



D. G. Limbey
FQCM Concurrence

2/5/15
Date

Paul Hudson 2/5/15
Field Engineering Manager Approval PAUL HUDSON Date

MATERIAL CONTROL METHODS MATRIX (MCMM)

Scope
<p>The MCMM is applicable to Quality (Q) bulk materials and commercial (CM) and/or nonpermanent (NP) materials that are visually indistinguishable from Q, used or installed at the WTP jobsite. Line-by-line compliance is expected.</p> <p>Marking material blue to identify it as Q is permitted only when the commodity is specified in the matrix. Blue tinting is not acceptable. All green tint finishes shall be CM. Items identified as CM may be purchased as Q.</p> <p>When fasteners are removed from an installation (permanent or temporary), the fasteners are to be disposed of or retained using the “bag and tag” process. Unused Fasteners provided with equipment are to be disposed of or retained using the “bag and tag” process.</p> <p>Nonpermanent Plant (NP) materials that could be commingled with CM/Q bulks are purchased as CM/Q or marked yellow or orange (Start-Up materials). There are two exceptions: 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, <i>Product Marking</i>. (The yellow color-code indicates the material grade and is not to be interpreted to indicate nonpermanent plant material). Additionally, spacer clamps manufactured by James C. White have a material code of CM marked on the clamps. The spacer clamps are quality level Q.</p> <p>For field procurement of small catalog components (e.g., fuses, lights, light bezels, o-rings, gaskets, belts, consumables, precision or nonstructural shims, gases, lubricants), refer to engineering specification 24590-WTP-3PS-M000-T0013, <i>Small Catalog Components, Consumables, Shims, and Lubricants for Equipment</i>.</p>
Matrix Organization and Use
<p><u>Sections and Discipline Owners</u></p> <p>The MCMM is organized into the following sections: General (Fasteners), General (Other), Civil, Electrical, Instrumentation, and Piping.</p> <p>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.</p> <p>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.</p>

Subcontractors: Section headings (General, Civil, Piping, Mechanical, Instrumentation, Electrical), Discipline Owner, and Discipline Use information are for internal use by BNI. Disregard section heading, Discipline Owner, and Discipline Use and search by Item & Material. Use of any material in this matrix by a subcontractor must 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 MCMM. Items and materials are organized alphabetically within sections.

Control Method & Q/CM Differentiator

The Control Methods & Q/CM Differentiator column identifies the approved Q/CM (and NP, as applicable) control method/differentiator for each item. No other control methods/differentiators are acceptable unless otherwise specified in the Remarks section.

Site Control in Effect

The Site Control in Effect column indicates when a control method is in effect. Control requirements are effective for specifying and requisitioning material on the effective date of the matrix revision that added or revised the requirement for material on site. The presence of “Yes” in the column indicates that the control method is currently in effect for material on site. A date in the column indicates when the control method is forecasted to be in effect, allowing time for subcontractors to make the proper preparations, write special instructions, conduct site purges, etc., to be in compliance with the control method when it becomes effective. The requirement is not in effect for material on site unless it is shown as “Yes”.

Reference Design Document

The Reference Design Document column lists applicable reference design documents.

Remarks

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

General (Fasteners)

Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.

Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Anchors, Cast in Place: F1554 All grades A193 Gr B5 All finishes	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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 BNI 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> . NOTE: Gr55 anchors shall not be purchased as NP.	Civil
Bolts: A307 Gr B Any finish, carbon steel bolting for general use	<u>Q:</u> None <u>CM:</u> All	Yes	<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)

Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.

Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Bolts: A325 Type 1 Black and galvanized carbon steel high strength bolts for structural steel joint	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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
Bolts: A325 Type 1 Electroplated, carbon steel high strength bolts for structural steel joint	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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
Bolts: A490 Type 1 Black finish, heat treated steel structural bolts	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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
Bolts: SAE J429 Gr 2, 5, 8	Q: None CM: All	Yes	<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 (Non-ITS)</i>	Anodized green acceptable for sizes 1/4" to 3/4".	Civil
Bolts/Stud Bolts: 18-8 Stainless Steel (no ASTM material specification)	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil

General (Fasteners)

Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.

Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Bolts/Stud Bolts: A193 Gr B7 Black finish, alloy steel bolting for high temperature service	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
Bolts/Stud Bolts: A193 Gr B8, B8M Stainless steel, for high temperature service	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
Bolts/Stud Bolts: A307 Gr A Black carbon steel bolting for general use	<u>Q:</u> None <u>CM:</u> All	Yes	<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
Bolts/Stud Bolts: A193 Gr B6 12% Chromium	<u>Q:</u> None <u>CM:</u> All	Yes			Piping
Bolts/Stud Bolts: A307 Gr A Electroplated (yellow/gold finish) and galvanized finish, bolting for carbon steel general use	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners.</i>	Yes	<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>	For Intermech only: Prior to 5/1/2008, yellow/gold electroplated finish acceptable as Q.	Civil

General (Fasteners)

Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.

Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Bolts/Stud Bolts: A354 Gr BC and BD Black finish	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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
Bolts/Stud Bolts: F593 (all alloys) Stainless steel	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>Plant Design:</u> 24590-WTP-3PS-M000-T0002, <i>General Specification for Mechanical Handling Equipment Design and Maintenance</i>		Mech.
Bolts, Tension Control (TC): F1852 Type 1 (A325) and F2280 Type 1 (A490) Black finish, twist-off type tension control structural bolt/nut/washer assemblies, steel, heat treated	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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
Nelson Stud Shear Connectors: A108	<u>Q:</u> All <u>CM:</u> None	Yes	<u>CSA:</u> 24590-WTP-3PS-DD00-T0001, <i>Purchase of Standard and Non-Standard Embedded Steel Items</i>	All Q Nelson studs, including those used by subcontractors, will be supplied by BNI.	Civil

General (Fasteners)

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Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Nelson Studs, Threaded: A108	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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 Q Nelson studs, including those used by subcontractors, will be supplied by BNI.	Civil
Nuts, 18-8 Stainless Steel	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners.</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	<u>None</u>	Civil
Nuts, Hex, Hvy Hex: A194 Gr 2H Black finish alloy steel for high temperature service	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
Nuts, Hex, Hvy Hex: A194 Gr 6, 6F	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes			Mech.
Nuts, Hex, Hvy Hex: A194 Gr 8, 8M Stainless steel, for high temperature service	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping

General (Fasteners)

Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.

Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Nuts, Hex, Hvy Hex: A563 Gr A Black finish, carbon steel	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
Nuts, Hex, Hvy Hex: A563 Gr A Electroplated and galvanized carbon steel	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	CSA: 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
Nuts, Hex, Hvy Hex: A563 Gr DH Electroplated and black finish, carbon steel	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	CSA: 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
Nuts, Hex, Hvy Hex: A563 Gr DH Galvanized, carbon steel	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-SS01-T0002, <i>Purchase of Structural Steel</i> 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>		Civil
Nuts, Hex, Hvy Hex: F594 All alloys, stainless steel	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	Plant Design: 24590-WTP-3PS-M000-T0002, <i>General Specification for Mechanical Handling Equipment Design and Maintenance</i>		Mech.

General (Fasteners)					
Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Nuts, Hex, Hvy Hex: SAE J995 Gr 2, 5, 8	Q: None CM: All	Yes	CSA: 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 (Non-ITS)</i>	Anodized green acceptable for sizes 1/4" to 3/4".	Civil
Nuts, Wing	Q: None CM: All	Yes	Electrical: 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Rivet, Pop: All materials	Q: None CM: All	Yes	24590-WTP-3PS-ATTF-T0001, <i>Sheet Metal Flashing and Trim</i>		Civil
Rod: A108 Threaded for entire length with yellow/gold electroplated finish	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i> CSA: 24590-WTP-3PS-FA01-T0001, <i>Engineering Specification for Furnishing of Anchor Bolts (Rods)</i>	BNI and subcontractors (other than Intermech) are not to purchase or use this type of material. Rods shall meet the tensile and hardness of ASTM grade A307, Grade A.	Mech.
Rod, All Thread: A193 B7 Black finish, Alloy steel for high temperature service	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	Electrical: 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i> Plant Design: 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "QL" Pipe Supports</i>		Piping

