEAM SIZE	NO. OF BOLTS (2) (3)	CONNECTION WITH 3/4"Ø BOLTS		CONNECTION WITH 1"Ø BOLTS		REMARKS
		PL THICK	PL WELD (1)	PL THICK	PL WELD (1)	
C8, C10	2	1/4"	3/16"	5/16"	1/4"	
W8, W10	2	1/4"	3/16"	5/16"	1/4"	
W12, W14	3	1/4"	3/16"	5/16"	1/4"	
W16	4	5/16"	1/4"	3/8"	1/4"	
W18	5	5/16"	1/4"	3/8"	1/4"	
W21	6	5/16"	1/4"	3/8"	1/4"	
W24, W27	7	3/8"	1/4"	3/8"	1/4"	
W30	8	3/8"	1/4"	3/8"	1/4"	
W33	9	3/8"	1/4"	1/2"	5/16"	
W36	10	3/8"	1/4"	1/2"	5/16"	
W40	11	3/8"	1/4"	1/2"	5/16"	
W44	12	3/8"	1/4"	1/2"	5/16"	

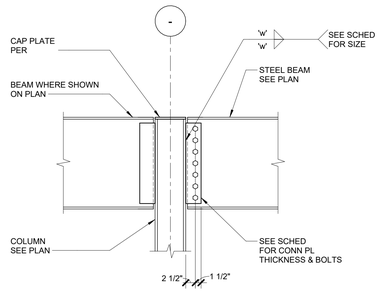
NOTES:

1. FILLET WELD SIZE, 'w', SHALL BE AS SHOWN UNLESS A LARGER SIZE IS REQUIRED BY AISC STEEL CONSTRUCTION MANUAL, TABLE J2.4.
2. WHERE NUMBER OF BOLTS NOTED IN SCHED CANNOT BE IN A SINGLE ROW, ADD SECOND ROW WITH TWO BOLTS MINIMUM.
3. BOLT SIZE AND QUANTITY SHALL BE TYP FOR ALL CONDITIONS UNLESS DETAILED OTHERWISE.



9 TYPICAL SHEAR CONNECTION TO BEAM

3/4" = 1'-0"
S_S-601

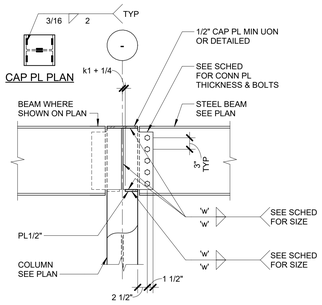


NOTE:

1. INTERSECTING BEAM NOT SHOWN FOR CLARITY.

10 TYPICAL SHEAR CONNECTION TO COLUMN FLANGE AT ROOF

3/4" = 1'-0"
S_S-604



11 TYPICAL SHEAR CONNECTION TO COLUMN WEB AT ROOF

3/4" = 1'-0"
S_S-605

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VA U.S. Department of Veterans Affairs

Drawing Title	TYPICAL STEEL SECTIONS AND SCHEDULES
Phase	100% CONSTRUCTION DOCUMENTS
Project Title	EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA
Project Number	528A7-22-700
Building Number	001
Approved:	FULLY SPRINKLERED
Location	VA NY SYRACUSE 800 IRVING AVE., SYRACUSE, NY 13210
Issue Date	08/22/2025
Checked	EB
Drawn	GRB
Drawing Number	S500

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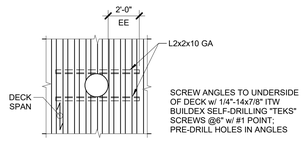
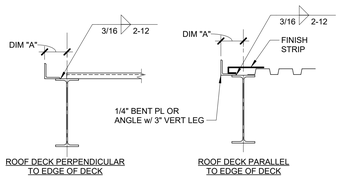
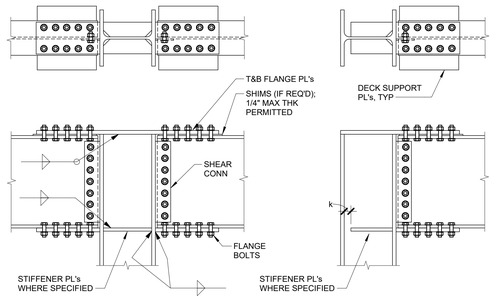


