

JEFFREY B. FERTICH, P.E.
 26 NORTH FOURTH STREET
 GETTYSBURG, PA 17325
 717-337-1335

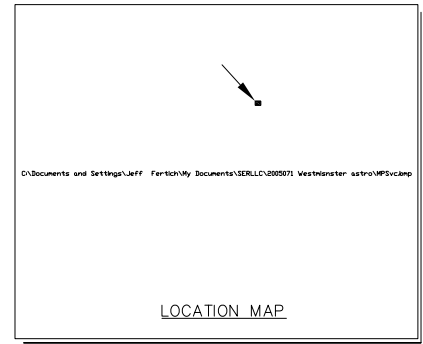
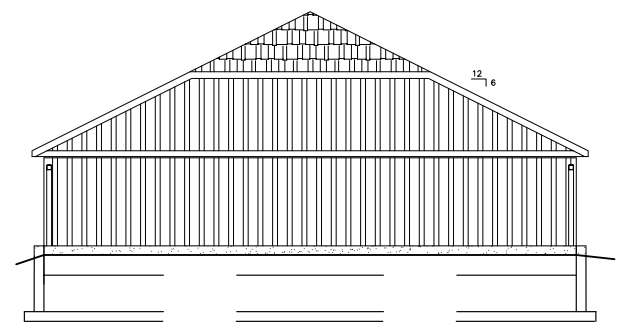
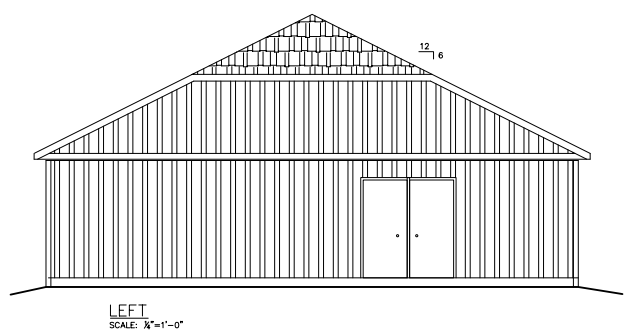
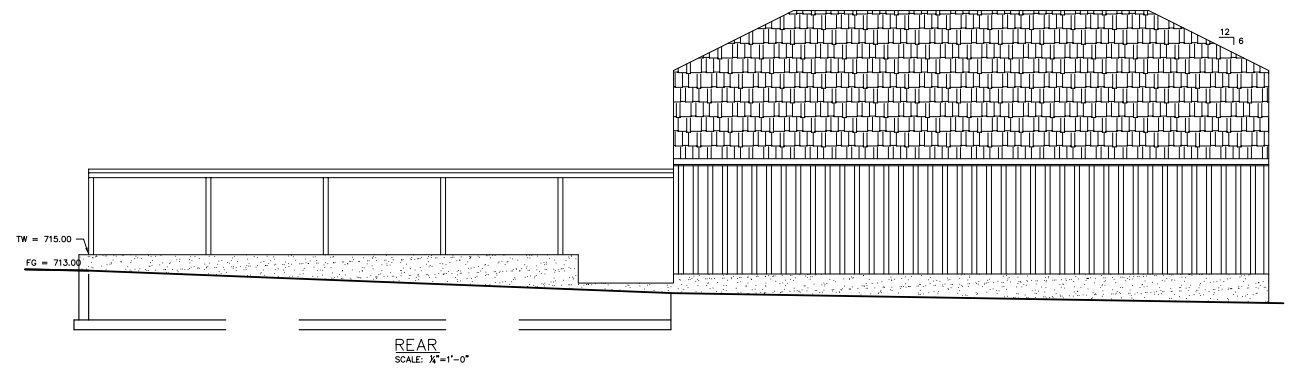
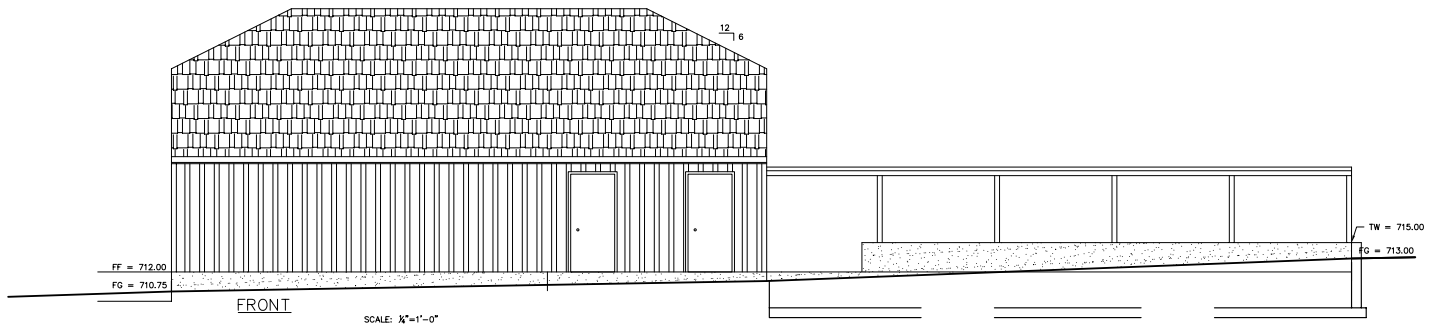


