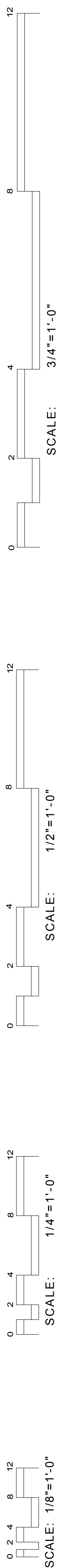


C:\Users\RyanM\Documents\PROJECTS\VA Albuquerque B10\S10-066 VA Albuquerque\_RJM.rvt



SUPPORTING FROM STRUCTURE

SUMMARY:

- A. WORK INCLUDED:
1. THESE NOTES PROVIDE GUIDELINES AND LIMITATIONS FOR SUPPORTING ALL NON-STRUCTURAL ELEMENTS INCLUDING MECHANICAL, ELECTRICAL, PLUMBING, FIRE-SPRINKLERS ARCHITECTURAL ETC., FROM THE BUILDING STRUCTURE, AND FOR SEISMIC BRACING FOR ALL SUCH ITEMS.
  2. CONTRACTOR SHALL PROVIDE COMPLETE DESIGN AND INSTALLATION OF ALL SUPPORT AND BRACING SYSTEMS EXCEPT AS NOTED. PROVIDE FOR ATTACHMENT TO PORTIONS OF THE BUILDING STRUCTURE CAPABLE OF BEARING THE LOADS IMPOSED. DESIGN SYSTEMS TO PREVENT OVERSTRESS TO THE BUILDING STRUCTURE. UTILIZE OSHPD PRE-APPROVED SUPPORT AND BRACING SYSTEMS OR CONTRACTOR SHALL PROVIDE COMPLETE SHOP DRAWINGS AND SUBSTANTIATING CALCULATIONS PREPARED SPECIFICALLY FOR THIS PROJECT TO BE STAMPED AND SIGNED BY A LICENSED NEW MEXICO STRUCTURAL ENGINEER.
  3. THE DESIGN OF SUPPORT AND BRACING SYSTEMS SHALL COMPLY TO THE LIMITATIONS NOTED HEREIN. ADDITIONAL SUPPORTS, BRACING, HANGERS, BLOCKING ETC., SHALL BE PROVIDED BY CONTRACTOR AS REQUIRED. SEE ALSO BASIC HANGER AND BRACING ATTACHMENT CONFIGURATION DETAIL THIS SHEET.
- B. WORK NOT INCLUDED:
1. THE CONTRACTOR IS NOT REQUIRED TO DESIGN SUPPORT AND BRACING FOR ITEMS FOR WHICH THE CONTRACT DOCUMENTS PROVIDE SPECIFIC ATTACHMENT, SUPPORT, AND BRACING. SEISMIC BRACING IS NOT REQUIRED FOR THE FOLLOWING ITEMS:  
A. GAS PIPING LESS THAN 1 INCH INSIDE DIAMETER.  
B. PIPING FOR BOILERS AND MECHANICAL EQUIPMENT LESS THAN 1.25 INCHES INSIDE DIAMETER.  
C. ALL OTHER PIPING LESS THAN 2.5 INCHES INSIDE DIAMETER, UNLESS RACKED TOGETHER.  
D. ALL PIPING AND DUCT SUSPENDED BY INDIVIDUAL HANGERS 12 INCHES OR LESS IN LENGTH.  
E. ALL RECTANGULAR AIR HANDLING DUCTS LESS THAN 6 SQUARE FEET IN CROSS SECTIONAL AREA.  
F. ALL ROUND AIR HANDLING DUCTS LESS THAN 28 INCHES IN DIAMETER.  
G. ALL ELECTRICAL CONDUITS LESS THAN 2.5 INCHES INSIDE DIAMETER, UNLESS RACKED TOGETHER.
- QUALITY ASSURANCE

