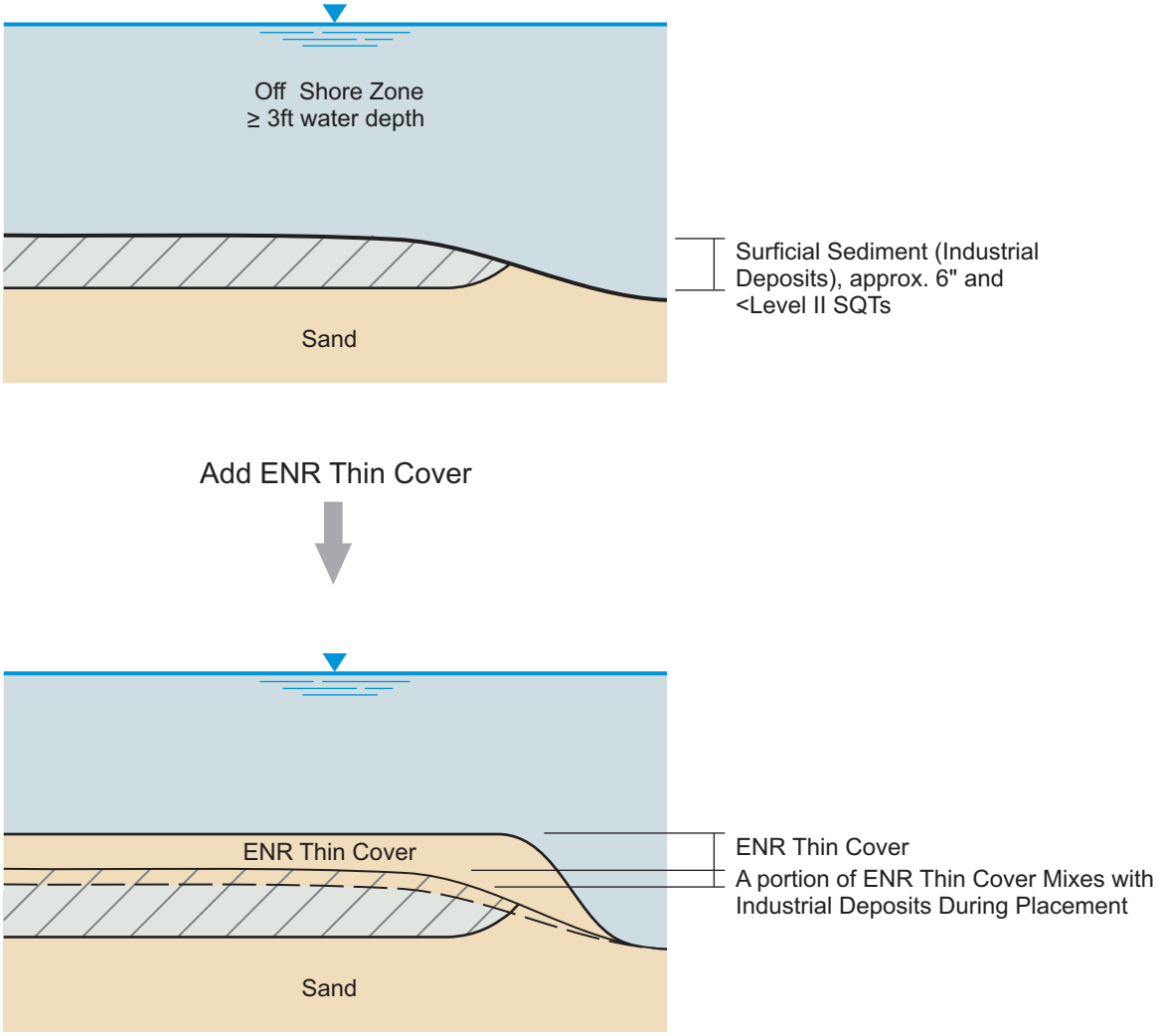
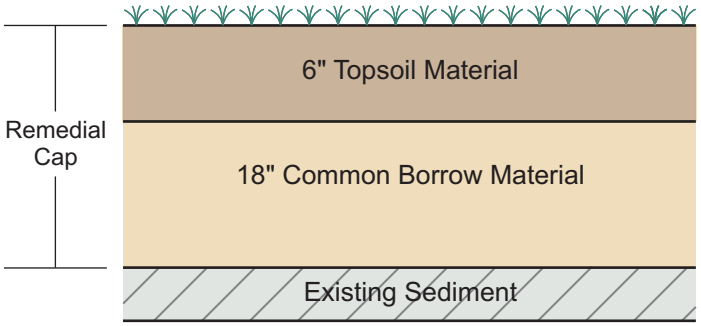


Figure I-1

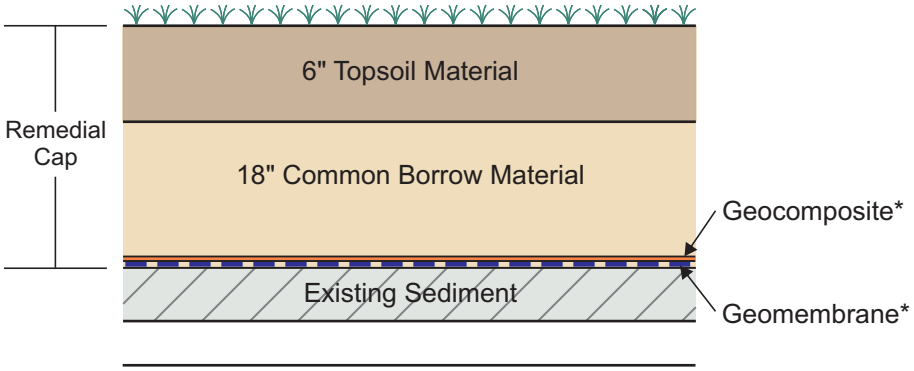
ENHANCED NATURAL RECOVERY (ENR)
THIN COVER
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JLB Enhanced Natural Recovery ENR Thin Cover.CDR RLG 06-29-15

