



O'BRIEN & GERE

Joint Venture

STATEMENT OF SPECIAL INSPECTIONS

Client Name (Client Number): City of Massillon (2337)

Project Name (Project Number): 2013 WWTP Improvements (51633)

Location: Massillon, Ohio

This Statement of Special Inspections includes the following building systems:

- | | |
|---|--|
| ☒ Soils and Foundations | ☐ Spray Fire Resistant Material |
| ☒ Cast-in-Place Concrete | ☐ Wood Construction |
| ☒ Prestressed Concrete | ☐ Exterior Insulation and Finish System |
| ☒ Masonry | ☐ Special Cases |
| ☒ Structural Steel | ☐ Smoke Control |
| ☒ Cold-Formed Steel Framing | |
| ☐ Mastic & Intumescent Coatings | |

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests.

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge on a bi-weekly basis.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Refer to page 2 for Registered Design Professionals in Responsible Charge.



O'BRIEN & GERE

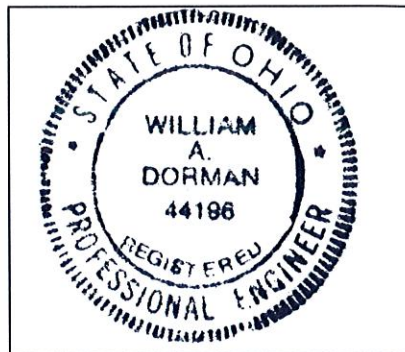
Joint Venture

STATEMENT OF SPECIAL INSPECTIONS

Prepared by:

William A. Dorman
(type or print name)

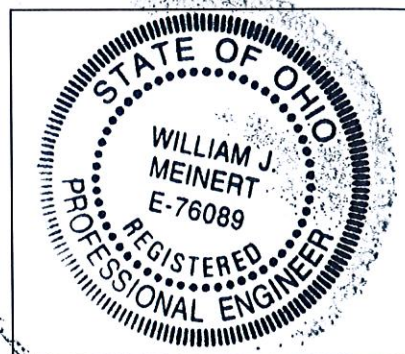
William A. Dorman 9-17-15
Signature Date



Prepared by:

William J. Meinert PE
(type or print name)

[Signature] 9/24/15
Signature Date



Minimum Qualifications for Special Inspectors

CATEGORY	CODE REFERENCE	MINIMUM QUALIFICATIONS
Reinforced concrete	1704.4	1. Current ICC Reinforced Concrete Special Inspector or ACI Concrete Construction Inspector. 2. Concrete field testing can be by an ACI Concrete Field Testing Technician with Grade 1 Certification. 3. Intern Engineer with relevant experience. 4. Registered Design Professional Engineer (RDP) with relevant experience.
Prestressed concrete	Table 1704.4	Pretension Tendons 1. Current ICC Reinforced Concrete certification and ACI Concrete Field Testing Technician with Grade 1 certifications plus one year of relevant experience. 2. Intern Engineer with relevant experience. 3. RDP with relevant experience. Post-tension Tendons 1. Current Post-Tensioning Institute (PTI) certification. 2. Intern Engineer with relevant experience. 3. RDP with relevant experience.
Welding	1704.3; Table 1704.3, Item 5; Table 1704.4, Item 2; 1707.2	1. Current AWS Certified Welding Inspector. 2. Current ICC Structural Steel and Welding Certificate plus one year of relevant experience. 3. Current Level II certification from the American Society for Non-Destructive Testing (NDT). 4. Current NDT Level III provided previously certified as NDT Level II.
High-strength bolting & steel frame inspection	1704.3; Table 1704.3	1. Current ICC Structural Steel and Welding certification and one year of relevant experience. 2. Intern Engineer with relevant experience. 3. RDP with relevant experience.
Masonry	1704.5; Table 1704.5.1; Table 1704.5.3	1. Current ICC Structural Masonry certification and one year of relevant experience. 2. Intern Engineer with relevant experience. 3. RDP with relevant experience.
Sprayed fire-resistant materials	1704.12	1. Current ICC Spray-Applied Fireproofing certification and one year of relevant experience. 2. Intern Engineer with relevant experience. 3. RDP with relevant experience.
Excavation and filling; verifications of soils; piling & drilled piers; modular retaining walls	1704.7; 1704.8; 1704.9	1. Current Level II certification in geotechnical engineering technology/construction from the National Institute for Certification in Engineering Technologies (NICET). 2. Intern Engineer with relevant experience. 3. RDP with relevant experience.

