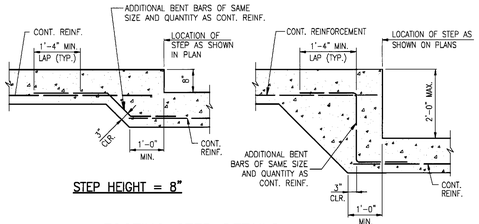
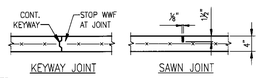


STEP HEIGHT = 8"

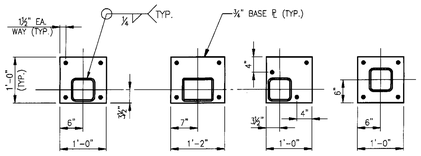
STEP HEIGHT > 8"

FOOTING STEP DETAILS
AS REQUIRED



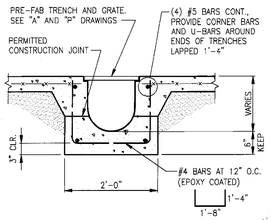
NOTE:
1. TYPE OF JOINT IS OPTIONAL WITH CONTRACTOR. SAWN JOINT SHALL BE MADE WITHIN 24 HOURS AFTER PLACING CONCRETE.
2. AT THE CONTRACTOR'S OPTION, A METAL PRE-FORMED JOINT OF APPROVED DESIGN WILL BE ACCEPTABLE AT EACH JOINT IN LIEU OF THE ABOVE JOINT TYPES.
3. WHERE SAWED JOINT WILL BE LEFT PERMANENTLY EXPOSED TO VIEW, FILL THE JOINT FLUSH WITH FLEXIBLE JOINT SEALING COMPOUND.

SLAB CONSTRUCTION JOINT DETAILS (CJ)

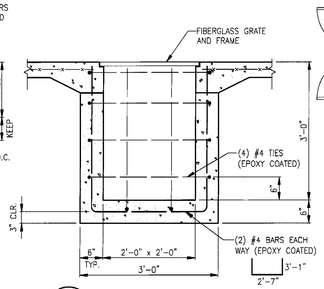


COL. A6, B1, B3, C4 | COL. B2 | COL. A5, B4 | COL. B6, C6

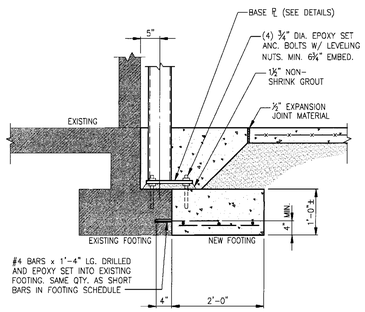
COLUMN BASE PLATE DETAILS



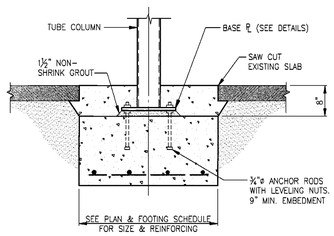
7 S1.1 **SECTION** 3/4"=1'-0"



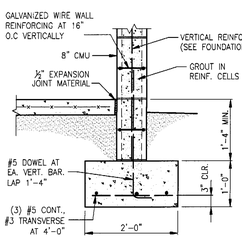
8 S1.1 **SECTION** 3/4"=1'-0"



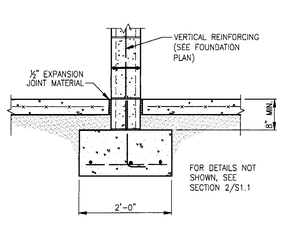
5 S1.1 **SECTION** 3/4"=1'-0"



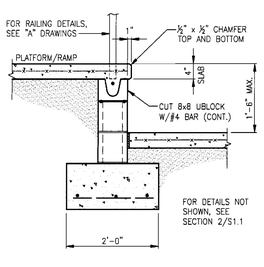
6 S1.1 **SECTION** 3/4"=1'-0"



