

Field Engineering Manager Paul Hudson  
Print Name

Paul Hudson  
Signature

2/3/21  
Date

# MATERIAL CONTROL METHODS MATRIX (MCMM)

## Scope

The Material Control Methods Matrix (MCMM) is applicable to **Safety Class/Safety Significant (SC/SS)**, **Chemical Safety/Air Permit (Enhanced Commercial [EC])**, and **Catalog Commercial/Commercial (CC/CM)** bulk materials which are visually indistinguishable from each other.

- **Exception:** Industrial safety item(s) painted safety yellow are not governed by this document.
1. Designation Color Markings:
    - a. Blue color marking is reserved for “Safety Class” and “Safety Significant” material.
      - 1) Blue tinting without the blue marking is **not** acceptable.
    - b. Green color marking is reserved for “Enhanced Commercial” material with an approved Graded Approach to Quality Confirmation Sheet (GRAQ).
      - 1) Green tinting without the green marking is **not** acceptable.
    - c. Yellow color marking is reserved for Construction NP materials.
    - d. Pink color marking is reserved for Startup NP materials.
  2. Catalog Commercial materials previously purchased as Non-Permanent (NP) may be used as Permanent CC/CM, provided the yellow marking is removed and the item is verified to be acceptable material for the application/installation.
    - a. **Exceptions to yellow paint requirements:**
      - 1) Yellow paint on the end of stainless steel preformed channel struts is “end spray” applied by Unistrut to denote 304SS and is not to be interpreted to indicate nonpermanent material.
      - 2) Yellow is used to color-code ASTM F1554 Gr-55 anchor assemblies (including nuts, washers, and sleeves) in accordance with ASTM F1554 Section 19, *Product Marking*. (The yellow color-code indicates the material grade and is not to be interpreted to indicate NP plant material).

## Matrix Organization and Use

### Sections and Discipline Owners

The MCM is organized into the following sections: General (Fasteners), General (Other), Civil, Electrical, Instrumentation, and Piping.

Commodities listed in the General section are typically used by multiple disciplines. To ensure consistency, general commodities are assigned a Discipline Owner. These commodities can be requisitioned and used by all disciplines, without review and approval of the Discipline Owner.

Commodities listed in the discipline-specific sections (e.g., Civil, Electrical, Instrumentation, Piping) are not typically used by multiple disciplines. To ensure consistency, these commodities are categorized by discipline in the Discipline Use column. The discipline listed in the Discipline Use column is responsible for either ordering or approving FMRs when these commodities are needed by other disciplines. Changes to, or additions of, control methods are approved by the assigned Discipline Owner or discipline listed in the Discipline Use column.

### Subcontractors:

Section headings (General, Civil, Piping, Mechanical, Instrumentation, Electrical), Discipline Owner, and Discipline Use information are for internal use by BNI-WTP/WTCC. Disregard section heading, Discipline Owner, and Discipline Use and search by Item & Material. Use of any material in this matrix by a subcontractor is to be controlled by the method shown, regardless of section heading, Discipline Owner, or Discipline Use information.

### Item & Material

The Item & Material column includes a detailed description of the items/materials controlled by the MCM. Items and materials are organized alphabetically within sections.

### Control Method

The Control Methods column identifies the approved SC/SS, EC, or CC/CM control method for each item. No other control methods are acceptable unless otherwise specified in the Remarks section.

### Reference Design Document

The Reference Design Document column lists applicable reference design documents.

### Remarks

The Remarks column provides additional details, exceptions to control method and other pertinent information. The information in the Remarks section is not optional; compliance is expected just as with the Control Methods column.

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-1	<b>Anchors, Cast in Place:</b> F1554 All grades A193 Gr B5 All finishes	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-FA01-T0001, <i>Furnishing of Anchor Bolts (Rods)</i> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Subcontractors are not permitted to use anchor bolts with WTCC stock codes unless issued from a Field Procurement controlled storage area.  Subcontractors shall submit for approval contract-unique control program (e.g., size, manufacturer, marking, distinguishable characteristics).  Color-coding shall indicate material grade and comply with ASTM F1554 Section 19, <i>Product Marking</i> (Gr 36-Blue, Gr 55-Yellow; Gr 105-Red). ASTM F1554 anchor assemblies (including nuts, washers, and sleeves) are exempt from quality level color-coding requirements defined in the <i>Material Methods Control Matrix</i> .	Civil
GF-2	<b>Bolts:</b> A307 Gr B Any finish, carbon steel bolting for general use	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i> <u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Civil

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-3	<b>Bolts:</b> A325 Type 1 Black and galvanized carbon steel high strength bolts for structural steel joint	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
GF-4	<b>Bolts:</b> A325 Type 1 Electroplated, carbon steel high strength bolts for structural steel joint	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
GF-5	<b>Bolts:</b> A490 Type 1 Black finish, heat treated steel structural bolts	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
GF-6	<b>Bolts:</b> A449 Type 1 Black & Galvanized Carbon Steel	<u>SC/SS:</u> Color coded blue <u>EC:</u> Color coded green <u>CC/CM:</u> No marking	<u>CSA:</u> 24590-WTP-3PS-SS01-T0003, <i>Purchase of Commercial Structural Steel, Miscellaneous Steel, Steel Decking, and Fasteners</i>	Limited in size to 3/4" diameter or smaller.	Civil
GF-7	<b>Bolts:</b> SAE J429 Gr 2, 5, 8	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>	Anodized green or yellow bolts are acceptable for sizes 1/4" to 3/4".	Civil

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-8	<b>Bolts/Stud Bolts:</b> 18-8 Stainless Steel (no ASTM material specification)	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
GF-9	<b>Bolts/Stud Bolts:</b> A193 Gr B7 Black finish, alloy steel bolting for high temperature service	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
GF-10	<b>Bolts/Stud Bolts:</b> A193 Gr B8, B8M Stainless steel, for high temperature service	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
GF-11	<b>Bolts/Stud Bolts:</b> A307 Gr A Black carbon steel bolting for general use	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
GF-12	<b>Bolts/Stud Bolts:</b> A193 Gr B6 12% Chromium	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All			Mech
GF-13	<b>Bolts/Stud Bolts:</b> A307 Gr A Electroplated (yellow/gold finish) and galvanized finish, bolting for carbon steel general use	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-14	<b>Bolts/Stud Bolts:</b> A354 Gr BC and BD Black finish	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Plant Design:</u> 24590-WTP-3PS-PH01-T0002, <i>Installation of Pipe Supports</i> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
GF-15	<b>Bolts/Stud Bolts:</b> F593 (all alloys) Stainless steel	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Plant Design:</u> 24590-WTP-3PS-M000-T0002, <i>General Specification for Remote and Mechanical Handling Equipment Design and Manufacture</i> 24590-WTP-3PS-SS01-T0003, <i>Purchase of Commercial Structural Steel, Miscellaneous Steel, Steel Decking, and Fasteners</i>		Mech.
GF-16	<b>Bolts, Tension Control (TC):</b> F1852 Type 1 (A325) and F2280 Type 1 (A490) Black finish, twist-off type tension control structural bolt/nut/washer assemblies, steel, heat treated	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS02-T0001, <i>Erection of Structural Steel</i>		Civil
GF-17	<b>Nelson Stud Shear Connectors:</b> A108	<u>SC/SS:</u> All <u>EC:</u> None <u>CC/CM:</u> None	<u>CSA:</u> 24590-WTP-3PS-DD00-T0001, <i>Purchase of Standard and Non-Standard Embedded Steel Items</i>	All Nelson studs, including those used by subcontractors, will be supplied by WTCC.	Civil