Minimum Qualifications for Special Inspectors

CATEGORY	CODE REFERENCE	MINIMUM QUALIFICATIONS
Inspection of fabricators	1704.2	1. Precast: Current ICC Reinforced Concrete certification plus one year relevant experience. 2. Bar Joist: see welding requirements. 3. Metal Building: see welding requirements. 4. Structural Steel: see welding requirements.
Exterior insulation and finish system	1704.14	1. RDP with relevant experience. 2. Intern Engineer with relevant experience.
Smoke control	1704.16	1. See the requirements in Section 1704.16. 2. The RDP responsible for design.
Seismic Resistance	1707; 1708	1. See the applicable categories in this table.

STEEL

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

TABLE 1704.3 FROM IBC 2009

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE	INCLUDE ?
1. Material verification of high-strength bolts, nuts, and washers:					
a. Identification markings to conform to ASTM standards specified in the approved construction documents.	-	X	AISC 360, Section A3.3 and applicable ASTM material standards	-	☒
b. Manufacturer's certificate of compliance required.	-	X	-	-	☒
2. Inspection of high-strength bolting:					
a. Snug-tight joints.	-	X			☒
b. Pretensioned and slip-critical joints using turn-of-nut- with matchmarking, twist-off bolt or direct tension indicator methods of installation	-	X			☐
c. Pretensioned and slip-critical joints using turn-of-nut without matchmarking or calibrated wrench methods of installation.	X	-	AISC 360 Section M2.5	1704.3.3	☐
3. Material verification of structural steel and cold-formed steel deck:					
a. For structural steel, identification markings to conform to AISC 360.	-	X	AISC 360, Section M5.5		☒
b. For other steel, identification markings to conform to ASTM standards specified in the approved construction documents.	-	X	Applicable ASTM material standards	-	☒
c. Manufacturer's certified test reports.	-	X	-		☒
4. Material verification of weld filler materials:					
a. Identification markings to conform to AWS specification in the approved construction documents.	-	X	AISC 360, Section A3.5 and applicable AWS A5 documents	-	☒
					☒

STEEL

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

TABLE 1704.3 FROM IBC 2009

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE	INCLUDE ?
b. Manufacturer's certificate of compliance required.	-	X	-	-	☒
5. Inspection of welding:					
a. Structural steel and cold-formed steel deck:					
1) Complete and partial penetration groove welds.	X	-			☐
2) Multi-pass fillet welds.	X	-			☐
3) Single-pass fillet welds > 5/16"	X	-	AWS D1.1	1704.3.1	☐
4) Plug and slot welds.	X	-			☐
5) Single-pass fillet welds <= 5/16"	-	X			☒
6) Floor and deck welds.	-	X	AWS D1.3	-	☒
b. Reinforcing steel:					
1) Verification of weldability of reinforcing steel other than ASTM A706.	-	X	AWS D1.4 ACI 318: 3.5.2	-	☒
2) Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, and boundary elements of special structural walls of concrete and shear reinforcement.	X	-	AWS D1.4 ACI 318: 3.5.2	-	☐
3) Shear reinforcement.	X	-			☒
4) Other reinforcing steel.	-	X			☒
6. Inspection of steel frame joint details for compliance with approved construction documents:					
a. Details such as bracing and stiffening.	-	X			☒
b. Member locations.	-	X	-	-	☒
c. Application of joint details at each connection.	-	X			☒

STEEL

REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION

TABLE 1704.3 FROM IBC 2009

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE	INCLUDE ?
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1704.3.1 Welding - Welding inspection and welding inspector qualification shall be in accordance with this section.

1704.3.1.1 Structural steel. Welding inspection and welding inspector qualification for structural steel shall be in accordance with AWS D1.1

1704.3.1.2 Cold-formed steel. Welding inspection and welding inspector qualification for cold-formed steel floor and roof decks shall be in accordance with AWS D1.3.

1704.3.1.3 Reinforcing steel. Welding inspection and welding inspector qualification for reinforcing steel shall be in accordance with AWS D1.4 and ACI 318.

1704.3.2 Details. The special inspector shall perform an inspection of the steel frame to verify compliance with the details shown on the approved construction documents, such as bracing, stiffening, member locations and proper application of joint details at each connection.

