

### **DELAWARE STATE UNIVERSITY**

### OFFICE OF CAPITAL PLANNING, DEVELOPMENT, ENERGY & ENVIRONMENTAL MANAGEMENT

1200 N. DuPont Highway Dover, Delaware 19901-2277

### Addendum #02

Date: May 15, 2017

Project: Alumni Stadium Stormwater Drainage

Contract: FD-15-128

The work herein shall be considered part of the bid documents for the referenced project and carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time. Acknowledge receipt of addendum on the bid form as indicated.

### **Clarifications:**

1. None

### **Changes to Specifications:**

1. None

### **Changes to Drawings:**

- 1. Reissued 1 of 3 Site Plan
- 2. Reissued 2 of 3 Details
- 3. Reissued 3 of 3 Details

### **General Information:**

1. None.

### **Questions and Answers:**

1. **Question:** Will the vending booth under the stadium be removed prior to paving, and

or will it be paved around?

**Answer:** The vending booth will not be removed. Please refer to the attached

revised drawings.

2. **Question:** Can the engineer provide a spec and detail for the type of trench drain to

be used.

**Answer:** Please refer to the attached revised drawings for a spec and tranch drain

details.

**END** 

# DELAWARE STATE UNIVERSITY - MAIN CAMPUS



35.6

INV.: 32.01—

TRENCH DRAIN

**EXISTING** 

INVERT≈34.76 —

ALUMNI STADIUM DRAINAGE UPGRADES 1200 NORTH DUPONT HIGHWAY DOVER, DE 19901 PROJECT #FD 15-128

\_\_\_ 50 L.F. @ 0.005 FT/FT PROPOSED

DRAIN WITH VARIABLE SLOT

SAWCUT 250 L.F. OF EXISTING

PROPOSED TRENCH DRAIN -

ASPHALT/CONCRETE TO INSTALL

DRAIN —

EXISTING

TRENCH DRAIN

INVERT≈35.21—

CONTRACTOR TO TIE-IN

TO EXISTING TRENCH

" NON-TRAFFIC NYLOPLAST \_\_\_

DRAIN BASIN

WITH 15" CONCRETE APRON

(SEE DETAIL-SHEET 3)

15" DURASLOT® LINEAR SURFACE

- PROPOSED INSERTA-TEE

CONNECTION

→ TOP: 35.65

INV.: 33.05

- 12 L.F. @ 0.005 FT/FT

INV.: 33.40

PROPOSED 8" HDPE PIPE

— 50 L.F. @ 0.005 FT/FT PROPOSED

DRAIN WITH VARIABLE SLOT

HEIGHT (V8-V12)

APPROXIMATELY 845±

S.F. PROPOSED

CONCRETE

35.9

1 STORY

BRICK

RESTROOMS AND STORAGE

2,291 SQ.FT.

15" DURASLOT® LINEAR SURFACE

PROPOSED INSERTA-TEE

CONNECTION

→ TOP: 35.65

- 12 L.F. @ 0.005 FT/FT

INV.: 33.65

- CONTRACTOR TO RESLOPE

AREA UNDER BLEACHERS

TO ENSURE DRAINAGE TO

YARD INLETS

— TOP: 35.9

- APPROXIMATELY 78± S.F.

OF CONCRETE TO BE

REPLACED

FIELD STORAGE

UTILITY CROSSINGS TO INSTALL

PROPOSED TRENCH DRAIN

CONTRACTOR TO REMOVE SECTION OF

PROPOSED TRENCH DRAIN TIE-IN

EXISTING TRENCH DRAIN TO ALLOW FOR

— CONTRACTOR TO RELOCATE EXISTING

PROPOSED 8" HDPE PIPE

 $\P$  5,280 $\pm$  S.F. OF ASPHALT =

MAPPROXIMATE LOCATION OF CONCRETE PIER

DRAIN BASIN AND DURASLOT SURFACE DRAIN

FIELD ADJUST LOCATION OF NYLOPLAST

AS NEEDED TO AVOID CONFLICT -

- APPROXIMATELY 82± S.F.

OF CONCRETE TO BE

INSTALLED

NYLOPLAST DRAIN BASIN

WITH 15" CONCRETE APRON

(SEE DETAIL-SHEET 3)

MILL AND OVERLAY START V4 SECTION

20 L.F. @ 0.005 FT/FT

PROPOSED 8" WITH 2.5"

SURFACE DRAIN WITH

VARIABLE SLOT HEIGHT

PROPOSED 24"

NYLOPLAST DRAIN

BASIN WITH SOLID

SLOT DURASLOT® LINEAR

INV.: 33.30

— 20 L.F. @ 0.005 FT/FT PROPOSED 15"

