

**100% DOMESTIC****MJ Accessories**

ANSI/AWWA C111/A21.11

T-Bolts, Double Ended Rods & Nuts

HSLA STEEL

SPECIFICATIONS:

- Bolts & Nuts are manufactured in accordance with ANSI / AWWA C111 / A21.11.
- Material is High Strength Low Alloy Steel per ANSI/AWWA C111/A21.11.
- Threads per ASME B1.1 unified standard coarse (Class 2A & 2B)

MECHANICAL PROPERTIES

- Yield Strength 45000 PSI (min)
- Elongation in 2in. 20% (min)

CHEMICAL PROPERTIES

Carbon	0.20% Max
Manganese	1.25% Max
Sulfur	0.05% Max
Nickel	0.25% Min
Copper	0.20% Min
Combined	1.25% Min (Ni, Cu, Cr)

BLUE BOLT/NUT/ROD

T-Bolts, Rods & Nuts have fluoropolymer coating material which is VOC-compliant, resin-bonded, thermally cured and dry lubricant.

COATING PHYSICAL PROPERTIES

Film Thickness:	0.3 to 0.4 mil per coat
Number of Coats:	3 to 4 coats
Adhesion:	1 mm cross hatch test + 5 Pulls. Good knife resistance
Cure Test:	50+Rubs with MEK. No substrate exposure
Pencil Hardness:	Pencil Hardness: 4-6H
Volatile Organic Compounds	2.74lbs/gal

Stainless Steel T-Bolts & Nuts

ALLOYS SS 304 & SS 316 PER ASTM F593

SPECIFICATIONS:

- T-bolt dimensions are manufactured in accordance with ANSI / AWWA C111 / A21.11.
- T-bolt alloys SS 304 and SS 316 per ASTM F593
- Heavy Hex Nut Alloys SS 304 & SS 316 per ASTM F594.

MECHANICAL PROPERTIES

- Tensile Strength: 85,000 PSI to 140,000 PSI
- Yield Strength: 45,000 PSI (min)

COATING SPECIFICATION

Nuts have fluoropolymer coating material which is VOC-Compliant, resin-bonded, thermally cured and dry lubricant.

COATING PHYSICAL PROPERTIES

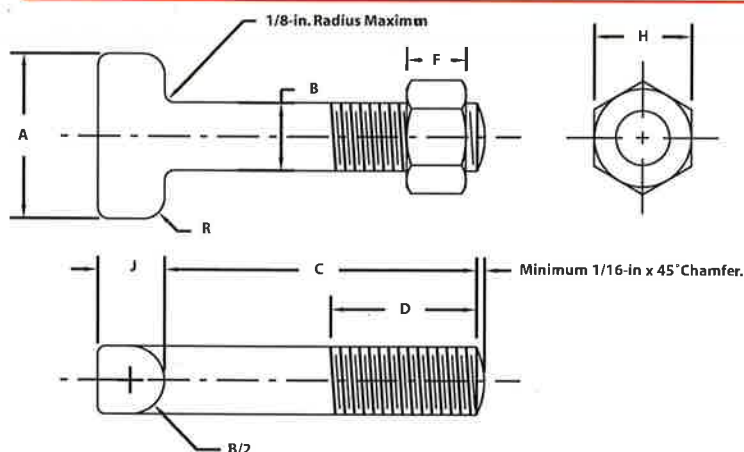
- | | |
|---|---|
| • Film Thickness: 0.3 to 0.4 mil per coat | • Pencil Hardness: 4-6H |
| • Number of Coats: 3 to 4 coats | • Volatile Organic Compounds 2.74 lbs/gal |
| • Adhesion: 1mm cross hatch test + 5 Tape Pulls. | • Continuous use temperature - 356°F |
| • Cure Test: 50+ Rubs with MEK, no substrate exposure | • Color: SS 304 is green, SS 316 is red |



100% DOMESTIC

Accessories

ANSI/AWWA C111/A21.11

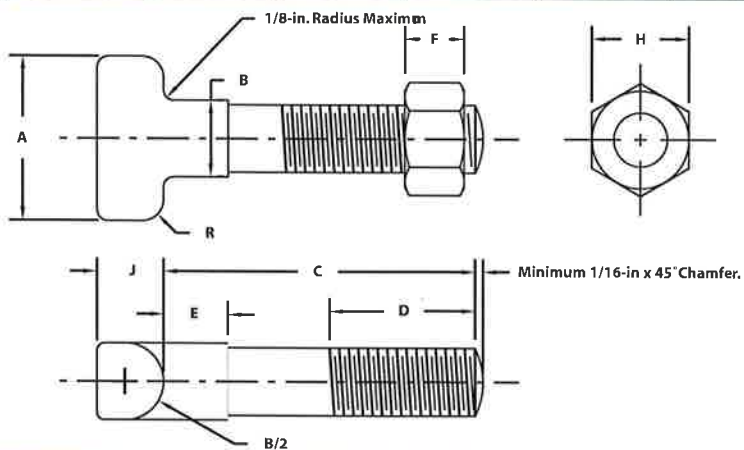


MECHANICAL JOINT BOLT TORQUE		
PIPE SIZE (IN)	BOLT SIZE (IN)	RANGE ¹ OF TORQUE (FT-LBS)
2-3	5/8	45-60
4-24	3/4	75-90
30-36	1	100-120
42-48	1 1/4	120-150

¹These torque ranges are requirements of AWWA C600

T-HEAD (LOW ALLOY STEEL) BOLT & NUT

NOM. SIZE	A	B	C	D	THREADS PER IN.	F	H	J	R
5/8 x 3	1.50	0.625	3.00	2.00	11	0.625	1.062	0.625	0.312
5/8 x 3 1/2	1.50	0.625	3.50	2.70	11	0.625	1.062	0.625	0.312
3/4 x 3 1/2	1.75	0.750	3.50	2.50	10	0.750	1.250	0.750	0.375
3/4 x 4	1.75	0.750	4.00	3.00	10	0.750	1.250	0.750	0.375
3/4 x 4 1/2	1.75	0.750	4.50	3.00	10	0.750	1.250	0.750	0.375
3/4 x 5	1.75	0.750	5.00	3.00	10	0.750	1.250	0.750	0.375
3/4 x 5 1/2	1.75	0.750	5.50	3.70	10	0.750	1.250	0.750	0.375
1 x 5 1/2	2.25	1.000	5.50	3.00	8	1.000	1.625	1.000	0.500
1 x 6	2.25	1.000	6.00	3.00	8	1.000	1.625	1.000	0.500
1 1/4 x 6	2.50	1.250	6.00	3.00	7	1.250	2.000	1.250	0.625
1 1/4 x 6 1/2	2.50	1.250	6.50	3.50	7	1.250	2.000	1.250	0.625
1 1/4 x 8 1/2	2.50	1.250	8.50	3.50	7	1.250	2.000	1.250	0.625



