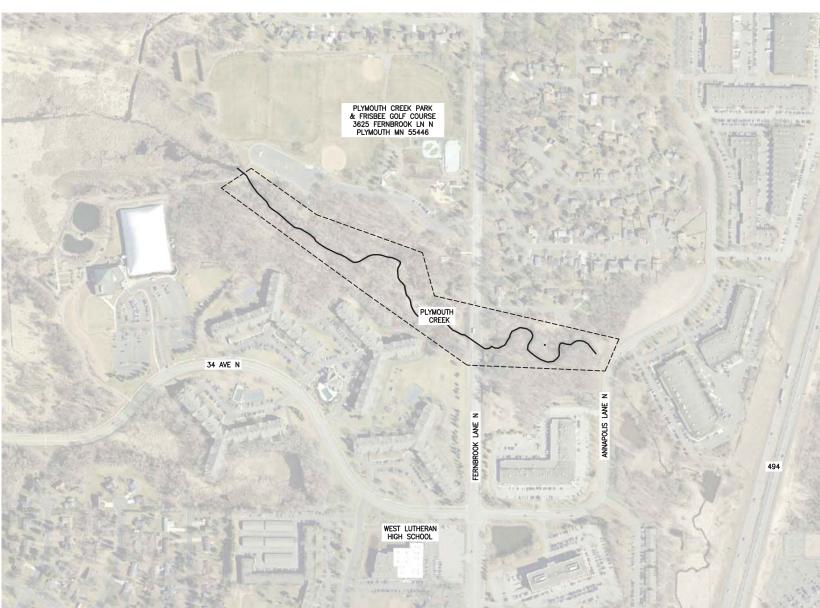
# CONSTRUCTION PLANS FOR PLYMOUTH CREEK STREAM RESTORATION CITY PROJECT NO. 16007

# PREPARED FOR CITY OF PLYMOUTH,MN

APRIL 2017



# 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. THE CONTRACTOR SHALL REPAIR OR REPLACE THE ABOVE WHEN DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER.

CALL BEFORE YOU DIG GOPHER STATE ONE CALL TWN CITY AREA: 651-454-0002 TOLL FREE 1-800-252-1166

# PROJECT VICINITY MAP

					SEAL	PRIME CONSULTANT
					I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION,	
		<u> </u>	<u> </u>		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.	
2	FOR BID	SJB	EAM	08/01/17	Same	
1	90% DESIGN	SJB	EAM	06/30/17	ED MATTHIESEN	Responsive partner. E
0	60% DESIGN	SJB	EAM	04/20/17	ED MATHIESEN	
REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800	



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G-102	LEGEND AND GENERAL NOTES
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D-103	DETAILS
D-104	DETAILS
D-105	DETAILS
D-106	DETAILS

Item 5B.

BCWMC 8-17-17

PROJECT TITLE	SHEET TITLE										
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	TITLE AND INDEX SHEET										
CITY OF PLYMOUTH	dwn by SJB	снк'р LNJ	APP'D DWG DATE MAR 2017 EAM SCALE AS SHOWN								
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	PROJECT 1756		SHEET N	<sub>o.</sub> G—101	REV NO.						

# GENERAL NOTES:

- EXISTING CONDITIONS HAVE BEEN PROVIDED BY A COMBINATION OF HISTORIC PLANS FROM 1. EXISTING CONTROL TAY DOWN AND A SITE VISIT BY WEACK STAFF AND LIDAR. EXISTING FEATURES MAY NOT BE EXACT TO THEIR LOCATION. THE CONTRACTOR IS RESPONSIBLE FOR VERTYING THE CONDITIONS OF THE SITE AND SHALL NOTIFY TH ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE DRAWINGS.
- ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE DRAWINGS. ALL QUANTITIES ARE APPROXIMATE AND MAY VARY TO ALLOW COMPLETION OF WORK. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38–2 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA".
- SUBSURFACE UTILITY DATA". EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBER OPTIC, PIPELINES, ELECTRICAL, AND CABLE TV ARE UNKNOWN. CONTRACTOR RESPONSIBLE FOR LOCATING PRIOR TO STARTING WORK. CONTRACTOR SHOULD ANTICIPATE PRIVATE UTILITY CONFLICTS THROUGHOUT THE PROJECT
- 5.
- CONTRACTOR SHOULD ANTICIPATE PRIVATE UTILITY CONFLICTS THROUGHOUT THE PROJECT SUB CUT AND TRENCH AREAS AND SHALL COORDINATE WITH PRIVATE UTILITY OWNERS. THE RELOCATION AND OR PROTECTION OF ALL EXISTING UTILITES MUST BE COORDINATED BY THE CONTRACTOR AND ANY COSTS FOR SUCH WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR EXTRA TIME AND EFFORT OF PROVISIONS NECESSARY TO WORK AROUND OR UNDER ANY UTILITIES. INSTALL AND MAINTAIN EROSION CONTROL DEVICES AS SPECIFIED OR AS DIRECTED BY
- FNGINFFR.
- B. CONTRACTOR SHALL COMPLY WITH ALL STATE, COUNTY, AND CITY PERMITS.
   MAINTAIN MAIL, GARBAGE, AND RECYCLING SERVICES TO PROPERTIES.
   PROTECT EXISTING PAVEMENT AND SITE FEATURES, EXCEPT AS NOTED.
- 11. CONTRACTOR TO COORDINATE AND MAINTAIN ACCESS TO PROPERTIES.
- 12. MAINTAIN DRAINAGE CONVEYANCE DURING CONSTRUCTION (BOTH PIPED AND OVERLAND). 13. THE EXISTING PAVEMENT CONDITIONS HAVE BEEN DOCUMENTED, AND ANY DAMAGE TO THE EXISTING PAVEMENT, CURBING, AND STRIPING SHALL BE REPLACED BY THE CONTRACTOR, TO THE OWNERS SATISFACTION, AT NO ADDITIONAL COST TO THE OWNER.

# **REMOVAL NOTES:**

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

# **DEWATERING NOTES:**

- NO BID ITEM HAS BEEN PROVIDED FOR DEWATERING AS ALL DEWATERING WORK NECESSARY FOR CONSTRUCTION WILL BE CONSIDERED INCIDENTAL. 1.
- ENERGY DISSIPATION SHALL BE PROVIDED AT ALL DISCHARGE POINTS TO 2.
- PREVENT SCOUR. PROVIDE SILT BACS FOR DEWATERING. CONTRACTOR RESPONSIBLE TO SUBMIT DEWATERING PLAN TO ENGINEER FOR REVIEW.
- DEWATENING SHALL MEET ALL PERMIT REQUIREMENTS AND BE APPROVED PRIOR TO STARTING ANY CONSTRUCTION ACTIVITIES. THE CONTRACTOR MUST DISCHARGE TURBID OR SEDIMENT-LADEN WATER RELATED TO 5 THE CONTRACTOR MUST DISCHARGE TURNED OR SEDIMENT-LADEN WATER RELATED TO DEWATERING OR BASIN DRAINING (E.G. PUMPED DISCHARGES, TRENCH/DITCH CUTS FOR DRAINAGE) TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE PROJECT SITE UNLESS INFEASIBLE. THE CONTRACTOR MAY DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASINS TO THE SURFACE WATERS IF THE BASIN WATER HAS BEEN VISUALLY CHECKED TO ENSURE ADEQUATE TREATMENT HAS BEEN OBTAINED IN THE BASIN AND THAT NUISANCE CONDITIONS (SEE MINN. RULES 7050.0210, SUBPART 2) WILL NOT RESULT FROM THE DISCHARGE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMPs, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM PROPERTIES. IF THE CONTRACTOR MUST DISCHARGE WATER THAT CONTAINS OIL OR GREASE, THE CONTRACTOR MUST USE AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE (E.G. CARTRIDGE FILTERS. ABSORBENTS PADS) PRIOR TO DISCHARGING THE WATER. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE THAT DISCHARGE FOINTS ARE ADECOMPLET FROTECTED FROM EVENTS AND SOCIAL. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING, OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ALL WATER FROM DEWATERING OR BASIN-DRAINING ACTIVITIES MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS
- MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNEL OR ON DOWNSLOPE PROPERTIES, OR INUNDATION IN WETLANDS CAUSING SIGNIFICANT ADVERSE IMPACT TO THE WETLAND. IF THE CONTRACTOR IS USING FILTERS WITH BACKWASH WATER, THE CONTRACTOR MUST HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWASH WATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR MAY DISCHARGE BACKWASH WATER TO THE SANITARY SEWER IF PERMISSION IS GRANTED BY THE SANITARY SEWER AUTHORITY. THE CONTRACTOR MUST REPLACE AND CLEAN THE FILTER MEDIA USED IN DEWATERING DEVICES WHEN REQUIRED TO RETAIN ADEQUATE

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# GOVERNING SPECIFICATIONS:

- 1. THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" 2016 EDITION & LATEST SUPPLEMENTS.
- 2. CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD UTILITIES
- SPECIFICATIONS (LATEST EDITION) SPECIFICATIONS (LATEST EDITION) CITY OF PLYMOUTH CONSTRUCTION SPECIFICATIONS ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCE WILL BE COMPLETED WITH IN THE CONSTRUCTION OF THIS PROJECT.

# TRAFFIC CONTROL NOTES:

- 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. A STAGING PLAN SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES.
   CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC CONTROL. ALL TRAFFIC CONTROL SHALL CONFORM TO THE LATEST EDITION OF THE MMUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS. A TRAFFIC CONTROL PLAN SHALL BE SUBMITTED TO THE ENGINEER, CITY, AND COUNTY FOR REVIEW AND APPROVAL PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES. PLANS SHALL COMPLY WITH ALL APPLICABLE PERMIT REQUIREMENTS.
- PRIOR TO ANY CONSTRUCTION RELATED ACTIVITIES. PLANS SHALL COMPLY WITH ALL APPLICABLE PERMIT REQUIREMENTS. TRAFFIC CONTROL SHALL ALSO INCLUDE ALL NECESSARY SIGNAGE AND MARKINGS REQUIRED FOR THE BOARDWALK CLOSURE (SIMILAR TO SIDEWALK CLOSURE). THIS SHALL INCLUDE ADVANCED WARNING SIGNS AND INCESSARY FENCING AND SIGNAGE TO PREVENT PEDESTRIANS FROM ACCESSING THE PROPOSED BOARDWALK CONNECTION AREA.

# EROSION CONTROL NOTES:

- SEE SHEETS EC-101, EC-102, EC-103, EC-104 FOR EROSION AND SEDIMENT CONTROL MEASURES.
   ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DEPENDING ON SITE

- CONDITIONAL ELOSING CONTRUCTION. COORDINATE WITH ENGINEER. CONCRETE WASH-OUT SHALL COMPLETED OFF-SITE OR CONCRETE READY MIX TRUCKS SHALL BE SELF-CONTAINED. 4.
- SHALL BE SELF-CONTAINED. ALL EROSION CONTROL DEVICES TO BE INSTALLED PRIOR TO COMMENCEMENT OF WORK, MAINTAINED IN ACCORDANCE WITH THE SWPPP, NPDES, AND SPECIFICATIONS THROUGHOUT DURATION OF PROJECT, AND REMOVED UPON ESTABLISHMENT OF FINAL STABILIZATION AS DIRECTED BY ENGINEER. EROSION CONTROL MEASURES USED FOR CONSTRUCTION SHALL NOT BE REMOVED UNTIL AUTHORIZED BY OWNER OR ENGINEER.
- REMOVE TRACKED SEDIMENT FROM ALL PAVED SURFACES BOTH ON AND OFFSITE ON A
- DAILY BASIS (INCIDENTAL). MINIMIZE DUST FROM CONSTRUCTION OPERATIONS BY PROVIDING WATER OR OTHER 6. APPROVED METHOD ON A DAILY BASIS (INCIDENTAL).