WITH VARIABLE SLOT HEIGHT

PROPOSED INSERTA-TEE

— TOP: 35.65

- 12 L.F. @ 0.005 FT/FT

× 36.19

× 36.16

GROUND OR PAVEMENT ELEVATION

GROUND OR STONE SPOT ELEVATION

ST — ( ) PROPOSED STORM SEWER WITH INLETS

PROPOSED ASPHALT

PROPOSED CONCRETE

PROPOSED SPOT GRADE

PROPOSED FLOW ARROW

AT BUILDING CORNER

PAVEMENT ELEVATION

MAJOR CONTOUR

MINOR CONTOUR ST PROPOSED TRENCH DRAIN

-----36------ PROPOSED CONTOUR PROPOSED SAW CUT

PROPOSED 8" HDPE PIPE

CONNECTION

DURASLOT® LINEAR SURFACE DRAIN

- 12 L.F. @ 0.005 FT/FT

- TOP: 35.4

INV.: 32.70

NYLOPLAST DRAIN

NYLOPLAST DRAIN BASIN 25 80

ASPHAL T

CONTRACTOR TO REMOVE SEDIMENT AND

DEBRIS FROM EXISTING TRENCH DRAIN —

× 51.82

× 50.8

\_\_\_\_ \_\_\_ \_\_\_ STORM DRAIN PIPE

WITH PEDESTRIAN

- MILL AND OVERLAY 817±

S.F. OF ASPHALT

- 63 L.F. @ 0.010⁴ ₽T/FT

PROPOSED 15" HDPE

SAWCUT 165 L.F. OF

- APPROXIMATELY 35± S.F.<sup>36,2</sup>

OF CONCRETE TO BE

REPLACED

CATCH BASIN

GAS METER

SANITARY CLEANOUT

SANITARY MANHOLE

ELECTRIC PEDESTAL

CONCRETE WALK/PAD/PAVEMENT

*WATER VALUE* 

BUILDING WALL

\_\_\_\_ GRATE=12.35'

EXISTING ASPHALT TO

**INSTALL PROPOSED PIPE** 

END WITH V19

PROPOSED 15" HDPE

THE PURPOSE OF THIS PLAN IS TO CORRECT THE DRAINAGE PROBLEMS ALONG THE EAST SIDE OF THE TRACK AND AROUND THE EXISTING BLEACHERS.

- PROPOSED INSERTA-TEE

— 20 L.F. @ 0.005 FT/FT

PROPOSED 15" DURASLOT®

/ START WITH V1 SECTION

— DURASLOT ENDCAP

CONTRACTOR TO MILL

AREAS WHERE NEEDED TO

- MATCH¦EXISTING GRADE

PÉRIMETÉR OF

CONCESSION STAND

LOCATION OF

**EXISTING PIER** 

x TIE-IN TO

EXISTING

GRADE

x TIE-IN TO

GRADE

**EXISTING** 

∃ 36.25
 MAG NAIL SET 2

–'6" DURASLOT ENDCAP

TOP: 35.85

−V1 AN⊅ V2 SECTION

PROPOSED 8" WITH 2.5"

SLOT DURASLOT® LINEAR

VARIABLE SLOT HEIGHT

ASPHALT

— 20 L.F. @ 0.005 FT/FT

36.3 SURFACE DRAIN WITH

INV.: 34.98

(APPROXIMATELY 36.0) @

LINEAR SURFACE DRAIN

WITH VARIABLE SLOT

HEIGHT (V1-V2)

INV.: 33.65

CONNECTION

- TOP: 35.65

INV : 33.55

— 13 L.F. @ 0.005 FT/FT, 35.75

APPROXIMA TE

I OCATION OF

CONCESSION

\_\_TOP: 35.85 x 35.85

START V3 SECTION

× 36.03

INV.: 34.87

- 77 L.F. @ 0.005 FT/FT PROPOSED TRENCH

DRAIN TO TIE INTO EXISTING TRENCH DRAIN

HEAVY TRAFFIC CHANNEL GRATE - BLACK -

NDS #845

\*12"x20" PRO SERIES CHANNEL™ CAST IRON

TOP: 35.4

PROPOSED 8" HDPE PIPE

— 50 L.F. @ 0.005 FT/FT PROPOSED

SURFACE DRAIN WITH VARIABLE

TOP: 35.40

INV.: 34.32

TOP: 35.85 ++

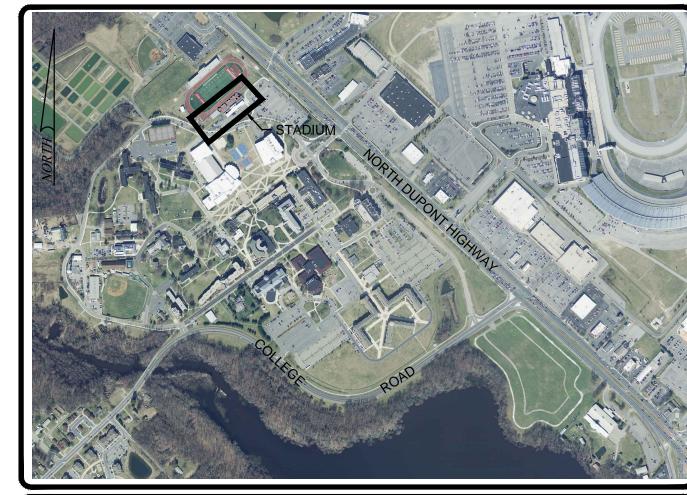
INV : 34.82

(V3-V4) —

COVER-

15" DURASLOT® LINEAR

SLOT HEIGHT (V3-V7)



**LOCATION MAP** MAP: DEMEC AERIAL

SCALE: 1" = 800'

**GENERAL NOTES** 

1. WORK SHALL COMPLY WITH ALL LOCAL, STATE. AND NATIONAL CODES AND REQUIREMENTS.

2. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT

3. ALL LAWN AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED WITH NATIVE GRASSES OR APPROVED **EQUIVALENT** 

4. THE CONTRACTOR SHALL EXERCISE ADEQUATE PRECAUTIONS TO PREVENT ANY DAMAGE OR DISTURBANCE TO AREAS OUTSIDE THE WORK AREA AND ACCESS ROUTE. ANY DAMAGES OUTSIDE OF THE WORK AREA SHALL BE REPAIRED BY THE CONTRACTOR AT HIS SOLE EXPENSE

CONTRACTOR SHALL REMOVE ALL CONSTRUCTION RELATED TRASH AND DEBRIS FROM PROPERTY AND DISPOSE OF IN A LEGAL MANNER. PROVIDE DUMPSTERS IF REQUIRED. MAINTAIN JOB SITE IN A NEAT AND ORDERLY CONDITION.