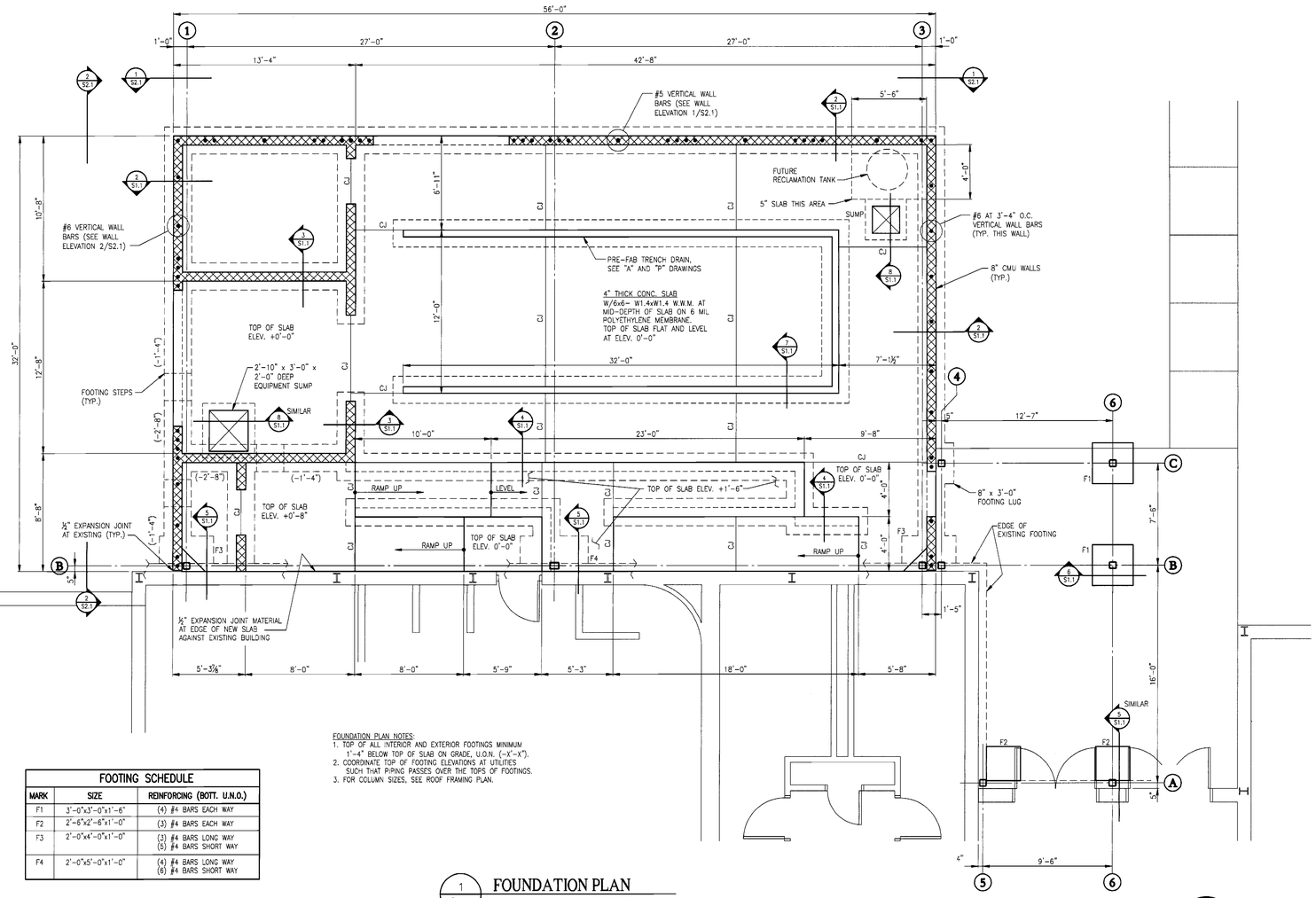
2 S1.1 **SECTION** 3/4"=1'-0"



3 S1.1 **SECTION** 3/4"=1'-0"



4 S1.1 **SECTION** 3/4"=1'-0"



1 S1.1 **FOUNDATION PLAN** 1/4"=1'-0"

FOUNDATION PLAN NOTES:
1. TOP OF ALL INTERIOR AND EXTERIOR FOOTINGS MINIMUM 1'-4" BELOW TOP OF SLAB ON GRADE, U.O.N. (-X'-X").
2. COORDINATE TOP OF FOOTING ELEVATIONS AT UTILITIES SUCH THAT PIPING PASSES OVER THE TOPS OF FOOTINGS.
3. FOR COLUMN SIZES, SEE ROOF FRAMING PLAN.

FOOTING SCHEDULE

MARK	SIZE	REINFORCING (BOTT. U.N.O.)
F1	3'-0"x3'-0"x1'-6"	(4) #4 BARS EACH WAY
F2	2'-6"x2'-6"x1'-0"	(3) #4 BARS EACH WAY
F3	2'-0"x4'-0"x1'-0"	(3) #4 BARS LONG WAY (5) #4 BARS SHORT WAY
F4	2'-0"x5'-0"x1'-0"	(4) #4 BARS LONG WAY (6) #4 BARS SHORT WAY

DESIGN CRITERIA
1. BUILDING CODE.....NORTH CAROLINA BUILDING CODE, 2009 EDITION.
2. IMPORTANCE FACTORS WIND (Iw) 1.0; SNOW (Is) 1.0; SEISMIC (Iw) 1.0
2. DESIGN LIVE LOADS
   A) ROOF ..... 20 PSF
3. GROUND SNOW LOAD..... 10 PSF
4. WIND
   A) BASIC WIND SPEED (ASCE 7-05) ..... 130 MPH
   B) WIND HAZARD EXPOSURE CATEGORY..... C
   C) WIND BASE SHEARS (for MWFRS) Vx = 8.5 k Vy = 9.0 k
5. SEISMIC
   A) SEISMIC DESIGN CATEGORY A
      COMPLIANCE WITH SECTION 1616.4 ONLY? ___YES _X_NO
   B) SEISMIC DESIGN CATEGORY ___X___B ___C ___D
      SEISMIC USE GROUP II
      SPECTRAL RESPONSE ACCELERATION Ss 9.7 %g S1 4.5 %g
      SITE CLASSIFICATION D ___FIELD TEST _X_PRESUMPTIVE ___HISTORICAL DATA
      BASIC STRUCTURAL SYSTEM (CHECK ONE)
      _X_BEARING WALL ___DUAL W/SPECIAL MOMENT FRAME
      ___BUILDING FRAME ___DUAL W/INTERMEDIATE R/C OR SPECIAL STEEL
      ___MOMENT FRAME ___INVERTED PENDULUM
      SEISMIC BASE SHEAR Vx = 2.7 k Vy = 2.3 k
      R = 3
      ANALYSIS PROCEDURE _X_SIMPLIFIED ___EQUIVALENT LATERAL FORCE ___MODAL
      ARCHITECTURAL, MECHANICAL, COMPONENTS ANCHORED? NO
      LATERAL DESIGN CONTROL: EARTHQUAKE_____ WIND_X_