# HORIZONTAL AND VERTICAL CONTROL:

- THE HORIZONTAL CONTROL FOR THIS PLAN IS HENNEPIN COUNTY COORDINATE 1.
- RELATIVE TO SYSTEM NAD83(11). 2. THE VERTICAL CONTROL FOR THIS PLAN IS NAVD88.

BBREVIATIONS	

А

BV

BV	BUTTERFLY VALVE		STORM SEWER FLARED END
<u>د</u>	CENTER LINE	9	STORM SEWER CATCH BASIN
CL.	CLASS		
CMP	CORRUGATE METAL PIPE	>>	STORM SEWER
CY	CUBIC YARD	þ.	HYDRANT
DIP	DUCTILE IRON PIPE		WATER MAIN
EL./ELEV	ELEVATION		
EX	EXISTING	— — 898 — —	CONTOUR MINOR
FES	FLARED END SECTION	— — 900 — —	CONTOUR MAJOR
F/F	FACE TO FACE		
FM	FORCEMAIN		PROPERTY LINE
GV	GATE VALVE		PROJECT AREA LIMITS
HDPE	HIGH-DENSITY POLYETHYLENE		ACCESS ROUTE BOUNDARY
HP	HIGH POINT		
HWL	HIGH WATER LEVEL		RETAINING WALL
HYD	HYDRANT	X	EXISTING FENCE
INV	INVERT		EXISTING CHANNEL
LF	LINEAL FEET		
LP	LOW POINT	.( Y Y ).	APPROXIMATE TREE LINE
мн	MANHOLE	WET	WETLAND BOUNDARY
NWL	NORMAL WATER LEVEL	_	
PVC	POLYVINYL CHLORIDE	$\odot$	DECIDUOUS TREE
R	RADIUS	× PP N_S	UTILITY POLE
RCP	REINFORCED CONCRETE PIPE	×	LIGHT POLE
R/W	RIGHT-OF-WAY	~ P	EDGE OF PAVEMENT
SF	SQUARE FEET		EDGE OF PAVEMENT
STA	STATION	Δ	SIGN
SY	SQUARE YARD	мө	MAILBOX
TNH	TOP NUT HYDRANT		
TYP	TYPICAL	٩	GUARD POST
WM	WATERMAIN		PROPERTY IRON

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					PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	ASSOCIATES
2	FOR BID	SJB	EAM	08/01/17	Same	ASSOCIATES
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REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800	



EXISTING SYMBOLS/LINES LEGEND

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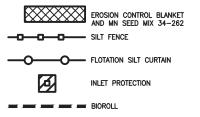
STORM SEWER FLARED END SECTION

STORM SEWER CATCH BASIN/MANHOLE

# PROPOSED SYMBOLS/LINES LEGEND STORM SEWER FLARED END SECTION

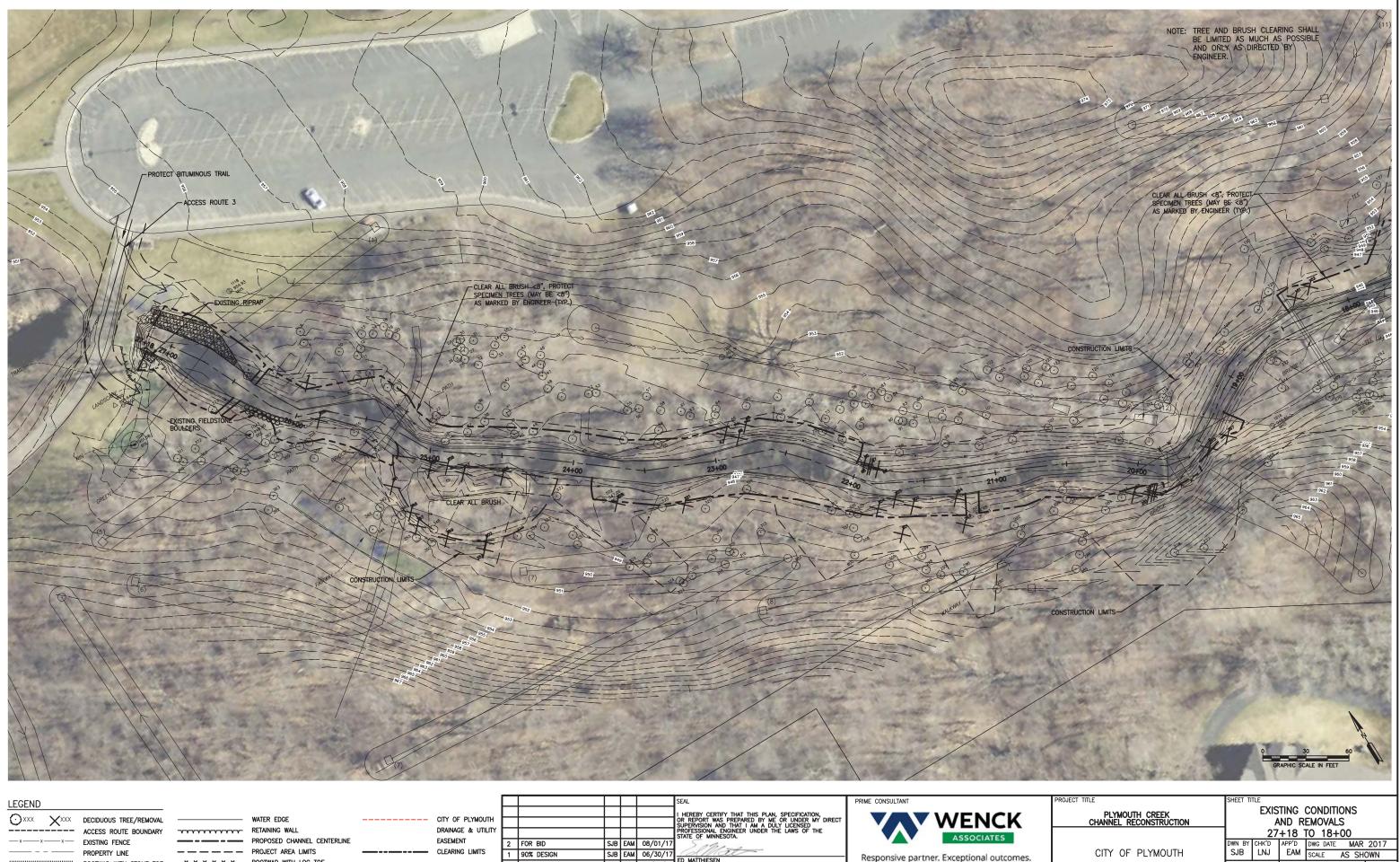
	STORM SEWER FLARED END SECTION
	RIP RAP
0	STORM SEWER CATCH BASIN/MANHOLE
	STORM SEWER
>->-	DRAINTILE
-~~~-	VEGETATED RIPRAP
-82000000000000000000000000000000000000	TWO STAGE CHANNEL
1//////////////////////////////////////	CHANNEL CLEANOUT
+++++++++++++++++++++++++++++++++++++++	GRADED BANK
	CONTOUR MINOR
	CONTOUR MAJOR
+811.95	SPOT ELEVATION
	BITUMINOUS
4 4 4	CONCRETE
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	ACCESS ROUTE BOUNDARY
xx	
	PROPERTY LINE ROOTWAD WITH STONE TOE
	WATER EDGE
	PROPOSED CHANNEL CENTERLINE
	PROJECT AREA LIMITS
	ROOTWAD WITH LOG TOE
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
	BARE ROOT SHRUB PLANTING
REMOVAL SY	MBOLS/LINES LEGEND
×	TREE REMOVAL
	,

EROSION CONTROL SYMBOLS/LINES LEGEND STRAW MULCH W/ DISK ANCHORING AND MN SEED MIX 34-262



PROJECT TITLE	SHEET TITLE									
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	LE	GEND	AND	GENERAL NO	TES					
CITY OF PLYMOUTH	dwn by SJB	снк'd LNJ	APP'D EAM	DWG DATE MAR SCALE AS SH	2017 OWN					
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	PROJECT 1756	NO. <b>5—10</b>	SHEET N	₀. G <b>—102</b>	rev no. 2					

