SECTION 01 4533 -STRUCTURAL TESTING AND SPECIAL INSPECTION SERVICES

PART 1 - GENERAL

1.01 SUMMARY

A. Section summarizes the responsibility of the Contractor and the Testing/Inspection Agency in the performance of the testing/inspection specified in the Contract Documents.

B. Neither the observations of the Design Professional in the administration of the contract, nor tests/inspections by the Testing/Inspection Agency, nor approvals by persons other than the Design Professional shall relieve the Contractor from his obligation to perform the work in accordance with the Contract Documents.

C. Special Inspection reports and a final report in accordance with Section 1704.2.4 of the 2018 International Building Code shall be submitted to the Building Official prior to the time that phase of work is approved for occupancy.

1.02 REFERENCES

A. ASTM D3740 - Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

B. ASTM E329 - Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

C. American Council of Independent Laboratories - Recommended Requirements for Independent Laboratories Qualifications.

1.03 SELECTION AND PAYMENT

A. The Owner will select the Testing/Inspection Agency and will pay for the structural testing and special inspection services that are required by the Contract Documents.

B. Contractor shall pay for any additional structural testing/inspection required for work or materials not complying with Contract Documents due to negligence or nonconformance.

C. Contractor shall pay for any additional structural testing/inspection required for his convenience.

1.04 SUBMITTALS

D. Completed Contractor’s Statement of Responsibility

1.05 QUALITY ASSURANCE

A. Testing/Inspection Agency Qualifications: In accordance with the Minimum Special Inspector Qualifications Table.

1.06 STRUCTURAL TESTING AND SPECIAL INSPECTION REQUIRED FORMS

A. Specific structural testing and special inspection forms are included in this specification section as follows:
1. Minimum Special Inspector Qualifications Table
2. Statement of Special Inspections
3. Schedule of Special Inspections
4. Fabricator Certificate of Compliance
5. Final Report of Special Inspection

PART 2 - MATERIALS

Not Used.

PART 3 - EXECUTION

3.01 STRUCTURAL PRECONSTRUCTION MEETING

A. A structural preconstruction meeting may be conducted at the construction site by the Design Professional to discuss quality issues. The parties involved may be the Architect, Structural Engineer, Contractor, Structural Testing/Inspection Agency, appropriate subcontractors, suppliers, and detailers.

3.02 STRUCTURAL TESTING/INSPECTION AGENCY'S RESPONSIBILITIES

A. Cooperate with the Contractor and provide timely service.

B. Upon arriving at the construction site, sign in and notify the Contractor of presence.

C. Select the representative samples that are to be tested/inspected.

D. Perform tests/inspections as outlined in Contract Documents, the applicable code referenced standards, and as directed by the Design Professional.

E. Report work and materials not complying with Contract Documents immediately to the Contractor and Design Professional.

F. Leave copies of field notes with the Contractor prior to leaving the construction site. Field notes shall include the message given to the Contractor, date, time of message, name of Contractor's representative informed, type and location of work or materials tested/inspected, whether the work or materials complies with Contract Documents and name of the Structural Testing/Inspection Agency's representative.

G. Report and distribute results of tests/inspections promptly in the form of written reports as directed by the Design Professional.

H. Promptly report any non-conforming work in separate discrepancy reports indicating description, location, reference to applicable Contract Documents, resolution or corrective action taken and date.

I. Structural Testing/Inspection Agency shall not alter requirements of Contract Documents, approve or reject any portion of the work, or perform duties of the Contractor.

J. Initial and date the “Date Completed” box in the Schedule of Special Inspections as the inspection and testing activities are completed.

K. Submit a completed Final Report of Special Inspections at the completion of the special inspection activities.

3.03 CONTRACTOR’S RESPONSIBILITIES

A. Provide copy of Contract Documents to the Structural Testing/Inspection Agency.

B. Arrange the preconstruction meeting to discuss quality issues.

C. Notify the Structural Testing/Inspection Agency 48 hours in advance of operations to allow assignment of personnel and scheduling of tests.

D. Cooperate with Structural Testing/Inspection Agency and provide access to work.

E. Provide samples of materials to be tested in required quantities.

F. Furnish copies of mill test reports when requested.

G. Provide storage space for Structural Testing/Inspection Agency's exclusive use, such as for storing and curing concrete testing samples.