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Material Control Methods Matrix (MCMM)

General (Fasteners)					
Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Rod, All Thread: A193 B8, B8M Class 1 & 2 stainless steel for high temperature service	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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 (Non-ITS)</i>		Piping
Rod, All Thread: A307 Gr C Electroplated yellow/gold	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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 (Non-ITS)</i>	A307 Gr C Replaced by ASTM F1554 Gr 36.	Piping
Rod, All Thread: F1554 Gr 36 Electroplated yellow/gold	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-FA01-T0001, <i>Engineering Specification for Furnishing of Anchor Bolts (Rods)</i>	F1554 Gr 36 can be used in place of ASTM A307 Gr C.	Civil
Rod, All Thread: Galvanized and electroplated	Q: None CM: All	Yes	<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 (Non-ITS)</i>		Piping
Screws, Cap, Socket Button & Flat Countersunk Head: F879 stainless steel	Q: None CM: All	Yes			Mech.

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Material Control Methods Matrix (MCMM)

General (Fasteners)					
Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Screws, Cap, Socket Button & Flat Countersunk Head: F835 Alloy steel	Q: None CM: All	Yes			Mech.
Screws, Cap, Socket Head: A574 Alloy steel	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>Mechanical:</u> 24590-WTP-3PS-M000-T0002, <i>General Specification for Mechanical Handling Equipment Design and Maintenance</i>		Mech.
Screws, Cap, Socket Head: F837 stainless steel	Q: None CM: All	Yes	<u>Mechanical:</u> 24590-WTP-3PS-MQR0-T0002, <i>Engineering Specification for HLW Standardized Bogies</i>	1/4" diameter and larger.	Mech.
Screw, Lag	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Screws, Machine: Non-Stainless Steel	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Screws, Machine: 18-8 Stainless Steel	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil

General (Fasteners)

Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.

Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Screws, Self-Drilling: Self-tapping, AISI 1022 30RC minimum, 138,000 PSI minimum tensile strength	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes			Civil
Screws, Tek	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Screw, Sheet Metal	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Washers, Beveled: ASME B18.23.1 Black and galvanized	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
Washers, Beveled: Stainless Steel	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Washers, Flat: Meeting both F844 and ASME B18.22.1 Electroplated	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil

General (Fasteners)					
Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Washers, Lock: ASME B18.21.1 Electroplated	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
Washers, Structural: F436 Type 1 Galvanized and black finish, hardened steel washers	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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 Important to Safety (ITS) 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)

Note: Fastener assemblies (bolt & nut or stud bolt & nuts) are to use the material control method applicable to the bolt or stud bolt.

Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Washers, Load Indicating: F959 Type 325 and Type 490 Galvanized and black finish, compressible type direct tension indicators for use with structural steel fasteners	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<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
Washer, Flat & Lock (SS)	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil
Washer, Flat & Lock (Steel)	Control methods are identified in 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>	Yes	<u>CSA:</u> 24590-WTP-3PS-F000-T0001, <i>Q Bulk Fasteners</i>		Civil

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Material Control Methods Matrix (MCM)

General (Other)					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Anchors, Acrylic: All	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
Anchors, Concrete Screw	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
Anchors, Drop-In: All	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
Anchors, Epoxy	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
Anchors, Power Actuated: All	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
Anchors, Undercut: A193 B7 and B8	Q: All CM: None	Yes	CSA: 24590-WTP-3PS-FA02-T0002, <i>Purchase of Post Installed Concrete Anchors for ITS 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
Anchors, Wedge Type: All	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil

General (Other)					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Epoxy: All	Q: None CM: All	Yes	CSA: 24590-WTP-3PS-FA02-T0001, <i>Purchase of Post Installed Concrete Anchors for Non ITS Applications</i>		Civil
Grout: All	Q: See Remarks CM: All products not listed as Q. See Remarks NP: None allowed	Yes	CSA: 24590-WTP-3PS-D000-T0001, <i>Concrete Work</i> 24590-WTP-CGD-C-06-0004, <i>Commercial Grade Dedication - Grout (Cement Based)</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

24590-WTP-MCM-CON-03-001 Rev. 45
Material Control Methods Matrix (MCMM)

