Wetland Enhancement Request for Quote
Westport WMA – Pope County

Overview: Minnesota Land Trust (MLT) is seeking quotes from qualified contractors for a wetland enhancement project on Westport Wildlife Management Area (WMA)**.** Please review the plans and details below and determine if you would be interested in this project. If so, we ask that you bid on the project, using the itemized bid sheet at the end of the statement of work. It is **HIGHLY RECOMMENDED** that contractor's complete on-site visits before submitting their quotes. Quotes **MUST** be as accurate as possible. Contractors will be held to their bid price limit unless major unforeseen circumstances develop on site. The basis of this project will be enhancing wetlands by filling in drainage ditches, excavating sediment, and building ditch plugs, and dikes. It will also involve installing water control structures.

Location: This project is located in in Sections 2 and 3, Grove Lake Township (T.125N, R.36W) Pope County Minnesota. The property is located about 3.5 miles south of Westport, MN on County Road 33; there are two approaches located on the west side of the road to gain access to the site. See Exhibit B.

Site Visit: If a contractor wants to visit the site before bidding, they may do so at any time. The site has not been staked as of the date of this Request for Quote. It is recommended that contractors contact the Site Manager regarding site visits and for detailed construction planning information.

Project Management: The property is owned and managed by the Minnesota Department of Natural Resources (MN DNR). MLT will be hiring the contractor for this job and the project will be managed on-the-ground by Adam Kleinschmidt with the MN DNR Wetlands Program. Contact Adam Kleinschmidt with any questions about the scope of work and to a schedule site visit.

Contact Information

Adam Kleinschmidt – Site Manager
Minnesota Department of Natural Resources
Wildlife Wetland Specialist
398 Sibley Park Road NE
New London, MN 56273-9664
Phone (Cell): 320-491-5030
Email: adam.kleinschmidt@state.mn.us

Leah Hall–Contract Manager
Minnesota Land Trust
Conservation Program Manager
2356 University Ave W Ste 240
Saint Paul, MN 55114
Phone (Cell): 651-706-2071
Email: LHall@mnland.org

General Bid Information

Bid Due Date: All bids must be submitted to Leah Hall by **6:00 pm CST on April 4, 2023,** via email. **If you decline to bid** on the project please call, email, or otherwise send a courtesy note to inform the project manager of your declination so we know not to expect your bid. Also, let us know if you would like to be removed from similar bid invitations in the future.

Format for Bid: The final bid award will be based on the lump sum amount of all wetland restoration work combined; however, we do request that the cost for each wetland restoration part be listed separately. Please use the summary sheet at the end of this document to track itemized costs. Although estimated fill volumes are listed in cubic yards, some experienced operators prefer to estimate costs based on the time it takes to complete the job and expected equipment hours. **Include all mobilization, materials, or other fees as needed in your single quote amount.**

Bid vs. Final Cost: It is expected that bids will be complete and as accurate as possible. Contractors **will be held to the total dollar amount of their bid** unless unreasonable, unforeseen circumstances arise. The Land Trust will complete a service contract based on the cost of the winning bid. The Land Trust reserves the right to cancel bid items in the event of unforeseen circumstances. Final bills exceeding the bid amount, especially if in excess of the project budget, will be difficult to accommodate and may not be payable. Measurements in the plans are best estimates based on on-site surveys; however, actual volumes and/or measurements may vary slightly because of uneven terrain and the characteristics of natural landscapes. To the extent possible, project engineering has attempted to error on the high side of estimated volumes. Contractors should allow for flexibility in their cost margins if they are concerned regarding underestimated volumes. Bids must include any associated costs such as mobilization; extra costs will not be accepted if added later. Any stoppage, or re-mobilization costs will be considered incidental to bid. The Site Manager must be contacted if unforeseen circumstances arise during construction that will require changes to the original designs. All changes must be approved by the Site and Contract Managers. If costs will change, a modification to the bid may be negotiated at that time.

Bid Selection/Award: Responses will be opened and reviewed in private. MLT reserves the right to reject any or all bids and reserves the right to issue a subsequent Solicitation of Bids or cancel the entire Solicitation of Bids process. MLT reserves the right to contact any Respondent for clarification after responses are opened and/or to further negotiate with any Respondent if such clarification is deemed desirable by MLT. MLT reserves the right to evaluate the responses submitted, to waive any informalities and irregularities therein, to select candidates for interview, or to reject any or all submittals should it be deemed in the MLT's best interest. MLT reserves the right to negotiate with any, all, or none of the Respondents.

Bids will be reviewed by MLT. MLT will consider all information provided in the proposal when making its decision and may consider relevant information from other sources. MLT in its sole discretion will award the contract to the Responder submitting the "best" bid. Cost is an important consideration, but the lowest price bid is not necessarily the "best" bid. Criteria for determining the best bid includes but is not limited to: 1) overall cost and value, 2) equipment, schedule, and workforce, and 3) previous contractor experience.

The winning bidder will be notified of the award by MLT. All other bidders will also be notified at the time of award.

Permits, Licenses & Liabilities: The Site and/or Contract Manager will provide for any specific permissions or permits needed to do the work. The **contractor WILL be responsible** for calling **Gopher State One Call** (1-800-252-1166) to identify any utilities **BEFORE** digging. The contractor is ultimately responsible for any liability resulting from damage by their equipment to any utilities. If the contractor or Gopher One identify any issues that would impact this project, the project manager must be informed immediately to help find a solution. The contractor is also liable for damage to any other property, infrastructure, or personal injury on site due to accident or negligence and must carry the required insurance, as specified in the Request for Quote.

Insurance: The Contractor must maintain, at their sole expense, general or business liability insurance during the term of this contract with a minimum coverage amount of $1,000,000. Insurance shall name the Minnesota Land Trust as additional insured. Proof of insurance must be submitted to the Land Trust prior to commencing work. The Contractor's policy(ies) shall be primary insurance to any other valued and collectible insurance available to the Land Trust with respect to any claim arising out of the Contractor's performance of this Contract.

Prevailing Wage Requirements for State Funded Projects:
This project includes State Prevailing Wage Requirements. Contractors are required to comply with State Prevailing Wage Requirements. Contractor worker pay shall meet or exceed state wage rates listed per classification. http://workplace.doli.state.mn.us/prevwage/highway_data.php?region=04

Funding Source: Funding for this project is provided by Minnesota's Outdoor Heritage Fund as recommended by the Lessard-Sams Outdoor Heritage Council (LSOHC). Specifically, this project is funded through the Sauk River Watershed Habitat and Restoration grant. A contract awarded under this grant will be subject to the requirements of the DNR Reimbursement Manual found at http://dnr.state.mn.us/grants/passthrough, and to the accomplishment plan of the Outdoor Heritage Fund grant found at www.lsohc.mn.gov/FY2020/accomp_plans/5e.pdf. The Contractor understands and agrees to comply with these and all other relevant state and federal laws and regulations in fulfillment of this work.

Project Information

Timeline and Project Completion Dates:
Project work may begin on or after **May 29th, 2023**, and when the site is dry enough to support project activities. **The project must be completed no later than October 31st, 2023.**

Once work is initiated, that work should be completed as quickly as possible to limit the duration of site disturbance and to reduce the chance that weather events might cause undesired project delays or damage at vulnerable stages. **Any stoppage, or remobilization costs will be considered incidental to the contract.**

All work must be completed by the deadlines described in the Scope of Work. If the project is not completed prior to the deadline due to contractor delays, the project may be re-bid or awarded to an alternate contractor on the original bid.

The Contractor must maintain contact with the Site Manager relative to a planned start date and **give at least a one-week notice before starting work**.

Contractor Responsibilities:

- Work must be conducted in a manner that will minimize rutting, disturbance, or compaction of soil or sod and the spread of noxious and invasive species.
    - Care must be taken to minimize the amount of rutting/gouging of the ground while working. Contractor will be responsible for repair of site if Site Manager determine disturbance is substantial enough to require repair. Areas in need of repair need to be smoothed out before project completion.
    - Equipment must arrive at the site clean and free of mud, vegetation, sticks, etc. All equipment must be free of noxious weed seeds. The Site Manager may inspect equipment before it can work on this project.
- Contractor is responsible for furnishing all equipment, labor, supplies, transportation, fuel, and all else necessary for job completion as described within this Scope of Work.
- Equipment left on site must be secured and is the sole responsibility of the Contractor.
- The Contractor should keep a neat and orderly job site and must clean up and remove all trash from the site at the end of the job.

Equipment: Ultimately, it is the job of the contractor to decide what equipment to use in a given situation and to obtain a desired outcome. The contractor may sub-contract any part of the project work if the contractor does not have the necessary equipment; however, the Contractor shall be responsible for all work performance and no cost add-ons will be allowed.

Elevations and Survey Benchmarks: Elevations for this project will be based on mean sea level survey shots taken with a survey grade GPS. The Site Manager or his representative will place a reference pin on site and label it prior to construction. Work areas will be staked and flagged. The Site Manager will be available for a pre-construction meeting to explain staking. The contractor should provide their own laser level or other survey tools as needed, as the Site Manager will not be on-site 100% of the time.

General Specifications

Borrow Areas: Borrow pit locations will be decided between the Site Manager and the contractor, but generally will be on the side of wetland #04 to expand the wetland area as borrow is removed. Before fill is removed from the borrow site, all topsoil must be removed and stockpiled. Borrow fill should be taken from the clay layer, unless otherwise noted in the construction notes in Exhibit A. It is preferred to make borrow pits larger in size rather than deeper, a general rule of thumb is to not take out more than 2 feet of fill in any one area, unless otherwise approved by the Site Manager. All borrow areas will be covered back up with topsoil and feathered out to match the surrounding topography. The borrow areas should be smooth and free of clumps, ruts, or mounds of soil so as to be seedbed ready for planting.

Wetland Dikes / Ditch Plugs: Refer to the individual wetland specifications and design sheets for specific dimensions and elevations in Exhibit A.

Each dike will require a core trench as seepage is anticipated. The core trench depth is specified in the individual wetland specifications. Width of the core trench is flexible with a minimum of 3 feet (see individual wetland design sheets) but the contractor must re-compact the trench as it is re-filled and, thus, will need to allow for the width of the compacting tool to run in the trench (6 feet for a smaller sheepsfoot, 10 feet for a loaded scraper, etc.). If a seepage zone is found, the contractor will dig it out down to a firm base or up to 5 feet deep. If the material excavated from the core is of sufficient quality, it can be integrated into the downstream toe of the ditch plug or dike and be included in overall compacted fill volume needed.

Material used to build the ditch plugs and dikes is to be clay fill from the borrow pit(s).

Build the ditch plugs and dikes up and compact in 6-inch lifts if using a dozer or compact in 9-inch lifts if using a wheeled scraper. **High compaction is needed between each lift.** Compact by driving back and forth covering the whole dike area twice for each lift. Refer to individual design specifications for maximum height of fill measurements in Exhibit A.

When grading and compaction are finished, the dike will be covered with 3 to 4 inches of black dirt to support the growth of vegetation. **Black dirt is over and above the specified dike elevation.** It may be easiest to reuse the same material stripped off from the core trench or sediment scrapes. Black dirt from within the wetland basins or edges of those basins if wet, or from sediment removals can be used for the black dirt if it is good quality topsoil that can be leveled and smoothed out.

Spillways: A spillway will be constructed around some of the ends of the dikes or ditch plugs as indicated on the individual wetland design specification sheets in Exhibit A. It should be cut into the ground level so that water flows over the spillway evenly and have 5:1 side slopes. The "control section" or highest/spill point of the spillway should be as smooth and uniform as possible and at least 25 feet long. Spillways should be cut so they direct water downstream, away from the back of the ditch plug. The upstream side of the spillway should start 20 feet upstream of the upstream toe of the dike, while the downstream, portion of the spillway should direct water 40 feet downstream of the downstream toe of the dike. Cut material can be integrated into the downstream toe of the dike or used for black dirt on the dike if it is black dirt itself.

Water Control Structures: Some wetlands will have water control structures (WCS) placed on them,

see Exhibit A for specific wetlands with WCS and their designs. There are three different WCS that will be used on this project, they include Agri-Drains, slide gates, and banjo ball valves. There will be no substitutes allowed in the selection of what brands to use for the WCS. Installation instructions can be found in Exhibit A. The WCS will be installed with tile lines or PVC pipes. All tile lines will be dual-walled and will use perforated and non-perforated sections. The intakes for all the WCS will be underground in a sense. All tile lines will be placed in the bottom of the existing drainage ditches, and those ditches will then be filled in. On the intake side of the WCS, again the perforated tile lines will be placed in the existing drainage ditches. Erosion control fabric (minimum 6 oz. weight) will be placed under all sections of perforated tile and PVC lines. Then the tile is placed. All tile seems must be wrapped with 4-inch tile tape. Once the perforated tile is placed these sections will be backfilled with 2-inch round rock.

Old Dike Removals: There are three wetlands that will have their old dikes removed, the spoil from these old dikes will be used to fill in the drainage ditches that lead out of their respective wetlands. On two of these wetlands new dikes will be built on the footprint of the old dikes.

Drainage Ditch Filling: There are four surface drainage ditches that will be filled in on the WMA. These ditches will be filled in with the spoil that exists along them, from old dikes that are removed, and from sediment removals done in nearby wetlands. Once the ditches are filled in, any extra spoil left should be mounded over the top of them. They should then be leveled and smoothed off to match the surrounding topography and be seed bed ready.

Sediment Removal: Scrape out the specified depth of soil as indicated below within the wetland basin boundaries marked by flags. Follow the contour of the basin not necessarily a flat cut bottom. If the sediment layer can be identified by the operator it may not be of equal depth in all parts of the basin so follow the sediment layer up or down if possible as long as it stays within the averages of the bid volume. Generally, sediment is identified as different than the native soil by a change of color or texture. In most cases the sediment is lighter color and courser texture than the natural soil it is covering in wetlands. Operators may notice a harder push in the equipment as they reach the native layer. If operators get past the "black dirt" and into a lighter grey or yellow subsoil layer, back off into the black again as you would be too deep. Cover any exposed subsoil with black dirt. Spoil from the sediment removals will either be used to fill in the nearby drainage ditches. Feather the edges to a 5:1 slope to avoid leaving a straight cut and to match the surrounding topography.

- *Wetland ID# 38:* Remove 0.5 feet of sediment
- *Wetland ID# 39:* Remove 1.0 foot of sediment
- *Wetland ID# 42:* Remove 0.5 feet of sediment
- *Wetland ID# 45:* Remove 0.5 feet of sediment
- *Wetland ID# N1:* Remove 0.5 feet of sediment
- *Wetland ID# N2:* Remove 0.5 foot of sediment

Culvert Replacement on Road Approaches: The culverts under the two road approaches will be replaced at the same elevations as the current ones. They will be replaced with galvanized corrugated metal pipe, 15-inch diameter and 90 feet long. Aprons will need to be placed on both ends, aprons must have 6:1 slopes on them. Bands for the culvert must be 2-foot minimum per the Counties specifications. The side slopes of the approached will need to be sloped to 6:1 to meet the Counties new requirements. Use fill from the borrow pits on site for this additional fill. Be sure to cover the side

slopes with 3-4 inches of black dirt.

Mowing: Post planting maintenance will consist of mowing to a height of about 6 inches every time the weeds get taller than 15 inches during the first growing season, (potentially 2 times).

- **The mowing extent will be based on weed pressure.**
- The number of times the site is actually mowed will be based on the weed pressure.
- When the native species start growing, the mowing height will be changed to just above the majority of the native plants.
- Site will be monitored by MN DNR, once it is determined mowing will be needed Adam Kleinschmidt will contact the contractor to set up a date to mow.
- Contractor will only be paid for **actual acreage and number of times** the site was mowed.

ALL DISTURBED AREAS SHOULD BE GRADED SMOOTH AFTER CONSTRUCTION WITH NO DIRT CLUMPS, RUTS, HOLES, OR PILES REMAINING.

Materials Needed for Water Control Structures & Drainage Systems (Additional materials may be needed)

- Agri-Drain Inline Water Control Structure (PVC connections)
  - x1: Pipe size – 8-inch, height – 6 feet
  - x2: Pipe size – 6-inch, height – 6 feet
- Agri-Drain valterra valve gate
  - x1: 6-inch gate
  - x1: 4-inch gate
- Corrugated metal pipe (reinforced concrete pipe is acceptable as well, just make sure the locking lids made by Haala are made for RCP's, should you go that route)
  - x2: Pipe size 42-inch, height 7 feet
  - x1: Pipe size 30-inch, height 6.5 feet
  - x1: Pipe size 30-inch, height 4 feet
- Haala Industries lockable CMP cap
  - x3: cap to fit 42-inch CMP or RCP
  - x2: cap to fit 30-inch CMP or RCP
- Dual-walled tile lines
  - 332 feet of 8-inch non-perforated tile
  - 100 feet of 8-inch perforated tile
  - 595 feet of 6-inch non-perforated tile
  - 150 feet of 6-inch perforated tile
  - 255 feet of 4-inch non-perforated tile
  - 50 feet of 4-inch perforated tile
- Dual-walled tile tee
  - x1: 8" to 8" size
- Rodent guards for tile lines
  - x1: 8-inch
  - x1: 6-inch
  - x1: 4-inch
- Tile caps for tile lines
  - x1: 8-inch
  - x2: 6-inch
  - x1: 4-inch
- Agri-Drain Anti-seepage Plate
  - x8: 36"x36" size
  - x5: 24"x24" size
- Banjo ball valve
  - x3: 3-inch size
- PVC pipe
  - 105 feet of 3-inch non-perforated pipe
  - 15 feet of 3-inch perforated pipe
- PVC caps
  - x3: 3-inch size
- Tile tape
- Precast concrete slabs
  - x3: 5'x5'x6"
  - x2: 4'x4'x6"
- Quikrete ®
- Mastic tar
- Bentonite
- Galvanized Corrugated Metal Pipe Culverts
  - x2 15-inch diameter by 90-foot long
  - x4 aprons sloped 6:1
  - *Pipe bands must be 2-foot minimum*
- Erosion control fabric (minimum 6 oz. weight)

Itemized Bid Sheet

Bids must be received by 6:00 pm on April 4, 2023

Submit bids to:

Leah Hall
Minnesota Land Trust
LHALL@mnland.org

Project Name: Westport WMA Wetland Enhancement Project 2023

Contractor Name:	Business Phone No:	Cell No:
Address:	**City/State/Zip Code:**	**Contractor Signature:**

Item	Quantity	Unit Price	Total Price
Wetland ID# 04			
Strip core trench - 2.5-foot depth	125 CY		
Compacted fill needed - clay from borrow pit	680 CY		
Emergency spillway excavation	1	Lump Sum	
Culvert removal	1	Lump Sum	
8" dual-walled non-perforated tile - purchase and installation of all components needed	332 FT		
8" dual-walled perforated tile - purchase and installation of all components needed	100 FT		
Agri-Drain 6' height and 8" pipe size - purchase and installation of all components needed	1	Lump Sum	
CMP 42"x7' - purchase and installation	1	Lump Sum	
Washed sand - for inside of CMP	2 CY		
Haala Industries lockable cap for 42" CMP - purchase and installation	1	Lump Sum	
Erosion control fabric (minimum 6 oz. weight)	700 SQ FT		
2-inch round rock - fill material for perforated tile section	50 CY		

Anti-seepage collars	2		
Wetland ID# 06			
Strip core trench - 2.0-foot depth	25 CY		
Compacted fill needed - clay from borrow pit	150 CY		
Emergency spillway excavation	2		
Wetland ID# 07 West Dike			
Strip core trench - 2.0-foot depth	62 CY		
Compacted fill needed - clay from borrow pit	365 CY		
Emergency spillway excavation	1	Lump Sum	
Old dike removal	1	Lump Sum	
Wetland ID# 07 East Dike			
Strip core trench - 2.0-foot depth	100 CY		
Compacted fill needed - clay from borrow pit	600 CY		
Emergency spillway excavation	1	Lump Sum	
6" dual-walled non-perforated tile - purchase and installation of all components needed	451 FT		
6" dual-walled perforated tile - purchase and installation of all components needed	50 FT		
Agri-Drain 6' height and 6" pipe size - purchase and installation of all components needed	1	Lump Sum	
CMP 42"x7' - purchase and installation	1	Lump Sum	
Washed sand - for inside of CMP	2 CY		
Haala Industries lockable cap for 42" CMP - purchase and installation	1	Lump Sum	
Erosion control fabric (minimum 6 oz. weight)	350 SQ FT		
2-inch round rock - fill material for perforated tile section	25 CY		
Anti-seepage collars	2		
Wetland ID# 19			
Strip core trench - 0.5-foot depth	5 CY		
Compacted fill needed - clay from borrow pit	30 CY		
Wetland ID# 38			

Strip core trench - 2.0-foot depth	65 CY		
Compacted fill needed - clay from borrow pit	485 CY		
4" dual-walled non-perforated tile - purchase and installation of all components needed	255 FT		
4" dual-walled perforated tile - purchase and installation of all components needed	50 FT		
Agri-Drain Valterra valve gate 4" pipe size - purchase and installation of all components needed	1	Lump Sum	
CMP 30"x6.5' - purchase and installation	1	Lump Sum	
Washed sand - for inside of CMP	1 CY		
Haala Industries lockable cap for 30" CMP - purchase and installation	1	Lump Sum	
Erosion control fabric (minimum 6 oz. weight)	350 SQ FT		
2-inch round rock - fill material for perforated tile section	25 CY		
Anti-seepage collars	2		
Old dike removal	1	Lump Sum	
Wetland ID# 39			
Strip core trench - 2.0-foot depth	20 CY		
Compacted fill needed - clay from borrow pit	85 CY		
Sediment removal - 1.0-foot depth	275 CY		
Wetland ID# 42			
Strip core trench - 2.0-foot depth	18 CY		
Compacted fill needed - clay from borrow pit	75 CY		
Emergency spillway excavation	1	Lump Sum	
6" dual-walled non-perforated tile - purchase and installation of all components needed	52 FT		
6" dual-walled perforated tile - purchase and installation of all components needed	50 FT		
Agri-Drain Valterra valve gate 6" pipe size - purchase and installation of all components needed	1	Lump Sum	
CMP 30"x4' - purchase and installation	1	Lump Sum	
Washed sand - for inside of CMP	1 CY		

Haala Industries lockable cap for 30" CMP - purchase and installation	1	Lump Sum	
Erosion control fabric (minimum 6 oz. weight)	200 SQ FT		
2-inch round rock - fill material for perforated tile section	8 CY		
Anti-seepage collars	2		
Sediment removal - 0.5-foot depth	1,000 CY		
Wetland ID# 43 West			
Strip core trench - 2.0-foot depth	25 CY		
Compacted fill needed - clay from borrow pit	35 CY		
Wetland ID# 43 East			
Strip core trench - 2.0-foot depth	150 CY		
Compacted fill needed - clay from borrow pit	910 CY		
6" dual-walled non-perforated tile - purchase and installation of all components needed	92 FT		
6" dual-walled perforated tile - purchase and installation of all components needed	50 FT		
Agri-Drain 6' height and 6" pipe size - purchase and installation of all components needed	1	Lump Sum	
CMP 42"x7' - purchase and installation	1	Lump Sum	
Washed sand - for inside of CMP	2 CY		
Haala Industries lockable cap for 42" CMP - purchase and installation	1	Lump Sum	
Erosion control fabric (minimum 6 oz. weight)	350 SQ FT		
2-inch round rock - fill material for perforated tile section	25 CY		
Anti-seepage collars	2		
Old dike removal	1	Lump Sum	
Wetland ID# 45 North			
Strip core trench - 2.0-foot depth	25 CY		
Compacted fill needed - clay from borrow pit	40 CY		
Sediment removal - 0.5-foot depth	475 CY		
Wetland ID# 45 East			

Strip core trench - 2.0-foot depth	40 CY		
Compacted fill needed - clay from borrow pit	70 CY		
Wetland ID# 49			
Strip core trench - 2.0-foot depth	50 CY		
Compacted fill needed - clay from borrow pit	175 CY		
3" PVC non-perforated pipe - purchase and installation of all components needed	35 FT		
3" PVC perforated pipe - purchase and installation of all components needed	5 FT		
Banjo ball valve - 3" pipe size	1	Lump Sum	
Erosion control fabric (minimum 6 oz. weight)	25 SQ FT		
2-inch round rock - fill material for perforated tile section	2 CY		
Anti-seepage collars	1		
Culvert removal	1	Lump Sum	
Wetland ID# 50			
Strip core trench - 2.0-foot depth	15 CY		
Compacted fill needed - clay from borrow pit	55 CY		
3" PVC non-perforated pipe - purchase and installation of all components needed	35 FT		
3" PVC perforated pipe - purchase and installation of all components needed	5 FT		
Banjo ball valve - 3" pipe size	1	Lump Sum	
Erosion control fabric (minimum 6 oz. weight)	25 SQ FT		
2-inch round rock - fill material for perforated tile section	2 CY		
Anti-seepage collars	2		
Culvert removal	1	Lump Sum	
Wetland ID# N1			
Strip core trench - 2.0-foot depth	25 CY		
Compacted fill needed - clay from borrow pit	40 CY		
Sediment removal - 0.5-foot depth	120 CY		
Wetland ID# N2			

Strip core trench - 2.0-foot depth	15 CY		
Compacted fill needed - clay from borrow pit	45 CY		
Sediment removal - 0.5-foot depth	100 CY		
Wetland ID# N5			
Culvert removal	1	Lump Sum	
Wetland ID# N6			
Strip core trench - 2.0-foot depth	20 CY		
Compacted fill needed - clay from borrow pit	145 CY		
3" PVC non-perforated pipe - purchase and installation of all components needed	35 FT		
3" PVC perforated pipe - purchase and installation of all components needed	5 FT		
Banjo ball valve - 3" pipe size	1		
Erosion control fabric (minimum 6 oz. weight)	25 SQ FT		
2-inch round rock - fill material for perforated tile section	2 CY		
Anti-seepage collars	2		
Culvert removal	1	Lump Sum	
Wetland ID# N8			
Strip core trench - 2.0-foot depth	25 CY		
Compacted fill needed - clay from borrow pit	35 CY		
Drainage Ditch Filling			
Ditch A - takes 370 CY to fill	370 CY		
Ditch B - takes 925 CY to fill, use fill from wetlands #42 & #N1 sediment scrapes (don't count twice)	925 CY	N/A	N/A
Ditch C - takes 1,050 CY to fill, use fill from wetlands #38 & #39 sediment scrapes (don't count twice)	1,050 CY	N/A	N/A
Ditch D - takes 420 CY to fill, use fill from wetlands #45 & #N2 sediment scrapes (don't count twice)	420 CY	N/A	N/A
Seeding			
Seeding of native grasses and forbs **(seed provided by DNR)** (Will be paid based on actual acres planted)	10 ac.		
Mowing - up to two mowing's on the seeded areas as needed, Site Manager will make the call on the	10 ac.		