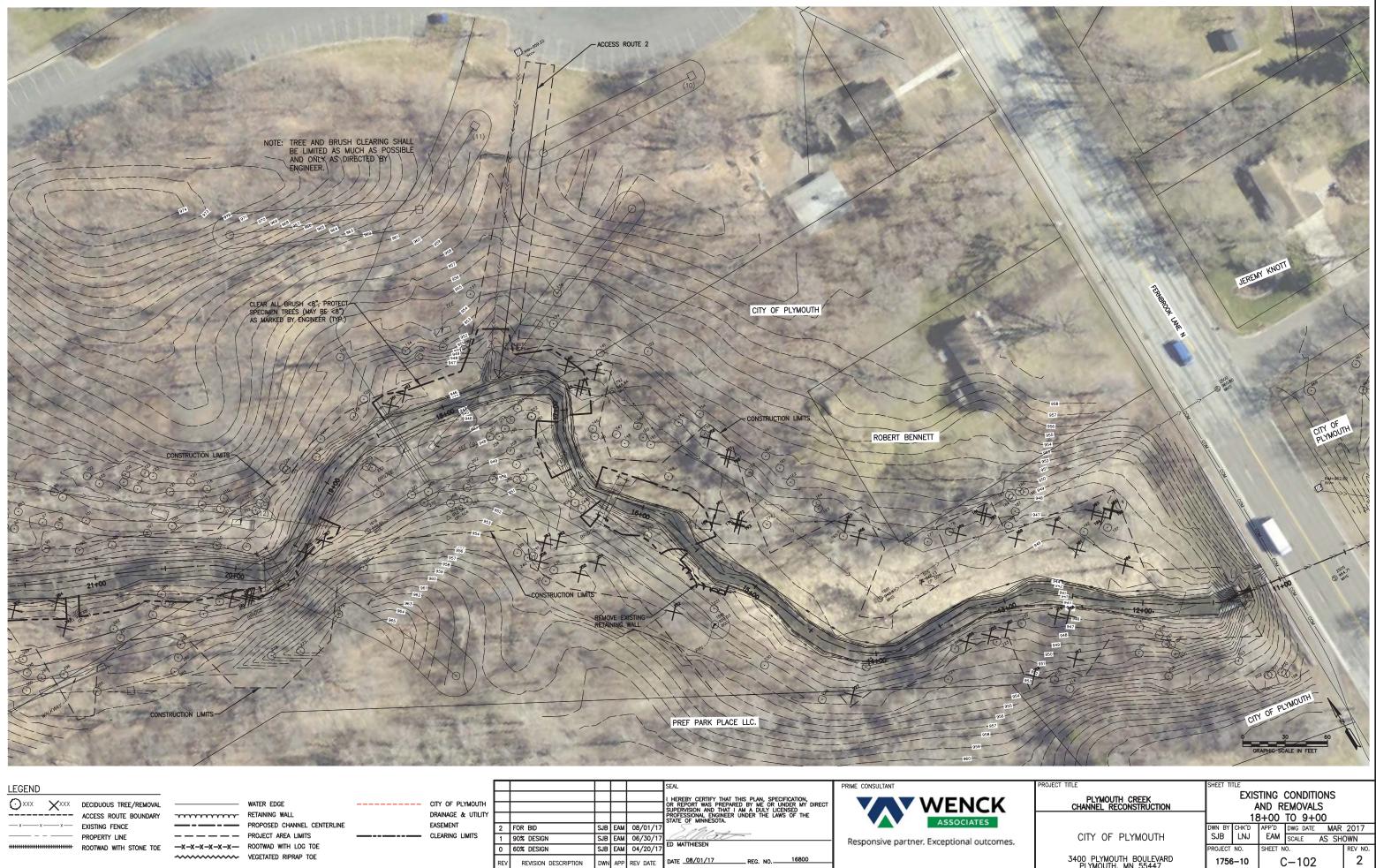




LEGEND										SEAL	PRIME CONSULTANT
$\bigcirc$ XXX XXXX	DECIDUOUS TREE/REMOVAL		WATER EDGE	 CITY OF PLYMOUTH						I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT	
	ACCESS ROUTE BOUNDARY	~~~~~~	RETAINING WALL	DRAINAGE & UTILITY						SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	
xx	EXISTING FENCE		PROPOSED CHANNEL CENTERLINE	EASEMENT	2	FOR BID	SJB	EAM	08/01/17		ASSOCIATES
	PROPERTY LINE		PROJECT AREA LIMITS	 CLEARING LIMITS	1	90% DESIGN	SJB	EAM	06/30/17	(d)Mat-	Responsive partner. Exceptional outcon
*****	ROOTWAD WITH STONE TOE		ROOTWAD WITH LOG TOE		0	60% DESIGN	SJB	EAM	04/20/17	ED MATTHIESEN	Responsive partner. Exceptional outcom
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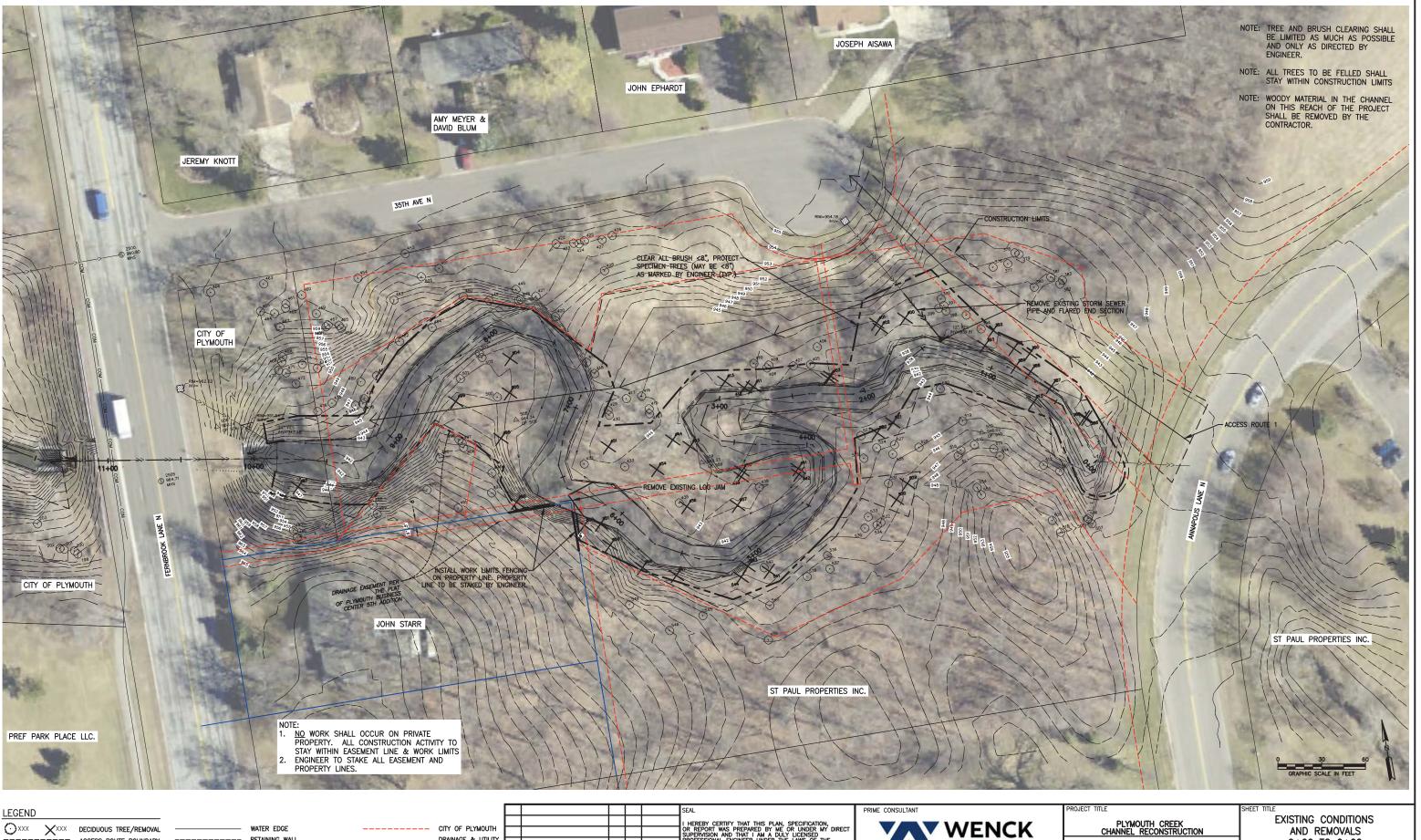
3400 PLYMOUTH BOULEVARD	
PLYMOUTH, MN 55447	

EXISTING CONDITIONS											
AND REMOVALS											
27+18 TO 18+00											
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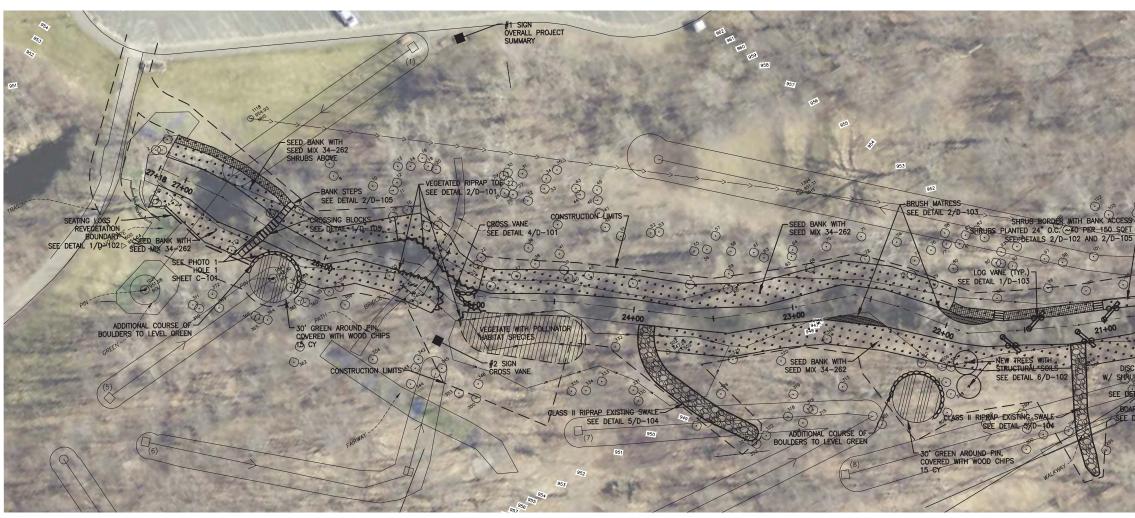
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756			~~~~~~	VEGETATED RIPRAP TOE				-			DATE 08/01/17 REG. NO. 16800
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	PROJECT	NO.	SHEET N	10.	
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	1756	6–10	0	C-102	) -



LEGEND											SEAL	PRIME CONSULTANT
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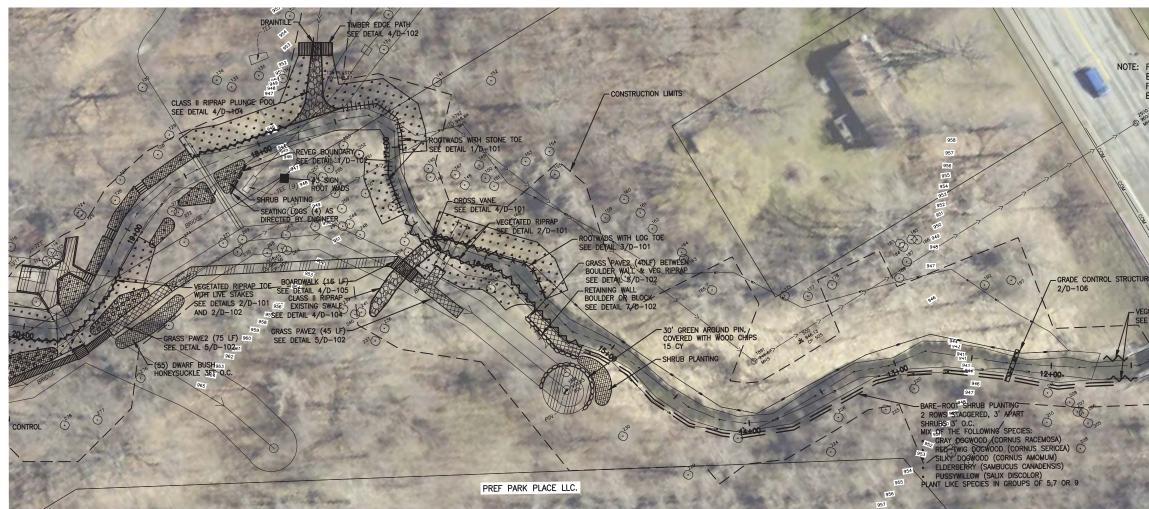
PLYMOUTH CREEK CHANNEL RECONSTRUCTION		A	ND R	CONDITIONS EMOVALS TO 0+00	
CITY OF PLYMOUTH	dwn by SJB	снк'd LNJ	APP'D EAM	DWG DATE MAR SCALE AS SH	2017 OWN
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	PROJECT 1756	NO. <b>5–10</b>	SHEET N	₀. C—103	REV NO.



PLYMOUTH CREEK CENTERLINE STA 27+18 TO 18+00

LEFT BANK         VECKTOD DEFREIP TO: 200-101         DESTING SINCE         DESTING SINCE <t< th=""><th>955</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	955															
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2 FOR BID SJB EAM 08/01/17 PROPERTY LINE PROJECT AREA LIMITS 2 FOR BID SJB EAM 08/01/17 1 90% DESIGN SJB EAM 06/30/17 EASTWEESEN			ACCESS ROUTE BOUNDARY	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	- RETAINING WAL	L		DRAINAGE & UTILITY					PROFESSIONAL ENGINEER UNDER THE LAWS	OF THE		
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ED MATTUICCEN	l —		PROPERTY LINE		- PROJECT AREA	LIMITS									Deservation	
0 60% DESIGN SJB EAM 04/20/17			ROOTWAD WITH STONE TOE		- ROOTWAD WITH	LOG TOE				60% DESIGN					Responsive partner.	exceptional outcomes.
	6		BARE ROOT SHRUB PLANTING	;	✓ VEGETATED RIP	PRAP TOE								16800		
REV REVISION DESCRIPTION DWN APP REV DATE DATE 08/01/17 REG. NO. 16800	íL		SHRUB PLANTING WITH BANK	ACCESS					REV	REVISION DESCRIPTION	DWN AP	PP REV DA	E DATE REG. NO			

	不会	BANK	LOCATION AND I STABILIZATION W LOCATED AND S EER.	ORK TO BE	0° 0°	50 BE BE BE BE BE BE BE BE BE BE BE BE BE B
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		CITY OF PLYM		DWN BY CHK'D SJB LNJ PROJECT NO. 1756-10	APP'D DWG DATE	MAR 2017 SHOWN REV NO. 2

