SUBMITTAL
HEAVY-DUTY "HD"
NO-HUB COUPLINGS

_____
Date

_____ _____
Architect **Project**

_____ _____
Contractor **Engineer**

Heavy-Duty "HD" No - Hub Couplings

Size	Part No.	Installation Torque Inch Pounds	No. of Clamps Per Coupling
1-1\2"	6217H8G	80	4
2"	6218H8G	80	4
3"	6219H8G	80	4
4"	6220H8G	80	4
5"	6221H8G	80	6
6"	6222H8G	80	6
8"	6223H8G	80	6
10"	6230H8G	80	6

The patented Ideal Heavy-Duty "HD" No-Hub Couplings are engineered to connect no-hub cast iron pipe in applications replacing the less-efficient hub & spigot material. The Coupling consists of a neoprene gasket (ASTM C-564) housed inside a 304 stainless steel corrugated shield. Depending on the size of the shield, (4) or (6) 304 stainless steel clamps surround the shield and provide the sealing force. The 3/8" hex-head screws are made from 305 stainless steel. The Ideal Heavy-Duty "HD" No-Hub Couplings are available in sizes ranging from 1 1/2" – 10". The couplings are designed to be torqued to 80 in-lbs. The entire coupling is corrosion resistant.

The Design
The Ideal Heavy-Duty "HD" No-Hub Couplings has been re-engineered to install with 80 in-lbs. of screw torque and boasts an ultimate torque rating exceeding 100 in/lbs. Our patented, extra wide bi-directional shield is now constructed with a heavier gauge stainless steel. The mechanically interlocked 9/16" wide clamps have also been augmented with a heavier gauge stainless steel and a 3/8" hex-head screw. These changes, teamed with our specially beaded gasket, enable our new Heavy-Duty "HD" coupling to exert exceptional hold on the pipe for a positive, reliable seal.

The Gasket
Made from high-quality neoprene (ASTM C-564), the Ideal No-Hub gasket features a pattern of multiple thick sealing sectors and adjacent groove sectors laterally spaced. When the clamps are tightened, this pattern permits the clamping bands and the shield to form a restriction impeding the movement of the shield relative to the gasket.

The Shield
0.008" thick type 304 stainless steel green shield requires less band load to transfer pressure to the gasket, leaving more clamping load in reserve to compress the gasket. The patented, bi-directional corrugations create clamp sealing pressure in both parallel and transverse patterns on the gasket and pipe, thereby avoiding pull-out failures, and providing a positive, reliable seal.

The Clamps
Heavy-duty 304 stainless steel clamps and 3/8" hex-head 305 screws provide the sealing force. 1-½" through 4" couplings use four (4) clamps; 5" through 10" couplings use six (6) clamps. The entire assembly is corrosion resistant.

HEAVY-DUTY "HD" NO-HUB COUPLINGS

Product Information Submittal
for No-Hub Systems

TEST	GASKET PHYSICAL TEST MIN. OR MAX. REQUIREMENTS	ASTM METHOD
Tensile Strength	1500 psi min.	D 412
Elongation	250 min.	D 412
Durometer (Shore A)	70 +/-5 @ 76˚F +/- 5˚F	D 2240
Accelerated Aging	15% maximum tensile and 20% maximum elongation, 10 points maximum increase in hardness, all determinations after oven aging for 96 hours at 158˚F	D573
Compression Set	25% max. after 22 hours at 158˚F	D 395 Method B
Oil Immersion	80% max. volume change after immersion in IRM 903 for 70 hours at 212˚F.	D 471
Ozone Cracking	No visible cracking at 2 times magnification of the gasket after 100 hours exposure in 1.5 ppm ozone concentration at 104˚F. Testing and inspection to be on gasket which is loop mounted to give approximately 20% elongation of outer surface.	D 1149
Tear Resistance	150 lbf /in. min.	D 624
Water Absorption	20% max. by weight after 7 days at 158˚F	D 471

MATERIALS

Clamp: Type 304 AISI stainless steel
Screw: Type 305 AISI stainless steel 3/8" hex head/shoulder
Shield: Type 304 AISI stainless steel, corrugated. Shield thickness 0.008"
Gasket: The gasket shall be fabricated from a compound containing high quality neoprene as the sole elastomer. ASTM C-564.

The Ideal patented Heavy-Duty "HD" No-Hub Coupling has been engineered to provide a heavy-duty, all stainless steel coupling; balancing the desire for a more rigid joint with the need to provide a superior, positive seal which can accommodate possible disparities in the mating of No-Hub pipe and fittings. This has been accomplished by manufacturing our Ideal patented No-Hub Heavy-Duty "HD" coupling with a heavy-duty corrugated shield of sufficient width to accommodate additional surface-bearing sealing clamps.