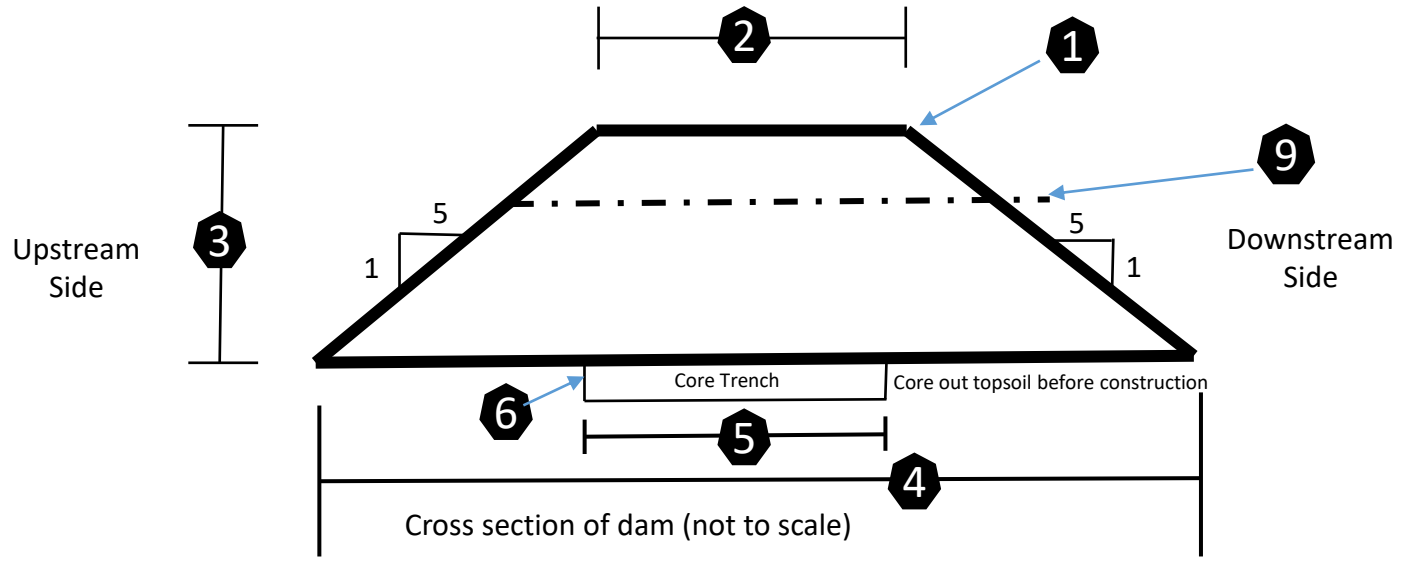
mowing's			
Mobilization for <u>mowing only</u> (all other mobilizations should be included in the mob section below)	1 Unit	Lump Sum	
Culvert Replacements on Road Approaches			
15-inch diameter x 90 foot long CMP with 6:1 aprons on both ends culvert replacements under both approaches (include disposal of old ones) Building side slopes out to 6:1 slopes on approaches will be considered incidental costs, fill can be taken from borrow pits. Pipe bands need to be 2 foot minimum.	2 Units		
Class 5 gravel for approaches after culvert replacement	30 CY		
Additional Fees			
Mobilization			
Total Bid Price			

Exhibit A

Westport WMA

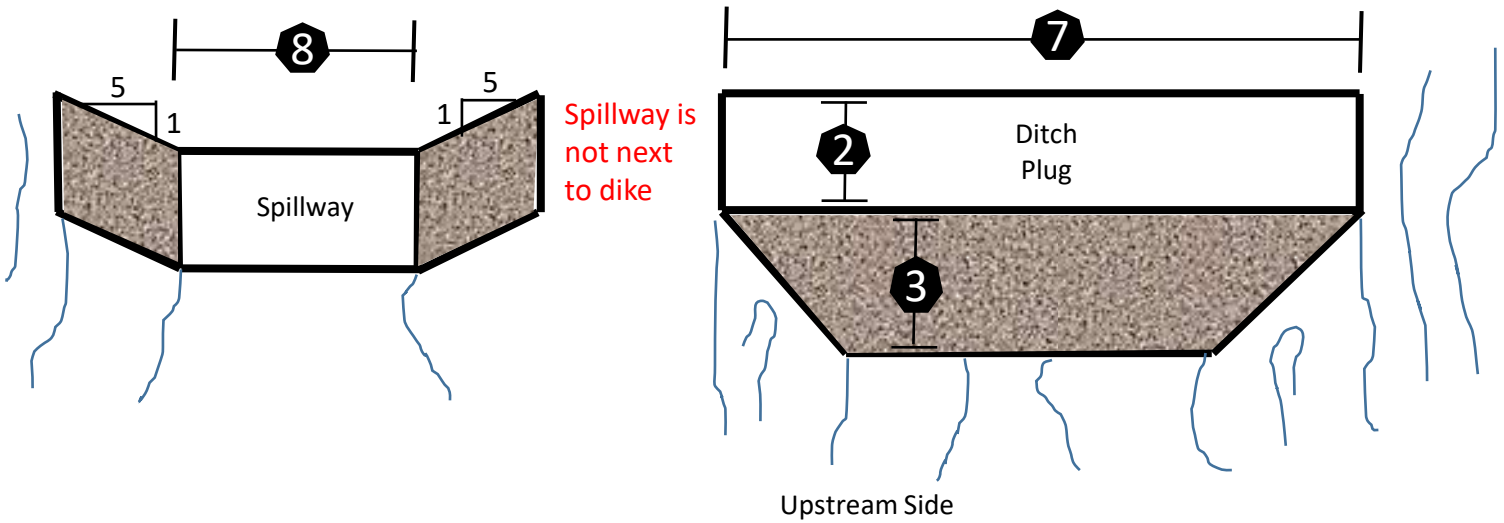
Individual Wetland Design Sheets

Wetland ID# 04



Construction Notes:

- Scrape off topsoil to a depth of 2.5 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Spillways must be constructed perfectly flat for a width of 10 feet and a length of 25 feet. Upstream side should be directed 20 feet from the toe of dike and downstream side should be directed at least 40 feet from the toe of the dike.
- Compacted fill needed for dike construction is 680 cubic yards.
- All ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**



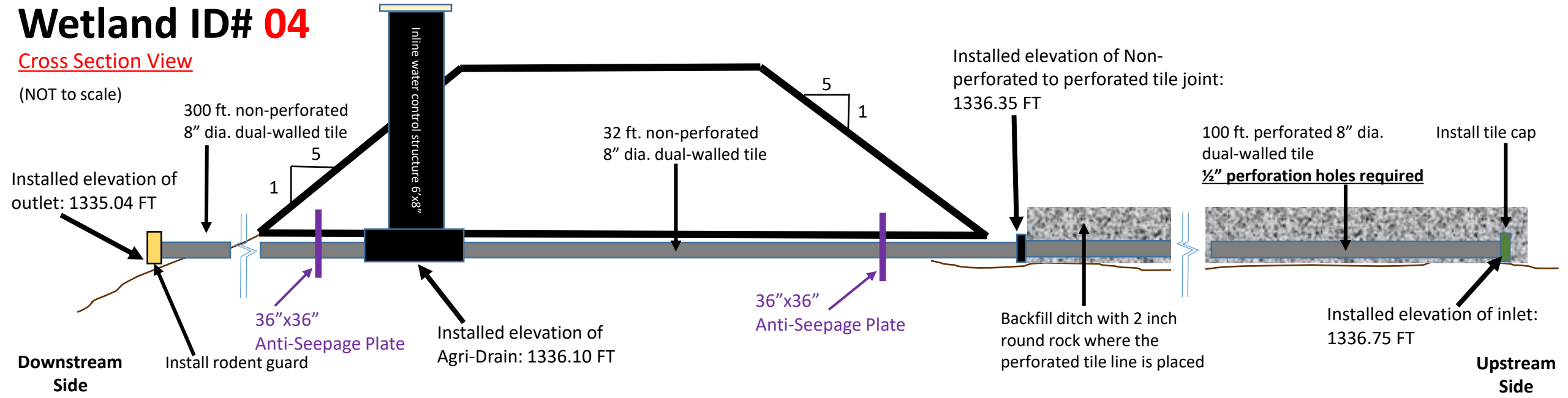
Isometric profile along centerline of dam (not to scale)

Benchmark Elevation:		Feet
Description of Bench:		
Construction Specifications		
1. Elevation of dam top:	1341.10	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	3.04	Feet
4. Max bottom width of dam:	40.4	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.50	Feet
7. Top length of dam:	447.00	Feet
8. Spillway width	10.00	Feet
9. Spillway elevation	1340.10	Feet

Wetland ID# 04

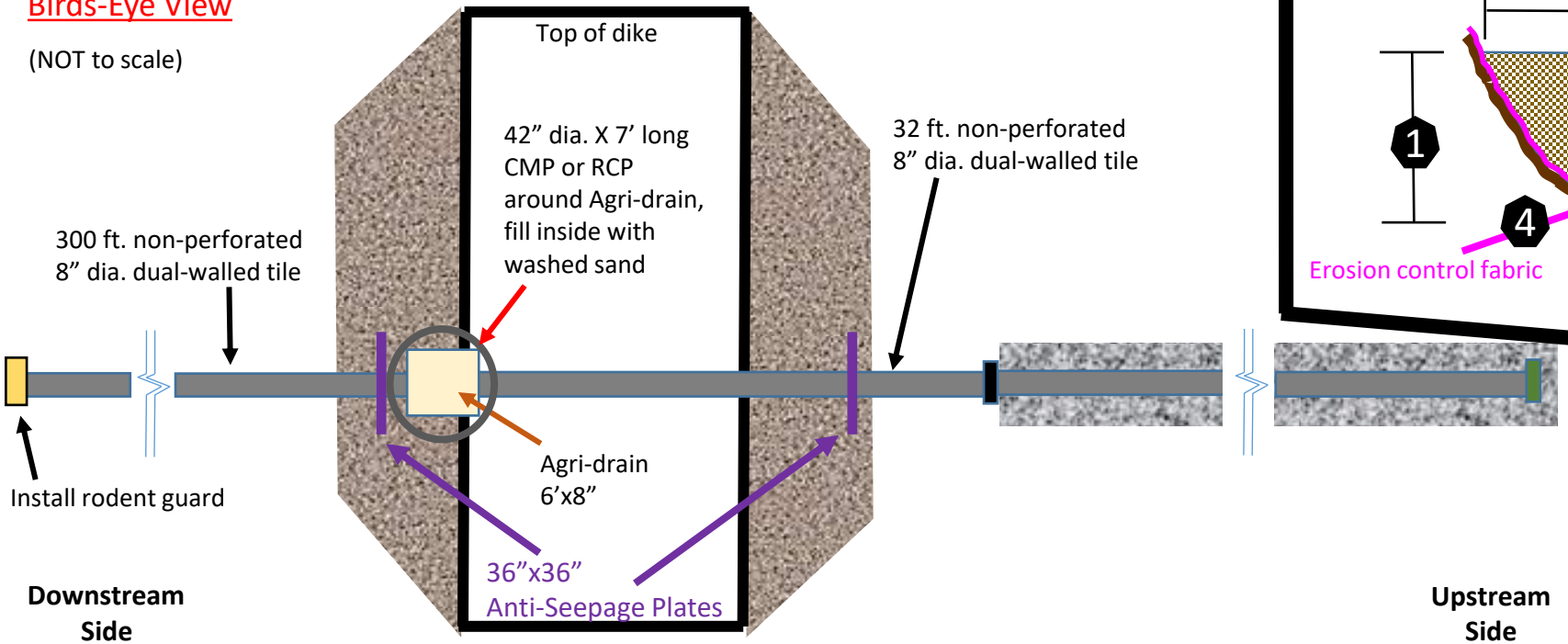
Cross Section View

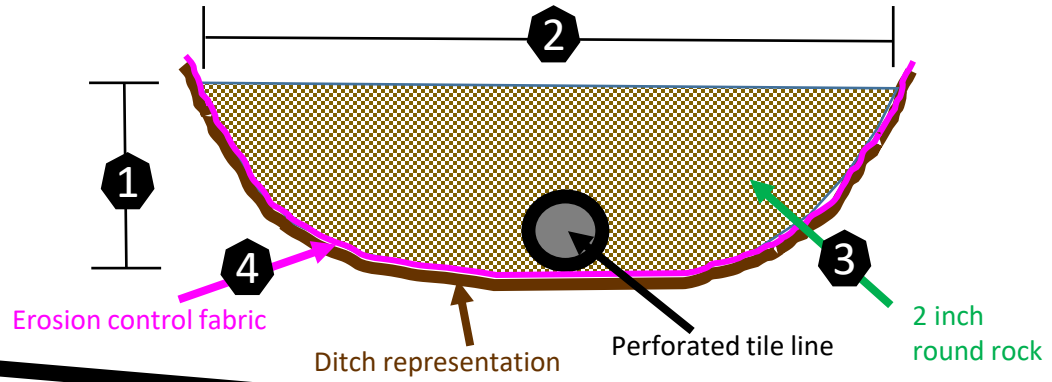
(NOT to scale)



Birds-Eye View

(NOT to scale)





Isometric Profile of Perforated Tile Line in Ditch

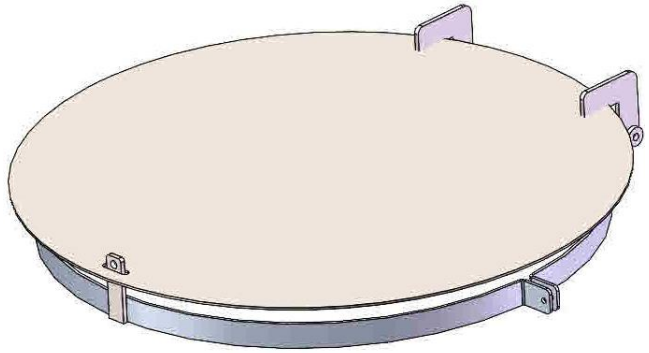
(NOT to scale)

Construction Specifications		
1. Height of fill material:	2.5	Feet
2. Approximate width of fill material:	5.0	Feet
3. 2 inch round rock:	50.0	CY
4. Erosion control fabric:	700.0	Sq Ft

Wetland ID# 04

Agri-Drain Detail

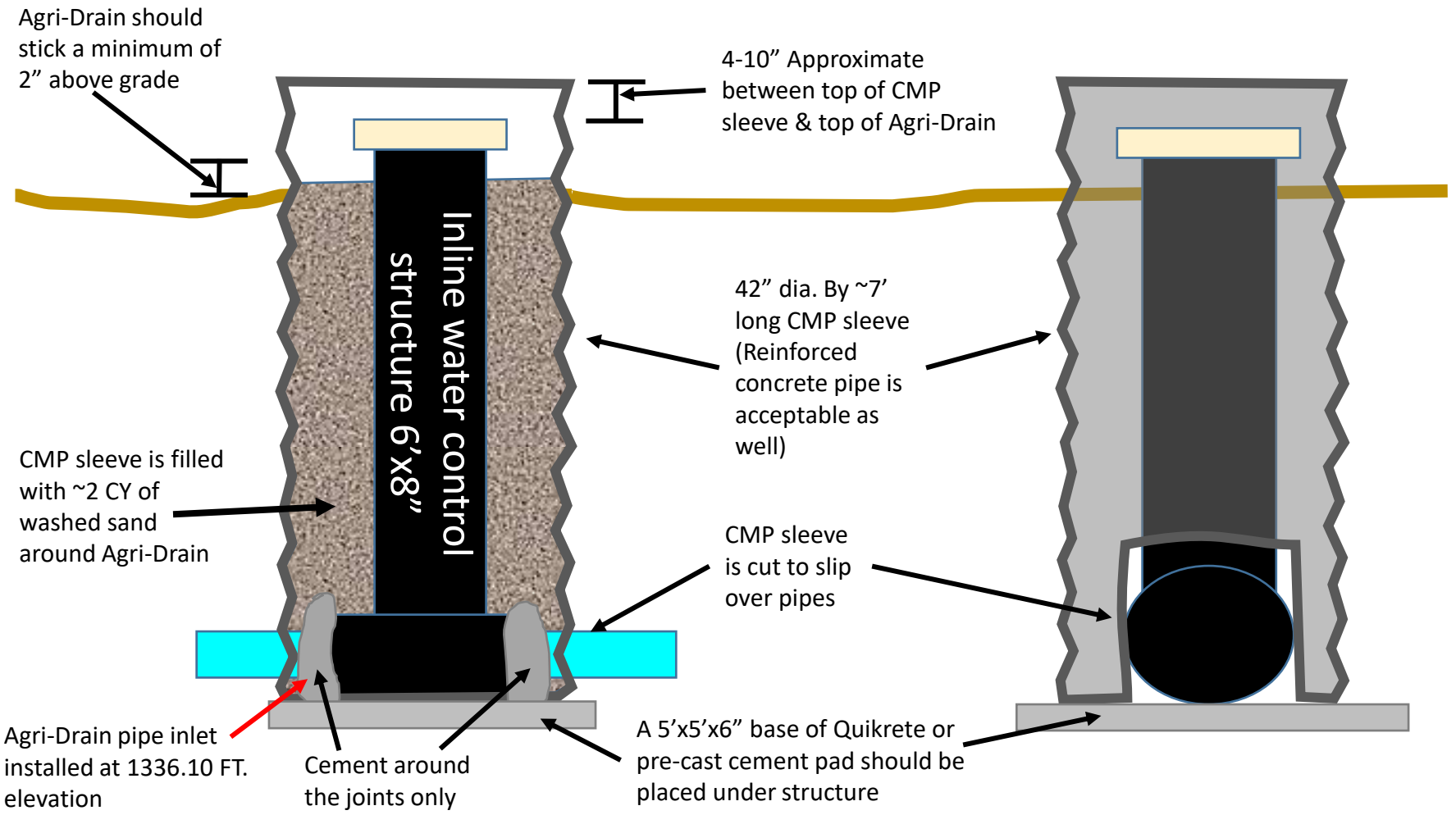
(NOT to scale)



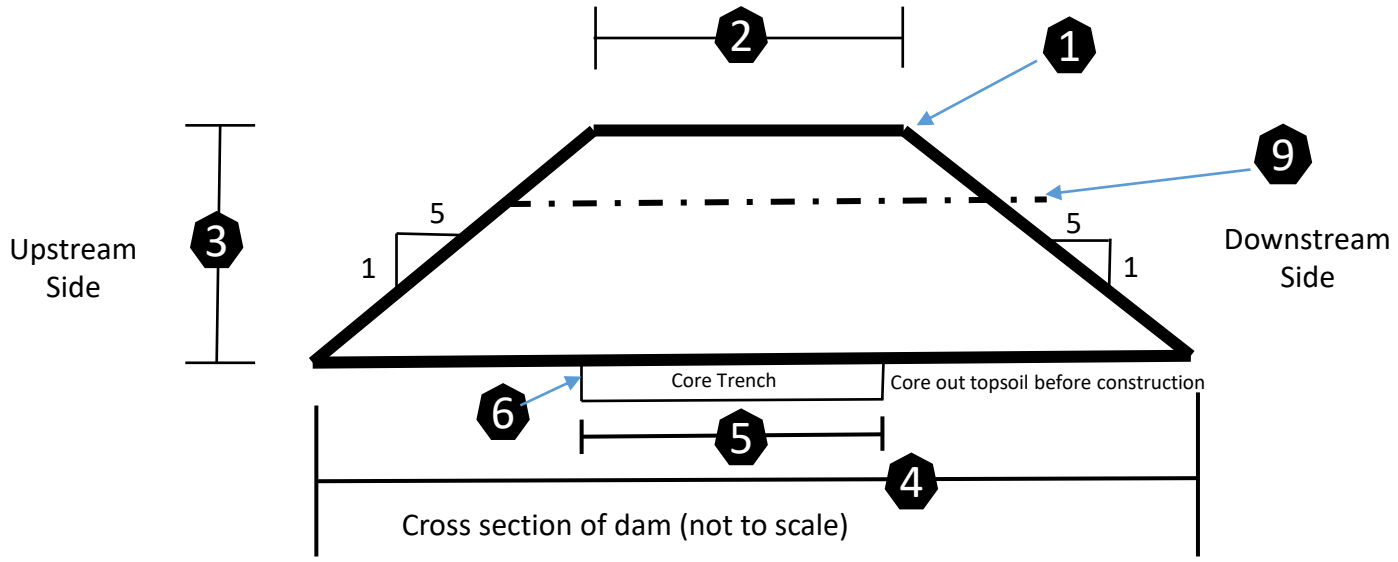
A locking cover made for a 42” CMP will be installed on the CMP sleeve. This must be purchased from Haala Industries.
Should you go the route of RCP pipes, be sure Haala makes the lids to fit concrete pipe.

Specifications:

- 3/16” thick lid cover and under supports
- ¼” thick clamping band
- 3/8” thick hinge plates
- 1” thick hinge rod
- Hot dip galvanized after fabrication



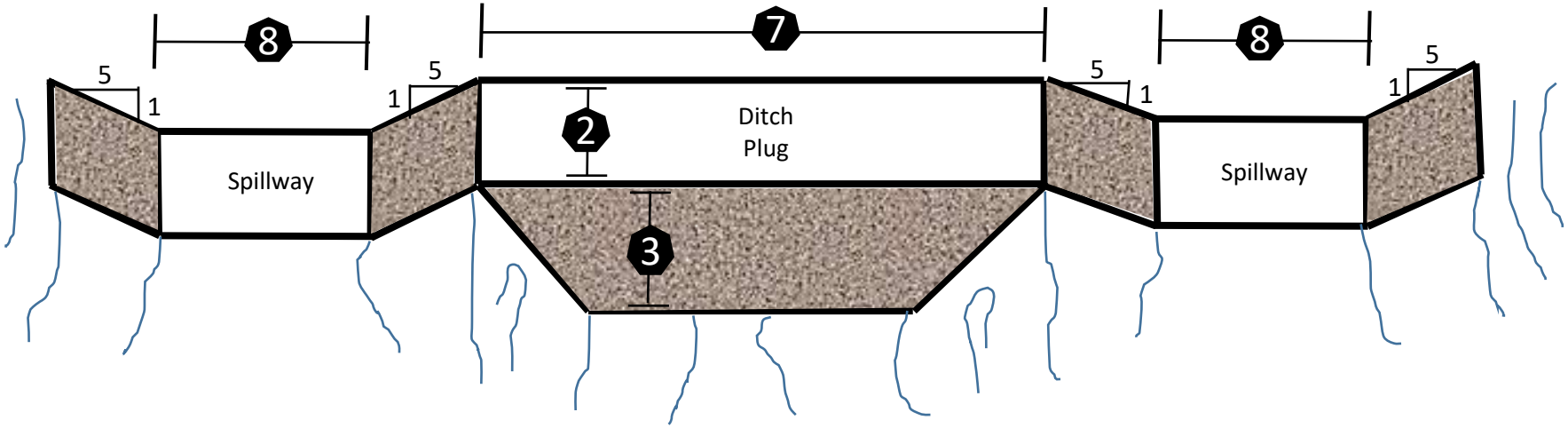
Wetland ID# 06



Cross section of dam (not to scale)

Construction Notes:

- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Spillways must be constructed perfectly flat for a width of 10 feet and a length of 25 feet. Upstream side should be directed 20 feet from the toe of dike and downstream side should be directed at least 40 feet from the toe of the dike.
- Compacted fill needed for dike construction is 150 cubic yards.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

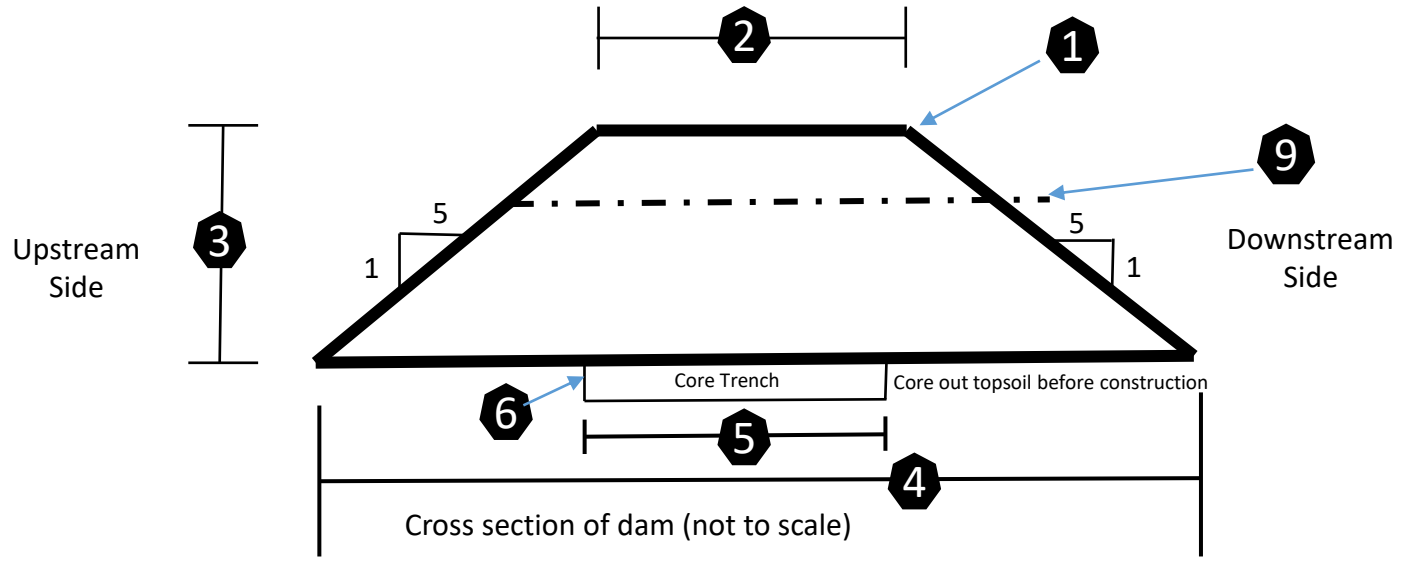


Upstream Side

Isometric profile along centerline of dam (not to scale)

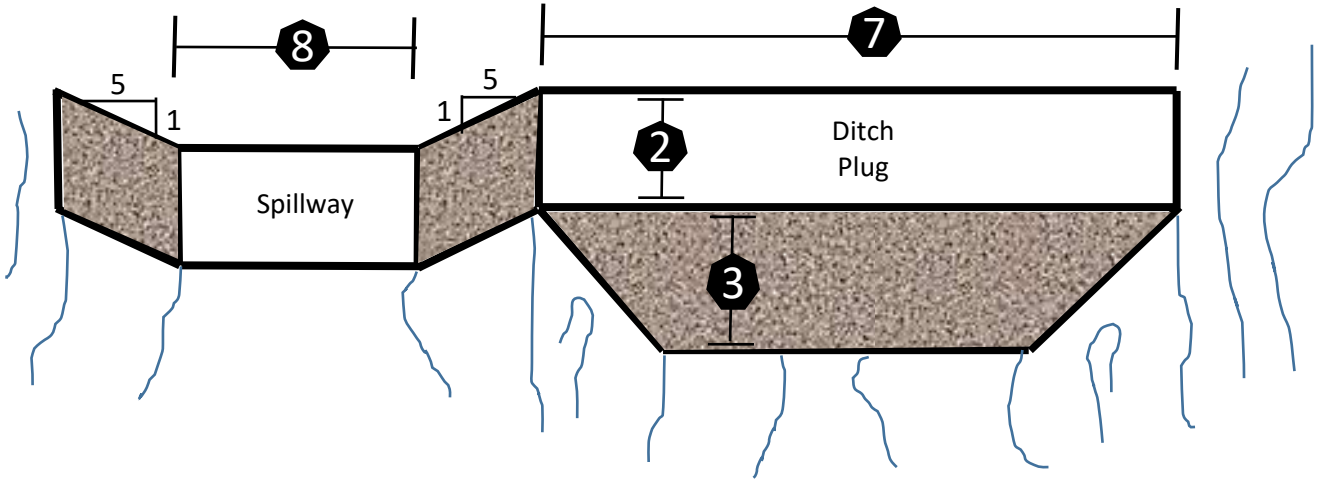
Benchmark Elevation:		Feet
Description of Bench:		
Construction Specifications		
1. Elevation of dam top:	1341.10	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	2.09	Feet
4. Max bottom width of dam:	30.90	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	105.00	Feet
8. Spillway width	10.00	Feet
9. Spillway elevation	1340.00	Feet

Wetland ID# 07 West



Construction Notes:

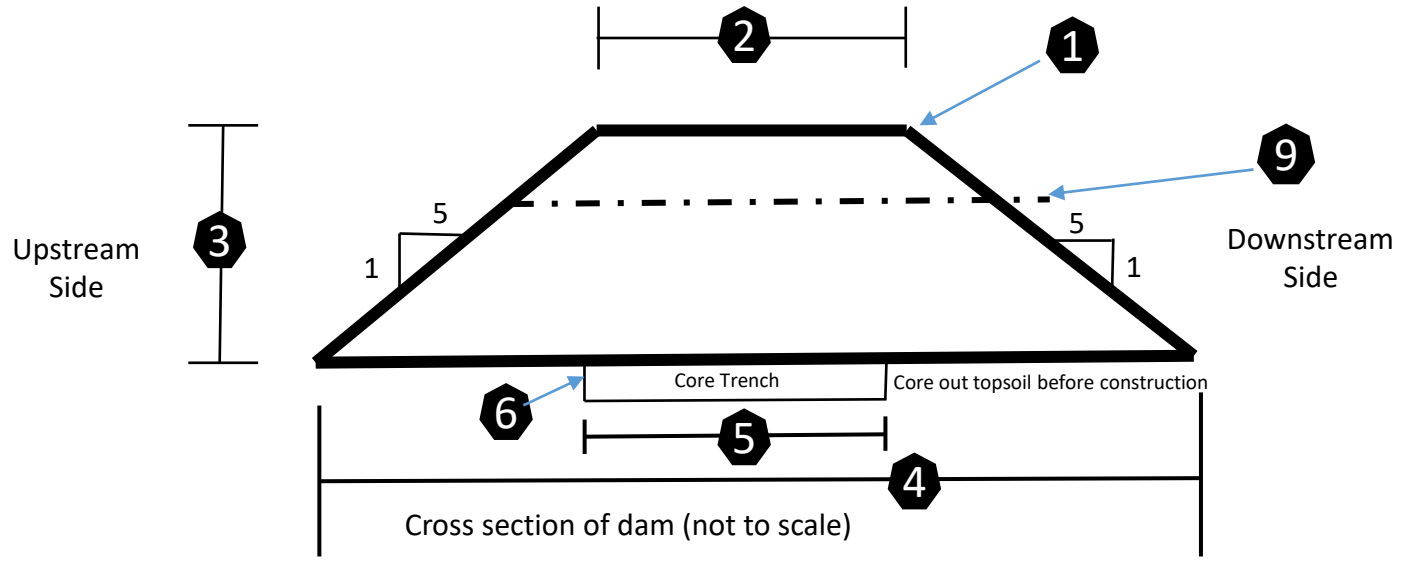
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Spillways must be constructed perfectly flat for a width of 10 feet and a length of 25 feet. Upstream side should be directed 20 feet from the toe of dike and downstream side should be directed at least 40 feet from the toe of the dike.
- Compacted fill needed for dike construction is 365 cubic yards.
- All ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**