ANTI-ROTATION T-HEAD (LOW ALLOY STEEL) BOLT & NUT

NOM. SIZE	A	B	C	D	E	THREADS PER IN.	F	H	J	R
5/8 x 3	1.50	0.625	3.00	2.00	0.63	11	0.625	1.062	0.625	0.312
5/8 x 3 1/2	1.50	0.625	3.50	2.50	0.63	11	0.625	1.062	0.625	0.312
3/4 x 3 1/2	1.75	0.750	3.50	2.50	0.63	10	0.750	1.250	0.750	0.375
3/4 x 4	1.75	0.750	4.00	3.00	0.63	10	0.750	1.250	0.750	0.375
3/4 x 4 1/2	1.75	0.750	4.50	3.00	0.63	10	0.750	1.250	0.750	0.375
3/4 x 5	1.75	0.750	5.00	3.00	0.63	10	0.750	1.250	0.750	0.375

NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY
P.O. BOX 969
SHIPROCK, NEW MEXICO 87420
PHONE: (505) 210-7070

TO: Navajo Tribal Utility Authority

PO Box 170

Fort Defiance, Arizona 86504-0170

GENTLEMEN:

WE ARE SENDING YOU

☒ ATTACHED ☐ UNDER

Separate cover via _____ THE FOLLOWING ITEMS:

- ☐ SHOP DRAWINGS ☐ PRINTS ☐ PLANS ☐ SAMPLES ☐ SPECIFICATIONS
☐ COPY OF LETTER ☐ CHANGE ORDER ☐ As-Built

COPIES	DATE	NO.	DESCRIPTION
1	9-Sep-2019	10	HARCO PVC-IPS Fittings Data
1	9-Sep-2019	11	NAPCO IPS Pipe Submittal
1	9-Sep-2019	12	Poly Tape 10mil Specs

THESE ARE TRANSMITTED As checked below:

- ☒ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RESUBMIT ____ COPIES FOR APPROVAL
☐ FOR YOUR USE ☐ APPROVED AS NOTED ☐ SUBMIT ____ COPIES FOR DISTRIBUTION
☐ AS REQUESTED ☐ RETURNED FOR CORRECTIONS ☐ RESUBMIT ____ CORRECTED PRINTS
☒ FOR REVIEW AND COMMENT ☐ FOR YOUR SIGNATURE _____

Remarks: CORRECTED SUBMITTAL NOS.

PLEASE SIGN, DATE, AND RETURN THE YELLOW COPY.

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COPY TO: NTUA (RB, AT, DS, DS, JD, AM, CH, DY) NHA (KD, VM, LL,
NN) NECA (WB, PM, GL, HP, BG)

SIGNED: _____

Ammerson T. Barber, Estimator/Coordinator

9-Sep-19

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE

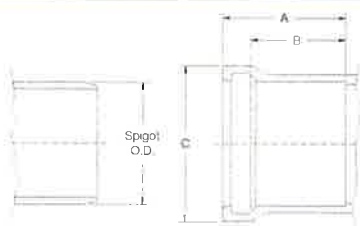
HARCO PVC IPS GASKETED FITTINGS

DESIGN DATA

Applicable Standards:

Materials:	ASTM D-1784, NSF 61
Joints:	ASTM D-3139
Gaskets:	ASTM F-477
Wall Thickness:	SDR-21
NSF 14 Certification	
Vacuum Qualification:	22"-Hg for 4 hours with no loss per method of ASTM D-3139

BELL SPECIFICATIONS



SIZE	STYLE	A	B	C	Spigot O.D.
1½	M	3.17	2.42	2.8	1.90
2	M	3.27	2.52	3.3	2.38
2½	M	3.38	2.63	3.8	2.88
3	M	3.52	2.77	4.5	3.50
4	M	4.10	2.99	5.9	4.50
6	M	4.57	3.46	8.3	6.63
8	M	5.16	3.90	10.4	8.63
10	Fab	5.75	4.70	11.5	10.75
	Fab	6.15	4.90	12.0	12.75

Notes:

- All lay lengths & weights are approximate and are subject to change without notice
- Fabricated fitting configurations may vary

Style Legend:

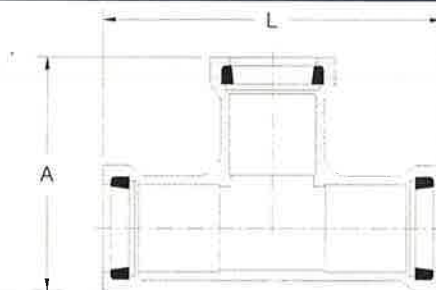
- M - One piece molded
A - Assembled using one piece molded fitting with MIPT x Gasketed adapter or Spigot adapter for branch or Bell
Fab - Fabricated using SCH-40 PVC fittings with HARCO Spigot adapters (or pipe) solvent welded together (See pressure rating warning on this page)

Fab Style: These fittings use SCH-40 PVC fittings. SCH-40 PVC fittings do not have a long term pressure rating. See section 6.3.2 of ASTM D2466-97. Use of these fittings in pressure systems is at user's risk.

The use of anything but properly designed and installed thrust blocks will reduce the life of plastic fittings. Thrust blocks must be poured concrete only and sized for the soil conditions. Joint restraint products are available.

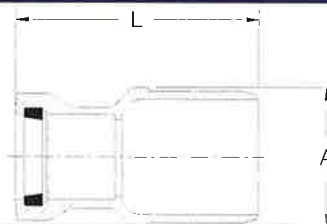
WARNING: Cyclical pressure surges (WATER HAMMER) can reduce the life of PVC fittings. Where such conditions may exist, HARCO DEEP BELL DUCTILE IRON FITTINGS for IPS size PVC pipe should be considered. HARCO DEEP BELL DUCTILE IRON FITTINGS are available in sizes 1½" through 12".

