Replacement Facility For

Wrangell Medical Center

Wrangell, Alaska

DEJA

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DEJA Project 10528.00

March 28, 2012

VOLUME 2 - EARLY RELEASE PACKAGE
STRUCTURAL

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Contact: Tim Rooney

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Contact: Noel Rea

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VOLUME 2 - EARLY RELEASE PACKAGE
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GENERAL NOTES

THE CONTRACTOR SHALL BUILD THE BUILDING, ASSEMBLING THE COMPONENTS WITH CAREFUL ATTENTION TO FLASHINGS, VAPOR BARRIER INTEGRITY, INSTALLATION OF EXTERIOR SKIN, FRAMING, SEALANTS, COMPONENTS SUCH AS DOOR FRAMES, LOUVERS, INSULATION SEALANTS, ETC., AS SHOWN ON THE DRAWINGS AND AS REQUIRED TO CREATE A COMPLETED PROJECT THAT IS WATERTIGHT AND IN COMPLIANCE WITH THE STATED DESIGN INTENT. FURTHERMORE, THE BUILDING SHALL BE IN COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND GOOD CONSTRUCTION PRACTICES FOR THIS LOCATION.

CONTRACTOR SHALL COORDINATE THE WORK OF THE VARIOUS SUBCONTRACTORS AND MATERIAL SUPPLIERS TO ASSURE THE DESIGN INTENT IS ACHIEVED.

VAPOR BARRIER SHALL BE SEALED TIGHTLY AROUND ALL PENETRATIONS, INCLUDING OPENINGS, ELECTRICAL BOXES, PIPING PENETRATIONS, ETC., AS WELL AS BEING SEALED TIGHT TO THE FLOOR AND TO THE ROOF DECK TO ACHIEVE A PERM RESISTANCE OF 1.0. VAPOR BARRIERS SHALL BE FREE OF ANY TEARS OR UNSEALED PENETRATIONS.

PORTIONS OF THE EXTERIOR WALL SYSTEM THAT ARE DESIGNED AS BARRIER WALLS SHALL BE INSTALLED TO CREATE A WATER BARRIER AT THE PERIMETER, AT ALL OPENINGS AND AT ALL PENETRATIONS.

ALL WALLS SHALL BE BUILT INCORPORATING CONTROL JOINTS AND/OR EXPANSION JOINTS AS APPROPRIATE TO CONTROL MOVEMENT IN THE WALL DUE TO TEMPERATURE MOVEMENT. FLASHINGS SHALL BE PROVIDED AS BACKING OVER OR UNDER ALL SUCH JOINTS.

ALL WOOD BLOCKING IS TO BE FIRE RETARDANT. SEE SPEC SECTION 06 10 00.

ALL FIRE DOORS, FIRE WINDOWS, & FIRE DAMPERS ARE TO HAVE AN APPROVED LABEL PERMANENTLY APPLIED AT THE FACTORY.

SEISMIC ANALYSIS FOR ARCHITECTURAL & MPE COMPONENTS

REFER TO THE SPECIFICATIONS AND APPLICABLE INDUSTRY STANDARDS FOR APPLICATION OF THESE NOTES TO SPECIFIC BUILDING COMPONENTS

ARCHITECTURAL, MECHANICAL, & ELECTRICAL COMPONENTS AND SYSTEMS
ALIVE MATERIALS MANAGEMENT SEISMIC REQUIREMENTS
(BASED ON 2006 INTERNATIONAL BUILDING CODE)

Seismic Use Group: IV
Importance Factor Ie: 1.5
Spectral Response SDS: .180
Spectral Response SD1: .23
Site Class: D

ARCHITECTURAL COMPONENTS		
COMPONENT	Coefficient (Ap)	Coefficient (Rp)
Exterior-nonbearing walls	1.0	2.5
Interior-nonbearing wall, including vertical shaft enclosures	1.0	2.5
Exterior & Interior ornamentations & appendages	2.5	2.5
Permanent floor supported cabinets and books stacks	1.0	2.5
Suspended ceilings	1.0	2.5
Access floor systems	1.0	2.5
Partitions	1.0	2.5
Light Fixtures	1.0	1.25

MECHANICAL, PLUMBING, & ELECTRICAL COMPONENTS		
COMPONENT	Coefficient (Ap)	Coefficient (Rp)
Tanks & Vessels including support systems.	1.0	2.5
Electrical, Mechanical, and plumbing equipment and associated conduit and ductwork and piping.	1.0	2.5
Electrical Distribution Systems	1.0	2.5
Electrical Equipment	1.0	2.5
Elevator Equipment	1.0	2.5

ADDITIONAL REQUIREMENTS:

1) Seismic restraints may be omitted from piping and duct supports if all the following conditions are satisfied:
   a) lateral motion of the piping or duct will not cause damaging impact with other systems.
   b) The piping or duct is made of ductile material with ductile connections.
   c) lateral motion of the piping or duct does not cause impact of fragile appurtenances (e.g. sprinkler heads) with any other equipment, piping, or structural member.
   d) Lateral motion of the piping or duct does not cause loss of system vertical support
   e) Rod-hung supports of less than 12 inches in length have top connections that cannot develop moments.
   f) Support members cantilevered up from the floor are checked for stability.

2) Seismic restraints may be omitted from electrical raceways, such as cable trays, conduit and bus ducts, if all the following conditions are satisfied:
   a) Lateral motion of the raceway will not cause damaging impact with other systems
   b) Lateral motion of the raceway does not cause loss of system vertical support
   c) Rod-hung supports of less than 12 inches in length have top connections that cannot develop moments
   d) Support members cantilevered up from the floor are checked for stability.

3) Piping, ducts and electrical raceways, which must be functional following an earthquake, spanning between different buildings or structural systems shall sufficiently flexible to withstand relative motion of support points assuming out-of-phase motions.

4) Movement of components within electrical cabinets, rack- and skid-mounted equipment and portions of skid-mounted electro-mechanical equipment that may cause damage to other components by displacing, shall be restricted by attachment to anchored equipment or support frames.

Architectural Fire Safety Code Analysis

WRANGELL MEDICAL CENTER
Wrangell, Alaska (Draft 2)

1. Applicable Codes:
   State Health Care Facilities –
   A. 2000 NFPA 101 Life Safety Code (LSC)
   State Fire Marshal –
   A. 2006 International Building Code (IBC) Chapters 1–12, 14–28, 30–35 and Appendix C with amendments
   B. 2006 International Mechanical Code with amendments
   C. 2006 Uniform Plumbing Code with amendments
   D. 2008 National Electrical Code with amendments
   E. 2006 International Fuel Gas Code with amendments
   F. 2006 International Fire Code including Appendices B–G with amendments
   City –
   State–adopted codes will govern
   TJC and CMS –
   2000 NFPA 101 Life Safety Code

2. Occupancy Types:
   A. Group I–2 Institutional (IBC 308.3)
   B. Health Care – Hospital (LSC Ch. 18)

3. Construction Types:
   A. Type II B (IBC 602.2)
   B. Type II (000)/NFPA 220

4. Structural Fire Ratings:
   None required.

5. Fire Suppression System:
   Complete automatic sprinkler protection to be provided for entire building.

6. Height and Area:
   One–story; 55,390 SF for entire facility.

7. Fire Safety Concept:
   Construct a hospital of noncombustible construction which is divided by a 2–hour fire wall into two separate "buildings" as per IBC 503.1. The base allowable area is 11,000 sq. ft. which can be increased 300% with complete sprinkler protection (IBC 506.3). This permits an additional 33,000 sq. ft. for a total allowable area of 44,000 sq. ft. on each side of the fire wall. Additional area up to 75% of 11,000 sq. ft. (8,250 sq. ft.) is possible depending on the open area perimeter for each building. The north building (Smoke Compartments 1 & 2) is 28,530 sq. ft. The south building (Smoke Compartments 3,4 & 5) is 26,481 sq. ft.

   Outside exits are provided at ten main locations around the perimeter.

   Each fire area is subdivided into smoke compartments by 1–hour smoke barriers as per IBC 407.4 and LSC 18.3.7.

   The following areas are considered suites as per IBC 1014.2.2 and LSC 18.2.5.4 : Radiology, Surgery and Clinic.

   Multi–purpose therapeutic spaces are open to the corridor as permitted by IBC 407.2.3 and LSC 18.3.6.1, Ex. 5.

8. Other Life Safety Considerations (most stringent of applicable codes is indicated):
   A. Occupant load (IBC 1004.1.1 & LSC 18.1.7):
      Smoke Compartment #1 –
      Treatment: 4,779 SF/240 SF/occ.=20 occupants
      Office/Support/Clinic: 7,954 SF/100 SF/occ.=79 occupants
      Dining: 513 SF/15 SF/occ.=34 occupants
      Storage/Mechanical: 2,709 SF/300 SF/occ. = 9 occupants
      Total: 142 occupants

      Smoke Compartment #2 –
      Treatment: 4,087 SF/240 SF/occ. = 17 occupants
      Office: 5,384 SF/100 SF/occ. = 54 occupants
      Waiting: 757 SF/15 SF/occ. = 50 occupants
      Total: 121 occupants

      Smoke Compartment #3 –
      Sleeping: 15,657 SF/120 SF/occ. = 130 occupants
      Treatment: 1,920 SF /240 SF/occ. = 8 occupants
      Office/Support: 1,593 SF/100 SF/occ. = 16 occupants
      Total: 154 occupants

      Smoke Compartment #4 –
      Sleeping: 3,669 SF/120 SF/occ. = 30 occupants

      Smoke Compartment #5 –
      Sleeping: 3,642 SF/120 SF/occ. = 30 occupants

      Grand Total: 477 occupants

   B. Exit capacity (IBC 1005.1 & LSC 7.3.3.1):
      Outside exits –3 (33") + 8 (45") + 1 (66") = 525"
      525"/0.2"/occ. = 2,625 occupants

   C. Corridor width (IBC Table 1017.2 & AIA/HHS 8.2.2.1[1]):
      Inpatient areas with bed or stretcher movement: 8' min.
      Staff only areas: 5' min.

   D. Dead end (IBC 1017.3): 20' maximum

   E. Travel distance (IBC Table 1016.1 & LSC 18.2.6.2):
      Point in sleeping room to exit access: 50' maximum
      Point in suite to exit access door
      –one intervening room: 100' maximum
      –two intervening rooms: 50' maximum
      Exit access to exit: 150' maximum
      Any point to an exit: 200' maximum

   F. Door width (IBC 1008.1.1 & LSC 18.2.3.6):
      41–1/2" clear width minimum for areas with bed movement
      32" clear width minimum elsewhere

   G. Interior finish (IBC 803.5):
      Exits and exit access: Class B maximum flame spread
      Rooms: Class B maximum flame spread; Class C allowed in rooms with four persons or less

      Smoke production must be 450 or less under NFPA 258– 2001.

   H. Corridor construction (IBC 407.3): Non–hourly rated, smoke partition per IBC 710 extended to deck

   I. Corridor doors (IBC 407.3.1 & LSC 18.3.6.3.1): Non–hourly–rated doors which limit smoke transfer: positive latch required

   J. Incidental use or hazardous area separation (IBC Table 508.2, LSC 18.3.2.1 & NFPA 110,7.2):

Boiler room:	1–hour
Maintenance shop:	1–hour
Trash collection rooms:	1–hour
Soiled linen holding rooms:	1–hour
Storage rooms greater than 100 SF in area:	1–hour
Medical gas storage:	1–hour
Emergency generator room:	2–hour
Storage rooms 50 –100 SF in area:	Smoke–resistant
Laboratory (less than severe hazard):	Smoke–resistant

   K. Floor covering (IBC 804.5.1, Ex.):
      Enclosed exits & exit access: 0.22 watts/sq. cm. minimum as per NFPA 253 (radiant panel)

   L. Outside window (LSC 18.3.8):
      Required in each patient sleeping room with a 36" maximum sill height; 60" maximum sill height allowed in special nursing care areas

   M. Accessible egress (IBC 1007.1–1007.7 & LSC 7.5.4.1.3):
      Accessible outside exits provide accessible egress under the IBC.

      The LSC does not require additional accessible means of egress in fully sprinklered health care occupancies.