2-FT SOIL COVER



2-FT SOIL COVER WITH GEOMEMBRANE



SOIL COVER DETAILS
- Cover Thickness = Potentially BAZ+IZ
- Potentially BAZ (Bioactive Zone)
- IZ = Isolation Zone

* Cover Thickness and Material Types to be Determined During Remedial Design

Figure I-2

UPLAND REMEDIAL CAPPING
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Upland Remedial Capping.CDR RLG 07-01-15

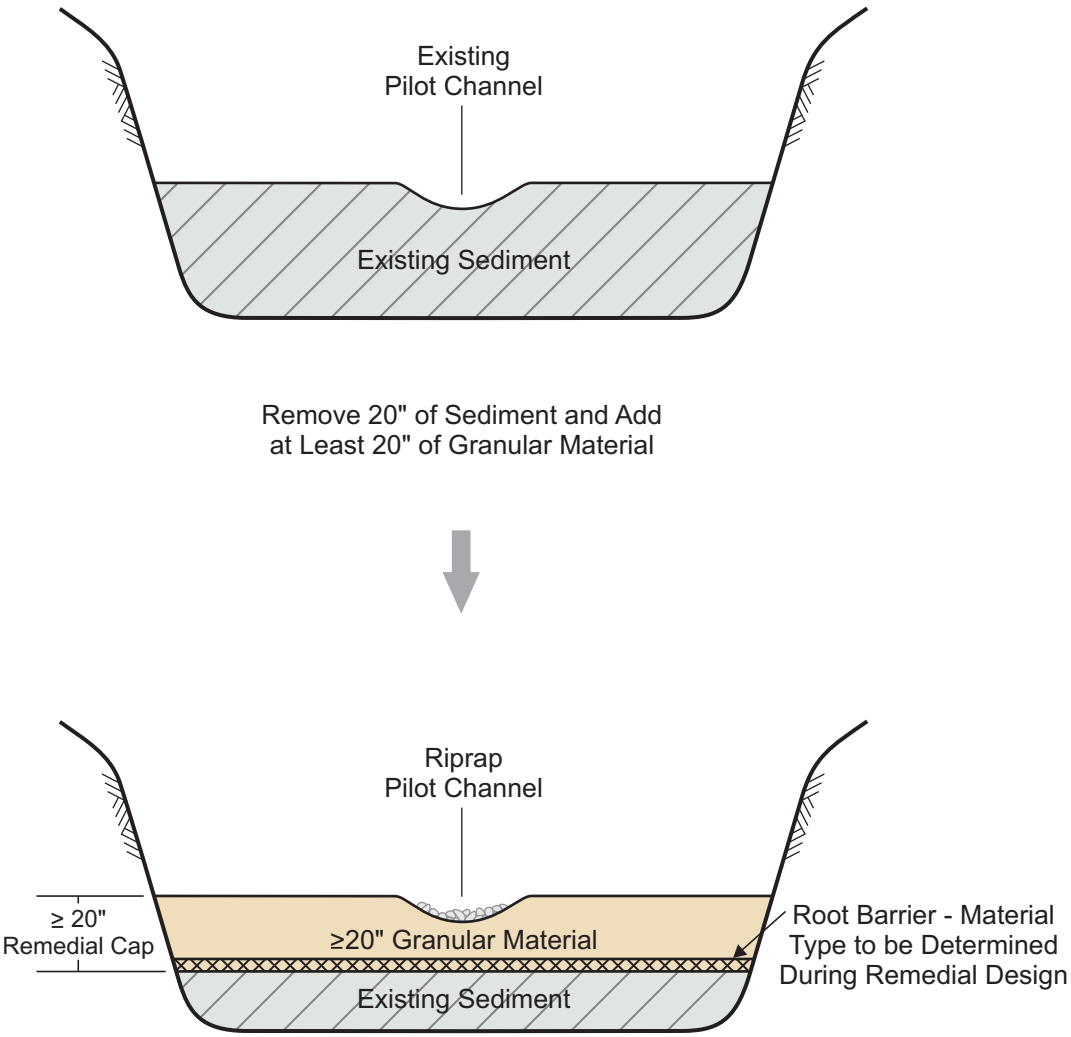
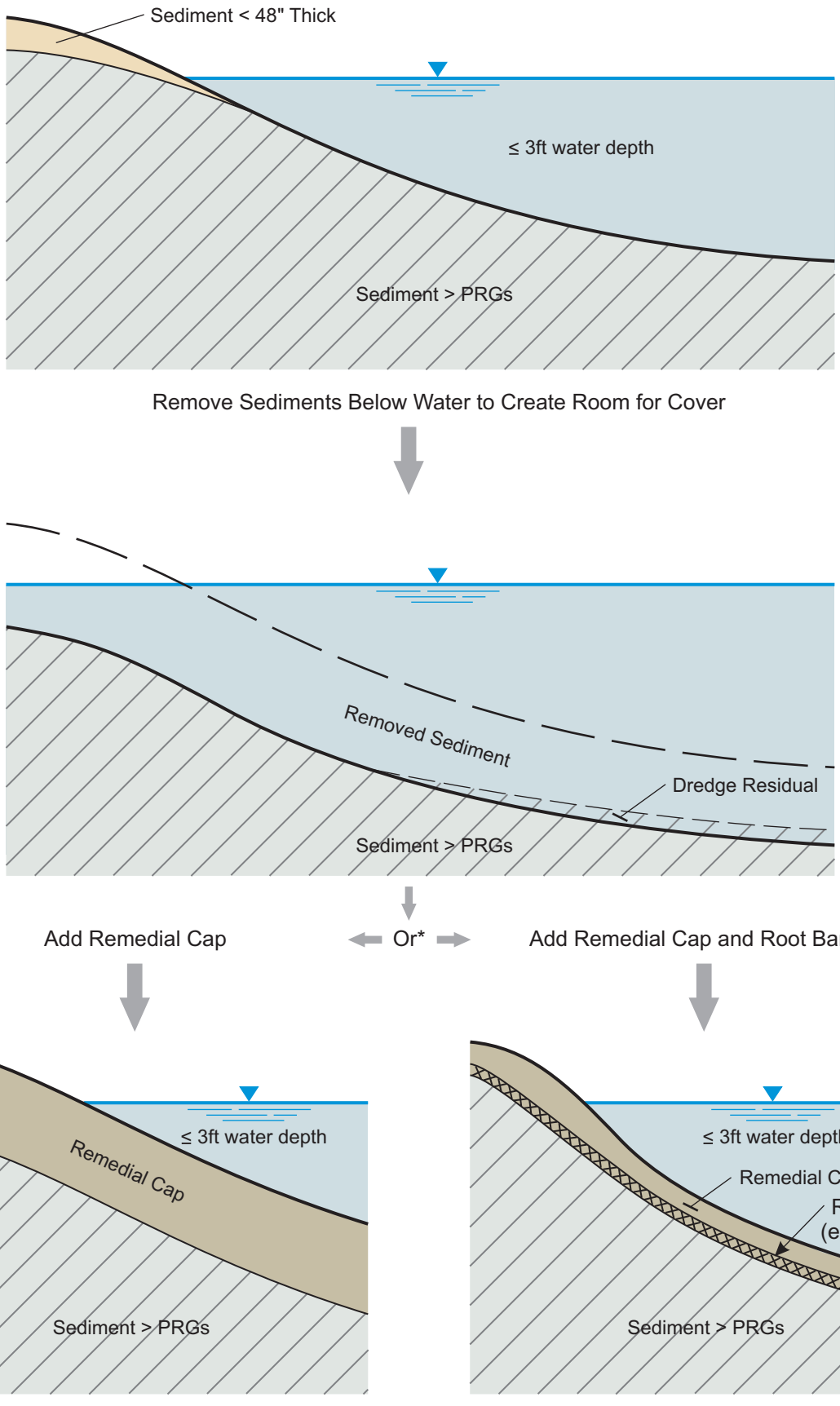