TEE (GxGxG)



SIZE	PART #	STYLE	A	L	WT
1½ x 1½	112-150	M	6.0	9.1	1.0
2 x 1½	112-215	M	6.1	9.1	1.3
2 x 2	112-220	M	6.1	9.1	1.4
2½ x 1½	112-251	A	8.4	9.9	1.4
2½ x 2	112-252	M	6.8	9.9	2.0
2½ x 2½	112-255	M	6.8	9.9	1.7
3 x 1½	112-315	A	9.4	10.9	2.5
3 x 2	112-320	M	7.7	11.4	2.8
3 x 2½	112-325	M	8.0	11.9	3.1
3 x 3	112-330	M	7.7	10.9	2.8
4 x 2	112-420	M	8.6	13.1	4.3
4 x 2½	112-425	M	8.5	13.1	4.9
4 x 3	112-430	M	8.8	13.1	4.9
4 x 4	112-440	M	9.3	13.1	5.6
5 x 5	112-550	M	11.0	14.8	10.0
6 x 2	112-620	A	12.2	11.6	2.8
6 x 3	112-630	M	11.5	12.5	3.0
6 x 4	112-640	M	11.8	16.3	11.0
6 x 6	112-660	M	11.5	16.4	12.3
8 x 4	112-840	M	13.9	19.5	18.7
8 x 6	112-860	M	14.4	19.5	19.3
8 x 8	112-880	M	14.9	19.5	21.3

REDUCER S.E.B. (SxG)



SIZE	PART #	STYLE	A	L	WT
2 x 1½	116-215	M	2.8	7.0	0.5
2½ x 2	116-252	M	3.4	7.0	0.8
3 x 2	116-320	M	3.7	7.9	0.9
3 x 2½	116-325	M	4.2	7.4	1.3
4 x 2	116-420	M	4.7	10.0	1.5
4 x 2½	116-425	M	5.0	8.3	1.8
4 x 3	116-430	M	4.7	10.1	1.9
5 x 4	116-540	Fab	5.8	7.8	3.0
6 x 3	116-630	M	7.0	9.0	3.5
6 x 4	116-640	M	6.9	8.0	2.7
6 x 5	116-650	M	7.0	10.0	4.9
8 x 6	116-860	M	9.0	9.3	5.8

Call For Other Sizes, Configurations & Gasket Materials



THE HARRINGTON CORPORATION

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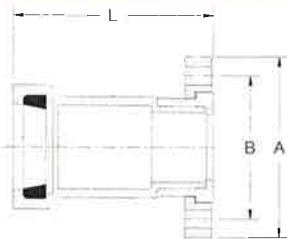
HARCO PVC IPS GASKETED FITTINGS

DESIGN DATA

Applicable Standards:

Materials:	ASTM D-1784, NSF 14
Joints:	ASTM D-3139
Gaskets:	ASTM F-477
Wall Thickness:	SDR-21
NSF 14 Certification	
Vacuum Qualification:	22"-Hg for 4 hours with no loss per method of ASTM D-3139

GASKET x FLANGE ADAPTER



SIZE	PART #	STYLE	A	B	L	WT (approx.)
1½	154-015	Fab	5.0	3.9	4.8	0.8
2	154-020	Fab	6.0	4.8	5.1	1.2
2½	154-025	Fab	7.0	5.5	5.8	1.7
3	154-030	Fab	7.5	6.0	6.0	2.4
4	154-040	Fab	9.0	7.5	7.0	6.0
	154-060	Fab	11.0	9.5	8.3	12.0
	154-080	Fab	13.5	11.8	17.7	20.0

NOTES:

- All lay lengths & weights are approximate and are subject to change without notice
- Fabricated fitting configurations may vary

STYLE LEGEND:

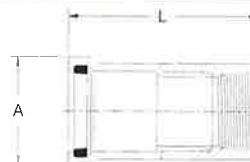
- M - One piece molded
- Fab - Fabricated using SCH-40 PVC fittings with Harco Spigot adapters (or pipe) solvent welded together (See pressure rating warning on this page)

Fab Style: These fittings use SCH-40 PVC fittings. SCH-40 PVC fittings do not have a long term pressure rating. See section 6.3.2 of ASTM D2466-97. Use of these fittings in pressure systems is at user's risk.

The use of anything but properly designed and installed thrust blocks will reduce the life of plastic fittings. Thrust blocks must be poured concrete only and sized for the soil conditions. Joint restraint products are available.

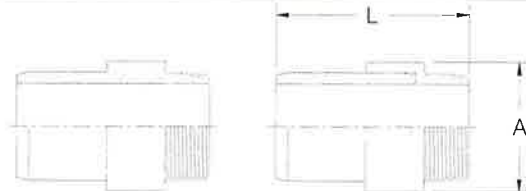
WARNING: Cyclical pressure surges (WATER HAMMER) can reduce the life of PVC fittings. Where such conditions may exist, HARCO DEEP BELL DUCTILE IRON FITTINGS for IPS size PVC pipe should be considered. HARCO DEEP BELL DUCTILE IRON FITTINGS are available in sizes 1½" through 12".

GASKET x FEMALE NPT ADAPTER



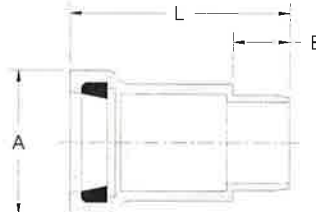
SIZE	PART #	STYLE	A	L	WT (approx.)
1½	132-015	Fab	2.7	5.7	0.5
2	132-020	Fab	3.3	6.1	0.7
2½	132-025	Fab	3.8	7.3	1.2
3	132-030	Fab	4.5	7.5	1.5
4	132-040	Fab	5.8	9.4	2.6
5	132-050	Fab	7.0	10.5	5.0
6	132-060	Fab	8.1	12.1	6.0

PE (Plain End) x MALE NPT ADAPTER



SIZE	PART #	STYLE	A	L	WT (approx.)
1½	133-015	Fab	2.2	5.2	0.3
2	133-020	M	2.6	4.1	0.3
2½	133-025	Fab	3.3	6.3	0.8
3	133-030	Fab	4.0	6.9	1.3
4	133-040	Fab	5.0	7.5	2.0
6	133-060	Fab	7.3	9.8	5.3

SPIGOT x GASKET ADAPTER



SIZE	PART #	STYLE	A	B	L	WT (approx.)
1½	130-015	M	2.7	1.1	4.5	0.3
2	130-020	M	3.3	1.4	4.9	0.5
2½	130-025	M	3.8	2.0	5.3	0.7
3	130-030	M	4.5	2.0	5.8	0.9
4	130-040	M	5.9	2.3	6.4	1.7
5	130-050	M	7.0	3.0	9.1	3.0
6	130-060	M	8.3	3.0	8.0	3.8



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20180618

HARCO PVC IPS GASKETED FITTINGS

DESIGN DATA

Applicable Standards:

Materials:	ASTM D-1784, NSF 14
Joints:	ASTM D-3139
Gaskets:	ASTM F-477
Wall Thickness:	SDR-21
NSF 14 Certification	
Vacuum Qualification:	22"-Hg for 4 hours with no loss per method of ASTM D-3139

NOTES:

- All lay lengths & weights are approximate and are subject to change without notice
- Fabricated fitting configurations may vary

STYLE LEGEND:

- M - One piece molded
 HB - Harco style one piece molded, reduced by use of flush style thread x thread bushing
 FB - Flo style one piece molded, reduced by use of flush style thread x thread bushing
 Fab - Fabricated using SCH-40 PVC fittings with Harco Spigot adapters (or pipe) solvent welded together (See pressure rating warning on this page)

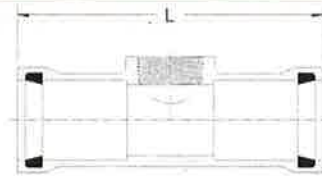
Flush Style: These fittings use SCH-40 PVC fittings. SCH-40 PVC fittings do not have a long term pressure rating. See section 6.3.2 of ASTM D2466-97. Use of these fittings in pressure systems is at user's risk.

