

MEETING DATE: August 11, 2016

TITLE: Approval of Design for the Highway 101 Causeway Shoreline Reconstruction Project and Authorization to Solicit Bids

RESOLUTION NUMBER: 16-064

PREPARED BY: Tiffany Schaufler

E-MAIL: tschaufler@minnehahacreek.org

TELEPHONE: 952-641-4513

REVIEWED BY: Administrator Counsel Program Director:
 Board Committee Engineer Other

WORKSHOP ACTION:

<input type="checkbox"/> Advance to Board mtg. Consent Agenda.	<input type="checkbox"/> Advance to Board meeting for discussion prior to action.
<input type="checkbox"/> Refer to a future workshop (date): _____	<input type="checkbox"/> Refer to taskforce or committee (date): _____
<input type="checkbox"/> Return to staff for additional work.	<input type="checkbox"/> No further action requested.
<input checked="" type="checkbox"/> Other (specify): Preliminary design plans reviewed at July 14, 2016 Workshop. Seeking final action at August 11, 2016 Board Workshop.	

PURPOSE or ACTION REQUESTED:

Approval of design and authorization to solicit bids for the Highway 101 Causeway Shoreline Reconstruction Project.

PROJECT/PROGRAM LOCATION:

Wayzata Bay Causeway in the City of Wayzata

PROJECT TIMELINE:

- April 2016: Award design services
- July 2016: Review of preliminary design
- August 2016: Review design and solicit construction bids
- September 2016: Award construction contract
- October-November 2016: Construction

PROJECT/PROGRAM COST:

Fund name and number: Highway 101 Causeway Reconstruction, 3149
Current budget: \$1,604,308
Expenditures to date: \$66,151.51
Requested amount of funding: \$0

PAST BOARD ACTIONS:

- October 24, 2013 – Resolution to express support for working with Hennepin County on a plan for vegetated reinforced soil slopes in the Grays Bay causeway, and direct the staff to prepare a plan in consultation with the County, along with a project budget and cost share resolution.
- December 12, 2013 – Resolution to direct staff to:
 1. Communicate its commitment to reviewing the Bushaway Road Project for compliance with all MCWD rules, recommending enhancements to the Project as submitted by Hennepin County beyond current regulatory requirements for which the MCWD would take financial responsibility;
 2. These enhancements would include the design, construction and maintenance of the Wayzata Bay Restoration Shoreline Project, to be installed after the County has completed seawall construction and with a County funding contribution equal to the cost of the riprap design presented on October 24, 2013;
 3. The MCWD enhancements also would include improvements to stormwater management facilities, and the MCWD will be responsible for enhancements to the Project beyond those presented by the County on October 24, 2013 that exceed MCWD requirements for the entire project within the City of Wayzata.
- January 23, 2014
 - Approval of MCWD Permit 13-460
 - Resolution 14-008: Authorization to executed a Cooperative Agreement with Hennepin County for CSAH 101
- October 23, 2014 – Resolution 14-088: Authorization to execute a Cooperative Agreement with the City of Minnetrista to effect a transfer of the fee title interest in 3.26 acres of land to MCWD, for purposes of floodplain mitigation to fulfill the District’s regulatory obligation under permit 13-460 Bushaway Road.
- February 26, 2015 – Public Hearing for Highway 101 Causeway Reconstruction Project
- March 26, 2015 – Ordering of Highway 101 Causeway Reconstruction Project
- April 28, 2016 – Resolution 16-043: Authorization to Execute Contracts for Design and Construction Oversight for the Highway 101 Causeway Shoreline Reconstruction Project
- June 9, 2016 – Resolution 16-058: Authorization to enter into Contracts for the Gray’s Bay Shoreline Restoration
- July 14, 2016 – Board review preliminary design plans (no action)

SUMMARY:

Following review of Hennepin County's proposed improvement to CSAH 101, at the October 24, 2013 Board Meeting, the Board of Managers resolved to express support for working with Hennepin County to develop a vegetated solution to the Gray's/Wayzata Bay Causeway shoreline, including a project budget and plan to finance. The District and the County entered into a cooperative agreement that allows the District to install and maintain vegetated reinforced soil slopes (VRSS) and related bioengineering and vegetation features along the causeway facing both Wayzata and Gray's Bays, with a \$30,000 reimbursement from Hennepin County. Pursuant to the terms of the agreement, the District may enter the causeway once the County's CSAH 101 roadway reconstruction is completed in order to perform its shoreline work. This planned work to reconstruct the Lake Minnetonka shoreline with VRSS will fill some of the 100 year floodplain. Consequently, as a condition of District permit 13-460, MCWD obligated itself to provide "compensatory storage for floodplain fill along the causeway due to vegetative slope construction."

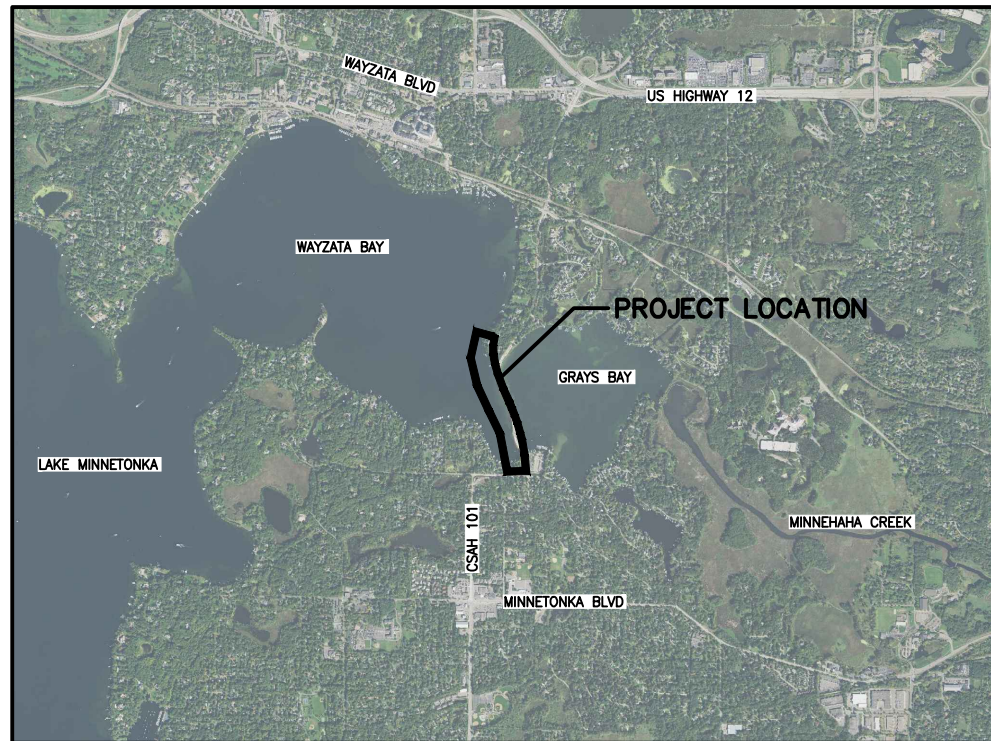
In March 2015, the Board ordered the Highway 101 Causeway Reconstruction Project which includes both the causeway shoreline restoration work ("causeway element") and the independent but associated flood storage replacement work ("flood storage element"). The causeway element of the project is proposed to include both the Wayzata and Gray's Bay shorelines. For the Wayzata Bay shoreline component the District proposes to create a shoreline using VRSS and bioengineering techniques in areas where only sheet pile exists today. For the Gray's Bay shoreline component the District proposes to enhance shoreline habitat by installing native plantings into the existing shoreline where conditions allow.

In April 2016 the Board authorized contracts for design and construction oversight services with Wenck Associates, Inc. and Hart Howerton for the causeway element. At the July 14, 2016 Board Workshop, the Board reviewed the preliminary design plans for the causeway element. During July 2016, Hennepin County, the City of Wayzata, City of Minnetonka, and the Bushaway Road Landscape Committee, as well as local residents also reviewed the preliminary design and provided input which has been incorporated into the final design.

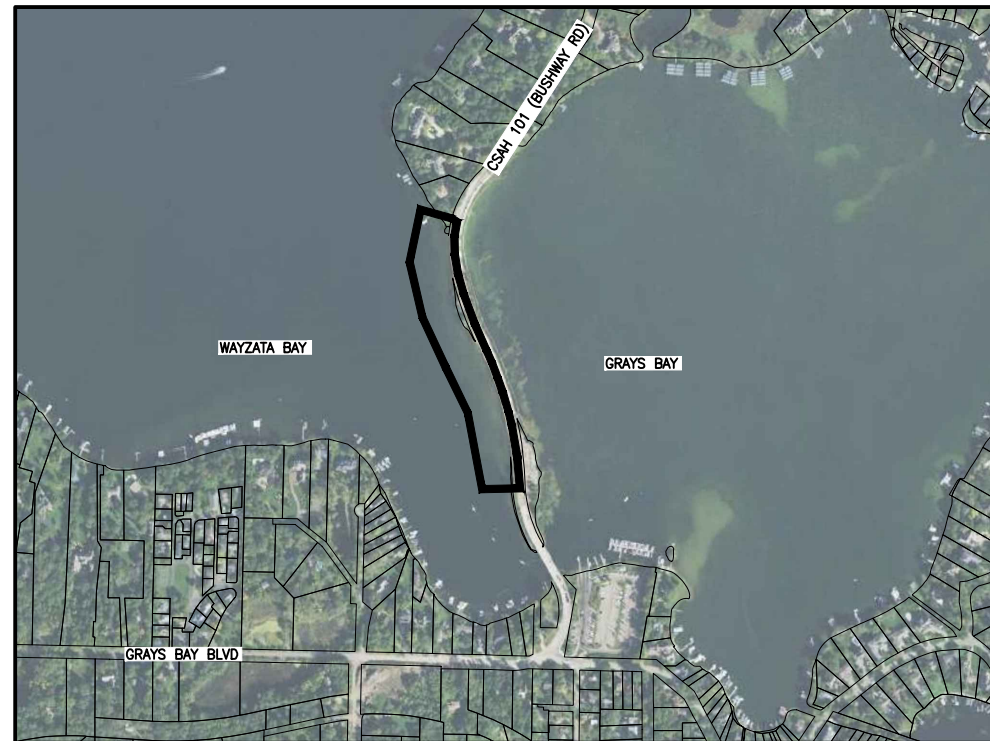
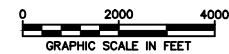
ATTACHMENT:

Final Design Plans

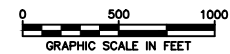
MINNEHAHA CREEK WATERSHED DISTRICT HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION AUGUST 2016



PROJECT VICINITY MAP



PROJECT LOCATION MAP



SHEET INDEX	
SHEET	TITLE
G-101	TITLE AND INDEX SHEET
G-102	LEGEND AND GENERAL NOTES
C-101	EXISTING CONDITIONS
C-102	SITE PLAN SOUTH
C-103	SITE PLAN NORTH
C-301	GRADING PLAN SOUTH
C-302	GRADING PLAN NORTH
C-303	SHEET PILE RETAINING WALL PROFILES
C-304	CROSS SECTIONS SHEET PILE RETAINING WALL D3
C-305	CROSS SECTIONS SHEET PILE RETAINING WALL D3
C-306	CROSS SECTIONS SHEET PILE RETAINING WALL D4
C-801	CIVIL DETAILS
L-1	PLANTING PLAN SOUTH SEGMENT
L-2	PLANTING PLAN NORTH SEGMENT
L-3	IRRIGATION CONCEPT PLAN
L-4	PLANTING DETAILS AND PLANT LIST
THIS PLAN CONTAINS 16 SHEETS	

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
0	ISSUED FOR BID	MJS	CJM	08/15/16

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Christopher J. Meehan
CHRISTOPHER J. MEEHAN
DATE 08/15/16 REG. NO. 43066

SUB CONSULTANT
HART | HOWERTON

PRIME CONSULTANT
WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.

PROJECT TITLE
HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION

MINNEHAHA CREEK WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE			
TITLE AND INDEX SHEET			
DWN BY MJS	CHK'D MJS	APP'D CJM	DWG DATE AUG 2016
PROJECT NO. 0185-0047	SCALE AS SHOWN	SHEET NO. G-101	REV NO. 0

GENERAL NOTES:

- 1. EXISTING CONDITIONS HAVE BEEN PROVIDED BY A COMBINATION OF SURVEY AND PROPOSED INFORMATION FROM CSAH 101 RECONSTRUCTION PROJECT...

REMOVAL NOTES:

- 1. FEATURES NOT SPECIFICALLY IDENTIFIED ON PLAN FOR SALVAGE OR REMOVAL THAT CONFLICT WITH CONSTRUCTION ARE TO BE REVIEWED WITH ENGINEER.

WARNING:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING FOR LOCATIONS OF ALL EXISTING UTILITIES. THEY SHALL COOPERATE WITH ALL UTILITY COMPANIES IN MAINTAINING THEIR SERVICE AND/OR RELOCATION OF LINES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL AT 651-454-0002 AT LEAST 48 HOURS IN ADVANCE FOR THE LOCATIONS OF ALL UNDERGROUND WIRES, CABLES, CONDUITS, PIPES, MANHOLES, VALVES OR OTHER BURIED STRUCTURES BEFORE DIGGING.

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TOLL FREE 1-800-252-1166

GOVERNING SPECIFICATIONS:

- 1. THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" 2016 EDITION & LATEST SUPPLEMENTS.

TRAFFIC CONTROL NOTES:

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL CONSTRUCTION STAGING, ON OR OFFSITE, AS NECESSARY TO COMPLETE THE WORK AS SPECIFIED IN THE PROJECT DOCUMENTS.

TREE PRESERVATION NOTES:

- 1. PROTECT EXISTING TREES THAT ARE NOT TO BE REMOVED. INSTALL ORANGE MESH FENCING, 4' HIGH, WITH STAKES EVERY 10 FEET, 5' OUTSIDE OF THE DRIP LINE OF ALL PRESERVED TREES...

EROSION CONTROL NOTES:

- 1. SEE SHEETS C-102 AND C-103 FOR EROSION CONTROL MEASURES. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING ON SITE CONDITIONS DURING CONSTRUCTION.

HORIZONTAL AND VERTICAL CONTROL:

- 1. THE HORIZONTAL CONTROL FOR THIS PLAN IS NAD88 HENNEPIN COUNTY COORDINATES.