INDEX OF DRAWINGS

LEGEND OF TAGS

- DOOR TAG (#, LETTER, #, #)
- EXTERIOR WINDOW (#, LETTER) / INTERIOR WINDOW (#, #)
- SECTION MARK
- DETAIL MARK
- PLAN KEY NOTE
- CASEWORK TAG
- ROOM TAG
- ENLARGED PLAN MARK

HATCH LEGEND

- EXISTING CMU TO REMAIN
- NEW CMU
- NEW INSULATED WALL CAVITY @ EXIST. CMU WALL
- STONE VENEER
- BRICK VENEER

LEGEND OF ABBREVIATIONS

BP#1	BID PACKAGE ONE/EARLY RELEASE
GYP. BD	GYPSUM BOARD
E.J.	EXPANSION JOINT
SF	SQUARE FOOT
STRUCT.	STRUCTURAL
MECH.	MECHANICAL
ELEC.	ELECTRICAL
EIFS	EXTERIOR INSULATION FINISH SYSTEM
DEFS	DIRECT APPLIED ETERIOR FINISH SYSTEM
CMU	CONCRETE MASONRY UNIT
EPDM	ELASTOMERIC MEMBRANE ROOFING
FEC	FIRE EXTENGUISHER CABINET
ACT	ACOUSTICAL CEILING TILE
FV	FIELD VERIFY
RWL	RAINWATER LEADER
PC	PERSONAL COMPUTER
WCT	WHEEL CHAIR TURN–AROUND
UNO	UNLESS NOTED OTHERWISE
STL	STEEL
F.O.	FACE OF
CONC.	CONCRETE
CLG	CEILING
O.C.	ON CENTER
DIA.	DIAMETER
W/	WITH
R.D.	ROOF DRAIN
BLKG.	BLOCKING
MIN.	MINIMUM
MAX.	MAXIMUM
ALUM.	ALUMINUM
CONT.	CONTINUOUS
MTL.	METAL
TYP.	TYPICAL
INSUL.	INSULATION
EXIST.	EXISTING
KT	KEYBOARD TRAY
CT	CURTAIN TRACK
T	TEMPERED GLASS
VIF	VERIFY IN FIELD
R.D.	ROOF DRAIN
OPP.	OPPOSITE
SIM.	SIMILAR
SC	SCUPPER
FDVC	FIRE DEPT. WALL CONNECTION
LF	LIGHT FIXTURE
T.O.S.	TOP OF STEEL
T.O.M.	TOP OF MASONRY
O.F.O.B.	OUTSIDE FACE OF BRICK

BUILDING ENVELOPE

WRANGELL, AK IS WITHIN CLIMATE ZONE 7 AS DESIGNATED IN THE 2006 INTERNATIONAL ENERGY CONSERVATION CODE

ROOF
R–VALUE (REQUIRED BY CODE): R25ci (ENTIRELY ABOVE DECK)
R–VALUE (ACTUAL DESIGN): AVERAGE R30 (ABOVE DECK)

WALL
R–VALUE (REQUIRED BY CODE): R13 + 7.5ci
R–VALUE (ACTUAL DESIGN): APPROX. R19 +7.5ci

BELOW GRADE WALLS
R–VALUE (REQUIRED BY CODE): R–7.5ci
R–VALUE (ACTUAL DESIGN): R–7.5ci

FLOORS
R–VALUE (REQUIRED BY CODE): R–30
R–VALUE (ACTUAL DESIGN): R–30

WINDOWS
MTL. FRAMING @ STOREFRONT – U–FACTOR (REQ'D BY CODE): 0.45
MTL. FRAMING @ STOREFRONT – U–FACTOR (ACTUAL DESIGN): 0.45

ENTRANCE DOORS – U–FACTOR (REQUIRED BY CODE): 0.80
ENTRANCE DOORS – U–FACTOR (ACTUAL DESIGN): 0.80

SHGC (WHERE PF=.25 OR GREATER): NO REQUIREMENT

VAPOR RETARDER
REQUIRED ON INSIDE FACE OF METAL STUDS ON EXTERIOR WALLS

ALTERNATE PRICING

PROVIDE PRICING FOR ALTERNATES AS FOLLOWS:

1. PROVIDE CONTINUOUS CONCRETE MASONRY UNIT FOUNDATION WALL ALONG PERIMETER OF BUILDING. REFER TO STRUCTURAL DRAWINGS FOR DETAILS.

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AHFD | AMERICAN HEALTH FACILITIES DEVELOPMENT

STATE OF ALASKA — DAVID E. SHOWN — No.12691 — REGISTERED PROFESSIONAL ENGINEER — 9-28-12

PROJECT NUMBER
10528.00
DATE
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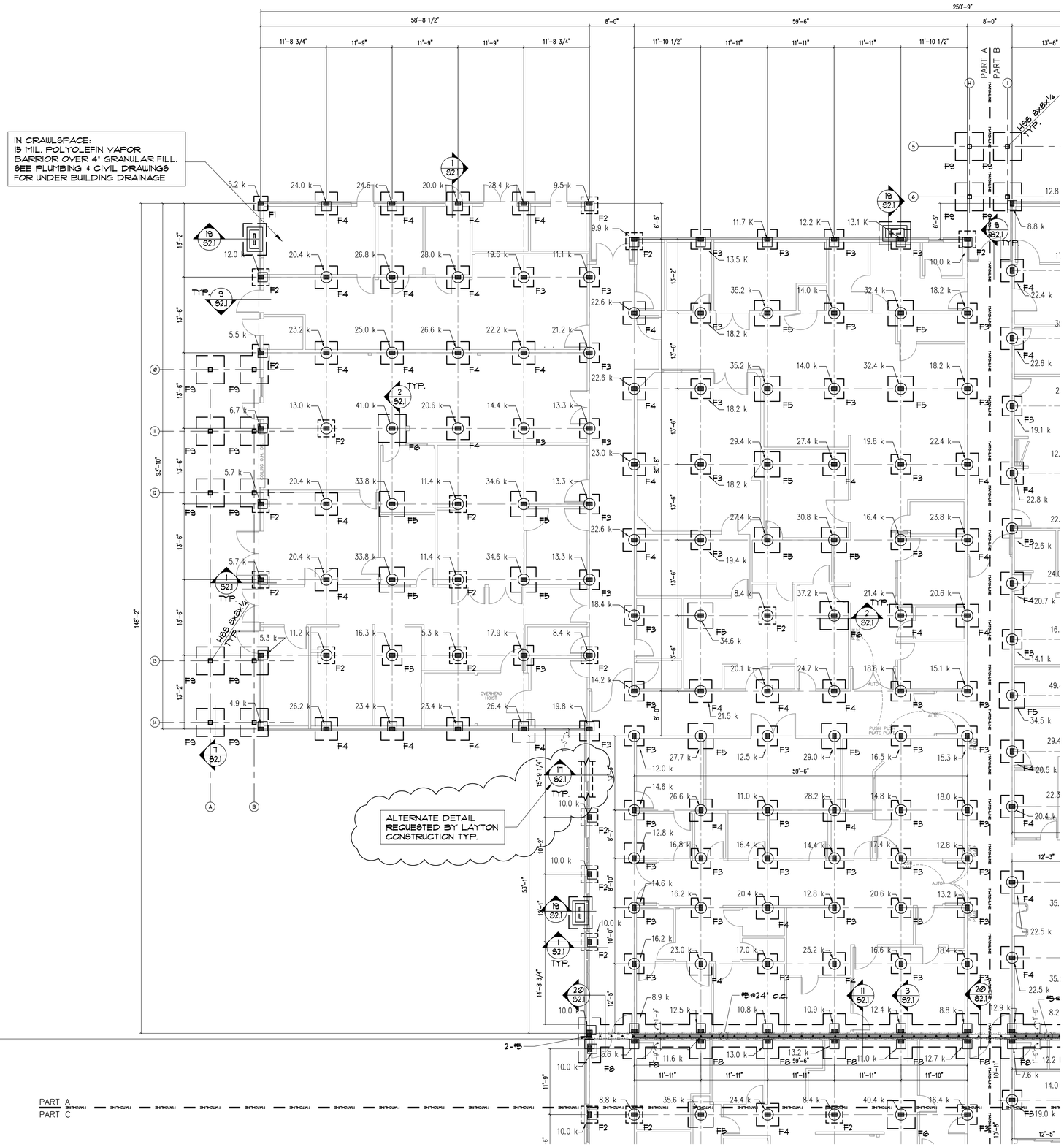
VOLUME TWO INDEX/CODE ANALYSIS/GENERAL NOTES

Early Release Package



FOUNDATION PLAN - PART A

8' 0 8'

NOTES:

1) TOP OF INTERIOR FTG.=F.F.E. -3'-6" U.N.O.
2) TOP OF EXTERIOR FTG.=F.F.E. -2'-8" OR -1'-8" BELOW EXTERIOR GRADE WHICHEVER IS LOWER U.N.O.
3) THE CONTRACTOR SHALL COORDINATE ANY UNDER SLAB PIPING, CONDUITS OR ANY UTILITIES PRIOR TO PLACING FOOTINGS. REPORT ANY CONFLICT TO ENGINEER IMMEDIATELY.
4) SEE ARCH. DWG FOR ANY LOCATIONS AND OR DIMENSIONS NOT SHOWN.
5) DOWELS SHOWN ON PLANS INDICATE GROUT FILLED REINFORCED CORES. (SEE DETAIL 12/S2.1)

KEYPLAN

A B C D

10166

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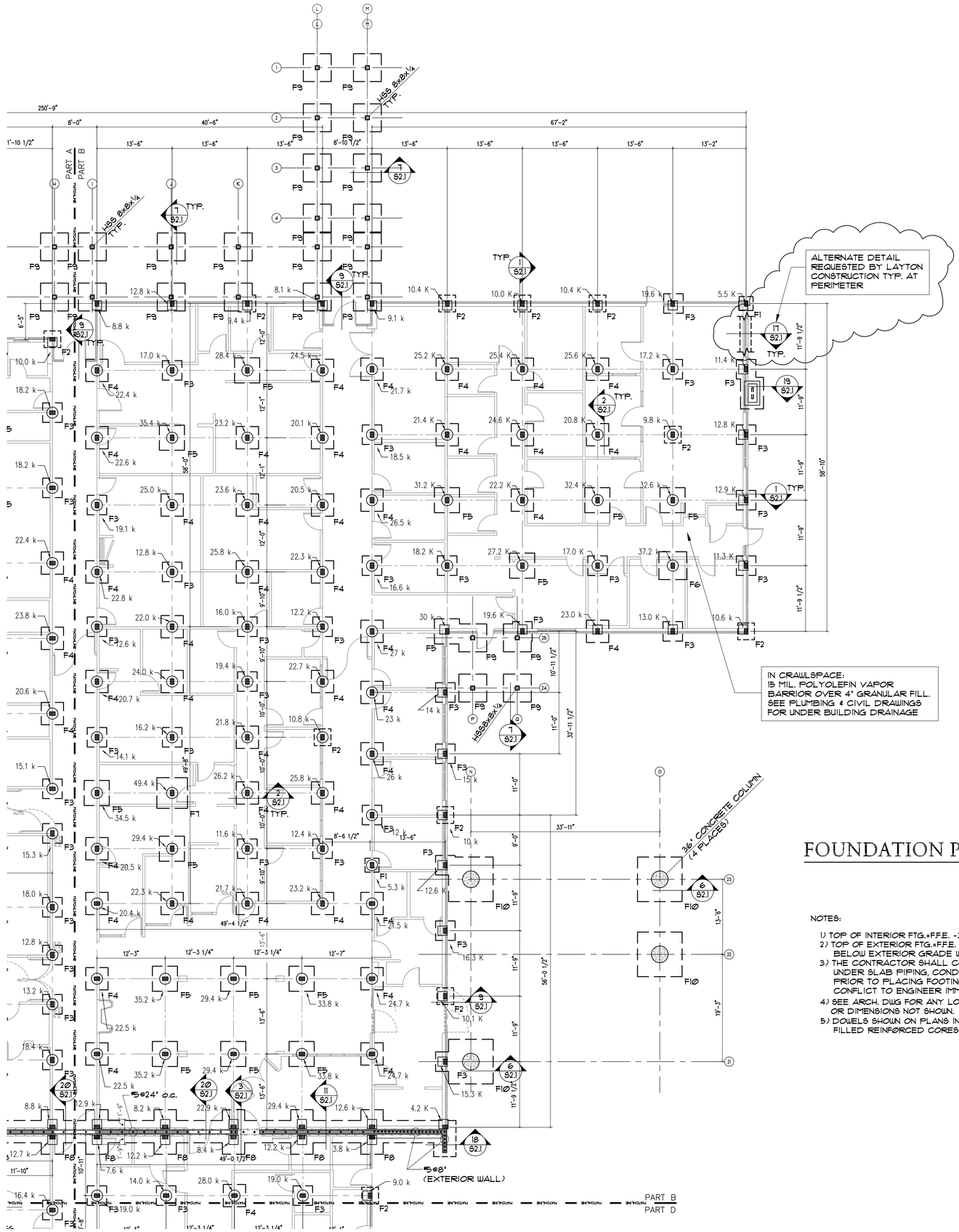
S1.1A

FOUNDATION PLAN-PART A



FOUNDATION PLAN - PART B

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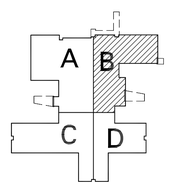

