

S**ENGINEERING CHANGE NOTICE**Page 1 of 21. ECN **656451**Proj.
ECN

2. ECN Category (mark one)		3. Originator's Name, Organization, MSIN, and Telephone No.	4. USQ Required?	5. Date
<input type="checkbox"/> Supplemental <input checked="" type="checkbox"/> Direct Revision <input type="checkbox"/> Change ECN <input type="checkbox"/> Temporary <input type="checkbox"/> Standby <input type="checkbox"/> Supersedure <input type="checkbox"/> Cancel/Void		TA Nuxall, SNF CVD, R3-86, 372-3739	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	11/29/99
		6. Project Title/No./Work Order No.	7. Bldg./Sys./Fac. No.	8. Approval Designator
		W-441 Spent Nuclear Fuel Cold Vacuum Drying	142-K	S ^N Q
		9. Document Numbers Changed by this ECN (includes sheet no. and rev.)	10. Related ECN No(s).	11. Related PO No.
		SNF-5102, Rev. 1	N/A	N/A
12a. Modification Work	12b. Work Package No.	12c. Modification Work Complete	12d. Restored to Original Condition (Temp. or Standby ECN only)	
<input type="checkbox"/> Yes (fill out Blk. 12b) <input checked="" type="checkbox"/> No (NA Blks. 12b, 12c, 12d)	N/A	N/A	Design Authority/Cog. Engineer Signature & Date	
13a. Description of Change		13b. Design Baseline Document?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Addition of components.				
14a. Justification (mark one)				
Criteria Change <input checked="" type="checkbox"/>		Design Improvement <input type="checkbox"/>	Environmental <input type="checkbox"/>	Facility Deactivation <input type="checkbox"/>
As-Found <input type="checkbox"/>		Facilitate Const <input type="checkbox"/>	Const. Error/Omission <input type="checkbox"/>	Design Error/Omission <input type="checkbox"/>
14b. Justification Details CGI req. #13.				
15. Distribution (include name, MSIN, and no. of copies) See Distribution				

RELEASED BY
 DATE: DEC 01 1999
 STA: d MANFORD RELEASE ID: 2

A-7900-013-2 (05/96) GEF095

A-7900-013-1

DISTRIBUTION SHEET

Distribution	T. Nuxall, SNF-CVD	Page 1 of 1
Project Title/Work Order		Date 11/29/99
W-441, SNF-5102, Rev. 2		EDT No. N/A
		ECN No. 656451

CONDUIT FASTENERS

Carl Van Katwijk
Numatec Hanford, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 656451 UC: 620
Org Code: 2G300 Charge Code: 105559/A000
B&R Code: 39EW40400 Total Pages: 40

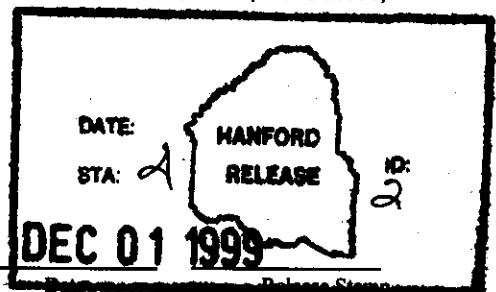
Key Words: W-441, Cold Vacuum Drying Facility (CVD), CGI, Conduit Fasteners

Abstract: W-441, Cold Vacuum Drying Facility (CVD), CGI, Conduit Fasteners

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W. Van Katwijk 12/1/99
Release Approval



Approved for Public Release

Commercial Grade Item Upgrade Dedication Form
SNF-5102 Rev. 2
ECN No. NA
CGI No. CGI-SNF-D-93-2-C1-056
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Title: CONDUIT FASTENERS
Section 1 Part Information

Item No.: NA	Manufacturer:	Supplier:
Mfg. Part/Model No.:		Supplier's P/N:
Part Description:		
End Use Description:		

Section 2a Component Information

Equipment No.: See attached Section 9	Specification No.: W-441-C1, Section 16110	Manufacturer: ABC Fasteners; PowerStrut; Fastenal	Past P.O. No.: NA
Procurement and/or Model No.: See attached Section 9	Equipment Supplier (if different from manufacturer): American Electric; George A. Grant, Inc for Fastenal		Equip. Supplier's Part No.: NA

Component Description: Fasteners for Safety Class Wiring Conduit.
Section 2b Commercial Availability of the Item

1. Is the item available from a catalogue of a qualified NQA1 supplier? (coordinate with project CGI interface Engineer or BTR)

YES (go to #2 below)

NO (go to procedure step 6.3.2, proceed to dedicate item.)

If not available from a qualified NQA1 supplier, is it available from an ISO 9000 supplier? (coordinate with project CGI interface Engineer or BTR)

YES (go to #2 below, then go to procedure step 6.3.2, proceed to dedicate item)

NO (go to procedure step 6.3.2, proceed to dedicate item.)

2. List of Candidate qualified suppliers or ISO 9000 suppliers

company name & type

contact name

phone

NA

3. Recommended Procurement Strategy (coordinate with project CGI interface Engineer or BTR):

NA

Section 2c CGI Determination

1. Question #1: Is the item subject to design or specification requirements that are unique to nuclear facilities or activities?

YES (the item is not commercial grade)

NO (continue)

2. Question #2: Is the item used in applications other than nuclear facilities or activities?

NO (the item is not commercial grade)

YES (continue)

3. Question #3: Is the item ordered from manufacturer/supplier on the basis of specifications set forth in the published product information (e.g. manufacturer's catalog)?