Figure I-3

REMEDIAL CAP OU-I
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Remedial Cap OUI.CDR RLG 07-15-15



REMEDIAL CAP DETAILS
- Remedial Cap = Potentially BAZ+IZ
- Potentially BAZ (Bioactive Zone) = 100-120cm in Shoreline Zone, (MPCA, 2014b)
- IZ = Isolation Zone

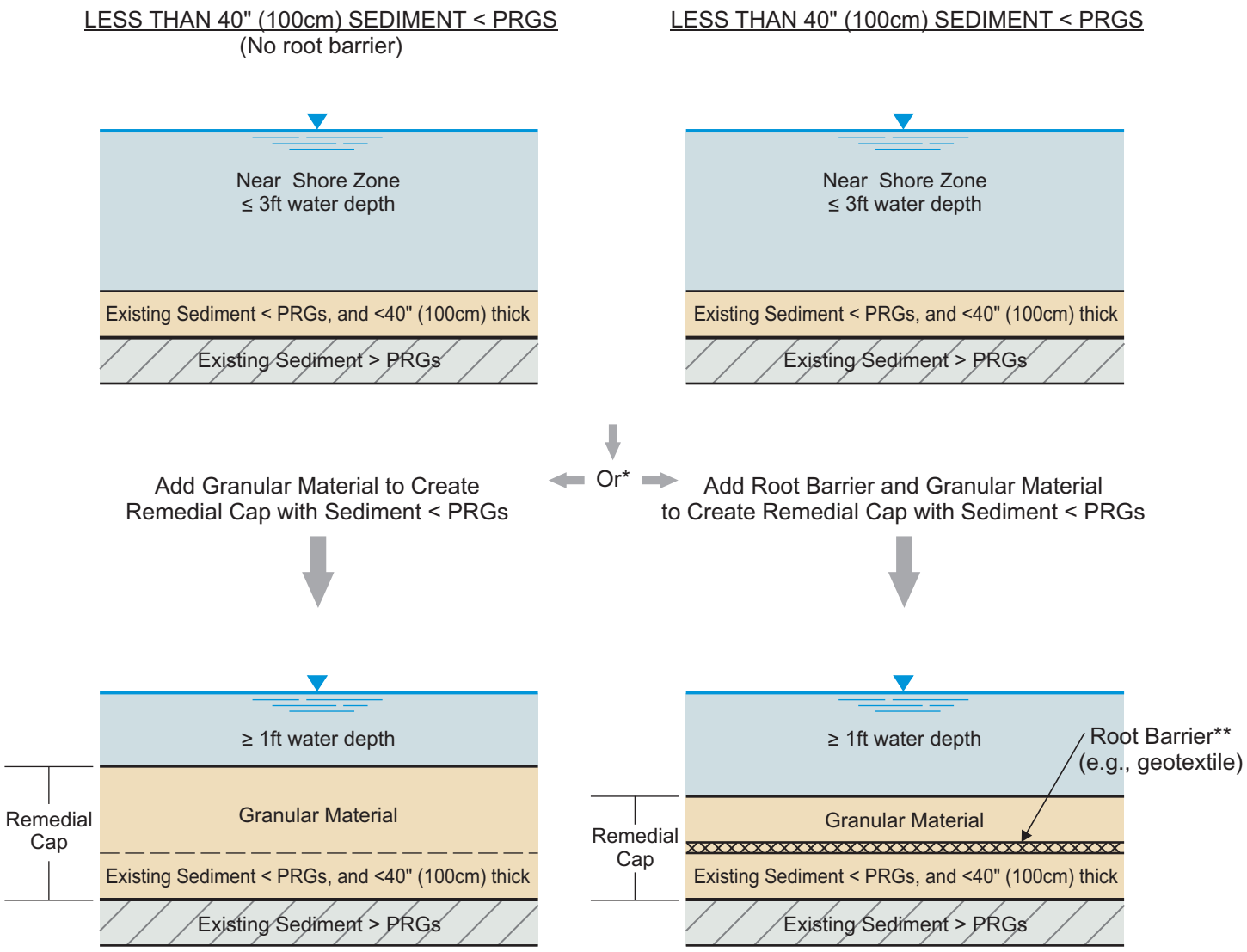
* Final Cap Configuration to be Determined During Remedial Design