Isometric profile along centerline of dam (not to scale)

Benchmark Elevation:		Feet
Description of Bench:		
Construction Specifications		
1. Elevation of dam top:	1344.30	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	2.12	Feet
4. Max bottom width of dam:	31.20	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	278.00	Feet
8. Spillway width	10.00	Feet
9. Spillway elevation	1343.20	Feet

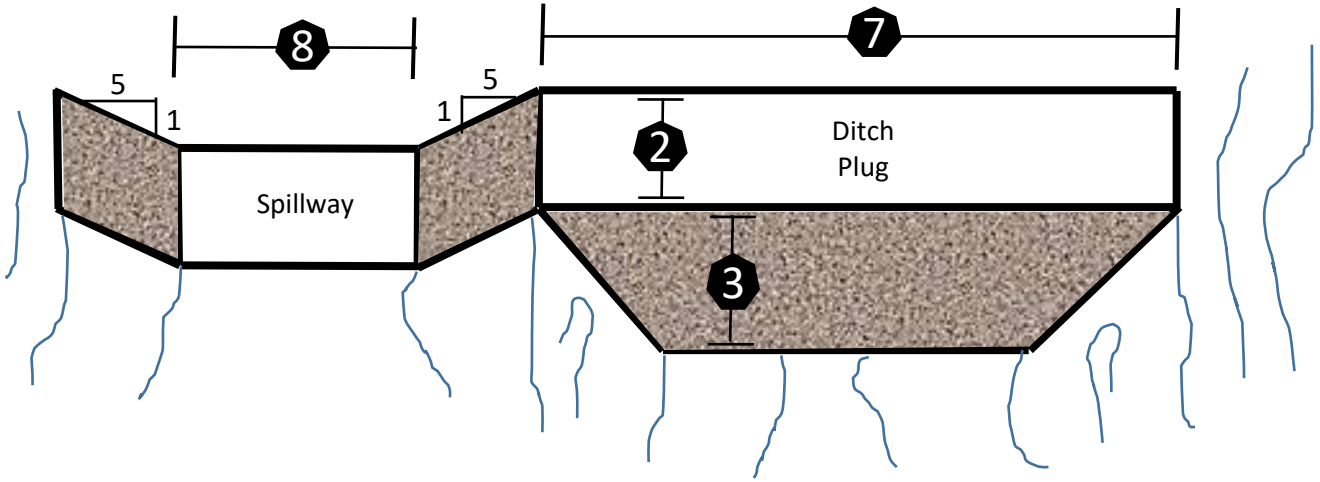
Wetland ID# 07 East



Cross section of dam (not to scale)

Construction Notes:

- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Spillways must be constructed perfectly flat for a width of 10 feet and a length of 25 feet. Upstream side should be directed 20 feet from the toe of dike and downstream side should be directed at least 40 feet from the toe of the dike.
- Compacted fill needed for dike construction is 600 cubic yards.
- All ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**



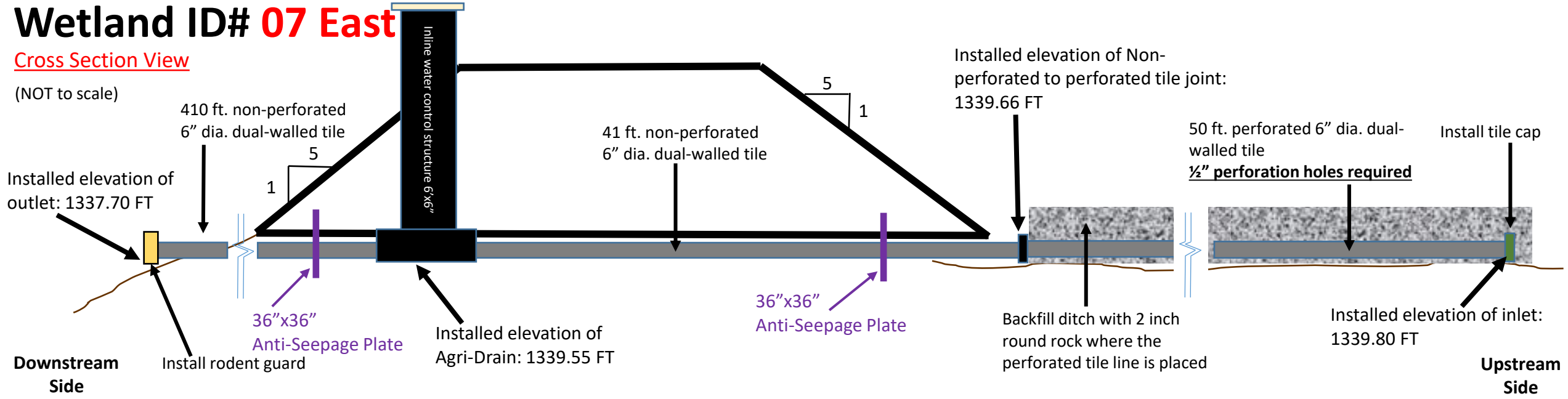
Isometric profile along centerline of dam (not to scale)

Benchmark Elevation:		Feet
Description of Bench:		
Construction Specifications		
1. Elevation of dam top:	1344.30	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	4.76	Feet
4. Max bottom width of dam:	57.60	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	450.00	Feet
8. Spillway width	10.00	Feet
9. Spillway elevation	1343.20	Feet

Wetland ID# 07 East

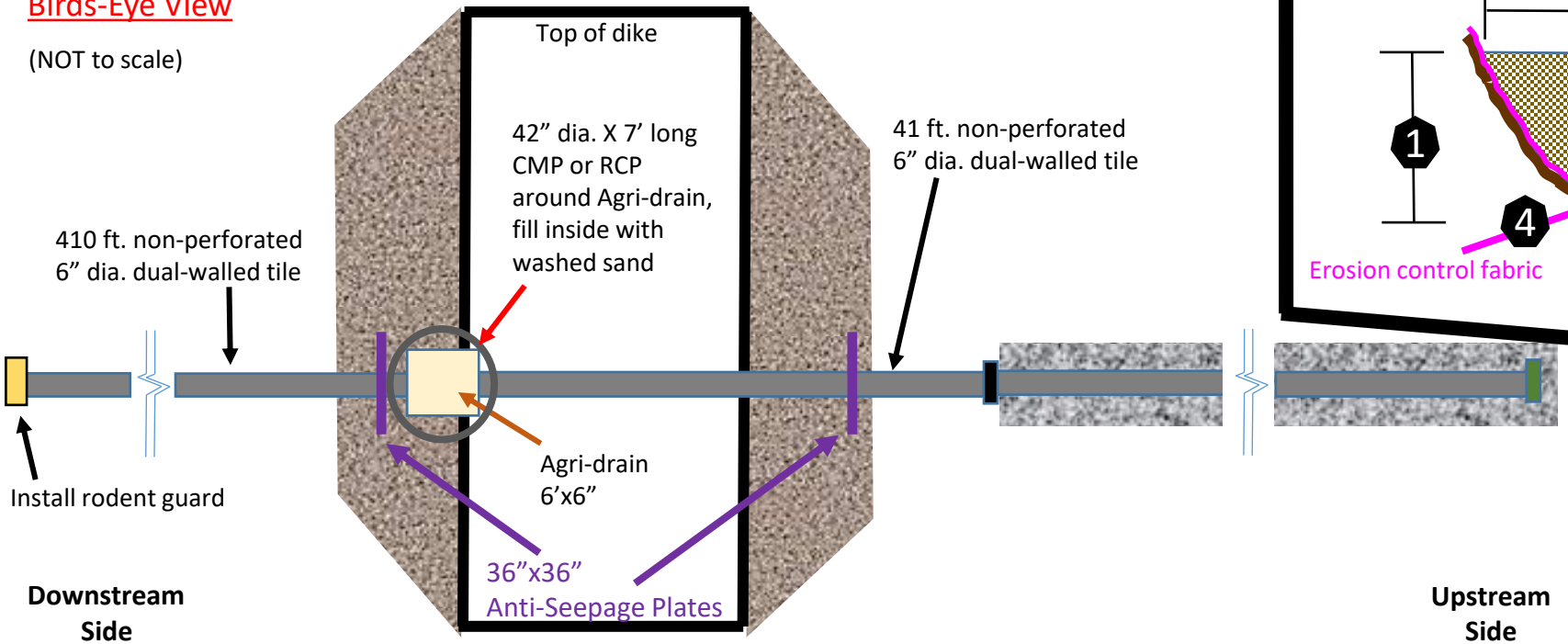
Cross Section View

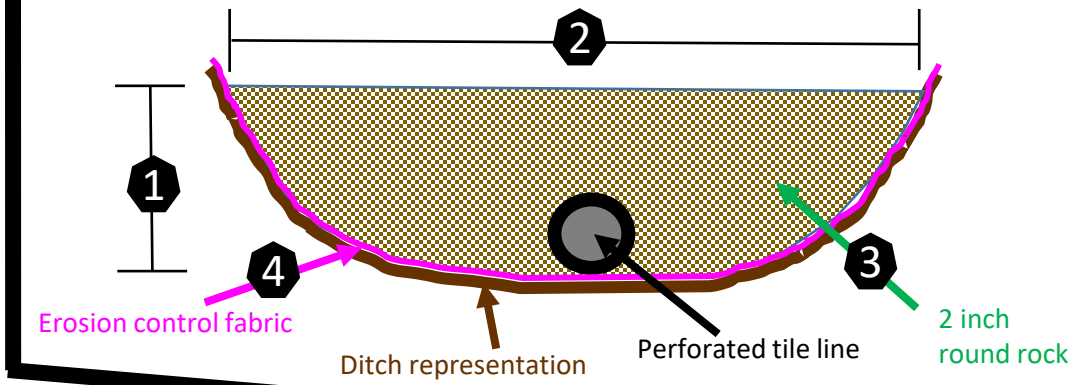
(NOT to scale)



Birds-Eye View

(NOT to scale)





Isometric Profile of Perforated Tile Line in Ditch

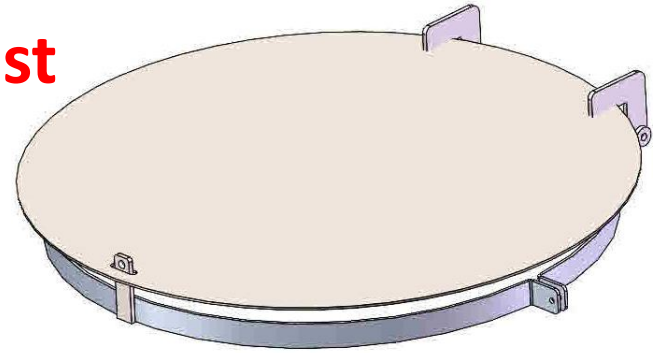
(NOT to scale)

Construction Specifications		
1. Height of fill material:	2.5	Feet
2. Approximate width of fill material:	5.0	Feet
3. 2 inch round rock:	25.0	CY
4. Erosion control fabric:	350.0	Sq Ft

Wetland ID# 07 East

Agri-Drain Detail

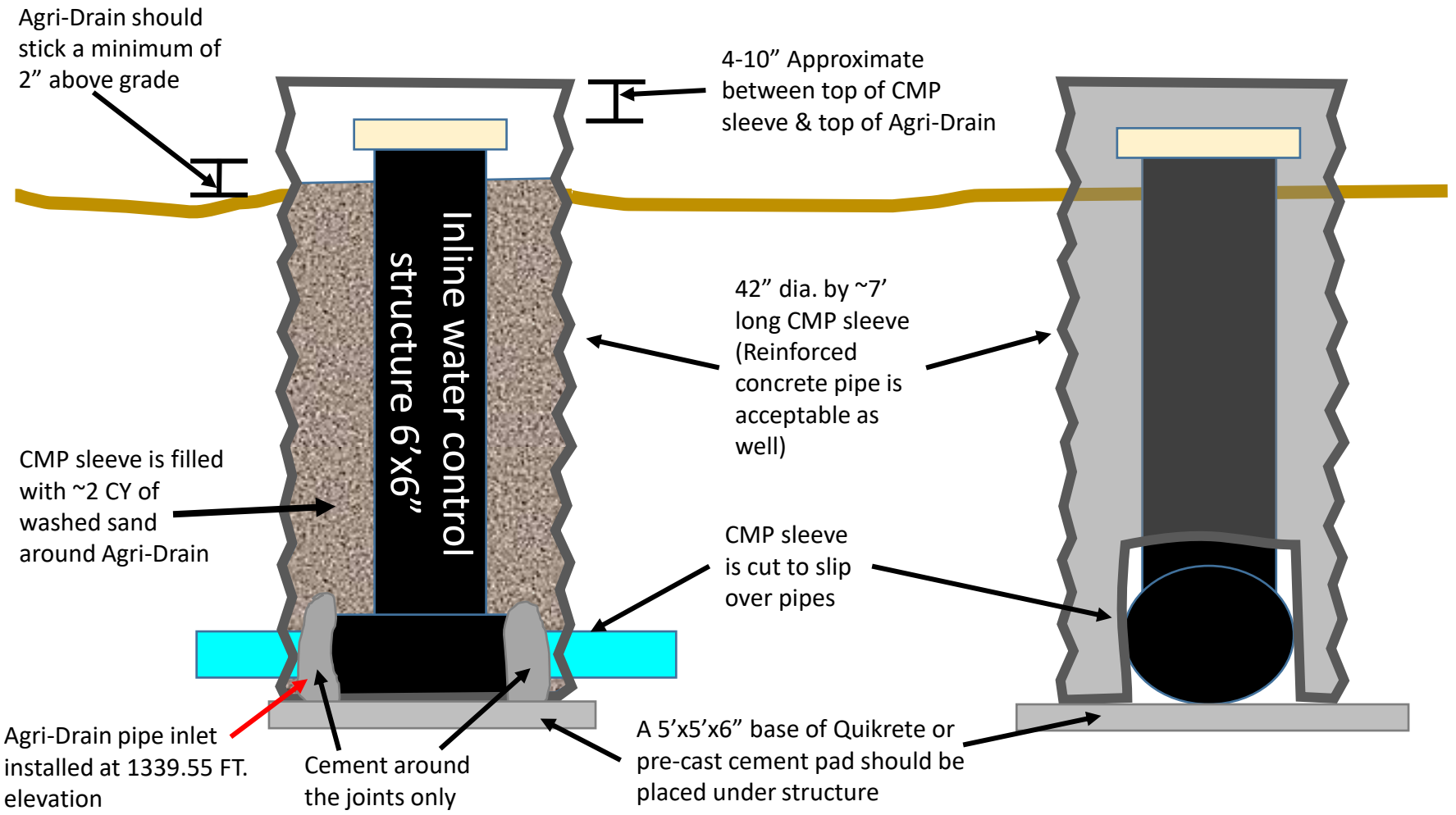
(NOT to scale)



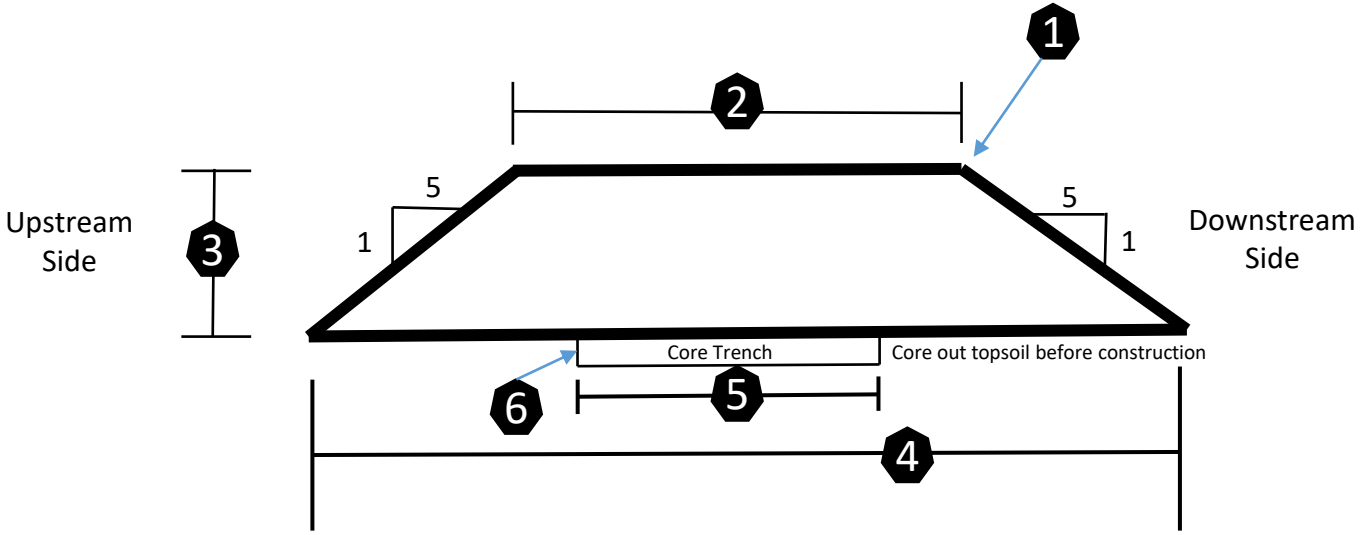
A locking cover made for a 42” CMP will be installed on the CMP sleeve. This must be purchased from Haala Industries.
Should you go the route of RCP pipes, be sure Haala makes the lids to fit concrete pipe.

Specifications:

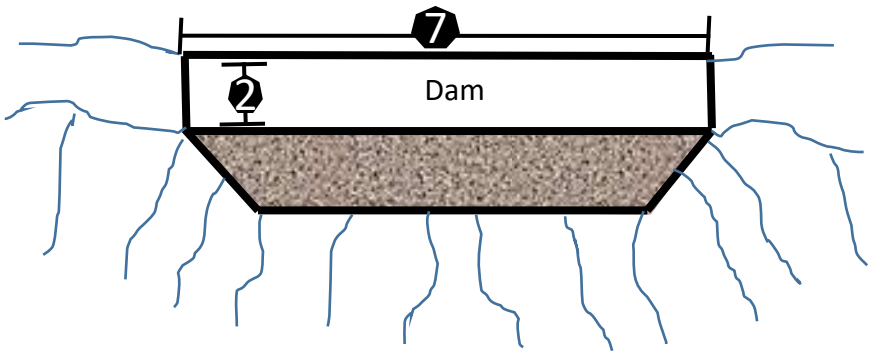
- 3/16” thick lid cover and under supports
- ¼” thick clamping band
- 3/8” thick hinge plates
- 1” thick hinge rod
- Hot dip galvanized after fabrication



Wetland ID# 19



Cross section of dam (not to scale)



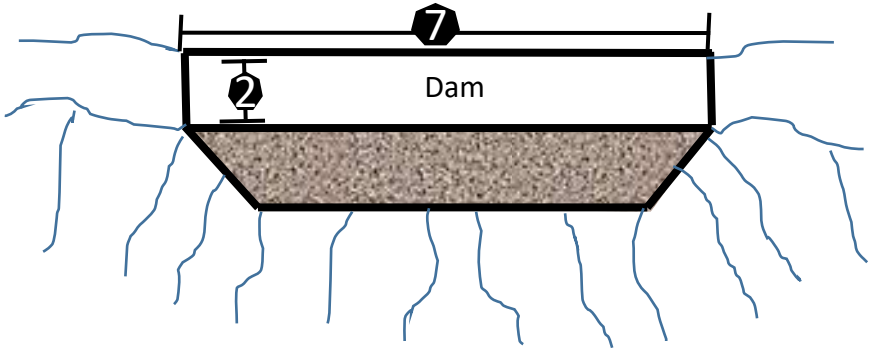
Isometric profile along centerline of dam (not to scale)

Construction Notes:

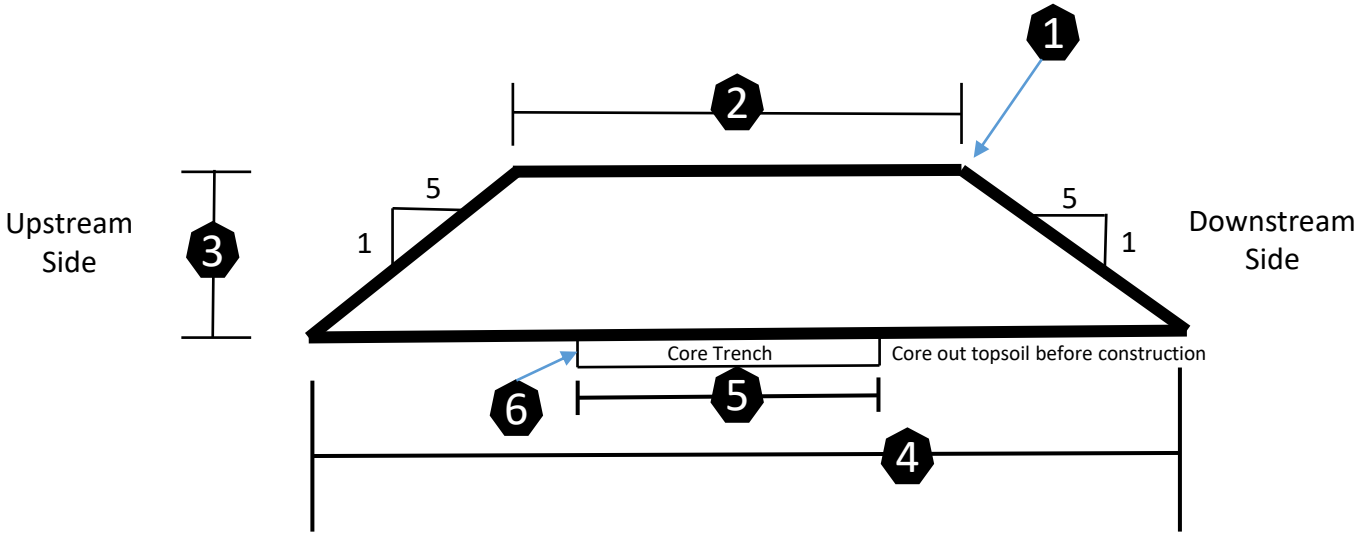
- Scrape off topsoil to a depth of 0.5 feet and a minimum width of 8.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 30 cubic yards.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1339.00	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	1.40	Feet
4. Max bottom width of dam:	24.00	Feet
5. Core trench width (minimum):	8.00	Feet
6. Core trench depth:	0.5	Feet
7. Top length of dam:	25.00	Feet

Wetland ID# 38



Isometric profile along centerline of dam (not to scale)



Cross section of dam (not to scale)

Construction Notes:

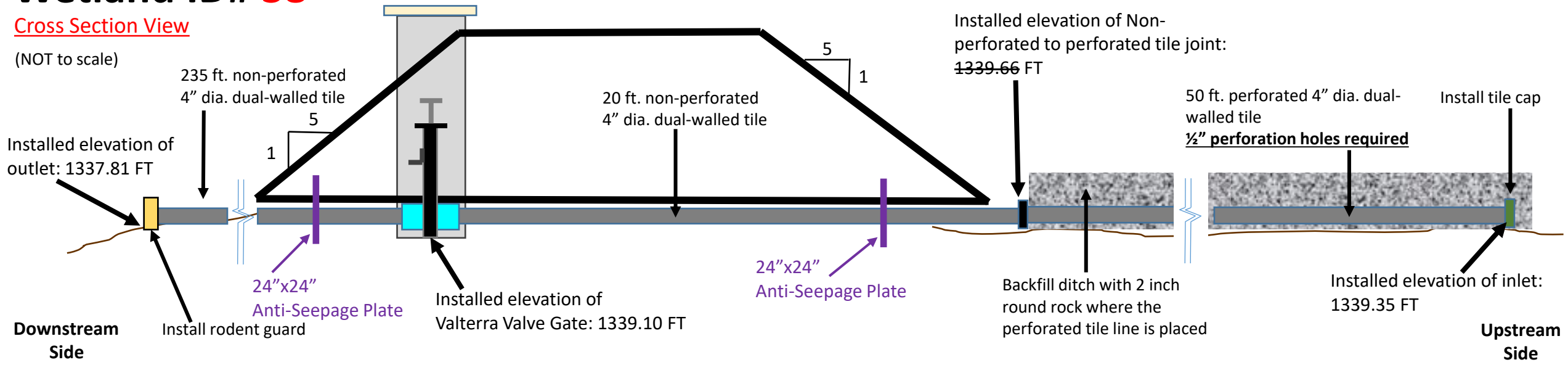
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 485 cubic yards.
- 0.5 feet of sediment will be removed from the basin and used to fill in the drainage ditches near by, total sediment removed is 740 cubic yards.
- All ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1344.70	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	5.20	Feet
4. Max bottom width of dam:	62.00	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	294.00	Feet

Wetland ID# 38

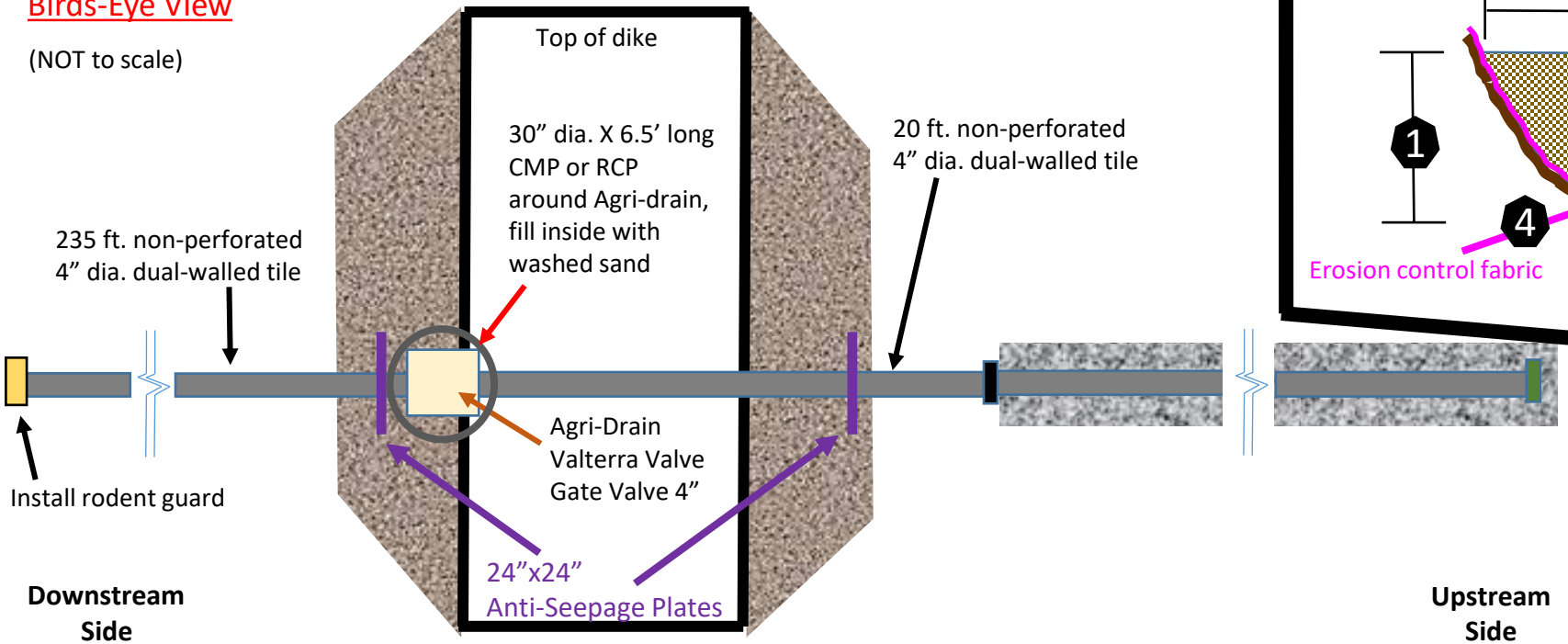
Cross Section View

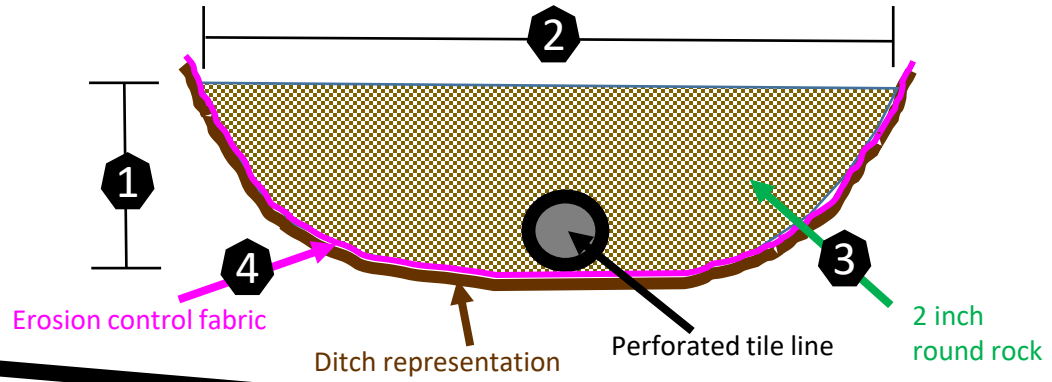
(NOT to scale)



