

K:\Projects\1 - 40 CSAH\CSAH 37\CP 0037-509059\400 Design\410 Drawings\520 Sheets\1_CP-0037-509059\TITLE SHEET(new).dwg, 11/20/2019 7:36:26 AM

PLAN SYMBOLS

SECTION SUBDIVISION LINE	
EXISTING R/W	
NEW R/W	
TEMP EASE	
RAILROAD R/W	
ROAD SHOULDER	
EDGE OF LAKE	
SWAMP BOUNDARY	
MISCELLANEOUS BOUNDARY	
CORPORATE OR CITY LIMITS	
PROPERTY LINE	
RECREATIONAL TRAIL	
ROAD ALIGNMENT	
ALIGNMENT POINTS	
RIVER OR CREEK	
DRAINAGE DITCH	
BRIDGE	
RAILROAD (SINGLE TRACK)	
RR CROSSING PAVEMENT MARKING	
RR CROSSING GATE	
RR CROSSBUCK SIGN	
RR CROSSBUCK SIGN W/LIGHTS	
BARBED WIRE FENCE	
CHAIN LINK FENCE	
WOVEN WIRE, COMBINATION WOVEN AND BARB	
WOOD FENCE	
BILLBOARD	
RETAINING WALL	
GUARDRAIL (CABLE)	
GUARDRAIL (PLATE BEAM)	
DRAIN TILE	
CULVERT	
CULVERT WITH APRONS	
TREELINE OR BRUSHLINE	
DECIDUOUS TREES	
CONIFER (EVERGREEN) TREES	
HEDGE	
BUSH OR SHRUB	
SWAMP OR MARSH	
MONUMENT (CLACT,ACP,BCP,...)	
CONCRETE OR STONE MONUMENT	
IRON PIPE, PIN OR REBAR	
IRON PIN WITH BRASS DISK	
NAIL, PK NAIL, SPIKE, SFP, T-BAR, ...	
VERTICAL CONTROL	
HORIZONTAL CONTROL	
POWER POLE	
LIGHT POLE	
LIGHT AND TELEPHONE POLE	
LIGHT, TELEPHONE AND POWER POLE	
GUY POLE	
POLE ANCHOR	
TELEPHONE POLE	
TELEPHONE AND POWER POLE	
UNDERGROUND UTILITY PEDESTAL	
TELEPHONE MANHOLE (VAULT)	
ELECTRIC CABLE IN CONDUIT	
TELEPHONE CABLE IN CONDUIT	
BURIED ELECTRIC CABLE	
BURIED TELEPHONE CABLE	
GAS LINE	
WATER LINE	
VALVE	
FIRE HYDRANT	
WATER MANHOLE	
WELL	
LAWN SPRINKLER HEAD	
MANHOLE	
CATCH BASIN	
SEPTIC TANK	
FORCE MAIN LIFT STA.	
SEWER LINE	
PERMANENT BARRICADE	
TRAFFIC SIGNAL LIGHT	
HAND HOLE	
ENTRANCE	
BUILDING	
SATELLITE DISH	
STEEL TOWER	
FLAG POLE	
SIGN	
TYPE III BARRICADE	
CHANNELIZING DEVICE	
TYPE A WARNING LIGHT	

MINNESOTA DEPARTMENT OF TRANSPORTATION SAINT LOUIS COUNTY CONSTRUCTION PLAN FOR: 6'x4' PRECAST CONCRETE BOX CULVERT REPLACEMENT

