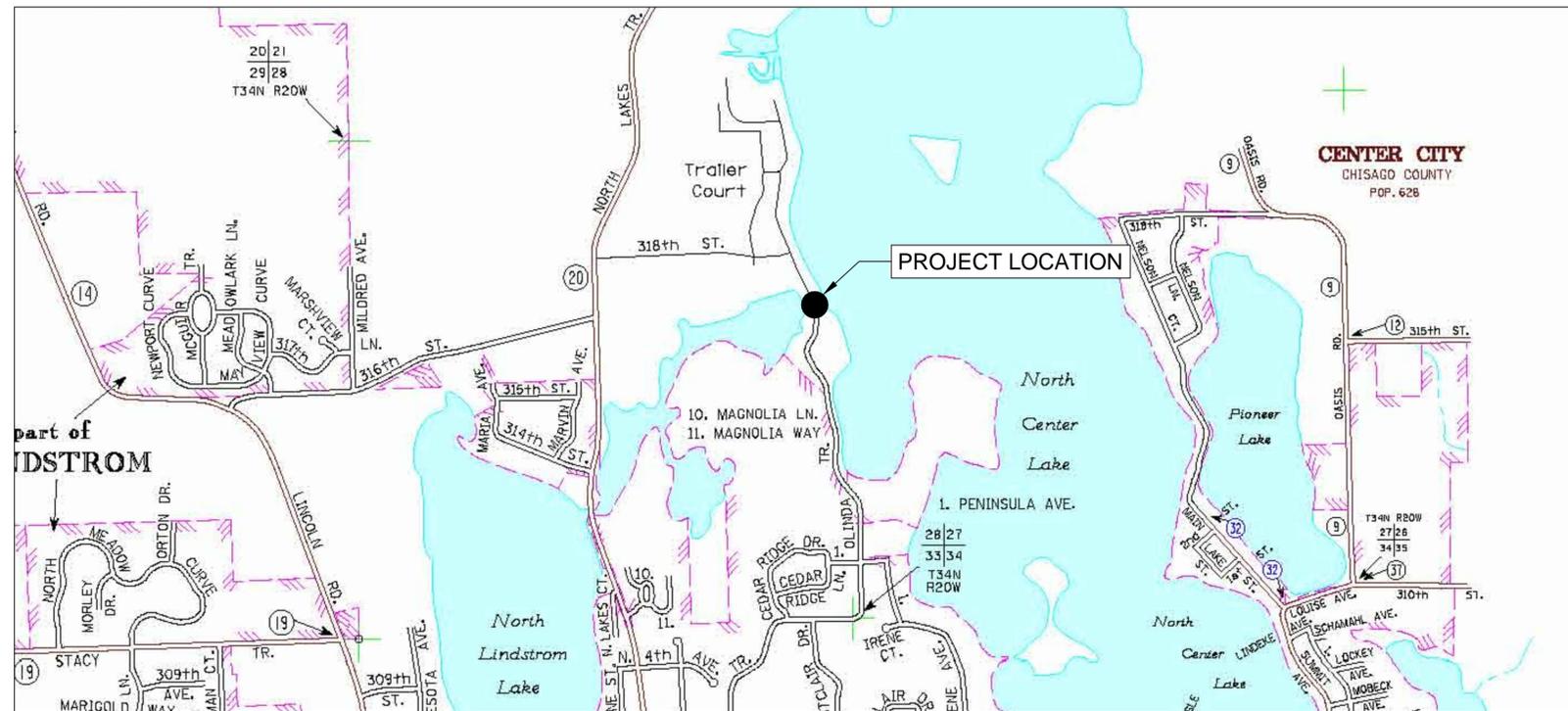


CHISAGO LAKES LAKE IMPROVEMENT DISTRICT

NORTH CENTER - NORTH LINDSTROM CHANNEL IMPROVEMENTS

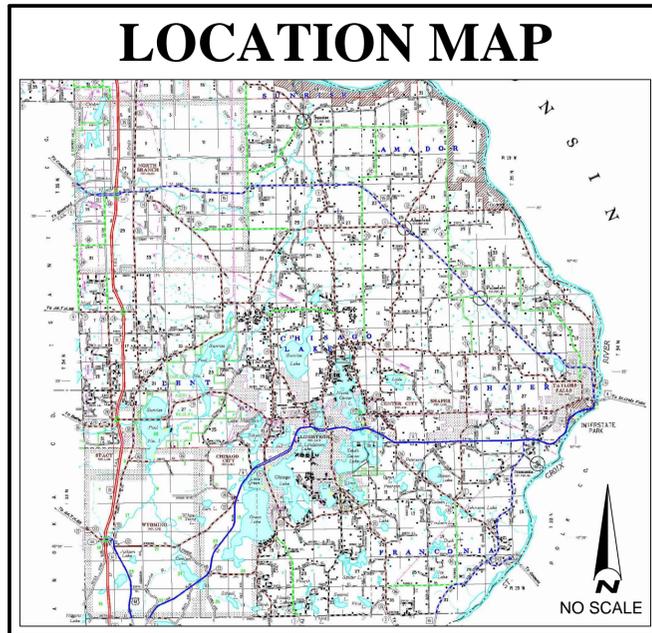
LINDSTROM TOWNSHIP, CHISAGO CO., MN

FEATURE	EXISTING	PROPOSED
SILT FENCE		
CONSTRUCTION FENCE		
DELINEATED WETLAND		
WATERLINE/Shoreline		
OVERHEAD ELECTRIC LINES		
BURIED ELECTRIC LINES		
FIBER OPTIC LINES		
GAS LINES		
PIPELINE		
OVERHEAD TELEPHONE		
BURIED TELEPHONE		
TELEPHONE MANHOLE		
TELEPHONE CABLE PEDESTAL		
OVERHEAD CABLE TV		
BURIED CABLE TV		
TV CABLE PEDESTAL		
BARBED WIRE FENCE		
CHAIN LINK FENCE		
STOCKADE/WOOD FENCE		
GUARD RAIL		
CENTER LINE ROADWAY		
CENTER LINE RAILROAD		
SANITARY SEWER LINE		
SANITARY SEWER FORCEMAIN		
SANITARY SEWER MANHOLE		
STORM SEWER LINE		
STORM SEWER CULVERT		
STORM SEWER FORCEMAIN		
STORM SEWER MANHOLE		
WATERMAIN		
WATERMAIN MANHOLE		
HYDRANT		
WATER VALVE		