ABBREVIATIONS

- BV BUTTERFLY VALVE
CL CENTER LINE
CL CLASS
CMP CORRUGATE METAL PIPE
CY CUBIC YARD
DIP DUCTILE IRON PIPE
EL/ELEV ELEVATION
EX EXISTING
FES FLARED END SECTION
F/F FACE TO FACE
FM FORCEMAIN
GV GATE VALVE
HDPE HIGH-DENSITY POLYETHYLENE
HP HIGH POINT
HWL HIGH WATER LEVEL
HYD HYDRANT
INV INVERT
LF LINEAL FEET
LP LOW POINT
MH MANHOLE
NWL NORMAL WATER LEVEL
PVC POLYVINYL CHLORIDE
R RADIUS
RCP REINFORCED CONCRETE PIPE
R/W RIGHT-OF-WAY
SF SQUARE FEET
STA STATION
SY SQUARE YARD
TNH TOP NUT HYDRANT
TYP TYPICAL
WM WATERMAIN

EXISTING SYMBOLS/LINES LEGEND

- STORM SEWER FLARED END SECTION
STORM SEWER CATCH BASIN/MANHOLE
STORM SEWER
SANITARY MANHOLE
SANITARY SEWER
FORCE MAIN
WATER VALVE
HYDRANT
WATER MAIN
CONTOUR MINOR
CONTOUR MAJOR
PROPERTY LINE
APPROXIMATE TREE LINE
DECIDUOUS TREE
CONIFEROUS TREE
SHRUB
FENCE
UNDERGROUND GAS LINE
UNDERGROUND ELECTRICAL
OVERHEAD UTILITY
UTILITY POLE
GUY WIRE
LIGHT POLE
UNDERGROUND TELEVISION
OVERHEAD TELEVISION
UNDERGROUND TELEPHONE
UNDERGROUND COMMUNICATION
EDGE OF PAVEMENT
SIGN
MAILBOX
GUARD POST
PROPERTY IRON

PROPOSED SYMBOLS/LINES LEGEND

- STORM SEWER FLARED END SECTION
RIP RAP
STORM SEWER CATCH BASIN/MANHOLE
STORM SEWER
DRAIN TILE
RETAINING WALL
CONTOUR MINOR
CONTOUR MAJOR
SPOT ELEVATION
BOULDERS

REMOVAL SYMBOLS/LINES LEGEND

- PAVEMENT REMOVAL
REMOVE CURB & GUTTER
TREE REMOVAL

EROSION CONTROL SYMBOLS/LINES LEGEND

- VEGETATED REINFORCED SOIL SLOPE (VRSS)
EROSION CONTROL BLANKET
COIR BLANKET PAD
SILT FENCE
FLOTATION SILT CURTAIN
CULVERT PROTECTION
INLET PROTECTION
BIOROLL

Table with columns: REV, REVISION DESCRIPTION, DWN, APP, REV DATE. Row 0: ISSUED FOR BID, MJS, CJM, 08/15/16

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PROJECT TITLE
HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION
MINNEHAHA CREEK WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

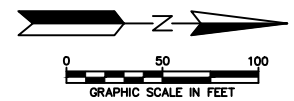
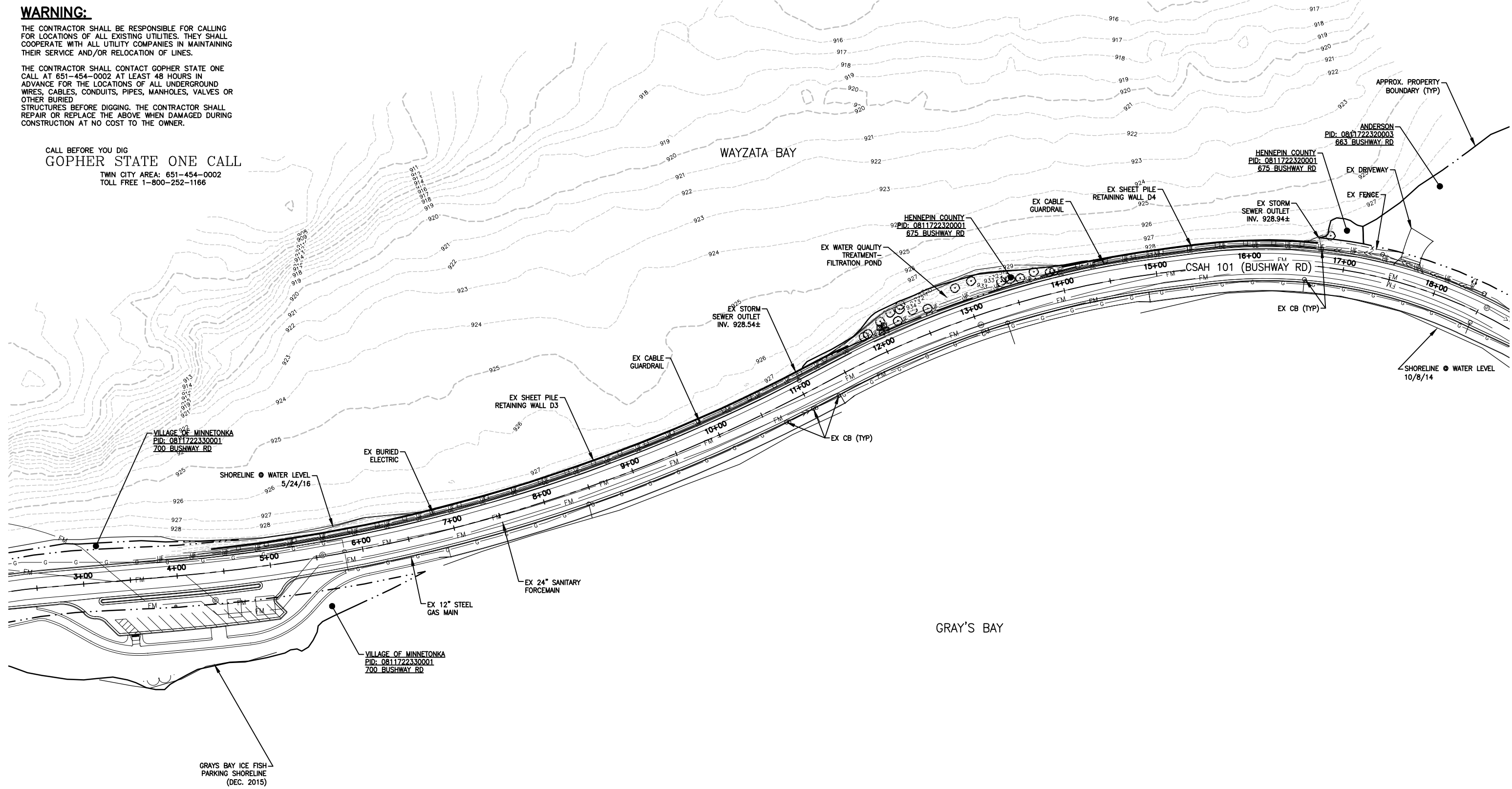
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NOTES: SEE SHEET G-102

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SHEET TITLE			
EXISTING CONDITIONS			
DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	REV NO.
0185-0047	C-101	AS SHOWN	0

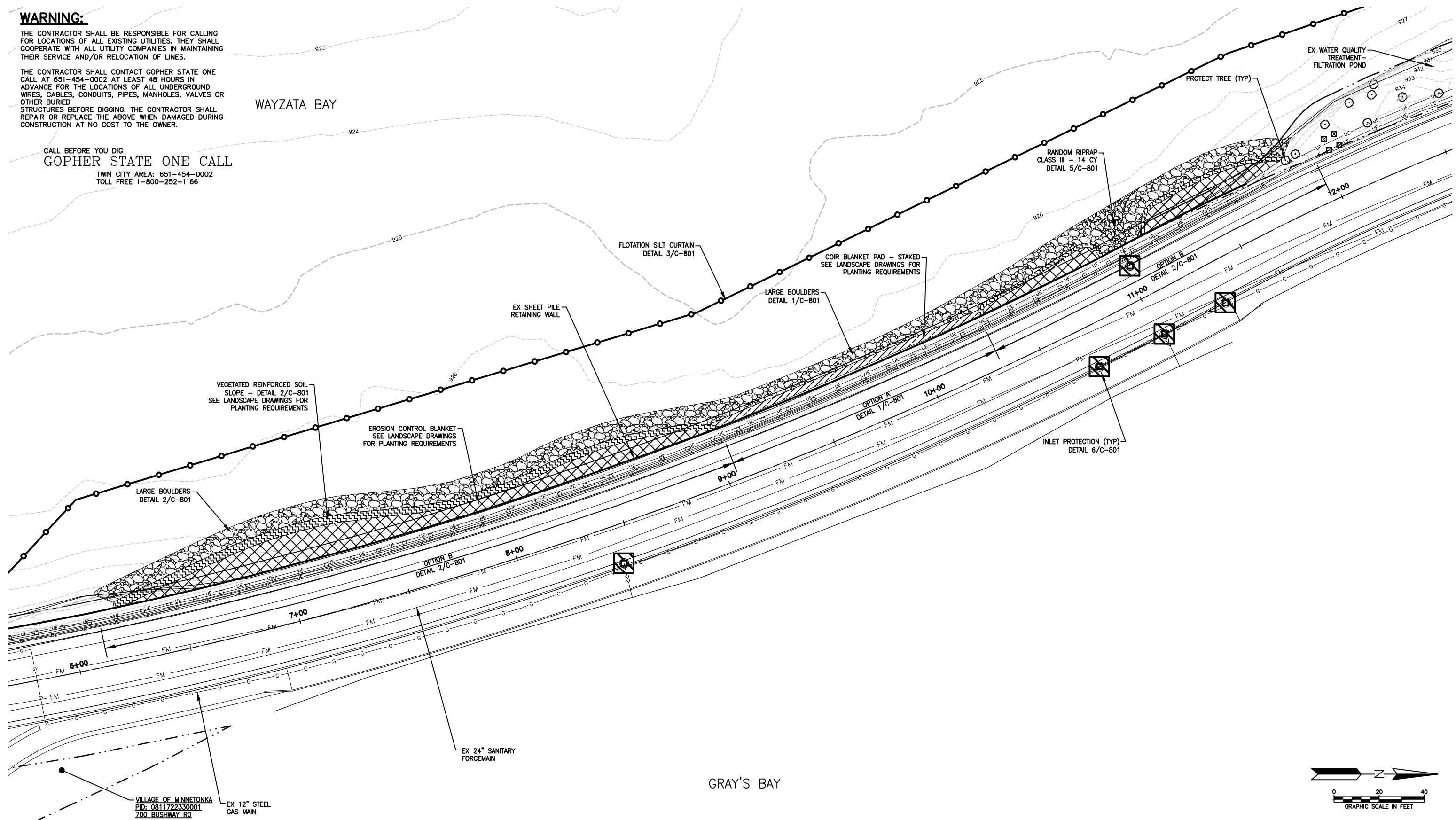
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SHEET TITLE
SITE PLAN SOUTH

DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
0185-0047	C-102		
			REV NO. 0

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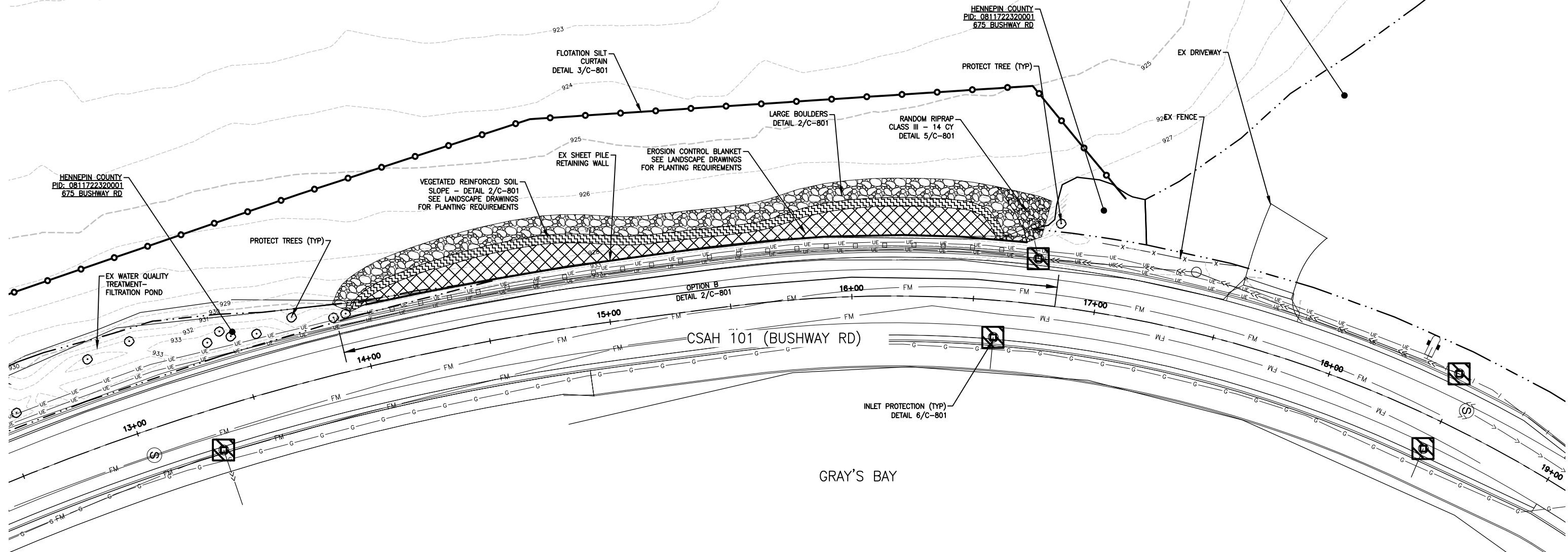
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WAYZATA BAY

APPROX. PROPERTY
 BOUNDARY (TYP)



NOTES: SEE SHEET G-102

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SHEET TITLE SITE PLAN NORTH			
DWN BY MJS	CHK'D MJS	APP'D CJM	DWG DATE AUG 2016
PROJECT NO. 0185-0047	SHEET NO. C-103	SCALE AS SHOWN	REV NO. 0