ELEVATIONS
**OBSERVATORY AT
 BEAR BRANCH NATURE CENTER**
 WESTMINSTER ASTRONOMICAL SOCIETY, INC.
 CARROLL COUNTY, MARYLAND

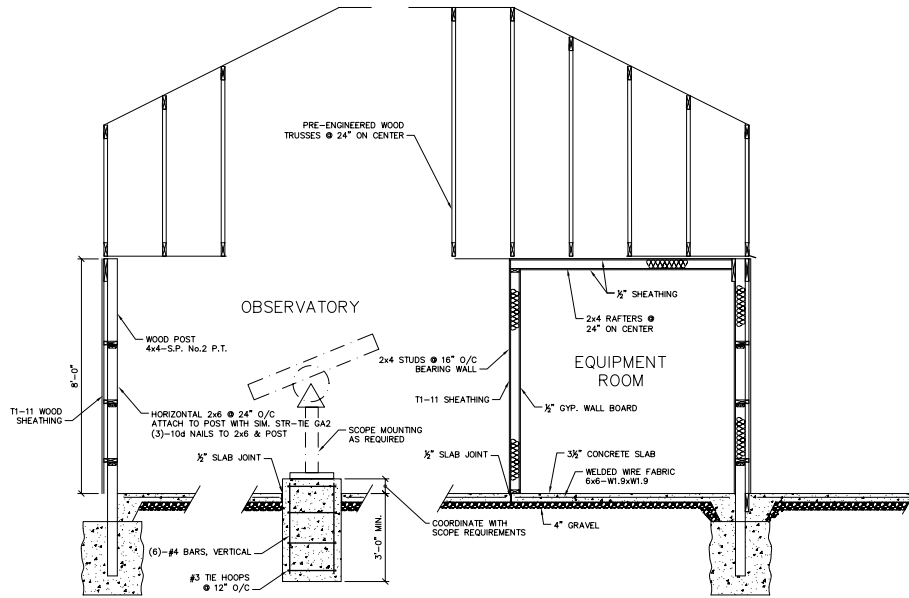


REV. NO.	REV. DATE
DWG. CHK. APP.	
PROJECT	2005071
ISSUED FOR BUILD	
DATE	FEB. 12, 2006
SHEET	1 OF 3

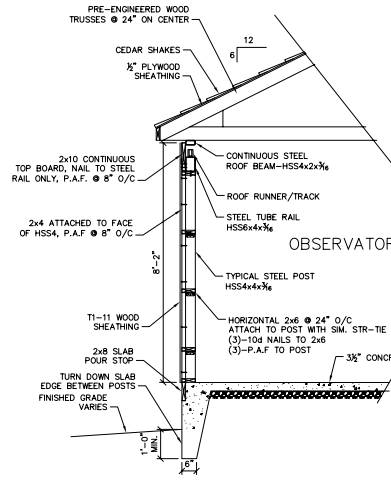
DRAWING
S1



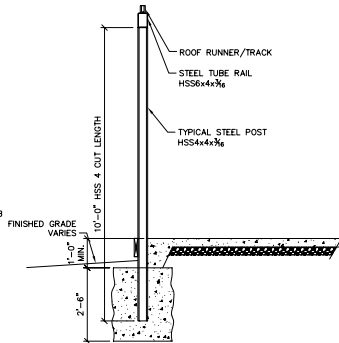
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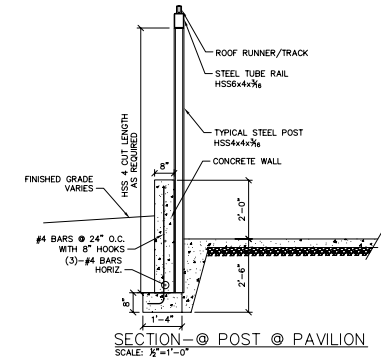
LONGITUDINAL SECTION
SCALE: 1/2"=1'-0"



TRANSVERSE SECTION-BETWEEN POSTS
@ BUILDING
SCALE: 1/2"=1'-0"



SECTION @ POST @ BUILDING
SCALE: 1/2"=1'-0"



SECTION @ POST @ PAVILION
SCALE: 1/2"=1'-0"

STRUCTURAL NOTES

1. BUILDING CODES

- A. ALL CONSTRUCTION SHALL CONFORM WITH THE 2003 IBC BUILDING CODE AND ALL SUBSEQUENT SUPPLEMENTS.
- B. IN ADDITION, ALL CONSTRUCTION SHALL CONFORM WITH THE GOVERNING LOCAL BUILDING CODE.

2. DESIGN LOADS

- A. THE MINIMUM DESIGN UNIFORMLY DISTRIBUTED LIVE LOADING FOR ALL NEW FRAMING SHALL BE AS FOLLOWS:

FLOOR LIVE LOAD	40 PSF
ROOF LIVE LOAD	30 PSF
- B. ROOF SNOW LOAD DESIGN CRITERIA:

GROUND SNOW LOAD (P _g)	30 PSF
FLAT ROOF SNOW LOAD (P _f)	21 PSF
EXPOSURE FACTOR (C _e)	1
IMPORTANCE FACTOR (I)	1.0
- C. WIND LOAD DESIGN CRITERIA:

BASIC WIND SPEED	90 MPH
IMPORTANCE FACTOR (I)	1.0