The use of anything but properly designed and installed thrust blocks will reduce the life of plastic fittings. Thrust blocks must be poured concrete only and sized for the soil conditions. Joint restraint products are available.

WARNING: Cyclical pressure surges (WATER HAMMER) can reduce the life of PVC fittings. Where such conditions may exist, HARCO DEEP BELL DUCTILE IRON FITTINGS for IPS size PVC pipe should be considered. HARCO DEEP BELL DUCTILE IRON FITTINGS are available in sizes 1½" through 12".

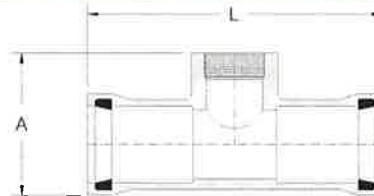
Call For Other Sizes, Configurations & Gasket Materials

SERVICE TEE (GxGxFIPT) (Tapered NPT Thread)



SIZE	PART #	STYLE	L	WT (approx.)
1½ x ¾	151-153	FB	8.5	0.8
1½ x 1	151-154	M	8.5	0.8
1½ x 1¼	151-155	Fab	10.9	0.8
2 x ½	151-202	HB	9.2	1.2
2 x ¾	151-203	M	9.2	1.2
2 x 1	151-204	M	9.2	1.2
2 x 1¼	151-205	M	9.2	1.2
2 x 1½	151-206	M	9.2	1.2
2½ x ½	151-252	HB	9.9	1.5
2½ x ¾	151-253	HB	9.9	1.5
2½ x 1	151-254	M	9.9	1.5
2½ x 1¼	151-255	M	9.9	1.5
2½ x 1½	151-256	M	9.9	1.5
2½ x 2	151-258	M	9.9	1.5
3 x ½	151-302	HB	11.0	2.5
3 x ¾	151-303	HB	11.0	2.5
3 x 1	151-304	M	11.0	2.5
3 x 1¼	151-305	M	11.0	2.5
3 x 1½	151-306	M	11.0	2.5
3 x 2	151-308	M	11.0	2.5
4 x ½	151-402	HB	10.7	3.1
4 x ¾	151-403	HB	10.7	3.1
4 x 1	151-404	M	10.7	3.1
4 x 1¼	151-405	M	10.7	3.1
4 x 1½	151-406	M	10.7	3.1
4 x 2	151-408	M	10.7	3.1
6 x ½	151-602	HB	9.3	5.8
6 x ¾	151-603	HB	9.3	5.8
6 x 1	151-604	HB	9.3	5.8
6 x 1¼	151-605	HB	9.3	5.8
6 x 1½	151-606	M	9.3	5.8
6 x 2	151-608	M	11.5	5.8

ACME SERVICE TEE (GxGxACME) (315psi rated)



SIZE	PART #	STYLE	A	L	WT (approx.)
2 x 1	153-204	M	4.5	9.2	1.4
2 x 1¼	153-205	M	4.5	9.2	1.4
2 x 1½	153-206	M	4.5	9.2	1.5
2½ x 1	153-254	M	4.4	9.6	1.9
2½ x 1¼	153-255	M	4.4	9.6	1.9
2½ x 1½	153-256	M	4.4	9.6	1.9
3 x 1	153-304	M	3.9	10.2	2.8
3 x 1¼	153-305	M	3.9	10.2	2.7
3 x 1½	153-306	M	3.8	10.2	2.6



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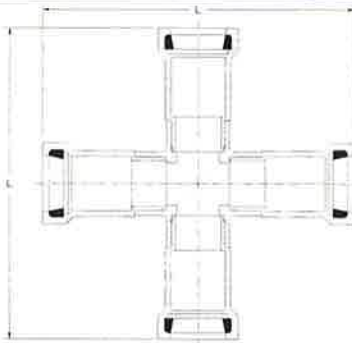
HARCO PVC IPS GASKETED FITTINGS

DESIGN DATA

Applicable Standards:

Materials:	ASTM D-1784, NSF 14
Joints:	ASTM D-3139
Gaskets:	ASTM F-477
Wall Thickness:	SDR-21
NSF 14 Certification	
Vacuum Qualification:	22"-Hg for 4 hours with no loss per method of ASTM D-3139

CROSS (GxGxGxG)



SIZE	PART #	STYLE	L	WT (approx.)
1½	172-015	Fab	11.6	1.7
2	172-020	Fab	12.1	3.4
	172-025	Fab	14.3	4.4
	172-030	Fab	15.1	5.3
4	172-040	Fab	17.9	9.0

NOTES:

- All lay lengths & weights are approximate and are subject to change without notice
- Fabricated fitting configurations may vary

STYLE LEGEND:

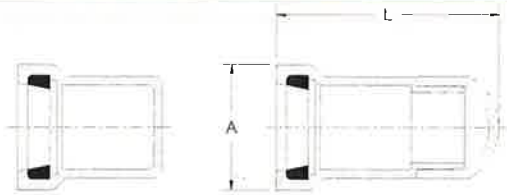
- M - One piece molded
 Fab - Fabricated using SCH-40 PVC fittings with Harco Spigot adapters (or pipe) solvent welded together (See pressure rating warning on this page)

Fab Style: These fittings use SCH-40 PVC fittings. SCH-40 PVC fittings do not have a long term pressure rating. See section 6.3.2 of ASTM D2466-97. Use of these fittings in pressure systems is at user's risk.

The use of anything but properly designed and installed thrust blocks will reduce the life of plastic fittings. Thrust blocks must be poured concrete only and sized for the soil conditions. Joint restraint products are available.

WARNING: Cyclical pressure surges (WATER HAMMER) can reduce the life of PVC fittings. Where such conditions may exist, HARCO DEEP BELL DUCTILE IRON FITTINGS for IPS size PVC pipe should be considered. HARCO DEEP BELL DUCTILE IRON FITTINGS are available in sizes 1½" through 12".