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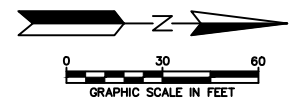
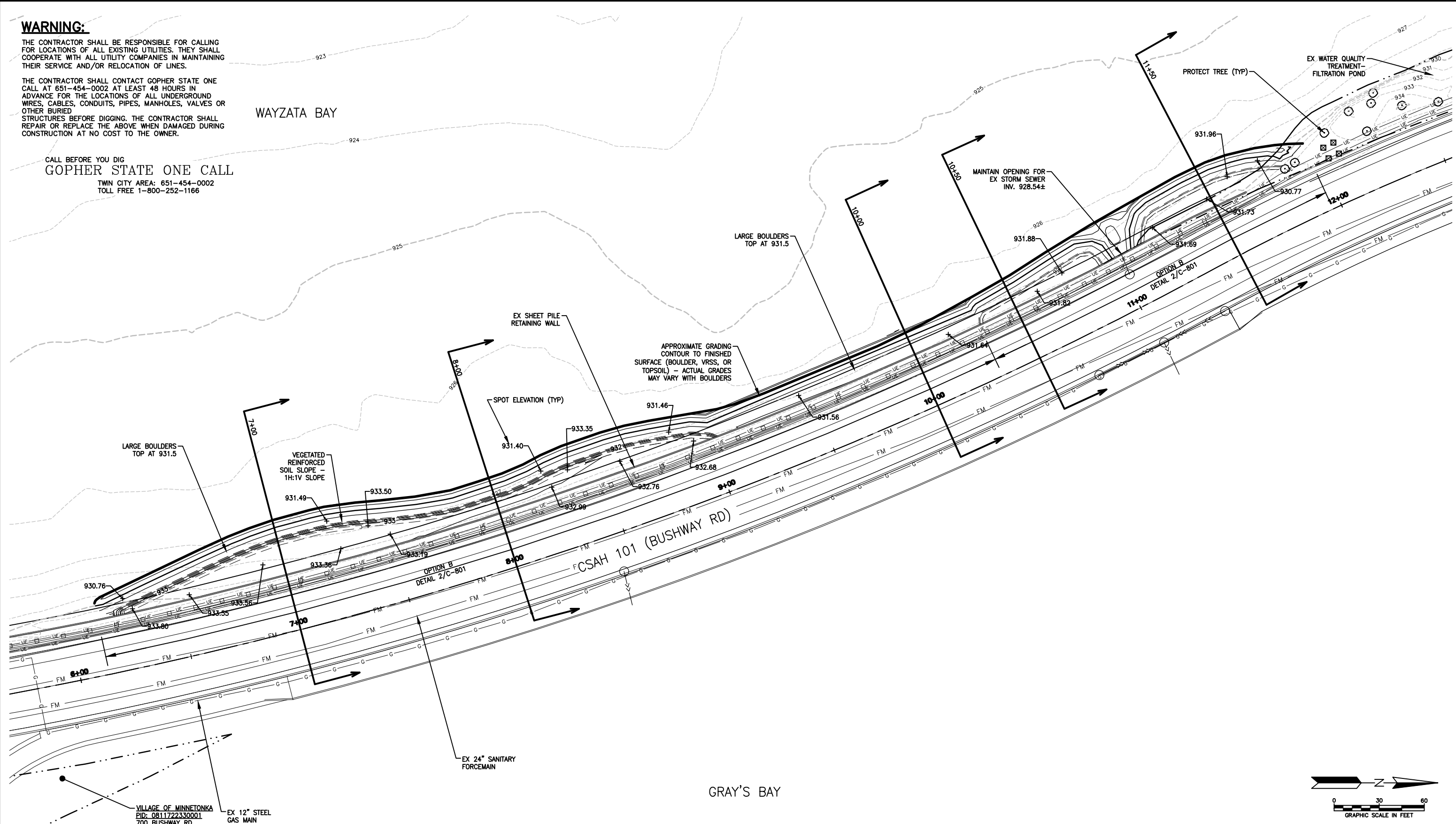
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NOTES: SEE SHEET G-102

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SHEET TITLE			
GRADING PLAN SOUTH			
DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
0185-0047	C-301		
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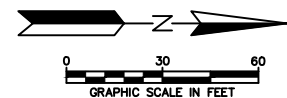
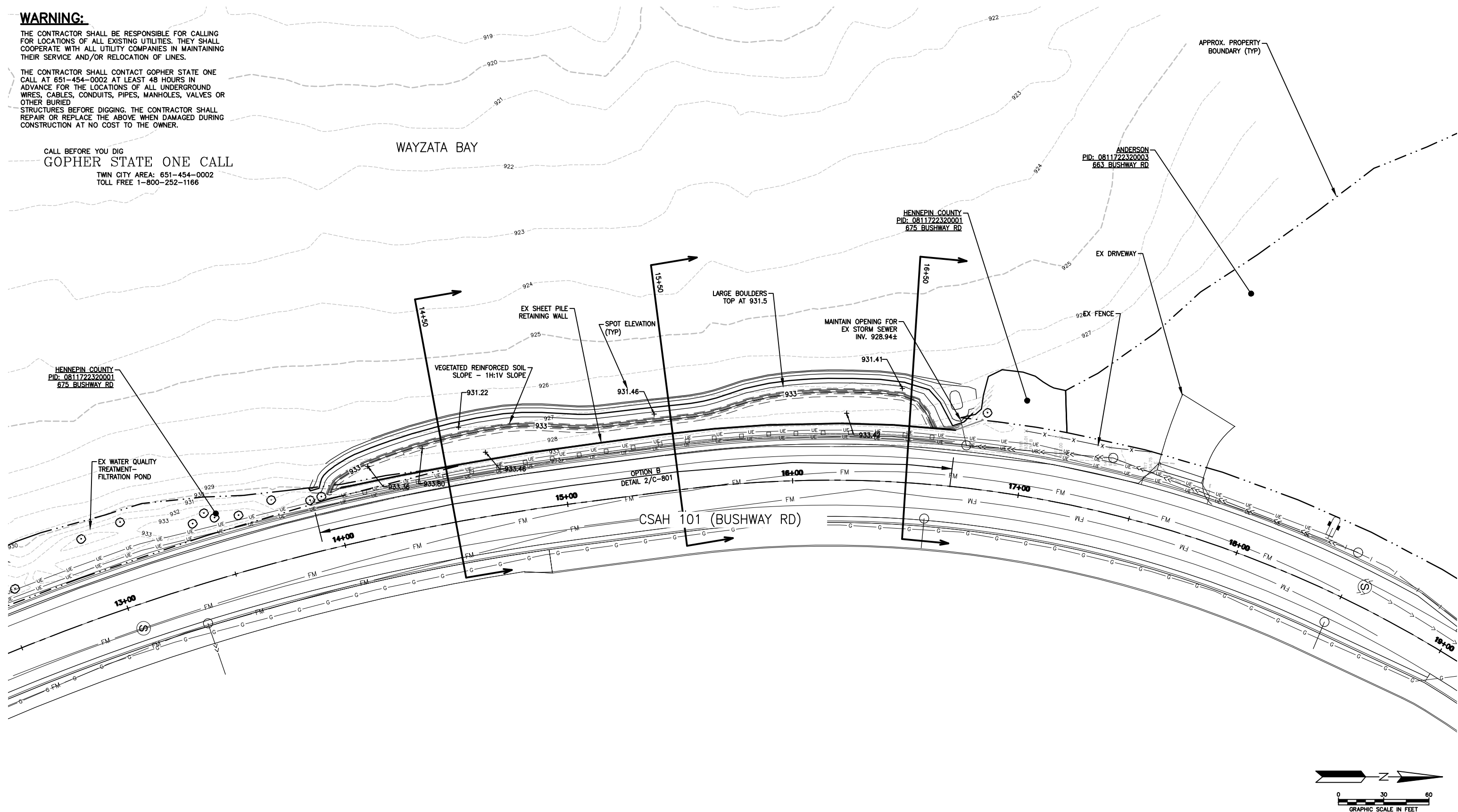
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WAYZATA BAY



NOTES: SEE SHEET G-102

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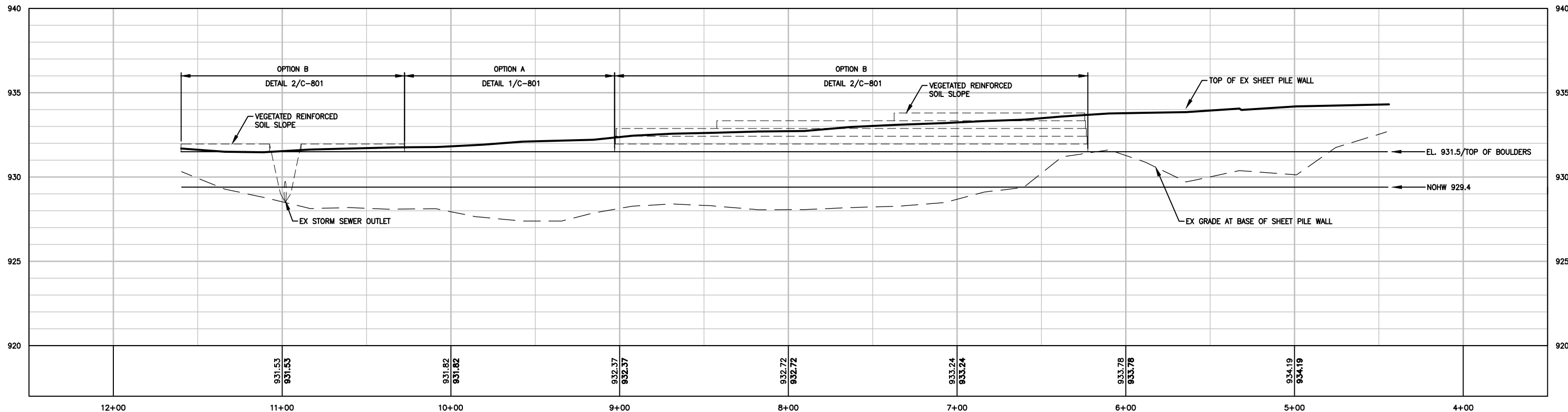
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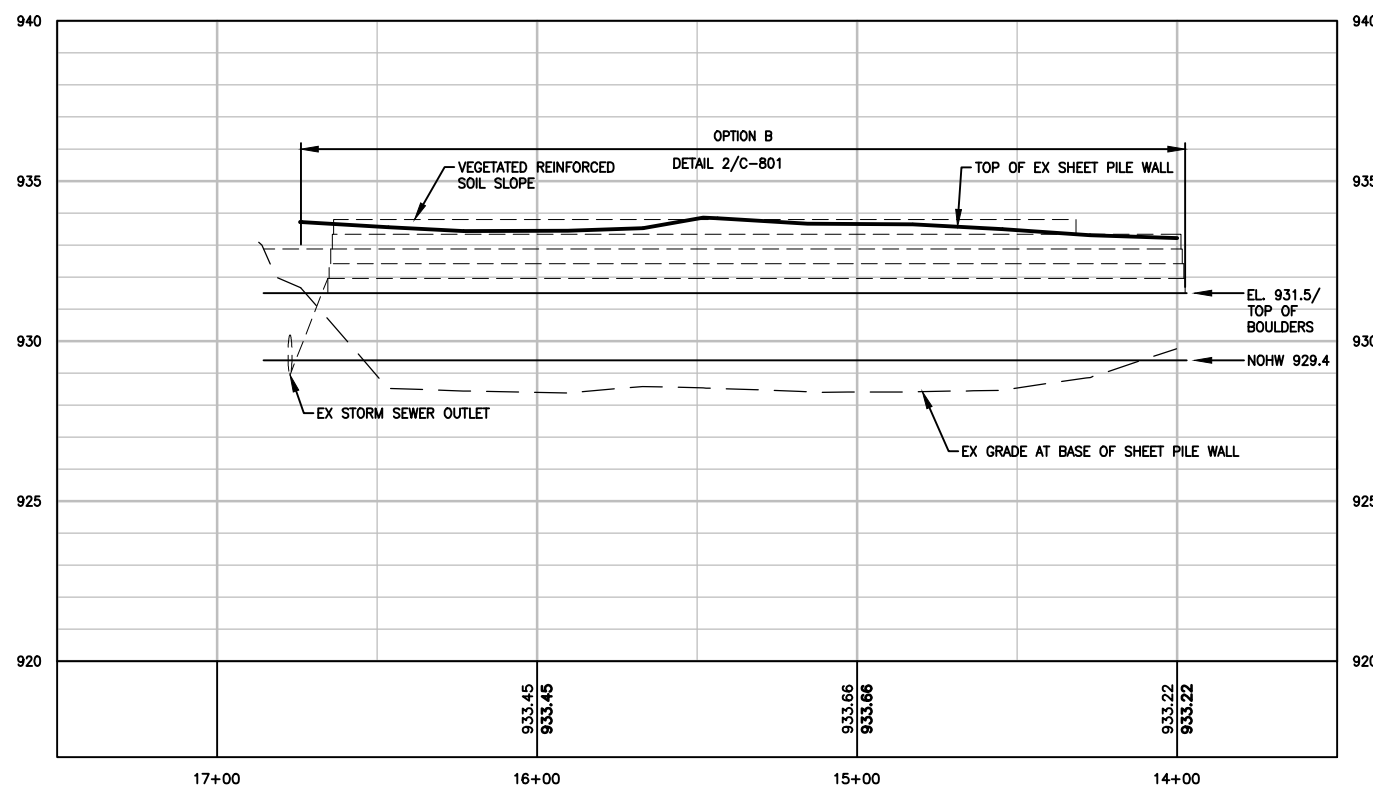
SHEET TITLE			
GRADING PLAN NORTH			
DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
0185-0047	C-302		
			REV NO.
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RETAINING WALL D3 PROFILE



