SLOPED CHANNEL DRAINAGE SYSTEMS

June 2003

DURA-SLOPE™

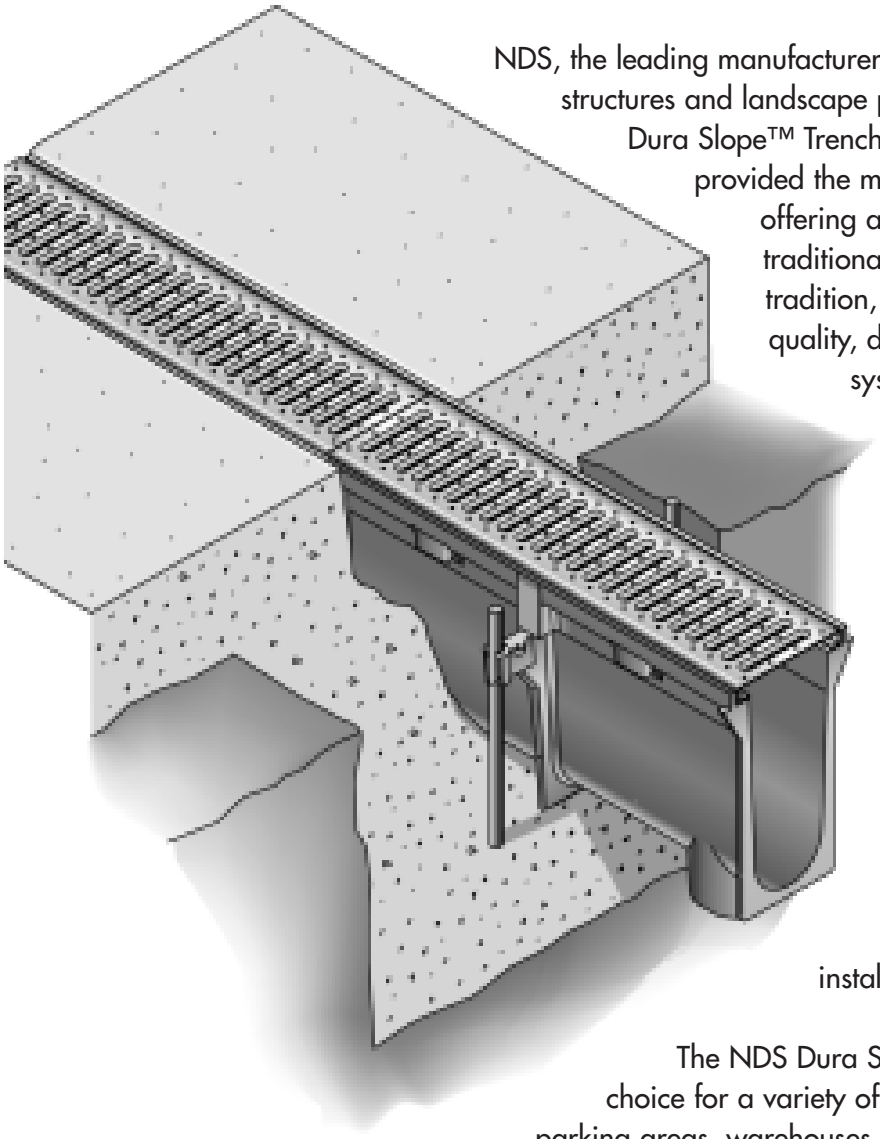
NDS

One source. Many solutions.

NDS
One source. Many solutions.

DURA SLOPE™

TRENCH DRAIN SYSTEM



NDS, the leading manufacturer of structural foam polyolefin drainage structures and landscape products, is pleased to introduce the new Dura Slope™ Trench Drain System. Since 1978, NDS has provided the market with innovative quality products offering an economic, user-friendly alternative to traditional concrete products. Following in that tradition, NDS has developed Dura Slope™, a high quality, dependable, and economical trench drain system designed to simplify your drainage solutions.

Dura Slope™ is a 6" wide structural foam polyethylene trench drain system with a built-in 0.7% slope. The system has been specifically designed and manufactured to ensure strength, structural integrity and durability, while incorporating excellent hydraulic characteristics and chemical resistance. Dura Slope™ is an economical alternative to traditional polymer concrete trench drain systems, while offering superior durability and ease of installation.

The NDS Dura Slope™ trench drain system is the best choice for a variety of drainage solutions including driveways, parking areas, warehouses, loading docks, gas station entrances, and other areas for the interception and collection of surface run-off. Dura Slope™ trench drain systems now provide a solution for your residential, commercial, industrial and municipal drainage needs.

PRODUCT FEATURES & BENEFITS

Interlocking tongue and groove joints

Secures alignment
Ensures straight channel runs
Easy assembly and installation

Dura Loc™ integral joint lock

Prevents joint movement during installation
No extra clamps or screws needed

Lightweight 4ft modular sections

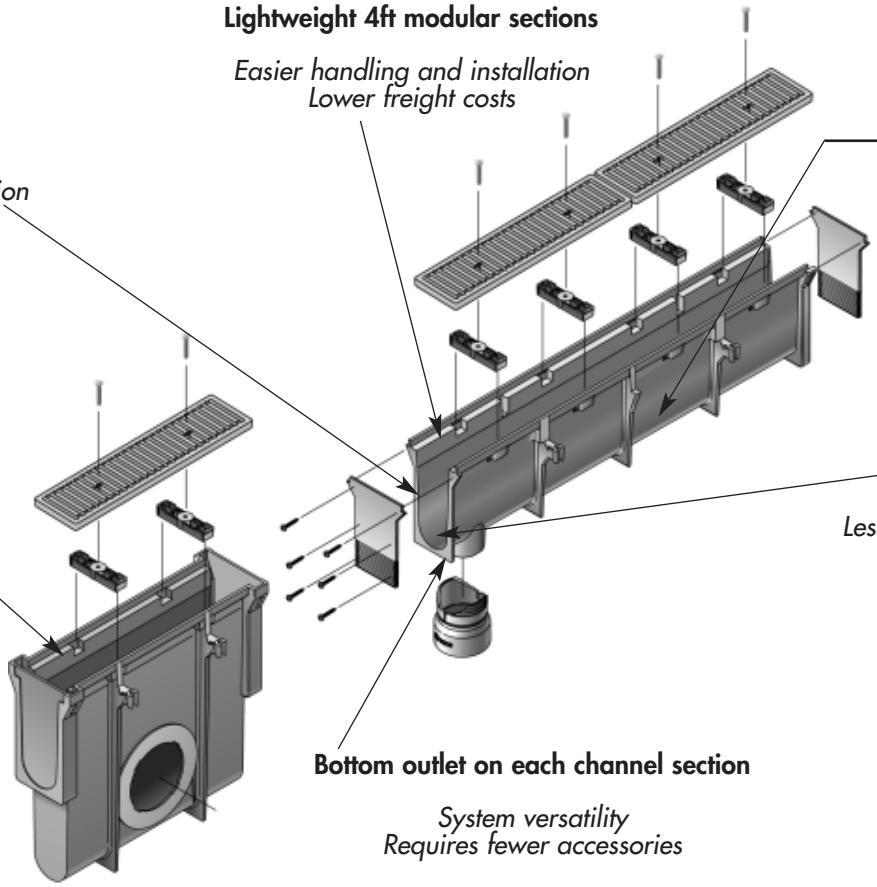
Easier handling and installation
Lower freight costs