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-18	<b>Nelson Studs, Threaded:</b> A108	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i>	All Nelson studs, including those used by subcontractors, will be supplied by WTCC.	Civil
GF-19	<b>Nuts, 18-8</b> Stainless Steel	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
GF-20	<b>Nuts, Hex, Hvy Hex:</b> A194 Gr 2H Black finish alloy steel for high temperature service	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
GF-21	<b>Nuts, Hex, Hvy Hex:</b> A194 Gr 6, 6F	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>			Mech.
GF-22	<b>Nuts, Hex, Hvy Hex:</b> A194 Gr 8, 8M Stainless steel, for high temperature service	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
GF-23	<b>Nuts, Hex, Hvy Hex:</b> A563 Gr A Black finish, carbon steel	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-24	<b>Nuts, Hex, Hvy Hex:</b> A563 Gr A Electroplated and galvanized carbon steel	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
GF-25	<b>Nuts, Hex, Hvy Hex:</b> A563 Gr DH Electroplated and black finish, carbon steel	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
GF-26	<b>Nuts, Hex, Hvy Hex:</b> A563 Gr DH Galvanized, carbon steel	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
GF-27	<b>Nuts, Hex, Hvy Hex:</b> F594 All alloys, stainless steel	24590-WTP-3PS-F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Plant Design:</u> 24590-WTP-3PS-M000-T0002, <i>General Specification for Remote and Mechanical Handling Equipment Design and Manufacture</i>		Mech.
GF-28	<b>Nuts, Hex, Hvy Hex:</b> SAE J995 Gr 2, 5, 8	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>	Anodized green acceptable for sizes 1/4" to 3/4".	Civil



**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-29	<b>Nuts, Wing</b>	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
GF-30	<b>Rivet, Pop:</b> All materials	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All	24590-WTP-3PS-ATTF-T0001, <i>Sheet Metal Flashing and Trim 07620</i>		Civil
GF-31	<b>Rod:</b> A108 Threaded for entire length with yellow/gold electroplated finish	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i> <u>CSA</u> : 24590-WTP-3PS-FA01-T0001, <i>Furnishing of Anchor Bolts (Rods)</i>	WTCC and subcontractors (other than <u>Intermech</u> ) are not to purchase or use this type of material.  Rods shall meet the tensile and hardness of ASTM A307, Grade A.	Mech.
GF-32	<b>Rod, All Thread:</b> A193 B7 Black finish, Alloy steel for high temperature service	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Piping
GF-33	<b>Rod, All Thread:</b> A193 B8, B8M Class 1 & 2 stainless steel for high temperature service	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> <u>CSA</u> : 24590-WTP-3PS-FA01-T0001, <i>Furnishing of Anchor Bolts (Rods)</i>		Piping
GF-34	<b>Rod, All Thread:</b> A307 Gr C Electroplated yellow/gold	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>	A307 Gr C Replaced by ASTM F1554 Gr 36.	Piping

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-35	<b>Rod, All Thread:</b> F1554 Gr 36 Electroplated yellow/gold	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-FA01-T0001, <i>Furnishing of Anchor Bolts (Rods)</i> <u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>	F1554 Gr 36 can be used in place of ASTM A307 Gr C.	Civil
GF-36	<b>Rod, All Thread:</b> A36, A575, A576	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>Plant Design:</u> 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "QL" Pipe Supports</i> <u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Piping
GF-37	<b>Screws, Cap, Socket Button &amp; Flat Countersunk Head:</b> F879 stainless steel	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All			Mech.
GF-38	<b>Screws, Cap, Socket Button &amp; Flat Countersunk Head:</b> F835 Alloy steel	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All			Mech.
GF-39	<b>Screws, Cap, Socket Head:</b> A574 Alloy steel	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>Mechanical:</u> 24590-WTP-3PS-M000-T0002, <i>General Specification for Remote and Mechanical Handling Equipment Design and Manufacture</i>		Mech.
GF-40	<b>Screws, Cap, Socket Head:</b> F837 stainless steel	<u>SC/SS:</u> None <u>EC:</u> None <u>CC/CM:</u> All	<u>Mechanical:</u> 24590-WTP-3PS-MQR0-T0002, <i>HLW Standardized Bogies</i>	1/4" diameter and larger.	Mech.

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-41	Screw, Lag	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
GF-42	Screws, Machine: Non-Stainless Steel	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
GF-43	Screws, Machine: 18-8 Stainless Steel	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>CSA</u> : 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
GF-44	Screws, Self-Drilling: Self-tapping, AISI 1022 30RC minimum, 138,000 PSI minimum tensile strength	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>			Civil
GF-45	Screws, Set, Socket Head, ASTM F912 Alloy Steel or ASTM F880 Stainless Steel	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All			Civil
GF-46	Screws, Tek	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
GF-47	Screw, Sheet Metal	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
GF-48	Washers, Beveled: ASME B18.23.1 Black and galvanized	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>CSA</u> : 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-49	<b>Washers, Beveled:</b> Stainless Steel	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
GF-50	<b>Washers, Flat:</b> Meeting both F844 and ASME B18.22.1 Electroplated	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA</u> : 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
GF-51	<b>Washers, Lock:</b> ASME B18.21.1 Electroplated	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA</u> : 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
GF-52	<b>Washers, Structural:</b> F436 Type 1 Galvanized and black finish, hardened steel washers	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA</u> : 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i> 24590-WTP-3PS-DD00-T0001, <i>Purchase of Standard and Non- Standard Embedded Steel Items</i> 24590-WTP-3PS-FA02-T0002, <i>Purchase of Post Installed Concrete Anchors for QL Applications</i> 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non-Important to Safety (Non-ITS) Applications</i> 24590-WTP-3PS-FA01-T0001, <i>Furnishing of Anchor Bolts (Rods)</i>		Civil

**General (Fasteners) (GF)**

**Note:** Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt. When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the marking control or the material package control (MPC) process, as applicable. Unused Fasteners provided with equipment are to be disposed of or retained using the MPC process.

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Owner
GF-53	<b>Washers, Load Indicating:</b> F959 Type 325 and Type 490 Galvanized and black finish, compressible type direct tension indicators for use with structural steel fasteners	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS02-T0001, <i>Erection of Structural Steel</i>		Civil
GF-54	<b>Washer, Flat &amp; Lock (SS)</b>	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
GF-55	<b>Washer, Flat &amp; Lock (Steel)</b>	24590-WTP-3PS- F000-T0001, <i>Q</i> <i>Bulk Fasteners</i>	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil

General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-1	<b>Penetration and Joint Seal Materials</b> Fire stop materials including, but not limited to caulks and sealants (in tubes, sausages, or pails), wrap strips, boot materials and duct wrap.	24590-QL-HC1-AYFP-00001-33-00001, <i>Penetration Seal – Procedure – Material Control Procedure Packing, Shipping, Storage, and Handling</i>  <u>SC/SS</u> : See Remarks <u>EC</u> : None <u>CC/CM</u> : See Remarks		<u>CSA</u> : 24590-WTP-3PS-ATFS-T0001, <i>Penetration Firestop and Sealant Systems 07841</i> 24590-WTP-3PS-ATFS-T0002, <i>Fire Resistive Joint Systems 07842</i>	Penetrations and joint seal materials are shipped, received, inspected, and handled per the WTP approved Subcontractor’s Quality Assurance Program 24590-WTP-AR-QA-15-024, Rev 0, and associated procedures.  <u>SC/SS</u> products shall have a blue acceptance tag applied.  <u>CC/CM</u> products shall have a green acceptance tag applied. <b>NOTE:</b> This entry does not include Sealant/Lubricant.	Civil
GO-2	<b>Anchors, Acrylic:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>CSA</u> : 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
GO-3	<b>Anchors, Concrete Screw (Powers Wedge-Bolt®)</b>	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>CSA</u> : 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>	The material is no longer manufactured or supplied to this project (but it may exist on site). The Powers Wedge-Bolt <b>DOES NOT</b> have a “+” sign on the head of the anchor.	Civil
GO-4	<b>Anchors, Concrete Screw (Powers Wedge-Bolt®+)</b>	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All			The Powers Wedge-Bolt+ has a “+” sign on the hex head of the anchor.	Civil
GO-5	<b>Anchors, Drop-In:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>CSA</u> : 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil

General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-6	<b>Anchors, Epoxy</b>	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>CSA</u> : 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
GO-7	<b>Anchors, Power Actuated (Powder or pneumatic):</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>CSA</u> : 24590-WTP-3PS-FA02-T0004, <i>Installation and Testing of Post Installed Concrete Anchors and Drilling/Coring of Concrete;</i> 24590-WTP-3PS-AFGB-T0001, <i>Gypsum Board Assemblies 09260;</i> 24590-WTP-3PS-AFGW-T0001, <i>Gypsum Board Shaft-Wall Assemblies 09265</i>		Civil
GO-8	<b>Anchors, Undercut:</b> A193 B7, B8 CL1, B8 CL2, A36	<u>SC/SS</u> : All <u>EC</u> : None <u>CC/CM</u> : None		<u>CSA</u> : 24590-WTP-3PS-FA02-T0002, <i>Purchase of Post Installed Concrete Anchors for QL Applications</i>	Mark the A193 B8 Class 2 Anchors with a blue metal marker, low-leachable chloride metal marker, or equal, on the sleeve and threaded rod end for material class differentiation purposes.	Civil
GO-9	<b>Anchors, Wedge Type:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>CSA</u> : 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil

General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-10	<b>Grout:</b> All	<u>SC/SS</u> : See Remarks (Sticker "Q") <u>EC</u> : All <u>CC/CM</u> : All not color coded or with a quality level sticker		<u>CSA</u> : 24590-WTP-3PS-D000-T0001, <i>Concrete Work</i>	Products listed below are the only grout allowed for Q applications: Ceilcote 749dp Epoxy Grout (SC CGDGROUTE002) Masterflow 928 Non Shrink Grout (SC CCQGROUT2) MBT Construction Grout General Purpose Grout (SC CCQGROUT6) MasterFlow 648 CP Plus High-Strength, High Temp, High-Flow Epoxy Grout (SC CCQEGROUT1) FSP Construction Grout (SC CCCDGROUT11) Five Star Structural Concrete V/O Grout (SC CCCDGROUT12) Five Star Grout, Precision (SC CCCDGROUT14) Five Star Fluid Grout 100 (SC CCCDGROUT15) Five Star Structural Concrete ES (SC CCCDGROUT13) Five Star Special Grout 400 (SC CCCDGROUT10) Five Star Fluid Epoxy Grout (SC CCCGDEPOXYGROUT1) Note: All grout shall remain in original manufacturer's container until use.	Civil
GO-11	<b>Hooks, S-Hooks:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical



General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-12	<b>Insulation:</b> Building	<u>SC/SS</u> : Color coded blue <u>EC</u> : Color coded green <u>CC/CM</u> : No marking		<u>CSA</u> : 24590-WTP-3PS-ATIB-T0001, <i>Building Insulation 07210</i> 24590-LAW-3PS-NN00-T0001, <i>LAW Pour Caves, Buffer Store, &amp; Finishing Line Insulation and Stainless Steel Liner Plate</i> 24590-HLW-3PS-NN00-T0001, <i>HLW Pour Tunnels and Canister Handling Cave Insulation and Stainless Steel Liner Plate</i>		Civil
GO-13	<b>Insulation:</b> Equipment/Vessel	<u>SC/SS</u> : Color coded blue <u>EC</u> : Color coded green <u>CC/CM</u> : No marking		<u>Mechanical</u> : 24590-WTP-3PS-NN00-T0001, <i>Thermal Insulation for Mechanical System</i>		Mech.
GO-14	<b>Insulation:</b> Piping	<u>SC/SS</u> : Color coded blue <u>EC</u> : Color coded green <u>CC/CM</u> : No marking		<u>Plant Design</u> : 24590-WTP-3PS-NN00-T0002, <i>Microporous Insulation for Hot Pipes Penetrating Concrete Walls and Floors</i> 24590-WTP-3PS-NN00-T0003, <i>Pipe Insulation for High Radiation Areas</i> 24590-WTP-3PS-NN00-T0004, <i>Microporous Insulation for High Temperature Encased Joggle Pipes Penetrating Concrete Walls and Floors</i>		Piping

General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-15	<b>Pipe, Steel Handrail:</b> 1-1/2" carbon steel schedule 40 zinc coated	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>CSA</u> : 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>	Handrail use only.	Civil
GO-16	<b>Plate, Carbon Steel:</b> All carbon steel grades	<u>SC/SS</u> : Primed. See Remarks. <u>EC</u> : Non-Primed, marked green. <u>CC/CM</u> : Non-primed, not marked.		<u>CSA</u> : 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>	In lieu of primer, <u>SC/SS</u> plate may be color coded blue (each fabricated piece shall also have blue color code).  For Grade 50 plate, record the stock code, with a low chloride marker, on each field fabricated piece.  <u>Intermech</u> galvanized or non-primed <u>SC/SS</u> plate are controlled via heat number traceability and associated documentation.  <u>CB&amp;I</u> non-primed <u>SC/SS</u> plate are controlled via heat number traceability and associated documentation.	Civil
GO-17	<b>Plate, Shapes, Misc. Stainless Steel</b>	<u>SC/SS</u> : Color coded blue. See Remarks. <u>EC</u> : Color coded green <u>CC/CM</u> : No marking		<u>CSA</u> : 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>	<u>Intermech</u> and <u>CB&amp;I</u> <u>SC/SS</u> stainless steel plate are controlled via heat number traceability and associated documentation.  <u>SC/SS</u> (non-ASME) to be color coded blue. <u>SC/SS</u> (ASME) must have unique stock code, ASME marking, and blue marking.	Civil

General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-18	Sealant/Lubricant	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Plant Design</u> : 24590-WTP-3PS-PS02-T0003, <i>Field Fabrication and Installation of Piping</i> 24590-WTP-GPP-RAEG-EG-0001, <i>Approved Equivalent Item Determination</i> 24590-WTP-3PS-AFPS-T0004, <i>Field Applied Special Protective Coatings for Concrete Surfaces and Gypsum Board Walls</i> 24590-WTP-GPP-RAEN-EN-0041, <i>Lubrication Control Procedure</i>		Civil/ Piping/ Mech
GO-19	<b>Steel Shapes (Misc. excluding handrail pipe):</b> All carbon steel grades	<u>SC/SS</u> : Primed. See Remarks. <u>EC</u> : Non-Primed, marked green. <u>CC/CM</u> : Non-primed, not marked.		<u>CSA</u> : 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>	In lieu of primer, <u>SC/SS</u> steel shapes may be color coded blue (each fabricated piece shall also have a blue color code). For Grade 50 angle, channel, and bars, record the stock code, with a low-chloride marker, on each field fabricated piece. <u>Intermech</u> galvanized or non-primed <u>SC/SS</u> steel shapes are controlled via heat number traceability and associated documentation. <u>CB&amp;I</u> non-primed <u>SC/SS</u> steel shapes are controlled via heat number traceability and associated documentation.	Civil

General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-20	<b>Strut/Fittings/Accessories (Preformed channel):</b> Carbon steel Stainless Steel	<u>SC/SS</u> : Unistrut brand only. See Remarks <u>EC</u> : color coded green <u>CC/CM</u> : See Remarks		<u>Civil</u> : 24590-WTP-3PS-SY00-T0001, <i>Purchase of Standard Struts, Fittings, and Accessories</i>	<u>SC/SS</u> must have Unistrut name or part number stamp viewable. In lieu of stamps, the strut/fitting/accessories shall be marked blue. Any item without viewable stamps or blue marking shall be <u>CC/CM</u> .  <u>CC/CM</u> : Non-Unistrut products or green (e.g., B-Line) are permitted for use in <u>CC/CM</u> installations.	Civil
GO-21	<b>PVC/CPVC Primer and Cement</b>	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		None	None	Piping
GO-22	<b>Tubing, Galvanized:</b> ASTM A787	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All. See Remarks.		<u>Plant Design</u> : 24590-WTP-3PS-MD00-T0001, <i>Heating Ventilation and Air Conditioning Systems Installation</i> 24590-WTP-3PS-MDH0-T0002, <i>Heating Ventilating and Air Conditioning System Seismic Category III and IV Ductwork (CM)</i>	This is not instrument tubing. <u>Intermech</u> galvanized tubing is controlled via heat number traceability and associated documentation.	Mech.
GO-23	<b>U-Bolts:</b> Carbon steel Stainless steel	<u>SC/SS</u> : Marked blue or tagged with a stock code <u>EC</u> : Marked green or tagged with a stock code <u>CC/CM</u> : Not marked/not tagged		<u>Plant Design</u> : 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "QL" Pipe Supports</i>		Piping