H. Provide labor to assist the Structural Testing/Inspection Agency in performing tests/inspections.

END OF SECTION

MINIMUM SPECIAL INSPECTOR QUALIFICATIONS TABLE

Category of Testing and Inspection	Minimum Qualifications (refer to key at end of Table)		
	Shop Testing or Inspection	Field Testing or Inspection	Review Testing, Certification, & Lab Reports
1704.2.5 Inspection of Fabricators			
1. Pre-cast concrete	A, C, E		
2. Structural steel construction	C, F, G		
3. Wood construction	A		
4. Cold formed metal construction	A		
1705.2, 1705.10, 1705.11& 1705.12 Steel Construction			
1. Verification of welding consumables, filler metals, procedure specifications, procedure qualification records and personnel performance qualification records			C, F
2. Nondestructive testing of welding	G	G	
3. Inspection of welding	C, F	C, F	
4. Verification of fabricator and erector documents as listed in AISC 360, chapter N, paragraph 3.2			A, C
5. Material verification of weld filler materials			C, F
6. Inspection of high strength bolting and steel frame joint details		A, C	
7. Inspection of embedments and erection of fabricated steel and steel frame elements		A, C, F	
8. Inspection of steel elements of composite construction		A, C, F	
9. Verification of reinforcing steel, cold formed steel deck and truss materials			A, C, F
10. Inspection of reinforcing steel, cold formed steel deck and trusses		A, C	
1705.3 & 1705.12 Concrete Construction			
1. Reinforcing placement, cast-in-place bolts, post installed anchors concrete and shotcrete placement and curing operations. Inspection of formwork for shape, location and dimensions		A, C, H	
2. Pre-stressing steel installation		A, C, D, E	
3. Erection of pre-cast concrete members		A, C, H	
4. Concrete field sampling and testing		J	
5. Concrete strength testing		P	
6. Review certified mill reports			A, C
7. Verify use of required design mix		A, I, J, H, C	
8. Pre-stressed (pre-tensioned) concrete force application	A, C, E		
9. Post-tensioned concrete force application		A, C, D	
10. Review of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs		A, C, D, H	
11. Reinforcing steel weldability, reinforcing welding, weld filler material		C, F	

(Table Continued)			
Category of Testing and Inspection	**Minimum Qualifications (refer to key at end of Table)**		
	Shop Testing or Inspection	**Field Testing or Inspection**	**Review Testing, Certification, & Lab Reports**
12. Testing of welding of reinforcing steel		G	
1705.4 Masonry			
1. Verification of *f'm* and *f'AAC*		A, C, L, M	
2. Mortar joint construction, grout protection and placement, materials proportion, type/size/location of reinforcement, structural elements, anchorage, and connectors		A, C, K	
3. Sampling/testing of grout/mortar specimens		A, C, L, M	
4. Observe preparation of masonry prisms for testing of compressive strength of masonry, *f'm* and *f'AAC*		A, C, K, L, M	
5. Inspection of welding of reinforcing steel		C, F	
6. Testing of welding of reinforcing steel		G	
1705.6& 1804 Soils			
1. Observe site preparation, fill placement testing of compaction for compliance with the construction documents for the project		A, C, I, N	
2. Observe test bearing materials below shallow foundations for ability to achieve design bearing capacity		A, C, I, N (Level III)	
3. Review compaction testing for compliance with the construction documents for the project			A
1705.5, 1705.10, 1705.11 & 1705.12 Wood Construction			
1. Observe structural panel sheathing, size of framing members, nail or staple diameter and length, number of fastener lines, and spacing of fastener lines and fasteners for compliance with construction documents for the project		A	
2. Observe temporary and permanent truss member restraint/bracing, field gluing of elements. Observe bolting, anchoring or other fastening of: shear walls, diaphragms, drag struts, braces and hold-downs.		A	
1705.7, 1705.8, 1705.9 & 1810 Pile and Pier Foundations			
1. Observe installation		A, N	
2. Observe load tests		A	
1705.13 Sprayed Fire-Resistant Materials			
1. Observe surface conditions, application, average thickness and density of applied material, and cohesive/adhesive bond		A, C	
1705.14 Mastic and Intumescent Fire-Resistant Coatings			
1. Observe application compliance with AWCI 12- B		A, C	
1705.15 Exterior Insulation and Finish Systems			

(Table Continued)			
Category of Testing and Inspection	**Minimum Qualifications (refer to key at end of Table)**		
	Shop Testing or Inspection	**Field Testing or Inspection**	**Review Testing, Certification, & Lab Reports**
1. Inspect EIFS systems		A, B, C, O	
1705.1 Special Cases			
1. Work of unusual or special nature		A, B, O	
1705.16 Fire-Resistant Penetrations and Joints	*See Requirements of IBC Sections 1705.16.1 and 17016.2*		
1705.17 Smoke Control	*See Requirements of IBC Section .1705.17.2*		
1705.10, 1705.11, 1705.12, Seismic and Wind Resistance			
1. Periodic inspection of fabrication, installation and/or anchorage of building systems and components		A	

KEY:

A. Georgia Professional Engineer (GA PE) competent in the specific task area or graduate of accredited engineering/engineering technology program under the direct supervision of a GA PE.
B. Georgia Registered Architect (GA RA) or graduate of accredited architecture/architecture technology program under the direction of a GA RA.
C. International Code Council (ICC) Special Inspector Certification specific to the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
D. Post-tensioning Institute (PTI) Certification, Level 2, bonded or unbonded as applicable.
E. Pre-stressed Concrete Institute (PCI) Certified Inspector.
F. American Welding Society (AWS) Certified Welding Inspector (CWI) or AWS Certified Associate Welding Inspector working under the direct on-site supervision of a CWI.
G. American Society for Nondestructive Testing (ASNT) Level II certification, or a Level III certification if previously certified as a Level II in the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
H. American Concrete Institute (ACI) Concrete Construction Special Inspector.
I. National Institute for Certification in Engineering Technologies (NICET) Level II or higher certification specific to the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
J. ACI Concrete Field Testing Technician with Grade 1 certification.
K. Georgia Concrete and Products Association (GC&PA) – Masonry Association of Georgia (MAG) Masonry Construction Inspector Certification.
L. National Concrete Masonry Association (NCMA) Concrete Masonry Testing Procedures certification.
M. GC&PA – MAG Masonry Testing Technician certification.
N. NICET Certified Engineering Technologist (CT).
O. Other Qualified Special Inspector as approved by the Building Official.
P. American Concrete Institute (ACI) Strength Testing Technician.

