Statement of Special Inspections

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- ☑ Soils and Foundations
- ☑ Cast-In-Place Concrete
- ☐ Special Cases
- ☑ Structural Steel
- ☑ Wood Construction
- ☑ Masonry

General Notes

The Inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and 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 all personnel performing Special Inspections and testing activities are subject to the approval of the Building Official and E.O.R. The credentials of all inspectors and testing technicians shall be provided if requested.

The special Inspectors shall keep records of Inspections and shall furnish Inspection reports to the owner, Engineer of Record (E.O.R.) and Architect of Record (A.O.R.). Field and testing result reports shall be submitted to all designated parties as they are completed. The reports shall indicate that the work performed was done in accordance to the construction drawings. Discrepancies shall be brought to the attention of the general contractor for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the E.O.R. prior to completion of that phase of work. A final report that documents required special inspections and corrections of discrepancies shall be submitted by the General Contractor to the Owner, E.O.R. and A.O.R.

Soils and Foundations

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Shallow Foundations	*Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.* *Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill.*	*P* *C*
2. Controlled Structural Fill	*Perform sieve tests (ASTM D422 & D1140) and modified Proctor tests (ASTM D1557) of each source of fill material.* *Inspect placement, lift thickness and compaction of controlled fill.* *Test density of each lift of fill by nuclear methods (ASTM D2922)* *Verify extent and slope of fill placement.*	*C*

Note:
1. Special Inspection is not required during placement of controlled fill having a total depth of 12 inches or less.

Cast-in-Place Concrete

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Mix Design	*Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed that allowed by the mix design. Submit proposed mix design of each class of concrete to Structural Engineer of Record and to inspection and testing firm for review prior to commencement of work.*	*P*
2. Material Certification	*Review for conformance to contract documents. Submit to Structural Engineer of Record for review.*	*P*
3. Anchor Rods	*Inspect size, positioning and embedment of anchor rods. Inspect concrete placement and consolidation around anchors.*	*C*
4. Concrete Placement	*Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.*	*C*
5. Sampling and Testing of Concrete	*Test concrete compressive strength (ASTM C31 & C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064). Three concrete test cylinders will be taken for every 75 or less cubic yards of each class of concrete placed, or concrete placed on any given day. One additional test cylinder will be taken during cold weather concreting, cured on job site under same conditions as concrete represents.*	*C*
6. Curing and Protection	*Inspect curing, cold weather protection and hot weather protection procedures.*	*P*

Note: Special Inspection is not required for flatwork patios, driveways and sidewalks, on grade not shown on structural drawings.

Structural Steel

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Material Certification	*Review for conformance to contract documents. Submit to Structural Engineer of Record for review.*	*P*
2. Anchor Rods and embedded plates	*Inspect size, positioning and embedment of anchor rods and embedded plates*	*C*
3. Welder Qualification	*Qaulification per AWS D1.1, Subclause 6.1.4., D1.1M*	*P*
4. Weld Acceptance	*Welds meet visual acceptance per AWS D1.1/D1.1M /C*	*C*

Wood Construction

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Fabricator Certification/ Quality Control Procedures ☐ Fabricator Exempt	*Inspect shop fabrication and quality control procedures for wood truss plant.* *Confirm certification of supplier.*	*P*
2. Material Grading	*Inspect grade stamps on structural lumber for compliance with the contract documents.*	*P*
3. Connections	*Verify connection hardware and its installation. Inspect bearing, nails, bolts, hangers or clips, or other devices are tight and otherwise properly installed per the contract documents.*	*C*
4. Framing and Details	*Inspect members for size and placement for conformance to the SER approval submittals and contract document. Review engineered joist shop drawings. Submit to SER for review.*	*P*
5. Diaphragms & Shearwalls	*Inspect thickness and grade of plywood (or OSB), blocking, placement, embedment, size of hold down anchors and the edge and field nailing of the plywood (or OSB) to the framing for conformance to the contract documents.*	*C*
6. Prefabricated Wood Trusses	*Inspect the fabrication of wood trusses. Bottom chord splices are prohibited in the middle third point of the truss.*	*P*
7. Permanent Truss Bracing	*Bridging and bracing installed per the approved truss shop drawings.*	*P*