General (Other) (GO)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Owner
GO-24	<b>Weld Filler Material:</b> Includes electrodes, wire, brazing wire	<u>SC/SS</u> : All. See Remarks. <u>EC</u> : None <u>CC/CM</u> : None		<u>Welding</u> : 24590-WTP-MN-CON-01-001-05-01, <i>WFMC-2, Welding Filler Metal Control</i>	1) For direct hire welding, all weld filler material shall be controlled in accordance with the requirements of 24590-WTP-MN-CON-01-001-01-01, <i>Introduction and Instructions – Introduction to the WCM</i> . 2) For subcontractor welding, all weld filler material shall be controlled in accordance with WTP Project approved subcontractor procedures.	Welding

<b>Civil (C)</b>						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
C-1	<b>Ecology Blocks, Jersey Barriers, and Wheel Stops</b>	<u>SC/SS</u> : Stencil "Q". See Remarks. <u>EC</u> : None <u>CC/CM</u> : No marking			Lettering to be approximately 2" in height. Color to contrast commodity, marked on the top surface/side.	Civil
C-2	<b>Embeds, Bulk:</b> All	<u>SC/SS</u> : All. <u>EC</u> : None <u>CC/CM</u> : None		<u>CSA</u> : 24590-WTP-3PS-DD00-T0001, <i>Purchase of Standard and Non-Standard Embedded Steel Item</i>		Civil
C-3	<b>Rebar:</b> A706	<u>SC/SS</u> : All. Except #4 Rebar. <u>EC</u> : None <u>CC/CM</u> : #4 Rebar only		<u>CSA</u> : 24590-WTP-3PS-DG00-T0001, <i>Furnishing of Reinforcing Steel</i>		Civil

Electrical (E)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
E-1	<b>Boxes, Pull and Junction:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All. No unique markings.		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
E-2	<b>Cable:</b> All	<u>SC/SS</u> : All SC/SS cable will be uniquely marked with an identifier designating quality level. <u>EC</u> : None <u>CC/CM</u> : All CC/CM cable reels 8 AWG or larger and all multiconductor cables will be uniquely tagged. All Cable smaller than 8 AWG with no unique marking will be <u>CC/CM</u> . Cable cut from a reel will be tagged with a unique cable number.		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> 24590-WTP-3PS-EW00-T0001, <i>Power, Control and Instrumentation Cable, Medium Voltage Power Cable and Fire Optic Cable Safety (Safety)</i> 24590-WTP-3PS-E00X-T0005, <i>Electrical Raceway and Cable Identification</i>		Electrical

Electrical (E)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
E-3	<b>Cable Termination Materials:</b> Lugs/Termination Kits/Splices	<u>SC/SS</u> : Marked with blue paint or Bag/box with vendor stock code and marked with blue paint <u>EC</u> : Marked with green paint or Bag/box with vendor stock code and marked with green paint <u>CC/CM</u> : Any cable termination materials not <u>SC/SS</u> or <u>EC</u> .		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> 24590-WTP-3PS-E00X-T0003, <i>Cable Terminations</i>	Blue/Green paint not to be applied to any portion of the termination kit that will need a clean surface for continuity (e.g., washer, ring/fork portion of lug).	Electrical
E-4	<b>Cable Tray/Fittings:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
E-5	<b>Conduit/Fittings:</b> All	<u>SC/SS</u> : Marked with blue paint <u>EC</u> : Marked with green paint <u>CC/CM</u> : Any conduit/fittings not <u>SC/SS</u> or <u>EC</u> .		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
E-6	<b>Cord Caps, Flexible:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical
E-7	<b>Cord, Flexible:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical



Electrical (E)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
E-8	<b>Grounding and Lightning Protection:</b> All	<u>SC/SS</u> : None <u>EC</u> : See remarks <u>CC/CM</u> : None		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>	EC must be UL listed and have Thompson Lightning Protection Inc. name or part number stamp viewable on the product or the box containing the product.	Electrical
E-9	<b>Lighting, General and Emergency:</b> All	<u>SC/SS</u> : Unique equipment IDs <u>EC</u> : None <u>CC/CM</u> : Specified on electrical lighting fixture schedule or facility specific drawings		<u>Electrical</u> : 24590-WTP-E0-LTE-00003, <i>Electrical Lighting Fixture Schedule</i> 24590-WTP-E0-LTE-00004, <i>Electrical Lighting Fixture Schedule</i> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> 24590-LAB-3PS-ELF0-T0001, <i>Hot Cell Lighting for Analytical Laboratory</i> 24590-WTP-3PS-EED1-T0002, <i>Through Wall Lighting</i> 24590-WTP-3PS-EED1-T0003, <i>Wall Mounted In Cave Lighting</i> 24590-WTP-3PS-EED1-T0004, <i>Through Wall Socket Assembly (Safety)</i>		Electrical
E-10	<b>Receptacles:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical

Electrical (E)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
E-11	<b>Tags, Cable and Wire:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> 24590-WTP-3PS-E00X-T0005, <i>Electrical Raceway and Cable Identification</i>		Electrical
E-12	<b>Tubing, Heat Shrink:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> 24590-WTP-3PS-E00X-T0003, <i>Cable Termination</i>		Electrical
E-13	<b>Welding, Exothermic Material:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-EQ00-T0002, <i>Cathodic Protection</i>		Electrical
E-14	<b>Wire Nuts, Twist On:</b> All	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i>		Electrical

**Instrumentation (I)**

#	Item & Material	Control Method	Reference Design Document	Remarks	Discipline Use
I-1	<b>Fittings, Hastelloy Tube; All sizes</b>	<u>SC/SS</u> : Not Marked, Hy-Lok brand only <u>EC</u> : None <u>CC/CM</u> : See Remarks	<u>Instrument</u> : 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - Q</i>	<u>CC/CM</u> Fittings must be supplied by a brand other than Hy-Lok. No mixing of parts is permitted.	Instr.
I-2	<b>Stainless Instrument Tube Fittings and Valves</b>	<u>SC/SS</u> : Hy-Lok brand only <u>EC</u> : Color coded green <u>CC/CM</u> : Any not SC/SS or EC	<u>Instrument</u> : 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - Q</i> 24590-LAB-3PS-P000-T0002, <i>Lab High Purity Gas and Cryogenic Tubing and Welding</i> 24590-WTP-3PB-P000-TS11H, <i>Piping Material Classification Pipe Class S11H</i>	Cryogenic Tube Fittings are to be marked "BPE" and controlled by responsible installation contractor. No mixing of parts permitted.	Instr.
I-3	<b>Tubing Clamps and Hardware, Stainless Steel or Zinc Plated:</b> All sizes	<u>SC/SS</u> : See Remarks <u>EC</u> : None <u>CC/CM</u> : See Remarks.	<u>Instrument</u> : 24590-WTP-3PS-JXF0-T0003, <i>Instrument Tubing Supports - Q</i>	For acceptable <u>SC/SS</u> tubing support material see 24590-WTP-J8-50-0410X drawing series. For acceptable <u>CC/CM</u> tubing supports see 24590-WTP-J8-50-0310X drawing series. Spacer clamps manufactured by James C. White have a material code of <u>CM</u> marked on the clamps. The spacer clamps are quality level <u>SC/SS</u> .	Instr.
I-4	<b>Tubing, Hastelloy</b>	<u>SC/SS</u> : All <u>EC</u> : None <u>CC/CM</u> : None	<u>Instrument</u> : 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - Q</i>		Instr.

