

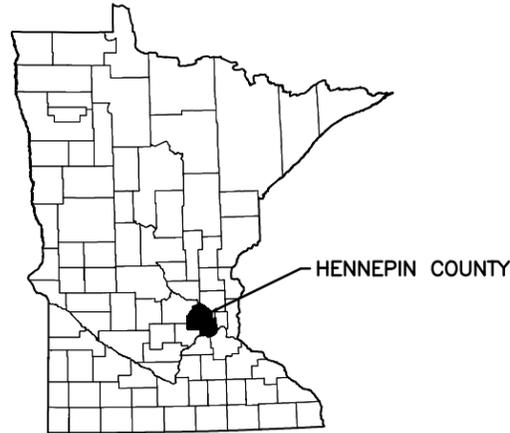
# DECOLA PONDS B AND C IMPROVEMENT PROJECT

## CITY OF GOLDEN VALLEY

### GOLDEN VALLEY, MN

### CITY PROJECT #18-06

Item 5A.  
BCWMC 4-18-19



MINNESOTA COUNTY MAP



PROJECT LOCATION MAP

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**DECOLA PONDS B & C IMPROVEMENT PROJECT:**

JENNIFER KOEHLER, PE  
BARR ENGINEERING CO.  
PHONE: 952-832-2750  
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JEFF OLIVER, PE  
CITY OF GOLDEN VALLEY  
PHONE: 763-593-8043  
EMAIL: JOLIVER@GOLDENVALLEYMN.GOV

ERIC ECKMAN  
CITY OF GOLDEN VALLEY  
PHONE: 763-593-8084  
EMAIL: EECKMAN@GOLDENVALLEYMN.GOV

COORDINATE SYSTEM: HENNEPIN COUNTY  
HORIZONTAL DATUM: NAD83 (2011)  
VERTICAL DATUM: NGVD88



GOPHER STATE ONE CALL:  
CALL BEFORE YOU DIG.  
1-800-252-1166

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 LAWS OF THE STATE OF MINNESOTA.

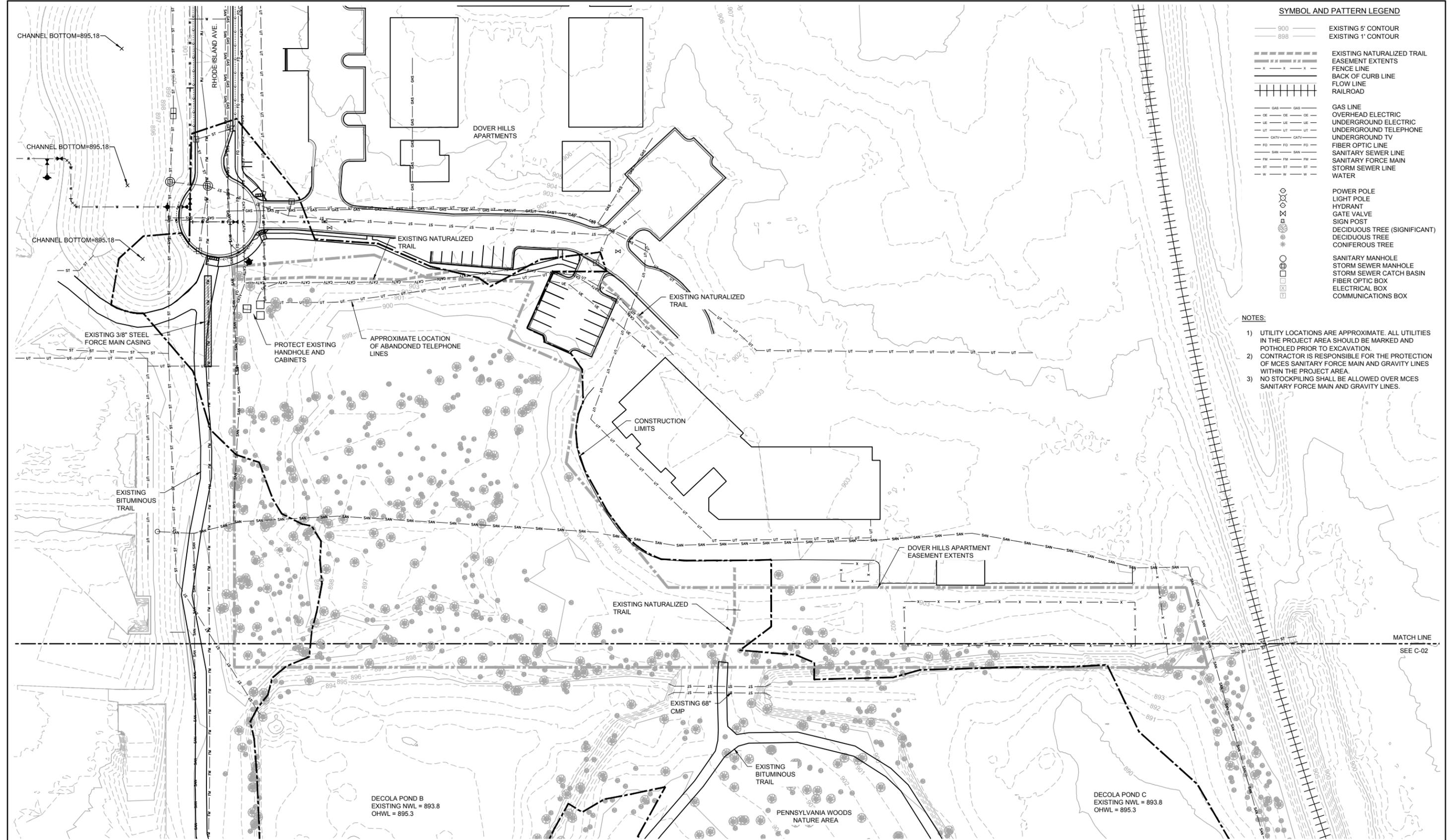
JEFF OLIVER, PE, CITY ENGINEER  
DATE \_\_\_\_\_ REG. NO. 23110

90% DESIGN  
DRAFT

				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 LAWS OF THE STATE OF MINNESOTA.				CLIENT 03/22				BARR		Scale AS SHOWN		DECOLA PONDS B&C IMPROVEMENT PROJECT		BARR PROJECT No. 23/27-1677.00	
				PRINTED NAME KURT A. LEUTHOLD				RELEASED TO/FOR A B C 0 1 2 3				city of golden valley		CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN		CLIENT PROJECT No. #18-06		DWG. No. G-01	
				SIGNATURE DATE _____ LICENSE # _____				DATE RELEASED				Corporate Headquarters Minneapolis, Minnesota Ph: 1-800-632-2277		Date 03/22/2019		TITLE SHEET AND SITE LOCATION MAP		REV. No. A	
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION														

CADD USER: Katie J. Turpin-Negri FILE: M:\DESIGN\2027\1677\_00\2027167700\_G01\_TITLE SHEET.DWG PLOT SCALE: 1:2 PLOT DATE: 4/9/2019 4:32 PM

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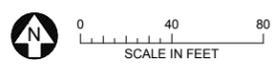


**SYMBOL AND PATTERN LEGEND**

--- 900 ---	EXISTING 5' CONTOUR
--- 898 ---	EXISTING 1' CONTOUR
---	EXISTING NATURALIZED TRAIL
---	EASEMENT EXTENTS
-x-x-x-	FENCE LINE
---	BACK OF CURB LINE
---	FLOW LINE
---	RAILROAD
---	GAS LINE
---	OVERHEAD ELECTRIC
---	UNDERGROUND ELECTRIC
---	UNDERGROUND TELEPHONE
---	UNDERGROUND TV
---	FIBER OPTIC LINE
---	SANITARY SEWER LINE
---	SANITARY FORCE MAIN
---	STORM SEWER LINE
---	WATER
○	POWER POLE
○	LIGHT POLE
○	HYDRANT
○	GATE VALVE
○	SIGN POST
○	DECIDUOUS TREE (SIGNIFICANT)
○	DECIDUOUS TREE
○	CONIFEROUS TREE
○	SANITARY MANHOLE
○	STORM SEWER MANHOLE
○	STORM SEWER CATCH BASIN
○	FIBER OPTIC BOX
○	ELECTRICAL BOX
○	COMMUNICATIONS BOX

- NOTES:**
- 1) UTILITY LOCATIONS ARE APPROXIMATE. ALL UTILITIES IN THE PROJECT AREA SHOULD BE MARKED AND POTHOLED PRIOR TO EXCAVATION.
  - 2) CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF MCES SANITARY FORCE MAIN AND GRAVITY LINES WITHIN THE PROJECT AREA.
  - 3) NO STOCKPILING SHALL BE ALLOWED OVER MCES SANITARY FORCE MAIN AND GRAVITY LINES.

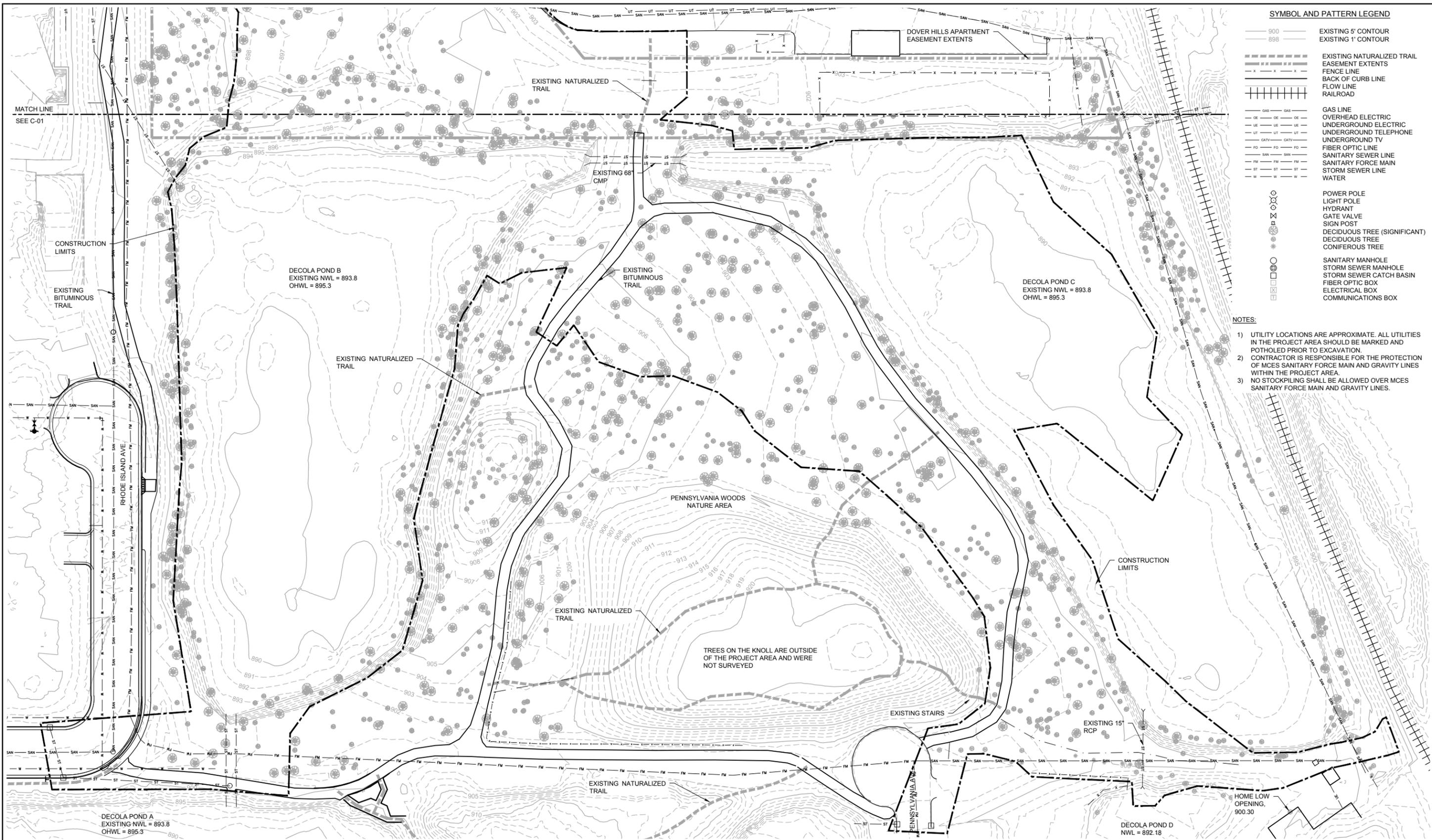
**1 PLAN: EXISTING CONDITIONS - DOVER HILLS APARTMENTS' EASEMENT AREA**  
1"=40'-0"



90% DESIGN  
DRAFT

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. PRINTED NAME: KURT A. LEUTHOLD SIGNATURE: _____ DATE: _____ LICENSE #: _____		CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____	 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Scale: AS SHOWN Date: 03/22/2019 Drawn: KJN2 Checked: JAK2 Designed: JAK2 Approved: KAL	CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN	DECOLA PONDS B&C IMPROVEMENT PROJECT EXISTING CONDITIONS DOVER HILLS APARTMENT EASEMENT AREA	BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. C-01 REV. No. A
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CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\_002327167700\_C-02\_EXISTINGCONDITIONS\_DECOLAB\_C.DWG PLOT SCALE: 1:2 PLOT DATE: 3/26/2019 5:47 PM



**SYMBOL AND PATTERN LEGEND**

900	EXISTING 5' CONTOUR
898	EXISTING 1' CONTOUR
(Dashed line with 'x' marks)	EXISTING NATURALIZED TRAIL EASEMENT EXTENTS
(Dashed line)	FENCE LINE
(Dashed line with 'x' marks)	BACK OF CURB LINE
(Dashed line)	FLOW LINE
(Dashed line with 'x' marks)	RAILROAD
(Line with 'GAS' label)	GAS LINE
(Line with 'OE' label)	OVERHEAD ELECTRIC
(Line with 'UE' label)	UNDERGROUND ELECTRIC
(Line with 'UT' label)	UNDERGROUND TELEPHONE
(Line with 'CATV' label)	UNDERGROUND TV
(Line with 'FO' label)	FIBER OPTIC LINE
(Line with 'SAN' label)	SANITARY SEWER LINE
(Line with 'FM' label)	SANITARY FORCE MAIN
(Line with 'ST' label)	STORM SEWER LINE
(Line with 'W' label)	WATER
(Circle with 'X')	POWER POLE
(Circle with 'H')	LIGHT POLE
(Circle with 'V')	HYDRANT
(Circle with 'G')	GATE VALVE
(Circle with 'S')	SIGN POST
(Circle with 'D')	DECIDUOUS TREE (SIGNIFICANT)
(Circle with 'd')	DECIDUOUS TREE
(Circle with 'C')	CONIFEROUS TREE
(Circle with 'M')	SANITARY MANHOLE
(Circle with 'S')	STORM SEWER MANHOLE
(Circle with 'B')	STORM SEWER CATCH BASIN
(Circle with 'F')	FIBER OPTIC BOX
(Circle with 'E')	ELECTRICAL BOX
(Circle with 'C')	COMMUNICATIONS BOX

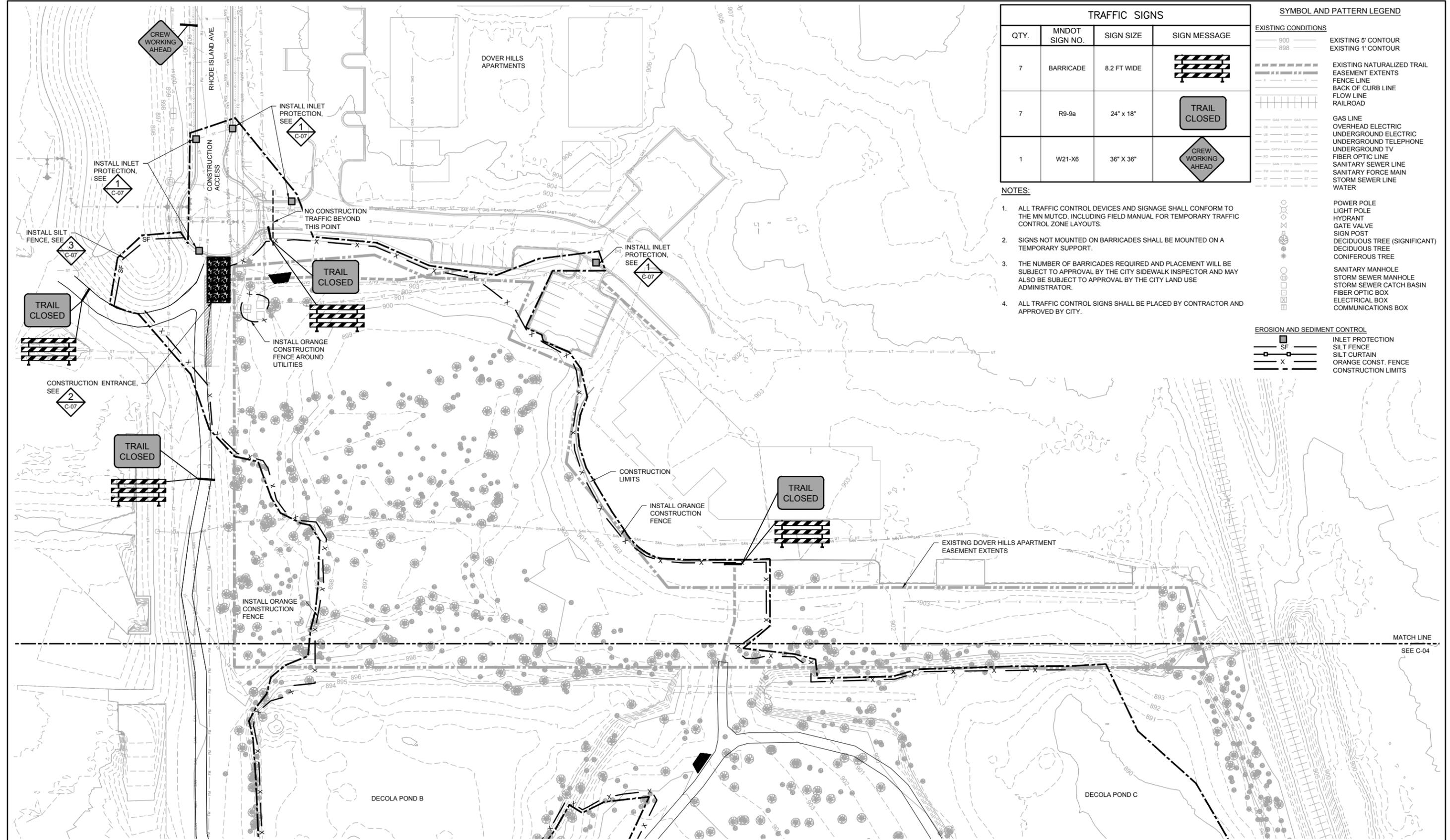
- NOTES:**
- UTILITY LOCATIONS ARE APPROXIMATE. ALL UTILITIES IN THE PROJECT AREA SHOULD BE MARKED AND POTHOLED PRIOR TO EXCAVATION.
  - CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF MCES SANITARY FORCE MAIN AND GRAVITY LINES WITHIN THE PROJECT AREA.
  - NO STOCKPILING SHALL BE ALLOWED OVER MCES SANITARY FORCE MAIN AND GRAVITY LINES.

**1 PLAN: EXISTING CONDITIONS - DECOLA PONDS B AND C**  
 1"=40'-0"  
 SCALE IN FEET  
 0 40 80

90% DESIGN DRAFT

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. PRINTED NAME: KURT A. LEUTHOLD SIGNATURE: _____ DATE: _____ LICENSE #: _____		CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____	 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Scale: AS SHOWN Date: 03/22/2019 Drawn: KJN2 Checked: JAK2 Designed: JAK2 Approved: KAL	CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN	DECOLA PONDS B&C IMPROVEMENT PROJECT EXISTING CONDITIONS DECOLA PONDS B & C	BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. C-02 REV. No. A
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION		

CADD USER: Katie J. Turpin-Nagel FILE: M:\DESIGN\23271677\_002327167700\_C-03\_EROSIONCONTROL\_FOREBAYLIBERTY.DWG PLOT SCALE: 1:2 PLOT DATE: 4/8/2019 8:24 AM



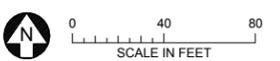
TRAFFIC SIGNS			
QTY.	MNDOT SIGN NO.	SIGN SIZE	SIGN MESSAGE
7	BARRICADE	8.2 FT WIDE	
7	R9-9a	24" x 18"	
1	W21-X6	36" x 36"	

SYMBOL AND PATTERN LEGEND	
<b>EXISTING CONDITIONS</b>	
	EXISTING 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING NATURALIZED TRAIL
	EASEMENT EXTENTS
	BACK OF CURB LINE
	FLOW LINE
	RAILROAD
	GAS LINE
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	UNDERGROUND TELEPHONE
	UNDERGROUND TV
	FIBER OPTIC LINE
	SANITARY SEWER LINE
	SANITARY FORCE MAIN
	STORM SEWER LINE
	WATER
	POWER POLE
	LIGHT POLE
	HYDRANT
	GATE VALVE
	SIGN POST
	DECIDUOUS TREE (SIGNIFICANT)
	DECIDUOUS TREE
	CONIFEROUS TREE
	SANITARY MANHOLE
	STORM SEWER MANHOLE
	FIBER OPTIC BOX
	ELECTRICAL BOX
	COMMUNICATIONS BOX

- NOTES:**
1. ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL CONFORM TO THE MN MUTCD, INCLUDING FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
  2. SIGNS NOT MOUNTED ON BARRICADES SHALL BE MOUNTED ON A TEMPORARY SUPPORT.
  3. THE NUMBER OF BARRICADES REQUIRED AND PLACEMENT WILL BE SUBJECT TO APPROVAL BY THE CITY SIDEWALK INSPECTOR AND MAY ALSO BE SUBJECT TO APPROVAL BY THE CITY LAND USE ADMINISTRATOR.
  4. ALL TRAFFIC CONTROL SIGNS SHALL BE PLACED BY CONTRACTOR AND APPROVED BY CITY.

EROSION AND SEDIMENT CONTROL	
	SILT FENCE
	INLET PROTECTION
	SILT CURTAIN
	ORANGE CONST. FENCE
	CONSTRUCTION LIMITS

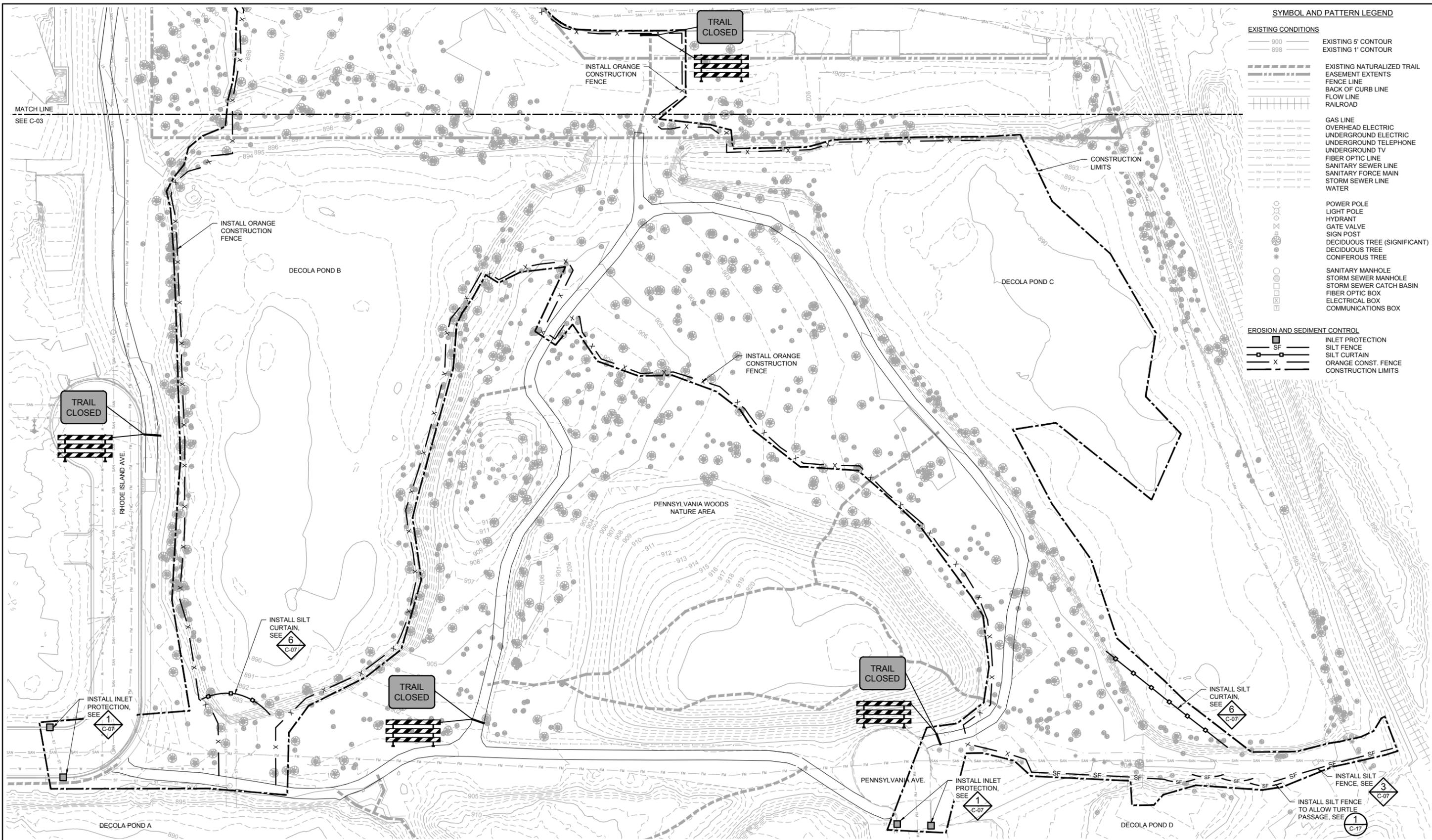
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1"=40'-0"



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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION		

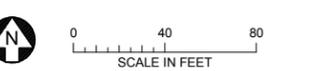
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**SYMBOL AND PATTERN LEGEND**

EXISTING CONDITIONS	
(Solid line)	EXISTING 5' CONTOUR
(Dashed line)	EXISTING 1' CONTOUR
(Dashed line with dots)	EXISTING NATURALIZED TRAIL
(Dashed line with 'A')	EASEMENT EXTENTS
(Dashed line with 'B')	FENCE LINE
(Dashed line with 'C')	BACK OF CURB LINE
(Dashed line with 'D')	FLOW LINE
(Dashed line with 'E')	RAILROAD
(Dashed line with 'G')	GAS LINE
(Dashed line with 'H')	OVERHEAD ELECTRIC
(Dashed line with 'I')	UNDERGROUND ELECTRIC
(Dashed line with 'J')	UNDERGROUND TELEPHONE
(Dashed line with 'K')	UNDERGROUND TV
(Dashed line with 'L')	FIBER OPTIC LINE
(Dashed line with 'M')	SANITARY SEWER LINE
(Dashed line with 'N')	SANITARY FORCE MAIN
(Dashed line with 'O')	STORM SEWER LINE
(Dashed line with 'P')	WATER
(Circle with 'X')	POWER POLE
(Circle with 'Y')	LIGHT POLE
(Circle with 'Z')	HYDRANT
(Circle with 'AA')	GATE VALVE
(Circle with 'AB')	SIGN POST
(Circle with 'AC')	DECIDUOUS TREE (SIGNIFICANT)
(Circle with 'AD')	DECIDUOUS TREE
(Circle with 'AE')	CONIFEROUS TREE
(Circle with 'AF')	SANITARY MANHOLE
(Circle with 'AG')	STORM SEWER MANHOLE
(Circle with 'AH')	STORM SEWER CATCH BASIN
(Circle with 'AI')	FIBER OPTIC BOX
(Circle with 'AJ')	ELECTRICAL BOX
(Circle with 'AK')	COMMUNICATIONS BOX
EROSION AND SEDIMENT CONTROL	
(Square)	INLET PROTECTION
(Line with 'SF')	SILT FENCE
(Line with 'X')	SILT CURTAIN
(Line with 'Z')	ORANGE CONST. FENCE
(Line with 'AA')	CONSTRUCTION LIMITS

**1 PLAN: EROSION AND SEDIMENT CONTROL - DECOLA PONDS B AND C**  
1"=40'-0"



90% DESIGN DRAFT

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**1.0 GENERAL CONSTRUCTION ACTIVITY INFORMATION:**

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared in compliance with the Minnesota General Stormwater Permit for Construction Activity No. MNR100001 (General Permit), as required by the Minnesota Pollution Control Agency (MPCA) under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Program.