** Root Barrier may Reduce the Potentially BAZ Thickness

Figure I-4

REMEDIAL CAP IN SHORELINE ZONE
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Remedial Cap in Shoreline Zone.CDR RLG 07-01-15

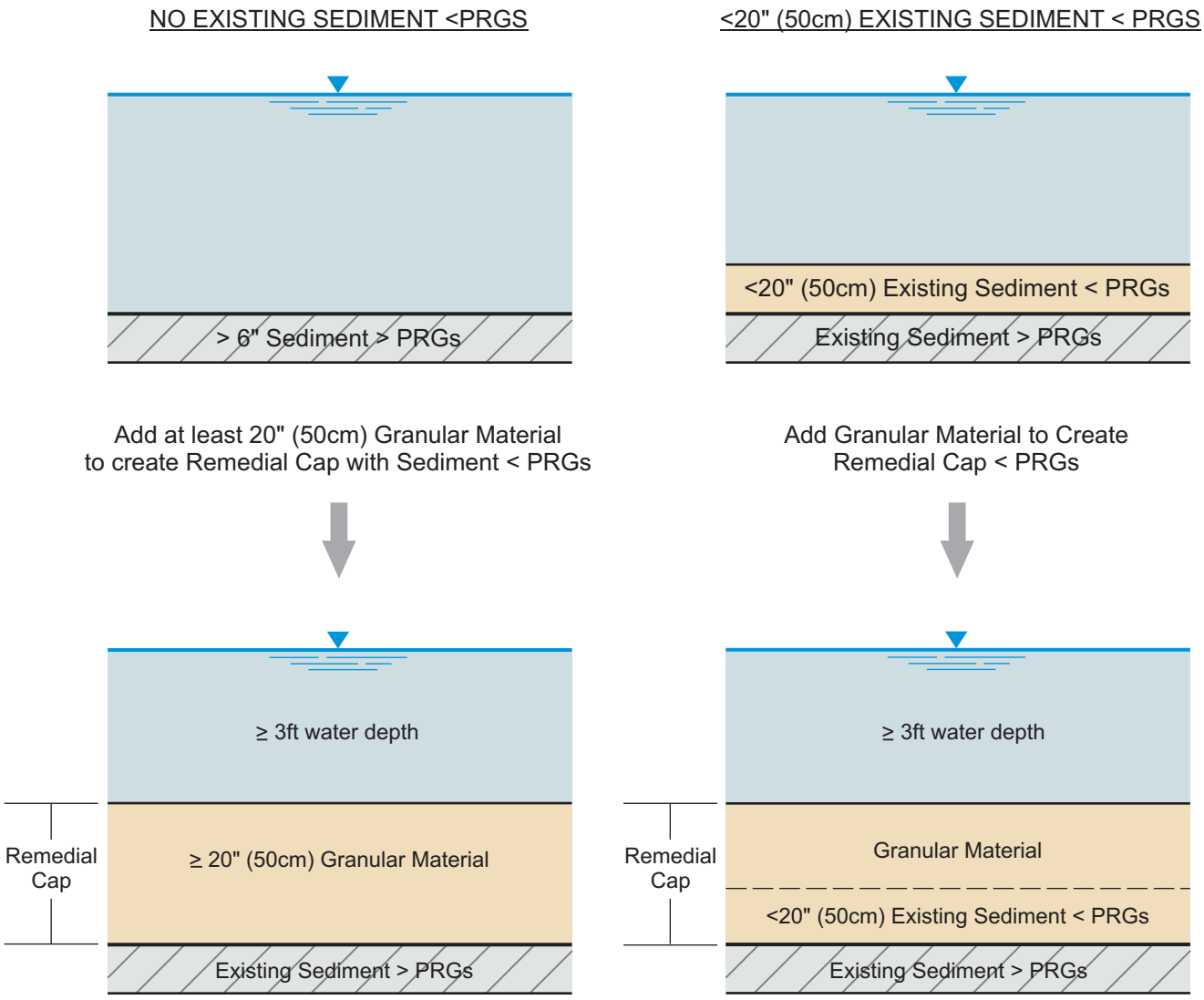


REMEDIAL CAP DETAILS
- Remedial Cap = Potentially BAZ+IZ
- Potentially BAZ (Bioactive Zone) = 100cm in Shoreline Zone, (MPCA, 2014b)
- IZ = Isolation Zone
* Final Cap Configuration to be Determined During Remedial Design
** Root Barrier may Reduce the Potentially BAZ Thickness

Figure I-5

REMEDIAL CAP IN NEAR SHORE ZONE
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Remedial Cap in Near Shore Zone.CDR RLG 07-01-15



REMEDIAL CAP DETAILS
- Remedial Cap = Potentially BAZ+IZ
- Potentially BAZ (Bioactive Zone) = 50cm in Offshore Zone, (MPCA, 2014b)
- IZ = Isolation Zone

