

Appendix D

Mitigation Options

Figures:

- D-1: Depot Park Terrace Section
- D-2: Beach Section
- D-3: Boatworks Marina
- D-4: East Pond
- D-5: Bushaway Road Mitigation

Appendix D Mitigation Options

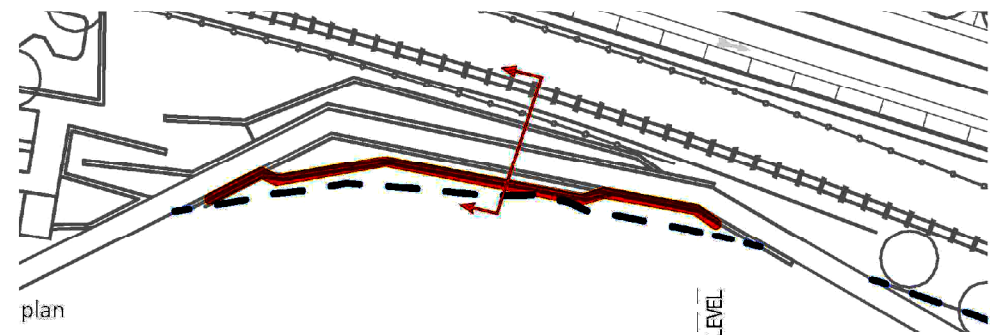
Option M1 – Depot Park Terrace - At the eastern side of the Depot, between the Lake Walk and the shoreline, the area would be landscaped to provide terraces for people to gather. Presently, the area is protected behind a wrought iron fence and gently slopes to the water. The area on the lake side of the fence would be shaped into four terraces, one of which would continue to the Lake Walk. As part of this terrace, and as a mitigation measure for lake bottom and volume displaced by the proposed project, the lake bottom at or just below the OHWL would be expanded by excavation (Figure D-1).

Option M2 – Beach Edge – A beach area is currently present on the west side of the proposed project, to the west of the Boatworks building. As a mitigation measure for lake bottom and volume displaced by the proposed project, the existing beach edge would be excavated, moving the shoreline approximately 14' inland (Figure D-2).

Options M3 and M4 - Boatworks Marina Dredging – currently there are two inland bays in the western portion of the project used as the Boatworks Marina. As a mitigation measure for lake volume displaced by the proposed project, the marina would be dredged either one foot or two feet (Figure D-3).

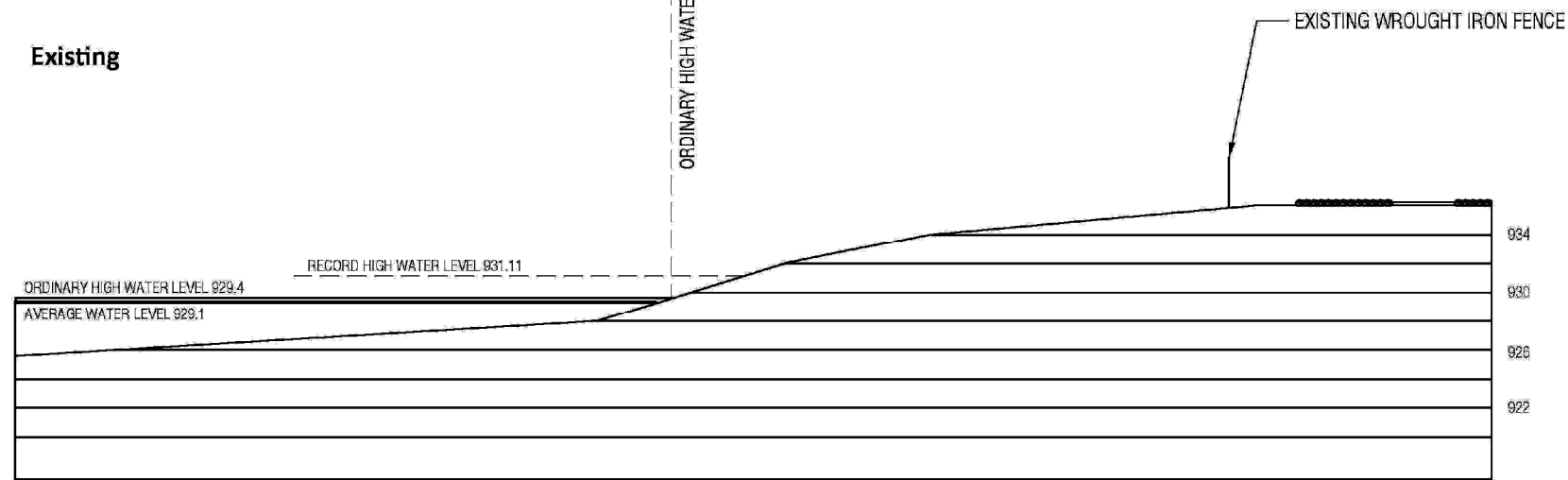
Options M5 and M6 – East Pond Dredging – currently there is a man-made stormwater basin on the east end of the proposed project, near the Section Forman House. As a mitigation measure for lake volume displaced by the proposed project, the basin would be dredged either one foot or two feet (Figure D-4).

