

1. Location: Aldergrove Lake Regional Park. Langley Township, B.C.



2. Construction Timeline: June 2013 - April 2014

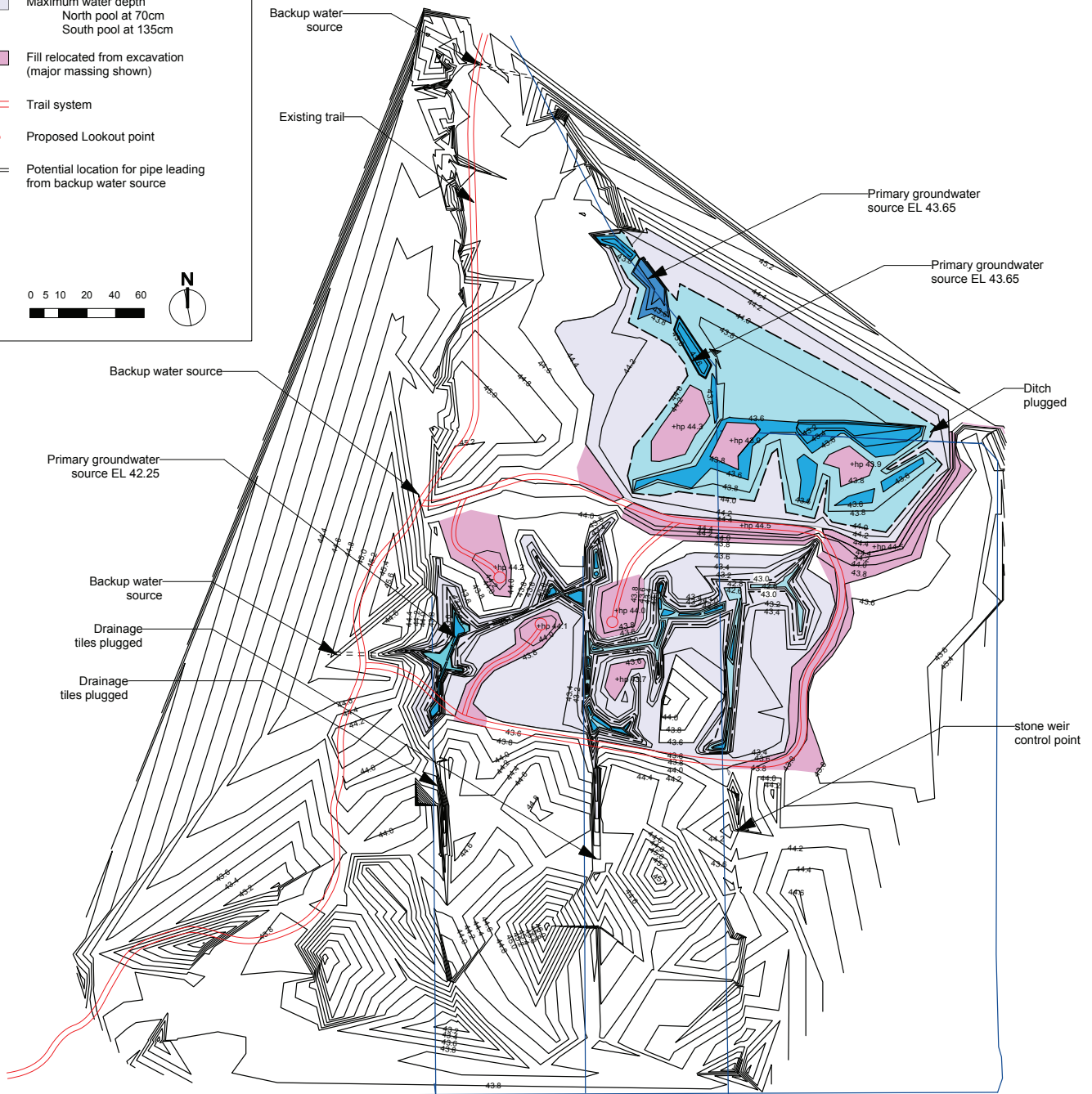
Construction Timeline		
Construction Stage	Timing	Detail
Control of Invasive Species		
Initial Control	June 2013	Field preparation: mowing as soon as field is accessible to tractor
Initial Control	July 2013	Apply glyphosate using tractor boom in late summer to resprouting grass (approx. 12" height). (requires dry watercourses)
Seed bank exhaustion	Aug 2013	Tilling / harrowing at least 3 times in summer 2013. Potential for secondary glyphosate application in early August prior to construction
Habitat Complexing and Feature Construction		
Habitat complexing	Aug – Sep 2013	Sculpt landscape: channels, pools, benches.
Feature construction	Sep 2013	Install ponds, weirs, large wood; construct trails.
Hydrologic restoration		
Habitat complexing	Sep 2013	Infill ditches, plug drain tile, water flow and water control devices.
Feature construction	Sep 2013	Connect habitat complex to groundwater; monitor and adjust as necessary.
Re-vegetation		
Initial Seeding	Oct 2013	Seed with native wetland seeds.
Shrub planting	Oct - Nov 2013	Plant riparian / higher elevation berms / islands / trails.
Herb planting	March - April 2014	Plant plugs in depressions. Spread additional seed.