The project is located in the city of Golden Valley, Hennepin County, Minnesota. Proposed construction activities will take place within the Dover Hills Apartment Easement Area and Pennsylvania Woods Nature Reserve surrounding DeCola Ponds A, B, C, and D. The approximate centroid of the project has a latitude of 45.00469 and a longitude of -93.37605.

This project involves dewatering of DeCola Ponds B and C, sediment dredging in DeCola Ponds C and D, excavation and removals within the Dover Hills Apartment easement and Pennsylvania Woods Nature Reserve areas to develop flood storage volume, installation and removals of storm sewer and box culverts, modification to the DeCola C overflow berm, and upland and wetland restoration. The project, as proposed, has a total disturbance area of 9.1 acres. Erosion prevention and sediment control measures are required to minimize sediment from being transported into downstream DeCola Pond D and upstream DeCola Pond A, which are DNR identified water bodies. Refer to project drawings for further details. (CSW Permit Part III.A.1)

**1.1 Project Size and Cumulative Impervious Surface:**

- The anticipated area of disturbance is approximately 8.0 acres.
- The total area of pre-construction impervious area is approximately 0.66 acres.
- The total area of post-construction impervious area is approximately 0.77 acres.
- The total new impervious area is approximately 0.11 acres.

**1.2 Dates of Construction:**

- Anticipated start date: 09/02/2019 (Start of Dewatering)
- Anticipated end date: SUMMER 2020

**1.3 Contact Information:**

Owner: The City of Golden Valley  
 Mailing Address: 7800 Golden Valley Road, Golden Valley, MN 55427  
 Contact Person: Jeff Oliver, PE  
 Phone Number: 763-593-8043  
 Alternate Contact Person: Eric Eckman  
 Phone Number: 763-593-8084

Title: City Engineer  
 Email Address: joliver@goldenvalleymn.gov  
 Title: Development and Assets Supervisor  
 Email Address: eeckman@goldenvalleymn.gov

Operator / General Contractor (who will oversee implementation of the SWPPP): TBD  
 Mailing Address: TBD  
 Contact Person: TBD  
 Phone Number: TBD

Title: TBD  
 Email Address: TBD

Party responsible for long-term operation and maintenance of the Permanent Stormwater Management System: City of Golden Valley  
 Mailing Address: 7800 Golden Valley Road, Golden Valley, MN 55427  
 Contact Person: Jeff Oliver, PE  
 Phone Number: 763-593-8043

Title: City Engineer  
 Email Address: joliver@goldenvalleymn.gov

**2.0 RECEIVING WATERS:**

List all waters within one mile (nearest straight line distance) that are likely to receive stormwater runoff from the project site. (CSW Permit Item 5.10)

Name of Water Body	Type <sup>(1)</sup>	Water Body ID <sup>(2)</sup>	Special Water? <sup>(3)</sup>	Impaired Water? <sup>(3)</sup>	DNR Public Water with Work in Water Restrictions?
DeCola Pond A	Pond/Wetland	#27-0630P	No	No	No
DeCola Pond B	Pond/Wetland	#27-0647P	No	No	No
DeCola Pond C	Pond/Wetland	#27-0647P	No	No	No
DeCola Pond D	Pond/Wetland	-	No	No	No
DeCola Pond E	Pond/Wetland	-	No	No	No
DeCola Pond F	Pond/Wetland	-	No	No	No
Honeywell Pond	Pond	-	No	No	No
Bassett Creek	Stream	07010206-538	No	Yes	No

- Type examples: ditch, pond, wetland, calcareous fen, lake, stream, river
- Water Body identification (ID) might not be available for all water bodies. Use the Special and Impaired Waters Search Tool at: <https://www.pca.state.mn.us/water/stormwater-special-and-impaired-waters-search>
- Refer to CSW Permit Section 23  
 Impaired water for the following pollutant(s) or stressor(s): phosphorus (nutrient eutrophication biological indicators), turbidity, total suspended solids (TSS), dissolved oxygen, or aquatic biota (fish bioassessment, aquatic plant bioassessment, and aquatic macroinvertebrate bioassessment)

**2.1 Special and Impaired Waters:** The MPCA's Special and Impaired Waters Search Tool was used to locate special and impaired waters within one mile (aerial radius measurement) of the Project site. No waterbodies within one mile have an EPA-approved impairment. Bassett Creek, which is located further downstream than one mile (aerial radius), has EPA-approved impairments for chlorides, fecal coliform, and fishes bioassessments. These impairments are considered non-construction related and do not require additional best management practices (BMPs) or plan review for compliance with the General Permit. (CSW Permit Item 2.7 and Section 23)

Additional BMPs or other specific construction related implementation activities identified in an approved Total Maximum Daily Load (TMDL) are not applicable to this project. (CSW Permit Item 5.19)

**2.2 Public Waters with Work in Water Restrictions:** DeCola Ponds A, B, and C are identified by the DNR as public waters, but are not designated as having work in water restrictions. For water bodies that have water restrictions, during the respective restriction periods, all exposed soils within 200 feet of the water's edge will have erosion prevention stabilization activities initiated immediately after construction activity has ceased (and completed within 24 hours). (CSW Permit Item 5.11)

**2.3 Wetland Impacts:** This project may have adverse impacts to wetlands, including: excavation, degradation of water quality, draining, filling, permanent inundation or flooding. Perimeter sediment controls will be installed during construction to help mitigate water quality degradation. The project will result in a net increase in wetland area. (CSW Permit Items 2.4 and 2.10, and Section 22)

**2.4 Environmental Review and Other Required Reviews:** Stormwater mitigation measures are not required as a result of an environmental review (e.g., eaw or eis), endangered or threatened species review, archeological site review, or other local, state, or federal review conducted for the project. (CSW permit items 2.8, 2.9, and 5.16)

**2.5 Karst Areas or Drinking Water Supply Management Areas:** Proposed construction activities do not fall within karst areas or drinking water supply management areas. (CSW Permit Items 16.19, 16.20, and 18.10)

**3.0 PROJECT PLANS AND SPECIFICATIONS:**

**Required Feature**

- Project Location and Construction Limits
- Existing and final grades, including drainage area boundaries, directions of flow and all discharge points where stormwater is leaving the site or entering a surface water
- Soil types at the site
- Locations of impervious surfaces
- Locations of areas not to be disturbed (e.g., buffer zones, wetlands, etc.)
- Locations of areas of steep slopes
- Locations of areas where construction will be phased to minimize duration of exposed soils
- Locations of all temporary and permanent erosion and sediment control BMPs as required in Permit Sections 8 through 10 and 14 through 19
- Buffer zones as required in Permit Items 9.17 and 23.11
- Locations of potential pollution-generating activities identified in Permit Section 12
- Standard details for erosion and sediment control BMPs to be installed at the site

**Sheet Number**

- G-01
- C-01 - C-02
- C-13 - C-14
- C-06
- C-13 - C-14
- C-03 - C-04
- C-01 - C-02
- C-10, 13, 14
- C-03,04,24
- L-01 - L-02
- N/A
- N/A
- C-07, L-03

**4.0 BEST MANAGEMENT PRACTICES (BMPs):**

**4.1 Erosion Prevention Practices:**

- Methods of temporarily stabilizing soils and soil stockpiles (e.g., mulches, hydraulic tackifiers, erosion blankets, etc.): (CSW Permit Items 8.4, 8.5, and 23.9)
  - Areas of exposed soil will be stabilized with one of the following: erosion control blanket, preservation of mature vegetation, mulch, vegetative slash, etc.
  - If present, soil stockpiles will be stabilized with one of the following materials: mulch (such as straw mulch, slash mulch, wood chip, or other appropriate mulch) (if slopes ≤3h:1v), cover material such as tarps or plastic sheeting, etc.
  - Temporary stockpiles without significant silt, clay, or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) and the constructed base components of roads, parking lots, and similar surfaces are exempt from these stabilization requirements.
  - Finalizing arrangements to have stabilization product fully installed
- Timeline for Stabilization of Exposed Soils: Where required, stabilization of exposed soil areas (including stockpiles) must be initiated immediately to limit soil erosion whenever any construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 7 calendar days. The following activities can be taken to initiate stabilization:
  - prepping the soil for vegetative or non-vegetative stabilization
  - applying mulch or other non-vegetative product to the exposed soil area
  - seeding or planting the exposed area
  - finalizing arrangements to have stabilization product fully installed
- Methods to be used for stabilization of ditch and swale wetted perimeters (Note that mulch, hydraulic soil tackifiers, hydromulches, etc. are not acceptable soil stabilization methods for any part of a drainage ditch or swale with a continuous slope of greater than 2 percent). (CSW Permit Items 8.6 through 8.8)
  - In the event soils within existing stormwater ditches or swales are disturbed, they will be stabilized using one or more of the following methods: channel erosion control blanket, riprap, turf reinforcement mat, etc.
  - Mulch, hydromulch, tackifier, polyacrylamide, or similar erosion prevention practices will not be used to stabilize any part of an existing stormwater ditch or swale.
  - Timeline for Stabilization of Stormwater Ditches and Swales: The last 200 lineal feet of length of the normal wetted perimeter of any temporary or permanent ditch or swale that drains water from any portion of the construction site, or diverts water around the site, within 200 lineal feet from the property edge, or from the point of discharge into any surface water will be stabilized within 24 hours after connecting to a surface water or property edge. Stabilization of the remaining portions of any temporary or permanent ditches or swales will be completed within 14 calendar days after connecting to a surface water or property edge and construction in that portion of the ditch has temporarily or permanently ceased.
- Methods to be used for energy dissipation at pipe outlets (e.g., rip rap, splash pads, gabions, etc.). (CSW Permit Item 8.9)
- Describe timelines to be implemented at this site for completing the installation of the erosion prevention. (CSW Permit Items 5.4, 8.4 through 8.6, and 23.9)
  - If applicable, include the timeline for completing soil stabilization for areas within 200 feet of a public water with work in water restrictions due to fish spawning time frames
  - Soil stabilization timelines for portions of the site that drain to special or impaired waters.
  - Before land disturbing activities begin, the limits of the areas to be disturbed during construction will be delineated (e.g., with flags, stakes, signs, silt fence, etc.).
- Describe additional erosion prevention measures that will be implemented at the site during construction (e.g., construction phasing, minimizing soil disturbance, vegetative buffers, horizontal slope grading, slope draining/terracing, etc.). (CSW Permit Items 8.2, 8.3, and 8.10)
  - Construction phasing will be utilized to minimize the area of soil exposed at any one time.
  - Soil disturbance will be minimized wherever possible to aid in erosion prevention.
  - Existing vegetation will be preserved where possible to limit exposed soil and thus will serve as natural vegetative buffers.
  - Exposed soil on steep slopes (≤3h:1v) will be stabilized.
- If applicable, describe additional erosion prevention BMPs to be implemented at the site to protect planned infiltration areas. (CSW Permit Items 16.4 and 16.5)

**4.2 Sediment Control Practices:**

- Methods to be used for downgradient perimeter control. (CSW Permit Items 9.2 through 9.6)
  - Sediment control practices shall be established on all downgradient perimeters and located upgradient of any buffer zones. Perimeter sediment controls that may be used in areas of sheet flow include: silt fencing, sediment control logs / biorolls (filled with compost, wood chips, rock, etc.), vegetative slash barriers, other native material barriers, vegetative buffers (retain existing vegetation where possible), earthen berms, rock checks, etc.
  - Perimeter sediment control practices must be installed before any upgradient land-disturbing activities begin and remain in place until permanent cover has been established.
  - If sediment control practices have been adjusted or removed to accommodate short-term activities (such as clearing, grubbing, or passage of vehicles), the controls must be re-installed immediately after the short-term activity has been completed. Sediment control practices must be re-installed before the next precipitation event, even if the short-term activity is not complete.
  - If the downgradient sediment controls are overloaded (based on frequent failure or excessive maintenance requirement), install additional upgradient sediment control practices or redundant BMPs to eliminate the overloading and amend the SWPPP to identify these additional practices.
- Methods to be used to contain soil stockpiles. (CSW Permit Items 9.9 and 9.10)
  - Any temporary soil stockpiles shall be surrounded by silt fencing or biorolls (or other effective sediment controls) and shall not be placed in any natural buffers or surface waters.
- Methods to be used for storm drain inlet protection. (CSW Permit Items 9.7 and 9.8)
  - If storm drains are present, inlet protection BMPs will be installed around all storm drain inlets downgradient of construction activities. Storm drain inlets will be protected until all sources with potential for discharging to the inlet have been stabilized. Inlet protection BMPs that may be used include: sediment control log, filter sack, rock with filter fabric, filter fence box, etc.

- Methods to minimize vehicle tracking at construction exits and street sweeping activities. (CSW Permit Items 9.11 and 9.12)
  - A vehicle tracking BMP (such as a rock pads, mud mats, slash mulch, concrete or steel wash racks, or an equivalent system) shall be installed to minimize the tracking out of sediment from the construction area.
  - If such vehicle tracking BMPs are not adequate to prevent sediment from being tracked onto the paved road, street sweeping will also be employed. Sediment will be removed by sweeping within 24 hours.
- If applicable, additional sediment controls (e.g., diversion berms) will be installed to keep runoff away from planned infiltration areas when excavated prior to establishing permanent cover within the contributing drainage area. (CSW Permit Items 16.4 and 16.5)
- Describe methods to be used to minimize soil compaction and preserve top soil (unless infeasible) at this site. (CSW Permit Items 5.24, 9.14, and 9.15)
- Methods to be used to promote infiltration and sediment removal on the site prior to offsite discharge, unless infeasible. (CSW Permit Item 9.16)
  - Discharges from BMPs will be directed to vegetated areas of the site (including any natural buffers) in order to increase sediment removal and maximize stormwater infiltration. If erosion is noted to occur as the result of such a discharge, velocity dissipation BMPs will be considered and installed as necessary to prevent erosion.
- Describe plans to preserve a 50-foot natural buffer between the project's soil disturbance and a surface water or plans for redundant sediment controls if a buffer is infeasible. (CSW Permit Item 9.17)
  - In wetlands and non-special waters, a 50-foot natural buffer shall be preserved. When a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water, or when a buffer is infeasible, redundant sediment controls shall be provided. Redundant perimeter controls will be installed at least 5 feet apart unless limited by lack of available space.
  - A 100-foot natural buffer shall be preserved in construction areas discharging to special waters or, if a buffer is infeasible, redundant sediment controls shall be provided, when a special water is located within 100 feet of the Project's earth disturbances and stormwater flows to the surface water.
- Describe plans for use of sedimentation treatment chemicals (e.g., polymers, flocculants, etc.). (CSW Permit Items 5.22 and 9.18)
- If required to install a temporary sediment basin due to 10 or more acres draining to a common location or 5 acres or more if the site is within 1 mile of a special or impaired water, describe (or attach plans) showing how the basin will be designed and constructed. (CSW Permit Items 5.6, 9.13, and 23.10 and Section 14)

**4.3 DEWATERING AND BASIN DRAINING:** (CSW PERMIT SECTION 10 AND ITEM 10.5)

- The following will be used to treat/dispose of turbid or sediment-laden water during dewatering or basin draining: Dewatering filter bags or equivalent measures.
- The following will be used to prevent erosion or scour of discharge points during dewatering or basin draining: Temporary drainage channels and sediment basins or equivalent measures.
- Filters for backwash water will be managed on the site and consistently inspected for damage and properly disposed of offsite when pumping is completed or if signs of damage are found.

**4.4 BMP Design Factors:** The following BMP design factors have been considered in designing the temporary erosion prevention and sediment control BMPs:

- Expected amount, frequency, intensity, and duration of precipitation.
- Nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features.
- Stormwater volume, velocity, and peak flow rates to minimize discharge of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points.
- Range of soil particle sizes expected to be present.

**4.5 BMP Quantities:** Anticipated erosion prevention and sediment control BMP quantities needed for the life of the project:

- Inlet Protection (Each): 8
- Silt Fence (LF): 420
- Silt Curtain (LF): 135
- Erosion Control Blanket (SF): 9,580
- Turf Reinforcement Mat (SF): 2,470

**5.0 PERMANENT STORMWATER MANAGEMENT SYSTEM:**

A permanent stormwater management system is required if the project results in one acre or more of new impervious surfaces or results in a net increase of one or more acres of cumulative new impervious surfaces in total or if the project is part of a larger plan of development. (CSW PERMIT ITEM 15.3)

**5.1** A water quality volume of one inch of runoff from the net increase in cumulative new impervious surfaces created by the project must be retained on-site through volume reduction practices (e.g., infiltration or other) unless prohibited due to one of the reasons in Permit Items 16.14 through 16.21. If infiltration is prohibited, identify other method(s) to treat the water quality volume (e.g., wet sedimentation basin, filtration basin, regional pond, or equivalent method). (CSW Permit Items 5.15, 15.4 through 15.9, and 23.14)

**5.2** For linear projects with lack of right of way to install treatment systems capable of treating the entire water quality volume, identify other method(s) for providing treatment of runoff prior to discharge (e.g., grassed swales, filtration systems, smaller ponds or grit chambers, etc.). (CSW Permit Item 15.9)

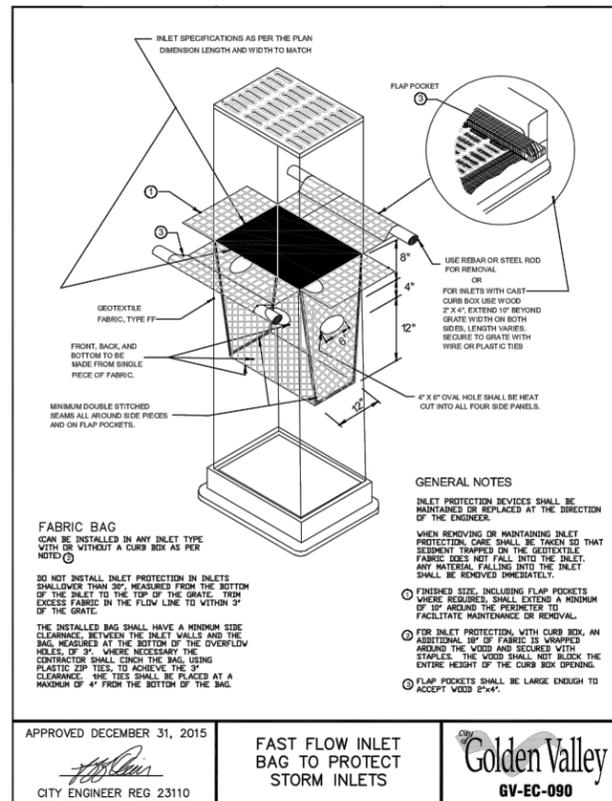
**5.3** This project does not discharge to a trout stream (or a tributary to a trout stream). (CSW PERMIT ITEM 23.12)

90% DESIGN  
DRAFT

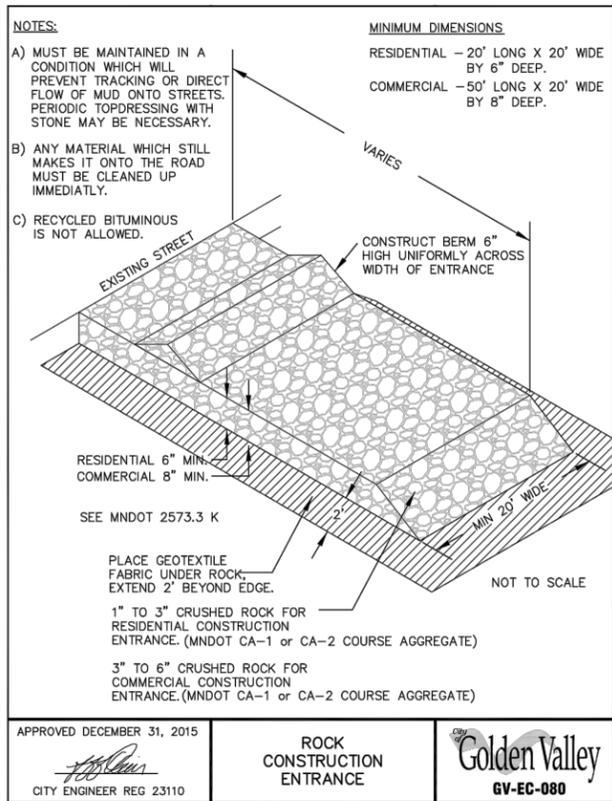
CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\002327167700\_C-05\_SWPPP.DWG PLOT SCALE: 1:2 PLOT DATE: 4/8/2019 4:16 PM

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. PRINTED NAME: KURT A. LEUTHOLD SIGNATURE: _____ DATE: _____ LICENSE # _____		CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____	 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277		Scale: _____ Date: 03/22/2019 Drawn: KJN2 Checked: JAK2 Designed: JAK2 Approved: KAL	DECOLA PONDS B&C IMPROVEMENT PROJECT STORM WATER POLLUTION PREVENTION PLAN (SWPPP)	BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. C-05 REV. No. A
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION		

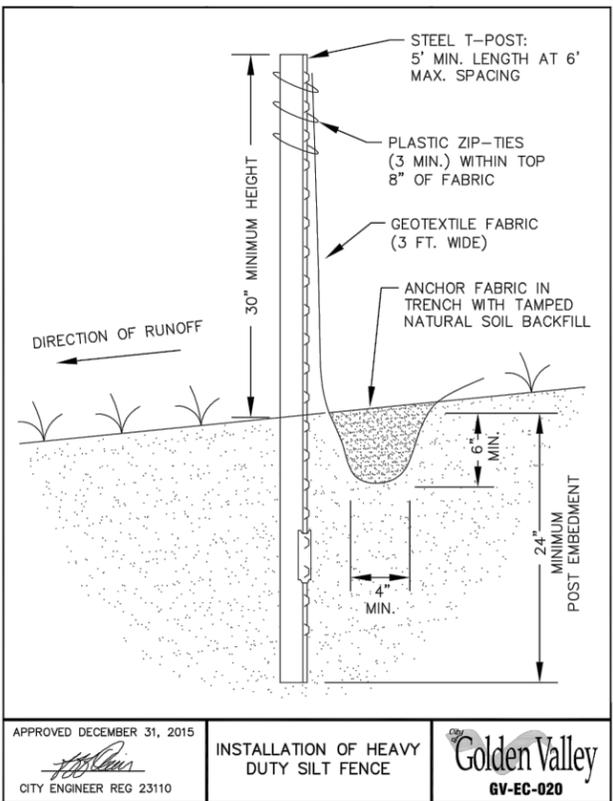




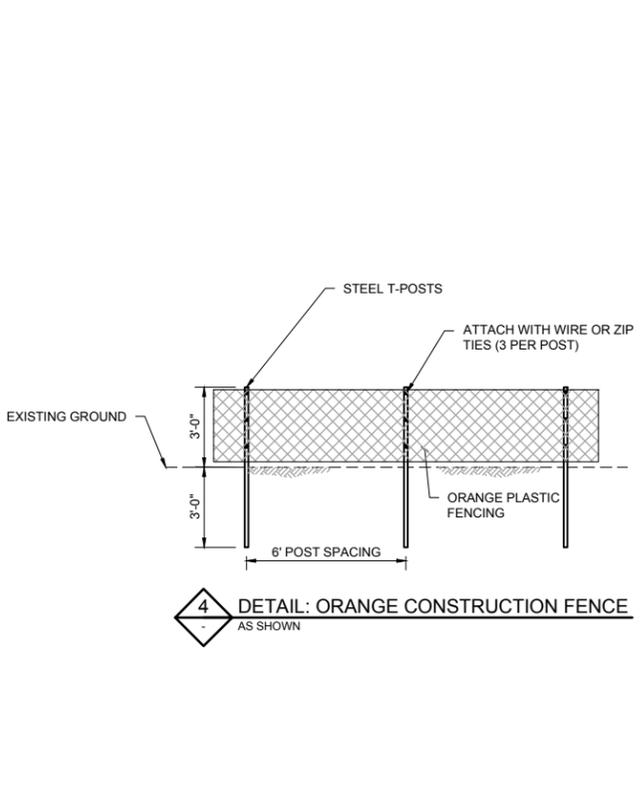
**1** DETAIL: INLET PROTECTION AS SHOWN



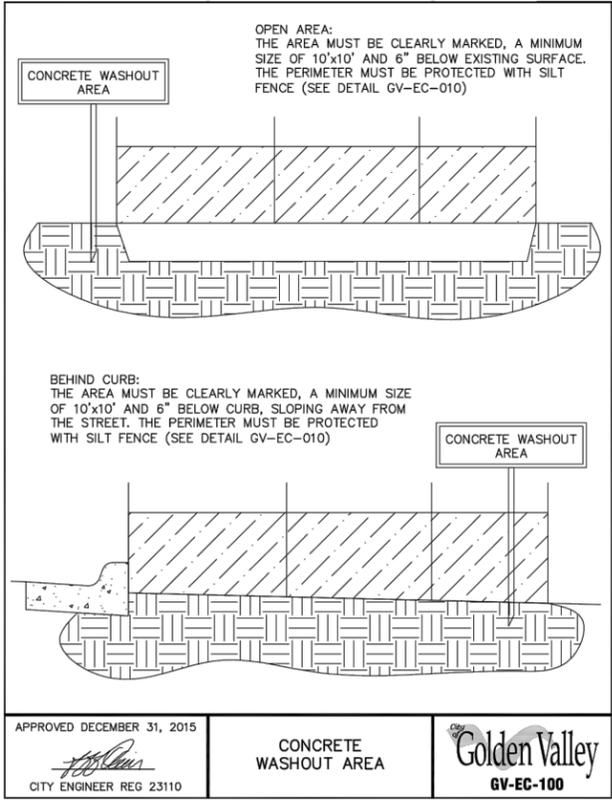
**2** DETAIL: ROCK CONSTRUCTION ENTRANCE AS SHOWN



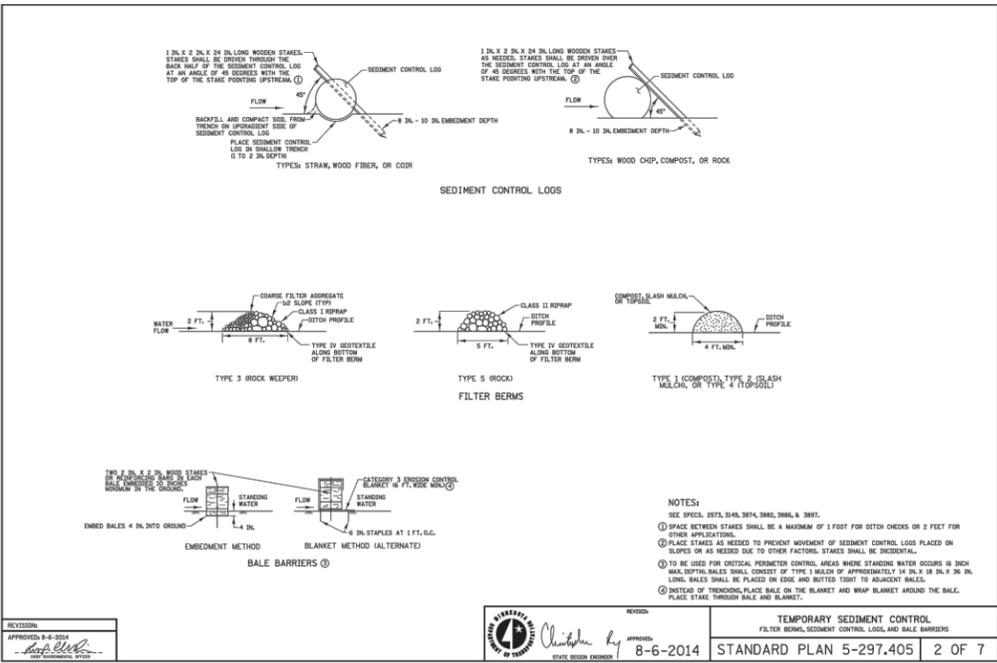
**3** DETAIL: SILT FENCE AS SHOWN



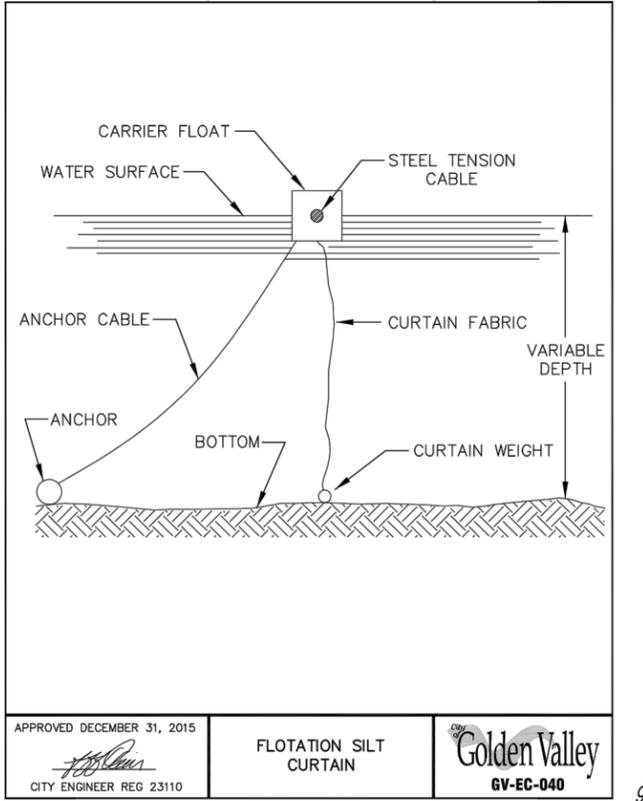
**4** DETAIL: ORANGE CONSTRUCTION FENCE AS SHOWN



