

SPECIAL INSPECTIONS - STEEL					
Inspections & Test	Cont.	Per.	IBC Ref.	Required For Project	Referenced Standard
Steel Construction				Yes	
1. Structural Steel				Yes	
a. Inspection Tasks Prior To Welding				Yes	
iii. Manufacturer certifications for welding consumables available		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
i. Welder Qualification records and continuity records	X		1705.2.1	Yes	AISC 360 Table N.5.4-1
ii. Welding Procedure Specifications (WPS) Available	X		1705.2.1	Yes	AISC 360 Table N.5.4-1
iv. Material identification (type/grade)		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
v. Welder identification system		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
vi. Fit up of groove welds (including joint geometry)		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
vii. Fit up of CJP groove welds of HSS, T, Y, and K-joints without backing (including joint geometry)		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
viii. Configuration and finish of access holes		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
ix. Fit-up of fillet welds		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
x. Check Welding equipment		X	1705.2.1	Yes	AISC 360 Table N.5.4-1
b. Inspection Tasks During Welding				Yes	
i. Control and Handling of welding consumables.		X	1705.2.1	Yes	AISC 360 Table N.5.4-2
ii. No welding over cracked tack welds.		X	1705.2.1	Yes	AISC 360 Table N.5.4-2
iii. Environmental Conditions		X	1705.2.1	Yes	AISC 360 Table N.5.4-2
iv. Verify WPS followed		X	1705.2.1	Yes	AISC 360 Table N.5.4-2
v. Verify Welding Techniques		X	1705.2.1	Yes	AISC 360 Table N.5.4-2
vi. Placement and installation of steel headed stud anchors		X	1705.2.1	Yes	AISC 360 Table N.5.4-2
c. Inspection Tasks after Welding				Yes	
i. Welds cleaned		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
ii. Size, length, and location of welds		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
iii. Welds meet visual acceptance criteria		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
iv. Arc strikes		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
v. K-area		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
vi. Weld access holes in rolled heavy shapes and built-up heavy shapes		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
vii. Backing removed and weld tabs removed (if required)		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
viii. Repair activities		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
iv. Document acceptance or rejection of welded joint or member		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
x. No prohibited welds have been added without the approval of the EOR		X	1705.2.1	Yes	AISC 360 Table N.5.4-3
d. Inspection Tasks Prior to Bolting				Yes	
i. Manufacturer's certification available for fastener materials		X	1705.2.1	Yes	AISC 360 Table N.5.6-1
ii. Fasteners marked in accordance with ASTM requirements		X	1705.2.1	Yes	AISC 360 Table N.5.6-1
iii. Proper fasteners selected for the joint detail (grade, type, bolt length if threads are to be excluded from shear plane)		X	1705.2.1	Yes	AISC 360 Table N.5.6-1
iv. Proper bolting procedure selected for joint detail		X	1705.2.1	Yes	AISC 360 Table N.5.6-1
v. Connecting elements, including the appropriate faying surface condition and hole preparation, if specified, meet applicable requirements.		X	1705.2.1	Yes	AISC 360 Table N.5.6-1
vi. Pre-installation verification testing by installation personnel observed and documented for fastener assemblies and methods used.		X	1705.2.1	Yes	AISC 360 Table N.5.6-1
vii. Proper storage provided for bolts, nuts, washers and other fastener components. X 1705.2.1.1		X	1705.2.1	Yes	AISC 360 Table N.5.6-1
AISC 360 Table N.5.6-1					
e. Inspection Tasks During Bolting				Yes	
i. Fastener assemblies, of suitable condition, placed in all holes and washers (if required) are positioned as required.		X	1705.2.1	Yes	AISC 360 Table N.5.6-2
ii. Joint brought to the snug-tight condition prior to the pretensioning operation.		X	1705.2.1	Yes	AISC 360 Table N.5.6-2
iii. Fastener component not turned by the wrench prevented from rotating.		X	1705.2.1	Yes	AISC 360 Table N.5.6-2
iv. Fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges.		X	1705.2.1	Yes	AISC 360 Table N.5.6-2
f. Inspection Tasks After Bolting				Yes	
i. Document acceptance or rejection of bolted connections.		X	1705.2.1	Yes	AISC 360 Table N.5.6-3