NOTES:

1. The Special Inspector shall meet one of the minimum qualifications listed for the applicable Category of Testing and Inspection.
2. Materials testing shall be done by an Approved Testing Agency meeting the requirements of IBC Section 1703 and ASTM E 329.

STATEMENT OF SPECIAL INSPECTIONS

PROJECT: _____

LOCATION: _____

PERMIT APPLICANT: _____

APPLICANT'S ADDRESS: _____

ARCHITECT OF RECORD: _____

STRUCTURAL ENGINEER OF RECORD: **Martin S. Kigudde, PE**

MECHANICAL ENGINEERS OF RECORD: _____

ELECTRICAL ENGINEERS OF RECORD: _____

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE: _____

This Statement of Special Inspections is submitted in accordance with Section 1704.3 of the 2018 International Building Code. It includes a *Schedule of Special Inspection Services* applicable to the above-referenced Project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. If applicable, it includes *Special Inspections for Seismic Resistance* and/or *Special Inspections for Wind Resistance*.

Are *Special Inspections for Seismic Resistance* included in the *Statement of Special Inspections*? ☐ Yes ☒ No

Are *Special Inspections for Wind Resistance* included in the *Statement of Special Inspections*? ☐ Yes ☒ No

The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the Building Official and to the Registered Design Professional in Responsible Charge at a frequency agreed upon by the Design Professional and the Building Official prior to the start of work. Discrepancies shall be brought to the immediate attention of the Contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible charge of special inspections and corrections of any discrepancies noted in the inspections shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge at the conclusion of the project.

Frequency of interim report submittals to the Registered Design Professional in Responsible Charge:

__Weekly __Bi-Weekly _X_Monthly Other; specify:_____

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Statement of Special Inspections Prepared by:

Preparer's Seal

Martin S. Kigudde
Type or print name

_____
Signature Date

Building Official's Acceptance:

_____
Signature Date
Permit Number:

Frequency of interim report submittals to the Building Official:

__Monthly __Bi- Monthly __Upon Completion Other; specify:_____

SCHEDULE OF SPECIAL INSPECTIONS TABLE

Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
1704.2.5 Inspection of Fabricators Required where structural load-bearing members and assemblies are fabricated in a shop, except not required where fabricator is approved in accordance with section 1704.2.5.2. Where this exception is utilized, at the completion of fabrication, the approved fabricator shall submit a certificate of compliance to the building official stating that the work was performed in accordance with the approved construction documents					
1. Verify fabrication/quality control procedures	In-plant review (3)	Y	Periodic	1	
1705.1.1 Special Cases					
1. Work unusual in nature, including but not limited to alternative materials and systems, unusual design applications, materials and systems with special manufacturer's requirements	Submittal review, shop (3) and/or field inspection	N			
2. Inspection of anchors post-installed in solid grouted masonry: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, masonry unit, grout, masonry compressive strength, anchor embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source	1	
1705.2 Steel Construction Special inspection of the steel fabrication process shall not be required where the fabricator does not perform any welding, thermal cutting or heating operation of any kind as part of the fabrication process.					
1. Fabricator and erector documents (Verify reports and certificates as listed in AISC 360, chapter N, paragraph 3.2 for compliance with construction documents)	Submittal Review	Y	Each submittal	1	
2. Material verification of structural steel	Shop (3) and field inspection	Y	Periodic	1	
3. Embedments (Verify diameter, grade, type, length, embedment. See 1705.3 for anchors)	Field inspection	Y	Periodic	1	
4. Verify member locations, braces, stiffeners, and application of joint details at each connection comply with construction documents	Field inspection	Y	Periodic	1	

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
5. Structural steel welding:					
a. Inspection tasks Prior to Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-1)	Shop (3) and field inspection	Y	Observe or Perform as noted (4)	1	
b. Inspection tasks During Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-2)	Shop (3) and field inspection	Y	Observe (4)	1	
c. Inspection tasks After Welding (Observe, or perform for each welded joint or member, the QA tasks listed in AISC 360, Table N5.4-3)	Shop (3) and field inspection	Y	Observe or Perform as noted (4)	1	
d. Nondestructive testing (NDT) of welded joints: As a minimum for special inspections, AISC 360 Chapter N requires UT testing of complete joint penetration groove welds (CJP) subject to transversely applied tension loading in butt, T- and corner joints, in materials 5/16" (8mm) thick or greater. Further NDT testing, including UT testing of partial penetration groove welds (PJP) and magnetic particle or penetrant testing of fillet welds, may be added at the option of the engineer of record as a project requirement. AISC 360 Chapter N also allows reduction or increase in the rate of UT testing if approved by the engineer of record and by the authority having jurisdiction.					
1) Complete penetration groove welds 5/16" or greater	Shop (3, 5) or field ultrasonic testing - 100%	Y	Periodic	1	
2) Thermally cut surfaces of access holes when material t > 2"	Shop (3) or field magnetic Particle or Penetrant testing	Y	Periodic	1	