Sheet List Table	
Sheet Number	Sheet Title
01	TITLE SHEET
02	SEQ
03	DETAILS-OPTION 1 (REMOVABLE WEIR)
04	DETAILS-OPTION 2 (CHANNEL WIDENING)
05	OPTION 1 (REMOVABLE WEIR)
06	OPTION 2 (CHANNEL WIDENING)

GOVERNING SPECIFICATIONS
 THE 2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN
 ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING FIELD MANUAL FOR TEMPORARY CONTROL ZONE LAYOUTS.



EXISTING UTILITIES
 THE LOCATION OF UNDERGROUND FACILITIES AND/OR STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORD AT THE TIME THE PLANS WERE PREPARED AND ARE NOT GUARANTEED TO BE COMPLETE OR CORRECT. THE SUBSURFACE UTILITY INFORMATION SHOWN IS UTILITY QUALITY LEVEL D, AS DETERMINED USING THE GUIDELINES OF "CI/ASCE 38-02 STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA." THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION OF ALL FACILITIES AND TO PROVIDE ADEQUATE PROTECTION OF SAID UTILITIES DURING THE COURSE OF WORK.

CONSTRUCTION NOTE
 CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN OPERATION OF EXISTING UTILITIES THROUGHOUT THE DURATION OF THE PROJECT. IN THE EVENT THAT AN INTERRUPTION OF SERVICE IS UNAVOIDABLE IN ORDER TO COMPLETE THE WORK, CONTRACTOR SHALL PROVIDE ADEQUATE NOTIFICATION TO ALL AFFECTED BUSINESSES A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF ANY INTERRUPTION.

GOPHER STATE ONE-CALL
 IT IS THE LAW THAT ANYONE EXCAVATING AT ANY SITE MUST NOTIFY GOPHER STATE ONE CALL (GSOC) SO THAT UNDERGROUND ELECTRIC, NATURAL GAS, TELEPHONE OR OTHER UTILITY LINES CAN BE MARKED ON OR NEAR YOUR PROPERTY BEFORE ANY DIGGING BEGINS. A 48-HOUR NOTICE, NOT INCLUDING WEEKENDS, IS REQUIRED. CALLS CAN BE MADE TO GSOC AT 1-800-252-1166 OR (651)454-0002, MONDAY THROUGH FRIDAY (EXCEPT HOLIDAYS) FROM 7 A.M. TO 5 P.M.

Plot Date: 09/26/2014
 Drawing Name: X:\Clients\Chisago_Lakes_Improvement_District\0027_NC-NL_Channel_Prem_Plan_&_Cons\09_GIMS_ProjectName\027_NC-NL_Channel_Improvements.dwg
 User: X:\BASE\0272_GS_LAYERS.ZJ

NO	DATE	BY	REVISION
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

JAY R. HILL
 DATE: 09-26-2014 LICENSE # 24552

SUBMISSION DATE:
09-26-2014

DESIGN BY: JRH DRAWN BY: JRH

EOR PROJECT NO.

EOR Emmons & Olivier Resources, Inc.
 651 Hale Avenue North
 Oakdale, MN 55128
 Telephone: 651.770.8448
 www.eorinc.com

CHISAGO LAKES LAKE IMPROVEMENT DISTRICT
 313 NORTH MAIN STREET
 ROOM 243
 CENTER CITY, MN 55012

NORTH CENTER - NORTH LINDSTROM CHANNEL IMPROVEMENTS
 LINDSTROM TOWNSHIP, CHISAGO CO., MN
 STATE PROJECT NO. --- CITY PROJECT NO. .

TITLE SHEET
 SHEET 01 OF 06 SHEETS

WARNING
 THE CONTRACTOR SHALL CONTACT ALL PUBLIC UTILITIES FOR LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES, OR OTHER BURIED STRUCTURES BEFORE DIGGING. HE SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO OWNER.

2005 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL GOVERN. THE FOLLOWING NOTES ARE INTENDED TO CLARIFY AND/OR BE A SPECIAL PROVISION TO THE STANDARD SPECIFICATIONS.

MEASUREMENT & PAYMENT

- ALL LABOR, MATERIALS AND INSTALLATION COMPONENTS NOT SPECIFICALLY ITEMIZED IN THE BID ARE INCIDENTAL TO THE PROJECT.

GENERAL NOTES

- CONTRACTOR SHALL INSPECT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK;
- CONTRACTOR SHALL VERIFY PLAN LAYOUT AND BRING TO THE ATTENTION OF THE PROJECT ENGINEER DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN OR INTENT OF THE LAYOUT;
- CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND MATERIALS SUPPLIED;
- CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF NEWLY INSTALLED MATERIALS UNTIL TIME OF SUBSTANTIAL COMPLETION. REPAIR OF ACTS OF VANDALISM OR DAMAGE THAT MAY OCCUR PRIOR TO SUBSTANTIAL COMPLETION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR;
- SYMBOLS ON PLAN DRAWING TAKE PRECEDENCE OVER SCHEDULES IF DISCREPANCIES IN QUANTITIES EXIST. SPECIFICATIONS AND DETAILS TAKE PRECEDENCE OVER NOTES;
- SKYHOOKS TO BE CONSTRUCTED BY MINNESTOTA TROUT UNLIMITED VOLUNTEERS CONTRACTOR TO INSTALL IN STREAM.

CONSTRUCTION TIMELINE

- SUBSTANTIAL COMPLETION TO BE ACHIEVED BEFORE _____;
- PER MNDNR REQUIREMENTS NO IN WATER WORK PERMITTED BETWEEN _____ AND _____;
- PROJECT SHALL BE SUBSTANTIALLY COMPLETED WITHIN ___ CALENDAR DAYS OF INITIATING CONSTRUCTION.