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S1.1B

FOUNDATION PLAN-PART B

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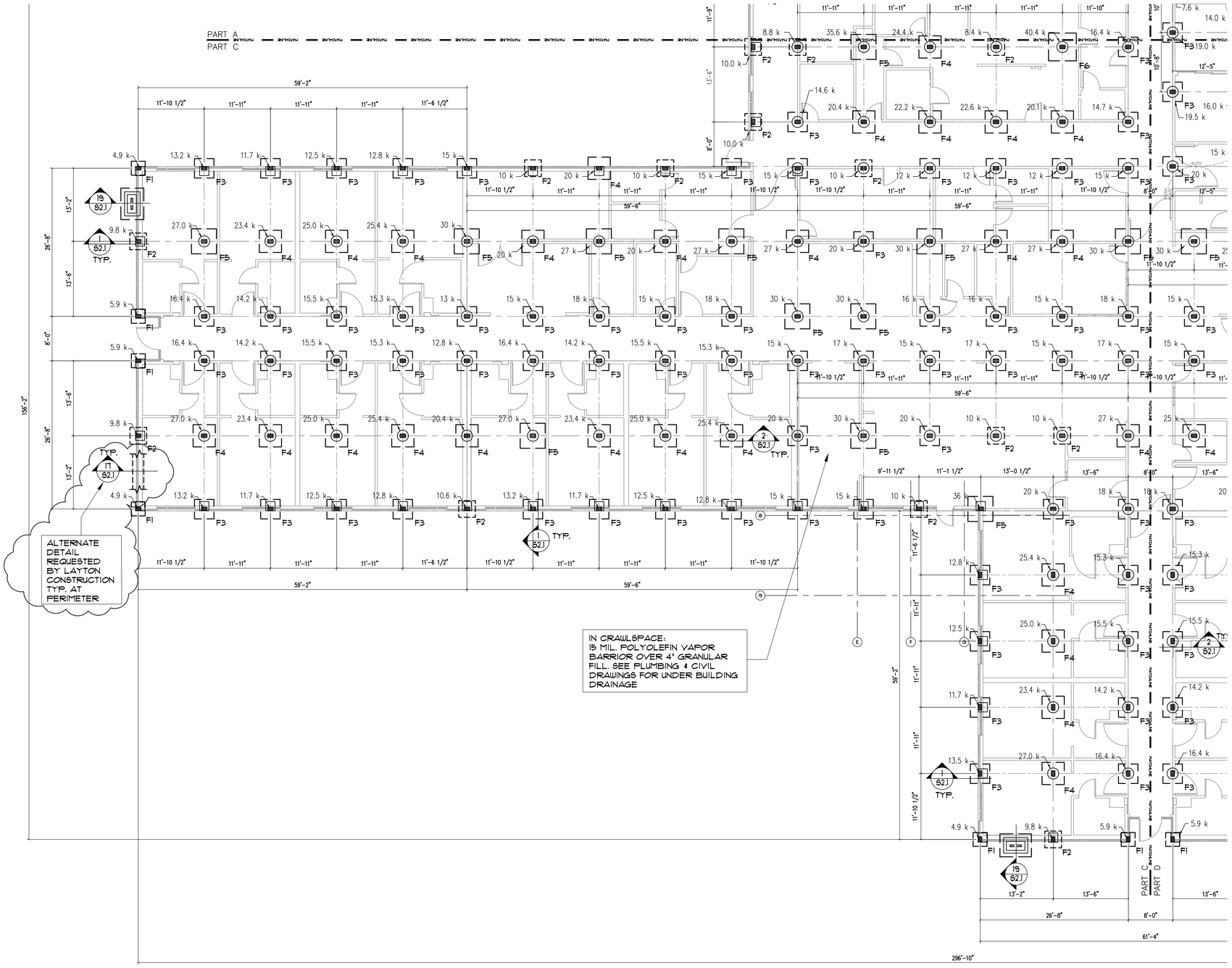

FOUNDATION PLAN - PART C

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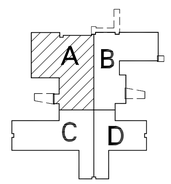

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FOUNDATION PLAN-PART C

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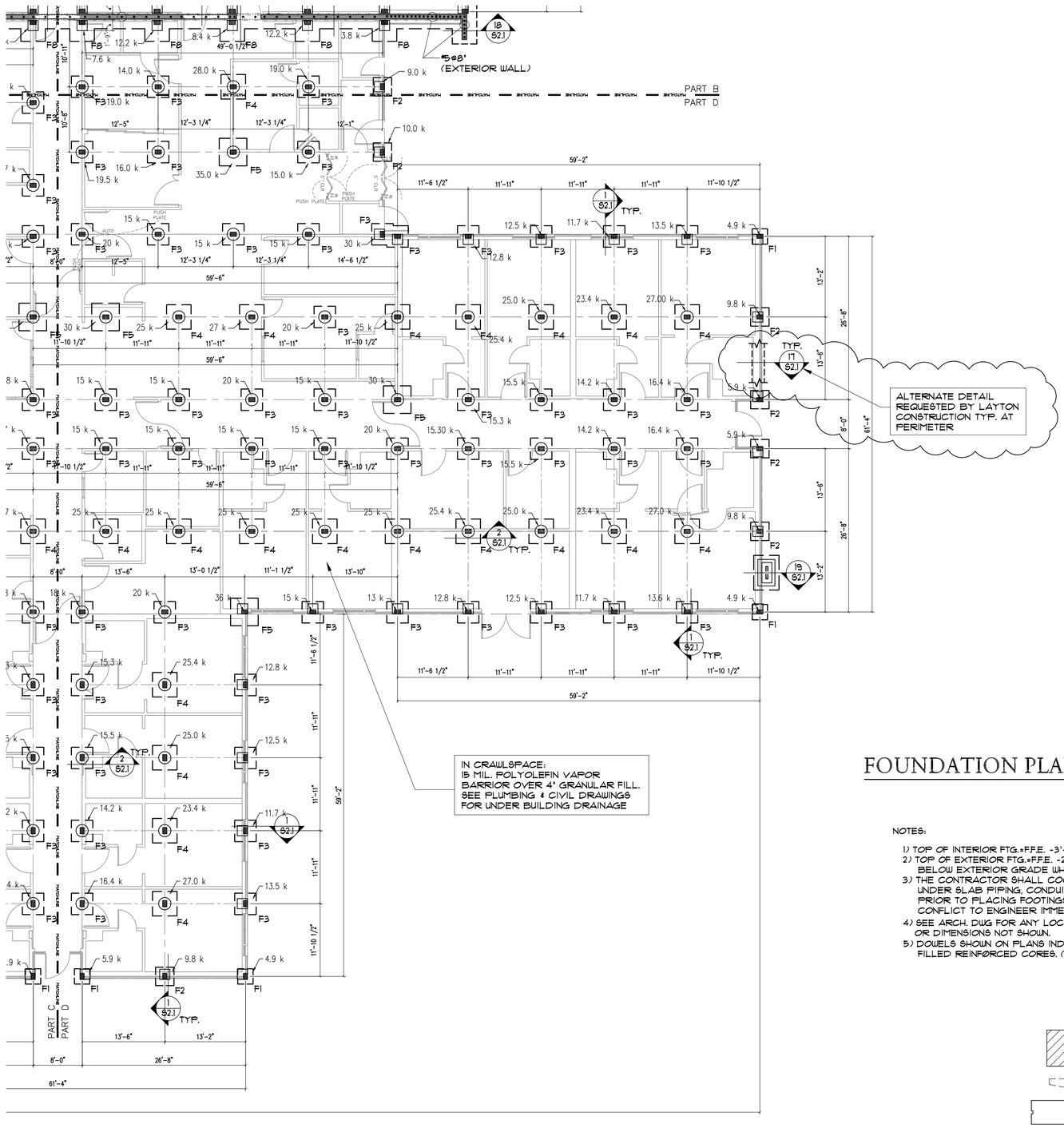

FOUNDATION PLAN - PART D

8' 0 8'

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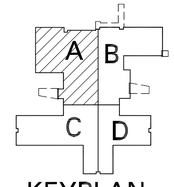

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S1.1D

FOUNDATION PLAN -PART D

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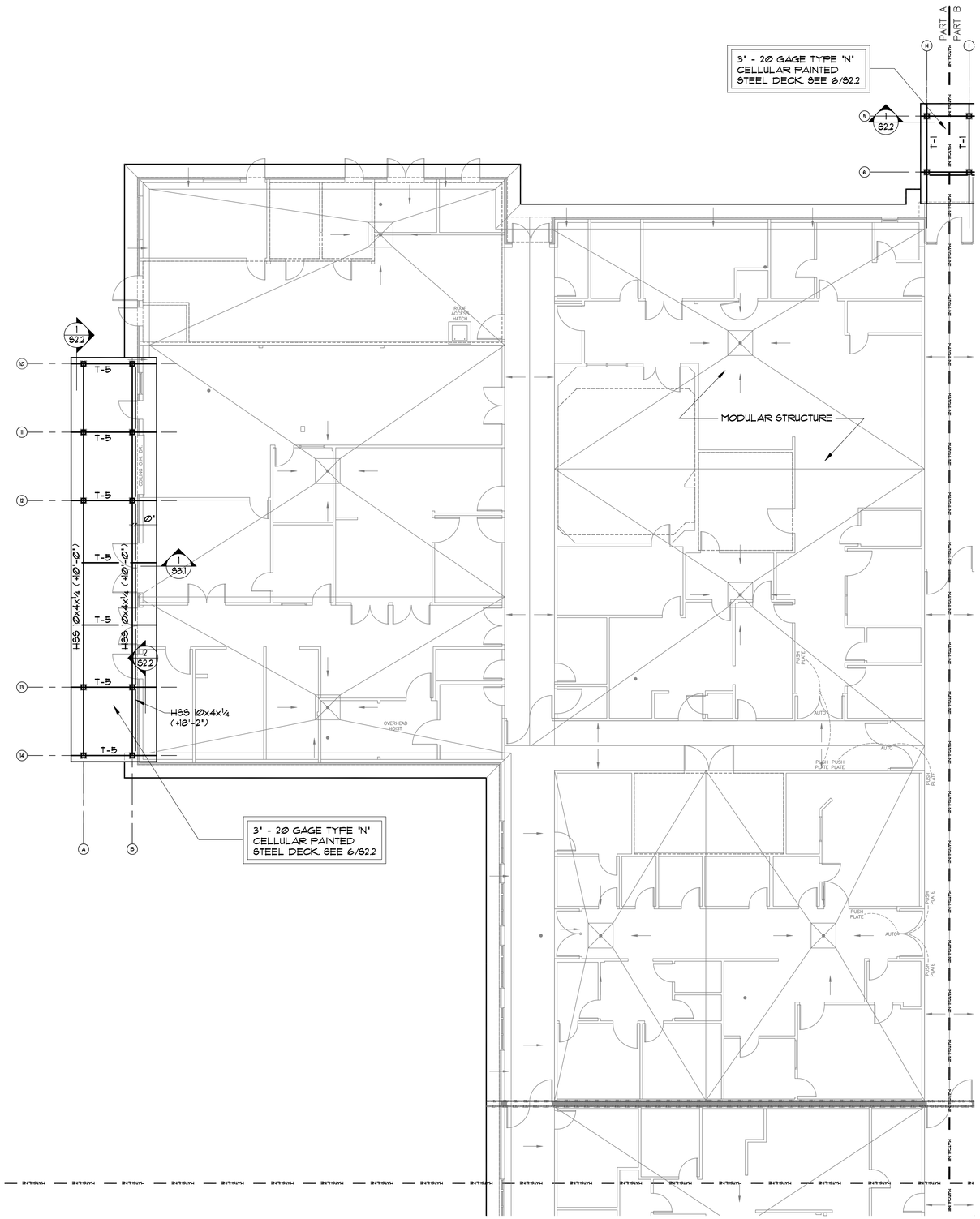
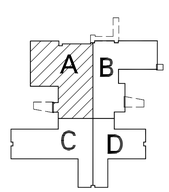


ROOF FRAMING PLAN - PART A

8' 0 8'

NOTES:
1. SEE SHEET S3.1 FOR TRUSSES.



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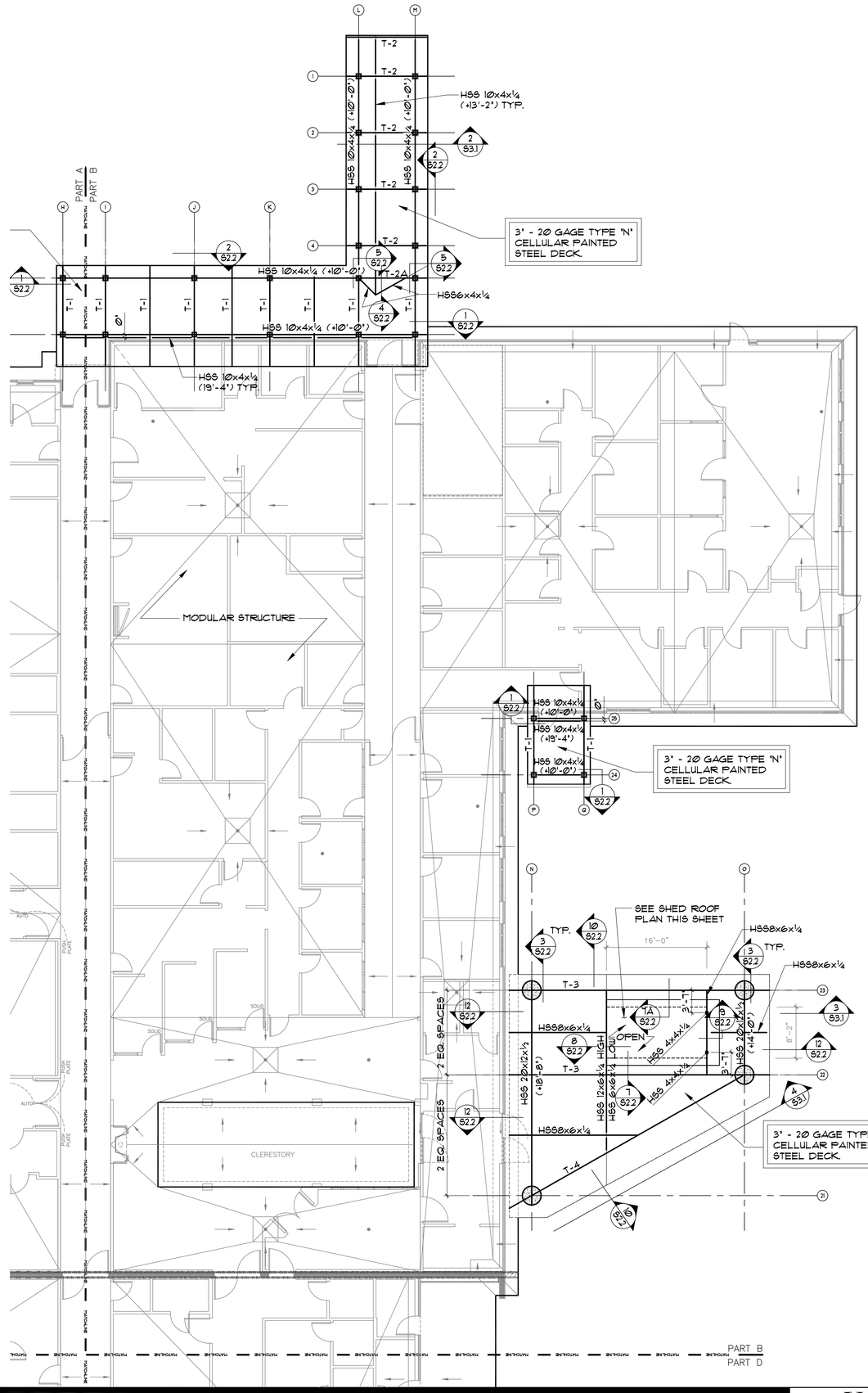
S1.2A

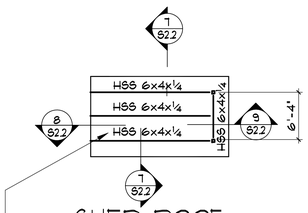
ROOF FRAMING PLAN
PART A



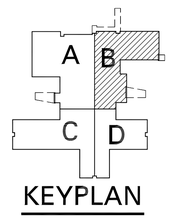
ROOF FRAMING PLAN - PART B

8' 0 8'

NOTES:
1. SEE SHEET S3.1 FOR TRUSSES.