Smooth HDPE interior

Virtually no water absorption

.7% built-in Slope

Maintains optimum flow rates throughout system



2" radius bottom

Lessens debris build-up

Polyethylene material

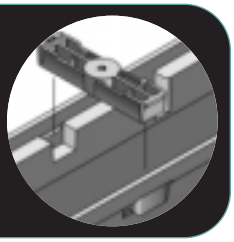
Durable and inexpensive
Less breakage versus concrete
Chemical resistance

Bottom outlet on each channel section

System versatility
Requires fewer accessories

Pro Fit™ locking system

Locks grate to integral frame
Supports product in shipping and installation



Leve Loc™ re-bar supports with internal protruding knob

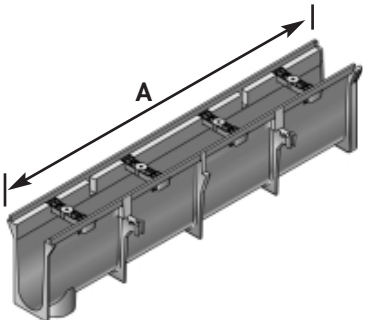
Levels channel and grips re-bar
Requires fewer accessories

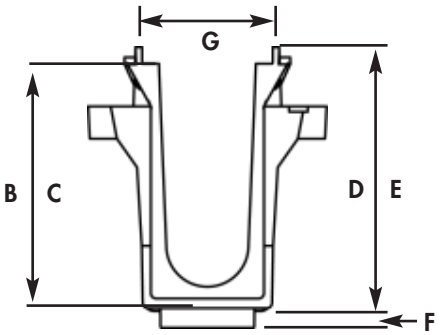
NDS
One source. Many solutions.

DURA SLOPE™

GENERAL ENGINEERING SPECIFICATIONS

NDS Dura Slope™ is a 6-5/8″ wide trench drain system with a built-in slope of 0.7%. Each channel section is molded of gray structural foam polyethylene with UV inhibitors and has a 4″ inside diameter with a 2″ radius bottom. The system consists of 4-foot channel sections including twelve pre-sloped channel sections and four neutral channel sections. The sloped channel sections enable the Dura Slope™ system to extend to a length of 48 feet with a continuous 0.7% slope. Utilize neutral channels to extend the system run to an excess of 60 feet. By incorporating central collection through the use of the basin assembly, the Dura Slope™ trench drain system can be extended to lengths up to 130 feet. Dura Slope™ channels are designed with the pre-installed Pro Fit™ locking system, which maintains structural integrity during shipping and installation and locking devices for the grating. Leve Loc™ integral re-bar supports are located at 24″ intervals along each side of the channel and contain an internal protruding knob designed to grip #4 re-bar (1/2″) for easier channel height adjustment during installation. Dura Loc™ tongue and groove ends connect allowing for a precise fit and ensure straight channel runs. Dura Loc™ joints incorporate an integral snap-lock feature that prevents joint movement during channel installation. Each channel section is molded with a bottom outlet allowing for system versatility and ensuring proper drainage.



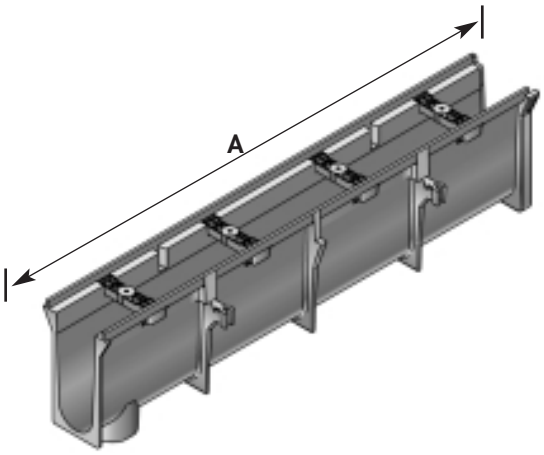


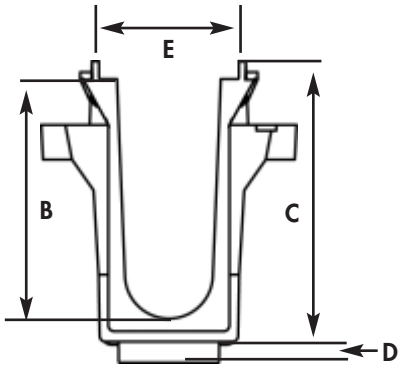
Dimension Key
A: Length
B: Min Inner Depth
C: Max Inner Depth
D: Min Outer Depth
E: Max Outer depth
F: Bottom Outlet Depth
G: Width

Dura Slope Dimensions & Weights																			Dura Slope Flow Rates				Dura Slope Holding Capacity					
	A		B		C		D		E		F		F		Avg Weight		Color	Material			Cu Ft per sec	Cu Meters per sec					List Price (EA)	Product Class
Part No.	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg			GPM	LPM			Gal.	Liters	Cu Ft	Cu Meters		
DS-100N	48	1219.2	7.38	187.45	7.38	187.45	8.61	218.69	8.91	226.31	.43	10.92	6.625	168.28	8.86	4.02	Gray	Polyethylene	215	814	.48	.0136	5.1	19.3	.68	.0190	92.28	25DS
DS-101	48	1219.2	7.38	187.45	7.72	196.08	8.85	224.79	9.21	233.93	.43	10.92	6.625	168.28	8.94	4.06	Gray	Polyethylene	215	814	.48	.0136	5.1	19.3	.68	.0190	92.28	25DS
DS-102	48	1219.2	7.72	196.09	8.06	204.72	9.19	233.43	9.55	242.57	.43	10.92	6.625	168.28	9.22	4.18	Gray	Polyethylene	229	867	.51	.0144	5.4	20.4	.72	.0200	92.28	25DS
DS-103	48	1219.2	8.06	204.72	8.40	213.36	9.53	242.06	9.89	251.21	.43	10.92	6.625	168.28	9.47	4.30	Gray	Polyethylene	243	920	.54	.0153	5.7	21.6	.76	.0210	92.28	25DS
DS-103N	48	1219.2	8.40	213.36	8.40	213.36	9.97	253.24	10.27	260.86	.43	10.92	6.625	168.28	9.42	4.27	Gray	Polyethylene	243	920	.54	.0153	5.7	21.6	.76	.0210	92.28	25DS
DS-104	48	1219.2	8.40	213.36	8.74	222.00	9.87	250.70	10.23	259.84	.43	10.92	6.625	168.28	9.75	4.42	Gray	Polyethylene	257	973	.57	.0161	6.0	22.7	.80	.0230	92.28	25DS
DS-105	48	1219.2	8.74	222.00	9.08	230.63	10.21	259.332	10.57	268.48	.43	10.92	6.625	168.28	10.03	4.55	Gray	Polyethylene	271	1026	.60	.0170	6.2	23.5	.83	.0230	92.28	25DS
DS-106	48	1219.2	9.08	230.63	9.42	239.27	10.55	67.97	10.91	277.11	.43	10.92	6.625	168.28	10.31	4.68	Gray	Polyethylene	285	1079	.64	.0181	6.5	24.6	.87	.0250	92.28	25DS
DS-106N	48	1219.2	9.42	239.27	9.42	239.27	10.99	279.15	11.29	286.77	.43	10.92	6.625	168.28	10.29	4.67	Gray	Polyethylene	285	1079	.64	.0181	6.5	24.6	.87	.0250	92.28	25DS
DS-107	48	1219.2	9.42	239.27	9.76	247.90	10.89	276.61	11.25	285.75	.43	10.92	6.625	168.28	10.59	4.80	Gray	Polyethylene	299	1132	.67	.0190	6.8	25.7	.91	.0260	92.28	25DS
DS-108	48	1219.2	9.76	247.90	10.1	256.54	11.23	285.24	11.59	294.39	.43	10.92	6.625	168.28	10.86	4.93	Gray	Polyethylene	313	1185	.70	.020	7.1	26.9	.95	.0270	92.28	25DS
DS-109	48	1219.2	10.1	256.54	10.44	265.18	11.57	293.88	11.93	303.02	.43	10.92	6.625	168.28	11.14	5.05	Gray	Polyethylene	327	1238	.73	.0207	7.4	28.0	.99	.0280	92.28	25DS
DS-109N	48	1219.2	10.44	265.18	10.44	265.18	12.01	305.05	12.31	312.67	.43	10.92	6.625	168.28	11.17	5.07	Gray	Polyethylene	327	1238	.73	.0207	7.4	28.0	.99	0.280	92.28	25DS
DS-110	48	1219.2	10.44	265.18	10.78	273.81	11.91	302.51	12.27	311.66	.43	10.92	6.625	168.28	11.42	5.18	Gray	Polyethylene	341	1291	.76	.0215	7.7	29.1	1.03	.0290	92.28	25DS
DS-111	48	1219.2	10.78	273.81	11.12	282.45	12.25	311.15	12.61	320.29	.43	10.92	6.625	168.28	11.70	5.31	Gray	Polyethylene	355	1345	.79	.0224	8.0	30.3	1.07	.0300	92.28	25DS
DS-112	48	1219.2	11.12	282.45	11.46	291.08	12.59	319.79	12.95	328.93	.43	10.92	6.625	168.28	11.97	5.43	Gray	Polyethylene	368	1393	.82	.0232	8.2	31.0	1.10	.0310	92.28	25DS