RETAINING WALL D4 PROFILE



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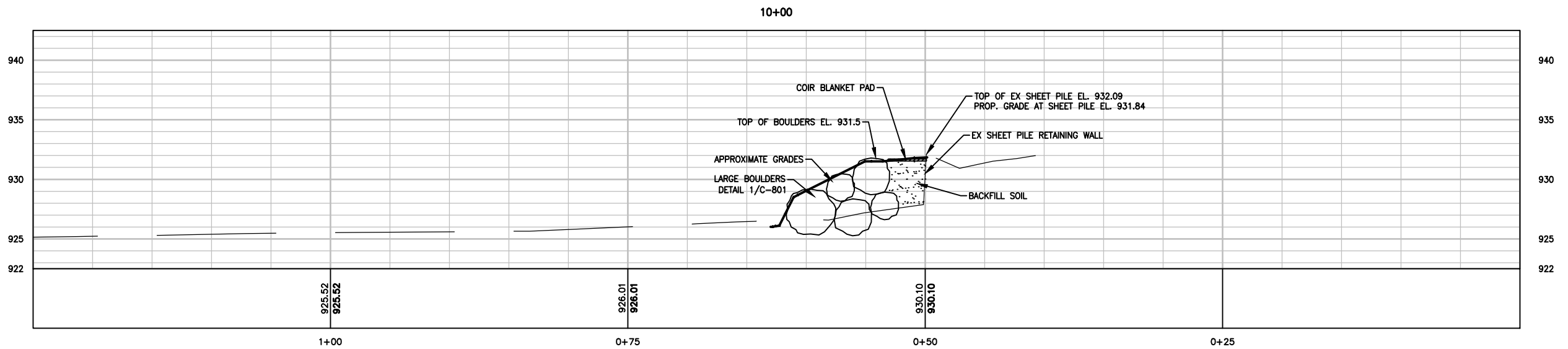
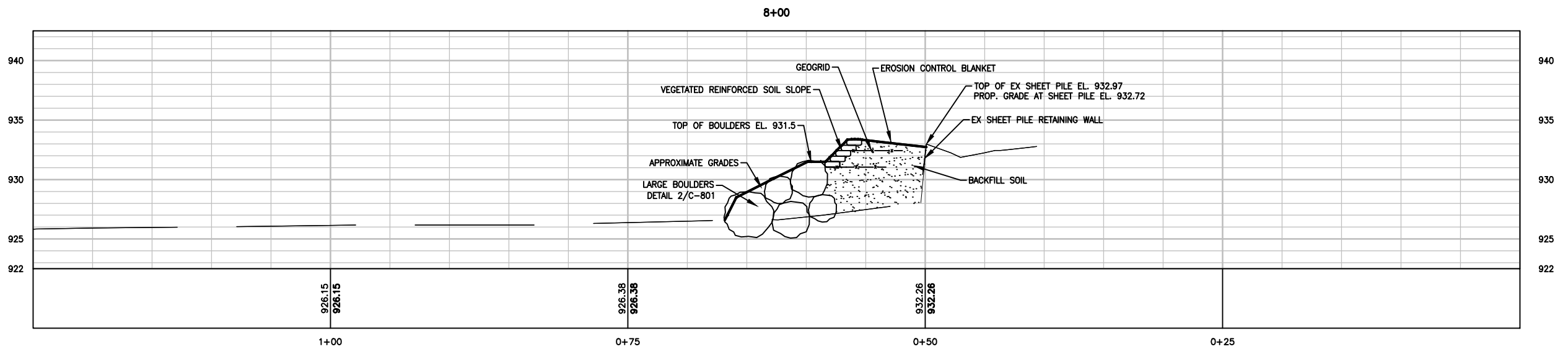
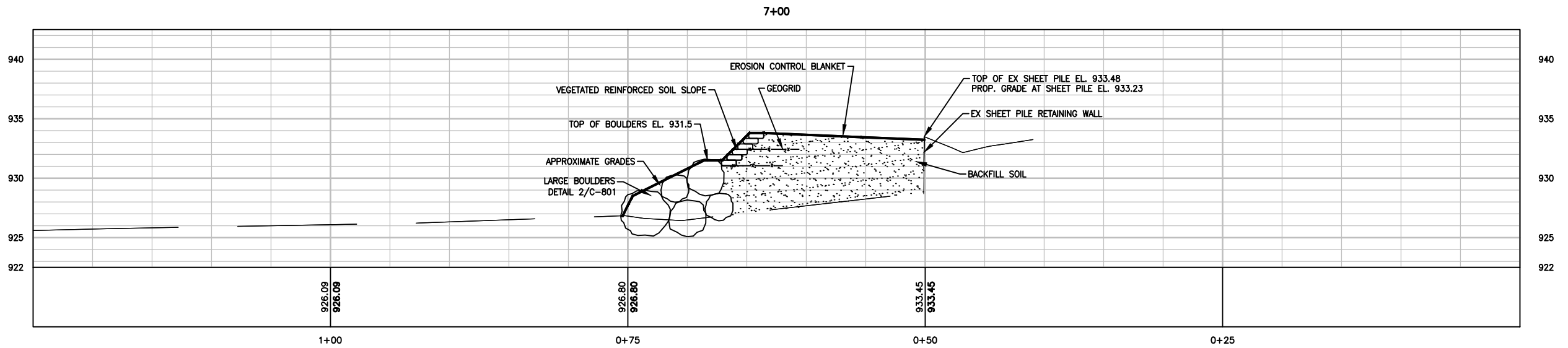
PRIME CONSULTANT

WENCK ASSOCIATES
 Responsive partner. Exceptional outcomes.

PROJECT TITLE
HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION

MINNEHAHA CREEK WATERSHED DISTRICT
 QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE			
SHEET PILE RETAINING WALL PROFILES			
DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
0185-0047	C-303		
			REV NO.
			0



NOTES: SEE SHEET G-102

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
0	ISSUED FOR BID	MJS	CJM	08/15/16

SEAL

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

Christopher J. Meehan

CHRISTOPHER J. MEEHAN
DATE 08/15/16 REG. NO. 43066

SUB CONSULTANT

HART | HOWERTON

PRIME CONSULTANT

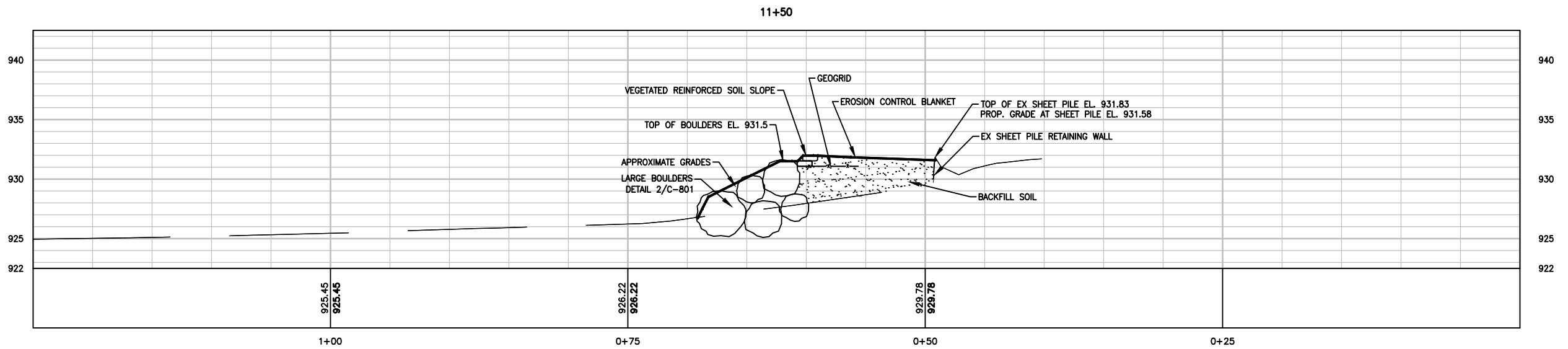
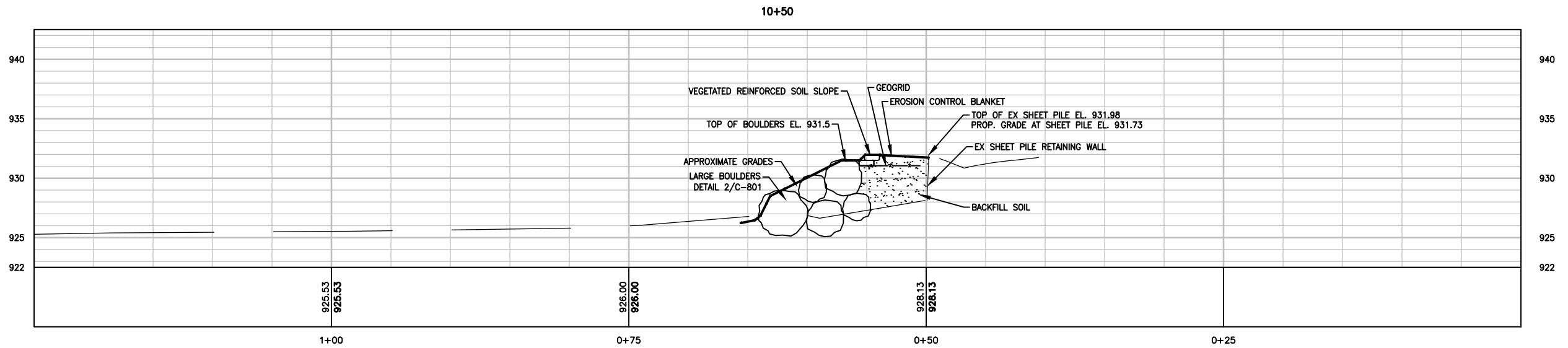
WENCK ASSOCIATES

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PROJECT TITLE
HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION

MINNEHAHA CREEK WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE			
CROSS SECTIONS SHEET PILE RETAINING WALL D3			
DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	REV NO.
0185-0047	C-304	AS SHOWN	0



NOTES: SEE SHEET G-102

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
0	ISSUED FOR BID	MJS	CJM	08/15/16

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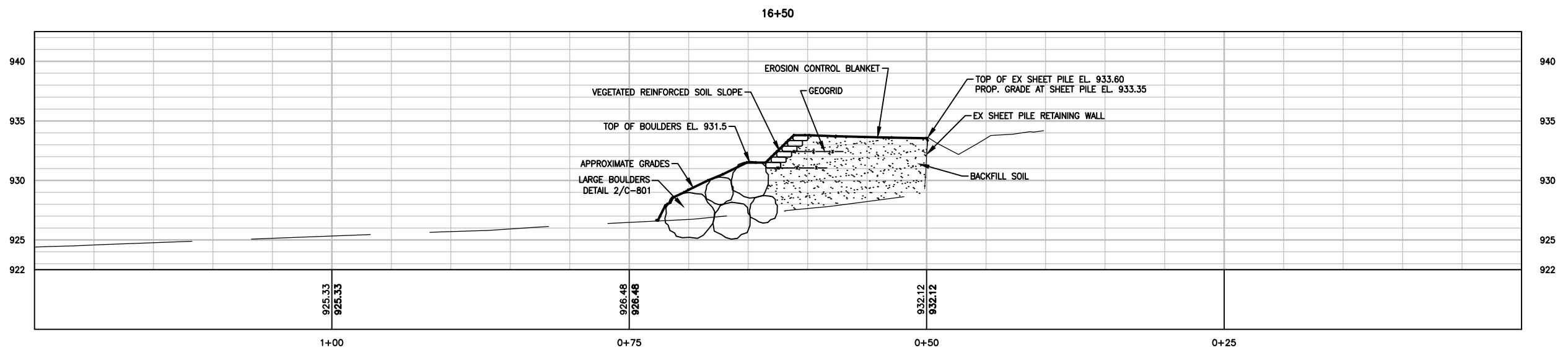
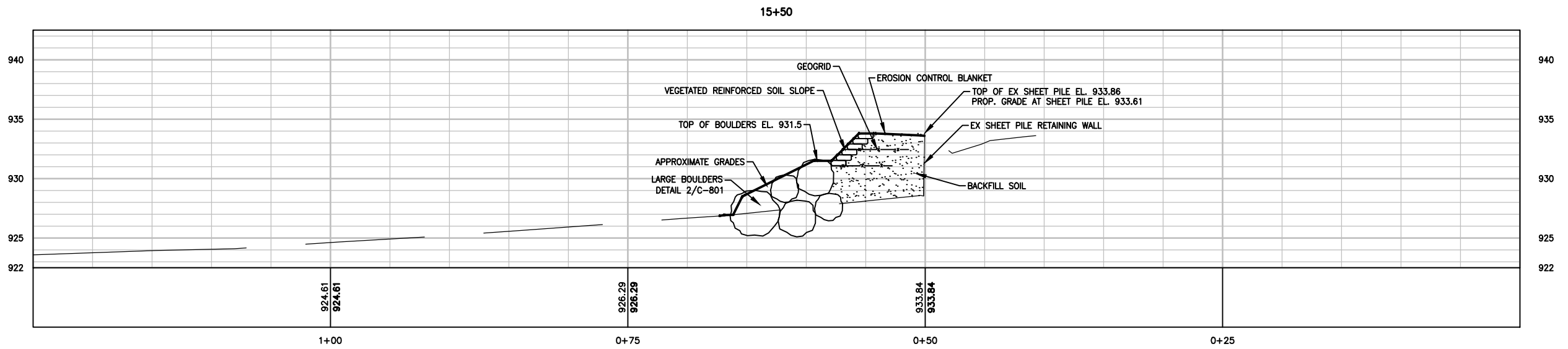
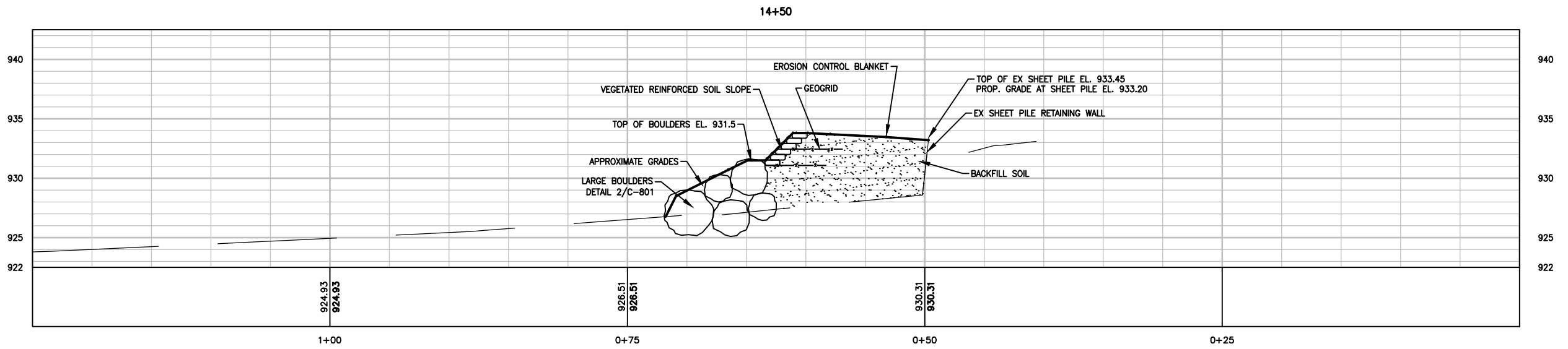
PRIME CONSULTANT

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PROJECT TITLE
HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION

MINNEHAHA CREEK WATERSHED DISTRICT
 QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE			
CROSS SECTIONS SHEET PILE RETAINING WALL D3			
DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	REV NO.
0185-0047	C-305	AS SHOWN	0