**Instrumentation (I)**

#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
I-5	<b>Tubing, Stainless Steel:</b>	<u>SC/SS</u> : All <u>EC</u> : None <u>CC/CM</u> : See Remarks.		<u>Instrument</u> : 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - Q</i> 24590-WTP-3PB-P000-TS11H, <i>Piping Material Classification Pipe Class S11H</i> 24590-LAB-3PS-P000-T0002, <i>Lab High Purity Gas and Cryogenic Tubing and Welding</i>	Cryogenic tubing is to be marked “BPE” and controlled by the responsible installation contractor.	Instr.
I-6	<b>Tubing Tray and Hardware, Stainless Steel:</b> All sizes	<u>SC/SS</u> : All <u>EC</u> : None <u>CC/CM</u> : None		<u>Instrument</u> : 24590-WTP-3PS-JXF0-T0003, <i>Instrument Tubing Supports – Q</i>		Instr.

Piping (P)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
P-1	<b>Components, Pipe Support:</b> All	<u>SC/SS</u> : Marked blue or tagged with a stock code <u>EC</u> : Marked green or tagged with a stock code <u>CC/CM</u> : Not marked/not tagged		<u>Plant Design</u> : 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "Q" Pipe Supports</i>		Piping
P-2	<b>Gaskets, Piping (Flanged):</b> Neoprene, EPDM, SBR Rubber, Fiber (including Garlock type gaskets)	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Plant Design</u> : 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
P-3	<b>Gaskets, Piping (Flanged):</b> Spiral wound, soft iron, flexible graphite	<u>SC/SS</u> : Will have Lamons brand marking. <u>EC</u> : None <u>CC/CM</u> : Any not SC/SS		<u>Plant Design</u> : 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> 24590-WTP-CGD-PROE-15-0006, <i>Gaskets for Piping Systems</i>		Piping
P-4	<b>Grayloc Seal Rings:</b> All	<u>SC/SS</u> : Edge marked with blue paint <u>EC</u> : None <u>CC/CM</u> : No markings		<u>Plant Design</u> : 24590-WTP-3PS-PF00-T0004, <i>Remote Clamp Connectors</i>		Mech.

Piping (P)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
P-5	<b>Pipe/Flanges/ Fittings:</b> Carbon steel and galvanized	<u>SC/SS</u> : See Remarks <u>EC</u> : See Remarks <u>CC/CM</u> : See Remarks		<u>Plant Design</u> : 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> 24590-WTP-3PS-PB01-T0001, <i>Technical Supply Condition for Pipe, Fittings, and Flanges</i>	<u>SC/SS</u> (ASME) items must have unique stock code, ASME marking, and blue marking. <u>SC/SS</u> (ASTM) items must have blue marking. <u>EC</u> (ASTM) items must have green marking. <u>CC/CM</u> (ASTM) items are not marked. <u>Intermech</u> may control their <u>SC/SS</u> carbon steel and galvanized Pipe/Flanges/Fittings via heat number traceability and associated documentation. <u>For Intermech only</u> : Prior to 5/1/2008, unmarked galvanized pipe/flanges/fittings acceptable. <u>CB&amp;I SC/SS</u> carbon steel pipe are controlled via heat number traceability and associated documentation.	Piping
P-6	<b>Pipe/Flanges/ Fittings:</b> Stainless steel, Hastelloy- C-22 and AL-6XN: Inconel 625, Titanium	<u>SC/SS</u> : See Remarks <u>EC</u> : None <u>CC/CM</u> : None		<u>Plant Design</u> : 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> 24590-WTP-3PS-PB01-T0001, <i>Technical Supply Condition for Pipe, Fittings, and Flanges</i>	(ASME) items must have unique stock code, ASME marking, and blue marking.  (ASTM) items are not marked.  <u>CB&amp;I SC/SS</u> stainless steel fittings are controlled via heat number traceability and associated documentation.	Piping

Piping (P)						
#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
P-7	<b>Pipe/Flanges/ Fittings:</b> PVC and fiberglass, Ductile iron and malleable iron, Copper/Bronze/ Brass	<u>SC/SS</u> : None <u>EC</u> : None <u>CC/CM</u> : All		<u>Plant Design</u> : 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "QL" Pipe Supports</i>		Piping
P-8	<b>In-Line Components including Valves:</b> All	<u>SC/SS</u> : Tagged. See Remarks. <u>EC</u> : Tagged. See Remarks. <u>CC/CM</u> : Tagged. See Remarks.		<u>Plant Design</u> : 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> 24590-WTP-3PS-PB01-T0001, <i>Technical Supply Condition for Pipe, Fittings, and Flanges</i> 24590-WTP-3PS-PS02-T0003, <i>Engineering Specification for Field Fabrication and Installation of Piping</i> 24590-WTP-3PS-PV00-T0001, <i>Specification for Technical Supply Conditions for Valves</i> 24590-WTP-3PS-PV00-T0002, <i>Engineering Specification for Technical Supply Conditions for Resilient Seated Butterfly Valves</i> 24590-WTP-3PS-PV00-T0003, <i>Engineering Specification for Technical Supply Conditions for Q Stainless Steel Valves</i> 24590-WTP-3PS-PV00-T0004, <i>Engineering Specification for CM Valves</i>	Valves purchased for permanent plant under valve MRs shall be supplied with a tag per 24590-WTP-3PS-PV00-T0001, Section 7.2.  Bulk valve stock codes received on Q or CD valve procurement orders prior to 09-10-2020 and identified on Q HLW or PTF isometrics shall be verified to meet the safety function requirements of the valve based on the final installed location of the valve. See 24590-WTP-3PS-PS02-T0003 Section 3.1.4.	Piping

**Piping (P)**

#	Item & Material	Control Method		Reference Design Document	Remarks	Discipline Use
P-9	Valve and In-Line Internals (e.g., kits, gaskets)	<u>SC/SS</u> : See Remarks <u>EC</u> : See Remarks <u>CC/CM</u> : See Remarks		Applicable vendor submitted drawings and/or operation/maintenance manuals	Internals for <u>SC/SS</u> installations are controlled via an Engineered Stock Code. Internals for <u>EC</u> installations are controlled via a non-engineered stock code and color coded green Internals for <u>CC/CM</u> installations may use items purchased as <u>CC/CM</u> via a non-engineered stock code and no color coding.	Piping



**Revision History**

<b>Revision</b>	<b>Reason for Revision</b>
0	Issued for Use.
1	Added differentiator for steel plate (shims).
2	Added controls for subcontractor welding materials.
3	Corrected numbering in requirements section for A325 bolts (page 4). Added control method for temporary/NP piping components (page 3).
4	Added requirements for Post Installed Anchors (Maxi Bolts) (page 3). Corrected typo in QL/CM differentiator column for A563 Gr DH nuts (page 8). Clarified requirements for pipe/flanges/fittings (page 14) and gaskets (page 15).
5	Added requirements for blue paint marking for nuts and bolts (pages 1-11).
6	Corrected CM differentiator (pages 5, 6, and 8).
7	Added PVC and ductile iron (pipe/flanges/fittings) (page 14).
8	Total rewrite. Editorial changes. Revised format to divide matrix into sections (by discipline usage of materials). Added requirements for: valves, piping gaskets, pipe supports). Added requirements for Stainless Steel pipe flanges & fittings. Added line items for tube and tube supports. Added Epoxy Grout requirements. Added item additions to Electrical usage materials and added further clarification of electrical materials.
9	Revise control requirements for A563 Gr A nuts to make Q nuts marking controlled with blue paint, also added A1554 bolts to the General section.
10	This revision is to change/correct the addition of A1554 bolts from the last revision, to F1554 bolts.
11	Revised A325 Type 1 bolt control requirements, elaborated all-thread rod types and requirements, and elaborated post installed concrete anchors.
12	Revised loose CM A325 Type 1 bolt control requirements, deleting Nucor bolts marking restriction. Revise A563 Gr DH nut control requirements. Revise A194 Gr 2H nut requirements to implement galvanized nuts as CM. Elaborated U-bolt requirements to specify between carbon steel and stainless steel.
13	Delete vendor supplied materials container control, and bagging and tagging, due to material control procedure addition of Material Package Control process. Added Cable Staples, Machine Head Screws, S-Hooks, Cable, and Cable Terminations.
14	Total restructure of matrix. Re-formatted matrix to add the "Site Control Effective" column. The purpose of the Site Control Effective column is to indicate when a control method is effective in the specifying and purchasing of bulk material. When added to the matrix, requirements shall be effective immediately for BNI purchased material, and effective at a future date as noted for control on site to permit time for any necessary purges, re-order of material, subcontract changes, etc. Revised control requirements for fasteners such as nuts, washers, bolts, and all-thread rod, as well as revised lubricant control requirements. Revised requirements for QL spiral wound, soft iron, and flexible graphite pipe gaskets (flanged).
15	Addition of Welding coupons in the general section, and update specification number for piping gaskets.
16	Incorporate construction site purge results, indicating that the site control is effective for many items. Add electrical cable requirement that all cable smaller than 8 AWG will be CM unless uniquely marked QL; with no NP cable smaller than 8 AWG. Add new Q materials identified by yellow/gold electroplating.
17	Added reference to engineering specification governing the procurement of small catalog components. Removed Mechanical discipline specific section since that material is covered by the engineering specification.