SHED ROOF FRAMING PLAN



KEYPLAN

DEJA

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Wrangell, Alaska

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No. AEL 12676
REGISTERED PROFESSIONAL ENGINEER
2-28-12

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PROJECT NUMBER
10528.00
DATE
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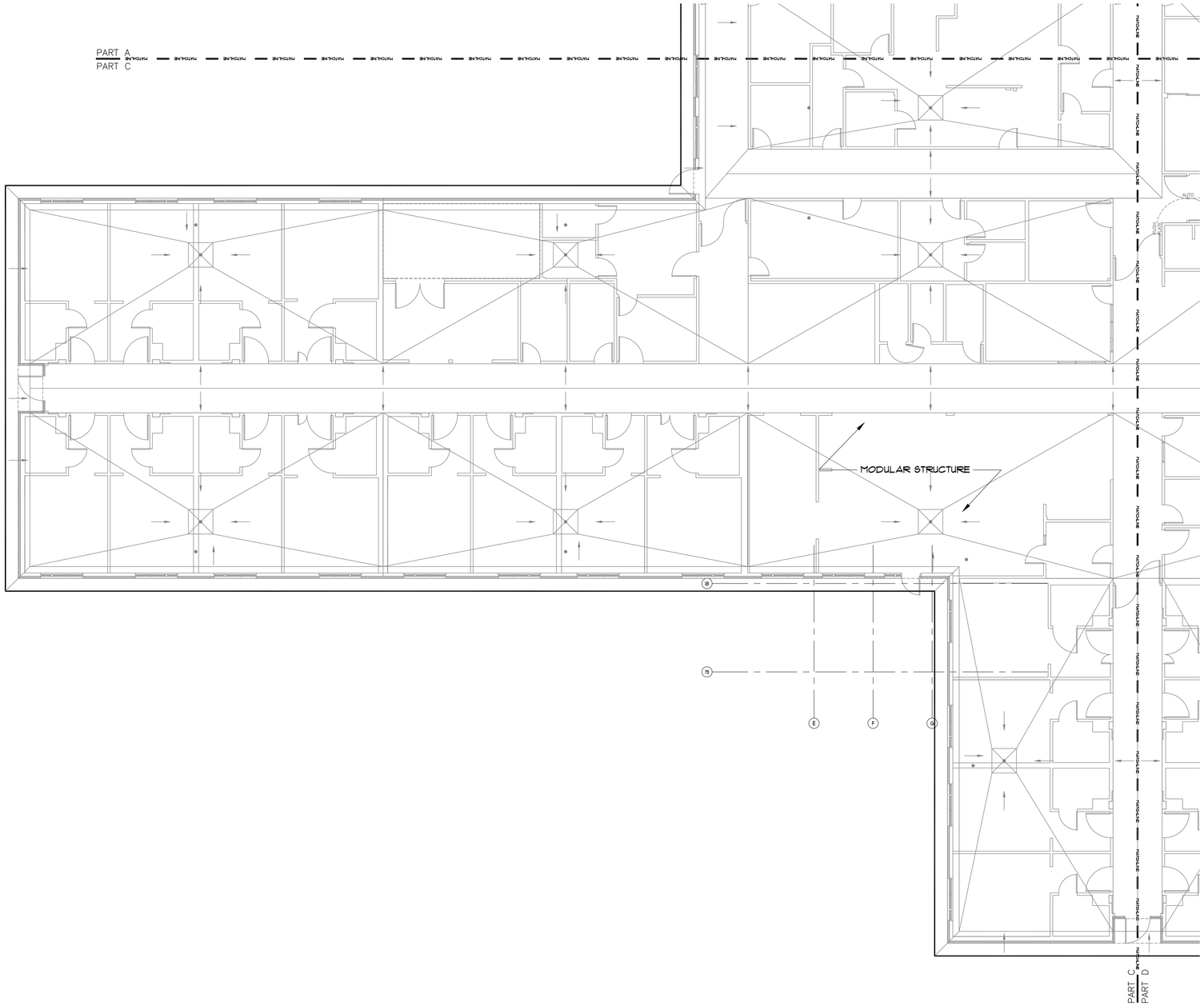
S1.2B

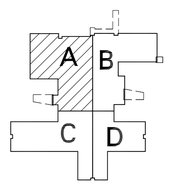
ROOF FRAMING PLAN
PART B

10166



ROOF FRAMING PLAN - PART C

8' 0 8'



KEYPLAN

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A Replacement Facility for
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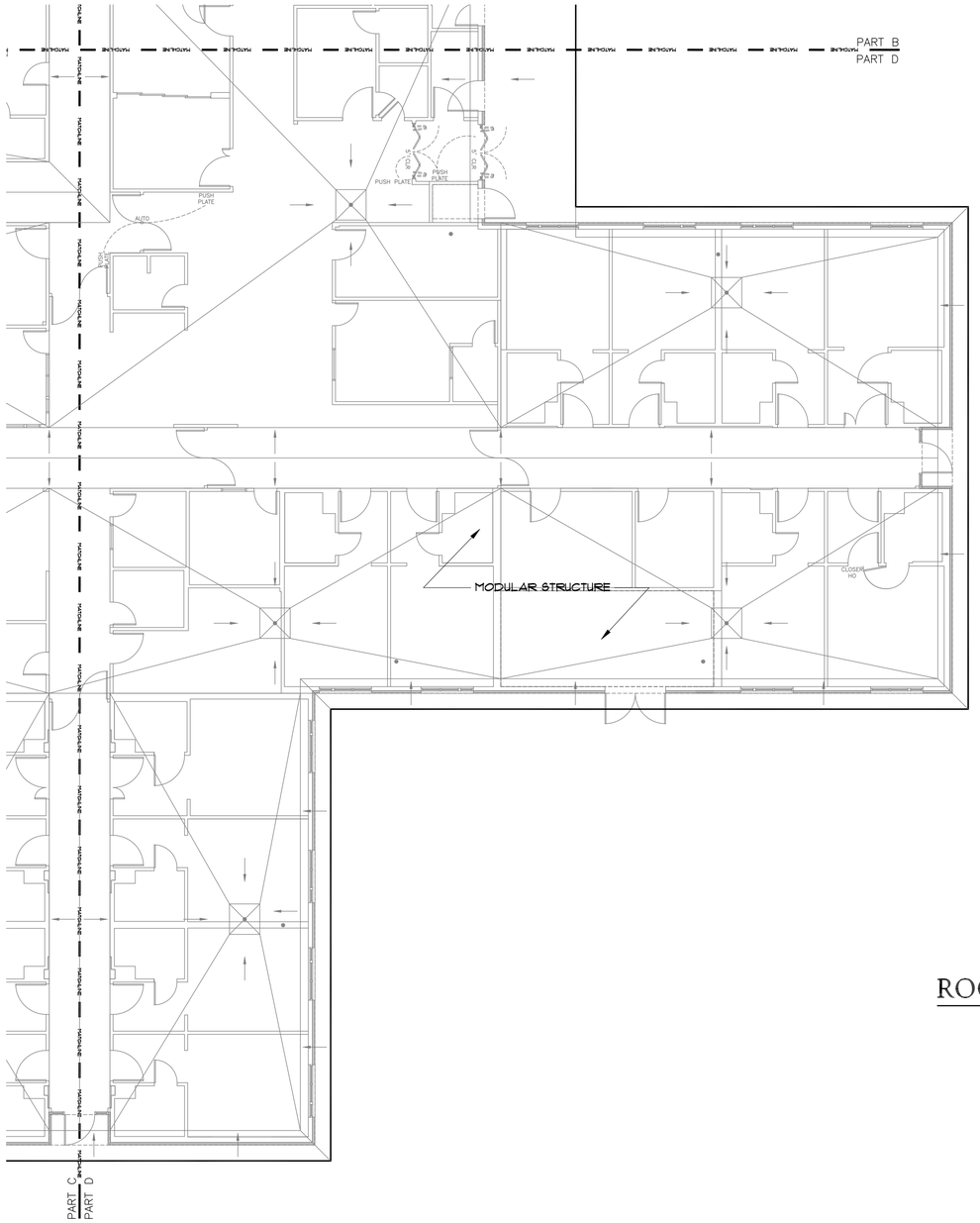
S1.2C

ROOF FRAMING PLAN
PART C

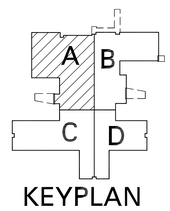
S:\DWG\2010\10166\Drawings ACAD\CDs\10166 Plan.dwg Garner 28/03/12 - 2:08 P

10166



ROOF FRAMING PLAN - PART D

8' 0 8'



KEYPLAN

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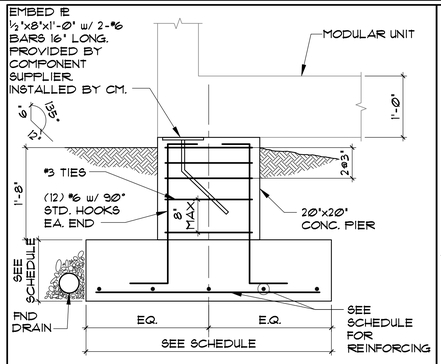
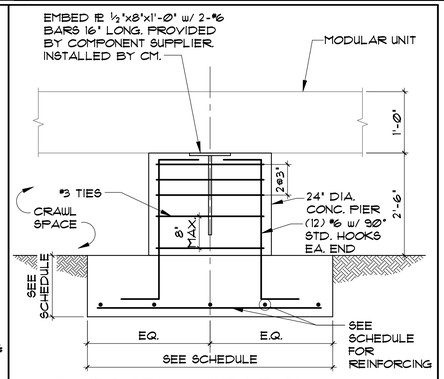
S1.2D

ROOF FRAMING PLAN
PART D

10166



1 FOOTING SECTION
SCALE: NONE



2 FOOTING SECTION
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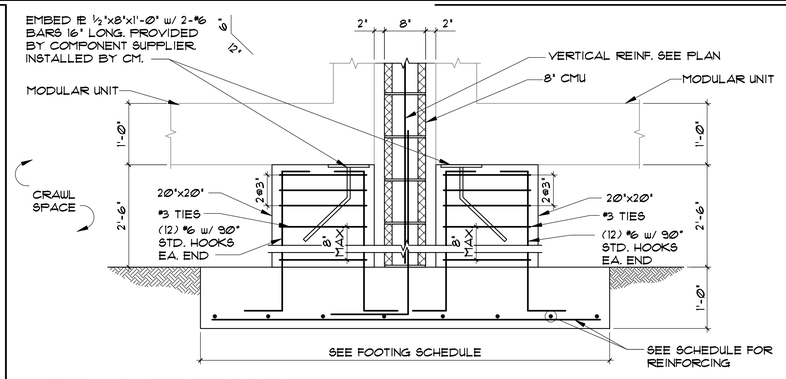
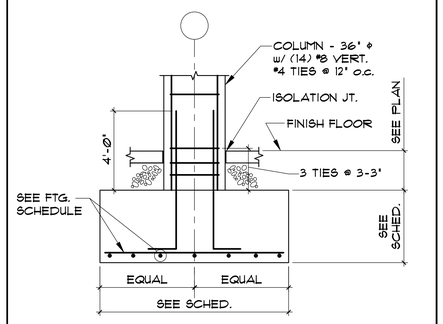


3 FOOTING SECTION
SCALE: NONE

MARK	SIZE	REINF.	REMARKS
F1	2'-6"x2'-6"x1'-0"	4-#5 E.W.	
F2	3'-0"x3'-0"x1'-0"	5-#5 E.W.	
F3	3'-6"x3'-6"x1'-0"	6-#5 E.W.	
F4	4'-0"x4'-0"x1'-0"	6-#5 E.W.	
F5	4'-6"x4'-6"x1'-0"	7-#5 E.W.	
F6	5'-0"x5'-0"x1'-0"	7-#5 E.W.	
F7	5'-6"x5'-6"x1'-0"	8-#5 E.W.	
F8	8'-0"x4'-0"x1'-0"	5-#5 LONG DIR. 9-#5 SHORT DIR.	TOP & BOTTOM
F9	5'-0"x5'-0"x1'-4"	6-#5 E.W.	TOP & BOTTOM
F10	8'-0"x8'-0"x1'-6"	10-#5 E.W.	TOP & BOTTOM