Figure I-6

REMEDIAL CAP IN OFFSHORE ZONE
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Remedial Cap in Offshore Zone.CDR RLG 06-29-15

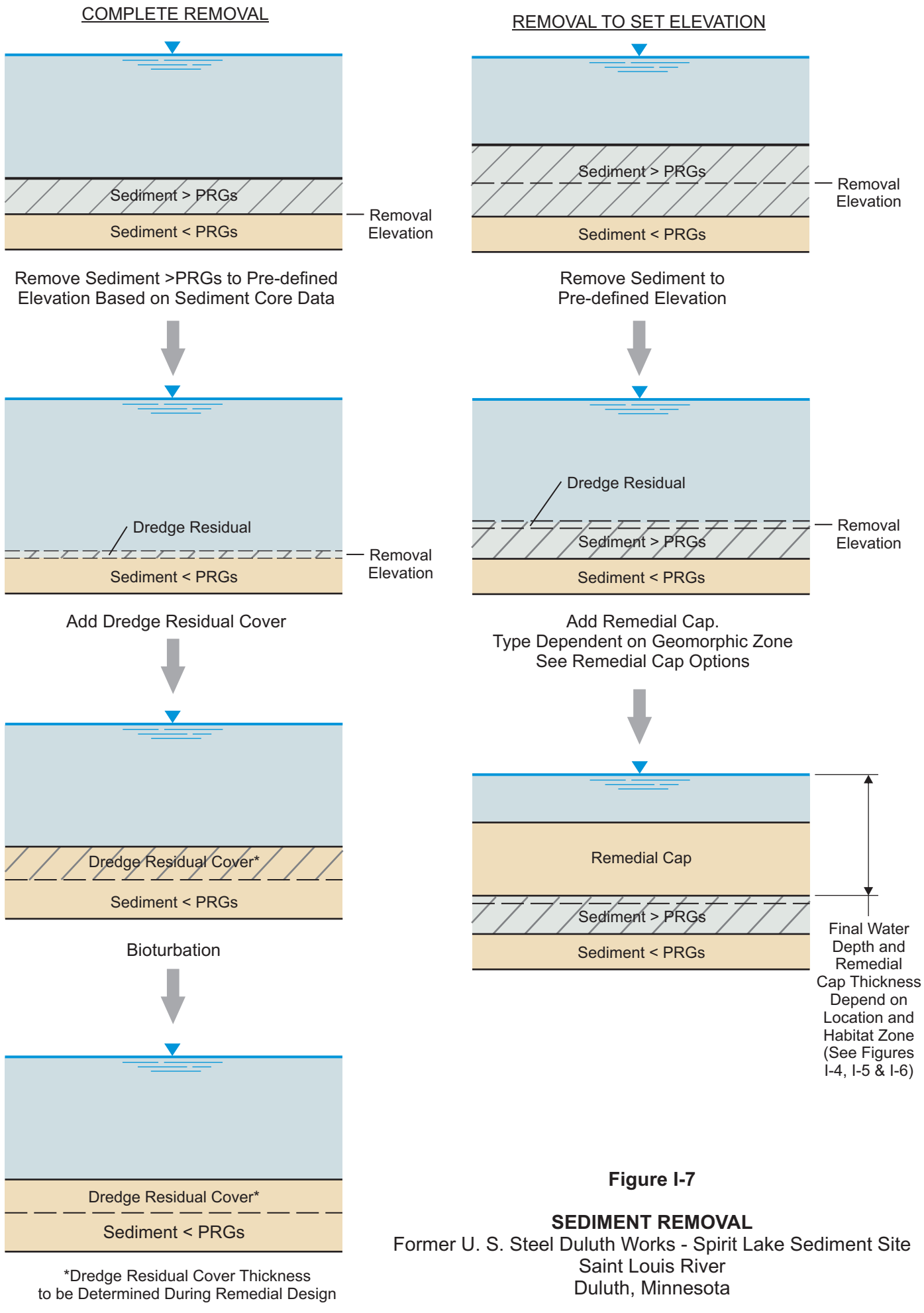
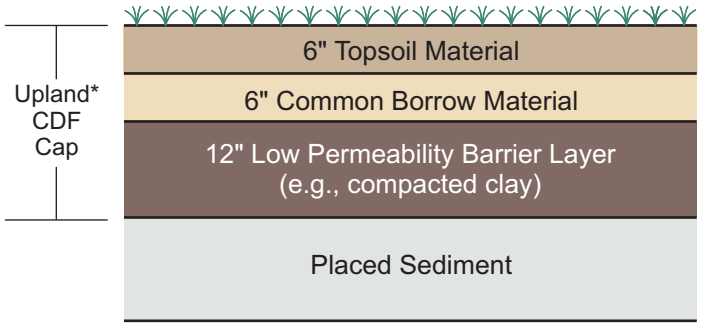


Figure I-7

SEDIMENT REMOVAL
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Sediment Removal.CDR RLG 07-01-15

2-FT SOIL COVER WITH LOW PERMEABILITY BARRIER LAYER



* Typical Sections used for Feasibility Analysis. Final Details or Potential Alternates to be Determined During Remedial Design.

