



PAW PAW LAKE

**INTRODUCTION OF THE WATER QUALITY IMPROVEMENT PLANS
BEEN ABLE TO MAINTAIN AND STABILIZE
REDUCTION OF THE SEDIMENT AND NUTRIENTS**

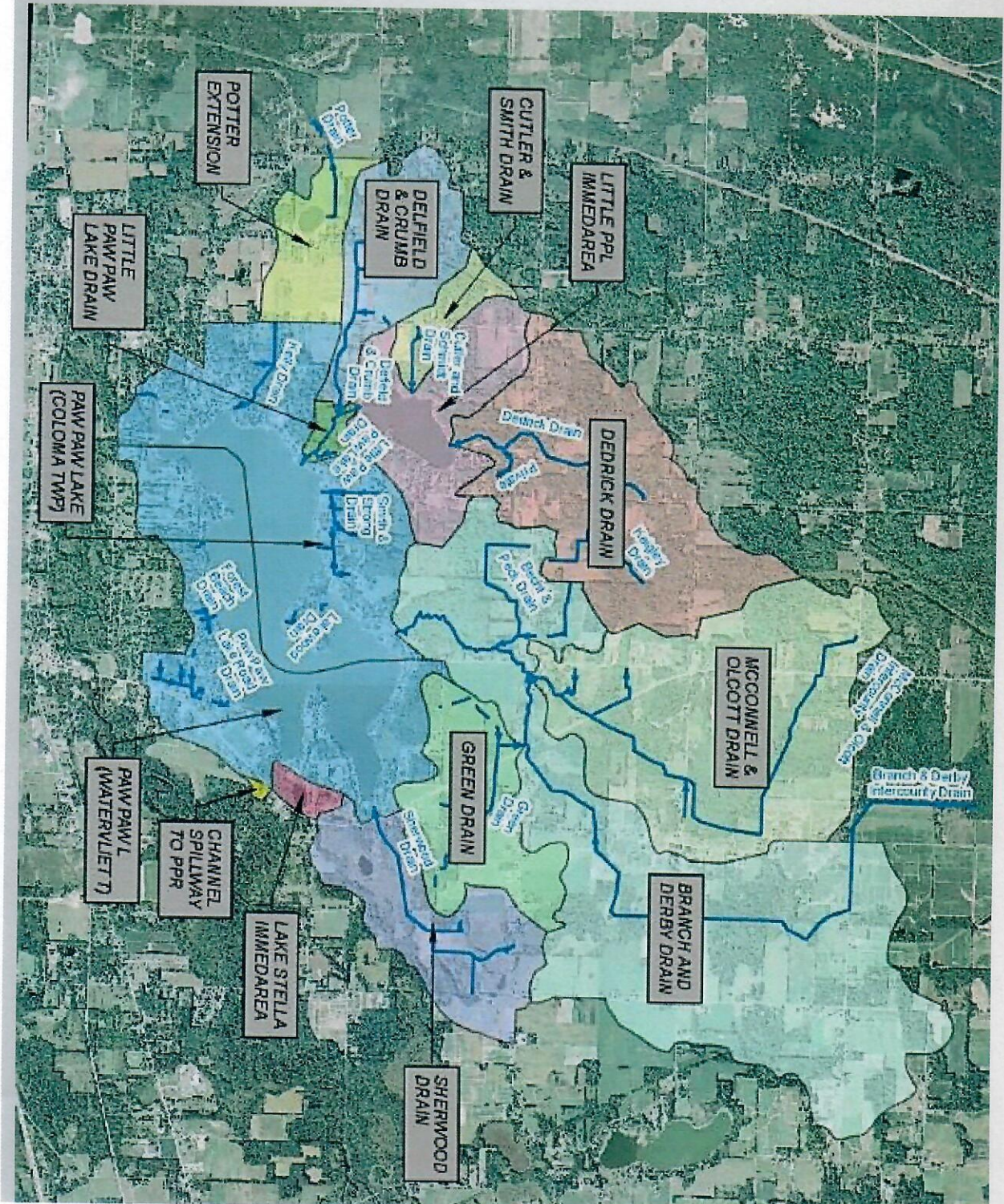
WATER QUALITY IMPROVEMENT PL

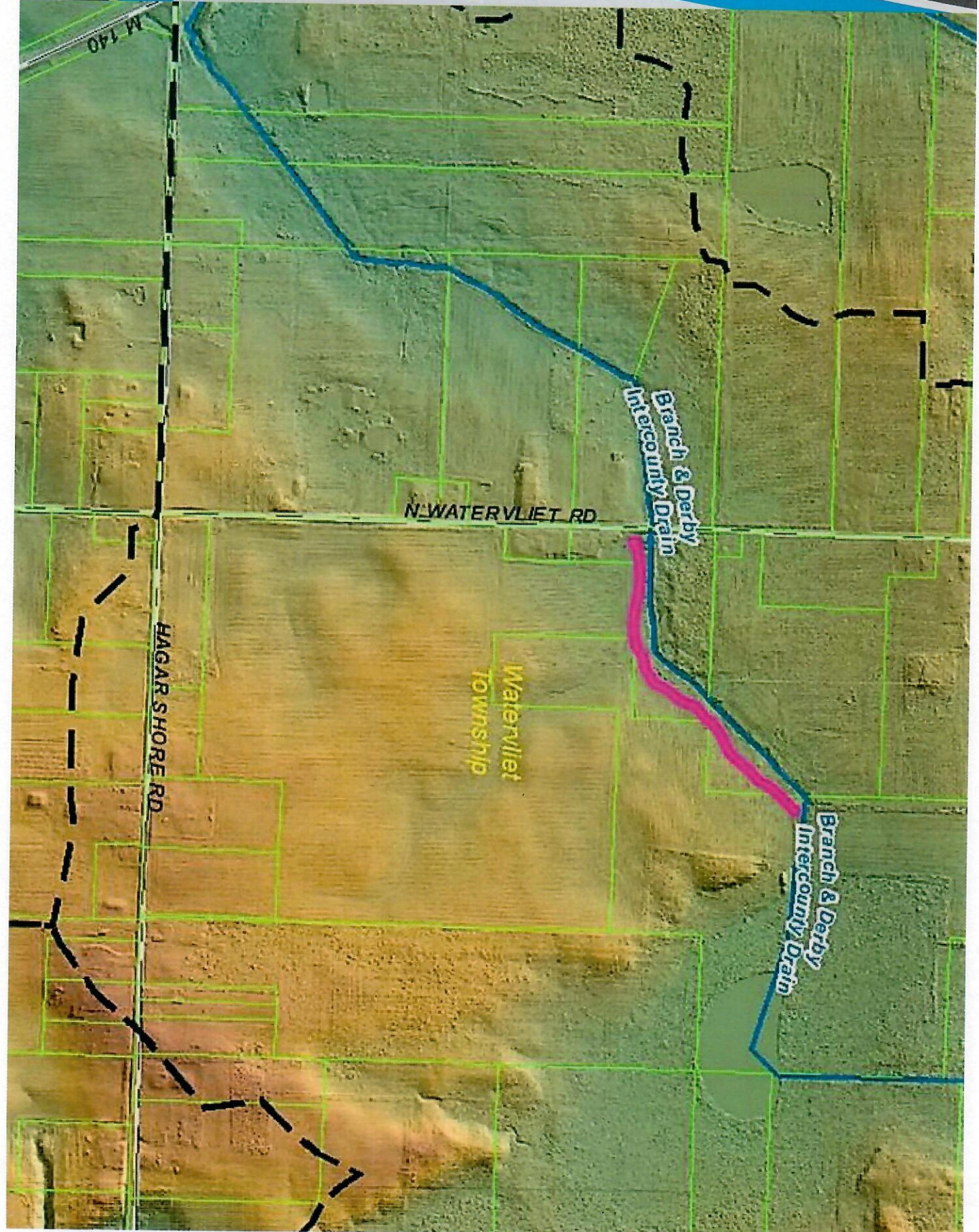
- WATERSHED RUNOFF
- TREATMENT WETLANDS
- FLOODPLAIN RECONNECTION
- SEDIMENT REMOVAL
- STORM SEWER RUNOFF TREATMENT

WATERSHED RUNOFF

- POOR QUALITY RUNOFF IS WATERSHED WIDE
- HOLDING THE SOIL ON THE LAND IS THE FIRST LINE OF DEFENSE
- USE BEST MANAGEMENT PRACTICES TO STOP SOIL EROSION
- INSTALLATION OF BUFFER STRIPS AND GRASS WATERWAYS
- NO TIL OR MINIMUM TIL FARMING PRACTICES
- CONSERVATION RESERVE ENHANCEMENT PROGRAM
- PRELIMINARY ESTIMATED OF COST \$50k TO 100k

