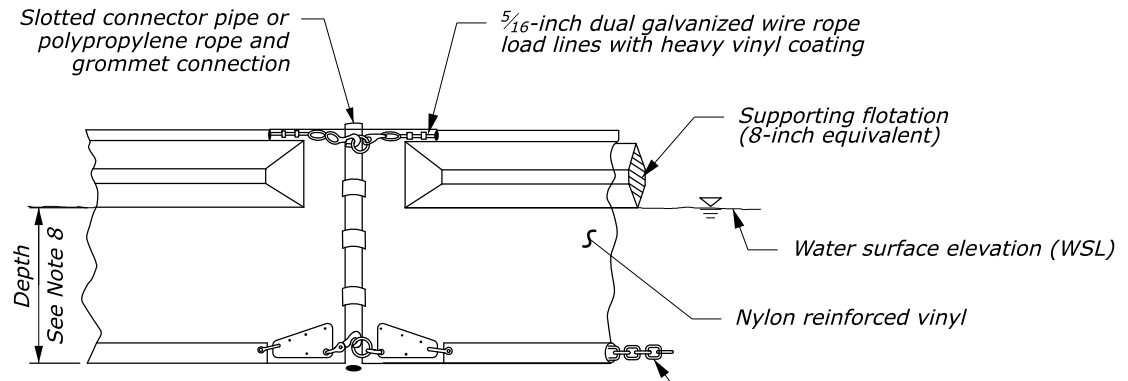
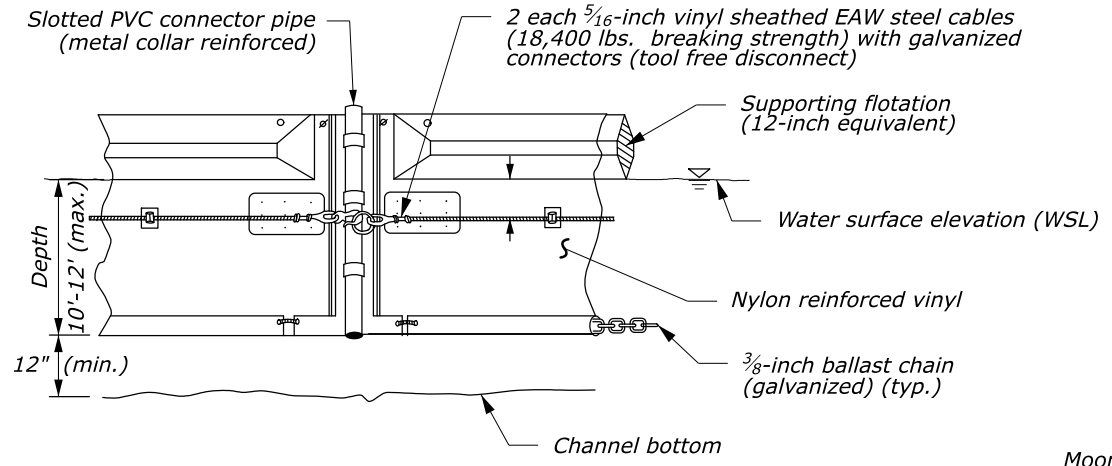