1704.3.3 High-strength bolts. Installation of high-strength bolts shall be inspected in accordance with AISC 360.

1704.3.3.1 General. While the work is in progress, the special inspector shall determine that the requirements for bolts, nuts, washers and paint; bolted parts and installation and tightening in such standards are met. For bolts requiring pretensioning, the special inspector shall observe the preinstallation testing and calibration procedures when such procedures are required by the installation method or by project plans or specifications; determine that all plies of connected materials have been drawn together and properly snugged and monitor the installation of bolts to verify that the selected procedure for installation is properly used to tighten bolts. For joints required to be tightened only to the snug-tight condition, the special inspector need only verify that the connected materials have been drawn together and properly snugged.

1704.3.3.2 Periodic monitoring. Monitoring of bolt installation for pretensioning is permitted to be performed on a periodic basis when using the turn-of-nut method with matchmarking techniques, the direct tension indicator method or the alternate design fastener (twist-off bolt) method. Joints designated as snug tight need be inspected only on a periodic basis.

1704.3.3.3 Continuous monitoring. Monitoring of bolt installation for pretensioning using the calibrated wrench method or the turn-of-nut method without matchmarking shall be performed on a continuous basis.

1704.3.4 Cold-formed steel trusses spanning 60 feet or greater. Where a cold-formed steel truss clear span is 60 feet (18 288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.

CAST-IN-PLACE CONCRETE

REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

TABLE 1704.4 FROM IBC 2009 (Cast-in-place concrete portions only)

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE	INCLUDE ?
1. Inspection of reinforcing steel, and placement.	-	X	ACI 318: 3.5, 7.1-7.7	1913.4	☒
2. Inspection of reinforcing steel welding in accordance with Table 1704.3, Item 5b.	-	-	AWS D1.4 ACI 318: 3.5.2	-	☒
3. Inspection of bolts to be installed in concrete prior to and during placement of concrete where allowable loads have been increased or where strength design is used.	X	-	ACI 318: 8.1.3, 21.2.8	1911.5 1912.1	☐
4. Inspection of anchors installed in hardened concrete.	-	X	ACI 318: 3.8.6, 8.1.3, 21.2.8	1912.1	☒
5. Verifying use of required design mix.	-	X	ACI 318: Ch. 4, 5.2-5.4	1904.3, 1913.2, 1913.3	☒
6. At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	X	-	ASTM C 172 ASTM C 31 ACI 318: 5.6-5.8	1913.10	☒
7. Inspection of concrete and shotcrete placement for proper application techniques.	X	-	ACI 318: 5.9, 5.10	1913.6, 1913.7 1913.8	☒
8. Inspection for maintenance of specified curing temperature and techniques.	-	X	ACI 318: 5.11-5.13	1913.9	☒
9. Verification of in-situ concrete strength prior to removal of shores and forms from beams and structural slabs.	-	X	ACI 318: 6.2	-	☒
10. Inspect formwork for shape, location and dimensions of the concrete member being formed.	-	X	ACI 318: 6.1.1	-	☒

1704.4.1 Materials. In the absence of sufficient data or documentation providing evidence of conformance to quality standards for materials in Chapter 3 of ACI 318, the building official shall require testing of materials in accordance with the appropriate standards and criteria for the material in Chapter 3 of ACI 318. Weldability of reinforcement, except that which conforms to ASTM A 706, shall be determined in accordance with the requirements of Section 3.5.2 of ACI 318.

Exceptions: Special Inspections shall not be required for:

1. Isolated spread concrete footings of building three stores or less in height that are fully supported on earth or rock.
2. Continuous concrete footings supporting walls of buildings three stories or less in height that are fully supported on earth or rock where:
 - 2.1 The footings support walls of light frame construction;
 - 2.2 The footings are designed in accordance with Table 1805.9.7; or
 - 2.3 The structural design of the footing is based on a specified compressive strength, f'_c , no greater than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the construction documents or used in the footing construction.
3. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 pounds per square inch.
4. Concrete foundation walls constructed in accordance with Tables 1807.1.6.2.
5. Concrete patios, driveways and sidewalks, on grade.