WATERSHED RUNOFF





M 140

N WATERVLLET RD

HAGAR'S SHORE RD

Waterliet
Township

Branch & Derby
Intercountry Drain

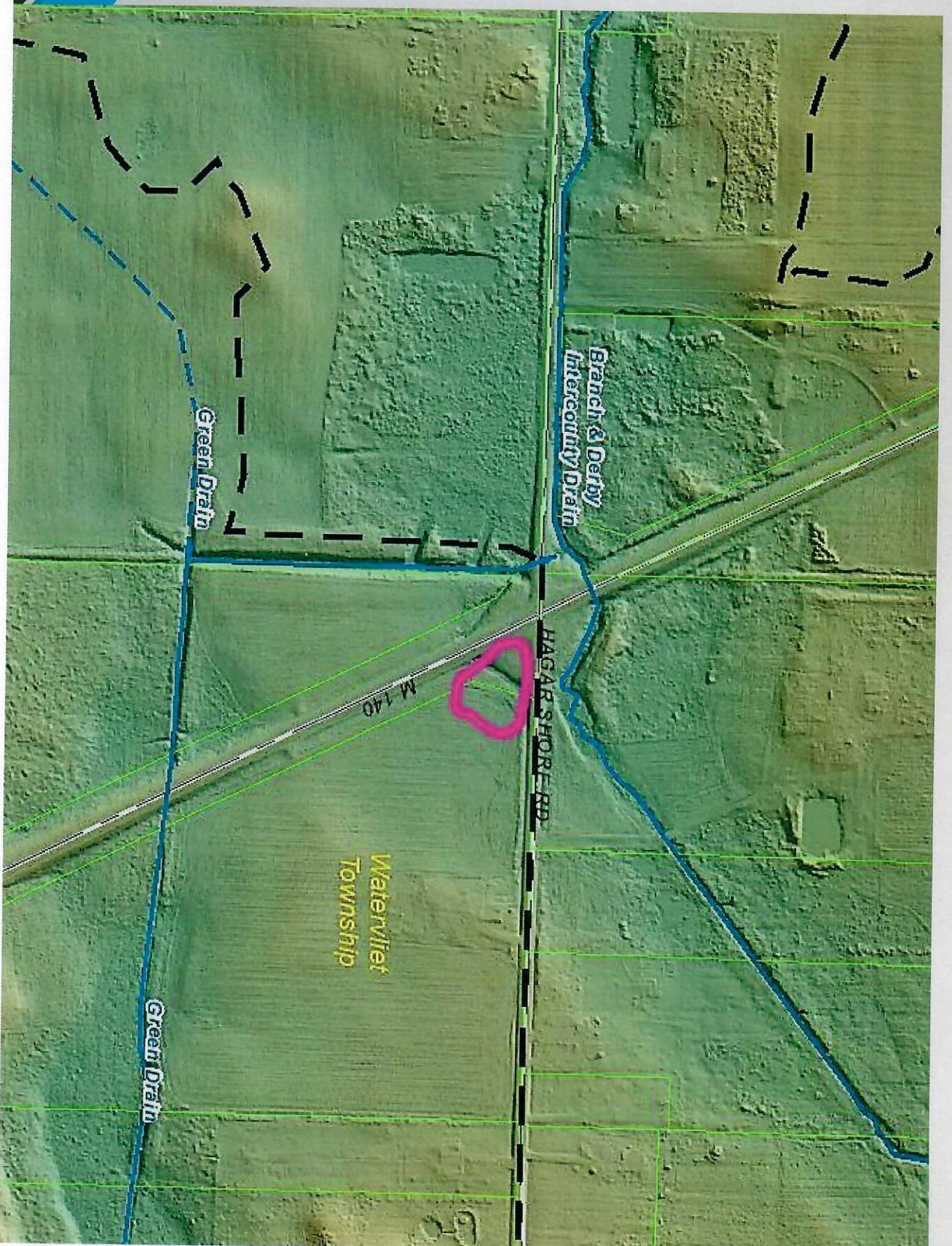
Branch & Derby
Intercountry Drain

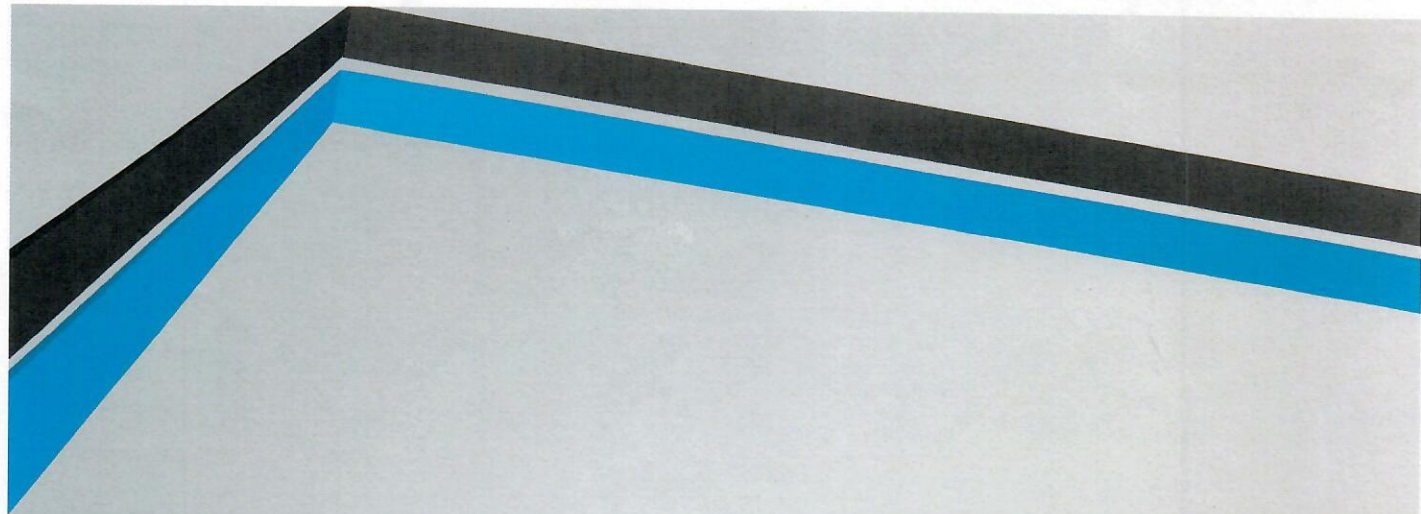


M140 TREATMENT

- MDOT – PROJECT PARTNER
- WATER QUALITY TREATMENT FOR FIRST FLUSH
- RESTRICT THE OUTLET AND PROVIDE A FILTER
- PRELIMINARY ESTIMATE OF COST \$15K TO \$20K