Option M7 – Bushaway Road Parcel – this is a separate parcel of land owned by the City of Wayzata, on the east side of Bushaway Road. The parcel is located adjacent to a previously excavated backwater lagoon of the Lower Lake of Lake Minnetonka. As a mitigation measure for lake bottom and volume displaced by the proposed project, an area of this parcel that is currently dominated by volunteer herbaceous plants, would be excavated an average depth of 3.4' to expand the adjacent lagoon (Figure D-5).

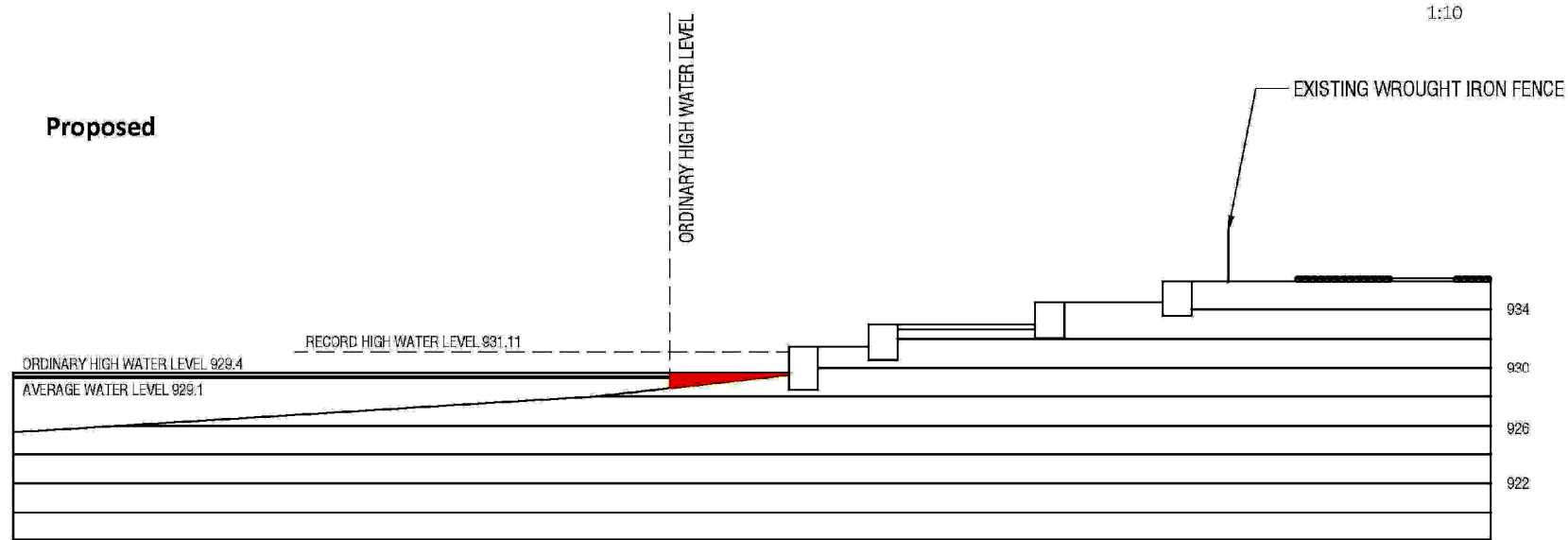


plan

Existing



Proposed



WAYZATA LAKE EFFECT

Lake Edge Diagrams : Depot Park Terrace Section

VOLUME CALCULATIONS

length of terrace = 285 lf
Area of section = 4.72 sf

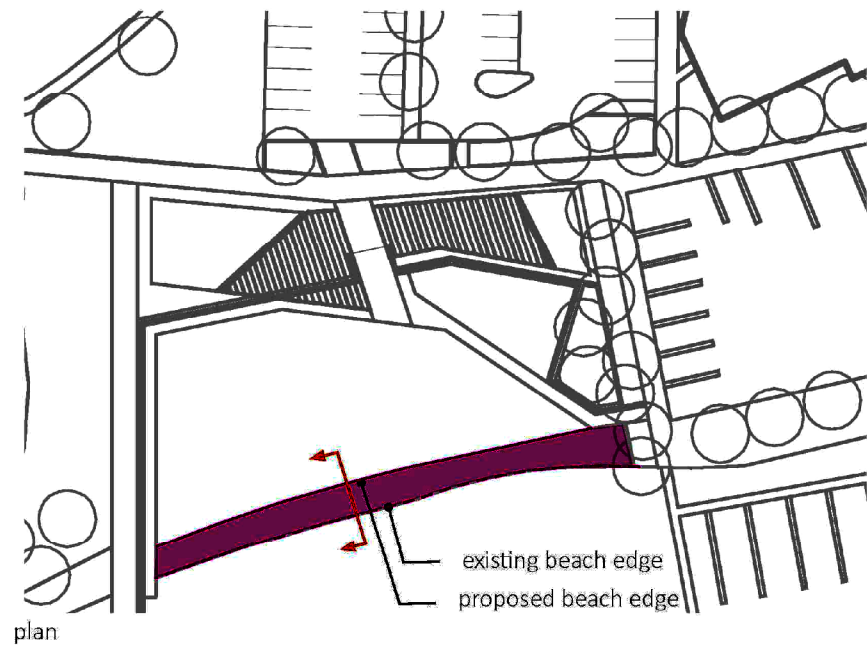
Lake Bottom Disturbance
2,346 sf

Volume = 1,345 cf

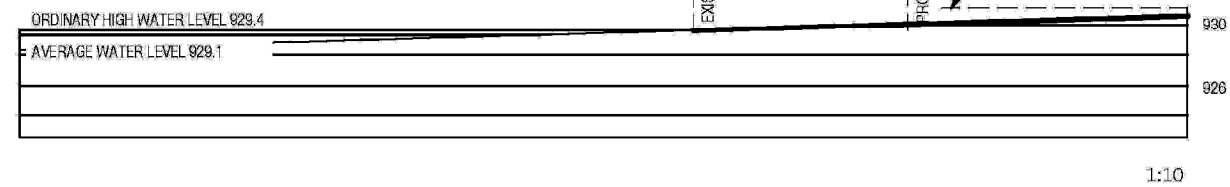
