

ADDENDUM NO. 1

**Bidding and Contract Documents**

For

**CUSTOMER HANGAR FLOOD PROTECTION ENCHANCEMENTS  
Quonset State Airport  
North Kingstown, Rhode Island  
RIAC Construction Contract No. 24920**

**RHODE ISLAND AIRPORT CORPORATION**

July 24, 2014

Prepared by

**AECOM Technical Services Inc**  
66 Long Wharf  
Boston, MA 02110

**NOTICE TO PROSPECTIVE BIDDERS**

Prospective Bidders and all concerned are hereby notified of the following changes to the Bidding Documents for Quonset Hangar Flood Protection Enhancements at the Quonset State Airport. These changes are to be incorporated into and shall become an integral part of the Contract Documents. The number and date of this addendum must be entered into the space provided on Page 1 of the Proposal Form. These changes will be incorporated into the Contract Documents to be issued to the successful bidder.

**APPROVED BY:**



Jeffrey P. Goulart  
Manager of Finance & Administration

**ADDENDUM NO. 1**

**All prospective bidders are hereby notified that the date for the bid opening has been changed from July 29, 2014, to August 5, 2014. Time and location have not changed.**

**QUESTION NO. 1**

Please clarify the locations of the vertical wall expansion joints, Detail 4/A-6 (a). Drawing A-3 implies this joint will be approx. every 8 ft. (b).

**RESPONSE NO. 1**

- (a) Joint locations are shown on the architectural sheets (A-4 and A-5).
- (b) Per 033000, section 3.5 B, contractor shall submit for review final locations for construction joints.

**QUESTION NO. 2**

What is the 1" material?

**RESPONSE NO. 2**

Per 079200, section 3.04 A, contractor shall provide sealant type US-1 at construction joints at cast in place concrete. Note, where joints are indicated and construction joints are not required, the 1" joint is either to be concrete or eliminated.

**QUESTION NO. 3**

Please clarify the modifications to the security fence at the northeast corner of the building: fence is being modified so that it straddles the new flood wall. Will the cut-out in the fence be framed (a)? Fastened to the flood wall (b)?

**RESPONSE NO. 3**

- (a) Yes, the cut-out in the fence will need to be framed.
- (b) It is acceptable to fasten the frame fence to the wall.

**QUESTION NO. 4**

The fence line appears to be on the same alignment as the trench drain. Drawing A-3 shows a fence post in the trench drain. Please confirm the location of the fence and trench drain.

**RESPONSE NO. 4**

Per note on C-1, fence posts to be located to avoid new trench drain.

**QUESTION NO. 5**

There is a canopy at the northeast side of the building. The new flood wall is approx. 2 ft. off the canopy. The canopy will be undermined by the excavation for the flood wall. Please provide structural details for the existing canopy.

**RESPONSE NO. 5**

Existing condition drawings are attached. Based on the original drawings the bottom of the canopy footing should be a minimum of 3'-4" below grade. Acceptable options include:

1. Raise new retaining wall footing to match existing for length of footing affected by existing.  
or

2. Berm existing grade at a slope of 1 vertical to 1.5 horizontal away from existing bottom of footing and cast bottom of the leading edge of the new footing to follow this slope until a depth of 4'-0" bottom of footing from grade is achieved.

QUESTION NO. 6

Since the new flood walls are signed and sealed by a PE can we assume the new structure and existing structure are considered to be compliant for the Flood loads?

RESPONSE NO. 6

Only the new concrete flood wall is stamped and signed by a PE. Per 083959, 1.03, E: the contractor is responsible for providing signed and sealed documents by a PE during submittals for entire water tight flood barrier system including attachment to the existing slab.

Pertaining the existing slab, a ground water analysis was done and determined that uplift on the slab was not expected to the existing groundwater table.

QUESTION NO. 7

Are there existing structural drawings available showing the existing Slab on grade construction / foundations in the area of the new internal water tight barriers?

RESPONSE NO. 7

Existing condition drawings are attached.

QUESTION NO. 8

We have received a quote from PS Door manufacture for a flood barrier and the price based on PS Door series FP-530A, which according to PS Door meets the specifications.

RESPONSE NO. 8

Alternates are acceptable as long as they are an approved equal. Submit alternates per specification section 01631

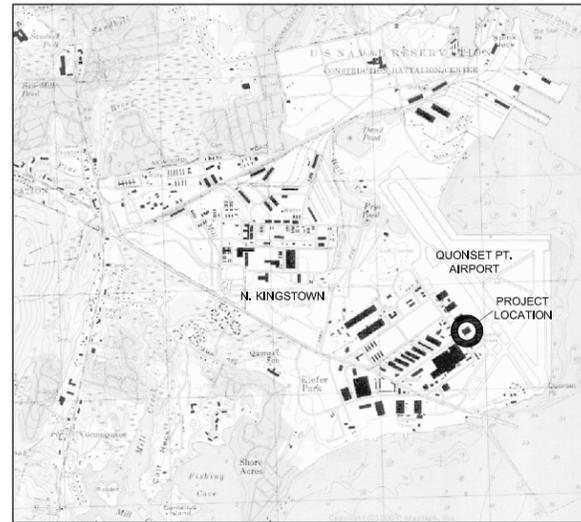
END OF ADDENDUM NO. 1

RHODE ISLAND AIRPORT CORPORATION

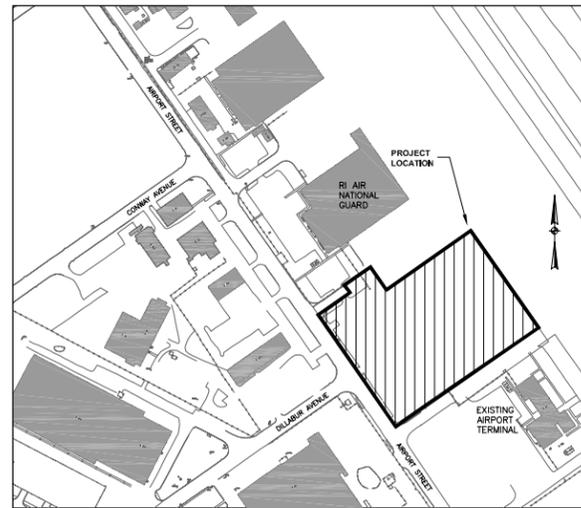
**QUONSET AIRPORT  
NEW CUSTOMER HANGAR**

RIAC CONTRACT NO. 20223

INDEX OF DRAWINGS



**LOCATION MAP**  
NOT TO SCALE



**SITE MAP**  
NOT TO SCALE



**BUILDING RENDERING**  
AIRSIDE PERSPECTIVE - NOT TO SCALE

NUMBER	DESCRIPTION	NUMBER	DESCRIPTION
<b>EARTH WORK</b>		<b>STRUCTURAL</b>	
EW-1	DEEP DYNAMIC COMPACTION - LOCATION PLAN	S-1	GENERAL NOTES AND ROOF SNOW LOADING PLAN
<b>SITE / CIVIL</b>		S-2	FOUNDATION PLAN
C-1	LEGEND AND GENERAL NOTES	S-3	CONCRETE SLAB PLAN
C-2	EXISTING CONDITIONS PLAN - ALL UTILITIES	S-4	SECOND FLOOR FRAMING PLAN
C-3	EXISTING CONDITIONS PLAN - REMAINING SITE UTILITIES	S-5	ROOF FRAMING PLAN
C-4	SITE PLAN	S-6	STRUCTURAL FRAMING ELEVATIONS
C-5	UTILITY PLAN	S-7	STRUCTURAL FRAMING ELEVATIONS, BRACING DETAILS, AND COLUMN SCHEDULE
C-6	DRAINAGE AND GRADING PLAN	S-8	FOUNDATION DETAILS
C-7	DETAILS	S-9	FOUNDATION DETAILS
C-8	LANDSCAPING PLAN	S-10	FRAMING DETAILS
<b>ARCHITECTURAL</b>		S-11	FRAMING DETAILS
A-0002	ABBREVIATIONS, GENERAL NOTES, LEGEND, AND CODE ANALYSIS	<b>MECHANICAL</b>	
A-0003	PARTITION TYPES	M-1	MECHANICAL LEGEND
A-0201	FIRST FLOOR PLAN	M-2	HVAC SCHEDULE
A-0202	SECOND FLOOR PLAN	M-3	HVAC - FIRST FLOOR PLAN
A-0203	ROOF PLAN	M-4	HVAC - SECOND FLOOR PLAN
A-0301	FIRST FLOOR REFLECTED CEILING PLAN	M-5	HVAC - ROOF PLAN
A-0302	SECOND FLOOR REFLECTED CEILING PLAN	<b>PLUMBING</b>	
A-0401	BUILDING ELEVATIONS	P-1	PLUMBING LEGEND, SCHEDULES, AND GENERAL NOTES
A-0402	BUILDING ELEVATIONS	P-2	PLUMBING - FIRST FLOOR PLAN
A-0501	BUILDING SECTIONS	P-3	PLUMBING - SECOND FLOOR & ROOF PLANS
A-0601	TERMINAL PUBLIC SPACES - ELEVATIONS AND DETAIL	<b>ELECTRICAL</b>	
A-0602	RESTROOMS AND LOCKERS - PLANS AND ELEVATIONS	E-0	ELECTRICAL LEGEND, DETAILS, AND ABBREVIATIONS
A-0603	KITCHEN AND CONFERENCE ROOM - PLANS AND ELEVATIONS	E-1	LIGHTING - FIRST FLOOR PLAN
A-0604	LINE OPS AND HANGAR - PLANS AND ELEVATIONS	E-2	LIGHTING - SECOND FLOOR PLAN
A-0701	STAIR 1 - ELEVATIONS AND DETAILS	E-3	ELECTRICAL - FIRST FLOOR PLAN
A-0702	STAIR 1 - DETAILS	E-4	ELECTRICAL AND POWER - SECOND FLOOR PLAN
A-0703	STAIR 2 - PLANS, SECTIONS, AND DETAILS	E-5	ELECTRICAL AND POWER - ROOF PLAN
A-0704	ELEVATOR - PLANS, SECTIONS, AND DETAILS	E-6	ELECTRICAL SITE PLAN
A-0801	WALL SECTIONS - HANGAR	E-7	ELECTRICAL DETAILS
A-0802	WALL SECTIONS - TERMINAL	E-8	ELECTRICAL POWER AND F.A. RISER DIAGRAMS
A-0803	WALL SECTIONS - TERMINAL	E-9	LIGHTING FIXTURES AND MECHANICAL EQUIPMENT SCHEDULES
A-0901	EXTERIOR DETAILS	<b>FIRE PROTECTION</b>	
A-0902	DETAILS	FP-1	FIRE PROTECTION LEGEND, SCHEDULES, & GENERAL NOTES
A-0903	ROOF DETAILS	FP-2	FIRE PROTECTION - FIRST FLOOR PLAN
A-1101	FINISH, DOOR, & WINDOW SCHEDULES	FP-3	FIRE PROTECTION - SECOND FLOOR PLAN
A-1102	VESTIBULE PLANS AND SECTIONS	FP-4	FIRE PROTECTION - FIRST FLOOR FOAM FIRE SUPPRESSION SYSTEM
A-1103	VESTIBULE DETAILS	FP-5	FIRE PROTECTION - FOAM TANK SCHEMATICS
A-1104	EXTERIOR SPECIALTIES - SUNSHADING SYSTEM		
A-1105	DOOR AND STOREFRONT DETAILS		
A-1106	INTERIOR STOREFRONT ELEVATION AND DETAILS		
A-1110	CURTAINWALL ELEVATIONS AND DETAILS		
A-1201	CUSTOM CASEWORK		

  
Rhode Island Airport Corporation

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
MANAGER OF ENGINEERING

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
EXECUTIVE VICE PRESIDENT

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
PRESIDENT AND CEO

  
EarthTech  
tyco International, Inc. Computer  
38 Chauncy Street, Suite 1001  
Boston, MA 02111

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_



**100% CONSTRUCTION DRAWING PROGRESS SET  
SUBMITTED MARCH 30, 2007**

**BID SET**

PRIME CONSULTANT / ARCHITECT:  
**EARTH TECH ARCHITECTURE**  
 38 CHAUNCEY STREET  
 SUITE 1001  
 BOSTON, MA 02111  
 T 617.482.4835  
 F 617.482.0642

EXECUTIVE ARCHITECT:  
**L.A. TORRADO ARCHITECTS**  
 35 GREENWICH STREET  
 PROVIDENCE, RI 02907  
 T 401.781.0633

SITE AND CIVIL ENGINEERING:  
**EARTH TECH, INC.**  
 300 BAKER AVENUE  
 CONCORD, MA 01742  
 T 978.371.4000

MECHANICAL / ELECTRICAL / PLUMBING  
 AND FIRE PROTECTION ENGINEERING:  
**SAR ENGINEERING, INC.**  
 10 GRANITE STREET  
 QUINCY, MA 02169  
 T 617.221.9234

STRUCTURAL ENGINEERING:  
**ODEH ENGINEERS, INC.**  
 1223 MINERAL SPRING AVENUE  
 NORTH PROVIDENCE, RI 02904  
 T 401.421.4140

GEOTECHNICAL ENGINEERING:  
**GZA GEOENVIRONMENTAL**  
 140 BROADWAY  
 PROVIDENCE, RI 02903  
 T 401.421.4140

SURVEYOR:  
**TIBBETTS ENGINEERING, CORP.**  
 716 COUNTY STREET  
 TAUNTON, MA 02780

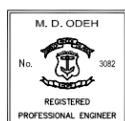
Revisions:		Description:
No.	Date:	
	02/26/07	95% CD SUBMISSION
	03/28/07	100% CD SUBMISSION

Key Plan:

Date: FEBRUARY 26, 2007  
 Scale: NO SCALE  
 Drawn By: MFF  
 Checked By: MDO/DJO