NOTES: SEE SHEET G-102

0	ISSUED FOR BID	MJS	CJM	08/15/16			
REV	REVISION DESCRIPTION	DWN	APP	REV DATE			

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PROJECT TITLE

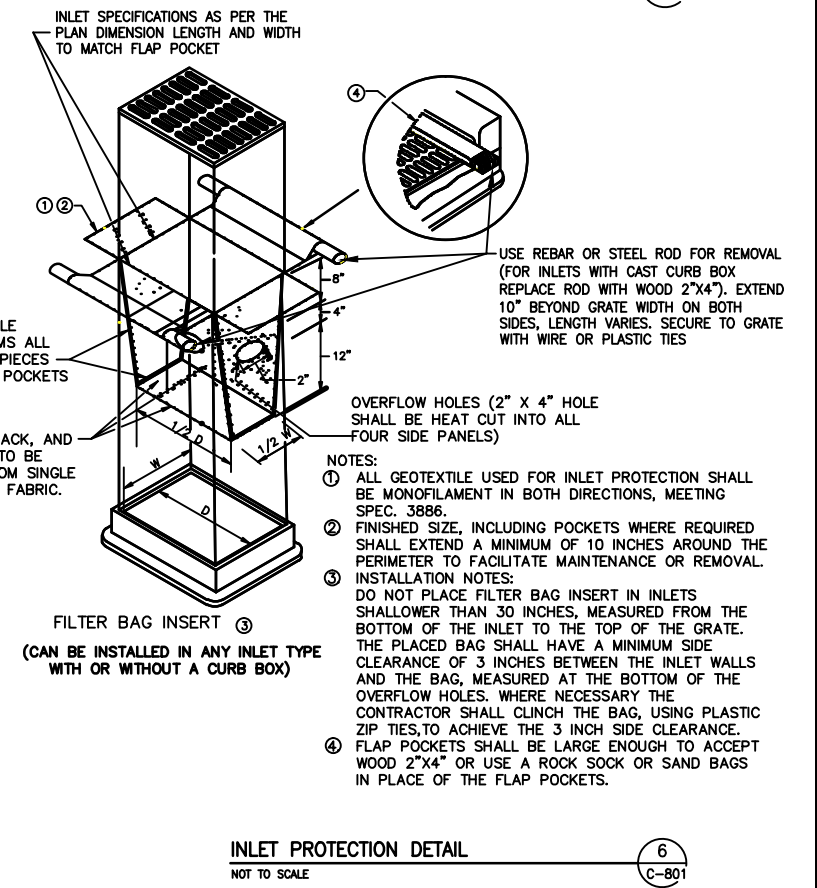
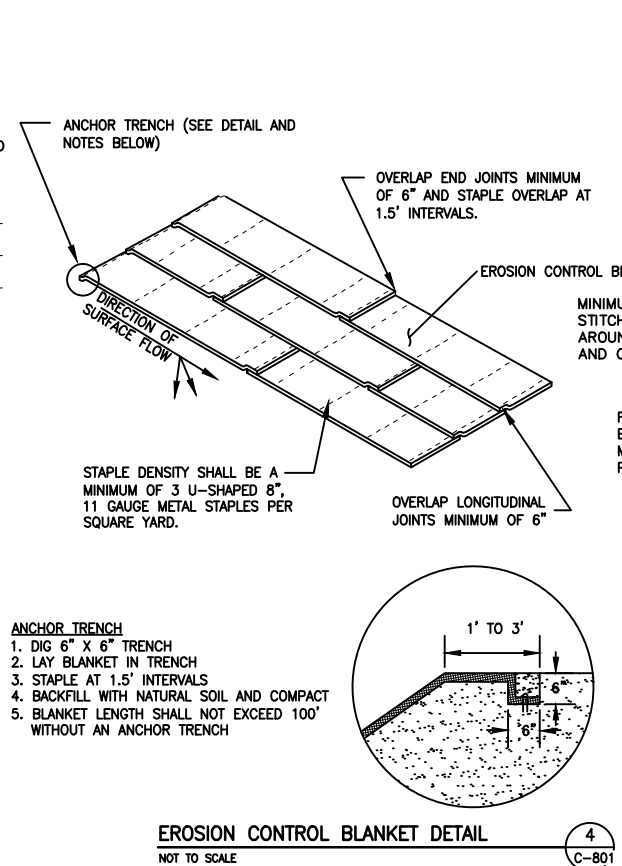
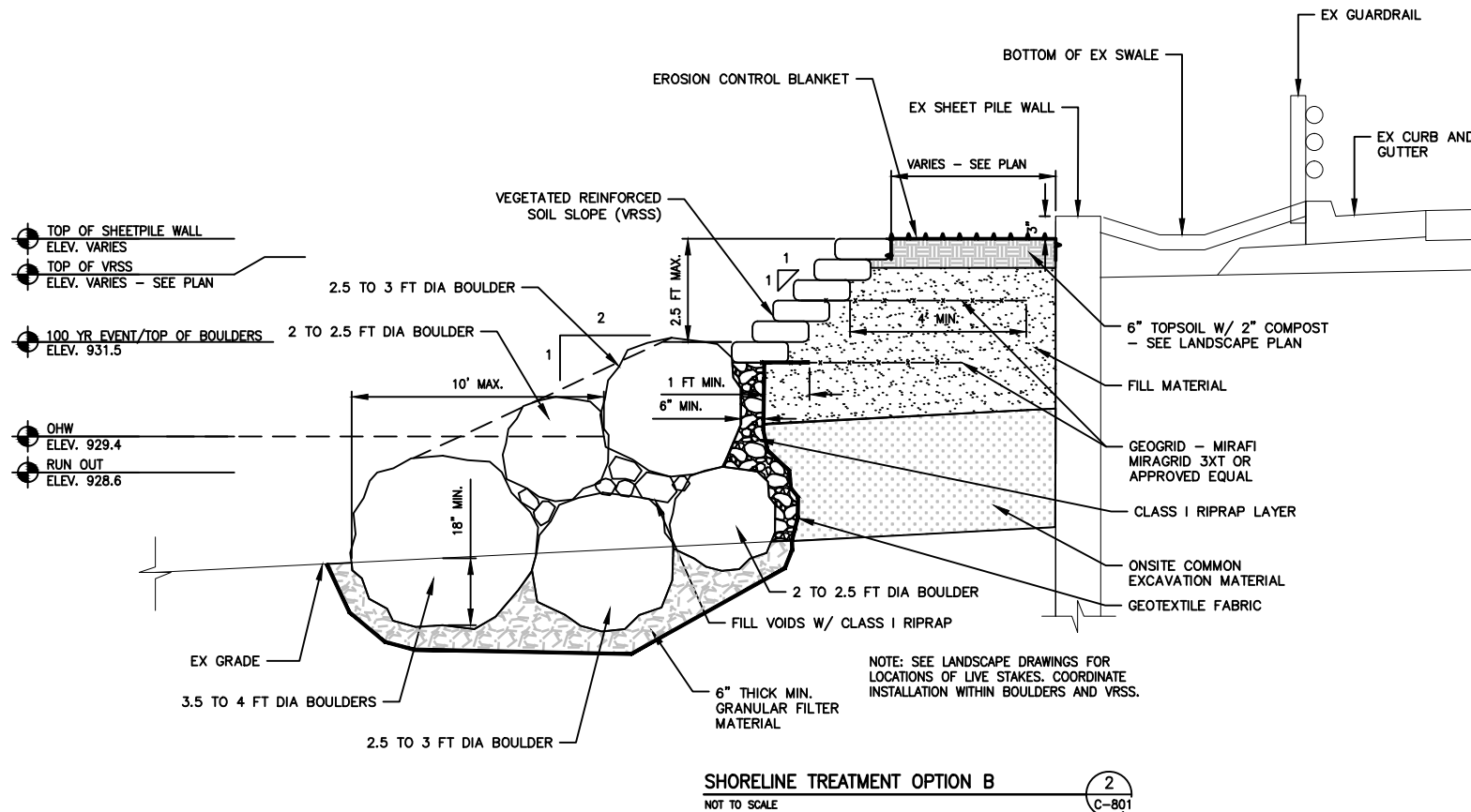
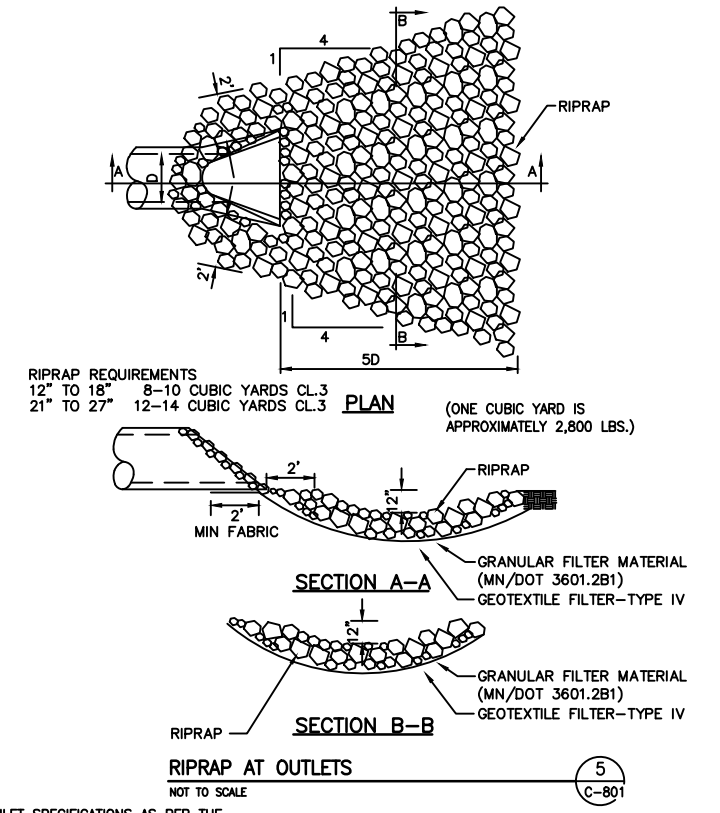
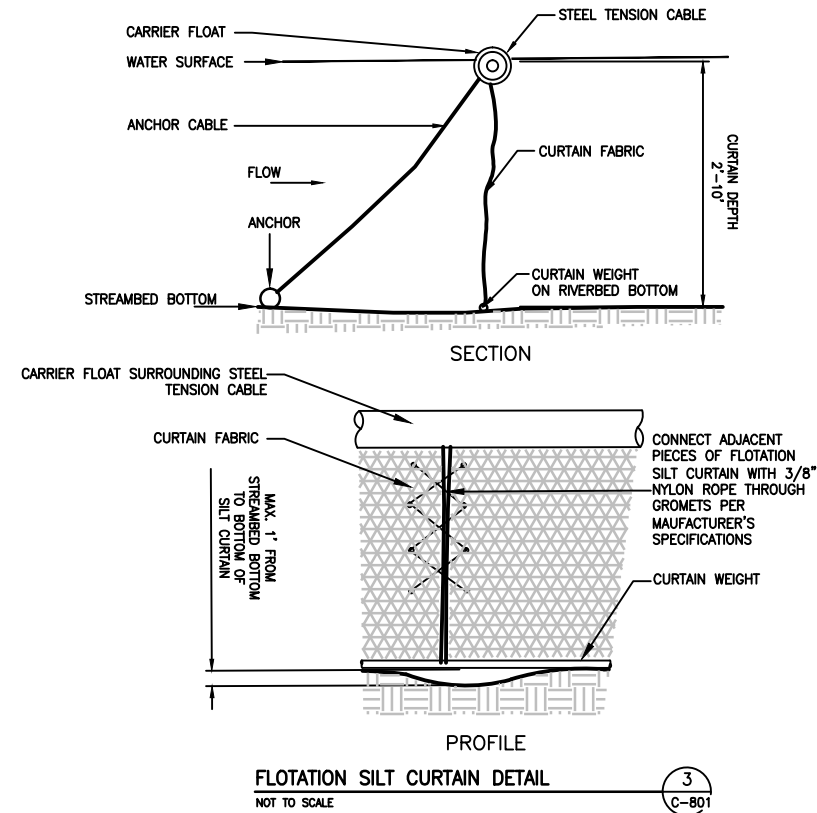
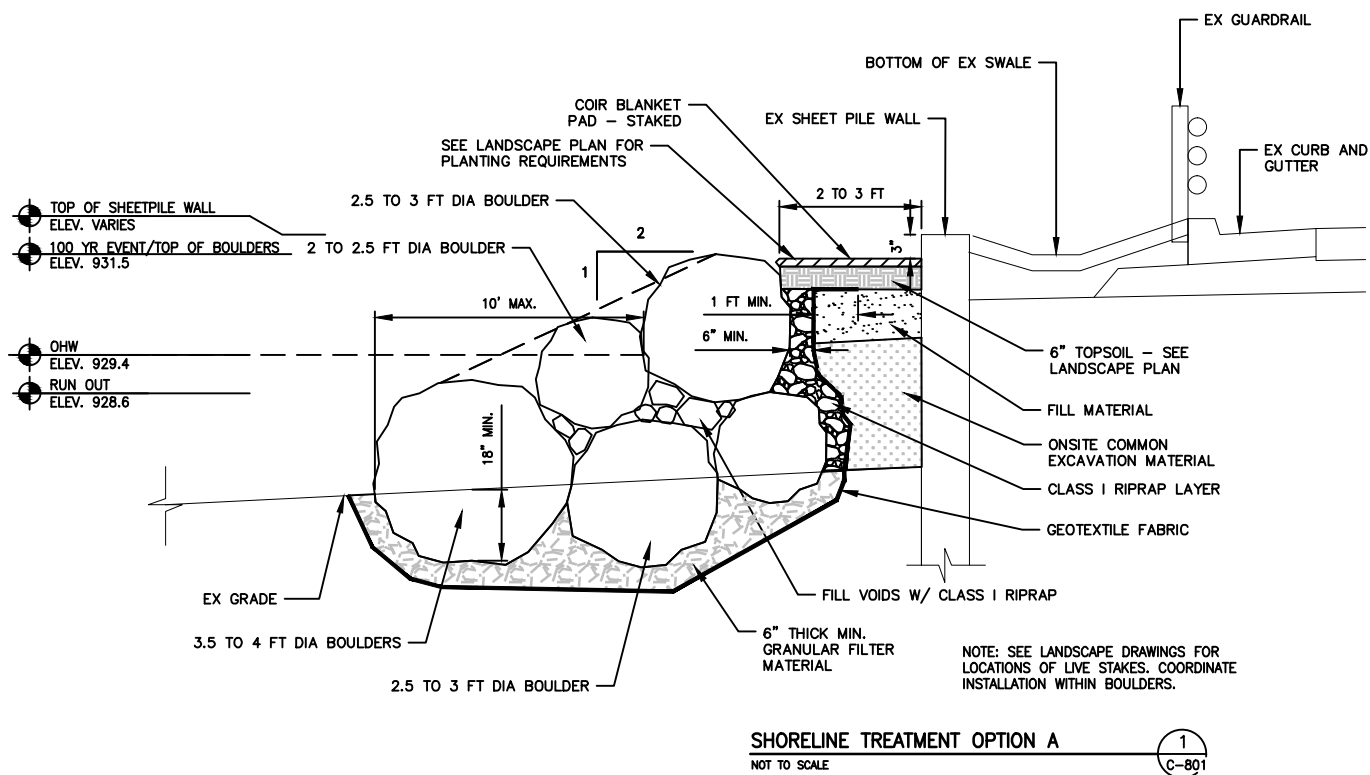
**HIGHWAY 101 CAUSEWAY
 SHORELINE RECONSTRUCTION**