NO (the item is not commercial grade)

YES (continue)

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<input checked="" type="checkbox"/> All three criteria have been satisfied. The item meets the definition of commercial grade.	
Section 2d Reason for Dedication The above described item is being Dedicated for use in the application cited for the following reason(s):	
<input checked="" type="checkbox"/> Item is being purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Class application.	
<input type="checkbox"/> Item is being purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Significant application.	
<input type="checkbox"/> Item was purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Class application.	
<input type="checkbox"/> Item was purchased from a non ESL manufacturer supplier as commercial grade to be used in a Safety Significant application.	
<input type="checkbox"/> Other ('like-for-like', similar, substitution, replacement evaluation)	
Section 3 Failure Effects Evaluation	
A. Part/Component Safety Function:	
1. Provide conduit protection, structural support for safety class wiring conduit.	
2. Maintain critical function before, during, and after Seismic Event.	
B. Part/Component Functional Mode:	
Safety Function #1:	
<input type="checkbox"/> Active – Mechanical or Electrical change of state is required to occur for the component to perform its safety function	
<input checked="" type="checkbox"/> Passive – Change of state is not required for the component to perform its safety function	
Safety Function #2:	
<input type="checkbox"/> Active – Mechanical or Electrical change of state is required to occur for the component to perform its safety function.	
<input checked="" type="checkbox"/> Passive – Change of state is not required for the component to perform its safety function	
Safety Function #3:	
<input type="checkbox"/> Active – Mechanical or Electrical change of state is required to occur for the component to perform its safety function.	
<input type="checkbox"/> Passive – Change of state is not required for the component to perform its safety function	
C. Host Component Safety Function (if applicable): NA	
1.	
D. Failure Mode(s) and the effects on component or system safety function (see Worksheet 1):	
1. Fracture or material fatigue leads to loss of structural support and possible damage to wiring.	

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Section 4 Environmental & Natural Phenomena Hazard Design
Environmental Qualification Required:
Yes []
No [X]
If yes: Environmental Qualification Requirements
Limiting Environmental Conditions:
Required Safety Functions:
Qualification Period:
Environmental Condition B
Natural Phenomena Hazard (NPH) Design Required:
Yes [X]
No []
If yes: NPH Design Requirements
Performance Category: **PC-3**
NPH Design Req'ts.: **Seismic Condition C**
HNF-PRO-097, Rev. 0
Required Safety Functions: **Provide protection and support for safety class wiring conduit. Maintain critical function before, during, and after Seismic Event.**
Section 5 Component Functional Classification
[X] Safety Class (SC)
[] General Service (GS)
[] Safety Significant (SS)
If part/component classification is different from host component/system, document basis. **NA**
Section 6 (Reserved)
Section 7 (Reserved)
Section 8 References (for Functional Classification)
National Codes/Standards: **IEEE 628**
**Safety Analysis Report (SAR):
HNF-SD-SNF-SAR-002, Rev. 4A**
Drawings: **HNF-SD-SNF-SEL-002, Rev. 6A
Dwg. H-1-82303**
Vendor Manual/Manufacturer/Supplier Information:
Fender Washers, Lock Washers, Flat Washers, Hex Head Bolts - ABC Fasteners Page 2-1;
PS-146 Continuous Threaded Rod/Clamping Nut with spring - Power Strut Pages 40, 42
Phillips Drive Machine Screws - Fastenal Catalog, Pages 76 and 77
Nylon Insert Lock Nuts, Fastenal Catalog, Page 104
Hex Full Nuts Fastenal Catalog, Page 101
SAE Flat Washers, Fastenal Catalog, Page 115
Medium Split Lock Washers, Fastenal Catalog, Page 116
Hose Banding, Worm-Drive Hose Clamps, Polyethylene Tubing, McMaster-Carr, Pages 153, 146, and 62.
Other:

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Section 9: Critical Characteristics					
Critical Characteristics Verification Document: HNF-SD-SNF-SEL-002, Rev. 6A DWG. H-1-82303	Acceptance Criteria/Tolerances	Acceptance Method	ID	Function	
1. Item Identification Critical Characteristics (necessary for reasonable assurance that the item delivered is the item specified)					
Fender, Flat, and Lock Washers, Page 2-1, Manufacturer		ABC Fasteners	1, IN	X	
Fender, Flat and Lock Washers - Component Number- Procurement and/or Model Number Fender 20004 20008 20015			1, IN	X	
Flat 18020 18025 18030 18035					
Lock 19020 19025 19030 19035					
Fender, Flat, and Lock Washers, - Size, inches Fender, 20004 1/4" x 1 1/4" 20008 3/8" x 1 1/2" 20015 1/2" x 2"			1, IN	X	
Flat, 18020 #1/4 18025 #5/16 18030 #3/8 18035 #1/2					
Lock 19020 #1/4 19025 #5/16 19030 #3/8 19035 #1/2					
Hex Nuts, Page 2-1, Manufacturer		ABC Fasteners	1, IN	X	

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Hex Nuts, - Component Number- Procurement and/or Model Number	17025 17030 17035 17040	1, IN	X	
Hex Nuts, - Size/Thread, inch	17025 17030 17035 17040	1/4 - 20 5/16 -18 3/8 - 16 1/2 - 13	1, IN	X
Hex Head Bolts, Manufacturer	ABC Fasteners	1, IN	X	
Hex Head Bolts, - Component Number- Procurement and/or Model Number		1, IN	X	
1/4 inch	38110 38111 38112 38113 38114 38115			
5/16 inch	38126 38127 38128 38141			
3/8 inch	38142 38143 38144			
1/2 inch	38155 38156 38157 38158 38159 38160 38161			