PRESTRESSED CONCRETE

REQUIRED VERIFICATION AND INSPECTION OF PRESTRESSED CONCRETE CONSTRUCTION

THESE TASKS ARE IN ADDITION TO THOSE REQUIRED OF CAST-IN-PLACE CONCRETE

TABLE 1704.4 FROM IBC 2009 (Prestressed concrete portions only)

VERIFICATION AND INSPECTION TASK	CONTINUOUS	PERIODIC	REFERENCED STANDARD	IBC REFERENCE	INCLUDE ?
1. Inspection of prestressing tendons and placement.	-	X	ACI 318: 3.5, 7.1-7.7	1913.4	☐
2. Inspection of prestressed concrete:					
a. Application of prestressing forces.	X	-	ACI 318: 18.20	-	☐
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system.	X	-	ACI 318: 18.18.4	-	☐
3. Erection of precast concrete members.	-	X	ACI 318: Ch. 16	-	☒
4. Verification of in-situ concrete strength prior to stressing of tendons in post-tensioned concrete.	-	X	ACI 318: 6.2	-	☐

MASONRY

LEVEL 1 SPECIAL INSPECTION

TABLE 1704.5.1 FROM IBC 2009

INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA			INCLUDE ?
	CONTINUOUS	PERIODIC	IBC SECTION	TMS 402/ACI 530/ ASCE 5	TMS 602/ACI 530.1/ ASCE	
1. Compliance with required inspection provisions of the construction documents and the approved submittals shall be verified.	-	X	-	-	Art. 1.5	☒
2. Verification of fm and fAAC prior to construction except where specifically exempted by this code.	-	X	-	-	Art. 1.4B	☒
3. Verification of slump flow and VSI as delivered to the site for self-consolidating grout.	X	-	-	-	Art. 1.5B.1.b.3	☐
4. As masonry construction begins, the following shall be verified to ensure compliance:						
a. Proportion of site-prepared mortar.	-	X	-	-	Art. 2.6A	☒
b. Construction of mortar joints.	-	X	-	-	Art. 3.3B	☒
c. Location of reinforcement, connectors, prestressing tendons, and anchorages.	-	X	-	-	Art. 3.4.3.6A	☒
d. Prestressing technique.	-	X	-	-	Art. 3.6B	☐
e. Grade and size of prestressing tendons and anchorages.	-	X	-	-	Art. 2.4B, 2.4H	☐
5. During construction the inspection program shall verify:						
a. Size and location of structural elements.	-	X	-	-	Art. 3.3F	☒
b. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.	-	X	-	Sec. 1.2.2(e), 1.16.1	-	☒

MASONRY

LEVEL 1 SPECIAL INSPECTION

TABLE 1704.5.1 FROM IBC 2009

INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA			INCLUDE ?
	CONTINUOUS	PERIODIC	IBC SECTION	TMS 402/ACI 530/ ASCE 5	TMS 602/ACI 530.1/ ASCE	
c. Specified size, grade and type of reinforcement, anchor bolts, prestressing tendons and anchorages.	-	X	-	Sec. 1.15	Art. 2.4, 3.4	☒
d. Welding of reinforcing bars.	X	-	-	Sec. 2.1.10.7.2, 3.3.3.4(b)	-	☒
e. Preparation, construction and protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90°F).	-	X	Sec. 2104.3, 2104.4	-	Art. 1.8C, 1.8D	☒
f. Application and measurement of prestressing force.	X	-	-	-	Art. 3.6B	☐

MASONRY

LEVEL 1 SPECIAL INSPECTION

TABLE 1704.5.1 FROM IBC 2009

INSPECTION TASK	FREQUENCY OF INSPECTION		REFERENCE FOR CRITERIA			INCLUDE ?
	CONTINUOUS	PERIODIC	IBC SECTION	TMS 402/ACI 530/ASCE 5	TMS 602/ACI 530.1/ ASCE	
6. Prior to grouting, the following shall be verified to ensure						
a. Grout space is clean.	-	X	-	-	Art. 3.2D	☒
b. Placement of reinforcement and connectors, and prestressing tendons and anchorages.	-	X	-	Sec. 1.13	Art. 3.4	☒
c. Proportions of site-prepared grout and prestressing grout for bonded tendons.	-	X	-	-	Art. 2.6B	☒
d. Construction of mortar joints.	-	X	-	-	Art. 3.3B	☒
7. Grout placement shall be verified to ensure compliance:	X	-	-	-	Art. 3.5	☒
a. Grouting of prestressing bonded tendons.	X	-	-	-	Art. 3.6C	☐
5. Preparation of any required grout specimens, mortar specimens and/or prisms shall be observed.	-	X	Sec. 2105.2.2, 2105.3	-	Art. 1.4	☒

