SECTION 05 1213

ARCHITECTURALLY EXPOSED STRUCTURAL STEEL

PART 1 GENERAL

1.1 SUMMARY

A. Work of this Section includes requirements regarding the fabrication and installation tolerances, appearance, and surface preparation of Architecturally Exposed Structural Steel (AESS).

1. Refer to Section 05 1200 - STRUCTURAL STEEL for all other requirements regarding steel work not included in this section.
2. This Section applies to any structural steel members noted on Structural Design Documents as AESS. All AESS members must also be identified by their AESS Category.
3. This section applies to any member noted on Architectural and Structural drawings as AESS, and in the areas defined as AESS below.

B. Related Documents and Sections: Examine Contract Documents for requirements that directly affect or are affected by Work of this Section. A list of those Documents and Sections include, but is not limited to the following:

1. General provisions of the Contract, including General and Supplementary Conditions, and Division 01 General Requirements Specification Sections.
2. Section 05 1200 - STRUCTURAL STEEL.
3. Section 05 5000 - METAL FABRICATIONS.
4. Section 09 9600 - HIGH-PERFORMANCE COATINGS.

1.2 SYSTEM DESCRIPTION

A. Intent: The intent of this specification is to provide a consistent mechanism to define appearance quality requirements for Architecturally Exposed Structural Steel, and to address the appearance issues of structural steel used in exposed locations.

Table 1 – AESS Category Matrix

Characteristics		*Category*			
		AESS 4 Showcase Elements	**AESS 3** Feature Elements (Viewed @ Distance ≤ 20 ft.)	**AESS 2** Feature Elements (Viewed @ Distance >20 ft.)	**AESS 1** Basic Elements
ID					
1.1	Surface prep to SSPC-SP 6	√	√	√	√
1.2	Sharp edges ground smooth	√	√	√	√
1.3	Continuous weld appearance	√	√	√	√
1.4	Standard structural bolts	√	√	√	√
1.5	Weld spatters removed	√	√	√	√
2.1	Visual Samples	√	√	optional	
2.2	Stricter fabrication tolerances	√	√	√	
2.3	Fabrication marks not apparent	√	√	√	
2.4	Welds uniform and smooth	√	√	√	
3.1	Mill marks removed	√	√		
3.2	Butt and plug welds ground	√	√		

	smooth and filled				
3.3	HSS weld seam oriented for reduced visibility	√	√		
3.4	Cross sectional abutting surface aligned	√	√		
3.5	Joint gap tolerances minimized	√	√		
3.6	All welded connections	√	Optional		
4.1	HSS seam not apparent	√			
4.2	Welds contoured and blended	√			
4.3	Surfaces filled and sanded	√			
4.4	Weld show-through minimized	√			

Notes:	
2.1	Visual samples are either a 3-D rendering, a physical sample, a first off inspection, a scaled mock-up or a full-scale mock-up, as specified in Contract Documents.
2.2	These tolerances are required to be 50% of those of standard structural steel as specified in ASTM A6 or AWS D1.1
2.3	Members marked with specific numbers (“piece marks”) during the fabrication and erection processes are not to be visible.
3.1	Prior to blast cleaning, any deposits of grease or oil are to be removed using steam or hot water in conjunction with trisodium phosphate or similar cleaning agent. All mill marks are not to be visible in the finished product.
3.2	Rough surfaces are to be deburred and ground smooth. Edges must be prepared so that they are consistent with the design intent of the structure. Limited caulking or body filler is acceptable. No filler is to telegraph visually through the surface
3.3	Intermittent welds are made continuous, either with additional welding, caulking or body filler. For corrosive environments, all joints should be seal welded. Seams of hollow structural sections shall be acceptable as produced. Seams shall be oriented away from view or as indicated in the Contract Documents.
3.4	All bolt heads in connections shall be on the same side, as specified, and consistent from one connection to another. Whenever possible use smaller than usual bolts, flatheads, studs, pins, cogs and slots, all achieved with tight cutting / drilling tolerances and high-strength bolts. The matching of abutting cross-sections shall be required
3.5	This characteristic is similar to 2.2 above. A clear distance between abutting members of 3 mm is required. Weld spatter, slivers, surface discontinuities are to be prevented from accumulating with spatter shields or sprays. Weld projection up to 2 mm is acceptable for butt and plug welded joints.
3.6	Hidden bolts may be considered.
4.1	HSS seams shall be treated so they are not apparent.
4.2	In addition to a contoured and blended appearance, welded transitions between members are also required to be contoured and blended. No surface preparation shall telegraph through the finished surface.
4.3	The steel surface imperfections should be filled and sanded.
4.4	The backface of the welded element caused by the welding process can be minimized by hand grinding the backside of the weld. The degree of weld-through is a function of weld size and material.
C	Additional characteristics may be added for custom elements.