6. THESE PLANS WERE PREPARED BASED ON SURVEY TITLED "EXISTING CONDITIONS PLAN KNOWN AS ALUMNI STADIUM" PREPARED BY TRANSITION ENGINEERING SURVEYING DATED JANUARY 27, 2016.

1. THESE DRAWINGS ARE MADE FROM AVAILABLE INFORMATION AT THE TIME THE DRAWINGS WERE PREPARED. COMPLETENESS OR CORRECTNESS THEREOF IS NOT GUARANTEED. IT SHALL B THE CONTRACTOR'S RESPONSIBILITY TO CONTACT MISS-UTILITY OF DELMARVA (TELEPHONE 1-800-282-8555) NO LESS THAN 72 HOURS PRIOR TO INITIATING INTRUSIVE WORK. THE CONTRACTOR SHALL CONTACT THE OWNERS OF UTILITIES AT RISK AS A RESULT OF CONDUCTING THE WORK HEREIN. THE CONTRACTOR SHALL CONSULT WITH UTILITY OWNERS TO OBTAIN THE MOST ACCURATE INFORMATION AVAILABLE WITH

2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACCURATELY LOCATE EXISTING UTILITIES (E.G. GAS. WATER, SEWER, ELECTRIC, TELEPHONE, ETC.). PRIOR TO PERFORMING ANY WORK ON THE PROJECT, THE CONTRACTOR SHALL CONTACT OWNERS OF UTILITIES AT RISK IN ORDER THAT ANY UTILITY ADJUSTMENTS MAY BE MADE. NO UTILITY SERVICE MAY BE DISCONNECTED WITHOUT PRIOR APPROVAL OF THE

3. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT ALL EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DISRUPTION OR DAMAGES DONE TO UTILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE IMMEDIATELY AND COMPLETELY REPAIRED TO THE SATISFACTION OF THE INVOLVED UTILITY COMPANY / OWNER AT

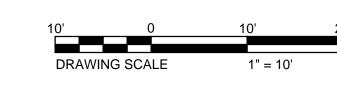
### **EQUIVALENCY**

REGARD TO UTILITY ELEVATION AND LOCATION.

OWNER'S REPRESENTATIVE.

THE SOLE EXPENSE OF THE CONTRACTOR.

"APPROVED EQUIVALENT": THE CONTRACTOR SHALL SUBMIT PRODUCT INFORMATION TO THE OWNER FOR REVIEW. SUBMITTED ITEMS WILL BE REVIEWED FOR GENERAL CONFORMANCE TO THE DESIGN INTENT. THE CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS, WHICH SHALL BE CONFIRMED AT THE JOB SITE; FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF WORK BETWEEN TRADES; AND SATISFACTORY COMPLETION OF THE

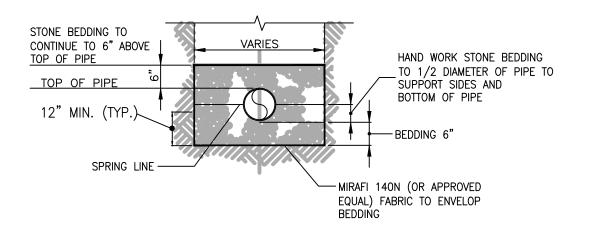


E 9 MARCH 2016 DATE: SCALE: 1'' = 10'PROJECT NO. 9564.CQ SHEET: 1 OF 3

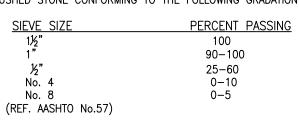
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DR



STONE BEDDING: STANDARD SPECIFICATIONS BEDDING, HAUNCHING AND INITIAL BACKFILL SHALL UTILIZE STONE BEDDING WHICH SHALL CONSIST OF WASHED GRAVEL OR CRUSHED STONE CONFORMING TO THE FOLLOWING GRADATION REQUIREMENTS:



PRIOR TO PIPE INSTALLATION, CAREFULLY BRING THE 6" OF BEDDING MATERIAL TO GRADE ALONG THE ENTIRE LENGTH OF PIPE TO BE INSTALLED. LITTLE OR NO COMPACTION IS REQUIRED DUE TO THE ANGULAR NATURE OF THE PARTICLES. IF TRENCH BOTTOM CONDITIONS SO WARRANT, MORE THAN 6" OF BEDDING MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER.