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
3) Welded joints subject to fatigue when required by AISC 360, Appendix 3, Table A-3.1 This requirement is intended to apply when the flange thickness of rolled shapes exceeds 2" or when the web thickness of built up shapes exceeds 2". Any crack shall be deemed unacceptable regardless of size or location.	Shop (3) or field radiographic or Ultrasonic testing	N	Periodic	1	
4) Fabricator's NDT reports when fabricator performs NDT NDT of welds completed in an approved fabricator's shop may be performed by that fabricator only when approved by the authority having jurisdiction. Special Inspections include review of reports of all NDT testing done by the fabricator.	Verify reports	Y	Each submittal (5)	1	
6. Structural steel bolting:	Shop (3) and field inspection				
a. Inspection tasks Prior to Bolting (Observe, or perform tasks for each bolted connection, in accordance with QA tasks listed in AISC 360, Table N5.6-1)		N	Observe or Perform as noted (4)	1	
b. Inspection tasks During Bolting (Observe the QA tasks listed in AISC 360, Table N5.6-2)		Y	Observe (4)	1	
1) Pre-tensioned and slip-critical joints					
a) Turn-of-nut with matching markings		N	Periodic		
a) Direct tension indicator		Y	Periodic	1	
b) Twist-off type tension control bolt		Y	Periodic	1	
c) Turn-of-nut without matching markings		N	Continuous		
d) Calibrated wrench		N	Continuous		
2) Snug-tight joints		N	Periodic		

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
c. Inspection tasks After Bolting (Perform tasks for each bolted connection in accordance with QA tasks listed in AISC 360, Table N5.6-3)		Y	Perform (4)	1	
7. Inspection of steel elements of composite construction prior to concrete placement in accordance with QA tasks listed in AISC 360, Table N6.1	Shop (3) and field inspection and testing	Y	Observe or Perform as noted (4)	1	
1705.2.2 Steel Construction Other Than Structural Steel					
1. Material verification of cold-formed steel deck:					
a. Identification markings	Field inspection	Y	Periodic	1	
b. Manufacturer's certified test reports	Submittal Review	N	Each submittal		
2. Connection of cold-formed steel deck to supporting structure:	Shop (3) and field inspection				
a. Welding Per AWS D1.3.		Y	Periodic	1	
b. Other fasteners (in accordance with AISC 360,Section N6)					
1) Verify fasteners are in conformance with approved submittal		Y	Periodic	1	
2) Verify fastener installation is in conformance with approved submittal and manufacturer's recommendations		Y	Periodic	1	
3. Reinforcing steel Per AWS D1.4 and ACI 318 Section 3.5.2.	Shop (3) and field inspection				
a. Verification of weldability of steel other than ASTM A706		N	Periodic		
b. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames, boundary elements of special concrete structural walls and shear reinforcement		N	Continuous		
c. Shear reinforcement		N	Continuous		
d. Other reinforcing steel		N	Periodic		

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
4. Cold-formed steel trusses spanning 60 feet or greater					
a. Verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection	N	Periodic		
1705.3 Concrete Construction Special Inspections are not required for certain isolated spread concrete footings, certain continuous concrete footings, nonstructural concrete slabs supported directly on the ground, and concrete foundation walls constructed in accordance with Table 1807.1.6.2. See Section 1705.3 for these specific exceptions. Special inspections are not required for any concrete patios, driveways and sidewalks, on grade.					
1. Inspection of reinforcing steel installation (see 1705.2.2 for welding)	Shop (3) and field inspection	Y	Periodic.	1	
2. Inspection of prestressing steel installation	Shop (3) and field inspection	N	Periodic		
3. Inspection of anchors cast in concrete where allowable loads have been increased per section 1908.5 or where strength design is used	Shop (3) and field inspection	N	Periodic		
4. Inspection of anchors and reinforcing steel post-installed in hardened concrete: Per research reports including verification of anchor type, anchor dimensions, hole dimensions, hole cleaning procedures, anchor spacing, edge distances, concrete minimum thickness, anchor embedment and tightening torque	Field inspection	Y	Periodic or as required by the research report issued by an approved source	1	
5. Verify use of approved design mix	Shop (3) and field inspection	Y	Periodic	1	
6. Fresh concrete sampling, perform slump and air content tests and determine temperature of concrete	Shop (3) and field inspection	Y	Continuous	1	
7. Inspection of concrete and shotcrete placement for proper application techniques	Shop (3) and field inspection	Y	Continuous	1	
8. Inspection for maintenance of specified curing temperature and techniques	Shop (3) and field inspection	Y	Periodic	1	
9. Inspection of prestressed concrete	Shop (3) and field inspection	N			
a. Application of prestressing force		N	Continuous		

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
b. Grouting of bonded prestressing tendons in the seismic-force-resisting system		N	Continuous		
c. Verify proper installation of encapsulation caps and grouting of pocket recesses.		N	Continuous		
10. Erection of precast concrete members Inspection of the erection of precast concrete has always been included in IBC, but no specific inspections have been indicated. Inspection of bolts and welds for precast concrete are covered in Section 1705.2 Steel Construction. Any specific precast erection inspection requirements should either be added to the project Special Inspection Schedule or Construction Documents. The following are some inspections that the Design Professional should consider: A. Verify member locations and joint details comply with construction and erection documents B. Verify proper bearing pad type and placement C. Verify placement of grout (including hot and cold weather procedures and that max. specified number of levels to be placed before grouting are not exceeded D. Verify joint widths are within specified tolerance where joints are to receive sealant E. Verify thread engagement and torque for mechanical connections					