**5** DETAIL: CONCRETE WASHOUT AREA AS SHOWN



**6** DETAIL: TEMPORARY SEDIMENT CONTROL AS SHOWN



**7** DETAIL: FLOATATION SILT CURTAIN AS SHOWN

CADD USER: Katie J. Turpin-Negrel FILE: M:\DESIGN\23271677\_002327167700\_C-07\_EROSION CONTROL DETAILS.DWG PLOT SCALE: 1/2 PLOT DATE: 3/29/2019 4:55 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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PRINTED NAME: KURT A. LEUTHOLD  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # \_\_\_\_\_

CLIENT	03/22/2019						
BID							
CONSTRUCTION							
RELEASED TO/FOR	A	B	C	0	1	2	3
DATE RELEASED							

**BARR** city of golden valley  
Corporate Headquarters: Minneapolis, Minnesota  
Ph: 1-800-632-2277

Scale	
Date	03/22/2019
Drawn	KUN2
Checked	JAK2
Designed	JAK2
Approved	KAL

CITY OF GOLDEN VALLEY  
GOLDEN VALLEY, MN

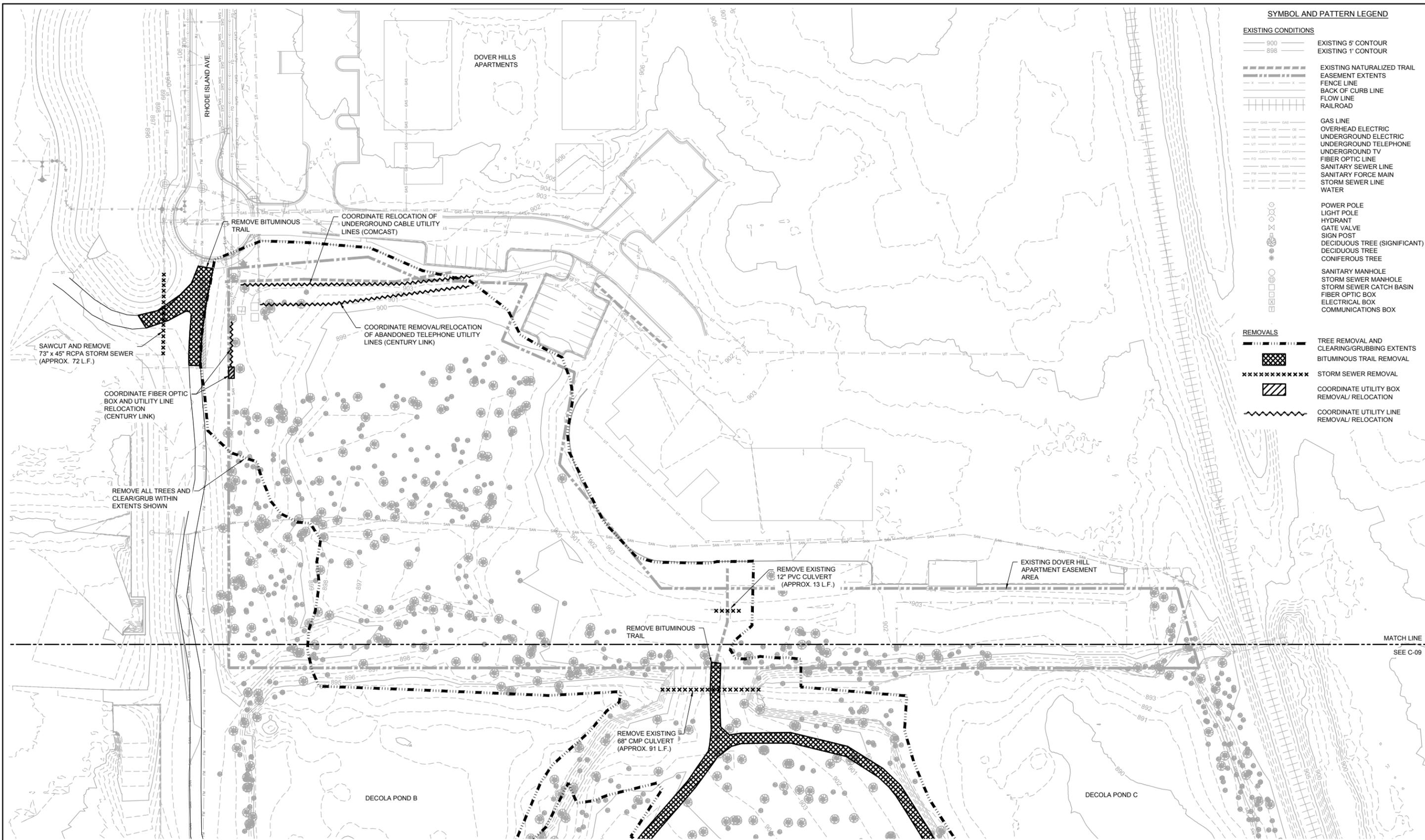
DECOLA PONDS B&C IMPROVEMENT PROJECT  
DETAILS  
EROSION CONTROL

BARR PROJECT No.	23/27-1677.00
CLIENT PROJECT No.	#18-06
DWG. No.	C-07
REV. No.	A

90% DESIGN DRAFT

**SYMBOL AND PATTERN LEGEND**

- EXISTING CONDITIONS**
- 900 ——— EXISTING 5' CONTOUR
  - 898 ——— EXISTING 1' CONTOUR
  - EXISTING NATURALIZED TRAIL
  - FENCE LINE
  - BACK OF CURB LINE
  - FLOW LINE
  - RAILROAD
  - GAS LINE
  - OVERHEAD ELECTRIC
  - UNDERGROUND ELECTRIC
  - UNDERGROUND TELEPHONE
  - UNDERGROUND TV
  - FIBER OPTIC LINE
  - SANITARY SEWER LINE
  - SANITARY FORCE MAIN
  - STORM SEWER LINE
  - WATER
  - POWER POLE
  - LIGHT POLE
  - HYDRANT
  - GATE VALVE
  - SIGN POST
  - DECIDUOUS TREE (SIGNIFICANT)
  - DECIDUOUS TREE
  - CONIFEROUS TREE
  - SANITARY MANHOLE
  - STORM SEWER MANHOLE
  - STORM SEWER CATCH BASIN
  - FIBER OPTIC BOX
  - ELECTRICAL BOX
  - COMMUNICATIONS BOX
- REMOVALS**
- TREE REMOVAL AND CLEARING/GRUBBING EXTENTS
  - BITUMINOUS TRAIL REMOVAL
  - STORM SEWER REMOVAL
  - COORDINATE UTILITY BOX REMOVAL/RELOCATION
  - COORDINATE UTILITY LINE REMOVAL/RELOCATION



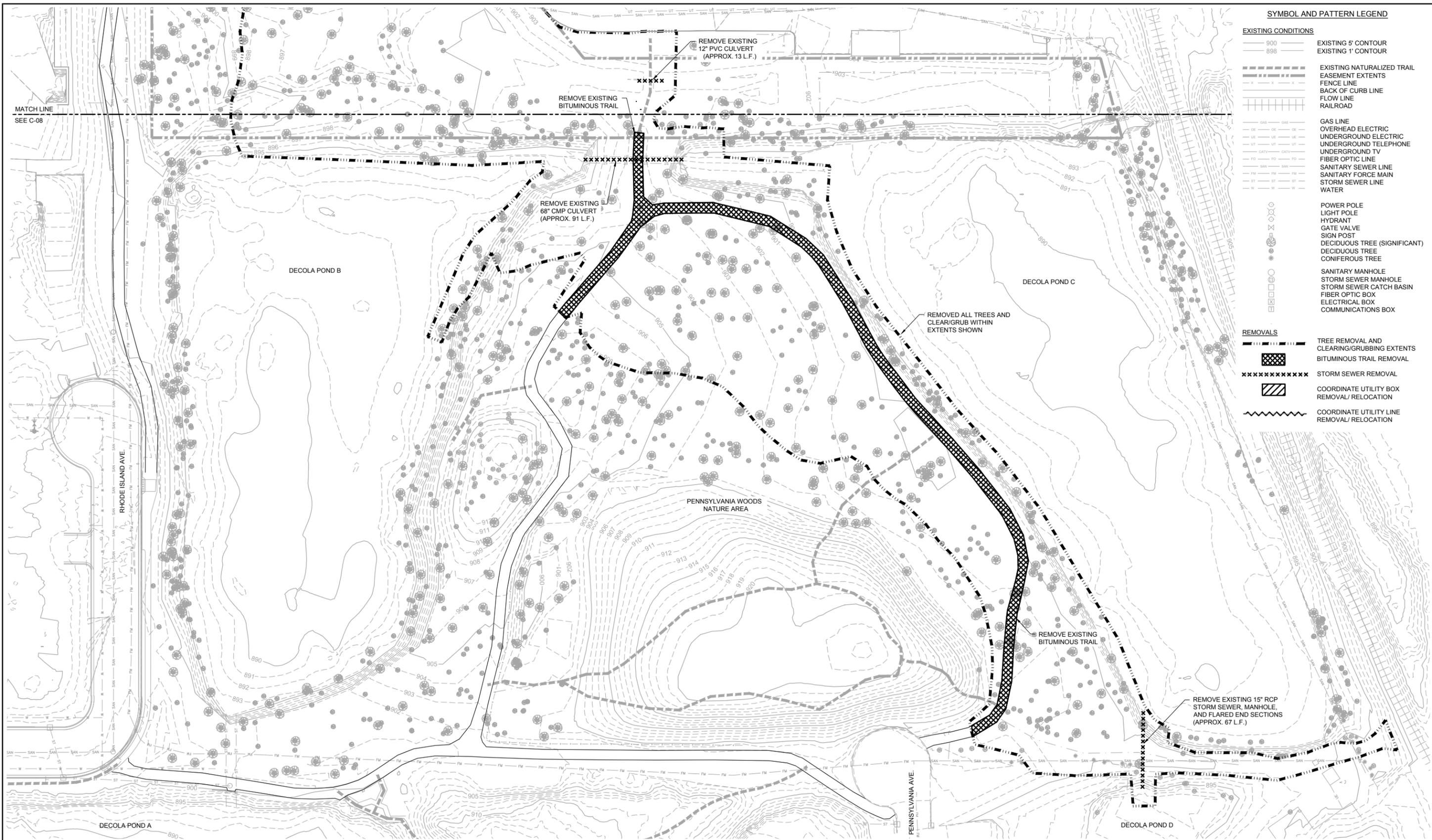
**1 PLAN: REMOVALS - DOVER HILLS APARTMENTS' EASEMENT AREA**  
 1"=40'-0"  
 SCALE IN FEET

90% DESIGN  
DRAFT

				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. PRINTED NAME: KURT A. LEUTHOLD SIGNATURE: _____ DATE: _____ LICENSE #: _____				CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____				 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277		 Scale: AS SHOWN Date: 03/22/2019 Drawn: KJN2 Checked: JAK2 Designed: JAK2 Approved: KAL		CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN		DECOLA PONDS B&C IMPROVEMENT PROJECT REMOVALS AND RELOCATIONS DOVER HILLS APARTMENT EASEMENT AREA		BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. C-08 REV. No. A	
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION																

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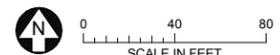
CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\_00\2327167700\_C-09\_REMOVALS\_DECOLAB\_CDWG PLOT SCALE: 1:2 PLOT DATE: 3/22/2019 9:03 AM



**SYMBOL AND PATTERN LEGEND**

- EXISTING CONDITIONS**
- 900 EXISTING 5' CONTOUR
  - 898 EXISTING 1' CONTOUR
  - EXISTING NATURALIZED TRAIL
  - EASEMENT EXTENTS
  - FENCE LINE
  - BACK OF CURB LINE
  - FLOW LINE
  - RAILROAD
  - GAS LINE
  - OVERHEAD ELECTRIC
  - UNDERGROUND ELECTRIC
  - UNDERGROUND TELEPHONE
  - UNDERGROUND TV
  - FIBER OPTIC LINE
  - SANITARY SEWER LINE
  - SANITARY FORCE MAIN
  - STORM SEWER LINE
  - WATER
  - POWER POLE
  - LIGHT POLE
  - HYDRANT
  - GATE VALVE
  - SIGN POST
  - DECIDUOUS TREE (SIGNIFICANT)
  - DECIDUOUS TREE
  - CONIFEROUS TREE
  - SANITARY MANHOLE
  - STORM SEWER MANHOLE
  - STORM SEWER CATCH BASIN
  - FIBER OPTIC BOX
  - ELECTRICAL BOX
  - COMMUNICATIONS BOX
- REMOVALS**
- TREE REMOVAL AND CLEARING/GRUBBING EXTENTS
  - BITUMINOUS TRAIL REMOVAL
  - STORM SEWER REMOVAL
  - COORDINATE UTILITY BOX REMOVAL/RELOCATION
  - COORDINATE UTILITY LINE REMOVAL/RELOCATION

**1 PLAN: REMOVALS - DECOLA PONDS B AND C**  
1"=40'-0"



90% DESIGN  
DRAFT

		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.		CLIENT 03/22				 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277		Scale AS SHOWN		CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN		DECOLA PONDS B&C IMPROVEMENT PROJECT		BARR PROJECT No. 23/27-1677.00	
		PRINTED NAME KURT A. LEUTHOLD		CONSTRUCTION						Date 03/22/2019				Drawn KJN2		REMOVALS AND RELOCATIONS DECOLA PONDS B & C	
		SIGNATURE		RELEASED TO/FOR		DATE RELEASED		Checked JAK2		Designed JAK2				DWG. No. C-09		REV. No. A	
NO.		BY		CHK.		APP.		DATE		REVISION DESCRIPTION							

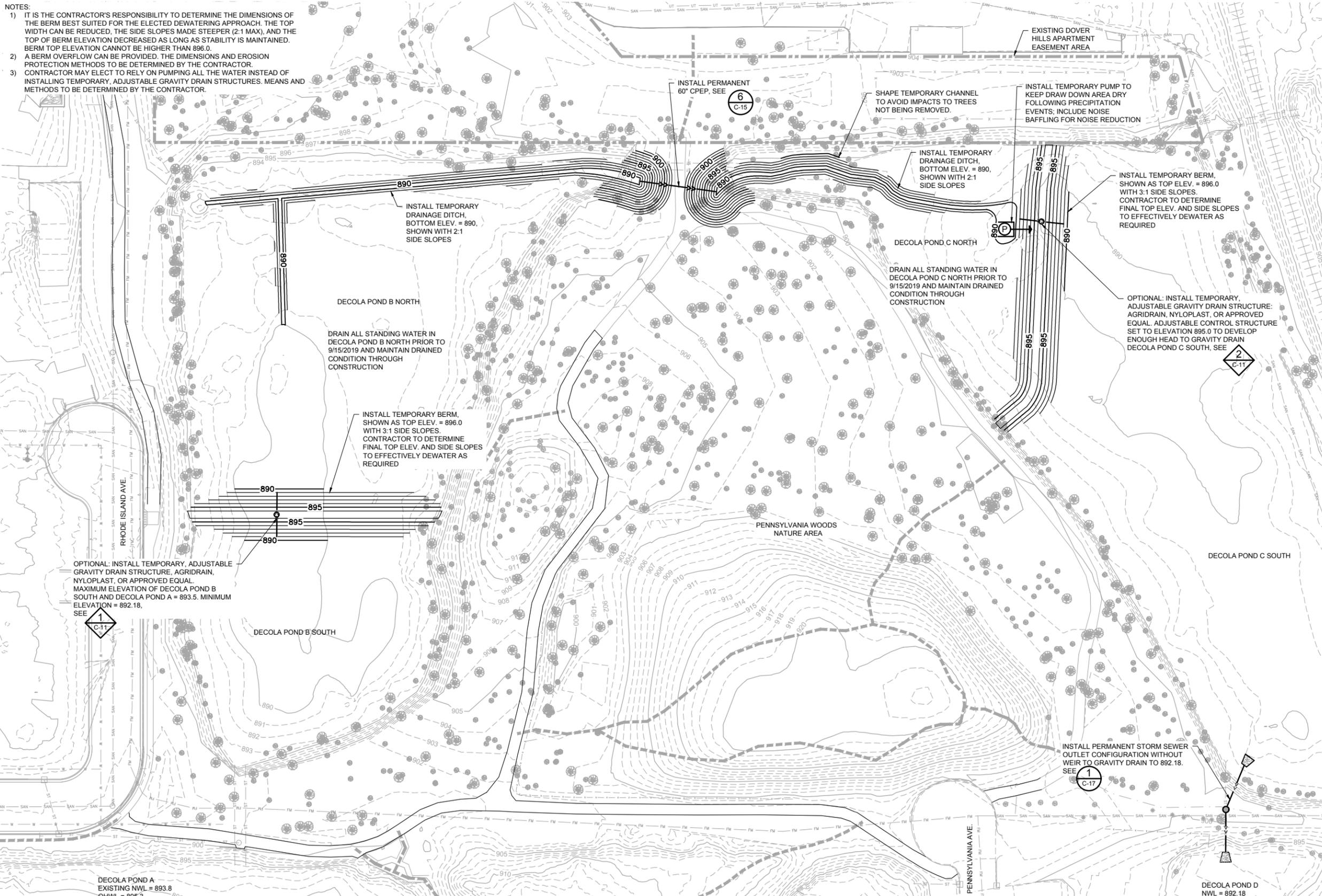
- NOTES:**
- 1) IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE DIMENSIONS OF THE BERM BEST SUITED FOR THE ELECTED DEWATERING APPROACH. THE TOP WIDTH CAN BE REDUCED, THE SIDE SLOPES MADE STEEPER (2:1 MAX), AND THE TOP OF BERM ELEVATION DECREASED AS LONG AS STABILITY IS MAINTAINED. BERM TOP ELEVATION CANNOT BE HIGHER THAN 896.0.
  - 2) A BERM OVERFLOW CAN BE PROVIDED. THE DIMENSIONS AND EROSION PROTECTION METHODS TO BE DETERMINED BY THE CONTRACTOR.
  - 3) THE CONTRACTOR MAY ELECT TO RELY ON PUMPING ALL THE WATER INSTEAD OF INSTALLING TEMPORARY, ADJUSTABLE GRAVITY DRAIN STRUCTURES. MEANS AND METHODS TO BE DETERMINED BY THE CONTRACTOR.

**SYMBOL AND PATTERN LEGEND**

- EXISTING CONDITIONS**
- 900 EXISTING 5' CONTOUR
  - 898 EXISTING 1' CONTOUR
  - EXISTING NATURALIZED TRAIL EASEMENT EXTENTS
  - FENCE LINE
  - BACK OF CURB LINE
  - FLOW LINE
  - RAILROAD
  - GAS LINE
  - OVERHEAD ELECTRIC
  - UNDERGROUND ELECTRIC
  - UNDERGROUND TELEPHONE
  - UNDERGROUND TV
  - FIBER OPTIC LINE
  - SANITARY SEWER LINE
  - SANITARY FORCE MAIN
  - STORM SEWER LINE
  - WATER
  - POWER POLE
  - LIGHT POLE
  - HYDRANT
  - GATE VALVE
  - SIGN POST
  - DECIDUOUS TREE (SIGNIFICANT)
  - DECIDUOUS TREE
  - CONIFEROUS TREE
  - SANITARY MANHOLE
  - STORM SEWER MANHOLE
  - STORM SEWER CATCH BASIN
  - FIBER OPTIC BOX
  - ELECTRICAL BOX
  - COMMUNICATIONS BOX
- DRAW DOWN PLAN**
- 900 PROPOSED 5' CONTOUR
  - 899 PROPOSED 1' CONTOUR
  - PROPOSED STORM SEWER
  - PROPOSED STORM MANHOLE

**DRAWDOWN SEQUENCE OPTIONS (INITIAL DRAWDOWN MUST BE COMPLETED BEFORE 9/15/2019):**

- 1) INSTALL PERMANENT OUTLET CONTROL STRUCTURE AT SOUTH END OF DECOLA POND C WITHOUT THE NOTCHED WEIR TO ALLOW DECOLA POND C TO GRAVITY DRAIN TO 892.18 AND DECOLA PONDS A AND B TO GRAVITY DRAIN TO 893.0 (EXISTING INVERT OF PIPE BETWEEN DECOLA PONDS B AND C).
- 2) CONTRACTOR CAN ELECT TO INSTALL A TEMPORARY STORM SEWER OR THE PROPOSED STORM SEWER BETWEEN DECOLA PONDS B AND C AT INVERT ELEV. 890.0 TO GRAVITY DRAIN DECOLA PONDS A AND B TO 892.18.
- 3) CONTRACTOR CAN ELECT TO TEMPORARILY BULKHEAD DECOLA POND A AND PUMP DECOLA POND B IN ITS ENTIRETY TO ASSIST IN THE EXCAVATION OF THE DRAINAGE CHANNEL AND THE CONSTRUCTION OF THE TEMPORARY BERM. ALTERNATIVELY, THE CONTRACTOR MAY CHOOSE TO CONSTRUCT THE BERM AND EXCAVATE THE DRAINAGE DITCH IN WET CONDITIONS.
- 4) INSTALL DECOLA POND B TEMPORARY BERM AND TEMPORARY CONTROL STRUCTURE. REMOVE DECOLA POND A BULKHEAD, IF CONSTRUCTED. THE LOWEST WSE OF DECOLA POND A AND DECOLA POND B SOUTH SHALL BE 892.18. THE CONTROL STRUCTURE SHOULD ALLOW FOR A MAXIMUM WSE OF THIS AREA EQUAL TO 893.8 THROUGH THE TEMPORARY, GRAVITY DRAIN CONTROL STRUCTURE. CONTRACTOR CAN ELECT TO PUMP DECOLA POND C IN ITS ENTIRETY FOLLOWING GRAVITY DRAIN TO ASSIST IN THE EXCAVATION OF THE DRAINAGE CHANNEL AND THE CONSTRUCTION OF THE TEMPORARY BERM. AFTER WHICH TIME, THE MINIMUM WSE SHALL BE 892.18. ALTERNATIVELY, THE CONTRACTOR MAY CHOOSE TO CONSTRUCT THE BERM AND EXCAVATE THE DRAINAGE DITCH IN WET CONDITIONS.
- 4) INSTALL DECOLA POND C TEMPORARY BERM AND TEMPORARY CONTROL STRUCTURE. THE LOWEST WSE OF DECOLA POND C SOUTH SHALL BE 892.18. THE CONTROL STRUCTURE SHOULD BE SET AT 895.0 TO CREATE ENOUGH HEAD TO GRAVITY DRAIN DECOLA POND C SOUTH.
- 5) PUMP AS NEEDED TO KEEP THE DECOLA PONDS B AND C AREAS BETWEEN THE BERMS FREE OF STANDING WATER FROM 9-15-2019 TO THE END OF THE EXCAVATION PERIOD.
- 6) INSTALL THE 5'-WIDE NOTCHED WEIR FOLLOWING COMPLETION OF THE DRAWDOWN PERIOD.



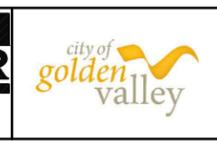
**1 PLAN: DRAW DOWN PLAN - DECOLA PONDS B AND C**  
 1"=40'-0"  
 SCALE IN FEET

90% DESIGN  
 DRAFT

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.

PRINTED NAME: KURT A. LEUTHOLD  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE # \_\_\_\_\_

CLIENT	03/22					
BID						
CONSTRUCTION						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						



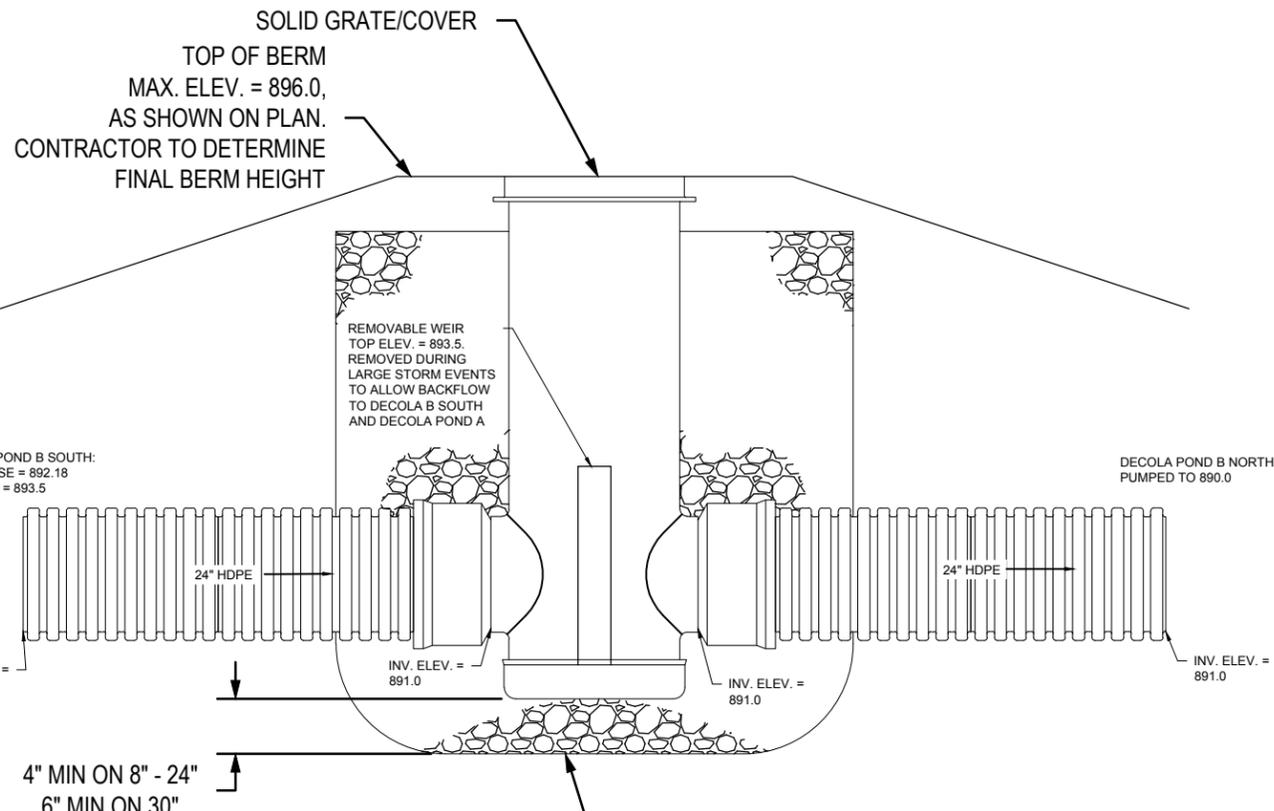
Scale	AS SHOWN
Date	03/22/2019
Drawn	KJN2
Checked	JAK2
Designed	JAK2
Approved	KAL

**CITY OF GOLDEN VALLEY**  
 GOLDEN VALLEY, MN

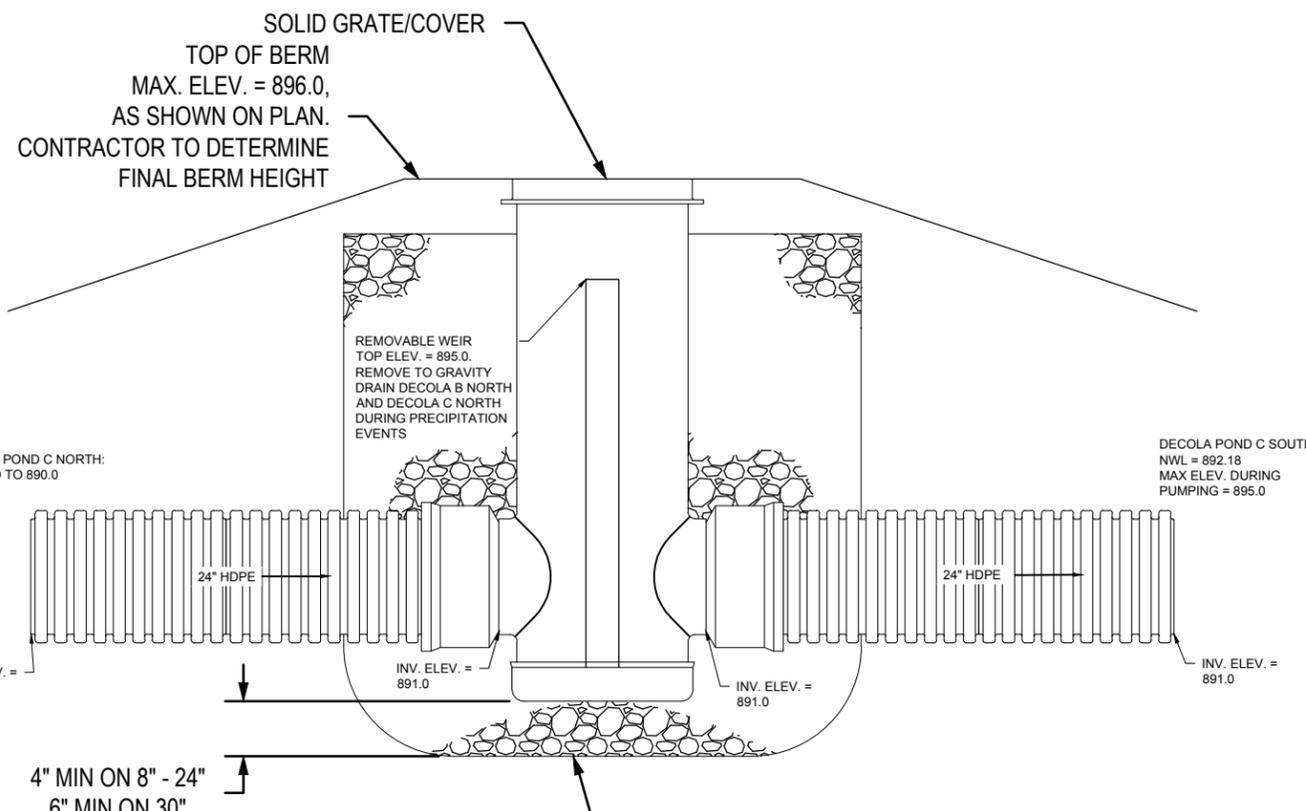
**DECOLA PONDS B&C IMPROVEMENT PROJECT**  
 DRAW DOWN PLAN  
 DECOLA PONDS B & C

BARR PROJECT No.	23/27-1677.00
CLIENT PROJECT No.	#18-06
DWG. No.	C-10
REV. No.	A

CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\002327167700\_C-10\_DRAWDOWN\PLAN\_DECOLAB\_CDWG\_PLOT SCALE: 1:2 PLOT DATE: 3/29/2019 10:41 AM



THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.



THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

1 - DETAIL: OPTIONAL TEMPORARY STORMWATER CONVEYANCE STRUCTURES FOR DECOLA B BERM DURING DRAW DOWN  
NOT TO SCALE

2 - DETAIL: OPTIONAL TEMPORARY STORMWATER CONVEYANCE STRUCTURES FOR DECOLA C BERM DURING DRAW DOWN  
NOT TO SCALE

90% DESIGN  
DRAFT

CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\_002327167700\_C-11\_DRAWING\DOWN\DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 3/29/2019 10:44 AM

				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.				CLIENT 03/22				BARR				Scale AS SHOWN		DECOLA PONDS B&C IMPROVEMENT PROJECT				BARR PROJECT No. 23/27-1677.00			
				PRINTED NAME KURT A. LEUTHOLD				CONSTRUCTION				city of golden valley				Date 03/22/2019		CLIENT PROJECT No. #18-06				CLIENT PROJECT No. #18-06			
				SIGNATURE				RELEASED TO/FOR				Corporate Headquarters Minneapolis, Minnesota Ph: 1-800-632-2277				Drawn KJN2		CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN				DWG. No. C-11		REV. No. A	
				DATE				DATE RELEASED				Checked JAK2		DRAW DOWN DETAILS DECOLA PONDS B & C				Approved KAL							
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION																				

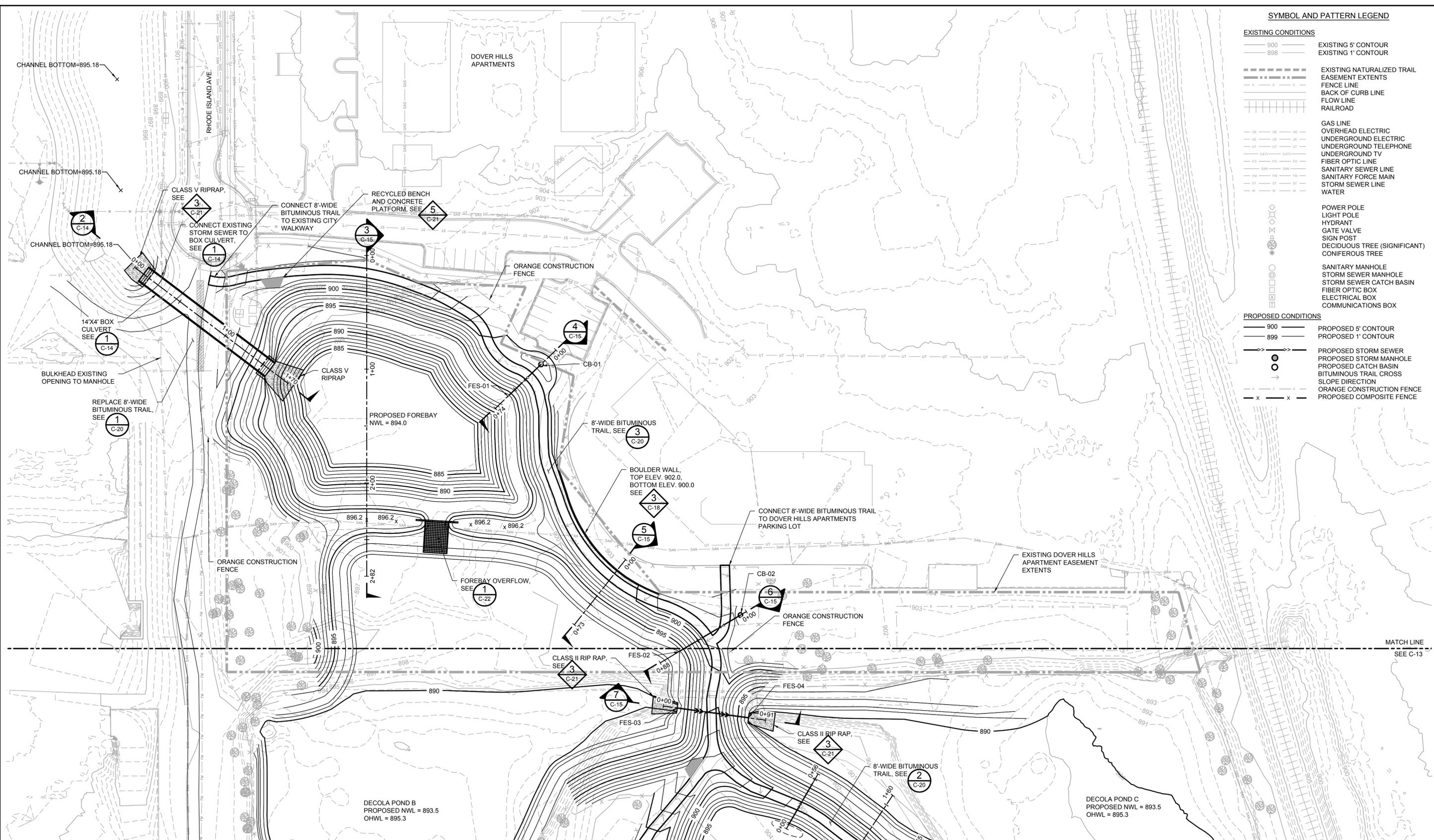
**SYMBOL AND PATTERN LEGEND**

**EXISTING CONDITIONS**

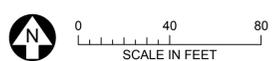
- 900 ——— EXISTING 5' CONTOUR
- 898 ——— EXISTING 1' CONTOUR
- EXISTING NATURALIZED TRAIL
- EASEMENT EXTENTS
- FENCE LINE
- BACK OF CURB LINE
- FLOW LINE
- RAILROAD
- GAS LINE
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- FIBER OPTIC LINE
- SANITARY SEWER LINE
- SANITARY FORCE MAIN
- STORM SEWER LINE
- WATER
- POWER POLE
- LIGHT POLE
- HYDRANT
- GATE VALVE
- SIGN POST
- DECIDUOUS TREE (SIGNIFICANT)
- CONIFEROUS TREE
- SANITARY MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER CATCH BASIN
- FIBER OPTIC BOX
- ELECTRICAL BOX
- COMMUNICATIONS BOX

**PROPOSED CONDITIONS**

- 900 ——— PROPOSED 5' CONTOUR
- 899 ——— PROPOSED 1' CONTOUR
- PROPOSED STORM SEWER
- PROPOSED STORM MANHOLE
- PROPOSED CATCH BASIN
- BITUMINOUS TRAIL CROSS
- SLOPE DIRECTION
- ORANGE CONSTRUCTION FENCE
- PROPOSED COMPOSITE FENCE



**1 PLAN: PROPOSED CONDITIONS - DOVER HILLS APARTMENTS' EASEMENT AREA**  
1"=40'-0"

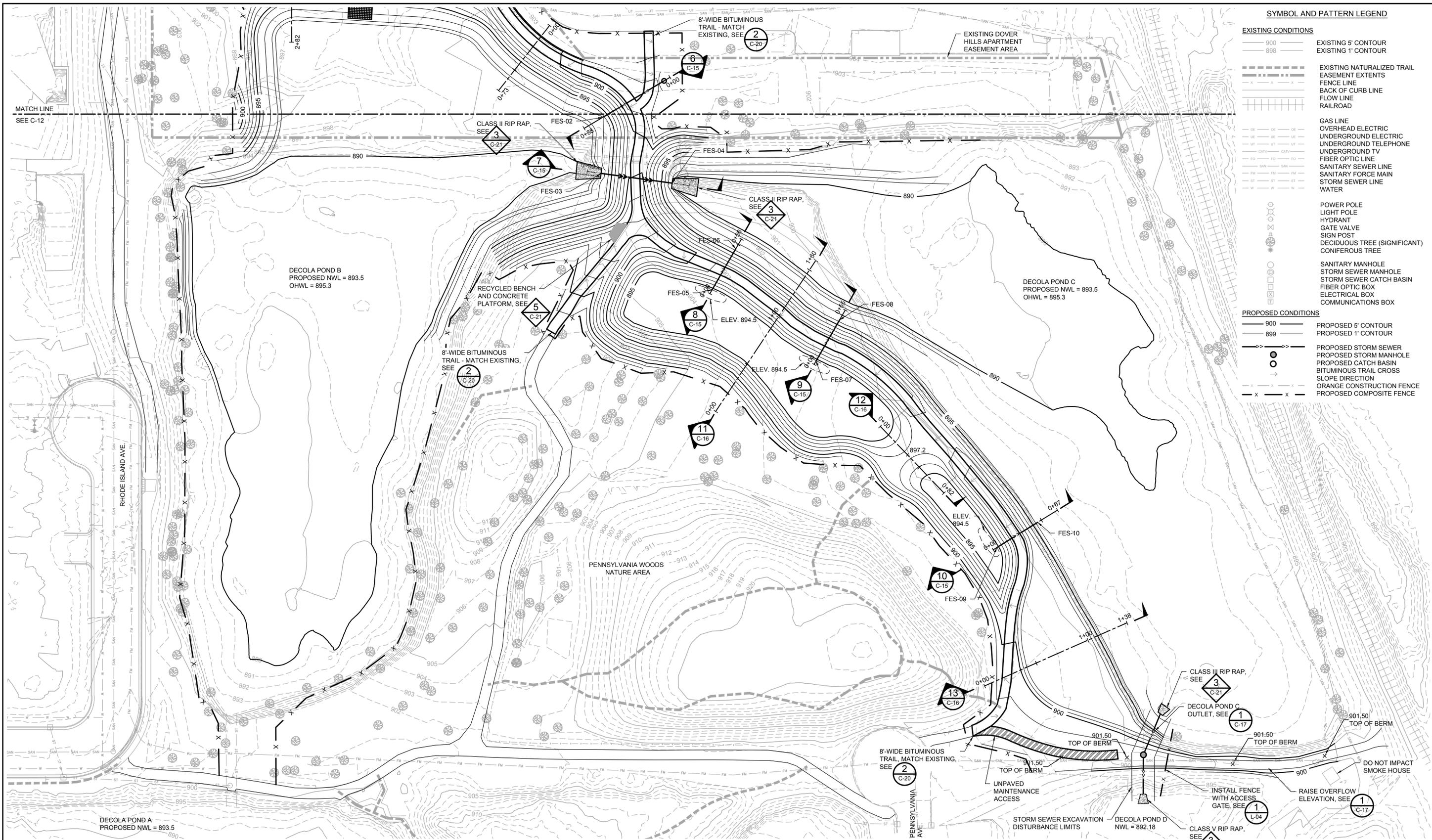


**90% DESIGN DRAFT**

CADD USER: Katie J. Turpin-Negrel FILE: M:\DESIGN\23271677\002327167700\_C-12\_PROPOSEDPLAN\_FOREBAYLIBERTY.DWG PLOT SCALE: 1:1 PLOT DATE: 4/9/2019 9:58 AM

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. PRINTED NAME: <b>KURT A. LEUTHOLD</b> SIGNATURE: _____ DATE: _____ LICENSE # _____		CLIENT: 03/22 BID: _____ CONSTRUCTION: _____		 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Scale: AS SHOWN Date: 03/22/2019 Drawn: KJN2 Checked: JAK2 Designed: JAK2 Approved: KAL		<b>CITY OF GOLDEN VALLEY</b> GOLDEN VALLEY, MN		<b>DECOLA PONDS B&amp;C</b> <b>IMPROVEMENT PROJECT</b>		BARR PROJECT No. <b>23/27-1677.00</b>	
		RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____					<b>PROPOSED GRADING AND STORM SEWER</b> <b>DOVER HILLS APARTMENT EASEMENT AREA</b>		CLIENT PROJECT No. <b>#18-06</b>		DWG. No. <b>C-12</b>	

CADD USER: Katie J. Turpin-Negrel FILE: M:\DESIGN\23271677\002327167700\_C-13\_PROPOSEDPLAN\_DECOLAB\_C.DWG PLOT SCALE: 1:1 PLOT DATE: 4/9/2019 10:01 AM

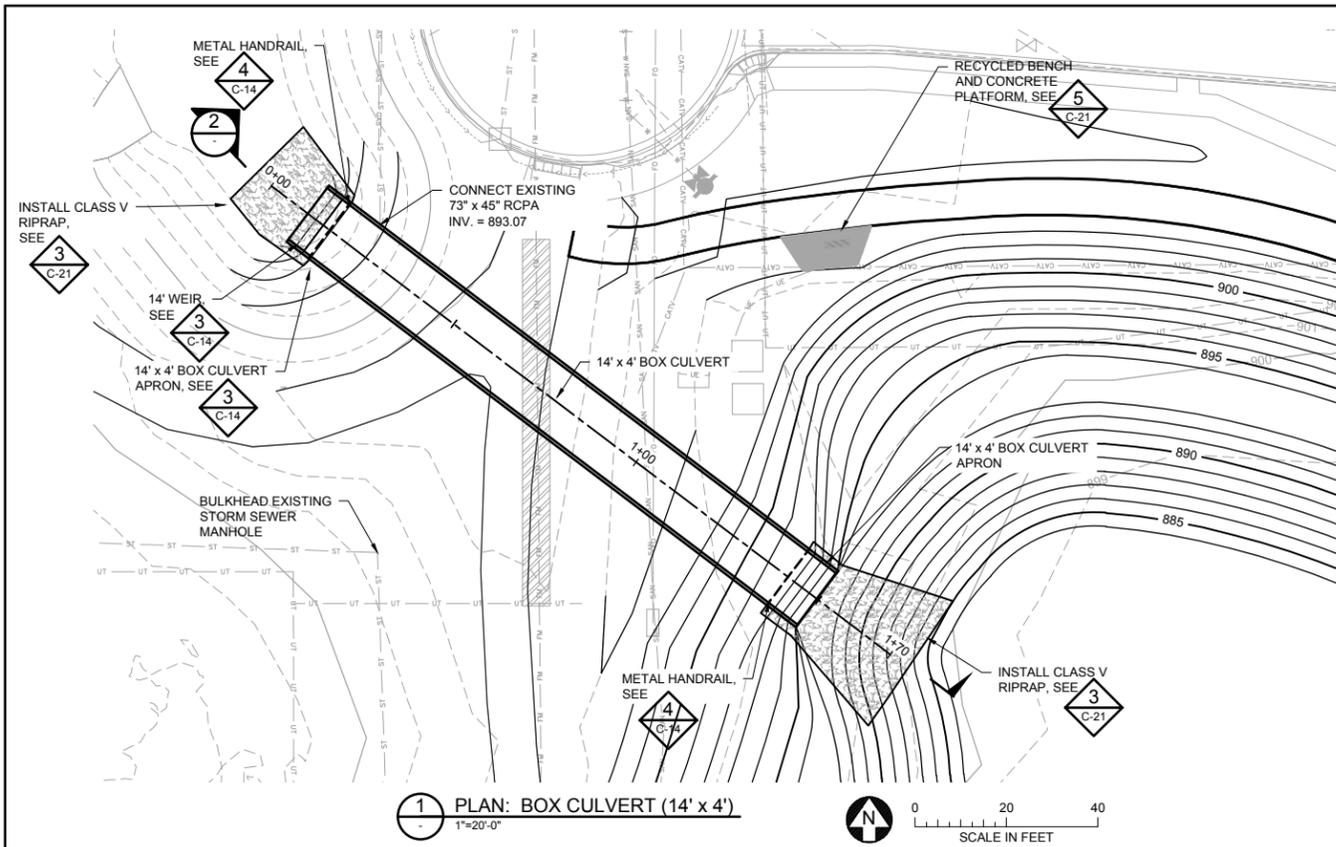


SYMBOL AND PATTERN LEGEND	
<b>EXISTING CONDITIONS</b>	
	EXISTING 5' CONTOUR
	EXISTING 1' CONTOUR
	EXISTING NATURALIZED TRAIL EASEMENT EXTENTS
	FENCE LINE
	BACK OF CURB LINE
	FLOW LINE
	RAILROAD
<b>GAS LINE</b>	
	OVERHEAD ELECTRIC
	UNDERGROUND ELECTRIC
	UNDERGROUND TELEPHONE
	UNDERGROUND TV
	FIBER OPTIC LINE
	SANITARY SEWER LINE
	SANITARY FORCE MAIN
	STORM SEWER LINE
	WATER
<b>POWER POLE</b>	
	LIGHT POLE
	HYDRANT
	GATE VALVE
	SIGN POST
	DECIDUOUS TREE (SIGNIFICANT)
	CONIFEROUS TREE
<b>SANITARY MANHOLE</b>	
	STORM SEWER MANHOLE
	STORM SEWER CATCH BASIN
	FIBER OPTIC BOX
	ELECTRICAL BOX
	COMMUNICATIONS BOX
<b>PROPOSED CONDITIONS</b>	
	PROPOSED 5' CONTOUR
	PROPOSED 1' CONTOUR
	PROPOSED STORM SEWER
	PROPOSED STORM MANHOLE
	PROPOSED CATCH BASIN
	BITUMINOUS TRAIL CROSS
	SLOPE DIRECTION
	ORANGE CONSTRUCTION FENCE
	PROPOSED COMPOSITE FENCE

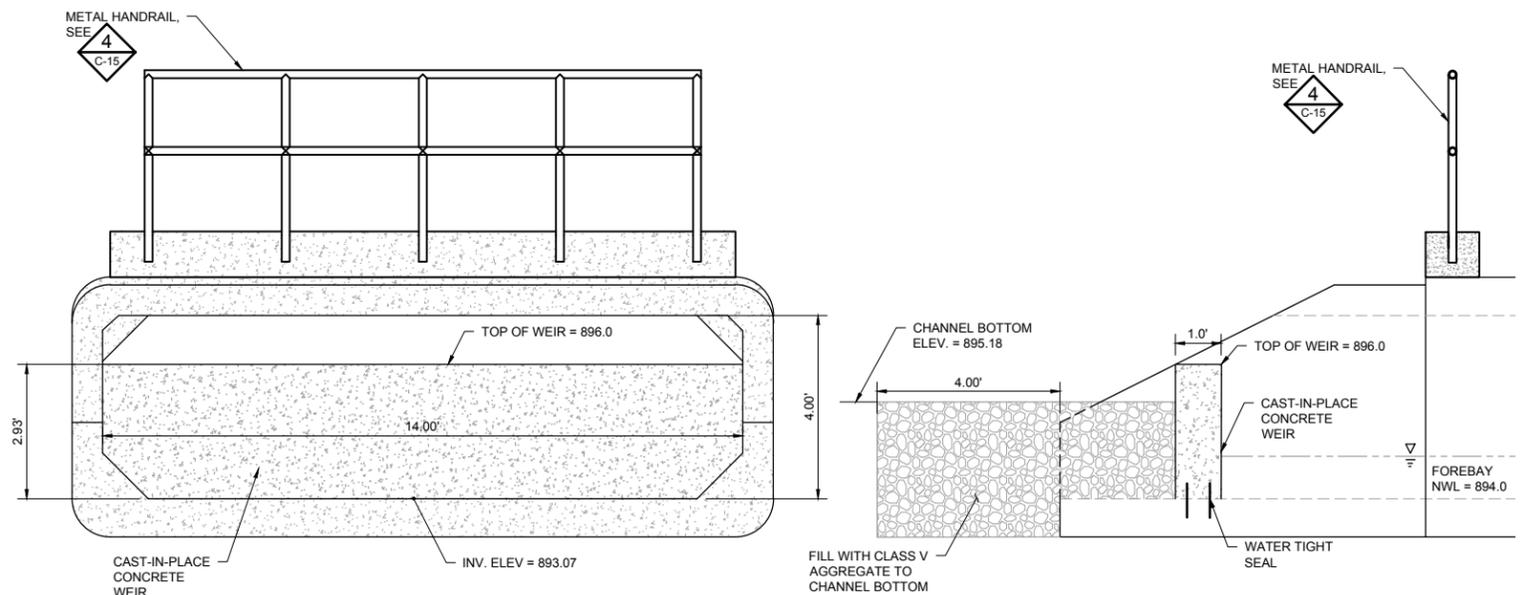
**1 PLAN: PROPOSED CONDITIONS - DECOLA PONDS B AND C**  
 1"=40'-0"  
 SCALE IN FEET

90% DESIGN DRAFT

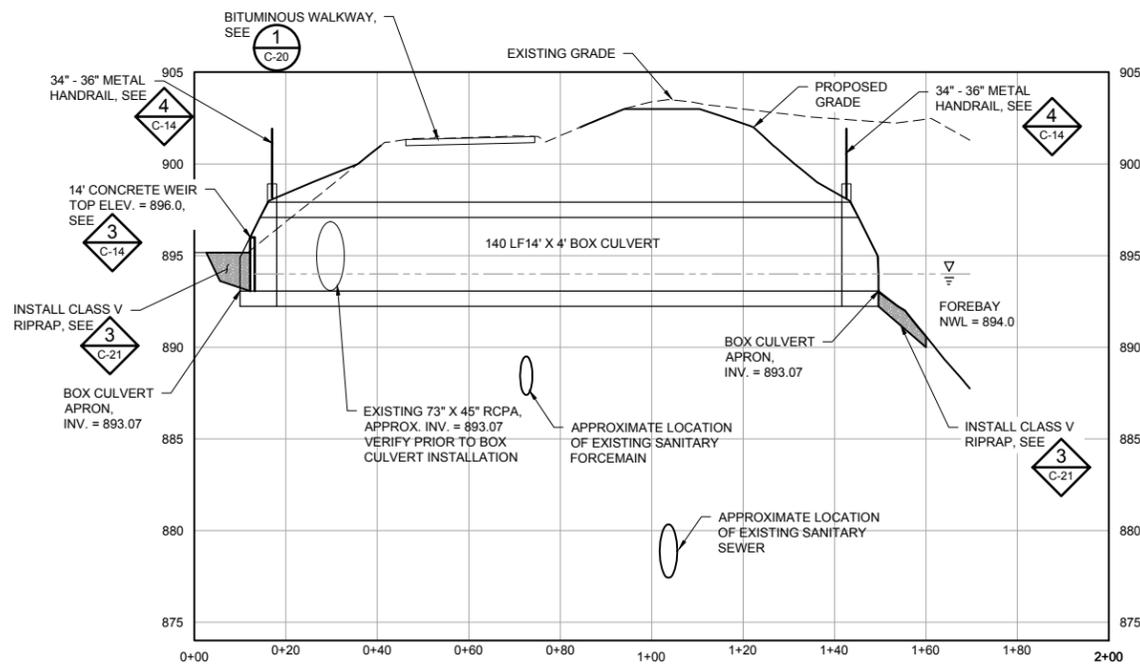
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: KURT A. LEUTHOLD SIGNATURE: _____ DATE: _____ LICENSE #: _____		CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____	 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Scale: AS SHOWN Date: 03/22/2019 Drawn: KJN2 Checked: JAK2 Designed: JAK2 Approved: KAL	CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN	DECOLA PONDS B&C IMPROVEMENT PROJECT PROPOSED GRADING AND STORM SEWER DECOLA PONDS B & C	BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. C-13 REV. No. A
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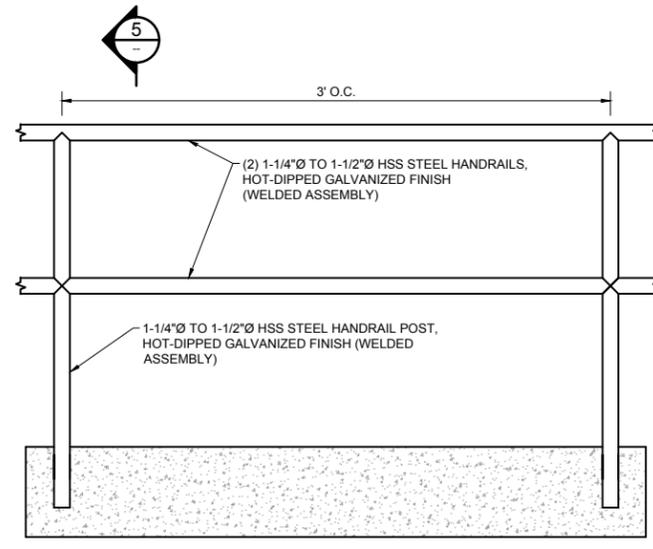
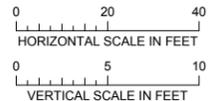
1 PLAN: BOX CULVERT (14' x 4')



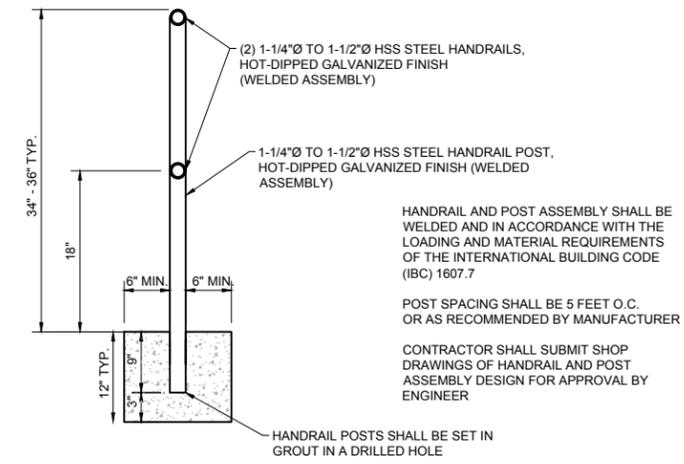
3 DETAIL: BOX CULVERT APRON AND CONCRETE WEIR  
NOT TO SCALE