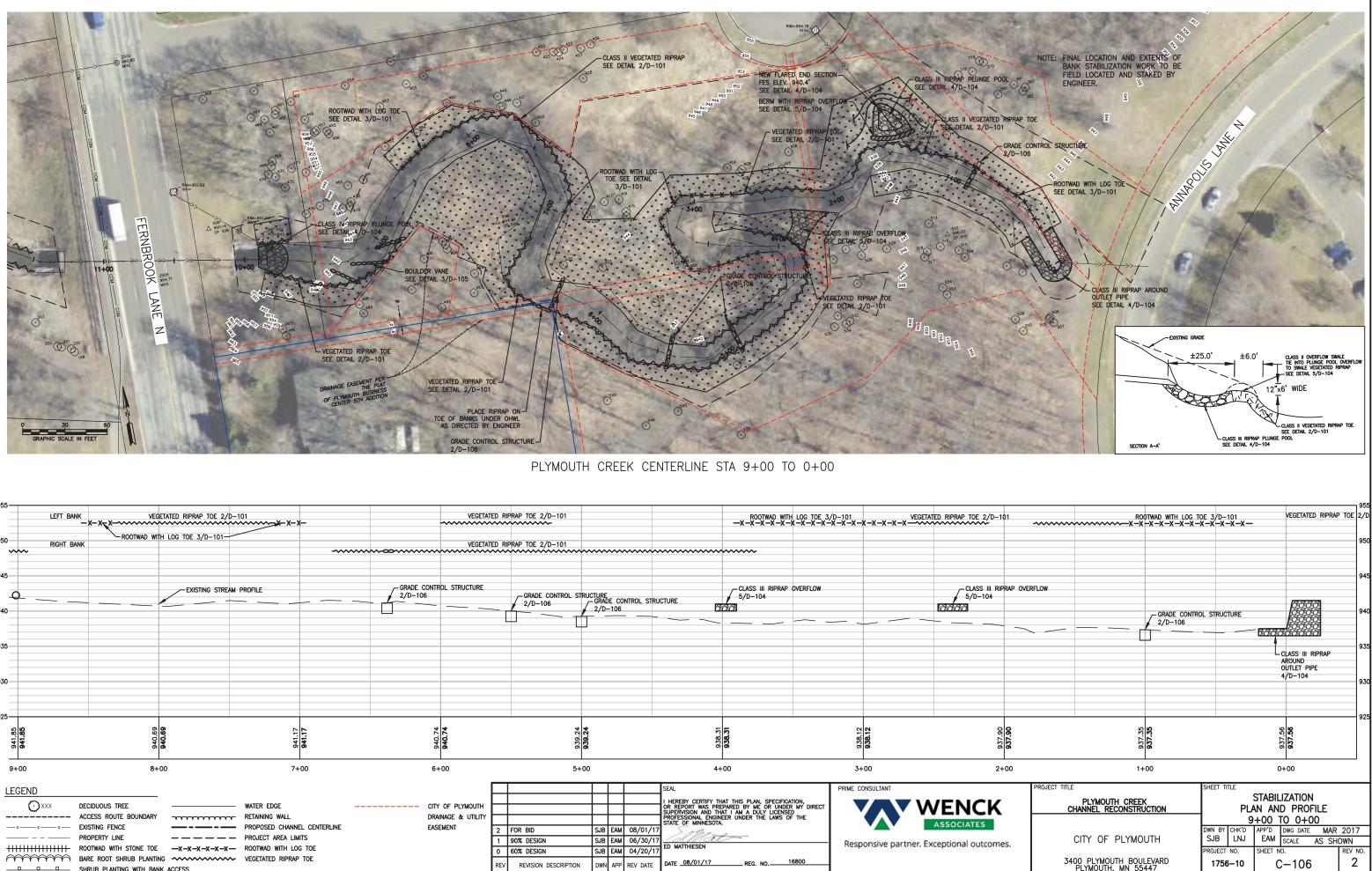


PLYMOUTH CREEK CENTERLINE STA 18+00 TO 9+00

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$\odot^{\text{XXX}}$	DECIDUOUS TREE			WATER EDGE		<ul> <li>CITY OF PLYMOUTH</li> </ul>					I HEREBY CERTIFY THAT THIS PLAN, OR REPORT WAS PREPARED BY ME SUPERVISION AND THAT I AM A DUI PROFESSIONAL ENGINEER UNDER TH STATE_OF_MINNESOTA.	OR UNDER MY DIRECT		WEN	CK
	ACCESS ROUTE E	BOUNDARY	F	RETAINING WALL		DRAINAGE & UTILITY				1	PROFESSIONAL ENGINEER UNDER TH	E LAWS OF THE			
x x x	— EXISTING FENCE	—	- <b></b> -	PROPOSED CHANNEL CENTERLIN	E	EASEMENT	2	FOR BID	SJB EAM	1 08/01/17	STATE OF MINNESUTA.			ASSOCIAT	TES
			- <u>—</u> F	PROJECT AREA LIMITS				90% DESIGN	SJB EAN		allat		December 1		
	HH ROOTWAD WITH S	TONE TOE -x-	<b>x-x-x-x</b>	ROOTWAD WITH LOG TOE				60% DESIGN		A 04/20/17	ED MATTHIESEN		Responsive par	ner. Exceptional o	outcomes.
annan	🔿 BARE ROOT SHRU	JB PLANTING ~		VEGETATED RIPRAP TOE			⊢⊢ ⊢					16800			
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		•	I LOG TOE 3/D-101-																
950	RIGHT BANK				-~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			IPRAP TOE 2/D-101		~~~~	~~~~~	~~~~~~						
945																			
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LEGEN	D												SEAL			PRIME CO	ONSULTANT		
fmr:	)xxx dec	DUOUS TREE		WATER EDGE			CITY OF PLYMOUTH				$\vdash$		I HEREBY CERTIFY TH OR REPORT WAS PRE	IAT THIS PLAN, SPECIFIC PARED BY ME OR UNDE	ATION, ER MY DIRECT			W/FM	JCK
		ESS ROUTE BOUNDARY	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	RETAINING WALL			DRAINAGE & UTILITY						SUPERVISION AND TH PROFESSIONAL ENGIN STATE OF MINNESOTA	IAT THIS PLAN, SPECIFIC (PARED BY ME OR UNDE AT I AM A DULY LICENS EER UNDER THE LAWS (	ed of the	1		ASSOCI	LATES
		STING FENCE OPERTY LINE		PROPOSED CHANNE PROJECT AREA LIM			EASEMENT	2	FOR BID			08/01/17	Sellin	2		-		ASSOCI	AILS
<del>اااااا</del>		DTWAD WITH STONE TOE						1	90% DESIGN 60% DESIGN	SJB SJB		06/30/17 04/20/17	ED MATTHIESEN			Resp	onsive partne	er. Exceptiona	al outcomes
			G	VEGETATED RIPRAP	TOE			REV	REVISION DESCRIPTION			REV DATE	DATE 08/01/17	REG. NO	16800	l			
		RUB PLANTING WITH BANK	CACCESS																

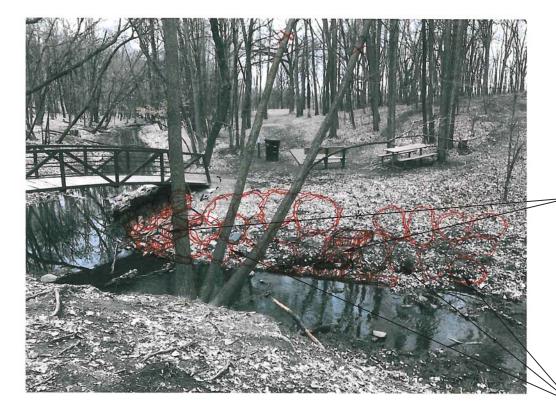


HOLE ONE CURRENTLY HAS BANK EROSION WHERE THE FAIRWAY MEETS PLYMOUTH CREEK. THE METHODS PROPOSED TO FIX THE PROBLEM ARE BY INTRODUCING A NEW LOW-FLOW CROSSING POINT WITH BANK STEPS LEADING TO STEPPERS WITHIN THE CREEK BED. INCREASING THE AMOUNT OF VEGETATION THROUGH SHRUB PLANTINGS AND NATIVE GRASSES. THE PUTTING GREEN FOR HOLE FIVE IS LOCATED CLOSE AND TO MITIGATE THE SOIL EROSION THE PROPOSED SOLUTION INCLUDES INCREASING THE HEIGHT OF THE EXISTING BOULDER WALL AND FLATTENING OUT THE "GREEN" AREA. IN ADDITION, ADDING WOOD CHIPS IN THE HIGH TRAFFIC 30 RADIUS OF THE PIN WILL REDUCE THE AMOUNT OF MUD AND IMPROVE PLAY CONDITIONS.

					SEAL	PRIME CONSULTANT	PROJECT TITLE	SHEET TITLE
E					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	WENCK	PLYMOUTH CREEK CHANNEL RECONSTRUCTION	REFERENCE PICTURES
2	_	FOR BID 90% DESIGN	SJB EAM	08/01/17	STATE OF MINNESOTA.	Responsive partner. Exceptional outcomes.	CITY OF PLYMOUTH	DWN BY CHK'D APP'D DWG DATE MAR 2017 SJB LNJ EAM SCALE AS SHOWN
C R	-	60% DESIGN REVISION DESCRIPTION		-	ED MATTHIESEN DATE	Responsive parties, exceptional outcomes,	3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	PROJECT NO. SHEET NO. REV NO. 1756-10 C-601 2



30FT	MULCH	RING	ΤO	ELIMINATE	MUD	AND	EROSION



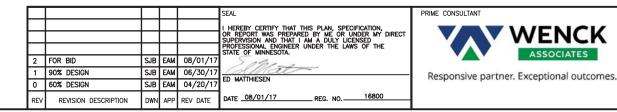




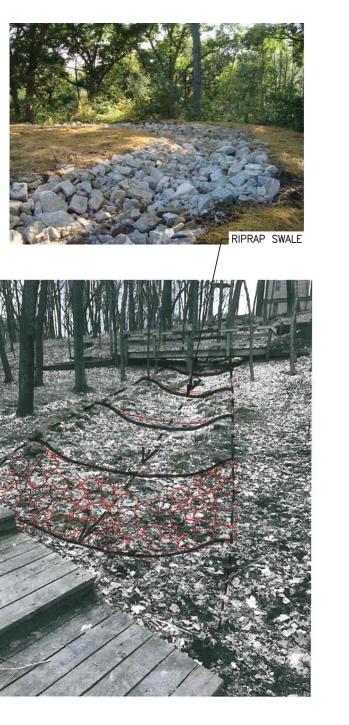
-SHRUB PLANTINGS



ON HOLE 8 HAS IS A HIGH POTENTIAL FOR DISC'S TO ENTER THE CREEK. THE EXISTING BANKS ARE IN NEED OF EROSION MITIGATION VEGETATION AND ARMORING. IN ORDER TO ACCOMPLISH BOTH DESIRED OUTCOMES A COMBINATION OF SHRUB PLANTINGS TO STABILIZES THE BANK WITH ACCESS STEPS LEADING TO THE CREEK EDGE FOR FISHING DISC'S OUT. THE OUTSIDE BEND WILL BE ARMORED WITH VEGETATED RIPRAP TO COMBAT FLOW VELOCITY AND PRESERVE THE VISUAL AESTHETIC WITH TALL GRASSES GROWING OVER THE ARMORING.



EXISTING SWALES



MULTIPLE EXISTING DRAINAGE SWALES OCCUR WITHIN THE DISC GOLF COURSE. THE ADDITION OF RIPRAP TO STABILIZE THE SOILS WILL MITIGATE SOIL MIGRATION INTO THE CREEK. PLAYABILITY OF THE COURSE WILL NOT BE AFFECTED AND A REDUCTION OF OVERALL MUD WILL BE ACHIEVED.

PROJECT TITLE	SHEET TI	TLE							
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	REFERENCE PICTURES								
CITY OF PLYMOUTH	DWN BY SJB	снк'd LNJ	APP'D EAM	DWG DATE	MAR AS SH	2017 OWN			
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	PROJECT 1756		SHEET N	₀. <b>2−602</b>		rev no. 2			

# HOLE 8: MUDDY PATH OPTIONS



EXISTING TREES WITHIN THE FLIGHT PATH ARE SCARRED BY DISCS REPEATEDLY HITTING THE SOFT TISSUE OF YOUNG TREES. TO PROTECT THE TREES DISC STOP POLES WOULD BE PLACED BETWEEN THE TREE AND THE DIRECTION OF FLYING DISCS. WITH STAGGERED ROWS OF POLES DEFLECTION WILL SERVE TO PROTECT TREES.