M140 TREATMENT

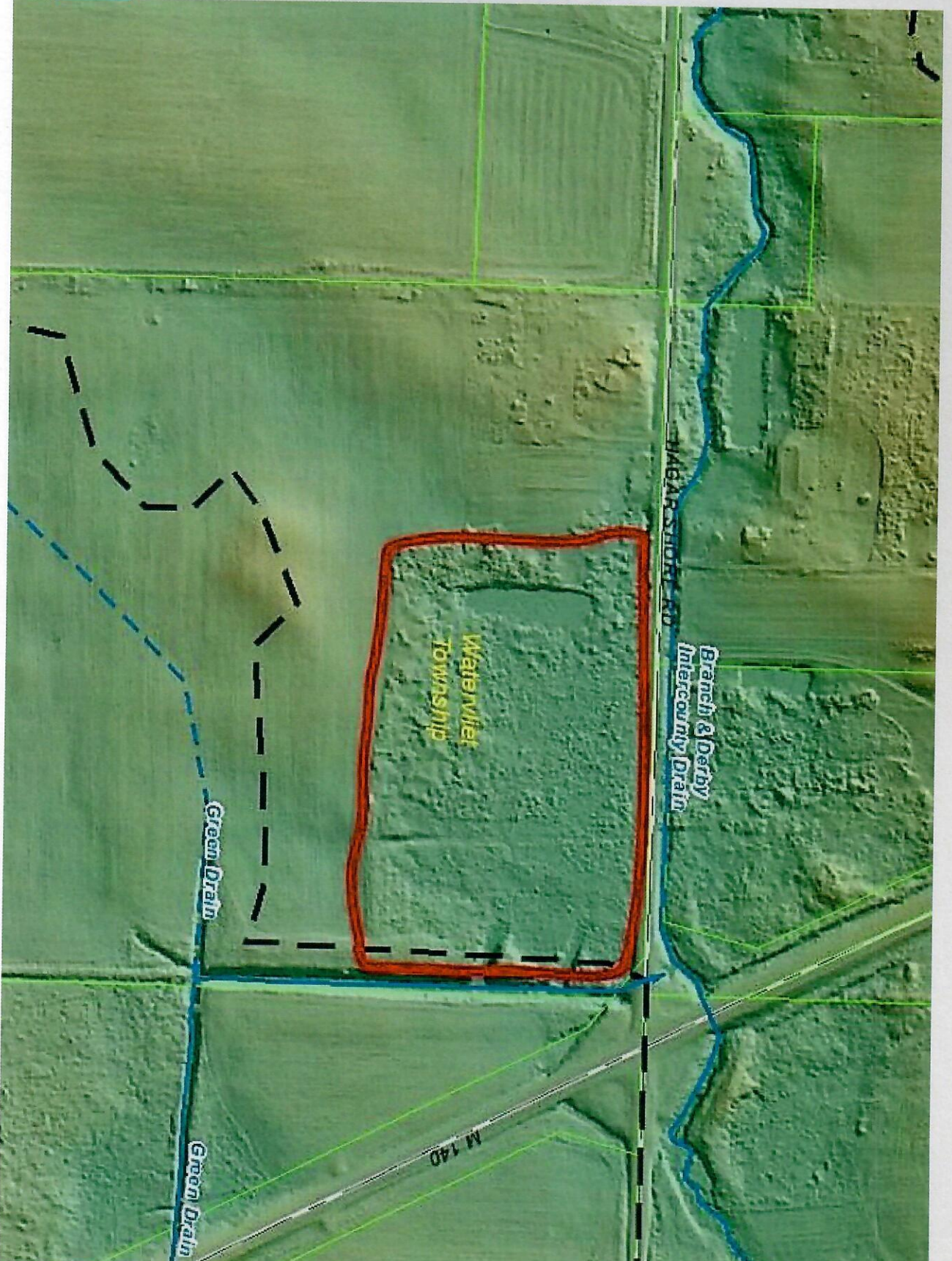


