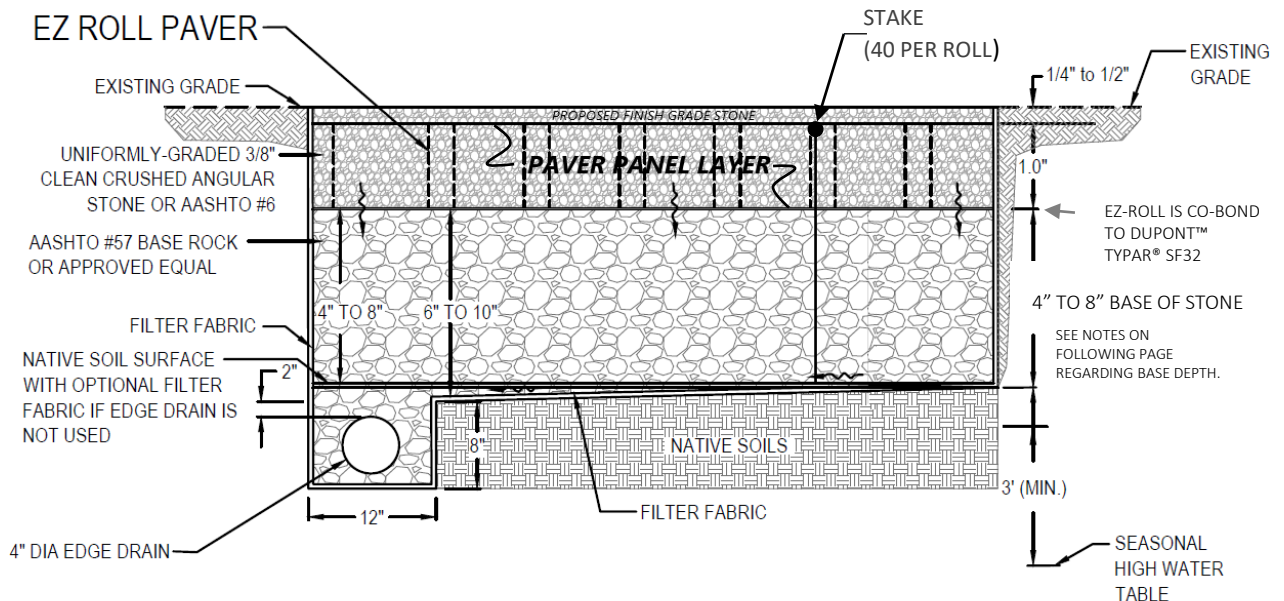
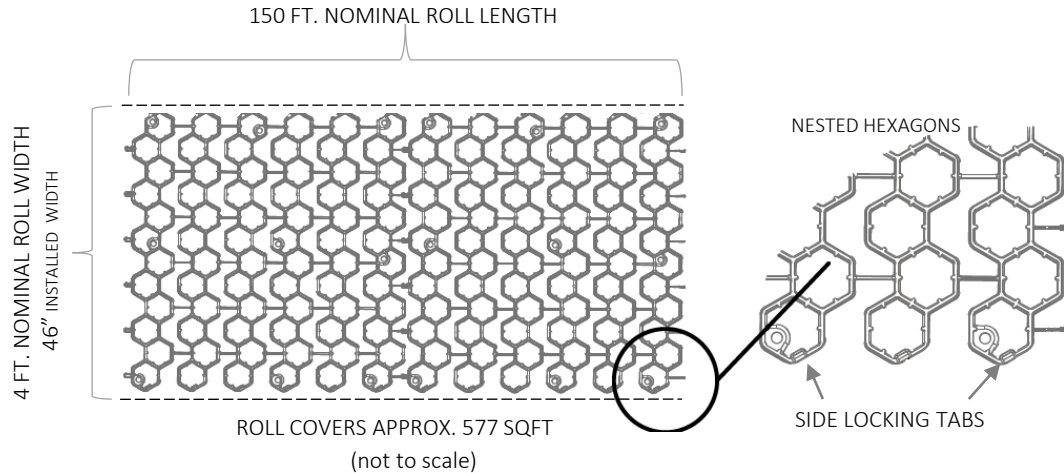