EQUIPMENT

- EQUIPMENT SHALL HAVE ADQUATE REACH AND LIFT TO PLACE ALL INSTALLATIONS;
- EQUIPMENT SHALL HAVE A THUMB ATTACHEMENT FOR CONSTRUCTION OF INSTREAM MEASURES.

SURVEYING AND STAKING

- SPECIFIC PROJECT AREA SURVEY PERFORMED BY EOR, INC. IN 2014. SURVEY IS BASED ON THE CHISAGO COUNTY COORDINATE SYSTEM, WITH THE NORTH AMERICAN VERTICAL DATUM OF 1988;
- CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY AND STAKING, AS NECESSARY, TO MATCH THE GRADES AND ELEVATIONS DETAILED IN THESE PLANS AND SPECIFICATIONS.

UTILITIES

- CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PUBLIC & PRIVATE UTILITES FOR LOCATIONS OF UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES, OR OTHER BURIED STRUCTURES BEFORE COMMENCING CONSTRUCTION ACTIVITIES;
- CONTRACTOR SHALL IMMEDIATELY CONTACT AFFECTED UTILITY COMPANIES TO REPORT ANY DAMAGE OF UTILITIES. CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO OWNER.

CONSTRUCTION LIMITS AND ACCESS

- ACCESS LIMITED TO APPROVED ACCESS ROUTES;
- CONSTRUCTION SHALL BE LIMITED TO PUBLIC PROPERTY AND ACQUIRED EASEMENT AREAS EXCEPT AS APPROVED BY THE PROJECT ENGINEER AND OWNER(S). DISTURBANCE WITHIN THE CONSTRUCTION LIMITS SHALL BE FURTHER LIMITED TO THE GREATEST EXTENT PRACTICABLE TO MINIMIZE IMPACTS TO THE RIPARIAN ZONE;
- DISTURBANCE WITHIN THE CONSTRUCTION LIMITS AS WELL AS ACCESS ROUTES TO THE CONSTRUCTION LIMITS, MATERIAL STOCKPILE LOCATIONS AND OTHER ACTIVITIES OUTSIDE OF THE CONSTRUCTION LIMITS SHALL BE PROPOSED BY THE CONTRACTOR IN WRITING (PLAN AND SKETCH), AND APPROVED BY THE PROJECT ENGINEER AND OWNER;
- PUBLIC INFRASTRUCTURE AND PRIVATE IMPROVEMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: ROADWAY SURFACES, BRIDGES AND ABUTMENTS, DRIVEWAYS, FENCES, AND STRUCTURES ARE TO BE PROTECTED BY THE CONTRACTOR AT THE COST OF THE CONTRACTOR. ANY DAMAGES SHALL BE REPAIRED PER THE DISCRETION OF THE PROJECT ENGINEER AT THE COST OF THE CONTRACTOR;
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING ANY REQUIRED TRAFFIC CONTROL, RIGHT OF WAY, AND/OR ACCESS PERMITS.

LANDSCAPE & PLANT MATERIAL NOTES

- NO PLANT MATERIAL SUBSTITUTIONS WILL BE ACCEPTED UNLESS APPROVAL IS GRANTED BY THE PROJECT ENGINEER PRIOR TO THE SUBMISSION OF BID;
- ALL SEED AND LIVE PLANTS SHALL BE A LOCAL ECOTYPE, ORIGIN WITH 100-MILE RADIUS OF THE SITE.

SITE RESTORATION

- ALL DISTURBED GROUND TO RECEIVE SITE RESTORATION PER PLANS OR ENGINEER DIRECRTION, SITE RESTORATION ABOVE PLAN QUANTITIES IS INCIDENTAL TO THE PROJECT;

NL-NC Channel - Option 1 (REMOVABLE WEIR)					
Line No.	Item	Units	Estimated Quantity	Estimated Unit Cost	Estimated Total Cost
1	Mobilization	LUMP	1	\$53,000.00	\$53,000.00
2	Clear & Grub Tree	EACH	13	\$250.00	\$3,250.00
3	Relocate Small Utilities	LF	650	\$50.00	\$32,500.00
4	Dewatering	LUMP	1	\$50,000.00	\$50,000.00
5	Erosion Control Management	LUMP	1	\$10,000.00	\$10,000.00
6	Floating Silt Curtain (Work Area)	LF	80	\$15.00	\$1,200.00
7	Common Excavation w/ Haul	CY	1,500	\$20.00	\$30,000.00
8	Contaminated Material Disposal	CY	1,500	\$15.00	\$22,500.00
9	Subgrade Excavation	CY	50	\$20.00	\$1,000.00
10	Granular Borrow	CY	75	\$30.00	\$2,250.00
11	Cast-In-Place Concrete	SF	285	\$50.00	\$14,250.00
12	Fabricate & Install Steel Weir Structure (Galvanized)	LUMP	1	\$25,000.00	\$25,000.00
13	Furnish & Install 18,000 lb Winch	EACH	1	\$3,000.00	\$3,000.00
14	Sheet Pile Wall -PZC13 (Galvanized)	SF	6,800	\$45.00	\$306,000.00
15	Safety Fencing	LF	340	\$50.00	\$17,000.00
16	Class 7 Aggregate Surfacing	CY	20	\$30.00	\$600.00
17	Erosion Control Blanket, Type 1	SY	900	\$3.00	\$2,700.00
18	Seeding	AC	0.2	\$5,000.00	\$1,000.00
19	Mulch, Type 1 with Type 1 Natural Tackifier	TON	0.4	\$1,000.00	\$400.00
20	Seed, State Mix 32-261 [38 LBS per acre]	LBS	7.6	\$50.00	\$380.00
				Sub Total:	\$576,030.00
				10% Contingency:	\$57,603.00
				Project Total:	\$633,633.00