Birds-Eye View

(NOT to scale)





Isometric Profile of Perforated Tile Line in Ditch

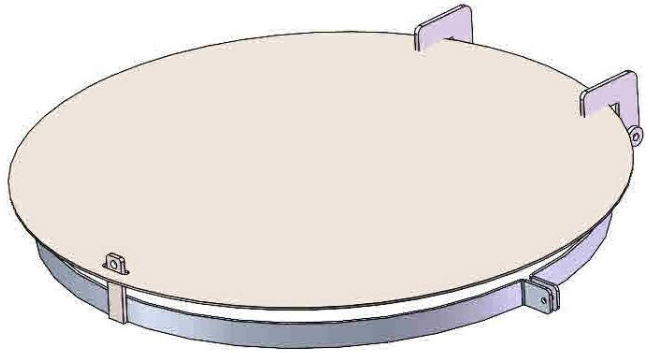
(NOT to scale)

Construction Specifications		
1. Height of fill material:	2.5	Feet
2. Approximate width of fill material:	5.0	Feet
3. 2 inch round rock:	25.0	CY
4. Erosion control fabric:	350.0	Sq Ft

Wetland ID# 38

Slide Gate Valve Detail

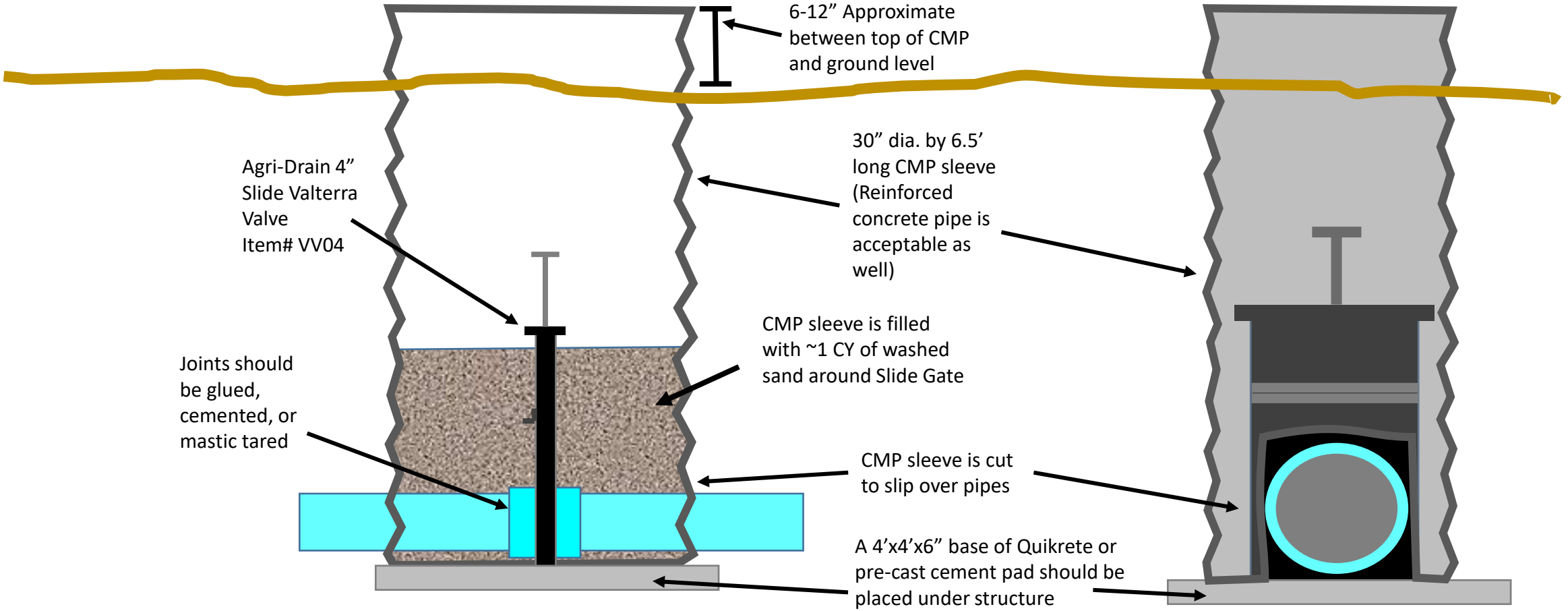
(NOT to scale)



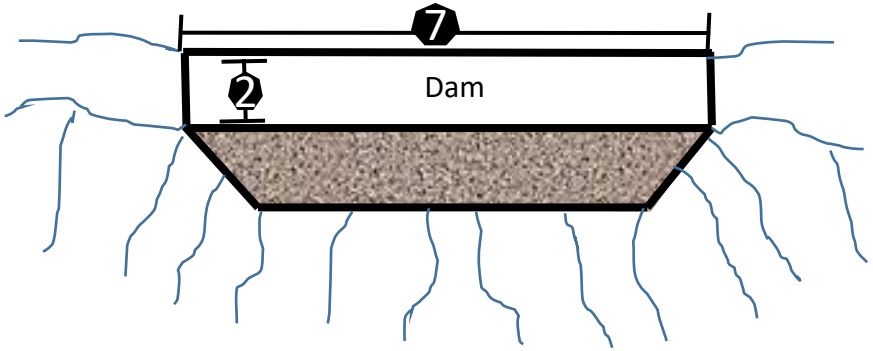
A locking cover made for a 42” CMP will be installed on the CMP sleeve. This must be purchased from Haala Industries.
Should you go the route of RCP pipes, be sure Haala makes the lids to fit concrete pipe.

Specifications:

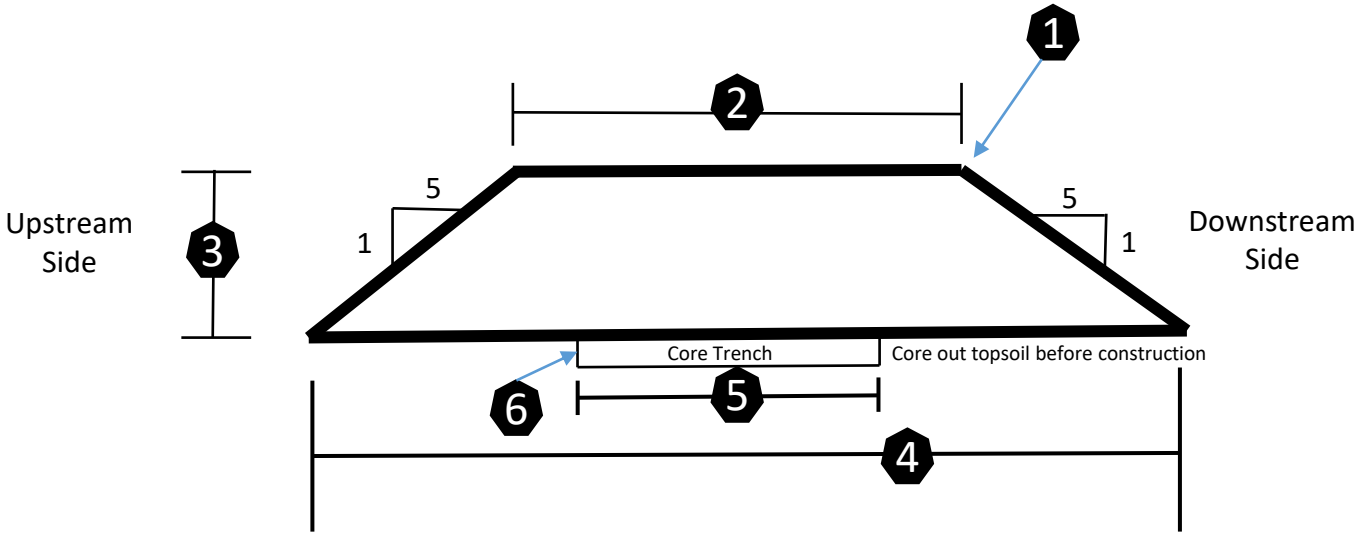
- 3/16” thick lid cover and under supports
- ¼” thick clamping band
- 3/8” thick hinge plates
- 1” thick hinge rod
- Hot dip galvanized after fabrication



Wetland ID# 39



Isometric profile along centerline of dam (not to scale)



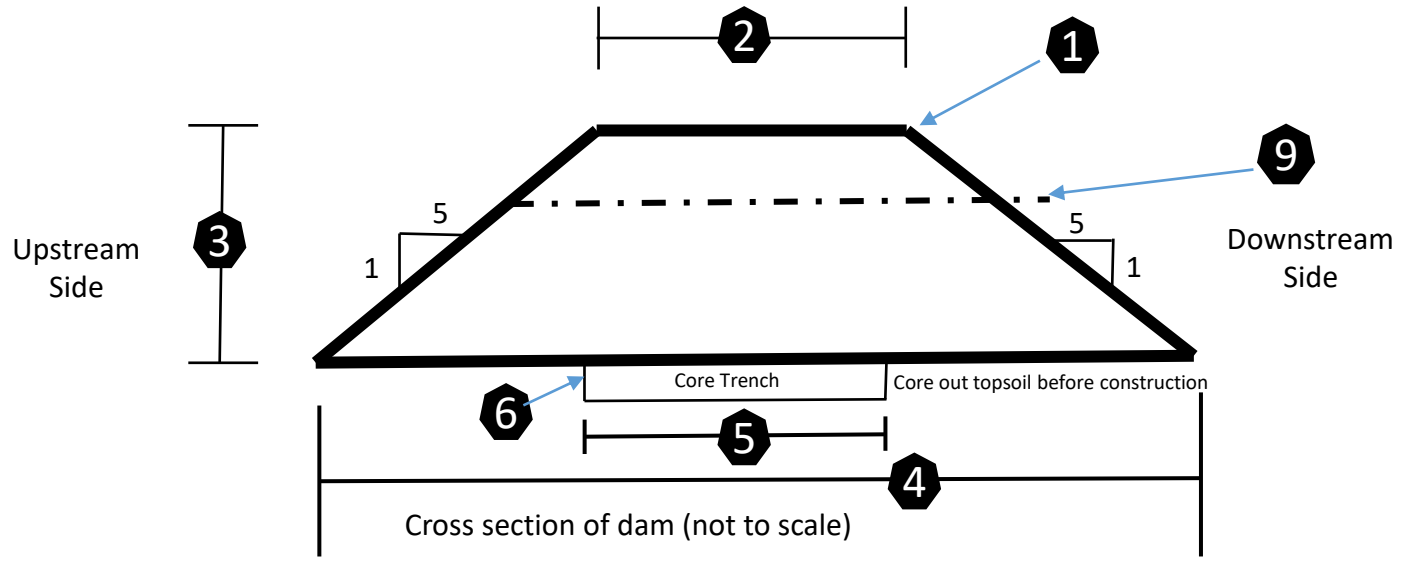
Cross section of dam (not to scale)

Construction Notes:

- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 85 cubic yards.
- 0.5 feet of sediment will be removed from the basin and used to fill in the drainage ditches near by, total sediment removed is 140 cubic yards.
- All ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

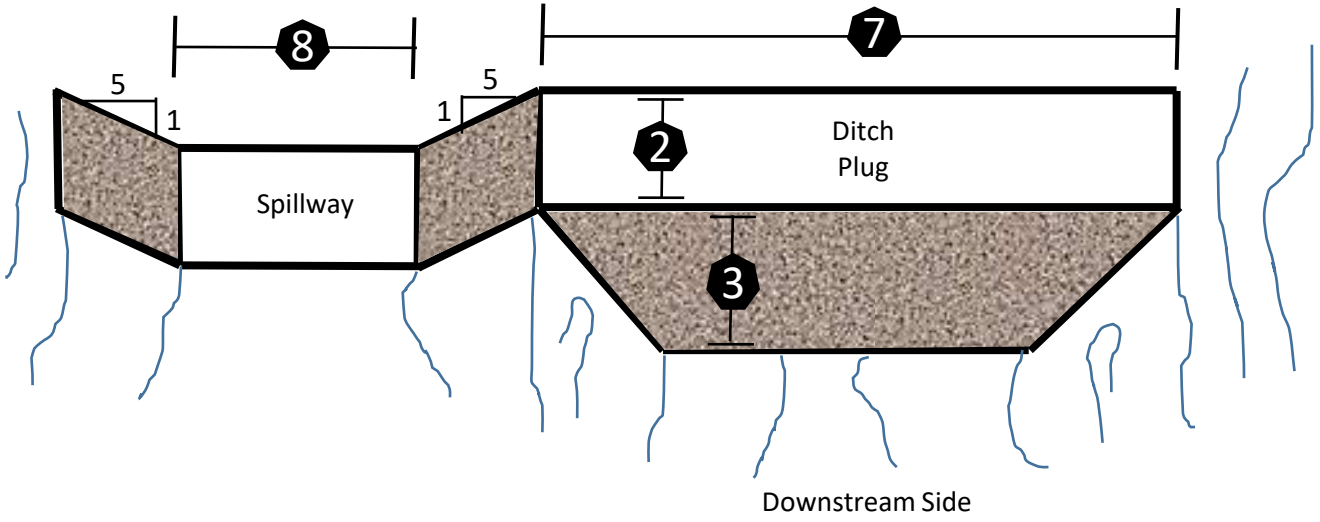
Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1343.90	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	1.53	Feet
4. Max bottom width of dam:	25.30	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	86.00	Feet

Wetland ID# 42



Construction Notes:

- Scrape off topsoil to a depth of 2.0 feet a minimum width of 8.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Spillways must be constructed perfectly flat for a width of 10 feet and a length of 25 feet. Upstream side should be directed 20 feet from the toe of dike and downstream side should be directed at least 40 feet from the toe of the dike.
- Compacted fill needed for dike construction is 75 cubic yards.
- 0.5 feet of sediment will be removed from the basin and used to fill in the drainage ditches near by, total sediment removed is 1,000 cubic yards.
- All ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**



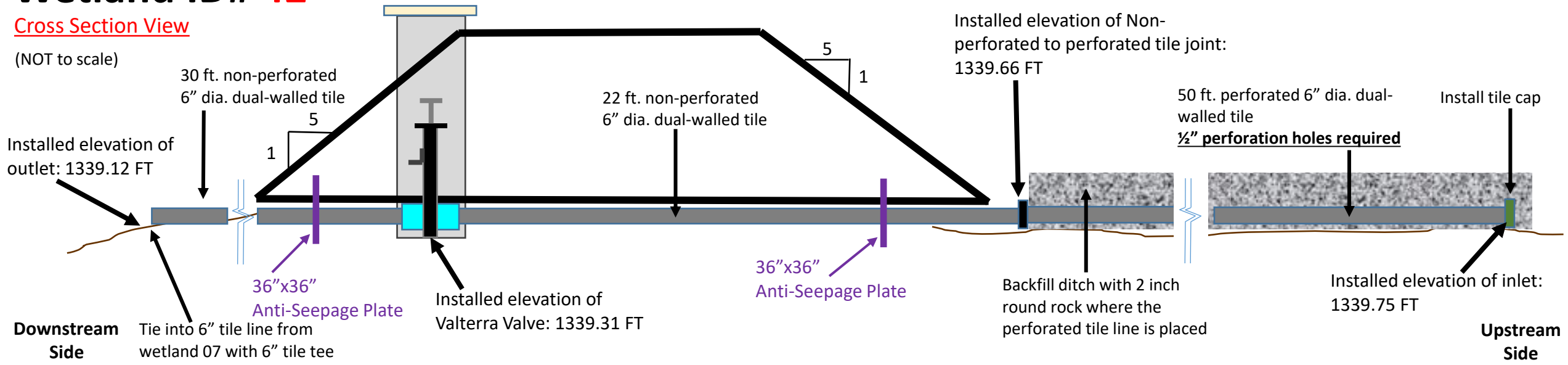
Isometric profile along centerline of dam (not to scale)

Benchmark Elevation:		Feet
Description of Bench:		
Construction Specifications		
1. Elevation of dam top:	1343.40	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	3.50	Feet
4. Max bottom width of dam:	45.00	Feet
5. Core trench width (minimum):	8.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	28.00	Feet
8. Spillway width	10.00	Feet
9. Spillway elevation	1342.30	Feet

Wetland ID# 42

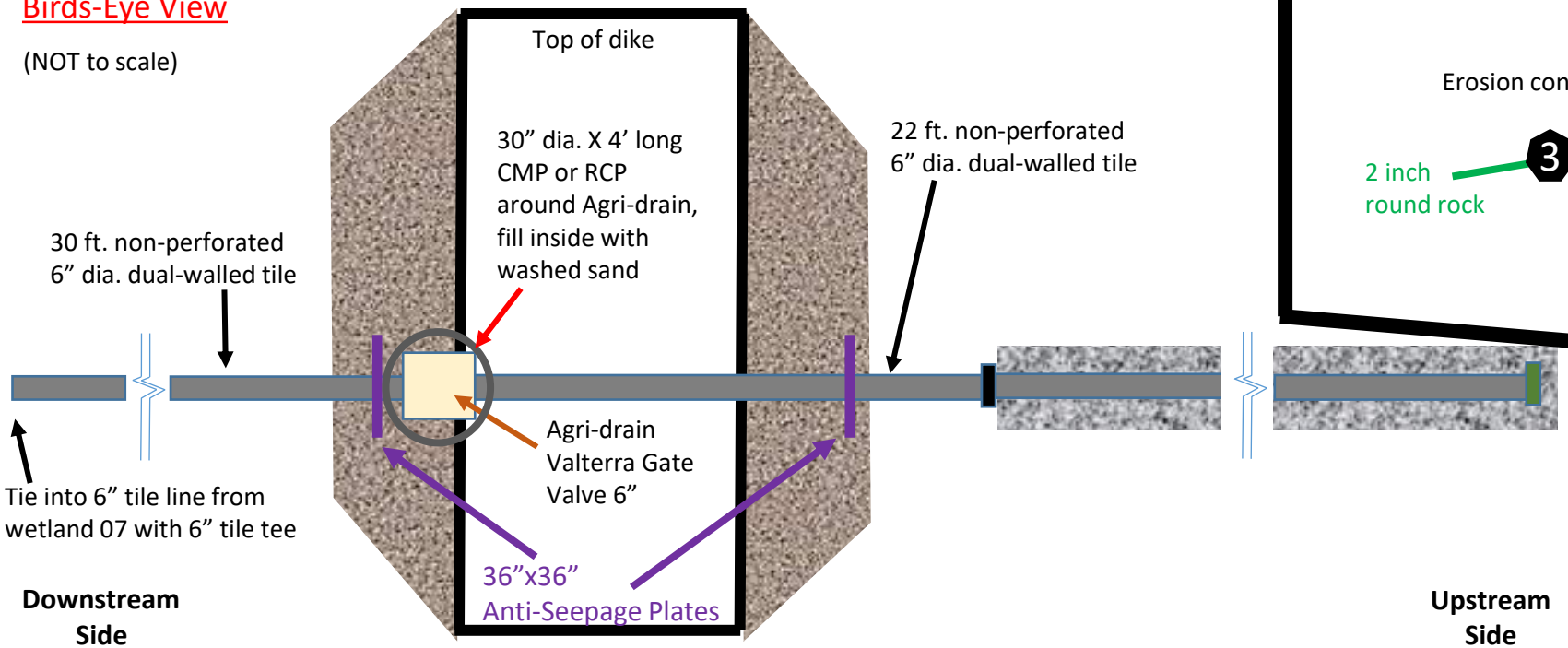
Cross Section View

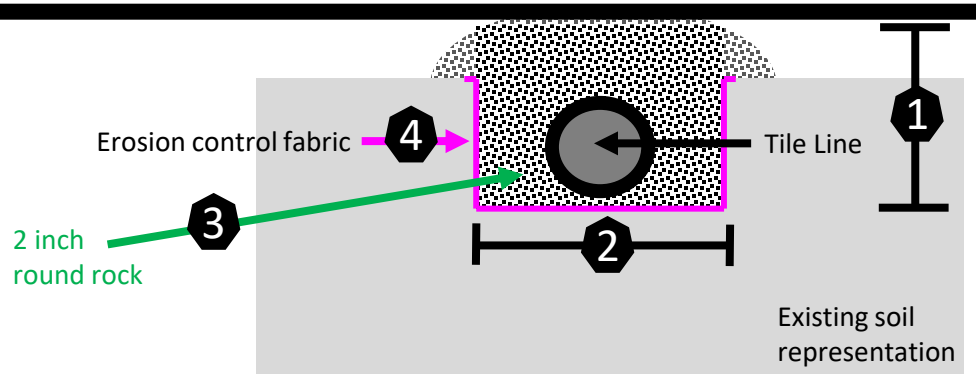
(NOT to scale)



Birds-Eye View

(NOT to scale)





Isometric Profile of Perforated Tile Line in Ditch

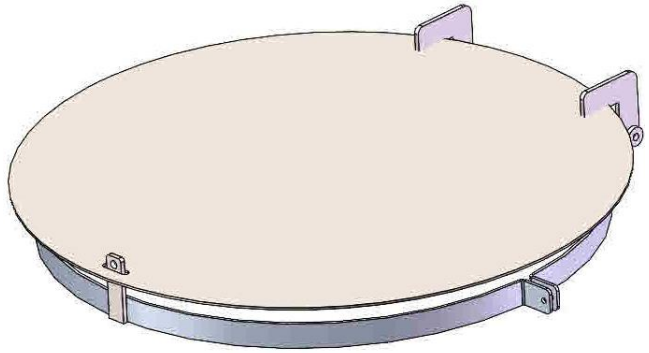
(NOT to scale)

Construction Specifications		
1. Height of fill material:	1.5	Feet
2. Width of fill material:	3.0	Feet
3. 2 inch round rock:	8.0	CY
4. Erosion control fabric:	200.0	Sq Ft

Wetland ID# 42

Slide Gate Valve Detail

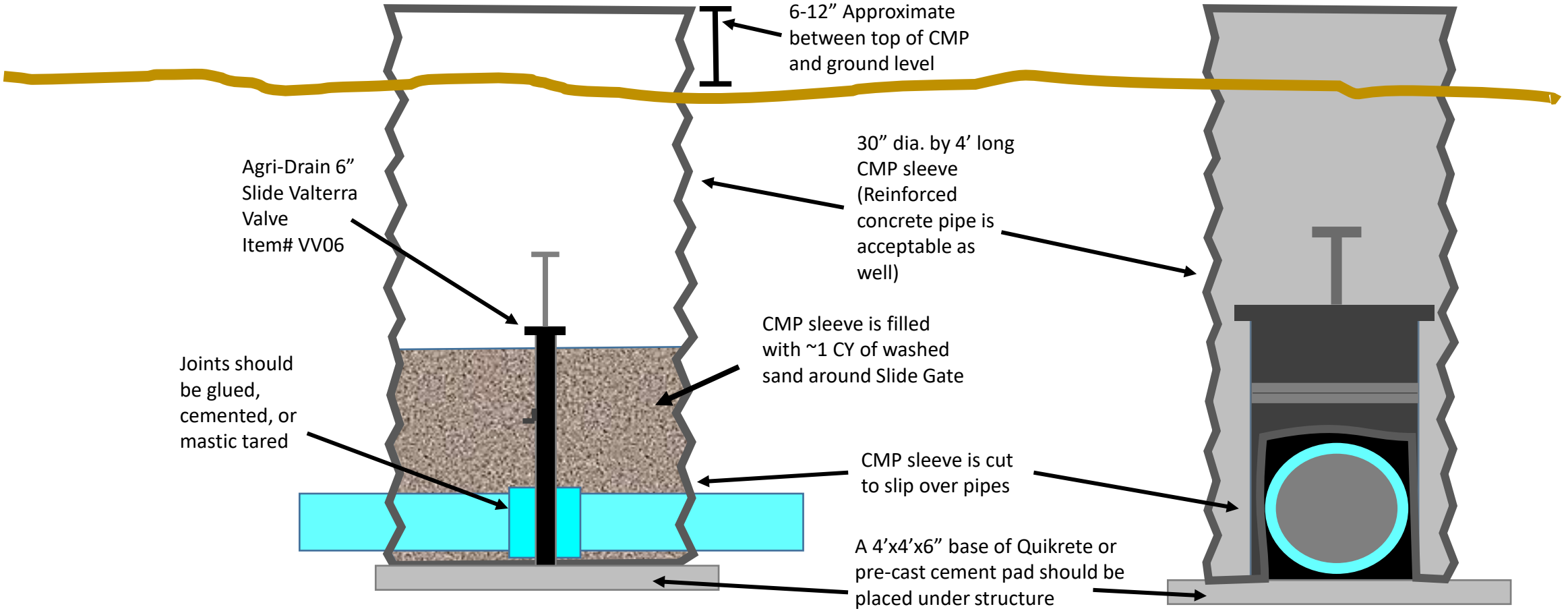
(NOT to scale)



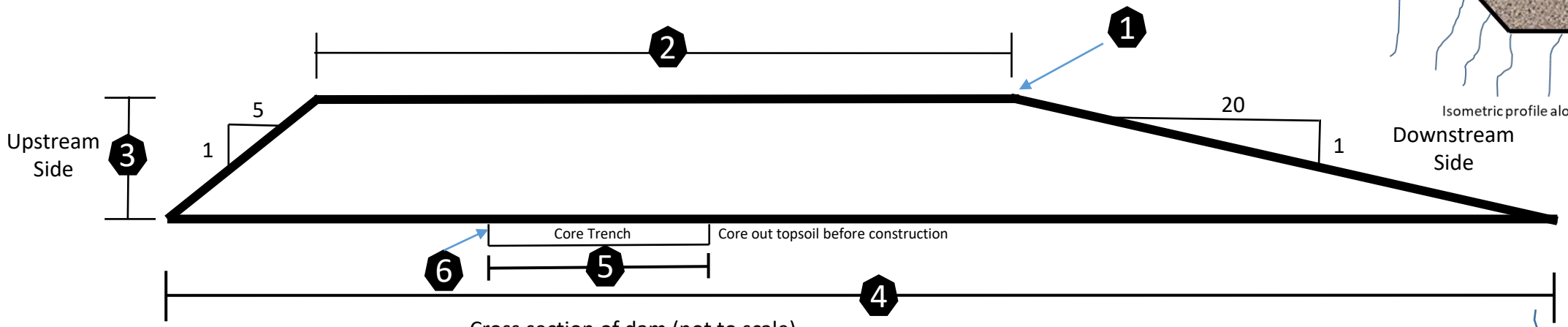
A locking cover made for a 42” CMP will be installed on the CMP sleeve. This must be purchased from Haala Industries.
Should you go the route of RCP pipes, be sure Haala makes the lids to fit concrete pipe.