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
a. Inspect in accordance with construction documents	Field inspection	N	In accordance with construction documents		
b. Perform inspections of welding and bolting in accordance with Section 1705.2	Field inspection	N	In accordance with Section 1705.2		
c. Application of joint details at each connection	Field inspection	N	Periodic		
11. Verification of in-situ concrete strength, prior to stressing of tendons in post tensioned concrete and prior to removal of shores and forms from beams and structural slabs	Review field testing and laboratory reports	N	Periodic		
12. Inspection of formwork for shape, lines, location and dimensions	Field inspection	N	Periodic		
13. Testing of concrete floor flatness as required per construction documents.	Field testing	Y	Periodic	1	
14. Concrete strength testing and verification of compliance with construction documents	Field testing and review of laboratory reports	Y	Periodic	1	
1705.4 Masonry Construction Masonry construction shall be inspected and verified in accordance with TMS 402/ACI 530/ASCE 5 and TMS 602/ACI 530.1/ASCE 6 quality assurance program requirements. Exceptions: See 1705.5 Risk Categories: See 1604.5					
(A) Level A, B + C Quality Assurance: Masonry in Risk Category I, II, or III structures and designed in accordance with ACI 530 Chapter 5, 6, or 7 (Empirical Design, Veneer, Glass Unit Masonry)					
1. Verify compliance with approved submittals	Field Inspection	Y	Periodic	1	
(B) Level B Quality Assurance: 1. Masonry in Risk Category IV structures and designed in accordance with ACI 530 Chapter 6 or 7 (Veneer, Glass Unit Masonry)					

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
2. Masonry in Risk Category I, II, or III structures and designed in accordance with ACI 530 Chapter 2, 3, 4, 8 or Appendix B (Allowable Stress Design, Strength Design, Prestressed Masonry, AAC Masonry, Masonry Infill)					
1. Verification of f'm and f'AAC prior to construction	Testing by unit strength method or prism test method	Y	Periodic	1	
(C) Level C Quality Assurance: Masonry in Risk Category IV structures and designed in accordance with ACI 530 Chapter 2, 3, 4, 8 or Appendix B (Allowable Stress Design, Strength Design, Prestressed Masonry, AAC Masonry, Masonry Infill)					
1. Verification of f'm and f'AAC prior to construction and for every 5,000 SF during construction	Testing by unit strength method or prism test method	N	Periodic		
2. Verification of proportions of materials in premixed or preblended mortar, prestressing grout, and grout other than self-consolidating grout, as delivered to the project site	Field inspection	N	Continuous		
3. Verify placement of masonry units	Field Inspection	N	Periodic		
(D) Levels B + C Quality Assurance:					
1. Verification of Slump Flow and Visual Stability Index (VSI) of self-consolidating grout as delivered to the project	Field testing	Y	Continuous	1	
2. Verify compliance with approved submittals	Field inspection	Y	Periodic	1	
3. Verify proportions of site-mixed mortar, grout and prestressing grout for bonded tendons	Field Inspection	Y	Periodic	1	
4. Verify grade, type, and size of reinforcement and anchor bolts, and prestressing tendons and anchorages	Field Inspection	Y	Periodic	1	
5. Verify construction of mortar joints	Field Inspection	Y	Periodic	1	

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
6. Verify placement of reinforcement, connectors, and prestressing tendons and anchorages	Field Inspection	Y	Level B - Periodic	1	
		N	Level C - Continuous		
7. Verify grout space prior to grouting	Field Inspection	Y	Level B - Periodic	1	
		N	Level C - Continuous		
8. Verify placement of grout and prestressing grout for bonded tendons	Field Inspection	Y	Continuous	1	
9. Verify size and location of structural masonry elements	Field Inspection	Y	Periodic	1	
10. Verify type, size, and location of anchors, including details of anchorage of masonry to structural members, frames, or other construction.	Field inspection	Y	Level B - Periodic	1	
		N	Level C - Continuous		
11. Verify welding of reinforcement (see 1705.2.2)	Field inspection	N	Continuous		
12. Verify preparation, construction, and protection of masonry during cold weather (temperature below 40^{O}F) or hot weather (temperature above 90^{O}F)	Field inspection	Y	Periodic	1	
13. Verify application and measurement of prestressing force	Field Inspection	N	Continuous		
14. Verify placement of AAC masonry units and construction of thin-bed mortar joints (first 5000 SF of AAC masonry)	Field inspection	N	Continuous		
15. Verify placement of AAC masonry units and construction of thin-bed mortar joints (after the first 5000 SF of AAC masonry)	Field inspection	N	Level B - Periodic		
		N	Level C - Continuous		
16. Verify properties of thin-bed mortar for AAC masonry (first 5000 SF of AAC masonry)	Field inspection	N	Continuous		
17. Verify properties of thin-bed mortar for AAC masonry (after the first 5000 SF of AAC masonry)	Field inspection	N	Level B - Periodic		
		N	Level C - Continuous		
18. Prepare grout and mortar specimens	Field testing	Y	Level B - Periodic	1	
		N	Level C - Continuous		
19. Observe preparation of prisms	Field inspection	Y	Level B -	1	

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
			Periodic		
		N	Level C - Continuous		
1705.5 Wood Construction Special inspections of the fabrication process of prefabricated wood structural elements and assemblies shall be in accordance with Section 1704.2.5. High-load diaphragms designed in accordance with Section 2306.2 shall be installed with special inspections as indicated in Section 1704.2. Exception: Special inspections are not required for portions of structures designed and constructed in accordance with IBC Section 2308 unless the approved construction documents indicate otherwise.					
1. Inspection of the fabrication process of wood structural elements and assemblies in accordance with Section 1704.2.5	In-plant review (3)	N	Periodic		
2. For high-load diaphragms, verify grade and thickness of structural panel sheathing agree with approved building plans	Field inspection	N	Periodic		
3. For high-load diaphragms, verify nominal size of framing members at adjoining panel edges, nail or staple diameter and length, number of fastener lines, and that spacing between fasteners in each line and at edge margins agree with approved building plans	Field inspection	N	Periodic		
4. Verify grade of lumber, manufactured wood products and sheathing.	Field inspection	N	Periodic		
5. Inspect details of wood framing including member types, sizes, spacing, blocking, bridging and bearing.	Field inspection	N	Periodic		
6. Inspect wood connections including nailing, bolting, tie downs, hangers and anchors.	Field inspection	N	Periodic		
7. Inspect diaphragms for sheathing thickness and for fastener size and spacing.	Field inspection	N	Periodic		