Revision	Reason for Revision
18	Referenced 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i> , to utilize the control methods as established in this specification. Added references 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> , and 24590-WTP-3PS-PB01-T0001, <i>Technical Supply Condition for Pipe, Fittings, and Flanges</i> , as applicable.
19	Added clarification that welding tungsten electrodes did not require controls per this matrix. Added Reference to 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i> , to utilize the control methods as established in this specification for additional commodities.
20	Added separate section for spiral wound 304 stainless steel gaskets per 24590-WTP-RITS-QAIS-04-1022 to resolve conflict between WTP color-coding of temporary material and vendor color-coding per ASME B16.20.
21	Changed the cast in place anchors CM control method and added 3rd requirement exempting anchor assemblies from quality level color-coding requirements. Changed undercut anchors, reference design document to correct specification number. Added marking requirements for A193 B8 Class 2 undercut anchors for material class differentiation purposes. Added subcontractor control requirements for CM spiral wound 304 stainless steel gaskets.
22	Added control methods for stainless steel tubing, stainless steel tube fittings, stainless steel instrument valves, stainless steel manifold valves, stainless steel tubing tray, stainless steel tubing clamps - 2d and 3d, stainless tubing tray and clamp hardware.
23	Removed material grade from “Item & Mat'l” for Civil “Steel Plate” and “Steel Shapes” and added traceability requirement for grades other than A36. Added mechanical reference 24590-WTP-3PS-M000-T0013 to Civil “Steel Plate” and removed requirement of shims for installation of equipment.
24	Added Bulk Hardware: Grade 5 Carbon Steel Nuts, Bolts, Washers. Electrical Circuit Breakers have been removed as they are not ordered as bulk material. The PP circuit breakers will arrive as part of a panel assembly. Changed “Q” requirement on Strut/Fittings (Preformed Channel) to read “None Allowed”. Removed Electrical Heat Tracing commodity. Revise control requirements for grout.
25	Removed “Scotch 27 & 70 tape”, as it will be procured as CM regardless of quality level. Deleted “Cable Staples” as we are not currently purchasing cable staples. “General Lighting/Emergency Lighting/Receptacles” section, removed requirement to mark NP general lighting/emergency lighting with yellow paint, as Q lighting has individual tag numbers and CM lighting is specified on electrical fixture lighting schedule, therefore marking of NP lighting is non-value added. Separated “Receptacles/Photo Cells” from General Lighting/Emergency Lighting” and placed them into their own category. Added Self Drilling Deck Fasteners.
26	Specified material control requirements for Q Carbon Steel Pipe/Flanges/Fittings. Clarified requisitioning review and approval requirements for materials specified in the MCMM. Removed comments associated with weld filler material as it is identified in the Weld Control Manual. Specified requirements for miscellaneous Stainless Steel Plate as identified in 24590-WTP-CRPT-QA-06-105. Removed material control type (e.g., marking, receipt, and Material Package Control) as this can be identified through the Q/CM differentiator. Revised Stainless Steel Tubing Clamps to include Hardware and allow for CM. Revised Stainless Steel Tubing Tray to include Hardware, due to the deletion of Stainless Steel Tubing Tray and Clamp Hardware. Made exclusion from Steel Shapes (Misc) and created requirements for Steel Handrail Pipe. Added Nelson Studs.
27	Clarified requirements section of Nelson Stud shear connectors and added control methods allowing purchase of CM threaded Nelson studs.

Revision	Reason for Revision
28	Removed entire entry for Stainless Steel Tubing: All except 1". Changed title of Stainless Steel Tubing: 1" entry to read Stainless Steel Tubing; changed content from "Q: All purchased Q" to "Q: Not marked"; and from "NP None specified or purchased" to "NP: Marked with NP". For Stainless Steel Tube Fittings: changed content from "Q: All purchased Q" to "Q: Not marked"; and from "NP None specified or purchased" to "NP: Marked with NP". For Stainless Steel Valves: changed content from "Q: All purchased Q" to "Q: Not marked"; and from "NP None specified or purchased" to "NP: Marked with NP". For Stainless Steel Manifold Valves: changed content from "Q: All purchased Q" to "Q: Not marked"; and from "NP None specified or purchased" to "NP: Marked with NP".
29	Renamed requirements section Remarks to more accurately reflect its content. Addressed CRPT-08-120 by removing the statement about non-Q piping gaskets for BOF being logged prior to the receipt of permanent plant gaskets. Incorporated discipline comments: Piping-added sizes to the Remarks section for thread rod and bolts, Electrical-updated description of preformed strut/fittings to specify carbon steel instead of all in order differentiate from Q items, Civil-added Q preformed strut/fittings under Civil in the General section.
30	This is a total restructuring; therefore, revision bars are not used to indicate changes. Replaced notes with Scope and Organization and Use sections. Reorganized and alphabetized for ease of use. The following changes to content are in response to CRPT- 07-130: Added Bolts/Stud Bolts (excludes all thread rod): A354, Gr BC and BD, F1554 All Thread Rod, Threaded Nelson Studs. Bolts/Studs: A307 Gr A: (electroplated yellow gold finish) bolting for carbon steel general use, added Q/CM differentiator and moved reference to Q Bulk Fastener Spec to Reference Design Document column. Rod, A108 that has been threaded for entire length with yellow/gold electroplated finish removed text from Reference Design Document column. Added galvanized to Piping/Flanges/Fittings: Carbon Steel. Added Ductwork to Pipe Insulation. Additional Changes to content include: Bolts/Studs: A193 Gr 8 added class. A108 removed text in Reference Design Document block. Added Inconel 625 to Piping/Flanges/Fittings: Hastelloy. Added Fiberglass to Piping/Flanges/Fittings: PVC. Added Malleable iron to Piping/Flanges/Fittings: Ductile Iron.
31	To reincorporate comments associated with weld filler material as it is identified in the Weld Control Manual.
32	Incorporates changes necessary due to 24590-WTP-CRPT-QA-08-416. Clarified A307 GA Electroplated Bolts/Stud Bolts. Separated equipment, piping, and building insulation into individual entries. Added thread sealant/lubricant. Updated reference design documents. Corrected reference under remarks section for valves. This is a total restructuring; therefore, revision bars are not used to indicate changes.
33	Split "General" category into two sections: "General (Fasteners)" and "General (Other)." Listed all fasteners under the "General (Fasteners)" section; listed remainder of general items under "General (Other)" section. Added Socket Head Cap Screws. Added washers to align with Q Bulk Fastener spec. Made minor formatting corrections and alphabetized entries throughout; therefore, no revision bars were used to indicate changes.
34	Edited scope of the matrix; edited and formed control Method & Q/CM differentiator column; added new entries; and updated the remarks column.
35	Updated: Reference and Design Document and Remarks fields for section General (Fasteners) Bolts/Stud Bolts, 18-8/304 and 316 Stainless steel (no ASTM material specification), and Item & Material Control Method & Q/CM Differentiator, Reference Design Document, and Remarks fields associated with Pipe/Flanges/Fittings: Stainless steel, Hastelloy- C-22 and AL-6XN: Inconel 625, and Titanium. Also added the Item: "Shapes" to Plate, Misc. Stainless Steel in section General (Other).
36	Clarified blue marking for Q items. Added F837 Socket Head Cap Screws. Added Q Carbon Steel Strut/Fittings (preformed channel). Clarified markings for CM stainless and alloy pipe and fittings. Added reference design document to F593 Bolts/Stud Bolts, F594 Nuts, and A574 Socket Head Cap Screws. Removed unused grout items from list of grout.