General (Other)					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Hooks, S-Hooks: All	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Insulation: Building	Q: Color coded blue CM: Specified CM	Yes	<u>CSA:</u> 24590-WTP-3PS-ATIB-T0001, <i>Building Insulation 07210</i> 24590-LAW-3PS-NN00-T0001, <i>LAW Pour Caves, Buffer Store, and 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
Insulation: Equipment/Vessel	Q: Color coded blue CM: Specified CM	Yes	<u>Mechanical:</u> 24590-WTP-3PS-NN00-T0001, <i>Thermal Insulation For Mechanical System</i>		Mech.
Insulation: Piping	Q: Color coded blue CM: Specified CM	Yes	<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
Pipe, Steel Handrail: 1-1/2" carbon steel schedule 40 zinc coated	Q: None CM: All	Yes	<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

24590-WTP-MCM-CON-03-001 Rev. 45
Material Control Methods Matrix (MCM)

General (Other)					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Plate, Carbon Steel: All carbon steel grades	<u>Q</u> : Primed. See Remarks <u>CM</u> : Non-primed	Yes	<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>Mechanical</u> :	In lieu of primer, Q 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. Intermech galvanized or nonprimed Q plate are controlled via heat number traceability and associated documentation.	Civil
Plate, Shapes, Misc. Stainless Steel	<u>Q</u> : Will be color coded blue. See Remarks <u>CM</u> : No marking	Yes	<u>CSA</u> : 24590-WTP-3PS-SS01-T0001, <i>Purchase of Miscellaneous Steel</i>	Intermech Q stainless steel plate is controlled via heat number traceability and associated documentation. Q (non-ASME) to be color coded blue. Q (ASME) must have unique stock code, ASME marking, and blue marking.	Civil
Sealant/Lubricant Thread	<u>Q</u> : None <u>CM</u> : All. See Remarks	Yes	<u>Plant Design</u> : 24590-WTP-3PS-PS02-T0003, <i>Field Fabrication and Installation of Piping</i> <u>Mechanical</u> : 24590-WTP-3PS-M000-T0013, <i>Small Catalog Components, Consumables, Shims and Lubricants for Equipment</i>	All thread sealants/lubricants specified CM and may be used in CM or Q applications.	Piping

24590-WTP-MCM-CON-03-001 Rev. 45
Material Control Methods Matrix (MCM)

General (Other)					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Steel Shapes (Misc. excluding handrail pipe): All carbon steel grades	<u>Q</u> : Primed. See Remarks <u>CM</u> : Non-primed	Yes	<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, Q 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. Intermech galvanized or nonprimed Q steel shapes are controlled via heat number traceability and associated documentation.	Civil
Strut/Fittings (Preformed channel): Carbon steel	<u>Q</u> : See Remarks <u>CM</u> : See Remarks	Yes		Only Unistrut products are permitted for Q installations. Q struts, fittings, and accessories are marked in accordance with 24590-WTP-3PS-SY00-T0001, <i>Purchase of Standard Struts, Fittings, and Accessories</i> . Non-Unistrut products (e.g., B-Line) are permitted for use in CM installations.	Civil
Strut (Preformed channel): Stainless steel	<u>Q</u> : Unistrut Brand Only <u>CM</u> : None	Yes	<u>Civil</u> : 24590-WTP-3PS-SY00-T0001, <i>Purchase of Standard Struts, Fittings, and Accessories</i>	Yellow paint on the end of the channel is “end spray” applied by Unistrut to denote 304SS and is not to be interpreted to indicate nonpermanent material.	Civil
Preformed Channel Fittings: Stainless Steel	<u>Q</u> : Unistrut Brand Only <u>CM</u> : Non-Unistrut Brand	Yes	<u>Civil</u> : 24590-WTP-3PS-SY00-T0001, <i>Purchase of Standard Struts, Fittings, and Accessories</i>		Civil