2 PROFILE: BOX CULVERT (14' x 4')



4 DETAIL: METAL HANDRAIL, SUPPORT POSTS  
NOT TO SCALE

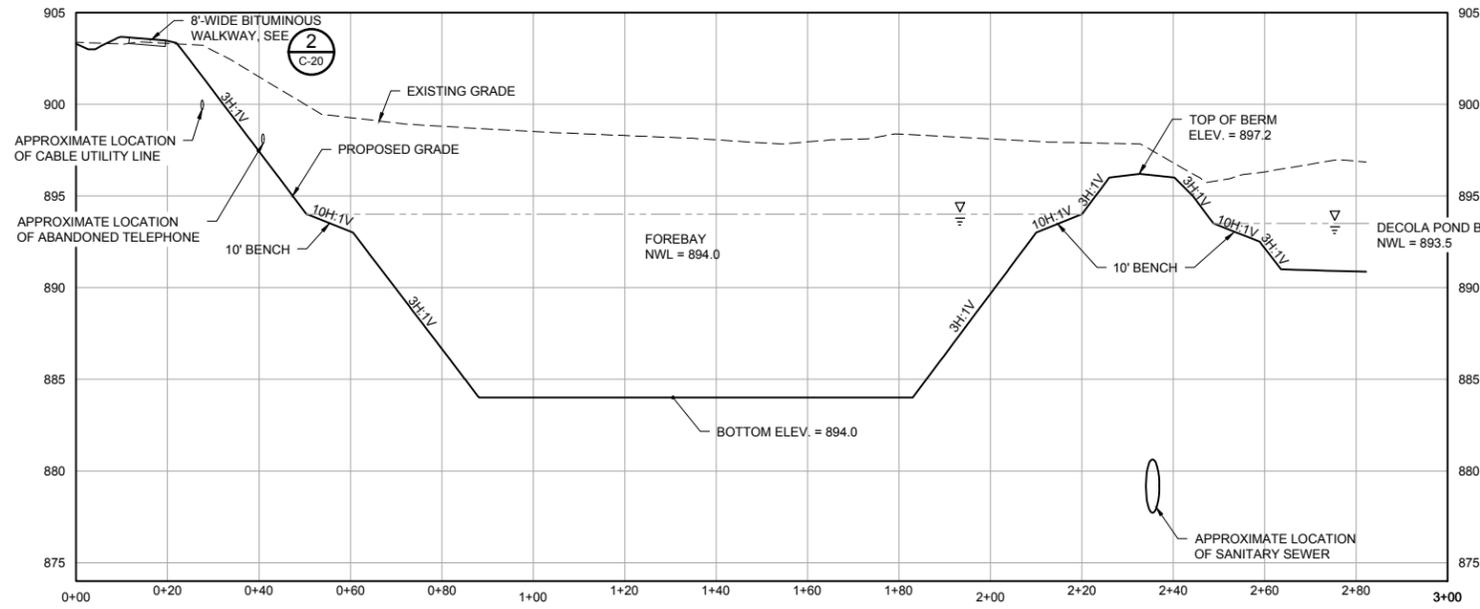


5 CROSS SECTION: METAL HANDRAIL WITH THICKENED SIDEWALK  
NOT TO SCALE

90% DESIGN  
DRAFT

CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\002327167700\_C-14\_BOX CULVERT PLAN AND PROFILE.DWG PLOT SCALE: 1:2 PLOT DATE: 3/29/2019 5:58 PM

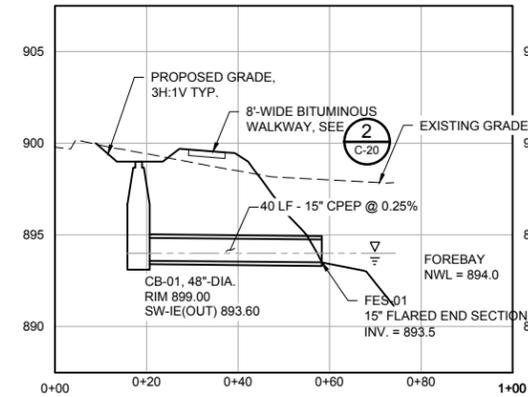
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT BID CONSTRUCTION	03/22				Scale Date Drawn Checked Designed Approved	AS SHOWN 03/22/2019 KJN2 MAK MAK KAL	CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN	DECOLA PONDS B&C IMPROVEMENT PROJECT	BARR PROJECT No. 23/27-1677.00	
PRINTED NAME: KURT A. LEUTHOLD SIGNATURE: _____ DATE: _____ LICENSE # _____		RELEASED TO/FOR	A	B	C	0	1	2			3	CLIENT PROJECT No. #18-06
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION						DWG. No. C-14	REV. No. A



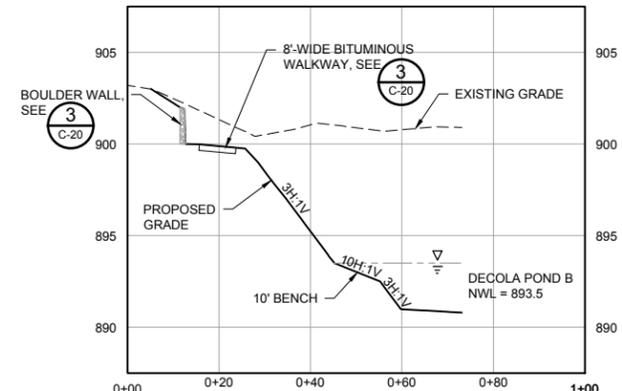
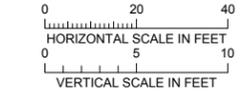
3 SECTION: FOREBAY  
C-12



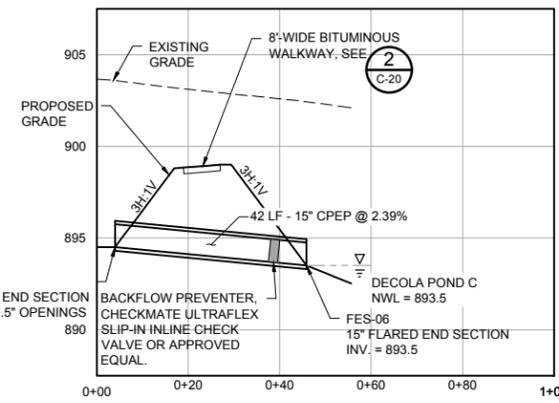
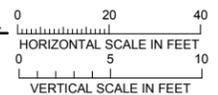
NOTE:  
1. CABLE AND TELEPHONE UTILITIES SHOWN WITH AN ASSUMED THREE FEET OF COVER. VERIFY EXISTING UTILITY LOCATIONS PRIOR TO CONSTRUCTION



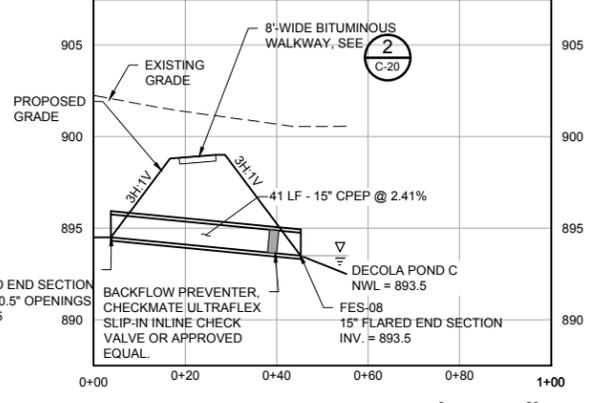
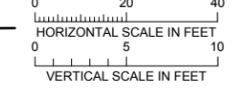
4 PROFILE: CB-01  
C-12



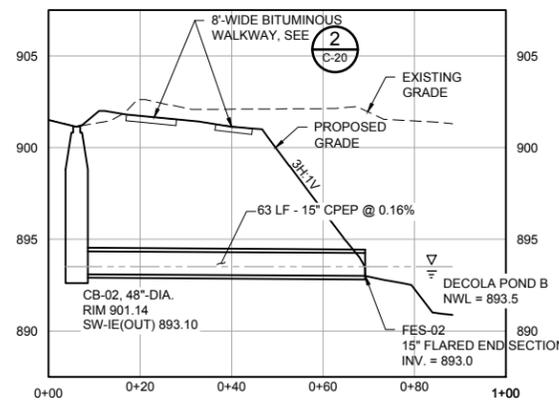
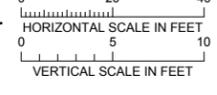
5 SECTION: BOULDER WALL  
C-12



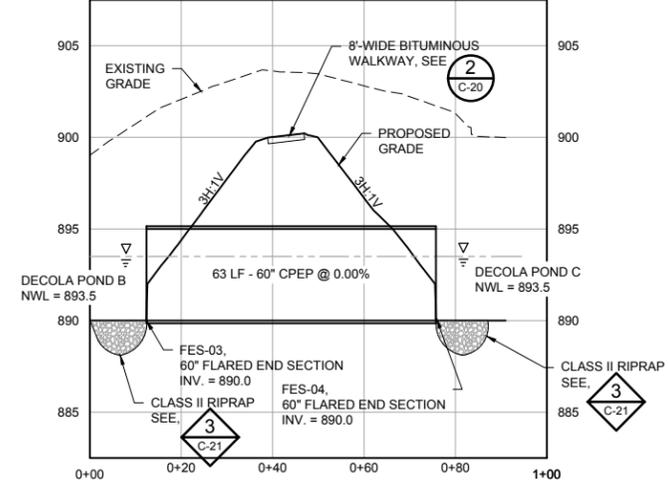
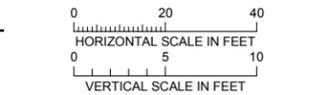
8 PROFILE: WET MEADOW CULVERT 1  
C-13



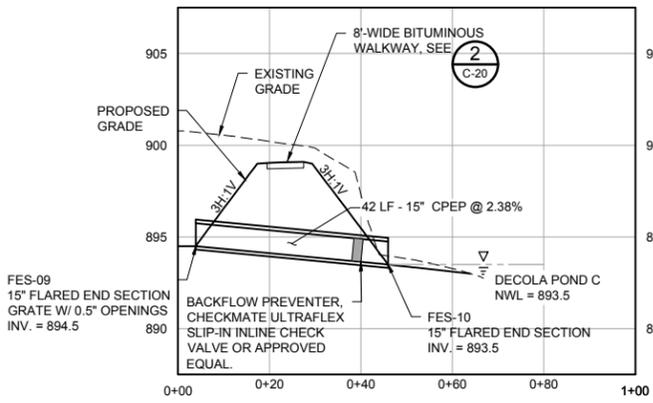
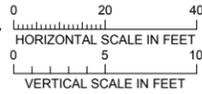
9 PROFILE: WET MEADOW CULVERT 2  
C-13



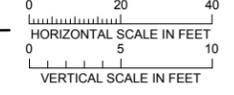
6 PROFILE: CB-02  
C-12



7 PROFILE: DECOLA POND B AND C CULVERT  
C-13



10 PROFILE: WET MEADOW CULVERT 3  
C-13



NOTE:  
1. BACKFLOW PREVENTER (CHECKMATE ULTRAFLEX SLIP-IN INLINE CHECK VALVE OR APPROVED EQUAL) TO BE INLINE AND FULLY LOCATED WITHIN THE SEWER STORM AND UPSTREAM OF THE FLARED END SECTION. NO PORTION SHALL EXTEND PAST END OF STORM SEWER.

90% DESIGN DRAFT

CADD USER: Katie J. Turpin-Nigel FILE: M:\DESIGN\23271677\00\2327167700\_C-15\_PROFILES\_SECTIONS1.DWG PLOT SCALE: 1:12 PLOT DATE: 4/4/2019 11:58 AM  
Xrefs: M:\Drawings - M:\Design\23271677\00\2327167700\_BASE\_C3D\_PIPES\_ALIGN\_DECOLA\_PONDS\_B\_C.dwg  
K:\2 M:\Design\23271677\00\C-15\_PROFILES\_SECTIONS1.dwg Plot at 03/18/2019 15:43:05

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.  
PRINTED NAME: KURT A. LEUTHOLD  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # \_\_\_\_\_

CLIENT	03/22					
BID						
CONSTRUCTION						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						



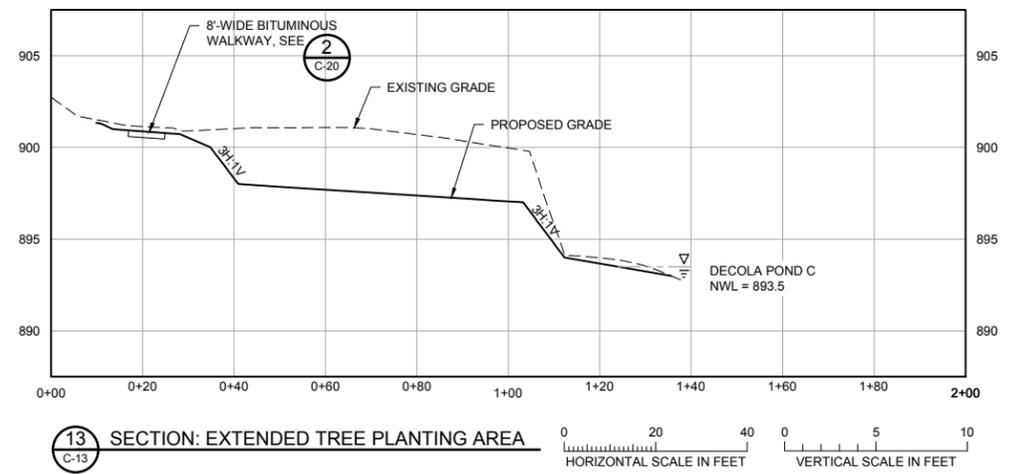
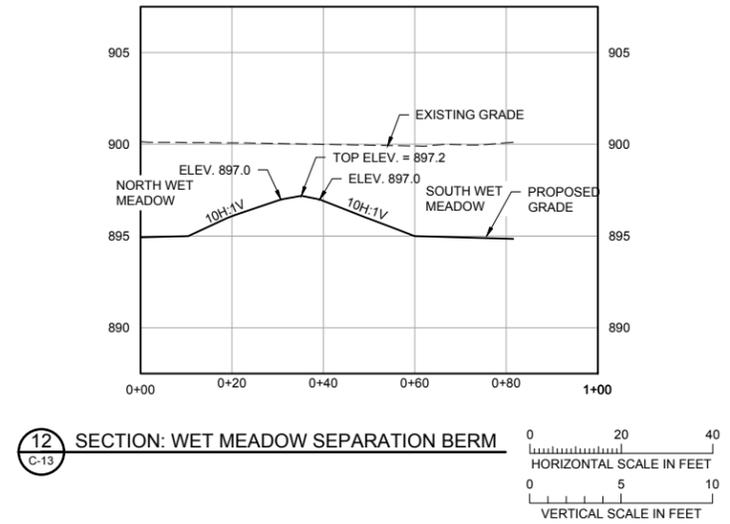
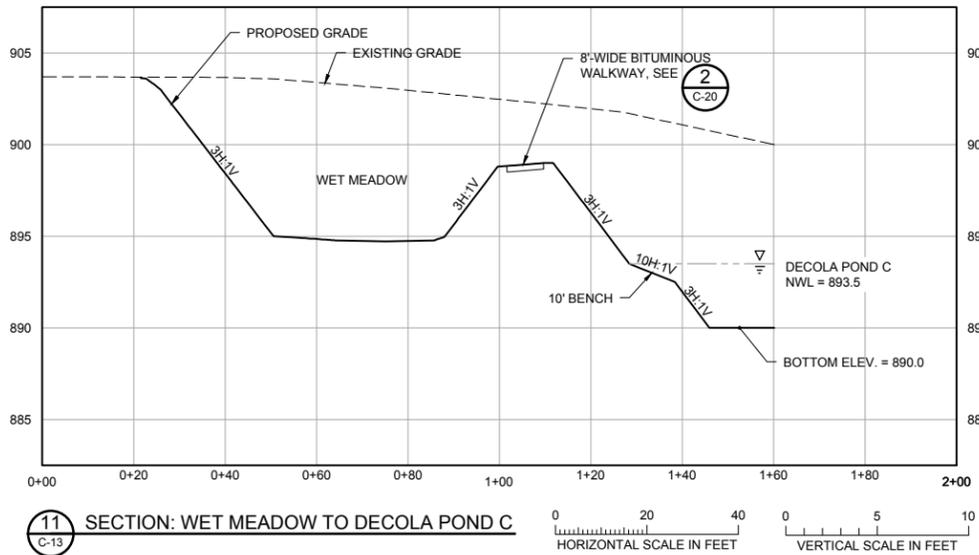
Scale	AS SHOWN
Date	03/22/2019
Drawn	KJN2
Checked	MAK
Designed	MAK
Approved	KAL

CITY OF GOLDEN VALLEY  
GOLDEN VALLEY, MN

DECOLA PONDS B&C  
IMPROVEMENT PROJECT  
PROFILES AND SECTIONS

BARR PROJECT No.	23/27-1677.00
CLIENT PROJECT No.	#18-06
DWG. No.	C-15
REV. No.	A

CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\032327167700\_C-16\_PROFILES\_SECTIONS.DWG PLOT SCALE: 1:2 PLOT DATE: 3/29/2019 6:01 PM  
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 KURT.A.LEUTHOLD\3/27/2019\2327167700\_C-16\_PROFILES\_SECTIONS.dwg Plot at 0: 03/22/2019 11:00:56



90% DESIGN  
DRAFT

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. PRINTED NAME: KURT A. LEUTHOLD SIGNATURE: _____ DATE: _____ LICENSE # _____					CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____					 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277		 CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN		Scale: AS SHOWN Date: 03/22/2019 Drawn: KJN2 Checked: MAK Designed: MAK Approved: KAL		DECOLA PONDS B&C IMPROVEMENT PROJECT BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. C-16 REV. No. A	
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION												

**SYMBOL AND PATTERN LEGEND**

**EXISTING CONDITIONS**

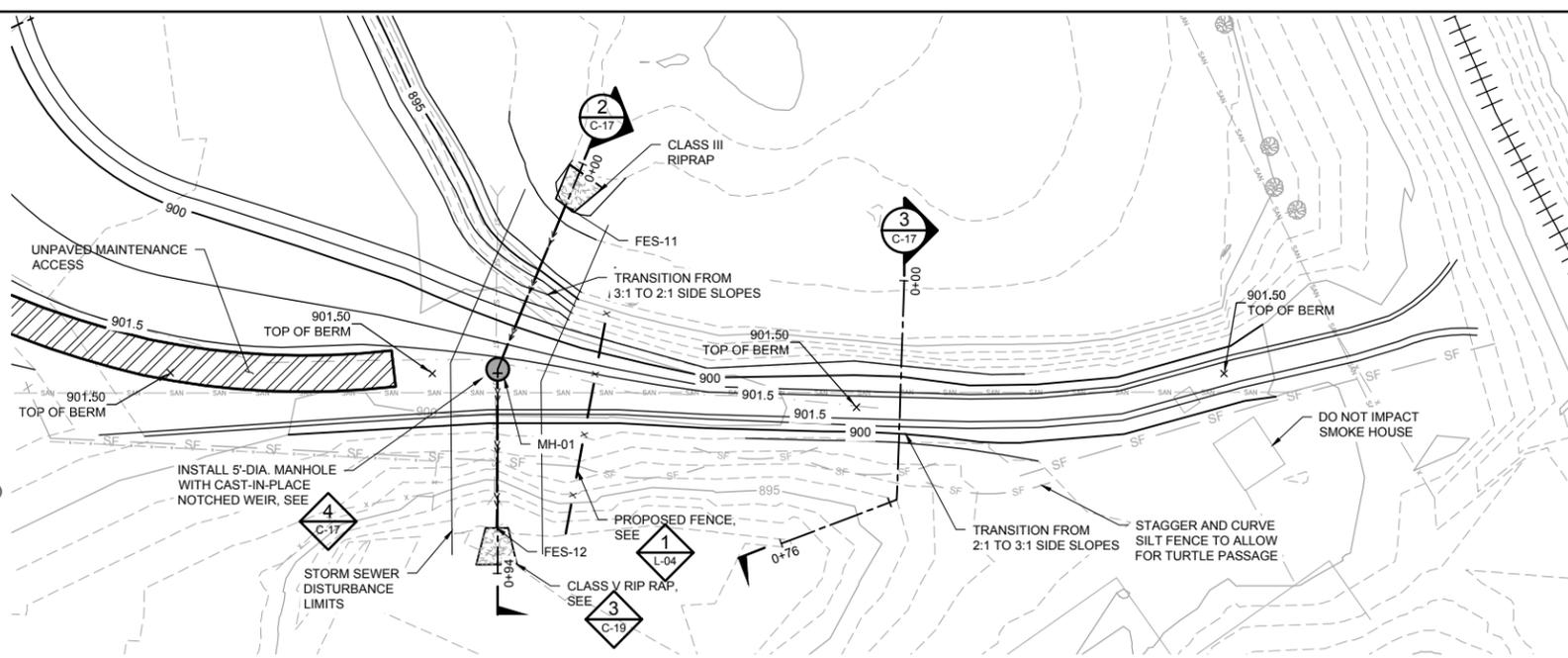
- 900 EXISTING 5' CONTOUR
- 898 EXISTING 1' CONTOUR
- EXISTING NATURALIZED TRAIL
- EASEMENT EXTENTS
- FENCE LINE
- BACK OF CURB LINE
- FLOW LINE
- RAILROAD
- GAS LINE
- OVERHEAD ELECTRIC
- UNDERGROUND ELECTRIC
- UNDERGROUND TELEPHONE
- UNDERGROUND TV
- FIBER OPTIC LINE
- SANITARY SEWER LINE
- SANITARY FORCE MAIN
- STORM SEWER LINE
- WATER

- POWER POLE
- LIGHT POLE
- HYDRANT
- GATE VALVE
- SIGN POST
- DECIDUOUS TREE (SIGNIFICANT)
- CONIFEROUS TREE

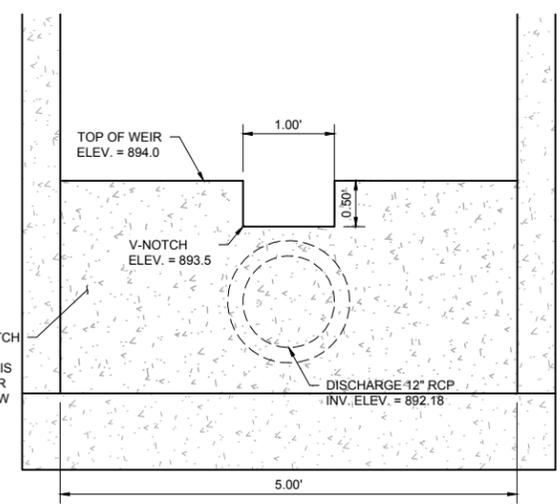
- SANITARY MANHOLE
- STORM SEWER MANHOLE
- STORM SEWER CATCH BASIN
- FIBER OPTIC BOX
- ELECTRICAL BOX
- COMMUNICATIONS BOX

**PROPOSED CONDITIONS**

- 900 PROPOSED 5' CONTOUR
- 899 PROPOSED 1' CONTOUR
- PROPOSED STORM SEWER
- PROPOSED STORM MANHOLE
- PROPOSED CATCH BASIN
- BITUMINOUS TRAIL CROSS
- SLOPE DIRECTION
- PROPOSED FENCE
- ORANGE CONSTRUCTION FENCE
- SILT FENCE

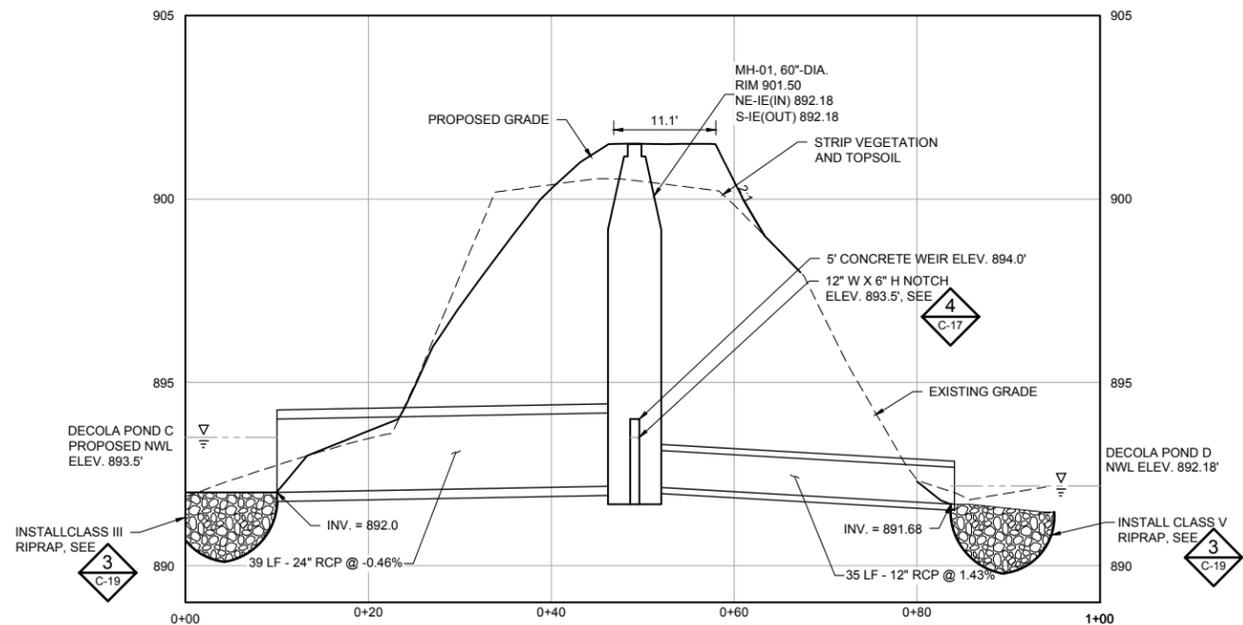


**1 PLAN: DECOLA POND C OUTLET AND OVERFLOW BERM**  
 1"=20'-0"  
 SCALE IN FEET

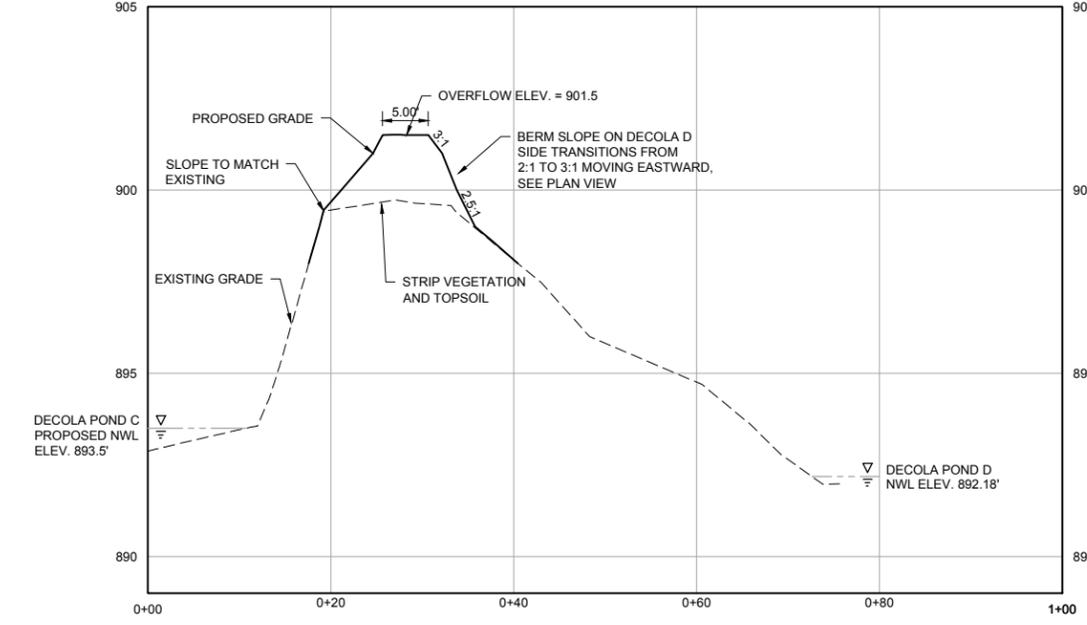


**4 DETAIL: CAST-IN-PLACE NOTCHED WEIR**  
 AS SHOWN

CAST-IN-PLACE V-NOTCH WEIR. INSTALL AFTER DRAW DOWN PERIOD IS COMPLETE AND PRIOR TO REMOVAL OF DRAW DOWN BERMS



**2 SECTION: DECOLA C OUTLET**  
 HORIZONTAL SCALE IN FEET: 0, 10, 20  
 VERTICAL SCALE IN FEET: 0, 2.5, 5



**3 SECTION: DECOLA C OVERFLOW BERM**  
 HORIZONTAL SCALE IN FEET: 0, 10, 20  
 VERTICAL SCALE IN FEET: 0, 2.5, 5

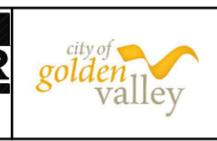
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 USER: K. J. Turpin-Negel M:\Design\23271677\_00\chgs\kjen\kjen.dwg DATE: 4/4/2019 8:21 AM  
 KJN2 M:\Design\23271677\_00\2327167700\_C-17\_PLAN\_SECTION\_DECOLAOutlet.dwg Plot 11 2/06/2019 12:03:31

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: KURT A. LEUTHOLD  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE # \_\_\_\_\_