THROUGH THE USE OF BOARDWALKS WHICH ALSO MINIMIZES THE FOOT TRAFFIC TRAMPLING ANY VEGETATION. THE ADDITION OF DISC STOP POLES WILL PROTECT EXISTING/NEWLY PLANTED TREES AND ADD A NEW ELEMENT OF DIFFICULTY FOR PLAYERS TO SHOOT AROUND.



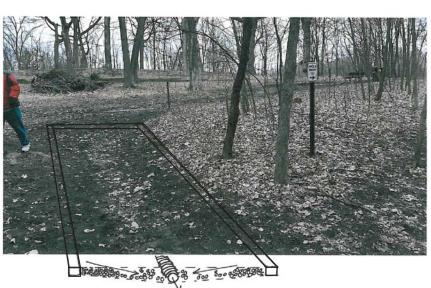


					SEAL	PRIME CONSULTANT
					I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION,	
					OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED	<b>WENCK</b>
					PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	ASSOCIATES
2	FOR BID	SJB	EAM	08/01/17	Same	ASSOCIATES
1	90% DESIGN	SJB	EAM	06/30/17	ED MATTHIESEN	Responsive partner. Exceptional outcomes.
0	60% DESIGN	SJB	EAM	04/20/17	ED MATTHESEN	
REV	REVISION DESCRIPTION	DWN	APP	REV DATE	DATE 08/01/17 REG. NO. 16800	

FOR AREAS OF HEAVY FOOT TRAFFIC IN SUNNY LOCATIONS THE USE OF GRASSPAVE2 WOULD ALLOW FOR REDUCED COMPACTION AND TRAMPLING OF TURF GRASS COVER. THE SOILS IN THESE LOCATIONS WOULD THUS BE STABILIZED WHILE ALLOWING FOR CONSISTENT GOLFER TRAFFIC. IN AREAS OF HEAVILY SHADE DUE TO TREE CANOPY THE USE OF ADDITIONAL BOARDWALKS WILL SERVE TO FOCUS TRAFFIC MOVEMENTS AROUND TREE COMP TREE ROOTS AND BARE SOILS.

PROJECT TITLE	SHEET TITLE							
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	REFERENCE PICTURES							
CITY OF PLYMOUTH	dwn by SJB	снк'd LNJ	APP'D EAM	DWG DATE MAR 2 SCALE AS SHOW				
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	PROJECT 1756		SHEET N	<sup>o.</sup> 2-603		rev no. 2		

# HOLE 11: MUDDY TEE BOX OPTIONS



FOR AREAS OF HEAVY FOOT TRAFFIC IN AND AROUND SHADY TEE BOXES THE PATHWAYS CAN BE BOXED IN USING PRESSURE TREATED TIMBERS AND THE BOXES FILLED WITH EITHER WOODCHIPS OR GRAVEL. THIS WILL SERVE TO REDUCE THE AMOUNT OF MUD AND KEEP THE SOIL MIGRATION DOWN.

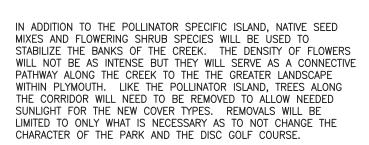


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					SUPERVISION AND THAT I AM A DULT LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.	ASSOCIATES
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PROJECT TITLE	SHEET TITLE						
PLYMOUTH CREEK CHANNEL RECONSTRUCTION	REFERENCE PICTURES						
CITY OF PLYMOUTH	DWN BY SJB	снк'd LNJ	APP'D EAM	DWG DATE MAR SCALE AS SH		2017 OWN	
3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	PROJECT 1756		SHEET N	₀. ≎ <b>−604</b>		REV NO.	



THE RUSTY PATCHED BUMBLEBEE BECAME THE FIRST BEE SPECIES EVER LISTED UNDER THE ENDANGERED SPECIES ACT IN MARCH OF THIS YEAR; HOWEVER, POLLINATORS OF ALL KINDS (BEES, MOTHS, AND BUTTERFLIES) ARE CURRENTLY IN A DECLINING STATE ACROSS THE U.S. FOR THE ISLAND OFF THE EDGE OF THE COURSE BEHIND THE OXE-BOW A DEDICATED POLLINATOR HABITAT AND NECTAR SOURCE IS PLANNED. A COMBINATION OF SEEDING NATIVE GRASSES AND FORBS ARE PROPOSED, AS WELL AS, POTTED FORBS TO INCREASE THE DENSITY. IN ORDER TO ACHIEVE THE NECESSARY SUNLIGHT FOR THESE SPECIES THE CURRENT TREES WILL BE REMOVED.





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	3400 PLYMOUTH BOULEVARD PLYMOUTH, MN 55447	1756	5–10	C	-605	2

#### Construction Dates: Fall 2017 - Spring 2018

#### Party Responsible for Long Term Operation and Maintenance of the Site -OWNER Derek Asche Water Resources Manager City of Plymouth

City of Plymouth	Derek Asche, Water Resources Mar
3400 Plymouth Boulevard	763-509-5526
Plymouth, MN 55447-1482	engineering@plymouthmn.gov

# Party Responsible for Implementation of the SWPPP - CONTRACTOR

Contractor	
Contact Name	
Phone	
Email	

## Surface Area Tabulation

Total Disturbed Area	1.5 acres
Existing Impervious Area	0.1 acres
Proposed Impervious Area	0.1 acres
Net Impervious Area Increase	<0.1 acres

## **Project Description**

The project consists of riparian buffer restoration, streambank stabilization, installation of boardwalk, path improvements, and improvements to several existing disc golf holes and tee boxes.

### **Temporary Sediment Basin**

Because the total disturbed area for this project is less than 5 acres, there are no additional temporary sedimentation basin requirements.

## **EROSION AND SEDIMENT CONTROL PRACTICES**

All exposed soil areas must have temporary erosion protection (erosion control blanket, seed) as soon as possible or within 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

CONTRACTOR shall implement appropriate construction phasing, vegetative buffer strips, horizontal slope grading, and other construction practices that minimize erosion when practical. The normal wetted perimeter of any temporary or permanent drainage ditch that drains water from a construction site, or diverts water around a site, must be stabilized within 200 lineal feet from the property edge, or from the point of discharge to any surface water. Stabilization must be completed within 24 hours of connecting to a surface water. Pipe outlets must be provided with temporary or permanent energy dissipation within 24 hours of connection to a surface water.

The following measures will be taken as sediment control practices in order to minimize sediments from entering surface waters:

The following measures will be taken as sediment control practices in order to minimize sediments from entering surface waters:

1. Installation of floating silt curtain within the creek channel at the downgradient extents of construction activity prior to site disturbance. Floating silt curtain shall be installed in two locations upgradient of the culverts under Fernbrook Lane and Annapolis Lane as shown on Sheets EC-102 and EC-103. Install silt curtain as shown on Sheet D-104.

2. Installation of perimeter silt fence in the locations shown on Sheets EC-102 through EC-104 prior to site disturbance. Perimeter silt fence shall be installed as shown on Sheet D-104.

3. Installation of inlet protection in the locations shown on Sheets EC-102 through EC-104 prior to site disturbance. Inlet protection shall be installed as shown on Sheet D-104.

4. Installation of rock construction entrances in the locations shown on Sheet C201. Rock construction entrances shall be constructed as shown on Sheet C803 to prevent tracking of sediment offsite. Street sweeping of tracked sediment shall be performed as required.

Leaend

### Dewatering

Turbid or sediment-laden water must be treated with the appropriate BMPs, such that discharge does not adversely affect the receiving water. Ensure that discharge points are adequately protected from erosion and scour. CONTRACTOR responsible to develop and submit dewatering plan to engineer, secure any required permits, and comply with permits.

### **Final Stabilization**

All areas disturbed by construction will receive seed according to the plans and specifications and within the specified vegetative time schedule.

Final stabilization will occur when the site has a uniform vegetative cover with a density of 70% over the entire disturbed area. All temporary synthetic erosion prevention and sediment control BMPs (such as silt fence) must be removed as part of the site final stabilization. All sediment must be cleaned out of conveyances and temporary sedimentation basins if

Notice of Termination (NOT) must be submitted within 30 days of final stabilization. Before Termination, revegetation establishment and coverage must meet the permit requirements.

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#### Pollution Prevention Measures

#### Solid Waste

Solid waste, including but not limited to, collected asphalt and concrete millings, floating debris, paper, plastic, fabric, construction and demolition debris and other waste must be disposed of properly and must comply with MPCA disposal requirements.

#### Hazardous Materials

Hazardous materials, including but not limited to oil, gasoline, paint and any hazardous substance must be properly stored including secondary containments, to prevent spills, leaks or other discharge. Restricted access to storage areas must be provided to prevent vandalism. Storage and disposal of hazardous waste must be in compliance with MCPA regulations.

#### Washing of Construction Vehicles

External washing of trucks and other construction vehicles must be limited to a defined area of the site. Runoff must be contained and waste properly disposed of. No engine degreasing is allowed on site.

#### Concrete Washout Area

The contractor shall provide effective containment for all liquid and solid wastes generated by washout operations to prevent runoff to surface waters. Liquid and solid wastes must be disposed of properly in compliance with MPCA rules.

#### Amendments

Amend the SWPPP as necessary to address any changes in design, construction, operation, maintenance, weather or seasonal conditions that have a significant effect on discharge of pollutants to surface or underground waters; or to address concerns identified during inspections or investigations by OWNER or local government entities.

#### **Record Retention**

The SWPPP, all changes to it, and inspection and maintenance records must be kept on-site during construction. The OWNER must retain a copy of the SWPPP along with the following records for three (3) years after submittal of the Notice of Termination.

- 1. Any other permits required for the project;
- 2. Records of all inspection and maintenance conducted during

3. All permanent operations and maintenance agreements that have been implemented, including all right of way, contract, covenants and other binding requirements regarding perpetual maintenance.

4. All required calculations for design of the temporary and permanent stormwater management systems.

### Inspections

NOT FOR

CONSTRUCTION

construction:

The inspection log will be completed by the CONTRACTOR for the construction site. Inspections at the site will be completed as follows:

Once every seven (7) days during active construction and, Within 24 hours after a rainfall event greater than 0.5 inches in 24 hours.

The individual performing inspections must be trained as required by part IV.E of the Permit. CONTRACTOR to provide OWNER with proof of training. Inspections must include stabilized areas, erosion prevention and sediment control BMPs, and infiltration areas. Corrective actions must be identified and date of correction must be noted as identified in Section IV.E. of the Permit.

RIME CONSULTAN

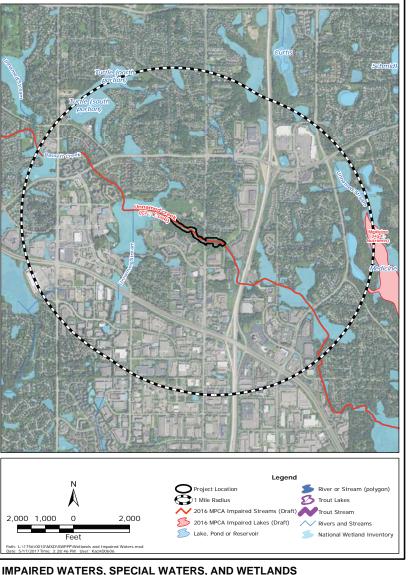
Responsive partner. Exceptional outcomes.

Project Location Soil Map Unit applicable.

UNIVERSITY OF MINNESOTA Louis H Sigtermans Minneapolis, MN Design of Construction SWPPP (May 31, 2020)

#### CERTIFICATION

In accordance with Part III.A.2 of the General Permit Authorization to Discharge Stormwater Associated with Construction Activity under the NPDES, the preparer of this document was trained under the University of Minnesota Erosion and Sediment Control Certification Program. Mr. Louis Sigtermans' certification in Design of SWPPP is valid through May 31, 2020.



