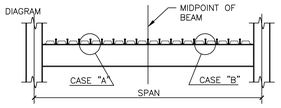
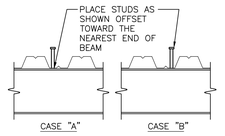
COMPOSITE BEAM NOTES AND DETAILS

FOR BEAMS WITH DECK SPAN PERPENDICULAR TO THE BEAM.

STUD DIAGRAM

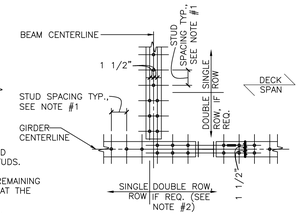




1. LAYOUT STUDS ALONG BEAM LENGTH PRIOR TO STUD ATTACHMENT.
2. IF TOTAL QUANTITY OF STUDS EXCEEDS SPAN LENGTH IN FEET, LAYOUT A SINGLE ROW OF STUDS AT 12" O.C. AND LAYOUT REMAINING STUDS IN EQUAL QUANTITIES FROM EACH END OF BEAM AT 12" O.C. IN A DOUBLE ROW OF STUDS. CENTER DOUBLE STUD ROW ABOUT CENTERLINE OF BEAM. SEE STUD PLACEMENT DETAIL FOR STUD PLACEMENT.
3. IF TOTAL QUANTITY OF STUDS IS LESS THAN THE SPAN LENGTH IN FEET, PLACE STUDS AT 24" O.C. AND PLACE REMAINING STUDS IN EQUAL QUANTITIES FROM EACH END OF BEAM AT VACANT DECK FLUTE LOCATIONS AT 24" O.C. SUCH THAT THE STUD SPACING AT END IS 12" O.C.
4. IN ALL CASES, THERE SHALL BE AN EQUAL NUMBER OF SHEAR STUDS ON EACH SIDE OF THE MIDPOINT OF BEAM.

FOR BEAMS WITH DECK SPAN PARALLEL TO THE BEAM.

1. LAYOUT STUDS ALONG BEAM LENGTH PRIOR TO STUD ATTACHMENT.
2. SPACE STUDS IN A SINGLE ROW BETWEEN SUPPORTS AT A UNIFORM SPACING, SPACING SHALL NOT BE LESS THAN 4 1/2".
3. IF SPACING WOULD BE LESS THAN 4 1/2", LAYOUT A SINGLE ROW OF STUDS AT 4 1/2" ON CENTER AND LAYOUT THE REMAINING STUDS IN EQUAL QUANTITIES FROM EACH END OF THE BEAM IN A DOUBLE ROW OF STUDS. CENTER DOUBLE STUD ROW ABOUT CENTERLINE OF BEAM. SEE DETAIL "C" FOR STUD PLACEMENT.



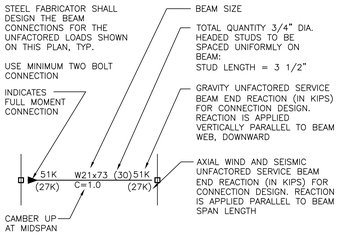
STUD PLACEMENT DETAIL

COMPOSITE BEAM LEGEND

STEEL FABRICATOR SHALL DESIGN THE BEAM CONNECTIONS FOR THE UNFACTORED LOADS SHOWN ON THIS PLAN, TYP.

USE MINIMUM TWO BOLT CONNECTION

INDICATES FULL MOMENT CONNECTION



COMPOSITE DECK ATTACHMENT

1. DECK PERPENDICULAR TO SUPPORT – (4)–5/8" DIA. PUDDLE WELDS PER SHEET.
2. DECK PARALLEL TO SUPPORT – 5/8" DIA. PUDDLE WELDS AT 12" O.C. (24" O.C. MAX.)
3. SIDELAPS – 3/8"x1 1/4" ARC SEAM WELDS AT 24" O.C. U.N.O.
4. DECK SHALL BE CONTINUOUS OVER (3) SUPPORTS, U.N.O.

GENERAL NOTES

A. GROUND FINISHED FLOOR ASSUMED ELEVATION = 100'–0" (4754.87') ALL ELEVATIONS ARE BASED ON THIS DATUM UNLESS NOTED OTHERWISE.

B. SEE SHEET SG001 AND SG002 FOR GENERAL NOTES AND DESIGN LOADS.

C. SEE SHEETS SF401, SF402, AND SF403 FOR FRAMING DETAILS.

D. COORDINATE LIMITS AND LOCATION OF VENEER WITH ARCHITECTURAL DRAWINGS. DIMENSIONS SHOWN TO OUTSIDE OF BUILDING ARE TO FACE OF BRICK, TYP.