FOUNDATIONS
1. PRESUMPTIVE FOUNDATION SOIL BEARING PRESSURE = 2,000 PSF. THIS SHALL BE VERIFIED BY A LICENSED GEOTECHNICAL ENGINEER, AT THE EXPENSE OF OTHERS, BEFORE FOOTINGS ARE PLACED.
2. ALL FILL INSIDE BUILDING SHALL BE SELECT MATERIAL FREE FROM ROOTS, TRASH, WOOD SCRAPS AND OTHER EXTRANEOUS MATERIALS. PLACE FILL IN LIFTS NOT EXCEEDING 12 INCHES, AND COMPACT EACH LIFT TO A MINIMUM 95% DENSITY AT OPTIMUM MOISTURE CONTENT AS MEASURED BY ASTM D-698. FILL PLACEMENT SHALL BE MONITORED AND VERIFIED BY A LICENSED GEOTECHNICAL ENGINEER, AT THE EXPENSE OF OTHERS.

CONCRETE
1. CONCRETE WORK SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE," ACI 301-08, INCLUDING SUPPLEMENTS.
2. CONCRETE SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS, NORMAL WEIGHT.

GENERAL STRUCTURAL NOTES

REINFORCING STEEL
1. BARS SHALL BE ROLLED FROM NEW BILLET-STEEL CONFORMING TO THE "STANDARD SPECIFICATION FOR DEFORMED AND PLAIN BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT, ASTM A615, GRADE 60.
2. WELDED WIRE FABRIC SHALL CONFORM TO THE "STANDARD SPECIFICATION FOR WELDED WIRE FABRIC FOR CONCRETE REINFORCEMENT", ASTM A185.
3. DETAIL AND FABRICATE REINFORCING STEEL IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE "ACI DETAILING MANUAL" – 2004.
4. MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE:
   A) UNFORMED SURFACES IN CONTACT WITH THE GROUND..... 3"
   B) FORMED SURFACES EXPOSED TO EARTH OR WEATHER..... 2"
   C) FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER..... 1.5"
5. PROVIDE BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS OF THE SAME NUMBER AND SIZE AS LONGITUDINAL BARS.
6. MINIMUM LAP OF REINFORCING BARS SHALL BE 30 X BAR DIAMETER.

MASONRY
1. CONCRETE MASONRY UNITS SHALL HAVE A MINIMUM F'm = 1500psi.
2. ALL MASONRY SHALL BE LAID IN RUNNING BOND PATTERN, AND IN TYPE "S" MASONRY CEMENT MORTAR WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3,000 PSI. MORTAR SHALL CONFORM TO ASTM C270.
3. WHEN VERTICAL CELLS ARE SHOWN REINFORCED AND/OR FILLED, CONSTRUCT WITH CELLS ALIGNED AND ADJACENT WEB JOINTS MORTARED SOLID TO PREVENT SPREAD OF GROUT BEYOND THE GROUTED CELL.
4. REINFORCED MASONRY, WHERE NOTED, SHALL BE FILLED IN 4'-0" TO 6'-0" LIFTS OR AS REQUIRED TO PREVENT DAMAGE DURING GROUTING AND TO INSURE PROPER CONSOLIDATION. LIFTS SHALL BE TERMINATED 2" BELOW CMU COURSING. REINFORCING STEEL MAY BE MECHANICALLY SPLICED, OR LAP SPLICED 30 BAR DIAMETERS. KEEP MORTAR, DEBRIS AND DRIPPINGS OUT OF CELLS TO BE FILLED. HOLD BACK MORTAR FROM INNER FACES OF CELLS TO BE GROUTED.
5. GROUT FOR MASONRY SHALL CONFORM TO ASTM C-476 AND HAVE A 28 DAY STRENGTH OF 2,000 PSI. AGGREGATES SHALL CONFORM TO ASTM C-404. USE FINE GROUT IN SPACES LESS THAN 2 INCHES WIDE. USE COARSE GROUT IN SPACES 2 INCHES TO 4 INCHES WIDE. USE CONCRETE WITH PEA GRAVEL AGGREGATE IN SPACES OVER 4 INCHES WIDE. MINIMUM SLUMP SHALL BE 6" TO INSURE NO VOIDS IN THE GROUTED CELLS.