Revision	Reason for Revision
37	Added statements that yellow paint on end of stainless steel preformed channel struts is “end spray” applied by Unistrut to denote 304SS and is not to be interpreted to indicate nonpermanent material. Added statements that valves slated for CM installation may be vibro-etched “CM.” Changes are indicated with a revision bar in the right margin.
38	Added to description of hex nuts. Added grout alternatives. Clarified controls of electrical bulks. Changed remarks for tubing clamps and hardware. Clarified ASME materials per 24590-WTP-GPP-CON-7115. Added SS shoulder bolts per 24590-WTP-FC-M-11-0460. Modified instrument tube and fitting requirements to permit CM items.
39	Clarified control of fastener assemblies. Added control for A194 Gr. 6/6F nuts. Added control for SS beveled washers. Relocated Piping Gaskets to Piping Section. Clarified marking of Carbon Steel Struts and Fittings (preformed channel). Added controls for Garlock seal rings.
40	Corrected Control Method and Q/CM Differentiator for F879 Socket Button & Flat Counter-sunk Head Cap Screws and F837 Socket Head Cap Screws. Added F835 Socket Button & Flat Counter-sunk Head Cap Screws.
41	Clarified color coding of ASTM F1443 Cast-in-Place Anchors, including added scope statement. Added control for SAE Gr 8 nuts and bolts. Added control for fiber (e.g., Garlock) type gaskets. Removed contradicting information regarding remarks information referring to CM material for Gaskets, Piping (Flanged) when the control method differentiator did not indicate the purchasing or receiving of CM material.
42	Under General Fasteners: Added Pop Rivets. Changed control method for Preformed Channel Struts and Preformed Channel Fittings (Unistrut Brand only used for “Q”).
43	Clarify use of “extra fasteners” provided with equipment. Added gases to list of small catalog components. Added controls for non-structural flat washers and lock washers. Clarified control of In-Line Components. Added controls of Valve and In-Line Component internals to address 24590-WTP-PIER-MGT-13-0168-B.
44	Removed the requirement for the FEM to approve NP material purchases. Clarified marking on JC White spacer clamps. Added NOTE to Anchors, Cast in Place to say Gr55 anchors shall not be purchased as NP. Corrected Q/CM Differentiates for F879 cap screws. Clarified control method and corrected typos for flat & lock washers.
45	Revise control method of Machine Screws to align with Q Bulk Fastener Specification. Added 18-8 Stainless Steel Nut to General Fasteners to align with the Q Bulk Fastener Specification.
46	In the Scope, clarified that blue color marking is reserved for “Q” materials. Added control methods for subcontractor CB&I to the General (Other) and Piping sections, as appropriate. In response to 24590-WTP-GCA-MGT-15-00631-C, added “NP” Powers Wedge-Bolt+ to the MCMM for purposes of distinguishing the difference between Wedge-Bolt and Wedge-Bolt+ anchors. Removed blue marking requirement for Hastelloy tubing and tube fittings. For Cable Termination Materials, removed “AMP” brand until a Q cable termination supplier is awarded.
47	In the Scope, clarified that Industrial safety item(s) painted safety yellow are not governed by this document. Clarified Undercut Anchors and carbon steel Strut/Fittings. Updated Conduit/Fittings Remarks Section. In response to 24590-WTP-GCA-MGT-16-00534-D, added ‘bronze’ and ‘brass’ to Copper Pipe/Fittings/Flanges.

Revision	Reason for Revision
48	<p>Changes this revision: <b>Scope Section:</b> Moved the remarks on the James C. White Spacer clamp information from cover page to Instrumentation Section – <u>Tubing Clamps and Hardware, Stainless Steel or Zinc Plated</u> Remarks section.</p> <p><b>General (Fasteners) Section:</b> <u>Bolts/Stud Bolts A193 Gr B6:</u> Changed Discipline Owner from Piping to Mech. <u>Nuts, 18-8:</u> Deleted “None” in Remarks. <u>Anchors, Power Actuated:</u> Changed Item &amp; Material to “Anchors, Power Actuated (Powder or pneumatic) and updated Reference Design Documents. In <u>Sealant/Lubricant Thread:</u> In CM, removed “All” and clarified the Remarks.</p> <p><b>Instrumentation Section:</b> Modified the <u>Fittings, Hastelloy Tube, All sizes</u> item Control Method &amp; Q/CM Differentiator section and Remarks section for Hy-Lok brand only. <u>Tubing Clamps and Hardware, Stainless Steel or Zinc Plated</u> Remarks section updated for James C. White remarks from Scope Section.</p> <p><b>Piping Section:</b> <u>Support, Pipe Stock Coded</u> – updated the Remarks to add “or items are to be marked with stock code identification”.</p>
49	<p>Changes this revision: <b>Scope Section:</b> Clarified purchase of non-permanent materials. Revised marking for NP Startup materials from orange to pink. Added statement that Startup materials marked orange prior to 03/09/17 are acceptable. Added as an exception: Items may be purchased NP except as prohibited under the guidance for the individual item. Items with no specific control method provided for NP materials follow the scope guidance. Moved fasteners language from “<b>Scope</b>” Section to “<b>General (Fasteners)</b>” Section.</p> <p><b>General (Fasteners) Section:</b> <u>Anchors, Cast in Place.</u> – Added NP “See Remarks”.</p> <p><b>General (Other) Section:</b> <u>Anchors, Concrete Screw (Powers Wedge Bolt ®+)</u> Removed “marked with yellow paint”. <b>General (Other) Section:</b> <u>Welding Coupons</u> – Deleted “marked with yellow paint”.</p> <p><b>Piping Section:</b> <u>Valves:</u> Added to NP “See Remarks”.</p>
50	<p><b>Added Section Numbering to Matrix (e.g., GF-1, GO-1, C-1, E-1, I-1, P-1) Editorial change - changes not marked.</b></p> <p><b>Electrical Section Changes:</b> <b>#E-3 Cable Termination Materials:</b> <i>Control Method &amp; Q/CM Differentiator:</i> Q Control Method changed to “Marked with blue paint or Bag/box with vendor stock code and marked with blue paint.” CM changed to “No unique markings.” <b>#E-5 Conduit/Fittings: All:</b> Changed Q to “Q: Marked with blue paint”. Changed CM to remove “All.”</p> <p><b>Instrumentation Section Changes:</b> <b>#I-1 Fittings, Hastelloy Tube: All sizes:</b> Added “NP: None Allowed”. <b>#I-2 Fittings, Stainless Steel Tube: All sizes:</b> Added “NP: None Allowed”. <b>#I-4 Tubing, Hastelloy</b> – Added “NP: None Allowed”. <b>#I-5 Tubing, Stainless Steel</b> – Added “NP: None Allowed”. <b>#I-7 Valves, Stainless Steel Instrument Valves: All sizes:</b> <i>Control Method &amp; Q/CM Differentiator:</i> Changed Q to “Hy-Lok brand only”. Changed NP to Marked (stamped/engraved) with NP. Deleted “See Remarks”. <i>Remarks</i> changed to read “CM fitting must be supplied by a brand other than Hy-Lok. No mixing of parts permitted.” <b>#I-8 Valves, Stainless Steel Manifold Valves: All sizes:</b> <i>Control Method &amp; Q/CM Differentiator:</i> Changed Q to “Hy-Lok brand only”. Changed NP to Marked (stamped/engraved) with NP. Deleted “See Remarks”. <i>Remarks</i> changed to read “CM fitting must be supplied by a brand other than Hy-Lok. No mixing of parts permitted.”</p> <p><b>Piping Section Changes:</b> <b>#P-15 In-Line Components (except valves): All:</b> <i>Control Method &amp; Q/CM Differentiator:</i> Changed Q to “Tagged. See Remarks”. CM Changed to “Tagged. See Remarks.” Added NP “Not tagged. See Remarks.”. <i>Remarks:</i> Added language for permanent plant In-Line Component MRs. Added NP In-Line Component language.</p>
51	<p><b>General (Fasteners) Section: Added new item GF-44: Screws, Set, Socket Head, ASTM F912 Alloy Steel or ASTM F880 Stainless Steel. Items numbers GF-45 to GF-54 numbered (no revision bar used)</b></p>

