



# North Dakota Department of Transportation

Grant Levi, P.E.  
*Director*

Jack Dalrymple  
*Governor*

November 4, 2015

Todd Sando  
North Dakota State Water commission  
900 East Boulevard Avenue, Dept. 770  
Bismarck, ND 58505-0850

PROJECT: SIM-8-094(087)352 - PCN 20687  
LEVEE CONSTRUCTION  
CASS COUNTY

The North Dakota Department of Transportation is requesting a Modification to a Water Resource Permit to construct a levee in order to protect an existing lift station located within the existing NDDOT I-94 right of way near 5<sup>th</sup> St South in Fargo.

Attached is an application form and plan sheets for the proposed levee.

If you have any questions concerning this permit request, please contact Steve Kessler at (701) 328-3736.

MARK S. GAYDOS, P.E.  
DIRECTOR, ENVIRONMENTAL & TRANSPORTATION SERVICES DIVISION

19:msg:sek  
Enclosures



# APPLICATION/NOTIFICATION TO CONSTRUCT OR MODIFY A DAM, DIKE, RING DIKE OR OTHER WATER RESOURCE FACILITY

Office of the State Engineer  
900 East Boulevard -- Bismarck, ND 58505-0850  
SFN 51695 (11/03)

I, the undersigned, do hereby submit the following information to the Office of the State Engineer for determination and use as a filing of information required under North Dakota Century Code §61-04-02 or as an application to construct or modify a facility under North Dakota Century Code §61-16.1-38.

(SWC USE ONLY) No. \_\_\_\_\_

SWC USE ONLY

## A. GENERAL INFORMATION:

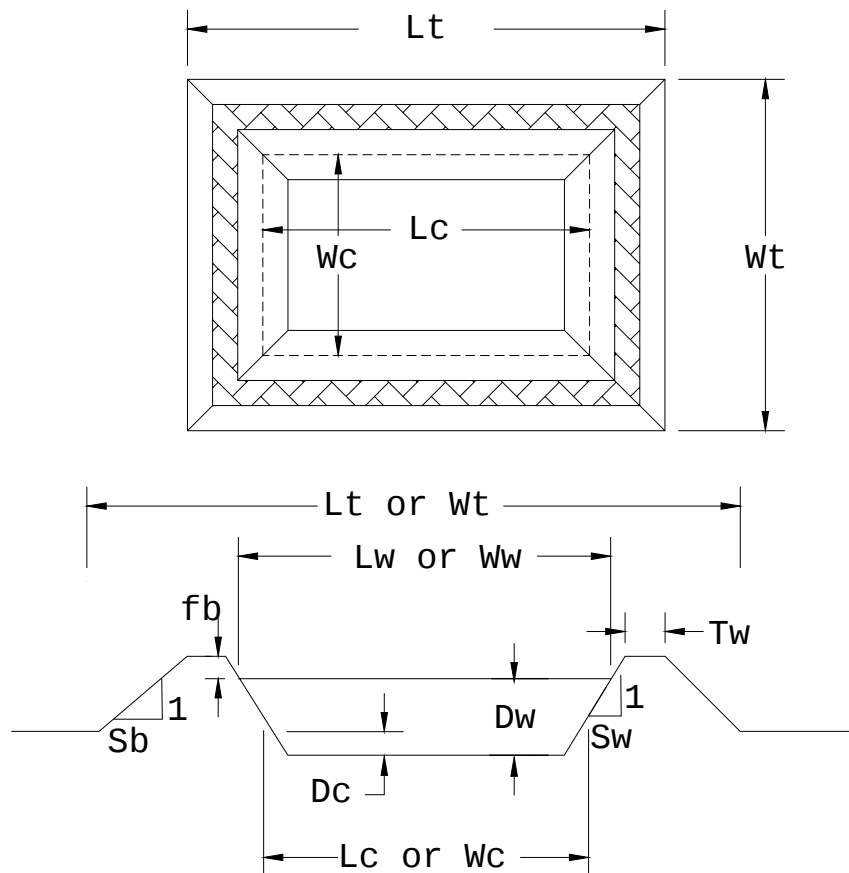
- (1) This Application/Notification must include a map from an actual survey, aerial photo or topographic map. The size of the map shall be 8½ by 11 inches. The map shall have a north arrow and approximate scale. If, in the opinion of the State Engineer, the map does not contain information to properly evaluate the project, it will be returned.
- (2) The proposed facility is a:  