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Hex Head Bolts, - Size - Thread x Nominal Length, inch		1, IN	X	
38110	1/4 - 20 x 1/2			
38111	1/4 - 20 x 3/4			
38112	1/4 - 20 x 1			
38113	1/4 - 20 x 1 1/4			
38114	1/4 - 20 x 1 1/2			
38115	1/4 - 20 x 2			
38126	5/16 - 18 x 3/4			
38127	5/16 - 18 x 1			
38128	5/16 - 18 x 1 1/4			
38141	3/8 - 16 x 3/4			
38142	3/8 - 16 x 1			
38143	3/8 - 16 x 1 1/4			
38144	3/8 - 16 x 1 1/2			
38155	1/2 - 13 x 3/4			
38156	1/2 - 13 x 1			
38157	1/2 - 13 x 1 1/4			
38158	1/2 - 13 x 1 1/2			
38159	1/2 - 13 x 2			
38160	1/2 - 13 x 2 1/2			
38161	1/2 - 13 x 3			
Fasteners, Pages 40 and 42				
Manufacturer	Powerstrut	1, IN	X	
PS 146 Continuous Threaded Rod - Size	Nominal 3/8" Nominal 1/2" Nominal 5/8" Nominal 3/4"			
PS RS Clamping Nut with Regular Spring.				
PS RS - Size x Thread	1/4" x 20 3/8" x 16 1/2" x 13 5/8" x 11 3/4" x 10 7/8" x 9			
Manufacturer, Pan Head Phillips Drive Machine Screws - All - Pages 76 and 77	Fastenal	1, IN	X	

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Pan Head Phillips Drive Machine Screws - Size - Thread, Part Number / Nominal Length, Inches	All 6 - 32 28780 / 1/8 28781 / 3/16 28783 / 1/4 28789 / 5/16 28795 / 3/8 28801 / 7/16 28804 / 1/2 28806 / 9/16 28810 / 5/8 28816 / 3/4 28822 / 7/8 28828 / 1 28830 / 1 1/8 28834 / 1 1/4 28836 / 1 3/8 28838 / 1 1/2 28840 / 1 5/8 28842 / 1 3/4 28846 / 2 28852 / 2 1/4 28853 / 2 1/2 28854 / 3	1, IN	X	
Pan Head Phillips Drive Machine Screws - Size - Thread, Part Number / Nominal Length, Inches	All 8 - 32 28856 / 3/16 28858 / 1/4 28864 / 5/16 28870 / 3/8 28876 / 7/16 28879 / 1/2 28881 / 9/16 28885 / 5/8 28891 / 3/4 28897 / 7/8 28903 / 1 28905 / 1 1/8 28909 / 1 1/4 28911 / 1 3/8 28913 / 1 1/2 28917 / 1 3/4 28921 / 2 28928 / 2 1/4 28929 / 2 1/2 28930 / 3	1, IN	X	

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Pan Head Phillips Drive Machine Screws - Size - Thread, Part Number / Nominal Length, Inches	All 10- 24 28936 / 1/4 28942 / 5/16 28948 / 3/8 28954 / 7/16 28957 / 1/2 28963 / 5/8 28969 / 3/4 28975 / 7/8 28981 / 1 28987 / 1 1/4 28991 / 1 1/2 28995 / 1 3/4 28999 / 2 29003 / 2 1/4 29007 / 2 1/2 29011 / 2 3/4 29015 / 3	1, IN	X	
Pan Head Phillips Drive Machine Screws - Size - Thread, Part Number / Nominal Length, Inches	All 10- 32 29055 / 5/8 29073 / 1	1, IN	X	
Manufacturer, All Nylon Insert Lock Nuts, Page 104	Fastenal	1, IN	X	
Part Number - Size - Thread	37010 6 - 32 37012 8 - 32 37014 10 - 24	1, IN	X	
Manufacturer, All Size Hex Full Nuts, Page 101	Fastenal	1, IN	X	
Part Number - Size - Thread	36020 6 - 32 36024 8 - 32 36028 10 - 24	1, IN	X	
Manufacturer, All Size SAE Flat Washers, Page 115	Fastenal	1, IN	X	
Part Number - Size - Nominal OD/ID, Inches	33070 - 6 - 3/8 / 5/32 33072 - 8 - 7/16 / 3/16 33074 - 10 - 1/2 / 7/32	1, IN	X	
Manufacturer, All Size Medium Split Lock Washers, Page 116	Fastenal	1, IN	X	

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Part Number - Size	33610 - 6 33612 - 8 33614 - 10	1, IN	X	
Supplier, Hose Banding, Page 153	McMaster-Carr	1, IN	X	
Part Number - Band Width	5658K13 - Nominal 1/4 inch	1, IN	X	
Supplier, Worm-Drive Hose Clamps, Page 146	McMaster-Carr	1, IN	X	
Part Number - Band Width - Diameter, inches	5321K24 - Nominal 5/16 - Nominal 15/16 - 1 1/2 5321K26 - Nominal 5/16 - Nominal 1 3/16 - 1 3/4 5321K32 - Nominal 5/16 - Nominal 1 11/16 - 2 1/4	1, IN	X	
Supplier, Polyethylene Tubing, Page 62	McMaster-Carr	1, IN	X	
Part Number - Description - OD/ID, inches	5181K85 - Translucent White - Nominal 1 3/8 / 1 1/8	1, IN	X	
2. Physical Critical Characteristics (for reasonable assurance that the item delivered is the item specified)				
Fender, Flat, and Lock Washers, Material	Zinc Coated Steel (Note 3)	1, IN 1, T	X	
Hex Nuts, Material	Zinc Coated Steel (Note 3)	1, IN 1, T	X	
Hex Head Bolts, Material	Zinc Coated Steel (Note 3)	1, IN 1, T	X	
Fasteners, PS 146 Continuous Threaded Rod, Material	Steel (Note 3)	1, IN 1, T	X	
PS RS Clamping Nut with Regular Spring, Material	Steel (Note 3)			
All Size Pan Head Phillips Drive Machine Screws, Material	Zinc Plated Steel (Note 3)	1, IN 1, T	X	
All Size Nylon Insert Lock Nuts, Material	Zinc Plated Steel (Note 3)	1, IN 1, T	X	
All Size Hex Full Nuts, Material	Zinc Plated Steel (Note 3)	1, IN 1, T	X	
All Size SAE Flat Washers, Material	Zinc Plated Steel (Note 3)	1, IN 1, T	X	
All Size Medium Split Lock Washers, Material	Zinc Plated Steel (Note 3)	1, IN 1, T	X	

