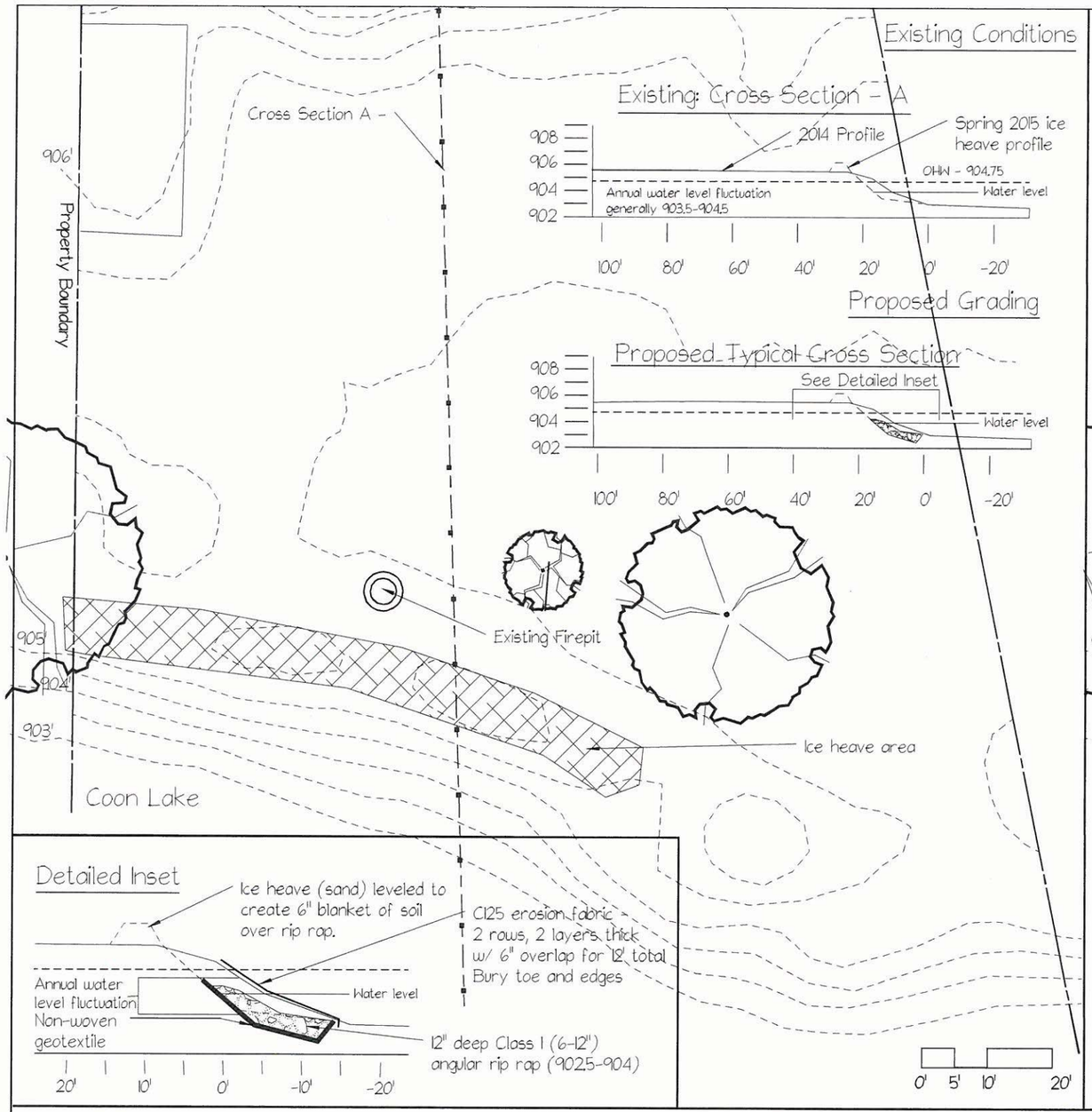
Existing Conditions

Existing: Cross Section - A

Proposed Grading

Proposed Typical Cross Section



Detailed Inset