3. SPREAD FOOTING FOUNDATIONS

- A. THE BOTTOM OF ALL EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 2'-6" BELOW FINISH GRADE FOR FROST PROTECTION.
- B. ALL FOOTINGS HAVE BEEN DESIGNED FOR AN ASSUMED NET ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
- C. ALL FILL PLACED UNDER SPREAD FOOTINGS SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698.
- D. ALL EXCAVATION AND BACKFILLING OPERATIONS WITHIN THE BUILDING FOOTPRINT, INCLUDING ALL COMPACTION TESTS AND INSPECTIONS, SHALL BE DONE UNDER THE DIRECTION AND SUPERVISION OF A REGISTERED GEOTECHNICAL ENGINEER.

4. SLABS ON GRADE

- A. ALL SLABS ON GRADE SHALL CONSIST OF A 3 1/2 INCH THICK CONCRETE SLAB REINFORCED WITH ONE LAYER OF 6"x6"-W1.4W1.4 WELDED WIRE FABRIC AND PLACED OVER A 6 IN. POLYETHYLENE VAPOR RETARDER AND 6 INCHES OF COMPACTED GRANULAR BASE. ALL EDGES OF VAPOR RETARDER SHALL BE LAPPED 6 INCHES AND TAPED. MAXIMUM AGGREGATE SIZE OF GRANULAR BASE SHALL BE 1/2 INCH.
- B. ALL FILL PLACED UNDER SLABS ON GRADE SHALL BE COMPACTED TO A DRY DENSITY OF AT LEAST 95 PERCENT OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 698.
- C. ALL EXCAVATION, BACKFILLING, AND COMPACTION OPERATIONS UNDER THE SLAB ON GRADE SHALL BE DONE UNDER THE DIRECTION AND SUPERVISION OF A REGISTERED GEOTECHNICAL ENGINEER.