SPECIAL INSPECTIONS - CONCRETE					
Inspections & Test	Cont.	Per.	IBC Ref.	Required For Project	Referenced Standard
Concrete Construction				Yes	
1. Inspect reinforcement, including prestressing tendons, and verify placement.		X	1705.3	Yes	ACI 318 Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 IBC 1908.4
2 Reinforcing Bar Welding:			1705.3	No	
a. Verify weldability of reinforcing bars other than ASTM A706.		X	1705.3	No	AWS D1.4 ACI 318: 26.6.4
b. Inspect single pass fillet welds, maximum 5/16"		X	1705.3	No	AWS D1.4 ACI 318: 26.6.4
c. Inspect all other welds		X	1705.3	No	AWS D1.4 ACI 318: 26.6.4
3. Inspect anchors cast in concrete.		X	1705.3	Yes	ACI 318: 17.8.2
4. Inspect anchors post-installed in hardened concrete members.			1705.3	Yes	
a. Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads		X	1705.3	Yes	ACI 318: 17.8.2.4
b. Mechanical anchors and adhesive anchors not defined in item 4a.		X	1705.3	Yes	ACI 318: 17.8.2
5. Verify use of required design mix		X	1705.3	Yes	ACI 318: Ch. 19, 26.4.3, 26.4.4; IBC 1904.1, 1904.2, 1908.2, 1908.3
6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete.		X	1705.3	Yes	ASTM C172, ASTM C31, ACI 318: 26.5, 26.12; IBC 1908.10
7. Inspect concrete and shotcrete placement for proper application techniques.		X	1705.3	Yes	ACI 318: 26.5; IBC 1908.6, 1908.7, 1908.8
8. Verify maintenance of specified curing temperature and techniques.		X	1705.3	Yes	ACI 318: 26.5.3-26.5.5 IBC: 1908.9
9. Inspect Prestressed concrete for:			1705.3	No	
a. Application of prestressing forces		X	1705.3	No	ACI 318: 26.10
b. Grouting of bonded prestressing tendons		X	1705.3	No	ACI 318: 26.10
10. Inspect erection of precast concrete members		X	1705.3	No	ACI 318: Ch. 26.9
11. Verify in-situ concrete strength, prior to stressing tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.		X	1705.3	No	ACI 318: 26.11.2
12. Inspect formwork for shape, location and dimensions of the concrete member being formed.		X	1705.3	Yes	ACI 318: 26.11.2b
13. Fabricated Items - Precast Concrete		X	1704.2.5; 1705.10	No	

SPECIAL INSPECTIONS - FOUNDATIONS					
Inspections & Test	Cont.	Per.	IBC Ref.	Required For Project	Referenced Standard
Foundations				Yes	
A. Soils				Yes	
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.		X	1705.6	Yes	
2. Verify excavations are extended to a proper depth and have reached proper material.		X	1705.6	Yes	
3. Perform classification and testing of compacted fill materials.		X	1705.6	Yes	
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.		X	1705.6	Yes	
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.		X	1705.6	Yes	
B. Driven Deep Foundations				No	
1. Verify element materials, sizes and lengths, comply with the requirements.		X	1705.7	No	
2. Determine capacities of test elements and conduct additional load tests, as required.		X	1705.7	No	
3. Inspect driving operations and maintain complete and accurate records for each element.		X	1705.7	No	
4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element.		X	1705.7	No	
5. For steel elements, perform additional special inspections in accordance with Section 1705.2.		--	1705.7	No	
6. For concrete elements and concrete-filled elements, perform tests and additional special inspections in accordance with Section 1705.3.		--	1705.7	No	
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.		--	1705.7	No	
C. Cast-in-place Deep Foundations				No	
1. Inspect drilling operations and maintain complete and accurate records for each element.		X	1705.8	No	
2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.		X	1705.8	No	
3. For concrete elements, perform tests and additional special inspections in accordance with Section 1705.3.		--	1705.8	No	
D. Helical Pile Foundations		X	1705.9	No	

**SPECIAL INSPECTION AND TESTING:**

1. SPECIAL INSPECTION WILL BE PROVIDED BY THE OWNER BASED ON THE REQUIREMENTS OF THE CURRENT EDITION OF THE NYSBC AS SUMMARIZED IN THE SPECIAL INSPECTION AND TESTING PROGRAM ON SHEET S003. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM THESE INSPECTIONS.