|                                                                              |                                                                               |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <input type="checkbox"/> Dam (Complete Sections A, C & F)                    | <input type="checkbox"/> Pond, Lagoon, or Dugout (Complete Sections A, B & F) |
| <input type="checkbox"/> Dike (Complete Sections A, D & F)                   | <input type="checkbox"/> Diversion Ditch (Complete Sections A, B & F)         |
| <input type="checkbox"/> Ring Dike (Complete Sections A, D & F)              | <input type="checkbox"/> Other (Complete Sections A, B & F)                   |
| <input type="checkbox"/> Wetland Restoration (Complete Sections A, C, E & F) |                                                                               |
- (3) Is this Application/Notification for modification of an existing structure? ☐ Yes ☐ No  
If so, what year was existing structure constructed? \_\_\_\_\_ By whom? \_\_\_\_\_
- (4) Project will be located in the \_\_\_\_\_ Water Resource District
- (5) Legal description to the nearest forty-acre tract: \_\_\_\_\_ ¼ \_\_\_\_\_ ¼ Section \_\_\_\_\_ Township \_\_\_\_\_ Range \_\_\_\_\_  
(Optional) Latitude \_\_\_\_\_ Longitude \_\_\_\_\_
- (6) Waterway on which project will be located: \_\_\_\_\_
- (7) A tributary to: \_\_\_\_\_
- (8) Will the project, including any area inundated as a result of the project, be located entirely on land owned by the applicant?  
☐ Yes ☐ No If any portion of the project will be constructed on land not owned in fee title by the applicant, written authorization to construct the project must be obtained from the landowner of record and a copy of the authorization provided to this office. If the project will impound water on land not owned in fee title by the applicant, a flowage easement must be obtained by the applicant and a copy of the easement provided to this office. If any portion of the project will be constructed within the right-of-way of a section line, roadway, or railroad, or if the project will impound water within the right-of-way of a section line, roadway, or railroad, written authorization to do so must be obtained from the appropriate authority and a copy provided to this office.
- (9) Project sponsor (Water Resource District/City/US Fish & Wildlife Service, etc.) if applicable \_\_\_\_\_
- (10) Contractor, if known \_\_\_\_\_
- (11) Anticipated construction start date \_\_\_\_\_ Completion date \_\_\_\_\_
- (12) Who will be responsible for the operation and maintenance of this project? \_\_\_\_\_

## B. POND, LAGOON, DUGOUT, DIVERSION DITCH, OR OTHER WATER RESOURCE FACILITY:

- (1) Design Data:
  - a. Pond, Lagoon, or Dugout (complete below and diagram next page for each pond or cell, photocopy if necessary)
    1. Surface area: top of structure \_\_\_\_\_ acres
    - service level \_\_\_\_\_ acres
    2. Storage: top of structure \_\_\_\_\_ acre-feet
    - service level \_\_\_\_\_ acre-feet
    3. Maximum depth of water \_\_\_\_\_ feet
    4. Maximum embankment height \_\_\_\_\_ feet
  - b. Diversion Ditch
    1. Length \_\_\_\_\_ feet
    2. Bottom width \_\_\_\_\_ feet
    3. Side slopes \_\_\_\_\_ feet
    4. Maximum cut \_\_\_\_\_ feet
    5. Gradient \_\_\_\_\_ foot/foot
- (2) Description of project, if not a Pond, Lagoon, Dugout, or Diversion Ditch: \_\_\_\_\_

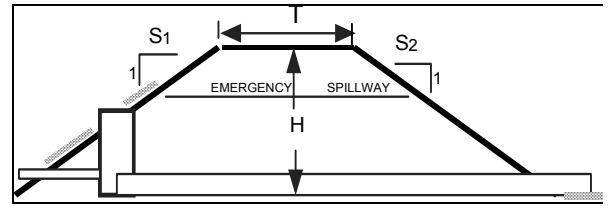
**B. OTHER WATER RESOURCE FACILITY (continued):**