CLIENT	03/22								
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									



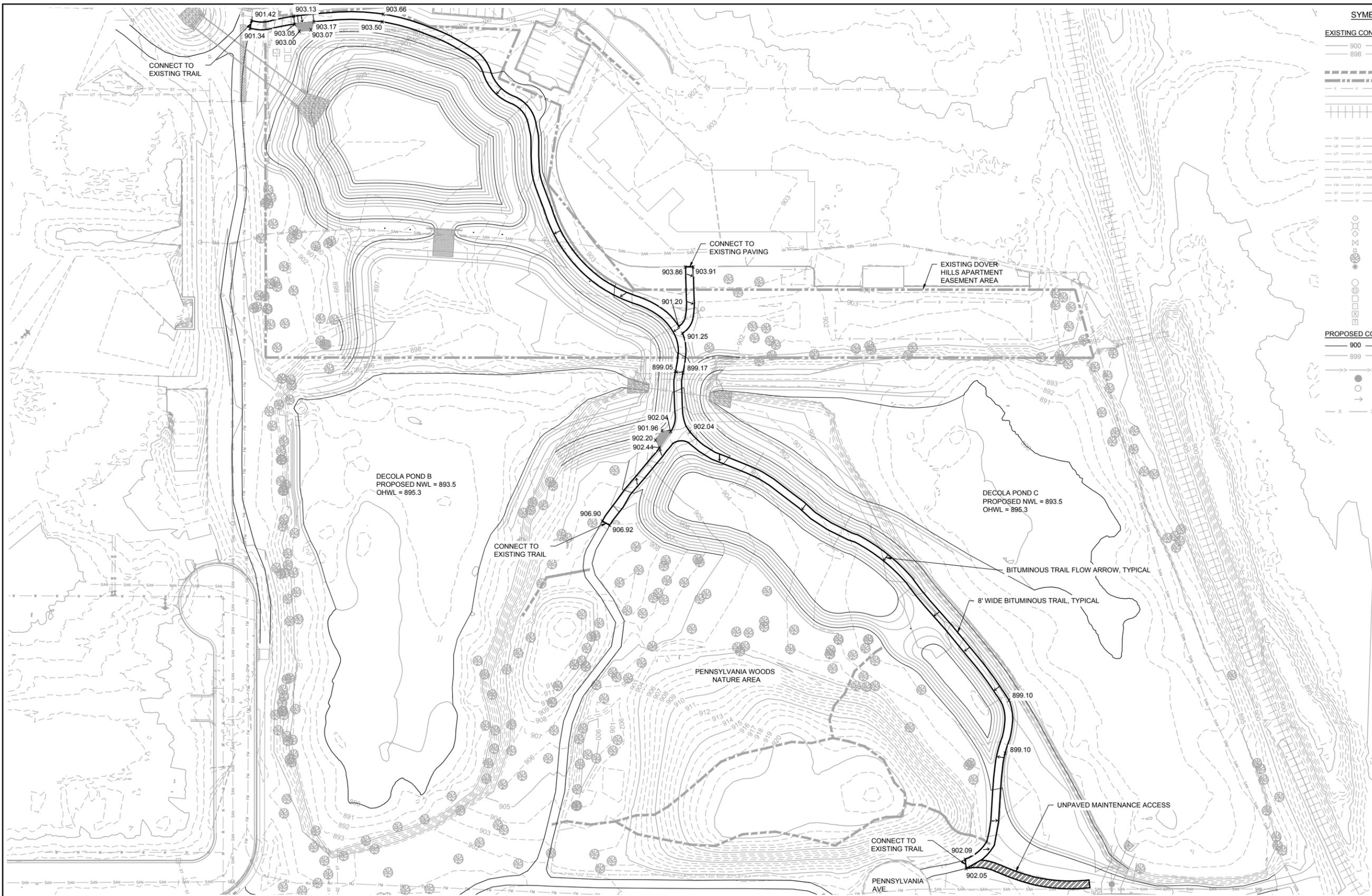
Scale	AS SHOWN
Date	03/22/2019
Drawn	KJN2
Checked	JAK2
Designed	JAK2
Approved	KAL

**CITY OF GOLDEN VALLEY**  
 GOLDEN VALLEY, MN

**DECOLA PONDS B&C IMPROVEMENT PROJECT**  
 PLAN AND SECTION  
 DECOLA POND C OUTLET AND OVERFLOW

BARR PROJECT No.	23/27-1677.00
CLIENT PROJECT No.	#18-06
DWG. No.	C-17
REV. No.	A

90% DESIGN  
 DRAFT



**SYMBOL AND PATTERN LEGEND**

EXISTING CONDITIONS	
900	EXISTING 5' CONTOUR
898	EXISTING 1' CONTOUR
---	EXISTING NATURALIZED TRAIL
-x-x-x-	EASEMENT EXTENTS
-x-x-x-	FENCE LINE
-x-x-x-	BACK OF CURB LINE
-x-x-x-	FLOW LINE
-x-x-x-	RAILROAD
-o-o-o-	GAS LINE
-e-e-e-	OVERHEAD ELECTRIC
-u-u-u-	UNDERGROUND ELECTRIC
-t-t-t-	UNDERGROUND TELEPHONE
-fo-fo-	UNDERGROUND TV
-fo-fo-	FIBER OPTIC LINE
-sm-sm-	SANITARY SEWER LINE
-fm-fm-	SANITARY FORCE MAIN
-st-st-	STORM SEWER LINE
-w-w-w-	WATER
○	POWER POLE
○	LIGHT POLE
○	HYDRANT
○	GATE VALVE
○	SIGN POST
○	DECIDUOUS TREE (SIGNIFICANT)
○	CONIFEROUS TREE
○	SANITARY MANHOLE
○	STORM SEWER MANHOLE
○	STORM SEWER CATCH BASIN
○	FIBER OPTIC BOX
○	ELECTRICAL BOX
○	COMMUNICATIONS BOX
PROPOSED CONDITIONS	
900	PROPOSED 5' CONTOUR
899	PROPOSED 1' CONTOUR
→	PROPOSED STORM SEWER
○	PROPOSED STORM MANHOLE
○	PROPOSED CATCH BASIN
○	BITUMINOUS TRAIL CROSS
-x-x-	SLOPE DIRECTION
-x-x-	PROPOSED COMPOSITE FENCE

**1 PLAN: PROPOSED BITUMINOUS TRAIL**  
 1"=40'-0"

0 50 100  
 SCALE IN FEET

90% DESIGN  
 DRAFT

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.

PRINTED NAME: KURT A. LEUTHOLD  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE #: \_\_\_\_\_

CLIENT	03/22					
BID						
CONSTRUCTION						
RELEASED TO/FOR	A	B	C	0	1	2
DATE RELEASED						



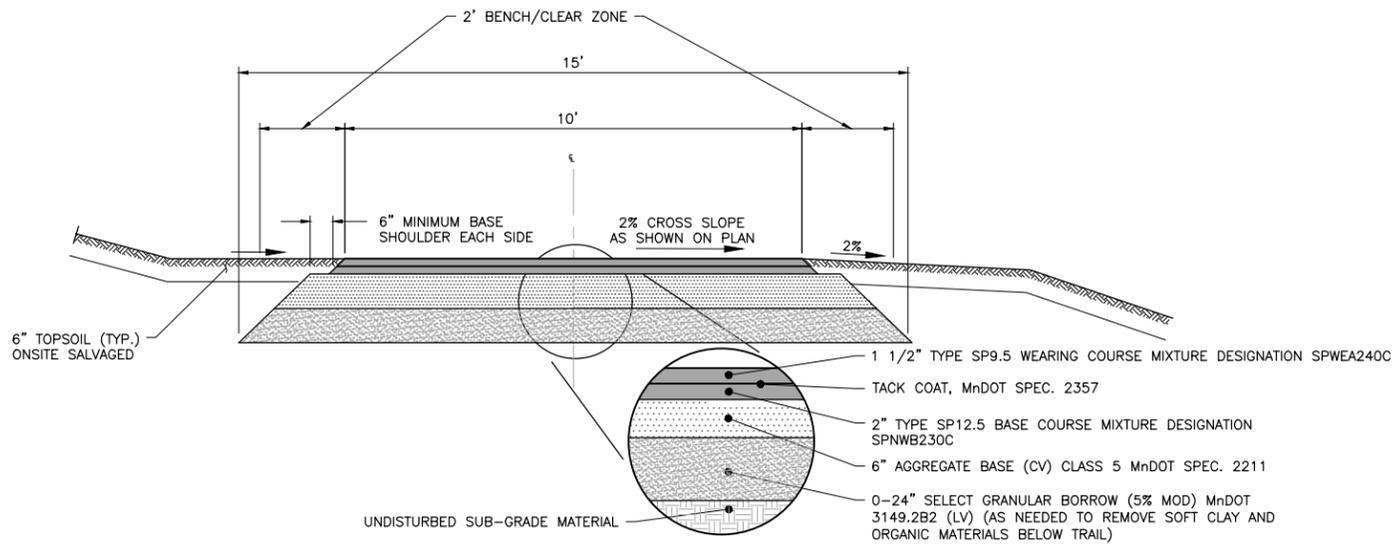
Scale	AS SHOWN
Date	04/05/2019
Drawn	KJN2
Checked	JAK2
Designed	JAK2
Approved	KAL

CITY OF GOLDEN VALLEY  
 GOLDEN VALLEY, MN

DECOLA PONDS B&C  
 IMPROVEMENT PROJECT  
 PROPOSED BITUMINOUS TRAIL PLAN  
 DECOLA PONDS B & C

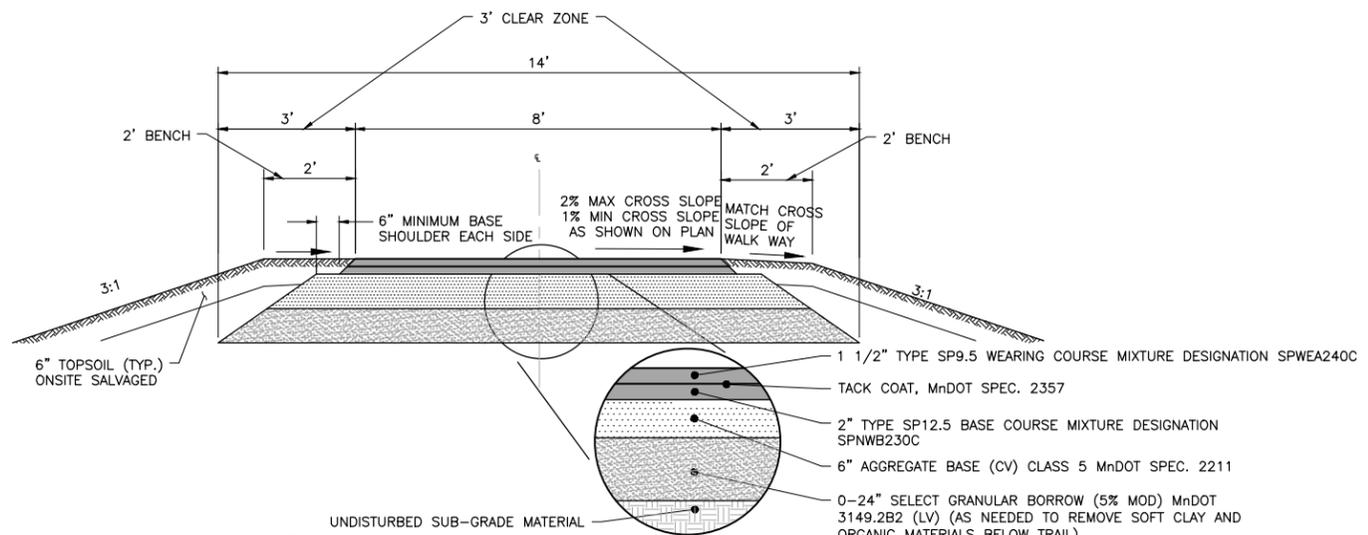
BARR PROJECT No.	23/27-1677.00
CLIENT PROJECT No.	#18-06
DWG. No.	C-18
REV. No.	A

CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\002327167700\_C-18\_BITUMINOUS\_TRAIL\_PLANDWG\_PLOT SCALE: 1:2 PLOT DATE: 4/22/2019 5:31 PM



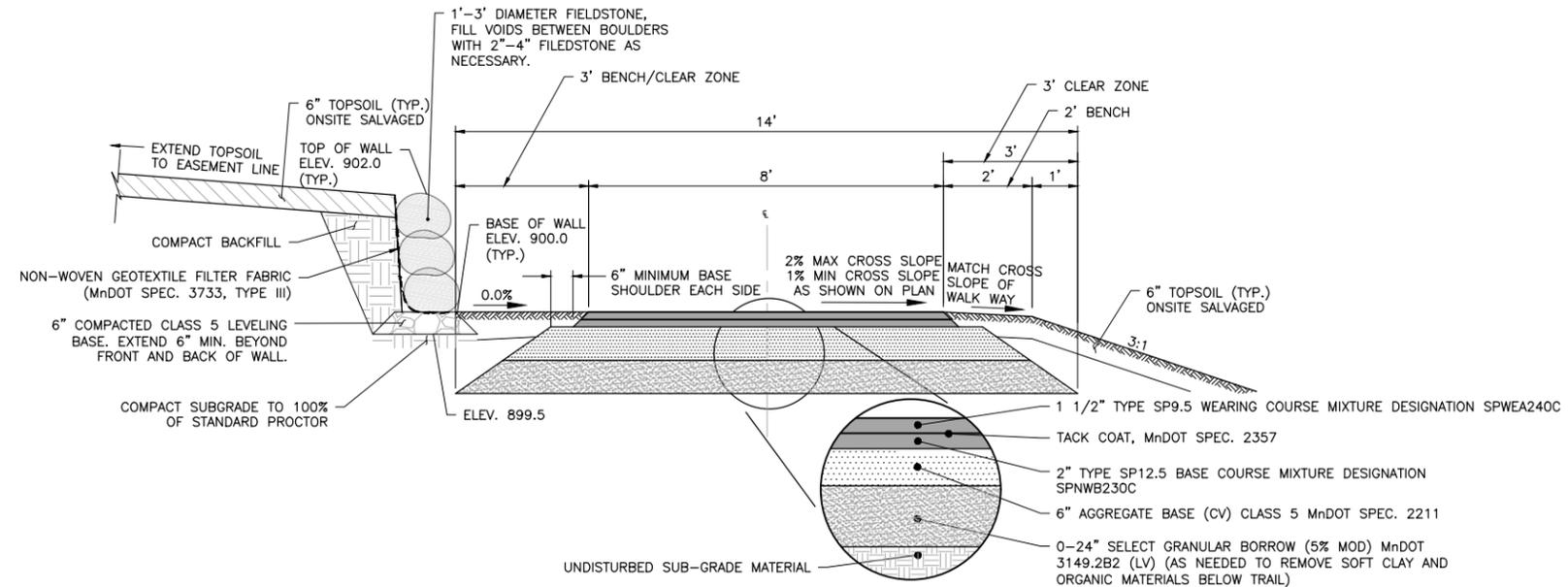
**1 TYPICAL SECTION: LIBERTY CROSSING TRAIL REPLACEMENT**  
NOT TO SCALE

NOTE A: COMPACT ALL AGGREGATE BASE AND SELECT GRANULAR TO 100% STANDARD PROCTOR



**2 TYPICAL SECTION: PENNSYLVANIA WOODS TRAIL**  
NOT TO SCALE

NOTE A: COMPACT ALL AGGREGATE BASE AND SELECT GRANULAR TO 100% STANDARD PROCTOR  
NOTE B: PROPOSED PLAN INDICATES SLOPE DIRECTIONS OF TRAILS.



**3 TYPICAL SECTION: FOREBAY BOULDER RETAINING WALL & TRAIL**  
NOT TO SCALE

NOTE A: COMPACT ALL AGGREGATE BASE AND SELECT GRANULAR TO 100% STANDARD PROCTOR

90% DESIGN  
DRAFT

CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\_00\2327167700\_C-20\_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/8/2019 4:22 PM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: KURT A. LEUTHOLD  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE # \_\_\_\_\_

CLIENT	03/22										
BID											
CONSTRUCTION											
RELEASED TO/FOR	A	B	C	0	1	2	3				
DATE RELEASED											

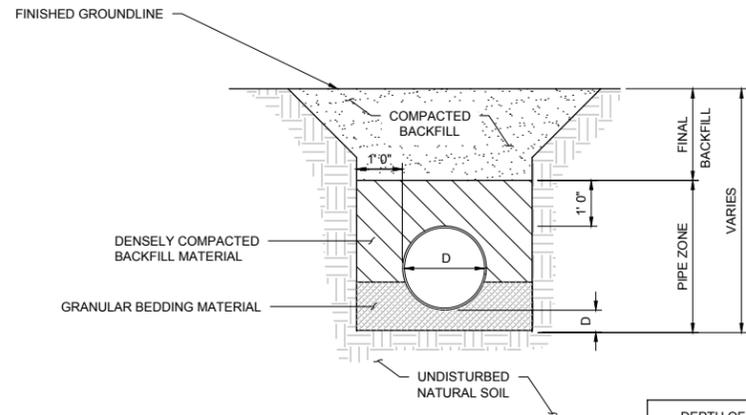


Scale	AS SHOWN
Date	03/22/2019
Drawn	KJN2
Checked	JAK2
Designed	JAK2
Approved	KAL

CITY OF GOLDEN VALLEY  
GOLDEN VALLEY, MN

DECOLA PONDS B&C  
IMPROVEMENT PROJECT  
DETAILS  
BITUMINOUS TRAIL

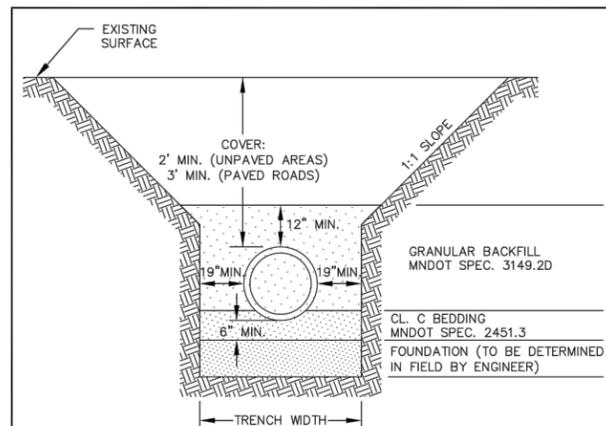
BARR PROJECT No.	23/27-1677.00
CLIENT PROJECT No.	#18-06
DWG. No.	C-20
REV. No.	A



NOTE:  
SHAPED SUBGRADE WITH GRANULAR  
FOUNDATION ALSO PERMITTED

DEPTH OF BEDDING BELOW PIPE	
D	d (MIN.)
27" & LESS	3"
30" to 60"	4"
66" & LARGER	6"

1 DETAIL: RCP STORM SEWER TRENCH  
NOT TO SCALE



CORRUGATED POLYETHYLENE PIPE (AASHTO M294)			
NOMINAL PIPE DIAMETER (INCHES)	MAXIMUM COVER (FEET)	TRENCH WIDTH (COVER ≤ 10 FT.) (INCHES)	TRENCH WIDTH (COVER ≥ 10 FT.) (INCHES)
12"	20'	50"	50"
15"	20'	54"	54"
18"	15'	58"	64"
24"	15'	64"	86"
30"	15'	72"	110"
36"	15'	78"	128"
42"	10'	84"	
48"	10'	92"	

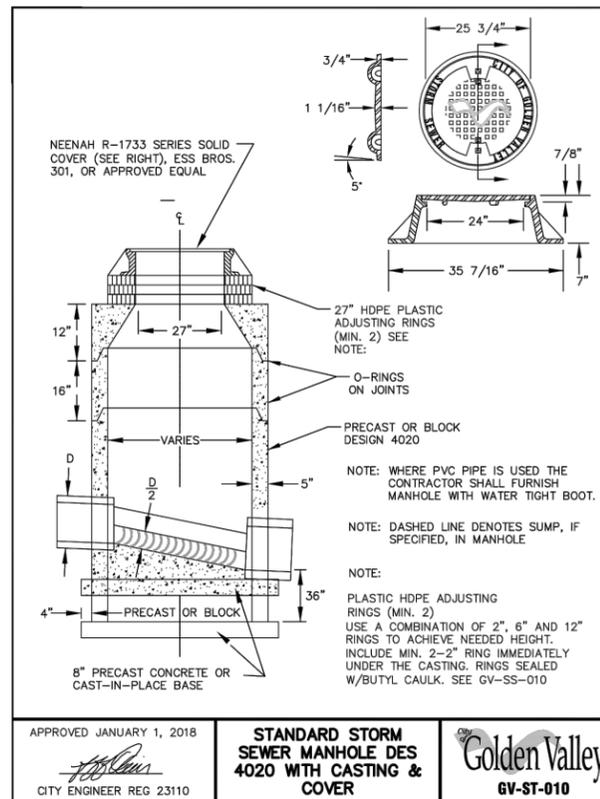
NOTE:  
1. MINIMUM 60" DIAMETER  
TRENCH WIDTH: 102"

APPROVED JANUARY 1, 2018  
CITY ENGINEER REG 23110

INSTALLATION OF  
CORRUGATED  
POLYETHYLENE PIPE

Golden Valley  
GV-ST-090

4 DETAIL: INSTALLATION OF CORRUGATED POLYETHYLENE PIPE  
NOT TO SCALE

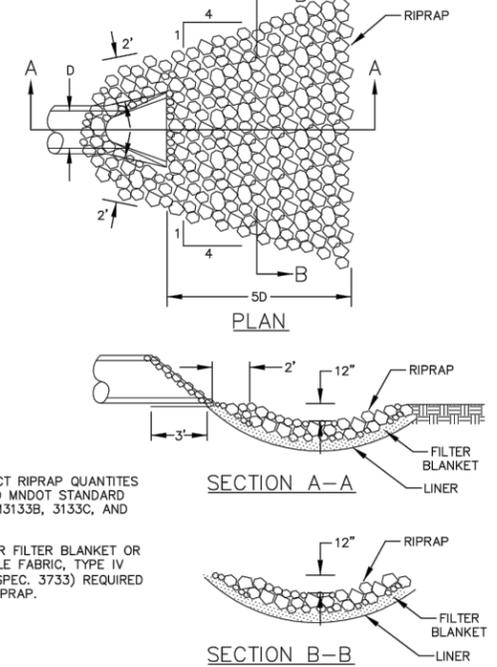


APPROVED JANUARY 1, 2018  
CITY ENGINEER REG 23110

STANDARD STORM  
SEWER MANHOLE DES  
4020 WITH CASTING &  
COVER

Golden Valley  
GV-ST-010

2 DETAIL: STANDARD STORM SEWER MANHOLE WITH CASTING COVER  
NOT TO SCALE



NOTE:  
FOR EXACT RIPRAP QUANTITIES  
REFER TO MNDOT STANDARD  
PLATES M3133B, 3133C, AND  
3134C.

GRANULAR FILTER BLANKET OR  
GEOTEXTILE FABRIC, TYPE IV  
(MNDOT SPEC. 3733) REQUIRED  
UNDER RIPRAP.

APPROVED DECEMBER 31, 2015  
CITY ENGINEER REG 23110

RIPRAP AT  
OUTLETS

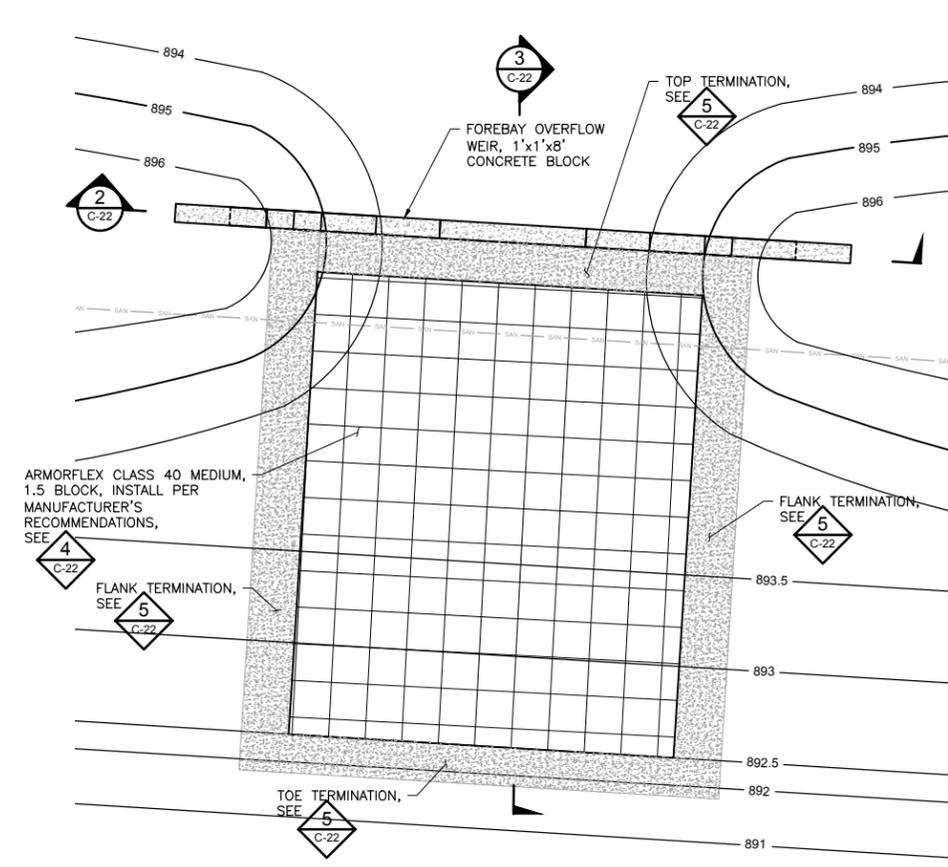
Golden Valley  
GV-EC-070

3 DETAIL: RIPRAP AT OUTLETS  
NOT TO SCALE

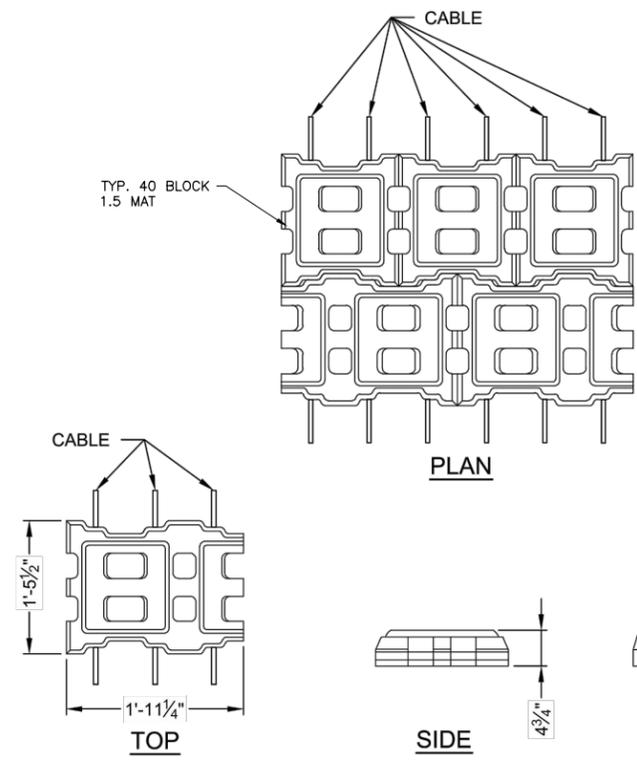
90% DESIGN  
DRAFT

CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\00\_2327167700\_C-20\_DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/8/2019 4:22 PM

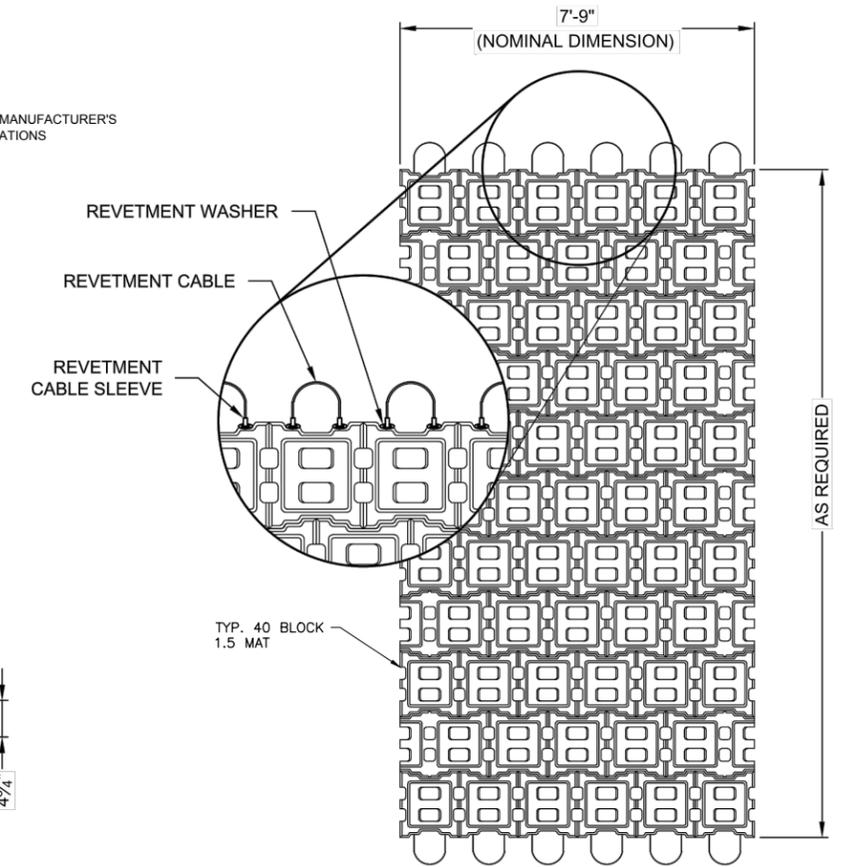
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.		CLIENT	03/22					 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Scale	AS SHOWN	CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN	DECOLA PONDS B&C IMPROVEMENT PROJECT DETAILS STORMWATER STRUCTURES	BARR PROJECT No.	23/27-1677.00
PRINTED NAME	KURT A. LEUTHOLD	BID					Date		03/22/2019	CLIENT PROJECT No.			#18-06	
SIGNATURE		CONSTRUCTION					Drawn	KJN2			DWG. No.	C-21	REV. No.	A
DATE		RELEASED TO/FOR	A	B	C	0	1	2	3					



