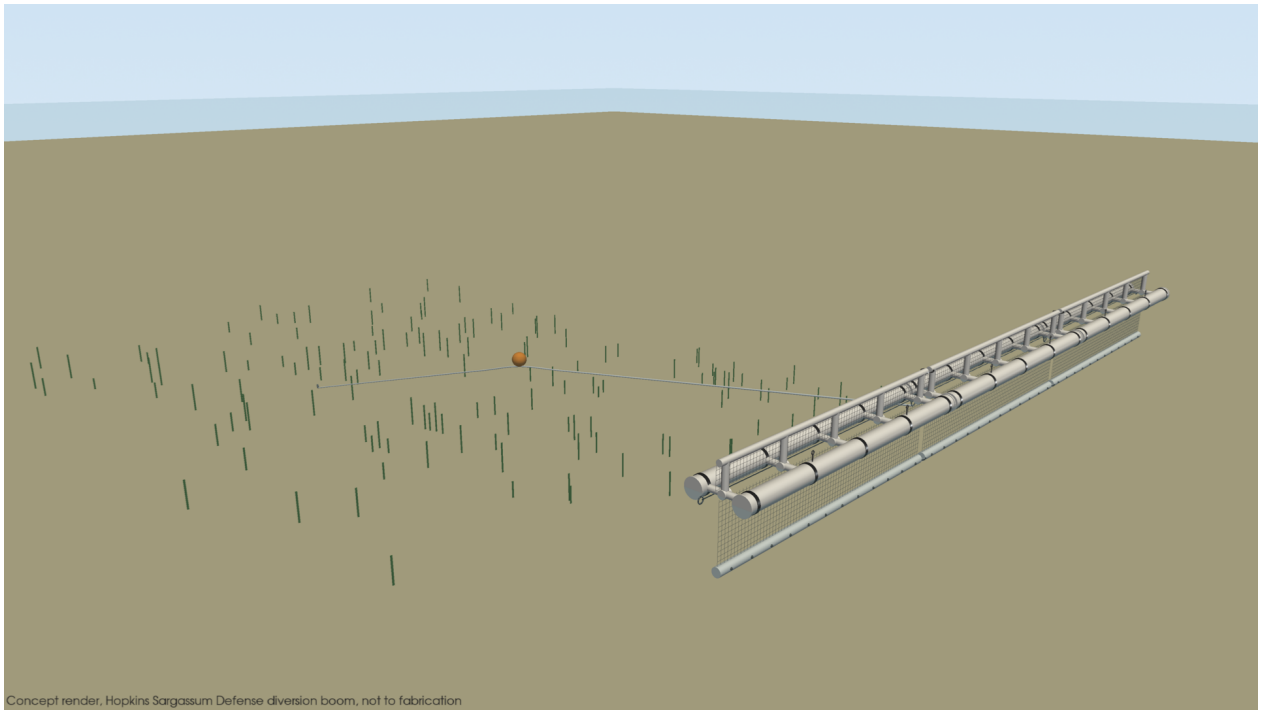
Hopkins Sargassum Defense

Illustrated assembly planning manual

Reviewed concept edition - 22 October 2026

The project aims to reduce beach accumulations and protect wildlife and seagrass through managed diversion and collection. This edition explains the proposed components and review priorities. It is not engineering-approved assembly or installation instructions.



Initial 20-30 ft prototype testing is proposed, followed conditionally by a 200-300 ft proof section. Further expansion depends on evidence, approvals, operational capacity and funding.

Original dimensions are retained as source assumptions. The artwork uses a 24-inch skirt; the interactive viewer shows 30 inches within a 24-39 inch source range. These are unapproved variants, not wildlife-safe limits.

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1. Worker and environmental safety

Decomposing sargassum can release harmful gases. Do not use smell to judge safety: hydrogen sulfide can impair the sense of smell. A competent safety assessment, gas monitoring, exposure controls, trained personnel and an emergency plan are needed before collection work.

Sources: US EPA: Sargassum and human health; OSHA: Hydrogen sulfide.

Protecting turtles, seagrass and coral remains a project goal. Surveys, ecological review, monitoring and stop-work criteria must guide placement and operation. No skirt depth alone establishes wildlife safety.

Qualified reviewers must establish lifting, tools, adhesives, leak testing, marine access, towing and anchoring procedures. The original estimate of about 57 kg per module is unverified and is not a safe lifting prescription. No diving or pull-test method is authorized by this document.

2. Proposed components

Source dimensions and quantities follow. Functions and suitability require review; this list is not an approved bill of materials.