1 ROOF DECK REINFORCING BELOW ROOF DRAIN
3/4" = 1'-0"

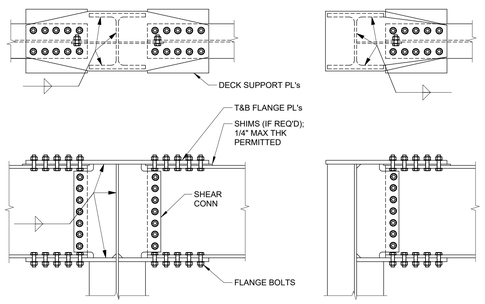


NOTES:
1. THIS DETAIL IS APPLICABLE AT ALL EDGE OF ROOF DECK LOCATIONS, UNO
2. SEE PLANS FOR DIM "A" OR SEE ARCH DWGS WHERE EDGE OF DECK DIMENSION IS NOT INDICATED ON STRUCTURAL DWGS

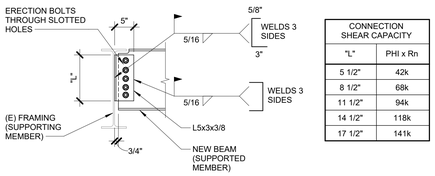
2 EDGE OF ROOF DECK
3/4" = 1'-0"



3 BEAM TO COL FLANGE MOMENT CONN @ ROOF
3/4" = 1'-0"

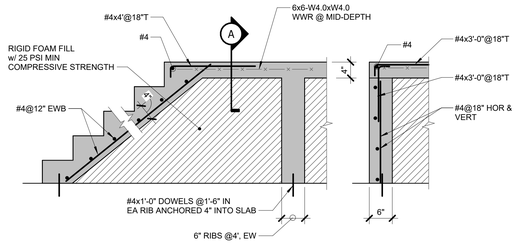


4 BOLTED BEAM TO COL WEB MOMENT CONN @ ROOF
3/4" = 1'-0"



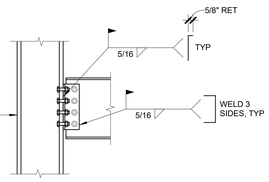
CONNECTION SHEAR CAPACITY	
"L"	PHI x Rn
5 1/2"	42k
8 1/2"	68k
11 1/2"	94k
14 1/2"	118k
17 1/2"	141k

5 NEW BM TO EXISTING BEAM SINGLE ANGLE SHEAR CONN
3/4" = 1'-0"

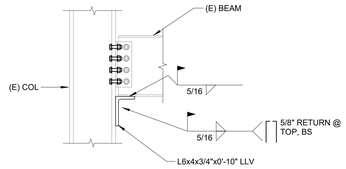


SEE ARCH DWGS FOR STAIR DIMENSIONS, DETAILS AND ADDITIONAL INFO.

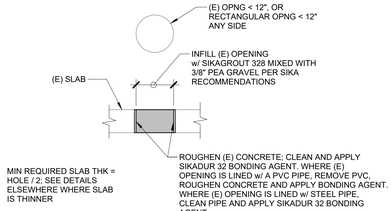
6 STAIR ON FOAM FILL
3/4" = 1'-0"



7 EXISTING CONNECTION REINFORCING
3/4" = 1'-0"



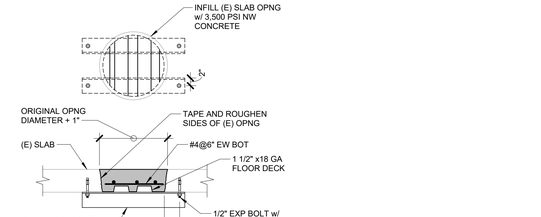
8 EXISTING CONNECTION REINFORCING
3/4" = 1'-0"