This Project is not located within 1 mile of a special water.

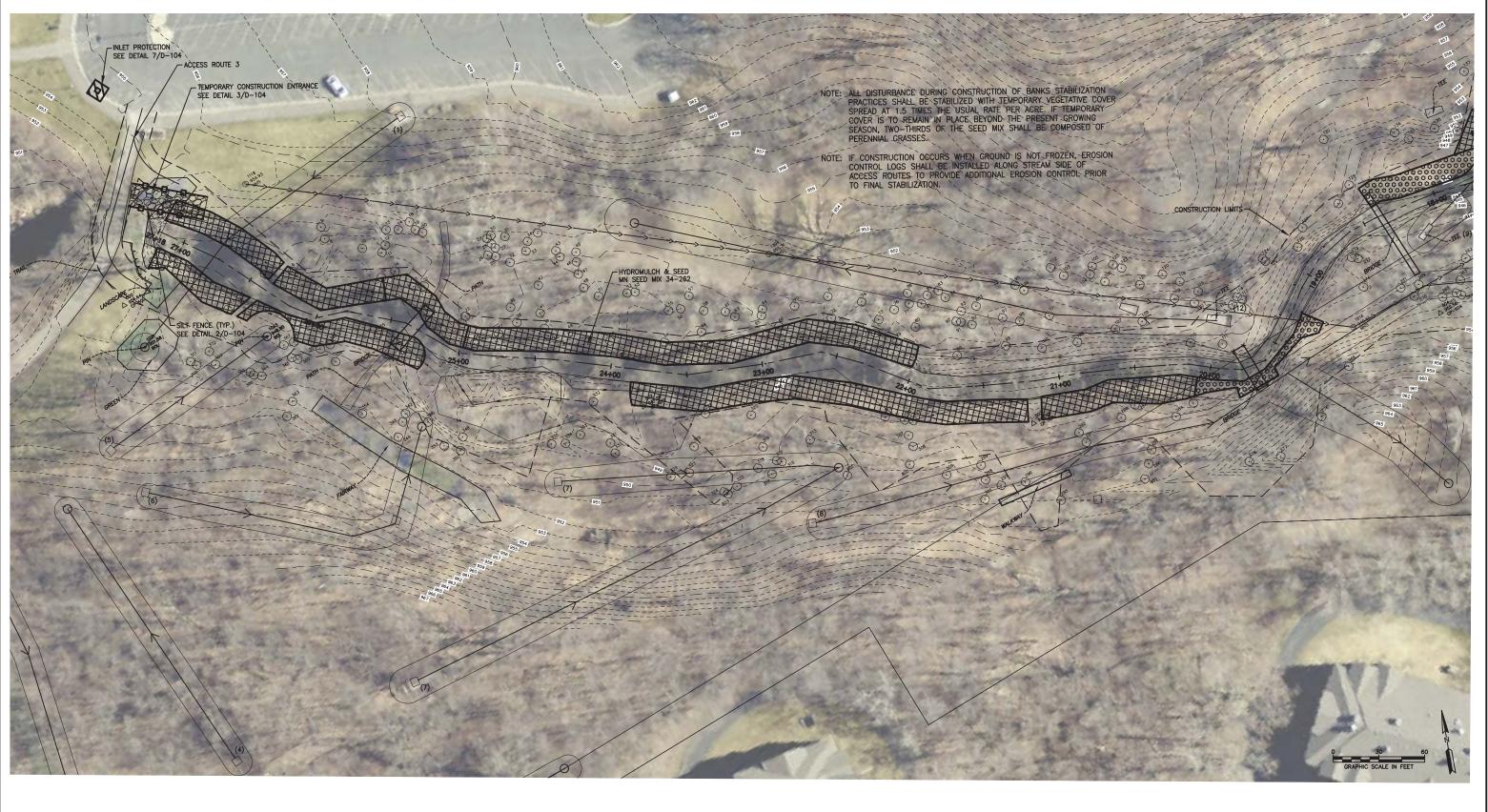
This Project is located within 1 mile of an impaired water (see figure above): Plymouth Creek impaired for Cl-, E. coli

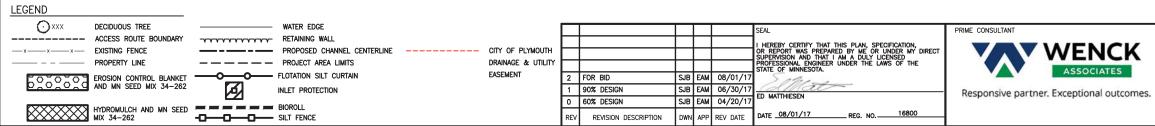
Because of the proximity of the project to an impaired water during construction, all exposed soil areas must be stabilized as soon as possible to limit soil erosion but in no case later than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

This Project will impact wetlands. A wetland delineation has been performed and wetland permits have been obtained.

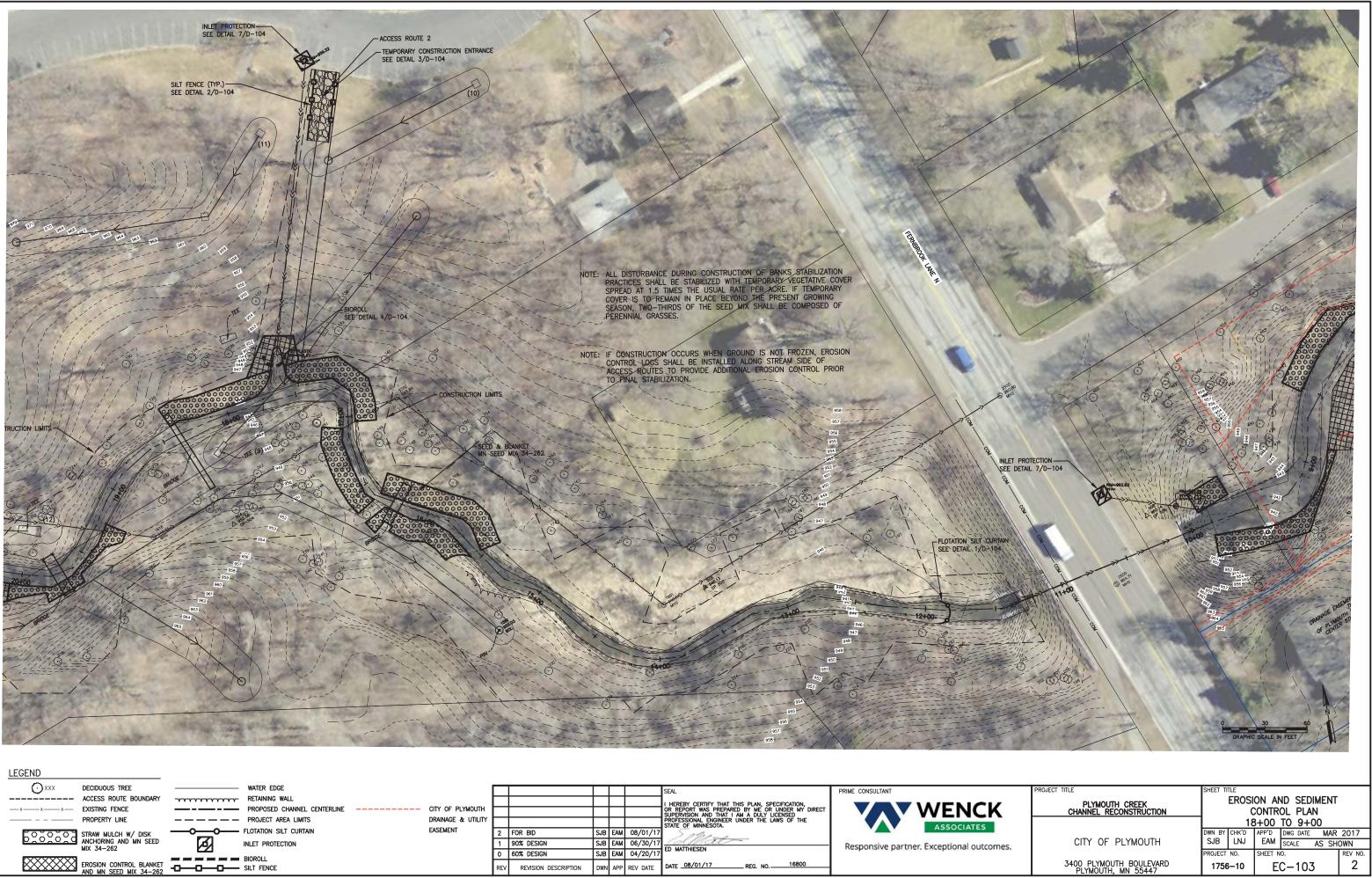
# EROSION CONTROL ESTIMATED QUANTITIES

ERUSI	ON CONTROL ESTIMATI	5					
Mater	ial	Quantity					
MnDO	T Seed Mix 34-262	14.5 lb/acre >					
Erosio	n Control Blanket	3385 SY					
Inlet P	rotection	5 EA					
Floata	tion Silt Curtain	50 LF					
Constr	uction Entrance	4 EA					
Biorol		4000 LF					
Silt Fe	nce	400 LF					
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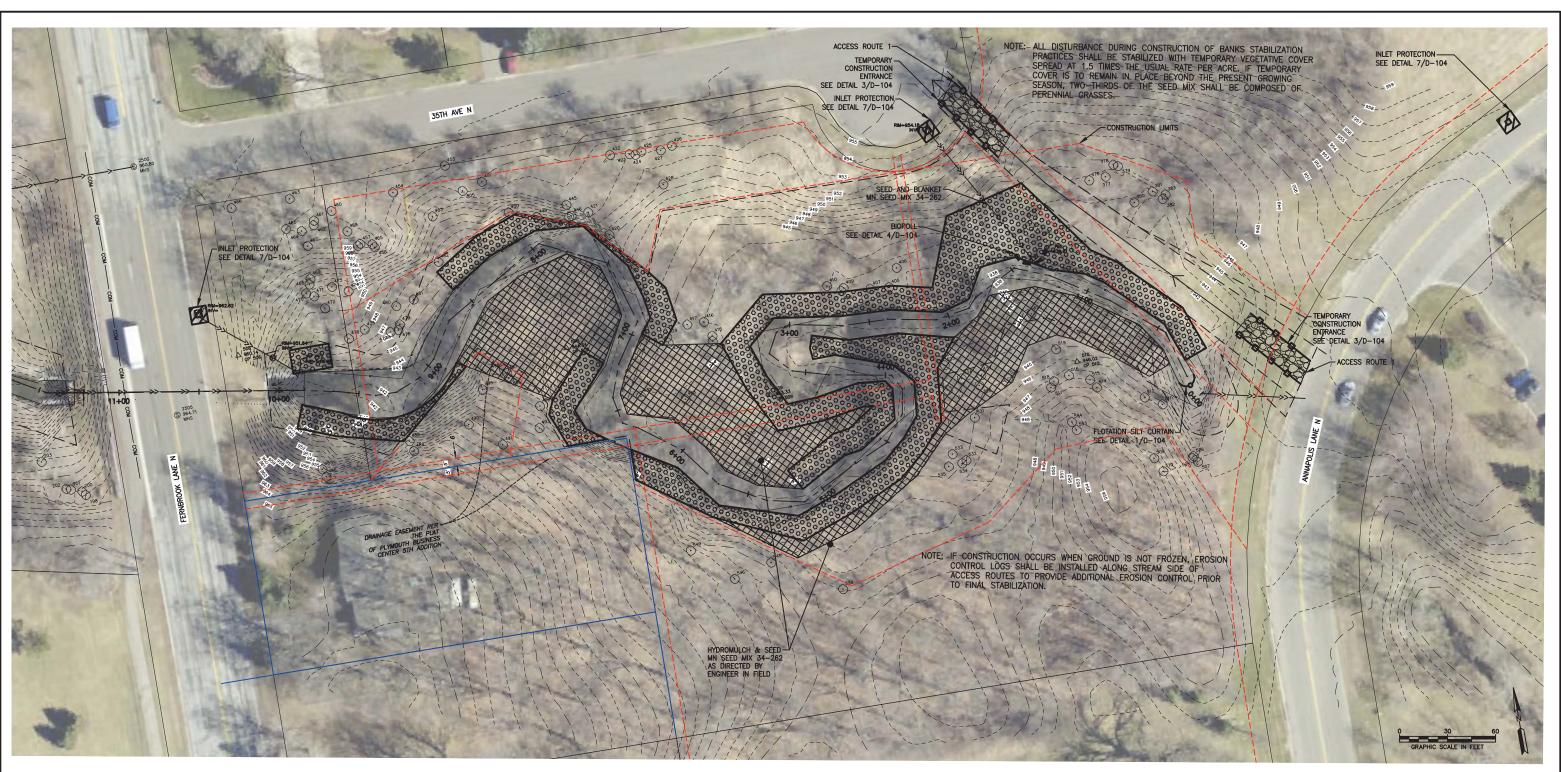