**STRUCTURAL OBSERVATION:**

1. THE STRUCTURAL ENGINEER OF RECORD (SER) WILL PERFORM STRUCTURAL OBSERVATIONS BASED ON THE REQUIREMENTS OF THE IBC AT THE STAGES OF CONSTRUCTION LISTED BELOW. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SER TO PERFORM THESE OBSERVATIONS:

STRUCTURAL OBSERVATIONS		
CONSTRUCTION PHASE	OBSERVATION BY SER	COMMENTS
PRIOR TO FIRST CONCRETE POUR	X	REF FOOTNOTE A, B, C
AT COMPLETION OF HORIZONTAL ROOF DIAPHRAGM	X	REF FOOTNOTE A, B
PRIOR TO COVERING STRUCTURAL ELEMENTS	X	REF FOOTNOTE A, B
AS REQUIRED TO ADDRESS STRUCTURAL ISSUES	X	REF FOOTNOTE A, B

- A. STRUCTURAL OBSERVATIONS ARE INTENDED TO VERIFY GENERAL CONFORMANCE WITH THE STRUCTURAL DRAWINGS. SPECIAL INSPECTIONS AND TESTING ARE STILL REQUIRED.
- B. A FIELD REPORT WILL BE SUBMITTED TO THE BUILDING DEPARTMENT FOLLOWING EACH VISIT.
- C. STRUCTURAL OBSERVATION TO OCCUR AFTER THE REINFORCING STEEL HAS BEEN INSTALLED.

**SUBMITTALS:**

1. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE FABRICATION AND CONSTRUCTION OF ALL STRUCTURAL ITEMS INCLUDING THE FOLLOWING:

SUBMITTALS			
ITEM	SUBMITTAL (A, C)	DEFERRED SUBMITTAL (B, C)	COMMENTS
CONCRETE MIX DESIGNS	X		
CONCRETE REINFORCEMENT	X		
REINFORCING STEEL MILL CERTS	X		
CONCRETE ANCHORAGES	X		
EMBEDDED STEEL ITEMS	X		
PRE-ENGINEERED METAL BUILDING SHOP DRAWINGS AND BASE REACTIONS	X	X	

- A. IF THE SHOP DRAWINGS DIFFER FROM OR ADD TO THE DESIGN OF THE STRUCTURAL DRAWINGS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN NEW YORK STATE. ANY MODIFICATIONS TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND ARE SUBJECT TO REVIEW AND ACCEPTANCE BY THE STRUCTURAL ENGINEER OF RECORD.
- B. DESIGN DRAWINGS, SHOP DRAWINGS, AND CALCULATIONS FOR THE DESIGN AND FABRICATION OF ITEMS THAT ARE DESIGNED BY OTHERS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN NEW YORK STATE. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS INDUCED BY THE CONNECTION LOADS. DESIGN SHALL BE BASED UPON THE REQUIREMENTS OF THE NYSBC AND AS NOTED UNDER "DESIGN CRITERIA."
- C. FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DIFFER FROM, OR ADD TO, THE STRUCTURAL DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN NEW YORK STATE AND SHALL BE SUBMITTED TO THE ARCHITECT PRIOR TO CONSTRUCTION. ANY SUCH DETAILS ARE SUBJECT TO REVIEW AND ACCEPTANCE BY THE STRUCTURAL ENGINEER OF RECORD.

DATE: 01.23.24  
DRAWN BY: EK  
SCALE: 1/2" = 1'-0"  
REVIEWED BY: CAM  
PROJECT NO.: 22-2496  
FILE:

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REVISIONS	
NO.	DESCRIPTION

**RHINEBECK WTP IMPROVEMENTS VILLAGE OF RHINEBECK DUTCHESS COUNTY, NY**

**SPECIAL INSPECTION & SUBMITTALS**

SHEET: **S003**