E. SEE ARCH FOR ROOF TAPER AND SLOPE REQUIREMENTS FOR DRAINAGE. ROOF SLAB IS FLAT ACROSS ENTIRE ROOF PLANE.

F. VERIFY ALL WALL OPENING AND INTERIOR WALL DIMENSIONS AND LOCATIONS WITH ARCHITECTURAL DRAWINGS.

G. VERIFY ALL DIMENSIONS IN THE FIELD AND WITH EQUIPMENT SUPPLIER REQUIREMENTS FOR FULL COORDINATION OF MISC. SUPPORT AND FRAMING STEEL AND OTHER STRUCTURAL ITEMS PRIOR TO FABRICATION. LOCATIONS OF SUPPORTS, HANGERS, ATTACHMENTS AND OTHER ITEMS WILL VARY ACCORDING TO EQUIPMENT SELECTED AND FINAL CONFIGURATION OF INSTALLED MEP SYSTEMS. SEE GENERAL NOTES ON SG001 AND SG002.

H. ONLY THOSE PORTIONS OF THE EXISTING STRUCTURE ARE SHOWN WHERE PERTINENT TO THE LOCATIONS OF SUPPORT FRAMING MODIFICATION OR ADDITION. DRAWINGS SHALL BE USED FOR LAYOUT RELATIVE TO THE EXISTING STRUCTURE, HOWEVER FIELD VERIFICATION OF FRAMING LOCATIONS IS REQUIRED BEFORE INSTALLATION OF ANY NEW FRAMING.

I. WHEN CORING THROUGH CONCRETE, CONTRACTOR SHALL PROVIDE GROUND PENETRATING RADAR OR OTHER MEANS OF SLAB OR OTHER STRUCTURAL COMPONENT REINFORCING LOCATION AND MARK SUCH LOCATIONS SO THAT NO EXISTING REINFORCING IS DAMAGED DURING INSTALLATION OF ANY NEW FASTENERS (POWER ACTUATED FASTENERS, SCREWS, BOLTS OR OTHER CONNECTORS), FLOOR SINKS DRAINS OR OTHER MEP SLAB PENETRATIONS TO TOP OF BOTTOM OF EXISTING FLOOR SLAB. ANY DAMAGED REINFORCING WILL REQUIRE STRUCTURAL REPAIRS AT THE CONTRACTORS EXPENSE.

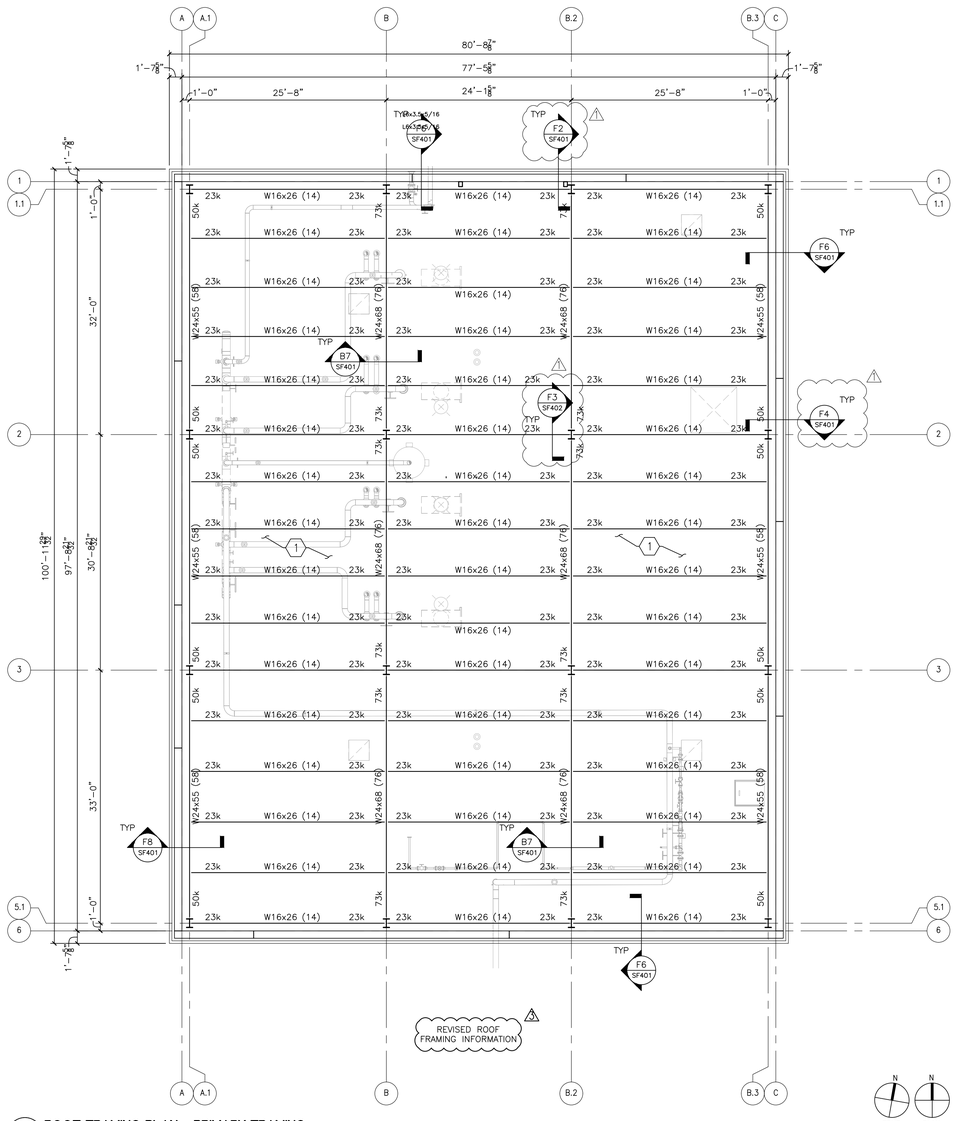
J. SEE COMPOSITE BEAM NOTES AND DETAILS THIS SHEET FOR SHEAR STUDS AND DECK ATTACHMENT TO FRAMING MEMBERS AND DECK FASTENER TYPE, SIZE, AND SPACING.