RIAC PROJECT NUMBER 20223

**GENERAL NOTES  
 AND  
 ROOF SNOW LOADING PLAN**



**GENERAL NOTES**

**I. GENERAL**

- ALL WORK SHALL CONFORM TO THE RHODE ISLAND STATE BUILDING CODE AND ITS APPLICABLE REFERENCED STANDARDS.
- WHERE DETAILS FOR SPECIFIC CONDITIONS ARE NOT SHOWN ON THESE PLANS, USE DETAILS FOR THE MOST NEARLY SIMILAR CONDITIONS SHOWN ON THE STRUCTURAL DRAWINGS AS DETERMINED BY THE ARCHITECT AND STRUCTURAL ENGINEER OF RECORD. REPORT ANY COORDINATION ISSUES IMMEDIATELY TO THE ARCHITECT FOR REVIEW.
- COORDINATE WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR LOCATIONS AND DIMENSIONS OF CHASES, OPENINGS, BEAM PENETRATIONS, AND OTHER INFORMATION NOT SHOWN ON THESE PLANS THAT IMPACT STRUCTURE AND FOUNDATIONS. INCLUDE ADDITIONAL FRAMING AND REINFORCEMENT FOR SUCH WORK (PER TYPICAL STRUCTURAL DETAILS IN THIS SET) IN BASE CONTRACT.
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE FOR A SAFE AND EFFICIENT METHOD OF SHORING AND/OR BRACING THE STRUCTURE DURING ALL CONSTRUCTION PHASES. SUBMIT AN OUTLINE OF PROPOSED PROCEDURE TO THE ARCHITECT/ENGINEER BEFORE CONSTRUCTION COMMENCES.
- ALL WORK SHALL BE CONTINUOUSLY MONITORED AND INSPECTED BY AN INDEPENDENT TESTING AGENCY. SUBMIT ALL TEST AND INSPECTION REPORTS TO A/E FOR REVIEW.
- STRUCTURAL MEMBERS SHALL NOT BE MODIFIED IN THE FIELD WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER. IN THE EVENT OF A CONSTRUCTION OR FABRICATION ERROR, THE CONTRACTOR SHALL PREPARE A SKETCH WITH A PROPOSED REPAIR, AND SUBMIT IT TO THE A/E FOR APPROVAL PRIOR TO PERFORMING ANY CORRECTIVE WORK.
- SUBMIT SHOP DRAWINGS FOR APPROVAL (FOR ALL TRADES INDICATED HEREIN) PRIOR TO PROCEEDING WITH FABRICATION AND/OR CONSTRUCTION.

**II. DESIGN LOADS**

- FLOOR LIVE LOAD
  - OFFICES ..... 50 PSF
  - CORRIDORS ..... 100 PSF
- ROOF LIVE LOAD (PER IBC 2003 SECTION 1608)
  - GROUND SNOW LOAD,  $P_g$  ..... 30 PSF
  - SNOW EXPOSURE FACTOR,  $C_e$  ..... 1.0
  - SNOW LOAD IMPORTANCE FACTOR,  $I_s$  ..... 1.0
  - THERMAL FACTOR,  $C_t$  ..... 1.0
  - \*MODIFIED FOR SNOW DRIFT PER RIBC - SEE ROOF LOADING PLAN
- WIND LOAD (PER IBC 2003 SECTION 1609)
  - BASIC WINDSPEED (ZONE I) ..... 110 MPH
  - WIND LOAD IMPORTANCE FACTOR,  $I_w$  ..... 1.00
  - WIND EXPOSURE CATEGORY ..... C
  - MAIN WIND FORCE RESISTING SYSTEM DESIGN METHOD ..... METHOD 1 (PER ASCE 7-02)
  - COMPONENTS AND CLADDING LOADS ..... PER IBC 2003 1609.6.5
- EARTHQUAKE LOAD (PER IBC 2003 SECTIONS 1614-1617)
  - SEISMIC USE GROUP ..... II
  - SEISMIC IMPORTANCE FACTOR,  $I_e$  ..... 1.00
  - SPECTRAL RESPONSE ACCELERATIONS
    - $S_s$  ..... 0.260
    - $S_1$  ..... 0.077
  - SITE CLASS ..... D
  - SPECTRAL RESPONSE COEFFICIENTS
    - $S_{ds}$  ..... 0.277
    - $S_{d1}$  ..... 0.123
  - SEISMIC DESIGN CATEGORY ..... B
  - SEISMIC FORCE RESISTING SYSTEM AT TERMINAL BUILDING: STEEL CONCENTRICALLY BRACED FRAMES (NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE)
  - AT TERMINAL BUILDING:  $R=3, C_d=3$
  - REFER TO PRE-ENGINEERED METAL BUILDING DRAWINGS FOR SEISMIC FORCE RESISTING SYSTEM.

**III. FOUNDATIONS**

- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING "DIG SAFE" AS WELL AS ALL APPROPRIATE AGENCIES AND MUNICIPALITIES TO AVOID DAMAGE TO UNDERGROUND UTILITIES PRIOR TO THE START OF ANY SITE WORK.
- BOTTOMS OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 3'-4" BELOW FINISH GRADE.
- FOOTINGS SHALL BE STEPPED AT A MAXIMUM SLOPE OF 2 HORIZONTAL TO 1 VERTICAL, UNLESS NOTED OTHERWISE (SEE TYPICAL DETAILS).
- ALL BOTTOMS OF FOOTINGS SHALL BEAR ON VIRGIN SOILS AND/OR ENGINEERED FILL WITH A MINIMUM BEARING CAPACITY OF 3500 PSF (TO BE VERIFIED BY A P.E. DURING CONSTRUCTION). ALL SOIL IMPROVEMENT OPERATIONS USING VIBRATORY PROBE COMPACTION (VPC) SHALL CONFORM TO THE GEOTECHNICAL REPORT AND EARTH WORK SPECIFICATIONS.
- ALL FOOTINGS AND SLABS SHALL BEAR ON COMPACTED ENGINEERED FILL USING "VPC" AS DIRECTED BY THE GEOTECHNICAL ENGINEERING REPORT FURNISHED BY GZA GEOENVIRONMENTAL, DATED OCTOBER 31, 2006. CONTRACTOR SHALL OBTAIN RECORDS OF BORINGS AND INCLUDE PROVISIONS IN BASE CONTRACT FOR REMOVAL OF ALL UNSUITABLE MATERIALS AND REPLACEMENT WITH COMPACTED ENGINEERED FILL USING "VPC" UP TO BOTTOM OF FOOTINGS AND SLABS. DEPTHS AND QUANTITIES OF MATERIAL REMOVAL AND REPLACEMENT SHALL BE BASED UPON THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT AND "VPC" SPECIFICATIONS.
- DURING BACKFILL OPERATIONS OF ALL FOUNDATION WALLS, THE FILL ON EITHER SIDE OF THE WALL SHALL NOT EXCEED A 2"-0" DIFFERENTIAL, UNLESS THE WALL IS DESIGNED FOR RETAINING ACTION.
- ALL RETAINING WALLS SHALL BE BACK FILLED AFTER 28 DAYS OF CONCRETE PLACEMENT.
- FOR PENETRATIONS THROUGH CONCRETE FOUNDATION WALLS EXCEEDING 8", REINFORCE WALL AROUND PERIMETER w/14# BARS, EACH FACE IN A DIAGONAL PATTERN EXTENDING 2'-6" BEYOND OPENING. COORDINATE ALL OPENING LOCATIONS WITH ARCHITECT.
- SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR REVIEW.

**IV. CONCRETE**

- ALL CONCRETE WORK SHALL CONFORM TO ACI 318 AND 301 REQUIREMENTS. THIS SHALL INCLUDE PROPORTIONING OF CONCRETE MIX, CONCRETE TESTING, PLACEMENT OF CONCRETE, AND CURING PROCEDURES.
- ALL CONCRETE SHALL HAVE MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4500 PSI.
- PROVIDE TOTAL AIR ENTRAINMENT OF 6% (4) FOR ALL CONCRETE EXPOSED TO WEATHER.
- MAX. WATER/CEMENT RATIO FOR 4000 PSI CONCRETE -  $W/C = 0.45$ . PROVIDE A HIGH-RANGE WATER REDUCING ADMIXTURE IF REQUIRED TO INCREASE WORKABILITY OF THE CONCRETE.
- CONCRETE REINFORCING SHALL BE IN ACCORDANCE WITH ASTM A615 AND HAVE THE FOLLOWING MINIMUM YIELD STRENGTH:
  - MAIN REINFORCING STEEL ..... 60 KSI
  - TES & STIRRUPS ..... 40 KSI
- WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH ASTM A185.
- UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING MINIMUM REINFORCING COVER:
  - FOOTINGS ..... 3 INCHES
  - CONCRETE EXPOSED TO WEATHER OR EARTH ..... 2 INCHES
  - SLABS ON GRADE (STEEL BARS) ..... 2 INCHES
  - SLABS ON GRADE (W/F) ..... SEE TYP. DETAILS
- MAXIMUM CONCRETE WALL LENGTHS BETWEEN CONSTRUCTION JOINTS SHALL BE 60 FEET.
- PROVIDE VERTICAL CONTROL JOINTS AT A MAXIMUM SPACING OF 20 FEET O.C. FOR ALL CONTINUOUS WALLS WITH MORE THAN 12" PROJECTION ABOVE FINISH GRADE.
- REINFORCING LAP SPICES SHALL BE IN ACCORDANCE WITH ACI-318-95 FOR TENSION LAP SPICES, CLASS B, UNLESS NOTED OTHERWISE. HORIZONTAL REINFORCING IN PERIMETER WALLS SHALL BE LAPPED 24" MINIMUM.
- PROVIDE CORNER BARS AT ALL WALL CORNERS & INTERSECTIONS MATCHING HORIZONTAL REINFORCEMENT WITH 2'-6" MINIMUM LAPS.
- PROVIDE MATCHING DOWELS FOR ALL VERTICAL REINFORCING BARS AT CMU WALLS. IF NO OTHER SIZE IS INDICATED, DOWELS SHALL BE 5'-0" LONG (2'-6" EMBEDMENT, 2'-6" PROJECTION). DOWEL SIZE SHALL MATCH VERTICAL REINFORCING BAR SIZE.
- PLACE ALL SLABS PER ACI 301 AND ACI 302.1/96 SPECIFICATIONS. UNLESS NOTED OTHERWISE, PROVIDE A MINIMUM FLOOR FLATNESS  $F_{1-25}$ , AND, AT SLABS ON GRADE, A MINIMUM FLOOR LEVELNESS  $F_{1-20}$ .
- PROVIDE SAWCUT JOINTS IN SLAB ON GRADE IN TERMINAL BUILDING USING AN EARLY-ENTRY SAW WITHIN 4 HOURS OF PLACEMENT. PROVIDE SAWCUTS @ 10'-0" O.C. MAX., UNLESS NOTED OTHERWISE.

**V. MASONRY**

- ALL MASONRY UNITS SHALL CONFORM TO ASTM C-90, TYPE N-1, WITH THE STRENGTH OF UNITS AND MORTAR BEING SUCH THAT THE ( $f_m$ ) VALUES INDICATED ARE SATISFIED.
- MINIMUM COMPRESSIVE STRENGTH OF CONCRETE MASONRY SHALL BE ( $f_m=1500$  PSI), UNLESS NOTED OTHERWISE.
- ALL MORTAR USED SHALL BE TYPE (M) OR (S). GROUT USED SHALL CONFORM TO ASTM C-476.
- ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 WITH A MINIMUM YIELD STRENGTH OF 60 KSI, UNLESS NOTED OTHERWISE.
- ALL REINFORCING STEEL TO BE WELDED OR DESIGNATED AS "WELDABLE" SHALL CONFORM TO BOTH ASTM A615 (BULLET-STEEL) AND ASTM A706 (LOW-ALLOY STEEL) WITH A MINIMUM YIELD STRENGTH OF 60 KSI. THE WELDING OF REINFORCING BARS SHALL CONFORM TO THE AWS/AWS D1.4 WELDING CODE.
- ALL MASONRY WORK, INCLUDING CURING, ERECTION, AND WEATHER PROTECTION, SHALL CONFORM TO THE REQUIREMENTS OF ACI 530-02 AND 530.1-02 AS WELL AS WITH THE STANDARDS OF THE NATIONAL CONCRETE MASONRY INSTITUTE (N.C.M.A.).
- PROVIDE GALVANIZED HORIZONTAL JOINT REINFORCEMENT AT 16" O.C. VERTICALLY, UNLESS NOTED OTHERWISE.
- UNLESS NOTED OTHERWISE, PROVIDE A MINIMUM OF #6 CONTINUOUS BARS AT 32" O.C. VERTICAL REINFORCEMENT IN ALL CMU WALLS, TYPICAL.
- PROVIDE MATCHING DOWELS INTO FOUNDATION WALLS AT ALL VERTICAL REINFORCEMENT LOCATIONS - SEE TYPICAL DETAILS.
- PROVIDE ADDITIONAL VERTICAL REINFORCEMENT AT JAMBS OF ALL WALL OPENINGS, ENDS OF WALL, AND STEEL BEAM OR ANGLE BEARING LOCATIONS. MINIMUM REINFORCEMENT SHALL BE (2)-#6 VERTICAL BARS, UNLESS NOTED OTHERWISE.
- LAP VERTICAL AND HORIZONTAL REINFORCEMENT (48) DIAMETERS MINIMUM.
- PROVIDE CONTINUOUS BOND BEAMS WITH (2)-#5 SET IN GROUT AT TOP OF ALL CMU WALLS, UNLESS NOTED OTHERWISE.
- PROVIDE ADDITIONAL BOND BEAMS WITH (2)-#5 CONTINUOUS AT 4'-0" O.C. MAXIMUM SPACING VERTICALLY, TYPICAL.
- SEE STRUCTURAL DRAWINGS FOR MASONRY Lintel SCHEDULE AND NOTES.
- HIGH LIFT GROUTING SHALL BE PERMITTED ONLY IF THE PROCEDURES OF ACI 530.1-02 (PART 3) ARE FOLLOWED, INCLUDING BUT NOT LIMITED TO CLEAN OUTS AND POUR HEIGHT LIMITS.
- SUBMIT REINFORCING STEEL SHOP DRAWINGS FOR REVIEW (SEE SECTION 7, GENERAL).