Specifications:

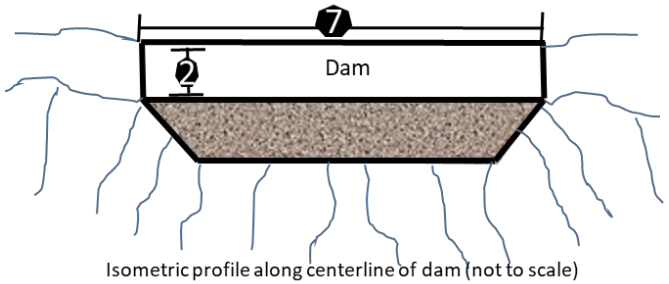
- 3/16” thick lid cover and under supports
- ¼” thick clamping band
- 3/8” thick hinge plates
- 1” thick hinge rod
- Hot dip galvanized after fabrication



Wetland ID# 43 West FLOW OVER DAM



Cross section of dam (not to scale)



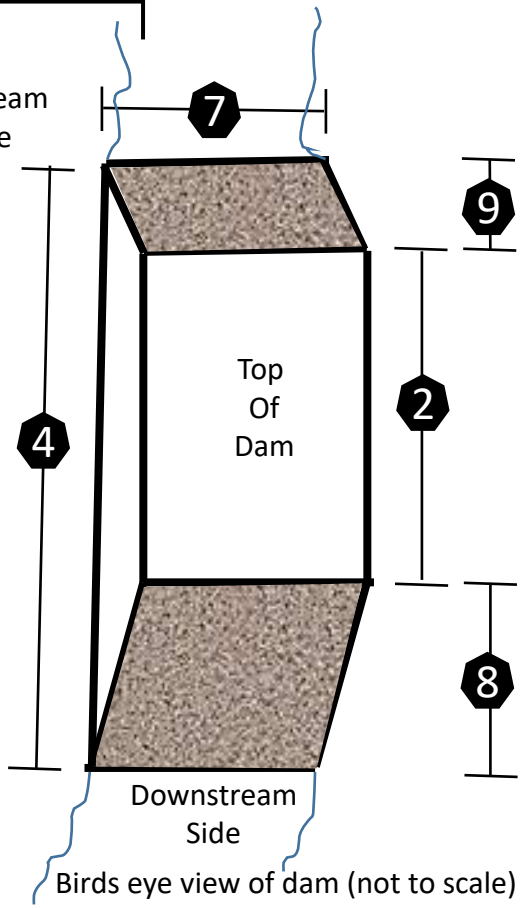
Isometric profile along centerline of dam (not to scale)

Downstream Side

Construction Notes:

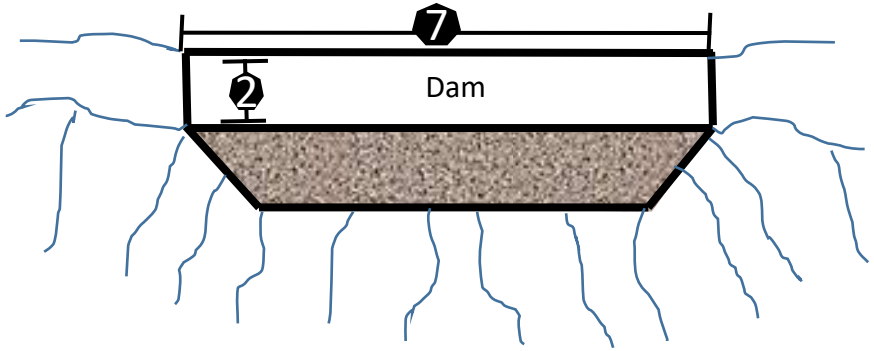
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 8 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 35 cubic yards.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench: _____		
_____		
_____		
Construction Specifications		
1. Elevation of dam top:	1341.50	Feet
2. Top width of dam:	25.00	Feet
3. Max height of fill:	0.22	Feet
4. Max bottom width of dam:	30.50	Feet
5. Core trench width (minimum):	8.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	40.00	Feet
8. Downstream slope bottom length	4.40	Feet
9. Upstream slope bottom length	1.10	Feet

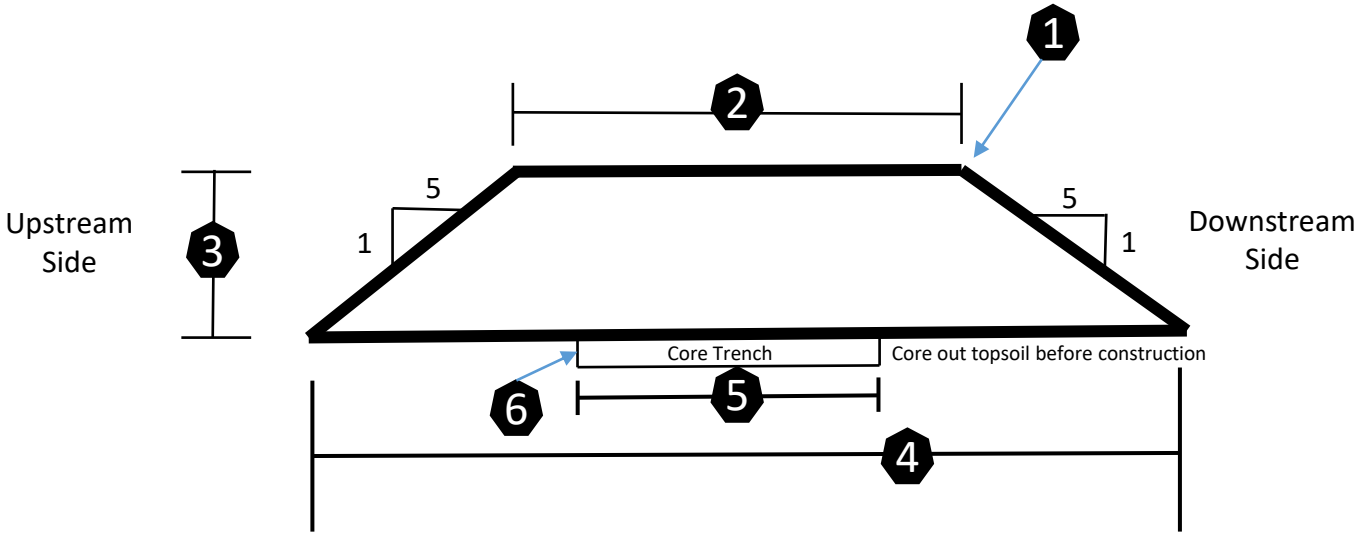


Birds eye view of dam (not to scale)

Wetland ID# 43 East



Isometric profile along centerline of dam (not to scale)



Cross section of dam (not to scale)

Construction Notes:

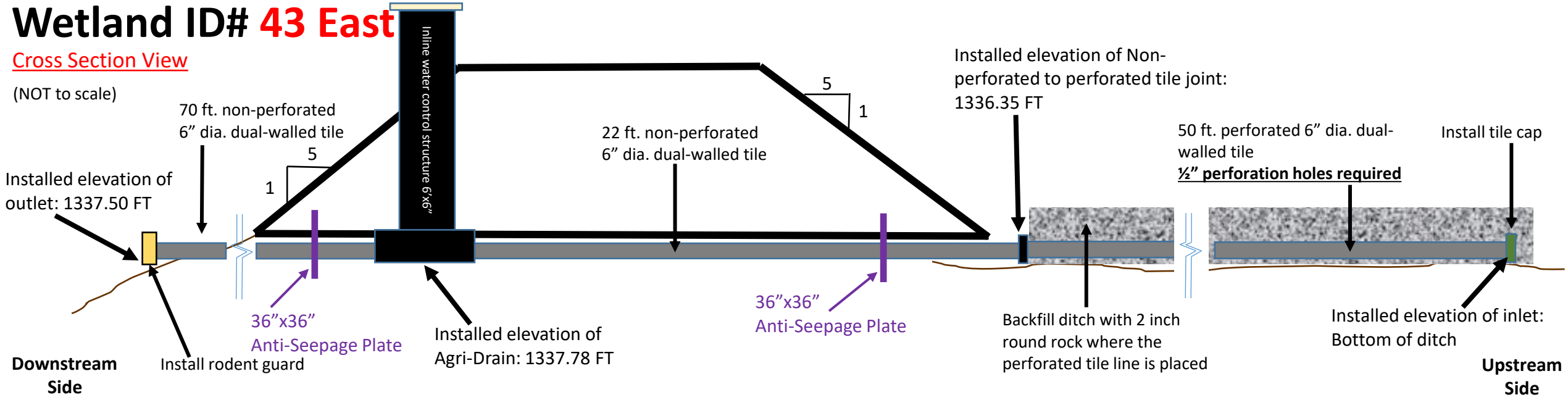
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, black dirt can be used from the core trench spoil or from within the wetland basin, no more then 6 inches of black dirt should be removed from anyone location within the wetland basin.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 910 cubic yards.
- All ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
_____		
_____		
_____		
Construction Specifications		
1. Elevation of dam top:	1342.60	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	4.91	Feet
4. Max bottom width of dam:	59.10	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	654.00	Feet

Wetland ID# 43 East

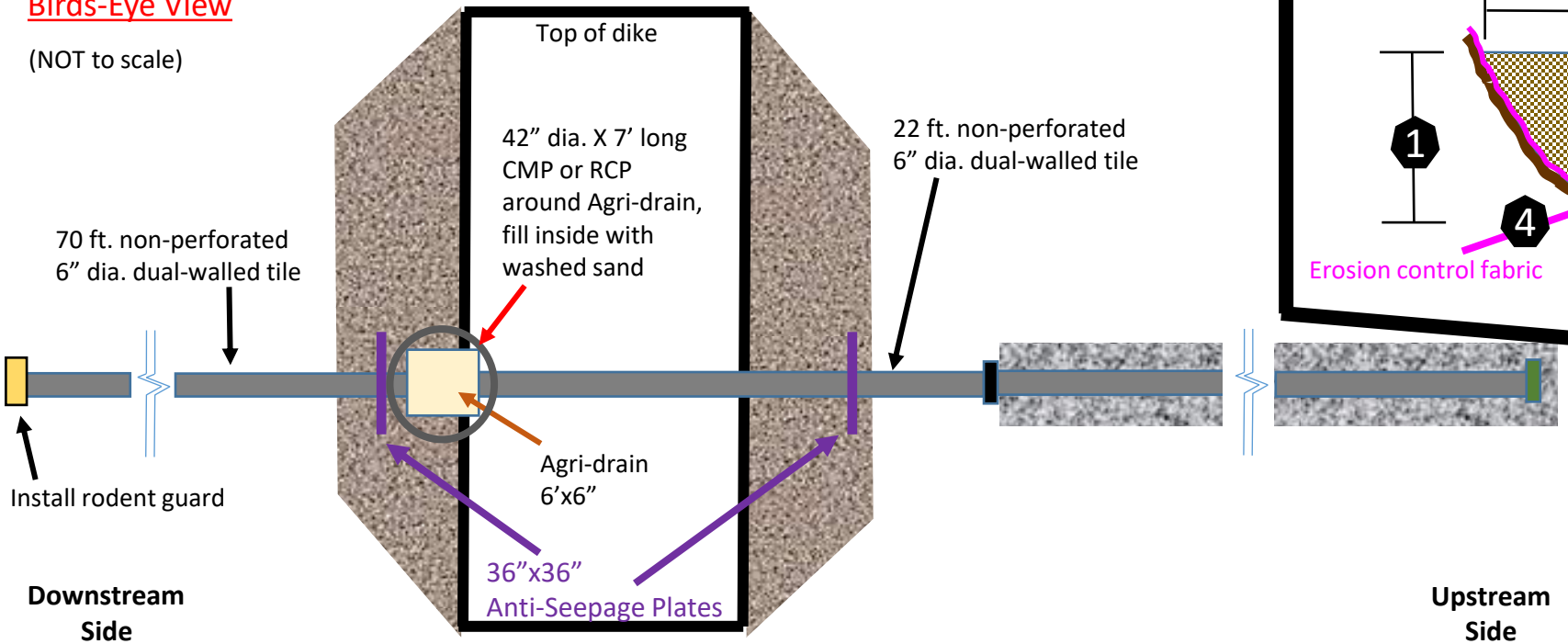
Cross Section View

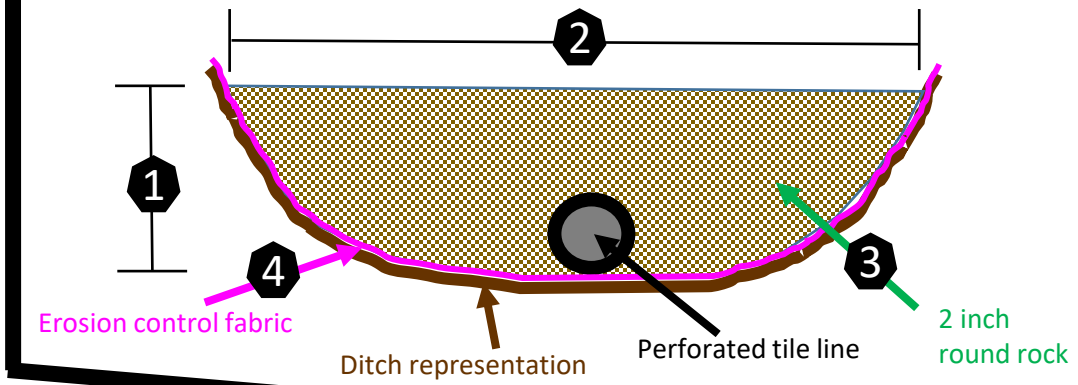
(NOT to scale)



Birds-Eye View

(NOT to scale)





Isometric Profile of Perforated Tile Line in Ditch

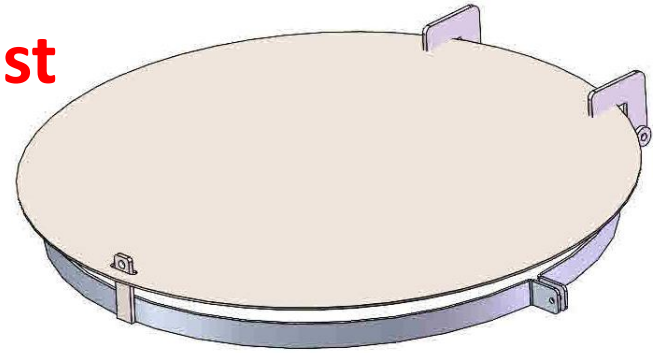
(NOT to scale)

Construction Specifications		
1. Height of fill material:	2.5	Feet
2. Approximate width of fill material:	5.0	Feet
3. 2 inch round rock:	25.0	CY
4. Erosion control fabric:	350.0	Sq Ft

Wetland ID# 43 East

Agri-Drain Detail

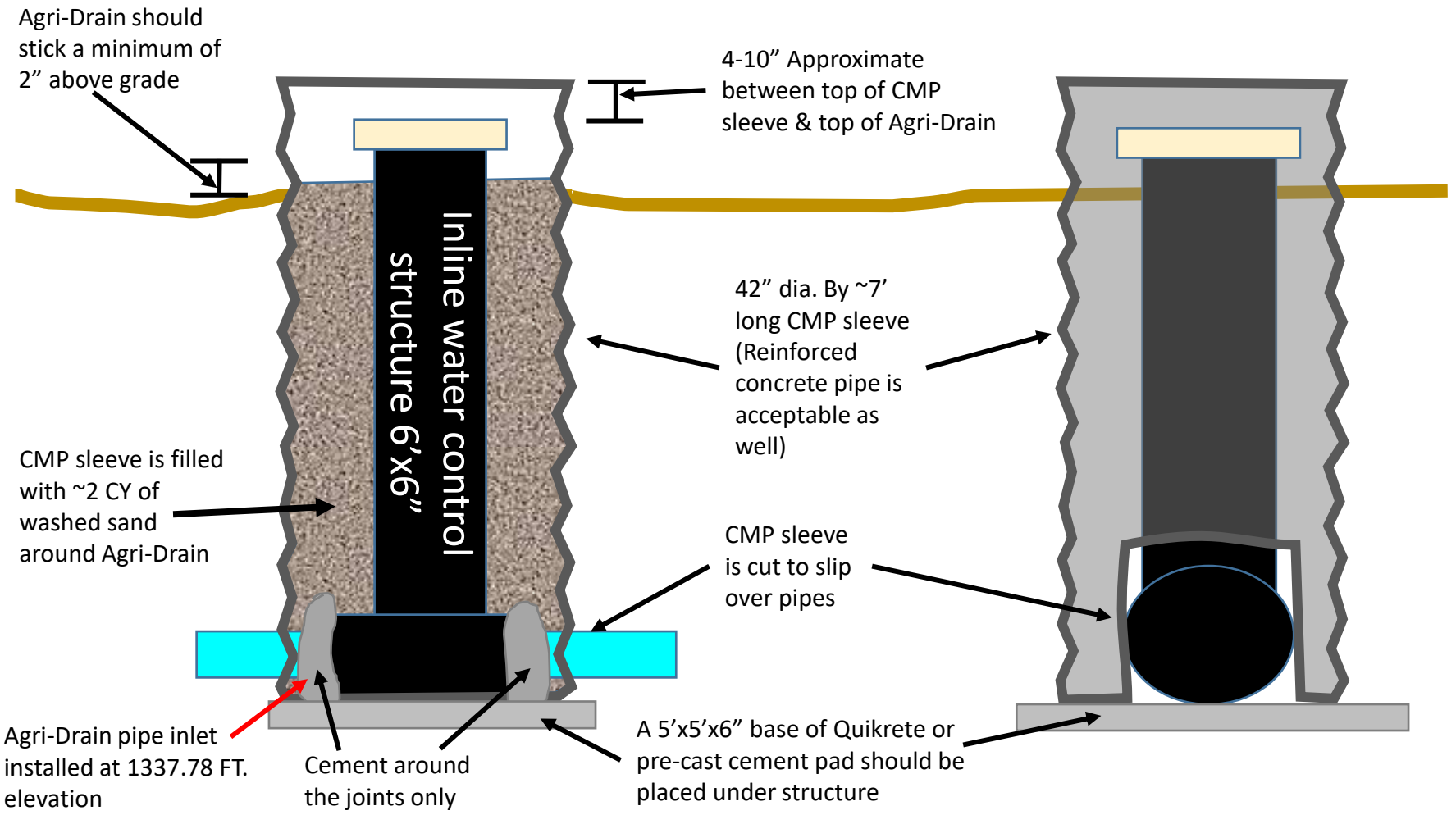
(NOT to scale)



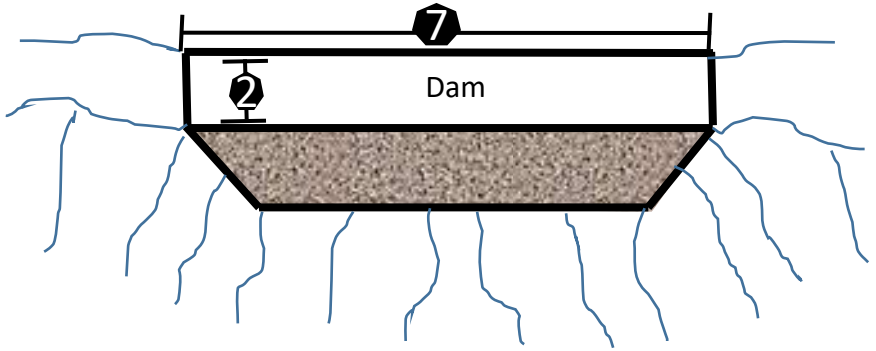
A locking cover made for a 42” CMP will be installed on the CMP sleeve. This must be purchased from Haala Industries.
Should you go the route of RCP pipes, be sure Haala makes the lids to fit concrete pipe.

Specifications:

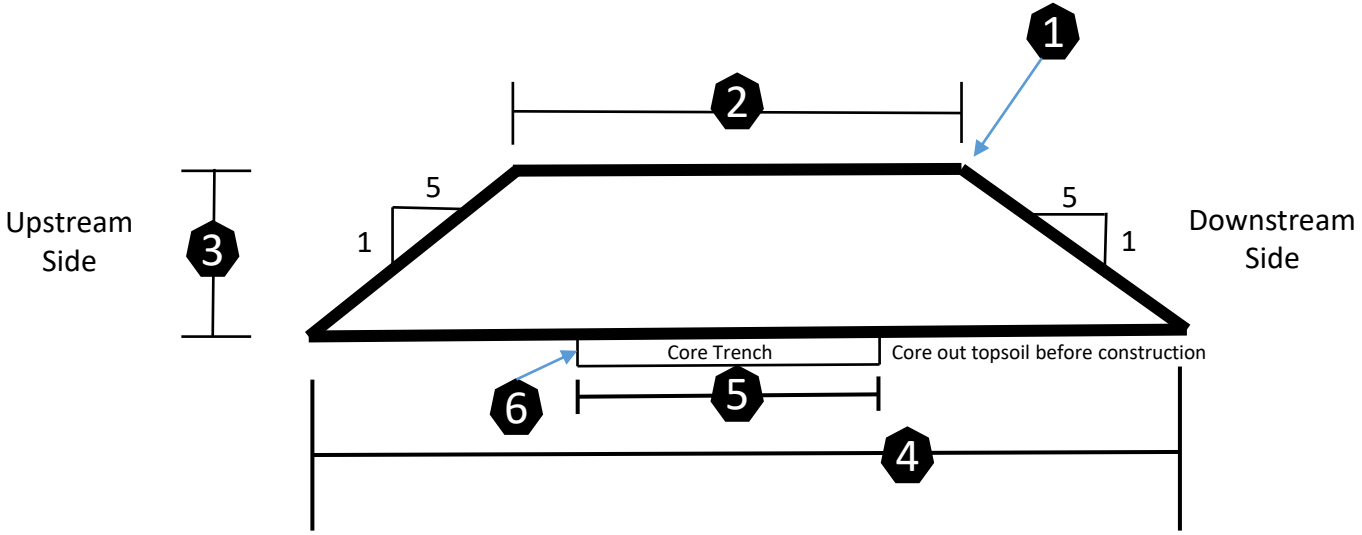
- 3/16” thick lid cover and under supports
- ¼” thick clamping band
- 3/8” thick hinge plates
- 1” thick hinge rod
- Hot dip galvanized after fabrication



Wetland ID# 45 North



Isometric profile along centerline of dam (not to scale)



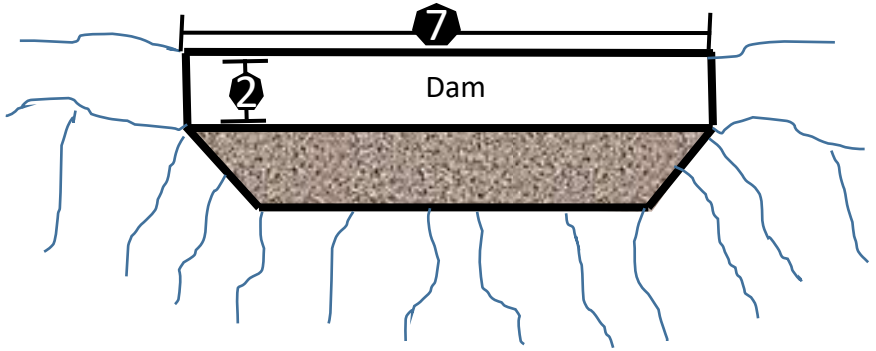
Cross section of dam (not to scale)

Construction Notes:

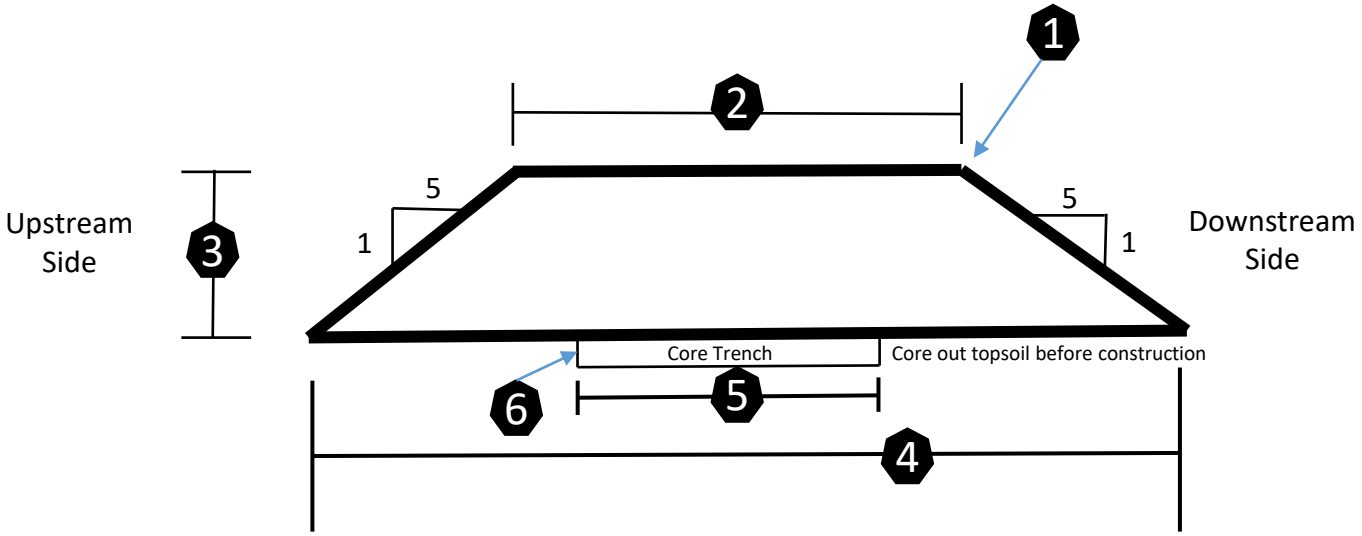
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 33333.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- The wetland will have 0.5 feet of sediment removed from the entire basin, which totals 475 cubic yards.
- Compacted fill needed for dike construction is 40 cubic yards.
- All extra sediment from the scrape should be spread on the uplands adjacent to the wetland and be no deeper than 8 inches in any one location.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1342.60	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	0.79	Feet
4. Max bottom width of dam:	17.90	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	41.50	Feet

Wetland ID# 45 East



Isometric profile along centerline of dam (not to scale)



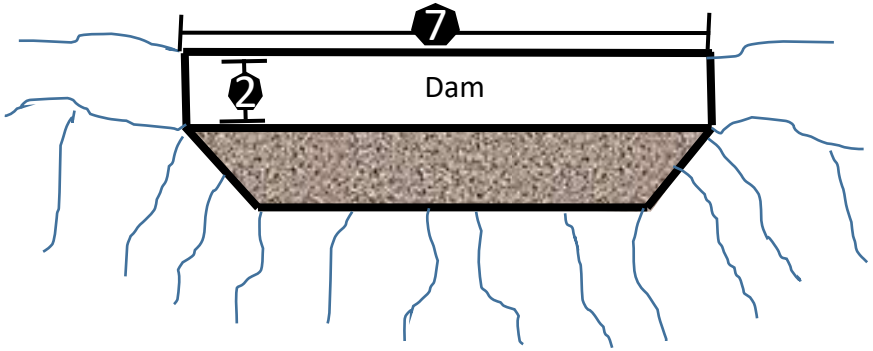
Cross section of dam (not to scale)

Construction Notes:

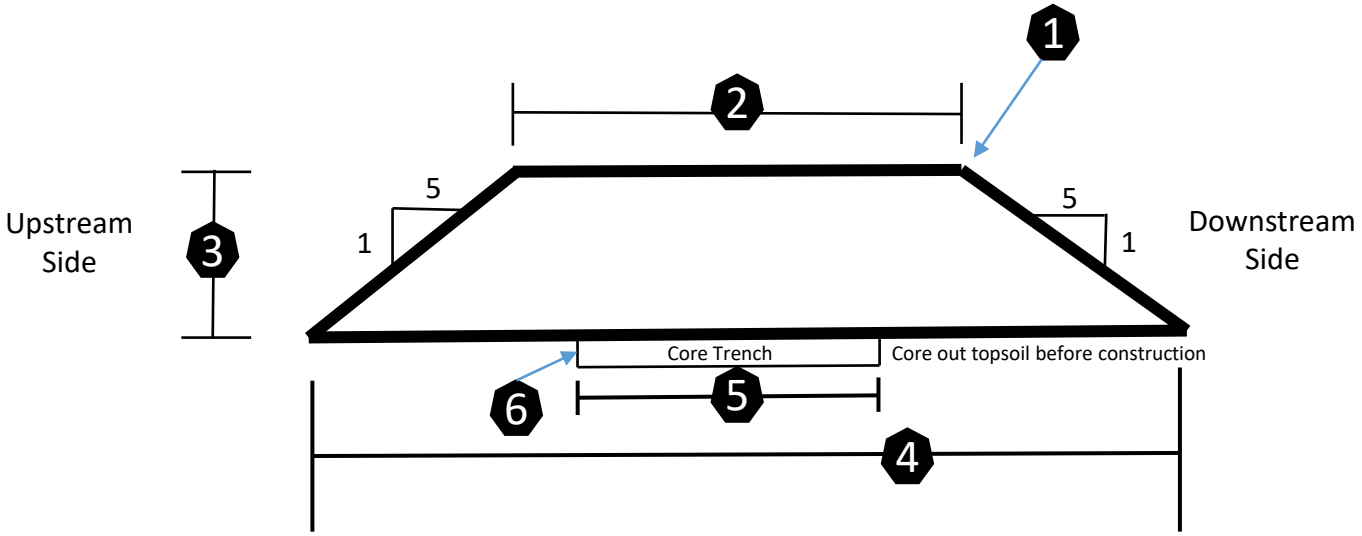
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- The wetland will have 0.5 feet of sediment removed from the entire basin, which totals 475 cubic yards.
- Compacted fill needed for dike construction is 70 cubic yards.
- All extra sediment from the scrape should be spread on the uplands adjacent to the wetland and be no deeper than 8 inches in any one location.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1342.60	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	1.30	Feet
4. Max bottom width of dam:	23.00	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	63.00	Feet

Wetland ID# 49



Isometric profile along centerline of dam (not to scale)



Cross section of dam (not to scale)

Construction Notes:

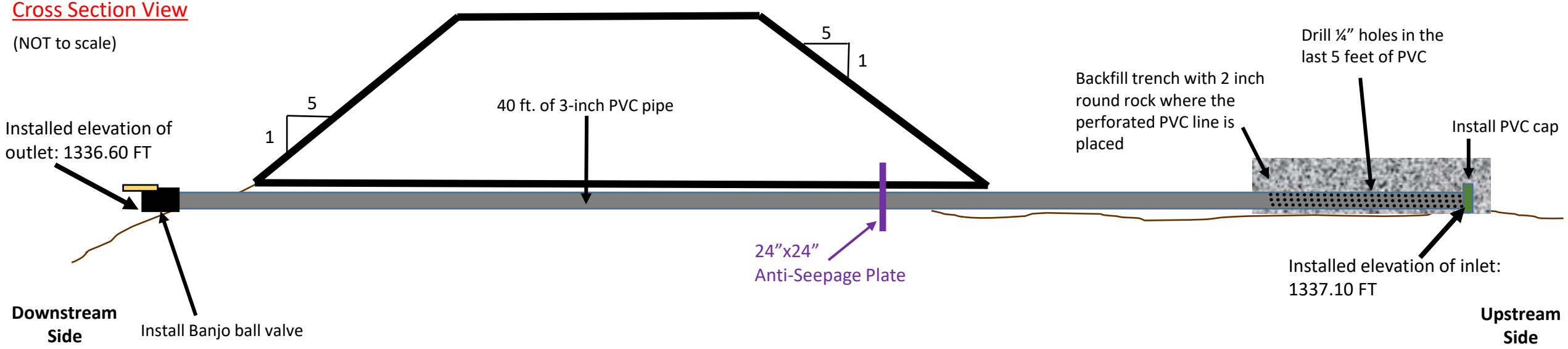
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 175 cubic yards.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1340.10	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	1.45	Feet
4. Max bottom width of dam:	24.5	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	217	Feet

Wetland ID# 49

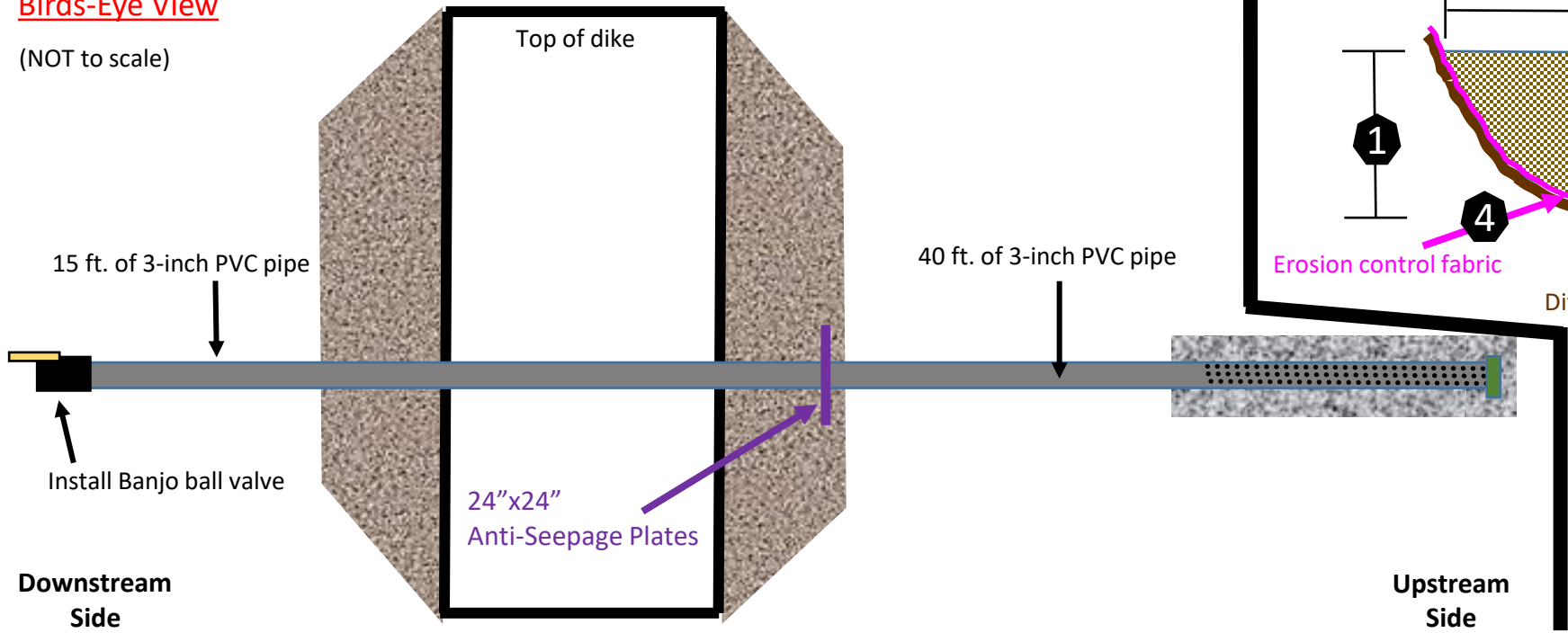
Cross Section View

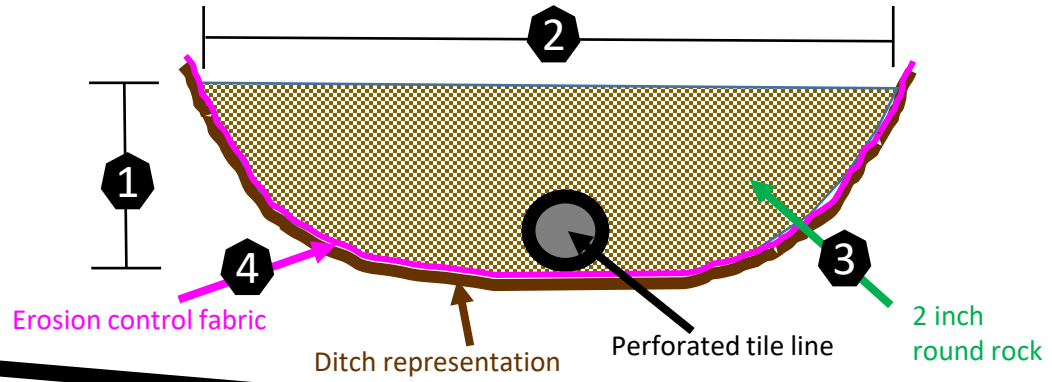
(NOT to scale)



Birds-Eye View

(NOT to scale)



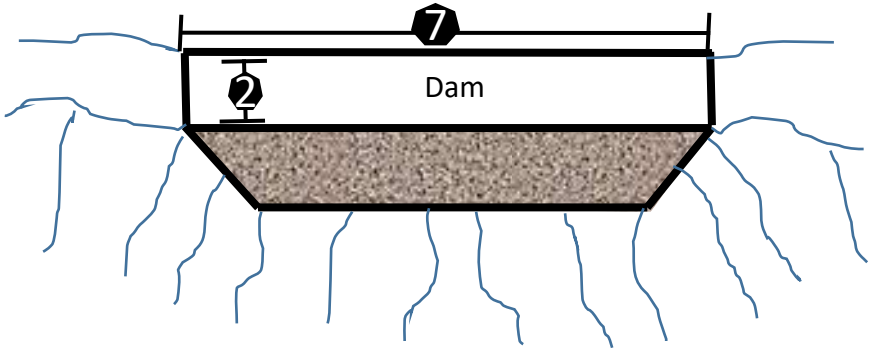


Isometric Profile of Perforated PVC Line in Ditch

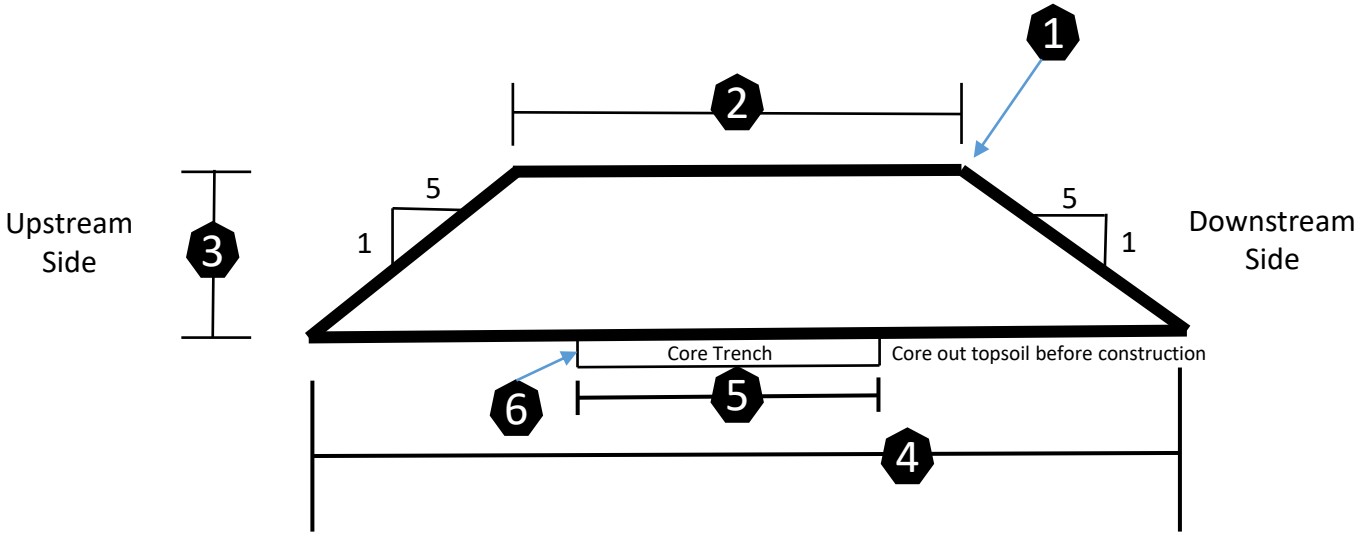
(NOT to scale)

Construction Specifications		
1. Height of fill material:	1.5	Feet
2. Approximate width of fill material:	3.0	Feet
3. 2 inch round rock:	2.0	CY
4. Erosion control fabric:	25.0	Sq Ft

Wetland ID# 50



Isometric profile along centerline of dam (not to scale)



Cross section of dam (not to scale)

Construction Notes:

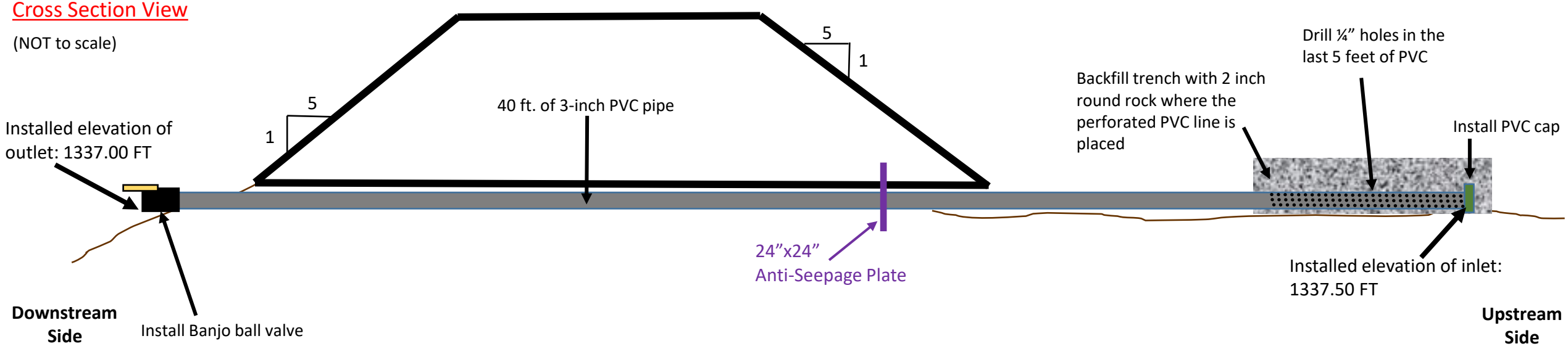
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 55 cubic yards.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1339.10	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	2.41	Feet
4. Max bottom width of dam:	34.1	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	70.00	Feet

Wetland ID# 50

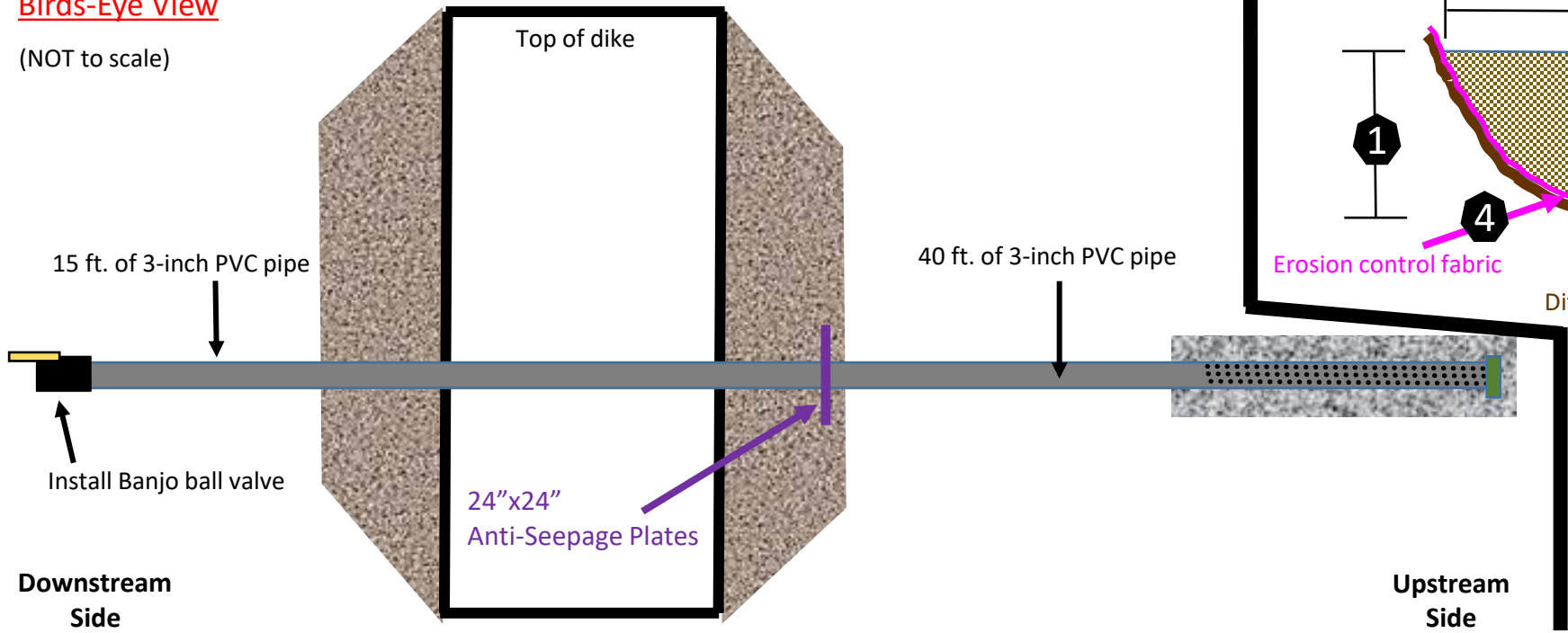
Cross Section View

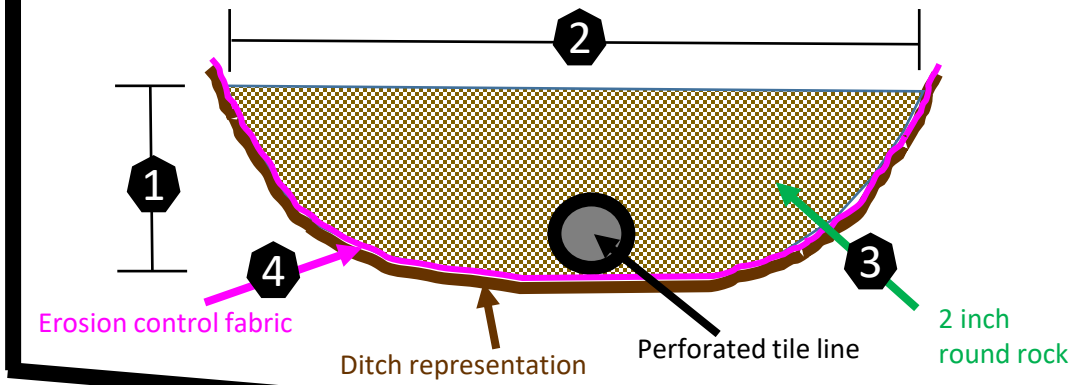
(NOT to scale)



Birds-Eye View

(NOT to scale)



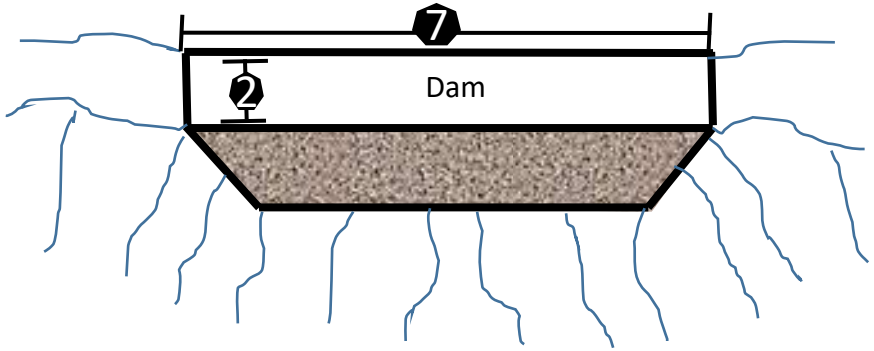


Isometric Profile of Perforated PVC Line in Ditch

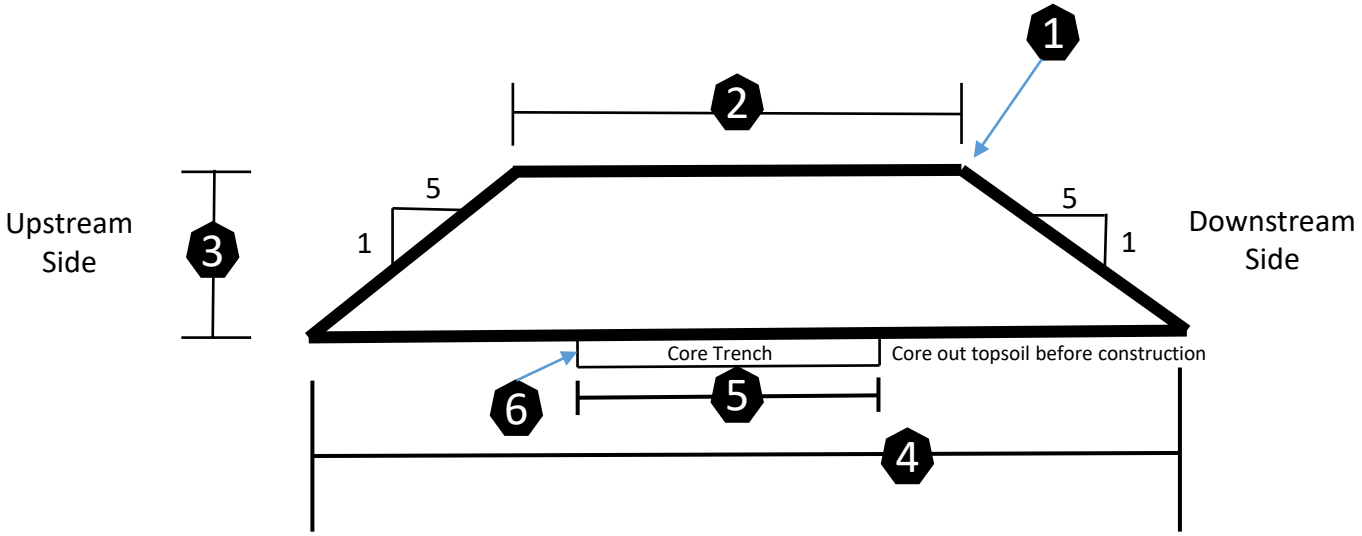
(NOT to scale)

Construction Specifications		
1. Height of fill material:	1.5	Feet
2. Approximate width of fill material:	3.0	Feet
3. 2 inch round rock:	2.0	CY
4. Erosion control fabric:	25.0	Sq Ft

Wetland ID# N1



Isometric profile along centerline of dam (not to scale)



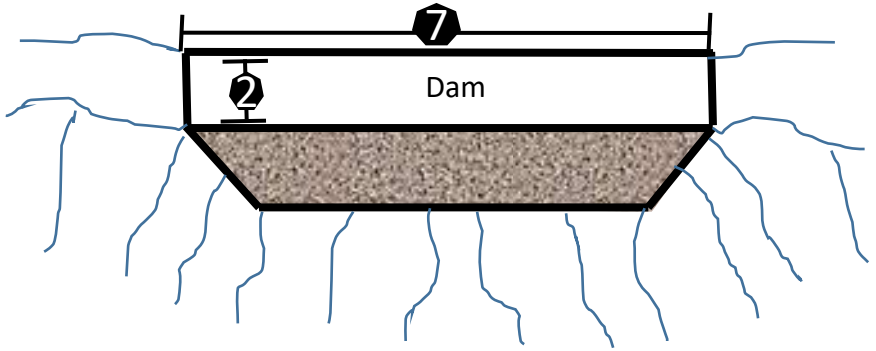
Cross section of dam (not to scale)

Construction Notes:

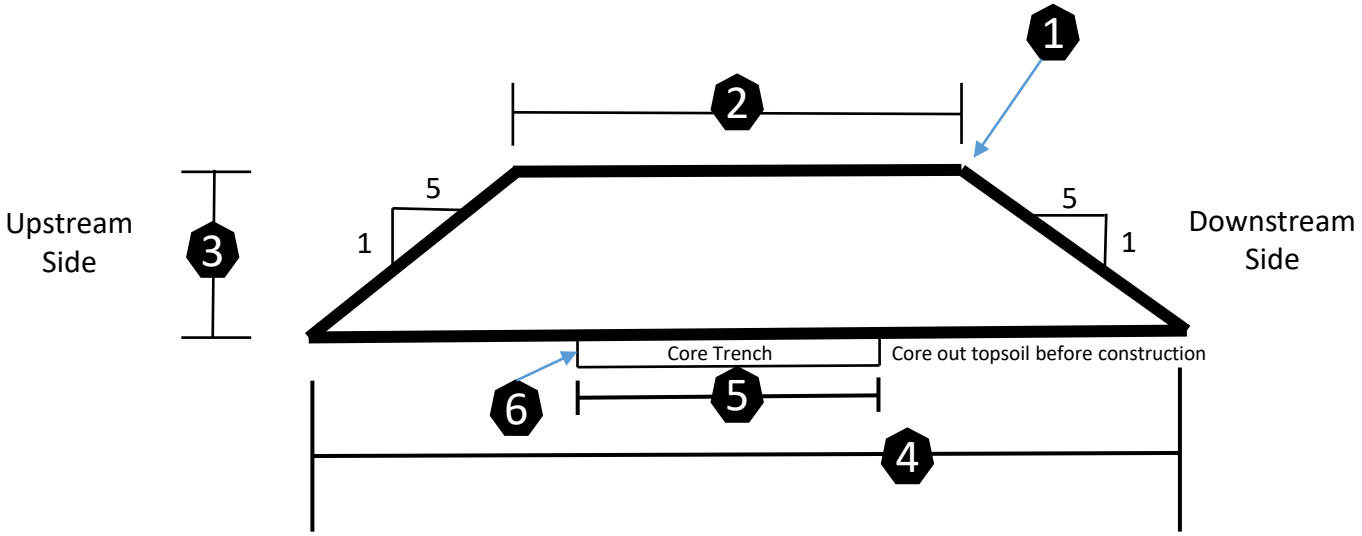
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- The wetland will have 0.5 feet of sediment removed from the entire basin, which totals 120 cubic yards.
- Compacted fill needed for dike construction is 40 cubic yards.
- All extra sediment from the scrape should be spread on the uplands adjacent to the wetland and be no deeper than 8 inches in any one location.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
_____		
_____		
_____		
Construction Specifications		
1. Elevation of dam top:	1340.10	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	0.93	Feet
4. Max bottom width of dam:	19.30	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	110.00	Feet

Wetland ID# N2



Isometric profile along centerline of dam (not to scale)



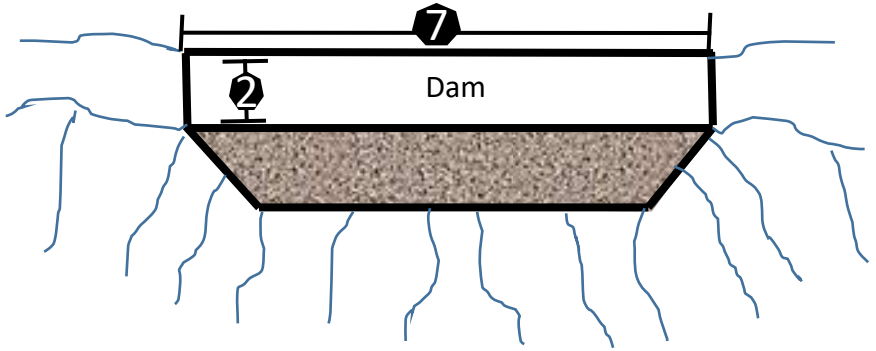
Cross section of dam (not to scale)

Construction Notes:

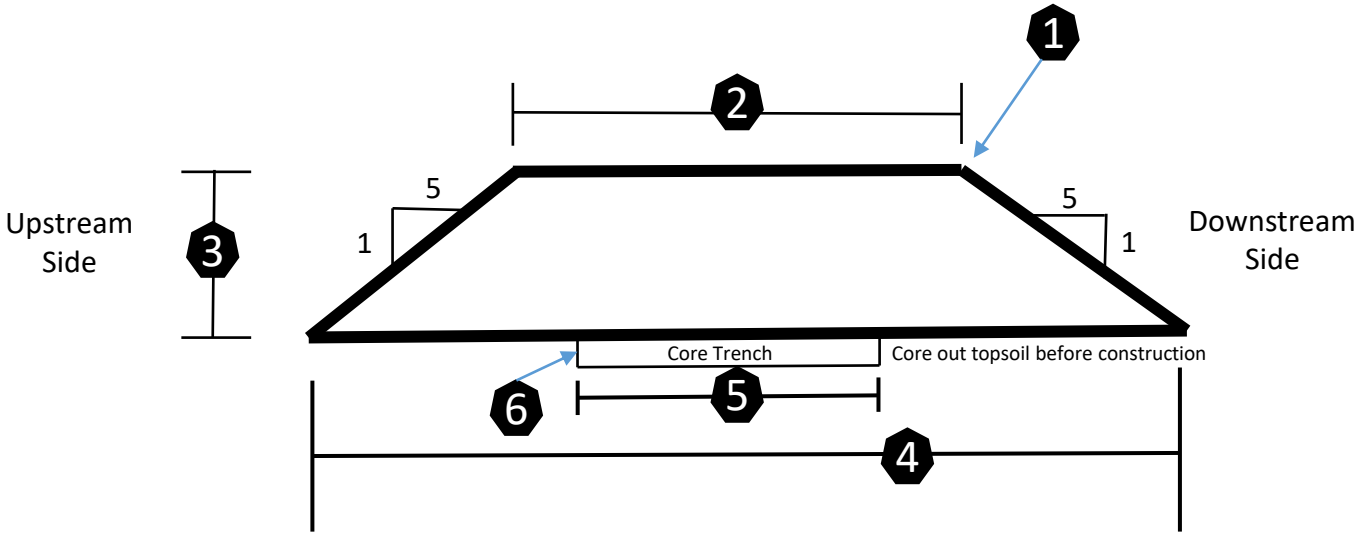
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- The wetland will have 0.5 feet of sediment removed from the entire basin, which totals 100 cubic yards.
- Compacted fill needed for dike construction is 45 cubic yards.
- All extra sediment from the scrape should be spread on the uplands adjacent to the wetland and be no deeper than 8 inches in any one location.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1342.60	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	1.28	Feet
4. Max bottom width of dam:	22.80	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	67.50	Feet

Wetland ID# N6



Isometric profile along centerline of dam (not to scale)



Cross section of dam (not to scale)

Construction Notes:

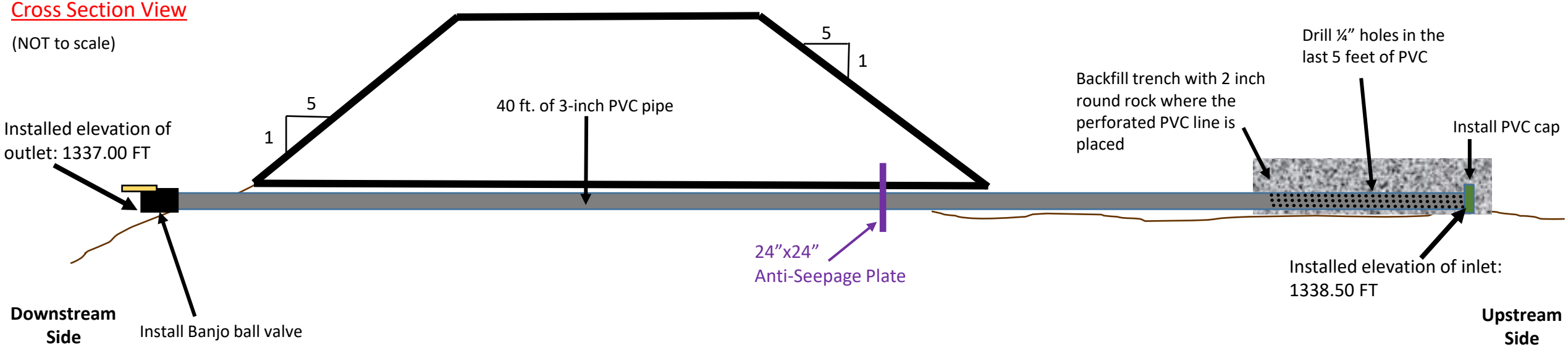
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 3.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- The wetland will have 0.5 feet of sediment removed from the entire basin, which totals 285 cubic yards.
- Compacted fill needed for dike construction is 145 cubic yards.
- All extra sediment from the scrape should be spread on the uplands adjacent to the wetland and be no deeper than 8 inches in any one location.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1343.00	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	3.63	Feet
4. Max bottom width of dam:	46.30	Feet
5. Core trench width (minimum):	3.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	90.00	Feet