DURA CHANNEL™ GENERAL ENGINEERING SPECIFICATIONS

NDS Dura Channel™ is a 6-5/8″ wide trench drain system molded of gray structural foam polyethylene with UV inhibitors. Dura Channel™ is a non-sloped channel drain system with a 4″ inside diameter and a 2″ radius bottom. Dura Channel™ systems are available in four depth ranges (see table below for available depths). Channels are provided with the pre-installed Pro Fit™ locking system, which maintains structural integrity during shipping and installation, and provides locking devices for the grating. Leve Loc™ integral re-bar supports are located at 24″ intervals along each side of the channel and contain an internal protruding knob to grip #4 re-bar (1/2″) providing height adjustment during installation. Dura Loc™ tongue and groove ends connect allowing for a precise fit and ensure straight channel runs. Dura Loc™ joints incorporate an integral snap-lock feature that prevents joint movement during channel installation. Each channel section is molded with a bottom outlet allowing for system versatility and ensuring proper drainage.



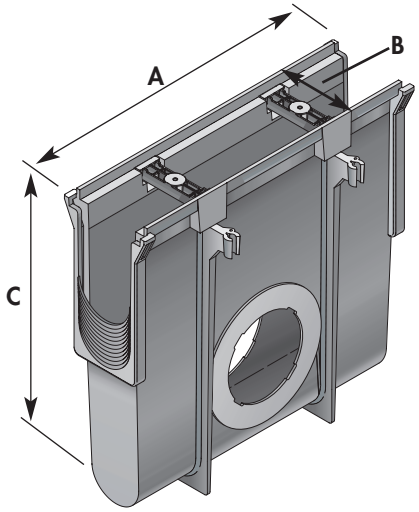


Dimension Key
A: Length
B: Max Inner Depth
C: Max Outer Depth
D: Bottom Outlet Depth
E: Width

Dura Channel Dimensions & Weights															Dura Channel Flow Rates				Dura Channel Holding Capacity					
	A		B		C		D		E		Avg Weight												List Price (EA)	Product Class
Part No.	in	mm	in	mm	in	mm	in	mm	in	mm	lbs	kg	Color	Material	GPM	LPM	Cu Ft per Sec	Cu Meters per Sec	Gal.	Cu Ft	Liters	Cu Meters		
DS-100N	48	1219.20	7.38	187.45	8.91	226.31	.43	10.92	6.625	168.28	8.86	4.01	Gray	Polyethylene	215	814	.51	.0136	5.1	.68	19.3	.0190	92.28	25DS
DS-103N	48	1219.20	8.40	213.36	10.27	260.86	.43	10.92	6.625	168.28	9.42	4.27	Gray	Polyethylene	243	920	.54	.0153	5.7	.76	21.6	.0210	92.28	25DS
DS-106N	48	1219.20	9.42	239.27	11.29	286.77	.43	10.92	6.625	168.28	10.29	4.67	Gray	Polyethylene	285	1079	.64	.0181	6.5	.87	24.6	.0250	92.28	25DS
DS-109N	48	1219.20	10.44	265.17	12.31	312.67	.43	10.92	6.625	168.28	11.17	5.07	Gray	Polyethylene	327	1238	.73	.0207	7.4	.99	28.0	.0280	92.28	25DS

CATCH BASIN GENERAL ENGINEERING SPECIFICATIONS

NDS Dura Slope™ in-line catch basins are a 6-5/8″ wide gray structural foam polyethylene catch basin with UV inhibitors. In-line catch basins are designed to provide an optional in-line junction or outlet piping connection location for NDS Dura Slope™ trench drain systems. Each Dura Slope™ Catch Basin Module is 2 feet long and 2 feet deep. The catch basin modules will fit all depth ranges of the Dura Slope™ trench drains. Dura Slope™ in-line catch basins are provided with the pre-installed Pro Fit™ locking system, which maintains structural integrity during shipping and installation, and provides locking devices for the grating. Leve Loc™ integral re-bar supports located along each side of the catch basin contain an internal protruding knob to grip #4 re-bar (1/2″) providing height adjustment during installation. Dura Loc™ tongue and groove ends connect allowing for a precise fit and ensure straight channel runs. Dura Loc™ joints incorporate a snap-lock feature that prevents joint movement during channel and basin installation. Basin inlets are to be sized as required to accept mating trench drain by the use of a reciprocating saw during installation eliminating the need for multiple basin configurations. The Dura Slope™ in-line catch basin has an outlet on both sides of the basin. NDS universal basin outlets are used to adapt basin to 3″, 4″, 6″ and 8″ pipe. Plugs are also available if one outlet is preferred. All universal outlets are ordered separately (see page 8 for details). For additional catch basin options see the NDS Drainage Catalog.