**VI. STRUCTURAL STEEL**

- ALL WORK SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS AND ITS CODE OF STANDARD PRACTICE.
- MATERIAL SPECIFICATIONS:
 

W, WT SHAPES	ASTM A992 (50 KSI)
S, M, HP, C, MC SHAPES	ASTM A572, GRADE 50
SQUARE & RECTANGULAR HSS	ASTM A500, GRADE C (50 KSI)
ROUND HSS	ASTM A500, GRADE C (46 KSI)
L SHAPES, MISC. PLATES & BARS	ASTM A36
ANCHOR RODS	ASTM A325
SHEAR STUD CONNECTORS	ASTM F1554, GRADE 36
	ASTM A109
- ALL WELDING OPERATIONS SHALL BE PERFORMED BY AWS CERTIFIED WELDERS IN CONFORMANCE WITH ALL APPLICABLE REQUIREMENTS. USE E-70XX WELDING ELECTRODES.
- STRUCTURAL STEEL CONNECTIONS SHALL DEVELOP (1/2) OF MEMBER'S TOTAL UNIFORM LOAD CAPACITY AS DETERMINED FROM THE AISC MANUAL OF STEEL CONSTRUCTION, 9TH ED. (ALLOWABLE STRESS DESIGN). SEE NOTES ON THESE PLANS FOR COMPOSITE BEAM REQUIREMENTS.
- ALL BOLTED CONNECTIONS SHALL USE 3/4" ASTM A325 BOLTS OR 4-40 BOLTS, UNLESS NOTED OTHERWISE. BOLTED CONNECTIONS SHALL BE DESIGNED PER THE AISC MANUAL OF STEEL CONSTRUCTION, 9TH ED. (ASD) AND THE RISC SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS (ASD). CONNECTIONS SHALL BE SNUG-TIGHT, U.N.O.
- ALL NEW STRUCTURAL STEEL SHALL BE GIVEN ONE COAT OF AN APPROVED SHOP PRIMER APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, UNLESS NOTED OTHERWISE. SURFACE PREPARATION OF STEEL PRIOR TO SHOP PAINTING SHALL CONFORM TO SSPC SP6.
- AFTER ERECTION IS COMPLETE, TOUCH-UP ALL SHOP PRIMED COATS DAMAGED DURING TRANSPORTATION AND ERECTION, AND PRIME ALL FIELD WELDS USING THE SAME PAINT USED FOR SHOP PRIMING.
- ALL STRUCTURAL STEEL TO RECEIVE SPRAY-ON FIREPROOFING SHALL BE FABRICATED WITHOUT ANY PRIMER COATINGS. (COORD. w/ARCHITECT).
- ALL EXPOSED STRUCTURAL STEEL AND CONNECTIONS SHALL BE HOT-DIP GALVANIZED, OR MAY BE PRIMED AND PAINTED WITH AN APPROVED EPOXY PAINT SYSTEM. TOUCH UP ALL CONNECTIONS AND DAMAGED SURFACES WITH THE SAME PAINT SYSTEM.
- BRACED FRAME CONNECTIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF RHODE ISLAND. CONNECTIONS SHALL BE DESIGNED FOR LOADS INDICATED ON EACH BRACE MEMBER FOR TENSION AND COMPRESSION. SUBMIT STAMPED DRAWINGS AND CALCULATIONS FOR REVIEW.
- MOMENT CONNECTIONS SHALL BE DESIGNED TO DEVELOP THE FULL MOMENT CAPACITY OF THE MEMBERS. ALL MOMENT CONNECTIONS SHALL BE DESIGNED BY A P.E. REGISTERED IN THE STATE OF RHODE ISLAND. SUBMIT STAMPED DRAWINGS AND CALCULATIONS FOR REVIEW.
- STRUCTURAL STEEL FRAME SHALL BE LEVEL AND PLUMB PRIOR TO COMPLETING CONNECTIONS.
- SUBMIT SHOP DRAWINGS FOR REVIEW.

**VII. STEEL JOISTS**

- THE DESIGN, FABRICATION, PAINTING, AND ERECTION OF ALL STEEL JOISTS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF THE STEEL JOIST INSTITUTE (SJI) STANDARD SPECIFICATIONS.
- HORIZONTAL BRIDGING SHALL BE PROVIDED WITH DESIGN AND CONNECTION DETAILS CONFORMING TO SJI SPECIFICATIONS. ALL BRIDGING SHALL BE INSTALLED BEFORE ANY CONSTRUCTION LOADS ARE PLACED ON THE JOISTS. THE ENDS OF ALL BRIDGING LINES TERMINATING AT WALLS OR BEAMS SHALL BE ANCHORED THERETO.
- STEEL JOISTS SUPPORTED BY MASONRY OR CONCRETE ARE TO BEAR ON STEEL BEARING PLATES INTO THE MASONRY AS REQUIRED, AND SHALL BE DESIGNED AS A STEEL BEARING CONDITION. SEE STRUCTURAL DETAILS FOR BEARING PLATE DESIGN.
- UNLESS SPECIFIED OTHERWISE BY THE MANUFACTURER, THE ENDS OF ALL JOISTS BEARING ON STEEL BEAMS OR BEARING PLATES SHALL EXTEND THE FOLLOWING MINIMUM DISTANCES OVER THE SUPPORT:
 

K-SERIES JOISTS	2 1/2"
MINIMUM	
- UNLESS SPECIFIED OTHERWISE BY THE MANUFACTURER, THE MINIMUM TYPICAL ANCHORAGE OF JOIST ENDS TO THE STEEL SUPPORTS SHALL BE AS FOLLOWS:
 

K-SERIES JOISTS	(2)-1/8" FILLET WELDS x 1" LONG
-----------------	---------------------------------
- DURING THE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL EXERCISE CARE AT ALL TIMES TO AVOID DAMAGE THROUGH CARELESS HANDLING DURING UNLOADING, STORING, AND ERECTION OF THE JOISTS. UNDER NO CIRCUMSTANCE SHALL THE JOIST BE MODIFIED IN THE FIELD FROM THE ORIGINAL DESIGN.
- ALL ROOF JOISTS AND JOIST BRIDGING SHALL BE DESIGNED FOR MINIMUM NET WIND UPLIFT LOADS OF 15 PSF.
- PROVIDE ADDITIONAL LINE OF CONTINUOUS BOTTOM CHORD BRIDGING NEAR FIRST BOTTOM CHORD PANEL POINTS FOR ALL STEEL JOISTS IN WIND UPLIFT AREAS AND WITHIN 10'-0" OF ALL ROOF EDGES (TYPICAL).
- COORDINATE BRIDGING LOCATION WITH MEP DUCTWORK AND LIGHTING, TYPICAL.
- PER OSHA REQUIREMENTS, CONNECTIONS OF INDIVIDUAL STEEL JOISTS TO STEEL STRUCTURES IN BAYS OF 40'-0" OR MORE SHALL BE FABRICATED TO ALLOW FOR FIELD BOLTING DURING ERECTION.
- SUBMIT SHOP DRAWINGS FOR REVIEW.

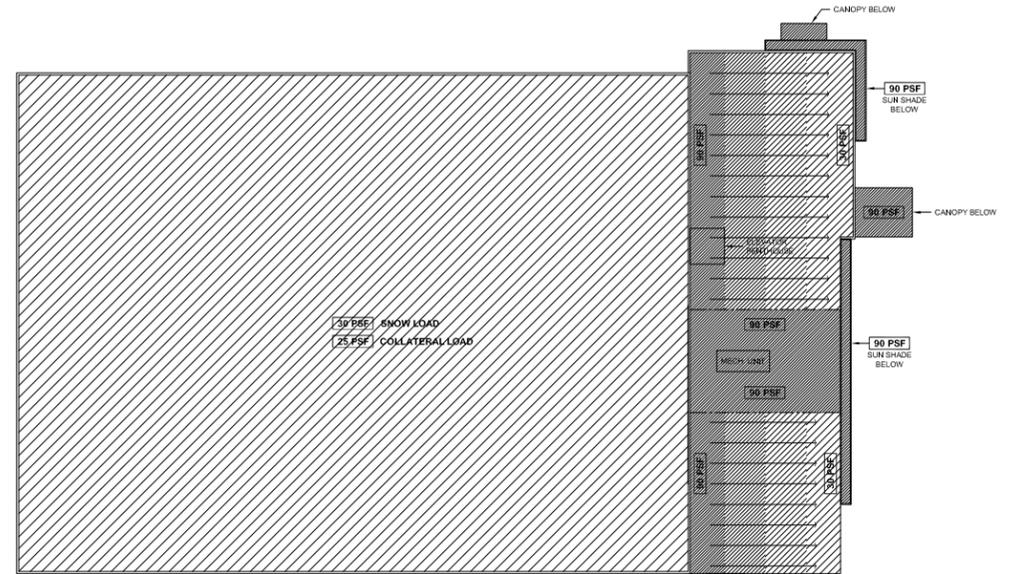
**VIII. STEEL DECKS**

- ALL STEEL DECKING SHALL CONFORM TO THE STEEL DECK INSTITUTE (SDI) APPLICABLE REQUIREMENTS. INSTALLATION SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS IN ACCORDANCE WITH SDI SPECIFICATIONS.
- STEEL DECK SHALL TYPICALLY BE STORED OFF THE GROUND AT THE JOBSITE, AND BE PROTECTED FROM THE ELEMENTS WITH A WATERPROOF COVERING WHERE REQUIRED.
- DECK SHEETS SHALL BE PLACED IN ACCORDANCE WITH APPROVED ERECTION LAYOUT DRAWINGS (INCLUDING FASTENING SCHEDULE) SUPPLIED BY THE DECK MANUFACTURER, AND IN CONFORMANCE WITH THE MANUFACTURER'S STANDARDS. UNLESS NOTED OTHERWISE, END LAPS SHALL OCCUR OVER SUPPORTS, AND SHALL NOT BE LESS THAN 2 INCHES.
- ALL STEEL TO BE USED FOR DECKING SHALL BE GALVANIZED, SEE SPECIFIC NOTES AT EACH FRAMING PLAN FOR INFORMATION.
- UNLESS NOTED OTHERWISE ON PLANS, THE FOLLOWING DECKING SHALL BE USED:
 

ROOF DECK	1 1/2" - 20 GA. (TYPE B) (SEE FRAMING PLANS)
FLOOR DECK	9/16" - 26 GA. METAL FORM DECK
- PROVIDE 20 GA. GALV. STEEL PLATES AT ALL RIDGES, VALLEYS AND LOCATIONS WHERE DECK CHANGES DIRECTION FOR CONTINUOUS EVEN SURFACE.
- UNLESS NOTED OTHERWISE, PROVIDE THE FOLLOWING MINIMUM FASTENING FOR ROOF DECK:
  - EACH SHEET SHALL BE FASTENED USING 5/8" PUDDLE WELDS WITH 36/7 WELD PATTERN AND (4)-#10 TEK SCREW SIDELAP FASTENERS PER SPAN MINIMUM.
  - ROOF DECK FASTENING SHALL CONFORM TO FM APPROVAL GUIDE, CLASS I-90.
  - FASTENING SHALL BE PER FM GLOBAL DATA SHEET 1-28, PAGE 16, ITEM 4.
  - MAXIMUM FASTENER SPACING AT SALIENT CORNERS SHALL BE 8" O.C. AT ALL SUPPORTS. SALIENT CORNERS ARE DEFINED AS A 10'-0" WIDE STRIP AROUND ENTIRE ROOF PERIMETER AND AT ALL CANOPIES.
  - PROVIDE ADDITIONAL FASTENERS AT SALIENT CORNERS AND OTHER AREAS AS REQUIRED TO MEET WIND UPLIFT REQUIREMENTS FOR ROOF DECK ASSEMBLY.
- UNLESS NOTED OTHERWISE, PROVIDE A 36/4 FASTENER PATTERN AND 6 SIDELAP WELDS PER SPAN MINIMUM FOR ALL COMPOSITE STEEL DECK.
- ROOF DECK SHALL BE DESIGNED FOR WIND UPLIFT LOADS PER RHODE ISLAND STATE BUILDING CODE, FM APPROVAL GUIDE, AND "DESIGN LOAD" NOTES ABOVE.
- NO PERMANENT SUSPENDED LOADS ARE TO BE SUPPORTED BY THE STEEL DECK. THIS INCLUDES PIPING, DUCTWORK, MECHANICAL UNITS, CEILING, ETC. ALL COMPONENTS ARE TO BE SUSPENDED FROM STRUCTURAL FRAMING MEMBERS, USING APPROVED ATTACHMENT DEVICES (SEE SPECIFICATIONS).
- SUBMIT SHOP DRAWINGS FOR REVIEW.