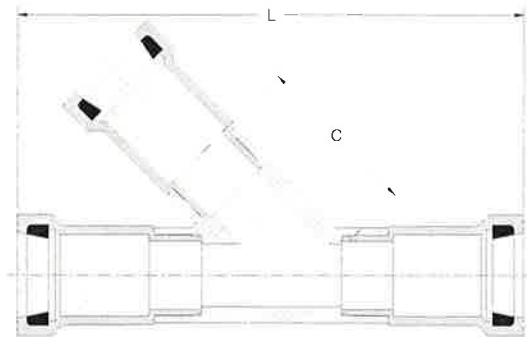
CAP (Gasket)



Poured concrete thrust blocks only.

SIZE	PART #	STYLE	A	L	WT (approx.)
1½	149-015	Fab	2.8	5.3	0.5
2	149-020	M	3.3	3.7	0.5
2½	149-025	Fab	3.8	6.4	1.0
3	149-030	Fab	4.5	6.7	1.4
4	149-040	Fab	5.9	7.6	2.7
5	149-050	Fab	7.0	10.0	4.4
6	149-060	Fab	8.5	9.8	6.9

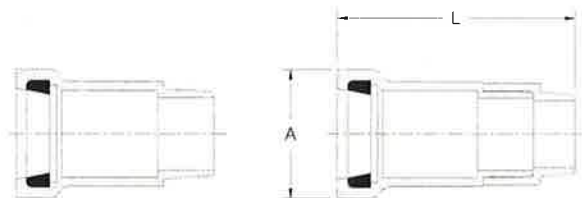
NON-PRESSURE WYE (GxGxG)



SIZE	PART #	STYLE	C	L	WT (approx.)
3 x 3	101-0303	Fab	6.8	10.1	5.0
4 x 4	101-0404	Fab	8.4	12.3	10.0

GASKET x MALE NPT ADAPTER

Do not use joint restraint.



Size on size and reducing sizes of these adapters also available in HARCO Ductile Iron.

SIZE	PART #	STYLE	A	L	WT (approx.)
1½	131-015	M	2.8	4.3	0.5
2	131-020	M	3.3	4.6	0.5
2½	131-025	M	3.8	4.8	1.2
3	131-030	M	4.5	5.0	1.5
4	131-040	Fab	5.9	8.5	2.8
5	131-050	M			3.0
6	131-060	Fab	8.3	10.9	10.3

Call For Other Sizes, Configurations & Gasket Materials



THE HARRINGTON CORPORATION

P.O. BOX 10335 • LYNCHBURG, VIRGINIA 24506 • 3721 COHEN PLACE • LYNCHBURG, VIRGINIA 24501
 PHONE: (434) 845-7094 • FAX: (434) 845-8562 • E-MAIL: sales@harcofittings.com • WEB: www.harcofittings.com
 20180618

HARCO PVC IPS GASKETED FITTINGS

DESIGN DATA

Applicable Standards:

Materials:	ASTM D-1784, NSF 14
Joints:	ASTM D-3139
Gaskets:	ASTM F-477
Wall Thickness:	SDR-21
NSF 14 Certification	
Vacuum Qualification:	22"-Hg for 4 hours with no loss per method of ASTM D-3139

11¼° BEND (GxG)



SIZE	PART #	STYLE	B	WT (approx.)
2	126-020	Fab		2.0
3	126-030	Fab		3.0
4	126-040	Fab		5.0
6	126-060	Fab		11.0

NOTES:

- All lay lengths & weights are approximate and are subject to change without notice
- Indicated fitting configurations may vary

STYLE LEGEND:

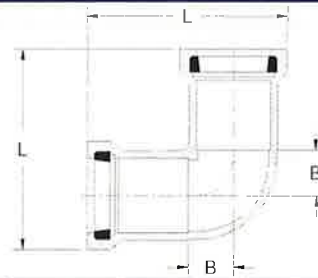
- M - One piece molded
 Fab - Fabricated using SCH-40 PVC fittings with Harco Spigot adapters (or pipe) solvent welded together (See pressure rating warning on this page)

Fab Style: These fittings use SCH-40 PVC fittings. SCH-40 PVC fittings do not have a long term pressure rating. See section 6.3.2 of ASTM D2466-97. Use of these fittings in pressure systems is at user's risk.

The use of anything but properly designed and installed thrust blocks will reduce the life of plastic fittings. Thrust blocks must be poured concrete only and sized for the soil conditions. Joint restraint products are available.

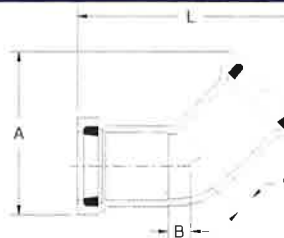
WARNING: Cyclical pressure surges (WATER HAMMER) can reduce the life of PVC fittings. Where such conditions may exist, HARCO DEEP BELL DUCTILE IRON FITTINGS for IPS size PVC pipe should be considered. HARCO DEEP BELL DUCTILE IRON FITTINGS are available in sizes 1½" through 12".

90° BEND (GxG)



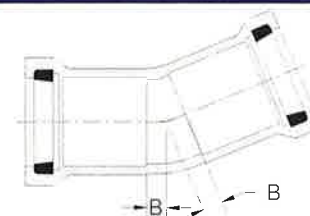
SIZE	PART #	STYLE	B	L	WT (approx.)
1½	118-015	M	1.0	4.8	0.6
2	118-020	M	1.3	6.2	0.8
2½	118-025	M	1.6	6.8	1.3
3	118-030	M	2.0	7.7	1.8
4	118-040	M	2.5	9.5	3.8
5	118-050	Fab			3.8
6	118-060	M	3.6	12.3	9.0
8	118-080	M	4.5	14.9	16.3

45° BEND (GxG)



SIZE	PART #	STYLE	A	B	L	WT (approx.)
1½	122-015	Fab	5.8	0.9	9.1	0.9
2	122-020	M	5.3	0.6	7.8	0.8
2½	122-025	M	6.1	0.7	8.3	1.1
3	122-030	M	6.6	0.9	9.1	1.6
4	122-040	M	8.4	1.1	11.0	3.4
6	122-060	M	11.3	1.6	13.6	7.8
8	122-080	M	13.8	2.0	15.8	13.3

22½° BEND



SIZE	PART #	STYLE	B	WT (approx.)
2	124-020	Fab	2.0	2.0
2½	124-025	Fab	2.0	3.0
3	124-030	Fab	2.3	3.0
4	124-040	Fab	2.6	5.0
6	124-060	Fab	4.3	11.0

Call For Other Sizes, Configurations & Gasket Materials



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 20180618

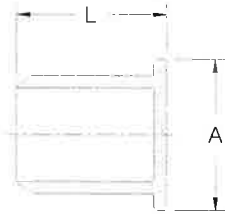
HARCO PVC IPS GASKETED FITTINGS

DESIGN DATA

Applicable Standards:

Materials:	ASTM D-1784, NSF 14
Joints:	ASTM D-3139
Gaskets:	ASTM F-477
Wall Thickness:	SDR-21
NSF 14 Certification	
Vacuum Qualification:	22"-Hg for 4 hours with no loss per method of ASTM D-3139

PLUG (Spigot)



Poured concrete thrust blocks only.