5. Grading Plan

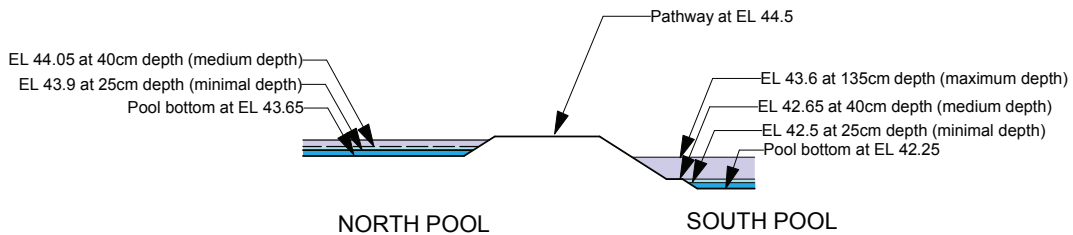
PEPIN MARSH GRADING PLAN LEGEND

- Minimal water depth at 25cm
- Medium water depth at 40cm
- Maximum water depth
North pool at 70cm
South pool at 135cm
- Fill relocated from excavation
(major massing shown)
- Trail system
- Proposed Lookout point
- Potential location for pipe leading from backup water source

0 5 10 20 40 60

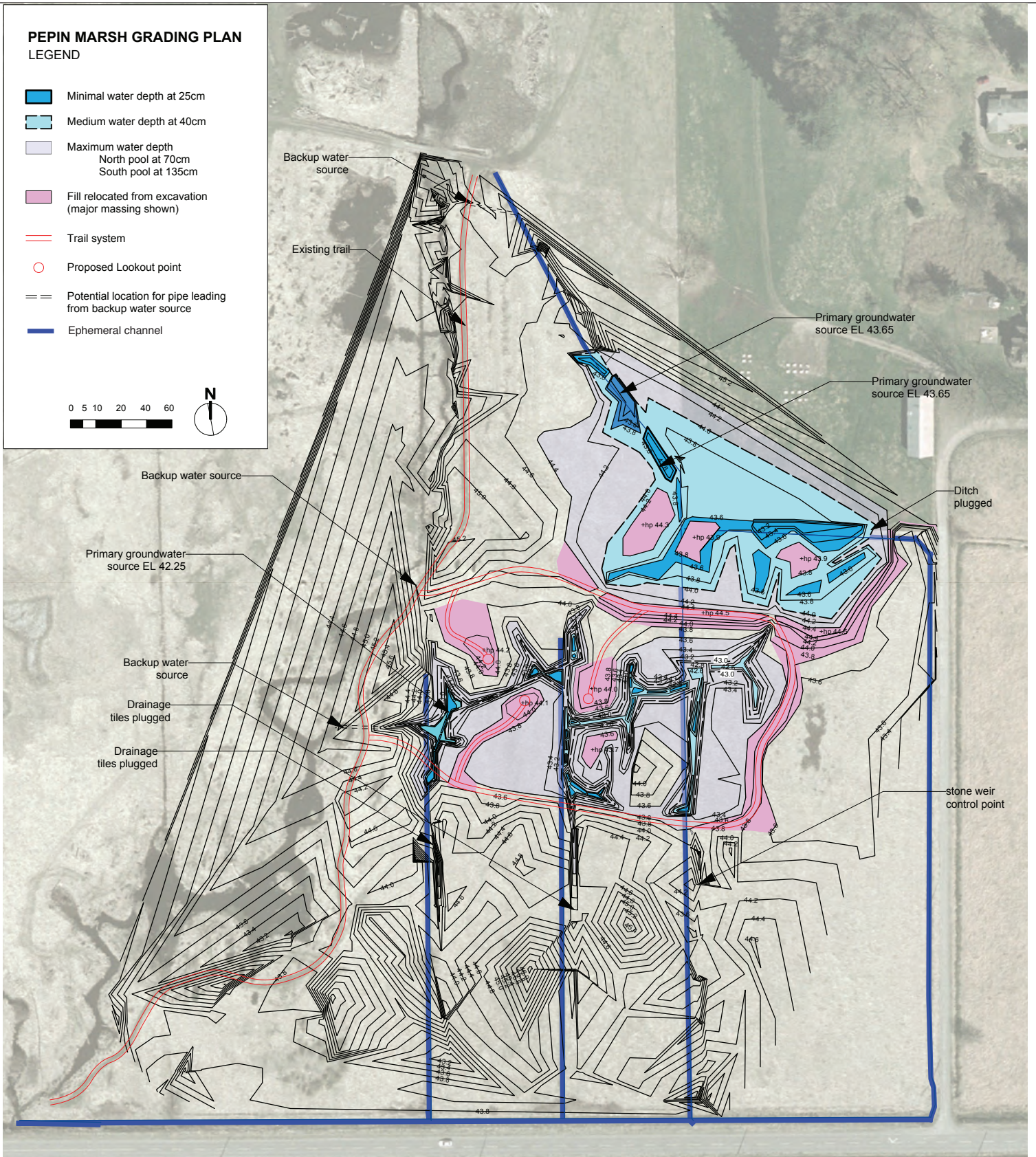
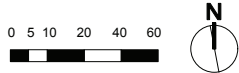