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Hose Banding, Material	Stainless Steel (Note 3)	1, IN 1, T	<input checked="" type="checkbox"/>	
Worm-Drive Hose Clamps, Material	Stainless Steel (Note 3)	1, IN 1, T	<input checked="" type="checkbox"/>	
3. Performance Critical Characteristics (for reasonable assurance that the item will perform its intended safety function(s))				
Environmental	Note 1			
Seismic Condition C	Note 2	1, T 1, A		<input checked="" type="checkbox"/>

4. Notes and Legend:

1. The components are not subject to degradation from the 40°F or 60% RH or 115°F and 22% RH conditions and are suitable for Environmental Condition B application.
2. Maintain critical function before, during, and after Seismic event. Equipment that has been shaker-table tested should not be installed in a plant (Ref. IEEE Standard 344-1984, Section 7). Consequently, the seismic test constitutes a destructive test. Seismic Design may be verified by analysis of the installed conduit system.
3. Material verification acceptance method may be by either inspection or test.

Acceptance Method:

1. Special Test and Inspection
1, IN for Inspection
1, T for Test
1, A for Acceptance by Analysis
2. Commercial Grade Survey
3. Source Verification
4. Vendor/Item History

Section 10 Initial Review and Approval

Approvals:

Designated Engineer: John G. Mark Koenig 11/29/99

Design Authority: John G. Mark Koenig

QA Engineer: John G. Mark Koenig

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WORKSHEET 1
DETERMINATION OF FAILURE MECHANISMS/MODES

Section 1

Typical Failure Mechanisms	Definition	Applicable to Component under Evaluation
Fracture	Separation of a solid accompanied by little or no macroscopic plastic deformation.	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]; If Yes, indicate failure Mode: <u>Fracture or material fatigue-loss of structural protection to wiring</u>
Corrosion	The gradual deterioration of a material due to chemical or electrochemical reactions, such as oxidation, between the material and its environment.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Erosion	Destruction of materials by the abrasive action of moving fluids, usually accelerated by the presence of solid particles carried with the fluid.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Open Circuit	An electrical circuit that is unintentionally broken so that there is no complete path for current flow.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Short Circuit	An abnormal connection by which an electrical current is connected to ground, or to some conducting body, resulting in excessive current flow.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Blockage	Clogging of a filtering medium resulting in the inability to perform its purification function or blockage of flow.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Seizure	Binding of a normally moving item through excessive pressure, temperature, friction, jamming.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Unacceptable Vibration	Mechanical oscillations produced are beyond the defined permissible limits due to unbalancing, poor support, or rotation at critical speeds.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Loss of Properties	A loss of mechanical and physical properties of a material due to exposure to high temperatures, radiation exposure.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Excess Strain	Under the action of excessive external forces the material of the part has been deformed or distorted.	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]; If Yes, indicate failure Mode: <u>Material fatigue leads to loss of structural support and enclosure of wiring</u>
Mechanical Creep	From prolonged exposure to high temperature and stress, the object will show a slow change in its physical (shape and dimension) and mechanical characteristics.	Yes [<input type="checkbox"/>] No [<input checked="" type="checkbox"/>]; If Yes, indicate failure Mode _____
Ductile Fracture	Fracture characterized by tearing of metal accompanied by appreciable gross plastic deformation.	Yes [<input checked="" type="checkbox"/>] No [<input type="checkbox"/>]; If Yes, indicate failure Mode: <u>Fracture or material fatigue – loss of structural support and protection of wiring</u>
Section 2 Additional Failure Modes Applicable to the Component Under Evaluation		
1.		
2.		

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CHECKLIST 1
ACCEPTANCE METHOD 1
SPECIAL TEST/INSPECTION VERIFICATION

SECTION 1			
Item Description: Fasteners for Safety Class Wiring Conduit. System #: 93-2		Equip #: NA Procurement and/or Model #: See Catalog Numbers in Section 8 and Characteristics in Section 9.	
Manufacturer (Address/Phone): Various - See Sections 8 and 9.		Supplier (Address/Phone):	
P.O. #			
SECTION 2 CRITICAL CHARACTERISTICS TO BE VERIFIED BY METHOD 1.			
Insp	Test	Post-Test	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. Fender, Flat, and Lock Washers
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. Hex Nuts
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. Hex Head Bolts
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. Fasteners
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. Pan Head Phillips Drive Machine Screws
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6. Nylon Insert Lock Nuts
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. Hex Full Nuts
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. SAE Flat Washers
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. Medium Split Lock Washers
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Hose Banding
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11. Worm-Drive Hose Clamps
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12. Polyethylene Tubing
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Material, Fender, Flat, and Lock Washers (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Material, Hex Nuts (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15. Material, Hex Head Bolts (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16. Material, Fasteners (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17. Material, Pan Head Phillips Drive Machine Screws (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	18. Material, Nylon Insert Lock Nuts (Verification may be by either inspection or by test)

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<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	19. Material, Hex Full Nuts (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	20. Material, SAE Flat Washers (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	21. Material, Medium Split Lock Washer (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	22. Material, Hose Banding (Verification may be by either inspection or by test)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	23. Material, Worm-Drive Hose Banding (Verification may be by either inspection or by test)
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24. Seismic Condition C (Seismic verification may be by test or by analysis)

SECTION 3 VERIFIED BY INSPECTION

* See Attachment H of Desk Instruction for Sampling Size: **Reduced Sampling Plan Was Selected Due to The Product History and Simplicity of Product**

Characteristic: **Manufacturer, Fender, Flat, and Lock Washers**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **ABC Fasteners**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: **Fender, Flat, and Lock Washers - Component Number- Procurement and/or Model Number and Size, inches**