SIZE	PART #	STYLE	A	L	WT (approx.)
1½	144-015	Fab	2.7	5.2	0.2
2	144-020	M	3.0	2.7	0.2
2½	144-025	Fab	3.4	5.3	0.8
3	144-030	M	3.8	3.5	0.4
4	144-040	M	5.0	3.5	0.4
6	144-060	M	6.8	5.4	2.3
8	144-080	M	8.9	6.4	3.8

NOTES:

- All lay lengths & weights are approximate and are subject to change without notice
- Fabricated fitting configurations may vary

STYLE LEGEND:

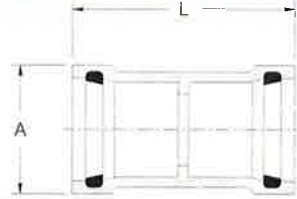
M - One piece molded
 C - Manufactured by Certain-Teed Corporation
 Fab - Fabricated using SCH-40 PVC fittings with Harco Spigot adapters (or pipe) solvent welded together (See pressure rating warning on this page)

Fab Style: These fittings use SCH-40 PVC fittings. SCH-40 PVC fittings do not have a long term pressure rating. See section 6.3.2 of ASTM D2466-97. Use of these fittings in pressure systems is at user's risk.

The use of anything but properly designed and installed thrust blocks will reduce the life of plastic fittings. Thrust blocks must be poured concrete only and sized for the soil conditions. Joint restraint products are available.

WARNING: Cyclical pressure surges (WATER HAMMER) can reduce the life of PVC fittings. Where such conditions may exist, HARCO DEEP BELL DUCTILE IRON FITTINGS for IPS size PVC pipe should be considered. HARCO DEEP BELL DUCTILE IRON FITTINGS are available in sizes 1½" through 12".

LINE COUPLING (GxG) (w/ Stop)



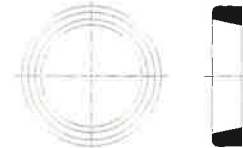
SIZE	PART #	STYLE	A	L	WT (approx.)
1½	108-015	M	2.8	6.5	0.5
2	108-020	M	3.3	6.7	0.7
2½	108-025	M	3.8	7.0	0.9
3	108-030	M	4.5	7.2	1.3
4	108-040	M	5.9	10.6	2.7
6	108-060	M	8.3	9.3	5.6
8	108-080	M	10.4	11.1	10.3
10	108-100	C	11.5	11.5	14.0
12	108-120	C	12.0	12.0	22.0

REPAIR COUPLING (GxG) KNOCK-ON STYLE (No Stop)



SIZE	PART #	STYLE	A	L	WT (approx.)
1½	109-015	M	2.8	6.5	0.5
2	109-020	M	3.3	7.8	0.7
2½	109-025	M	3.8	8.4	0.9
3	109-030	M	4.5	9.0	1.3
4	109-040	M	5.9	10.6	2.7
5	109-050	M	7.0	11.2	4.1
6	109-060	M	8.3	11.6	5.6
8	109-080	M	10.4	11.1	10.3
10	109-100	C	11.5	11.5	14.0
12	109-120	C	12.0	12.0	22.0

REPLACEMENT HARCO PRESSURE GASKET



SIZE	PART #	STYLE	WT (approx.)
1½	195-015	M	0.1
2	195-020	M	0.1
2½	195-025	M	0.1
3	195-030	M	0.1
4	195-040	M	0.2
6	195-060	M	0.3
8	195-080	M	0.3

Call For Other Sizes, Configurations & Gasket Materials



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✓ CHECK

MUNICIPAL PRODUCT SPECIFICATION

ASTM D2241/IB PVC Pressure Pipe | Gasketed Integral Bell

NAPCO's ASTM D2241 Gasketed Integral Bell PVC Pipe product line is manufactured to meet the needs of water distribution and irrigation systems. With top quality raw materials and modern processing technology, our D2241 pipe meets all industry standards in addition to our own rigorous quality control requirements.

Our D2241 pipe utilizes Rieber style gaskets throughout the entire product offering to create a leak-free joint.

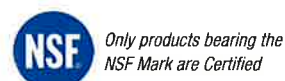


Short Form Specification		
Pipe Standard:	ASTM D2241	
Diameter Std.:	Iron Pipe Size (IPS)	
Nominal Sizes:	1½", 2", 2½", 3", 4", 6", 8", 10", 12"	
Dimension Ratios & Pressure Ratings:	SDR 41 – 100 psi SDR 32.5 – 125 psi SDR 26 – 160 psi	SDR 21 – 200 psi SDR 17 – 250 psi SDR 13.5 – 315 psi
Lay Length:	14' – Made-to-order 20' – All Sizes 40' and 42' – 2" to 6" Sizes	
Pipe Compound:	ASTM D1784 Cell Class 12454	
Pipe Joint Std.:	ASTM D3139	
Max. Angular Joint Deflection:†	1°	
Gasket Standard:	ASTM F477	
Gasket Material Offerings:	Standard – SBR Optional – NBR or EPDM	
Installation Std.:	ASTM D2774	



Applications	Potable Water	Wastewater	Reclaimed Water
Color:	White	Green	Purple
Certifications:*	NSF 14 NSF 61	None	None

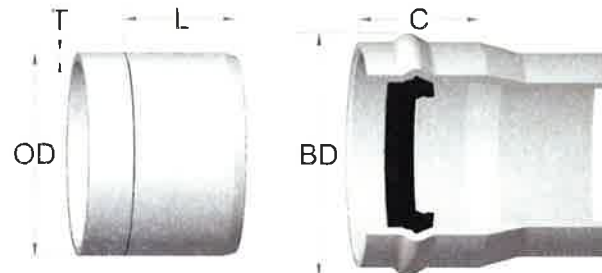
†See Installation Guide for more information.