**IX. PRE-ENGINEERED BUILDING**

- PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED FOR GRAVITY, SNOW, WIND, AND SEISMIC AS INDICATED IN "DESIGN LOADS" ABOVE.
- PRE-ENGINEERED BUILDING ROOF SHALL BE DESIGNED FOR MINIMUM COLLATERAL LOADS = 25 PSF.
- ROOF MEMBERS SHALL BE DESIGNED AND DETAILED TO RECEIVE ALL REQUIRED MECHANICAL UNITS AND ANY OTHER INCIDENTAL LOADS SUCH AS HOSTS, WINCHES, CRANES, ETC.
- PROVIDE ALL REQUIRED FRAMING TO RECEIVE AND SUPPORT MAIN HANGAR DOOR. DESIGN AND DETAILING SHALL CONFORM TO DOOR MANUFACTURER'S SPECIFICATIONS INCLUDING DEFLECTION CRITERIA.
- ALL DESIGN, FABRICATION, AND ERECTION SHALL CONFORM TO THE MORE STRINGENT REQUIREMENTS OF THE METAL BUILDING MANUFACTURING ASSOCIATION (MBMA) AS WELL AS THE APPLICABLE REQUIREMENTS OF THE RHODE ISLAND STATE BUILDING CODE.
- SUBMIT STRUCTURAL DRAWINGS AND DESIGN COMPUTATIONS PREPARED BY A P.E. REGISTERED IN THE STATE OF RHODE ISLAND.
- SUBMIT SHOP DRAWINGS FOR REVIEW.



**ROOF LOADING PLAN**  
 SCALE: 1/16"=1'-0"

NOTES:  
 30 PSF - INDICATES DESIGN LIVE LOAD.  
 - - - - - INDICATES VARIABLE LOAD, DECREASING IN DIRECTION OF ARROWS.

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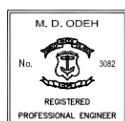
Revisions:		Description:
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02/26/07		95% CD SUBMISSION
03/28/07		100% CD SUBMISSION

Key Plan:

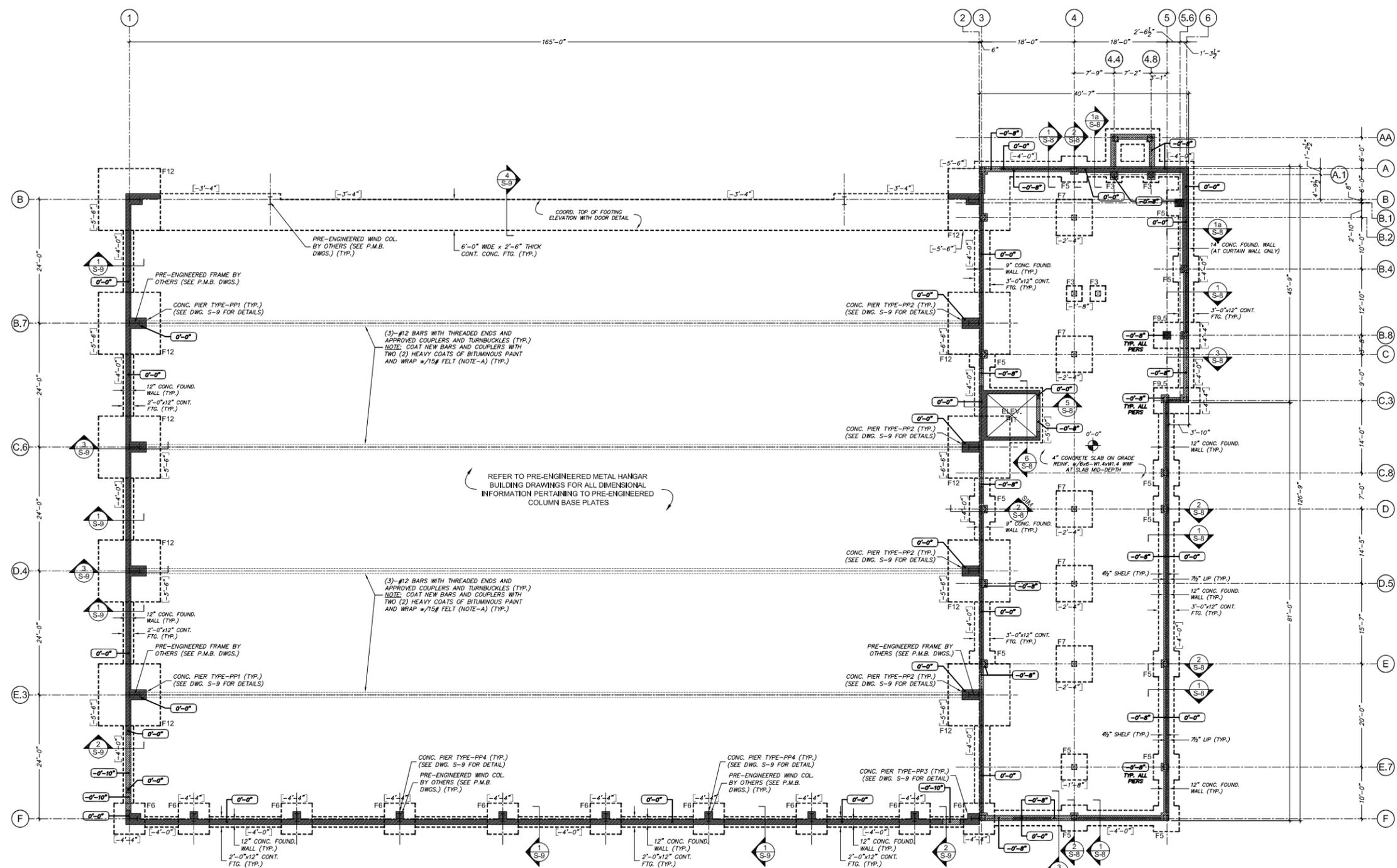
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 Scale: 1/8"=1'-0"  
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 Checked By: MDO/DJO

RIAC PROJECT NUMBER 20223

## FOUNDATION PLAN



S-2



### FOUNDATION PLAN

SCALE: 1/8"=1'-0"

#### NOTES:

- COORD. ALL FINISH DETAILS w/ARCH. DWGS.
- COORD. ALL DIMENSIONS w/ARCH. DWGS.
- [X'-X"] - INDICATES TOP OF NEW CONCRETE FOUNDATION WALL.
- [X'-X"] - INDICATES BOTTOM OF NEW CONCRETE FOOTING ELEVATION.
- F'-F" - INDICATES FLOOR ELEVATION (TYP., U.N.O.).
- F1 - INDICATES CONCRETE FOOTING TYPE. SEE FOOTING SCHEDULE ON THIS SHEET.
- SEE SHEETS S-8 AND S-9 FOR FOUNDATION AND PIER DETAILS.
- SEE SHEET S-7 FOR COLUMN SCHEDULE AND STRUCTURAL ELEVATIONS.
- P.M.B. - INDICATES PRE-ENGINEERED METAL BUILDING.

### FOOTING SCHEDULE

MARK	SIZE			REINFORCEMENT	
	W (WIDTH)	L (LENGTH)	D (DEPTH)	BOTTOM BARS (LONG DIR.)	BOTTOM BARS (SHORT DIR.)
F3	3'-0"	3'-0"	12"	4 - #5	4 - #5
F5	5'-0"	5'-0"	12"	6 - #5	6 - #5
F6	6'-0"	6'-0"	16"	7 - #6	6 - #6
F7	7'-0"	7'-0"	20"	8 - #6	8 - #6
F9.5	9'-0"	5'-0"	16"	6 - #5	10 - #5
F12	12'-0"	12'-0"	30"	12 - #8	12 - #8

### DATUM REFERENCE

REFERENCE FIRST FLOOR ELEVATION 0'-0" = ACTUAL ELEVATION 11.00'  
 REFERENCE SECOND FLOOR ELEVATION 13'-0" = ACTUAL ELEVATION 24.00'

NOTE REGARDING PRE-ENGINEERED BUILDING FOUNDATION:  
 1. FOUNDATION DETAILS INDICATED ARE BASED ON A TYPICAL RIGID FRAME PRE-ENGINEERED BUILDING SYSTEM. THIS PLAN REPRESENTS THE MINIMUM REQUIRED FOOTING SIZES AND DETAILS.  
 2. COORDINATE ALL ANCHOR BOLT LOCATIONS WITH PRE-ENGINEERED BUILDING MANUFACTURER'S ERECTION DRAWINGS. REPORT ANY DISCREPANCIES FOUND TO THE ENGINEER BEFORE PROCEEDING WITH ANY WORK. CHANGES IN THE ANCHOR BOLT LAYOUT MAY RESULT IN THE REDESIGN OF THE CONCRETE PIERS (SIZE & REINF.)

NOTE A: TURNBUCKLES  
 PROVIDE 1/2" MINIMUM DIAMETER TURNBUCKLE AS PER AISC SPECIFICATIONS. STAGGER LOCATION OF TURNBUCKLES AS REQUIRED FOR PROPER INSTALLATION. SUBMIT PROCEDURES TO PRE-TENSION THE RODS IN PLACE BEFORE CONCRETE SLAB IS PLACED.

# QUONSET AIRPORT

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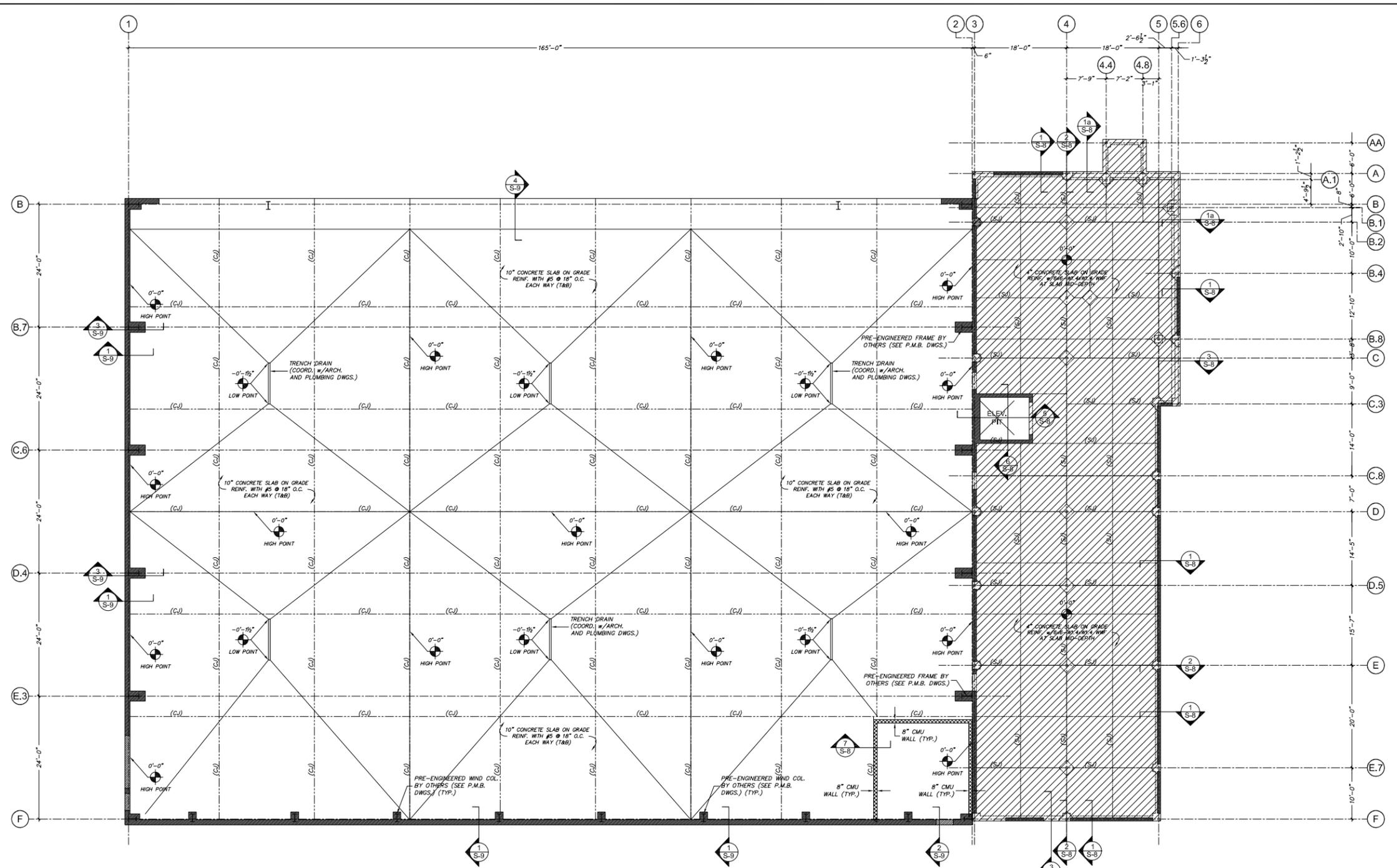
Key Plan:

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 Drawn By: MFF  
 Checked By: MDO/DJO

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## CONCRETE SLAB PLAN

S-3

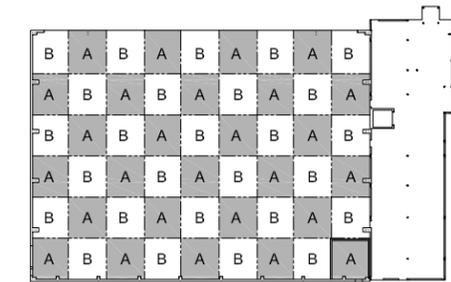


### CONCRETE SLAB PLAN

- SCALE: 1/8"=1'-0"
- NOTES:
1. FINISH FIRST FLOOR SLAB ELEVATION = 0'-0", UNLESS NOTED OTHERWISE.
  2. COORD. ALL DIMENSIONS AND FINISH DETAILS W/ARCH. DWGS.
  3.  $\nabla$  - INDICATES FLOOR ELEVATION (TYP., U.N.O.).
  4. (S-B) - INDICATES SLAB SAWCUT CONTROL JOINT (SEE DETAIL ON S-B).
  5. (C-J) - INDICATES SLAB CONSTRUCTION JOINT (SEE DETAIL ON S-B).
  6. P.M.B. - INDICATES PRE-ENGINEERED METAL BUILDING.