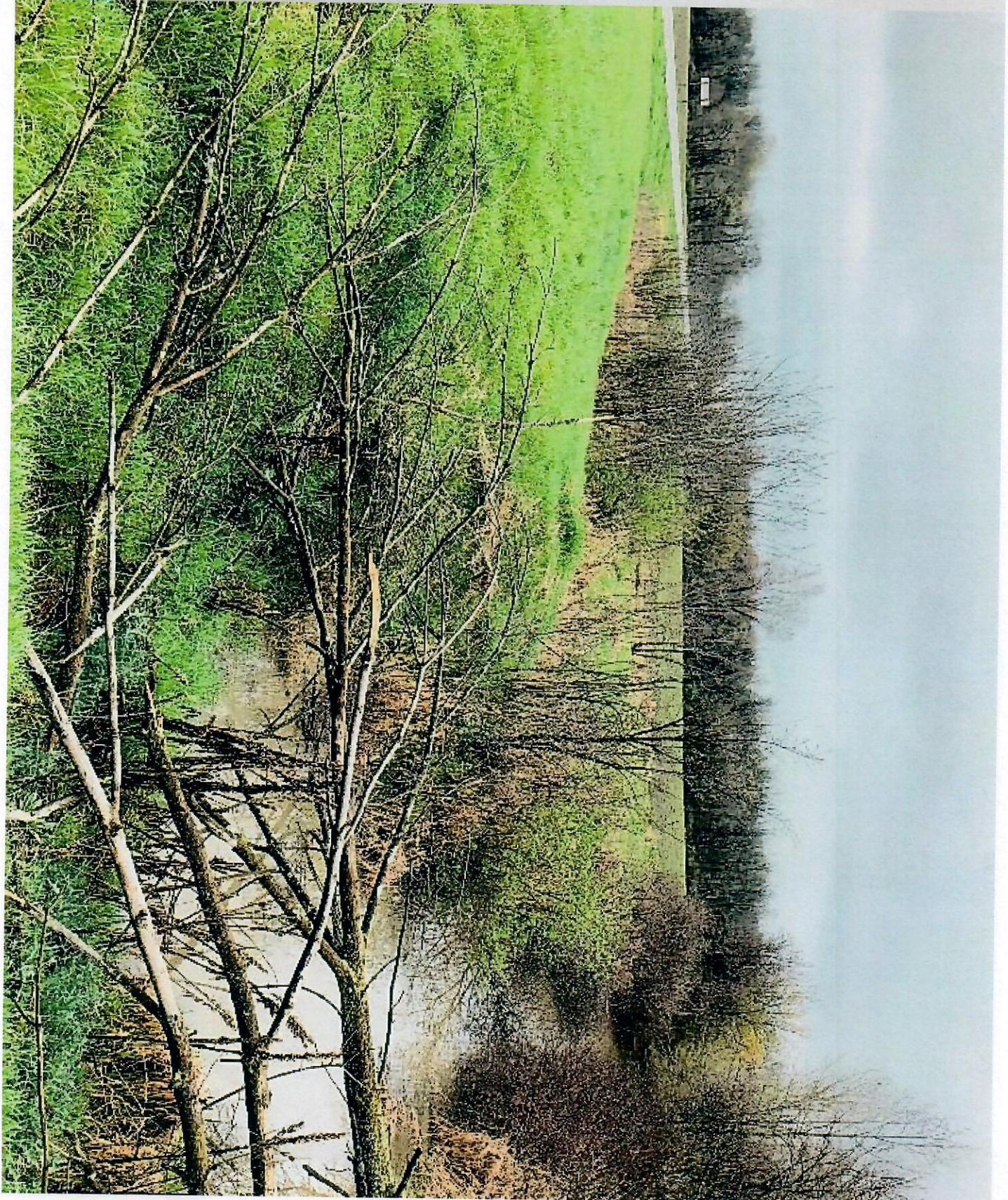
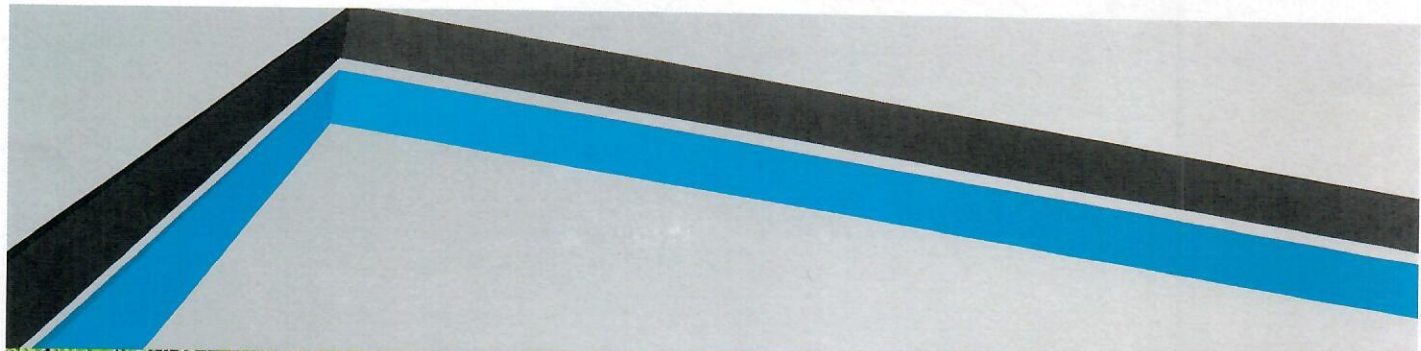