5 FOOTING SCHEDULE



6 COLUMN DETAIL
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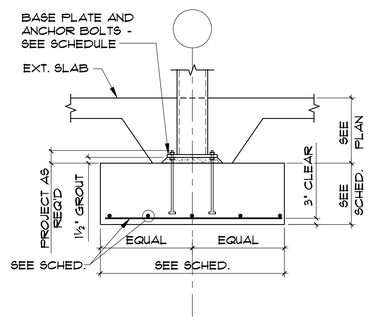
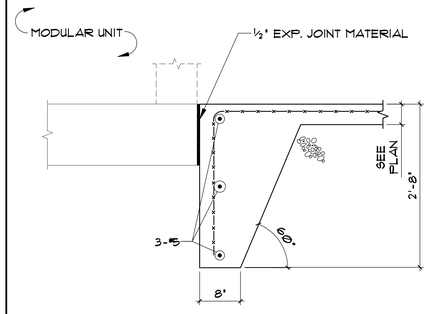


7 TYP. EXTERIOR COLUMN
SCALE : NONE



9 SECTION AT BUILDING
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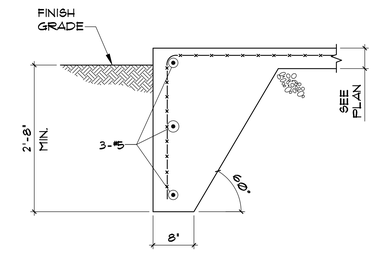
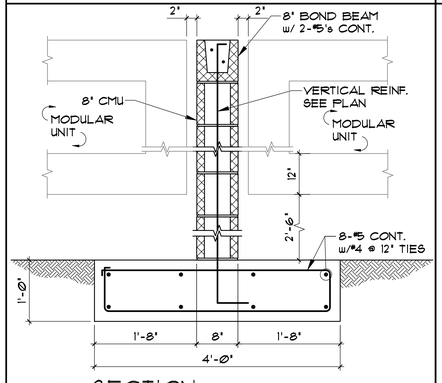
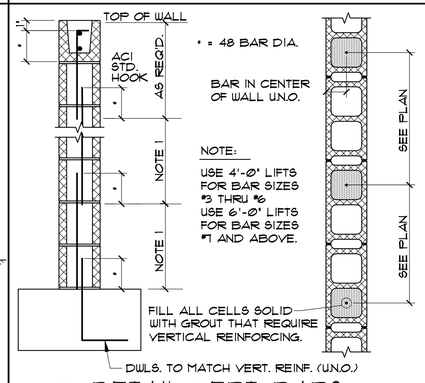


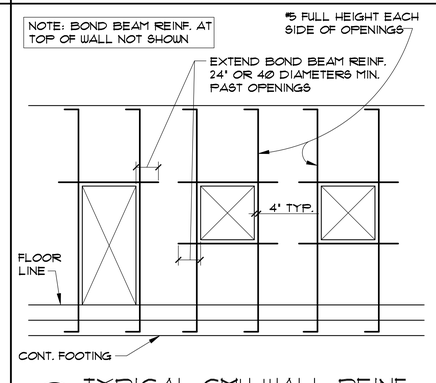
10 TURNED DOWN SLAB
SCALE: NONE



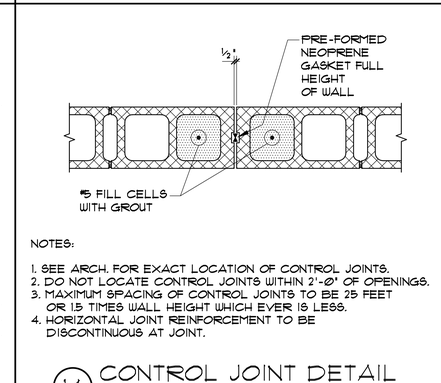
11 SECTION
SCALE: NONE



12 DETAIL VERT. BARS
SCALE: NONE



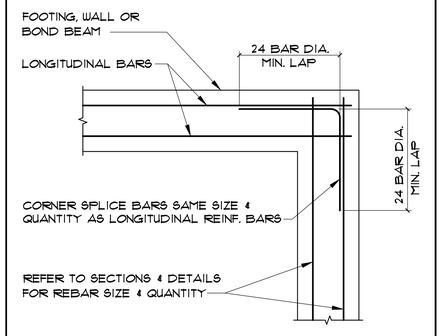
13 TYPICAL CMU WALL REINF.
SCALE: NONE



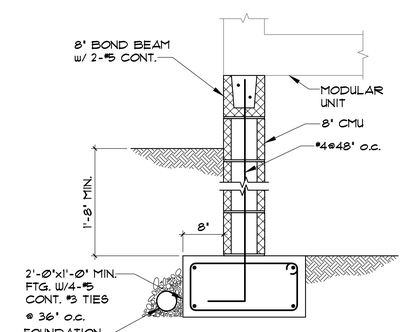
NOTES:

1. SEE ARCH. FOR EXACT LOCATION OF CONTROL JOINTS.
2. DO NOT LOCATE CONTROL JOINTS WITHIN 2'-0" OF OPENINGS.
3. MAXIMUM SPACING OF CONTROL JOINTS TO BE 25 FEET OR 1.5 TIMES WALL HEIGHT WHICH EVER IS LESS.
4. HORIZONTAL JOINT REINFORCEMENT TO BE DISCONTINUOUS AT JOINT.

14 CONTROL JOINT DETAIL
SCALE: NONE



16 TYP. CONTINUITY CORNER
SCALE : NONE



17 ALTERNATE SECTIONS
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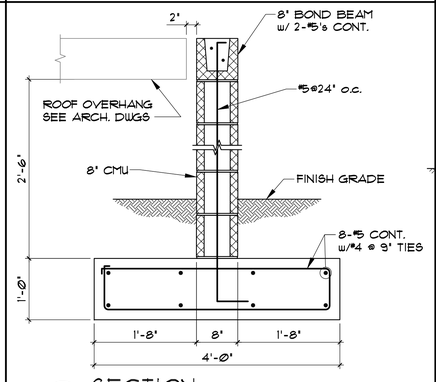

18 SECTION
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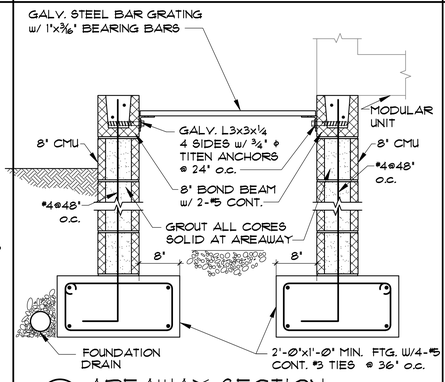

19 AREAWAY SECTION
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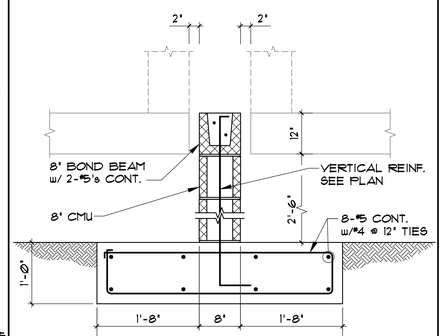

20 SECTION @ DOOR
SCALE: NONE

10166

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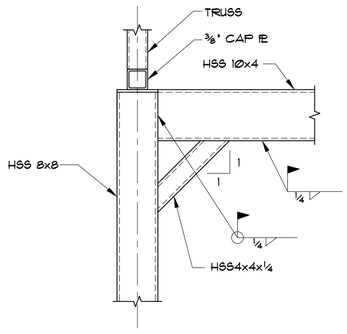
S2.1

SECTIONS AND DETAILS



1 SECTION
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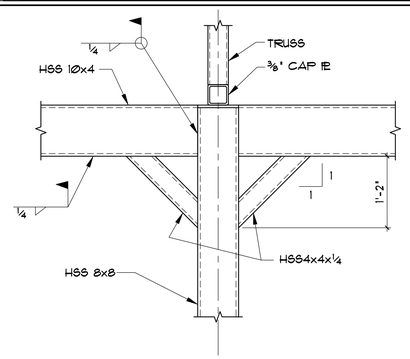

2 SECTION
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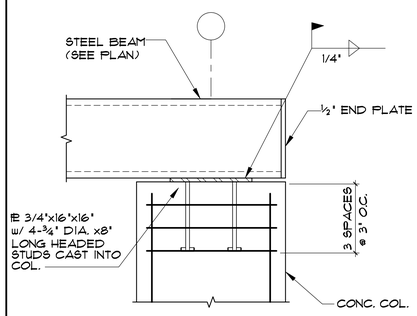

3 SECTION
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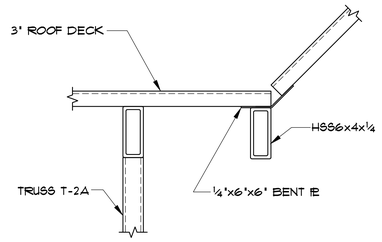

4 SECTION
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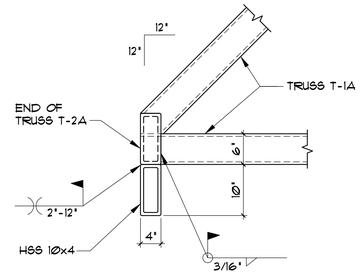
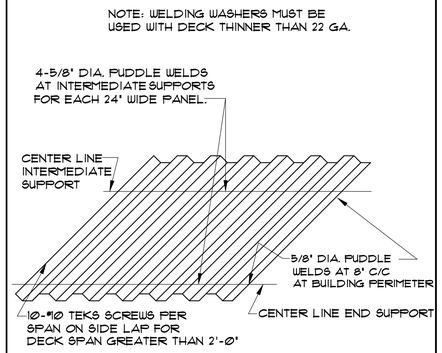
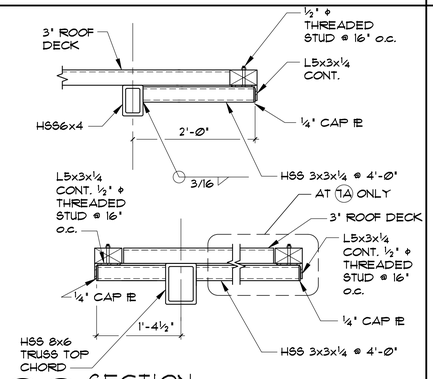


5 DETAIL @ T1A
SCALE: NONE



6 ROOF DECK ATTACHMENT
SCALE: NONE
3" DECK



7A 7 SECTION
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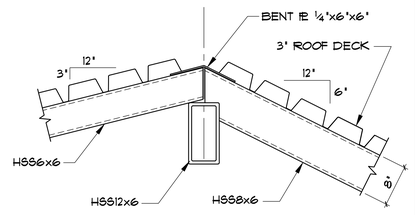

8 SECTION
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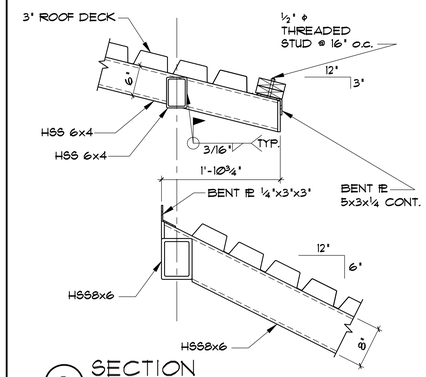

9 SECTION
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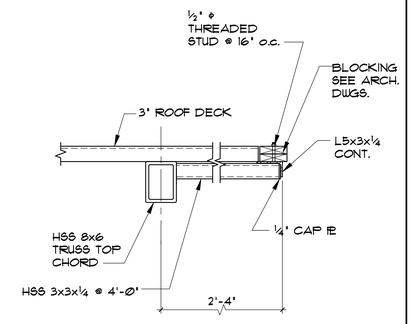

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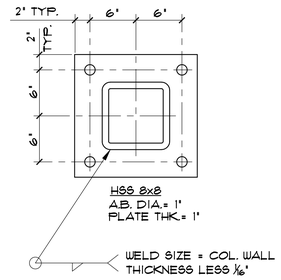
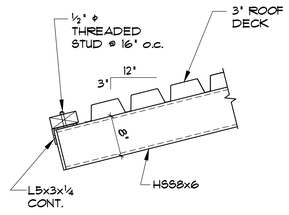