The additional sealing clamps, when torqued to 80 in-lbs., deliver additional performance benefits. First, the overall dimensional thickness of the clamp and shield, in conjunction with the additional width of the coupling, result in a more uniformly rigid joint, with the load being supported at both the outer edge of the coupling and the centerline of the joint. Second, the additional sealing clamps yield increased surface-bearing contact between the coupling and the pipe or fittings, thereby inhibiting joint movement at higher internal pressures not commonly associated with DWV systems.

The 1-1/2", 2", 3" and 4" diameter couplings consist of a 3" wide bi-directional, corrugated 304 stainless steel shield in conjunction with four (4) stainless steel clamps mounted in a series, secured in place by means of fixed and "floating" eyelets to allow the clamp "travel" during tightening. The 5", 6" 8" and 10" couplings consist of a 4" corrugated 304 stainless steel shield and six (6) stainless steel clamps.

All Ideal patented Heavy-Duty "HD" No-Hub Coupling are designed to be installed with a pre-set torque wrench calibrated at 80 in-lbs. to accommodate the 305 stainless steel 3/8" hex-head/shoulder screw.

WM TAO & ASSOCIATES
CONSULTING ENGINEERS

Shop Drawing Submittal Review

Transmitted To: Cannon Design

Date: June 13, 2016

Attention: **stl-cac@cannondesign.com**

Contact Person / WTA Field Inspector: Patrick Garner

Project Name: Webster University-**ISB**

Reviewed by: Mike Whitworth (WES)

Project No. WT 14127.01
WES 607

[ ] UPS [ ] Courier [X] **Email**

Copies	No.	Description
1 PDF	221316P01	(Submittal No.'s)
		(Cannon #22 1316-001) - (Paric #15051-) – (WES #607)
		• **Storm & Sanitary Piping Product Data**

*Remarks: See Submittal Review from Webb Enginnering.

c: **Kevin Patel**
Kpatel@cannondesign.com

[X] ***Reviewed**

[X] ***No Exceptions Taken**

[ ]

[ ] *Make Corrections As Noted, No Resubmittal Required

Corrections or comments made on shop drawings during this review do not relieve contractor from compliance with requirements of drawings and specifications. This check is only for review of general conformance with the design concept of project and general compliance with information given in contract documents. Contractor is responsible for: confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.

WEBB
ENGINEERING
SERVICES INC.

1400 S. 3rd Street, Suite 201
St. Louis, Missouri 63104
Phone: (314) 588-0600
Fax: (314) 588-0604

Letter of Transmittal

To: wtashop@wmtao.com

From: Mike Whitworth

Date: June 11, 2016

Re: Webster University ISB

WES No: 607

☐ For your Files ☐ For Review ☐ Please Comment ☐ Please Reply

Item No.	Description	No. of Copies	Date
1	Shop Drawing Review – 22 1316 Sanitary Waste and Vent Piping	1	06-11-2016

•Signature: Mike Whitworth

WES
WEBB ENGINEERING SERVICES INC.
1400 S. 3rd Street, Suite 201 • St. Louis, Missouri 63104 • 314.588.0600 • *fax* 314.588.0604
www.webb-engineering.com

The review of this submittal is limited to the general conformance with the designated design concept and intent of this project and with the general compliance of the information provided in the contract documents. All comments, remarks and notations made on the submittal(s) as a result of this review do not relieve the contractor from full compliance with requirements of the contract documents. Approval for a specific item shall not include approval of an assembly of which the item is not a component. The contractor is solely responsible for rough-in and installation confirming and correlating all quantities and dimensions; selecting fabrication processes and techniques of construction; coordination of this work with that of other trades on this project; and in a safe and satisfactory manner. All work shall be installed in full compliance with the manufacturer's recommendation, Federal, State and Local rules and regulation and the Authority Having Jurisdiction (AHJ) and applicable adopted codes and standards.

PROJECT NAME: Webster University ISI
LOCATION: St. Louis Missouri
CLIENT PROJ. NO.: N/A
WES PROJ. NO.: 607
SPEC SECTION: 22 1316 Sanitary & Storm Piping
SUBMITTAL ITEM: See Below -

CONTRACTOR: Deluca Plumbing, LLC.
CTR. SUBMITTAL #: 22 1316-001
SUBMITTAL DATE: May 23, 2016
DATE RECEIVED: June 08, 2016
RECEIVED VIA: E-Mail
RECEIVED FROM: WTA
DATE RETURNED: JUNE 11, 2016
RETURNED VIA: E-MAIL
RETRURNED TO: WTASHOP@WMTAO.COM

STATUS KEY:

NEC — NO EXCEPTION TAKEN
MCN — MAKE CORRECTIONS NOTED, NO RESUBMITTAL:
AAR — AMEND AND RESUBMIT
REJ — REJECTED, SEE REMARKS:
REV — REVIEWED ONLY

NEC	MCN	AAR	REJ	REV	ITEM	REMARKS
X					No-Hub Pipe and Fittings Charlotte Pipe and Foundry Storm and Sanitary Above Ground	
X					N-Hub Couplings IDEAL Heavy-Duty	
X					Schedule 40 PVC Solid Wall Charlotte Pipe and Foundry Storm and Sanitary Below Ground	
X					Drain Tile Cresline Perforated PVC-DS with Geo Tex Fabric	

REVIEWED BY: Michael R. Whitworth DATE: June 11, 2016

THESE COMMENTS ARE TO BE ATTACHED TO ALL COPIES OF THE SHOP DRAWING REFERENCED ABOVE.