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EZ ROLL™ PERMEABLE GRAVEL PAVER

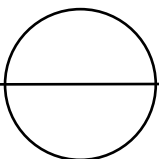
CELLULAR CONTAINMENT/REINFORCEMENT - EXCEEDS H-20 VEHICULAR LOADS



MANUFACTURED IN LINDSAY CA FROM 100% RECYCLED HDPE, CONTAINS UV INHIBITORS.

EMPTY PAVER TEST: ULTIMATE LOAD = 53,683 LBS / 373 PSI (12" PLATE TEST) -- EXCEEDS H-20 LOAD RATING

FILLED PAVER TEST : ULTIMATE LOAD = 500,000 LBS / 13,889 PSI (6" PLATE TEST)



EZ ROLL PERMEABLE GRAVEL PAVER

GRAVEL PAVING SYSTEM-AASHTO H-20 LOADING / FIRE LANES / PARKING



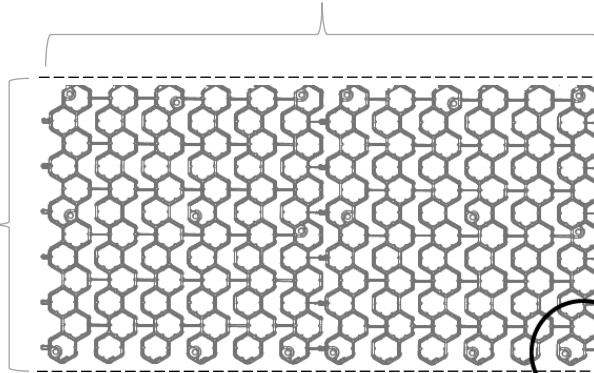
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EZ ROLL™ PERMEABLE GRAVEL PAVER