D. PLACE CONCRETE PER ACI 302. CONTRACTOR SHALL READ/UNDERSTAND FOLLOW GUIDELINES SET FORTH FOR PREPARING SUBGRADE, PLACING, CONSOLIDATING, FINISHING AND CURING CONCRETE SLABS.

E. ALL REINFORCING BARS SHALL BE NEW BILLET STEEL CONFORMING TO ASTM A 615 GRADE 60. ALL WELDED WIRE FABRIC (W.W.F.) SHALL CONFORM TO ASTM A 185. LAP ALL REINFORCING BARS A MINIMUM OF 48 BAR DIAMETERS AND ALL W.W.F. A MINIMUM OF TWO FULL GRIDS, UNLESS OTHERWISE INDICATED.

5. STRUCTURAL AND MISCELLANEOUS STEEL

- A. ALL STEEL CONSTRUCTION SHALL CONFORM TO THE NINTH EDITION OF THE AISC "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN" AND THE AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES".
- B. ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A 992 GRADE 50 OR ASTM A 36 AT THE CONTRACTORS OPTION.
- C. ALL MISCELLANEOUS STEEL (ANGLES, PLATES, ETC.) SHALL CONFORM TO ASTM A 36 HAVING A MINIMUM YIELD STRENGTH OF F_y = 36,000 PSI.
- D. ALL STRUCTURAL STEEL PIPE SHALL CONFORM TO ASTM A 501 HAVING A MINIMUM YIELD STRENGTH OF F_y = 36,000 PSI OR TO ASTM A 53, TYPE "B" OR "C" GRADE "B", HAVING A MINIMUM YIELD STRENGTH OF F_y = 35,000 PSI.
- E. ALL STRUCTURAL STEEL TUBES SHALL CONFORM TO ASTM A 500, GRADE "B", HAVING A MINIMUM YIELD STRENGTH OF F_y = 46,000 PSI.
- F. ALL SHOP AND FIELD WELDS SHALL BE PERFORMED BY CERTIFIED WELDERS AND CONFORM TO THE AMERICAN WELDING SOCIETY CODE FOR BUILDINGS AWS D1.1. WELDS SHALL DEVELOP THE FULL STRENGTH OF MATERIALS BEING WELDED UNLESS OTHERWISE INDICATED.
- G. ALL CONNECTIONS TO EXISTING STEEL FRAMING SHALL BE FIELD BULLETED UNLESS OTHERWISE INDICATED. THE CONTRACTOR MAY SUBSTITUTE WELDED CONNECTIONS PROVIDED THE EXISTING STEEL IS TESTED TO DETERMINE STRENGTH AND CHEMICAL PROPERTIES. TEST METHODS AND RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO ANY FIELD WELDING TO EXISTING STEEL.
- H. ALL EXPOSED STRUCTURAL STEEL SHALL CONFORM TO THE AISC "SPECIFICATION FOR ARCHITECTURALLY EXPOSED STRUCTURAL STEEL".
- I. THE CONTRACTOR SHALL NOT SPLICE OR CUT OPENINGS IN STEEL MEMBERS NOT SHOWN ON CONTRACT DRAWINGS WITHOUT THE PERMISSION OF THE STRUCTURAL ENGINEER.
- J. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS INDICATING THE STRESS, EXTENT, AND LOCATION OF ALL STRUCTURAL AND MISCELLANEOUS STEEL FRAMING INCLUDING ALL CONNECTIONS, FASTENERS, AND BEARINGS.

6. WOOD FRAMING

- A. ALL WOOD FRAMING SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE "NATIONAL DESIGN SPECIFICATION" PUBLISHED BY THE NATIONAL FOREST PRODUCTS ASSOCIATION.
- B. ALL NEW LUMBER SHALL BE NO. 2 SPRUCE PINE FIR AT 19 PERCENT MAXIMUM MOISTURE CONTENT OR AN APPROVED EQUIVALENT.

C. WOOD FRAMING CONNECTIONS REQUIRING STEEL FASTENERS AND HANGERS SHALL CONSIST OF A MINIMUM 16 GA. GALVANIZED STEEL. ALL CONNECTIONS SHALL BE DESIGNED TO DEVELOP THE REQUIRED LOAD CAPACITY.