MUNICIPAL PRODUCT SPECIFICATION

ASTM D2241/IB PVC Pressure Pipe | Gasketed Integral Bell



D2241/IB PIPE DIMENSIONS & PERFORMANCE								
Nom. Size	Outside Diameter (OD)	SDR	Pressure Rating (psi)	Min. Wall Thickness (T)	Internal Diameter (ID)	Approx. Bell Diameter (BD)	Bell Depth (C)	Insertion Mark (L)
1 1/2"	1.900	21	200	0.090	1.720	2.625	3.250	2.625
		17	250	0.112	1.676			
		13.5	315	0.141	1.618			
2"	2.375	26	160	0.091	2.193	3.250	3.500	2.750
		21	200	0.113	2.149			
		17	250	0.140	2.095			
2 1/2"	2.875	13.5	315	0.176	2.023	4.000	4.125	3.125
		26	160	0.110	2.655			
		21	200	0.137	2.601			
3"	3.500	17	250	0.169	2.537	4.750	4.125	3.625
		13.5	315	0.213	2.449			
		41	100	0.085	3.330			
4"	4.500	32.5	125	0.108	3.284	5.875	4.625	4.000
		26	160	0.135	3.230			
		21	200	0.167	3.166			
		17	250	0.206	3.088			
		13.5	315	0.259	2.982			
		41	100	0.110	4.280			
		32.5	125	0.138	4.224			
		26	160	0.173	4.154			
		21	200	0.214	4.072			
		17	250	0.265	3.970			
		13.5	315	0.333	3.834			

Notes:

1. These dimensions are for estimating purposes only. All dimensions are in inches unless otherwise specified.
2. SDR = Standard Dimension Ratio
3. ASTM Pressure Rating @ 73°F and includes 2:1 safety factor.
4. Internal diameter calculated using nominal outside diameter and minimum wall thickness.
5. Dimension given for Approx. Bell Diameter (BD) is for highest pressure rating.



MUNICIPAL PRODUCT SPECIFICATION

ASTM D2241/IB PVC Pressure Pipe | Gasketed Integral Bell

D2241/IB PIPE DIMENSIONS & PERFORMANCE								
Nom. Size	Outside Diameter (OD)	SDR	Pressure Rating (psi)	Min. Wall Thickness (T)	Internal Diameter (ID)	Approx. Bell Diameter (BD)	Bell Depth (C)	Insertion Mark (L)
6"	6.625	41	100	0.162	6.301	8.500	6.250	5.375
		32.5	125	0.204	6.217			
		26	160	0.255	6.115			
		21	200	0.316	5.993			
		17	250	0.390	5.845			
		13.5	315	0.491	5.643			
8"	8.625	41	100	0.210	8.205	10.625	7.250	6.375
		32.5	125	0.265	8.095			
		26	160	0.332	7.961			
		21	200	0.410	7.805			
		17	250	0.508	7.609			
10"	10.750	41	100	0.262	10.226	13.125	7.500	6.625
		32.5	125	0.331	10.088			
		26	160	0.413	9.924			
		21	200	0.511	9.728			
		17	250	0.632	9.486			
12"	12.750	41	100	0.311	12.128	15.550	8.250	7.375
		32.5	125	0.392	11.966			
		26	160	0.490	11.770			
		21	200	0.606	11.538			
		17	250	0.750	11.250			

Notes:

1. These dimensions are for estimating purposes only. All dimensions are in inches unless otherwise specified.
2. SDR = Standard Dimension Ratio
3. ASTM Pressure Rating @ 73°F and includes 2:1 safety factor.
4. Internal diameter calculated using nominal outside diameter and minimum wall thickness.
5. Dimension given for Approx. Bell Diameter (BD) is for highest pressure rating.

PIPE WRAP TAPE

Product Features

- Used for industrial identification, color coding and pipe wrap purposes
- Suitable use at not more than 140° F (60° C)
- Pipe wrapping tape is moisture resistant
- Adheres to metal and plastic
- Non-corrosive pressure-sensitive adhesive
- Does not require heat, moisture or other manner of preparation to apply
- No known hazards
- Approved for above or below ground use as a rust preventer and UV inhibitor
- Approved for use on all types of pipe including gas and oil pipe



PSPWT110

Model Numbers

PSPWT110	1 x 100 10 mil pipe wrap
PSPWT210	2 x 100 10 mil pipe wrap
PSPWT210Y	2 x 100 10 mil pipe wrap, yellow
PSPWT220	2 x 100 20 mil pipe wrap
PSPWT410	4 x 100 10 mil pipe wrap
PSPWT410Y	4 x 100 10 mil pipe wrap, yellow

Application

NO PRIMER REQUIRED.

Surface preparation: Steel surfaces should be cleaned of rust and other contaminants by wire brushing, blasting or other methods. Pipe surface should be free of frost and moisture. Pipe heated by welding should be allowed to cool to 120° F to 140° F. Wrap is applied by spiral wrapping with a minimall overlap so no pipe is exposed. Tension in wrapping should be enough to obtain conformability to the surface being coated.

Backfilling: No delay is necessary. Backfilling may be done immediately after wrapping.

Technical Performance

(Applies to PSPWT110, PSPWT210, PSPWT410, PSPWT210Y, PSPWT410Y)

DESCRIPTION	UNITS	VALUE	TEST METHOD
Tape thickness	mm/mils	0.25 / 10	ASTM D-1000
Adhesion to steel	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Adhesion to backing	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Elongation at break	%	200	ASTM D-1000
Tensile strength	kg/cm , lbs/in	4.6 / 25.7	ASTM D-1000
Dielectric strength	volts/mil	1250	ASTM D-1000

(Applies to PSPWT220)

DESCRIPTION	UNITS	VALUE	TEST METHOD
Tape thickness	mm/mils	0.50 / 20	ASTM D-1000
Adhesion to steel	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Adhesion to backing	kg/cm , oz/in	0.23 / 20	ASTM D-1000
Elongation at break	%	250	ASTM D-1000
Tensile strength	kg/cm , lbs/in	8 / 44.7	ASTM D-1000

Warranty and Codes

This product meets MIL. SPEC.T27730A. It is recommended that the buyer determine the suitability through for his own best purpose.

