Product Notes

Product Note 3.105
Re: Integral Bell Transition
Date: Updated July 22, 2002

Advanced Drainage Systems, Inc. offers a wide variety of coupler systems to meet the specific project requirements specified by the Engineer. When ADS became the first manufacturer of HDPE pipe to offer an in-line integral bell (N-12 IB), end users realized faster, easier installations with superior joint performance.

N-12 IB is an in-line integral bell which maintains a constant pipe outside diameter. This constant OD eliminates the need for bell holes and makes it easier to maintain line and grade. The gasketed bell and spigot design, with an electromeric rubber gasket meeting ASTM F477, is for silt-tight, gravity-flow storm sewer applications.

In 2001, ADS added to the Integral Bell product line with the addition of N-12 Watertight IB. N-12 WT IB enables the end user to gain a joint with watertight performance (tested in accordance with ASTM D 3212) with the same ease of use associated with N-12 IB. The use of N-12 WT IB provides the ultimate performance in storm sewer applications.

With the variety of couplers available, connecting to existing pipe runs or to fabricated fittings may necessitate a transition to other ADS joints. This product note will give guidance in selecting the proper method of making these connections.

Whenever using integral bell products with other ADS pipe systems, always position the integral bell pipe lengths at the end of the project.

Following is a brief summary of the possible combinations of ADS products and the recommended method of transitioning.

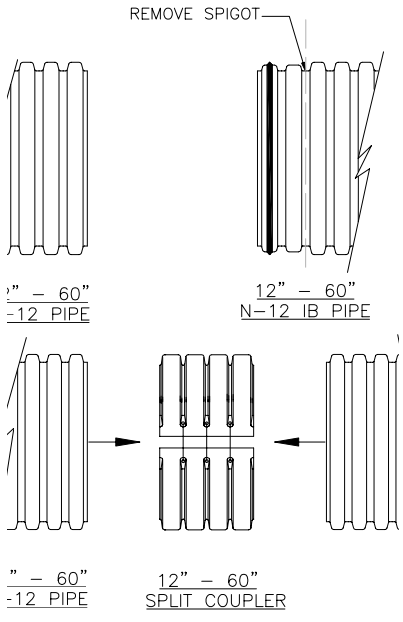

FIGURE 1

I. Soil / Silt Tight Applications

- **12" through 60" Integral Bell pipe to plain end pipe (Series 95)**

  Remove the mini-corrugations from the spigot end of the pipe, or the bell from the bell end, depending on flow direction. Utilize a split coupler to make the connection. (See Figure 1)

- **12" through 24" Integral Bell pipe to cleated bell - bell couplers (Series 85)**

  Remove the mini-corrugation from the spigot end or bell from the bell end, depending on flow direction. Insert this end into the female end of the cleated bell – bell coupler. (See Figure 2)

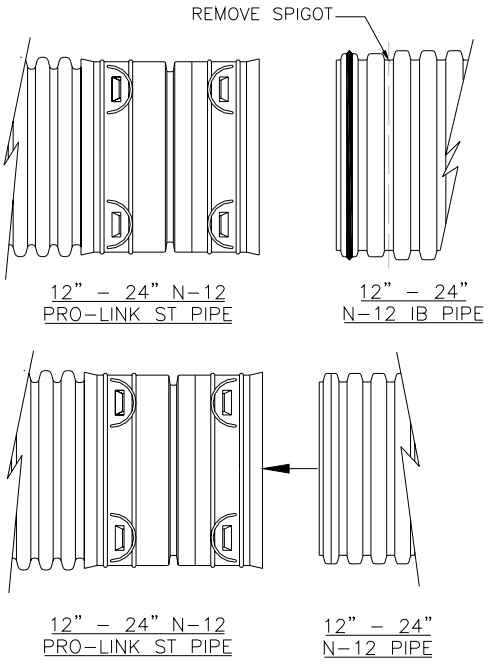

FIGURE 2

- **30" – 36" Integral Bell pipe to 30" – 36" welded bell pipe**

  For field connections of integral bell pipe to welded pipe two possibilities exist.