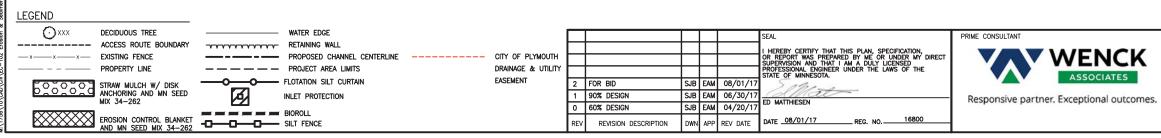


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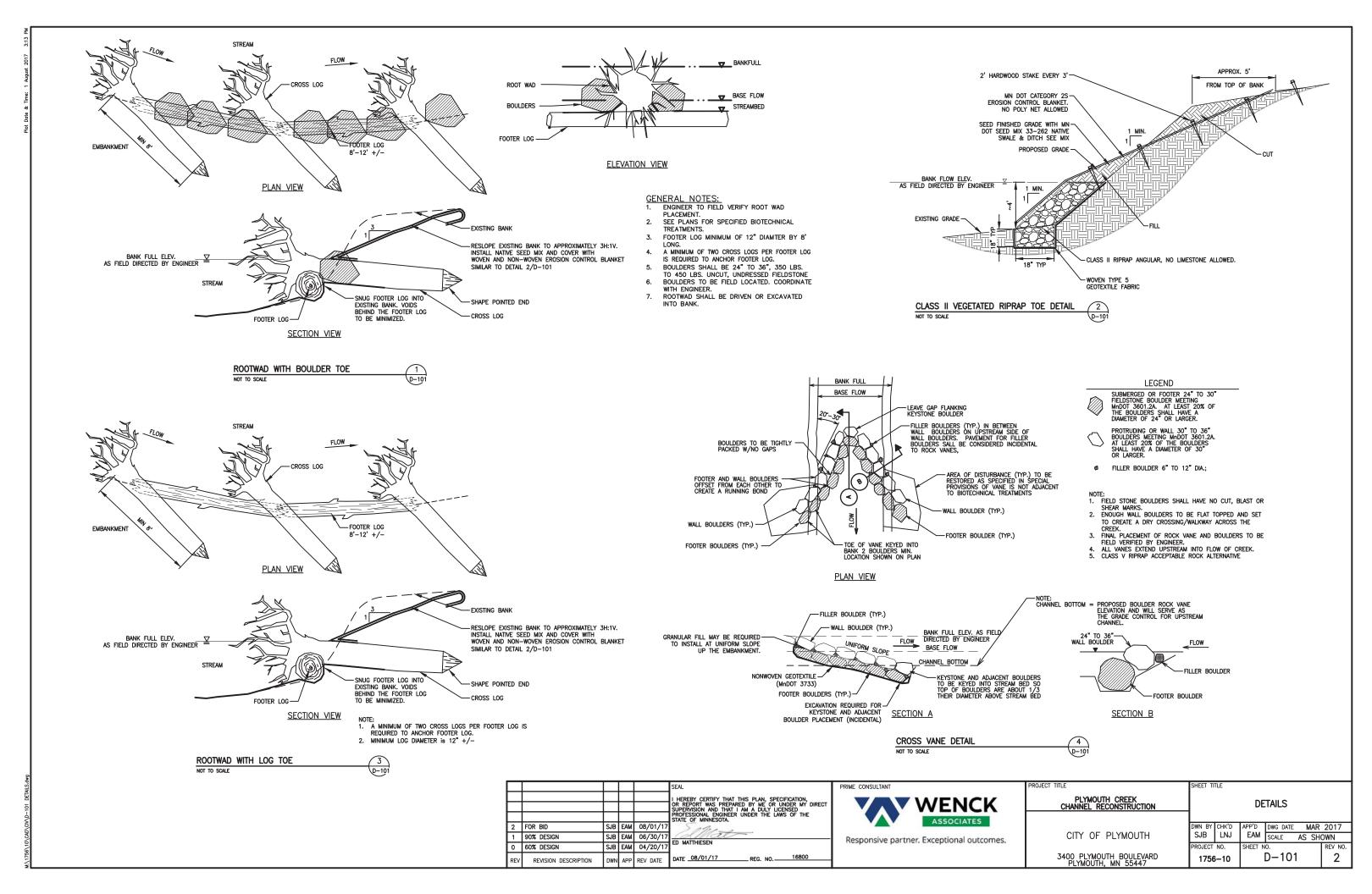


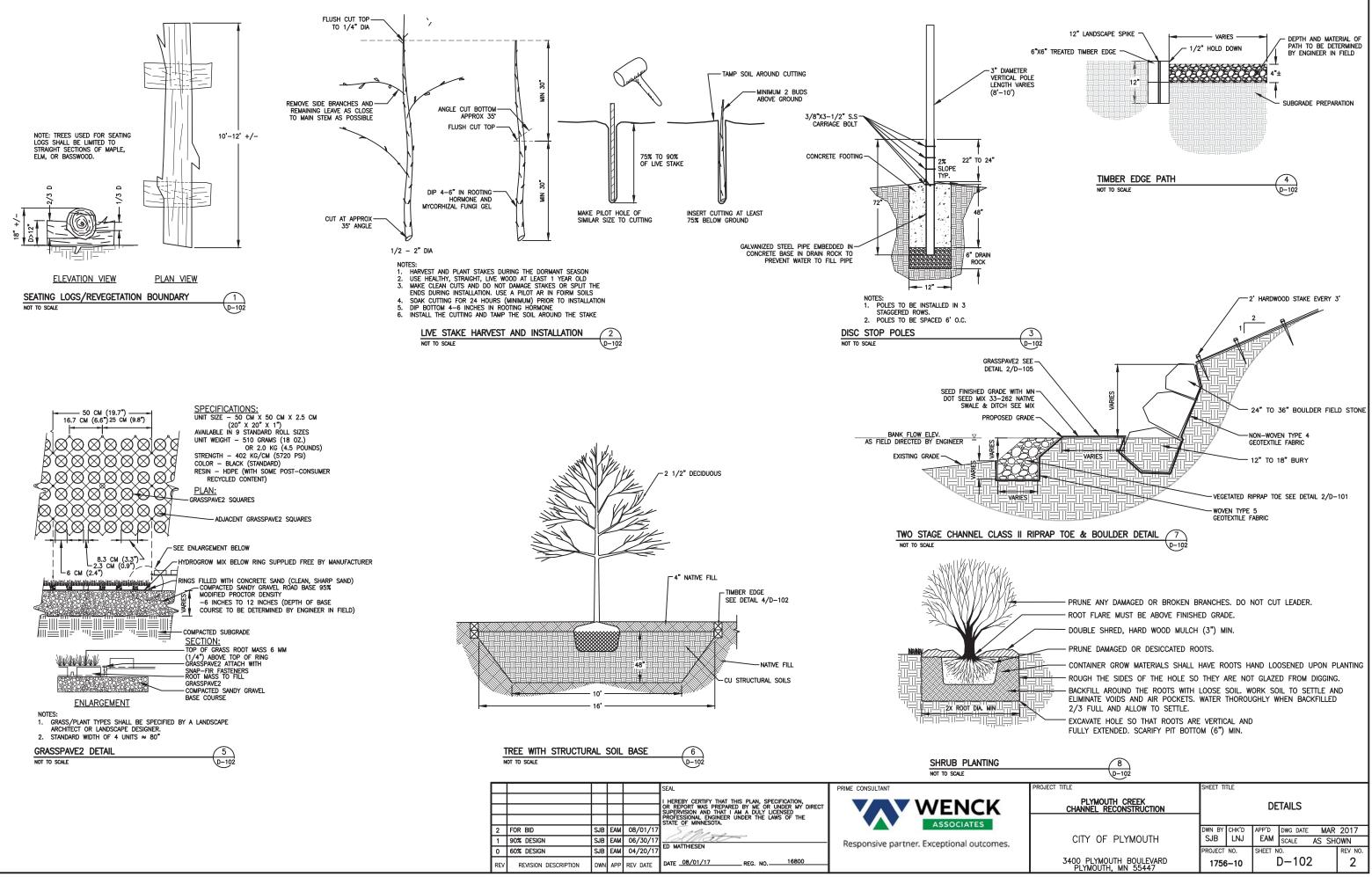
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• XXX	DECIDUOUS TREE		WATER EDGE						S	SEAL	PRIME CONSULTANT	
	ACCESS ROUTE BOUNDARY	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	RETAINING WALL						<b>—</b> .	HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION,		
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0202020	ANCHORING AND MN SEED		INLET PROTECTION		1	90% DESIGN	SJB EA	M 06/30/	/17 -	(SMat-	Responsive partn	er. Exceptional outcome
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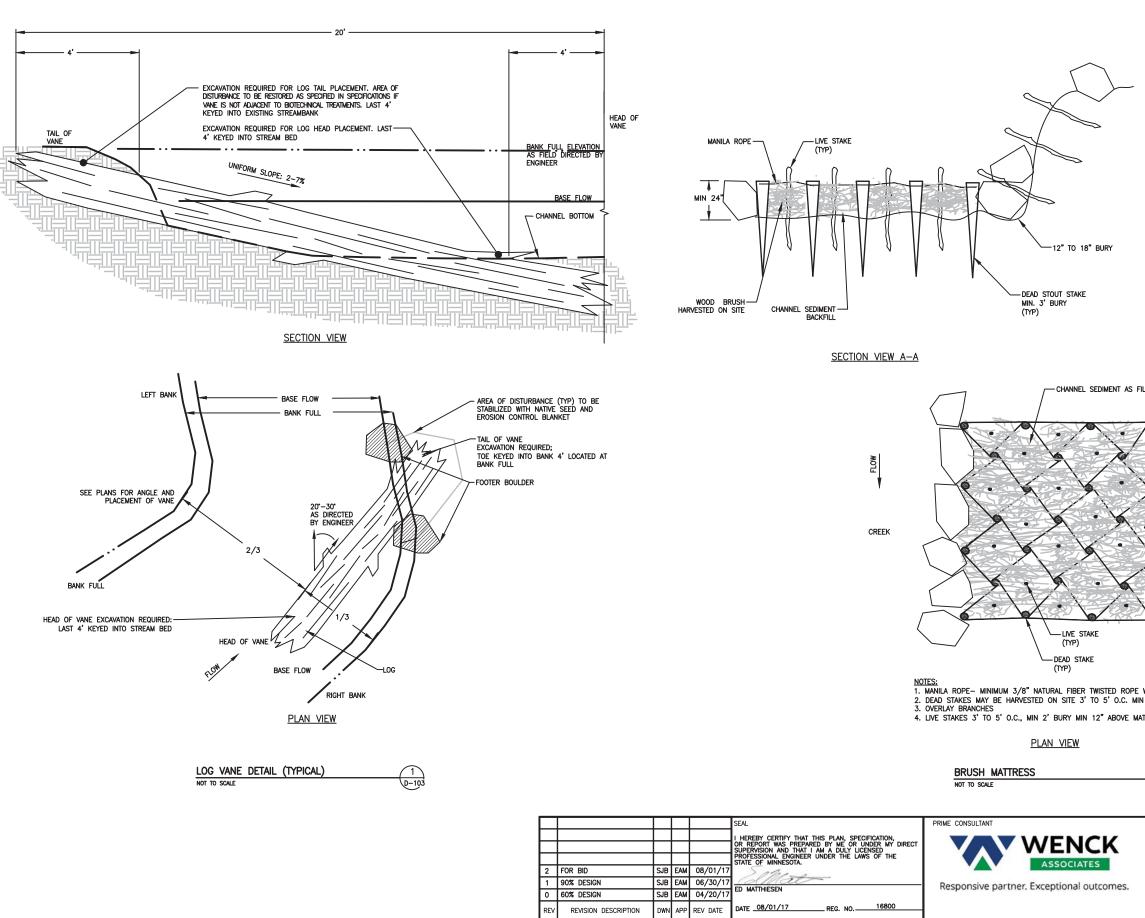