NL-NC Channel - Option 2 (CHANNEL WIDENING)					
Line No.	Item	Units	Estimated Quantity	Estimated Unit Cost	Estimated Total Cost
1	Mobilization	LUMP	1	\$20,000.00	\$20,000.00
2	Clear & Grub Tree	EACH	4	\$250.00	\$1,000.00
3	Lower Small Utilities	LF	120	\$50.00	\$6,000.00
4	Dewatering	LUMP	1	\$40,000.00	\$40,000.00
5	Erosion Control Management	LUMP	1	\$10,000.00	\$10,000.00
6	Floating Silt Curtain (Work Area)	LF	80	\$15.00	\$1,200.00
7	Common Excavation w/ Haul	CY	400	\$20.00	\$8,000.00
8	Contaminated Material Disposal	CY	400	\$15.00	\$6,000.00
9	Class IV Rip Rap (Boulder Toe)	CY	40	\$50.00	\$2,000.00
10	Soil Lift	SF	850	\$125.00	\$106,250.00
11	Safety Fencing	LF	170	\$50.00	\$8,500.00
12	Class 7 Aggregate Surfacing	CY	20	\$30.00	\$600.00
13	Erosion Control Blanket, Type 1	SY	300	\$3.00	\$900.00
14	Seeding	AC	0.1	\$5,000.00	\$500.00
15	Mulch, Type 1 with Type 1 Natural Tackifier	TON	0.2	\$1,000.00	\$200.00
16	Seed, State Mix 32-261 [38 LBS per acre]	LBS	3.8	\$50.00	\$190.00
				Sub Total:	\$211,340.00
				10% Contingency:	\$21,134.00
				Project Total:	\$232,474.00

Plot Date: 09/26/2014
 Drawing Name: X:\Clients_Courtesy\090909_Chisago_Lakes_Improvement_District\027_NL-NC_Channel_Prelim_Plans_&_Cons\09_GIMS_ProjectName\dwg\NC-NL_Channel_Improvements.dwg
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JAY R. HILL
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SUBMISSION DATE:
09-26-2014

DESIGN BY: JRH DRAWN BY: JRH

EOR PROJECT NO.:



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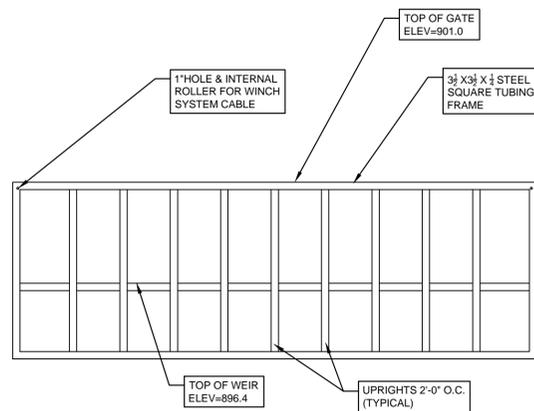
CHISAGO LAKES LAKE IMPROVEMENT DISTRICT
 313 NORTH MAIN STREET ROOM 243
 CENTER CITY, MN 55012

NORTH CENTER - NORTH LINDSTROM CHANNEL IMPROVEMENTS
 LINDSTROM TOWNSHIP, CHISAGO CO., MN
 STATE PROJECT NO. --- CITY PROJECT NO. .

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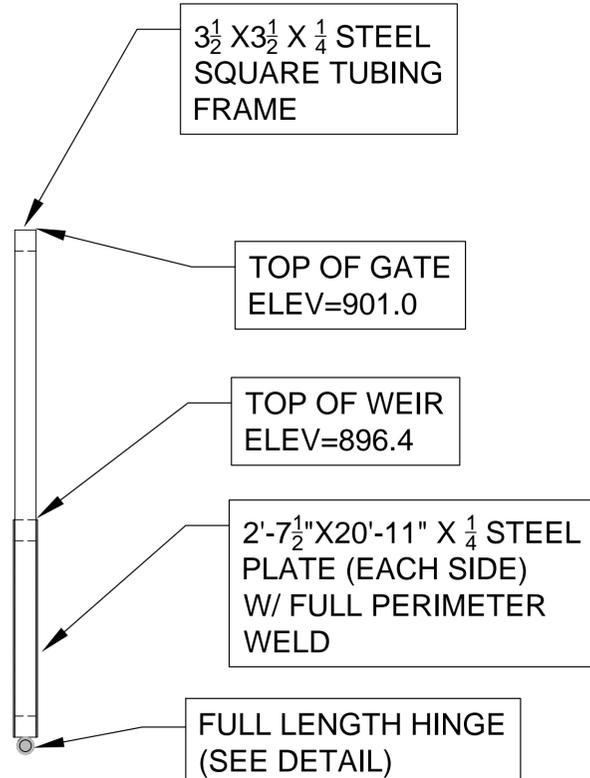
SHEET 02 OF 06 SHEETS

WEIR GATE FRONT VIEW



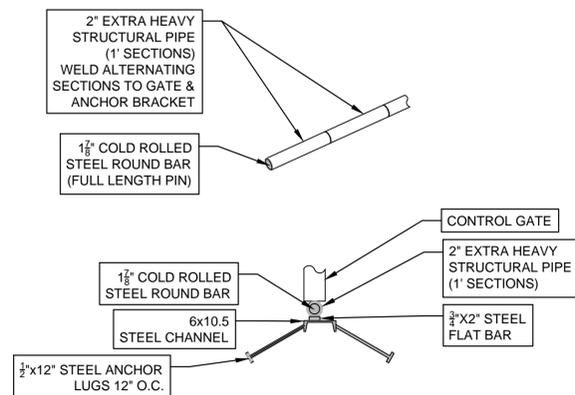
ALL PARTS TO BE GALVANIZED FOLLOWING FABRICATION

WEIR GATE SIDE VIEW



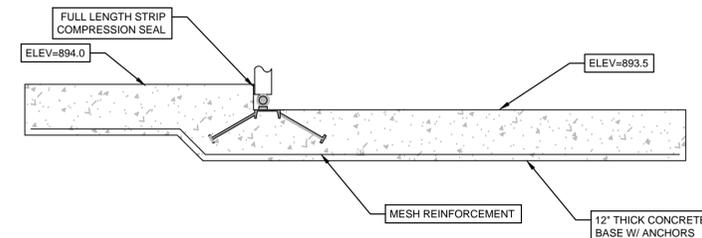
ALL PARTS TO BE GALVANIZED FOLLOWING FABRICATION