CANNONDESIGN

SUBMITTAL IDENTIFICATION SHEET

To be completed by Contractor/CM

WEBSTER UNIVERSITY ISB
PROJECT NAME

8274 BIG BEND BLVD
ADDRESS

NUMBER

WEBSTER UNIVERSITY
OWNER

CANNON DESIGN
ARCHITECT / ENGINEER

Joe Voypick
SUBMITTED BY

221316-001
CONTRACTOR / CM SUBMITTAL NO.

CANNON DESIGN SUBMITTAL NO.

DRAWING / DETAIL REFERENCE

221316
SPECIFICATION SECTION / PARAGRAPH

DeLuca
MANUFACTURER / SUPPLIER

ITEM / PRODUCT ID

REQUIRED DATE

PRIORITY

◯ CRITICAL

ITEM BEING SUBMITTED (check only one)

- ◯ Shop Drawings
- ◯ Samples (_____ copies)
- ◯ LEED Submittal
- ◯ Certification / Qualifications
- ◉ Record Documents
- ◯ Product Data
- ◯ Coordination Drawing
- ◯ Calculations
- ◯ Schedules
- ◯ O&M Manuals
- ◯ Other _____

ITEM BEING SUBMITTED FOR (check only one)

◉ Action ◯ Information Only ◯ Record

REMARKS OR DEVIATIONS

CONTRACTOR / CM CERTIFICATION
(SUBMITTALS NOT CERTIFIED WILL BE RETURNED WITHOUT REVIEW)

PARIC

PARIC CORPORATION
SUBMITTAL STAMP

THIS SHOP DRAWING HAS BEEN REVIEWED BY PARIC CORPORATION

Subcontractor remains responsible for dimensions, quantities, coordination with other trades and compliance with contract documents.

By:
Devin D. Gates

Joe Voypick
REVIEWED BY

6/7/16
DATE

To be completed by Reviewer

22 1316-001
CANNON DESIGN SUBMITTAL NUMBER

6/7/16
RECEIVED DATE

- ◯ **A. No Exceptions Taken**
  No further review of submittal is required.
- ◯ **B. Make Corrections Noted**
  Incorporate corrections in work; resubmission is not required.
- ◯ **C. Revise and Resubmit**
  Revise as noted, and resubmit for review.
- ◯ **D. Rejected**
  Submittal is not in compliance with Contract Documents; provide new submittal.
- ◯ **E. For Record / Information Only**
  Submittal was reviewed for Record / Information purposes only.
- ◯ **F. Not Required for Review**
  Submittal is not required by Contract Documents and has not been reviewed.

Review is for conformance with the design concept of this project and for general compliance with contract documents. Contractor is responsible for quantities, dimensions and compliance with contract documents and for information that pertains to fabrication processes, construction techniques and coordination of this work with all trades which will be affected thereby. This review is null and void if submittal deviates from contract documents and does not indicate or note deviations.

A/E COMMENTS ◯ See attached sheet(s) for additional comments

REVIEWED BY

DATE

77 Westport Plaza
Suite 250
St. Louis, MO 63146

TRANSMITTAL

No. 15051-0074

Paric Corporation

PROJECT: 15051-Webster University Interdisciplinary Science Building

DATE: 06/07/2016

TO: Cannon Design
1100 Clark Ave
St Louis MO 63102

RE: Storm and Sanitary Piping Product Data

ATTN: Kelvin Patel

JOB: 15051

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☑ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☐ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☐ Attached	☐ Returned for Corrections
☑ Other: Product Data	☐ Separate Cover Via:	☐ Due Date:

Item	*Package*	*Code*	*Rev.*	*Copies*	*Date*	*Description*	*Status*
Submittal		221316-001	1		06/07/2016	Storm and Sanitary Piping Product Data	Submitted

NOTES:

CC: Paric Corporation, Kathy Bathe

Project Coordinator: Paric Corporation, Kathy Bathe

Signed: _____
Devin Gates

Shop Drawing Submittal

Project Name:	WEBSTER ISB
Specification #	**221316-01** **221416-01**
Specification Description:	SANITARY & STORM PIPING
Date:	05-23-16
General Contractor / Construction Manager:	PARIC
ARCHITECT:	KWA
ENGINEER:	William Tao / Webb
Contractor:	DeLuca Plumbing, L.L.C. 8465 Delport Drive St. Louis, MO 63114
Supplier:	FERGUSON
Manufacturer:	Various
Reviewed & Approved by:	DeLuca Plumbing 05-23-16
Action:	Forward to GC/CM for Review & Approval