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
8. Metal-plate-connected wood trusses spanning 60 feet or greater: verify temporary and permanent restraint/bracing are installed in accordance with the approved truss submittal package	Field inspection	N	Periodic		
1705.6 Soils The approved geotechnical report and the construction documents prepared by the registered design professionals shall be used to determine compliance. 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.					
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	Field inspection	Y	Periodic	1	
2. Verify excavations are extended to proper depth and have reached proper material.	Field inspection	Y	Periodic	1	
3. Perform classification and testing of controlled fill materials.	Field inspection	Y	Periodic	1	
4. Verify use of proper materials, densities, and lift thicknesses during placement and compaction of controlled fill	Field inspection	Y	Continuous	1	
5. Prior to placement of controlled fill, observe subgrade and verify that site has been prepared properly	Field inspection	Y	Periodic	1	
1705.7 Driven Deep Foundations The approved geotechnical report, and the construction documents prepared by the registered design professionals, shall be used to determine compliance.					
1. Verify element materials, sizes and lengths comply with requirements	Field inspection	N	Continuous		
2. Determine capacities of test elements and conduct additional load tests, as required	Field inspection	N	Continuous		
3. Observe driving operations and maintain complete and accurate records for each element	Field inspection	N	Continuous		

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
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	Field inspection	N	Continuous		
5. For steel elements, perform additional inspections per Section 1705.2	See Section 1705.2	N	See Section 1705.2		
6. For concrete elements and concrete-filled elements, perform additional inspections per Section 1705.3	See Section 1705.3	N	See Section 1705.3		
7. For specialty elements, perform additional inspections as determined by the registered design professional in responsible charge	Field inspection	N	In accordance with construction documents		
8. Perform additional inspections and tests in accordance with the construction documents	Field Inspection and testing	N	In accordance with construction documents		
1705.8 Cast-in-Place Deep Foundations The approved geotechnical report, and the construction documents prepared by the registered design professionals, shall be used to determine compliance.					
1. Observe drilling operations and maintain complete and accurate records for each element	Field inspection	N	Continuous		
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	Field inspection	N	Continuous		
3. For concrete elements, perform additional inspections in accordance with Section 1705.3	See Section 1705.3	N	See Section 1705.3		
4. Perform additional inspections and tests in accordance with the construction documents	Field Inspection and testing	N	In accordance with construction documents		
1705.9 Helical Pile Foundations					

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
The approved geotechnical report, and the construction documents prepared by the registered design professional, shall be used to determine compliance.					
1. Verify installation equipment, pile dimensions, tip elevations, final depth, final installation torque and other data as required.	Field inspection	N	Continuous		
2. Perform additional inspections and tests in accordance with the construction documents	Field Inspection and testing	N	In accordance with construction documents		
1705.10.1 Structural Wood Special Inspections For Wind Resistance					
1. Inspection of field gluing operations of elements of the main windforce-resisting system	Field inspection	N	Continuous		
2. Inspection of nailing, bolting, anchoring and other fastening of components within the main windforce-resisting system	Shop (3) and field inspection	N	Periodic		
1705.10.2 Cold-formed Steel Special Inspections For Wind Resistance					
1. Inspection during welding operations of elements of the main windforce-resisting system	Shop (3) and field inspection	N	Periodic		
2. Inspections for screw attachment, bolting, anchoring and other fastening of components within the main windforce-resisting system	Shop (3) and field inspection	N	Periodic		
1705.10.3 Wind-resisting Components					
1. Roof cladding	Shop (3) and field inspection	N	Periodic		
2. Wall cladding	Shop (3) and field inspection	N	Periodic		
1705.11.1 Structural Steel Special Inspections for Seismic Resistance Mandatory in accordance with AISC 341 for the seismic force-resisting systems in Seismic Design Category C, D, E or F. Exceptions: 1. Structures assigned to Seismic Design Category C with structural steel systems not specifically detailed for seismic resistance with a Response Modification Coefficient, R, of 3 or less, excluding cantilever column systems.					

