14" ALDER
30" PSME
14" Betula pendula, dead top/half dead
24" Picea sp.
28" PSME
60" Populus trichocarpa
3-stem Sorbus aucuparia (10"+12"+12")
18" dead
30" PSME
Sweet cherry
Lombardy poplar - Remove b/c competing seed source
Lombardy poplar - Remove b/c competing seed source
Populus trichocarpa
Young trees- mix native evergreen
HBB resprouting throughout planted areas
HBB cut but now resprouting throughout
Robinia trees throughout
Island with jewelweed
Fast flow area- ripple after pool
all three = FRLA with snowberry
Nice tree cluster but if 24" cedar is removed then willow will need to go too due to form.
Non-native- ok to remove
Really nice, preserve if possible
Salix babylonica
Could be pushed over
FRLA
Remove - too close to oak
Limb up
Oak
Native - scraggly, ok
shape, not awesome
Mulberry - bad shape, ok to remove
37" FRLA with 48ft radius canopy
Walnut - nice, keep
Dead Spruce
Pine - bad shape
12"
Japanese maple
cottonwood growing at base - cut to ground/ remove - too close to maple
Spruce
Alder
Bad shape
Downed tree
Remove
Cedrus
Ash
Preserve
Cedrus
Spruce
Remove
Abies
Sequoia
Juniperus
Ok in cluster but can't stand alone
FRLA
FRLA
PREM
Unsurveyed concrete pad approx 25ft x 36 ft
Cedrus
Light pole
24" Pine
FRLA
FRLA
DEAD
POTR
POTR
SALU
SALU
SALU
Poor shape
Abies
FRLA
FRLA
14" ALRU
Snag
BET
10" BET
Spruce
Juniper
Juniper
HBB
to throughout
Knotweed
Funky shape
Leaning living Alder tree
Like alignment of original opening here too - but spruce too ragged to stand alone
Unsurveyed shed
Begin considering screening starting adjacent to this parcel
Enhance existing wood
Potential punch through point
Huge Rhodie
Rhodies
PRELIMINARY GRADING PLAN (2 OF 3)
Abies Deformed leader FRLA 10" Spruce 10" Spruce HBB throughout Leaning RCG Nice as cluster-hazelnut there too- but spruce Cedrus knotweed Willlow patch Preserve Preserve Preserve Preserve Ok to remove FRLA HBB & No canopy Consider buried armoring along edges if we take "wild" approach nur Map/Hazelnut hedge/mass
**LWD STRUCTURE TYP 1**

**LWD STRUCTURE TYP 2**

**LWD STRUCTURE TYP 3**

**LWD STRUCTURE TYP 4**

**LOG ANCHORING TYP**

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**Preliminary Habitat Log Typicals**

- **A**
  - **Scale:** NTS
  - **Overview:** Illustration of embankment fill with a 80% cobble boulder mix and 20% topsoil type B.
  - **Details:** Blanket, see detail.
  - **Embankment Planting Mix:** 12" depth.
  - **Log Protrusion:** Varies.
  - **Existing Grade vs. Proposed Grade:**
    - Low Flow:
      - 2-Year Flood
      - 10-Year Flood
      - 50-Year Flood
      - 100-Year Flood
    - Log buried. Do not trench into existing east bank.
  - **2:1 Slope Max:**
  - **Excavate to Accommodate Roots:** Anchor logs per details.
  - **Move Material to Accommodate Roots:**
    - Native soil
    - Move bank material as needed.
    - Backfill gravel/cobble/boulder mix or relocated excess streambed substrate as necessary.
  - **Tight Drive Earth Anchor System:**
    - Into ground approximately 7' into ground attached to eye bolt with 3/4" long-link self-colored lashing chain with a working load of 5,000 lbs or more.
    - Eye bolt for threaded rod shall pass through min. 12" of solid wood.
    - Drive earth anchor system approx. 30º from vertical and 30º landward from a line parallel to the bank (i.e. aimed upstream and into the bank).
    - Eye bolt or threaded rod shall pass through min. 12" of solid wood.
    - Earth anchor system min. 7' into ground attached to eye bolt with 3/4" or long-link self-colored lashing chain with a working load of 5,000 lbs or more.
    - Drive earth anchor system min. 7' into ground attached to eye bolt with 3/4" or long-link self-colored lashing chain with a working load of 5,000 lbs or more.
    - Drive earth anchor system min. 7' into ground attached to eye bolt with 3/4" or long-link self-colored lashing chain with a working load of 5,000 lbs or more.
  - **Drive Earth Anchor System Min. 7' Into Ground Attached to Eye Bolt Min. 12" of Solid Wood.**
    - Drive Earth Anchor System Min. 7' Into Ground Attached to Eye Bolt Min. 12" of Solid Wood.
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  - **Note:**
    - In some instances, if anchoring system is attached to eye bolt, it may be feasible to place the log such that the logs pass through the pre-drilled hole and secured using a bridge washer and nut as described above.
    - Each log shall have at least 2 anchoring points and each root wad shall have at least 1 anchoring point.

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