K. SEE SHEET SF104 FOR COMPOSITE FLOOR SLAB REINFORCING FOR THIS LEVEL, INCLUDING ADDITIONAL REQUIREMENTS FROM THE VA PHYSICAL SECURITY DESIGN MANUAL FOR TIE-FORCE METHOD TO MINIMIZE PROGRESSIVE COLLAPSE POTENTIAL.

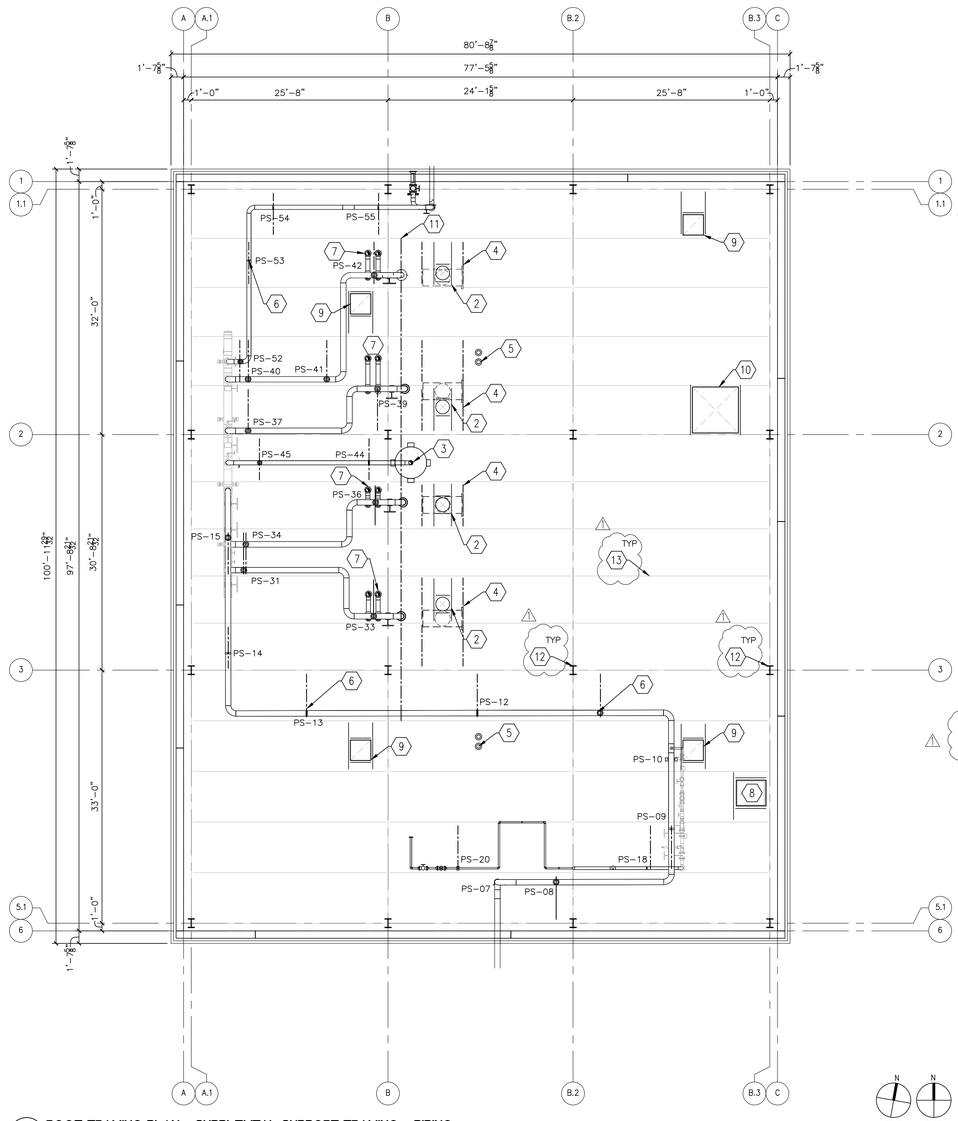
L. VERIFY ALL OPENINGS FOR MECHANICAL SHAFTS, STAIRS, ETC. WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. SEE C2/SF402 FOR TYPICAL FLOOR OPENINGS LESS THAN 24". SEE C9/SF402 FOR TYPICAL FLOOR OPENINGS GREATER THAN 24".