Sample Size*: **REDUCED SAMPLING PLAN**

ID Number/Acceptance Criteria:

Fender	20004	1/4 x 1 1/4
	20008	3/8 x 1 1/2
	20015	1/2 x 2
Flat	18020	#1/4
	18025	#5/16
	18030	#3/8
	18035	#1/2
Lock	19020	#1/4
	19025	#5/16
	19030	#3/8
	19035	#1/2

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

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<p>Characteristic: Hex Nuts, Manufacturer</p> <p>Sample Size*: REDUCED SAMPLING PLAN</p> <p>Acceptance Criteria: ABC Fasteners</p> <p>As Found: _____ Passed: Y / N (Circle)</p> <p>Receipt Inspection Plan / Report #: _____</p> <p>References (see Section 8): _____</p>								
<p>Characteristic: Hex Nuts - Component Number- Procurement and/or Model Number and Size/Thread, inches</p> <p>Sample Size*: REDUCED SAMPLING PLAN</p> <p>ID Number - Size / Acceptance Criteria:</p> <table> <tr><td>17025</td><td>1/4 - 20</td></tr> <tr><td>17030</td><td>5/16 -18</td></tr> <tr><td>17035</td><td>3/8 - 16</td></tr> <tr><td>17040</td><td>1/2 - 13</td></tr> </table> <p>As Found: _____ Passed: Y / N (Circle)</p> <p>Receipt Inspection Plan / Report #: _____</p> <p>References (see Section 8): _____</p>	17025	1/4 - 20	17030	5/16 -18	17035	3/8 - 16	17040	1/2 - 13
17025	1/4 - 20							
17030	5/16 -18							
17035	3/8 - 16							
17040	1/2 - 13							
<p>Characteristic: Hex Head Bolts - Manufacturer</p> <p>Sample Size*: REDUCED SAMPLING PLAN</p> <p>Acceptance Criteria: ABC Fasteners</p> <p>As Found: _____ Passed: Y / N (Circle)</p> <p>Receipt Inspection Plan / Report #: _____</p> <p>References (see Section 8): _____</p>								

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Characteristic: **Hex Head Bolts - Component Number- Procurement and/or Model Number - Size/Thread and Nominal Length, inches**

Sample Size*: **REDUCED SAMPLING PLAN**

ID Number –Size – Thread –Nominal Length / Acceptance Criteria:

1/4	38110	1/4 - 20 x 1/2
	38111	1/4 - 20 x 3/4
	38112	1/4 - 20 x 1
	38113	1/4 - 20 x 1 1/4
	38114	1/4 - 20 x 1 1/2
	38115	1/4 - 20 x 2
 5/16	38126	5/16 - 18 x 3/4
	38127	5/16 - 18 x 1
	38128	5/16 - 18 x 1 1/4
 3/8	38141	3/8 - 16 x 3/4
	38142	3/8 - 16 x 1
	38143	3/8 - 16 x 1 1/4
	38144	3/8 - 16 x 1 1/2
 1/2	38155	1/2 - 13 x 3/4
	38156	1/2 - 13 x 1
	38157	1/2 - 13 x 1 1/4
	38158	1/2 - 13 x 1 1/2
	38159	1/2 - 13 x 2
	38160	1/2 - 13 x 2 1/2
	38161	1/2 - 13 x 3

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: **Manufacturer, Fasteners**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **Powerstrut**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

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Characteristic: **Fasteners - Component Number- Procurement and/or Model Number and Size, inches**

Sample Size*: **REDUCED SAMPLING PLAN**

ID Number - Size/Acceptance Criteria: **PS 146 Continuous Threaded Rod / Nominal 3/8"**

Size	/ Nominal 1/2"
	/ Nominal 5/8"
	/ Nominal 3/4"

PS RS Clamping Nut with Regular Spring / 1/4" x 20

Size x Thread	/ 3/8" x 16
	/ 1/2" x 13
	/ 5/8" x 11
	/ 3/4" x 10
	/ 7/8" x 9

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: **Manufacturer, All Pan Head Phillips Drive Machine Screws**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **Fastenal**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

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Title: **CONDUIT FASTENERS****Characteristic: Pan Head Phillips Drive Machine Screws****Sample Size*: REDUCED SAMPLING PLAN**

ID All Size – Thread Part Number / Nominal Length, Inches / Acceptance Criteria:

All 6 - 32

28780 / 1/8
28781 / 3/16
28783 / 1/4
28789 / 5/16
28795 / 3/8
28801 / 7/16
28804 / 1/2
28806 / 9/16
28810 / 5/8
28816 / 3/4
28822 / 7/8
28828 / 1
28830 / 1 1/8
28834 / 1 1/4
28836 / 1 3/8
28838 / 1 1/2
28840 / 1 5/8
28842 / 1 3/4
28846 / 2
28852 / 2 1/4
28853 / 2 1/2
28854 / 3

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): **Machine Screws - Fastenal Catalog, Pages 76 and 77**

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Characteristic: Pan Head Phillips Drive Machine Screws**Sample Size*: REDUCED SAMPLING PLAN**

ID All Size – Thread Part Number / Nominal Length, Inches / Acceptance Criteria:

All 8 - 32

28856 / 3/16
28858 / 1/4
28864 / 5/16
28870 / 3/8
28876 / 7/16
28879 / 1/2
28881 / 9/16
28885 / 5/8
28891 / 3/4
28897 / 7/8
28903 / 1
28905 / 1 1/8
28909 / 1 1/4
28911 / 1 3/8
28913 / 1 1/2
28917 / 1 3/4
28921 / 2
28928 / 2 1/4
28929 / 2 1/2
28930 / 3

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): Machine Screws - Fastenal Catalog, Pages 76 and 77

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Characteristic: Pan Head Phillips Drive Machine Screws**Sample Size*: REDUCED SAMPLING PLAN**