P:\Mpls\23 MN\69\23691125\WorkFile\JJB CDF Landfill Cap.CDR RLG 07-02-15

Figure I-8

UPLAND CDF CAP
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

SCHEMATIC CDF BERM CROSS SECTION

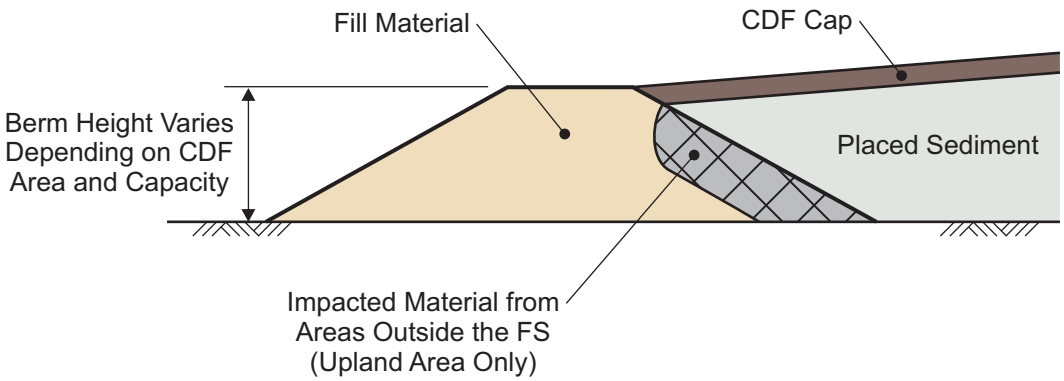
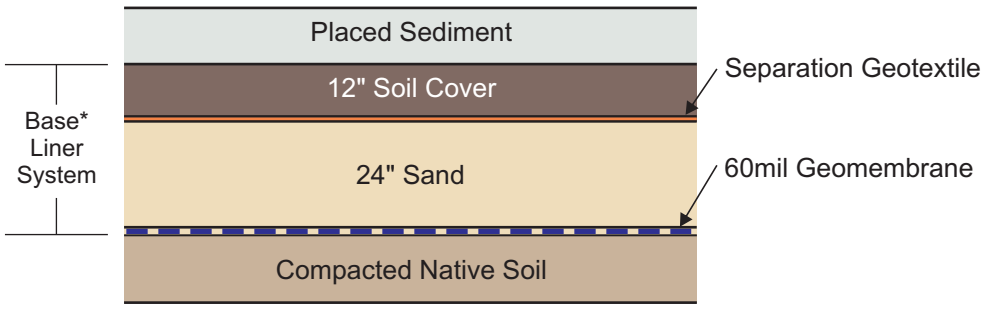


Figure I-9

CDF PERIMETER BERM
(Upland Area Only)
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JLB CDF Perimeter Berm.CDR RLG 07-01-15

TYPICAL UPLAND CDF BASE LINER SYSTEM
(ALTERNATIVE 10, 11, AND 12)



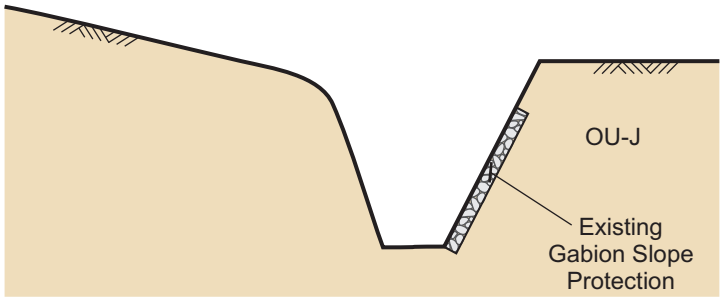
* Typical Sections used for Feasibility Analysis. Final Details or Potential Alternates to be Determined During Remedial Design.

P:\Mpls\23 MN\69\23691125\WorkFile\JLB Landfill Base Liner System.CDR RLG 07-02-15

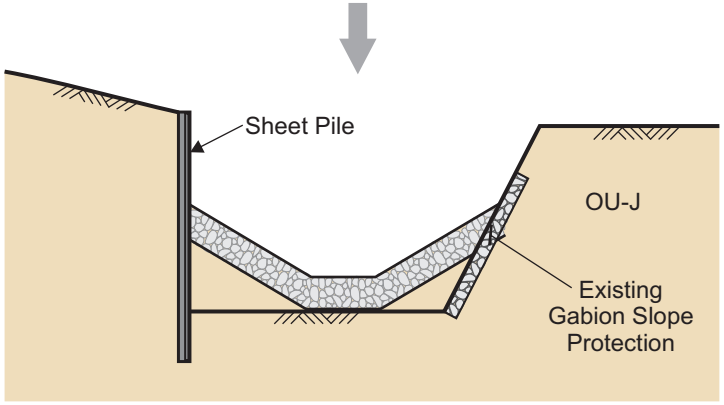
Figure I-10

ALTERNATIVE 10, 11, AND 12 BASE LINER SYSTEM
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

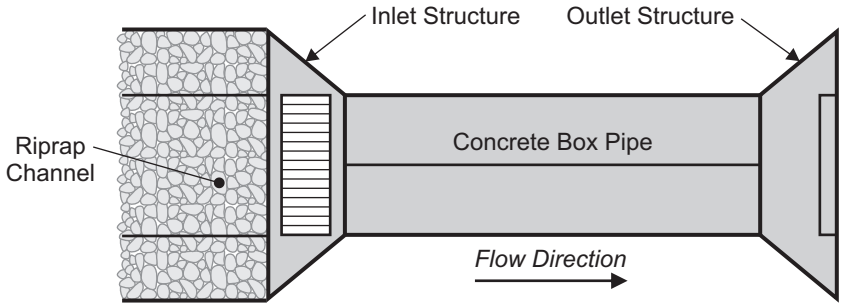
UNNAMED CREEK AT OU-J



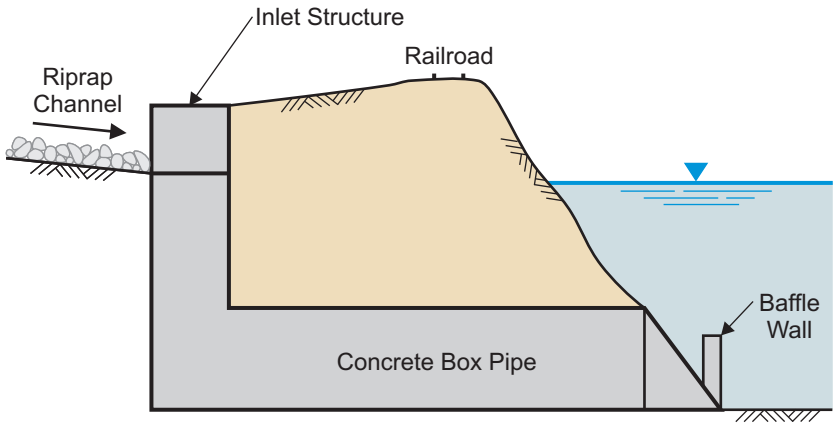
Install Sheet Pile to Unrestrict Storm Water Flow