KEY NOTES

1. 3" LIGHTWEIGHT CONCRETE ON VULCRAFT GALVANIZED 2" 20GA VLI COMPOSITE METAL DECK. TOTAL SLAB THICKNESS = 5". SEE SF104 FOR COMPOSITE SLAB REINFORCING.
2. BOILER EXHAUST STACK ROOF PENETRATION. SEE NOTE L FOR FRAMING AROUND SLAB ON DECK OPENINGS AND UTILIZE DETAIL C9/SF402 FOR THESE STACK OPENINGS. COORDINATE SIZE AND LOCATION OF ALL MECHANICAL OPENINGS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. NOTE OFFSET FROM VERTICAL LOWER STACK AND ECONOMIZER BELOW TO AVOID MAIN BEAMS. SEE MECHANICAL FOR PIPE BOLTING. SEE B9/SF401 FOR GUY WIRE BRACING BASE CONNECTIONS TO STRUCTURE.
3. 6" PIPE STEAM HEADER PRESSURE RELIEF PIPE PENETRATION OPENING CORE DRILLED THROUGH SLAB AND DECK, SEE MEP FOR PIPE AND SILENCER INFORMATION. PROVIDE FABRICATED STEEL SUPPORT FRAME FOR SILENCER TO BOLT TO ROOF SLAB. INCLUDE IN BID FOR POSSIBLE GUY WIRE BRACING AT TOP OF SILENCER AND POST-INSTALLED WIRE ANCHORAGE AND BRACKETS AT ROOF SLAB, FRAME, AND ANCHORAGE BY SILENCER SUPPLIER. SEE B9/SF401 FOR GUY WIRE BRACING BASE CONNECTIONS TO STRUCTURE.
4. STEAM BOILER ECONOMIZER (2410 LBS DESIGN WEIGHT, WET) AND UPPER SECTION OF EXHAUST STACK PIPE PENETRATION TO BE SUPPORTED BY HANGER RODS LOCATED IN COORDINATION WITH ECONOMIZER SUPPORT BRACKETS PER SUPPLIER. PROVIDE W8x10 BELOW MAIN ROOF BEAMS AND BOLTED TO BOTTOM FLANGE OF MAIN ROOF BEAMS. HANGER RODS SHOULD BE DRILLED THROUGH BOTTOM FLANGE OF W8x10 AND SUPPORTED BY HEAVY WASHERS AND DOUBLE HEX NUTS INSTEAD OF USING BEAM HANGER CLAMPS.
5. ROOF DRAIN OPENING CORE DRILLED THROUGH SLAB AND DECK, SEE ARCH FOR ROOF DRAIN DETAIL AND PLUMBING FOR PIPE CONNECTIONS AND SUPPORT. SEE GENERAL SHEET NOTE L AND DETAIL C2/SF402 FOR ADDITIONAL SUPPORT AT SMALL OPENINGS.
6. SUSPENDED MECHANICAL PIPE HANGER LOCATIONS. SEE MECHANICAL FOR HANGER TYPE AND LOAD. SEE DETAILS FOR FRAMING SUPPORT OF HANGER LOADS. WHERE NO ADDITIONAL INTERMEDIATE SUPPORT STEEL IS SHOWN, HANGER LOADS ARE LESS THAN 250# AND CAN BE SUSPENDED VIA THREADED ROD TITEN HD HANGER COUPLER BOLT INSTALLED IN BOTTOM OF STRUCTURAL SLAB/DECK OR VIA BOTTOM FLANGE HANGER CLAMP. SEE BOLT AND DECK SUPPLIER LITERATURE FOR SPACING/DISTANCE REQUIREMENTS FROM LOWER DECK FLUTE EDGES. MOST MEP PIPE/CONDUIT AND HANGERS LESS THAN 250# ARE NOT SHOWN THESE DRAWINGS, ONLY MAJOR LOAD POINTS ARE SHOWN TYPICALLY. REFER TO MEP DRAWINGS FOR ADDITIONAL PIPE/CONDUIT AND EQUIPMENT REQUIRING VERTICAL HANGER ROD SUPPORT.
7. MEP PIPE PENETRATION OPENING CORE DRILLED THROUGH SLAB AND DECK, SEE GENERAL SHEET NOTE L AND DETAIL C2/SF402 FOR ADDITIONAL SUPPORT AT SMALL OPENINGS.
8. ROOF ACCESS HATCH, SEE ARCH FOR DETAIL. COORDINATE WITH HATCH SUPPLIER FOR SUPPLEMENTAL FRAMING DIMENSIONS. SEE C9/SF402 FOR FRAMING AT OPENING ON ROOF DECK AND SLAB.
9. ROOF VENTILATION SHAFT OPENING THROUGH SLAB, SEE MECHANICAL FOR VENTILATION EQUIPMENT. SEE NOTE L FOR FRAMING AROUND SLAB ON DECK OPENINGS AND UTILIZE DETAIL C9/SF402 FOR THESE OPENINGS
10. MECHANICAL DUCT OPENING IN ROOF SLAB, SEE MECHANICAL. SEE NOTE L FOR FRAMING AROUND SLAB ON DECK OPENINGS AND UTILIZE DETAIL C9/SF402 FOR THESE OPENINGS, DO NOT CUT ANY STEEL BEAMS OR STOP DECK SHORT OF BEAM TOP FLANGE FOR ANY OPENINGS.
11. PROVIDE W8x10 CONTINUOUS TO EXTENTS SHOWN (BOLTED SHEAR CONNECTION WHERE REQUIRED FOR INSTALLATION, HOWEVER BOTTOM FLANGE SHALL BUTT TIGHT) BELOW MAIN ROOF BEAMS AND BOLTED TO BOTTOM FLANGE OF MAIN ROOF BEAMS. PROVIDE MANUAL 1 TON PUSH BEAM TROLLEY COMPATIBLE WITH W8 BOTTOM FLANGE AND PROVIDE MANUAL 1 TON CHAIN HOIST COMPATIBLE WITH TROLLEY HANGER POINT. ALIGN WITH VERTICAL MAIN STEAM RISER FROM BOILER.
12. SEE E9/SF402 FOR DECK BEARING SUPPORTS AT COLUMNS, TYP.
13. SEE E2/SF402 FOR REQUIREMENTS ON DECK BEARING CONFIGURATIONS AT BEAMS, TYP.