1.3 SUBMITTALS

A. Weld Samples: Submit samples of each type of AESS to set quality standards for exposed welds.

1. Two steel plates, 3/8 by 8 by 4 inches, with long edges joined by a groove weld dressed as required.
2. Steel plate, 3/8 by 8 by 8 inches, with one end of a short length of rectangular steel tube, 4 by 6 by 3/8 inches, welded to plate with a continuous fillet weld dressed as required.
3. Steel plate, 3/8 by 8 by 8 inches, welded with a continuous fillet weld dressed as required to

inside corner of 3 by 3 by 8 inch angle to demonstrate vertical and horizontal weld meet at inside corner.

4. Round steel tube or pipe, minimum 8 inches in diameter, with end of another round steel tube or pipe, approximately 4 inches in diameter, welded to its side at a 45-degree angle with a continuous fillet weld dressed as required.

B. Product Data: Manufacturer's product literature, specifications and installation instructions.

1. Product Data for Shop Primers: Provide product data showing that shop primers are compatible with specified high performance coating systems.
2. Product Data for Epoxy Filler:
   a. Product composition, application procedure, location and anticipated thickness of filler must be submitted for approval prior to commencement of work.
   b. Submit written confirmation signed by the fabricator confirming compatibility of epoxy filler and finish coat.

C. Shop Drawings detailing fabrication of AESS components:

1. Provide erection drawings clearly indicating which members are considered as AESS members;
2. Include details that clearly identify all of the requirements listed in sections 2.3 ‘’Fabrication’’ and 3.3 ‘’Erection’’ of this specification. Provide connections for AESS consistent with concepts, if shown on the Drawings;
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length and type of each weld. Identify grinding, finish and profile of welds as defined herein;
4. Indicate type, size, length, and finish of bolts. Indicate which side of the connection bolt heads should be placed; use flathead fasteners, rear face studs, zero-clearance locating pins or other low visibility / tight tolerance fasteners to the greatest extent possible
5. Indicate any special tolerances and erection requirements.
6. Indicate which surface or edges are to be exposed and what class of surface preparation is being used for each surface.

D. Submittal Procedures: In addition to the requirements included in Division 01, the following schedule and conditions shall pertain to the AESS shop drawing review process:

1. Contractor shall submit shop drawings for review a minimum of 20 business days prior to requiring them on site, including anytime required need for resubmission. The time does not absolve the Contractor or any time that may be required for the resubmission and review of submittals.
2. The Contractor must factor in any additional time which may be required for a resubmission into their submittal review and construction schedules.
3. Only shop drawings marked “No Exception” (or some equivalent langue or wording) may be used by the Contractor to commence work. Shop drawings marked “Revise and Resubmit” and “Rejected” (or some equivalent langue or wording) shall be corrected and completed as required and resubmitted for approval to the architect and engineer. They may not be used to commence work.
4. The Architect, Engineer and Owner shall not be held liable in any way (financical, time delays, etc.) for any materials and work which must be removed, reworked or replaced prior to the receipt of the appropriate approved submittal. Any work completed by the Contractor prior to the receipt of the appropriate approved submittal is done at the full risk to the Contractor.

E. Qualification data for firms and persons specified in the ‘Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects names and address, names

and addresses of architects and owners, and other information specified.

1. For each project, submit photographs showing detail of installed AESS.

F. Weld Tests: Submit results of ultrasonic weld tests required herein.

1.4 QUALITY ASSURANCE

A. Fabricator Qualifications: In addition to those qualifications listed in Section 05 1200 - STRUCTURAL STEEL, engage a firm experienced in fabricating AESS similar to that indicated for this Project with a record of successful in-service performance, as well as sufficient production capacity to fabricate AESS without delaying the Work.