Wetland ID# N6

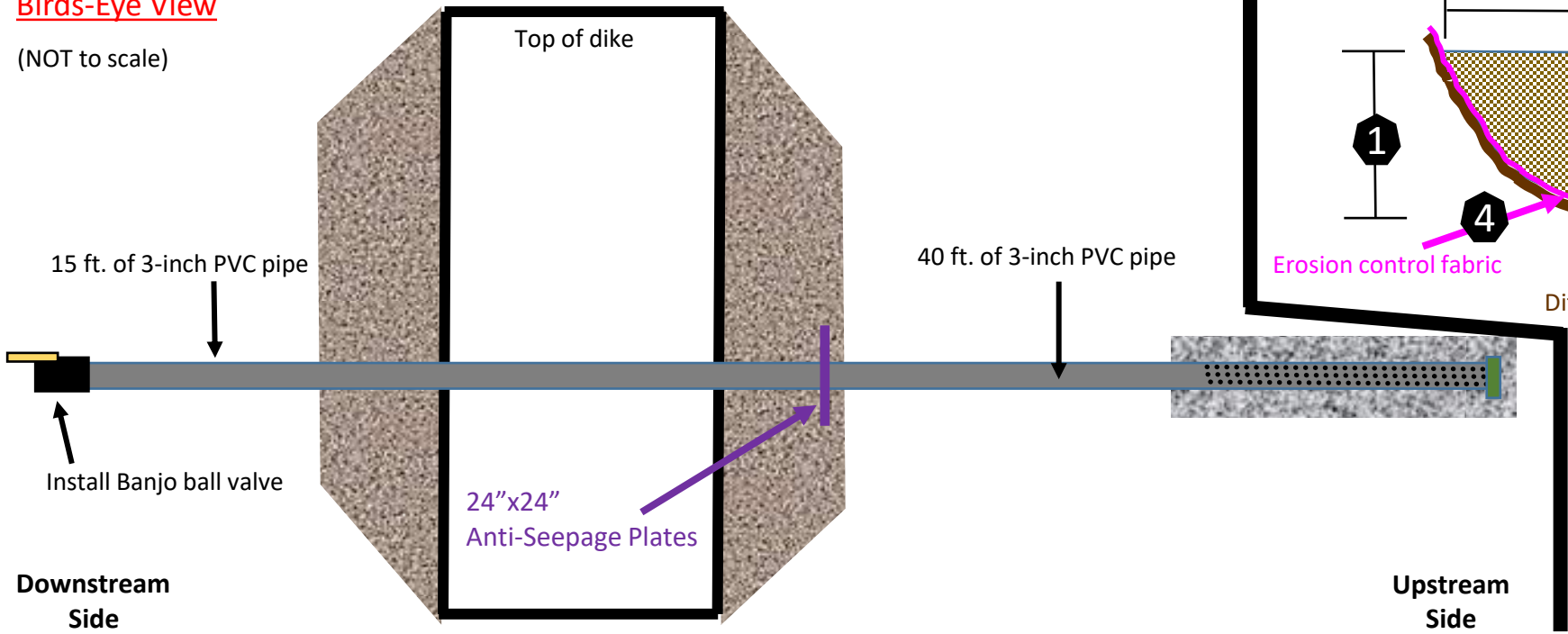
Cross Section View

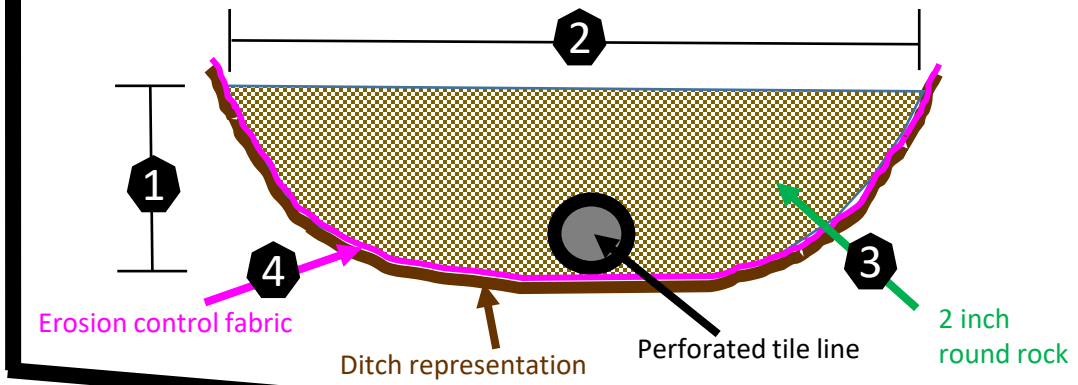
(NOT to scale)



Birds-Eye View

(NOT to scale)



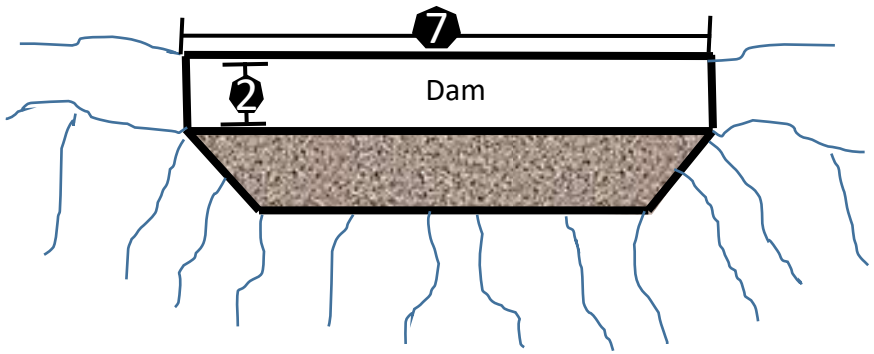


Isometric Profile of Perforated PVC Line in Ditch

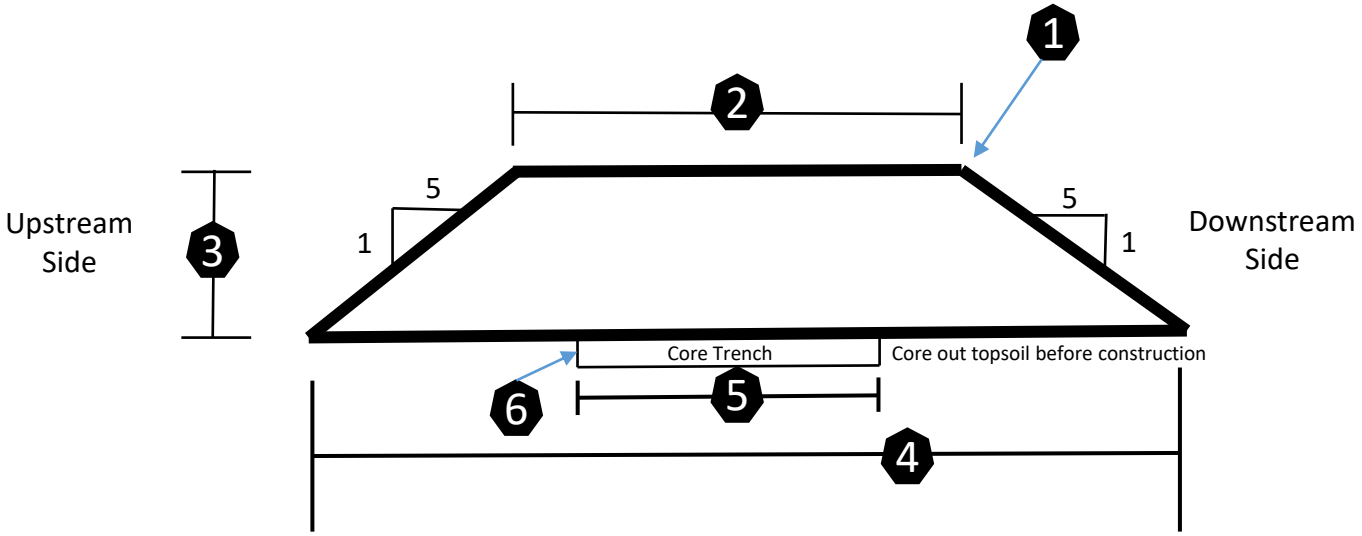
(NOT to scale)

Construction Specifications		
1. Height of fill material:	1.5	Feet
2. Approximate width of fill material:	3.0	Feet
3. 2 inch round rock:	2.0	CY
4. Erosion control fabric:	25.0	Sq Ft

Wetland ID# N8



Isometric profile along centerline of dam (not to scale)



Cross section of dam (not to scale)

Construction Notes:

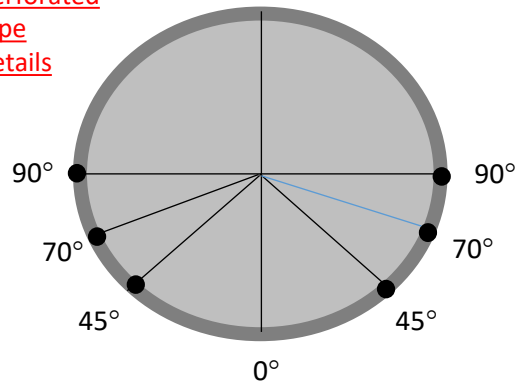
- Scrape off topsoil to a depth of 2.0 feet and a minimum width of 8.0 feet to form a core trench under the entire length of the dike.
- Construct plug with clay from the borrow pit, compact in 6-inch lifts.
- Dike will be built to specified elevations and dimensions.
- 4 inches of topsoil will be placed on top and sides of dike to accommodate plant growth, unless dike is built out of black dirt already; black dirt from core trench can be used.
- Sod layers should only be placed on the downstream toe or slope of dike.
- Construct dike out to designated locations; length, widths, height, and side slopes.
- Compacted fill needed for dike construction is 35 cubic yards.
- Edges of the scraped wetland should be feathered to match the surround topography, all ridges/clumps/ruts/holes must be leveled, feathered out, and filled in.
- Locations will be staked out prior to construction start date, and benchmark elevations will be placed.
- **Contractor is responsible for the Gopher State One Call.**

Benchmark Elevation:		Feet
Description of Bench:	_____	
	_____	
	_____	
Construction Specifications		
1. Elevation of dam top:	1338.30	Feet
2. Top width of dam:	10.00	Feet
3. Max height of fill:	0.70	Feet
4. Max bottom width of dam:	17.00	Feet
5. Core trench width (minimum):	8.00	Feet
6. Core trench depth:	2.00	Feet
7. Top length of dam:	40.50	Feet

Perforated Pipe Hole Requirements

8” Dual-walled Perf Pipe

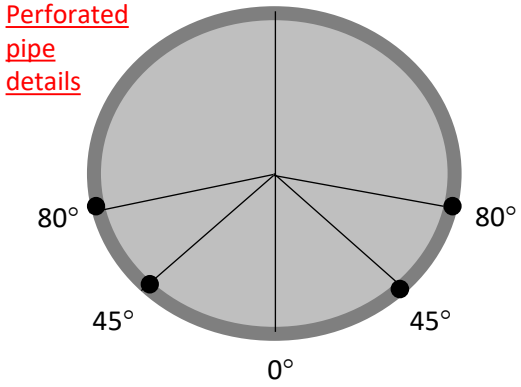
Perforated pipe details



Hole Size: ½”
Hole Spacing: 3” ± ¼”
Hole Rows: 2 @ 90°; 2 @ 140°; 2 @ 180° (± 3°)

4” Dual-walled Perf Pipe

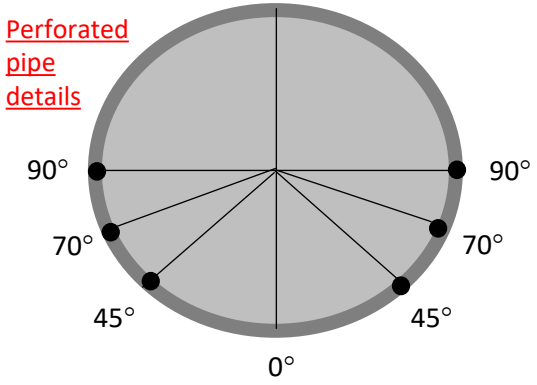
Perforated pipe details



Hole Size: ½”
Hole Spacing: 3” ± ¼”
Hole Rows: 2 @ 90°; 2 @ 160° (± 3°)

6” Dual-walled Perf Pipe

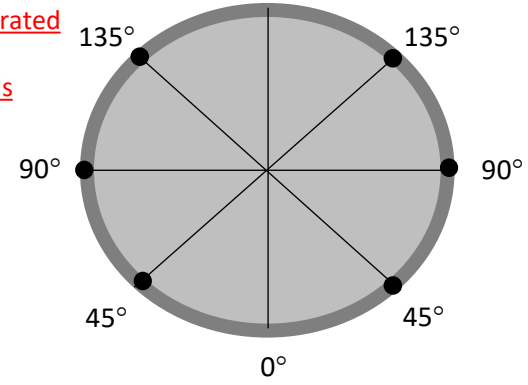
Perforated pipe details



Hole Size: ½”
Hole Spacing: 3” ± ¼”
Hole Rows: 2 @ 90°; 2 @ 140°; 2 @ 180° (± 3°)

3” PVC Perf Pipe

Perforated pipe details



Hole Size: ¼”
Hole Spacing: 3” ± ¼”
Hole Rows: 2 @ 90°; 2 @ 160°; 2 @ 270° (± 3°)

Installing Agri-Drain Water Control Structures in Wetland Dikes

- Once the dike or ditch plug is built to specifications, dig out the base for the Agri-Drain. If possible, leave 6 inches to 1 foot of fall from the inlet to the outlet of the Agri-Drain system.
- Structure base is dug a couple of inches below pipe grade. Make sure base is firm and packed very well.
- Lay down a 4 inch base of dry Quikrete® and level it.
    - Alternative, use a precast cement pad.
    - You may lay down a base layer of pea rock or class IV gravel under the Quikrete® or precast cement pad to form a more solid base.
        - It is usually best to have something between the compacted clay and structure.
    - Basically you need a firm base to set the water control structure (WCS) on. Dry Quikrete® will solidify on its own.

- Lift structure from the hook loops built into the top frame bracket.
- Keep all stop log boards in the structure during installation for side support.
- Take the lid off during lifting to avoid pinching or breaking it. Reinstall after WCS is set in place.
- NOTICE: there is a flow direction marked on the structure. Install in the correct direction.
- Place structure level and plumb.
- Reinstall lid after WCS is set in place.

- Depending on pipe type being used, some types of pipe have the first couple of ribs narrow for fitting into a bell gasket. If so, cut those narrow ribs off for a tighter fit into the Fernco® rubber coupler (if that is what the WCS was ordered with).
- Coat the first couple of ribs with mastic tar (roofing cement trowel grade).

- Install the pipe firmly into the Fernco® coupler and tighten straps.
    - FYI the metal band straps are zipped tied to the inside top of the structure from the manufacture.

- Cement around the seams of the pipes to prevent future separation.
- Slip a corrugated metal pipe (CMP) over the WCS.
    - Be sure to cut out a “U” shape in the CMP so that it fits around the pipes coming out of the WCS.
    - The WCS should stick 2-6 inches above grade.
    - The CMP should stick 4-8 inches above the WCS.
- Next place highly compacted clay fill around the CMP.

- Once CMP is backfilled around it with clay, fill the CMP with washed sand to within 2-6 inches from the top of the WCS.
    - Be sure to leave stop logs in while back filling the WCS with sand

- Install anti-seep collars on both ends of pipe coming out of the WCS
    - See individual designs sheets for placement of anti-seep collars
    - They should be installed far enough into the dike or ditch plug so that the entire anti-seep collar will be covered with at least 6 inches of clay from the top of it.
        - On the upstream side of the WCS, the anti-seep collar should be installed downstream of the first pipe connection and vice versa on the downstream side.
- Fill ribs and seams of anti-seep collar with mastic tar.

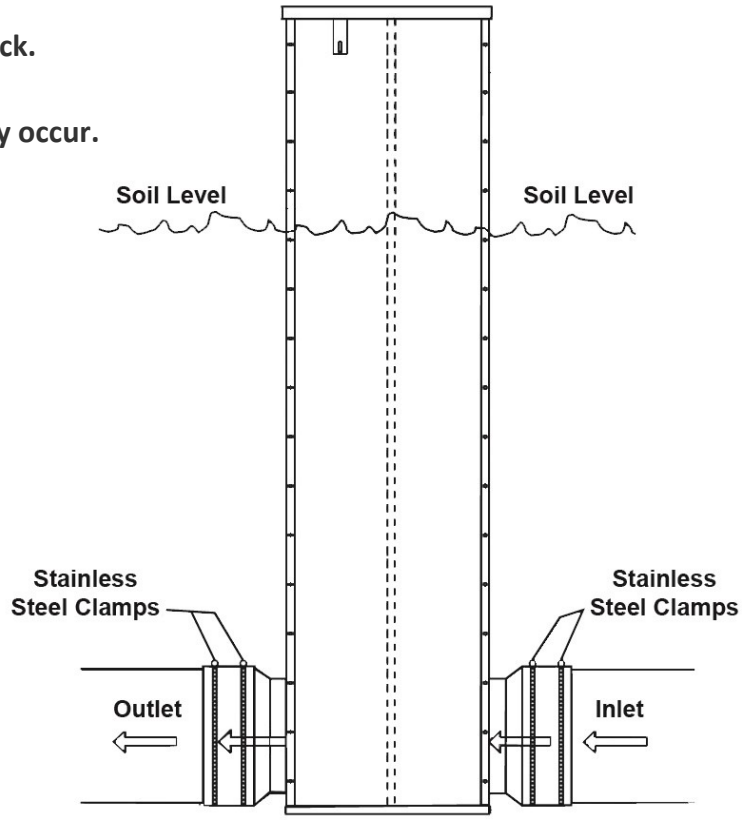
- Depending on the type of anti-seep collar, bolt on the top half if necessary and fill ribs and seems with mastic tar.
- Pour dry bentonite around seam or excess cement if you have some.

- Pipe should be bell and gasket seal, so it shouldn’t leak, but use wetted Quikrete® around all main seems of pipe to reduce the chance of pipe separation in the future.

- Backfill and compact with a vibratory packer or jumping jack in 6 inch lifts. Caution: be sure to only use hand or foot to pack up against the pipes.
- Mound soil of the pipe end as much as possible. Preferably at least 3 feet of quality compacted fill over the pipe. Can be a steep slope down to pipe, it doesn't have to match the more gradual dike slope.
- DO NOT use guard on inlet side. They are prone to plugging and then difficult to unplug when the wetland is then filled with water.
- BE SURE to install a rodent guard on the downstream pipe end if applicable.

INLINE WATER LEVEL CONTROL STRUCTURE™ INSTALLATION INSTRUCTIONS

Important! **—To minimize seepage, align stoplogs firmly against one side of the stoplog track.**
—Stoplogs must remain in track during structure installation.
—Structures are intended for gravity flow: Low pressure and some seepage may occur.



1.) EXCAVATION AND GRADING

Structure base, inlet pipe, & outlet pipe must be set on compacted soil or fill sand to provide a solid, stable base. This will reduce settling and reduce stress or misalignment of pipe connections.

2.) PIPE CONNECTION

Remove stainless steel clamps from inside structure. Place pipe inside flex couplers and tighten SS clamps.

3.) BACKFILL AND COMPACTION

Level structure vertically before placing backfill. Backfill around control structure by hand in 6" lifts. Hand tamp only - **do not** mechanically compact. **Do not** use a backhoe or blade to place backfill directly against the water control structure.

—**Seal on stoplog faces downstream/outlet side of structure.**

Excessive compaction may cause structural damage or failure.

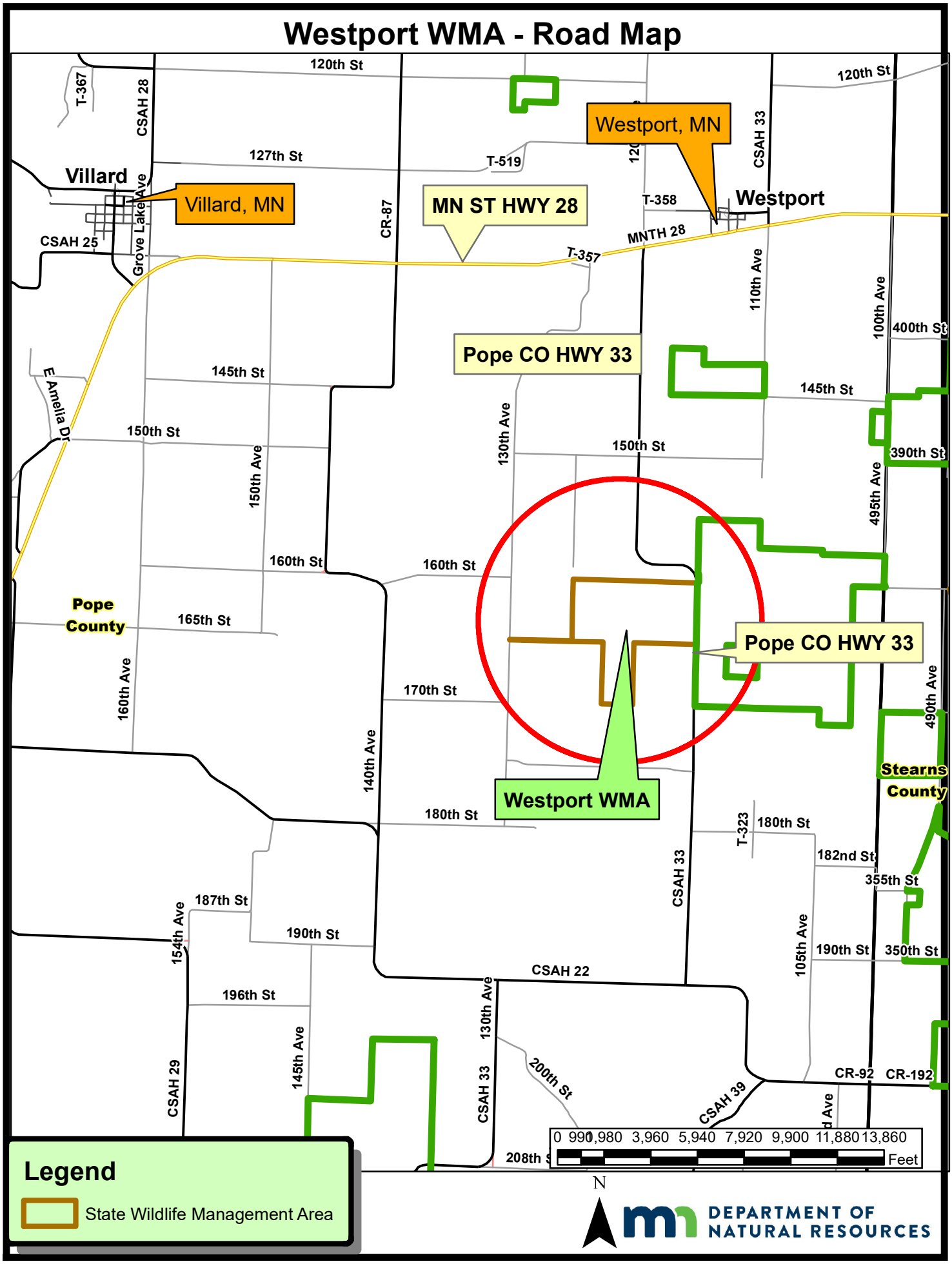
- Either the inlet or inline structure may be used for primary or secondary outlet, with larger pipe or emergency spillway as primary.
- Inline structure removes subsurface water.
- On the inline installation, the inlet end of the pipe should be held off the bottom of the impoundment to allow for siltation, and be protected with an inlet guard. The outlet end of the structure should be protected with a rodent guard.
- In a controlled drainage or subsurface irrigation application, the structure nearest the outlet should be installed with a minimum of 20' of non-perforated pipe on the downstream end. Anti-Seep Collars are recommended.