Approximate Volume Gain = 1,345 cf

DEPOT PARK TERRACE SECTION
 WAYZATA LAKE EFFECT
 WAYZATA, MINNESOTA

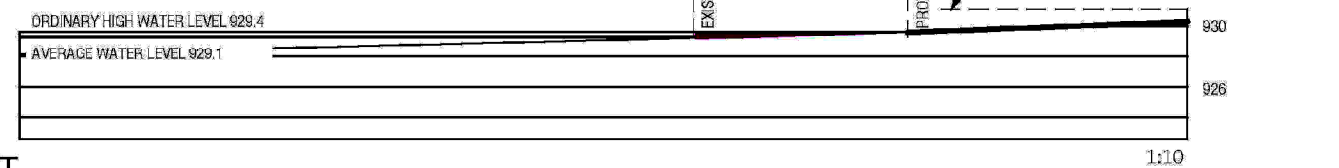
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CMF	
Date Drawn:	
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Last Modified:	
2/9/17	
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1 of 1	D-1



Existing



Proposed



VOLUME CALCULATIONS

Proposed

length = 215 lf
Area = 1.5 sf
Volume = 322 cf

Lake Bottom Disturbance
2,934 sf

Approximate Volume Gain = 322 cf

WAYZATA LAKE EFFECT
Lake Edge Diagrams : Beach Section

BEACH SECTION
WAYZATA LAKE EFFECT
WAYZATA, MINNESOTA

CIVITAS

21

Project No:	B1607634
Drawing No.	B1607634_FigD2
Drawn By:	CMF
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Fig.	D-2



IMAGE FOR REFERENCE. NOT TO SCALE OR EXACT PLACEMENT.