- A. GENERAL:
1. DESIGN AND INSTALL ALL SUPPORT SYSTEMS TO COMPLY WITH THE REQUIREMENTS OF THE 2009 INTERNATIONAL BUILDING CODE CHAPTER 16 AND ASCE 7 SECTION 13.2, 13.3, 13.4 & 13.5.
  2. FIRE-SPRINKLER SUPPORT & BRACING SYSTEMS SHALL ALSO COMPLY WITH THE REQUIREMENTS OF NFPA 13. THE ATTACHMENT OF FIRE SPRINKLER BRACING TO THE STRUCTURE SHALL BE PER ITEM 2 OR 3 BELOW.
  3. FOR PROJECT SPECIFIC SEISMIC BRACING DESIGN ENGAGE THE SERVICES OF A STRUCTURAL ENGINEER LICENSED IN NEW MEXICO.
  4. IN LIEU OF THE ABOVE REQUIREMENT REFERENCE MASON INDUSTRIES SEISMIC RESTRAINT GUIDELINES, OPA-0349 OR EQUAL, FOR BRACING REQUIREMENTS OF MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS. THE MINIMUM DESIGN FP COEFFICIENT SHALL BE AS NOTED BELOW IN SEISMIC BRACING.
- B. STANDARDS AND REFERENCES: (LATEST EDITION UNLESS SPECIFIED OTHERWISE)
1. THE GENERAL CONDITIONS, SUPPLEMENTARY CONDITIONS, AND APPLICABLE PORTIONS OF THE SPECIFICATION APPLY TO THE WORK NOTED HEREIN AS IF PRINTED HEREIN.
  2. IF THE YEAR OF THE ADOPTION OR LATEST REVISION IS OMITTED FROM THE DESIGNATION, IT SHALL MEAN THE SPECIFICATION, MANUAL OR TEST DESIGNATION IN EFFECT THE DATE OF NOTICE TO PROCEED WITH THE WORK GIVEN.

MATERIALS

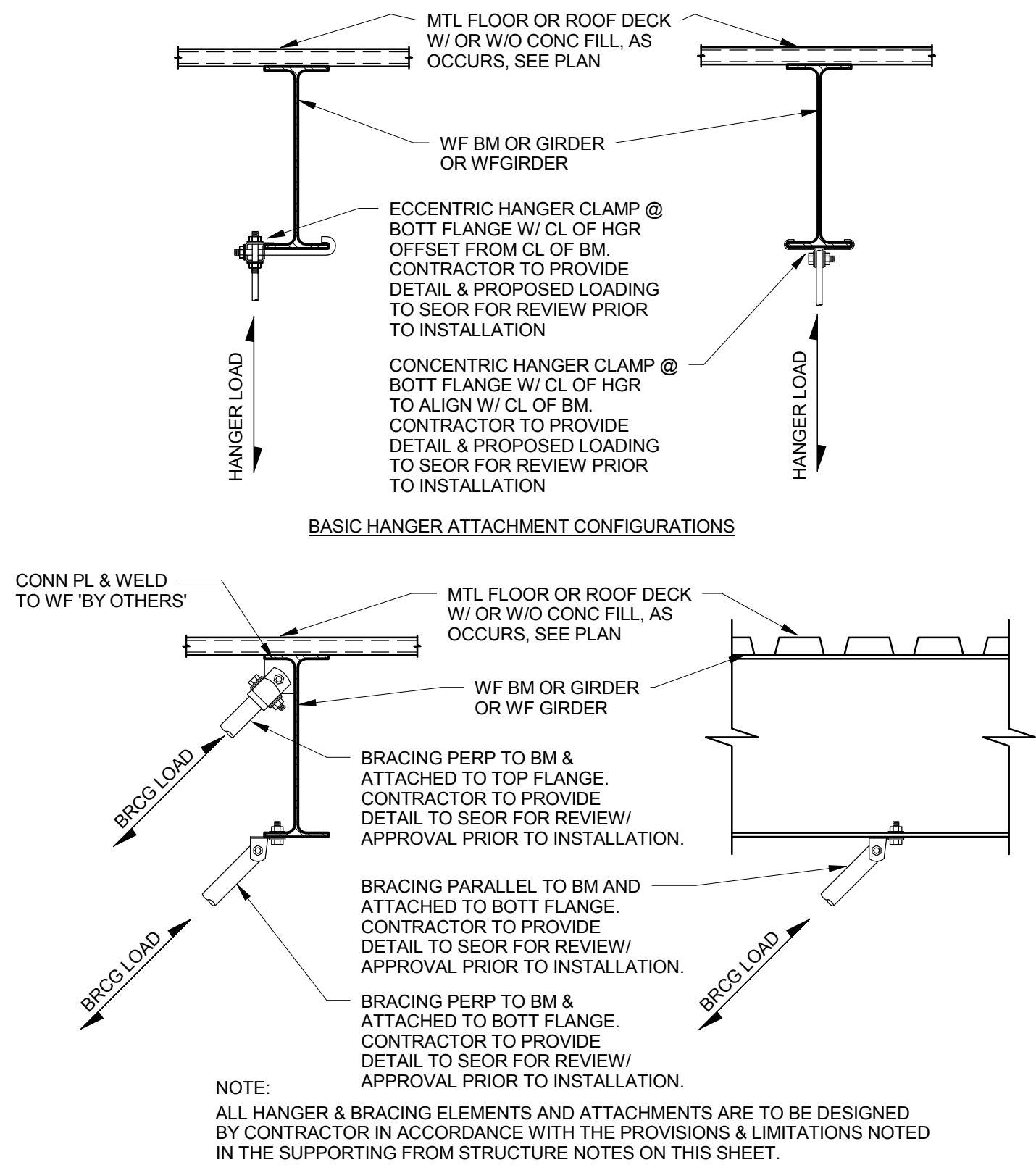
- A. FURNISH ALL SUBSTRUCTURES AND FASTENERS REQUIRED TO COMPLY WITH THE LIMITATIONS GIVEN BELOW. USE MATERIALS AS SPECIFIED IN THE VARIOUS SECTIONS AND AS APPROPRIATE TO THE USE.
- B. ALL EXTERIOR MATERIALS: HOT DIPPED GALVANIZED OR STAINLESS STEEL.
- C. ALL CONNECTIONS TO STRUCTURE SHALL BE MADE BY THE USE OF HARDWARE WITH BOLTS WELDS OR OTHER POSITIVE ATTACHMENTS. FRICTION CONNECTIONS ARE NOT PERMITTED. BEAM CLAMPS SHALL ENGAGE BOTH SIDES OF BEAM FLANGES.