SAMPLE SECTION

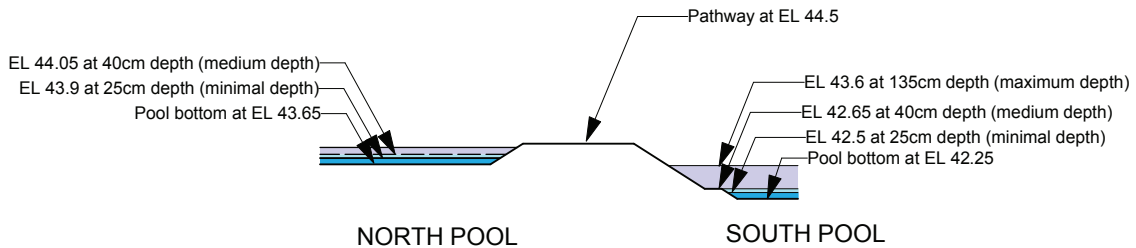


PEPIN MARSH GRADING PLAN
LEGEND

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from backup water source
- Ephemeral channel



SAMPLE SECTION



6. Monitoring Program

PEPIN MARSH	Monitoring Program					
	Hydrological Regime		Re-vegetation		Habitat Features	Wildlife Presence
	Permanent ponds	Wet Meadow	Permanent ponds	Wet Meadow		
Methods	Water gauges in ponds	Water depth at transect points and in groundwater wells	Visual surveys & vegetation plots	Visual surveys & permanent vegetation plots along transects	Habitat plots at designed feature sites	Wildlife surveys: visual, auditory and trapping
Targets	Max 40 cm in June - July; Min 25 cm in Aug / Sept.	Fields flooded during winter & OSF breeding season.	Native: invasive plant species ratios	Native: invasive plant species ratios	Substrate and vegetation structure; water depth etc.	Native and invasive amphibians; native birds; native and invasive fish.
Potential outcomes:	1. As per design 2. Wetter than design 3. Drier than design		A. Preferred outcome B. Acceptable outcome C. Undesirable outcome		i. Confidence in breeding / overwintering habitat suitability. ii. Non-confidence in habitat suitability for OSF.	a. Low density of bullfrog adults and invasive fish. b. High density of bullfrog adults and breeding on-site; invasive fish species.
Mgmt questions addressed	Hydrologic changes needed: increase / decrease input or outflow.		Invasive species management methods: chemical or manual / patch-treatment or landscape-level.		Likelihood of success for Oregon spotted frog introduction.	Likelihood of success for Oregon spotted frog introduction.

7. Adaptive Management Plan