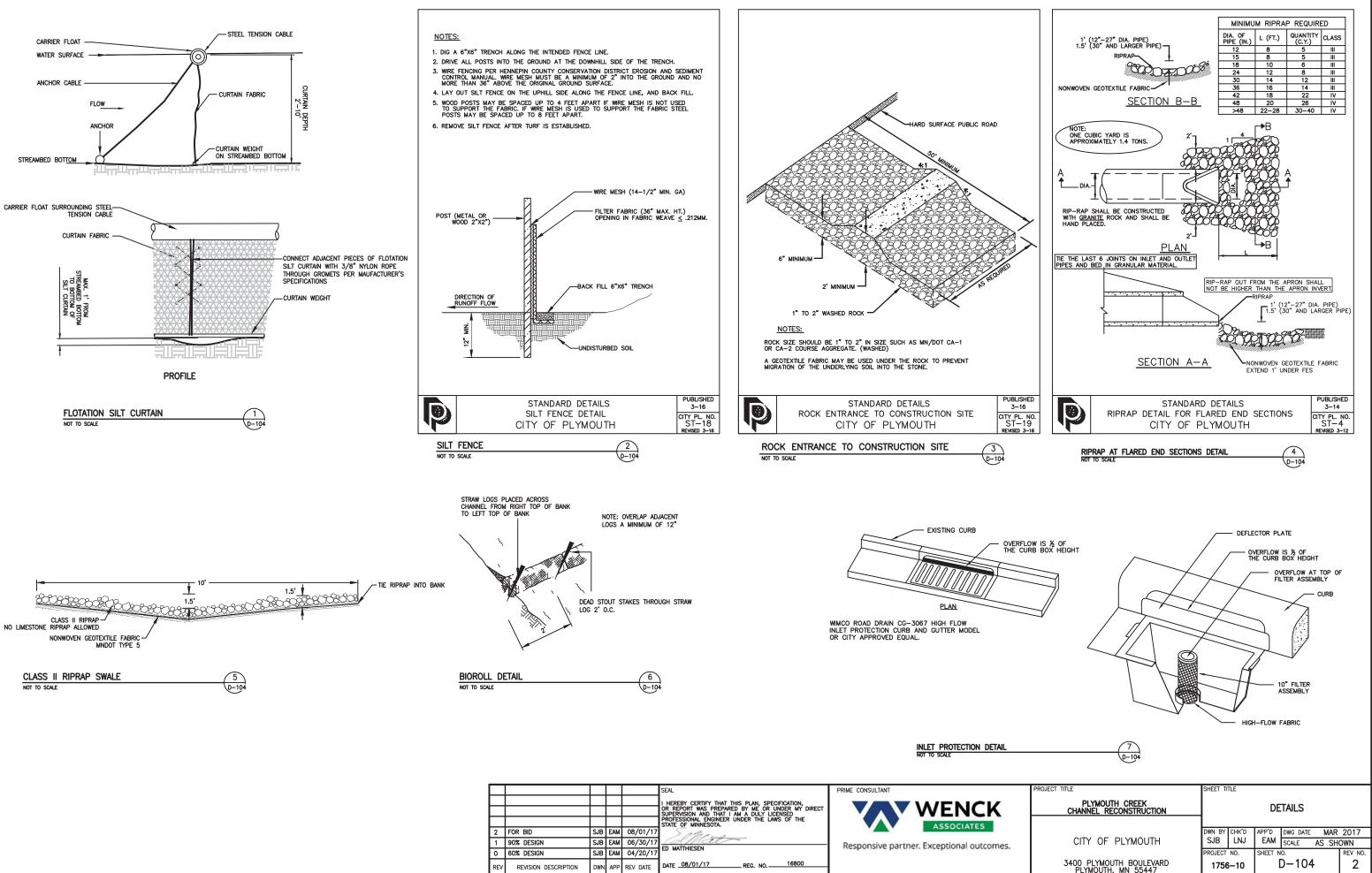
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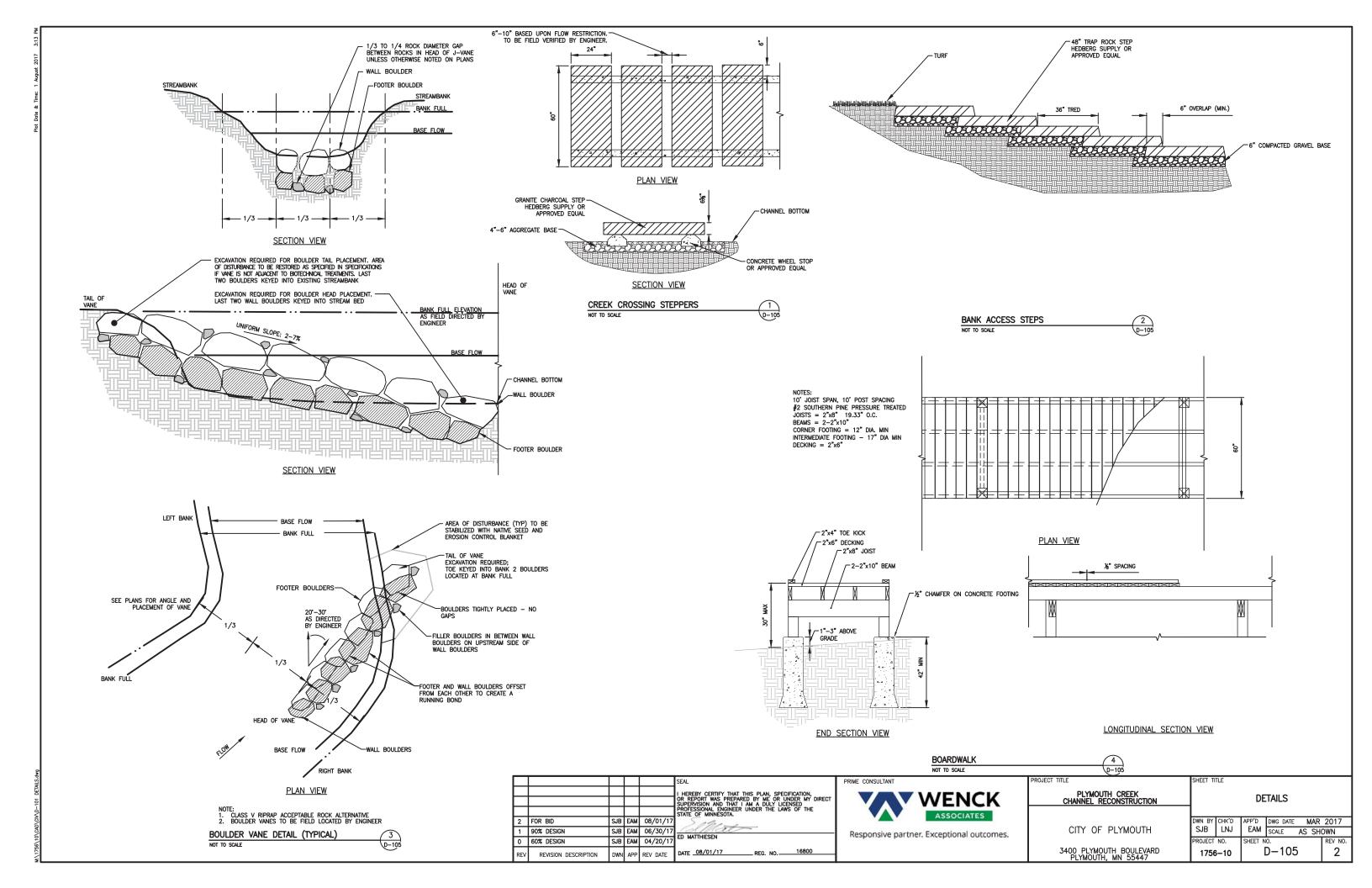


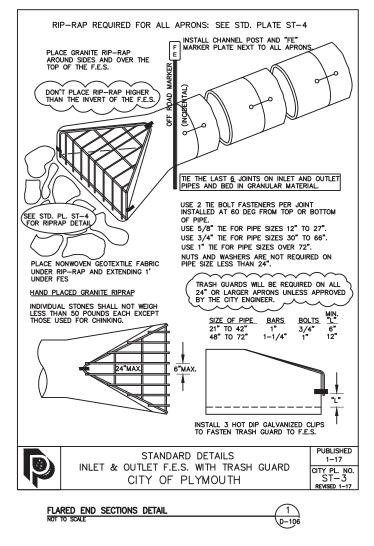


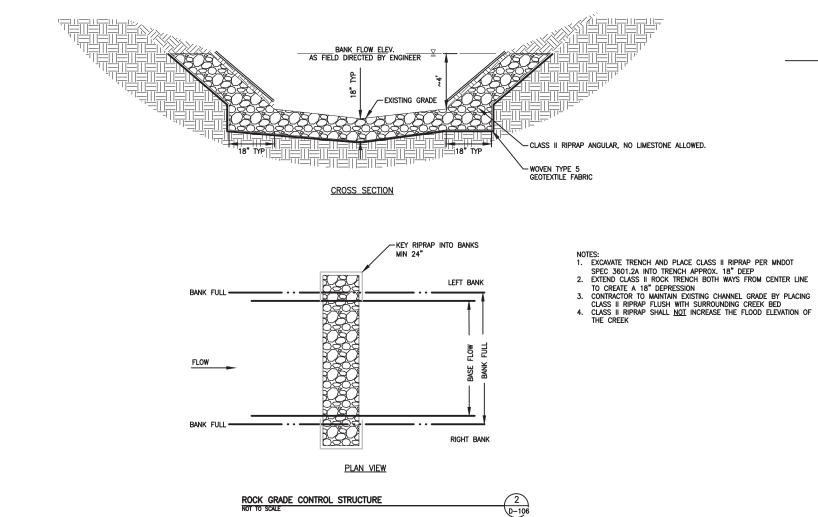
-	WOOD BRUSH HARVESTEST ON SITE A SINGLE ROW OF LARGE ROCKS PICKED FROM PROJECT RIPRAP DEAD STAKE APPROXIMATE 2° TO 6° DIA. MIN 3' BURY 3' TO 5° O.C		STAKE — ROCKS PLACED TWO HIGH ALONG BANK	1
S FILL	PLAN VIEW BANK	Ĵ		
DPE WIT MIN 3	H 500 LB BREAK STRENGTH. 'BURY, APPROXIMATE 2"-6" DIAMETER. ESS. $2^{-6^{-1}}$			
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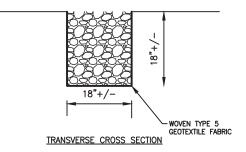
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