NON-SHRINK GROUT
1. PROVIDE PRE-MIXED, NON-SHRINK, NON-METALLIC, NON-STAINING, HIGH-STRENGTH GROUT UNDER ALL COLUMN BASE PLATES AND BEAM BEARING PLATES. MINIMUM STRENGTH = 6,000 PSI.

STRUCTURAL STEEL
1. STEEL SHALL CONFORM TO THE FOLLOWING "STANDARD SPECIFICATION FOR STRUCTURAL STEEL,"
   STRUCTURAL "W" SHAPES ..... ASTM A992.
   RECTANGULAR STRUCTURAL TUBING ..... ASTM A500, GRADE B, Fy=46ksi.
   ANCHOR RODS ..... ASTM F1554, GRADE 36 OR ASTM A36.
   OTHER STEEL ..... ASTM A36.
2. STEEL WORK SHALL CONFORM TO 13th EDITION OF THE "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS", ALLOWABLE STRENGTH DESIGN, OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION, INC., EFFECTIVE MARCH 9, 2005, AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES," EFFECTIVE MARCH 18, 2005.

STRUCTURAL STEEL (CONTINUED)
3. CONNECTION BOLTS SHALL BE 3/4 INCH DIAMETER, UNLESS OTHERWISE NOTED, CONFORMING TO THE "SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS", EFFECTIVE JUNE 30, 2004. CONNECTIONS ARE PRE-TENSIONED TYPE.
4. OVERSIZE HOLES AND SLOTTED HOLES SHALL NOT BE USED FOR BOLTED CONNECTIONS ON THIS PROJECT EXCEPT AT LOCATIONS NOTED ON THE DRAWINGS.
5. WELDING SHALL BE BY WELDERS AND WELDING OPERATORS WHO HAVE BEEN PREVIOUSLY QUALIFIED BY TESTS AS PRESCRIBED IN THE "STRUCTURAL WELDING CODE," AWS D1.1-2004 OF THE AMERICAN WELDING SOCIETY TO PERFORM THE TYPES OF WELDS REQUIRED ON THIS PROJECT.
6. THE CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY BRACING, SHORING AND GUYING FOR FRAMING AGAINST WIND, CONSTRUCTION LOADS AND OTHER TEMPORARY FORCES UNTIL SUCH PROTECTION IS NO LONGER REQUIRED FOR THE SAFE SUPPORT OF THE FRAMING.
7. ALL COPES, BLOCKS, CUTS, CUT-OUTS AND OTHER CUTTING OF STRUCTURAL MEMBERS SHALL HAVE ALL RE-ENTRANT CORNERS SHAPED, NOTCH FREE, TO A RADIUS OF AT LEAST 1/2 INCH. THE FILLET AND ITS CONTIGUOUS CUTS SHALL MEET WITHOUT OFFSET OR CUTTING PAST THE POINT OF TANGENCY.
8. ANCHOR BOLTS SHALL BE HEADED, TACK-WELD NUTTED OR DOUBLE-NUTTED. AT BASE PLATES, PROVIDE TWO NUTS AND ONE WASHER WITH EACH ANCHOR BOLT UNLESS OTHERWISE NOTED.
9. NO CHANGE IN SIZE OR POSITION OF THE STRUCTURAL ELEMENTS SHALL BE MADE, AND HOLES, SLOTS, CUTS, ETC., ARE NOT PERMITTED THROUGH ANY MEMBER UNLESS THEY ARE DETAILED ON THE APPROVED SHOP DRAWINGS.
10. NO FINAL BOLTING OR WELDING SHALL BE DONE UNTIL AS MUCH OF THE STRUCTURE HAS BEEN PROPERLY ALIGNED.

STEEL ROOF DECK
1. STEEL ROOF DECK SHALL BE DESIGNED AND MANUFACTURED IN ACCORDANCE WITH THE "SDI STEEL DECK SPECIFICATION" AND THE "SDI MANUAL OF CONSTRUCTION WITH STEEL DECK," OF THE STEEL DECK INSTITUTE, ANSI/RDI.0-08 STANDARD FOR STEEL ROOF DECK.
2. PROVIDE ALL RIDGE AND VALLEY PLATES, CANT STRIPS, SUMPS AND OTHER ACCESSORIES TO BE ATTACHED TO THE DECK FOR THE INSTALLATION OF INSULATION, ROOFING AND DRAINAGE.

MISCELLANEOUS
1. STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH THE ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR COORDINATING SUCH REQUIREMENTS INTO THEIR SHOP DRAWINGS AND WORK.
2. NO CHANGE IN SIZE OF THE DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER.
3. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED UPON STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.
4. DO NOT SCALE THESE DRAWINGS; USE DIMENSIONS.

DIMENSIONS
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REVIEWING THE DIMENSIONS OF THE STRUCTURAL DRAWINGS AND ADVISING THE ENGINEER OF ANY DIFFERENCES IN DIMENSIONS BETWEEN THE ARCHITECTURAL AND STRUCTURAL DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.