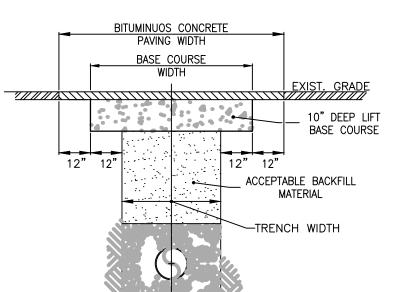
CAREFULLY WORK, BY HAND, STONE BEDDING FROM THE EDGE OF THE TRENCH UP AND UNDER THE PIPE TO SUPPORT THE HAUNCHES. CONTINUE FILLING, BY HAND, TO THE SPRING LINE OF THE PIPE.

CONTINUE WITH STONE BEDDING MATERIAL TO A DEPTH OF AT LEAST 6" ABOVE THE TOP OF THE PIPE. MECHANICAL PLACEMENT OF BEDDING IS ACCEPTABLE FOR INITIAL BACKFILL. SEE TRENCH WIDTH AND BACKFILL DETAIL.

# **DETAIL: PIPE BEDDING**

SCALE: NONE

DURASLOT

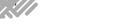


1. WHEN BOTTOM OF TRENCH IS IN ROCK, UNDERCUT 6" BELOW BOTTOM OF BARRREL AND REPLACE WITH TAMPED SUITABLE MATERIAL.

2. WHERE TWO TIER SHEETING IS AUTHORIZED BY THE ENGINEER, ALL WIDTHS SHALL BE INCREASED BY 3 FEET.

3. STONE BASE AND BACKFILL MUST BE COMPACTED IN 8" LIFTS AFTER PIPE IS COVERED

Complete DURASLOT® Assembly Example



TYPICAL SECTION							
PIPE DIAMETER	TRENCH WIDTH	BASE COURSE WIDTH	BITUMINOUS CONCRETE PAVING WIDTH				
6"	36"	60"	84"				
8"	36"	60"	84"				
10"	36"	60"	84"				
12"	36"	60"	84"				
15" (Includes 16")	36"	60 <b>"</b>	84"				
18"	42"	66"	90"				
21" (Includes 20")	42"	66"	90"				
24"	48"	72"	96"				
27"	60"	84"	108"				
<b>30</b> "	60"	84"	108"				
33"	66"	90"	114"				

TRENCH PAYMENT WIDTH

SCALE: NONE

### MATCH EXISTING WIDTH SLOPE (SEE NOTE 1) SEE NOTE 5 WARM MIX (SEE NOTE 2) 6" TYPE B GABC (SEE NOTE 3) 202442444244424442444244 PREPARED SUBGRADE (SEE NOTE 4)

NOTES: 1. MINIMUM CROSS SLOPE = 1%

BITUMASTIC SEALÂNT.

- MAXIMUM CROSS SLOPE = 2%
- TYPICAL CROSS SLOPE = 1.5%

ADS DURASLOT® PIPE SPECIFICATION

• Manning's "n" value for use in design shall be 0.012.

- 2. MATCH EXISTING PAVEMENT THICKNESS (2" MIN. ASSUMED) TYPE C WARM MIX, 160 GYRATIONS.
- 3. STONE AGGREGATE BELOW SITE PATH SHALL BE TYPE B GABC. THICKNESS OF GABC SHALL BE 6 INCHES.
- 4. PROOF ROLL SUBGRADE, COMPACT TO 95% DENSITY (ASTM D-1557) 5. SAWCUT, MILL AND OVERLAY AS NEEDED TO ACHIEVE DESIRED GRADES WITH 1 1 MINIMUM AND 2 1 MAXIMUM OVERLAY. SEAL JOINTS WITH HOT POURED

DETAIL: REPLACEMENT PAVEMENT

4- through 10-inch (100 to 250mm) pipe shall meet AASHTO M252, Type S.
12- through 36-inch (300 to 900 mm) pipe shall meet AASHTO M294, Type S or ASTM F2306.

aluminum grate shall be riveted to the pipe with a minimum of two rivets per linear foot.

representative or visit www.ads-pipe.com for a copy of the latest installation guidelines.

centers. The grate shall be ½ - #13 galvanized steel meeting the requirements of ASTM F1267, Type 2, Class 2. The grate shall have a diamond-shaped opening and be ADA compliant. The flange at the bottom of the

DURASLOT fittings shall be modified from fittings which conform to AASHTO M252, AASHTO M294, or

Installation shall be in accordance with HCPS recommended installation instructions. Contact your local ADS

### MATCH EXISTING WIDTH -MATCH EXISTING GRADING SLOPE (SEE NOTE 1) 4" 4,500 PSI CONCRETE (SEE NOTE 2) 4" TYPE B GABC (SEE NOTE 3) 世 PREPARED SUBGRADE (SEE NOTE 4) ☐

- 1. MINIMUM SIDEWALK CROSS SLOPE = 1% MAXIMUM SIDEWALK CROSS SLOPE = 2%
- 2. STANDARD SIDEWALK SHALL BE 4 INCHES THICK. DEPRESSED AND
- TRANSITION SIDEWALK SHALL BE 6 INCHES THICK. 3. STONE AGGREGATE BELOW CONCRETE SIDEWALK SHALL BE TYPE B GABC. THICKNESS OF GABC SHALL BE 4 INCHES FOR STANDARD SIDEWALK AND 6 INCHES FOR DEPRESSED AND TRANSITION

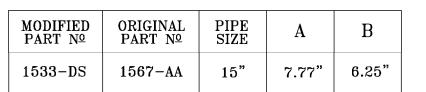
4. PROOF ROLL SUBGRADE, COMPACT TO 95% DENSITY (ASTM D-1557)