MIN REQUIRED SLAB THK = HOLE / 2; SEE DETAILS ELSEWHERE WHERE SLAB IS THINNER

BID QUANTITY = ... OPENINGS/FLOOR

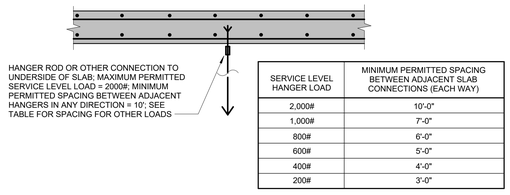
9 NEW SLAB INFILL AT EXISTING OPENING < 12"
3/4" = 1'-0"



FIREPROOF STEEL & DECK

BID QUANTITY = ... OPENINGS/FLOOR

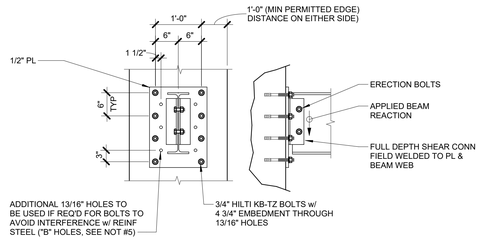
10 SLAB OPENING INFILL @ OPNGS 12" TO 24" DIA
3/4" = 1'-0"



SERVICE LEVEL HANGER LOAD	MINIMUM PERMITTED SPACING BETWEEN ADJACENT SLAB CONNECTIONS (EACH WAY)
2,000#	10'-0"
1,000#	7'-0"
800#	6'-0"
600#	5'-0"
400#	4'-0"
200#	3'-0"

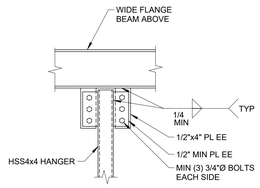
NOTES:
1. THIS DETAIL INDICATES MAXIMUM PERMITTED CONCENTRATED LOADS WHICH MAY BE SUSPENDED FROM UNDERSIDE OF SLABS FOR VARIOUS HANGER SPACING.
2. CONTRACTOR SHALL LOCATE THE CONNECTIONS TO THE UNDERSIDE OF THE SLAB SO THAT THE LOADS APPLIED TO THE SLAB DO NOT EXCEED THE MAXIMUM PERMITTED VALUES INDICATED ABOVE.
3. CONTRACTOR IS RESPONSIBLE FOR SELECTING THE APPROPRIATE POST-INSTALLED ANCHORS. ANCHORS SHALL BE CODE COMPLIANT, HAVE AN ICC-ES ESR REPORT AND SHALL BE SELECTED BASED UPON THEIR ACI 318, APPENDIX "D" LOAD CAPACITY. AVAILABLE SERVICE LEVEL ANCHOR STRENGTH = 0.50 x APPENDIX "D" AVAILABLE STRENGTH. DETERMINATION OF AVAILABLE ANCHOR STRENGTH SHALL CONSIDER ALL FACTORS, VARIABLES AND CONDITIONS SPECIFIED IN APPENDIX "D".
4. REINFORCING STEEL IN SLAB SHALL BE LOCATED WITH A METAL DETECTOR PRIOR TO DRILLING HOLES; ANCHORS SHALL BE LOCATED TO AVOID DAMAGING REINFORCING STEEL IN SLAB.

