MUSCLE WALL®

Stormwater & Containment — Engineer Resources

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PRODUCT OVERVIEW

Muscle Wall is a rotationally-molded low-density polyethylene (LDPE) modular barrier available in 2-ft, 3-ft, and 4-ft heights. Units interlock via male-to-female connections, secured with safety ratchet straps, filled with water, and wrapped with a plastic or geotextile liner to form a stable, reusable barrier system for stormwater management, erosion control, flood protection, and liquid containment.

Specification	2-FOOT WALL	3-FOOT WALL	4-FOOT WALL
Material	Low Density Polyethylene (LDPE)	Low Density Polyethylene (LDPE)	Low Density Polyethylene (LDPE)
Dimensions (H x L x W)	2' x 6' x 2'	3' x 6' x 2'	4' x 6' x 2.54'
Min. Wall Thickness	0.25 in.	0.25 in.	0.25 in.
Ground Footprint	11.5 sq ft	11.5 sq ft	14.5 sq ft
Empty Weight	62 lbs	72 lbs	121 lbs
Filled Weight	600 lbs	766 lbs	1,000 - 1,400 lbs
Ground Pressure (empty)	0.0333 psi	0.0333 psi	0.0527 psi
Ground Pressure (filled)	0.3939 psi	0.4325 psi	0.6705 psi
Impact Strength	190 ft-lb	190 ft-lb	190 ft-lb
Tensile Strength	2,600 PSI at yield	2,600 PSI at yield	2,600 PSI at yield
Elongation to Yield	20%	20%	20%
Temperature Range	-40°F to 180°F	-40°F to 180°F	-40°F to 180°F
UV Rating	12-Year UV Rated	12-Year UV Rated	12-Year UV Rated
Units per Trailer	256 / 48-ft flatbed	192 / 48-ft flatbed	96 / 48-ft flatbed
Units per Bundle/Pallet	16 walls per pallet	12 walls per bundle	12 walls per pallet
Sandbag Equivalent	~235 sandbags	~355 sandbags	~470 sandbags

PROVEN BMP APPLICATIONS

Check Dams / Velocity Dissipation

U-shaped basins spaced every 50–200 ft slow hillside flow. 4-ft walls form the back; 2-ft walls act as center weir.

Stormwater Detention Basins

Horseshoe or U-shape. Combined with 3–4 ft excavation yields up to 8 ft effective depth. Designed for 10-yr / 6-hr storm.

Perimeter Sediment Control

Replaces silt fence. No continual maintenance; withstands construction vehicle traffic.

Secondary Containment

Rectangular formation surrounds tanks, generators, or drill augers with negligible seepage.

Stormwater Diversion Channel

Two parallel runs create a temporary channel to reroute flow around active construction zones.

Stockpile Management

Berm around soil or material stockpiles prevents eroded fines from leaving site during storms.

Temporary Soil Retention

Overturning FS ~4.0 / Sliding FS ~2.0 on soil. Held 4 ft of surcharge soil adjacent to mixing augers.

Post-Fire Mitigation

U-shaped check dam in fire-scarred channels. Remove captured sediment when accumulation exceeds 2 ft.

Brownfield Remediation

High-speed barrier containment system engineered to contain hazardous risks at brownfield and contaminated site remediation projects.

Data Center Flood & Stormwater Protection

Rapidly deployable perimeter barrier protects critical data center infrastructure from flood events and stormwater intrusion with minimal site disruption.