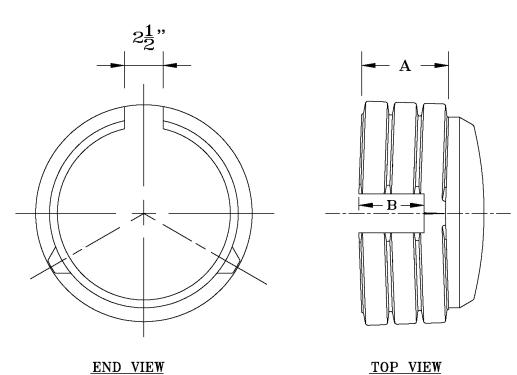
# DETAIL: REPLACEMENT SIDEWALK

SCALE: NONE

	MODIFIED PART №	ORIGINAL PART №	PIPE SIZE	A	В	С	D	
	1262-DS	1214-AA	12"	14"	14.6"	15.4"	5.5"	
	1562-DS	1514-AA	15"	16"	17.75"	18.6"	6.5"	
_	1862-DS	1814-AA	18"	18"	21.4"	22.4"	7.5"	
	2462-DS	2414-AA	24"	14.8"	28.2"	29.25"	6"	

# DETAIL: DURASLOT® ADAPTER





DETAIL: 15" DURASLOT® END CAP

SCALE: NONE

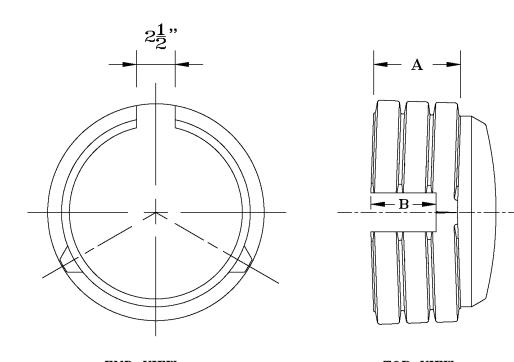
# This specification describes 4- through 36-inch (100 to 900 mm) ADS DURASLOT pipe for use in surface DURASLOT pipe, as manufactured by Hall Construction Products and Services (HCPS) and distributed by ADS, Inc., shall have a smooth interior and annular exterior corrugations with an aluminum slot mounted longitudinally along the length of the pipe to accept the grate frame while maintaining the original pipe The aluminum grate frame shall be manufactured from 0.063" tempered commercial aluminum meeting the requirements of ASTM B209, consisting of two parallel plates separated by spacers spanning the slot on 6"

	ı					l	
	MODIFIED PART №	ORIGINAL PART №	PIPE SIZE	A	В	С	D
_	1262-DS	1214-AA	12"	14"	14.6"	15.4"	5.5"
	1562-DS	1514-AA	15"	16"	17.75"	18.6"	6.5"
	1862-DS	1814-AA	18"	18"	21.4"	22.4"	7.5"
	2462-DS	2414-AA	24"	14.8"	28.2"	29.25"	6"

# DETAIL: DURASLOT® ASSEMBLY EXAMPLE AND SPECIFICATIONS

SCALE:

MODIFIED PART Nº	ORIGINAL PART №	PIPE SIZE	A	В	
1533-DS	1567-AA	15"	7.77"	6.25"	



**DURASLOT**<sup>®</sup> Variable Height Slot Table

-USE V1-V4 FOR 8"

3 1/8 3 3/4

4 3/8

5 5/8

6 1/4

6 7/8

7 1/2

8 1/8

8 3/4

9 3/8

10.5/8

- V10

- V12

- V13

SCALE: NONE

- V11

DURASLOT SECTION

3 3/4

4 3/8

6 1/4

6 7/8

7 1/2

8 1/8

8 3/4

9 3/8

10 5/8

11 1/4

DURASLOT

- V16

- V17

- V19

- V18

11 7/8

12 1/2

13 1/8

13 3/4

13 3/4

14 3/8

### DETAIL: TRENCH WIDTH AND BACKFILL SCALE: NONE

# **DURASLOT®** With Variable Height Slot DURASLOT® with a Variable Height Slot is available to provide slope in the pipe invert when grade is level. Standard 1/2 % slope is readily available; other slopes can be made

Information and Design Guidelines

• Lengths remain at 10'0" with change in slot height of 5/8" per length. This is a

- nominal 1/2% slope (actual slope is .52%). • Maximum slot height should not exceed 1.5 times the pipe diameter before consulting the manufacturer.
- On the following drawing and table,  $H_1$  and  $H_2$  are nominal slot heights. These are minimums from corrugation center to grade.
- Light traffic applications can start with V1

by special order.

- Moderate traffic applications can start with V4.
- Heavy traffic applications can start with V7.
- (from V11 and up). • Bands are made so that their band angles meet grade at each joint - i.e., the band

A second spacer (on 6" centers) is utilized within the slot when H<sub>1</sub> reaches 8 3/4"

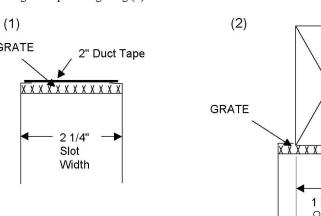
- between V9 and V10 would have 8 1/8" high band angles so that a continuous slot is maintained at the surface.
- A second thumbscrew is added when the band angle height reaches 8 3/4". A third thumbscrew is added when the height reaches 15".