TYPE 1



TYPE 2

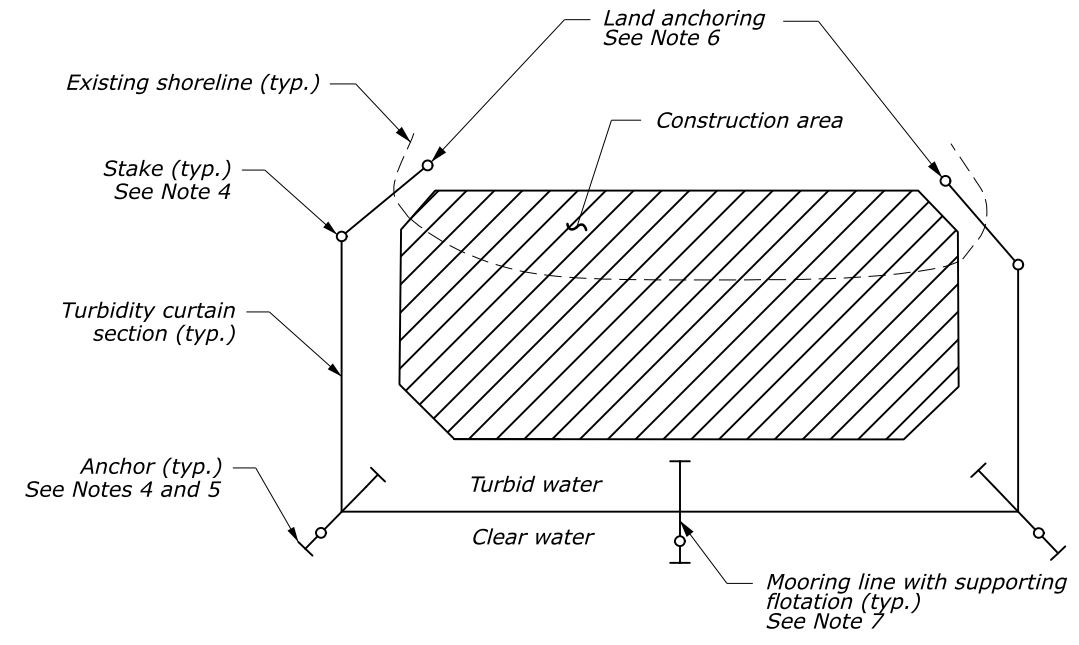


**TYPE 3
SEE NOTE 9**

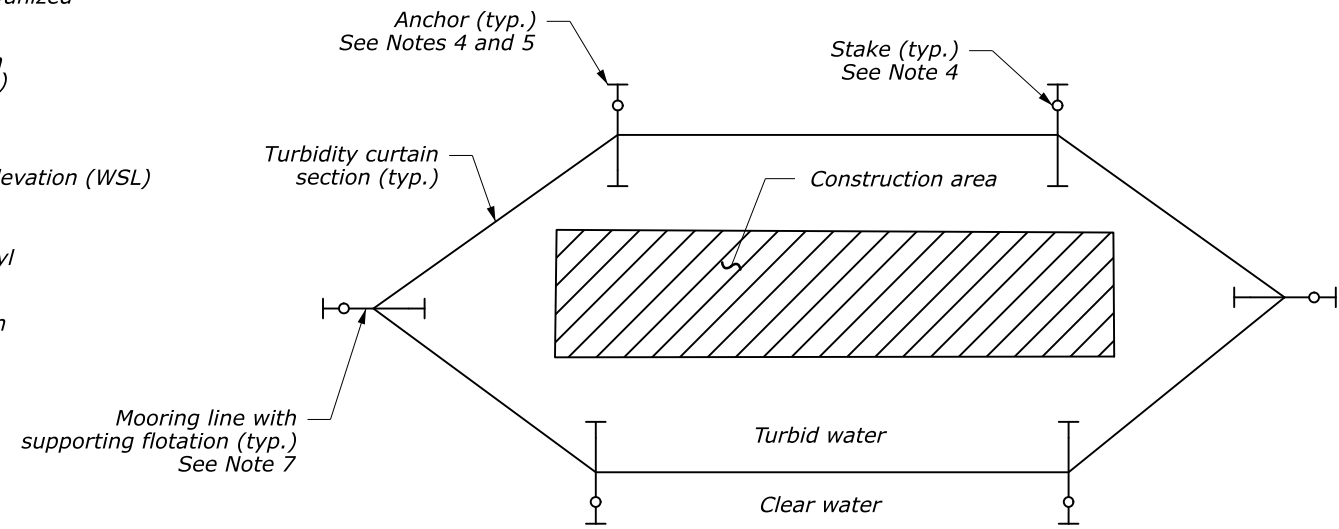
FLOATING TURBIDITY CURTAINS

USAGE CHART

| TYPE | MAXIMUM CURRENT (FT/S) | ADDITIONAL CONDITIONS |
|------|------------------------|--|
| 1 | 0.0 | No Wave/Wind/Tidal Action |
| 2 | 3.5 | Moving Water (One Direction) |
| 3 | 5.0 | Tidal Action or Subject to Wind and Wave Actions |



PLAN VIEW - INSTALLATION FOR SHORELINE WORK



PLAN VIEW - INSTALLATION FOR PILE WORK

NOTES:

1. Select a turbidity curtain type to suit the site conditions and meet erosion control and water quality requirements. Submit details and specifications of the selected turbidity curtain type to the CO for approval prior to installation.
2. Install the turbidity curtain before commencement of any construction activities that could impact the area of concern.
3. Install the turbidity curtain parallel to the direction of flow of a moving body of water. Do not install the turbidity curtain across the main flow of a significant moving body of water. Do not install the turbidity curtain where the flow of water will remove accumulated sediment or significantly move the curtain.
4. Install turbidity curtain stakes in a vertical position unless otherwise directed by the CO. Install anchors and stakes at a 100-foot maximum spacing.
5. For Type 1 turbidity curtains, install anchors made of wooden stakes (2- by 4-inch rectangular or 2½-inch minimum diameter) or metal stakes (1½ pounds per linear foot). For Type 2 and 3 turbidity curtains, install anchors that are either weighted or that dig into the channel bottom.
6. Extend the ends of the turbidity curtains well up into the shoreline especially if high water conditions are expected as approved by the CO. Secure the ends firmly to the shoreline (preferably to rigid bodies such as trees or piles) to fully enclose the area where sediment may enter into the water body.
7. Furnish minimum ½ inch nylon rope for adjustment line for mooring system. Ensure the mooring line is securely attached and is sufficiently buoyant to remain afloat under normal load conditions.
8. For Type 1 and 2 turbidity curtains, extend the nylon reinforced vinyl fabric through the entire depth of the water (to the channel bottom) unless tidal actions are present.
9. In areas subject to wind and wave actions or where tidal actions are present, use Type 3 turbidity curtains as directed by the CO. Furnish and install Type 3 turbidity curtains according to the manufacturer's recommendations and as approved by the CO.
10. Remove captured sediment behind the curtain prior to removing the floating turbidity curtains. Do not disperse sediment into adjacent body of water.

NO SCALE

| | |
|--|-------------------|
| U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION OFFICE OF FEDERAL LANDS HIGHWAY | |
| EFLHD DETAIL | |
| FLOATING TURBIDITY CURTAINS | |
| DETAIL APPROVED FOR USE APPROVED: NOVEMBER 2020 | DETAIL E157-11 |

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NOTES TO THE DESIGNER

November 13, 2020

General Information

Definition.

A flexible, impermeable barrier used to trap sediment in water bodies. This curtain is generally weighted at the bottom to ensure that sediment does not travel under the curtain which is supported at the top through a flotation system. Staked curtains are available for applications with very limited exposure to water flow or wave action.

Description and Purpose.

To prevent the migration of sediment from a work site in a water environment into the larger body of water. The practice may also be called turbidity barrier or silt curtain.

Applications and Design Criteria.

Applicable to non-tidal and tidal watercourses where intrusion into the watercourse by construction activities and subsequent sediment movement is unavoidable.

Turbidity curtain types must be selected based on the flow conditions within the water body - whether it be a flowing channel, lake, pond, or a tidal watercourse. See Usage Chart Table.

- **Type 1** configuration should be used in protected areas where there is no current and the area is sheltered from wind and waves.
- **Type 2** configuration should be used in areas where there may be small to moderate current running (up to 2 knots or 3.5 feet per second) and/or wind and wave action can affect the curtain.
- **Type 3** configuration should be used in areas where considerable current (up to 3 knots or 5 feet per second) may be present, where tidal action may be present and/or where the curtain is potentially subject to wind and wave action.
- Turbidity curtains should extend the entire depth of the watercourse whenever the watercourse in question is not subject to tidal action and/or significant wind and wave forces.
- In tidal and/or wind and wave action situations, the curtain should never be so long as to touch the bottom. A minimum 1-foot "gap" should exist between the weighted lower end of the skirt and the bottom at "mean" low water. Movement of the lower skirt over the bottom due to tidal reverses or wind and wave action on the flotation system may fan and stir sediments already settled out.

- In tidal and/or wind and wave action situations, it is seldom practical to extend a turbidity curtain depth lower than 10 to 12 feet below the surface, even in deep water. Curtains which are installed deeper than this will be subject to very large loads with consequent strain on curtain materials and the mooring system. In addition, a curtain installed in such a manner can "billow up" towards the surface under the pressure of the moving water, which will result in an effective depth which is significantly less than the skirt depth.
 - Turbidity curtains should be located parallel to the direction of flow of a moving body of water. Turbidity Curtain should not be placed across the main flow of a significant body of moving water.
 - When sizing the length of the floating curtain, allow an additional 10-20% variance in the straight-line measurements. This will allow for measuring errors, make installing easier and reduce stress from potential wave action during high winds.
 - For stability reasons, a maximum span of 100 feet between joints (anchor or stake locations) is also a good rule to follow.
-

Applicable SCRs

Typical Pay Item Used

- 15705-2000 Soil Erosion Control, FLOATING TURBIDITY CURTAIN [LNFT]
 - Can also be incidental to the following pay items:
 - 15701-0000 Soil Erosion Control [LPSM]
 - 15702-2000 Soil Erosion Control, TURBIDITY MONITORING [LPSM]
-

Updates