WALL FEATURES & SYSTEM DETAILS

Quick Setup & Take Down

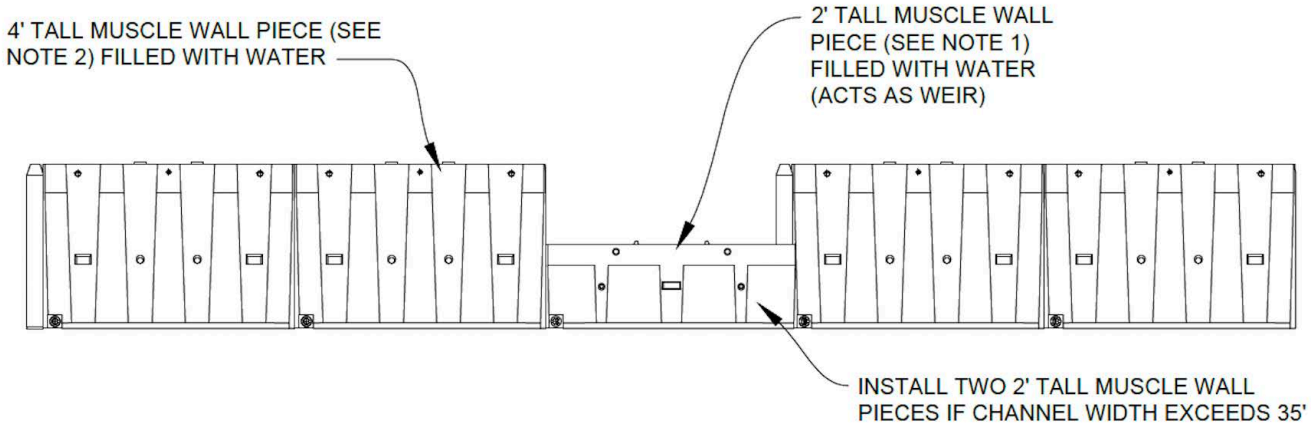
- Male-to-female connection slides easily into place
- Spring liner clip secures liner, reduces liner tenting (size-specific clip per wall)
- Each joint acts like a hinge — up to 22° range of motion
- Reversible corner unit enables 90° turns in any direction
- Specially designed hand truck moves 4 walls at a time (3-ft)

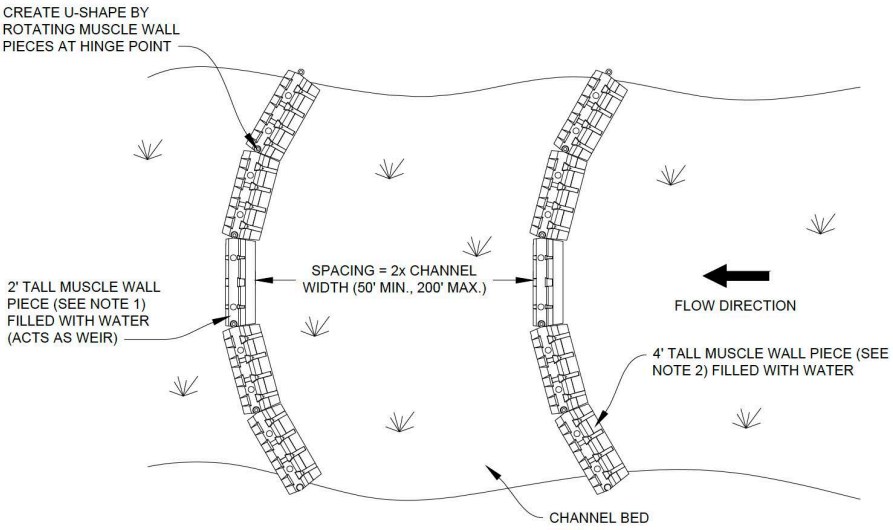
Intuitive Design

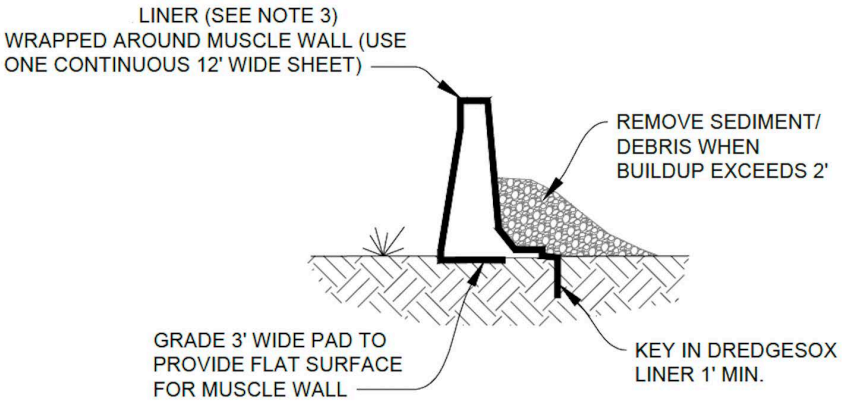
- Two walls nestle together to reduce storage and shipping space
- Threaded top hole cap
- Releasable bung-plug cap for rapid emptying
- Safety ratchet straps restrain adjacent panels
- 7 strategically placed kiss-throughs — structural integrity, strap installation, and hand-holds (2-ft & 4-ft)
- No pallet required using included forklift hole protectors (3-ft)