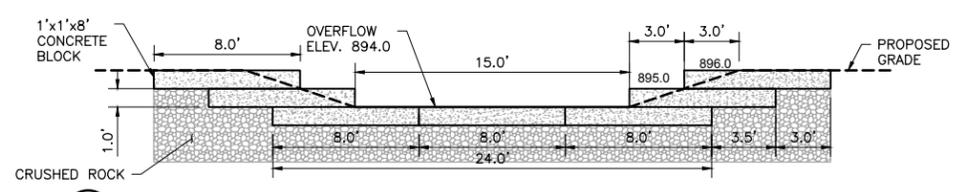
**1** DETAIL: FOREBAY OVERFLOW WEIR - TOP VIEW  
1"=5'-0"  
SCALE IN FEET



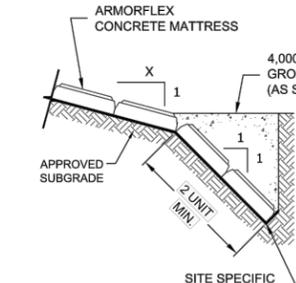
**4** DETAIL: ARMORFLEX CLASS 40 MEDIUM, BLOCK 1.5 DIMENSIONS  
NOT TO SCALE



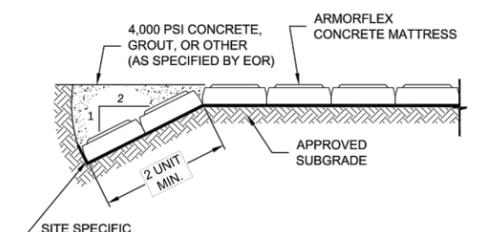
NOTE:  
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS



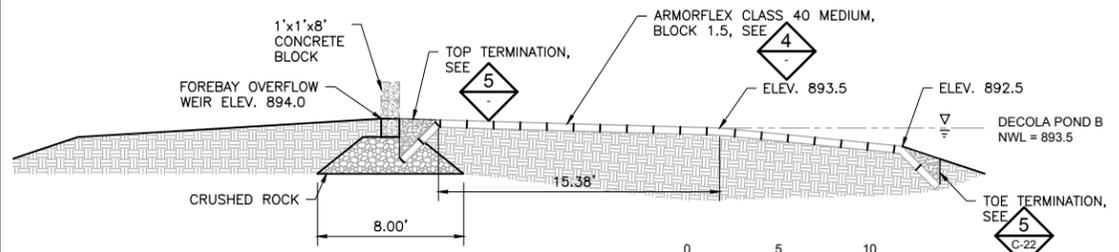
**2** SECTION: FOREBAY OVERFLOW WEIR  
1"=5'-0"  
SCALE IN FEET



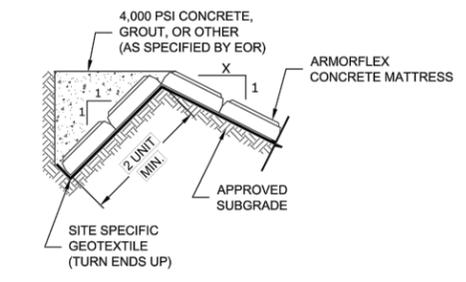
**TOE TERMINATION**  
N.T.S.



**FLANK TERMINATION**  
N.T.S.



**3** SECTION: FOREBAY OVERFLOW WEIR  
1"=5'-0"  
SCALE IN FEET



**TOP TERMINATION**  
N.T.S.

**5** DETAIL: ARMORFLEX CLASS 40 MEDIUM, BLOCK 1.5 TIE-IN SPECIFICATIONS  
NOT TO SCALE

NOTE:  
1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS

90% DESIGN DRAFT

CADD USER: Kalle J. Turpin-Negel FILE: M:\DESIGN\23271677\_00\DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/8/2019 4:23 PM

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.		CLIENT BID CONSTRUCTION	03/22						
PRINTED NAME: KURT A. LEUTHOLD		RELEASED TO/FOR	A	B	C	0	1	2	3
SIGNATURE: _____		DATE RELEASED							
DATE: _____ LICENSE # _____									

**BARR**  
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277

city of golden valley

Scale	AS SHOWN
Date	03/22/2019
Drawn	KJN2
Checked	JAK2
Designed	JAK2
Approved	KAL

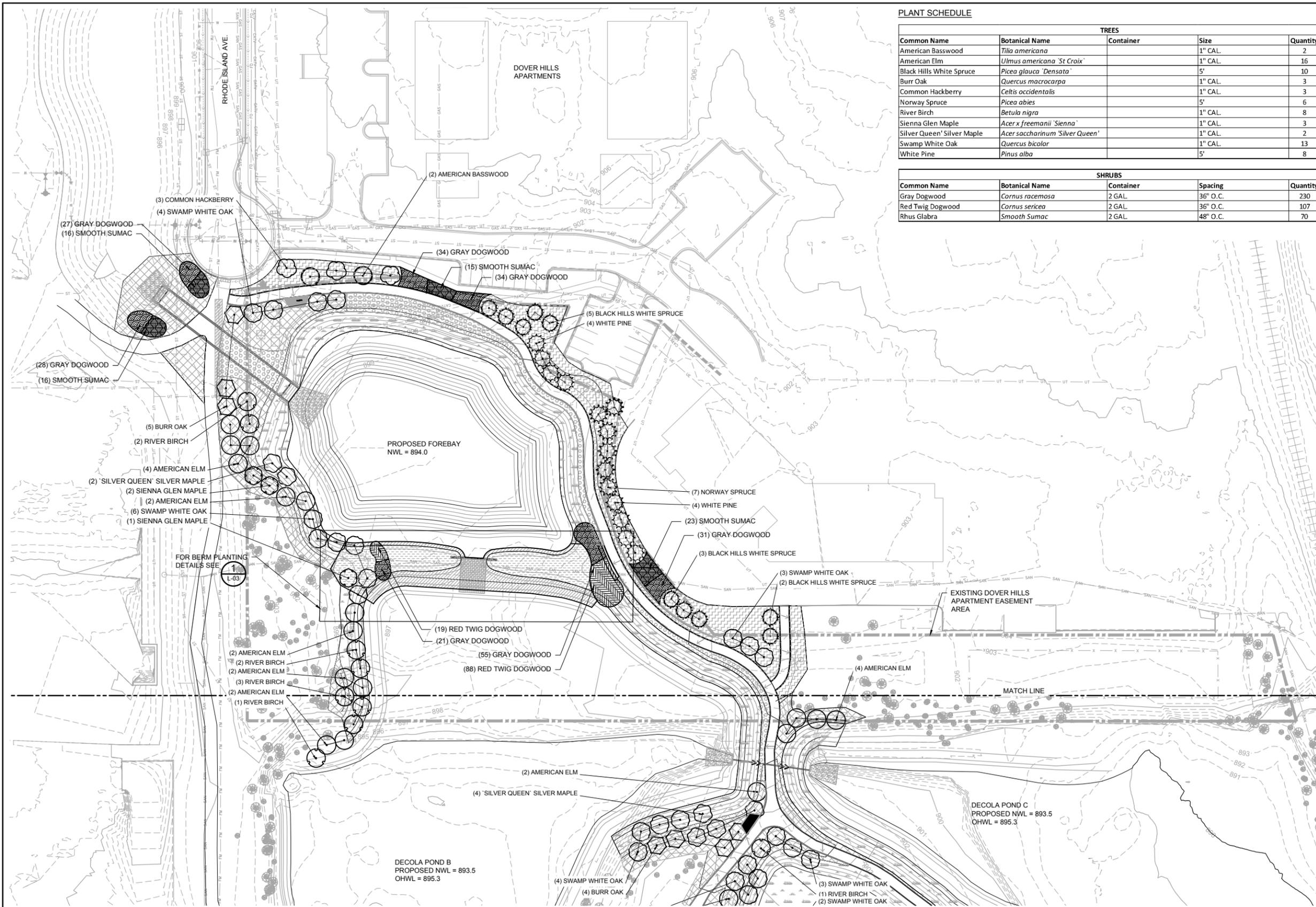
CITY OF GOLDEN VALLEY  
GOLDEN VALLEY, MN

DECOLA PONDS B&C  
IMPROVEMENT PROJECT  
DETAILS  
FOREBAY OVERFLOW

BARR PROJECT No. 23/27-1677.00	
CLIENT PROJECT No. #18-06	
DWG. No. C-22	REV. No. A



CADD USER: Katie J. Turpin-Negel FILE: M:\DESIGN\23271677\_002327167700\_L-01\_RESTORATION\PLAN\_FOREBAY\LIBERTY.DWG PLOT SCALE: 1:2 PLOT DATE: 4/10/2019 1:02 PM



**PLANT SCHEDULE**

TREES				
Common Name	Botanical Name	Container	Size	Quantity
American Basswood	<i>Tilia americana</i>		1" CAL.	2
American Elm	<i>Ulmus americana 'St Craix'</i>		1" CAL.	16
Black Hills White Spruce	<i>Picea glauca 'Densata'</i>		5'	10
Burr Oak	<i>Quercus macrocarpa</i>		1" CAL.	3
Common Hackberry	<i>Celtis occidentalis</i>		1" CAL.	3
Norway Spruce	<i>Picea abies</i>		5'	6
River Birch	<i>Betula nigra</i>		1" CAL.	8
Sienna Glen Maple	<i>Acer x freemanii 'Sienna'</i>		1" CAL.	3
Silver Queen Silver Maple	<i>Acer saccharinum 'Silver Queen'</i>		1" CAL.	2
Swamp White Oak	<i>Quercus bicolor</i>		1" CAL.	13
White Pine	<i>Pinus alba</i>		5'	8

SHRUBS				
Common Name	Botanical Name	Container	Spacing	Quantity
Gray Dogwood	<i>Cornus racemosa</i>	2 GAL.	36" O.C.	230
Red Twig Dogwood	<i>Cornus sericea</i>	2 GAL.	36" O.C.	107
Rhus Glabra	<i>Smooth Sumac</i>	2 GAL.	48" O.C.	70

**SYMBOL AND PATTERN LEGEND**

- EXISTING CONDITIONS**
- 900 EXISTING 5' CONTOUR
  - 898 EXISTING 1' CONTOUR
  - EXISTING NATURALIZED TRAIL EASEMENT EXTENTS
  - FENCE LINE
  - BACK OF CURB LINE
  - FLOW LINE
  - RAILROAD
  - GAS LINE
  - OVERHEAD ELECTRIC
  - UNDERGROUND ELECTRIC
  - UNDERGROUND TELEPHONE
  - UNDERGROUND TV
  - FIBER OPTIC LINE
  - SANITARY SEWER LINE
  - SANITARY FORCE MAIN
  - STORM SEWER LINE
  - WATER
  - POWER POLE
  - LIGHT POLE
  - HYDRANT
  - GATE VALVE
  - SIGN POST
  - DECIDUOUS TREE (SIGNIFICANT)
  - DECIDUOUS TREE
  - CONIFEROUS TREE
  - SANITARY MANHOLE
  - STORM SEWER MANHOLE
  - STORM SEWER CATCH BASIN
  - FIBER OPTIC BOX
  - ELECTRICAL BOX
  - COMMUNICATIONS BOX
- PROPOSED CONDITIONS**
- 900 PROPOSED 5' CONTOUR
  - 899 PROPOSED 1' CONTOUR
  - PROPOSED STORM SEWER
  - PROPOSED STORM MANHOLE
  - PROPOSED CATCH BASIN
  - BITUMINOUS TRAIL CROSS
  - SLOPE DIRECTION
  - PROPOSED COMPOSITE FENCE

**RESTORATION PLAN**

- UPLAND ZONE (899+): PRI SAVANNA GRASS SEED MIX AND EROSION CONTROL BLANKET
- UPLAND ZONE (899+): PRI SAVANNA WILD FLOWER SEED MIX AND EROSION CONTROL BLANKET
- WET MEADOW ZONE (NWL TO 899): PRI SHORLINE GRASS SEED MIX AND EROSION CONTROL BLANKET
- WET MEADOW ZONE (895+): PRI SHORLINE GRASS SEED MIX WITH EROSION CONTROL BLANKET AND UPPER BERM OVERFLOW NATIVE GRASS SEED AND PLUGS (SEE 1 L-03 FOR MORE DETAILS)
- WET MEADOW ZONE (<895): PRI SHORLINE GRASS SEED MIX WITH EROSION CONTROL BLANKET AND LOWER BERM OVERFLOW NATIVE GRASS SEED AND PLUGS (SEE 1 L-03 FOR MORE DETAILS)
- LOW MAINTENANCE TURF MIX (MnDOT 25-131, SEE MnDOT SEEDING MANUAL 2014 EDITION) WITH EROSION CONTROL BLANKET

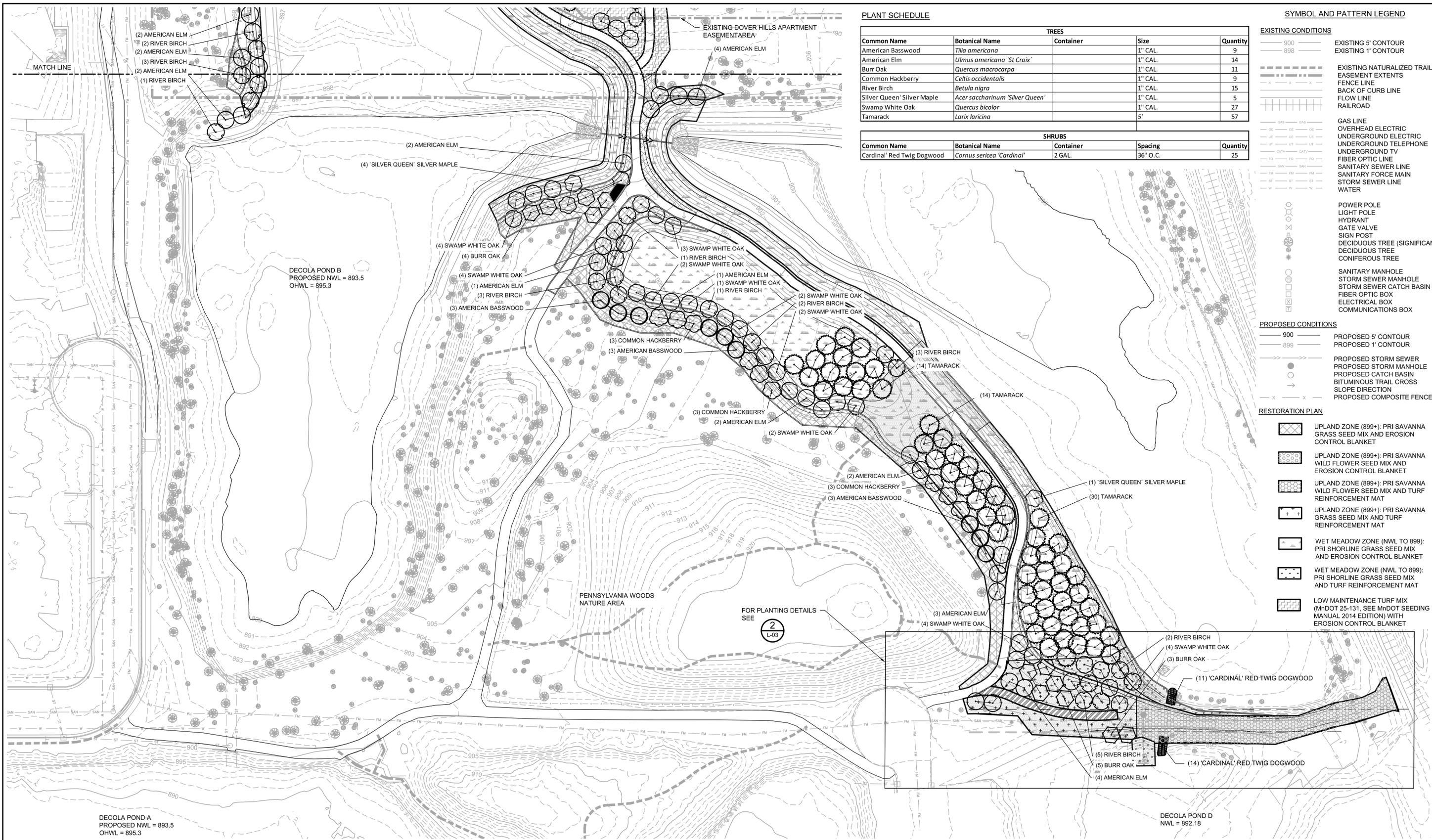
1 PLAN: RESTORATION - DOVER HILLS APARTMENTS' EASEMENT AREA  
1"=40'-0"



90% DESIGN  
DRAFT

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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: FRED ROZUMASKI SIGNATURE: _____ DATE: _____ LICENSE # 26559		CLIENT: 03/22 BID: _____ CONSTRUCTION: _____		 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Scale: AS SHOWN Date: 03/22/2019 Drawn: EEF Checked: JAK2 Designed: FJR Approved: KAL		<b>CITY OF GOLDEN VALLEY</b> GOLDEN VALLEY, MN		<b>DECOLA PONDS B&amp;C</b> <b>IMPROVEMENT PROJECT</b>		BARR PROJECT No. 23/27-1677.00	
		RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____					<b>RESTORATION AND LANDSCAPE PLAN</b> <b>DOVER HILLS APARTMENT EASEMENT AREA</b>		CLIENT PROJECT No. #18-06		DWG. No. L-01	

CADD USER: Erin E. Fierhiv FILE: M:\DESIGN\3271677\00327167700\_L02\_RESTORATION\PLAN\_DECOLAB\_C.DWG PLOT SCALE: 1:1 PLOT DATE: 4/10/2019 12:34 PM



**PLANT SCHEDULE**

TREES				
Common Name	Botanical Name	Container	Size	Quantity
American Basswood	<i>Tilia americana</i>		1" CAL.	9
American Elm	<i>Ulmus americana 'St Croix'</i>		1" CAL.	14
Burr Oak	<i>Quercus macrocarpa</i>		1" CAL.	11
Common Hackberry	<i>Celtis occidentalis</i>		1" CAL.	9
River Birch	<i>Betula nigra</i>		1" CAL.	15
Silver Queen Silver Maple	<i>Acer saccharinum 'Silver Queen'</i>		1" CAL.	5
Swamp White Oak	<i>Quercus bicolor</i>		1" CAL.	27
Tamarack	<i>Larix laricina</i>		5'	57

SHRUBS				
Common Name	Botanical Name	Container	Spacing	Quantity
Cardinal Red Twig Dogwood	<i>Cornus sericea 'Cardinal'</i>	2 GAL.	36" O.C.	25

**SYMBOL AND PATTERN LEGEND**

- EXISTING CONDITIONS**
- 900 EXISTING 5' CONTOUR
  - 898 EXISTING 1' CONTOUR
  - EXISTING NATURALIZED TRAIL
  - EASEMENT EXTENTS
  - FENCE LINE
  - BACK OF CURB LINE
  - FLOW LINE
  - RAILROAD
  - GAS LINE
  - OVERHEAD ELECTRIC
  - UNDERGROUND ELECTRIC
  - UNDERGROUND TELEPHONE
  - UNDERGROUND TV
  - FIBER OPTIC LINE
  - SANITARY SEWER LINE
  - SANITARY FORCE MAIN
  - STORM SEWER LINE
  - WATER
  - POWER POLE
  - LIGHT POLE
  - HYDRANT
  - GATE VALVE
  - SIGN POST
  - DECIDUOUS TREE (SIGNIFICANT)
  - DECIDUOUS TREE
  - CONIFEROUS TREE
  - SANITARY MANHOLE
  - STORM SEWER MANHOLE
  - STORM SEWER CATCH BASIN
  - FIBER OPTIC BOX
  - ELECTRICAL BOX
  - COMMUNICATIONS BOX
- PROPOSED CONDITIONS**
- 900 PROPOSED 5' CONTOUR
  - 899 PROPOSED 1' CONTOUR
  - PROPOSED STORM SEWER
  - PROPOSED STORM MANHOLE
  - PROPOSED CATCH BASIN
  - BITUMINOUS TRAIL CROSS
  - SLOPE DIRECTION
  - PROPOSED COMPOSITE FENCE
- RESTORATION PLAN**
- UPLAND ZONE (899+): PRI SAVANNA GRASS SEED MIX AND EROSION CONTROL BLANKET
  - UPLAND ZONE (899+): PRI SAVANNA WILD FLOWER SEED MIX AND EROSION CONTROL BLANKET
  - UPLAND ZONE (899+): PRI SAVANNA WILD FLOWER SEED MIX AND TURF REINFORCEMENT MAT
  - UPLAND ZONE (899+): PRI SAVANNA GRASS SEED MIX AND TURF REINFORCEMENT MAT
  - WET MEADOW ZONE (NWL TO 899): PRI SHORLINE GRASS SEED MIX AND EROSION CONTROL BLANKET
  - WET MEADOW ZONE (NWL TO 899): PRI SHORLINE GRASS SEED MIX AND TURF REINFORCEMENT MAT
  - LOW MAINTENANCE TURF MIX (MnDOT 25-131. SEE MnDOT SEEDING MANUAL 2014 EDITION) WITH EROSION CONTROL BLANKET

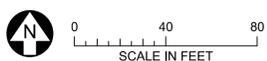
DECOLA POND A  
PROPOSED NWL = 893.5  
OHWL = 895.3

DECOLA POND B  
PROPOSED NWL = 893.5  
OHWL = 895.3

DECOLA POND D  
NWL = 892.18

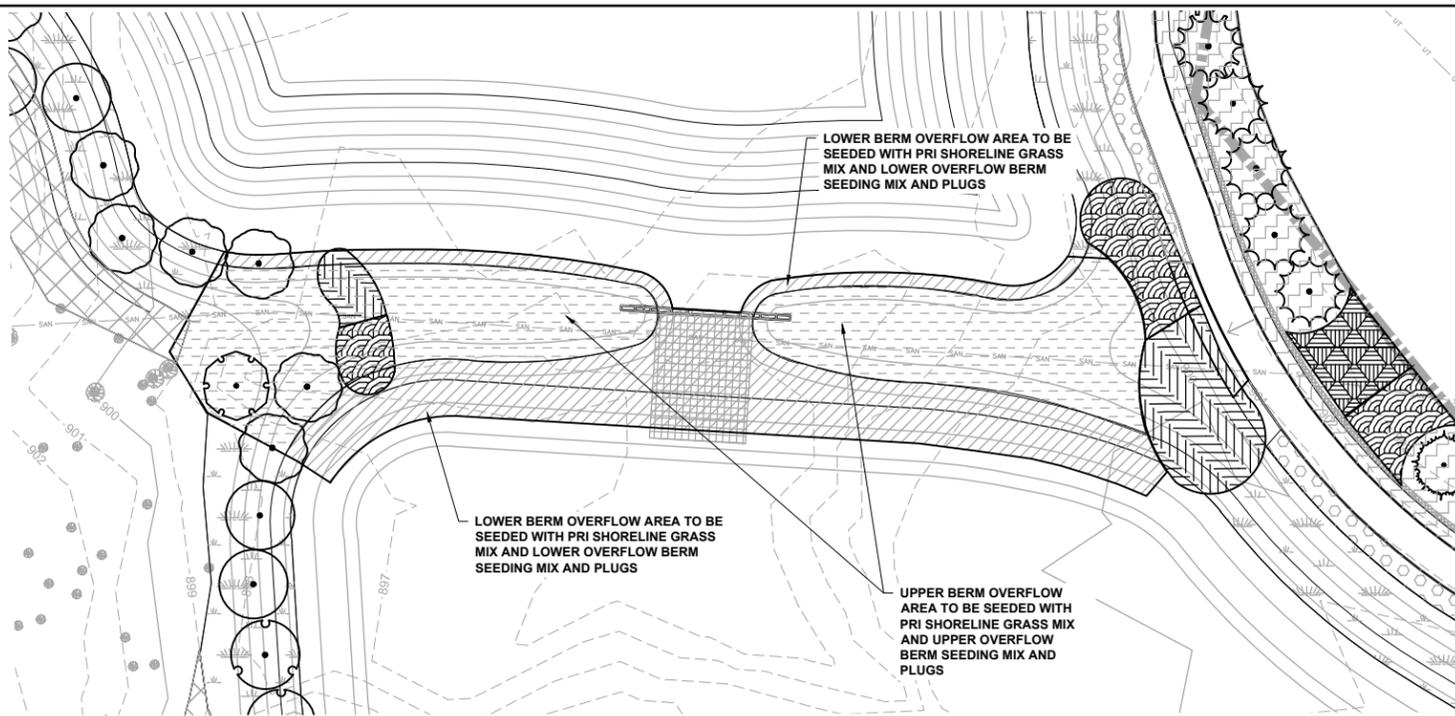
FOR PLANTING DETAILS  
SEE  
2  
L-03

1 PLAN: RESTORATION - DECOLA PONDS B AND C  
1"=40'-0"



90% DESIGN  
DRAFT

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 LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: FRED ROZUMALSKI SIGNATURE: _____ DATE: _____ LICENSE # 26559				CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: A B C 0 1 2 3 DATE RELEASED: _____				 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277		Scale: AS SHOWN Date: 03/22/2019 Drawn: EEF Checked: JAK2 Designed: FJR Approved: KAL		CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN		DECOLA PONDS B&C IMPROVEMENT PROJECT RESTORATION AND LANDSCAPE PLAN DECOLA PONDS B & C		BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. L-02 REV. No. A	
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**PLANT SCHEDULE**

UPPER OVERFLOW BERM PLANTING				
Common Name	Botanical Name	Container	Spacing	Quantity
Indiangrass	<i>Sorghastrum nutans</i>	Plug	2.5' O.C.	362
Prairie Cordgrass	<i>Spartina pectinata</i>	Plug	2.5' O.C.	362

LOWER OVERFLOW BERM PLANTING				
Common Name	Botanical Name	Container	Spacing	Quantity
Canadian Bluejoint Grass	<i>Calamagrostis canadensis</i>	Plug	2.5' O.C.	287
Prairie Cordgrass	<i>Spartina pectinata</i>	Plug	2.5' O.C.	288