GUIDELINES AND LIMITATIONS

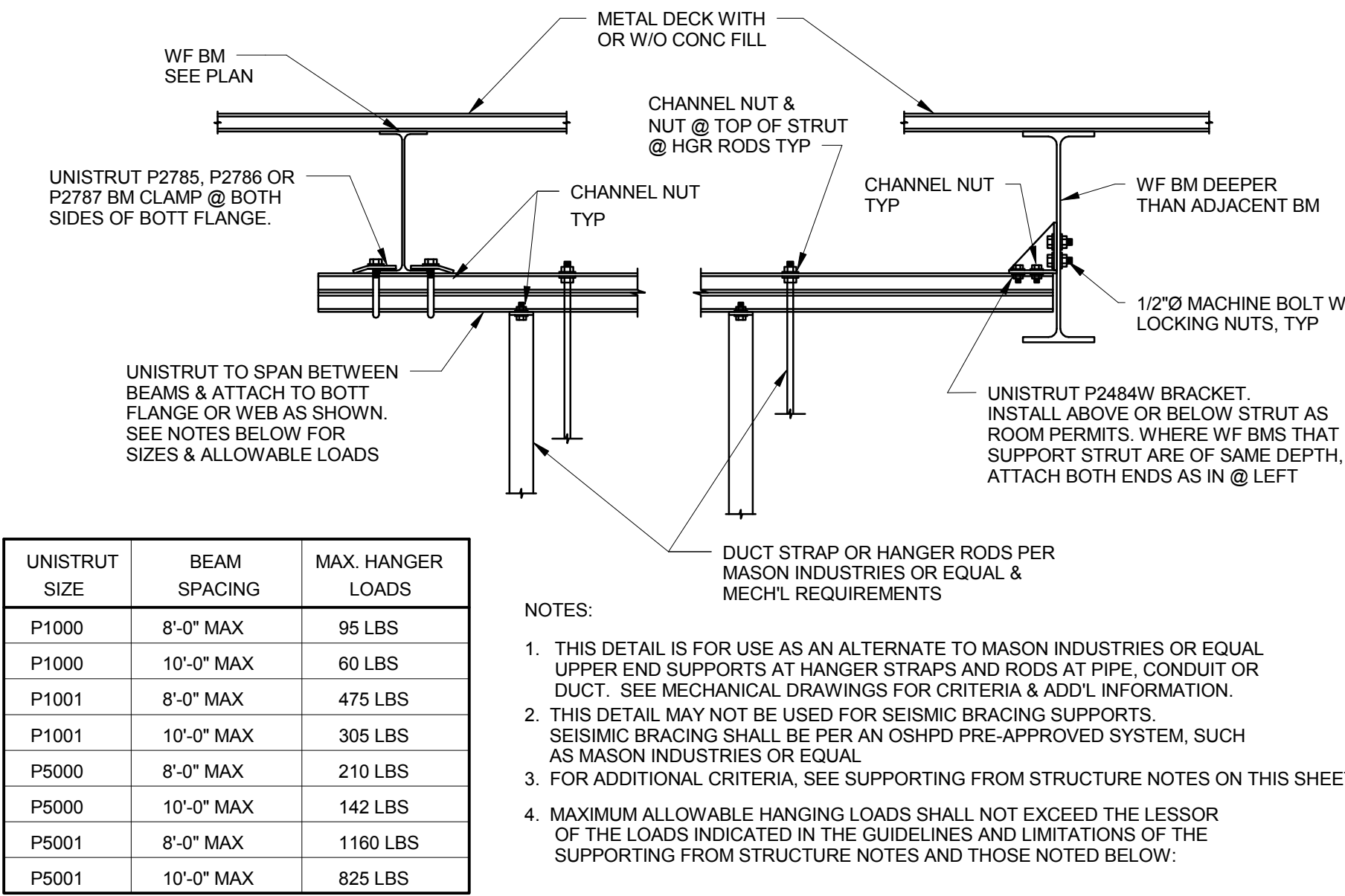
- A. THE GENERAL CONTRACTOR SHALL COORDINATE THE LOAD REQUIREMENTS FROM ALL SUB-CONTRACTORS SO THAT NO COMBINATION OF LOADS EXCEEDS THE LIMITATIONS GIVEN BELOW WITHOUT WRITTEN APPROVAL.
- B. MAXIMUM LOADING: ATTACH NO LOADS GREATER THAN THE FOLLOWING WITHOUT SPECIFIC APPROVAL OF THE STRUCTURAL ENGINEER. WHERE ATTACHMENTS ARE MADE TO PREFABRICATED ELEMENTS SUCH AS JOIST, OWJOWIG, GANG-NAIL, TRUSSES, ETC., LOADS NOTED ARE SUGGESTED MAXIMUMS. CONTRACTOR SHALL PROVIDE ALL PROPOSED ATTACHMENT DETAILS AND LOADS TO MANUFACTURER FOR FINAL REVIEW/APPROVAL PRIOR TO INSTALLATION.
1. METAL DECK WITHOUT CONCRETE FILL - ACOUSTICAL TILE AND GYPSUM BOARD CEILINGS AND MINOR PIPING, DUCTING CONDUIT AND BRACING AS NOTED BELOW. MAXIMUM CEILING WEIGHT = 3.0 PSF. MAXIMUM WIRE HANGER LOAD = 60 LBS. TO BE SPACED NO CLOSER THAN 4'-0" CC EACH WAY.