B. Erector Qualifications: In addition to those qualifications listed in Section 05 1200 - STRUCTURAL STEEL, engage an experienced Erector who has completed AESS work similar in material, design, and extent to that indicted for this Project and with a record of successful in-service performance.

C. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement or SSPC-QP 3.

D. Comply with applicable provisions of the following specifications and documents:

1. AISC “Code of Standard Practice,” latest edition, Section 10 as amended herein.
2. ASTM A6 - Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling, latest edition.
3. AWS D1.1 “Structural Welding Code”, latest edition.
4. SSPC Painting Manual, latest edition.
5. SSPC Surface Preparation Specifications and Practices, latest edition.

E. Prototypes: At least four weeks prior to fabricating AESS, the contractor shall construct prototypes of each type of AESS to demonstrate aesthetic effects as well as qualities of materials and execution. A prototype for each of the following elements shall be constructed:

1. Required Prototypes:
   a. As directed by the Architect.
2. Locate prototypes onsite or in the fabricator’s shop as directed by Architect. Prototypes shall be full-size pieces unless the Architect approves smaller models.
3. Notify the Architect one week in advance of the dates and times when prototypes will be available for review.
4. Demonstrate the proposed range of aesthetic effects regarding each element listed under the fabrication heading below.
5. Prototype will have finished surface (including surface preparation and paint system furnished and applied by painting subcontractor), and will be subject to Architect's inspection. Provide natural and artificial light on finished surfaces. Final finish shall be free of drops, runs, orange peel, and other imperfections, and shall exhibit a smooth consistent surface.
6. Obtain Architect’s approval of prototypes before starting fabrication of final units.
7. Retain and maintain prototypes during construction in an undisturbed condition as a standard for judging the completed work.

F. Preinstallation Conference: The Contractor shall schedule and conduct conference at the project site. As a minimum, the meeting shall include th Contractor, Fabricator, Erector, the finish painting subcontractor, and the Architect. Coordinate requirements for shipping, special handling, attachment of safety cables and temporary erection bracing, touch up painting and other requirements for AESS.

PART 2 PRODUCTS

2.1 MATERIALS

A. General: Meet requirements Section 05 1200 - STRUCTURAL STEEL as amended below.

B. Structural Steel Shapes, Bars and Plates:

1. Steel Plate, Bars, Solid Rounds and Hexagons: ASTM A572 Grade 50
2. W Shapes: ASTM A992
3. M, S, L, C and MC Shapes: ASTM A36
4. HSS Shapes: ASTM A500Grade B.
5. HP Shapes: ASTM A572 Grade 50.
6. Pipe: ASTM A53 Grade B
7. Stainless Steel: ASTM A276 UNS S31603 (AISI 316L)

C. Structural Fasteners:

1. High Strength Bolts: ASTM A449, F1852, F3125.
2. Common Bolts: ASTM A307 Grade A
3. Shear Stubs: ASTM A108
4. Anchor Bolts: ASTM F1554 Grade 105
5. Stainless Steel Fasteners: ASTM F593C or F593D (AISI 304CW1 or CW2).

D. Weld Materials:

1. All welding electrodes shall be the appropriate matching filler for the metal specified or as specified on the contract documents.
2. All welding electrodes shall be low hydrogen type.
3. Non-fusable backing bars shall be used whenever possible on exposed AESS Surfaces.

2.2 SPECIAL SURFACE PREPARATION

A. Compatibility: The Contractor shall submit all components / procedures of the paint system for AESS as a single coordinated submittal. As a minimum, identify required surface preparation, primer, intermediate coat (if applicable) and finish coat. All of the items shall be coordinated with the finish coat specified in Division 09.

B. Surfaces that are to be painted or filled must be cleaned using steam or hot water in conjunction with trisodium phosphate (TSP) or other similar cleaning agent.

C. Primers: See Architectural Drawings, Section 05 1200 - STRUCTURAL STEEL and Section 09 9600 - HIGH-PERFORMANCE COATINGS.

D. Epoxy Filler: Two part epoxy filler compatible with finish coats.

E. All of the items shall be coordinated with intermediate and finish coats specified in the following Sections:

1. Section 09 9600 - HIGH-PERFORMANCE COATINGS.

2.3 FABRICATION

A. Fabricate and assemble AESS in the shop to the greatest extent possible. Locate field joints in AESS assemblies at concealed locations or as approved by the Architect. Detail AESS assemblies to minimize field handling and expedite erection.