1. Float tube

6 in Sch40 PVC pipe, 10 ft, about 18 in apart centre to centre; quantity: 2.

2. Float end cap

6 in Sch40 PVC cap, cemented; quantity: 4.

3. Cross-connectors and centre uprights

2 in Sch40 PVC pipe with tees; quantity: 5 stations.

3. Top rail

2 in Sch40 PVC, about 12 in above water; quantity: 1.

5. Tees and elbows

2 in Sch40 PVC fittings; quantity: about 8 tees, 2 elbows.

6. Float band clamp

316 stainless band, lined; quantity: 10.

7. Eye bolt

316 stainless, 3/8 x 4 in, on a clamp or bracket; quantity: 2.

11. Barrier mesh

Stiff mesh, 2 to 5 cm openings; quantity: 1 panel.

11. Skirt mesh

Stiff mesh, 24 in deep to start, source range up to 39 in; not an approved limit; quantity: 1 panel.

4. Ballast sleeve

3 in Sch40 PVC, drilled; quantity: 1 (10 ft).

12. Ballast chain

1/4 in hot-dip galvanised chain; quantity: about 10.8 ft.

13. Lacing twine and cable ties

3 mm UV polyester twine, UV-black ties; quantity: about 10 m and 50 ties.

10. Wire tension member

8 mm 316 stainless wire, swaged eyes with thimbles, about 10.5 ft; quantity: 1.

8. Joint bow shackle

316 stainless, 3/8 in pin, stamped rating; quantity: 1 per joint.

9. Screw-gate clip

316 stainless; quantity: 2 per joint.

14. Ground screw

1-1/4 x 64 in with 10 in helix, set at 30 to 45 degrees; quantity: per anchor point.

15. Turning bar / install rod

6 to 8 ft bar; quantity: tool.

16. Anchor line

About 40 ft, nylon allowed here only; quantity: 1 per anchor.

17. Midline float

About 8 in float; quantity: 1 per anchor.

18-19. Anchor shackles and thimbles

Rated, stamped; quantity: 1 set per anchor.

20. End kit

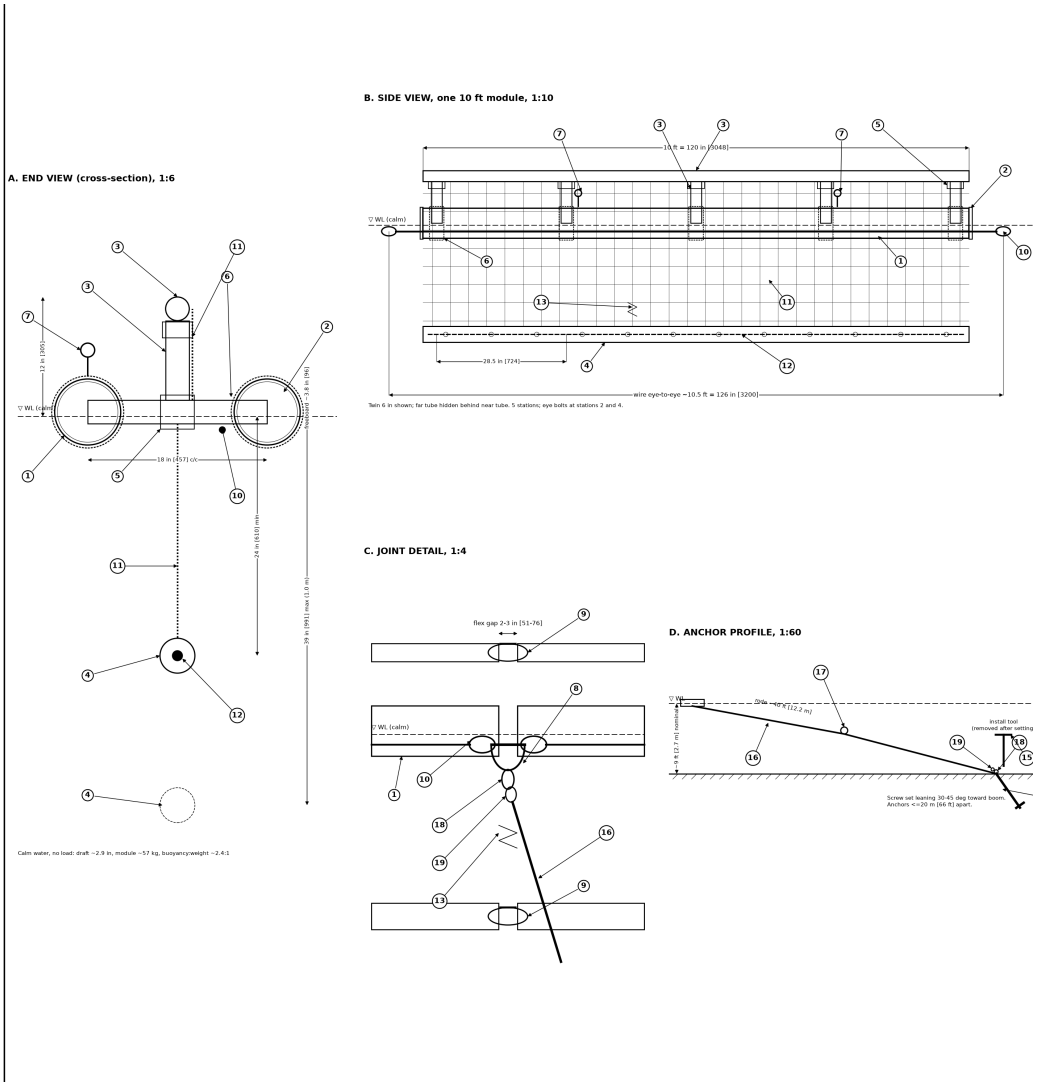
Per site design; quantity: 1 per boom end.