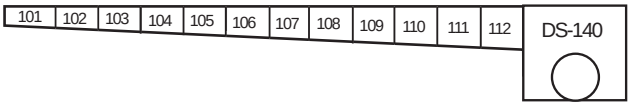
Dimension Key
A: Length
B: Width
C: Depth

Catch Basin Dimensions & Weights												Catch Basin Outflow Capacity												Catch Basin Holding Capacity at Seat of Grate					
	A		B		C		Avg Weight					1243/1245 3″ Outlet				1266 6″ Outlet				1888 8″ Outlet									
Part No.	in	mm	in	mm	in	mm	lbs	kg	Color	Material	GPM	LPM	CFS	CMS	GPM	LPM	CFS	CMS	GPM	LPM	CFS	CMS	Gal.	Cu Feet	Liters	Cu Meters	List Price (EA)	Product Class
DS-140 (1 out)	24	609.6	6 5/8	16827	27	685.8	12.0	5.44	Gray	Polyethylene	190	719	.423	.012	718	2718	1.599	.045	930	3520	2.071	.059	8.62	1.15	32.61	.0330	106.00	25DS
DS-140 (2 out)	24	609.6	6 5/8	16827	27	685.8	12.0	5.44	Gray	Polyethylene	380	1438	.846	.024	1436	5436	3.198	.090	1860	7040	4.142	.118	8.62	1.15	32.61	.0330	106.00	25DS

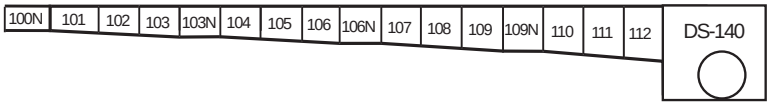
SYSTEM PROFILES

Neutral Run

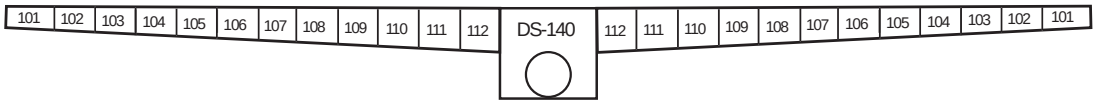
Linear fall without neutrals



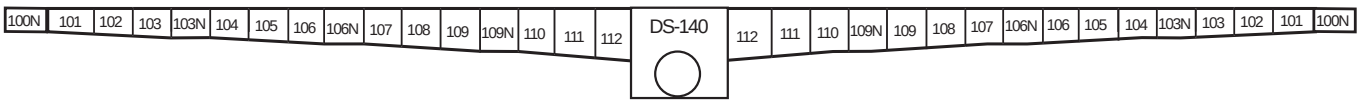
Linear fall with neutrals



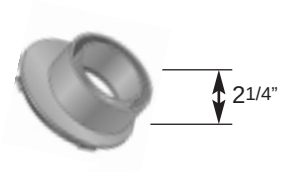
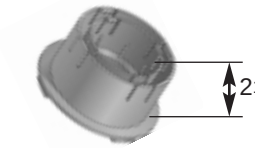
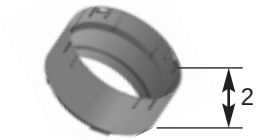
Counter Directional Fall without neutrals



Counter Directional Fall with neutrals

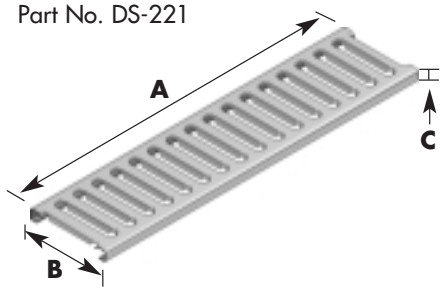


UNIVERSAL OUTLETS & ACCESSORIES

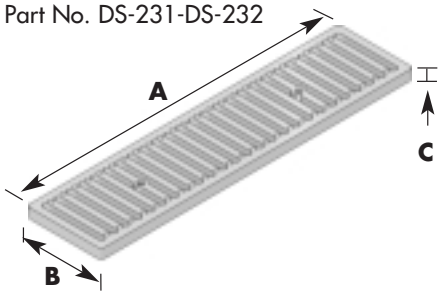
	Part No.	Description	Color	Pkg. Qty.	Wt. Ea. (lbs.)	Material	List Price (EA)	Product Class
	1245	3" & 4" Offset Universal Outlet Fits 3" & 4" Corrugated pipe, 3" & 4" Sewer and Drain Pipe, 4" SCH. 40 Pipe, 4" Triple Wall Pipe. Allows for adjusting inlet height.	Black	20	0.55	HIPS	4.24	10ND
	1243	3" & 4" Universal Locking Outlet Fits 3" & 4" Corrugated pipe, 3" & 4" Sewer and Drain Pipe, 4" SCH. 40 Pipe and 3" & 4" Triple Wall Pipe. *New Locking Outlet snaps on to most 3" & 4" Corrugated Pipe.	Black	20	0.70	HIPS	3.96	10ND
	1266	6" Universal Locking Outlet Fits 6" Sewer and Drain Pipe, 6" Corrugated Pipe. *New Locking Outlet snaps on to most 6" Corrugated Pipe.	Black	20	0.75	HIPS	4.75	10ND
	1888	8" Universal Adapter Fits 8" Sewer and Drain Pipe, 8" Corrugated Pipe.	Black	8	1.25	HIPS	9.48	10ND
	1206	6" Universal Plug Adapter	Black	20	0.35	HIPS	3.16	10ND
	DS-126	Bottom Outlet Adapter Fits to 4" S&D Pipe	Gray	6	.53	PVC	24.47	25DS
	629	Grate Lock Screws For use with Grate # DS-231, DS-232 and 660-665	Gray	40		Stainless Steel	0.41	25DS
	DS-122	Pro Fit™ Grate Lock Screws ordered separately	Black	8	.8	ABS	7.75	25DS
	DS-123	Universal End Cap Screws Use on DS-124 & DS-127 universal end cap downstream for (male) end.	Gray	12		Zinc Plated	0.31	25DS
	DS-124	Universal End Cap Slides into upstream (female) end. Requires DS-123 screws for use on downstream (male) end.	Gray	8	.63	PEI	10.98	25DS
	DS-127	Universal End Outlet Fits 4" S&D Pipe. Requires DS-123 Screws for use on downstream (male) end	Gray	6 (box)	.75		12.00	25DS

GRATING

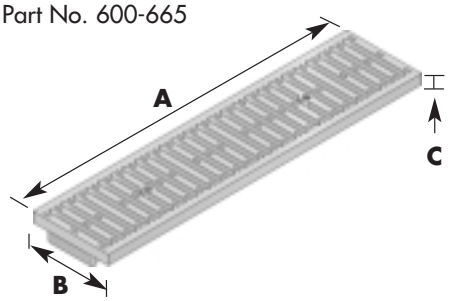
Part No. DS-221



Part No. DS-231-DS-232



Part No. 600-665



Dimension Key
A: Length B: Width C: Depth

Grate Dimensions & Weights											Grate Opening	Open Surface Area		Inflow Capacity			Load Rating		
	A		B		C		Avg Weight		Color	Material		ft2 per Linear Foot	m2 per Linear Meter	GPM Linear inflow (ft.)	LPM Linear inflow (ft.)	CFS Linear inflow (ft.)		List Price (EA)	Product Class
Part No.	in	mm	in	mm	in	mm	lbs	kg											
DS-221*	24	609.6	6	152.4	3/4	19.05	4	1.81	Steel	Galv Steel	¾" x 4 7/16"	.14	.050	26	98.5	.055		30.88	25DS
DS-231	24	609.6	6	152.4	3/4	19.05	15.0	6.80	Blk	Cast Iron	5/16" x 4 11/16"	.107	.038	20	75.5	.045		36.32	25DS
DS-232	24	609.6	6	152.4	3/4	19.05	16.0	7.26	Blk	Ductile Iron	5/16" x 4 11/16"	.107	.038	20	75.5	.045		55.20	25DS
660	24	609.6	6	152.4	3/4	19.05	2.92	1.33	Wht	Polyolefin	½" x 3 13/16"	.145	.052	27	102	.06		26.12	25PF
661LG	24	609.6	6	152.4	3/4	19.05	2.92	1.33	Lt Gry	Polyolefin	½" x 3 13/16"	.145	.052	27	102	.06		26.12	25PF
662	24	609.6	6	152.4	3/4	19.05	2.92	1.33	Grn	Polyolefin	½" x 3 13/16"	.145	.052	27	102	.06		26.12	25PF
663	24	609.6	6	152.4	3/4	19.05	2.92	1.33	Blk	Polyolefin	½" x 3 13/16"	.145	.052	27	102	.06		26.12	25PF
664	24	609.6	6	152.4	3/4	19.05	2.92	1.33	Snd	Polyolefin	½" x 3 13/16"	.145	.052	27	102	.06		26.12	25PF
665	24	609.6	6	152.4	3/4	19.05	2.92	1.33	Brk Rd	Polyolefin	½" x 3 13/16"	.145	.052	27	102	.06		26.12	25PF