11 BASE PLATE DETAILS
SCALE: NONE



12 SECTION
SCALE: NONE

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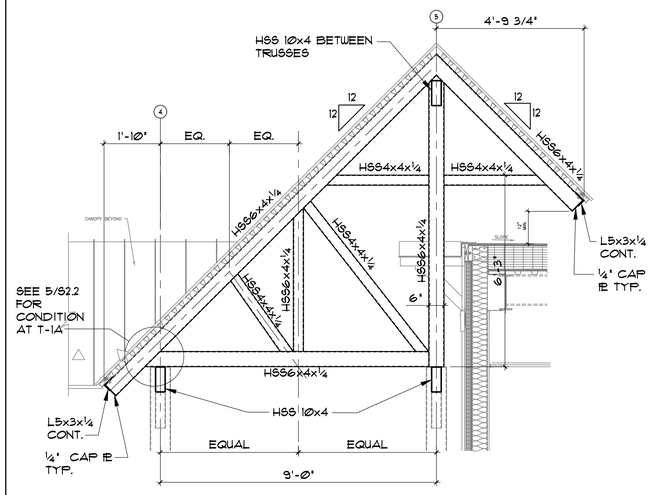
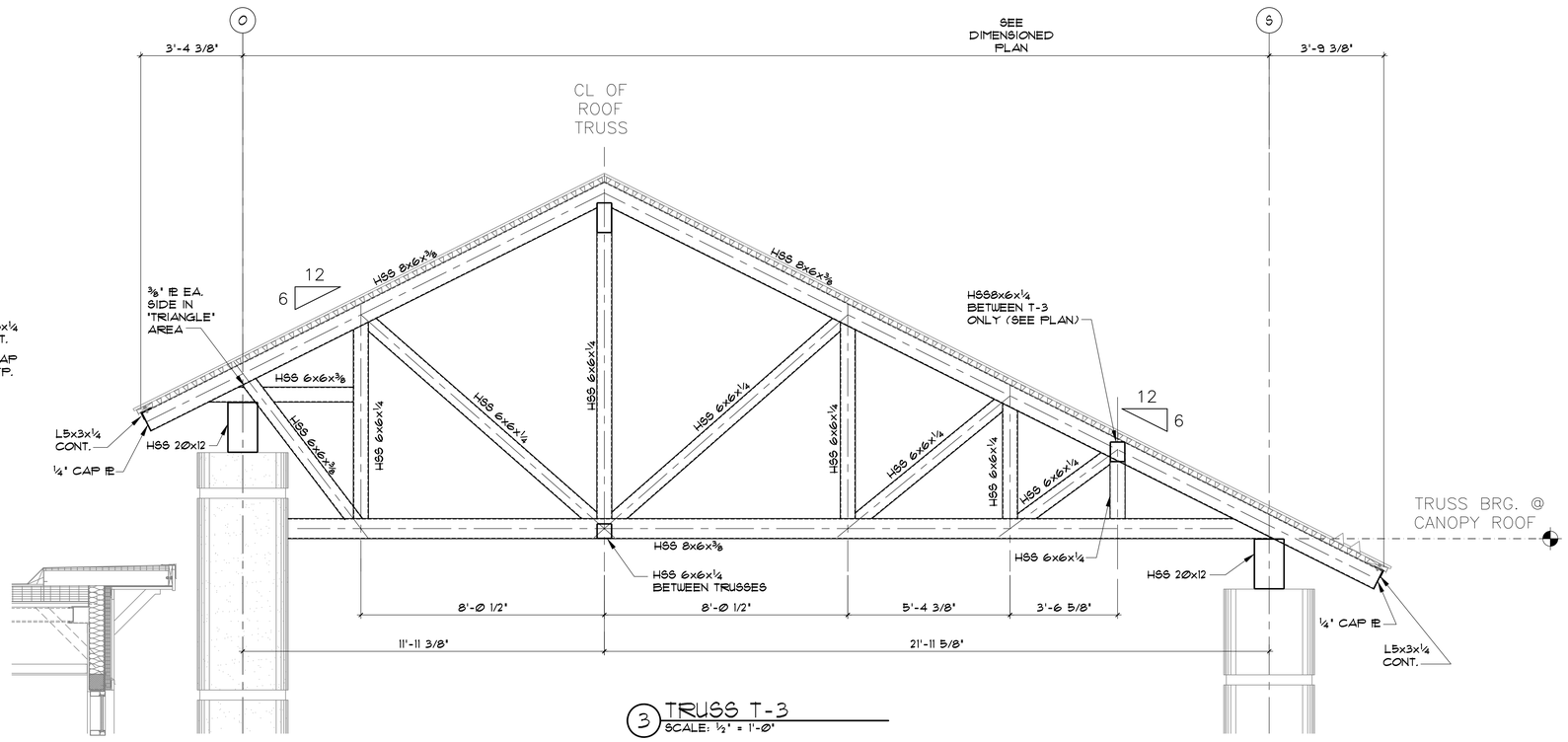
S2.2

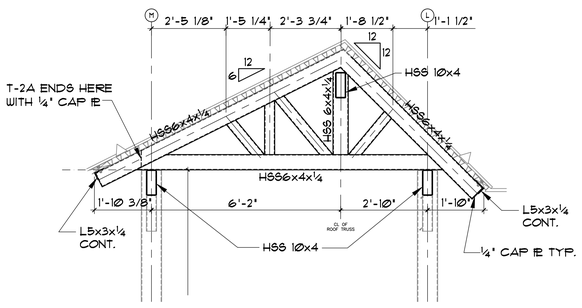
SECTIONS AND DETAILS



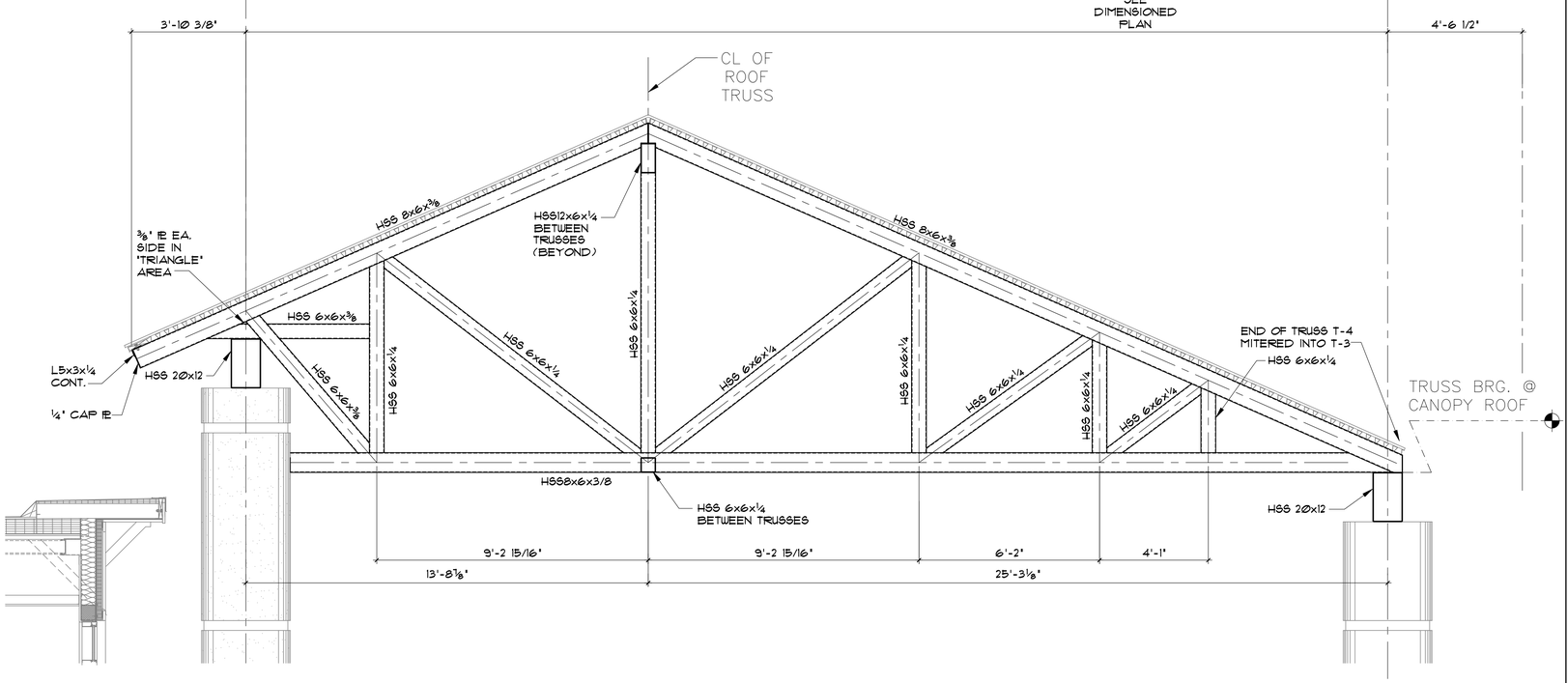
1 TRUSS T-1
SCALE: 1/2" = 1'-0"



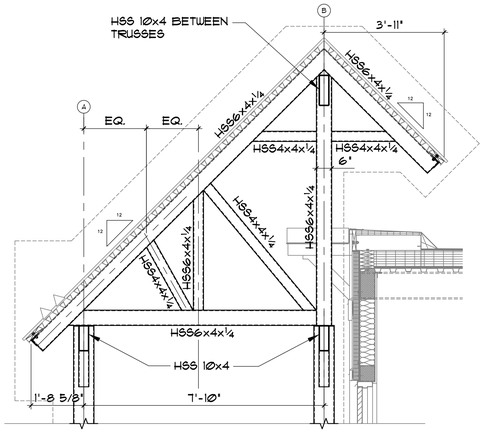
3 TRUSS T-3
SCALE: 1/2" = 1'-0"



2 TRUSS T-2
SCALE: 1/2" = 1'-0"



4 TRUSS T-4
SCALE: 1/2" = 1'-0"



5 TRUSS T-5
SCALE: 1/2" = 1'-0"

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S3.1

TRUSS ELEVATIONS

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10166

DESIGN AND CODE INFORMATION

1. ALL CONSTRUCTION SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2006 EDITION.

2. VERIFY EXISTING CONDITIONS AND ALL DIMENSIONS AND NOTIFY ARCHITECT OF ANY CONDITIONS WHICH CONFLICT WITH OTHER PLANS AND SPECIFICATIONS. STRUCTURAL DRAWINGS MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS. STRUCTURAL DRAWINGS ARE NOT INTENDED FOR BUILDING LAYOUT.

3. SHOP DRAWINGS WILL NOT BE REVIEWED BY THE DESIGNER UNTIL AFTER THE GENERAL CONTRACTOR HAS THOROUGHLY REVIEWED THE SHOP DRAWINGS, VERIFIED EXISTING CONDITIONS, AND COORDINATED THE SHOP DRAWINGS WITH OTHER AFFECTED TRADES. SUBMIT FOUR COPIES OF REVIEWED DRAWINGS FOR ENGINEER'S REVIEW. ONLY THREE SETS OF MARKED UP SHOP DRAWINGS SHALL BE RETURNED BY THE DESIGNER. REPRODUCTION OF STRUCTURAL DRAWINGS FOR SHOP DRAWINGS IS NOT PERMITTED.

4. THE DESIGN ADEQUACY OF TEMPORARY BRACING AND SHORING IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

5. DO NOT SCALE STRUCTURAL DRAWINGS, AND FOR LOCATION OF MISCELLANEOUS ITEMS (OPENINGS, BENT PLATES, INSERTS, ETC.) AFFECTING STRUCTURAL WORK, SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS.

6. LIVE LOADS:
   FLOORS: 60 PSF
   ROOFS: 30 PSF

7. ROOF LOADS:
   GROUND SNOW LOAD: 60 PSF
   SNOW EXPOSURE Ce: .7
   SNOW IMPORTANCE I: 1.1
   THERMAL FACTOR Ct: 1.0
   FLAT ROOF SNOW LOAD: 50 PSF

8. WIND LOADS:
   BASIC WIND SPEED: 120 MPH
   WIND IMPORTANCE I: 1.15
   WIND EXPOSURE FACTOR: B
   INTERNAL PRESSURE COEFFICIENT: .18
   CLADDING LOAD: 38 PSF

9. SEISMIC LOADS:
   SEISMIC USE GROUP: IV
   SEISMIC IMPORTANCE Ie: 1.5
   .2 SEC SPECTRAL RESPONSE ACCELERATION Ss: .169
   1.0 SEC SPECTRAL RESPONSE ADDELERATION S1: .153
   SITE CLASS: D
   DESIGN SPECTRAL RESPONSE SDS: .180
   DESIGN SPECTRAL RESPONSE SD1: .223
   SEISMIC DESIGN CATEGORY: D

SPECIAL INSPECTIONS AND TESTING

1. THE CONTRACTOR/OWNER SHALL EMPLOY AN INDEPENDENT TESTING COMPANY TO PERFORM SITE INSPECTIONS AND TESTING IN ACCORDANCE WITH THE QUALITY ASSURANCE PLAN SHEET S4.2.

STRUCTURAL OBSERVATIONS

1. THE ENGINEER OF RECORD HAS BEEN EMPLOYED TO PERFORM PERIODIC VISUAL OBSERVATIONS OF THE STRUCTURE DURING CONSTRUCTION FOR GENERAL CONFORMANCE TO THE DESIGN DRAWINGS.

FOUNDATION NOTES

1. FOUNDATION DESIGN IS BASED ON A REPORT MADE BY RIM ENGINEERING, INC. DATED DECEMBER 15, 2010 (REPORT NO. 10113).

2. FOOTINGS ARE DESIGNED TO BEAR ON UNIFORM SOIL CAPABLE OF SUPPORTING 2000 PSF. DESIGN ASSUMES DIFFERENTIAL AND TOTAL SETTLEMENT ARE WITHIN ACCEPTED TOLERANCES FOR THE TYPE OF CONSTRUCTION USED.

3. THE SOIL BEARING CAPACITY AND CONSISTENCY SHALL BE VERIFIED FOR THE BUILDING LIMITS BY A REGISTERED GEOTECHNICAL ENGINEER WHEN FOUNDATION EXCAVATIONS HAVE BEEN CARRIED DOWN TO THE PROPOSED ELEVATIONS. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE 2'-0" MINIMUM BELOW FINISHED GRADE.

4. WHERE FOOTING EXCAVATIONS ARE TO REMAIN OPEN AND MAY BE EXPOSED TO RAINFALL, THE EXCAVATIONS SHALL BE UNDERCUT AND A 3 INCH THICK MUD MAT OF 1000 PSI CONCRETE SHALL BE PLACED IN THE BOTTOM TO PROTECT THE BEARING SOILS.

5. WHERE FOOTING STEPS ARE NECESSARY, THEY SHALL BE NO STEEPER THAN 1 VERTICAL TO 2 HORIZONTAL, UNLESS SHOWN OTHERWISE ON PLANS.

REINFORCED CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," (ACI 318-05).