  2. METAL DECK WITH CONCRETE FILL - ITEMS AS INDICATED FOR METAL DECK WITHOUT CONCRETE FILL ABOVE. PLUS ELECTRICAL CONDUITS, GAS PIPING AND DUCTING NOT EXCEEDING 5.0 PSF AND BRACING AS NOTED BELOW. MAXIMUM HANGER LOAD = 200 LBS. TO BE SPACED NO CLOSER THAN 4'-0" CC EACH WAY. MECHANICAL UNITS HUNG FROM CONCRETE FILLED DECK SHALL NOT EXCEED 500 LBS.
  3. CAST-IN-PLACE CONCRETE SLABS - ITEMS AS INDICATED FOR METAL DECK WITH CONCRETE FILL ABOVE. NOT EXCEEDING 6.0 PSF AND BRACING AS NOTED BELOW. MAXIMUM HANGER LOAD = 200 LBS. TO BE SPACED NO CLOSER THAN 4'-0" CC EACH WAY. MECHANICAL UNITS HUNG FROM CONCRETE SLABS SHALL NOT EXCEED 500 LBS.
  4. STEEL WF BEAMS AND GIRDERS AND PLATE GIRDERS - WATER AND GAS PIPING, ELECTRICAL CONDUITS, DUCTING AND TRAPEZE OF SAME NOT TO EXCEED 10.0 PSF AND BRACING AS NOTED BELOW. MAXIMUM LOAD ON A SINGLE SPAN = 600 LBS. MECHANICAL UNITS HUNG FROM BEAMS SHALL NOT EXCEED 1000 LBS. UNLESS SPECIFICALLY INDICATED ON STRUCTURAL PLANS. CONCENTRIC CONNECTIONS ARE REQUIRED FOR HANGER LOADS IN EXCESS OF 100 LBS.