1. For the special fabrication characteristics, see Table 1 – AESS Category Matrix of this specification. Structure to meet the AESS requirements as specified on the construction drawings.

B. Fabricate AESS with surface quality consistent with the AESS Category specified on the construction drawings and of surface quality consistent with the approved mock up. Use special care in handling and shipping of AESS both before and after shop painting.

C. In addition to special care used to handle and fabricate AESS, employ the following fabrication techniques:

1. Welds Ground Smooth: Fabricator shall grind welds of AESS smooth. For groove welds, the weld shall be made flush to the surfaces each side and be within ± 1/16" of plate thickness.
   a. Welds shall be finished to meet or exceed the requirements of NOMMA Finish #2.
2. Contouring And Blending Of Welds: Where fillet welds are indicated to be ground contoured, or blended, oversize welds as required and grind to provide a smooth transition and match profile on approved mock-up.
3. Continuous Welds: Where welding is noted on the Drawings, provide continuous welds of a uniform size and profile.
4. Minimize Weld Show Through: At locations where welding on the far side of an exposed connection occurs, grind distortion and marking of the steel to a smooth profile with adjacent material.
5. Coping and Blocking Tolerance: Maintain a uniform gap of 1/8" ± 1/32 at all copes and blocks.
6. Joint Gap Tolerance: Maintain a uniform gap of 1/8 in. ± 1/32 in.
7. Piece Marks Hidden: Fabricate such that piece marks are fully hidden in the final structure or made with such media to permit full removal after erection.
8. Mill Mark Removal: Fabricator shall deliver steel with no mill marks (stenciled, stamped, raised etc.) in exposed locations. Mill marks shall be omitted by cutting of mill material to appropriate lengths where possible. Where not possible, the fabricator may fill and/or grind to a surface finish consistent with the approved mock up.
9. Grinding of sheared edges: Fabricator shall grind all edges of sheared, punched or flame cut steel to approximately 1/32 in. radius to match approved mockup.
10. Rolled Members: Member specified to be rolled to a final curved shape shall be fully shaped in the shop and tied during shipping to prevent stress relieving. Distortion of the web or stem and of outstanding flanges or legs of angles shall be visibly acceptable to the Architect from a distance as dictated by the AESS type under any lighting condition determined by the Architect. Tolerances for the vertical and horizontal walls of rectangular HSS members after rolling shall be the specified dimension +/- 1/2 in..
11. Seal Welds: Seal weld open ends of round and rectangular hollow structural section with closure plates. Provide continuous, sealed welds at angle to gusset plate connections and similar locations where AESS is exposed to weather.
12. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members.
    a. Cut, drill, or punch holes perpendicular to steel surfaces. Do not thermally cut bolt holes or enlarge holes by burning.
    b. Baseplate Holes: Cut, drill, mechanically cut, or punch holes perpendicular to steel surfaces.
    c. Weld threaded nuts to framing and other specialty items indicated to receive other work.
13. Provide weep holes for all hollow AESS members not completely welded shut, such as those that have hand holes for access to the interior or any other type of opening. Provide welded internal drain pans of 1/4” plate minimum thickness within hollow steel members to direct water to the weep and out of the member.
14. Paint or galvanize the interior of all AESS members that are not completely welded shut. Paint shall be ERP 420 epoxy paint by PPG with surface preparation per PPG specifications.

2.4 SHOP CONNECTIONS

A. Bolted Connections: Make in accordance with Section 05 1200 - STRUCTURAL STEEL. Provide bolt type and finish as noted herein and align bolt heads as indicated on the approved shop erection drawings.

1. Countersunk bolts shall be ASTM A449, custom made, with heads prepped, primed and painted to match the members connected. Head drive type shall be as chosen by Architect (Phillips, slot, Allen head). Countersunk bolts shall be fastened to heavy hex nuts welded to the interior of the hollow member, or approved equal. Apply Tef-gel Teflon paste to the bolt threads and interior head surface prior to installation. Touchup paint of head after installation.

B. Welded Connections: Comply with AWS D1.1, Section 05 1200 and this specification. Appearance and quality of welds shall be consistent with the AESS Category specified and the visual samples as applicable. Assemble and weld built-up sections by methods that will maintain alignment of members to the tolerance of this Subsection.