General (Other)					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Tubing, Galvanized: ASTM A787	<u>Q</u> : None <u>CM</u> : All. See Remarks	Yes	<u>Plant Design</u> : 24590-WTP-3PS-MD00-T0001, <i>Engineering Specification for Heating Ventilation and Air Conditioning Systems Installation</i> 24590-WTP-3PS-MDH0-T0002, <i>Engineering Specification for Heating Ventilating and Air Conditioning System Seismic Category III and IV Ductwork (CM)</i>	This is not instrument tubing. Intermech galvanized tubing is controlled via heat number traceability and associated documentation.	Mech.
U-Bolts: Carbon steel	<u>Q</u> : Identified/tagged with a stock code <u>CM</u> : Not identified/tagged with a stock code	Yes	<u>Plant Design</u> : 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "QL" Pipe Supports</i>		Piping
U-Bolts: Stainless steel	<u>Q</u> : Marked/tagged with stock code or unique number <u>CM</u> : Not marked/tagged with stock code or unique number	Yes	<u>Plant Design</u> : 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "QL" Pipe Supports</i>		Piping

24590-WTP-MCM-CON-03-001 Rev. 45
 Material Control Methods Matrix (MCMM)

General (Other)					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Owner
Weld Filler Material: Includes electrodes, wire, brazing wire	<u>Q</u> : All. See Remarks <u>CM</u> : None <u>NP</u> : None	Yes	<u>Welding</u> : 24590-WTP-MN-CON-01-001-05-01, <i>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-001-01-01, <i>Welding Control Manual</i> . 2) For subcontractor welding, all weld filler material shall be controlled in accordance with BNI approved subcontractor procedures.	Welding
Welding Coupons: All pipe diameters, schedules and material types	<u>Q</u> : None <u>CM</u> : None <u>NP</u> : All NP, marked with yellow paint	Yes	N/A		Welding

24590-WTP-MCM-CON-03-001 Rev. 45
 Material Control Methods Matrix (MCMM)

Civil					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Embeds, Bulk: All	<u>Q</u> : Stock Code tag or stamp <u>CM</u> : Not a Q stock code	Yes	<u>CSA</u> : 24590-WTP-3PS-DD00-T0001, <i>Purchase of Standard and Non-Standard Embedded Steel Item</i>	All BNI embeds shall be fabricated Q. Subcontractor embeds are CM and shall not be the same design or configuration as BNI embeds to prevent commingling.	Civil
Rebar: A706	<u>Q</u> : All <u>CM</u> : None	Yes	<u>CSA</u> : 24590-WTP-3PS-DG00-T0001, <i>Furnishing of Reinforcing Steel</i>	Subcontractor and BNI CM rebar on site at the time of preliminary construction authorization release (PCAR) work was epoxy coated, or sprayed on the ends and in rings at 10 ft intervals. Orange spray paint was used to clearly identify it from Q rebar.	Civil

Electrical					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Boxes, Pull and Junction: All	<u>Q</u> : None <u>CM</u> : All. No unique markings	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> (Non-ITS)		Electrical
Cable: All	<u>Q</u> : All Q cable will be uniquely marked with an identifier designating quality level. <u>CM</u> : All 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 CM. Cable cut from a reel will be tagged with a unique cable number. <u>NP</u> : No unique marking. No NP cable smaller than 8 AWG.	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials</i> (Non-ITS) 24590-WTP-3PS-EW00-T0001, <i>Power, Control and Instrumentation Cables</i> (ITS)		Electrical

24590-WTP-MCM-CON-03-001 Rev. 45
Material Control Methods Matrix (MCMM)

Electrical					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Cable Termination Materials: Lugs/Termination Kits/Splices	<u>Q</u> : All Q cable termination materials are AMP brand, and marked with AMP marking (kits will be provided by an identified manufacturer and contain all necessary materials to perform termination). <u>CM</u> : No unique marking	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i> 24590-WTP-3PS-E00X-T0003, <i>Cable Termination</i>		Electrical
Cable Tray/Fittings: All	<u>Q</u> : None <u>CM</u> : All	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Conduit/Fittings: All	<u>Q</u> : None <u>CM</u> : All. No unique marking	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>	BNI furnished conduit will be purchased through a dedicated onsite supplier who shall control the receipt and issue of CM bulk material. Conduit and other electrical bulk material will be under the onsite supplier's QA/QC program until it is issued to BNI.	Electrical
Cord Caps, Flexible: All	<u>Q</u> : None <u>CM</u> : None <u>NP</u> : All	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Cord, Flexible: All	<u>Q</u> : None <u>CM</u> : All	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical

24590-WTP-MCM-CON-03-001 Rev. 45
Material Control Methods Matrix (MCMM)

Electrical					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Ground and Lightning Protection Conductors and Connectors: All	<u>Q</u> : None <u>CM</u> : All. No unique marking	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Grounding and Lightning Accessories: All	<u>Q</u> : None <u>CM</u> : All	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical
Lighting, General and Emergency : All	<u>Q</u> : Unique equipment IDs <u>CM</u> : Specified on electrical lighting fixture schedule or facility specific drawings <u>NP</u> : No unique marking	Yes	<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 (Non-ITS)</i> 24590-LAB-3PS-ELF0-T0001, <i>Hot Cell Lighting for Analytical Laboratory</i> 24590-WTP-3PS-EED1-T0002, <i>Through Wall Lighting (ITS)</i> 24590-WTP-3PS-EED1-T0003, <i>Wall Mounted In Cave Lighting (Non-ITS)</i> 24590-WTP-3PS-EED1-T0004, <i>Through Wall Socket Assembly (ITS)</i>		Electrical
Receptacles/Photo Cells: All	<u>Q</u> : None <u>CM</u> : All. No unique marking except LAB Hot Cell	Yes	<u>Electrical</u> : 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i> 24590-CM-MRA-EAA0-00006, <i>Analytical Laboratory Hot Cell Receptacle Boxes</i>	Lab Hot Cell Receptacles are tagged LTE-RCPT-60001 thru 60029 per referenced MRA.	Electrical

24590-WTP-MCM-CON-03-001 Rev. 45
 Material Control Methods Matrix (MCMM)

Electrical					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Tags, Cable and Wire: All	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i> 24590-WTP-3PS-E00X-T0005, <i>Electrical Raceway and Cable Identification</i>		Electrical
Tubing, Heat Shrink: All	Q: None CM: None NP: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i> 24590-WTP-3PS-E00X-T0003, <i>Cable Termination</i>		Electrical
Welding, Exothermic Material: All	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-EQ00-T0002, <i>Cathodic Protection</i>		Electrical
Wire Nuts, Twist On: All	Q: None CM: All	Yes	<u>Electrical:</u> 24590-WTP-3PS-E000-T0001, <i>Electrical Bulk Materials (Non-ITS)</i>		Electrical

Instrumentation					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Fittings, Hastelloy Tube; All sizes	Q: All. See Remarks CM: None	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - QL</i>	Fittings to be color coded blue.	Instr.
Fittings, Stainless Steel Tube: All sizes	Q: Not marked, Hy-Lok brand only CM: See Remarks NP: Marked with NP. See Remarks	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - QL</i> 24590-LAB-3PS-P000-T0002, <i>Lab High Purity Gas and Cryogenic Tubing</i> 24590-WTP-3PB-P000-TS11H, <i>Piping Material Classification Pipe Class S11H</i>	CM Cryogenic Tube Fittings are to be marked "BPE" and controlled by subcontractor. CM fitting must be supplied by a brand other than Hy-Lok. No mixing of parts permitted. NP fittings may be either stamped or engraved with NP. Must be brand other than Hy-Lok. Hy-Lok not to be ordered as CM or NP.	Instr.
Tubing Clamps and Hardware, Stainless Steel or Zinc Plated: All sizes	See Remarks	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0003, <i>Instrument Tubing Supports - QL</i>	For acceptable Q tubing support material see 24590-WTP-J8-50-0410X drawing series. For acceptable CM tubing supports see 24590-WTP-J8-50-0310X drawing series.	Instr.
Tubing, Hastelloy	Q: See Remarks CM: None	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - QL</i>	Tubing to be color coded blue.	Instr.
Tubing, Stainless Steel:	Q: Not marked CM: Specified for cryogenic tubing. See Remarks NP: Marked with NP. See Remarks	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - QL</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</i>	CM Cryogenic Tube Fittings are to be marked "BPE" and controlled by subcontractor. NP tubing may be either stamped or engraved with NP. Must be taken from Q stock.	Instr.