CHECK DAM / BASIN DETAIL

U-shaped configuration using 4-ft walls as the main barrier and 2-ft walls as the center overflow weir. Both arms are keyed into the existing channel bank. Spacing between dams = 2x channel width (50 ft min., 200 ft max.). Remove captured sediment when accumulation exceeds 2 ft.







SECTION VIEW

NOTES

1. **2' TALL MUSCLE WALL**
   - LOW DENSITY POLYETHYLENE (LDPE)
   - 2' TALL, 6' LONG, 2' WIDE
   - 62 LBS EMPTY WEIGHT
   - 600 LBS FILLED WEIGHT
   - 190 FT-LB IMPACT STRENGTH
   - 2,600 PSI TENSILE STRENGTH AT YIELD
   - 10 YEAR UV RATED
2. **4' TALL MUSCLE WALL**
   - LOW DENSITY POLYETHYLENE (LDPE)
   - 4' TALL, 6' LONG, 2.54' WIDE
   - 121 LBS EMPTY WEIGHT
   - 1,400 LBS FILLED WEIGHT
   - 190 FT-LB IMPACT STRENGTH
   - 2,600 PSI TENSILE STRENGTH AT YIELD
   - 10 YEAR UV RATED

PROJECT GALLERY

SLOPE STABILITY — SLIDING FACTOR OF SAFETY (FS)

Static sliding analysis (ENGEO Inc.) calibrated from USACE pull-out tests. FS values below 1.0 (highlighted rows) indicate anchoring or full water-fill is required.

Slope	FS on Asphalt	FS on Soil	Minimum Fill Ratio (Filled : Unfilled)
0%	1.37	1.44	2 : 1
5%	1.18	1.25	2 : 1
10%	1.04	1.10	2.5 : 1
15%	0.93	0.98	3 : 1
20%	0.84	0.88	All walls filled

Key design rule: On slopes 15% or greater, fill ALL barriers with water. For haul-road crossings on 10–15% slopes, maintain a minimum 3:1 filled-to-unfilled ratio and reconnect unfilled center walls before each forecast storm.

INSTALLATION QUICK-REFERENCE

1	**Site Prep**	Grade a 3 ft wide level pad. Compact and level soil to minimize underseepage gaps.
2	**Placement**	Interlock 6-ft segments end-to-end. Create U-shape by rotating pieces at hinge point. Key both ends into hillside or channel bank.
3	**Water Fill**	Fill all anchor walls first. For haul-road crossings leave center walls unfilled; reconnect before each forecast storm.
4	**Liner Wrap**	Wrap one continuous 12 ft wide plastic or geotextile sheet around outside. Trench liner 1 ft min. into ground on downstream side.
5	**End Anchoring**	Key both ends into hillside or channel bank. Add perpendicular anchor walls if cross-slope exceeds 10%.
6	**Maintenance**	Remove captured sediment when buildup exceeds 2 ft. Inspect straps and liner after each storm event.

CONTACT & ONLINE RESOURCES

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Engineering Drawings & Specs	musclewall.com/engineering
Secondary Containment Calculator	musclewall.com/secondary-containment-calculator
Muscle Wall vs. Sandbag Calculator	musclewall.com/sandbag-calculator
Product Installation Guide	musclewall.com/installation
Request a Quote	musclewall.com/get-a-quote

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