| DESCRIPTION                                                                                                                               | ABBREVIATION | DIMENSION (feet) |
|-------------------------------------------------------------------------------------------------------------------------------------------|--------------|------------------|
| Total length of pond (includes banks)                                                                                                     | $L_t$        |                  |
| Total width of pond (includes banks)                                                                                                      | $W_t$        |                  |
| Length of water surface at full service level                                                                                             | $L_w$        |                  |
| Width of water surface at full service level                                                                                              | $W_w$        |                  |
| Length of cut into the soil surface                                                                                                       | $L_c$        |                  |
| Width of cut into the soil surface                                                                                                        | $W_c$        |                  |
| Depth of cut into soil surface                                                                                                            | $D_c$        |                  |
| Depth of water in the pond at the full service level                                                                                      | $D_w$        |                  |
| Freeboard (the distance between the full service level and the top of the structure that is used to manage wave action, usually 2-3 feet) | $fb$         |                  |
| Top width of embankment surrounding the pond                                                                                              | $Tw$         |                  |
| Outside bank sideslope ratio (usually 4:1, which is 4 horizontal feet for every 1 foot of rise)                                           | $S_b$        |                  |
| Inside bank sideslope ratio (will vary between 4:1 and 6:1, depending on the soil type)                                                   | $S_w$        |                  |

### C. DAMS

- (1) Drainage area above dam \_\_\_\_\_ square miles or \_\_\_\_\_ acres
- (2) Purpose: \_\_\_\_\_
- (3) Geometric description of dam:
- Maximum height (H) \_\_\_\_\_ feet, elevation \_\_\_\_\_ feet msl
  - Top width (T) \_\_\_\_\_ feet
  - Side slopes: upstream (S1) \_\_\_\_\_:1  
downstream (S2) \_\_\_\_\_:1
  - Type of embankment protection \_\_\_\_\_
  - Emergency spillway: type \_\_\_\_\_  
If earthen: width \_\_\_\_\_ ft, side slopes \_\_\_\_\_:1, level section length \_\_\_\_\_ ft  
Dimensions if other than earthen \_\_\_\_\_
  - Principal spillway:  
Outlet pipe: type \_\_\_\_\_ diameter \_\_\_\_\_ length \_\_\_\_\_ ft  
Riser: type \_\_\_\_\_ diameter \_\_\_\_\_  
Control gate: type \_\_\_\_\_ dimensions \_\_\_\_\_
  - Drawdown Pipe: type \_\_\_\_\_ diameter \_\_\_\_\_
- (4) Distance to nearest downstream occupied dwelling(s) \_\_\_\_\_



|                    | ELEVATION (feet)<br>Indicate datum:<br><input type="checkbox"/> local <input type="checkbox"/> NGVD 29 <input type="checkbox"/> NAVD 88 | RESERVOIR<br>SURFACE AREA<br>(acres) | RESERVOIR<br>CAPACITY<br>(acre-feet) |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|--------------------------------------|
| Top of Dam         |                                                                                                                                         |                                      |                                      |
| Emergency Spillway |                                                                                                                                         |                                      |                                      |
| Principal Spillway |                                                                                                                                         |                                      |                                      |
| Drawdown Pipe      |                                                                                                                                         |                                      |                                      |
| Streambed at Dam   |                                                                                                                                         |                                      |                                      |

### D. DIKE

- (1) Is this application/notification for the construction of a ring dike? ☒ Yes ☐ No
- If so, will the ring dike tie into existing? ☐ dike ☐ roadway ☐ high ground ☐ other \_\_\_\_\_
- (2) Purpose: \_\_\_\_\_
- (3) Area of land to be protected by dike \_\_\_\_\_ acres
- (4) Description of Dike:
- Dike length \_\_\_\_\_ feet
  - Dike design:
    - Top width (T) \_\_\_\_\_ feet
    - Side slopes: interior (S1) \_\_\_\_\_:1  
exterior (S2) \_\_\_\_\_:1
    - Maximum height (H) \_\_\_\_\_ feet, elevation \_\_\_\_\_ feet msl  
Minimum height (H) \_\_\_\_\_ feet, elevation \_\_\_\_\_ feet msl
    - Embankment erosion protection: \_\_\_\_\_
- (5) Will the dike flood or adversely affect adjacent, upstream or downstream land? ☐ Yes ☐ No
- If yes, attach flowage easements. Easements must include a description of provisions, and names and signatures of grantors.