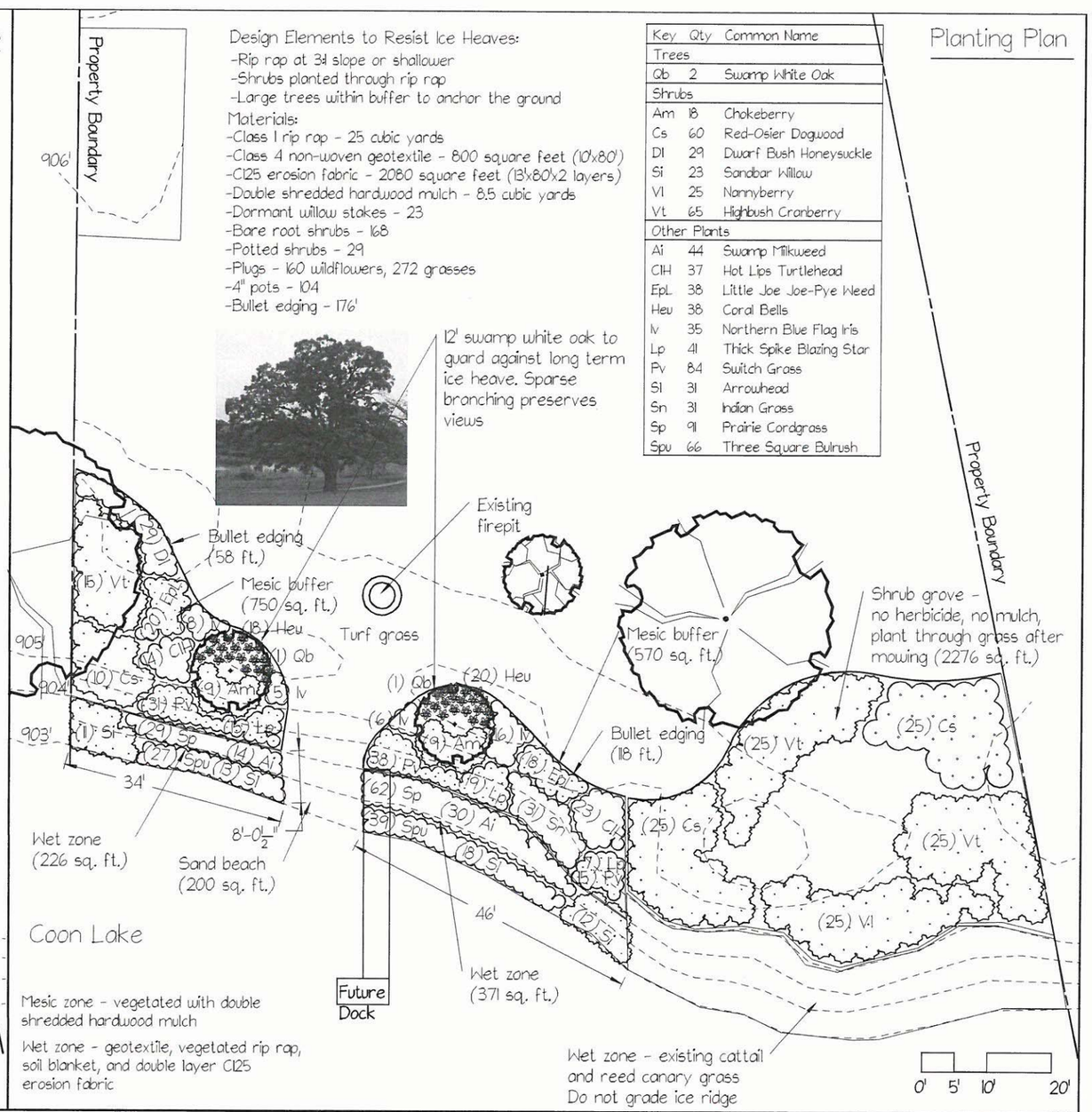
Design Elements to Resist Ice Heaves:
-Rip rap at 3:1 slope or shallower
-Shrubs planted through rip rap
-Large trees within buffer to anchor the ground