Revision	Reason for Revision
52	<p><b>Cover Page and #GO-19:</b> Deleted reference to canceled specification 24590-WTP-3PS-M000-T0013, <i>Engineering Specification for Small Catalog Components, Consumables, Shims and Lubricants for Mechanical Equipment</i>.</p> <p><b>General (Other) (GO) Section Changes: #GO-1: Penetration and Joint Seal Materials:</b> Remarks: Added note to clarify this entry does not include sealant/lubricant. <b>#GO-19: Item &amp; Material</b> Changed from “Sealant/Lubricant Thread” to Sealant/Lubricant”. <i>Control Method &amp; Q/CM Differentiator</i> section updated to <u>NP</u> “See Remarks”. <i>Reference Design Documents:</i> Added Plant Design. <i>Remarks</i> Section updated <u>CM</u> to “Purchase CM per design requirements and “Mark primary and secondary container(s) with appropriate NP marking(s).”. <i>Discipline Owner</i> section – added Mech.</p> <p><b>Instrumentation Section Changes: #I-2: Updated Remarks</b> section to change “subcontractor” to responsible installation contractor”. <b>#I-5: Updated Remarks</b> section to change “subcontractor” to responsible installation contractor”.</p> <p><b>Piping Section Changes: #P-16: Updated Remarks</b> section: Internals for <u>Q</u> installation – added “or SKU number”. Internals for <u>CM</u> installations: Added “Engineered Stock Code or purchased with a SKU number”.</p>
53	<p>Modified the <b>General Fasteners NOTE</b> to replace “bag and tag” with marking control or the material package control, as applicable. Modified GF-6 to add “or yellow bolts are” to the remarks. Updated GO-22 Unistrut for CM can be any brand other than Unistrut and updated remarks.</p>
54	<p>In <b>General (Other) (GO) Section:</b> Added the following item and renumbered the remaining items accordingly: <b>#GO-24: PVC/CPVC Primer and Cement</b>.</p> <p>In <b>Civil (C) Section:</b> Added the following item and renumbered the remaining items accordingly: <b>#C-1: Ecology Blocks, Jersey Barriers, and Wheel Stops</b>.</p> <p>In <b>Instrumentation (I) Section:</b> Changed the following items: <b>#I-7: Valves, Stainless Steel Instrument Valves:</b> All sizes. In <i>Remarks</i>, changed “<u>CM</u> fittings...” to “<u>CM</u> valves...”. <b>#I-8: Valves, Stainless Steel Manifold Valves:</b> All sizes. In <i>Remarks</i>, changed “<u>CM</u> fittings...” to “<u>CM</u> valves...”.</p>
55	<p>In <b>General (Other) (GO) Section: #GO-11 Grout:</b> Updated <b>Remarks</b> to add “NOTE: The grouts above may be designated “CM” by labeling the container “For CM use Only”.”</p> <p>In <b>Piping (P) Section: #P-14 Valves:</b> Updated <b>Reference Design Documents</b> to add: 24590-WTP-3PS-PV00-T0002, <i>Engineering Specification for Technical Supply Conditions for Resilient Seated Butterfly Valves</i>; 24590-WTP-3PS-PV00-T0003, <i>Engineering Specification for Technical Supply Conditions for Q Stainless Steel Valves</i>; 24590-WTP-3PS-PV00-T0004, <i>Engineering Specification for CM Valves</i>.</p>

Revision	Reason for Revision
56	<p><b>This revision is a complete rewrite. No Revision bars are visible.</b></p> <p>This document was revised to align with changes to 24590-WTP-PD-RAQA-QA-0003, <i>Graded Approach</i>, 24590-WTP-GPP-CON-7101, <i>Quality Control Program</i> and 24590-WTP-GPP-CON-7109, <i>Material Control</i>.</p> <p><b>Scope:</b> Removed “Q” and “CM. Replaced with <b>Safety Class/Safety Significant (SC/SS)</b> , <b>Chemical Safety/Air Permit (Enhanced Commercial [EC])</b>, and <b>Catalog Commercial/Commercial (CC/CM)</b>. Removed language for Items identified as CM may be purchased Q and purchasing language for NP. Updated color coding reference information, adding green color coding for EC material.</p> <p><b>Matrix Organization and Use Section:</b>  Changed Control Method &amp; Q/CM Differentiator to “Control Method” language</p> <p><b>Body of the Matrix:</b>  In the “Control Method” column deleted “Control methods are identified in” throughout column. Also, <b>throughout document</b> – replaced “Q” and “CM” with “SC/SS”, “EC”, and “CC/CM”.  Deleted “Site Control in Effect” column throughout document.  Specific Changes to Items added or removed:  Added <b>GF-6 Bolts: A449 Type 1 Black &amp; Galvanized Carbon Steel</b>.  <b>Changed GO-21 to Strut/Fittings Accessories (Preformed channel): Carbon steel and Stainless Steel</b> and deleted former GO#22 Strut (Preformed channel): Stainless steel &amp; GO#23 Preformed Channel Fittings: Stainless Steel.  <b>Changed GO-24 to U-Bolts: Caron steel and Stainless steel</b> and deleted former GO-27 U-Bolts: Stainless steel.  Deleted former <b>GO-29 Welding Coupons</b>.  Changed <b>E-8 to Grounding and Lightning Protection</b> (deleted Conductors and Connectors) and deleted former <b>E-9 Grounding and Lightning Accessories</b>.  Changed <b>E-10 to Receptacles</b> (deleted /Photo Cells).  Changed <b>I-2 to Stainless Instrument Tube Fittings and Valves</b> and deleted former I-7 Valves, Stainless Steel Instrument Valves and I-8 Valves, Stainless Steel Manifold Valves.  <b>Piping (P) Section:</b> Deleted Note.  In P-3 Gaskets, Piping (Flanged) Spiral wound, soft iron, flexible graphite: Deleted “except 304 stainless steel” to incorporate former “P-4 Gaskets, Piping (Flanged): Spiral wound 304 stainless steel only” into P-3.  Changed “P6 Pipe/Flanges/Fittings: Stainless steel, Hastelloy- C-22 and Al-6XN: Inconel 625, Titanium” to incorporate former P-8 Pipe/Flanges/Fittings: Hastelloy- C-22 and Al-6XN: Inconel 625” and “P-9 Pipe/Flanges/Fittings: Titanium”.  Changed “P7 Pipe/Flanges/Fittings: PVC and fiberglass, Ductile iron and malleable iron, Copper/Bronze/Brass” to incorporate former “P-11 Pipe/Flanges/Fittings: Ductile iron and malleable iron” and “P-12 Pipe/Flanges/Fittings: Copper/Bronze/Brass”.  Deleted former “P-13 Supports, Pipe: Stock Coded”.  Changed “P-8 In-Line Components including Valves” to incorporate former “P-15” In-Line Components (except valves)”.</p>
57	<p>Updated P-8 to align with Engineering specification 24590-WTP-3PS-PS02-T0003, adding note regarding bulk valve stock codes received on Q or CD valve procurement orders prior to 9-10-20. Updated reference design documents for GF-32, 33, 34, and 35 with applicable specifications.  Updated GF-36, replacing Galvanized and electroplated with A36, A575, and A576.</p>



This document has been digitally signed using the ElectroSign process.

## Document for Signature

**Document Number:** 24590-WTP-MCM-CON-03-001 **Rev:** 57

Participants	Signature	Completed	Status	Result	Comments
<b>Final Approver</b>	<b>1/28/2021 5:50 PM</b>				
Hudson, Paul	<i>Paul Hudson</i>	2/3/2021 3:29 PM	Completed	Approve	