11 CRITERIA FOR ATTACHMENT OF SUSPENDED LOADS FROM CONCRETE SLABS
3/4" = 1'-0"

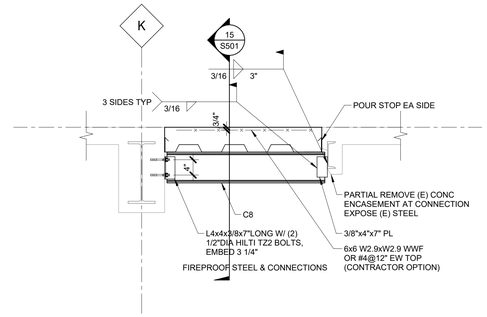


NOTES:
1. USEABLE ULTIMATE SHEAR STRENGTH PER BOLT = Rn = 5k
2. # OF BOLTS REQUIRED = FACTORED BEAM REACTION / 5k (ROUND UP TO AN EVEN # OF BOLTS)
3. REQUIRED MINIMUM CONCRETE STRENGTH = 3 KSI
4. THIS CONNECTION DETAIL MAY BE USED ONLY AT CONNECTIONS TO COLUMNS OR WALLS.
5. INSTALL BOLTS IN OUTERMOST HOLES ON EACH SIDE OF BEAM; USE INNER HOLES ("B" HOLES) ONLY IF REINFORCING STEEL DOES NOT PERMIT DRILLING HOLES IN CONCRETE AT OUTERMOST HOLES; WHERE REINFORCING STEEL REQUIRES USE OF "B" HOLES, RELOCATE BOLT TO CLOSEST ADJACENT "B" HOLE.
6. REINFORCING STEEL SHALL NOT BE DAMAGED WHEN INSTALLING BOLTS.

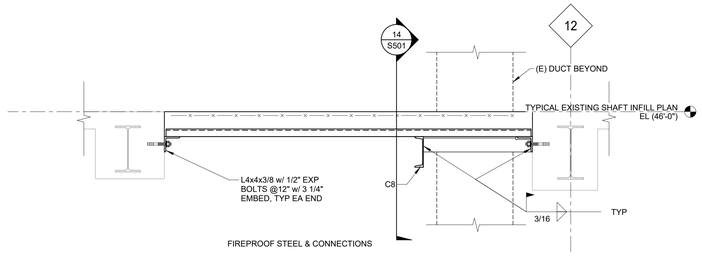
12 POST-INSTALLED BEAM CONN TO COLUMN OR WALL
3/4" = 1'-0"



13 TYP HANGER CONNECTION DETAIL
3/4" = 1'-0"



14 EXIST SHAFT INFILL SECTION
3/4" = 1'-0"



15 EXIST SHAFT INFILL SECTION
3/4" = 1'-0"

Revisions:	Date:

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PROJECT #23000139.00

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STATE OF NEW YORK
LEA M. COSENZA
106391
LICENSED PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	TYPICAL STEEL SECTIONS
Phase	100% CONSTRUCTION DOCUMENTS
Approved:	FULLY SPRINKLERED
Project Title	EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA
Location	VA NY SYRACUSE 800 IRVING AVE., SYRACUSE, NY 13210
Issue Date	08/22/2025
Checked	EB
Drawn	GRB
Project Number	528A7-22-700
Building Number	001
Drawing Number	S501

Autodesk Docs://528A7-22-700
VA Syracuse EHRM
Upgrades/VASY_01_ST_IMEG.rvt
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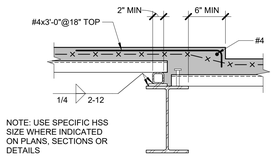
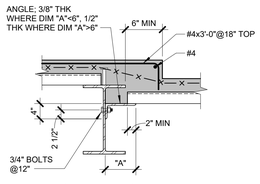
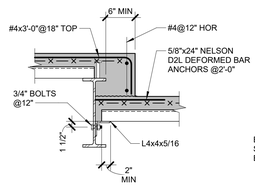


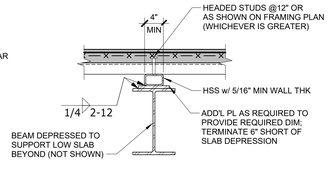
A SLAB DEPRESSION w/ DEPRESSED BEAM



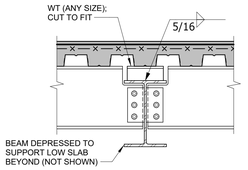
B SLAB DEPRESSION < 6"



C SLAB DEPRESSION > 6"