**MINNEHAHA CREEK
 WATERSHED DISTRICT**
 QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE

**CROSS SECTIONS
 SHEET PILE RETAINING WALL D4**

DWN BY	CHK'D	APP'D	DWG DATE	AUG 2016
MJS	MJS	CJM	SCALE	AS SHOWN
PROJECT NO.	SHEET NO.	REV NO.		
0185-0047	C-306	0		



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
0	ISSUED FOR BID	MJS	CJM	08/15/16

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DATE 08/15/16 REG. NO. 43066

SUB CONSULTANT

HART | HOWERTON

PRIME CONSULTANT

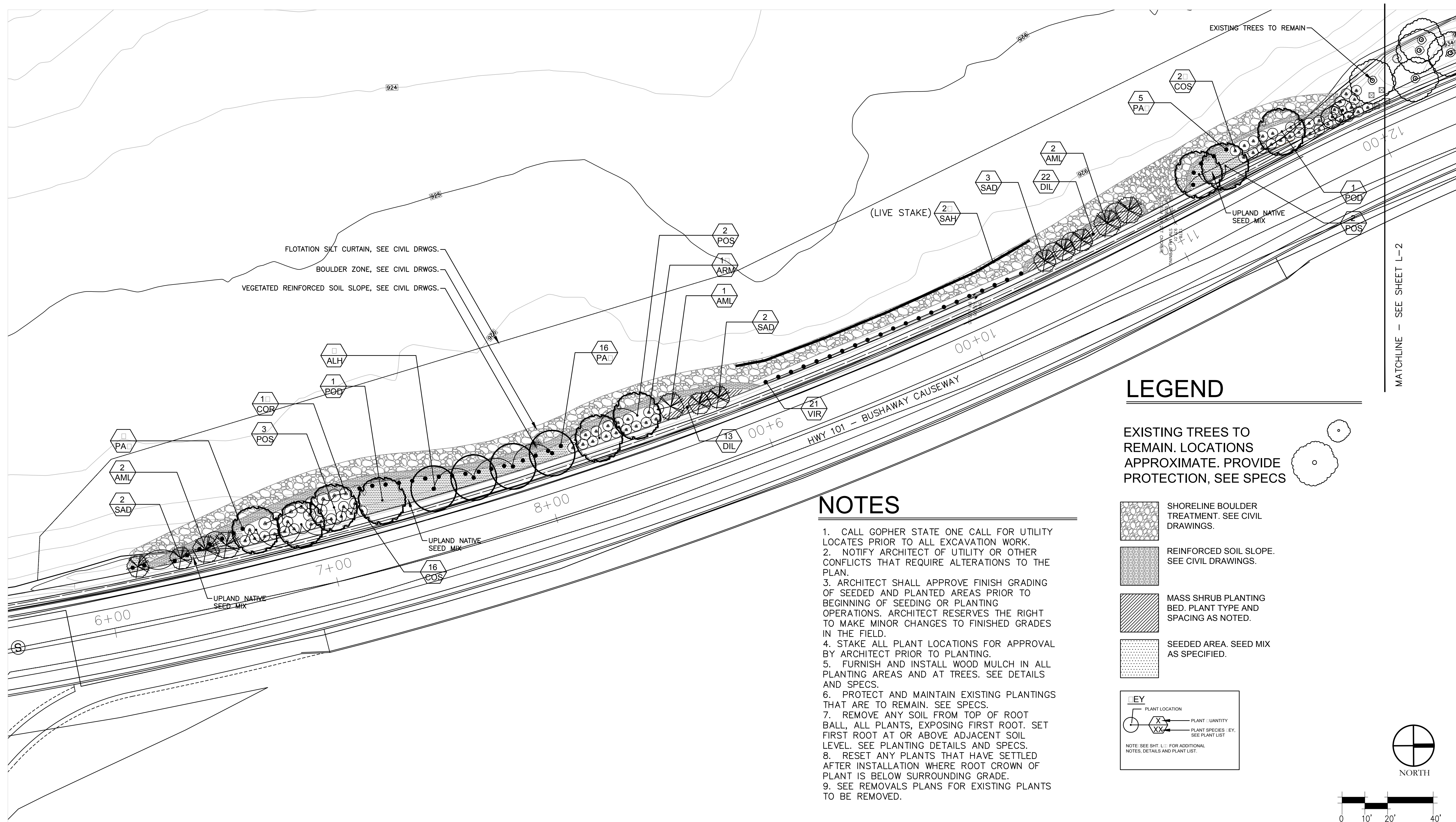
WENCK ASSOCIATES

Responsive partner. Exceptional outcomes.

PROJECT TITLE
HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION

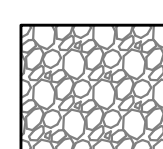
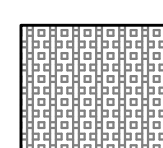
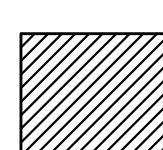
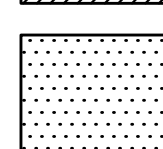
MINNEHAHA CREEK WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

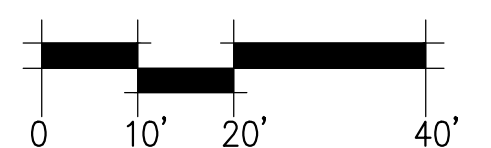
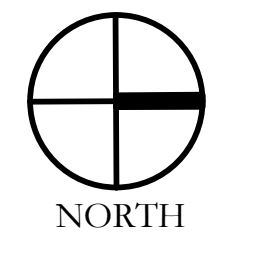
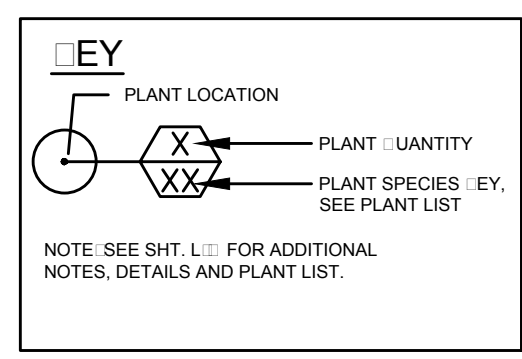
SHEET TITLE			
CIVIL DETAILS			
DWN BY	CHK'D	APP'D	DWG DATE
MJS	MJS	CJM	AUG 2016
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
0185-0047	C-801		
			REV NO.
			0



LEGEND

EXISTING TREES TO REMAIN. LOCATIONS APPROXIMATE. PROVIDE PROTECTION, SEE SPECS

-  SHORELINE BOULDER TREATMENT. SEE CIVIL DRAWINGS.
-  REINFORCED SOIL SLOPE. SEE CIVIL DRAWINGS.
-  MASS SHRUB PLANTING BED. PLANT TYPE AND SPACING AS NOTED.
-  SEEDED AREA. SEED MIX AS SPECIFIED.



NOTES

1. CALL GOPHER STATE ONE CALL FOR UTILITY LOCATES PRIOR TO ALL EXCAVATION WORK.
2. NOTIFY ARCHITECT OF UTILITY OR OTHER CONFLICTS THAT REQUIRE ALTERATIONS TO THE PLAN.
3. ARCHITECT SHALL APPROVE FINISH GRADING OF SEEDED AND PLANTED AREAS PRIOR TO BEGINNING OF SEEDING OR PLANTING OPERATIONS. ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES TO FINISHED GRADES IN THE FIELD.
4. STAKE ALL PLANT LOCATIONS FOR APPROVAL BY ARCHITECT PRIOR TO PLANTING.
5. FURNISH AND INSTALL WOOD MULCH IN ALL PLANTING AREAS AND AT TREES. SEE DETAILS AND SPECS.
6. PROTECT AND MAINTAIN EXISTING PLANTINGS THAT ARE TO REMAIN. SEE SPECS.
7. REMOVE ANY SOIL FROM TOP OF ROOT BALL, ALL PLANTS, EXPOSING FIRST ROOT. SET FIRST ROOT AT OR ABOVE ADJACENT SOIL LEVEL. SEE PLANTING DETAILS AND SPECS.
8. RESET ANY PLANTS THAT HAVE SETTLED AFTER INSTALLATION WHERE ROOT CROWN OF PLANT IS BELOW SURROUNDING GRADE.
9. SEE REMOVALS PLANS FOR EXISTING PLANTS TO BE REMOVED.

REV	REVISION DESCRIPTION	DWN	APP	REV DATE
-	BID ISSUE	JAL	RSA	08/15/16

SEAL
 I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.
 ROLAND S. ABERG
 DATE 08/15/16 REG. NO. 47454

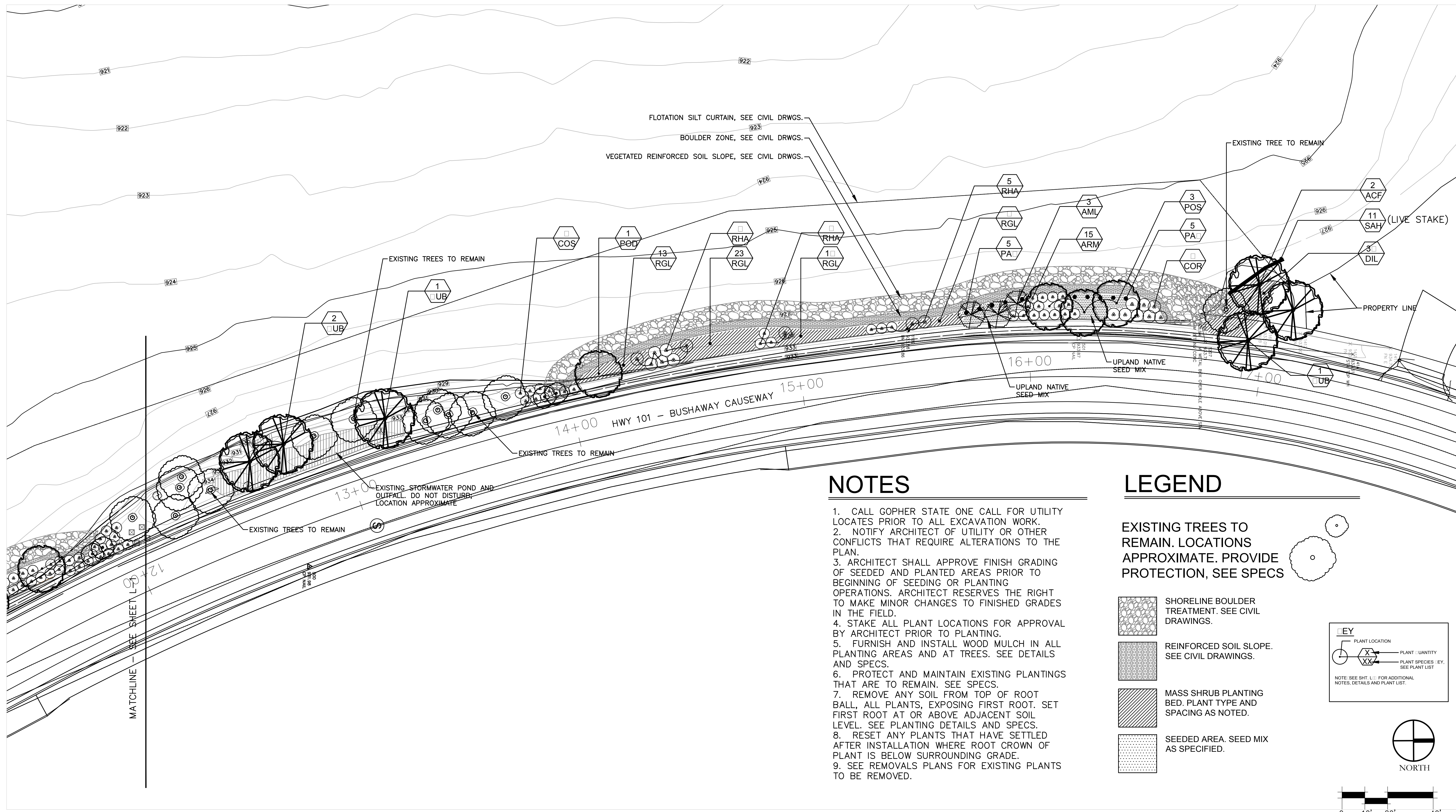
SUB CONSULTANT
HART HOWERTON
 13911 RIDGEDALE DR. STE. 220
 MINNETONKA, MINNESOTA 55305
 T: 952-476-1574 F: 952-476-1573
 ROLAND ABERG, MANAGING PRINCIPAL

PRIME CONSULTANT
WENCK ASSOCIATES
 Responsive partner. Exceptional outcomes.

PROJECT TITLE
 HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION
 **MINNEHAHA CREEK WATERSHED DISTRICT**
 QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE
PLANTING PLAN SOUTH SEGMENT

DWN BY	CHK'D	APP'D	DWG DATE	08/15/2016
-	-	-	SCALE	AS SHOWN
PROJECT NO.	SHEET NO.	REV NO.		
16-021	L-1	-		



NOTES

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8. RESET ANY PLANTS THAT HAVE SETTLED AFTER INSTALLATION WHERE ROOT CROWN OF PLANT IS BELOW SURROUNDING GRADE.
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LEGEND

EXISTING TREES TO REMAIN. LOCATIONS APPROXIMATE. PROVIDE PROTECTION, SEE SPECS

- SHORELINE BOULDER TREATMENT. SEE CIVIL DRAWINGS.
- REINFORCED SOIL SLOPE. SEE CIVIL DRAWINGS.
- MASS SHRUB PLANTING BED. PLANT TYPE AND SPACING AS NOTED.
- SEEDING AREA. SEED MIX AS SPECIFIED.

KEY

○ PLANT LOCATION

⊗ PLANT QUANTITY

⊘ PLANT SPECIES KEY. SEE PLANT LIST

NOTE: SEE SHT. L-1 FOR ADDITIONAL NOTES, DETAILS AND PLANT LIST.