CONSTRUCTION SAFETY
1. THESE STRUCTURAL DRAWINGS DO NOT CONTAIN NECESSARY COMPONENTS FOR SAFETY DURING CONSTRUCTION.
2. BRACE ALL WALLS DURING CONSTRUCTION TO PREVENT DAMAGE FROM WIND AND WATER AND FROM CONSTRUCTION LOADS, UNTIL ALL SUPPORTING WALLS AND ROOF DIAPHRAGMS ARE IN PLACE AND SECURELY ANCHORED.

NORTH CAROLINA AQUARIUM On Roanoke Island

ROANOKE ISLAND AQUARIUM RENOVATION

374 AIRPORT RD.
MANTEO, NORTH CAROLINA 27954

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Greensboro, NC 27410
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SCO ID# 10-08584-01A

REVISIONS

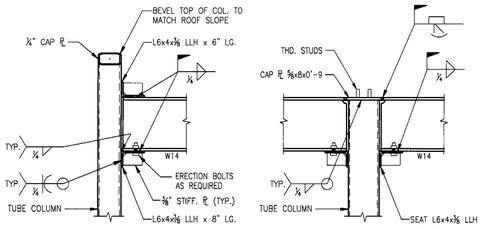
NO.	DATE	DESCRIPTION

DATE	04-13-2012
PROJECT NUMBER	11007.00
SCALE	AS NOTED
DRAWN BY	WJJ
CHECKED BY	WJJ

FOUNDATION PLAN AND DETAILS

S1.1

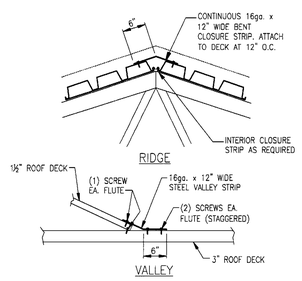
Published in JBuild



(TYPICAL "MC" IN PLAN)

TYPICAL MOMENT CONNECTIONS

¾"=1'-0"

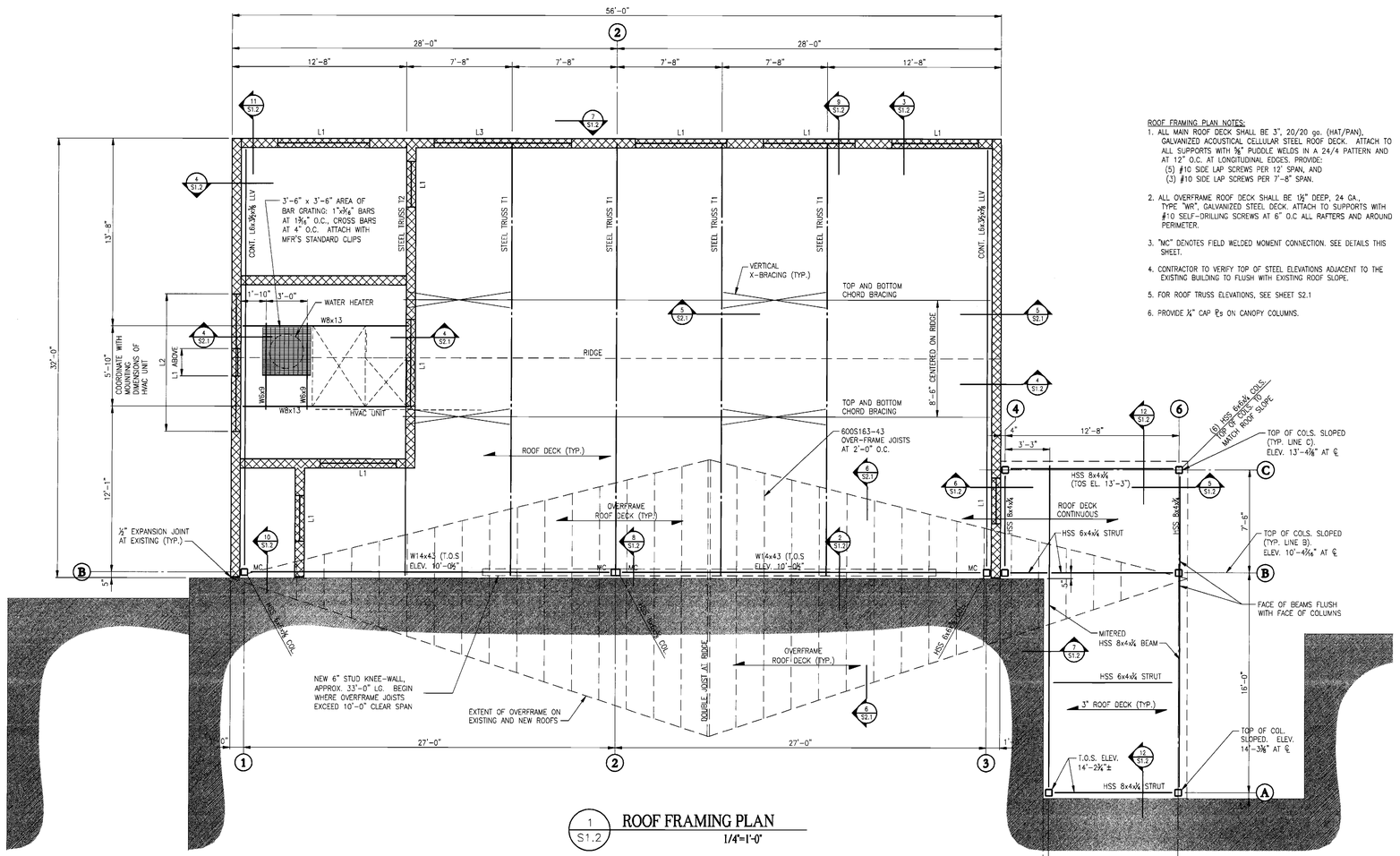


ROOF DECK TRANSITION STRIPS

¾"=1'-0"