GREEN DRAIN TREATMENT

- DIVERT WATER FROM GREEN DRAIN
- RESTRICT THE DIRECT OUTLET TO THE BRANCH AND DERBY I
- EXISTING WETLAND COMPLEX WOULD PROVIDE TREATMENT
- EXISTING WETLAND WOULD BE ENHANCED BY ADDITIONAL
- PRELIMINARY ESTIMATE OF COST \$40k TO \$55k

GREEN DRAIN TREATMENT

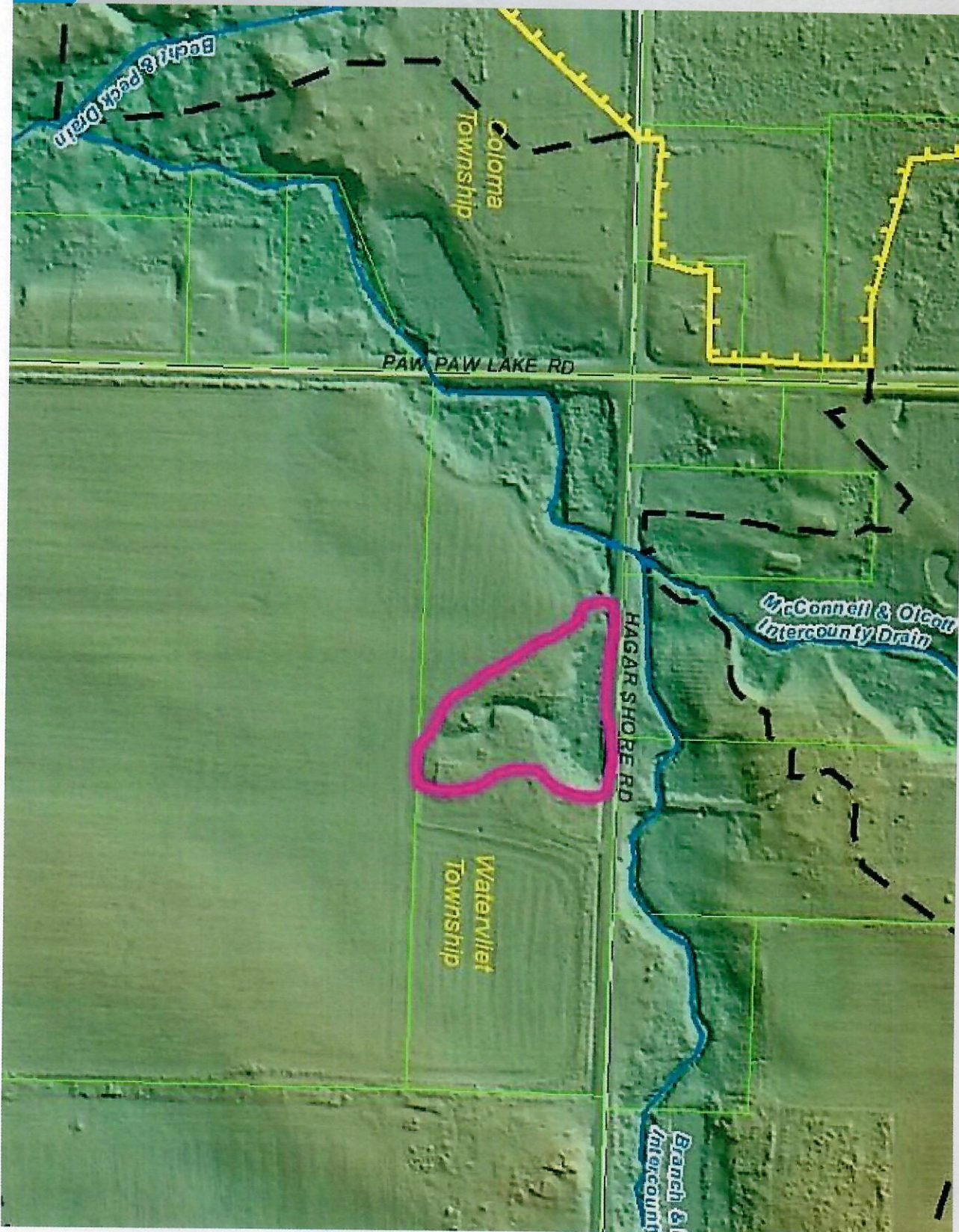


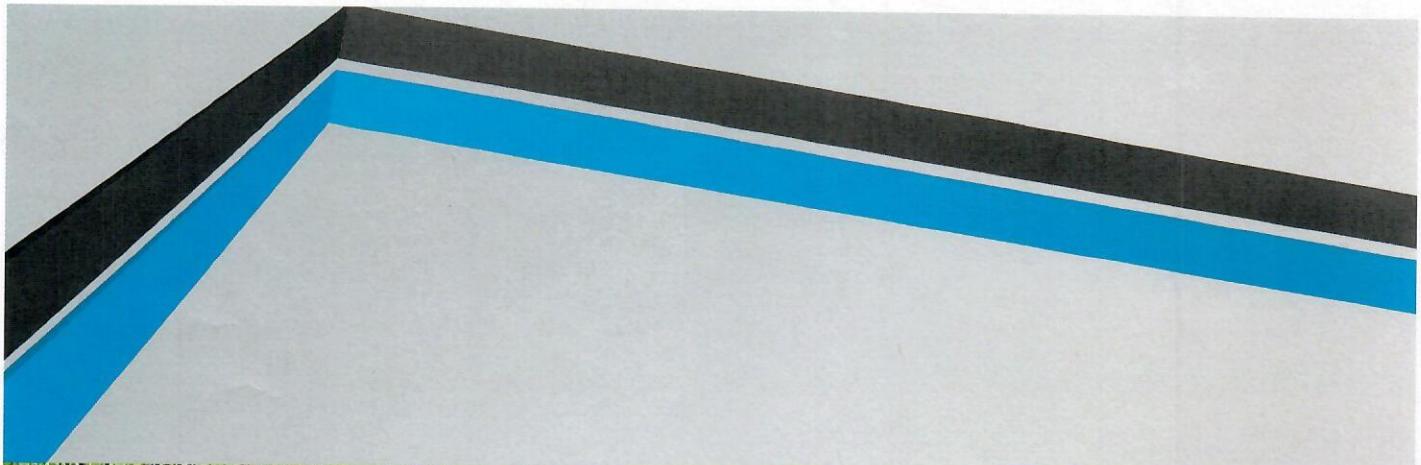


HAGGAR SHORE ROAD TREATMEN

- LOCATION HAS AN EXISTING WETLAND/DETENTION AREA
- INSTALLATION OF AN OULET STRUCTURE TO TRAP THE FIRST
- VERY TURBID WATER