NORTH

- BID ISSUE	JAL	RSA	08/15/16	
REV	REVISION DESCRIPTION	DWN	APP	REV DATE

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ROLAND S. ABERG
 DATE 08/15/16 REG. NO. 47454

SUB CONSULTANT

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 13911 RIDGEDALE DR. STE. 220
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 T: 952-476-1574 F: 952-476-1573
 ROLAND ABERG, MANAGING PRINCIPAL

PRIME CONSULTANT

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PROJECT TITLE

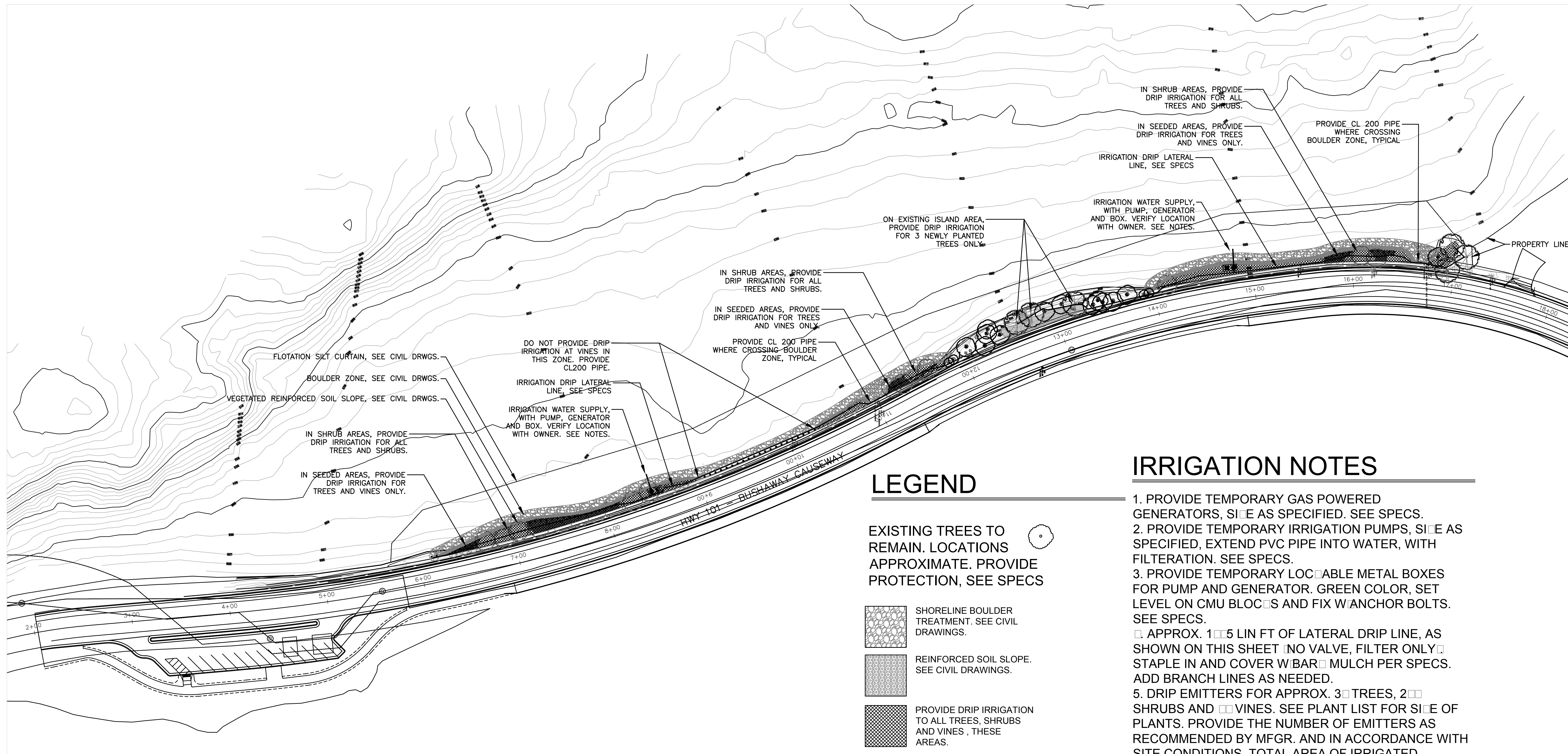
HIGHWAY 101 CAUSEWAY
SHORELINE RECONSTRUCTION

MINNEHAHA CREEK WATERSHED DISTRICT
 QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE

PLANTING PLAN
NORTH SEGMENT

DWN BY	CHK'D	APP'D	DWG DATE	08/15/2016
-	-	-	SCALE	AS SHOWN
PROJECT NO.	SHEET NO.	REV NO.		
16-021	L-2	-		



LEGEND

EXISTING TREES TO REMAIN. LOCATIONS APPROXIMATE. PROVIDE PROTECTION, SEE SPECS

SHORELINE BOULDER TREATMENT. SEE CIVIL DRAWINGS.

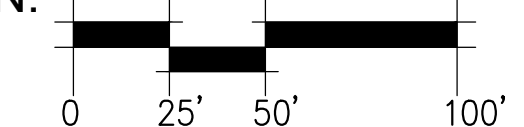
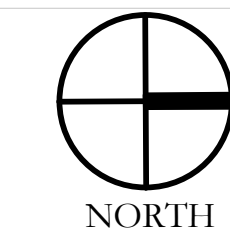
REINFORCED SOIL SLOPE. SEE CIVIL DRAWINGS.

PROVIDE DRIP IRRIGATION TO ALL TREES, SHRUBS AND VINES, THESE AREAS.

IRRIGATION PUMP, GENERATOR AND BOX. VERIFY LOCATION WITH OWNER'S REPRESENTATIVE.

IRRIGATION NOTES

1. PROVIDE TEMPORARY GAS POWERED GENERATORS, SIZE AS SPECIFIED. SEE SPECS.
 2. PROVIDE TEMPORARY IRRIGATION PUMPS, SIZE AS SPECIFIED, EXTEND PVC PIPE INTO WATER, WITH FILTRATION. SEE SPECS.
 3. PROVIDE TEMPORARY LOCKABLE METAL BOXES FOR PUMP AND GENERATOR. GREEN COLOR, SET LEVEL ON CMU BLOCKS AND FIX W/ANCHOR BOLTS. SEE SPECS.
 4. APPROX. 1" x 5' LIN FT OF LATERAL DRIP LINE, AS SHOWN ON THIS SHEET (NO VALVE, FILTER ONLY). STAPLE IN AND COVER W/BARK MULCH PER SPECS. ADD BRANCH LINES AS NEEDED.
 5. DRIP EMITTERS FOR APPROX. 3" TREES, 2" SHRUBS AND 1" VINES. SEE PLANT LIST FOR SIZE OF PLANTS. PROVIDE THE NUMBER OF EMITTERS AS RECOMMENDED BY MFR. AND IN ACCORDANCE WITH SITE CONDITIONS. TOTAL AREA OF IRRIGATED PLANTING IS APPROXIMATELY 5,000 SQ. FT.
 6. IRRIGATION SYSTEM TO BE DESIGN/BUILD. SEE SPECS FOR ADDITIONAL INFO.
- PROVIDE SHOP DRAWING AND PRODUCT DATA SHEETS FOR APPROVAL PRIOR TO CONSTRUCTION.
 - SEE SHEET L-1 FOR ADDITIONAL LEGEND INFORMATION.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE
-	BID ISSUE	JAL	RSA	08/15/16

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PROJECT TITLE
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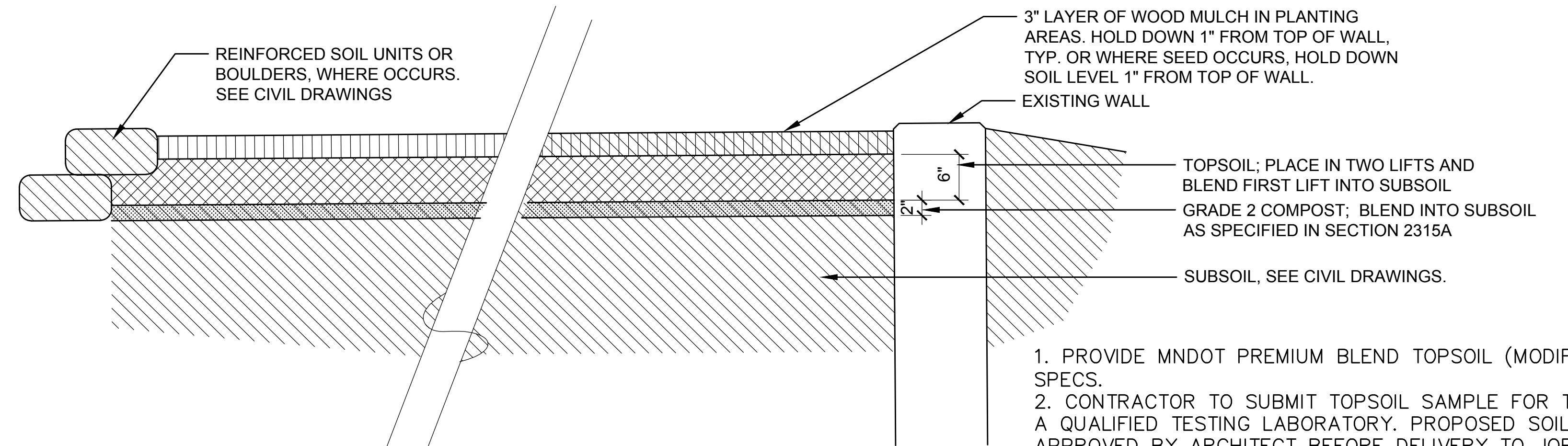
MINNEHAHA CREEK WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE			
IRRIGATION CONCEPT PLAN			
DWN BY	CHK'D	APP'D	DWG DATE 08/15/2016
-	-	-	SCALE AS SHOWN
PROJECT NO.	SHEET NO.	REV NO.	
16-021	L-3	-	

PLANT LIST

KEY	BOTANICAL NAME	COMMON NAME	QUANT.	SIZE	COMMENTS
TREES ON ISLAND AND ON NORTH END					
ACF	ACER X. FREEMANI "JEFFERSRED"	AUTUMN BLAZE MAPLE	2	#15 CONT.	STANDARD FORM
QUB	QUERCUS BICOLOR	SWAMP WHITE OAK	4	2" CAL.	B&B; STANDARD FORM
TREES ABOVE BOULDERS					
ALH	ALNUS H. "HARBIN"	PRAIRIE HORIZON ALDER	4	#10 CONT.	LOW BRANCHING STANDARD FORM
AML	AMELANCHIER LAEVIS	ALLEGHENY SERVICEBERRY	8	#10 CONT.	MULTI-TRUNK
POD	POPULUS DELTOIDES	EASTERN COTTONWOOD	3	#10 CONT.	LOW BRANCHING STANDARD FORM
POS	POPULUS D. "SIOUXLAND"	SIOUXLAND POPLAR	10	#10 CONT.	LOW BRANCHING STANDARD FORM
SAD	SALIX DISCOLOR	PUSSY WILLOW	7	#10 CONT.	MULTI-TRUNK
MEDIUM/TALL SHRUBS					
ARM	ARONIA MELANOCARPA	BLACK CHOKEBERRY	32	#5 CONT.	FULL FORM, FULLY ROOTED
COR	CORNUS RACEMOSA	GRAY DOGWOOD	18	#5 CONT.	FULL FORM, FULLY ROOTED
COS	CORNUS SERICEA	RED-OSIER DOGWOOD	53	#5 CONT.	FULL FORM, FULLY ROOTED
LOW SHRUBS					
DIL	DIERVILLA LONICERA	DWARF BUSH HONEYSUCKLE	72	#5 CONT.	42 IN. O.C., FULL FORM, FULLY ROOTED
RHA	RHUS AROMATICA	FRAGRANT SUMAC	16	#5 CONT.	FULL FORM, FULLY ROOTED
RGL	RHUS A. "GRO LOW"	GRO LOW SUMAC	57	#5 CONT.	48 IN. O.C., FULL FORM, FULLY ROOTED
LIVE STAKE/BARE ROOT SHRUBS					
SAH	SALIX HUMILIS VAR. HUMILIS	PRAIRIE WILLOW	35	LIVE STAKE/BARE ROOT	30 IN. O.C.; SEE SPECS
VINES					
PAQ	PARTHENOCISSUS QUINQUEFOLIA	VIRGINIA CREEPER	40	#1 CONT.	FULL FORM, FULLY ROOTED
VIR	VITUS RIPARIA	RIVERBANK GRAPE	21	#1 CONT.	FULL FORM, FULLY ROOTED

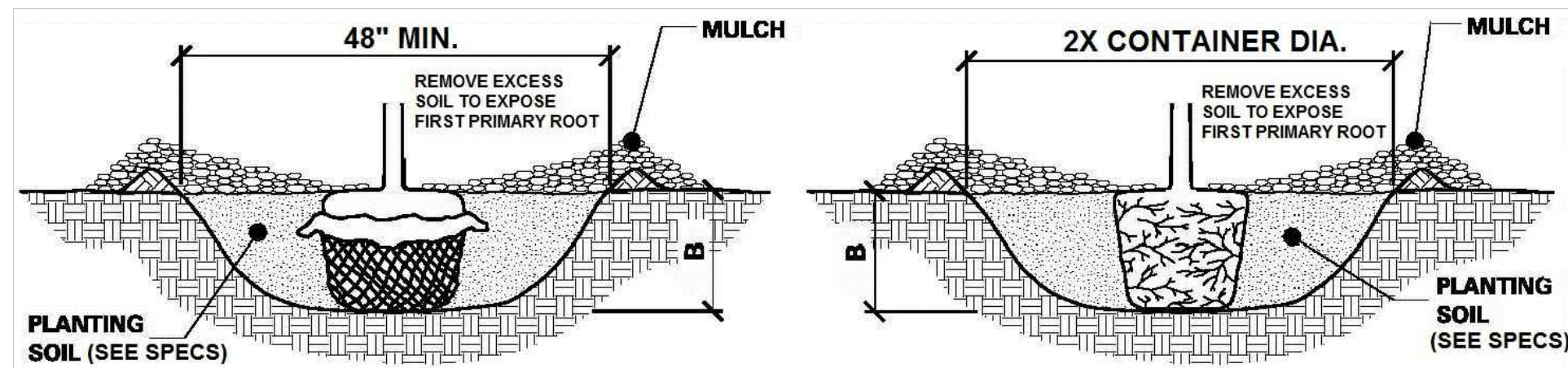
NOTE: PLANT MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF THE SPECIFICATIONS, PLANS, NOTES AND DETAILS