CELLULAR CONTAINMENT/REINFORCEMENT - EXCEEDS H20 VEHICULAR LOADS

150 FT. NOMINAL ROLL LENGTH

4 FT. NOMINAL ROLL WIDTH
46" INSTALLED WIDTH

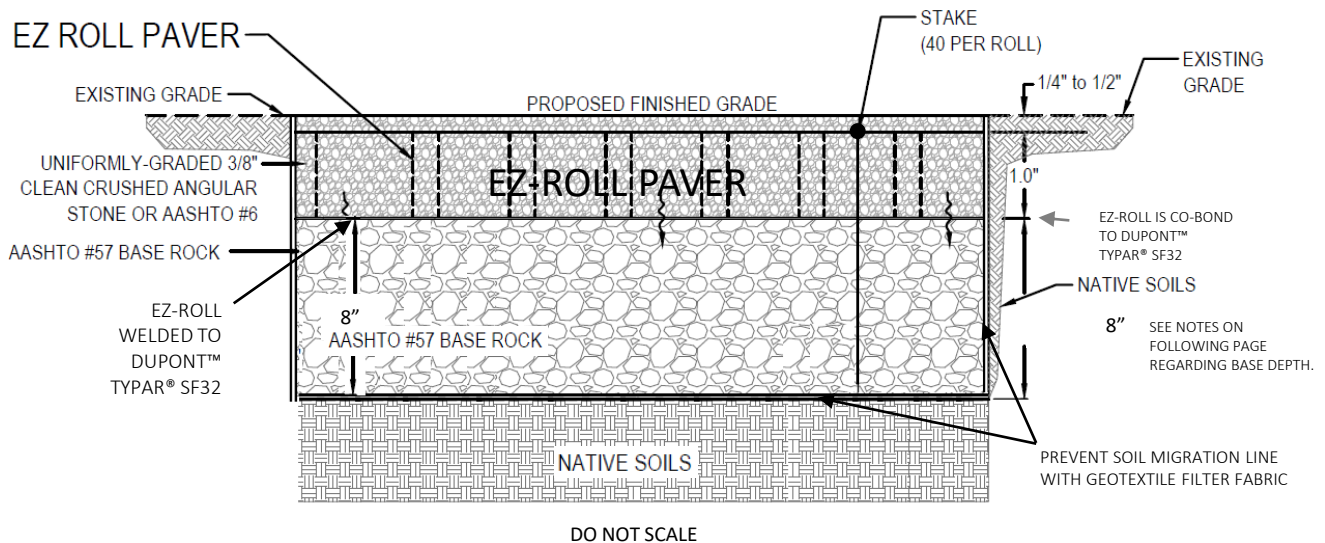


ROLL COVERS APPROX. 577 SQFT
(not to scale)

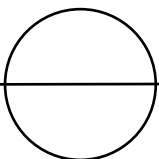
NESTED HEXAGONS

SIDE LOCKING TABS

EZ ROLL PAVER



MANUFACTURED IN LINDSAY CA FROM 100% RECYCLED HDPE, CONTAINS UV INHIBITORS.
EMPTY PAVER TEST: ULTIMATE LOAD = 53,683 LBS / 373 PSI (12" PLATE TEST) -- EXCEEDS H-20 LOAD RATING
FILLED PAVER TEST : ULTIMATE LOAD = 500,000 LBS / 13,889 PSI (6" PLATE TEST)



EZ ROLL PERMEABLE GRAVEL PAVER

GRAVEL PAVING SYSTEM, EXCEEDS **H20** LOADING / FIRE LANES / PARKING



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EZ ROLL™ GRAVEL SPECIFICATIONS

ULTIMATE LOAD = 500,000 LBS 13,889 PSI (6"x6" TEST)
EXCEEDS H-20 LOAD RATING

MATERIAL:

NDS EZ Roll™ Gravel Pavers Model GP4X150. Injection-molded, nested-honeycomb, rolled-plastic-panel gravel pavers for permeable, gravel paved environments. Polyolefin plastic with carbon black for UV stabilization. Black Gravel Pavers: 100 percent recycled material. Preassembled rolls comprised of 3.870ft Wide x 150ft Long by 1-1/8" High with integrated connecting cross links.

(72) 2-1/4" Hexagon Shape, Nested honeycomb. End-to-end clips snap-lock together. Side-to-side clips snap-lock together. 100 percent open bottom geotextile filter fabric. Superior chemical resistance and totally inert. Nonwoven, spunbonded, continuous-filament, polypropylene filter fabric, Dupont Tygar®. Thermally bonded to gravel paver bottom surface.

- Grab Tensile Strength: 110 lbs.
- Puncture Resistance: 30 lbs.,
- Apparent Opening Size (AOS), US Sieve 50

ANCHORING:

Each roll is supplied with (40) 12" by 3/8" diameter stakes, bright-dipped galvanized, head is 3/4", with diamond point. Additional anchors available, NDS part number is 'GPSTAKE'. Follow recommended staking pattern detail.

BASE STONE: NDS suggests AASHTO #57 or equivalent from local sources with the min recommended depths below:

- ☐ PEDESTRIAN: **NO BASE** IS REQUIRED (SLOPES UP TO 3%)
- ☐ GOLF CARTS / LIGHT LOADS: MIN. **4 INCHES** OF BASE RECOMMENDED
- ☐ CARS / PICKUP TRUCKS / MEDIUM LOADS: MIN. **6 INCHES** OF BASE RECOMMENDED. 10% MAX GRADE
- ☐ FIRE TRUCK / H20 / HEAVY LOADS: MIN. **8 INCHES** OF BASE RECOMMENDED. 6% MAX GRADE

FILL STONE:

Clean, crushed, semi-angular, uniformly-graded 3/8-inch gravel. AASHTO #6 or similar.