SEISMIC BRACING

- A. IN APPLYING EQUATIONS (13.3-1) & (13.3-2) FROM SECTION 13.3 OF ASCE 7 FOLLOWING MINIMUM DESIGN COEFFICIENTS SHALL BE USED:  
 $A_p = 1.0$  (RIGID)  $A_p = 2.5$  (FLEXIBLE)  $R_p = 2.5$   $R_p = 1.5$  (WHERE REQUIRED BY 13.4.2)  
 $I_p = 1.5$   $S_{DS} = 0.510$   $ZH = 1.0$
- B. THE DESIGN OF ELEMENTS AND THEIR ATTACHMENTS THAT ATTACH TO MORE THAN ONE LEVEL OF THE STRUCTURE AND/OR WHERE ATTACHMENTS OCCUR ON BOTH SIDES OF SEISMIC SEPARATIONS, WHERE OCCUR, SHALL CONFORM TO THE REQUIREMENTS OF ASCE 7 13.3.2.
- C. DESIGN AND INSTALL SEISMIC BRACING SO AS NOT TO ADVERSELY EFFECT THE PERFORMANCE OF SOUND AND/OR VIBRATION ISOLATION ITEMS.
- D. MAXIMUM LOADING: ATTACH NO BRACING LOADS GREATER THAN THE FOLLOWING WITHOUT SPECIFIC APPROVAL OF THE STRUCTURAL ENGINEER. WHERE ATTACHMENTS ARE MADE TO PREFABRICATED ELEMENTS SUCH AS JOIST, OWJOWIG, GANG-NAIL, TRUSSES, ETC., LOADS NOTED ARE SUGGESTED MAXIMUMS. CONTRACTOR SHALL PROVIDE ALL PROPOSED ATTACHMENT DETAILS AND LOADS TO MANUFACTURER FOR FINAL REVIEW/APPROVAL PRIOR TO INSTALLATION.
1. METAL DECK WITHOUT CONCRETE FILL - WIRE BRACING FOR SUSPENDED CEILINGS ONLY.
  2. METAL DECK WITH CONCRETE FILL - MAXIMUM BRACING LOAD SHALL NOT EXCEED 200 LBS. SPACED NO CLOSER THAN 8'-0" CC TO ADJACENT BRACING OR HANGERS.
  3. CAST-IN-PLACE CONCRETE SLABS - MAXIMUM BRACING LOAD SHALL NOT EXCEED 200 LBS. SPACED NO CLOSER THAN 8'-0" CC TO ADJACENT BRACING OR HANGERS.
  4. STEEL WF BEAMS AND GIRDERS AND PLATE GIRDERS - MAXIMUM BRACING LOADS IN A SINGLE SPAN SHALL BE LIMITED TO THE FOLLOWING:  
BRACING PERPENDICULAR TO WF BMS/GIRDERS & ATTACHED TO THE TOP FLANGE = 800 LBS.  
BRACING PERPENDICULAR TO WF BMS/GIRDERS & ATTACHED TO THE BOTTOM FLANGE = 100 LBS.  
BRACING PARALLEL TO WF BMS/GIRDERS & ATTACHED TO THE BOTTOM FLANGE = 800 LBS.  
BRACING SHALL NOT ATTACH TO BEAMS/GIRDERS THAT ALSO SUPPORT HANGING LOADS AS NOTED ABOVE.