WEIR GATE HINGE DETAIL

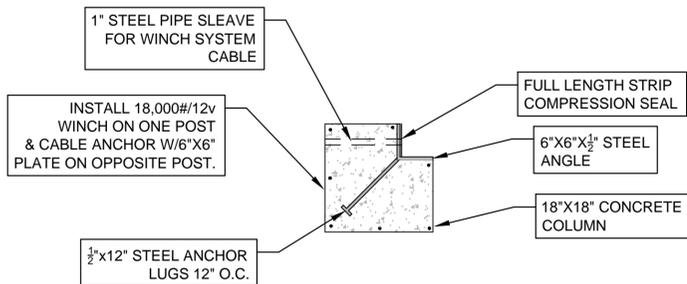


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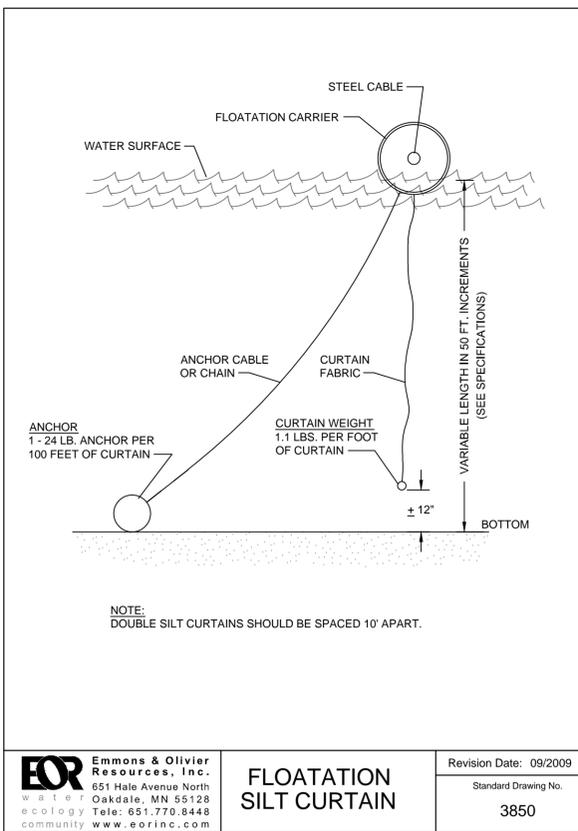
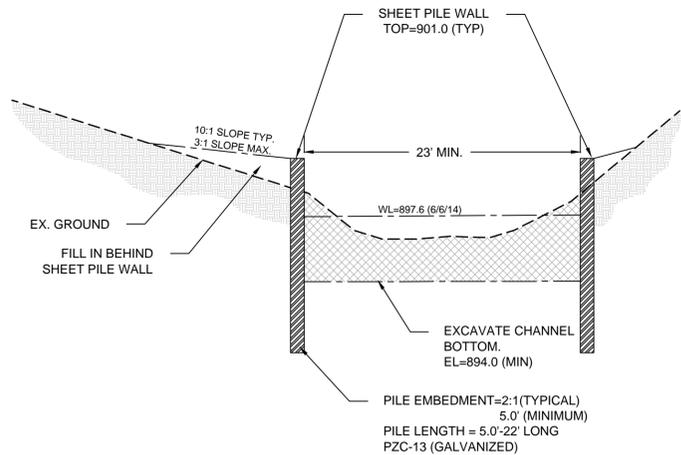
WEIR GATE CONCRETE BASE DETAIL



CONCRETE PIER DETAIL



CHANNEL CROSS SECTION DETAIL

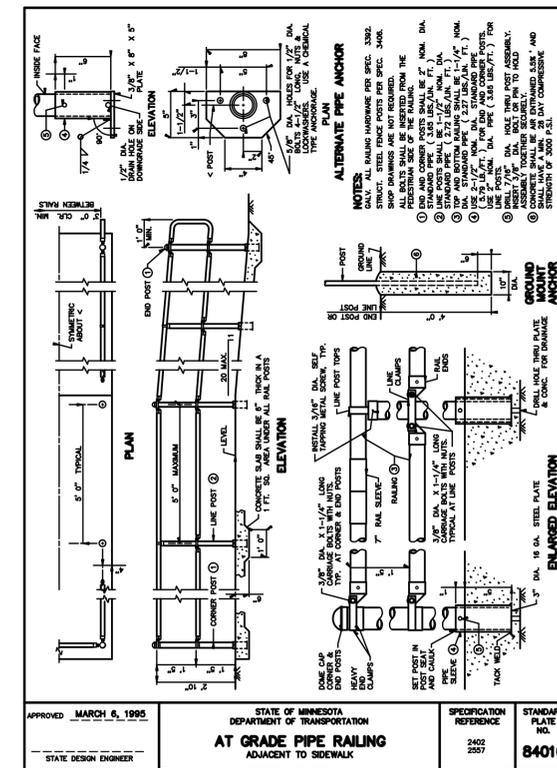


EOR Emmons & Olivier Resources, Inc.
651 Hale Avenue North
Oakdale, MN 55128
Tel: 651.770.8448
www.eorinc.com

FLOATATION SILT CURTAIN

Revision Date: 09/2009
Standard Drawing No. 3850

FENCE/RAILING DETAIL



APPROVED MARCH 6, 1995
STATE DESIGN ENGINEER

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
AT GRADE PIPE RAILING
ADJACENT TO SIDEWALK

SPECIFICATION REFERENCE 2402 2507
STANDARD PLATE NO. 8401C

Plot Date: 09/26/2014
 Drawing Name: X:\Clients_County\09099 - Chisago_Lakes_Improvement_District\027_NC-NL_Channel_Prelim_Plans_&_Cross\09_GIMS_ProjectName\dwg\NC-NL_Channel_Improvements.dwg
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JAY R. HILL
DATE: 09-26-2014 LICENSE # 24552