- PRELIMINARY ESTIMATE OF COST \$30K TO 40K

HAGGAR SHORE ROAD TREATMENT





FLOODPLAIN RECLAMATION

- REMOVAL OF SPOILS TO ALLOW FLOWS TO ENTER FLOODPLAIN
- REMOVAL OF SEDIMENT IN MAIN CHANNEL AFTER FIRST YEAR
- KEEP MAJORITY OF SEDIMENT FROM ENTERING THE LAKE
- PRELIMINARY ESTIMATE OF COST
 - INITIAL CONSTRUCTION \$15k to 20k – SPOIL REMOVAL
 - ANNUAL MAINTENANCE \$15k to 20k – SEDIMENT REMOVAL

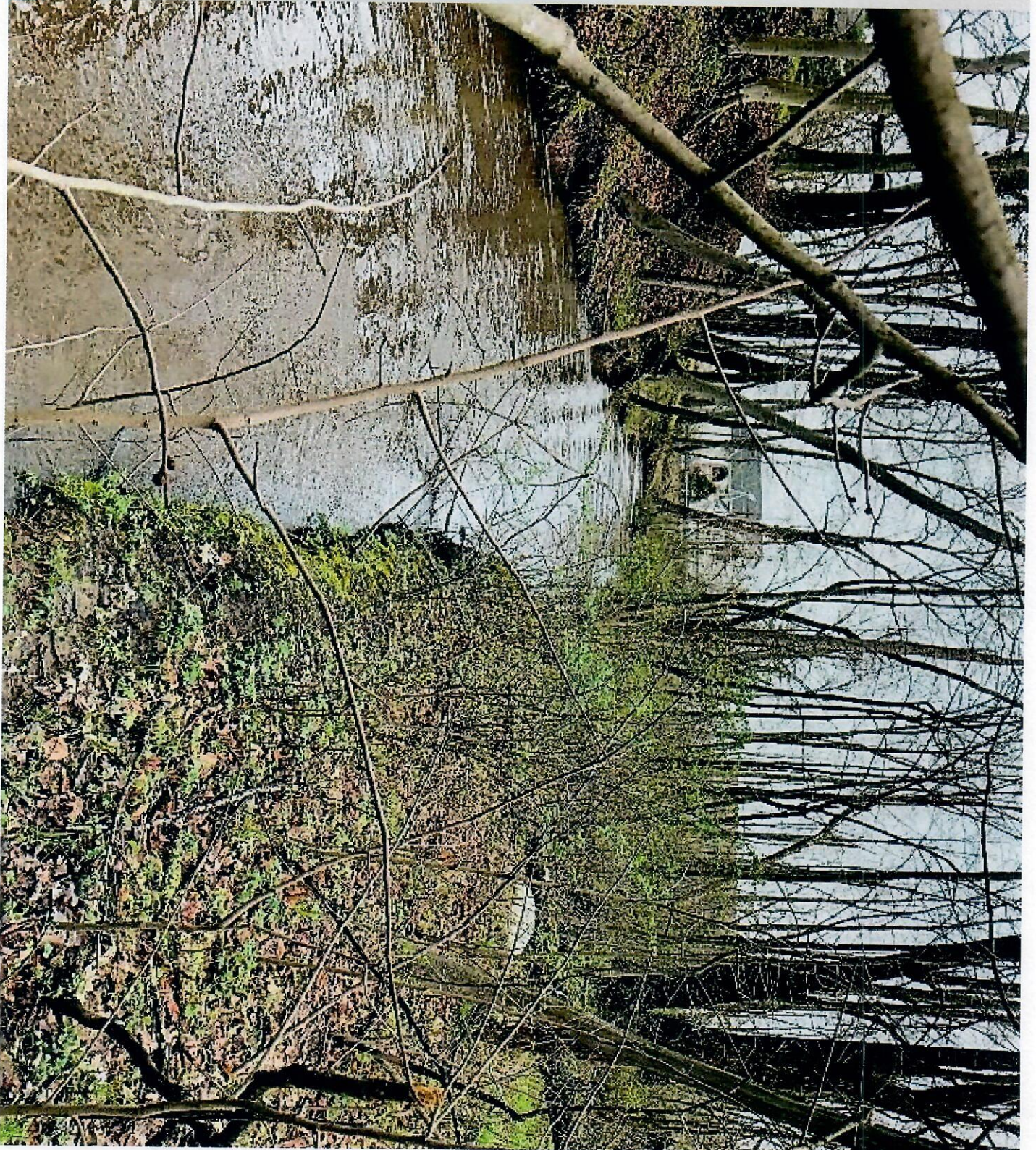
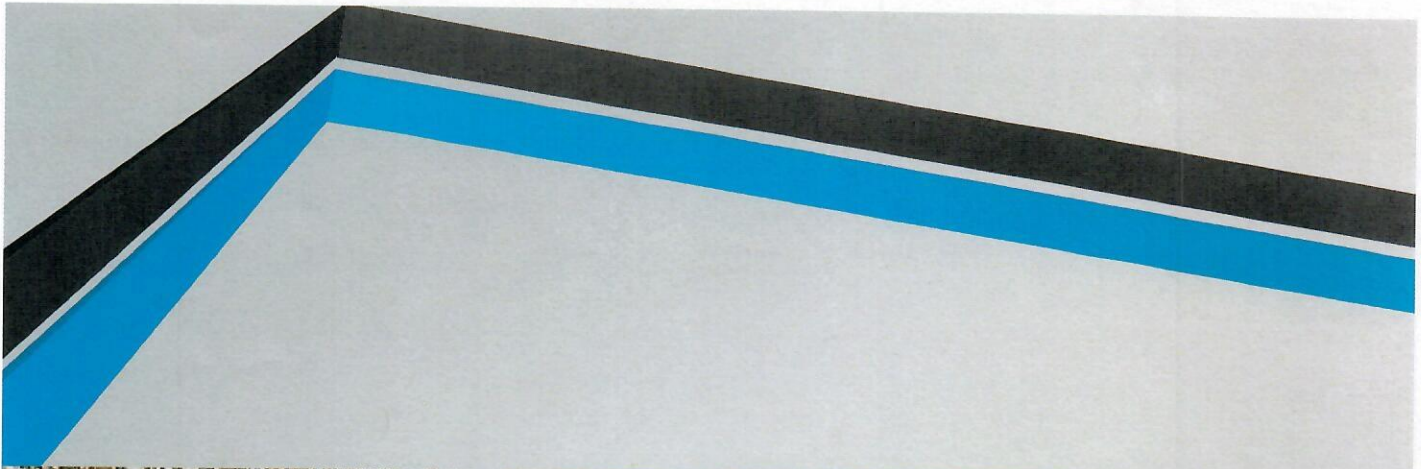
FLOODPLAIN RECLAMATION