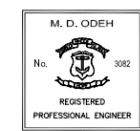
### DATUM REFERENCE

REFERENCE FIRST FLOOR ELEVATION 0'-0" = ACTUAL ELEVATION 11.00'  
 REFERENCE SECOND FLOOR ELEVATION 13'-0" = ACTUAL ELEVATION 24.00'



### CONCRETE SLAB PLACEMENT PLAN

- NO SCALE
- NOTES:
1. HANGAR SLAB SHALL BE PLACED IN A CHECKER BOARD PATTERN AS SHOWN.
  2. ALLOW MINIMUM 14 DAYS BETWEEN CONCRETE PLACEMENTS "A" AND "B".
  3. CONSTRUCTION JOINTS AT TERMINAL BUILDING SHALL BE PROVIDED PER CONTRACTOR'S OPTION FOR MAXIMUM PLACEMENT OF CONCRETE.



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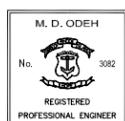
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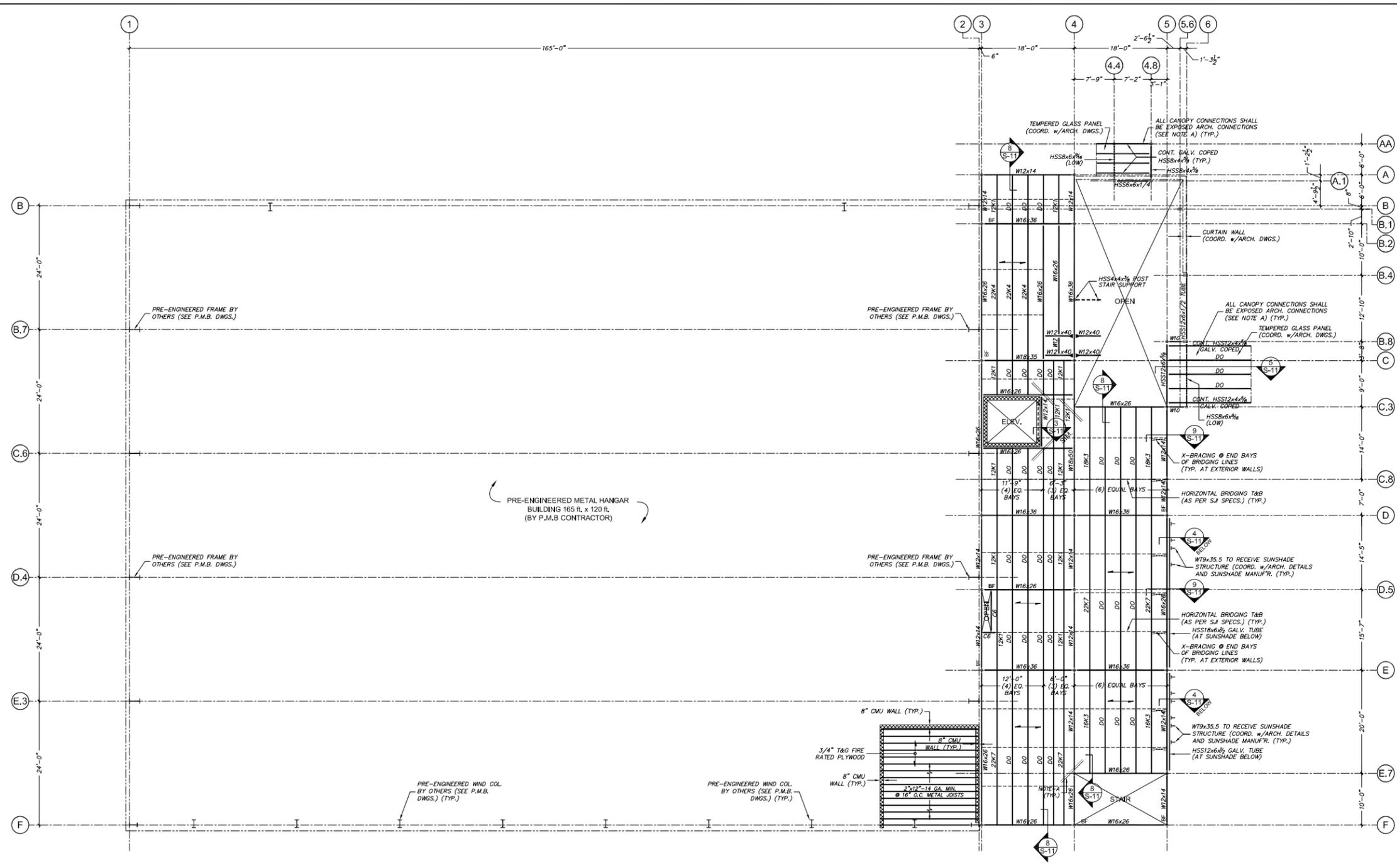
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Drawn By:	MFF
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## SECOND FLOOR FRAMING PLAN



S-4

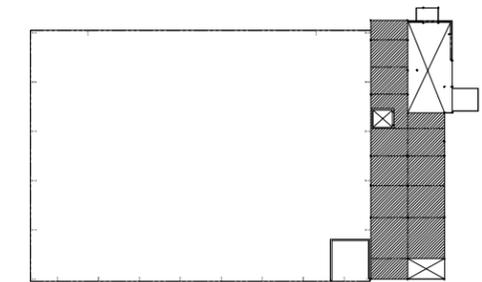


### 2nd FLOOR FRAMING PLAN

- SCALE: 1/8"=1'-0"
- NOTES:
1. FINISH SECOND FLOOR SLAB ELEVATION = (+13'-0"), UNLESS NOTED OTHERWISE.
  2. TOP OF STEEL JOISTS (BOTTOM OF STEEL BEAM) ELEVATION = (+12'-9"), UNLESS NOTED OTHERWISE.
  3. ———— INDICATES SPAN OF 9/16"-26 GA. GALV. METAL FORM DECK WITH 3" CONC. SLAB (SEE TYPICAL FLOOR DECK DETAIL ON DWG. S-10)
  4. COORDINATE ALL DIMENSIONS W/ARCH. DRAWINGS.
  5. PROVIDE HORIZONTAL BRIDGING FOR ALL OPEN WEB STEEL JOISTS AS PER "SJI" RECOMMENDATIONS.
  6. AT JOISTS BEARING ON STEEL BEAMS, JOIST SEATS MAY BE STAGGERED WHERE REQUIRED TO ACHIEVE PROPER BEARING PER SJI REQUIREMENTS.
  7. ———— INDICATES SYMBOL FOR MOMENT CONNECTION. (SUBMIT DETAILS AND CALCULATIONS FOR REVIEW AND APPROVAL.)
  8. BF — INDICATES BRACED FRAME. SEE STRUCTURAL ELEVATIONS FOR BRACE SIZES.
  9. W10 — INDICATES NEW W10x12
  10. W12 — INDICATES NEW W12x14
  11. C6 — INDICATES NEW C6x8.2
  12. C8 — INDICATES NEW C8x11.5
  13. GALV — INDICATED HOT DIPPED GALVANIZED.
  14. P.M.B. — INDICATES PRE-ENGINEERED METAL BUILDING.

### DATUM REFERENCE

REFERENCE FIRST FLOOR ELEVATION 0'-0" = ACTUAL ELEVATION 11.00'  
 REFERENCE SECOND FLOOR ELEVATION 13'-0" = ACTUAL ELEVATION 24.00'



### SLAB SAWCUT CONTROL JOINTS PLAN

- NO SCALE
- NOTES:
1. ———— INDICATES SLAB SAWCUT CONTROL JOINT.
  2. PROVIDE SAWCUT JOINTS IN CONCRETE SLAB AS SHOWN USING AN EARLY-ENTRY SAW WITHIN 4 HOURS OF PLACEMENT.

NOTE A  
 PROVIDE (2) -#5 x 6'-0" LONG ALL INSIDE CORNERS OF SLAB AND AROUND SLAB OPENINGS

STAIR NOTE  
 ALL STAIR STRUCTURES SHALL BE DESIGNED BY THE STRUCTURAL STEEL FABRICATOR IN ACCORDANCE WITH THE RHODE ISLAND STATE BUILDING CODE.  
 STAIRS AND LANDINGS SHALL BE DESIGNED FOR A (100 PSF) LIVE LOAD CAPACITY AND MAY BE SUPPORTED BY STRUCTURAL STEEL, U.N.O.  
 COORDINATE ALL DETAILS WITH ARCHITECTURAL DRAWINGS AND SUBMIT FABRICATION DRAWINGS AND CALCULATIONS STAMPED BY A P.E. FOR REVIEW AND APPROVAL.

FLOOR OPENING NOTE  
 ALL REQUIRED FLOOR OPENINGS MAY NOT BE INDICATED ON THESE DRAWINGS. COORDINATE EXACT LOCATIONS OF ALL REQUIRED OPENINGS WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. PROVIDE FRAMING AROUND ALL REQUIRED FLOOR OPENINGS USING TYPICAL FRAMING DETAILS ON SHEET S-10.

NOTE A: ARCHITECTURALLY EXPOSED CONNECTIONS  
**SPECIAL NOTES REGARDING WELDED CONNECTIONS FOR TUBULAR STEEL AT "VESTIBULES & CANOPIES":**

1. FABRICATION AND ERECTION OF ALL HSS MEMBERS AND JOINTS SHALL BE EXECUTED PER THE AISC CODE OF STANDARD PRACTICE REQUIREMENTS FOR "ARCHITECTURALLY EXPOSED STRUCTURAL STEEL."
2. TUBULAR STEEL (HSS) CONNECTIONS SHALL BE DESIGNED PER THE REQUIREMENTS OF THE AISC SPECIFICATION FOR THE DESIGN OF STEEL HOLLOW STRUCTURAL SECTIONS AND THE HOLLOW STRUCTURAL SECTIONS CONNECTIONS MANUAL (1997 EDITION).
3. ALL HSS-TO-HSS CONNECTIONS SHALL BE COMPLETE JOINT PENETRATION GROOVE WELDS. WELDS SHALL BE PREPARED IN ACCORDANCE WITH AWS D1.1-96 USING PRE QUALIFIED COMPLETE JOINT PENETRATION GROOVE WELDS, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

PRE-ENGINEERED FRAME BY OTHERS (SEE P.M.B. DWGS.)

PRE-ENGINEERED METAL HANGAR BUILDING 165 ft. x 120 ft. (BY P.M.B. CONTRACTOR)

PRE-ENGINEERED FRAME BY OTHERS (SEE P.M.B. DWGS.)

PRE-ENGINEERED FRAME BY OTHERS (SEE P.M.B. DWGS.)

PRE-ENGINEERED WIND COL. BY OTHERS (SEE P.M.B. DWGS.) (TYP.)

PRE-ENGINEERED WIND COL. BY OTHERS (SEE P.M.B. DWGS.) (TYP.)

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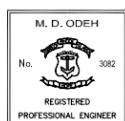
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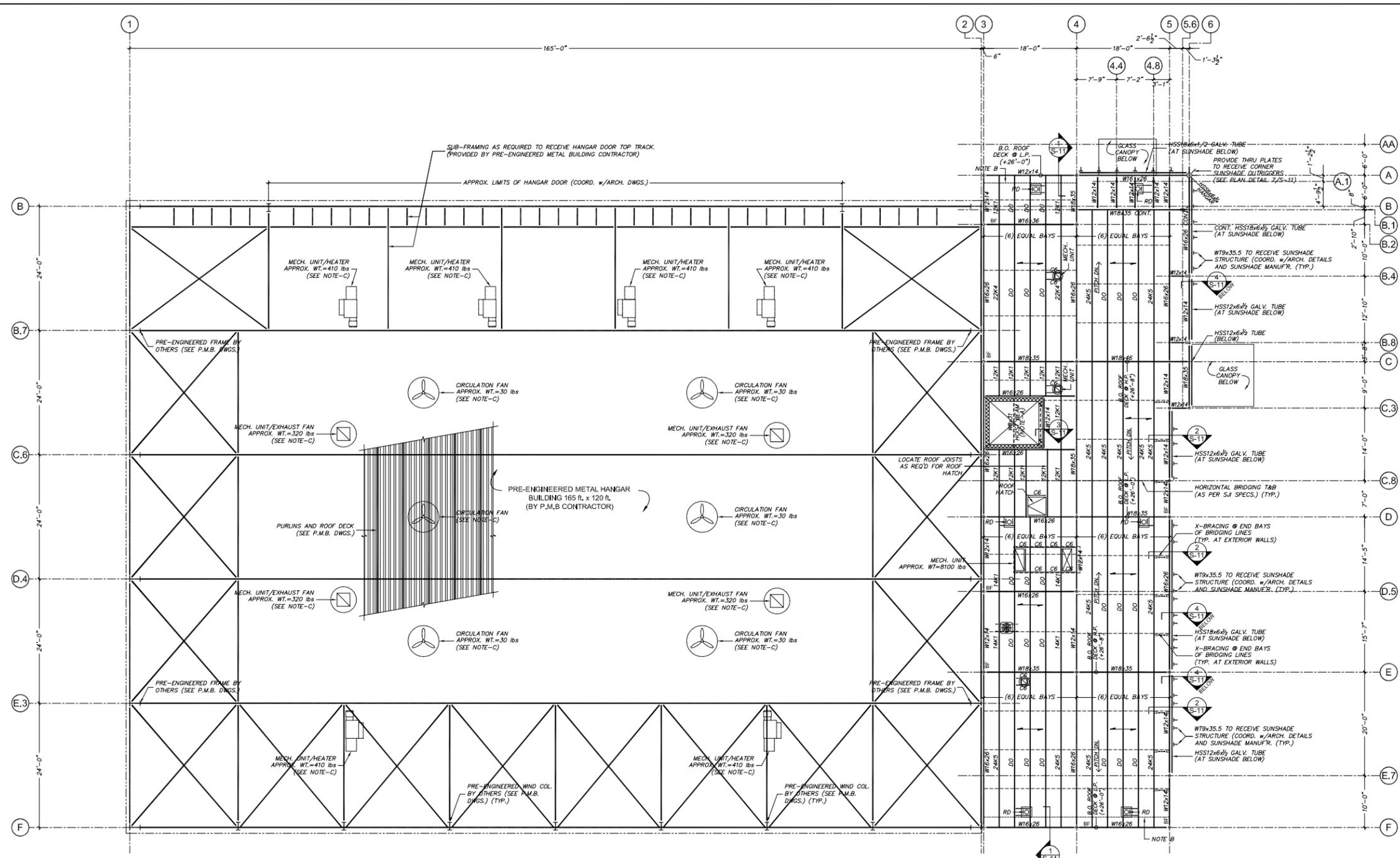
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## ROOF FRAMING PLAN