  Option 1 (integral bell to existing welded bell): Remove mini corrugations on spigot end of pipe. Install valley gasket provided by ADS on the first full valley corrugation. Lube joint and insert into welded bell of existing pipe. (See Figure 3)

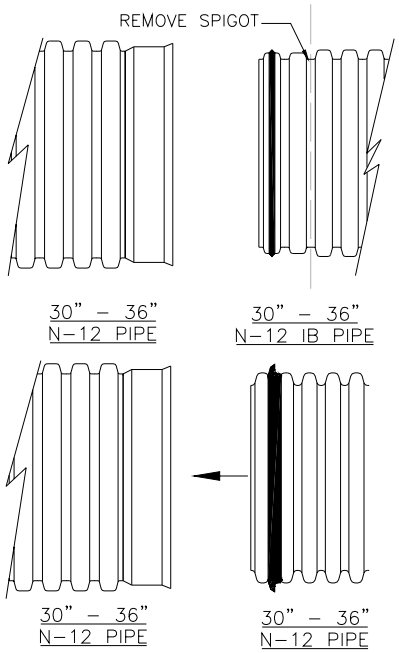

FIGURE 3

- **<u>30" – 36" Integral Bell pipe to 30" – 36" welded bell pipe, continued</u>**

Option 2 (integral bell to existing spigot end of welded bell):
For bell and spigot joint, remove bell from integral bell pipe and install a valley gasket provided by ADS on the first full valley corrugation. Install valley gasket provided by ADS on the first full valley corrugation on the spigot end of the welded bell pipe. Lube Series 65 bell-bell coupler and join pipe. If a non-gasketed connection is allowed, then a split coupler can be used on the pipe after the mini corrugations and bells have been removed. (See Figure 4)

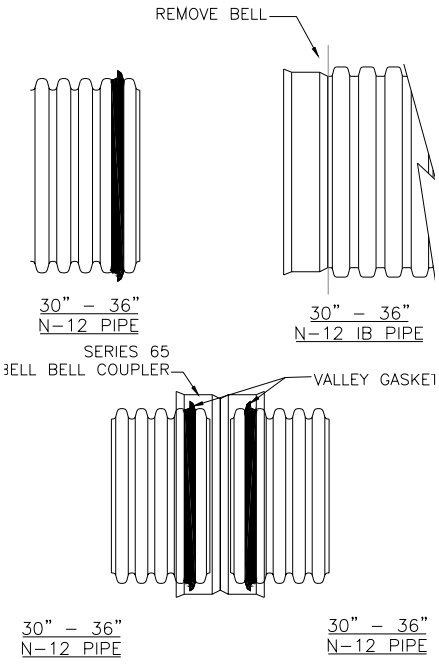

FIGURE 4

- **<u>42" – 60" Integral Bell pipe to 42" – 60" N-12 HC pipe.</u>**

For field connections of integral bell pipe to N-12 HC pipe three options exist to perform a soil tight connection.

Option 1 (spigot end of integral bell pipe to bell end of HC pipe):
Remove mini corrugations from spigot end of integral bell pipe. Install shoulder gasket provided by ADS on the first corrugation on the spigot end of the pipe. Lube joint and insert integral bell pipe into the bell of the HC pipe. (See Figure 5)

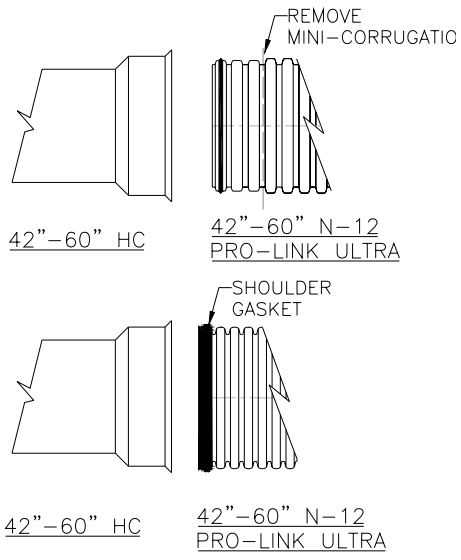

FIGURE 5

- **42" – 60" Integral Bell pipe to 42" – 60" N-12 HC pipe, continued.**

Option 2 (bell end of integral bell pipe to spigot end of HC pipe):
Remove bell from integral bell pipe. Install shoulder gasket provided by ADS on the first corrugation on the bell end of the integral bell pipe. Use bell bell coupler provided by ADS to join the pipes. Lube HC side of bell and push bell onto spigot of HC pipe. Lube integral bell side of bell-bell coupler and push integral bell pipe into bell-bell coupler. (See Figure 6.)