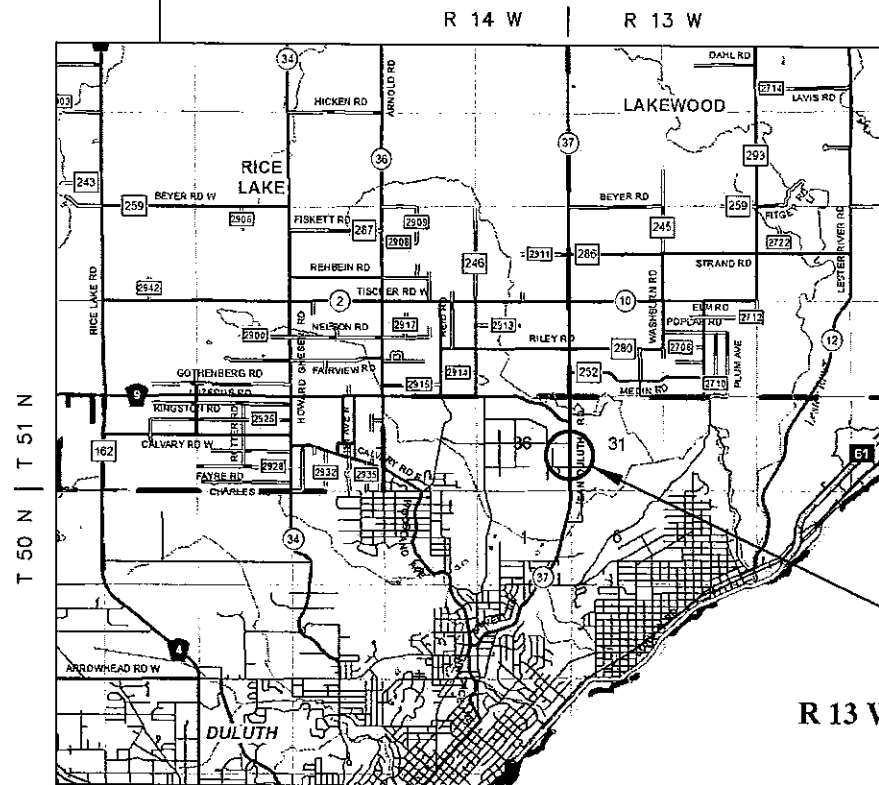
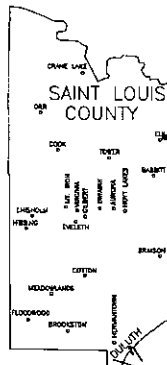
LOCATED ON

C.S.A.H 37 (JEAN DULUTH RD)

0.35 MILES SOUTH OF C.S.A.H. 10 (MARTIN RD)

A POINT 621' SOUTH OF THE WEST QUARTER CORNER OF SEC. 31, T51N, R13W

COUNTY PROJECT NO. 0037-509059



INDEX MAP

INDEX MAP
SCALE
0 1 MILE

PLAN REVISIONS		
DATE	SHEET NO.	APPROVED BY

CP 0037-509059

MINN. PROJ. NO.

SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET AND INDEX MAP
2	ESTIMATED QUANTITIES
3	STREAM PROFILE
4-5	RC BOX CULVERT STD. PLAN
6	PLAN VIEW
7-9	CULVERT TREATMENTS
10-13	TEMPORARY STREAM DIVERSION
14-15	TRAFFIC DETAILS
16	PAVEMENT MARKINGS

THIS PLAN CONTAINS 16 SHEETS

HYDRAULIC ENGINEER'S RECOMMENDATION

DATE: NOVEMBER 12, 2018

STREAM OR DITCH DESIGNATION UNNAMED TRIBUTARY TO AMITY CREEK
DRAINAGE AREA 0.127 SQ. MI.
MAX. FLOOD ON RECORD N/A DES. FLOOD(2 YR)
TOTAL STAGE INCREASE: NATURAL COND.0.86' EXISTING COND.-0.78'
HEADWATER ELEVATION 1147.16'
MINIMUM WATERWAY OPENING BELOW: 1147.16' 11.49 S.F.
DESIGN MEAN VELOCITY THROUGH STRUCTURE 5.8 F.P.S.
IN THE INTEREST OF FLOOD PLAN ZONING THE REGIONAL FLOOD
(100 YR. FREQ.) IS 92 C.F.S. AT STAGE 1149.39' AND MEAN
VELOCITY OF 7.5 F.P.S.
THE ABOVE RECOMMENDATION WILL PROVIDE A STRUCTURE OF
ADEQUATE WATERWAY TO PASS THE REGIONAL FLOOD CRITERIA
ESTABLISHED BY THE DEPT. OF NATURAL RESOURCES.

DESIGNERS DESIGN SOUTH

I HEREBY CERTIFY THAT THIS PLAN 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.

PRINT NAME: STEPHEN E. KRASAWAY

SIGNATURE: _____

DATE: _____ LIC. NO. 45397

APPROVED _____ ST. LOUIS CO. HWY. ENGINEER DATE _____

SHEET NO. 1 OF 16 SHEETS