TOPSOIL PLACEMENT AND NOTES

NOT TO SCALE

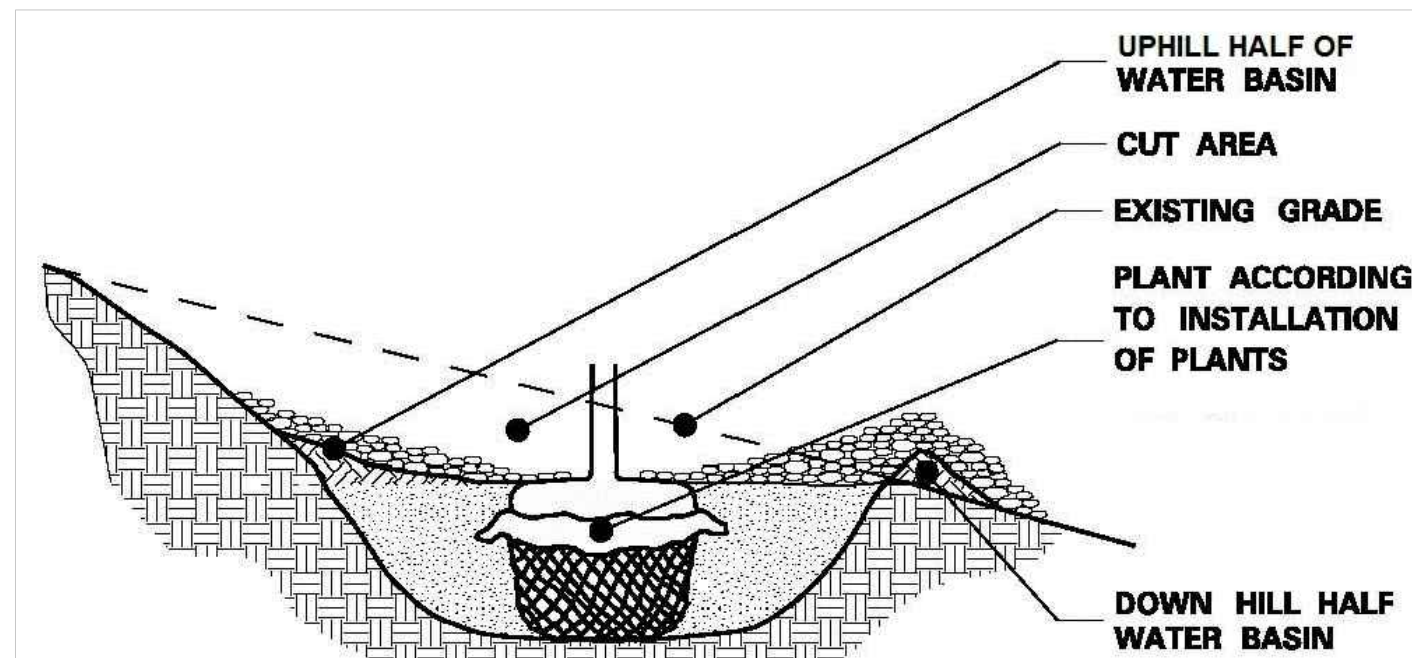
1. PROVIDE MNDOT PREMIUM BLEND TOPSOIL (MODIFIED). SEE SPECS.
2. CONTRACTOR TO SUBMIT TOPSOIL SAMPLE FOR TESTING BY A QUALIFIED TESTING LABORATORY. PROPOSED SOIL SHALL BE APPROVED BY ARCHITECT BEFORE DELIVERY TO JOB SITE. PROPOSED PRODUCT SHALL MEET SPECIFIED STANDARDS FOR PH, NUTRIENTS, SALTS AND PARTICLE SIZE DISTRIBUTION.
3. PERFORM SUBGRADE DRAINAGE TESTS AS PER SPECS, IN LOCATIONS AS DIRECTED.
4. CONTRACTOR TO ROTO TILL COMPOST AND TOPSOIL INTO SUBGRADE BEFORE PLACEMENT OF FINAL TOPSOIL LIFT.
5. COMPACTION AND FINAL GRADING OF TOPSOIL PER SPECS.
6. DO NOT REUSE EXISTING TOPSOIL UNLESS APPROVED BY ARCHITECT.
7. USE ACCEPTED TOPSOIL IN PLANT HOLE BACKFILL, BLENDED WITH SITE SOIL. SEE PLANTING DETAILS AND SPECS.



1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT.
4. SLIT REMAINING TREATED BURLAP AT 6" INTERVALS.
5. BACKFILL TO WITHIN APPROXIMATELY 12" OF THE TOP OF THE ROOTBALL, THEN WATER PLANT. REMOVE THE TOP 1/8 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM THE TOP 1/8 OF THE BALL. REMOVE ALL TWINE. REMOVE OR CORRECT STEM GIRDLING ROOTS.
6. PLUMB AND BACKFILL WITH PLANTING SOIL.
7. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
8. BACK FILL VOIDS AND WATER SECOND TIME.
9. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

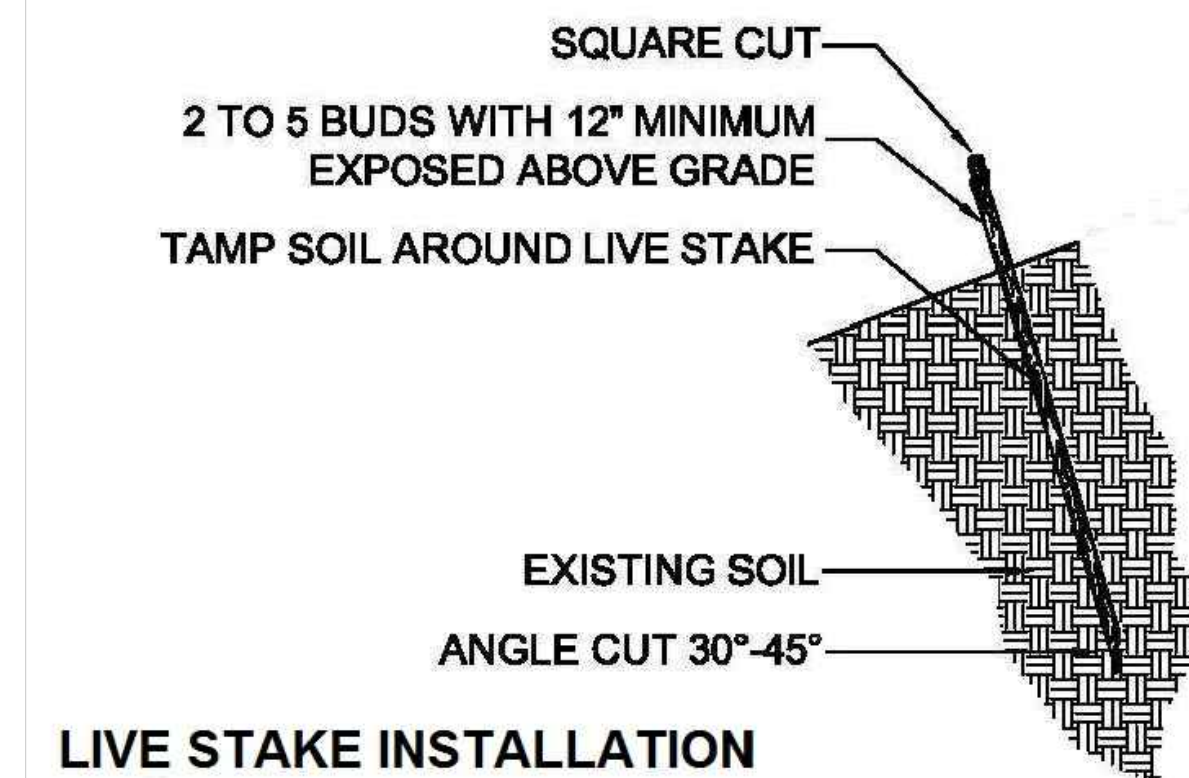
1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
3. REMOVE CONTAINER AND SCORE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCLING FIBROUS ROOTS. REMOVE OR CORRECT STEM GIRDLING ROOTS.
4. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE TOP OF THE ROOT FLARE IS AT OR UP TO 2" ABOVE THE FINISHED GRADE.
5. PLUMB AND BACKFILL WITH PLANTING SOIL.
6. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
7. BACK FILL VOIDS AND WATER SECOND TIME.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

PLANTING DETAILS

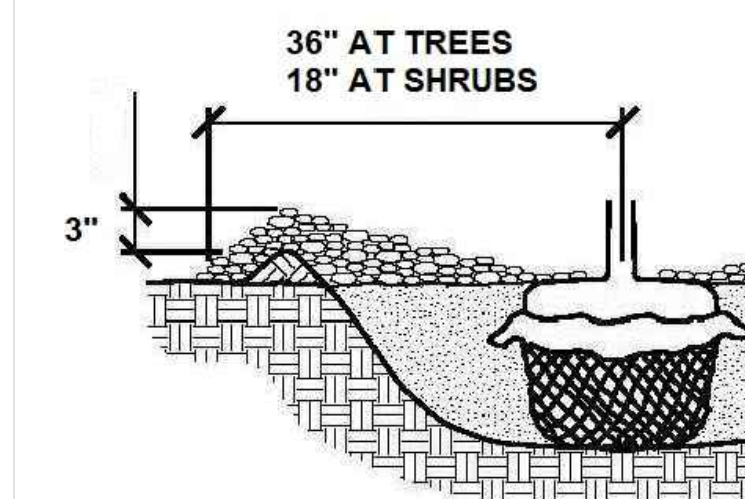


- NOTE:
1. ON 1:2 SLOPES OR GREATER, DO NOT CONSTRUCT THE UPHILL HALF OF THE WATERING BASIN.

PLANTING ON STEEP SLOPES

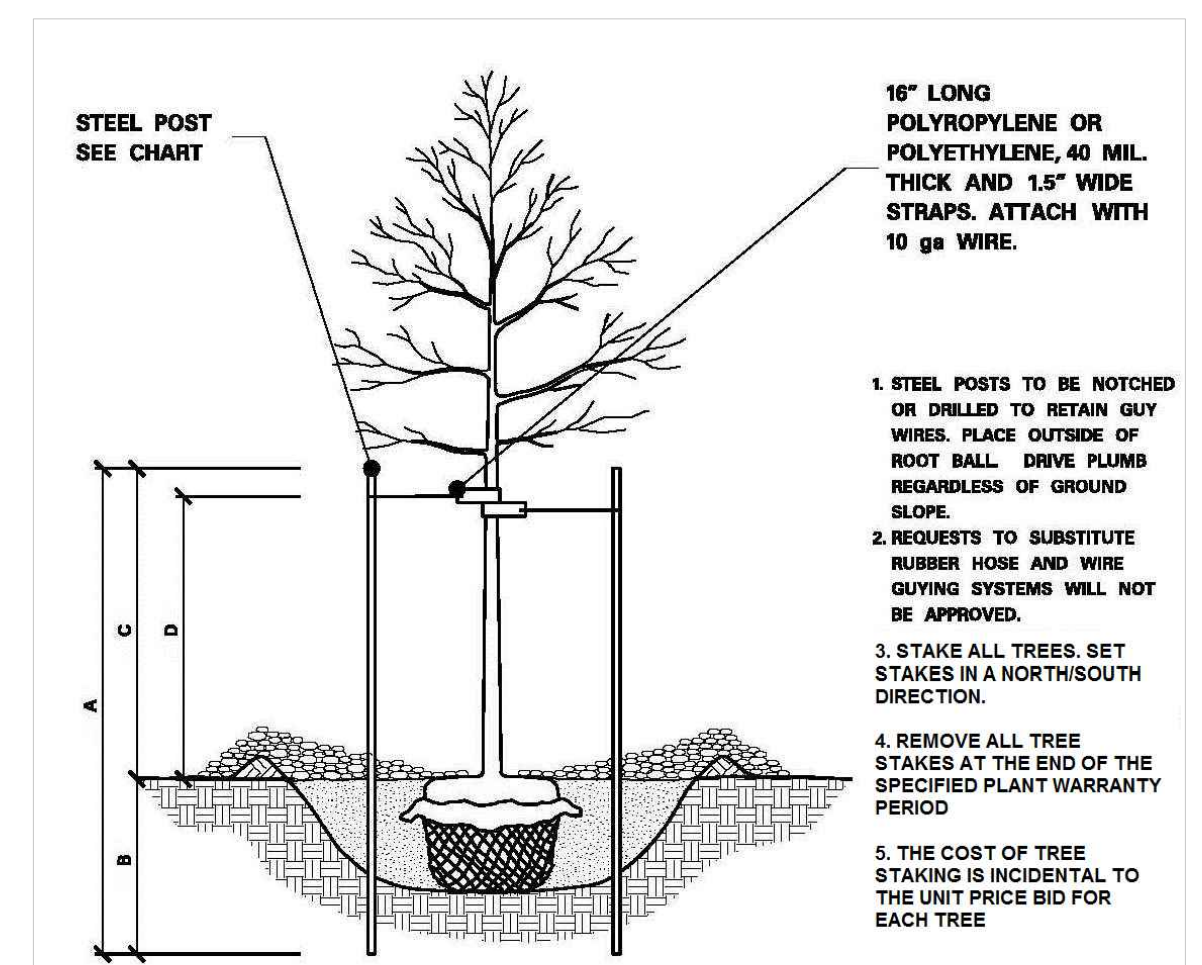


LIVE STAKE INSTALLATION



MULCH PLACEMENT

1. PULL MULCH BACK NO LESS THAN 3" AND NO MORE THAN 6" FROM TREE TRUNKS.
2. SUBSIDING OR DETERIORATING MULCH IS ACCEPTABLE THROUGHOUT THE CONTRACT IF THE MULCH DEPTH IS MAINTAINED AT A MINIMUM 3" DEPTH.
3. IF THE MULCH DEPTH IS LESS THAN 3" ADDITIONAL MULCH IS REQUIRED TO PROVIDE THE MINIMUM DEPTH.
4. MULCH CONTAMINATED WITH SOIL MUST BE REMOVED AND REPLACED.



TREE STAKING

1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF ROOT BALL. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.
2. REQUESTS TO SUBSTITUTE RUBBER HOSE AND WIRE GUYING SYSTEMS WILL NOT BE APPROVED.
3. STAKE ALL TREES. SET STAKES IN A NORTH/SOUTH DIRECTION.
4. REMOVE ALL TREE STAKES AT THE END OF THE SPECIFIED PLANT WARRANTY PERIOD.
5. THE COST OF TREE STAKING IS INCIDENTAL TO THE UNIT PRICE BID FOR EACH TREE.

STEEL POST SIZING				
CALIPER	STEEL POST TYPE	A	B	C
LESS THAN 4 INCHES	ROLLED STEEL FENCE POST (MNDOT 3403) OR APPROVED EQUAL	7'-0"	3'-0" MIN.	4'-0" 3'-0"
GREATER THAN 4 INCHES	1/2" 2.2 LB. FLANGED CHANNEL STEEL SIGN POST (MNDOT 3401) OR APPROVED EQUAL	10'-0"	4'-0" MIN.	6'-0" 5'-0"

REV	ISSUED FOR BID	REVISION DESCRIPTION	DWN	APP	REV DATE
-	ISSUED FOR BID		JAL	RSA	08/15/16

SEAL
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA.
ROLAND S. ABERG
DATE 08-15-16 REG. NO. 47454

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PRIME CONSULTANT
WENCK ASSOCIATES
Responsive partner. Exceptional outcomes.

PROJECT TITLE
HIGHWAY 101 CAUSEWAY SHORELINE RECONSTRUCTION
MINNEHAHA CREEK WATERSHED DISTRICT
QUALITY OF WATER, QUALITY OF LIFE

SHEET TITLE			
PLANTING DETAILS AND PLANT LIST			
DWN BY	CHK'D	APP'D	DWG DATE
-	-	-	08/15/2016
PROJECT NO.	SHEET NO.	SCALE	AS SHOWN
16-021	L-4		
REV NO.	-		