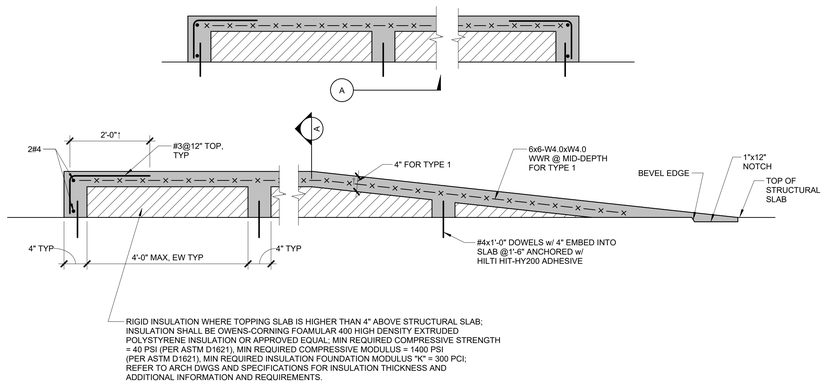
D SLAB DEPRESSION CROSSING BEAM



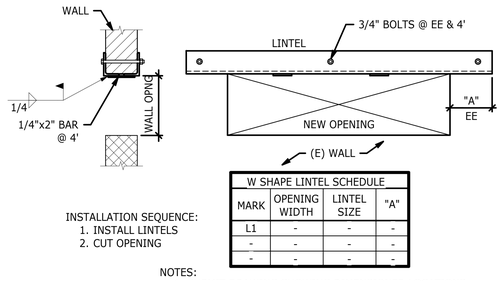
E SLAB DEPRESSION CROSSING GIRDER

NOTES:
1. DETAIL "A" APPLIES WHERE FRAMING PLAN INDICATES HSS ON TOP OF W SHAPE (EXAMPLE: W18x36 [33] +HSS); OTHERWISE DETAILS "B" AND "C".
2. WHERE SLAB DEPRESSION CROSSES OVER BEAM, LOWER BEAM SO TOP FLANGE SUPPORTS LOW SLAB AND PROVIDE HSS PER DETAIL "D" TO SUPPORT HIGH SLAB.
3. WHERE SLAB DEPRESSION IS LESS THAN "k" DIMENSION OF BEAM, DEPRESS BEAM AND PROVIDE HSS PER DETAIL "A".
4. WHERE HSS IS NOT AVAILABLE TO MATCH DEPRESSION DIMENSION, USE PLATE, OR PLATE + HSS.
5. SLAB DEPRESSIONS SHOWN; DETAILS SIMILAR FOR TRANSITIONS IN SLAB THICKNESSES.

1 SLAB-ON-METAL DECK DEPRESSIONS
3/4" = 1'-0"



2 TOPPING SLAB TYPE 1
3/4" = 1'-0"

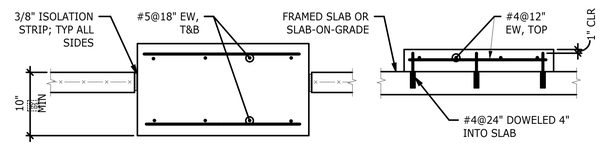


W SHAPE LINTEL SCHEDULE			
MARK	OPENING WIDTH	LINTEL SIZE	"A"
L1	-	-	-
-	-	-	-
-	-	-	-

INSTALLATION SEQUENCE:
1. INSTALL LINTELS
2. CUT OPENING

NOTES:
1. SUBMIT DRAWING SHOWING DIMENSIONED LOCATIONS OF NEW OPENINGS IN EXISTING WALLS.
2. DIMENSIONED LOCATIONS OF OPENINGS SHALL BE VERIFIED WITH THE ARCHITECTURAL DRAWINGS PRIOR TO CONSTRUCTION.

3 NEW OPENINGS IN EXISTING BEARING WALL (ANGLE LINTELS)
3/4" = 1'-0"



NOTES:
1. COORDINATE LOCATIONS AND DIMENSIONS OF EQUIPMENT SUPPORT PADS WITH MEP DWGS, MECHANICAL CONTRACTOR AND WITH EQUIPMENT MFR
2. VERIFY ADEQUACY OF PAD DESIGN INDICATED WITH EQUIPMENT MFR
3. COORDINATE VIBRATION ISOLATION REQUIREMENTS WITH MEP DWGS/SPECS AND WITH EQUIPMENT MFR

4 CONCRETE BASE AND PAD FOR INTERIOR EQUIPMENT
3/4" = 1'-0"

Revisions:	Date:

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SPEESDESIGNBUILD

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STATE OF NEW YORK · J.A.M. COSENZA · 106397 · LICENSED PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title	TYPICAL STEEL SECTIONS
Phase	100% CONSTRUCTION DOCUMENTS
Approved:	
	FULLY SPRINKLERED
Project Title	EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA
Location	VA NY SYRACUSE, 800 IRVING AVE., SYRACUSE, NY 13210
Issue Date	08/22/2025
Checked	EB
Drawn	GRB
Project Number	528A7-22-700
Building Number	001
Drawing Number	S502

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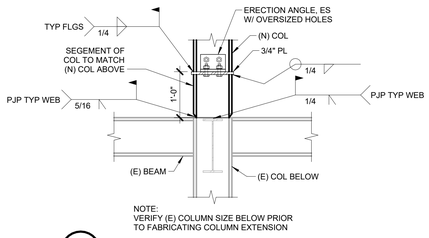
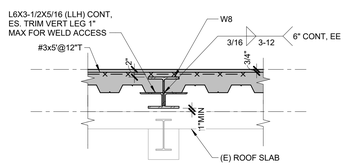
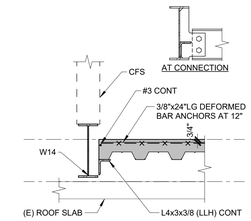


1 3/4" = 1'-0"

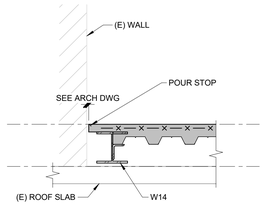


2 3/4" = 1'-0"



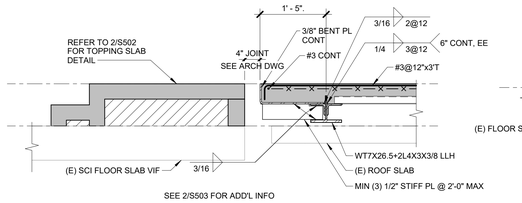
SEE 2/S503 FOR ADD'L INFO

3 3/4" = 1'-0"



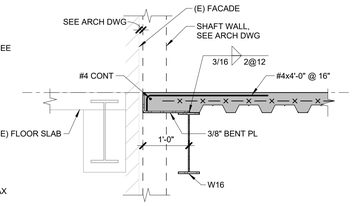
SEE 2/S503 FOR ADD'L INFO

4 3/4" = 1'-0"

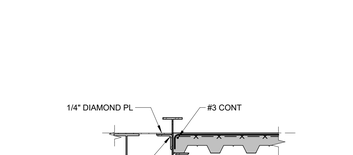


SEE 2/S503 FOR ADD'L INFO

5 3/4" = 1'-0"

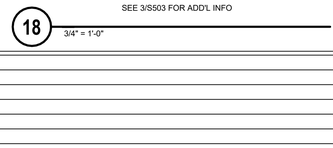


6 3/4" = 1'-0"



SEE 6/S503 FOR ADD'L INFO

7A 3/4" = 1'-0"



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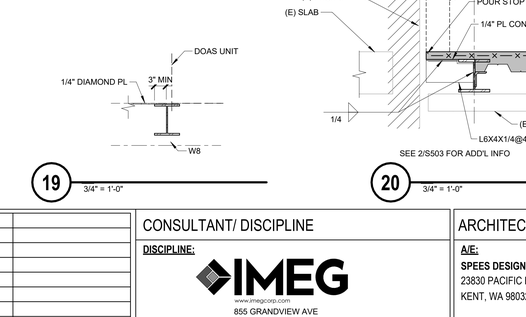

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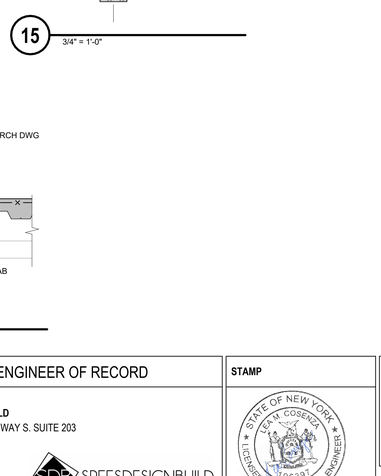