Instrumentation					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Tubing Tray and Hardware, Stainless Steel: All sizes	Q: All CM: None	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0003, <i>Instrument Tubing Supports - QL</i>		Instr.
Valves, Stainless Steel Instrument Valves: All sizes	Q: Not marked CM: See Remarks NP: Marked with NP. See Remarks	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - QL</i>	May be either stamped or engraved with NP. Instrument valves slated for CM installation may be vibro-etched "CM" AFTER issuance from Material Management. This installation is for convenience and does not affect procurement of item as Q/CD. Once the item is marked "CM", it cannot be used in a "Q" installation.	Instr.
Valves, Stainless Steel Manifold Valves: All sizes	Q: All. Not marked CM: See Remarks NP: Marked with NP. See Remarks	Yes	<u>Instrument:</u> 24590-WTP-3PS-JXF0-T0002, <i>Instrument Piping Material Classes - QL</i>	May be either stamped or engraved with NP. Manifold valves slated for CM installation may be vibro-etched "CM" AFTER issuance from Material Management. This installation is for convenience and does not affect procurement of item as Q/CD. Once the item is marked "CM", it cannot be used in a "Q" installation.	Instr.

Piping					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Note. All piping specified on quality Level “Q” material requisitions are purchased per Q requirements and shall be controlled as Q materials, up to the point of installation. Q materials installed in Q applications shall remain Q. Q materials installed in non-Q applications shall be downgraded and shall no longer be acceptable for Q applications. (“Q” PO’s are designated with “QL” or “CD”).					
Components, Pipe Support: All	Q: All CM: None	Yes	<u>Plant Design:</u> 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for “QL” Pipe Supports</i>	Marked/tagged with <i>Anvil</i> Figure No.	Piping
Gaskets, Piping (Flanged): Neoprene, EPDM, SBR Rubber, Fiber (including Garlock type gaskets)	Q: None CM: All	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>	Piping gaskets are defined in Specification 24590-WTP-3PS-P000-T0001. Not included are: Vessel manway gaskets, HVAC gaskets, specialty gaskets for valve bonnets or similar items.	Piping
Gaskets, Piping (Flanged): Spiral wound (except 304 stainless steel), soft iron, flexible graphite	Q: All. Will have Lamons brand marking CM: None	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> 24590-WTP-CGD-M-02-001, <i>Metallic Ring Joint Type, Flexible Graphite (w/ SS insert), and Spiral Wound Gaskets for Piping Systems</i>		Piping
Gaskets, Piping (Flanged): Spiral wound 304 stainless steel only	Q: All. Will have Lamons brand marking CM: None	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i> 24590-WTP-CGD-M-02-001, <i>Metallic Ring Joint Type, Flexible Graphite (w/ SS insert), and Spiral Wound Gaskets for Piping Systems</i>		Piping

Piping					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Grayloc Seal Rings: All	Q: Edge marked with blue paint CM: No markings	Yes	<u>Plant Design:</u> 24590-WTP-3PS-PF00-T0004, <i>Remote Clamp Connectors</i>		Mech.
Pipe/Flanges/Fittings: Carbon steel and galvanized	Q: See Remarks CM: See Remarks	Yes	<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>	Q (ASME) items must have unique stock code, ASME marking, and blue marking. CM (ASME) items must have unique stock code and ASME marking. Q (ASTM) items must have blue marking. CM (ASTM) items are not marked. Intermech may control their Q carbon steel and galvanized Pipe/Flanges/Fittings via heat number traceability and associated documentation. For Intermech only: Prior to 5/1/2008, unmarked galvanized pipe/flanges/fittings acceptable.	Piping

Piping					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Pipe/Flanges/Fittings: Stainless steel	<u>Q</u> : See Remarks <u>CM</u> : See Remarks	Yes	<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-PX04-T0004, <i>Epoxy Coating of Stainless Steel Items that are Buried, Embedded, or Insulated</i>	Subcontractors may have CM stainless steel pipe/flanges/fittings not purchased by BNI, only if marked with green striping. Q (ASTM) items are not marked. Q (ASME) items must have unique stock code, ASME marking, and blue marking. CM procurements are not allowed for this material. Underground stainless steel pipe/flanges/fittings to be coated in accordance with specification 24590-WTP-3PS-PX04-T0004. Pipe/flanges/fittings slated for CM installation may be vibro-etched "CM" AFTER issuance from Material Management. This installation is for convenience and does not affect procurement of item as Q/CD. Once the item is marked "CM", it cannot be used in a "Q" installation.	Piping