ID All Size – Thread Part Number / Nominal Length, Inches / Acceptance Criteria:

All 10- 24 **28936 / 1/4**
28942 / 5/16
28948 / 3/8
28954 / 7/16
28957 / 1/2
28963 / 5/8
28969 / 3/4
28975 / 7/8
28981 / 1
28987 / 1 1/4
28991 / 1 1/2
28995 / 1 3/4
28999 / 2
29003 / 2 1/4
29007 / 2 1/2
29011 / 2 3/4
29015 / 3

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): **Machine Screws - Fastenal Catalog, Pages 76 and 77****Characteristic: Pan Head Phillips Drive Machine Screws****Sample Size*: REDUCED SAMPLING PLAN**

ID All Size – Thread Part Number / Nominal Length, Inches / Acceptance Criteria:

All 10- 32 **29055 / 5/8**
29073 / 1

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): **Machine Screws - Fastenal Catalog, Pages 76 and 77****Characteristic: Manufacturer, All Nylon Insert Lock Nuts****Sample Size*: REDUCED SAMPLING PLAN****Acceptance Criteria: Fastenal**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

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Characteristic: Nylon Insert Lock Nuts**Sample Size*: REDUCED SAMPLING PLAN**

ID Part Number Size - Thread / Acceptance Criteria:

37010	6 - 32
37012	8 - 32
37014	10 - 24

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): **Nylon Insert Lock Nuts, Fastenal Catalog, Page 104****Characteristic: Manufacturer, All Size Hex Full Nuts****Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **Fastenal**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8):

Characteristic: All Size Hex Full Nuts**Sample Size*: REDUCED SAMPLING PLAN**

ID - Part Number - Size-Thread / Acceptance Criteria:

36020	- 6-32
36024	- 8-32
36028	- 10-24

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): **Hex Full Nuts, Fastenal Catalog, Page 101****Characteristic: Manufacturer, All Size SAE Flat Washers****Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **Fastenal**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8):

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Characteristic: **SAE Flat Washers**

Sample Size*: **REDUCED SAMPLING PLAN**

ID - Part Number - Size ~ Nominal OD/ID, Inches / Acceptance Criteria:

33070 - 6 - 3/8 / 5/32

33072 - 8 - 7/16 / 3/16

33074 - 10 - 1/2 / 7/32

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): **SAE Flat Washers, Fastenal Catalog, Page 115**

Characteristic: **Manufacturer, All Size Medium Split Lock Washers**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **Fastenal**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8):

Characteristic: **Medium Split Lock Washers**

Sample Size*: **REDUCED SAMPLING PLAN**

ID - Part Number - Size / Acceptance Criteria:

33610	6
33612	8
33614	10

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): **Medium Split Lock Washers, Fastenal Catalog, Page 116**

Characteristic: **Supplier, Hose Banding**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **McMaster-Carr**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

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Characteristic: Hose Banding**Sample Size*: REDUCED SAMPLING PLAN**

ID - Part Number - Band Width / Acceptance Criteria:

5658K13 - Nominal 1/4 inch

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): McMaster-Carr, Page 153**Characteristic: Supplier, Worm-Drive Hose Clamps****Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **McMaster-Carr**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8):

Characteristic: Worm-Drive Hose Clamps**Sample Size*: REDUCED SAMPLING PLAN**

ID - Part Number - Band Width - Diameter, inches / Acceptance Criteria:

5321K24 - Nominal 5/16 - Nominal 15/16 - 1 1/2**5321K26 - Nominal 5/16 - Nominal 1 3/16 - 1 3/4****5321K32 - Nominal 5/16 - Nominal 1 11/16 - 2 1/4**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): McMaster-Carr, Page 146**Characteristic: Supplier, Polyethylene Tubing****Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **McMaster-Carr**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

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Characteristic: Polyethylene Tubing**Sample Size*: REDUCED SAMPLING PLAN**

ID - Part Number - Description - OD / ID, inches / Acceptance Criteria:

5181K85 - Translucent White - Nominal 1 3/8 / 1 1/8

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): McMaster-Carr, Page 62**Characteristic: Material, Fender, Flat, and Lock Washers****Sample Size*: REDUCED SAMPLING PLAN****Acceptance Criteria: Zinc Coated Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: Material, Hex Nuts**Sample Size*: REDUCED SAMPLING PLAN****Acceptance Criteria: Zinc Coated Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: Material, Hex Head Bolts**Sample Size*: REDUCED SAMPLING PLAN****Acceptance Criteria: Zinc Coated Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

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Title: **CONDUIT FASTENERS****Characteristic: Material, Fasteners****Sample Size*: REDUCED SAMPLING PLAN**

Acceptance Criteria:

PS 146 Continuous**Threaded Rod.** **Steel****PS RS Clamping Nut with****Regular Spring.** **Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: Material, All Pan Head Phillips Drive Machine Screws**Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **Zinc Plated Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: Material, All Nylon Insert Lock Nuts**Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **Zinc Plated Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: Material, All Size Hex Full Nuts**Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **Zinc Plated Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: Material, All Size SAE Flat Washers**Sample Size*: REDUCED SAMPLING PLAN**Acceptance Criteria: **Zinc Plated Steel**

As Found: _____ Passed: Y / N (Circle)

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References (see Section 8): _____

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Characteristic: **Material, All Size Medium Split Lock Washers**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **Zinc Plated Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: **Material, Hose Banding**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **Stainless Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

Characteristic: **Material, Worm-Drive Hose Clamps**

Sample Size*: **REDUCED SAMPLING PLAN**

Acceptance Criteria: **Stainless Steel**

As Found: _____ Passed: Y / N (Circle)

Receipt Inspection Plan / Report #: _____

References (see Section 8): _____

SECTION 4 VERIFIED BY SPECIAL TEST

* See Attachment H of Desk Instruction for Sampling Size: **NA**

Characteristic for Test: **Seismic Condition C - All Items**

Acceptance Criteria: **Maintain Critical Function Before, During, and After Seismic Event.**