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
2. Exceptions listed in Sections 1704.2 and 1705.11.					
1. Inspection of structural steel in accordance with AISC 341	Shop (3) and field inspection	N	In accordance with AISC 341		
1705.11.2 Structural Wood Special Inspections for Seismic Resistance Mandatory for the seismic force-resisting systems in Seismic Design Category C, D, E or F. Exceptions: 1. Special inspection is not required for wood shear walls, shear panels and diaphragms, including nailing, bolting, anchoring and other fastening to other components of the seismic force-resisting system, where the fastener spacing of the sheathing is more than 4 inches on center. 2. Exceptions listed in Sections 1704.2 and 1705.11.					
1. Inspection of field gluing operations of elements of the seismic-force resisting system	Field inspection	N	Continuous		
2. Inspection of nailing, bolting, anchoring and other fastening of components within the seismic-force- resisting system	Shop (3) and field inspection	N	Periodic		
1705.11.3 Cold-formed Steel Light-Frame Construction Special Inspections for Seismic Resistance Mandatory for the seismic-force-resisting systems in Seismic Design Category C, D, E or F. Exceptions: 1. Sheathing is gypsum board or fiberboard. 2. Sheathing is wood structural panel or steel sheet on only one side and the fastener spacing of the sheathing is more than 4 inches on center. 3. Exceptions listed in Sections 1704.2 and 1705.11.					
1. Inspection during welding operations of elements of the seismic-force-resisting system	Shop (3) and field inspection	N	Periodic		
2. Inspections for screw attachment, bolting, anchoring and other fastening of components within the seismic-force-resisting system	Shop (3) and field inspection	N	Periodic		
1705.11.4 Designated Seismic Systems Verification					

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
Definition, Designed Seismic Systems: Those nonstructural components that require design in accordance with ASCE 7 Chapter 13 and for which the component importance factor, Ip, is greater than 1 in accordance with ASCE 7 Section 13.1.3.					
1. Inspect and verify that that the component label, anchorage or mounting conforms to the certificate of compliance in accordance with Section 1705.12.3 Mandatory for structures assigned to Seismic Design Category C, D, E or F.	Field inspection	N	Periodic		
1705.11.5 Architectural Components Special Inspections for Seismic Resistance					
1. Inspection during the erection and fastening of exterior cladding and interior and exterior veneer Mandatory for structures assigned to Seismic Design Category D, E or F. Exceptions: 1. Not required for exterior cladding, interior and exterior nonbearing walls, and interior and exterior veneer 30 feet or less in height above grade or walking surface. 2. Not required for exterior cladding and interior and exterior veneers weighing 5 psf or less. 3. Not required for interior nonbearing walls weighing less than 15 psf.	Field inspection	N	Periodic		
2. Inspection during the erection and fastening of interior and exterior nonbearing walls	Field inspection	N	Periodic		
3. Inspection during anchorage of access floors Mandatory for structures assigned to Seismic Design Category D, E or F.	Field inspection	N	Periodic		
1705.11.6 Mechanical and Electrical Components Special Inspections for Seismic Resistance					

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
1. Inspection during the anchorage of electrical equipment for emergency or standby power systems Mandatory for structures assigned to Seismic Design Category C, D, E or F.	Field inspection	N	Periodic		
2. Inspection during the anchorage of other electrical equipment Mandatory for structures assigned to Seismic Design Category C, D, E or F.	Field inspection	N	Periodic		
3. Inspection during installation and anchorage of piping systems designed to carry hazardous materials, and their associated mechanical units Mandatory for structures assigned to Seismic Design Category C, D, E or F.	Field inspection	N	Periodic		
4. Inspection during the installation and anchorage of HVAC ductwork that will contain hazardous materials Mandatory for structures assigned to Seismic Design Category C, D, E or F.	Field inspection	N	Periodic		
5. Inspection during the installation and anchorage of vibration isolation systems Mandatory for structures assigned to Seismic Design Category C, D, E or F, where the construction documents require a nominal clearance of 0.25 inches or less, between the equipment support frame and restraint.	Field inspection	N	Periodic		
1705.11.7 Storage Racks Special Inspections for Seismic Resistance					
1. Inspection during the anchorage of storage racks 8 feet or greater in height Mandatory for structures assigned to Seismic Design Category D, E or F.	Field inspection	N	Periodic		
1705.11.8 Seismic Isolation Systems					

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
1. Inspection during the fabrication and installation of isolator units and energy dissipation devices used as part of the seismic isolation system See ASCE 7 Section 17 for additional inspection and quality control requirements.	Shop and field inspection	N	Periodic		
1705.12.1 Concrete Reinforcement Testing and Qualification for Seismic Resistance Applies to special moment frames, special structural walls, and coupling beams connecting special structural walls in structures assigned to Seismic Design Category B, C, D, E or F. The reinforcement shall comply with ACI 318 Section 21.1.5.2, and if it is to be welded, also determine weldability in accordance with ACI 318 Section 3.5.2.					
1. Review certified mill test reports for each shipment of reinforcement used to resist earthquake-induced flexural and axial forces in reinforced concrete special moment frames, special structural walls, and coupling beams connecting special structural walls	Review certified mill test reports	N	Each shipment		
2. Verify reinforcement weldability of ASTM A615 reinforcement used to resist earthquake-induced flexural and axial forces in reinforced concrete special moment frames, special structural walls, and coupling beams connecting special structural walls	Review test reports	N	Each shipment		
1705.12.2 Structural Steel Testing and Qualification for Seismic Resistance Applies to structural steel systems designed to AISC 341 and assigned to Seismic Design Category C, D, E or F. This is not required for steel structures assigned to Seismic Design Category C that are not specifically detailed for seismic resistance, with a response modification coefficient, R, of 3 or less, excluding cantilever column systems.					
1. Test in accordance with the quality assurance requirements of AISC 341	Shop (3) and field testing	N	Per AISC 341		
1705.12.3 Seismic Certification of Nonstructural Components Applies to architectural, mechanical and electrical components in structures assigned to Seismic Design Category C, D, E or F and where the requirements of ASCE 7 Section 13.2.1 are met by submittal of manufacturer's certification, in accordance with Item 2.					
1. Review certificate of compliance for designated seismic system components.	Certificate of compliance review	N	Each submittal		