D. NAILING OF ALL WOOD FRAMING SHALL MEET THE MINIMUM RECOMMENDED REQUIREMENTS PROVIDED IN THE NAILING SCHEDULE OF THE IBC BUILDING CODE.

E. WOOD TRUSSES SHALL BE DESIGNED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE TRUSS PLATE INSTITUTE'S "DESIGN SPECIFICATION FOR LIGHT METAL PLATE CONNECTED WOOD TRUSSES" FOR THE DESIGN LOADS INDICATED ON THE CONTRACT DOCUMENTS.

F. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS FOR ALL WOOD TRUSSES INCLUDING MEMBER LAYOUT, WOOD SPECIES AND GRADE, MEMBER SIZES, TRUSS BEARING CONNECTION DETAILS, CAPACITY OF CONNECTOR PLATES AND THE SIZE AND LOCATION OF ALL REQUIRED BRIDGING. THE CALCULATIONS AND SHOP DRAWINGS SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF MARYLAND.

G. ALL PLYWOOD SHALL CONFORM TO THE DESIGN SPECIFICATIONS OF THE AMERICAN PLYWOOD ASSOCIATION, 494 PSI 1. PLYWOOD SHALL HAVE A MINIMUM OF THREE CONTINUOUS SPANS WITH FACE GRAIN PERPENDICULAR TO SUPPORTS. PROVIDE A MINIMUM OF TWO PANEL EDGE CLIPS BETWEEN SUPPORTS. NAIL PLYWOOD TO SUPPORTING MEMBERS WITH 8d NAILS AT 6 INCHES ON CENTER ALONG PANEL EDGE AND 12 INCHES ON CENTER AT INTERMEDIATE SUPPORTS.

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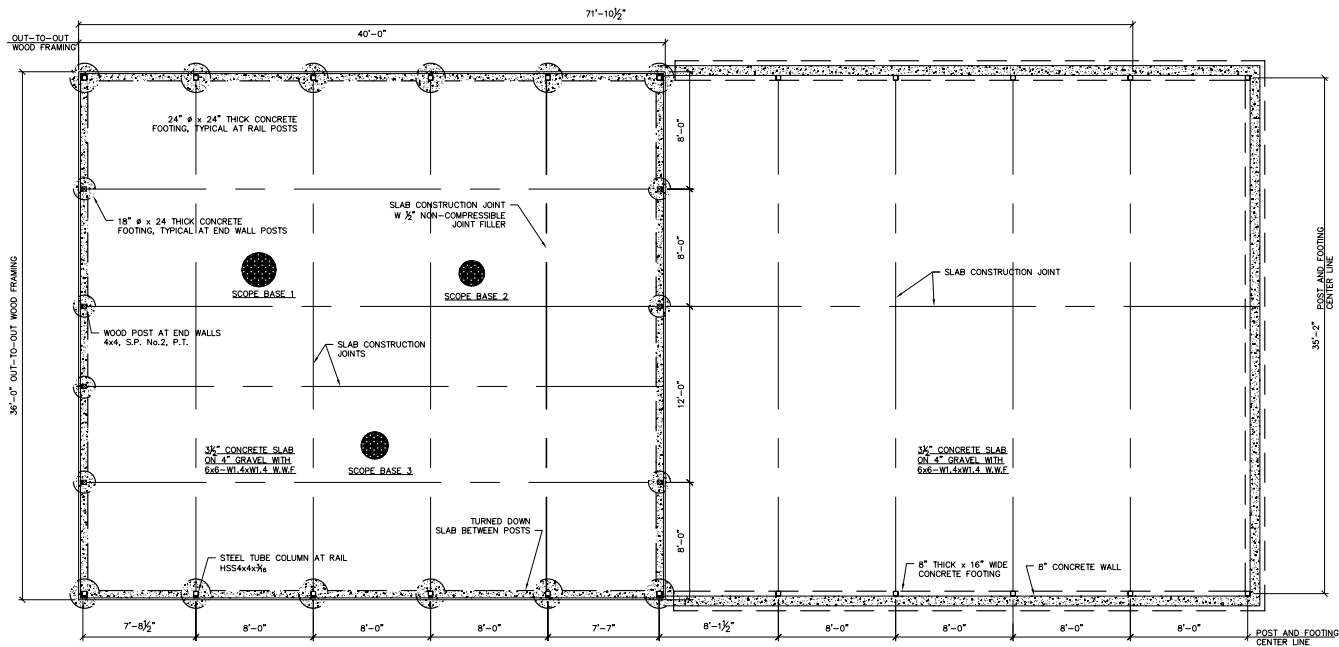
STRUCTURAL ENGINEERING RESOURCES, LLC