SEDIMENT REMOVAL



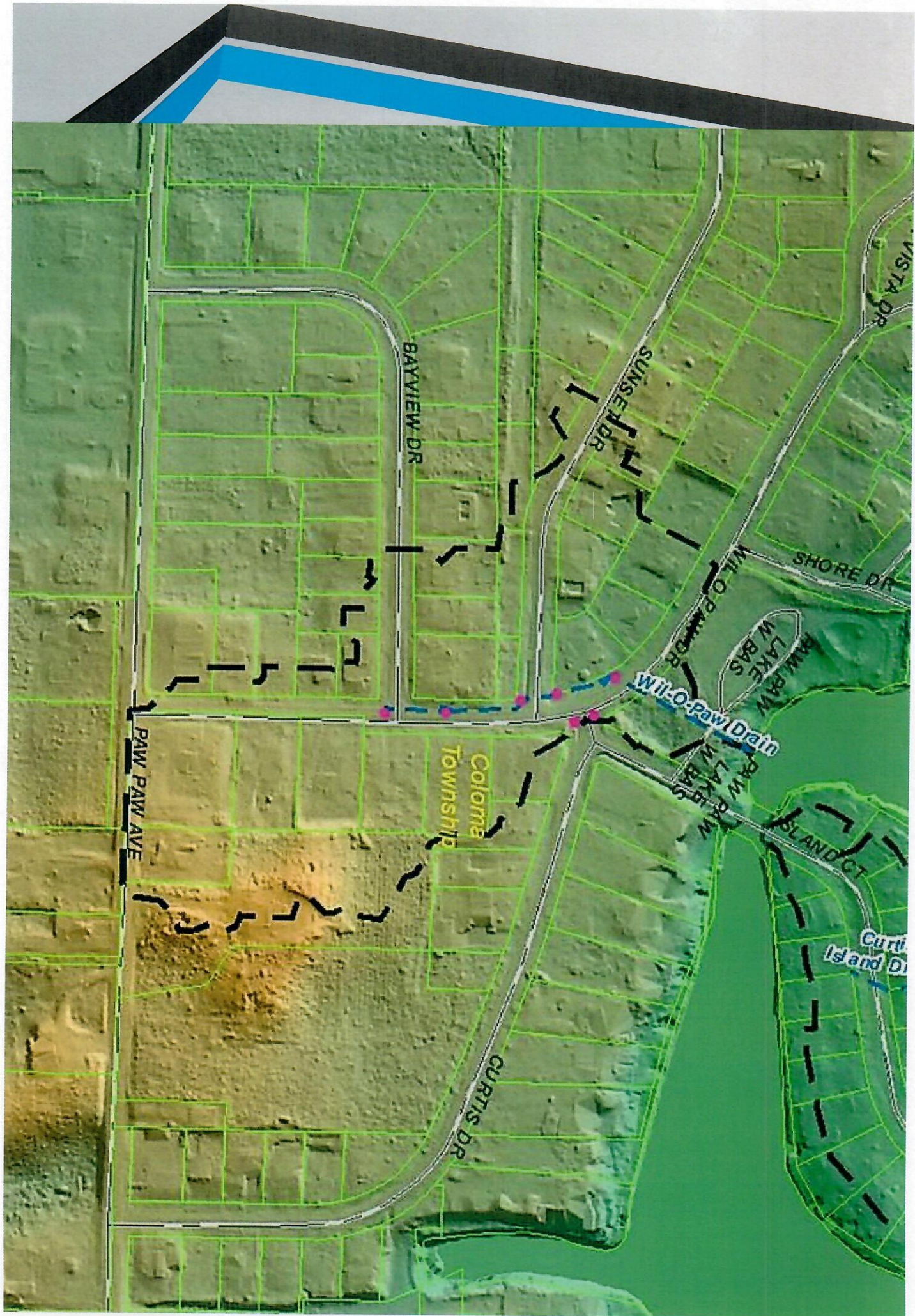
- PRELIMINARY ESTIMATE OF COST \$30k to \$40k (COST SHARE WITH CONDOMINIUM ASSOCIATION)