Load Recommendation Guide

Class A
- Loads of 1-60 psi.
- Recommended for pedestrians, bicycles and wheel chair traffic.

Class B
- Loads of 61-175 psi.
- Recommended for medium-duty pneumatic tire traffic, autos and light trucks at speeds less than 20 m.p.h.

Class C
- Loads of 176-325 psi.
- Recommended for heavy-duty pneumatic tire forklifts and tractor trailers at speeds less than 20 m.p.h., H-20 rated.

Class D
- Loads of 326-575 psi.
- Recommended for heavy-duty hard tire forklifts at speeds less than 20 m.p.h., H-20 rated.

Note: Some installations may require a concrete collar to meet load rating. Loads are based on encasing product in concrete. Product must be installed using NDS instructions.

* comes with screws

SPECIFICATIONS

PRODUCT
Dura Slope™ Trench Drain System

MANUFACTURER
NDS Inc., 851 N. Harvard Avenue, Lindsay, CA 93247 Phone: (800) 726-1994 Fax: (800) 726-1998

PRODUCT USE
NDS Dura Slope™ trench drain systems are designed to collect, contain and transport surface run-off to storm water management systems, sewer systems or other desired disposal or handling systems.

SPECIFICATION
The trench drain system shall be NDS Dura Slope™ as manufactured by NDS Inc, Lindsay California. Phone: (800) 726-1994. The system shall be manufactured from molded, structural foam polyethylene with UV inhibitors and shall have a nominal outside top dimension of 6-5/8"(168.3mm). Trench drain shall have an inside nominal flow path width of 4"(101.6mm), and shall have a bottom radius of 2" (50.8mm) to facilitate sediment removal. The system shall include neutral and pre-sloped sections to provide variable trench depth as required by site conditions. Pre-sloped sections shall have a slope of 0.7%. The channel and grating shall be designed to withstand loads up to Load class D (up to 575psi), when installed per the appropriate installation methods (see NDS installation instructions and grating specifications included in the Dura Slope™ catalog). Channel grating shall be installed per manufacturer load rating recommendations, and shall be attached to the channel using stainless steel screws with the manufacturer-supplied Pro Fit™ locking system. The channel shall include Leve Loc™ integral re-bar supports located at 24"(60cm) intervals along each side of the channel to provide height adjustment using #4 re-bar (1/2") during installation. The channel shall have tongue and groove Dura Loc™ joints that ensure precise alignment during installation with snap-lock mechanisms to eliminate joint movement.

MATERIAL
Material absorption rate shall not exceed .01%. Material shall withstand a compressive strength of 2900psi. Material tensile stress shall be 4550psi and material flexural strength shall be of 5800psi.
The Dura Slope™ System has the ability to withstand freeze/thaw cycles and provide chemical resistance, including road salt. For detailed information, refer to the NDS Chemical Resistance Guide to ensure acceptability for concentration and service temperature.

TECHNICAL DATA
Specific technical information such as approvals, test results and additional chemical resistance information is available from NDS, Inc. upon request.

INSTALLATION
The NDS Dura-Slope™ trench drain system is required to be surrounded by 6" of 3500psi concrete for standard Class C load rating applications (up to 325psi). For installation details please refer to the installation instructions included in the Dura Slope™ catalog, or call NDS, Inc. Technical Services at (559) 562-9888 ext 2105.

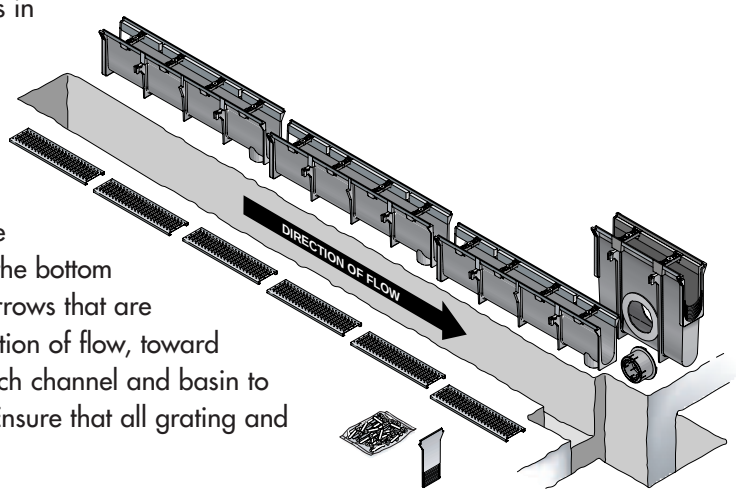
COST AND AVAILABILITY
NDS, Inc has stocking distributors and warehouses across the United States. NDS can supply local distributors to service a particular area upon request. List prices are published and available through local distributors or upon request by NDS, Inc. at (800) 726-1994.

WARRANTY
Limited Lifetime Warranty: NDS warrants to the original owner of its NDS catch basins, grates, and channel, subject to the conditions set forth in this warranty, that NDS catch basins, grates and channel will remain free from manufacturing defects. All NDS products are guaranteed against defects resulting from faulty workmanship or materials. Claims for labor costs and other expenses required to replace defective products or repair of any damage resulting from the use thereof will not be allowed by NDS. Our liability is limited to replacement of products acknowledged by NDS to be defective.

STANDARD INSTALLATION INSTRUCTIONS
FOR CLASS C LOAD RATING

Excavation

Excavate a trench that ensures a minimum of 6" bedding concrete beneath and on both sides of the NDS Dura Slope™ channel. As a guide for installing the channel to desired level, erect a temporary string line at each end of the trench. Slope the edges of the excavation to follow the slope of the channels in order to provide a smoother transition to the slab sub-grade.



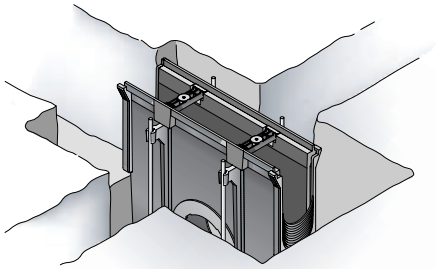
Layout / Preparation

Place channels alongside the excavation to desired layout. Each channel has a number that identifies its location in the system. The deepest channel should be at the end of the system where evacuation of water is planned, either through the bottom outlet or into a catch basin. Ensure that the directional flow arrows that are located on the bottom of the channel are pointing in the direction of flow, toward either the catch basin and/or the evacuation outlet. Check each channel and basin to ensure that all Pro Fit™ locking supports are in the channel. Ensure that all grating and screws necessary are laid out and ready when needed.