21. Tow bridle

Low-stretch polyester only; quantity: per tow.

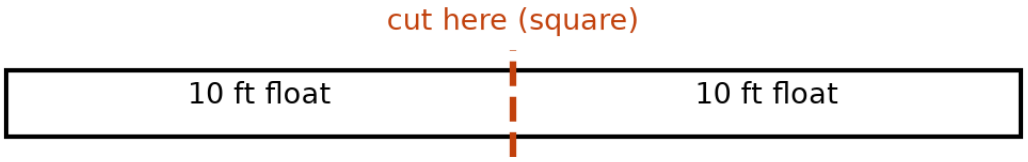
3. Module layout for review

Original component layout, not verified buoyancy or anchor performance. Source calculations remain unvalidated.

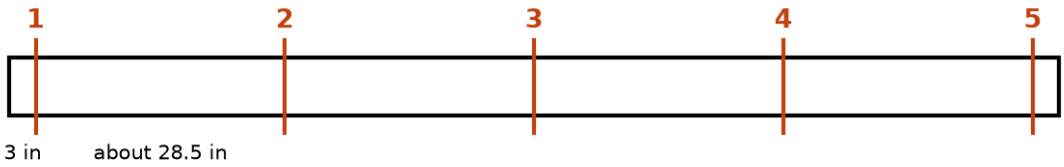


4. Workshop concept

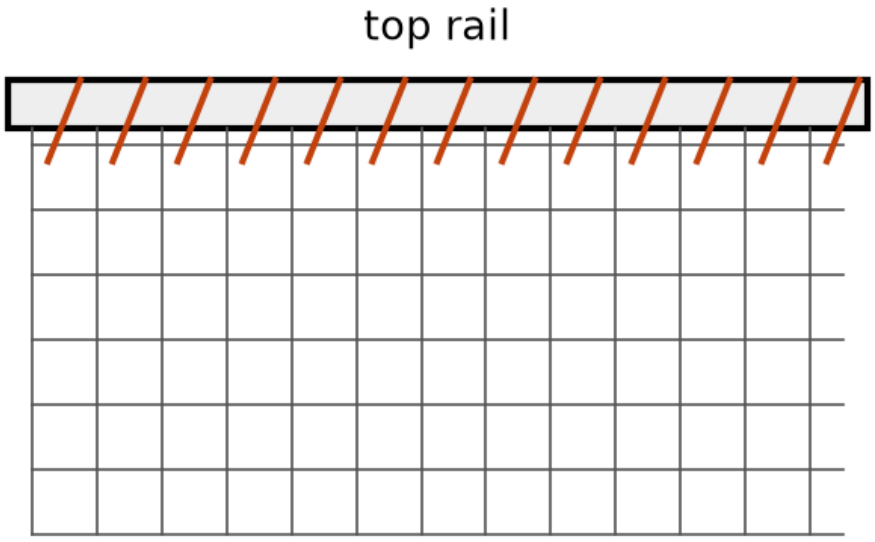
These original illustrations explain the proposed pipe lengths, station spacing and mesh arrangement. They do not replace a reviewed fabrication procedure, product instructions or inspection criteria.