## \* Each piece will have a 3 or 4 digit number starting with pipe diameter. DETAIL: DURASLOT® VARIABLE HEIGHT SLOT

## **DURASLOT® Drains - Installation Notes - 1.0**

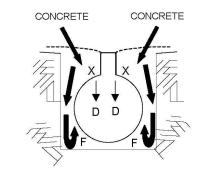
DURASLOT must first be set and secured in place - some methods that have been used: 1. Hung from cross members 2. Set in a cradle made of 3. Nested in the bottom of the trench (not for H-20 rebar or wood: Final Grade

Before concrete is poured or asphalt is laid down, the slot opening should be covered to prevent it from being clogged. If you hang the DURASLOT, a good way to do this is to put 2" duct tape over the slot opening (1). If the pipe is sitting in a cradle or the trench bottom, a 2" x 4" can be set on the 2" edge on top of the grating (2).



### **DURASLOT® Drains - Installation Notes - 2.0**

When pouring concrete around DURASLOT, especially when the pipe is sitting in a cradle, pour down on the spot where the pipe meets the slot (X) [taking care to keep the slot upright]. This type of pour will provide some downward force (D) that will serve to keep the pipe from floating due to upward force (F) as the concrete fills the trench.



The top of the DURASLOT at the slot opening should always be set 1/8" to 1/4" below finished XXXXXXXXXXX grade. This allows surface run-off to enter the inlet efficiently and protects the grate and flanges from snowplows and the like. A mason's tool can be used to knurl the edge after the tape or 2" x 4" has been removed.

It is important that all fittings and hardware are used when DURASLOT is installed. The product is designed as a system: all grate connectors and anchors must be used to keep the grate in tension, and to tie the ends of the grate into the concrete or asphalt. At the end of each run an end cap or adapter should always be utilized (these include the anchor). Only DURASLOT Couplers should be used to join sections of DURASLOT. See the Assembly Details or call HCPS at (518) 747-7047 with any

### **DURASLOT® Drains - Shipping & Handling**

A - DURASLOT End Cap

ADS N-12

DURASLOT Coupler Band

DURASLOT Grate Anchor

DURASLOT Grate Connector

1/4" SPHS x 3/4" Long w/ 1/4" Washer

I - 5/16" - 18 Thumbscrew x 3" Long w/ 5/16" Wingnut

One Grate Anchor (F) and SPHS/Washer (G) come with each End Cap (A) or Adapter (C).

Two SPHS/Washer (G), one Grate Connector (H), and one Thumbscrew/Wingnut (I) come

B - DURASLOT Pipe

with each Coupler Band (E).

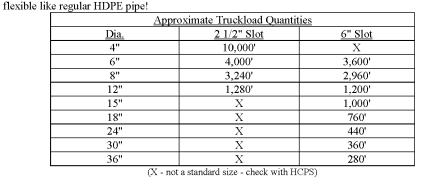
SCALE:

Most DURASLOT orders ship LTL from the HCPS plant in Hudson Falls, NY, zip: 12803. The majority of these orders consist of only one size of pipe. For this type of order HCPS will bundle the ten foot lengths into groups of 2-5 pieces, weighing from 65# - 155# (5 pcs. of 4" - 3 pcs. of 12"). Pipe of 15" diameter or larger is shipped individually. These orders generally arrive in a box trailer and are best unloaded by hand - two men can easily handle all bundles.

The bundles are held together by tie wire which is sandwiched between two layers of duct tape to protect the plastic pipe. The customer should be aware that the tape will not tear; the wire needs to be cut. When pipe is sent LTL, the fittings and hardware are generally sent UPS. These will usually arrive a day or two before the pipe. The UPS package(s) will have all the paperwork (packing list, copy of the bill of lading, order copy, assembly details, and installation notes) except the original bill of lading which comes with the pipe.

For orders with more than one pipe size (example- dealer stock), when possible, HCPS will nest smaller pipe in larger pipe. As this starts to get heavy, we will build a pallet or skid which allows the customer to unload by forklift. Some fittings may be included on the pallet, but generally fittings and hardware will still go UPS. The paperwork will be in the UPS box; the customer should be reminded to keep the order copy to check against the material on the pallet(s) or skid(s) when it arrives.

For Truckload Deliveries: When an order for a truckload of DURASLOT is loaded, all fittings and hardware goes with that truck. The fittings are generally strapped to the upper level of a step-deck trailer, and the hardware is boxed separately. The pipe will be stacked in four piles, ten feet long on 4" x 4" cross pieces. These allow nylon slings to be slid under the stack and wrapped around it. The whole 10-foot pile can be unloaded by a crane or any machine that can use the nylon slings to lift the pile off the truck. Metal chains or any other material which could damage the pipe are not recommended for lifting DURASLOT off any truck. We also do not recommend using a forklift for unloading DURASLOT off the truck. We also do not recommend using a forklift for DURASLOT that is not on a pallet or skid. <u>DURASLOT should never be pushed off the side of the truck</u> - it is not