If using an in-line catch basin ensure that appropriate outlet adapters have been selected and inlet panels have been removed with a reciprocating saw to best fit the depth of the mating channel.

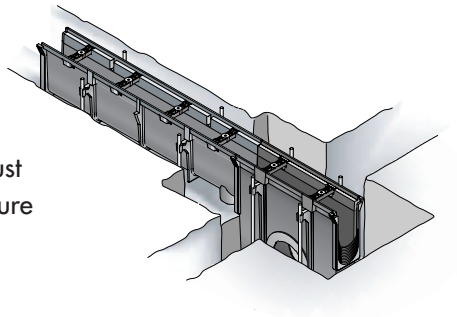
If evacuating from a bottom outlet, remove the cutout with reciprocating saw. Also make sure to have the Sure Fit™ bottom outlet fitting, pipe, fittings and an extra end cap for the downstream end of the system. Ensure that all screws, grates, pipe, fittings, silicon caulking, and other tools or materials needed are present.

Installation



In-line Catch Basin

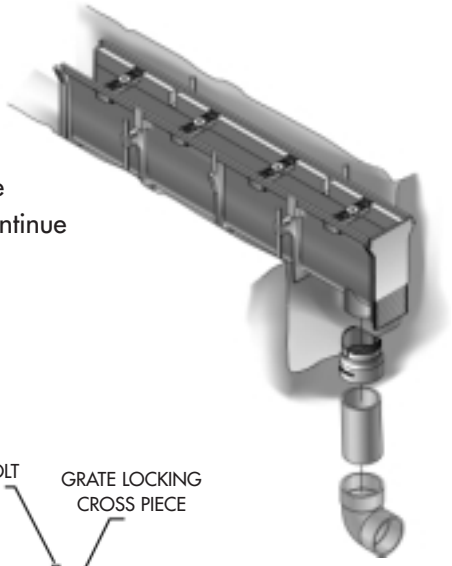
Begin installation with a prepared catch basin, as mentioned above. Ensure that basin is at desired elevation and location to the trench drain system. Align #4 re-bar (1/2") with the Leve Loc™ integral re-bar supports of the basin and drive them into the ground for positive anchoring. Permanently secure Leve Loc™ to re-bar with wire ties.



Channel

Attach channel directly to in-line basin, ensuring that the channel and basin Dura Loc™ joints are aligned. Silicon caulking may be used at each joint as a sealer. Slide the Dura Loc™ joints of the channel and the basin together taking care that they positively lock. Align #4 re-bar (1/2") with the Leve Loc™ integral re-bar supports of the channel and drive them into the ground for positive anchoring. Re-adjust channel using string line or level to ensure channel is at desired level. Permanently secure Leve Loc™ to re-bar with wire ties. Continue with the next channel section.

INSTALLATION INSTRUCTIONS

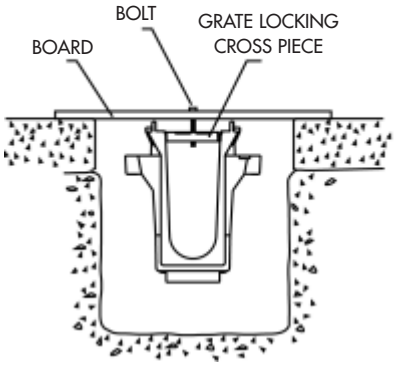


Bottom Outlet Option

Secure the NDS outlet adapter into the channel bottom outlet. Ensure that the channel Sure Fit™ adapter is sized and aligned properly to the outlet pipe. Attach Sure Fit™ to evacuation pipe and re-adjust channel using string line or level to ensure channel is at desired level. Permanently secure Leve Loc™ to re-bar with wire ties. Continue with the next channel section.

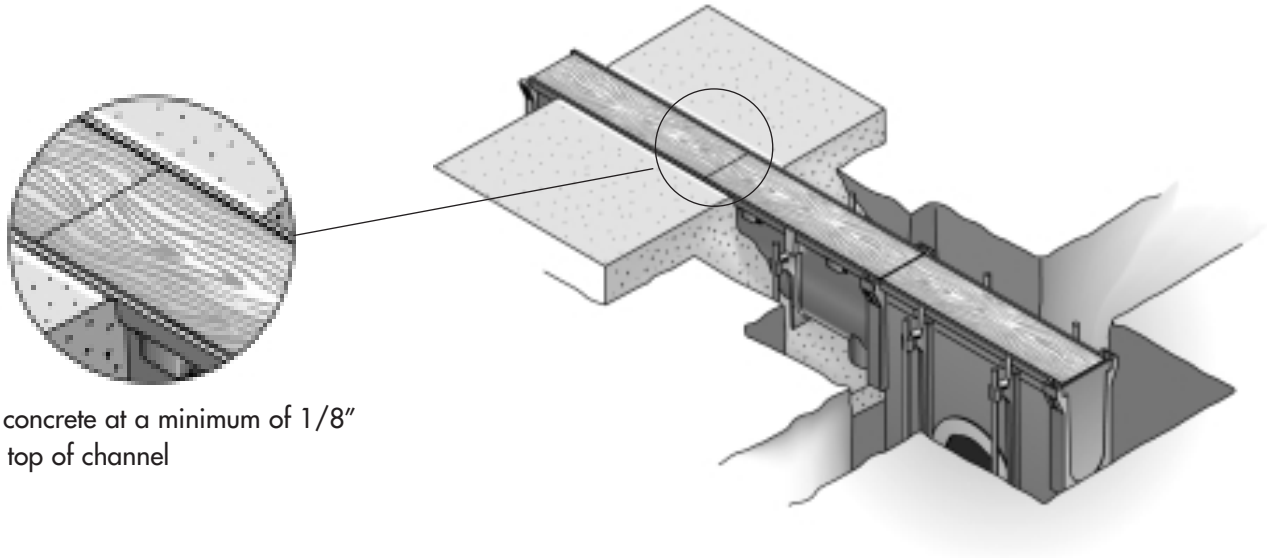
Suspended Installation

Attach a wooden brace to the channel that overlaps both sides of the trench. The wood brace is secured to the locking system in the channel and to the concrete on both sides of the trench. This method prevents the channel from floating and keeps the system to desired grade. Dimensions of trench depend on the specific application desired. See installation details on next page for specific dimensions.



Pour

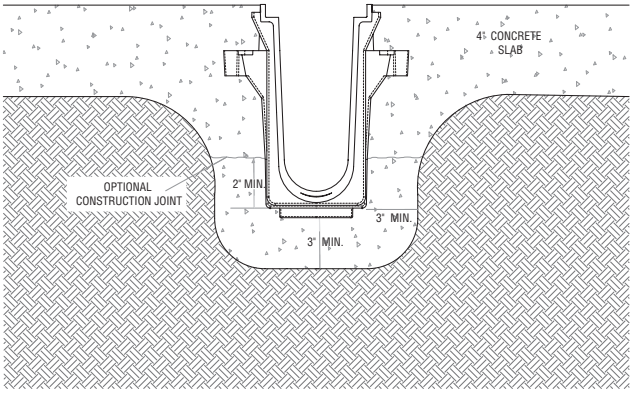
Install plywood with the same dimensions of the grates, or install the actual grates, carefully duct-taping over them in order to prevent channel sides from compressing inward and eliminating the possibility of concrete being poured into the channel. Cut back re-bar to ensure it will not appear above the concrete pour level. Pour 3500psi concrete around the channel system. In order to prevent air pockets from developing, vibrate the concrete as it is placed. Once finished, trowel concrete to be finished at a minimum of 1/8″ above the top of the channel and basin to ensure adequate channel edge protection and allow for efficient drainage.