NAVAJO ENGINEERING & CONSTRUCTION AUTHORITY**P.O. BOX 969****SHIPROCK, NEW MEXICO 87420****PHONE: (505) 210-7070****LETTER OF TRANSMITTAL**

DATE 24-Sep-2019 JOB NO. 4500078174

ATTENTION: Ronald Begay

RE: NTUA Emergency Inter-tie

Kaibeto, Arizona

NECA Proj. # 819141 - Kaibeto Inter-Tie

Submittal # 13

TO: Navajo Tribal Utility Authority

PO Box 170

Fort Defiance, Arizona 86504-0170

GENTLEMEN:**WE ARE SENDING YOU**☒ ATTACHED ☐ UNDER

Separate cover via _____ THE FOLLOWING ITEMS:

☐ SHOP DRAWINGS ☐ PRINTS ☐ PLANS ☐ SAMPLES ☐ SPECIFICATIONS☐ COPY OF LETTER ☐ CHANGE ORDER ☐ As-Built

COPIES	DATE	NO.	DESCRIPTION
1	24-Sep-2019	13	Temporary Traffic Control Plan

THESE ARE TRANSMITTED As checked below:

- ☒ FOR APPROVAL ☐ APPROVED AS SUBMITTED ☐ RESUBMIT ____ COPIES FOR APPROVAL
☐ FOR YOUR USE ☐ APPROVED AS NOTED ☐ SUBMIT ____ COPIES FOR DISTRIBUTION
☐ AS REQUESTED ☐ RETURNED FOR CORRECTIONS ☐ RESUBMIT ____ CORRECTED PRINTS
☒ FOR REVIEW AND COMMENT ☐ FOR YOUR SIGNATURE _____

Remarks:**PLEASE SIGN, DATE, AND RETURN A COPY.****RECEIVED BY:** _____**DATE:** _____

FY TO: NTUA (RF, AT, DS, DS, JD, DY) NECA (WB, PM, GL, HP, BG)

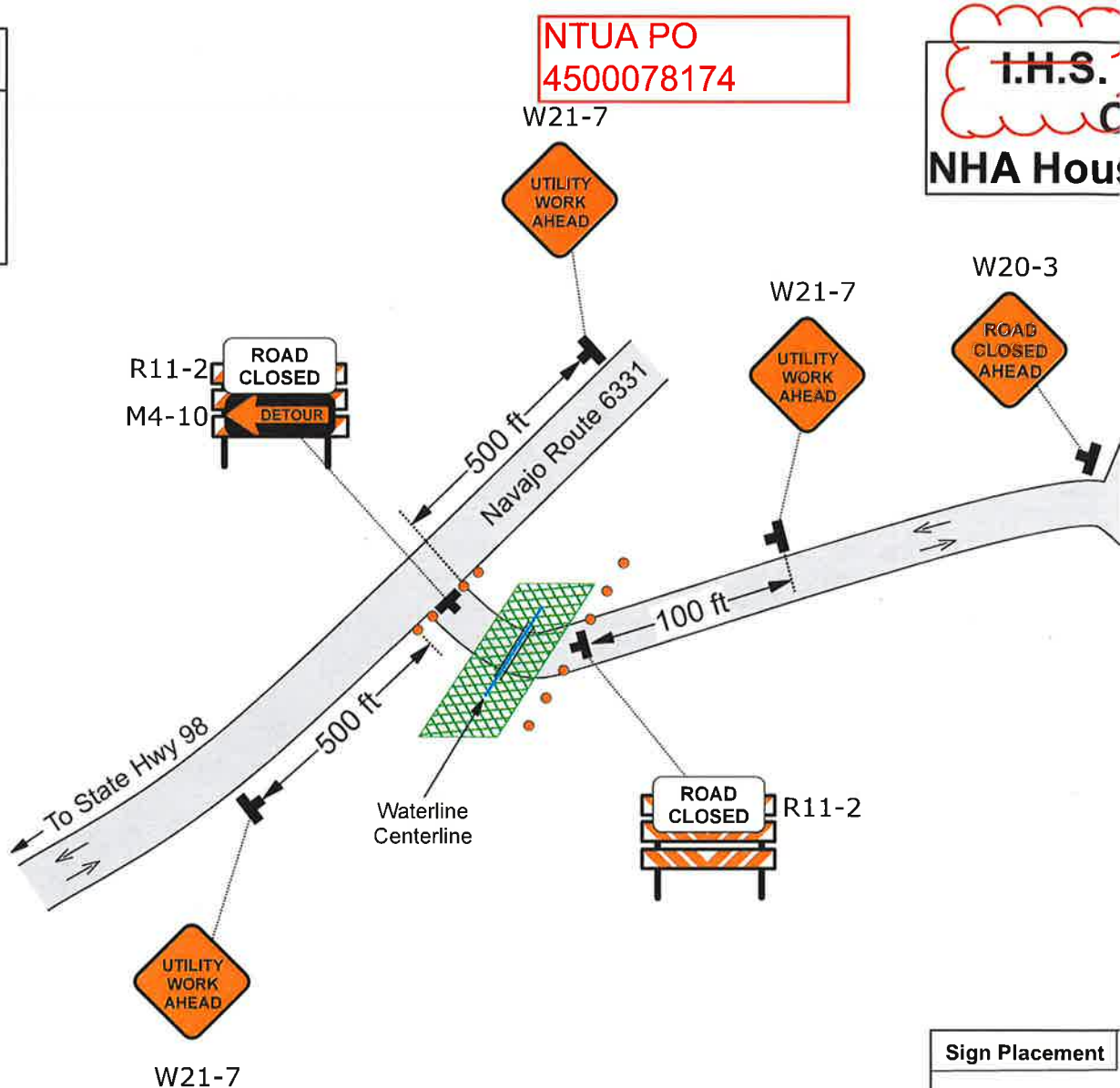
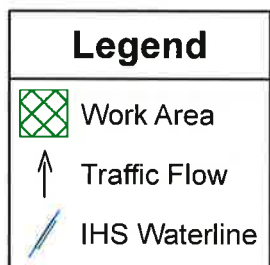
SIGNED: _____**REVIEWED**

By Ammerson Barber at 10:09 am, Sep 24, 2019

24-Sep-19

Ammerson T. Barber, Estimator/Coordinator

IF ENCLOSURES ARE NOT AS NOTED, KINDLY NOTIFY US AT ONCE



General Notes:

1. All traffic control devices and signs shall be in accordance with the MUTCD manual (latest edition).
2. At least 24 hour notice shall be given to all effected NHA residence prior to street closure.
2. All TTC signs and devices shall be maintained for cleanliness, visibility and correct positioning.
3. This TTC zone is temporary and shall be limited to working hours only. At the end of the shift, all TTC devices and signs shall be removed.
4. Final location and spacing of work space, temporary detour lane, signs and devices may be adjusted to fit onsite field conditions based on the daily Job Hazard Analysis.
7. All workers shall wear high-visibility safety apparel that meets Class 2 minimum requirements.
8. Orange Flags may be used to call attention to the advanced warning signs.

Sign Placement

2ft Min.
from the
roadway
edge

Roadway