Sample Size*: **Sample Size is NA because seismic verification of the installed conduit system with fittings, supports, etc, will be done by analysis. Physical testing is not anticipated.**

Actual Test Value:

Test Plan and Report #: _____ References (see Section 8): _____

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Section 5 Test / Inspection Summary (Acceptance Method 1)								
1. SUMMARY OF VERIFIED CRITICAL CHARACTERISTICS, THEIR VERIFICATION METHODS, AND RESULTS								
ITEM DESCRIPTION:	Critical Characteristics				Verification Results			
	Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/TN	Procedure or RR#	Check-list ID	Number Tested
Fender, Flat, and Lock Washers - Manufacturer	ABC Fasteners	X		N				
Fender, Flat and Lock Washers - Component Number- Procurement and/or Model Number		X		N				
Fender	20004							
	20008							
	20015							
Flat	18020							
	18025							
	18030							
	18035							
Lock	19020							
	19025							
	19030							
	19035							

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Critical Characteristics			Verification Results								
Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/M	Procedure or RR#	Check- list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
Fender, Flat, and Lock Washers, - Size, inches											
Fender	20004	1/4" x 1 1/4"	x	IN							
	20008	3/8" x 1 1/2"									
	20015	1/2" x 2"									
Flat	18020	#1/4									
	18025	#5/16									
	18030	#3/8									
	18035	#1/2									
Lock	19020	#1/4									
	19025	#5/16									
	19030	#3/8									
	19035	#1/2									
Hex Nuts - Manufacturer	ABC Fasteners	x		IN							
Hex Nuts, - Component Number- Procurement and/or Model Number		x		IN							
	17025										
	17030										
	17035										
	17040										
Hex Nuts, - Size - Thread, inch											
	17025	1/4 - 20									
	17030	5/16 - 18									
	17035	3/8 - 16									
	17040	1/2 - 13									

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Critical Characteristics		Verification Results									
Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/MN	Procedure or RR#	Check-list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
Hex Head Bolts, - Component Number- Procurement and/or Model Number	ABC Fasteners	X		IN							
1/4 inch		X		IN							
38110											
38111											
38112											
38113											
38114											
38115											
5/16 inch											
38126											
38127											
38128											
38141											
38142											
38143											
38144											
3/8 inch											
38155											
38156											
38157											
38158											
38159											
38160											
38161											
1/2 inch											

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Critical Characteristics		Verification Results									
Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/N	Procedure or R#	Check list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
Hex Head Bolts, - Size - Thread x Nominal Length, inches		x		IN							
38110	1/4 - 20 x 1/2										
38111	1/4 - 20 x 3/4										
38112	1/4 - 20 x 1										
38113	1/4 - 20 x 1 1/4										
38114	1/4 - 20 x 1 1/2										
38115	1/4 - 20 x 2										
38126	5/16 - 18 x 3/4										
38127	5/16 - 18 x 1										
38128	5/16 - 18 x 1 1/4										
38141	3/8 - 16 x 3/4										
38142	3/8 - 16 x 1										
38143	3/8 - 16 x 1 1/4										
38144	3/8 - 16 x 1 1/2										
38155	1/2 - 13 x 3/4										
38156	1/2 - 13 x 1										
38157	1/2 - 13 x 1 1/4										
38158	1/2 - 13 x 1 1/2										
38159	1/2 - 13 x 2										
38160	1/2 - 13 x 2 1/2										
38161	1/2 - 13 x 3										

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Critical Characteristics				Verification Results								
Critical Characteristics	Acceptance Criteria/Tolerances		ID	Function	Method T/N	Procedure or R/R#	Check-list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
Fasteners - Manufacturer PS 146 Continuous Threaded Rod, Size		<input checked="" type="checkbox"/>			IN							
Powerstrut												
Nominal 3/8"												
Nominal 1/2"												
Nominal 5/8"												
Nominal 3/4"												
PS RS Clamping Nut with Regular Spring	1/4" x 20											
PS RS	3/8" x 16											
Size x Thread	1/2" x 13											
	5/8" x 11											
	3/4" x 10											
	7/8" x 9											
All Size Pan Head Phillips Drive Machine Screws - Manufacturer	Fastenal	<input checked="" type="checkbox"/>			IN							

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Critical Characteristics		Verification Results									
Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method MN	Procedure or RR#	Check- list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
Pan Head Phillips Drive Machine Screws - Size 6 - 32	28780 / 1/8 28781 / 3/16 28783 / 1/4 28789 / 5/16 28795 / 3/8 28801 / 7/16	X		IN							
Part Number / Nominal Length, Inches	28804 / 1/2 28806 / 9/16 28810 / 5/8 28816 / 3/4 28822 / 7/8 28828 / 1 28830 / 1 1/8										
	28834 / 1 1/4 28836 / 1 3/8 28838 / 1 1/2 28840 / 1 5/8 28842 / 1 3/4 28846 / 2 28852 / 2 1/4 28853 / 2 1/2 28854 / 3										

Critical Characteristics

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Critical Characteristics

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Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/TN	Procedure or RR#	Check-list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
Pan Head Phillips Drive Machine Screws - Size 10 - 24	28936 / 1/4 28942 / 5/16 28948 / 3/8 28954 / 7/16 28957 / 1/2 28963 / 5/8 28969 / 3/4 28975 / 7/8 28981 / 1 28987 / 1 1/4 28991 / 1 1/2 28995 / 1 3/4 28999 / 2 29003 / 2 1/4 29007 / 2 1/2 29011 / 2 3/4 29015 / 3	X		IN							
Pan Head Phillips Drive Machine Screws - Size 10 - 32		X		IN							
Part Number / Nominal Length, Inches		29055 / 5/8 29073 / 1									
All Size Nylon Insert Lock Nuts - Manufacturer	Fastenal	X		IN							
Nylon Insert Lock Nuts - Part Number - Size - Thread	37010 6 - 32 37012 8 - 32 37014 10 - 24	X		IN							