2. REINFORCING STEEL SHALL BE DEFORMED BARS ASTM A-615 (GRADE 60).

3. THE COMPRESSIVE STRENGTH AT 28 DAYS OF ALL CAST IN PLACE CONCRETE SHALL BE:
   4000 PSI - SLABS-ON-GRADE
   4000 PSI - PIERS, WALLS
   4000 PSI - COLUMNS
   3000 PSI - FOOTINGS
   3000 PSI - ALL OTHER CONCRETE
   (SEE CIVIL DRAWINGS FOR SITE CONCRETE STRENGTH REQUIREMENTS).

4. LAP SPLICES FOR REINFORCING BARS SHALL BE CLASS B IN ACCORDANCE WITH ACI 318-05, UNLESS NOTED OTHERWISE.

5. CLEAR CONCRETE COVER FOR REINFORCING STEEL:

GRADE BEAMS AND PIERS	2"
MASONRY WALLS	LOCATE IN CENTER OF WALL (U.N.O.)
COLUMNS	1-1/2" FORMED EDGES
FOOTINGS	2" FORMED EDGES
	3" CAST AGAINST GROUND

6. THE LONGITUDINAL REINFORCING STEEL IN BOND BEAMS, WALLS, AND FOOTINGS SHALL BE CONTINUOUS AROUND CORNERS. SEE TYPICAL DETAILS.

7. MECHANICAL VIBRATORS SHALL VIBRATE ALL CONCRETE.

8. COORDINATE ALL VAPOR RETARDERS, VAPOR BARRIERS, AND WATERPROOFING OF CONCRETE SLABS-ON-GRADE AND CONCRETE WALLS WITH FINISH MATERIAL REQUIREMENTS AND ARCHITECTURAL SPECIFICATIONS.

CONCRETE MASONRY

1. MASONRY WALL CONTROL JOINTS SHALL BE LOCATED AS SHOWN ON THE ARCHITECTURAL DRAWINGS.

2. CONCRETE MASONRY SHALL CONFORM TO THE NATIONAL CONCRETE MASONRY ASSOCIATION SPECIFICATIONS, AND HAVE A DENSITY OF 125 PCF AND SHALL HAVE A MINIMUM PRISM STRENGTH (F'M) OF 1500 PSI.

3. GROUT FOR FILLING CONCRETE MASONRY CELLS SHALL CONFORM TO STANDARD SPECIFICATIONS FOR "MORTAR AND GROUT FOR REINFORCED MASONRY," ASTM C-476, AND SHALL HAVE A COMPRESSIVE PRISM STRENGTH (F'M) OF 3000 PSI AT 28 DAYS. THE SLUMP SHALL BE BETWEEN 8 INCHES AND 11 INCHES. WHERE THE MINIMUM DIMENSION OF ANY CONTINUOUS VERTICAL CELL IS 3 INCHES OR LESS, USE FINE GROUT, OTHERWISE USE COARSE (PEA GRAVEL) GROUT.

4. MORTAR FOR CONCRETE MASONRY SHALL BE TYPE 'S' AND SHALL CONFORM TO ASTM C-270.

5. MASONRY CONSTRUCTION SHALL BE BUILT IN LIFTS NOT TO EXCEED 4 FEET PRIOR TO GROUTING CORES. KEY NEXT GROUT LIFT INTO PRIOR LIFT BY STOPPING FIRST LIFT 2" BELOW TOP OF BLOCK.

6. ALL REINFORCING BARS IN FILLED CELLS SHALL BE DOWELED INTO FOOTINGS WITH STANDARD 90-DEGREE HOOKS AND DOWELED 7 INCHES INTO BOND BEAMS AT TOP OF WALLS.

7. MASONRY LAP SPLICES SHALL BE 48 BAR DIAMETERS (U.N.O.)

8. REINFORCEMENT IN WALLS SHALL BE PLACED IN THE CENTER OF THE WALL UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC "MANUAL OF STEEL CONSTRUCTION ALLOWABLE STRESS DESIGN" THIRTEENTH EDITION.

2. STRUCTURAL STEEL ROLLED SHAPES SHALL BE ASTM A-992 GRADE 50 UNLESS NOTED OTHERWISE. STRUCTURAL STEEL PLATES AND ANGLES SHALL BE ASTM A-36.

3. STRUCTURAL PIPE COLUMNS SHALL BE ASTM A-53, TYPE E OR S, GRADE B. STRUCTURAL TUBES SHALL BE ASTM A500, GRADE B.

4. STEEL FRAMING CONNECTIONS SHALL BE BOLTED OR WELDED. BOLTS SHALL BE 3/4 INCH DIAMETER MINIMUM AND SHALL BE ASTM A-325-N, UNLESS NOTED OTHERWISE.

5. METAL DECK SHALL BE INSTALLED IN ACCORDANCE WITH THE STEEL DECK INSTITUTE SPECIFICATIONS, LATEST EDITION.

6. ANCHOR BOLTS SHALL BE ASTM A-307 HEADED BOLTS. MINIMUM ANCHOR BOLT EMBEDMENT SHALL BE 12 BOLT DIAMETERS UNLESS NOTED OTHERWISE. CLEAN ANCHOR BOLTS OF ALL GREASE, DIRT, ETC., BEFORE INSTALLATION.

7. WELDS SHOWN ON THE STRUCTURAL DRAWINGS ARE THE MINIMUM REQUIRED BY DESIGN. THE FABRICATOR'S DRAWINGS SHALL SHOW WELDS AND THEY SHALL CONFORM TO AWS SPECIFICATIONS. ALL WELDING SHALL BE DONE WITH E-70 SERIES ELECTRODES.

8. PAINT ALL STRUCTURAL STEEL THAT DOES NOT RECEIVE SPRAY-ON FIREPROOFING WITH ONE COAT OF RUST-INHIBITIVE PRIMER 2.5 MILS IN THICKNESS. THE COMPATIBILITY OF PRIMER AND ANY TOP COAT SHALL BE VERIFIED BEFORE ANY PAINTING IS PERFORMED. TOUCH-UP ALL EXPOSED METAL AFTER FIELD INSTALLATION. ALL STRUCTURAL STEEL WHICH IS EXPOSED TO THE ELEMENTS SHALL RECEIVE TWO COATS OF EXTERIOR ENAMEL WHICH IS COMPATIBLE WITH THE PRIMED SURFACE.

9. STRUCTURAL STEEL SHOP DRAWINGS SHALL INCLUDE COMPLETE DETAILS, CONNECTIONS, AND SCHEDULES FOR FABRICATION AND ASSEMBLY OF STRUCTURAL STEEL MEMBERS. STRUCTURAL STEEL SHOP DRAWINGS SHALL NOT INCLUDE MISCELLANEOUS STEEL.

PRE-ENGINEERED MODULAR BUILDING

1. THE DESIGN OF PRE-ENGINEERED SYSTEMS WHICH ARE DESIGNED/ENGINEERED BY OTHERS, IS THE SOLE RESPONSIBILITY OF THE SUPPLIER AND ITS DESIGN ENGINEER, DULY LICENSED IN THE PROJECT STATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIMENSIONAL ACCURACY AND CONFORMANCE WITH THE INFORMATION CONTAINED IN THE STRUCTURAL DRAWINGS.

2. FOOTING SIZES HAVE BEEN BASED ON ASSUMED COLUMN REACTIONS. THE PRE-ENGINEERED MODULAR BUILDING MANUFACTURER SHALL SUBMIT REACTIONS TO THE ENGINEER OF RECORD FOR VERIFICATION OF FOOTING SIZES.

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A Replacement Facility for
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Wrangell, Alaska

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PROJECT NUMBER
10528.00
DATE
March 28, 2012

S4.1

GENERAL NOTES

10166

STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS/QUALITY ASSURANCE PROGRAM

GENERAL:

THIS STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS PLAN IDENTIFIES THE RESPONSIBILITIES OF THE CONTRACTOR AND THE SPECIAL INSPECTOR IN PERFORMING THE STRUCTURAL TESTING AND INSPECTION OF THE WORK REQUIRED BY CHAPTER 17 OF THE BUILDING CODE THAT IS WITHIN THE SCOPE OF THE STRUCTURAL ENGINEERING SERVICES FOR THIS PROJECT. REFER TO OTHER PORTIONS OF THE CONSTRUCTION DOCUMENTS FOR TESTING AND INSPECTIONS REQUIRED OF ARCHITECTURAL, MECHANICAL, ELECTRICAL, OR OTHER BUILDING COMPONENTS.

CONTRACTOR RESPONSIBILITIES:

THE CONTRACTOR SHALL SUBMIT TO THE BUILDING OFFICIAL AND THE ARCHITECT A WRITTEN STATEMENT OF RESPONSIBILITY THAT CONTAINS THE FOLLOWING:

1. ACKNOWLEDGEMENT OF AWARENESS OF THE SPECIAL REQUIREMENTS CONTAINED WITHIN THIS STATEMENT OF STRUCTURAL SPECIAL INSPECTIONS.
2. ACKNOWLEDGEMENT THAT CONTROL SHALL BE EXERCISED TO OBTAIN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS APPROVED BY THE BUILDING OFFICIAL.
3. PROCEDURES FOR EXERCISING CONTROL WITHIN THE CONTRACTOR'S ORGANIZATION, THE METHOD AND FREQUENCY OF REPORTING, AND THE DISTRIBUTION OF REPORTS.
4. IDENTIFICATION AND QUALIFICATIONS OF THE PERSON(S) EXERCISING SUCH CONTROL AND THEIR POSITION(S) IN THE ORGANIZATION.

THE STRUCTURAL TESTING/INSPECTION AGENCY THAT IS TO ACT AS THE SPECIAL INSPECTOR WILL BE HIRED BY THE OWNER, BUT CONTRACTOR SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR WORK OR MATERIALS NOT COMPLYING WITH THE CONSTRUCTION DOCUMENTS DUE TO NEGLIGENCE OR NONCONFORMANCE AND SHALL PAY FOR ANY ADDITIONAL STRUCTURAL TESTING/INSPECTION REQUIRED FOR HIS CONVENIENCE.

CONTRACTOR IS RESPONSIBLE TO ENSURE THAT THE SPECIAL INSPECTOR IS PRESENT FOR ALL WORK REQUIRING SPECIAL INSPECTION. ANY WORK THAT REQUIRES SPECIAL INSPECTION AND IS PERFORMED WITHOUT THE SPECIAL INSPECTOR BEING PRESENT IS SUBJECT TO BEING DEMOLISHED AND RECONSTRUCTED.

CONTRACTOR HAS THE FOLLOWING RESPONSIBILITIES TO THE SPECIAL INSPECTOR:

1. PROVIDE COPY OF CONSTRUCTION DOCUMENTS TO THE SPECIAL INSPECTOR.
2. NOTIFY THE SPECIAL INSPECTOR SUFFICIENTLY IN ADVANCE OF OPERATIONS TO ALLOW ASSIGNMENT OF PERSONNEL AND SCHEDULING OF TESTS.
3. COOPERATE WITH SPECIAL INSPECTOR AND PROVIDE ACCESS TO WORK.
4. PROVIDE SAMPLES OF MATERIALS TO BE TESTED IN REQUIRED QUANTITIES.
5. PROVIDE STORAGE SPACE FOR THE SPECIAL INSPECTOR'S EXCLUSIVE USE, SUCH AS FOR STORING AND CURING CONCRETE TESTING SAMPLES.
6. PROVIDE LABOR TO ASSIST THE SPECIAL INSPECTOR IN PERFORMING TESTS/INSPECTIONS.

SPECIAL INSPECTOR'S RESPONSIBILITIES:

SPECIAL INSPECTORS SHALL BE A LICENSED ENGINEER IN THE STATE OF ALASKA OR IS PERFORMING APPROPRIATE DUTIES DIRECTLY UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF ALASKA AND HAS A THOROUGH UNDERSTANDING OF THE SPECIAL INSPECTION REQUIREMENTS OF THE 2006 IBC. THE SPECIAL INSPECTOR SHALL BE AN INDIVIDUAL OR INDIVIDUALS CERTIFIED OR EXPERIENCED TO PERFORM SUCH INSPECTIONS IN A PARTICULAR FIELD.

THE SPECIAL INSPECTOR SHALL KEEP RECORDS OF ALL INSPECTIONS AND FURNISH REPORTS TO THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. PERIODIC REPORTS SHALL BE PROVIDED AND SHALL INDICATE THAT WORK INSPECTED WAS DONE IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THE DISCREPANCIES ARE NOT CORRECTED TO THE SATISFACTION OF THE SPECIAL INSPECTOR THE DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.

A WEEKLY REPORT OF INSPECTIONS DOCUMENTING REQUIRED SPECIAL INSPECTIONS AND CORRECTION OF ANY DISCREPANCIES NOTED IN THE INSPECTIONS SHALL BE SUBMITTED. AT THE COMPLETION OF THE SPECIAL INSPECTIONS, THE LICENSED PROFESSIONAL ENGINEER IN CHARGE OF PERFORMING THE SPECIAL INSPECTION SHALL CERTIFY THE FINAL SPECIAL INSPECTION REPORT AND AFFIX HIS/HER SEAL TO THE SPECIAL INSPECTOR'S FINAL REPORT. PROVIDE THREE (3) COPIES OF THIS REPORT: TWO TO THE ARCHITECT AND ONE TO THE STRUCTURAL ENGINEER OF RECORD.