REVISIONS BY

I HEREBY CERTIFY THAT THIS PLAN OR SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

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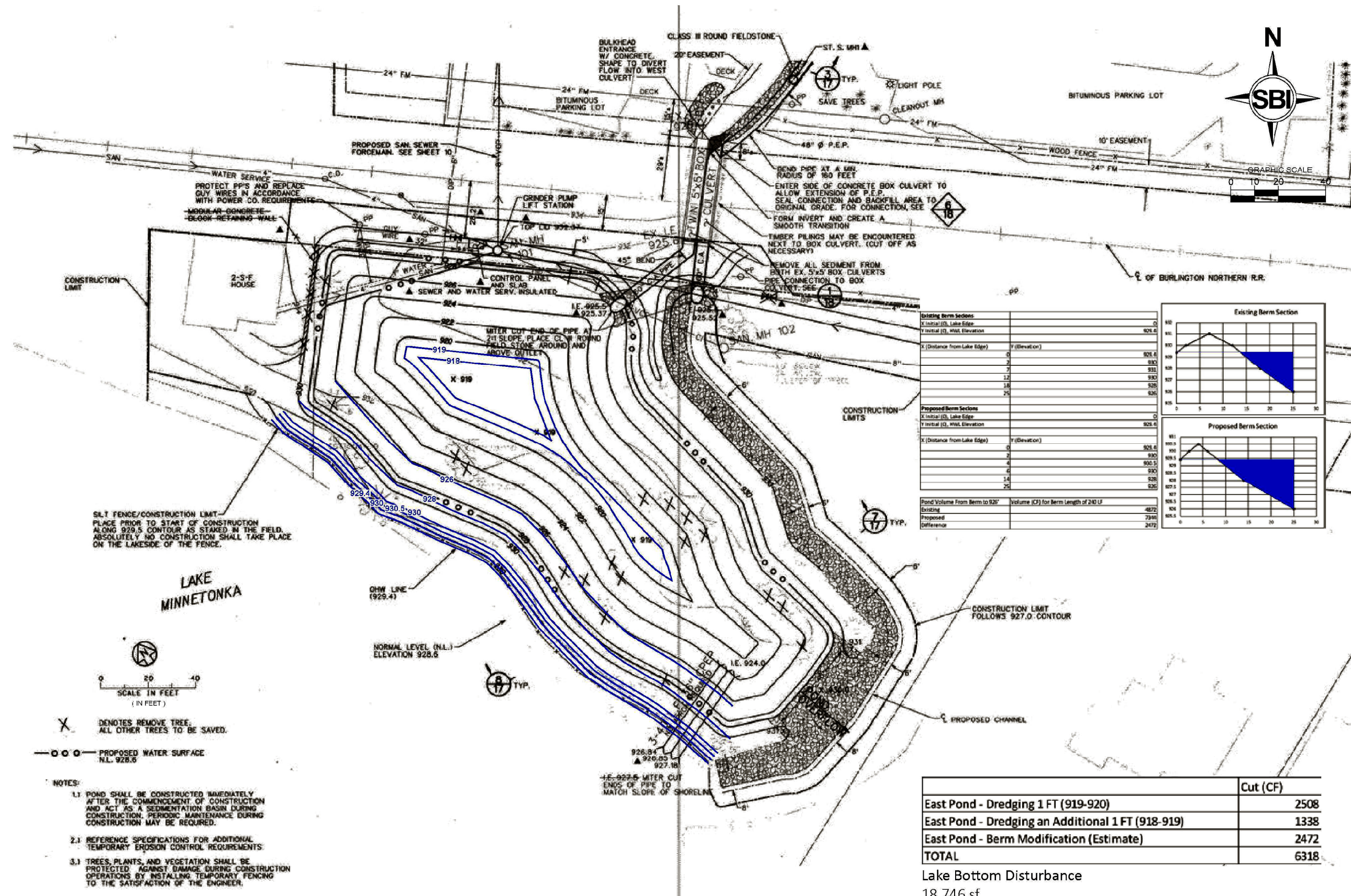
BOATWORKS
 WAYZATA LAKE EFFECT
 CIVITAS
 WAYZATA, MN