Masonry

Item	Scope	Monitoring: Periodic (P) Continuous (C)
1. Verify Compliance with the approved submittal	*Review submittals.*	*P*
2. Verification of F'M	*Review submittals.*	*P*
3. As masonry construction begins verify for comprlinace	*Verify.* *a. Portions of size prrepared mortar.* *b. Construction of mortar joints.* *c. location of connection.*	*P*
4. During construction	*Verify.* *a. Type, size and location of anchors, including other details of anchorage of masonry to structural members, frames or other construction.* *b. preparation construction and portion of masonry during cold weather (temperature below 40° F) or hot weather (temperature above 90°)*	*P*
5. Observe preparation of mortar specimens and / or prisms	*Field review.* *a. Preparation of mortar cubes* *b. Preparation of test prisms*	*P*

Special Cases

Item	Scope	Monitoring: Periodic (P) Continuous (C)
Epoxy Anchors In Concrete or CMU	*Review anchors and product being used for conformance to contract documents. Observe installation for compliance to manufacturers specifications. Perform pull test to 125% of allowable design load per manufacturer specifications. (Minimum of 10% of total anchors, to include a minimum of one of each type, size or embedment.)*	*C*

STRUCTURAL STEEL:

1. DESIGN, DETAIL AND ERECT STRUCTURAL STEEL ELEMENTS IN ACCORDANCE WITH THE FOLLOWING:
   A. AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
   B. AISC MANUAL OF STEEL CONSTRUCTION, ALLOWABLE STRESS DESIGN.
   C. AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
   D. AWS STRUCTURAL WELDING CODE, D1.1.
2. PROVIDE STRUCTURAL STEEL OF THE FOLLOWING ASTM DESIGNATIONS UNLESS OTHERWISE NOTED:
   A. ANGLES, BENT PLATES, HANGERS AND BRACES: ASTM A 36
   B. STRUCTURAL PIPE: ASTM A 53, GRADE B, TYPE E OR S
   C. HOLLOW STRUCTURAL SHAPES: ASTM A 500, GRADE C
   D. BASE PLATES AND MISCELLANEOUS STEEL PLATES: ASTM A 36
   E. ANCHOR RODS: ASTM F 1554, GRADE 36
   F. W SECTONS ASTM A992
3. CONNECTION MATERIALS:
   A. BEAM-COLUMN STIFFENER PLATES AND DOUBLER PLATES S SHAPES TO MATCH THE GRADE STEEL OF STRUCTURAL ELEMENT
4. WELD MINIMUM SIZE AND STRENGTH:
   A. PROVIDE MINIMUM SIZE OF FILLET WELDS AS SPECIFIED IN TABLE J2.4 OF THE AISC MANUAL.
   B. PROVIDE MINIMUM EFFECTIVE THROAT THICKNESS OF PARTIAL PENETRATION GROOVE WELDS AS SPECIFIED IN TABLE J2.3 OF THE AISC MANUAL.
   C. PROVIDE ELECTRODES FOR FIELD OR SHOP WELDING THAT CONFORM TO ASTM A 233 (CLASS 70).
   D. ALL WELDS ARE CONTINUOUS FOR THE FULL LENGTH OF THE CONNECTION UNLESS OTHERWISE NOTED ON DRAWINGS.
5. PROVIDE MINIMUM OF TWO BOLTS PER CONNECTION. PROVIDE MINIMUM BOLT DIAMETER OF 3/4 INCH.