Piping					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Pipe/Flanges/Fittings: Hastelloy- C-22 and AL-6XN: Inconel 625	Q: See Remarks CM: See Remarks	Yes	<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>	Q (ASTM) items are not marked. Q (ASME) items must have unique stock code, ASME marking, and blue marking. CM procurements are not allowed for this material. Pipe/flanges/fittings slated for CM installation may be vibro-etched "CM" AFTER issuance from Material Management. This installation is for convenience and does not affect procurement of item as Q/CD. Once the item is marked "CM", it cannot be used in a "Q" installation.	Piping
Pipe/Flanges/Fittings: Titanium	Q: Specified Q CM: See Remarks	Yes	<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>	Pipe/flanges/fittings slated for CM installation may be vibro-etched "CM" AFTER issuance from Material Management. This installation is for convenience and does not affect procurement of item as Q/CD. Once the item is marked "CM", it cannot be used in a "Q" installation.	Piping
Pipe/Flanges/Fittings: PVC and fiberglass	Q: None CM: All	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
Pipe/Flanges/Fittings: Ductile iron and malleable iron	Q: None CM: All	Yes	<u>Plant Design:</u> 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping

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Piping					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
Pipe/Flanges/Fittings: Copper	<u>Q</u> : None <u>CM</u> : All	Yes	<u>Plant Design</u> : 24590-WTP-3PS-P000-T0001, <i>Piping Material Classes General Description and Summary</i>		Piping
Supports, Pipe: Stock Coded All	<u>Q</u> : All. <u>CM</u> : None	Yes	<u>Plant Design</u> : 24590-WTP-3PS-PH01-T0001, <i>Technical Supply Conditions for "QL" Pipe Supports</i>	Issued to field using Material Package Control.	Piping
Valves: All	<u>Q</u> : Tagged. See Remarks <u>CM</u> : Tagged. See Remarks <u>NP</u> : Not tagged	Yes	<u>Plant Design</u> : 24590-WTP-3PS-PV00-T0001, <i>Specification for Technical Supply Conditions for 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. Nonpermanent (NP) valves will be identified as not having been tagged. BOF previously installed underground permanent plant valves not tagged are exempt from the <i>Material Control Methods Matrix</i> . If any BOF installed permanent plant valves not tagged are removed, they shall be tagged prior to removal. All tagging shall be per 24590-WTP-3PS-PV00-T0001, Section 7.2. Piping valves slated for CM installation may be vibro-etched "CM" AFTER issuance from Material Management. This installation is for convenience and does not affect procurement of item as Q/CD. Once the item is marked "CM", it cannot be used in a "Q" installation.	Piping

Piping					
Item & Material	Control Method & Q/CM Differentiator	Site Control In Effect	Reference Design Document	Remarks	Discipline Use
In-Line Components (except valves): All	<u>Q</u> : See Remarks <u>CM</u> : See Remarks	Yes	<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>	See note at beginning of Piping Section.	Piping
Valve and In-Line Internals (e.g., kits, gaskets)	<u>Q</u> : See Remarks <u>CM</u> : See Remarks	Yes	Applicable vendor submitted drawings and/or operation/maintenance manuals	See note at beginning of Piping Section. Internals for Q installations are controlled via an Engineered stock code. Internals for CM installations may use items purchased as CM with no Engineered stock code. Note: Items purchased as Q may be used on CM installations.	Piping

Revision History

Revision	Reason for Revision
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.

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Revision	Reason for Revision
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.
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.

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Material Control Methods Matrix (MCMM)

Revision	Reason for Revision
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.
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.

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Material Control Methods Matrix (MCMM)

Revision	Reason for Revision
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.
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.

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Material Control Methods Matrix (MCMM)

Revision	Reason for Revision
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.