S-5



### ROOF FRAMING PLAN

SCALE: 1/8"=1'-0"

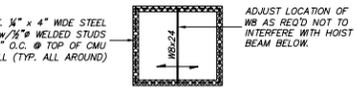
- NOTES:
- INDICATES SPAN OF 1 1/2" x 20 GA. (TYPE B) GALV. METAL ROOF DECK.
  - COORDINATE ALL DIMENSIONS w/ ARCH. DRAWINGS.
  - COORDINATE ALL DOOR AND WINDOW OPENING SIZES AND LOCATIONS WITH ARCH. DWGS.
  - PROVIDE HORIZONTAL BRIDGING FOR ALL OPEN WEB STEEL JOISTS AS PER "SJI" RECOMMENDATIONS.
  - AT JOISTS BEARING ON STEEL BEAMS, JOIST SEATS MAY BE STAGGERED WHERE REQUIRED TO ACHIEVE PROPER BEARING PER SJI REQUIREMENTS.
  - INDICATES SYMBOL FOR MOMENT CONNECTION. (SUBMIT DETAILS AND CALCULATIONS FOR REVIEW AND APPROVAL)
  - RD - INDICATES ROOF DRAIN. ALL ROOF DRAINS SHALL BE COORDINATED WITH ARCH. DWGS. PROVIDE C8x8.2 OPENING FRAMING AT ALL OPENINGS FOR ROOF DRAINS, U.N.O.
  - (L.P.) - INDICATES LOW POINT.
  - (H.P.) - INDICATES HIGH POINT.
  - SF - INDICATES BRACED FRAME; SEE STRUCTURAL ELEVATIONS FOR BRACE SIZES.
  - WTG - INDICATES NEW W10x12.
  - W12 - INDICATES NEW W12x14.
  - CB - INDICATES NEW C8x8.2.
  - CB - INDICATES NEW C8x11.5.
  - GALV. - INDICATED HOT DIPPED GALVANIZED.
  - P.M.B. - INDICATES PRE-ENGINEERED METAL BUILDING.

— BOTTOM OF ROOF DECK ELEVATIONS —  
 COORDINATE ALL BOTTOM OF DECK ELEVATIONS WITH ARCHITECTURAL ROOF PLAN

— ROOF OPENING NOTE —  
 ALL REQUIRED ROOF OPENINGS MAY NOT BE INDICATED ON THESE DRAWINGS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL ROOFTOP UNITS, EXHAUST FANS, ROOF HATCHES, ROOF DRAINS, SKYLIGHTS, ETC. WITH MECHANICAL AND ARCHITECTURAL DRAWINGS. PROVIDE FRAMING AROUND ALL REQUIRED ROOF OPENINGS USING TYPICAL ROOF OPENING FRAMING DETAILS ON SHEET S-10.

— NOTE A. HOIST BEAM —  
 EXACT LOCATION AND ELEVATION OF HOIST BEAM SHALL BE COORDINATED WITH ELEVATOR MANUFACTURER'S REQUIREMENTS.

— NOTE B —  
 PROVIDE ADDITIONAL LINE OF BOTTOM CHORD BRIDGING NEAR FIRST JOIST PANEL POINT PER SJI REQUIREMENTS FOR WIND UPLIFT, TYPICAL AT ALL JOIST BAYS WITHIN UPLIFT AREAS. SEE GENERAL NOTES.



### ELEVATOR OVERRUN FRAMING PLAN

SCALE: 1/8"=1'-0"

PRE-ENGINEERED METAL BUILDING ROOF STRUCTURE SHALL BE DESIGNED TO RECEIVE AND SUPPORT ALL MECHANICAL UNITS IN HANGAR BUILDING. ALL REQUIRED ROOF OPENINGS MAY NOT BE INDICATED ON THESE DRAWINGS. COORDINATE EXACT LOCATIONS OF ALL MECHANICAL ROOFTOP UNITS, EXHAUST FANS, FANS, HEATERS, ETC. WITH MECHANICAL DRAWINGS. PROVIDE FRAMING TO SUPPORT MECHANICAL UNITS AND AROUND ALL ROOF OPENINGS AS REQUIRED.

# QUONSET AIRPORT

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**EARTH TECH, INC.**  
 300 BAKER AVENUE  
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 T 978.371.4000

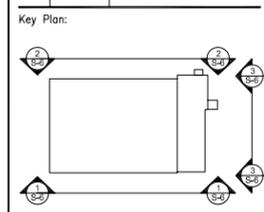
MECHANICAL / ELECTRICAL / PLUMBING  
 AND FIRE PROTECTION ENGINEERING:  
**SAR ENGINEERING, INC.**  
 10 GRANITE STREET  
 QUINCY, MA 02169  
 T 617.221.9234

STRUCTURAL ENGINEERING:  
**ODEH ENGINEERS, INC.**  
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 NORTH PROVIDENCE, RI 02904  
 T 401.421.4140

GEOTECHNICAL ENGINEERING:  
**GZA GEOENVIRONMENTAL**  
 140 BROADWAY  
 PROVIDENCE, RI 02903  
 T 401.421.4140

SURVEYOR:  
**TIBBETTS ENGINEERING, CORP.**  
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 TAUNTON, MA 02780

Revisions:		Description:
No.	Date:	
	02/26/07	95% CD SUBMISSION
	03/28/07	100% CD SUBMISSION

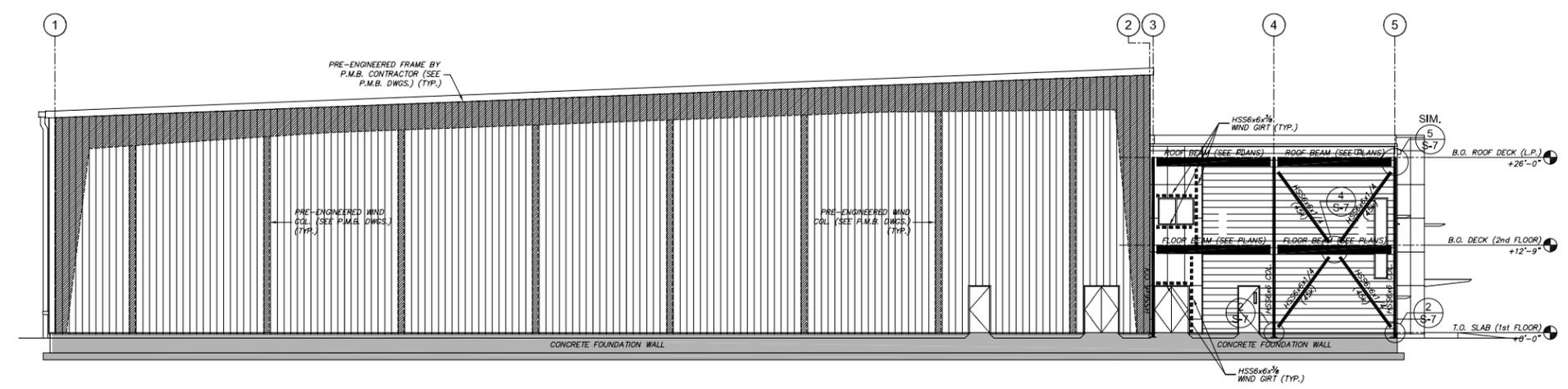


Date: FEBRUARY 26, 2007  
 Scale: 1/8"=1'-0"  
 Drawn By: MFF  
 Checked By: MDO/DJO

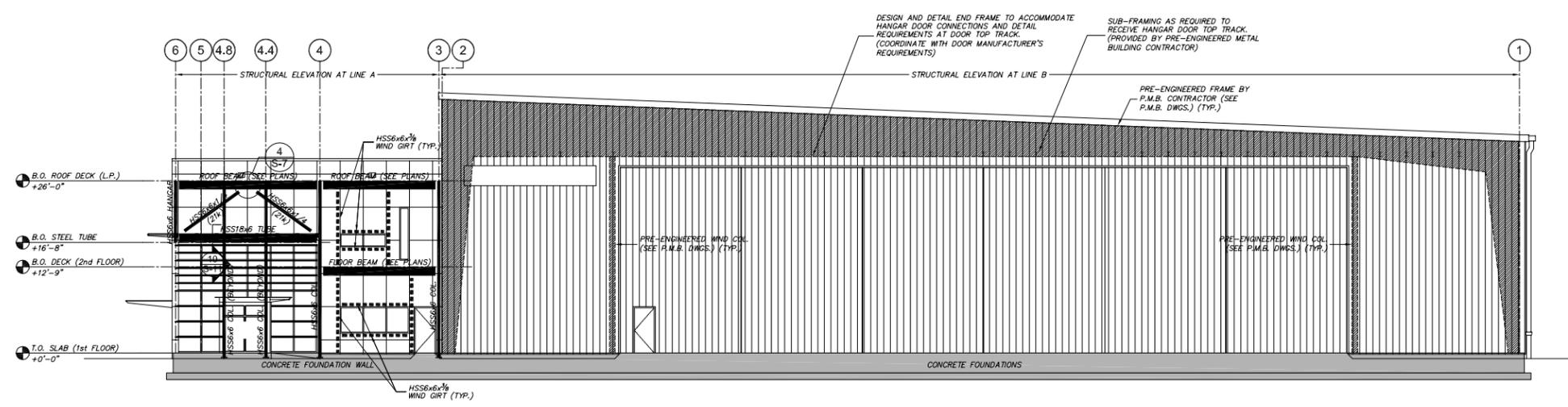
RIAC PROJECT NUMBER 20223  
**STRUCTURAL FRAMING ELEVATIONS**

M. D. ODEH  
 No. 3082  
 REGISTERED  
 PROFESSIONAL ENGINEER

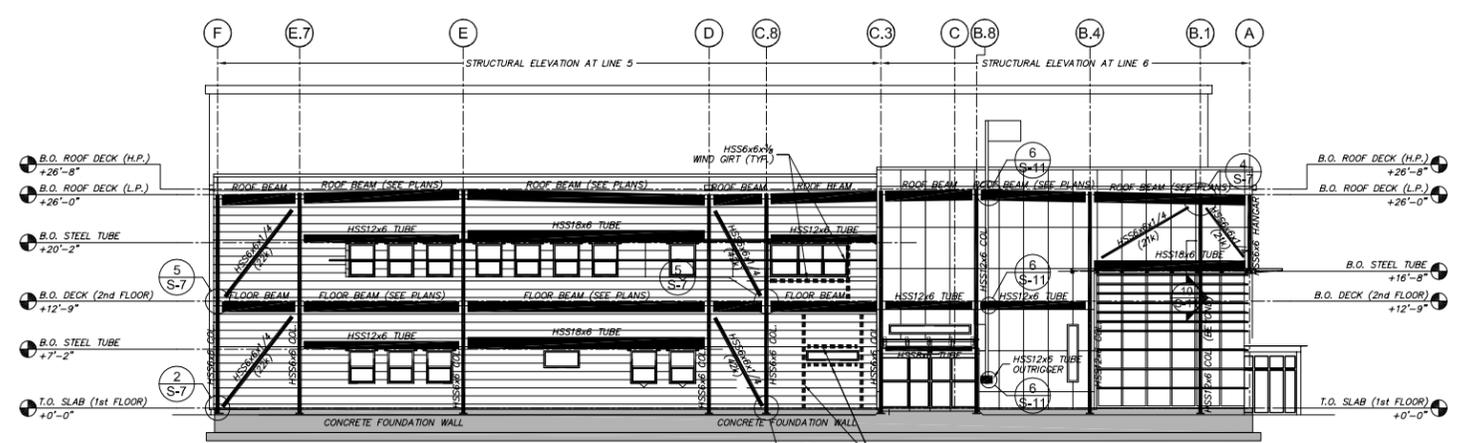
## S-6



**STRUCTURAL FRAME ELEVATION AT LINE F**  
 SCALE: 1/8"=1'-0"



**STRUCTURAL FRAME ELEVATION AT LINES A AND B**  
 SCALE: 1/8"=1'-0"



**STRUCTURAL FRAME ELEVATION AT LINES 5 & 6**  
 SCALE: 1/8"=1'-0"

- TYPICAL BRACED FRAMES CONNECTIONS DETAILS
- BRACED FRAME CONNECTIONS DETAILS SHOWN ONLY AS A GUIDELINE FOR FABRICATOR AND SHALL BE PROVIDED AS A MINIMUM.
  - ALL BRACED FRAME CONNECTIONS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF RHODE ISLAND.
  - CONNECTIONS SHALL BE DESIGNED FOR LOADS INDICATED ON EACH BRACE MEMBER FOR TENSION AND COMPRESSION.
  - ALL LOADS INDICATED ARE SERVICE (UNFACTORED) LOADS.
  - SUBMIT STAMPED SHOP DRAWINGS AND CALCULATIONS FOR REVIEW.