6. PROVIDE SIMPLE SHEAR CONNECTIONS FOR STEEL CONNECTIONS NOT SPECIFIED OTHERWISE UTILIZING HIGH STRENGTH BEARING BOLTS IN SINGLE SHEAR. PROVIDE SINGLE PLATE SHEAR TAB BOLTED CONNECTIONS.
7. STEEL FABRICATION:
   A. FABRICATE AND ASSEMBLE STRUCTURAL MEMBERS/ASSEMBLIES IN SHOP TO GREATEST EXTENT POSSIBLE.
   B. SPLICING OF STRUCTURAL STEEL MEMBERS IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE A/E.
   C. BE RESPONSIBLE FOR ALL ERRORS OF DETAILING ON THE SHOP DRAWINGS, ERRORS IN FABRICATION, AND THE CORRECT FITTING OF STRUCTURAL STEEL MEMBERS.
   D. CONFORM TO THE AISC CODE OF STANDARD PRACTICE, FOR ERECTION TOLERANCES. FIELD MODIFICATION TO STRUCTURAL STEEL IS PROHIBITED WITHOUT PRIOR APPROVAL BY THE A/E.
   E. CLEAN STEEL OF RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR FABRICATION, FITTING UP, OR WELDING.
   F. DO NOT CUT STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT PRIOR REVIEW AND APPROVAL OF THE A/E.
11. HOT DIP GALVANIZE AFTER FABRICATION ALL STRUCTURAL STEEL AND THEIR CONNECTIONS PERMANENTLY EXPOSED TO THE OUTSIDE. ITEMS INCLUDED BUT NOT LIMITED TO:
   A. SHELF ANGLES, LOOSE LINTELS
   B. EXAMINE THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR OTHER ITEMS THAT REQUIRE HOT DIPPED GALVANIZATION.
12. PROVIDE GROUT FOR BASE PLATES THAT IS NON-SHRINK, NON-METALLIC GROUT WITH MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 6000 PSI. COMPLETE GROUT WORK PRIOR TO PLACING ROOF CONCRETE OF A SINGLE STORY BUILDING OR PRIOR TO PLACING SECOND FLOOR CONCRETE OF A MULTIPLE STORY BUILDING.
13. PROVIDE WASHERS FOR ALL CONNECTIONS WITH STANDARD, OVERSIZE AND SHORT-SLOTTED HOLES. FOR LONG-SLOTTED HOLES PROVIDE WASHERS OR A CONTINUOUS BAR OF SUFFICIENT SIZE TO COMPLETELY COVER THE SLOT. PLATE WASHERS OR BARS TO BE MINIMUM OF 5/16 INCH THICK FOR LONG-SLOTTED HOLES.
14. WIDE FLANGE BEAM CONNECTIONS TO TUBE COLUMNS SHALL BE MADE WITH BOLTED SHEAR TAB PLATE TYPE CONNECTIONS UNLESS OTHERWISE NOTED ON PLAN. ONE-SIDED CONNECTIONS SHALL BE DESIGNED AS ECCENTRIC CONNECTIONS.
15. MILL STEEL COLUMN ENDS TO FIT FLUSH WITH BASE PLATE, CAP PLATE AND END PLATES. FIELD ASSEMBLY OF THESE STEEL ELEMENTS TO THE COLUMNS IS PROHIBITED.
16. HEADED STUDS (SHEAR AND ANCHOR) AND DEFORMED ANCHORS:
   A. PROVIDE HEADED STUDS (ANCHOR) MADE OF MATERIAL CONFORMING TO ASTM A 108.
   B. WELD STUDS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS. MANUAL ARC (STICK) WELDING OF HEADED STUDS AND/OR DEFORMED ANCHORS IS NOT ALLOWED.
18. PROVIDE TEMPORARY BRACING DURING CONSTRUCTION PHASE, PRIOR TO COMPLETING CONNECTIONS. TEMPORARY CONSTRUCTION BRACING OF THE STRUCTURAL STEEL FRAME IS THE RESPONSIBILITY OF THE CONTRACTOR
19. CLEAN STEEL TO BE PAINTED IN ACCORDANCE WITH STEEL STRUCTURES PAINTING COUNCIL POWER TOOL CLEANED SSPC-SP3.