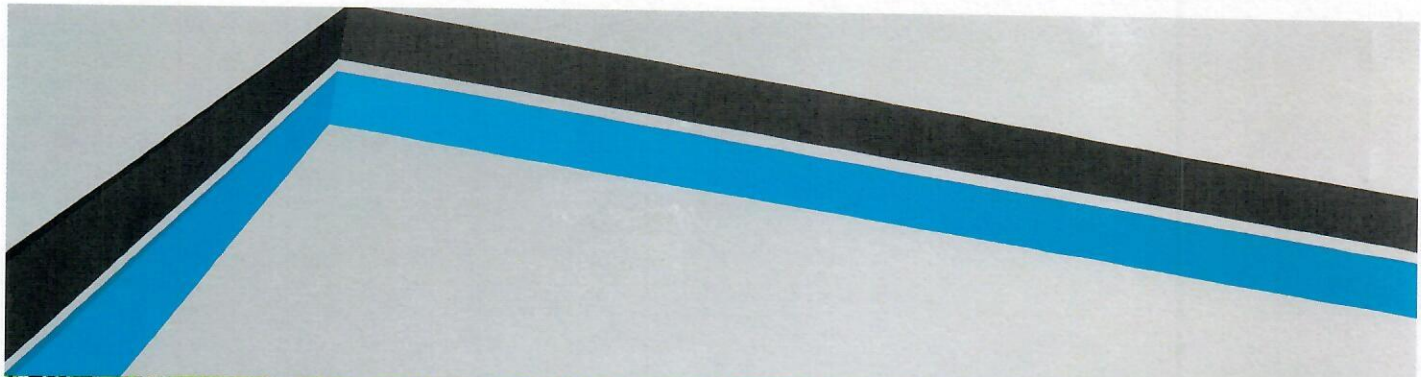


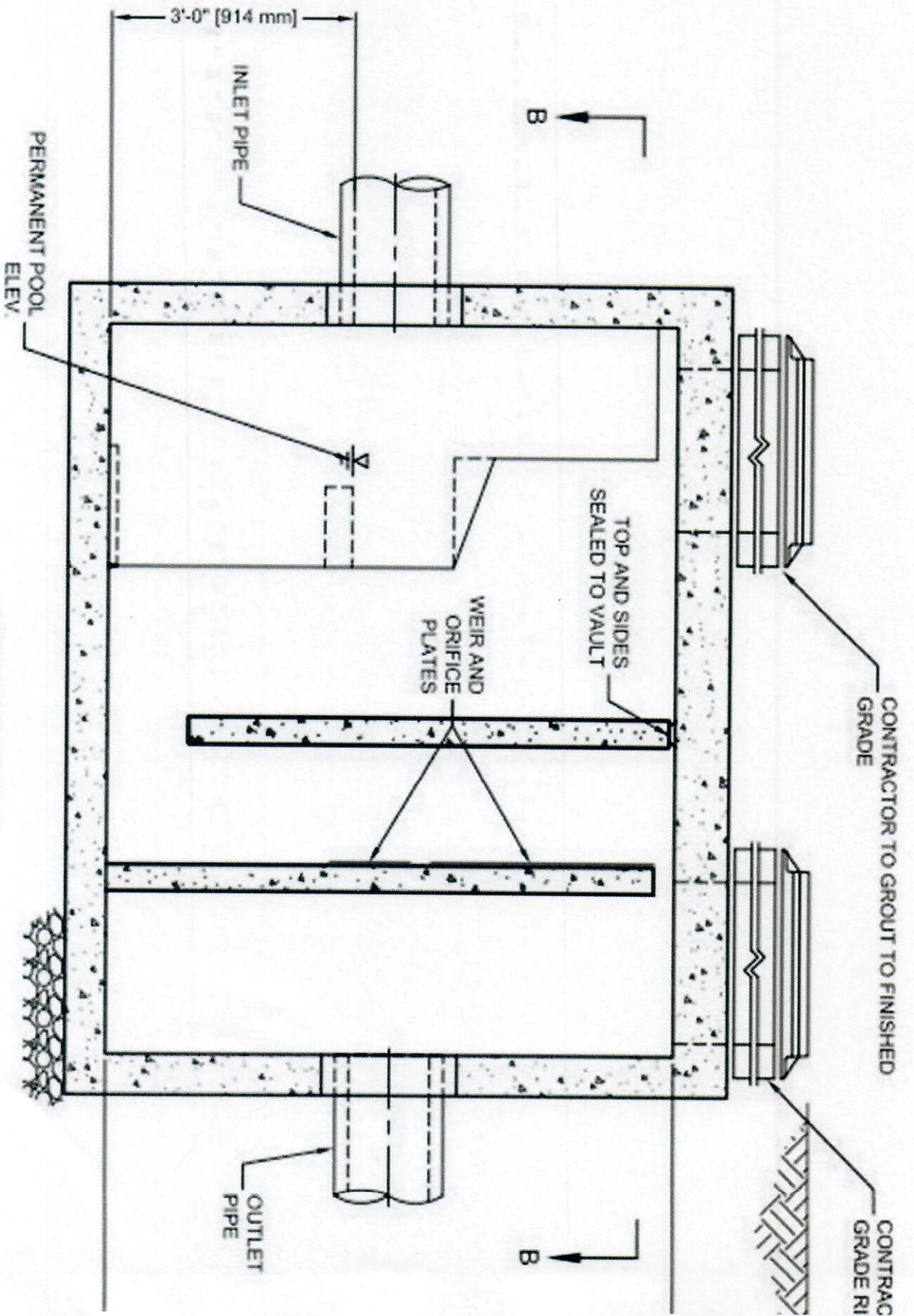
STORM SEWER RUNOFF TREATMENT

- COMPLETE AN ASSET MANAGEMENT PLAN OF THE CATCHBASINS, SEWERS
- INSTALL VORTEX/CDS UNITS AT STRATEGIC LOCATIONS
- CLEAN OUT THE CATCH BASINS
- PREPARE A LONG TERM MAINTENANCE PLAN
- COORDINATE WITH THE COUNTY DRAIN COMMISSIONER AND COLLEGE DEPARTMENT
- PRELIMINARY ESTIMATE OF COST
 - INITIAL ASSET MANAGEMENT PLAN AND INSTALLATION OF CLEANING UNITS - \$100k to \$120k
 - YEARLY MAINTENANCE AND CLEANING - \$20k to \$40k









SECTION A-A