SEE 6/S503 FOR ADD'L INFO

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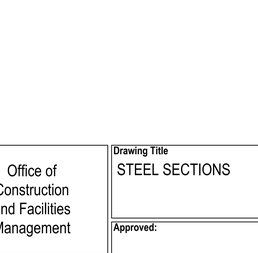

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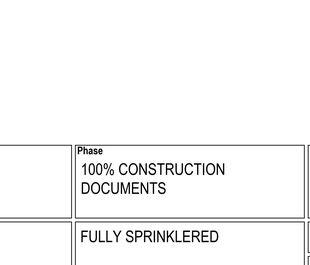

SEE 10/S503 FOR ADD'L INFO

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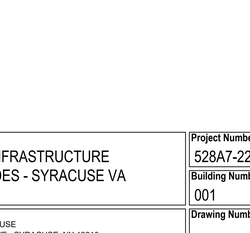

SEE 10 & 11/S503 FOR ADD'L INFO

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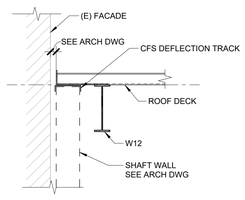

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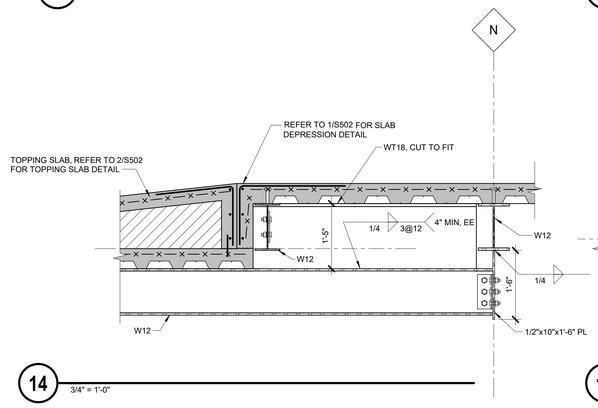

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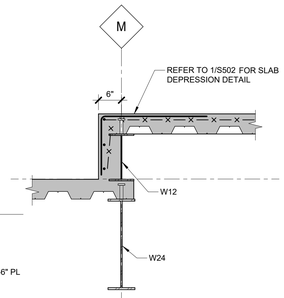

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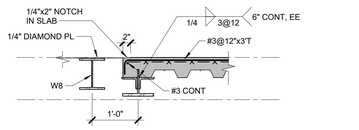

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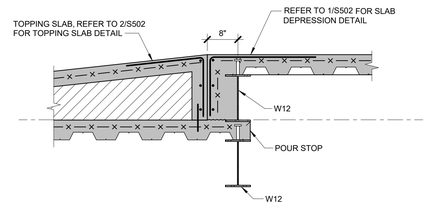
16 3/4" = 1'-0"



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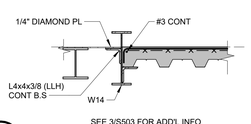
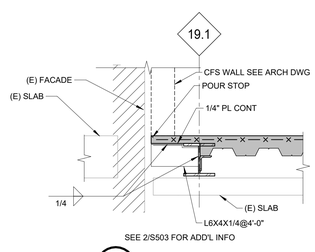


SEE 3/S503 FOR ADD'L INFO

18 3/4" = 1'-0"

19 3/4" = 1'-0"



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20 3/4" = 1'-0"

Revisions:	**Date:**

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SDB SPEESDESIGNBUILD

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Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title STEEL SECTIONS	**Phase** 100% CONSTRUCTION DOCUMENTS	**Project Title** EHRM INFRASTRUCTURE UPGRADES - SYRACUSE VA	**Project Number** 528A7-22-700
Approved:	FULLY SPRINKLERED	**Location** VA NY SYRACUSE 800 IRVING AVE., SYRACUSE, NY 13210	**Building Number** 001
		Issue Date 08/22/2025 · **Checked** EB · **Drawn** GRB	**Drawing Number** S503

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Infrastructure
Upgrades/VASY_01_ST_IMEG.rvt
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