SPECIAL INSPECTION:

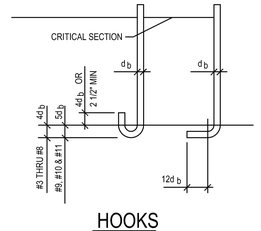
1. SPECIAL INSPECTION SHALL MEET THE REQUIREMENTS OF IBC SECTION 1704 AND TABLE LISTED ON THIS SHEET. SPECIAL INSPECTOR(S) SHALL BE HIRED BY THE OWNER TO PERFORM THE REQUIRED SPECIAL INSPECTIONS. THE NAMES OF PERSONS OR FIRMS WHO ARE TO PERFORM THE SPECIAL INSPECTIONS SHALL BE FORWARDED TO THE BUILDING OFFICIAL FOR APPROVAL. THE SPECIAL INSPECTOR(S) SHALL COMPLETE AND SUBMIT ALL FORMS REQUIRED BY THE CITY OF WESTMINSTER, MARYLAND.
2. ITEMS LISTED IN THE SPECIAL INSPECTION SCHEDULE SHALL BE INSPECTED IN ACCORDANCE WITH MEC CHAPTER 17 BY A CERTIFIED SPECIAL INSPECTOR FROM AN ESTABLISHED TESTING AGENCY.
3. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS, REFER TO THE MATERIAL SAMPLING AND TESTING SECTION, THE PROJECT SPECIFICATIONS, AND THE SPECIFIC GENERAL NOTES SECTIONS.
4. THE TESTING AGENCY SHALL SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE REGISTERED DESIGN PROFESSIONAL, CONTRACTOR, AND BUILDING OFFICAL. ANY ITEMS WHICH FAIL TO COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION.
5. IF DISCREPANCIES ARE NOT CORRECTED, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE BULIDING OFFICIAL AND REGISTERED DESIGN PROFESSIONAL PRIOR TO COMPLETION OF THAT PHASE OF THE WORK. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL CONTRACTOR DESIGNED COMPONENTS
6. CONTINUOUS SPECIAL INSPECTION MEANS THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.
7. PERIODIC SPECIAL INSPECTION MEANS THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECAIL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK (REFERENCE IBC SECTION 1702)
8. ALL WELDS SHALL BE VISUALLY INSPECTED IN ACCORDANCE WITH IBC SECTION 1705.2
9. ALL COMPLETE PENETRATION WELDS SHALL BE TESTED ULTRASONICALLY OR BY USING ANOTHER APPROVED METHOD (IBC 1705.2.1) IN ACCORDANCE WITH IBC SECTION 1705.2
10. WELDING INSPECTIONS SHALL BE IN COMPLIANCE WITH AWS D1.1
11. INSPECTION OF PRE-FABRICATED CONSTRUCTION SHALL BE THE SAME AS IF THE THE MATERIAL USED IN THE CONSTRUTION TOOK PLACE ON SITE. CONTINUOUS INSPECTION WILL NOT BE REQUIRED DURING PRE-FABRICATION IF THE APPROVED TESTING AGENCY CERTIFIES THE CONSTRUCTION AND FURNISHES EVIDENCE OF COMPLIANCE
12. ANY CONSTRUCTION OR MATERIAL THAT HAVE FAILED INSPECTION SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT REQUIRED DURING PRE-FABRICATION IF THE APPROVED TESTING AGENCY CERTIFIES THE CONSTRUCTION AND FURNISHES EVIDENCE OF COMPLIANCE
13. SPECIAL INSPECTION OF SOILS SHALL REFERENCE THE APPROVED SOILS REPORT TO DETERMINE COMPLIANCE
14. SLIP-CRITICAL CONNECTIONS MAY HAVE PERIODIC SPECIAL INSPECTION PROVIDED THAT THE TURN-OF-THE-NUT METHOD WITH MATCHMARKING TECHNIQUES ARE USED

DEFERRED SUBMITTAL:

1. THE FOLLOWING ITEMS ARE DEFERRED SUBMITTALS, PENDING APPROVAL OF THE BUILDING OFFICIAL:
   A. RACKS INCLUDING LATERAL BRACING AND ANCHORAGE
   B. CORRESPONDING JOIST PLANS AND PIECE SUBMITTALS.
   C. DESIGN DRAWING FOR ATTACHMENT OF MECHANICAL AND ELECTRICAL COMPONENTS TO THE STRUCTURE AND SUPPORTED BY THE STRUCTURE.
   D. CONCRETE DESIGN MIXES.
   E. COLD FORMED METAL FRAMING SHOP DRAWINGS. CALCULATIONS MUST MAKE REFERENCE TO THE PLANS AND PIECE SUBMITTALS.
   F. MASONRY REINFORCING SHOP DRAWINGS.
   G. STRUCTURAL STEEL SHOP DRAWINGS. CALCULATIONS MUST MAKE REFERENCE TO THE PLANS AND PIECE SUBMITTALS.
   H. CONCRETE REINFORCING SHOP DRAWINGS.
   I. PRE-FABRICATED METAL PLATED WOOD TRUSS SHOP DRAWINGS.
   J. PANELIZED WOOD FRAMING SHOP DRAWINGS CALCULATIONS MUST MAKE REF TO THE THE PLANS AND PIECE SUBMITTALS
2. DEFERRED SUBMITTALS MUST BE ACCOMPANIED BY CALCULATIONS SIGNED BY A REGISTERED MARYLAND ENGINEER.
3. DEFERRED SUBMITTALS MUST BE SUBMITTED PRIOR TO INSTALLATION AND MUST BE APPROVED BY THE ENGINEER OF RECORD FOR GENERAL CONFORMANCE TO DESIGN ASSUMPTION INTENT.

CONCRETE REINFORCING SPLICE DEVELOPMENT LENGTH

	SPLICE LENGTHS (CLASS "B")				DEVELOPMENT LENGTH			
	ALL BARS EXCEPT TOP BARS		TOP BARS (HORIZ BARS WITH MORE THAN 12" OF CONC BELOW)		ALL BARS EXCEPT TOP BARS		TOP BARS (HORIZ BARS WITH MORE THAN 12" OF CONC BELOW)	
f'c (PSI) / BAR SIZE	INCHES		INCHES		INCHES		INCHES	
	3500	4000	3500	4000	3500	4000	3500	4000
#3	16	16	21	18	13	12	16	14
#4	22	19	28	24	17	15	22	19
#5	27	23	35	30	21	18	27	23
#6	43	37	56	48	33	29	43	37
#7	63	54	81	71	48	42	63	54
#8	72	62	93	81	55	48	72	62
#9	81	70	105	91	62	54	81	70
#10	89	77	116	101	69	60	89	77
#11	98	85	128	111	76	66	98	85



HOOKS

NOTES:

1. DEVELOPMENT AND SPLICE LENGTHS SHOWN ARE BASED ON THE TABLE PROVIDED IN ACI 318-14 SECTION 25.4.2.2 AND APPLY UNLESS OTHERWISE NOTED ON PLANS AND DETAILS.
2. ALL LENGTHS AND COVERS ARE GIVEN IN INCHES UNLESS OTHERWISE NOTED.
3. TABULAR VALUES FOR DEVELOPMENT AND SPLICE LENGTHS ARE BASED ON NORMAL WEIGHT CONCRETE, GRADE 60 UNCOATED REINFORCING, CLEAR SPACING OF BARS EQUAL TO OR GREATER THAN 2 x BAR DIA OR 1 1/2", WHICHEVER IS GREATER, AND CLEAR COVER EQUAL TO OR GREATER THAN 1 x BAR DIAMETER OR 3/4", WHICHEVER IS GREATER.
4. TOP BARS ARE HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12" OF CONCRETE IS CAST IN THE MEMBER BELOW THE BAR. HORIZONTAL BARS IN WALLS ARE CONSIDERED AS TOP BARS. VERTICAL BARS MAY BE CONSIDERED AS OTHER BARS.
5. SPLICES SHALL NOT BE MADE AT POINTS OF MAXIMUM STRESS AS DETERMINED BY THE ENGINEER.

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REVISIONS:

ISSUE DATE:

PERMIT SET	2020-11-13

DRAWN BY: DWG

CFT PROJECT #:

ARCH PROJECT #: JCDT190143

STATE OF MARYLAND · GARY F. MARSH · No. 38483 · PROFESSIONAL ENGINEER

I certify that these documents were prepared or approved by me, and that I am a duly licensed architect or engineer under the laws of the State of Maryland, license number 38483 expiration date 02-17-2022

NORR ARCHITECTS | ENGINEERS | PLANNERS

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S-19-0029

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NOTES AND SPECIAL INSPECTIONS