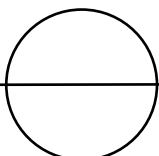
FABRIC SEPARATION:

Geotextile supplied by others, see detail.

INSTALLATION: Excavate to the required depth and compact Native Soil as follows:

1. Compact subgrade native soils 90 to 95% standard proctor density per ASTM D696 for soils with California Bearing Ratio >20%, R value >30, AASHTO A-1, A-2, and A-3 soils. Lower compaction levels promote infiltration through soil.
 1. NDS recommends that Engineer-of-Record consider higher level of compaction for native soils with CBR 5 to 20%, R-value 10 to 30, AASHTO A-4 soils for heavy loads (e.g., fire trucks) where infiltration into native soils is not a requirement.
 2. NDS recommends that Engineer-of-Record consult with Project Geotechnical Engineer for potential soil modification (e.g., lime treatment) and compaction level for CBR <5% and R-value <10, AASHTO A-5, A-6, and A-7 soils.

Installation (continued)

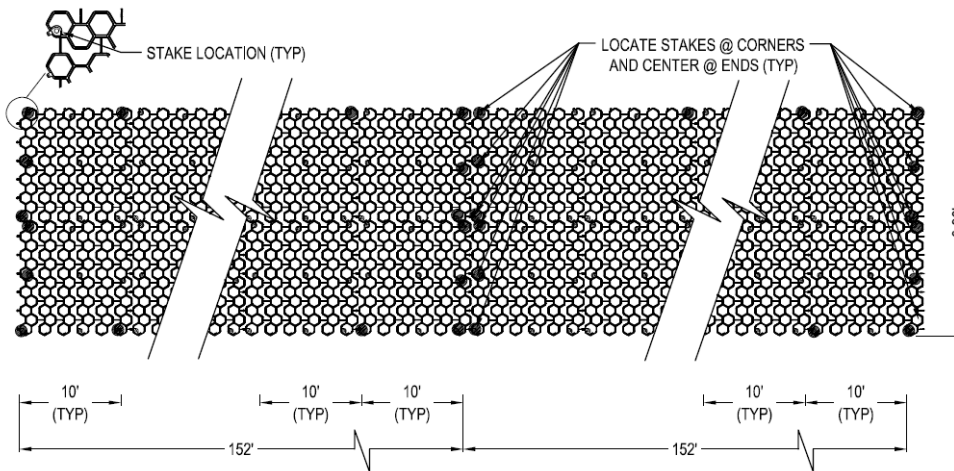


EZ ROLL PERMEABLE GRAVEL PAVER

GRAVEL PAVING SYSTEM-AASHTO H-20 LOADING / FIRE LANES / PARKING



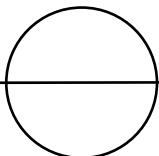
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NDS EZ-Roll™ Gravel Pavers Model GP4X150 (40 stakes supplied with each roll)

Installation (continued)