DISCHARGE STRUCTURE TO WIRE MILL INTAKE



PLAN VIEW

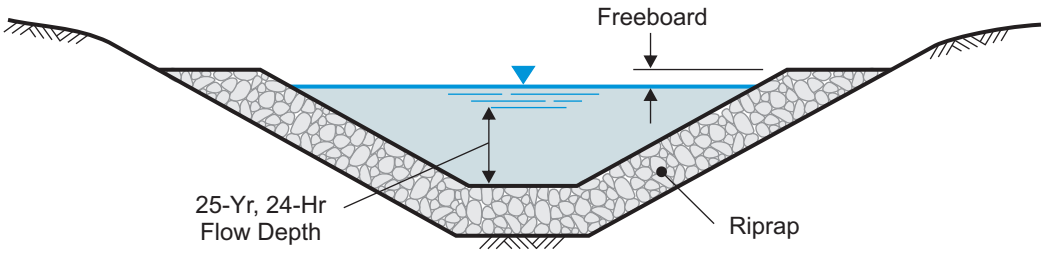


PROFILE VIEW

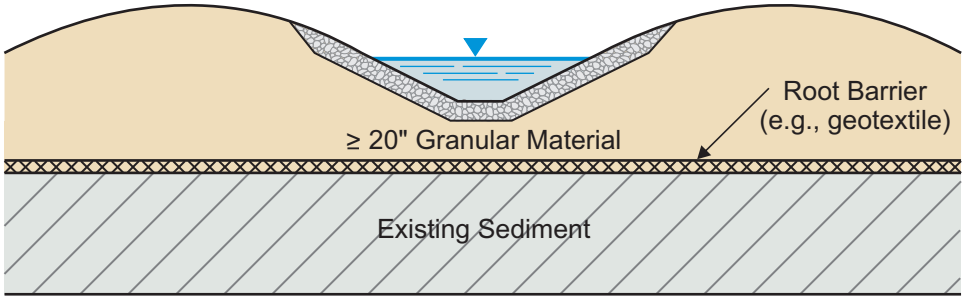
Figure I-11

STORMWATER CONVEYANCE 1 of 2
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

RIPRAP CHANNEL



PILOT CHANNEL THROUGH OU-I



P:\Mpls\23 MN\69\23691125\WorkFile\JLB Stormwater Conveyance 2 of 2.CDR RLG 07-01-15

Figure I-12

STORMWATER CONVEYANCE 2 of 2
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