Agri Drain CORPORATION

1462 340th Street
Adair, Iowa 50002
P: 800-232-4742
F: 800-282-3353
www.agridrain.com
info@agridrain.com

— Since 1976 —

Exhibit B
Westport WMA
Map Package


Westport WMA - Road Map
120th St
T-367
CSAH 28
Westport, MN
CSAH 33
127th St
T-519
Villard
Villard, MN
MN ST HWY 28
T-358
Westport
CR-87
CSAH 25
Grove Lake Ave
MNTH 28
T-357
110th Ave
100th Ave
400th St
Pope CO HWY 33
E Amelia Dr
145th St
130th Ave
150th St
390th St
150th Ave
495th Ave
160th St
Pope County
165th St
160th Ave
170th St
490th Ave
140th Ave
Stearns County
Westport WMA
180th St
T-323
182nd St
355th St
187th St
154th Ave
190th St
105th Ave
350th St
CSAH 22
196th St
130th Ave
145th Ave
CSAH 29
CSAH 33
200th St
CSAH 39
CR-92
CR-192
208th St
0 990 1,980 3,960 5,940 7,920 9,900 11,880 13,860
Feet
N
Legend
State Wildlife Management Area
DEPARTMENT OF NATURAL RESOURCES

Westport WMA - 2021 Aerial Imagery

Legend

County

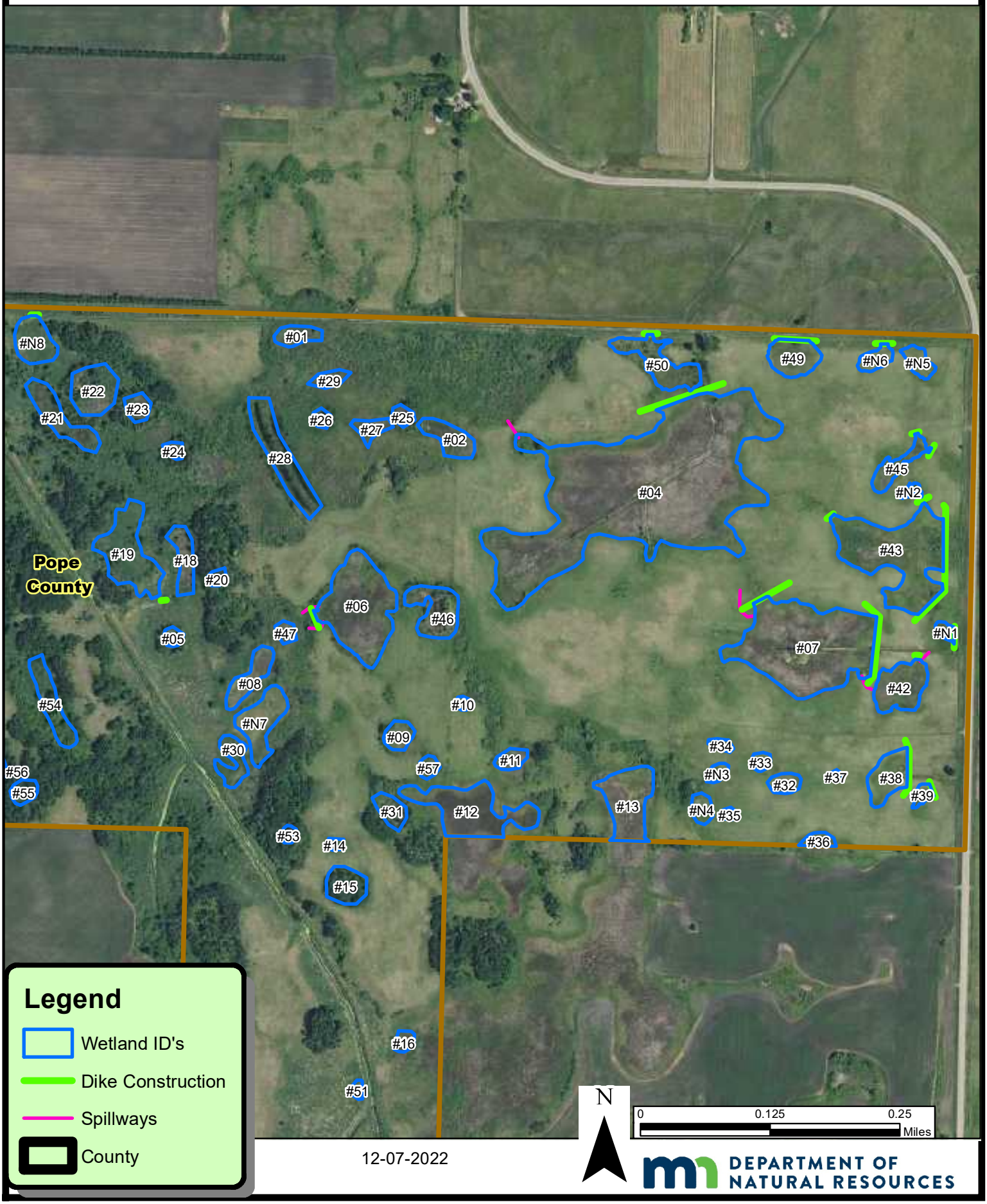
N

0 0.15 0.3 Miles

09-29-2022

DEPARTMENT OF NATURAL RESOURCES

Westport WMA - Dike & Spillway Construction Map



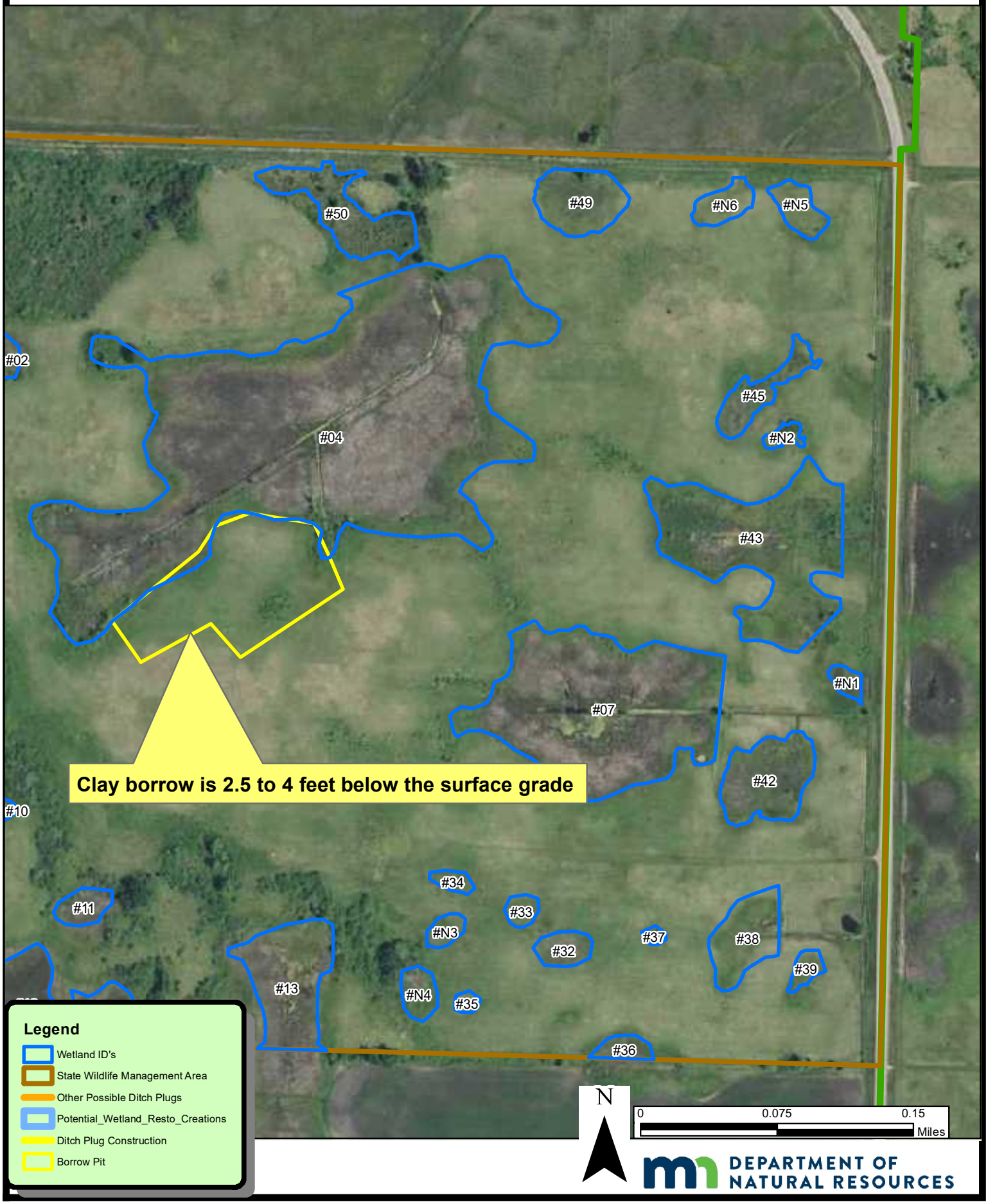
Legend

- Wetland ID's
- Dike Construction
- Spillways
- County

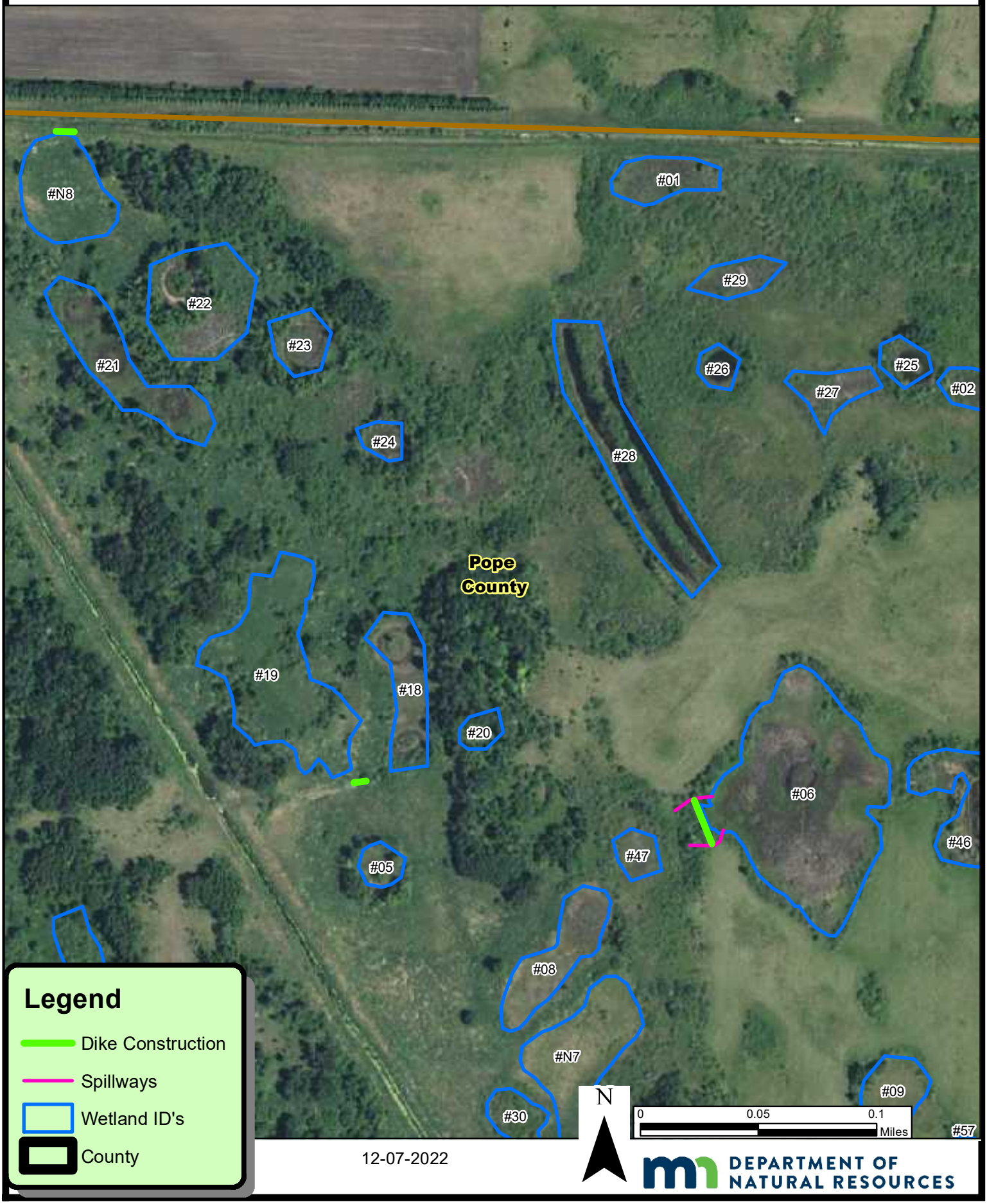
12-07-2022

DEPARTMENT OF NATURAL RESOURCES

Westport WMA - Borrow Pit Location



Westport WMA - Dike & Spillway Construction West Map



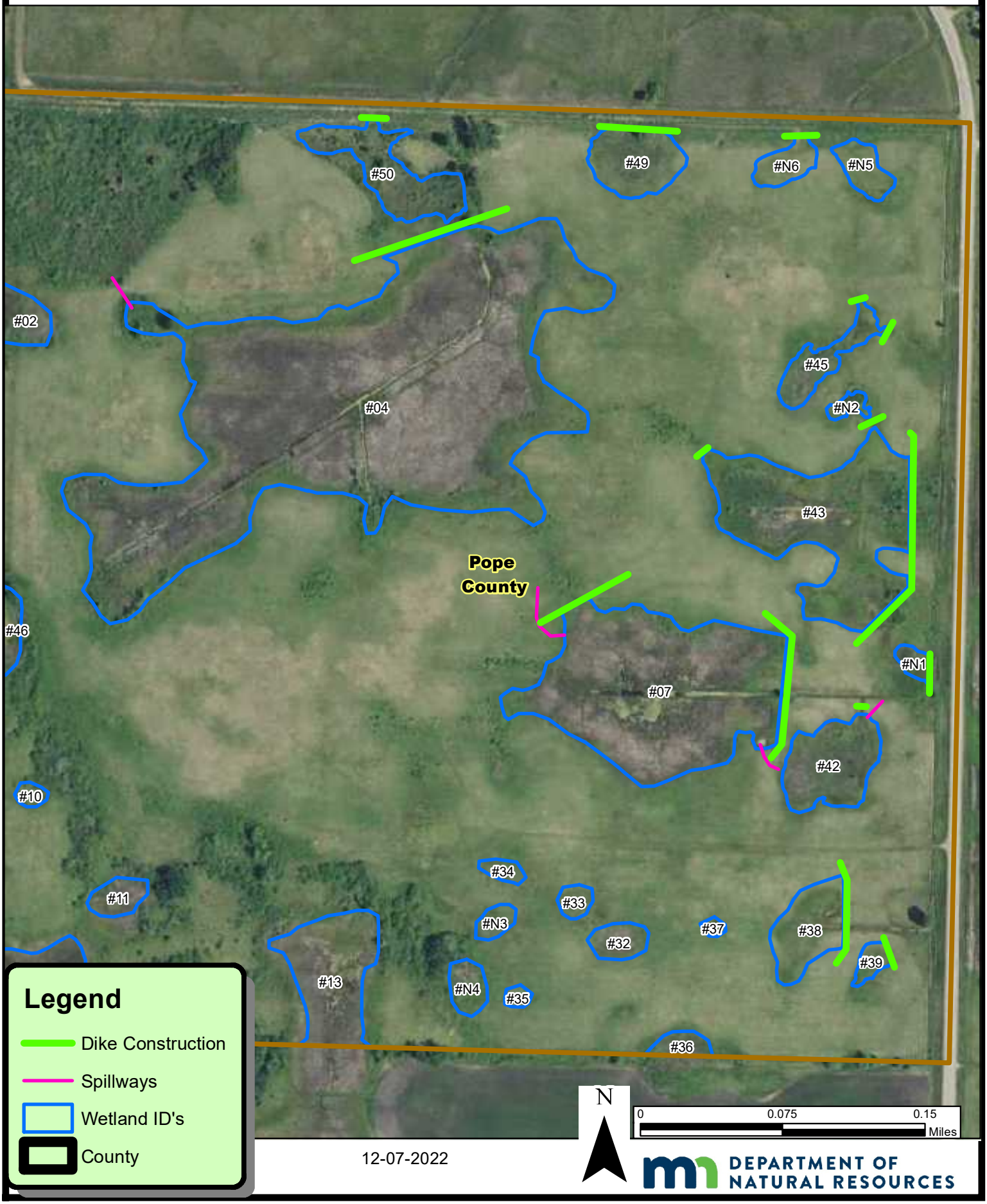
Legend

- Dike Construction
- Spillways
- Wetland ID's
- County

12-07-2022

DEPARTMENT OF NATURAL RESOURCES

Westport WMA - Dike & Spillway Construction East Map



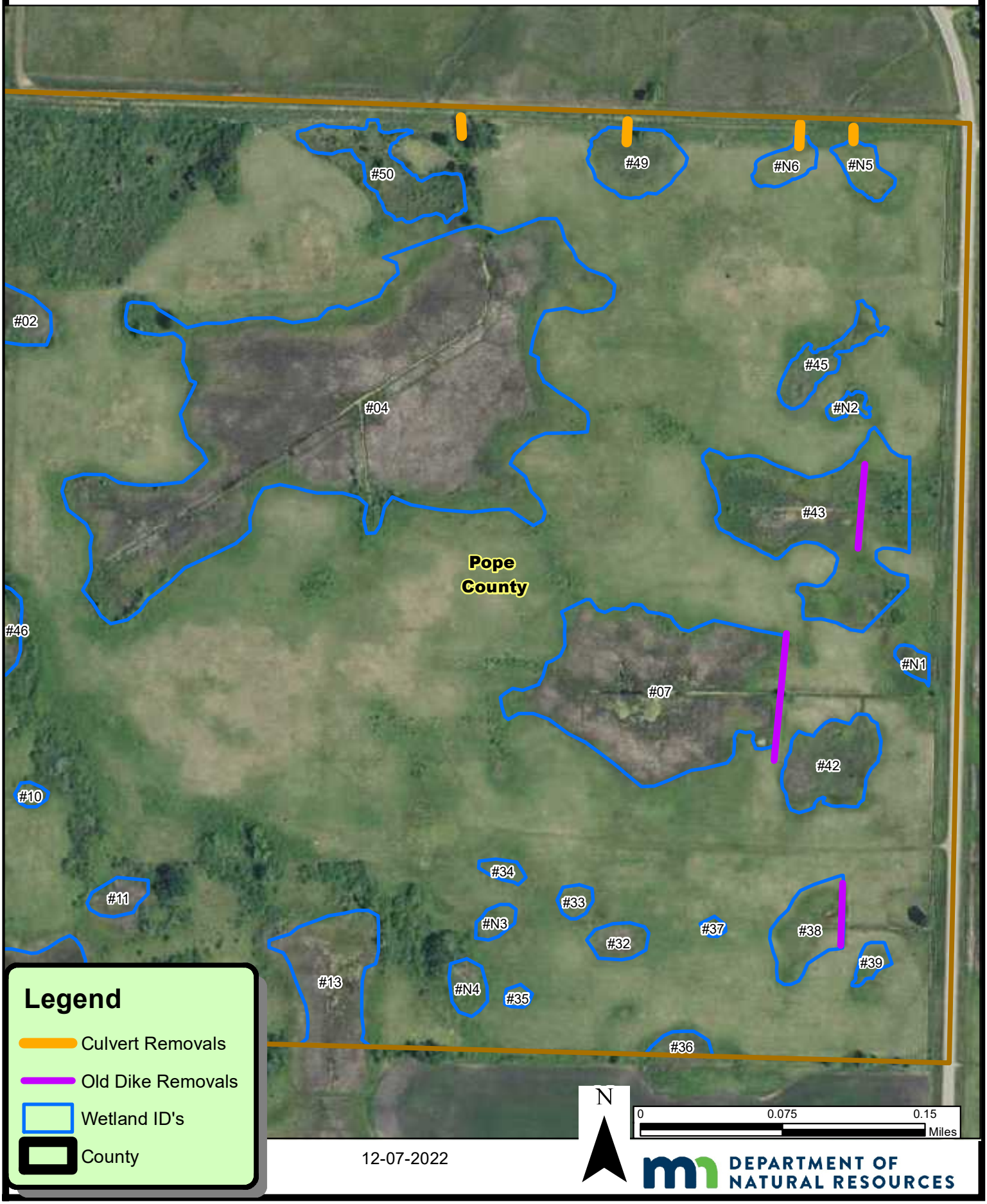
Legend

- Dike Construction
- Spillways
- Wetland ID's
- County

12-07-2022

DEPARTMENT OF NATURAL RESOURCES

Westport WMA - Culvert & Old Dike Removal Map



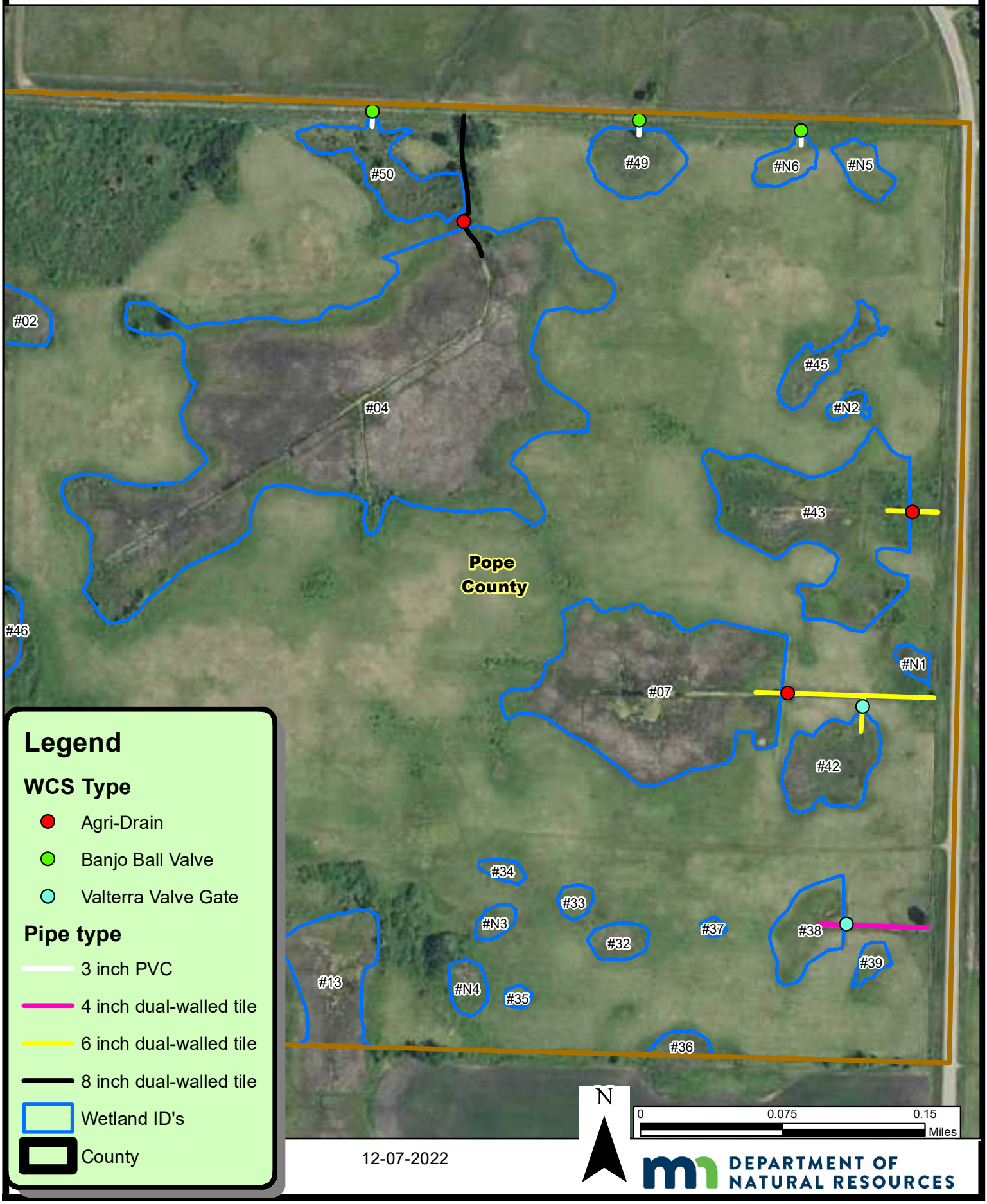
Legend

- Culvert Removals
- Old Dike Removals
- Wetland ID's
- County

12-07-2022

DEPARTMENT OF NATURAL RESOURCES

Westport WMA - Water Control Structures & Tile Line Map



Legend

WCS Type

- Agri-Drain
- Banjo Ball Valve
- Valterra Valve Gate

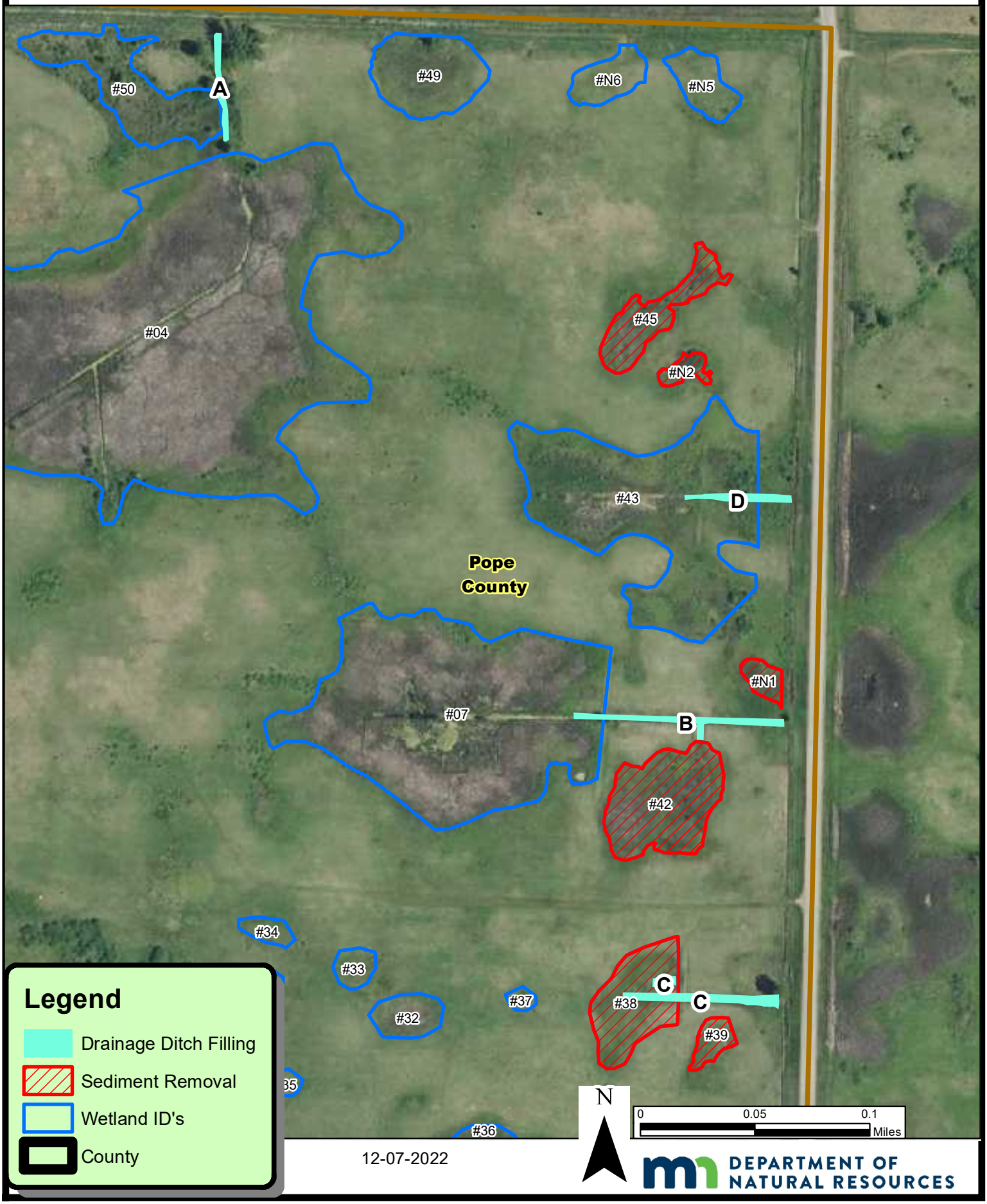
Pipe type

- 3 inch PVC
- 4 inch dual-walled tile
- 6 inch dual-walled tile
- 8 inch dual-walled tile
- Wetland ID's
- County

12-07-2022

DEPARTMENT OF NATURAL RESOURCES

Westport WMA - Culvert & Old Dike Removal Map



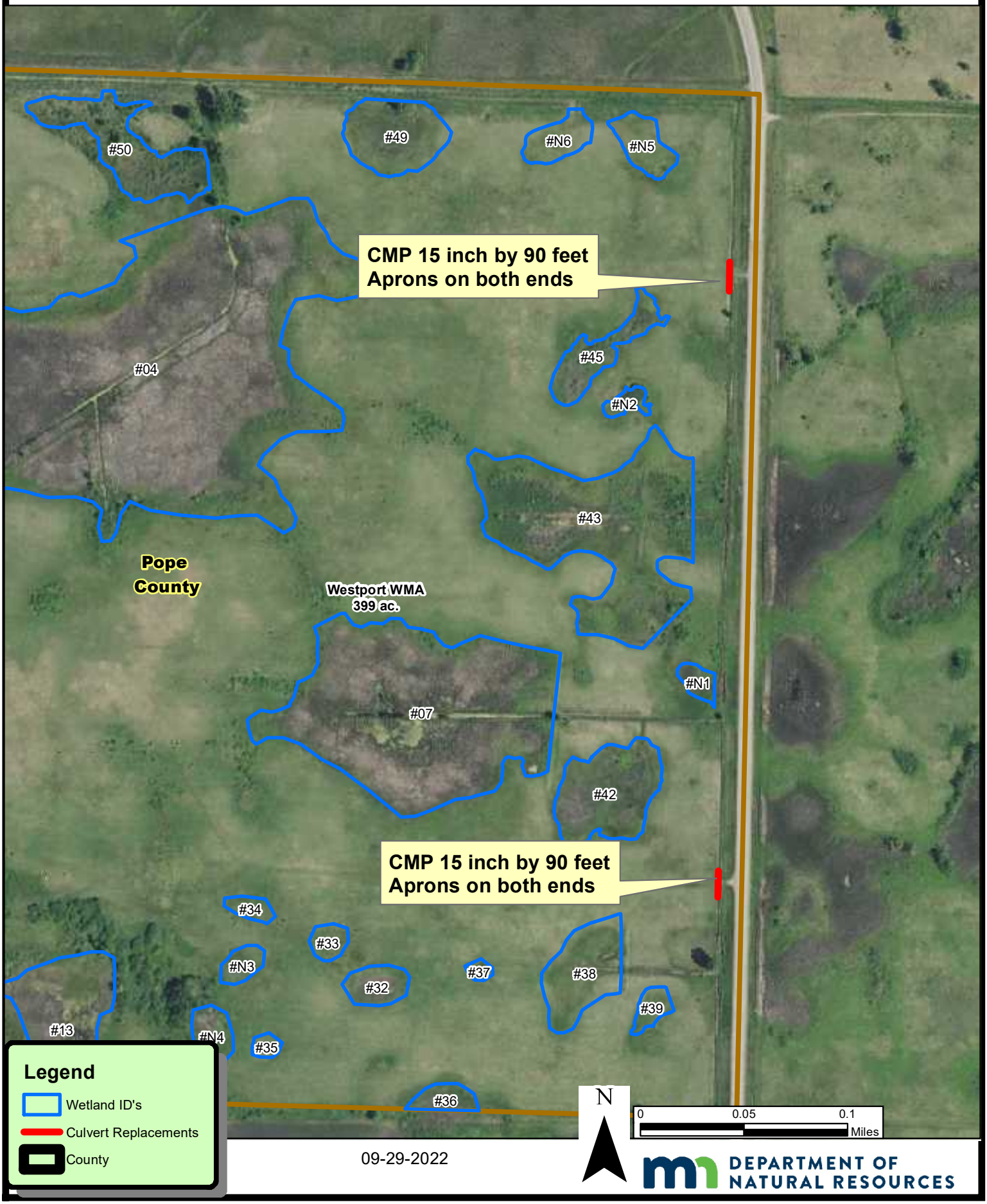
Legend

- Drainage Ditch Filling
- Sediment Removal
- Wetland ID's
- County

12-07-2022

DEPARTMENT OF NATURAL RESOURCES

Westport WMA - Culvert Replacements on Road Approaches



09-29-2022

DEPARTMENT OF NATURAL RESOURCES