DRAWN BY: NW
 CHECKED BY: MJC
 DATE: 11-29-16
 JOB NO.: 15.1002
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BOATWORKS MARINA
 WAYZATA LAKE EFFECT
 WAYZATA, MINNESOTA

Project No: B1607634
 Drawing No: B1607634_FigD3
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 Last Modified: 2/9/17
 Sheet: 1 of 1 | Fig: D-3

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Existing Berm Section	
X Initial (0, Lake Edge)	0
Y Initial (0, HWL Elevation)	925.4
X (Distance from Lake Edge)	Y (Elevation)
0	925.4
2	930
7	931
12	930
18	928
25	926

Proposed Berm Section	
X Initial (0, Lake Edge)	0
Y Initial (0, HWL Elevation)	925.4
X (Distance from Lake Edge)	Y (Elevation)
0	925.4
2	930
4	930.5
6	930
14	928
25	926

Pond Volume from Berm to 927'		Volume (CF) for Berm Length of 240 LF	
Existing		4872	
Proposed		2944	
Difference		2472	

	Cut (CF)
East Pond - Dredging 1 FT (919-920)	2508
East Pond - Dredging an Additional 1 FT (918-919)	1338
East Pond - Berm Modification (Estimate)	2472
TOTAL	6318

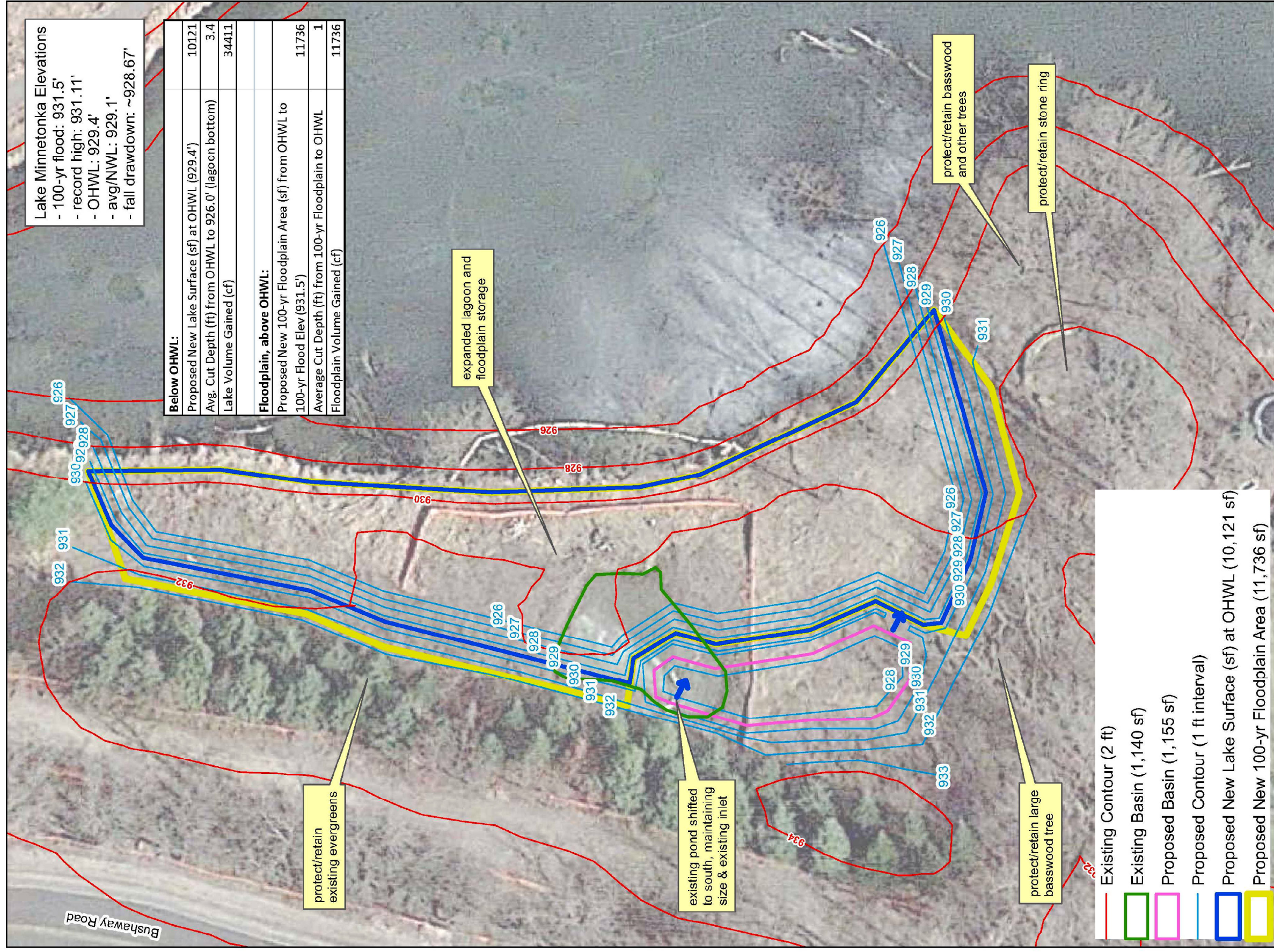
Lake Bottom Disturbance
18,746 sf

SILT FENCE/CONSTRUCTION LIMIT
PLACE PRIOR TO START OF CONSTRUCTION
ALONG 929.5 CONTOUR AS STAKED IN THE FIELD.
ABSOLUTELY NO CONSTRUCTION SHALL TAKE PLACE
ON THE LAKESIDE OF THE FENCE.

X DENOTES REMOVE TREE.
ALL OTHER TREES TO BE SAVED.

---○--- PROPOSED WATER SURFACE
N.L. 928.6

- NOTES:
1. POND SHALL BE CONSTRUCTED IMMEDIATELY AFTER THE COMMENCEMENT OF CONSTRUCTION AND ACT AS A SEDIMENTATION BASIN DURING CONSTRUCTION. PERIODIC MAINTENANCE DURING CONSTRUCTION MAY BE REQUIRED.
 2. REFERENCE SPECIFICATIONS FOR ADDITIONAL TEMPORARY EROSION CONTROL REQUIREMENTS.
 3. TREES, PLANTS, AND VEGETATION SHALL BE PROTECTED AGAINST DAMAGE DURING CONSTRUCTION OPERATIONS BY INSTALLING TEMPORARY FENCING TO THE SATISFACTION OF THE ENGINEER.



Lake Minnetonka Elevations
 - 100-yr flood: 931.5'
 - record high: 931.11'
 - OHWL: 929.4'
 - avg/NWL: 929.1'
 - fall drawdown: ~928.67'

Below OHWL:	
Proposed New Lake Surface (sf) at OHWL (929.4')	10121
Avg. Cut Depth (ft) from OHWL to 926.0' (lagoon bottom)	3.4
Lake Volume Gained (cf)	34411
Floodplain, above OHWL:	
Proposed New 100-yr Floodplain Area (sf) from OHWL to 100-yr Flood Elev (931.5')	11736
Average Cut Depth (ft) from 100-yr Floodplain to OHWL	1
Floodplain Volume Gained (cf)	11736

- Existing Contour (2 ft)
- Existing Basin (1,140 sf)
- Proposed Basin (1,155 sf)
- Proposed Contour (1 ft interval)
- Proposed New Lake Surface (sf) at OHWL (10,121 sf)
- Proposed New 100-yr Floodplain Area (11,736 sf)

Wayzata Lake Effect EAW

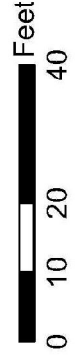
Bushaway Road Floodplain Mitigation Concept

Data Sources:
 - MNDNR (Contours)
 - GoogleEarth image (3/11/2016)

AES Project Number: 16-0549
 Date: 11/17/16
 File Name: Wayzata EAW_BushawayRd_2016-11-17



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