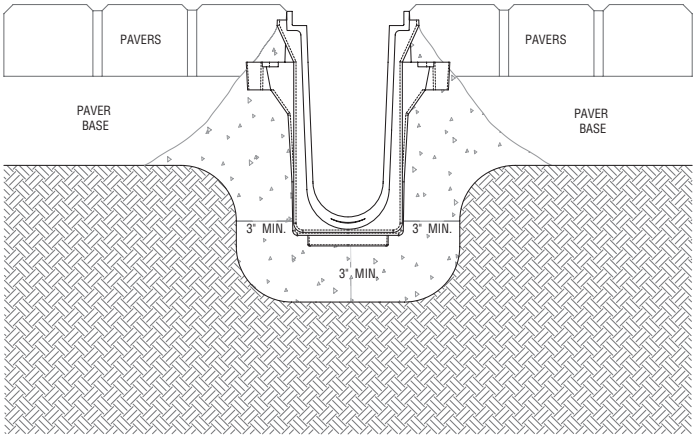
Finish concrete at a minimum of 1/8″ above top of channel

OPTIONAL INSTALLATIONS

Class A

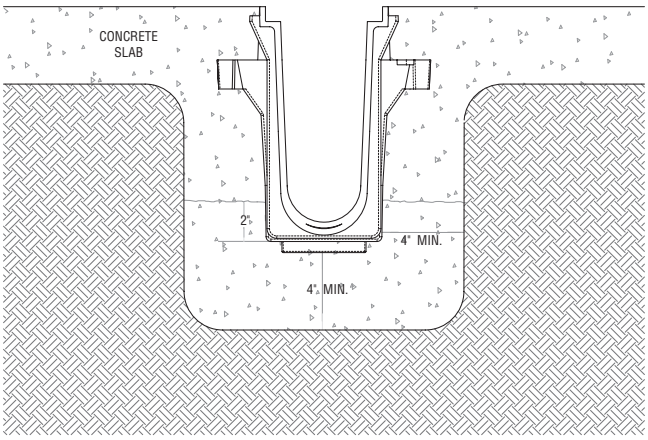


Set trench drain in channel surrounded by 3" of concrete or thickness of the concrete slab with a minimum of 2,500 P.S.I.

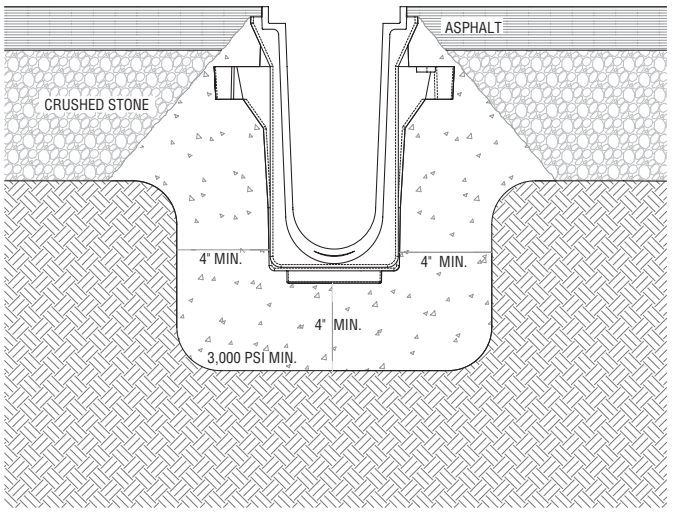


Set trench drain in channel surrounded by a minimum of 3" of concrete with a minimum of 2,500 P.S.I. Slope concrete off the top of and away from the drain.

Class B



Set trench drain in channel surrounded by 4" of concrete or thickness of the concrete slab with a minimum of 3,000 P.S.I.

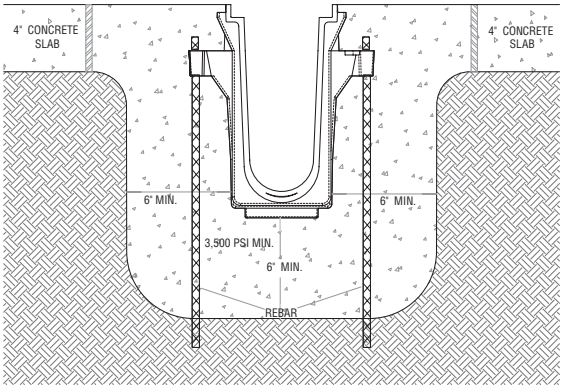


Set trench drain in channel surrounded by 4" of concrete with a minimum of 3,000 P.S.I. Slope concrete off the top of and away from the drain.

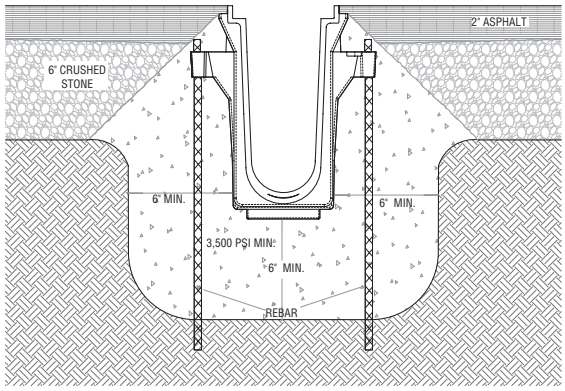
Designed By
PIEDMONT DESIGN ASSOCIATES, PA
125 East Plaza Dr., Ste. 104 Westfield Center
Mooresville, NC 28115-8812
(704) 664-7888

OPTIONAL INSTALLATIONS

Class C

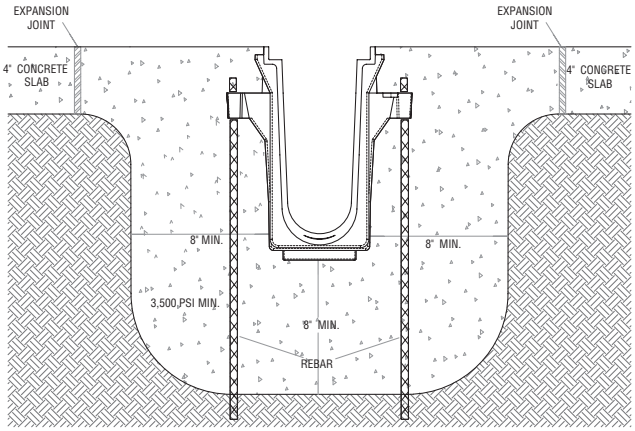


SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 6" OF CONCRETE WITH A MINIMUM OF 3,500 PSI. INSTALL #4 REBAR TO STABILIZE DRAIN WHILE CONCRETE IS BEING POURED. MAKE SURE REBAR IS 1/2" BELOW FINISHED SURFACE.