F1 ROOF FRAMING PLAN - PRIMARY FRAMING
1/8" = 1'-0"



F5 ROOF FRAMING PLAN - SUPPLEMTAL SUPPORT FRAMING - PIPING
1/8" = 1'-0"

Revisions:	Date:
1 ADDENDUM 1	08-09-24
2 ADDENDUM 2 (NO STRUCTURAL CHANGES)	XX-XX-XX
3 ADDENDUM 3	01-17-25

CONSULTANT

MOON TREE CONSULTING
SDVOSB
1808 DEEP CREEK RD. OKC, OK 73131
918.527.7166 INFO@MOONTREELLC.COM

ARCHITECT/ENGINEER OF RECORD

paradigm
Architecture | Engineering | Design-Build
200 Envoy Circle, Suite 201, Louisville KY 40299 – www.paradigmuso.com

STAMP

STATE OF KENTUCKY
DAVID RI WALTON
31109
LICENSED PROFESSIONAL ENGINEER

Office of Construction and Facilities Management

VA U.S. Department of Veterans Affairs

Drawing Title: ROOF FRAMING PLANS	Phase: 100% CONSTRUCTION DOCUMENTS	Project Title: DESIGN REPLACE BOILER PLANT	Project Number: 438-22-900
			Building Number: 12
Approved: Project Director	FULLY SPRINKLERED	Location: SIOUX FALLS VAMC, SIOUX FALLS, SD 57105	Drawing Number: SF103
		Issue Date: 08-09-2024 / Checked: TWW / Drawn: DRW	

VA FORM 08 - 6231