THE SPECIAL INSPECTOR FOR THIS PROJECT IS AS FOLLOWS:

SOILS AND FOUNDATIONS:

SPECIAL INSPECTOR SHALL PERFORM PERIODIC INSPECTIONS TO VERIFY THE FOLLOWING:

1. STRUCTURAL FILL COMPLIES WITH SPECIFICATIONS AND THE PROJECT GEOTECHNICAL.
2. OBSERVE PROOFROLLING.
3. PERFORM FIELD DENSITY TEST TO VERIFY COMPACTION OF STRUCTURAL FILL. AS A MINIMUM, PERFORM ONE TEST PER LIFT FOR EVERY 2500 SQUARE FEET OF FILL PLACED.
4. FOUNDATION BEARING CAPACITY OF ALL FOOTINGS.

CAST-IN-PLACE CONCRETE:

CONTRACTOR SHALL PERFORM THE FOLLOWING:

1. SUBMIT MANUFACTURER'S DATA FOR TENSILE AND COMPRESSIVE SPLICES.
2. ESTABLISH CONCRETE MIX DESIGN PROPORTIONS PER ACI 318, CHAPTER 5. SUBMIT THREE COPIES OF THE CONCRETE MIX DESIGNS. INCLUDE THE FOLLOWING:
   A. TYPE AND QUANTITIES OF MATERIALS
   B. SLUMP
   C. AIR CONTENT
   D. FRESH UNIT WEIGHT
   E. AGGREGATES SIEVE ANALYSIS
   F. DESIGN COMPRESSIVE STRENGTH
   G. LOCATION OF PLACEMENT IN STRUCTURE
   H. METHOD OF PLACEMENT
   I. METHOD OF CURING
   J. SEVEN-DAY AND 28-DAY COMPRESSIVE STRENGTHS
3. SUBMIT A CERTIFICATION FROM EACH MANUFACTURER OR SUPPLIER STATING THAT MATERIALS MEET THE REQUIREMENTS OF THE SPECIFIED ASTM AND ACI STANDARDS.
4. SUBMIT CERTIFICATION THAT THE READY-MIXED CONCRETE PLANT COMPLIES WITH THE REQUIREMENTS OF THE NATIONAL READY MIX CONCRETE ASSOCIATION.

SPECIAL INSPECTOR SHALL PERFORM THE FOLLOWING:

1. VERIFY GRADE, QUANTITY, LOCATION, AND THE PLACEMENT OF REINFORCING STEEL AND POST TENSION CABLES PRIOR TO CONCRETE PLACEMENT.
2. EXAMINE CONCRETE IN TRUCK TO VERIFY THAT CONCRETE APPEARS PROPERLY MIXED.
3. PERFORM A SLUMP TEST AS DEEMED NECESSARY FOR EACH CONCRETE LOAD. RECORD IF WATER OR ADMIXTURES ARE ADDED TO THE CONCRETE AT THE JOB SITE. PERFORM ADDITIONAL SLUMP TESTS AFTER JOB SITE ADJUSTMENTS.
4. INSPECT SIZE, POSITIONING AND EMBEDMENT OF ANCHOR RODS. INSPECT CONCRETE PLACEMENT AND CONSOLIDATION AROUND ANCHORS.
5. INSPECT PLACEMENT OF CONCRETE. VERIFY THAT CONCRETE CONVEYANCE AND DEPOSITING AVOIDS SEGREGATION OR CONTAMINATION, VERIFY THAT CONCRETE IS PROPERLY CONSOLIDATED.
6. INSPECT CURING, COLD WEATHER PROTECTION AND HOT WEATHER PROTECTION PROCEDURES.
7. MOLD FIVE SPECIMENS PER SET FOR COMPRESSIVE STRENGTH TESTING: ONE SET FOR EACH 75 CUBIC YARDS OF EACH MIX DESIGN PLACED IN ANY ONE DAY. FOR EACH SET MOLDED, RECORD:
   A. SLUMP
   B. AIR CONTENT
   C. UNIT WEIGHT
   D. TEMPERATURE, AMBIENT, AND CONCRETE
   E. LOCATION OF PLACEMENT
   F. ANY PERTINENT INFORMATION, SUCH AS ADDITION OF WATER, ADDITION OF ADMIXTURES, ETC.

   PERFORM ONE 1-DAY AND TWO 28-DAY COMPRESSIVE STRENGTH TESTS. (USE TWO AS A SPARE TO BE BROKEN AS DIRECTED BY THE STRUCTURAL ENGINEER IF COMPRESSIVE STRENGTHS DO NOT APPEAR ADEQUATE.)
8. REPORTS OF COMPRESSIVE STRENGTH TESTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF CONCRETE PLACEMENT, NAME OF CONCRETE TESTING AGENCY, CONCRETE DESIGN COMPRESSIVE STRENGTH, LOCATION OF CONCRETE PLACEMENT IN STRUCTURE, CONCRETE MIX PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH AND TYPE OF BREAK.

NON-SHRINK GROUT UNDER STEEL BASE PLATES:

SPECIAL INSPECTOR SHALL PERFORM THE FOLLOWING:

1. COMPRESSIVE STRENGTH TESTS PER ASTM C109.
2. NUMBER OF TEST: ONE TEST FOR EACH TEN BAGS OF GROUT USED OR MINIMUM OF ONE TEST FOR EACH DAY OF GROUTING.
3. CUBE SIZE: 2-INCH X 2-INCH.
4. TEST SCHEDULE: ONE CUBE AT 3 DAYS, TWO CUBES AT 7 DAYS, 3 CUBES AT 28 DAYS.

STRUCTURAL STEEL:

CONTRACTOR SHALL PERFORM THE FOLLOWING:

1. SUBMIT CERTIFICATION THAT THE FABRICATOR IS REGISTERED AND APPROVED BY THE BUILDING OFFICIAL TO PERFORM REQUIRED WORK WITHOUT SPECIAL INSPECTIONS.
2. IF FABRICATOR IS NOT REGISTERED AND APPROVED, SPECIAL INSPECTION OF THE FABRICATED ITEMS SHALL BE REQUIRED. SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF THE WORKMANSHIP AND THE FABRICATOR'S ABILITY TO CONFORM TO APPROVED CONSTRUCTION DOCUMENTS AND REFERENCED STANDARDS. SPECIAL INSPECTOR SHALL REVIEW THE PROCEDURES FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE CODE REQUIREMENTS FOR THE FABRICATOR'S SCOPE OF WORK.
3. SUBMIT CERTIFIED MILL TEST REPORTS FOR STRUCTURAL STEEL.
4. SUBMIT MANUFACTURER'S CERTIFICATE OF COMPLIANCE FOR HIGH-STRENGTH BOLTING AND WELD FILLER MATERIALS.

SPECIAL INSPECTOR SHALL PERFORM THE FOLLOWING:

1. INSPECTION OF STEEL FRAMING TO VERIFY COMPLIANCE WITH DETAILS SHOWN ON THE APPROVED CONSTRUCTION DOCUMENTS AND SHOP DRAWINGS INCLUDING MEMBER LOCATIONS, BRACING, CONNECTION DETAILS, ETC.
2. PROVIDE CONTINUOUS INSPECTION TO VERIFY COMPLIANCE OF THE FOLLOWING:
   A. COMPLETE AND PARTIAL PENETRATION GROOVE WELDS. ULTRASONICALLY INSPECT 100% OF THE COMPLETE PENETRATION WELDS.
   B. MULTI-PASS FILLET WELDS AND SINGLE-PASS FILLET WELDS GREATER THAN 5/16".
   C. SLIP CRITICAL BOLTED CONNECTIONS.
3. PROVIDE PERIODIC INSPECTION TO VERIFY COMPLIANCE OF THE FOLLOWING:
   A. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, AND WASHERS.
   B. MATERIAL VERIFICATION OF WELD FILLER MATERIAL.
   C. VERIFICATION OF ANCHOR ROD SIZE, CONFIGURATION, AND EMBEDMENT PRIOR TO PLACEMENT OF CONCRETE.
   D. VISUALLY INSPECT ALL BOLTED CONNECTIONS IN ACCORDANCE WITH AISC SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS. PRIOR TO VISUAL AND PHYSICAL TESTING, TENSION TESTING USING A CALIBRATION DEVICE (SKIDMORE-WILHELM) MUST INDICATE TENSIONS AT LEAST 5% IN EXCESS OF THE AISC MINIMUM. STRUCTURAL STEEL ERECTOR SHALL SUPPLY THE TENSION CALIBRATION DEVICE. TEST A MINIMUM OF 10% OF THE BOLTED CONNECTIONS.
   E. VISUALLY INSPECT ALL FIELD-WELDED CONNECTIONS. VISUAL INSPECTION OF WELDED JOINTS INCLUDES PERIODIC EXAMINATION OF FITUP.
   F. VERIFY STUD SHEAR CONNECTORS SPACING AND LOCATION. VISUALLY INSPECT WELDING OF STUD SHEAR CONNECTORS.
4. WELD INSPECTIONS TO INCLUDE THE FOLLOWING:
   A. WELD INSPECTIONS SHALL BE IN ACCORDANCE WITH AWS D1.1.
   B. REVIEW AND VERIFY COMPLIANCE OF WRITTEN WELDING PROCEDURES WITH AWS REQUIREMENTS.
   C. VERIFY THAT WELDING PROCEDURES ARE BEING ADHERED TO DURING FIELD WELDING.
   D. VERIFY WELDER QUALIFICATIONS.
   E. USE ALL MEANS NECESSARY TO DETERMINE THE QUALITY OF WELDS. THE INSPECTOR MAY USE GAMMA RAY, MAGNAFLUX, TREPANNING, SONICS OR ANY OTHER AID TO VISUAL INSPECTION THAT THE SPECIAL INSPECTOR MAY DEEM NECESSARY TO BE ASSURED OF THE ADEQUACY OF THE WELDING.
   F. KEEP A SYSTEMATIC RECORD OF ALL WELDS THAT INCLUDES, IN ADDITION TO OTHER REQUIRED RECORDS, THE IDENTIFICATION MARKS OF WELDERS, A LIST OF DEFECTIVE WELDS, AND THE MANNER OF CORRECTING DEFECTS.

STEEL DECK:

CONTRACTOR SHALL PERFORM THE FOLLOWING:

1. SUBMIT MILL CERTIFICATION THAT THE SUPPLIED STEEL COMPLIES WITH THE SPECIFICATIONS.

SPECIAL INSPECTOR SHALL PERFORM PERIODIC INSPECTIONS OF THE FOLLOWING:

1. VERIFY DECK PROFILE, THICKNESS, GENERAL ALIGNMENT AND DECK LAP.
2. VERIFY WELDS OR SCREWS FOR SIZE AND PATTERN.
3. VERIFY SPACING AND TYPE OF SIDELAP ATTACHMENTS.
4. VERIFY INSTALLATION OF DECK CLOSURES.

STRUCTURAL MASONRY (LEVEL 2):

CONTRACTOR SHALL PERFORM THE FOLLOWING:

1. SUBMIT MANUFACTURER'S DATA FOR TENSILE AND COMPRESSIVE SPLICER'S.
2. SUBMIT A CERTIFICATION FROM EACH MANUFACTURER OR SUPPLIER STATING THAT MATERIALS MEET THE REQUIREMENTS OF THE SPECIFIED ASTM AND ACI STANDARDS.
3. SUBMIT CERTIFICATION THAT THE READY-MIXED CONCRETE PLANT COMPLIES WITH THE REQUIREMENTS OF THE NATIONAL READY MIX CONCRETE ASSOCIATION.

SPECIAL INSPECTOR SHALL PERFORM PERIODIC INSPECTION TO VERIFY THE FOLLOWING:

1. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:
   A. PROPORTIONS OF SITE-PREPARED MORTAR AND PRESTRESSING GROUT.
   B. CONSTRUCTION OF MORTAR JOINTS.
   C. LOCATION OF REINFORCEMENT AND CONNECTORS AND PRESTRESSING TENDONS AND ANCHORS.
2. THE INSPECTION PROGRAM SHALL VERIFY:
   A. SIZE AND LOCATION OF STRUCTURAL ELEMENTS.
   B. SPECIFIED SIZE, GRADE, AND TYPE OF REINFORCEMENT.
   C. PLACEMENT OF MASONRY DURING COLD WEATHER (TEMPERATURE BELOW 40 DEGREES FAHRENHEIT) OR HOT WEATHER (TEMPERATURE ABOVE 90 DEGREES FAHRENHEIT).
3. PRIOR TO GROUTING, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:
   A. CLEANLINESS OF GROUT SPACE.
   B. PLACEMENT OF REINFORCEMENT AND CONNECTORS.
   C. PROPORTIONS OF SITE-PREPARED GROUT.
   D. CONSTRUCTION OF MORTAR JOINTS.
4. COMPLIANCE WITH REQUIRED INSPECTION PROVISIONS OF THE CONSTRUCTION DOCUMENTS AND THE APPROVED SUBMITTALS SHALL BE VERIFIED.

SPECIAL INSPECTOR SHALL PERFORM CONTINUOUS INSPECTIONS TO VERIFY THE FOLLOWING:

1. AS MASONRY CONSTRUCTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE:
   A. GROUT SPACE PRIOR TO GROUTING.
2. THE INSPECTION PROGRAM SHALL VERIFY:
   A. WELDING OF REBAR.
   B. TYPE, SIZE, AND LOCATION OF ANCHORS, INCLUDING OTHER DETAILS OF ANCHORAGE OF MASONRY TO STRUCTURAL MEMBERS, FRAMES OR OTHER CONSTRUCTION.
   C. APPLICATION AND MEASUREMENT OF PRESTRESS FORCE.
3. GROUT PLACEMENT SHALL BE VERIFIED TO ENSURE COMPLIANCE WITH CODE AND CONSTRUCTION DOCUMENT PROVISIONS.
4. PREPARATION OF ANY REQUIRED GROUT SPECIMENS, AND/OR PRISMS SHALL BE OBSERVED.

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QUALITY ASSURANCE PLAN