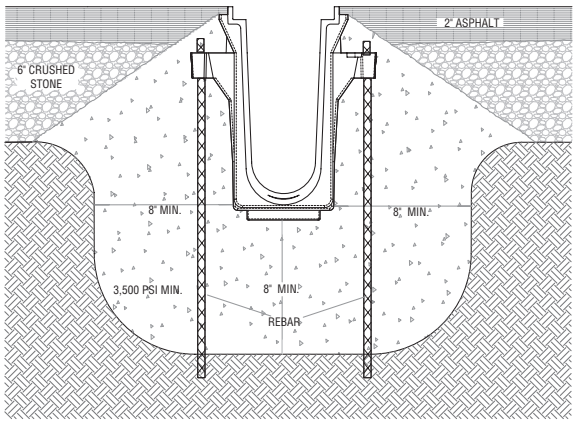


SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 6" OF CONCRETE WITH A MINIMUM OF 3,500 PSI. INSTALL #4 REBAR TO STABILIZE DRAIN WHILE CONCRETE IS BEING POURED. MAKE SURE REBAR IS 1/2" BELOW FINISHED SURFACE. SLOPE CONCRETE OFF THE TOP OF AND AWAY FROM THE DRAIN.

Class D



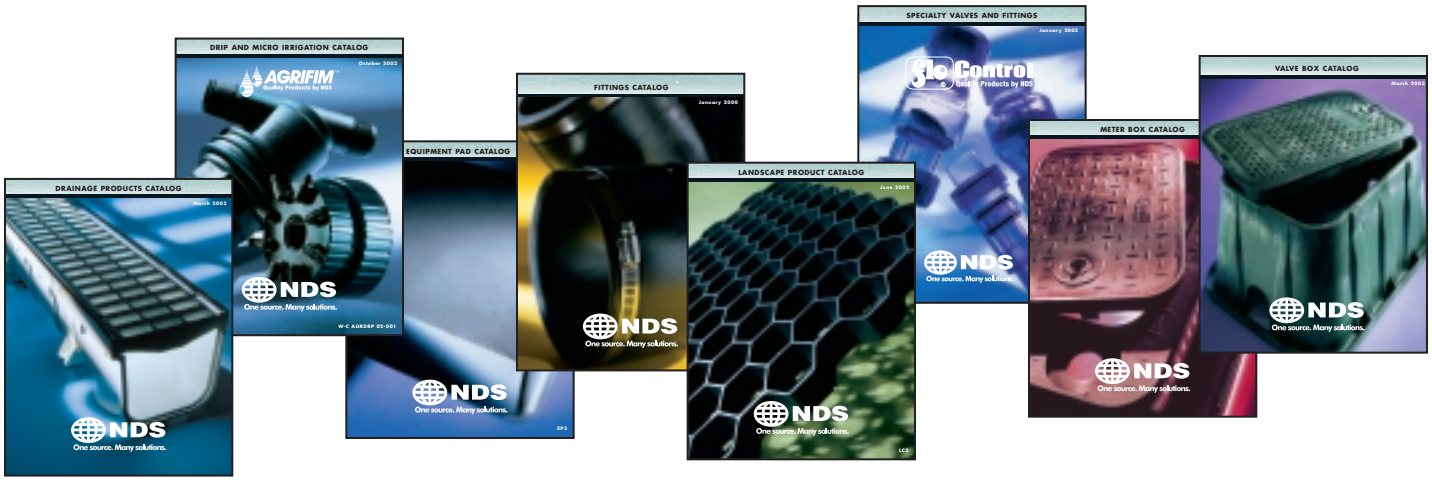
SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 8" OF CONCRETE WITH A MINIMUM OF 3,500 PSI. INSTALL #4 REBAR TO STABILIZE DRAIN WHILE CONCRETE IS BEING POURED. MAKE SURE REBAR IS 1/2" BELOW FINISHED SURFACE.



SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 8" OF CONCRETE WITH A MINIMUM OF 3,500 PSI. INSTALL #4 REBAR TO STABILIZE DRAIN WHILE CONCRETE IS BEING POURED. MAKE SURE REBAR IS 1/2" BELOW FINISHED SURFACE.SLOPE CONCRETE OFF THE TOP OF AND AWAY FROM THE DRAIN.

Designed By
PIEDMONT DESIGN ASSOCIATES, PA
125 East Plaza Dr., Ste. 104 Westfield Center
Mooresville, NC 28115-8812
(704) 664-7888

MARKETING MATERIALS



NDS Product Catalogs
Drainage Catalog • Drip & Micro Irrigation Product Catalog • Equipment Pad Catalog • Fittings Catalog
Landscape Product Catalog • Specialty Valves and Fittings Catalog • Meter Box Catalog • Valve Box Catalog

www.NDSPRO.com
From installation details to online catalogs to educational materials, NDSPRO.com is your one source for all information needed in order to use and specify NDS products.

NDS
SPECIFICATION BINDER

Specification Binder
Binder containing the Drainage Catalog, Landscape Catalog, Valve and Meter Box Catalog, NDS Price List, and Technical Manuals. Distributed to architects and engineers.

NDSpec is an Autocad database of installation details. The CD will create a database of drawings accessible by Autocad, Windows, or Mac systems. Over 100 different details are included.

NDSpec allows the user optimal design flexibility as details are created in layers with transparent backgrounds. This allows you to edit, resize, reorder and reposition without interfering with the rest of your design. As a specifier, we would like you to consider NDS products for all your future projects. NDS products are innovative, strong, durable and easy to use. To assist you with your projects, we offer a Specifier Binder complete with the NDS Product and Specification Catalogs, Price List, and Architect Manual.

DETAILS INCLUDE

Inlet Drains • Catch Basins • Channel Drains • Grates
Valve Boxes • Tree Grates • Root Barriers
Water Barriers • Grass Pavers
Pop-up Emitters

NDS

One source. Many solutions.

- **Catch Basins & Grates**
- **Channel Drains**
- **Agrifim Drip Irrigation**
- **Equipment Pads**
- **Flo-well Stormwater Leaching Systems**
- **Flo Control Specialty Fittings**
- **Flo Control Check Valves**
- **Flo Control Ball Valves**
- **Backwater & Diverter Valves**
- **Sewer & Drain Fittings**
- **Grass Pavers**
- **Root Barriers**
- **Valve & Meter Boxes**
- **Flexible Couplings**
- **Flexible Saddles**

NDS Product Catalogs

Drainage Catalog • Drip & Micro Irrigation Catalog • Equipment Pad Catalog • Fittings Catalog
Landscape Catalog • Specialty Valves and Fittings Catalog • Valve and Meter Box Catalog

PARTIAL CLIENT LIST

The White House
Los Angeles Country Club
Pebble Beach
Cypress Point
Spyglass Hill
PGA West Stadium Golf Course
Princeville Golf Course
Ritz Carlton
Santa Barbara Zoo

Sheraton Hotels
Sherwood Country Club
Soldier Field
Del Webb & Sun City Country Clubs
Westin Hotels
Riviera Country Club
Buchart Gardens
Disney World
Disneyland

Florida University
Harbortown Golf Links
Hyatt Grand Champions
La Quinta Resort
Marriott Hotels
MGM Grand Hotel & Theme Park
Mirage Hotel
Jack La Lane Athletic Clubs
Olympic Training Center

Address/Telephone
P.O. Box 339 • 851 N. Harvard Avenue
Lindsay, CA 93247
Phone: 800-726-1994
Fax: 800-726-1998
International Phone: 559-562-9888
International Fax: 559-562-4488
e-mail: NDS@NDSPRO.com

www.NDSPRO.com

Regional Warehouses:
- Lindsay, CA
- Dallas, TX
- Atlanta, GA
- Seattle, WA
- Philadelphia, PA
- Orlando, FL
- Puerto Rico