one 20 ft length of 6 in Sch40 PVC makes the 2 floats for one module

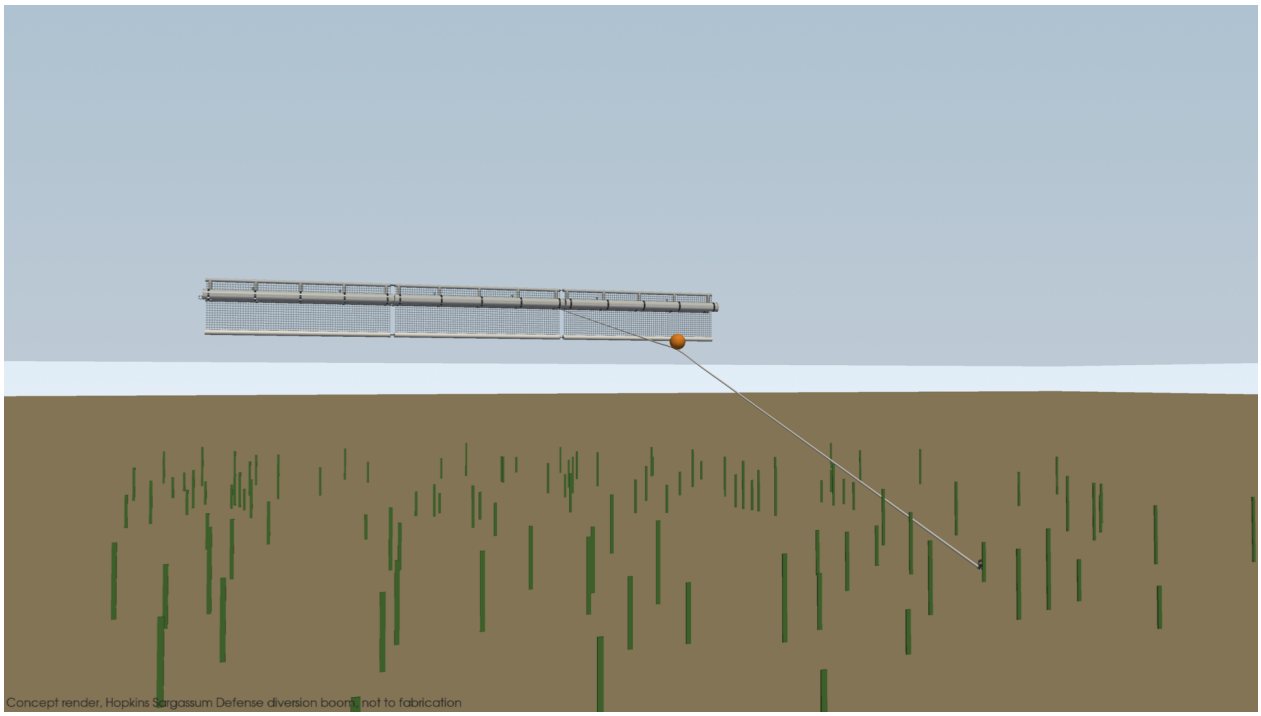


mark 5 stations on each float, same on both floats (confirm at shop mock-up)



lace the mesh to the pipe every square or two, pull snug, tie off

5. Anchoring and collection planning



The proposed midline float aims to reduce seabed contact; this rendering is not a surveyed site or evidence of habitat clearance. Capacity, anchor spacing, line geometry and materials require site-specific engineering.

Source conflict: the original parts table specifies a 3/4-inch polyester anchor rode, while the drawing specifies 3/4-inch nylon. A qualified reviewer must select the material and assess load, stretch, abrasion and compatibility before procurement.

The source drawing includes a proposed 1.5-2x proof-load ratio. It is not an accepted test instruction: a qualified reviewer must specify safe equipment, load, duration, exclusion zones and acceptance criteria.

Collection pockets, operators, transport and approved destinations remain proposed. The aim is prompt responsible collection. No agreed crew, site or 48-hour safety window is established.

6. Weather and retrieval

Storm removal is a design goal. A competent plan must set weather limits, decision authority, resources and retrieval lead time. A storm watch or a 24-hour target does not establish that retrieval is feasible or safe.

7. Planning record

Record the reviewer, evidence, decisions and unresolved questions for: design loads; habitat surveys; approvals; workshop procedures; prototype criteria; anchoring; collection; worker safety; monitoring; weather and retrieval. Checklist ticks are planning notes, not approval.

Editorial provenance

Derived from the supplied HSDP learning-hub package. Original files are retained. This edition replaces unsupported assurances and procedural directions with review requirements without changing the stated engineering dimensions. The separately downloadable drawing set retains original geometry and source estimates, with corrected attribution and goal wording.