LINTEL SCHEDULE

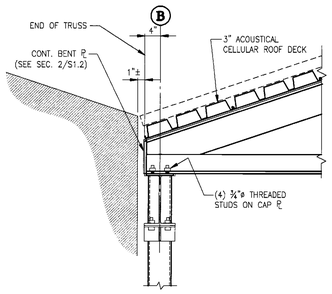
MARK	DESCRIPTION	REMARKS
L1	8x8 U/BLOCK W/(2) #5 BARS	2'-0" BRG E.E.
L2	8x8 U/BLOCK W/(2) #6 BARS	2'-0" BRG E.E.
L3	W8x18 W/℄ ¼x7 SOLID OR FILLED MASONRY ⅜ 2-12" TYP.	HOT DIPPED GALVANIZED FOR BEARING DETAILS, SEE ELEV. 7/S1.2



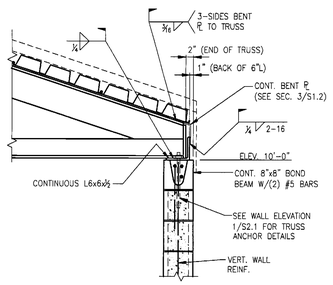
1 S1.2 ROOF FRAMING PLAN 1/4"=1'-0"

ROOF FRAMING PLAN NOTES:

1. ALL MAIN ROOF DECK SHALL BE 3", 20/20 ga. (HAT/PAN), GALVANIZED ACOUSTICAL CELLULAR STEEL ROOF DECK. ATTACH TO ALL SUPPORTS WITH ⅝" PUDDLE WELDS IN A 24/4 PATTERN AND AT 12" O.C. AT LONGITUDINAL EDGES. PROVIDE:
   (5) #10 SIDE LAP SCREWS PER 12' SPAN, AND
   (3) #10 SIDE LAP SCREWS PER 7'-8" SPAN.
2. ALL OVERFRAME ROOF DECK SHALL BE 1½" DEEP, 24 GA., TYPE "WR", GALVANIZED STEEL DECK. ATTACH TO SUPPORTS WITH #10 SELF-DRILLING SCREWS AT 6" O.C ALL RAFTERS AND AROUND PERIMETER.
3. "MC" DENOTES FIELD WELDED MOMENT CONNECTION. SEE DETAILS THIS SHEET.
4. CONTRACTOR TO VERIFY TOP OF STEEL ELEVATIONS ADJACENT TO THE EXISTING BUILDING TO FLUSH WITH EXISTING ROOF SLOPE.
5. FOR ROOF TRUSS ELEVATIONS, SEE SHEET S2.1
6. PROVIDE ¼" CAP ℄s ON CANOPY COLUMNS.



8 S1.2 SECTION 3/4"=1'-0"



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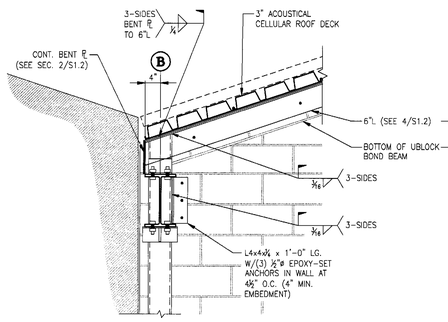

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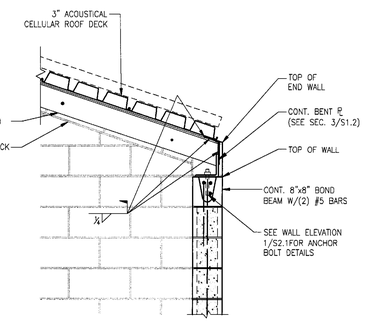
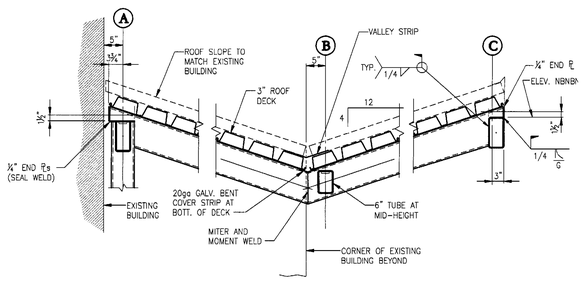


11 S1.2 SECTION 3/4"=1'-0"



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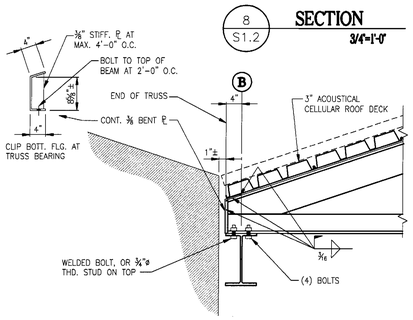