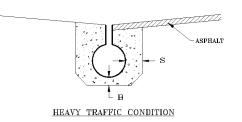


### **DURASLOT®** Installation Practices

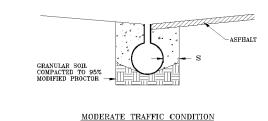
DURASLOT surface drains are made from a flexible conduit, which is designed to attain its structural strength utilizing ring compression derived from soil pressure. For this to occur, a minimum height of cover is required. Since this is not possible, the drain must be backfilled with concrete to allow it to accept vehicular traffic. This is true of any pipe with an inlet mounted on top to form this type of surface drain. The pipe cannot function in the manner for which it was designed when it is installed this close to the surface. The concrete-filled trench provides the actual structure

(A) Heavy Traffic - completely surrounded by concrete for critical loading applications. This would include frequent high-speed H-20 traffic, such as a highway. The dimensions 'S' and 'B' are generally 3" to 6" depending on the specific conditions for the project (design layout, traffic patterns, soil properties, etc.)

Following are some of the most often utilized installation details for DURASLOT surface drains.



(B) Moderate Traffic - surrounded by concrete to below the center of the pipe. This type of installation has been used when traffic loads are not as heavy (i.e., retail parking lots, against curbs, etc.). The soil below the pipe and concrete must be high quality and



# DETAIL: DURASLOT® SHIPPING AND INSTALLATION

Dimensions:

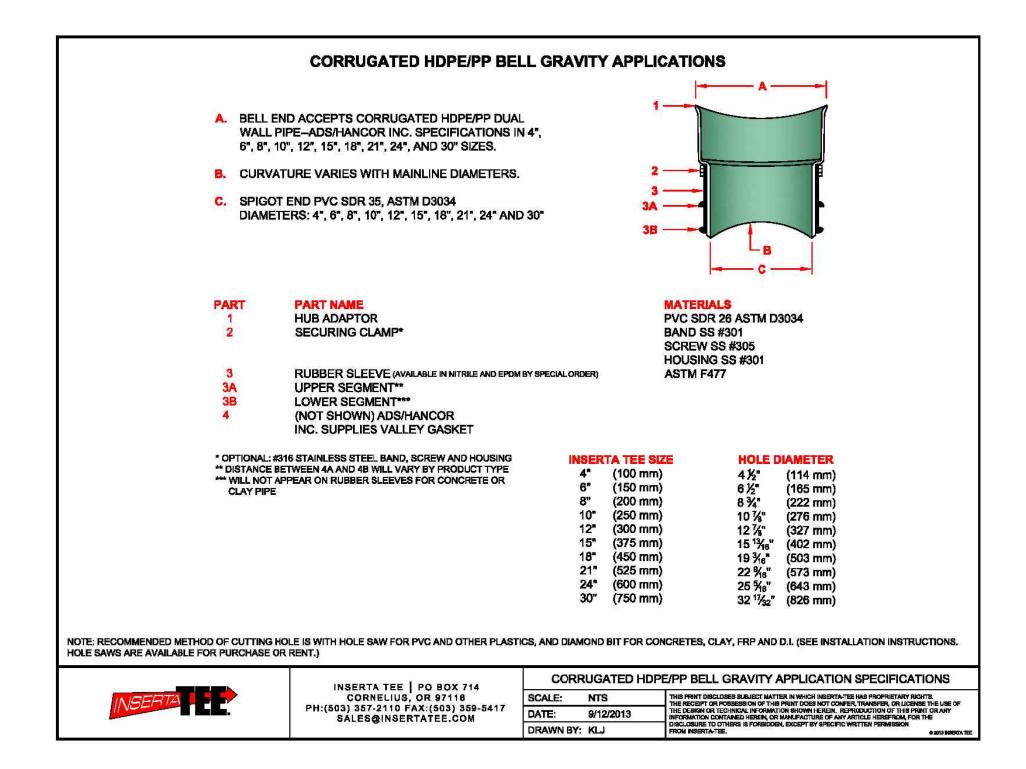
SCALE: NONE

UNIVERSIT

9 MARCH 2016 DATE: **NONE** SCALE: 9564.CQ PROJECT NO. 2 OF 3 **SHEET** 

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DETAIL: INSERTA TEE STORM SEWER CONNECTION

INSERTA TEE HUB ADAPTER -

CONNECT 8" HDPE TO

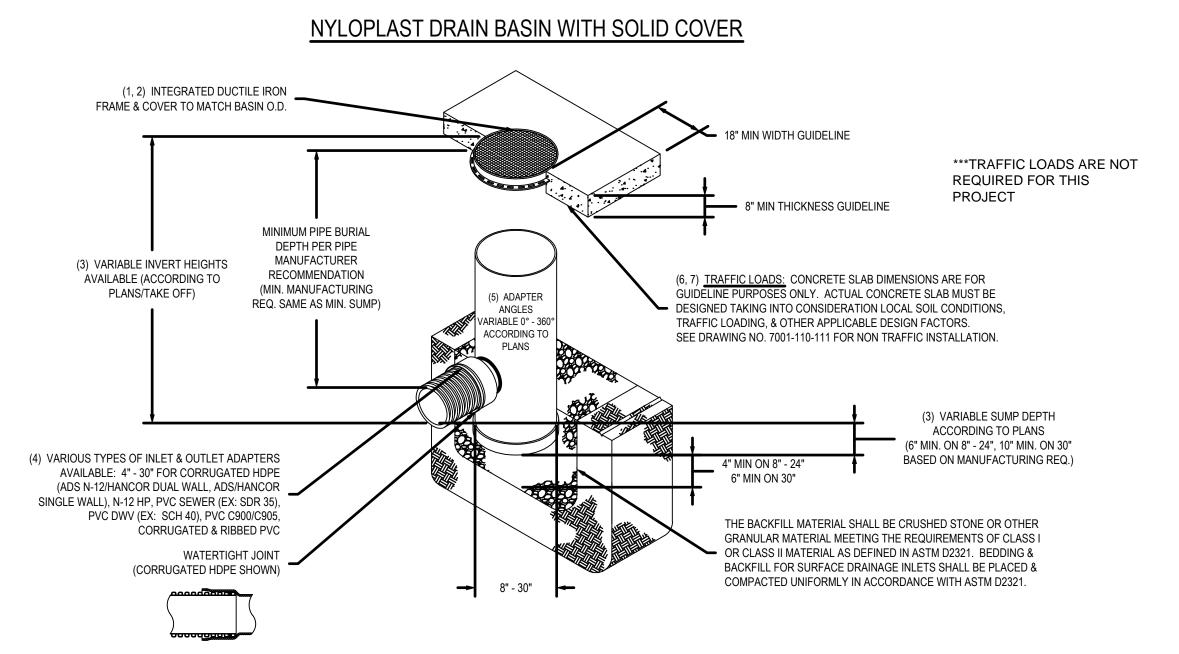
DURASLOT PIPE

SCALE: NONE

EX. 15" DURASLOT

PIPE

RUBBER SLEEVE —

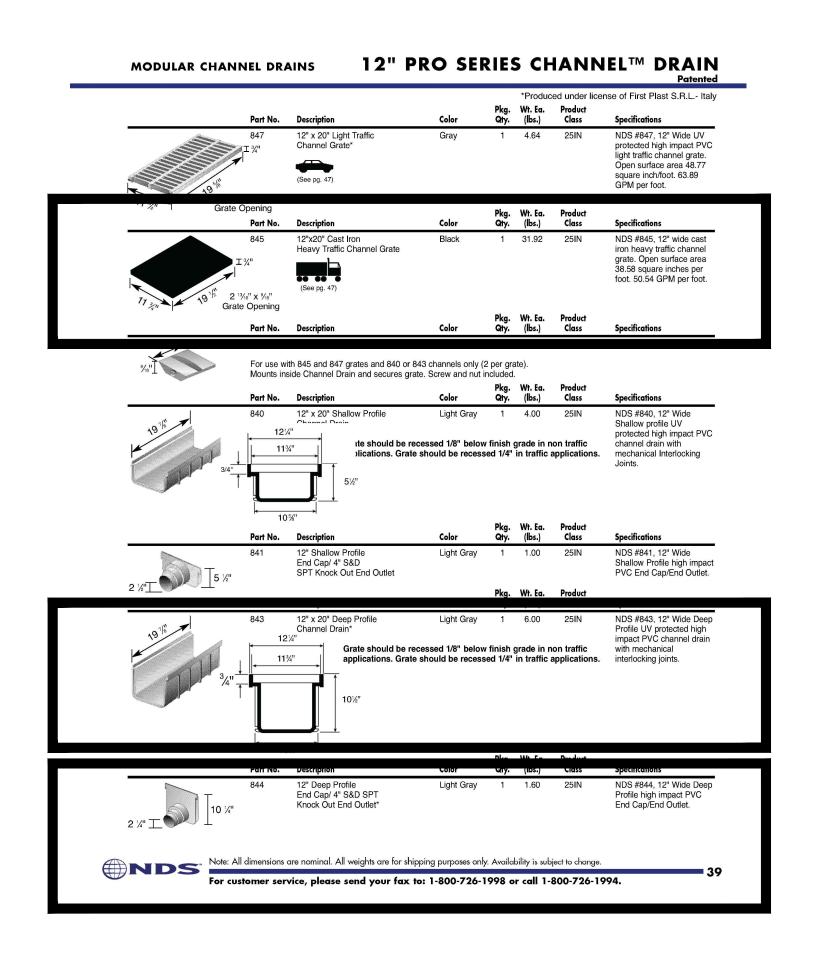


- 1 8" 30" SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05. 2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
- 8" & 10" SOLID COVERS FIT DIRECTLY ONTO DRAIN BASINS WITH THE USE OF A PVC BODY TOP. SEE DRAWING NO. 7001-110-045.
- 3 DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
- 4 DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO
  ASTM D3212 FOR CORRUGATED HOPE (ADS N-12/HANCOR DUAL WALL)
- ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" 24").
- 5 ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
   6 12" 30" SOLID COVERS SHALL MEET H-20 LOAD RATING.
- 7 8" & 10" SOLID COVERS SHALL WEET FIRE LOAD KATING.

  NO CONCRETE COLLAR NEEDED FOR LIGHT DUTY APPLICATIONS ONLY;

DETAIL: NYLOPLAST® DRAIN BASIN (COVER TYPE AND SIZE SPECIFIED ON PLAN)

SCALE: NONE



DETAIL: 12" PRO SERIES CHANNEL™

SCALE: NONE

RE STATE UNIVERSIT DIUM DRAINAGE UPGRAI

DATE: 9 MARCH 2016
SCALE: NONE
PROJECT NO. 9564.CQ
SHEET: 3 OF 3

DEI