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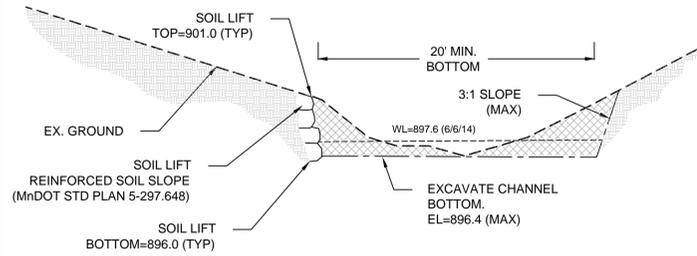
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CHISAGO LAKES LAKE IMPROVEMENT DISTRICT
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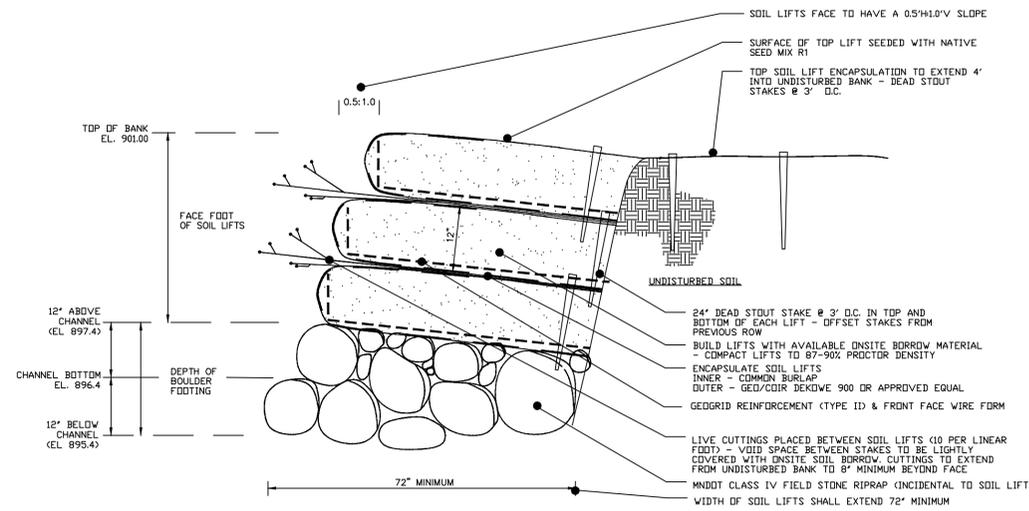
NORTH CENTER - NORTH LINDSTROM CHANNEL IMPROVEMENTS
LINDSTROM TOWNSHIP, CHISAGO CO., MN
STATE PROJECT NO. --- CITY PROJECT NO. .

DETAILS-OPTION 1 (REMOVABLE WEIR)
SHEET 03 OF 06 SHEETS

CHANNEL CROSS SECTION DETAIL

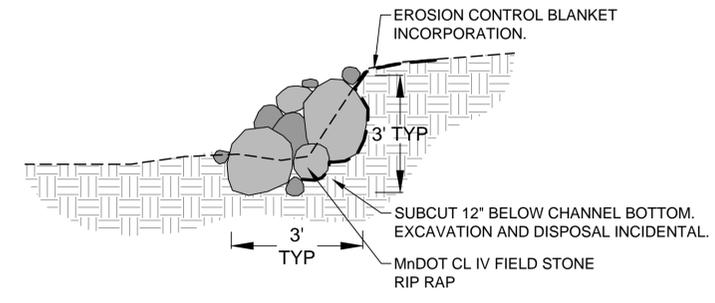


SOIL LIFT DETAIL

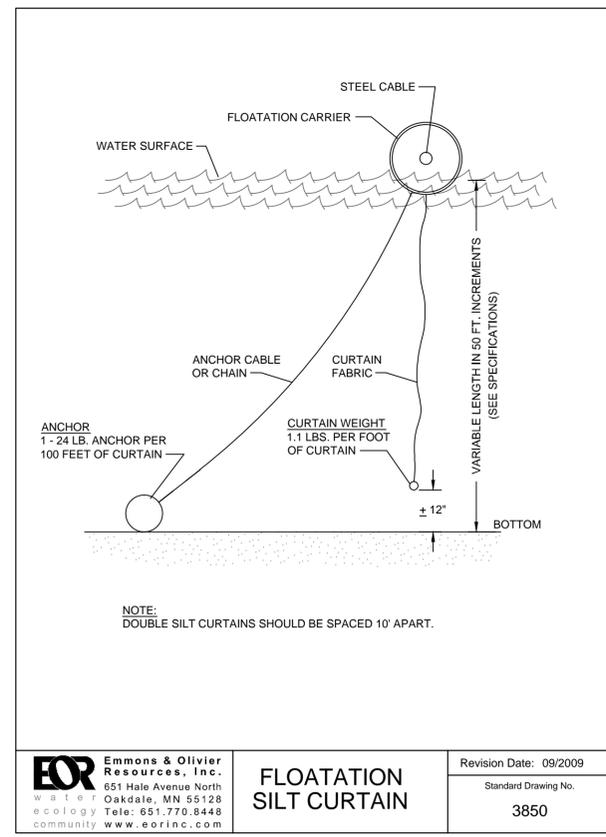


GENERAL NOTES:
 1) NO SEAMS WILL BE PERMITTED IN OUTER OR INNER SOIL LIFT ENCAPSULATION.
 2) LIVE CUTTINGS TO BE PLACED WITH BASIL ENDS TOWARDS THE BANK AND BUDS POINTING AWAY FROM THE BANK.