2. Install filter fabric as separation per manufacturer's recommendations.
3. Place Base Course material over prepared subbase to grades indicated on the Drawings, in lifts not to exceed 6 inches. Since it is difficult to measure density of coarse aggregate, approach of requiring a fixed density is not applicable. Compact Base Course with one to three passes of 5-ton steel wheel roller or equivalent. Base Course thickness is based on native soil conditions and anticipated wheel loads.
4. Install gravel pavers by placing units with cells facing up and connecting lateral snap locks together to maintain proper spacing and to interlock units.
5. Leave 1-inch minimum clearance between gravel pavers and fixed objects or surface structures.
6. Install the galvanized steel stakes supplied with the EZ Roll to secure the pavers in place prior to filling gravel.
7. Anchoring recommended for all emergency vehicle access road projects using EZ Roll with gravel fill. NDS provides stakes with EZ Roll gravel pavers. Additional stakes recommended for emergency vehicle access roads that have cross slopes greater than or equal to 5% and at sharp 90-degree turns where paver is subjected to shear and torsion.
8. Top of Cells: Leave top of cells 1/4 inch to 1/2 inch below surface of adjacent hard-surface pavements.
9. Fill the gravel in cells as pavers are laid in sections. Fill pavers from outer periphery moving inward.
10. Extend gravel fill inside pavers 1/4 inch to 1/2 inch above paver surface and match surrounding grade. When gravel fill is properly installed, paver cells will have minimum visibility. In locations where the area of the pavers is subjected to snow plowing, NDS recommends extending the gravel fill at least 1-inch above the paver surface to minimize contact of the plow blade with the plastic paver surface.
11. NDS recommends filling pavers with gravel within 30 days of being installed. Re-inspect inter-paver locking as well as anchoring with stakes prior to filling with gravel if not filled on same day of installation. Make necessary corrections if displacement has occurred since installation.
12. Work area consisting of pavers shall be opened to traffic only upon completion of all fill activities.



EZ-ROLL PERMEABLE GRAVEL PAVER

GRAVEL PAVING SYSTEM-AASHTO H20 LOADING / FIRE LANES / PARKING



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EZ-ROLL LANE MARKER SPECIFICATIONS

EZ Marker™ Parking Delineators increase safety and organization by strategically directing parking lot traffic. Delineators are a great way to guide motorists around hazards and to their final parking destination. Used in conjunction with EZ Roll™ Grass and Gravel Permeable Pavers they provide a simple and effective solution for managing parking lot traffic. EZ Marker™ is durable, tamper-resistant and built to last. Available in various colors to suit any traffic need including grass or gravel parking and fire line access.

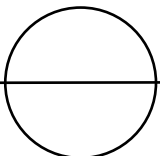
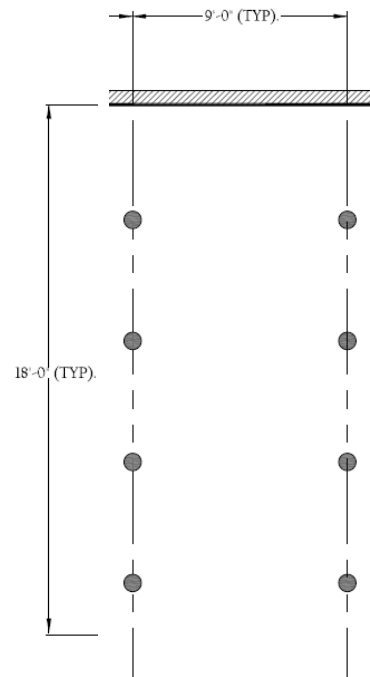
Used with EZ Roll™ Grass and Gravel Pavers, NDS EZ Marker™ is a modular solution to outlining driving lanes, parking stalls, and fire lanes. After the pavers have been unrolled, pinned, and secured, EZ Marker™ snaps into the appropriate empty cells to outline whatever pattern necessary to properly direct vehicular traffic.

- 2.7 inch hexagonal shape
- 0.40 inch profile above paver grade
- Molded polypropylene, impact copolymer
- 300 PSI class "C" compressive strength to withstand typical vehicular loading for cars and most trucks (with full base support)
- Secure Easy clip-in installation
- Self-cleaning: Raised dome design prevents debris from sticking



OPTIONS

- EZMARKER =DELINEATOR WHITE
- EZMARKER-B =DELINEATOR BLUE
- EZMARKER-R =DELINEATOR RED
- EZMARKER-Y =DELINEATOR YELLOW



EZ-ROLL PAVER MARKERS

PAVING SYSTEM-AASHTO H-20 LOADING LANE DELINEATORS



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Operation & Maintenance of Gravel Pavers

Recommendations Following Construction...