### STRUCTURAL FRAME ELEVATIONS

- SCALE: 1/8"=1'-0"
- NOTES:
- THE INTENT OF THE STRUCTURAL ELEVATIONS IS TO PROVIDE LOCATIONS AND CONFIGURATION OF STRUCTURAL STEEL MEMBERS. FOUNDATIONS ARE SHOWN SCHEMATICALLY AND MAY DIFFER FROM FOUNDATION AND SLAB PLANS. ARCHITECTURAL ELEVATIONS ARE SHOWN AS BACKGROUND FOR GRAPHIC REFERENCE ONLY.
  - REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS AND LOCATIONS OF WINDOW AND DOOR OPENINGS.
  - SEE SHEET S-7 FOR COLUMN SCHEDULE AND TYPICAL BRACED FRAME DETAILS.
  - P.M.B. - INDICATES PRE-ENGINEERED METAL BUILDING.

DATUM REFERENCE  
 REFERENCE FIRST FLOOR ELEVATION 0'-0" = ACTUAL ELEVATION 11.00'  
 REFERENCE SECOND FLOOR ELEVATION 13'-0" = ACTUAL ELEVATION 24.00'

# QUONSET AIRPORT

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GEOTECHNICAL ENGINEERING:  
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 T 401.421.4140

SURVEYOR:  
**TIBBETTS ENGINEERING, CORP.**  
 716 COUNTY STREET  
 TAUNTON, MA 02780

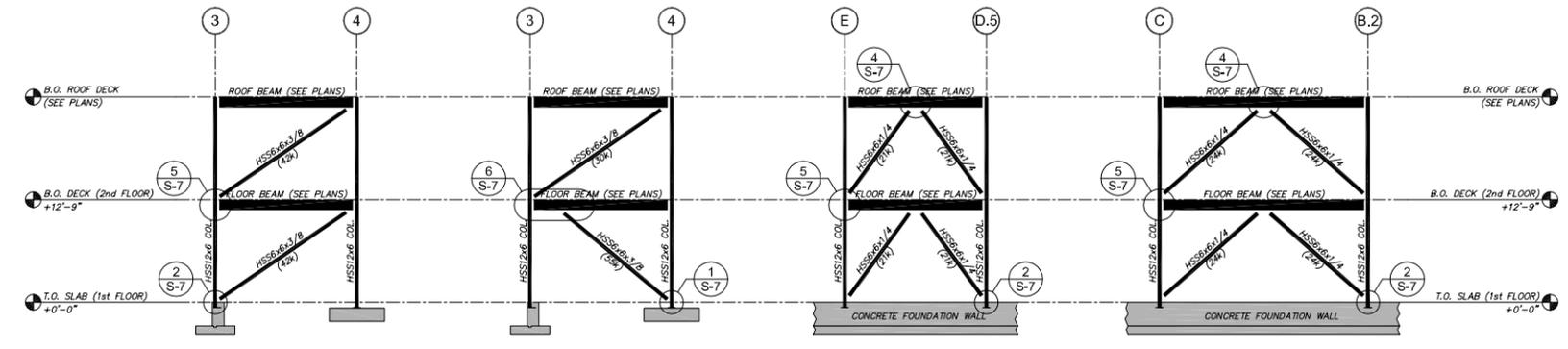
Revisions:		Description:
No.	Date:	
02/26/07		95% CD SUBMISSION
03/28/07		100% CD SUBMISSION

Key Plan:

Date:	FEBRUARY 26, 2007
Scale:	AS NOTED
Drawn By:	MFF
Checked By:	MDO/DJO

RIAC PROJECT NUMBER 20223

**STRUCTURAL FRAMING  
 ELEVATIONS,  
 BRACING DETAILS,  
 AND COLUMN SCHEDULE**

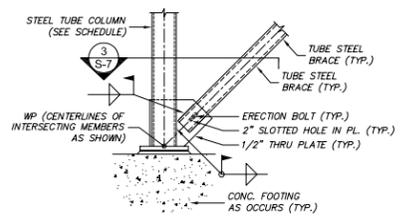


**BRACES AT LINE D.5**  
 SCALE: 1/8"=1'-0"

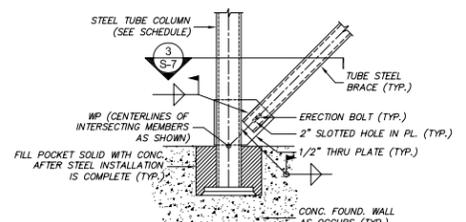
**BRACES AT LINE B.2**  
 SCALE: 1/8"=1'-0"

**BRACES AT LINE 3**  
 SCALE: 1/8"=1'-0"

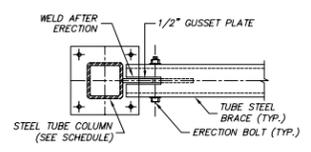
**BRACES AT LINE 3**  
 SCALE: 1/8"=1'-0"



**DETAIL 1**  
 NO SCALE

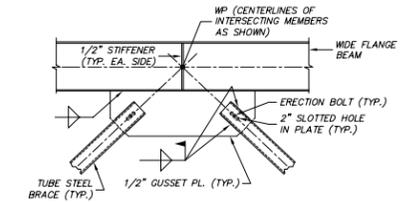


**DETAIL 2**  
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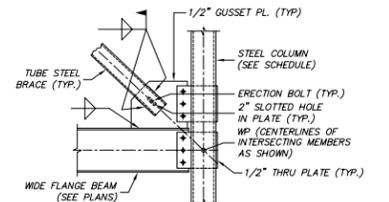


**DETAIL 3**  
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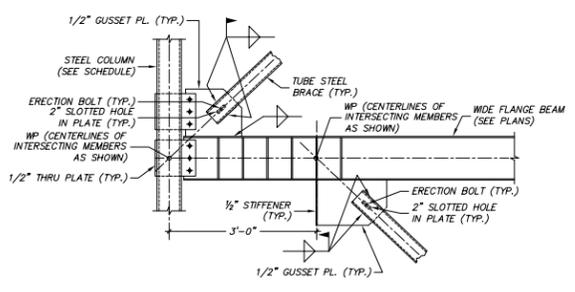
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**DETAIL 4**  
 NO SCALE



**DETAIL 5**  
 NO SCALE

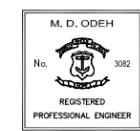


**DETAIL 6**  
 NO SCALE

**COLUMN SCHEDULE**

COLUMN MARK	AA	A	A.1	B.1	B.2	B.4	B.8	C	C.3	C.8	D	D.5	E	E.7	F	COLUMN MARK		
	4.4	4.8	3	4	4.4	4.8	5.6	3	4	6	5	6	3	4	5	3	4	5
B.O. DECK (ROOF H.P.) +26'-8"																		
B.O. DECK (ROOF L.P.) +26'-0"																		
B.O. DECK (2nd FLOOR) +12'-9"																		
CANOPY/VESTIBULE (SEE DETAILS)																		
T.O. FOOTING/PIER -0'-8"																		
BASE PLATE TYPE	III	III	III	II	I	IV	II	I	V	I	V	II	I	II	I	II	III	II
PIER TYPE	P2	P2	P2	P4	P4	P5	-	P1	P6	P1	P5	-	P5	-	P1	P2	P1	P2
COLUMN MARK	AA	A	A.1	B.1	B.2	B.4	B.8	C	C.3	C.8	D	D.5	E	E.7	F	COLUMN MARK		

NOTES:  
 1. (\*) - INDICATES COORDINATE TOP OF COLUMN ELEVATION WITH SLOPED ROOF FRAMING.



# QUONSET AIRPORT

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SURVEYOR:  
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 TAUNTON, MA 02780

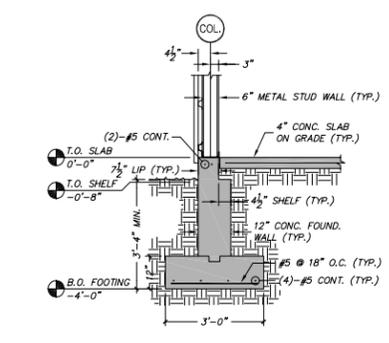
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Key Plan:

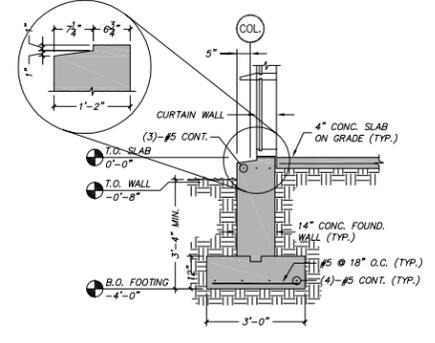
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Scale:	1/2"=1'-0"
Drawn By:	MFF
Checked By:	MDO/DJO

RIAC PROJECT NUMBER 20223

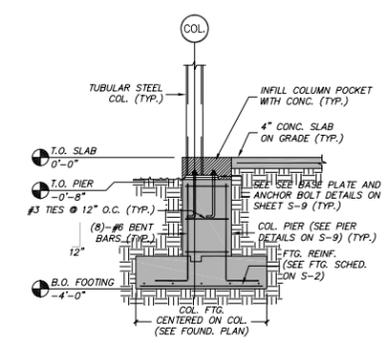
**FOUNDATION DETAILS**



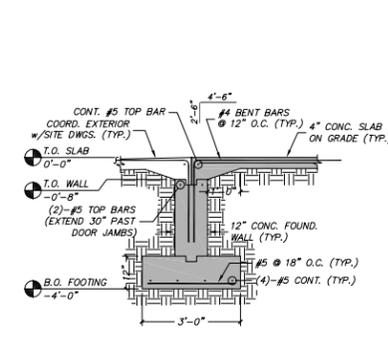
SECTION 1  
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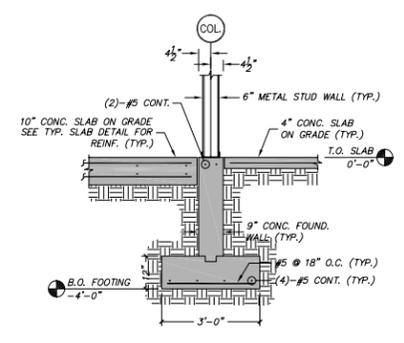
SECTION 1a  
 SCALE: 1/2"=1'-0"



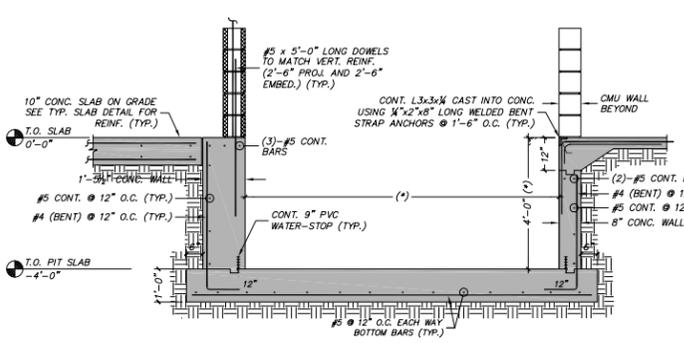
SECTION 2  
 SCALE: 1/2"=1'-0"



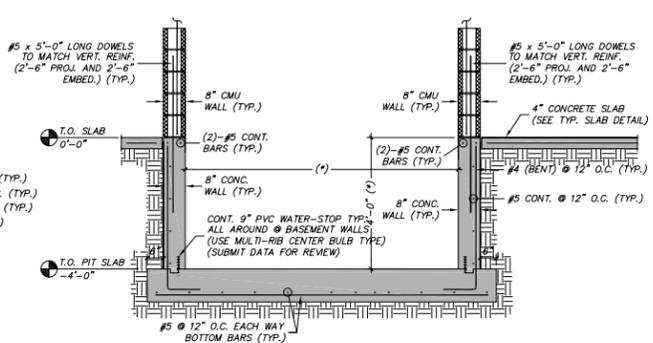
SECTION 3  
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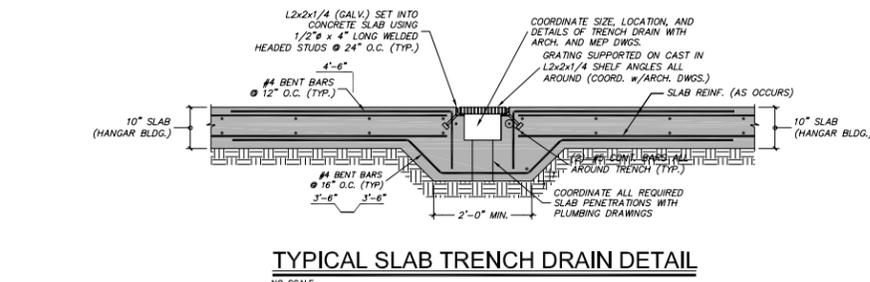
SECTION 4  
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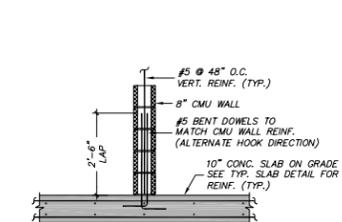
SECTION 5  
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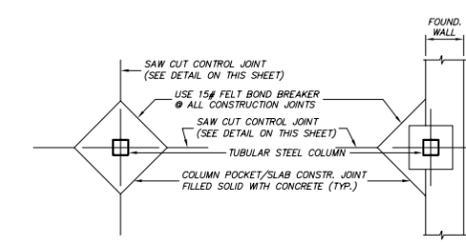
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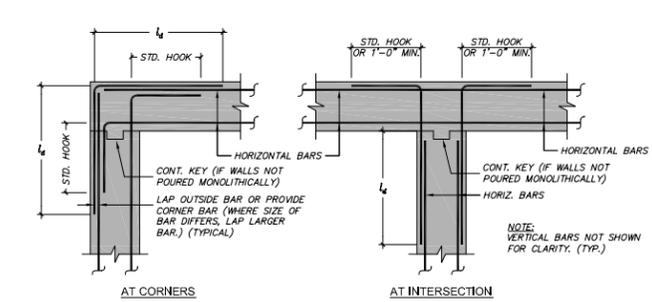
TYPICAL SLAB TRENCH DRAIN DETAIL  
 NO SCALE