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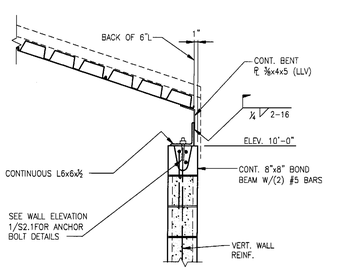

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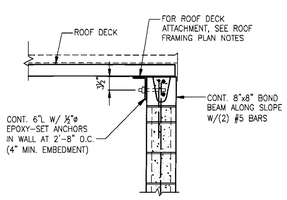

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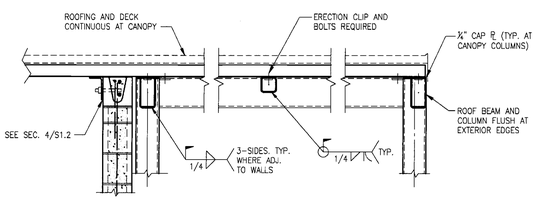
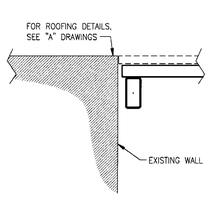


5 S1.2 SECTION 3/4"=1'-0"



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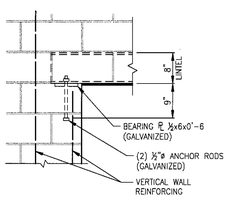

7 S1.2 SECTION 3/4"=1'-0"

North

NORTH·CAROLINA AQUARIUM On Roanoke Island

ROANOKE ISLAND AQUARIUM RENOVATION

374 AIRPORT RD.
MANTEO, NORTH CAROLINA 27954

COMPLETE FACILITIES SOLUTIONS

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617 492-7000 Fax 492-7007

SCO ID# 10-08584-01A

REVISIONS

NO.	DATE	DESCRIPTION

DATE	04-13-2012
PROJECT NUMBER	11007.00
SCALE	AS NOTED
DRAWN BY	WJJ
CHECKED BY	WJJ

ROOF FRAMING PLAN AND DETAILS

S1.2

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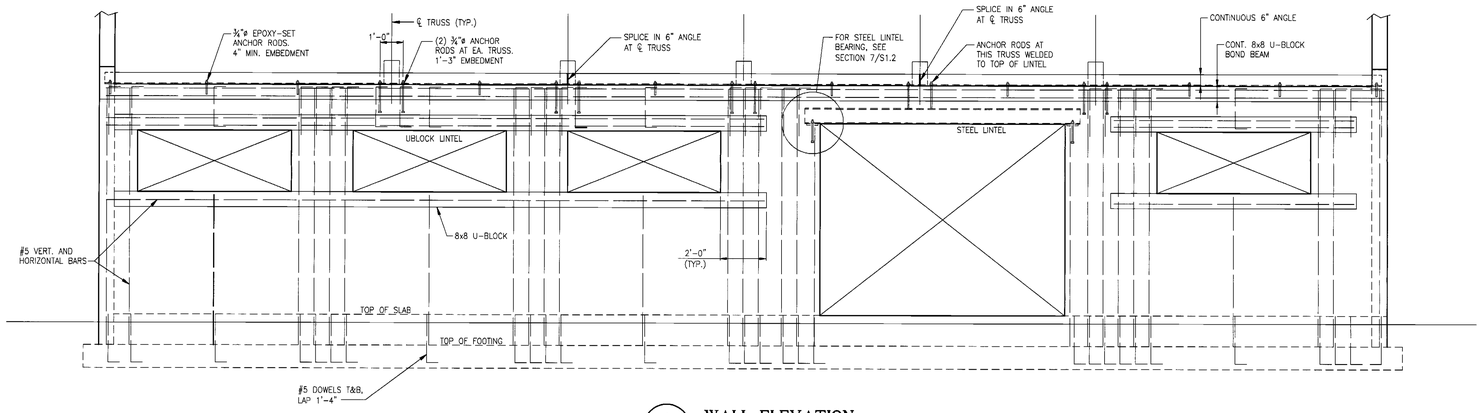
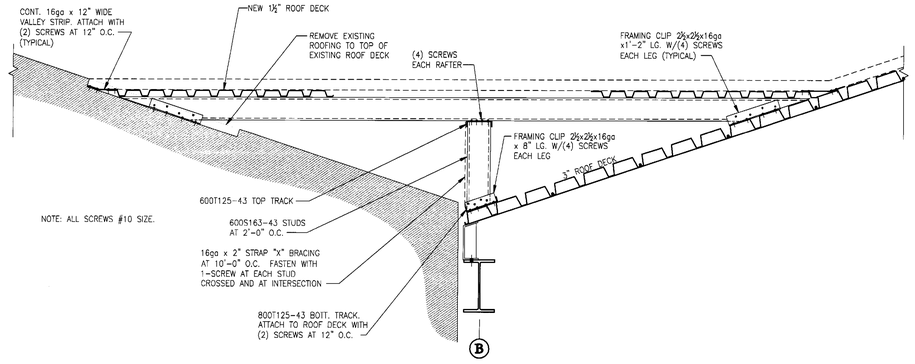