RIP RAP BOULDER TOE DETAIL



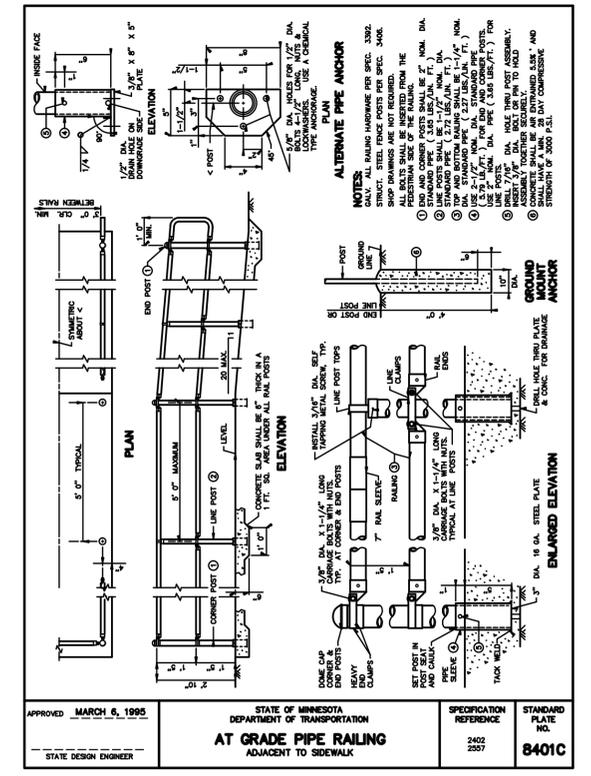
FENCE/RAILING DETAIL



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 community www.eorinc.com

FLOATATION SILT CURTAIN

Revision Date: 09/2009
 Standard Drawing No. 3850



Plot Date: 09/26/2014
 Drawing Name: X:\Clients_Courtesy\09099 - Chisago_Lakes_Improvement_District\0027_NC-NL_Channel_Prelim_Plans_&_Cross\09_GIMS_ProjectName\dwg\NC-NL_CHANNEL_IMPROVEMENTS.dwg
 Xrefs: X:\BASE_09099\0027_02_SIS LAYERS.dwg

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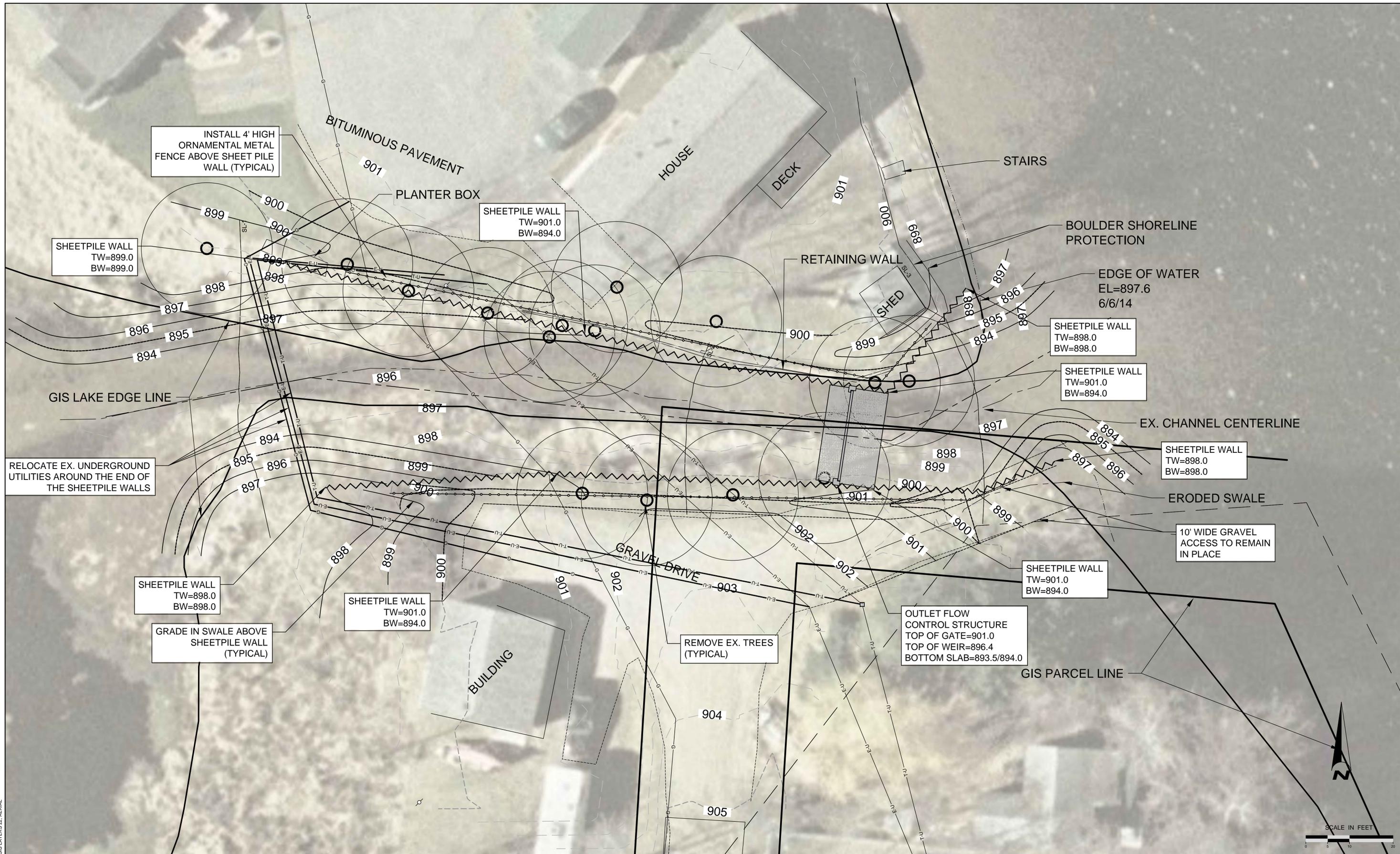
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 LINDSTROM TOWNSHIP, CHISAGO CO., MN
 STATE PROJECT NO. --- CITY PROJECT NO. .