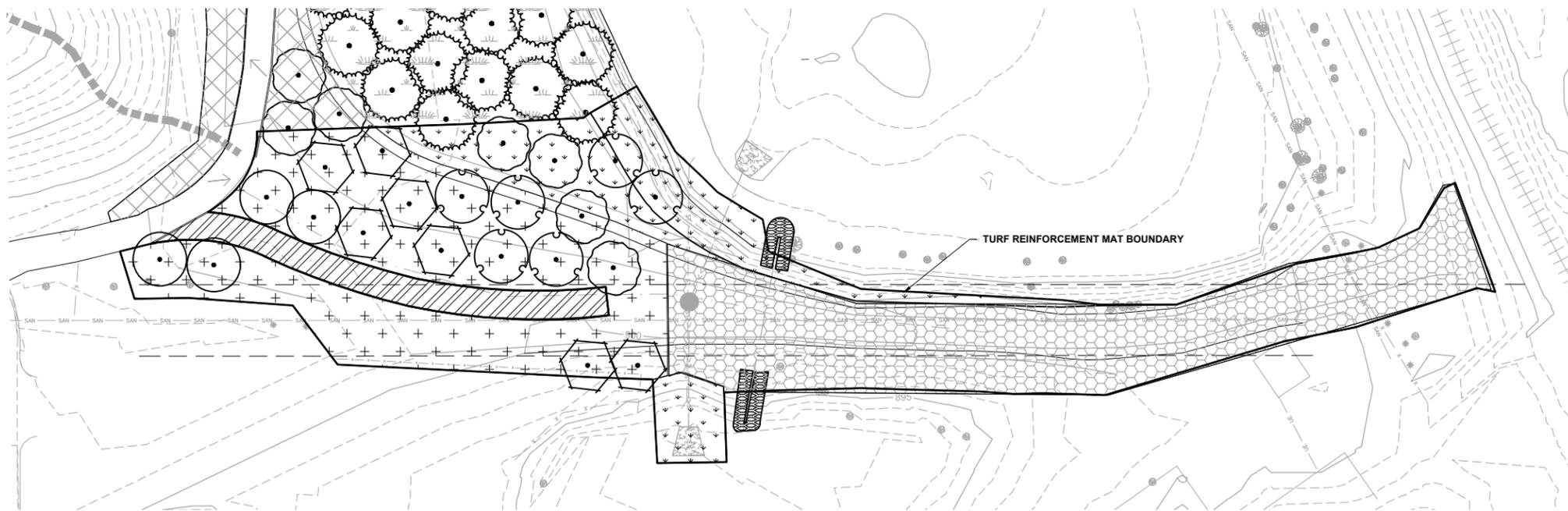
UPPER OVERFLOW BERM SEEDING MIX				
Common Name	Botanical Name	PLS Rate (lbs/ac)	% of Mix (by weight)	PLS Seeds/SQ FT
Canadian Wild Rye	<i>Elymus canadensis</i>			
Indiangrass	<i>Sorghastrum nutans</i>			
Little Bluestem	<i>Schizachyrium scoparium</i>			
Prairie Cordgrass	<i>Spartina pectinata</i>			
Virginia Wild Rye	<i>Elymus virginicus</i>			

LOWER OVERFLOW BERM SEEDING MIX				
Common Name	Botanical Name	PLS Rate (lbs/ac)	% of Mix (by weight)	PLS Seeds/SQ FT
Canadian Bluejoint	<i>Calamagrostis canadensis</i>			
Fowl Manna Grass	<i>Glyceria striata</i>			
Fowl Blue Grass	<i>Poa palus</i>			
Indiangrass	<i>Sorghastrum nutans</i>			
Prairie Cordgrass	<i>Spartina pectinata</i>			

**PATTERN LEGEND**

- UPLAND ZONE (899+): PRI SAVANNA GRASS SEED MIX AND EROSION CONTROL BLANKET
- UPLAND ZONE (899+): PRI SAVANNA WILD FLOWER SEED MIX AND EROSION CONTROL BLANKET
- UPLAND ZONE (899+): PRI SAVANNA GRASS SEED MIX AND TURF REINFORCEMENT MAT
- UPLAND ZONE (899+): PRI SAVANNA WILD FLOWER SEED MIX AND TURF REINFORCEMENT MAT
- WET MEADOW ZONE (NWL TO 899): PRI SHORLINE GRASS SEED MIX AND EROSION CONTROL BLANKET
- WET MEADOW ZONE (NWL TO 899, SEE PLAN): PRI SHORLINE GRASS SEED MIX AND TURF REINFORCEMENT MAT
- WET MEADOW ZONE (895+): PRI SHORLINE GRASS SEED MIX WITH EROSION CONTROL BLANKET AND UPPER BERM OVERFLOW NATIVE GRASS SEED AND PLUGS
- WET MEADOW ZONE (NWL TO 895): PRI SHORLINE GRASS SEED MIX WITH EROSION CONTROL BLANKET AND LOWER BERM OVERFLOW NATIVE GRASS SEED AND PLUGS
- LOW MAINTENANCE TURF MIX (MnDOT 25-131, SEE MnDOT SEEDING MANUAL 2014 EDITION) WITH EROSION CONTROL BLANKET

**1 PLAN: RESTORATION SEEDING - FOREBAY AND DECOLA POND B OVERFLOW BERM AS SHOWN**



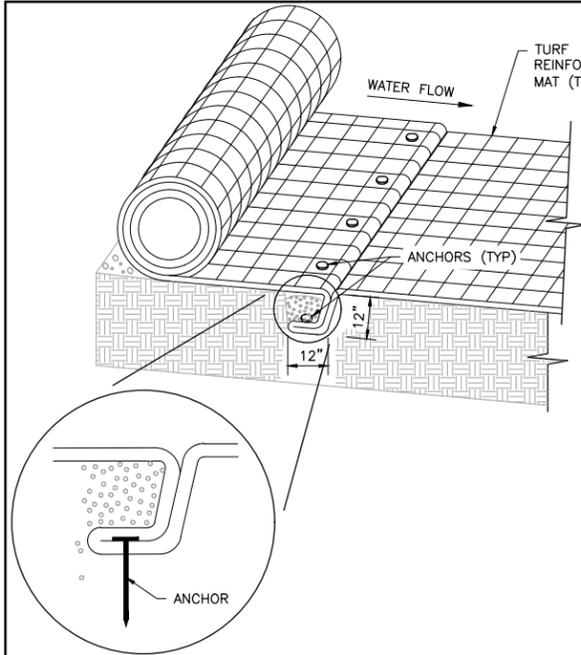
**2 PLAN: RESTORATION SEEDING AND TURF REINFORCEMENT MAT BETWEEN PONDS C AND D AS SHOWN**



90% DESIGN  
DRAFT

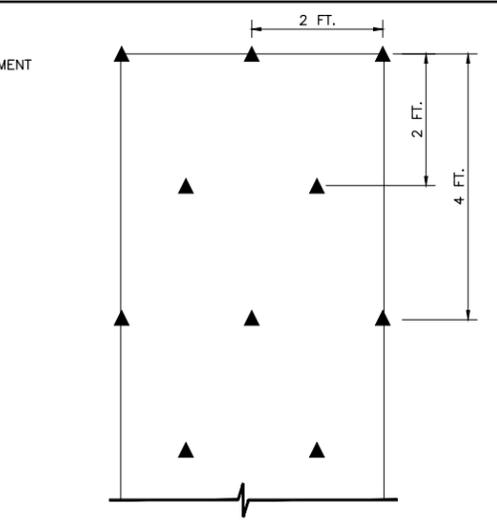
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: FRED ROZUMALSKI SIGNATURE: _____ DATE: _____ LICENSE # 26559				CLIENT: 03/22 BID: _____ CONSTRUCTION: _____		 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	 CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN	Scale: AS SHOWN Date: 03/22/2019 Drawn: EEF Checked: JAK2 Designed: FJR Approved: KAL	DECOLA PONDS B&C IMPROVEMENT PROJECT		BARR PROJECT No. 23/27-1677.00	
				RESTORATION AND LANDSCAPE PLAN DETAILED SEEDING PLANS					CLIENT PROJECT No. #18-06		DWG. No. L-03	REV. No. A

CADD USER: Katie J. Turpin-Nigel FILE: M:\DESIGN\23271677\03\_23\_2019\PLANS\SEEDING\PLANS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/10/2019 1:08 PM



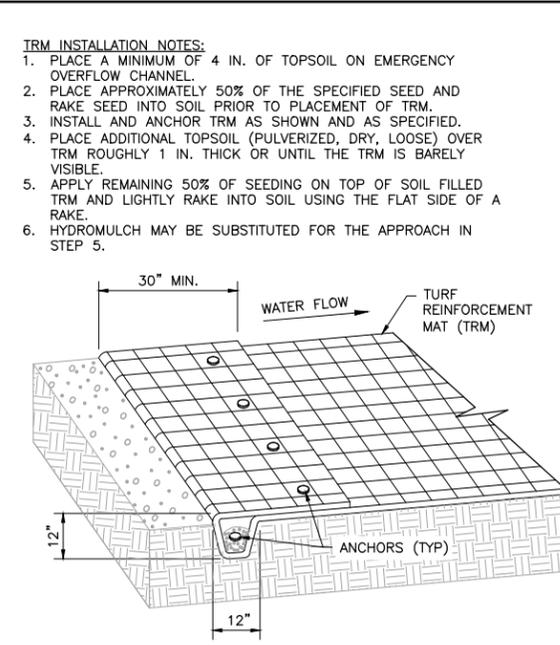
- CHECK SLOT NOTES:**
1. SECURE AT 12 IN. INTERVALS, BACKFILL AND COMPACT SOIL.
  2. CHECK SLOTS TO BE PLACED EVERY 25' ALONG FLOW LINE.

**INTERMITTENT CHECK SLOT**



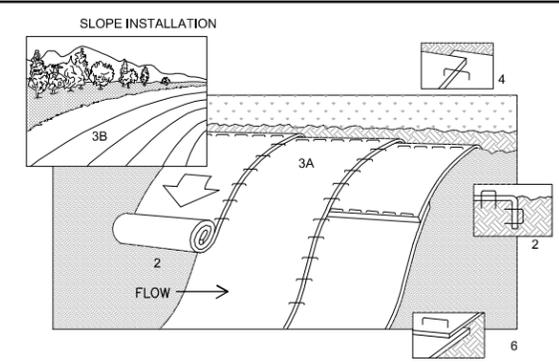
- ANCHOR NOTES:**
1. PLACE ANCHORS ACCORDING TO THE ABOVE PATTERN.
  2. OVERLAP BETWEEN ROLLS IS 6 IN. MINIMUM.
  3. SPLICE BETWEEN ROLLS IS 18 IN. MINIMUM.
  4. ALWAYS INSTALL DOUBLE ROW OF PINS SPACED 12" APART AT ALL ROLL SPLICES.
  5. INSTALL PINS DOWN THE CENTER OF EACH MAT STAGGERING THE OUTSIDE PINS.
  6. ANCHORS SHALL BE AT MINIMUM 12 IN. STEEL NAILS WITH 1-1/2 IN. WASHERS OR 12 IN. U-SHAPED WIRE STAPLES. LONGER ANCHORS MAY BE REQUIRED FOR LOOSE SOILS. ANCHORS MUST PROVIDE SUFFICIENT GROUND PENETRATION TO RESIST PULLOUT.

**TRM ANCHOR PATTERN**



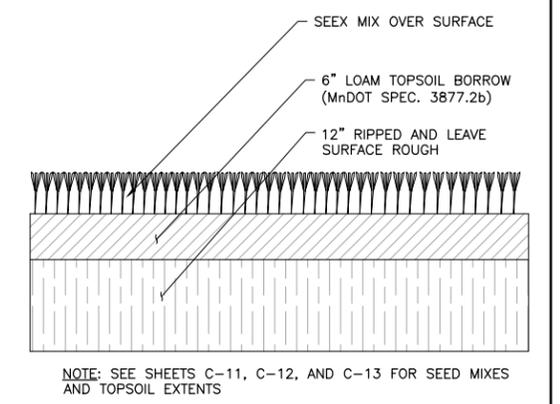
- ANCHOR TRENCH NOTES:**
1. SECURE AT 12 IN. INTERVALS, BACKFILL AND COMPACT SOIL.
  2. FOR SLOPES, CONSTRUCT TOP ANCHOR TRENCH 2 FT. BEYOND CREST OF SLOPE.

**TOP ANCHOR TRENCH**



- NOTES:**
1. REFER TO MANUFACTURER RECOMMENDATIONS FOR STAPLE PATTERNS FOR SLOPE INSTALLATIONS.
  2. PREPARE SOIL BY LOOSENING TOP 1-2 INCHES AND APPLY SEED (AND FERTILIZER WHERE REQUIRED) PRIOR TO INSTALLING BLANKETS. GROUND SHOULD BE SMOOTH AND FREE OF DEBRIS.
  3. BEGIN (A) AT THE TOP OF THE SLOPE AND ROLL THE BLANKETS DOWN OR (B) AT ONE END OF THE SLOPE AND ROLL THE BLANKETS HORIZONTALLY ACROSS THE SLOPE.
  4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 6" OVERLAP, WITH THE UPHILL BLANKET ON TOP.
  5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 6" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART.
  6. BLANKET MATERIALS SHALL BE AS SPECIFIED OR AS APPROVED BY ENGINEER.

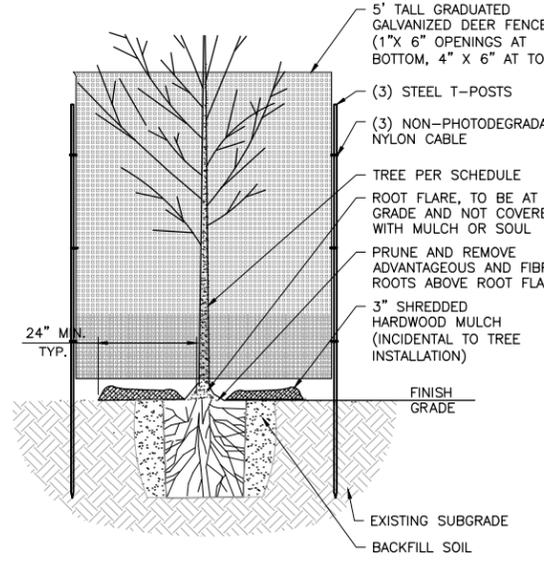
**2 DETAIL: EROSION CONTROL BLANKET INSTALLATION**  
NOT TO SCALE



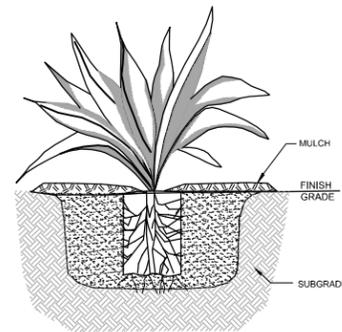
**3 DETAIL: SOIL PREP**  
NOT TO SCALE

**1 DETAIL: TURF REINFORCEMENT MAT**  
NOT TO SCALE

- TREE PLANTING NOTES:**
1. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
  2. ALL DECIDUOUS TREES SHALL BE ENCLOSED BY GALVANIZED DEER FENCING TO PROTECT FROM ANIMAL BROWSING. TREE PROTECTION SHALL BE CONSIDERED INCIDENTAL TO TREE PLANTING.
  3. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF PLANT. DO NOT CUT THE LEADER.
  4. IF ROOT FLARE IS NOT EXPOSED WITHIN THE CONTAINER EXCAVATE SURFACE SOIL TO BASE OF ROOT FLARE.
  5. DIG PLANT HOLES 6" MIN. LARGER THAN ROOT MASS, ALL SIDES.
  6. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
  7. SET TREE ON LIGHTLY FIRMED BACKFILL SOIL SO ROOT FLARE IS EVEN WITH FINISH GRADE.
  8. BACKFILL WITH PLANTING SOIL AND FIRM SOIL AROUND ROOT MASS TO MAINTAIN PLUMB AND ENSURE NO AIR GAPS AROUND ROOT MASS.
  9. CONSTRUCT 3" WATERING BASIN. THOROUGHLY WATER WITHIN 3 HOURS OF INSTALLATION.
  10. PLACE SHREDDED HARDWOOD MULCH (MnDOT SPEC 3882.2 TYPE 6 - WEED SEED FREE SHREDDED HARDWOOD) TO A RADIUS OF 24" AND TO A DEPTH OF 3" AROUND TREE (SOIL PREPARED AS PER PLAN).
  11. NO MULCH TO BE IN CONTACT WITH BASE OF PLANT.
  12. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
  13. CONTRACTOR TO WATER AS NECESSARY THROUGHOUT GUARANTEE PERIOD TO MAINTAIN IN A HEALTHY CONDITION. AT THE END OF THE GUARANTEE PERIOD ALL TREES THAT ARE DEAD OR DETERMINED UNHEALTHY OR UNSIGHTLY SHALL BE REPLACED AT CONTRACTOR'S EXPENSE. SEE HERBACEOUS PLANT ESTABLISHMENT SPECIFICATIONS FOR ADDITIONAL DETAIL.

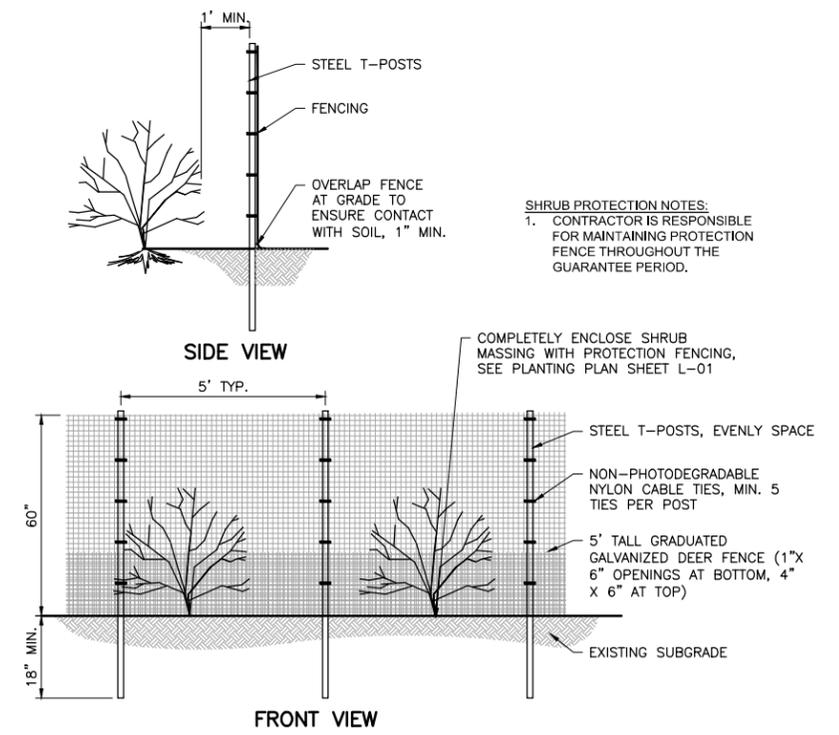


**4 DETAIL: TREE PLANTING**  
NOT TO SCALE



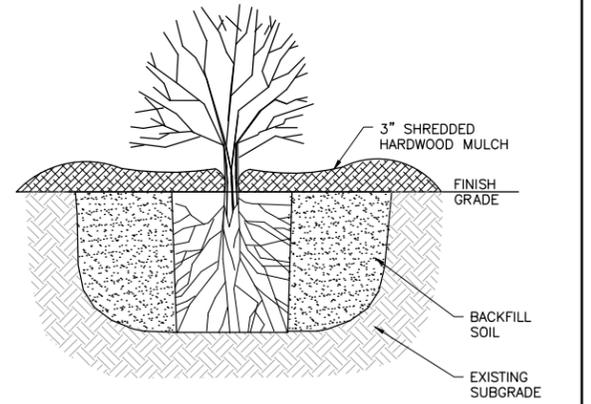
- HERBACEOUS PLUG PLANTING NOTES:**
1. PREPARE SOIL WITH COMPOST AMENDMENT PER PLAN
  2. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
  3. EXCAVATE HOLE 3 TIMES WIDTH OF ROOTBALL.
  4. BREAK BOTTOM OF ROOTBALL TO LOOSEN ROOTS.
  5. PLANT THROUGH MULCH ALIGNING ROOTBALL TOP EVEN WITH SOIL - DO NOT PLANT TOO DEEP OR TOO SHALLOW. FIRM SOIL TO ENSURE GOOD CONTACT WITH ROOTS.
  6. APPLY 3" DEPTH SHREDDED HARDWOOD MULCH TO ENTIRE PLANTING AREA (SOIL PREPARED AS PER SPECIFICATIONS).
  7. NO MULCH TO BE IN CONTACT WITH PLANT.
  8. WATER THOROUGHLY AFTER PLANTING.
  9. HERBACEOUS PLANTS SHALL BE GUARANTEED FOR 60 DAYS FROM TIME OF OWNER ACCEPTANCE. CONTRACTOR TO WATER AS NECESSARY TO MAINTAIN IN A HEALTHY CONDITION. AT THE END OF THIS PERIOD ANY DEAD PLANTS SHALL BE REPLACED AT CONTRACTOR'S EXPENSE.

**5 DETAIL: HERBACEOUS PLUG**  
NOT TO SCALE



- SHRUB PROTECTION NOTES:**
1. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING PROTECTION FENCE THROUGHOUT THE GUARANTEE PERIOD.

**6 DETAIL: SHRUB PROTECTION FENCE**  
NOT TO SCALE



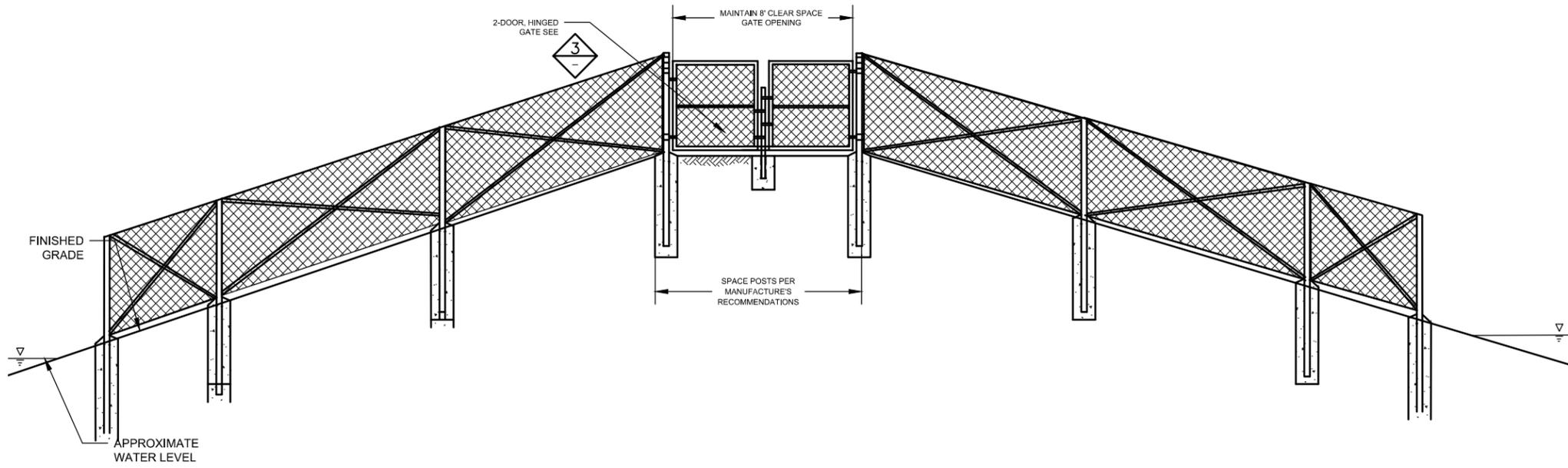
- SHRUB PLANTING NOTES:**
1. PROVIDE AND INSTALL PLANTS PER SCHEDULE.
  2. REMOVE DEAD OR DAMAGED BRANCHES. RETAIN THE NATURAL FORM OF PLANT.
  3. IF ROOT FLARE IS NOT EXPOSED WITHIN THE CONTAINER EXCAVATE SURFACE SOIL TO BASE OF ROOT FLARE.
  4. DIG PLANT HOLES 6" MIN. LARGER THAN ROOT MASS, ALL SIDES.
  5. SET SHRUB ON LIGHTLY FIRMED BACKFILL SOIL SO ROOT FLARE IS EVEN WITH FINISH GRADE.
  6. PLACE SHREDDED HARDWOOD MULCH (MnDOT SPEC 3882.2 TYPE 6 - WEED SEED FREE SHREDDED HARDWOOD) TO A RADIUS OF 24" AND TO A DEPTH OF 3" AROUND PLANT.
  7. NO MULCH TO BE IN CONTACT WITH PLANT.

**7 DETAIL: SHRUB AND VINE PLANTING**  
NOT TO SCALE

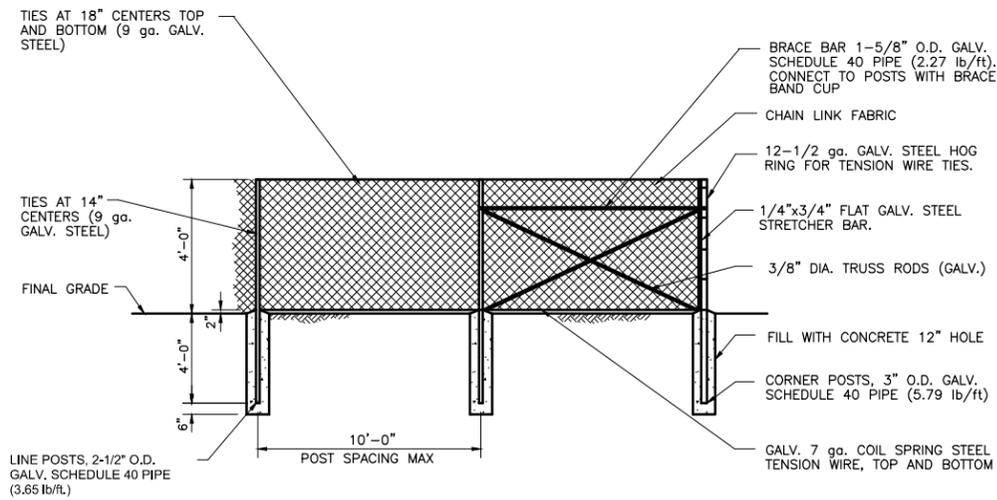
90% DESIGN DRAFT

CADD USER: ERIC E. FANNING FILE: M:\DESIGN\23271677\04\_RESTORE\DETAILS.DWG PLOT SCALE: 1:2 PLOT DATE: 4/5/2019 2:11 PM

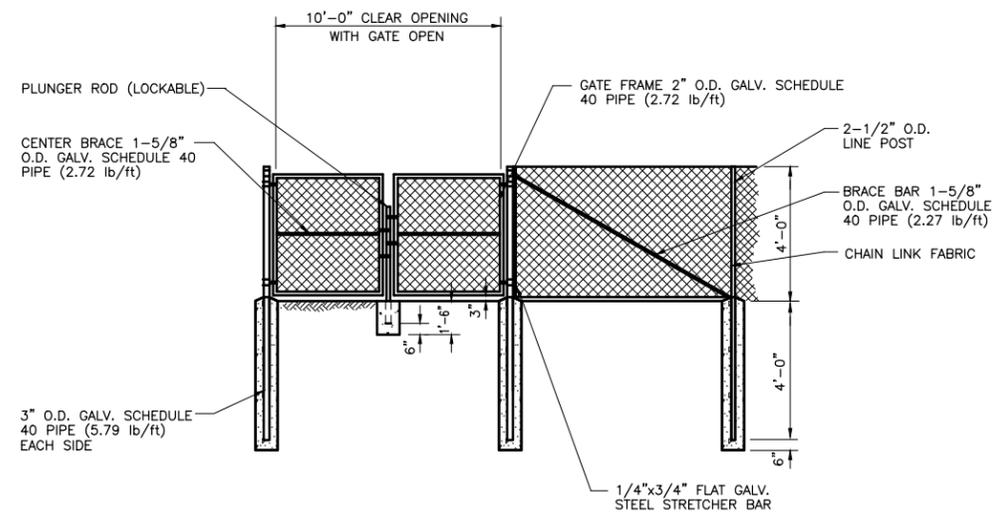
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED LANDSCAPE ARCHITECT UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINTED NAME: FRED ROZUMALSKI SIGNATURE: _____ DATE: 26559 LICENSE # _____		CLIENT: 03/22 BID: _____ CONSTRUCTION: _____ RELEASED TO/FOR: _____ DATE RELEASED: _____	 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Scale: _____ Date: 03/22/2019 Drawn: EEF Checked: JAK2 Designed: JAK2 Approved: KAL	CITY OF GOLDEN VALLEY GOLDEN VALLEY, MN	DECOLA PONDS B&C IMPROVEMENT PROJECT DETAILS RESTORATION	BARR PROJECT No. 23/27-1677.00 CLIENT PROJECT No. #18-06 DWG. No. L-04 REV. No. A
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION		



**1** DETAIL: FENCE OVER DEWATERING BERM  
NOT TO SCALE



**2** DETAIL: CHAIN LINK FENCE DETAIL  
NOT TO SCALE



**3** DETAIL: DOUBLE HINGED GATE  
NOT TO SCALE

90% DESIGN  
DRAFT

CADD USER: ERIC E. FANNIN FILE: M:\DESIGN\23271677\DWG\_PLOT\SCALE\_1:2 PLOT DATE: 4/9/2019 2:11 PM

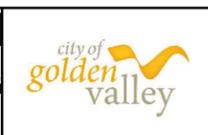
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

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.

PRINTED NAME: KURT A. LEUTHOLD  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE #: \_\_\_\_\_

CLIENT									
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									

**BARR**  
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277



Scale	
Date	03/22/2019
Drawn	EEF
Checked	JAK2
Designed	JAK2
Approved	KAL

CITY OF GOLDEN VALLEY  
GOLDEN VALLEY, MN

DECOLA PONDS B&C  
IMPROVEMENT PROJECT

DETAILS  
FENCING

BARR PROJECT No.	23/27-1677.00
CLIENT PROJECT No.	#18-06
DWG. No.	L-05
REV. No.	A