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
Review the construction documents for the requirements for certification by analysis, testing or experience data for nonstructural components and designated seismic systems in accordance with ASCE 7 Section 13.2.					
1705.12.4 Seismic Isolation Systems Test in accordance with ASCE 7 Section 17.8.					
1. Test seismic isolation system in accordance with ASCE 7 Section 17.8	Prototype testing	N	Per ASCE 7		
1705.13 Sprayed Fire-resistant Materials Inspect in accordance with ASTM E 605, ASTM E 736, and the written instructions of approved manufacturers.					
1. Verify surface condition preparation of structural members	Field inspection	N	Periodic		
2. Verify application of sprayed fire-resistant materials	Field inspection	N	Periodic		
3. Verify average thickness of sprayed fire-resistant materials applied to structural members Thickness testing required for minimum of 25% of structural members on each floor. See Section 1705.13 for testing requirements for floor, roof and wall assemblies.	Field inspection	N	Periodic		
4. Verify density of the sprayed fire-resistant material complies with approved fire-resistant design	Field inspection and testing	N	Per IBC Section 1705.13.5		
5. Verify the cohesive/adhesive bond strength of the cured sprayed fire-resistant material	Field inspection and testing	N	Per IBC Section 1705.13.6		
1705.14 Mastic and Intumescent Fire-Resistant Coatings					
1. Inspect mastic and intumescent fire-resistant coatings applied to structural elements and decks Special inspections shall be in accordance with AWCI 12-B. Special inspections shall be based on	Field inspection	N	Periodic		

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**
the fire-resistance design as designated in the approved construction documents.					
1705.15 Exterior Insulation and Finish Systems (EIFS)					
1. Verify materials, details and installations are per the approved construction documents Mandatory except for applications installed over masonry or concrete walls, or where installed over a water-resistive barrier with means of draining moisture to the exterior.	Field inspection	N	Periodic		
2. Inspection of water-resistive barrier over sheathing substrate Mandatory where water-resistive barrier coating is installed over sheathing substrate.	Field inspection	N	Periodic		
1705.16 Fire-Resistant Penetrations and Joints Mandatory in high-rise buildings or in buildings assigned to Risk Category III or IV in accordance with Section 1604.5.					
1. Inspect penetration firestop systems	Field testing	Y	Per ASTM E2174	1	
2. Inspect fire-resistant joint systems	Field testing	Y	Per ASTM E2393	1	
1705.17 Smoke Control Systems Mandatory by special inspection agencies having expertise in fire protection engineering, mechanical engineering and certification as air balancers.					
1. Leakage testing and recording of device locations prior to concealment	Field testing	N	Periodic		
2. Prior to occupancy and after sufficient completion, pressure difference testing, flow measurements, and detection and control verification	Field testing	N	Periodic		
*** INSPECTION AGENTS**	**FIRM**		**ADDRESS**		**PHONE NO.**
1. Qualified Testing Agent (TBD)					
2. Sykes Consulting Inc.					
3.					
4.					

NOTES:

1. The inspection and testing agent(s) shall be engaged by the Owner or the Owner's Agent, and

(Table Continued)					
Project					
Material / Activity	**Service**	**Applicable to this Project**			
		Y/N	**Extent**	**Agent***	**Date Completed**

not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official prior to commencing work. The qualifications of the Special Inspector(s) and/or testing agencies may be subject to the approval of the Building Official and/or the Design Professional.

2. *The list of Special Inspectors may be submitted as a separate document, if noted so above.*
3. *Special Inspections as required by Section 1704.2.5 are not required where the fabricator is approved in accordance with IBC Section 1704.2.5.2*
4. *Observe on a random basis, operations need not be delayed pending these inspections. Perform these tasks for each welded joint, bolted connection, or steel element.*
5. *NDT of welds completed in an approved fabricator's shop shall be performed by that fabricator's qualified Quality Control Inspector per AISC 360, N7.*

Are *Requirements for Seismic Resistance* included in the *Statement of Special Inspections*? Yes ☒ No

Are *Requirements for Wind Resistance* included in the *Statement of Special Inspections*? Yes ☒ No

DATE:

FINAL REPORT OF SPECIAL INSPECTIONS

PROJECT: _____

LOCATION: _____

PERMIT APPLICANT: _____

APPLICANT'S ADDRESS: _____

ARCHITECT OF RECORD: _____

STRUCTURAL ENGINEER OF RECORD: _____

MECHANICAL ENGINEERS OF RECORD _____

ELECTRICAL ENGINEERS OF RECORD: _____

REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE: _____

To the best of my information, knowledge, and belief, which are based upon observations or diligent supervision of our inspection services for the above-referenced Project, I hereby state that the special inspections or testing required for this Project, and designated for this Agent in the Schedule of Special Inspection Services, have been completed in accordance with the Contract Documents.

The Special Inspection program does not relieve the Contractor of the responsibility to comply with the Contract Documents. Jobsite safety and means and methods of construction are solely the responsibility of the Contractor.

Interim reports submitted prior to this final report and numbered_____to____form a basis for, and are to be considered an integral part of this final report. The following discrepancies that were outstanding since the last interim report dated_____have been corrected:

_____

_____

_____

_____

_____

(Attach 8 ½"x11" continuation sheet(s) if required to complete the description of corrections)

Prepared By:

_____
Special Inspection Agent/Firm

_____
Type or print name

_____
Signature