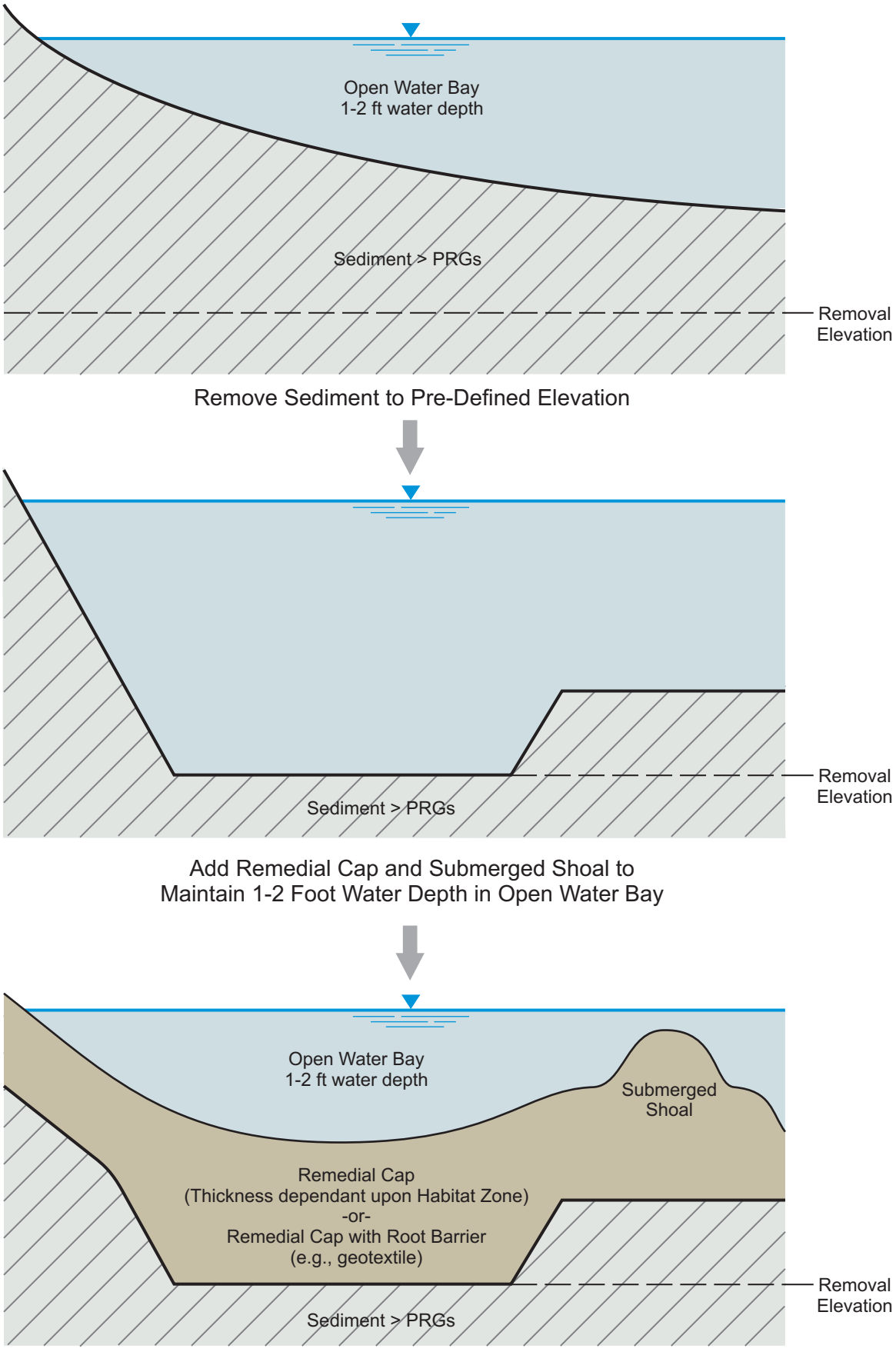


Figure I-13

OPEN WATER BAY AND SUBMERGED SHOAL CONCEPT
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Open Water Bay and Submerged Shoal Concept.CDR RLG 07-01-15

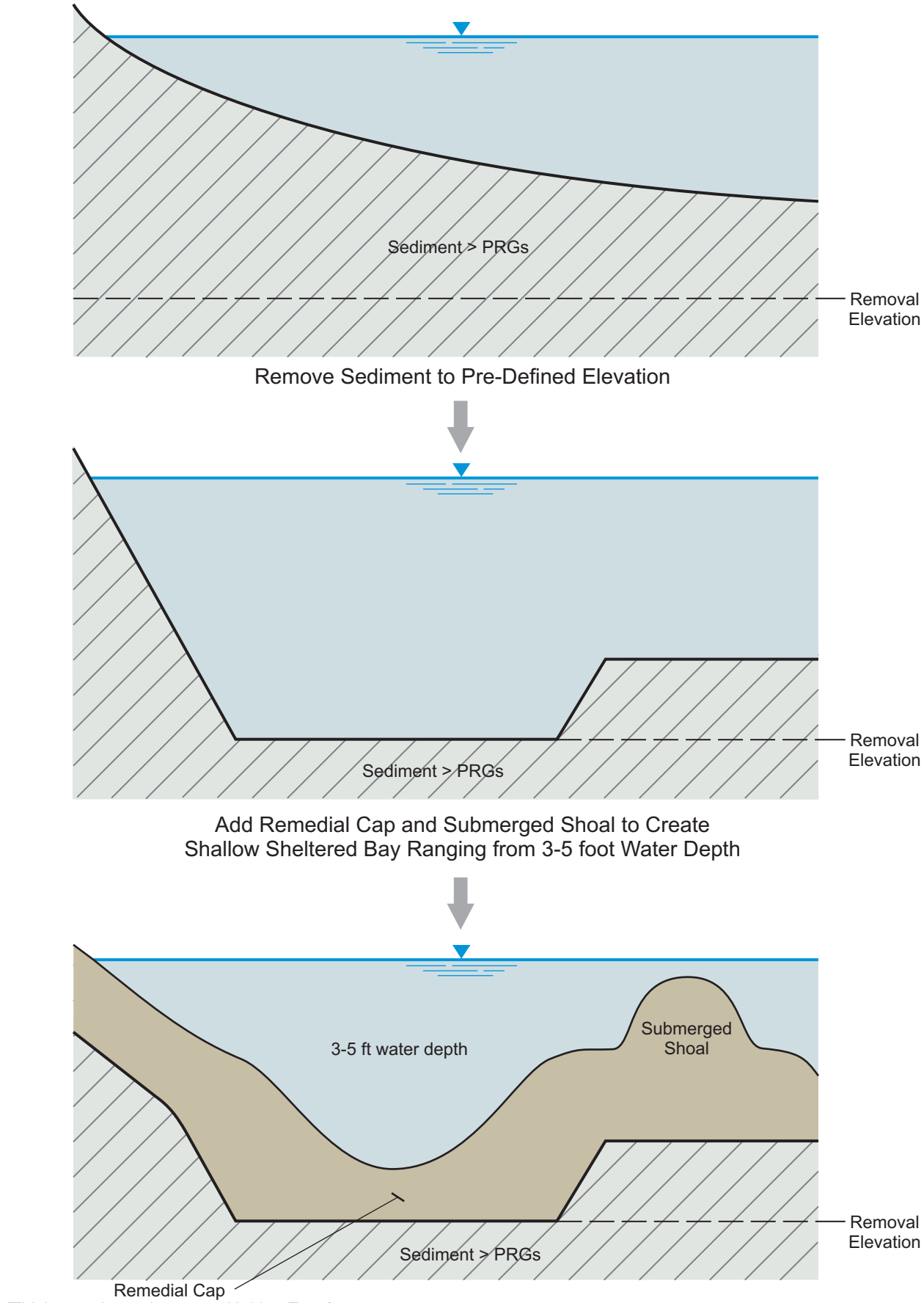


Figure I-14

SHALLOW SHELTERED BAY AND SUBMERGED SHOAL CONCEPT
Former U. S. Steel Duluth Works - Spirit Lake Sediment Site
Saint Louis River
Duluth, Minnesota

P:\Mpls\23 MN\69\23691125\WorkFile\JJB Shallow Sheltered Bay and Submerged Shoal Concept.CDR RLG 07-01-15