1. The lowest heat input with the commensurate weld process shall be used.
2. Welded connections between components shall be designed so tensions due to shrinkage are balanced. Materials shall be pre-heated as required prior to welding so as to avoid locked-in thermally-induced warpage.
3. Welds shall be executed in a suitable rotation (tacking and stitch welding) or in such a sequence (multi-pass) so as to avoid thermally-induced and asymmetrical stress accumulation.

2.5 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to AESS indicated for galvanizing according to ASTM A 123. Fabricate such that all connections of assemblies are made in the field with bolted connections. Provide galvanized finish or members and assemblies within the range of color and surface textures presented in the mock ups.

1. Nickel Zinc: Comply with ASTM B6.
2. Coverage: Provide at least 2.0 oz./sq.ft. nickel zinc coverage, but not less than the coverage required by referenced standards.
3. Fabrication: To the greatest extent possible, galvanize after fabrication is completed.
4. Touch Up: Touch-up damaged or abraded galvanized surfaces with cold galvanizing compound complying with ASTM A780.
5. Galvanized items scheduled to be painted shall NOT receive chromate passivation or similar pretreatment which might interfere with paint adhesion.

2.6 SHOP PRIMING

A. AESS shall be shop primed under Section 09 9600 - HIGH-PERFORMANCE COATINGS.

2.7 ARCHITECTURAL REVIEW

A. The Architect shall review the AESS steel in place and determine acceptability based on the AESS Category specified and the visual samples. The Fabricator/Erector will advise the consultant on the schedule of the AESS Work.

B. The architectural review for initial acceptance for installation and final acceptance of installed/erected work shall be done in accordance with Acceptance Criteria clauses.

2.8 ACCEPTANCE CRITERIA

A. The structure shall be approved for installation following a visual inspection by the owner's designated representative. The visual inspection shall be conducted under the following test conditions.

1. The structure shall be located so that it can be viewed from all sides (top, bottom, front, back, left right).
2. The ambient light shall best approximate the average lighting condition under which the structural will be typically viewed.
3. A movable spot light with an intensity equal to approximately twice the average lighting condition shall be shown on the structure. The spot light shall be adjusted such that the light strikes the structure at an angle 90 degrees to the face (i.e. perpendicular) to 20 degrees (i.e. raking) to the face. The lighting shall be positioned as to produce the worst visual appearance of the structure. The lighting condition shall be repeated on all sides required by the owner's designated representative.

B. If the structure is found to be visually acceptable to the owner's designated representative, the structure may be installed as-is, with the following stipulations:

1. If the structure is found to be in nonconformance to some other provision of this specification (i.e. tolerance, surface treatment, etc). The owner shall be entitled to a negotiated credit for this non-conformance, or to remediation of such non-conformance at no cost to the owner or result in any finical liability to the architect and engineer.

C. If the structure is found to be visually unacceptable to the owner's designated representative, the following criteria shall be applied:

1. If the structure is found to be in nonconformance to some other provision of this specification (i.e. tolerance, surface treatment, etc). The owner shall be entitled to remediation of those issues at no cost or result in any finical liability to the architect and engineer. Any remediation above what is required by these specification shall be subject to a change order request on the part of the fabricator to complete said work. The scope, price and contractual arrangement for this work must be completed prior to commencement of this work. Failure to do this will result in the owner, their designated representatives and the architect and engineer being absolved of any finical liability for such work. The owner may, personally, or through there designated representative wave their right to an agreed to change order prior to the commencement of remedial work. Any waiver of rights in this specifications must be done in writing. Verbal arrangements shall not be considered a formal notice to proceed with any remedial work.

PART 3 EXECUTION

3.1 EXAMINATION

Probably Not

A. The erector and Architect shall check all AESS members in the shop prior to delivery for twist, kinks, gouges or other imperfections which might result in rejection of the appearance of the member. Coordinate remedial action with fabricator prior to erecting steel.

3.2 PREPARATION

A. Provide connections for temporary shoring, bracing and supports only where noted on the approved shop drawings. Temporary connections not shown shall be made at locations not exposed to view in the final structure or as approved by the Architect. Handle, lift and align pieces using padded slings and/or other protection required to maintain the appearance of the AESS

through the process of erection.

3.3 ERECTION

A. Set AESS accurately in locations and to elevations indicated, and according to the requirements of Chapter 10 of the AISC *Code of Standard Practice*.