OBSEVATORY AT BEAR BRANCH NATURE CENTER @ BUILDING
WESTMINSTER ASTRONOMICAL SOCIETY, INC.
CARROLL COUNTY, MARYLAND

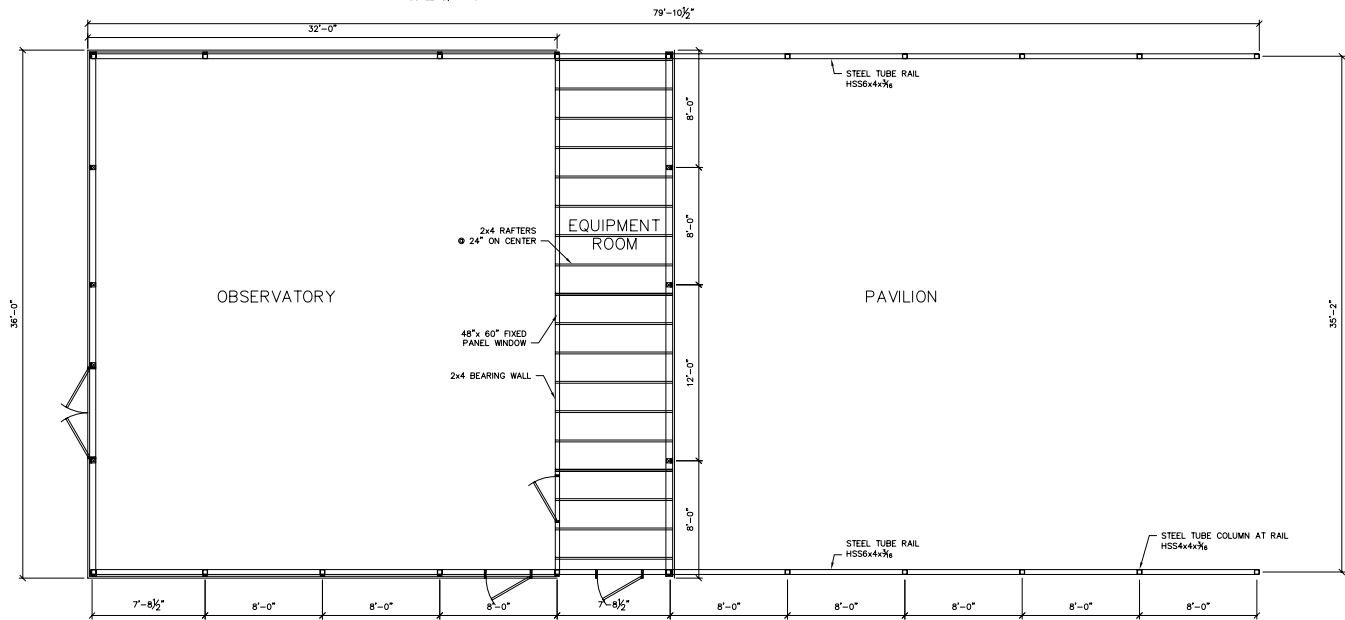


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PROJECT	2205071	
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SHEET	3 OF 3	

DRAWING
S3



PLAN @ FOUNDATION
SCALE: 1/4"=1'-0"



PLAN @ RAIL AND BELOW
SCALE: 1/4"=1'-0"

JEFFREY B. FERTICH, P.E.
26 NORTH
FOURTH STREET
GETTYSBURG,
PA 17325
717-337-1335



PLANS
**OBSERVATORY AT
BEAR BRANCH NATURE CENTER**
WESTMINSTER ASTRONOMICAL SOCIETY, INC.
CARROLL COUNTY, MARYLAND



REV. NO.	REV. DATE
DWG. CHK. APP.	
JBF JBF JBF	
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SHEET	2 OF 3

DRAWING
S2