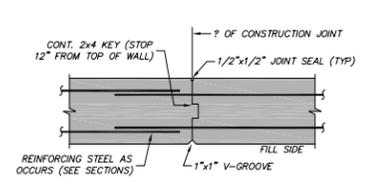
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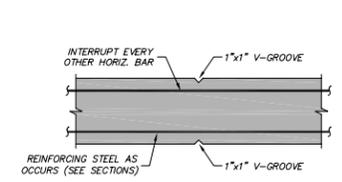
TYPICAL SLAB CONSTRUCTION JOINT DETAILS  
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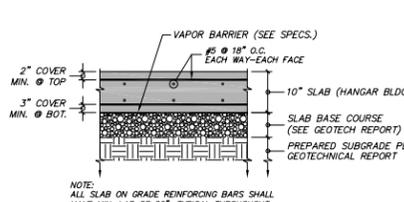
TYPICAL WALL CORNERS HORIZONTAL REINFORCEMENT PLAN DETAILS  
 NO SCALE



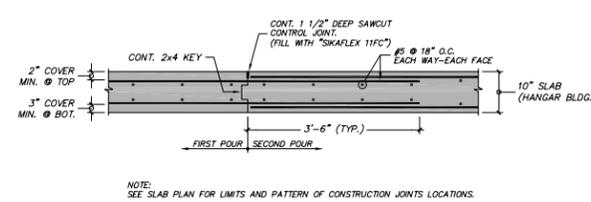
TYPICAL CONCRETE WALL JOINT DETAILS  
 NO SCALE



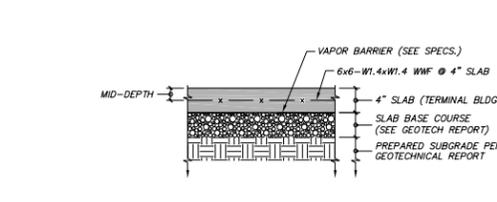
TYPICAL INTERIOR STEEL COLUMN FOOTING DETAIL  
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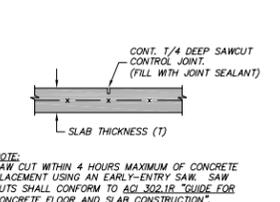
TYPICAL 10" REINFORCED CONCRETE SLAB DETAIL  
 NO SCALE



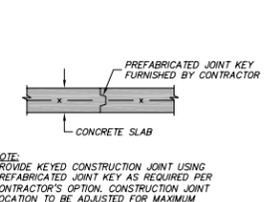
TYPICAL 10" SLAB CONSTRUCTION DETAIL  
 NO SCALE



TYPICAL CONCRETE SLAB DETAIL THROUGHOUT  
 NO SCALE



TYPICAL SLAB CONTROL JOINT DETAIL  
 NO SCALE



TYPICAL SLAB CONSTRUCTION JOINT DETAIL  
 NO SCALE

## TYPICAL CONCRETE SLAB ON GRADE DETAILS

NO SCALE

M. D. ODEH  
 No. 3882  
 REGISTERED  
 PROFESSIONAL ENGINEER



# QUONSET AIRPORT

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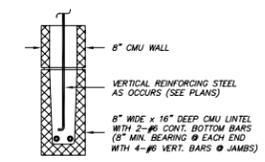
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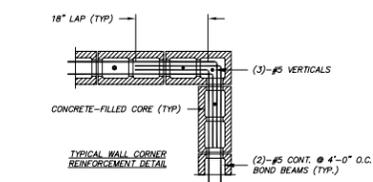
RIAC PROJECT NUMBER 20223

## FRAMING DETAILS



### TYPICAL CMU LINTEL DETAIL

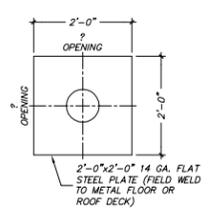
- NO SCALE
- NOTES:
- ALL REQUIRED CMU LINTELS ARE NOT INDICATED ON STRUCTURAL PLANS. SEE ARCHITECTURAL AND MECHANICAL DRGS. FOR COORDINATION OF CMU LINTEL REQUIREMENTS @ ALL WALL OPENINGS AND PENETRATIONS THROUGH CMU WALLS.
  - ALL VERTICAL REINFORCING STEEL @ OPENING JAMBS SHALL BE FULL WALL HEIGHT.
  - ALL VERTICAL REINF. STEEL SHALL HAVE MATCHING DONNELS SET INTO FOUNDATION WALLS OR FOOTINGS (AS OCCURS).
  - FOR OPENING WIDTHS GREATER THAN SHOWN, CONSULT STRUCTURAL ENGINEER.



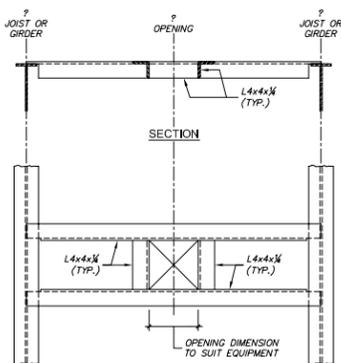
### TYPICAL CONTINUOUS WALL REINFORCEMENT DETAIL

### TYPICAL CMU WALL PLAN DETAILS

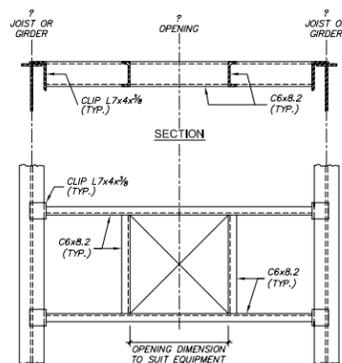
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PLAN FOR OPENINGS FROM 4" TO 12"



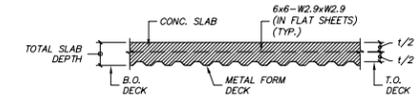
PLAN FOR OPENINGS FROM 12" TO 16"



PLAN FOR OPENINGS OVER 16"

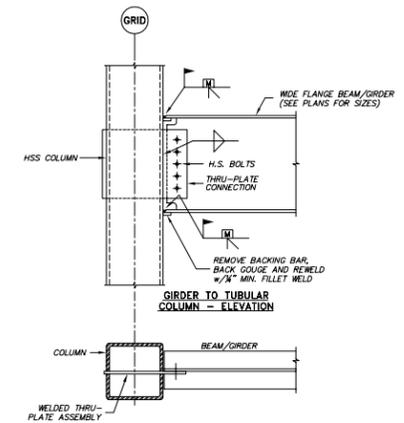
### TYPICAL FRAMING DETAILS @ FLOOR AND ROOF OPENINGS

- NO SCALE
- NOTES:
- THESE DETAILS ARE REQUIRED AT ALL FLOOR & ROOF OPENINGS. COORDINATE SIZES AND LOCATIONS OF ALL OPENINGS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
  - WHERE ROOFTOP UNITS ARE PRESENT, COORD. LOCATION OF FRAMING MEMBERS WITH SUPPORTING CURB REQUIREMENT DETAILS.

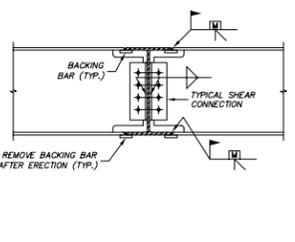


### TYPICAL 3" FLOOR DECK

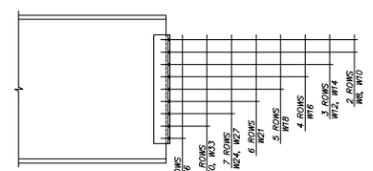
- NO SCALE
- NOTES:
- TOTAL SLAB DEPTH = 3"
  - CONC. SLAB THICKNESS "t" = 2 1/2"
  - USE NORMAL CONC. (145 PSF)
  - USE 9/16" THICK-26 GA. GALV. METAL FORM DECK



TYPICAL BEAM-TO-COLUMN MOMENT CONNECTION DETAIL



TYPICAL BEAM-TO-GIRDER MOMENT CONNECTION DETAILS

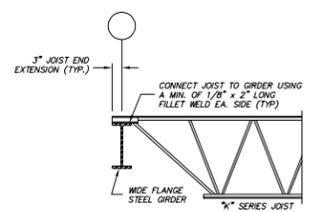


### MINIMUM STEEL BEAM CONNECTION DETAIL

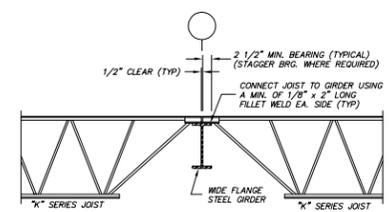
NOT TO SCALE

### TYPICAL MOMENT CONNECTION DETAILS

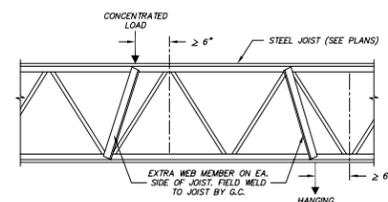
- NO SCALE
- NOTES:
- MOMENT CONNECTION DETAILS SHOWN ONLY AS A GUIDELINE FOR FABRICATOR.
  - ALL MOMENT CONNECTIONS SHALL BE DESIGNED BY A P.E. REGISTERED IN THE STATE OF RHODE ISLAND. SUBMIT STAMPED SHOP DRAWINGS FOR CONNECTION DETAILS WITH STAMPED SHOP DRAWINGS AND CALCULATIONS FOR REVIEW AND APPROVAL.
  - MOMENT CONNECTIONS SHALL BE DESIGNED TO DEVELOP THE FULL MOMENT CAPACITY OF THE MEMBERS.



K-SERIES - 1 SIDED BEARING ON BEAM



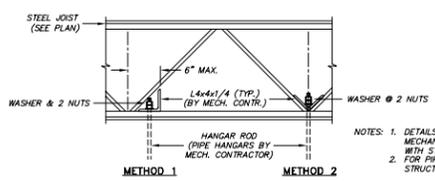
K-SERIES - 2 SIDED BEARING ON BEAM



REQUIRED AT ALL JOISTS SUPPORTING MECHANICAL UNITS

### TYPICAL JOIST REINF. DETAIL

NO SCALE

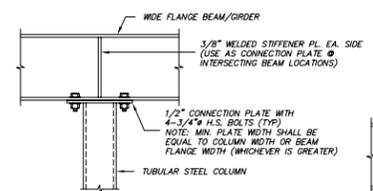


### TYPICAL PIPE HANGAR CONNECTION DETAILS

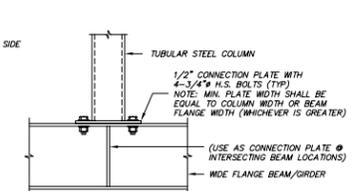
NO SCALE

### TYPICAL JOIST BEARING DETAILS

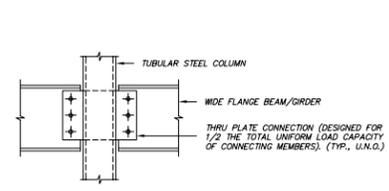
NO SCALE



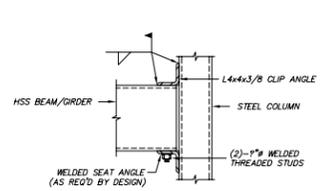
TYPICAL DETAIL @ BEAMS/GIRDERS CANTILEVERING OR CONTINUOUS OVER COLUMNS



TYPICAL DETAIL @ BEAMS/GIRDERS SUPPORTING COLUMNS ABOVE



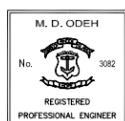
TYPICAL THRU PLATE CONNECTION @ INTERIOR COLUMNS



TYPICAL CONNECTION OF HSS BEAMS TO COLUMNS

### TYPICAL COLUMN/BEAM CONNECTIONS

NO SCALE



# QUONSET AIRPORT

N. KINGSTOWN, RHODE ISLAND

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**EARTH TECH ARCHITECTURE**  
 38 CHAUNCEY STREET  
 SUITE 1001  
 BOSTON, MA 02111  
 T 617.482.4835  
 F 617.482.0642

EXECUTIVE ARCHITECT:  
**L.A. TORRADO ARCHITECTS**  
 35 GREENWICH STREET  
 PROVIDENCE, RI 02907  
 T 401.781.0633

SITE AND CIVIL ENGINEERING:  
**EARTH TECH, INC.**  
 300 BAKER AVENUE  
 CONCORD, MA 01742  
 T 978.371.4000

MECHANICAL / ELECTRICAL / PLUMBING  
 AND FIRE PROTECTION ENGINEERING:  
**SAR ENGINEERING, INC.**  
 10 GRANITE STREET  
 QUINCY, MA 02169  
 T 617.221.9234

STRUCTURAL ENGINEERING:  
**ODEH ENGINEERS, INC.**  
 1223 MINERAL SPRING AVENUE  
 NORTH PROVIDENCE, RI 02904  
 T 401.421.4140

GEOTECHNICAL ENGINEERING:  
**GZA GEOENVIRONMENTAL**  
 140 BROADWAY  
 PROVIDENCE, RI 02903  
 T 401.421.4140

SURVEYOR:  
**TIBBETTS ENGINEERING, CORP.**  
 716 COUNTY STREET  
 TAUNTON, MA 02780

Revisions:		Description:
No.	Date:	
02/26/07		95% CD SUBMISSION
03/28/07		100% CD SUBMISSION

Key Plan:

Date: FEBRUARY 26, 2007  
 Scale: 3/4"=1'-0"  
 Drawn By: MFF  
 Checked By: MDO/DJO

RIAC PROJECT NUMBER 20223

## FRAMING DETAILS