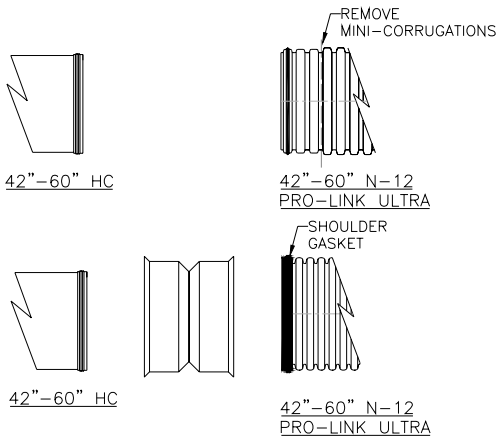

FIGURE 6

Option 3 (plain end HC pipe to bell or spigot end of integral bell pipe):
Remove bell or spigot from integral bell pipe. Use appropriately sized field repair coupler provided by ADS. Place coupler centered on joint between HC and integral pipe. Push pipes ends together. Wrap field repair coupler around the joint and install in accordance with instructions.

II. Water Tight Joint Applications:

- **12" – 36" N-12 WT IB to 12" – 36" Series 35 or Series 65 N-12 WT**

Remove mini corrugations or bell end of N-12 WT IB depending on flow direction. Install water tight valley gasket on the first full valley corrugation. Install valley gasket on the first full valley corrugation of the existing pipe. Obtain Series 35 or 65 bell-bell coupler from ADS. Lube bell-bell coupler on one side and install on existing pipe. Lube remaining side of bell-bell coupler and insert remaining pipe side into bell. (See Figure 7.)

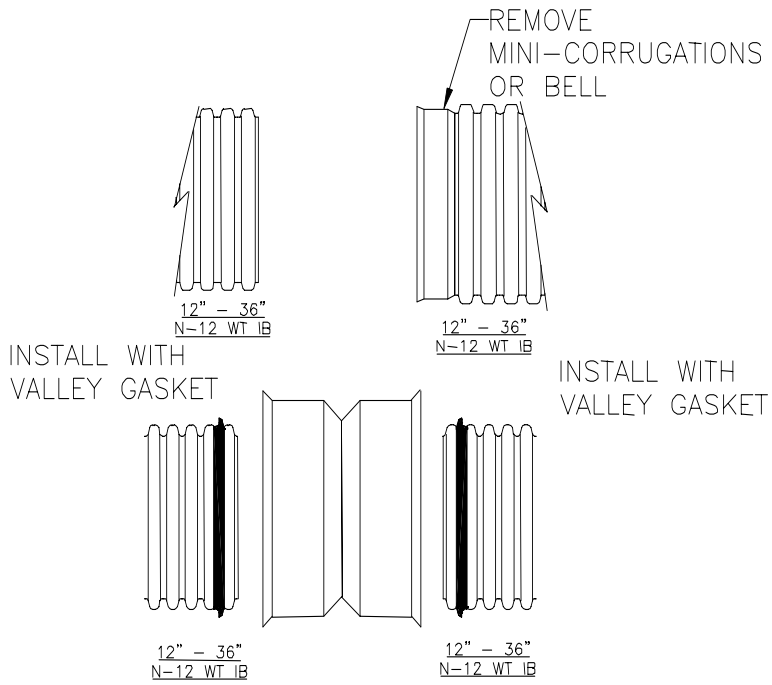

FIGURE 7

- **42" and 48" N-12 WT IB to 42" and 48" N-12 HC WT**

  To obtain a leak resistant joint a field repair coupler must be utilized. Remove bell or spigot from integral bell pipe. Use field repair coupler provided by ADS. Place coupler centered on joint between HC pipe and IB pipe. Push pipe ends together. Wrap field repair coupler around the joint and install in accordance with instructions. In order to obtain a testable joint it may be necessary to also use internal seals. Contact your ADS sales rep for information on this process.

Should further instructions be necessary, please contact your local ADS salesperson for additional information.