Critical Characteristics

Verification Results

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Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/N	Procedure or RR#	Check-list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
All Size Hex Full Nuts - Manufacturer											
Hex Full Nuts -	Fastenal	X		IN							
Part Number -	36020	6 - 32	X								
Size - Thread	36024	8 - 32									
	36028	10 - 24									
All Size SAE Flat Washers - Manufacturer											
SAE Flat Washers -	Fastenal	X		IN							
Part Number -	33070	6 - 3/8 / 5/32	X								
Size - Nominal OD/ID, Inches	33072	8 - 7/16 / 3/16									
	33074	10 - 1/2 / 7/32									
All Size Medium Split Lock Washers - Manufacturer											
Medium Split Lock Washers -	Fastenal	X		IN							
Part Number -	33610	6	X								
Size	33612	8									
	33614	10									
Hose Banding, Supplier	McMaster-Carr	X		IN							
Hose Banding -	5658K13	-	X								
Part Number -	Nominal 1	1 1/4 inch									
Band Width											
Worm-Drive Hose Clamps, Supplier	McMaster-Carr	X		IN							

Critical Characteristics

Verification Results

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Critical Characteristics	Acceptance Criteria/Tolerances	ID	Function	Method T/N	Procedure or RR#	Check-list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date
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Worm-Drive Hose Clamps -	Part Number -	Band Width -	Diameter	IN
			5321K24 - Nominal 5/16 - Nominal 15/16 - 1 1/2	X
			5321K26 - Nominal 5/16 - Nominal 1 3/16 - 1 3/4	
			5321K32 - Nominal 5/16 - Nominal 1 11/16 - 2 1/4	
Polyethylene Tubing, Supplier			McMaster-Carr	IN
Polyethylene Tubing, -	Part Number -	Description -	5181K85 - Translucent White - Nominal 1 3/8 / 1 1/8	IN
Material Identification:				IN, T
Fender, Flat, and Lock Washers			Zinc Coated Steel	
Hex Nuts			Zinc Coated Steel	IN, T
Hex Head Bolts			Zinc Coated Steel	IN, T

Critical Characteristics							Verification Results						
Critical Characteristics	Acceptance Criteria/Tolerances			ID	Function	Method T/N	Procedure or RR#	Check-list ID	Number Tested	Number Failed	Verifying Organization	Printed Name Signature	Date

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Fasteners,			<input checked="" type="checkbox"/>		IN, T
PS 146 Continuous Threaded Rod.	Steel				
PS RS Clamping Nut with Regular Spring.	Steel				
Pan Head Phillips Drive Machine Screws	Zinc Plated Steel	<input checked="" type="checkbox"/>		IN, T	
Nylon Insert Lock Nuts	Zinc Plated Steel	<input checked="" type="checkbox"/>		IN, T	
All Size Hex Full Nuts	Zinc Plated Steel	<input checked="" type="checkbox"/>		IN, T	
All Size SAE Flat Washers	Zinc Plated Steel	<input checked="" type="checkbox"/>		IN, T	
All Size Medium Split Lock Washers	Zinc Plated Steel	<input checked="" type="checkbox"/>		IN, T	
Hose Banding	Stainless Steel (Note 3)	<input checked="" type="checkbox"/>		IN, T	
Worm-Drive Hose Clamps	Stainless Steel (Note 3)	<input checked="" type="checkbox"/>		IN, T	
Seismic Condition C	Maintain Critical Function Before, During, and After Seismic Event. Seismic verification of the installed conduit system will be provided by analysis.	<input checked="" type="checkbox"/>		Analysis	

2. DISPOSITION OF UNVERIFIED OR FAILED CRITICAL CHARACTERISTICS

Critical Characteristic

Disposition

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<p>3. SIGNATURE INDICATES ALL CRITICAL CHARACTERISTICS VERIFIED SATISFACTORY OR ACCEPTABLY DISPOSITIONED AND COMMERCIAL GRADE DEDICATION IS SATISFACTORY AND COMPLETE.</p>	
<p>BUYER VERIFICATION</p>	
<p>Testing Agency Approval: _____</p>	<p>Date _____</p>
<p>Testing Agency QA Engineer: _____</p>	<p>Date _____</p>
<p>Design Authority: _____</p>	
<p>QA Engineer: _____</p>	

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SECTION 6 CONTACTS / PHONE NUMBERS	
Name	Phone
Design Authority	()
QA	()
QC	()
Cog - Engineer	()
CGI Engineer	()
Procurement Engineer	()
Other	()

SECTION 7 SUPPORTING DOCUMENTATION FOR THIS CHECKLIST	
Initial Procurement Documents	For Critical Characteristics
<input type="checkbox"/> Drawings:	
<input type="checkbox"/> Manuals (specify type & number):	
<input type="checkbox"/> Design Calculations	
<input type="checkbox"/> Installation Instructions	
<input type="checkbox"/> Operation Instructions	
<input type="checkbox"/> Calibration Instructions	
<input type="checkbox"/> Manufacturer's Recommended Spare Parts List	
<input type="checkbox"/> Other:	
Procurement Documents	
<input type="checkbox"/> Certificate of Conformance/Compliance	
<input type="checkbox"/> Seismic Qualification Certificate	
<input type="checkbox"/> Environmental Qualification Certificate	
<input type="checkbox"/> Test Report (s):	
<input type="checkbox"/> Inspection Report (s):	
<input type="checkbox"/> CMTRs for ASME Pressure Retaining Materials	
<input type="checkbox"/> Valve Seat Leakage Report	
<input type="checkbox"/> Weld Records	
<input type="checkbox"/> Material Traceability Record	
<input type="checkbox"/> Other:	