Materials:
-Class I rip rap - 25 cubic yards
-Class 4 non-woven geotextile - 800 square feet (10'x80')
-C125 erosion fabric - 2080 square feet (13'x80'x2 layers)
-Double shredded hardwood mulch - 8.5 cubic yards
-Dormant willow stakes - 23
-Bare root shrubs - 168
-Potted shrubs - 29
-Plugs - 160 wildflowers, 272 grasses
-4" pots - 104
-Bullet edging - 176'

12' swamp white oak to guard against long term ice heave. Sparse branching preserves views

Key	Qty	Common Name
Trees		
Qb	2	Swamp White Oak
Shrubs		
Am	18	Chokeberry
Cs	60	Red-Osier Dogwood
DI	29	Dwarf Bush Honeysuckle
Si	23	Sandbar Willow
Vl	25	Nannyberry
Vt	65	Highbush Cranberry
Other Plants		
Ai	44	Swamp Milkweed
ClH	37	Hot Lips Turtlehead
EpL	38	Little Joe Joe-Pye Weed
Heu	38	Coral Bells
Iv	35	Northern Blue Flag Iris
Lp	41	Thick Spike Blazing Star
Pv	84	Switch Grass
Sl	31	Arrowhead
Sn	31	Indian Grass
Sp	91	Prairie Cordgrass
Spu	66	Three Square Bulrush

Planting Plan



Mesic zone - vegetated with double shredded hardwood mulch

Wet zone - geotextile, vegetated rip rap, soil blanket, and double layer C125 erosion fabric

Wet zone - existing cattail and reed canary grass Do not grade ice ridge

Installation Instructions:
-Verify property boundaries and project extent with landowner
-Install project during low water to minimize work within standing water
-Treat turf in mulched buffer area with aquatic safe glyphosate herbicide two weeks prior to installation
-Create 12" deep trench along toe of slope ensuring slope is no steeper than 3:1
-Install type 4 non-woven geotextile in trench extending 8' upslope
-Install 12" Class I angular rip rap (6-12") over geotextile
-Push ice heave soil over rip rap at least 6" thick
-Compact and use water to get soil to settle into rock voids
-Install two rows of C125 erosion fabric over soil and rip rap to top of slope (6" overlap for total width of 12')
-C125 should be in a double layer secured with biodegradable stakes
-Install bullet edging along perimeter of buffer planting area flush with ground level
-Spread double shredded hardwood mulch 2" thick over treated turf

Fortified Shoreline Buffer

Joyce Sheffield
18453 Lakeview Point Drive NE East Bethel, MN

Funded By: Sunrise River WMO & the Clean Water Fund
Designed By: Chris Lord, District Manager
Anoka Conservation District (ACD)
Reviewed By: Jamm Ghen
Review Date: 7-8-15

PAGE 8 of 9
DATE June-2015
SCALE Varies
ORIGINAL 11" x 17"

Planting Instructions:
-Evenly distribute plants within planting zone
-Modify plant quantities to take advantage of volume discounts
-Grasses and forbs planted at 18" average spacing
-Shrubs planted at average 36" spacing except willows at 24" average spacing
-Dormant willow stakes 1-2" diameter 4' long planted through rip rap and geotextile in late fall
-Repair all areas of damaged sod affected during construction.
-Gently break rootballs (DO NOT PLANT BOUND ROOTBALL)
-Ensure plants get 1" of water per week for first growing season.
-Weed and replace plants as needed.
-Install wildlife and goose deterant throughout planting area until established (plastic snow fence)
-Install wave break (plastic construction fence)
-Call ACD with any questions 763-434-2030