DETAILS-OPTION 2 (CHANNEL WIDENING)
 SHEET 04 OF 06 SHEETS



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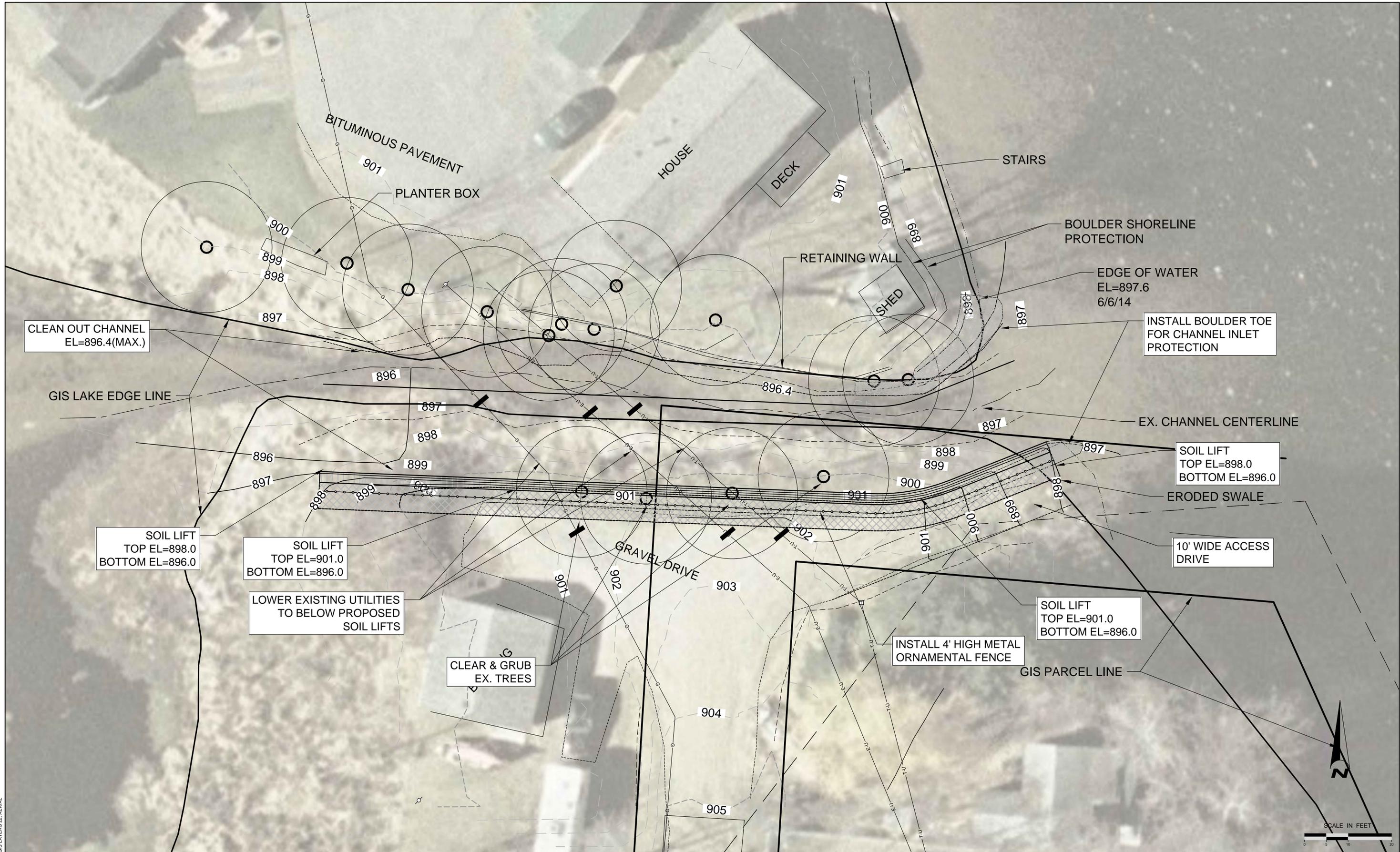
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OPTION 1 (REMOVABLE WEIR)
SHEET 05 OF 06 SHEETS

Plot Date: 09/26/2014
 Drawing Name: X:\Clients_Courtesy\0909_Chicago_Lakes_Improvement\District\0027_NC-NL_Channel_Prelim_Plans_&_Cross\09_GIS_ProjectName\dwg\NC-NL_Channel_Improvements.dwg
 Xrefs: X:\BASE_02\0272_GIS_LAYERS.dwg



CLEAN OUT CHANNEL
EL=896.4(MAX.)

GIS LAKE EDGE LINE

SOIL LIFT
TOP EL=898.0
BOTTOM EL=896.0

SOIL LIFT
TOP EL=901.0
BOTTOM EL=896.0

LOWER EXISTING UTILITIES
TO BELOW PROPOSED
SOIL LIFTS

CLEAR & GRUB
EX. TREES

GRAVEL DRIVE

INSTALL 4' HIGH METAL
ORNAMENTAL FENCE

SOIL LIFT
TOP EL=901.0
BOTTOM EL=896.0

GIS PARCEL LINE

INSTALL BOULDER TOE
FOR CHANNEL INLET
PROTECTION

EX. CHANNEL CENTERLINE

SOIL LIFT
TOP EL=898.0
BOTTOM EL=896.0

ERODED SWALE

10' WIDE ACCESS
DRIVE

BOULDER SHORELINE
PROTECTION

EDGE OF WATER
EL=897.6
6/6/14

RETAINING WALL

SHED

STAIRS

HOUSE

DECK

BITUMINOUS PAVEMENT

PLANTER BOX

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DESIGN BY: JRH DRAWN BY: JRH

EOR PROJECT NO.

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CHISAGO LAKES LAKE IMPROVEMENT DISTRICT
313 NORTH MAIN STREET
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CENTER CITY, MN 55012

NORTH CENTER - NORTH LINDSTROM CHANNEL IMPROVEMENTS
LINDSTROM TOWNSHIP, CHISAGO CO., MN

OPTION 2 (CHANNEL WIDENING)
SHEET 06 OF 06 SHEETS

Plot Date: 09/26/2014
 Drawing Name: X:\Clients_Courtesy\090909_Chisago_Lakes_Improvement\District\027_NC-NL_Channel_Prelim_Plans_&_Cross\09_GIS_ProjectName\027_NC-NL_Channel_Improvements.dwg
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