1. AESS Erection tolerances: Erection tolerances shall be 50% of the requirements of standard frame tolerances for structural steel per the AISC Code of Standard Practice. Note that erection tolerances in this context refers to field erection to structural steel and not to the assembly of AESS parts which are governed by Appendix 1 section 1.3.4.
2. All tolerances for AESS location, verticality and straightness shall be in accordance with requirements of AISC code of standard practice for steel buildings and bridges with all tolerance figures halved.

B. In addition to the special care used to handle and erect AESS, employ the following erection techniques:

1. Welds ground smooth: Erector shall grind welds smooth in the connections of AESS members. For groove welds, the weld shall be made flush to the surfaces of each side and be within + 1/16 inch of plate thickness.
   a. Welds shall be finished to meet or exceed the requirements of NOMMA Finish #2.
2. Contouring and blending of welds: Where fillet welds are indicated to be ground contoured, or blended, oversize welds as required; grind to provide a smooth transition and to match profile on approved mockup.
3. Continuous Welds: Where noted on the drawings, provide continuous welds of a uniform size and profile.
4. Minimize Weld Show Through: At locations where welding on the far side of an exposed connection occurs, grind distortion and marking of the steel to a smooth profile with adjacent material.
5. Bolt Head Orientation: All bolt heads shall be oriented as indicated on the Drawings. Where bolthead alignment is specified, the orientation shall be noted for each connection on the erection drawings. Where not noted, the bolt heads in a given connection shall be oriented to one side.
6. Removal of field connection aids: Runout tabs, erection bolts and other steel members added to connections to allow for alignment, fit-up, and welding in the field shall be removed from the structure. Field groove welds shall be selected to eliminate the need for backing bars or to permit their removal after welding. Welds at runout tabs shall be removed to match adjacent surfaces and ground smooth. Holes for erection bolts shall be plug welded and ground smooth.
7. Filling of weld access holes: Where holes must be cut in the web at the intersection with flanges on W shapes and structural tees to permit field welding of the flanges, they shall be filled. Filling shall be executed with proper procedures to minimize restraint and address thermal stresses in group 4 and 5 shapes.

C. Field Welding: Weld profile, quality, and finish shall be consistent with mockups approved prior to fabrication.

D. Weld Tests:

1. 100% of all partial penetration and 100% of all full penetration welds shall be tested with ultrasonic testing (UT) after grinding, fully documented, and submitted to the Architect.
2. Weld tests shall be conducted after all weld grinding has been completed, not before.

E. Splice members only where indicated.

F. Obtain permission for any torch cutting or field fabrication from the Architect. Finish sections thermally cut during erection to a surface appearance consistent with the mock up.

G. Do not enlarge unfair holes in members by burning or by using drift pins. Ream holes that must be enlarged to admit bolts. Replace connection plates that are misaligned where holes cannot be aligned with acceptable final appearance.

3.4 FIELD CONNECTIONS

A. Bolted Connections: Install bolts of the specified type and finish in accordance with Section 05 1200 - STRUCTURAL STEEL.

B. Welded Connections: Comply with AWS D1.1 for procedures, and appearance. Refer to Section 05 1200 - STRUCTURAL STEEL for other requirements.

1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without warp. Verify that weld sizes, fabrication sequence, and equipment used for AESS will limit distortions to allowable tolerances.
2. Obtain Architects approval for appearance of welds in repaired or field modified work.

3.5 FIELD QUALITY CONTROL

A. Structural Requirements: The Owner will engage an independent testing and inspecting agency to perform field inspections and tests and to prepare test reports. Refer to Section 05 1200 - STRUCTURAL STEEL for detailed bolt and weld testing requirements.

B. AESS Acceptance: The Architect shall observe the AESS steel in place and determine acceptability based on the mockup. The Testing Agency shall have no responsibility for enforcing the requirements of this Section.

3.6 ADJUSTING AND CLEANING

A. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint shall be completed to blend with the adjacent surfaces of AESS to the satisfaction of the Architect. Such touch up work shall be done in accordance with manufacturer’s instructions as specified in Section 09 9100 - PAINTING.

1. All metal to be touched up shall be cleaned back to bare metal, prepared, blended, primed, and painted to match quality of sample panel submitted for Architect's review.

END OF SECTION