1704.5.1 Empirically designed masonry, glass unit masonry and masonry veneer in Occupancy Category IV. The minimum special inspection program for empirically designed masonry, glass unit masonry or masonry veneer designed by Section 2109, 2110 or Chapter 14, respectively, or by Chapter 5, 6 or 7 of TMS 402/ACI 530/ASCE 5, respectively, in structures classified as Occupancy Category IV, in accordance with Section 1604.5, shall comply with Table 1704.5.1.

1704.5.2 Engineered masonry in Occupancy Category I, II or III. The minimum special inspection program for masonry designed by Section 2107 or 2108 or by chapters other than Chapter 5, 6 or 7 of TMS 402/ACI 530/ASCE 5 in structures classified as Occupancy Category I, II or III, in accordance with Section 1604.5, shall comply with Table 1704.5.1.

Exception: Special inspections shall not be required for:

1. Empirically designed masonry, glass unit masonry or masonry veneer designed by Section 2109, 2110 or Chapter 14, respectively, or by Chapter 5, 6 or 7 of TMS 402/ACI 530/ASCE 5, respectively, when they are part of structures classified as Occupancy Category I, II or III in accordance with Section 1604.5.
2. Masonry foundation walls constructed in accordance with Table 1807.1.6.3(1), 1807.1.6.3(2), 1807.1.6.3(3) or 1807.1.6.3(4).
3. Masonry fireplaces, masonry heaters or masonry chimneys installed or constructed in accordance with Section 2111, 2112 or 2113, respectively.

SOILS AND FOUNDATIONS

REQUIRED VERIFICATION AND INSPECTION OF SOILS

TABLE 1704.7 FROM IBC 2009

VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		INCLUDE ?
	CONTINUOUS	PERIODIC	
1. Verify materials below footings are adequate to achieve the design bearing capacity.	-	X	☒
2. Verify excavations are extended to proper depth and have reached proper material.	-	X	☒
3. Perform classification and testing of controlled fill materials.	-	X	☒
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	X	-	☒
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly.	-	X	☒

Exception: Where Section 1803 does not require reporting of materials and procedures for fill placement, the special inspector shall verify that the in-place dry density of the compacted fill is not less than 90 percent of the maximum dry density at optimum moisture content determined in accordance with ASTM D 1557.

REQUIRED VERIFICATION AND INSPECTION OF DRIVEN DEEP FOUNDATION ELEMENTS

TABLE 1704.8 FROM IBC 2009

VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		INCLUDE ?
	CONTINUOUS	PERIODIC	
1. Verify element materials, sizes and lengths comply with the requirements.	X	-	☐
2. Determine capacities of test elements and conduct additional load tests, as required.	X	-	☐
3. Observe driving operations and maintain complete and accurate records for each element.	X	-	☐
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	-	☐
5. For steel elements, perform additional inspections in accordance with Section 1704.3.	-	-	☐
6. For concrete elements and concrete-filled elements, perform additional inspections in accordance with Section 1704.4.	-	-	☐
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge.	-	-	☐

SOILS AND FOUNDATIONS

REQUIRED VERIFICATION AND INSPECTION OF CAST-IN-PLACE DEEP FOUNDATION ELEMENTS
TABLE 1704.9 FROM IBC 2009

VERIFICATION AND INSPECTION TASK	FREQUENCY OF INSPECTION		INCLUDE ?
	CONTINUOUS	PERIODIC	
1. Observe drilling operations and maintain complete and accurate records for each pier.	X	-	☐
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	-	☐
3. For concrete elements, perform additional inspections in accordance with Section 1704.4.	-	-	☐

1704.10 Helical pile foundations. Special inspections shall be performed continuously during installation of helical pile foundations. The information recorded shall include installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other pertinent installation data as required by the registered design professional in responsible charge. The approved geotechnical report and the construction documents prepared by the registered design professional shall be used to determine compliance.

1704.11 Vertical masonry foundation elements. Special inspection shall be performed in accordance with Section 1704.5 for vertical masonry foundation elements.