1 S2.1 WALL ELEVATION
3/8"=1'-0"



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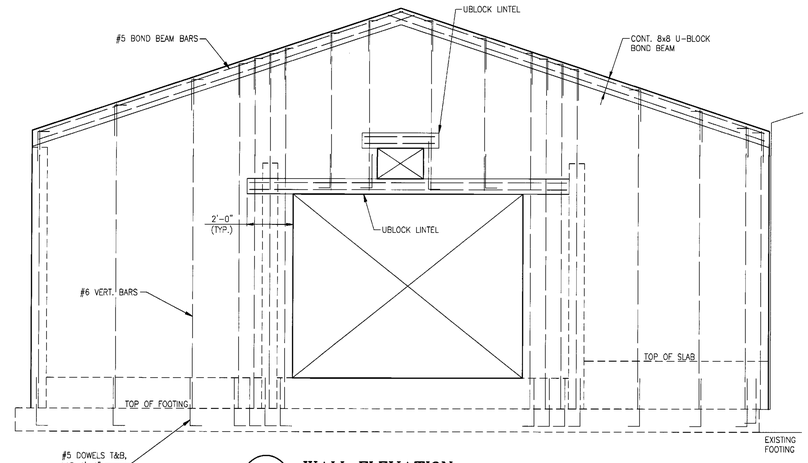
3/4"=1'-0"



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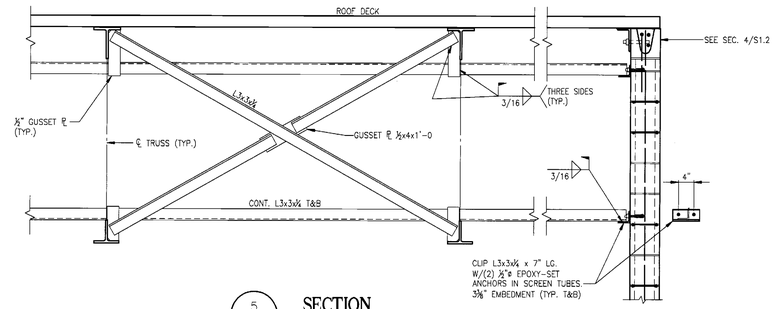
3/8"=1'-0"



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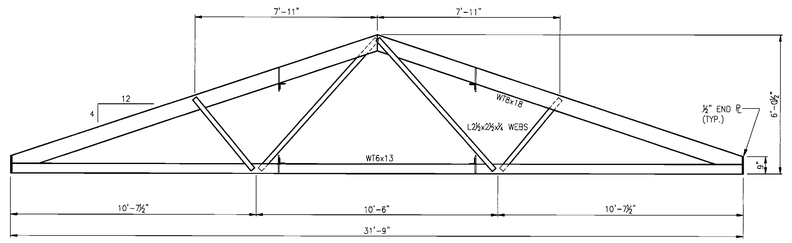
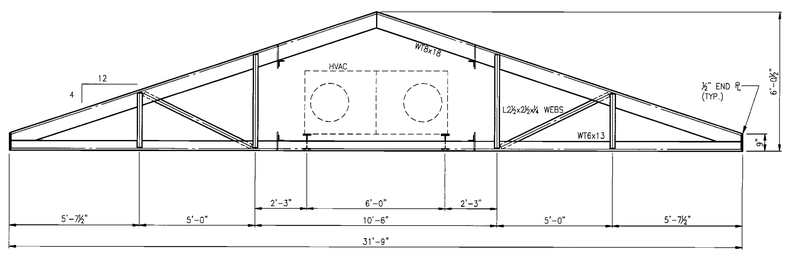
3/4"=1'-0"



TRUSS T1



TRUSS T2

3 S2.1 ROOF TRUSS ELEVATIONS
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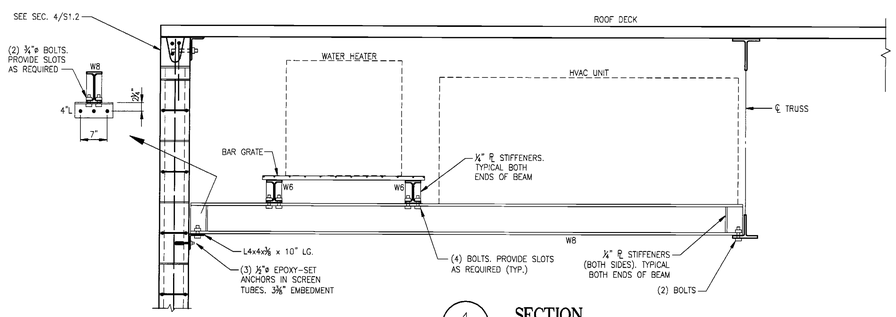

4 S2.1 SECTION
3/4"=1'-0"

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CHECKED BY	WIJ

MISCELLANEOUS DETAILS

S2.1

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