DETAIL 1 10S1.6 1" = 1'-0"



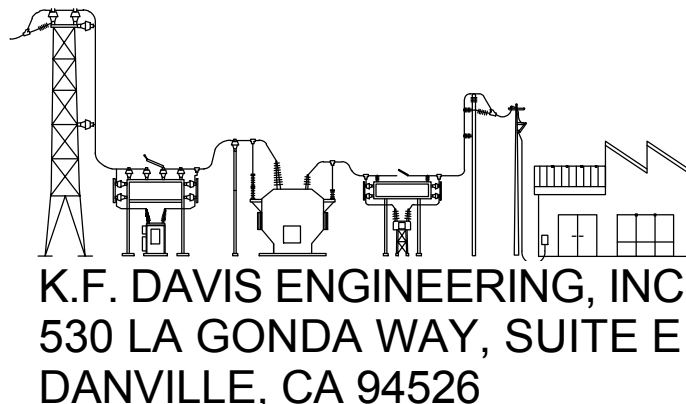
| UNISTRUT SIZE | BEAM SPACING | MAX. HANGER LOADS |
|---------------|--------------|-------------------|
| P1000         | 8'-0" MAX    | 95 LBS            |
| P1000         | 10'-0" MAX   | 60 LBS            |
| P1001         | 8'-0" MAX    | 475 LBS           |
| P1001         | 10'-0" MAX   | 305 LBS           |
| P5000         | 8'-0" MAX    | 210 LBS           |
| P5000         | 10'-0" MAX   | 142 LBS           |
| P5001         | 8'-0" MAX    | 1160 LBS          |
| P5001         | 10'-0" MAX   | 825 LBS           |

NOTES:

1. THIS DETAIL IS FOR USE AS AN ALTERNATE TO MASON INDUSTRIES OR EQUAL UPPER END SUPPORTS AT HANGER STRAPS AND RODS AT PIPE, CONDUIT OR DUCT. SEE MECHANICAL DRAWINGS FOR CRITERIA & ADDL. INFORMATION.
2. THIS DETAIL MAY NOT BE USED FOR SEISMIC BRACING SUPPORTS. SEISMIC BRACING SHALL BE PER AN OSHPD PRE-APPROVED SYSTEM, SUCH AS MASON INDUSTRIES OR EQUAL.
3. FOR ADDITIONAL CRITERIA, SEE SUPPORTING FROM STRUCTURE NOTES ON THIS SHEET.
4. MAXIMUM ALLOWABLE HANGING LOADS SHALL NOT EXCEED THE LESSOR OF THE LOADS INDICATED IN THE GUIDELINES AND LIMITATIONS OF THE SUPPORTING FROM STRUCTURE NOTES AND THOSE NOTED BELOW.

NOTE:  
MAX HANGER LOAD MAY BE FROM A SINGLE HANGER OR THE TOTAL LOAD FROM ALL HANGERS SUPPORTED FROM A COMMON STRUT.

DETAIL 2 10S1.6 1" = 1'-0"



Revisions:

Approved:

Approved:

Drawing Title:

BUILDING 10  
SUPPORTING FROM STRUCTURE

Approved: Medical Center Director

Approved: Chief, Engineering Service

Drawn:

Checked:

Project Title:

RENOVATE/EXPAND RESEARCH  
LABS, B-10 & 11

Building Number:

BLDGS 10 & 11

Location:

ALBUQUERQUE,  
NEW MEXICO

Date:

03/24/11

Project No.:

501-319

DRAWING No.

10S1.6

Dwg. 49 Of 135



Department of  
Veterans Affairs