In the first 6 months following construction, inspect the site and contributing drainage area twice, within 24 hours after storm events that exceed one-half inch of rainfall. Conduct any needed repairs or stabilization.

The overall frequency of inspection and maintenance is dependent upon the area that you live, the soils and slopes in the area, their natural infiltration rates, the material used in the base and reservoir layer as well as other items such as nearby construction, and items placed on the surface that may prevent it from its function. One year is a typical guideline to follow for maintenance once construction is complete.

Winter Maintenance/Misc. Equipment

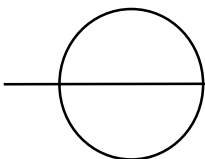
Snow can be plowed from plastic grid pavers if the plow blade is set slightly above their surface to not damage the material and or markers. Rotary brushes or snow blowers are not recommended. Deicing salts should be used on a very limited basis for gravel paver systems. There may be items that may make the maintenance easier such as a nylon spacer, or skid shoes attached to the plow.

Miscellaneous Inspection/Maintenance Tasks:

1. Any material that needs to be temporarily stored on the paver system during seasonal maintenance activities can be facilitated by placing a tarp beneath the stored material and on top or by moving the material to impervious pavement.
2. Preventive (regenerative) regular surface sweeping to maximize performance and longevity
3. Weed removal as required on grid paver system. Herbicides should be avoided and it is imperative to not allow unwanted vegetation to persist.
4. If the permeable pavement has underdrains, outlet(s) should be checked to verify free flow of water.
5. Inform and train operators

Repairs

Visually inspect for any edge lifting, raised portions, depressions or damage of any kind. Promptly address issues when small can greatly extend the service life and appearance.



EZ-ROLL PERMEABLE GRAVEL PAVER

GRAVEL PAVING SYSTEM-AASHTO H20 LOADING / FIRE LANES / PARKING



PERMEABILITY / RUNOFF COEFFICIENT

NDS EZ Roll™ Paver system is a valuable tool to reduce stormwater runoff, providing a lower runoff coefficient than traditional paving and promoting groundwater recharge.

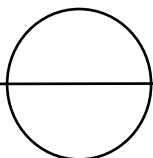
The EZ Roll™ Paver system has greater than 90% permeable surface area. As per Technical Release # 55, US Dept. of Agriculture, Soil and Conservation Service, the evaluation of storm water management objective is done by the following method:

1. Calculate the existing (pre-construction) runoff volumes and time of concentration factors.
2. Next calculate area and runoff volumes, which will be generated by new hard surface areas.
3. Runoff reduction can be calculated and compared when using the below Chart 1, which lists runoff percentages from various soils based on "Meadow" type cover and a 24-hour rainfall.

When used over a rock and sand base with sandy loam soil (CN30), EZ Roll™ will promote a situation unlikely to generate surface runoff in an average rainstorm (less than 6 inches in 24 hours).

% RUNOFF IN 24 HRS. SAND ——— SOIL TYPE ——— CLAY

Rainfall (Inches)	Type A - CN 30	Type B - CN 58	Type C - CN 71	Type D - CN 78
1	0	0	0.01	0.06
1.2	0	0	0.03	0.1
1.4	0	0	0.05	0.14
1.6	0	0	0.08	0.18
1.8	0	0.01	0.11	0.21
2	0	0.02	0.13	0.24
2.5	0	0.05	0.2	0.32
3	0	0.09	0.25	0.38
4	0	0.17	0.35	0.47
5	0	0.23	0.42	0.54
6	0.01	0.29	0.48	0.6
7	0.03	0.34	0.53	0.64
8	0.05	0.39	0.57	0.67
9	0.08	0.43	0.61	0.7
10	0.1	0.46	0.64	0.73
11	0.12	0.49	0.66	0.75
12	0.15	0.52	0.68	0.76



EZ-ROLL PERMEABLE PAVER

PAVING SYSTEM-AASHTO H20 LOADING / FIRE LANES / PARKING