CONSTRUCTION PLANS
FOR
THE CONSTRUCTION OF
RED LAKE WATERSHED DISTRICT DRAIN NO. 17
DECEMBER 2019
PROJECT CONSISTS OF THE CONSTRUCTION OF 10.2 MILES OF RED LAKE
WATERSHED DISTRICT DRAIN NO. 17, CMP CULVERTS & INCIDENTALS

PROJECT CONSISTS OF THE CONSTRUCTION OF 10.2 MILES OF RED LAKE
WATERSHED DISTRICT DRAIN NO. 17, CMP CULVERTS & INCIDENTALS

PRIBULA ENGINEERING, PLLC
208 3RD AVENUE NW
EAST GRAND FORKS, MN 56721
701-772-7058
PLAN SET: 12-30-2019

I hereby certify that this plan, specification, or report was prepared by me or
under my direct supervision and that I am a duly Registered Engineer under
the laws of the State of Minnesota.

Gerald D. Pribula
Minnesota License No. 13468
Date: December 30, 2019
NOTES:
1. That part of the spoil which is directly above the structure shall be maintained at elevation "E".
2. Flared end sections are required on the ends of all surface water inlet pipes. Flared end sections shall be in accordance with the standards of the industry and shall be compatible with the shape and class of pipe used.
3. For pipes having a diameter of 24 inches or less the flared end section shall be attached to the pipe by a rod connection. For pipes having a diameter greater than 24 inches the flared end section shall be attached to the pipe by a connecting band.
4. All pipe lengths shown are nominal lengths.
5. After the pipe and fittings are placed, the initial backfill under the pipe haunch (lower third) free of rocks and soil clods over 3 inches shall be placed in 6 inch horizontal lifts before compaction. The backfill shall be compacted by hand tamping or by manually directed power tampers or plate vibrators to an elevation 2 feet above the top of pipe. Fill material over pipe haunch shall be free of rock and soil clods over 6 inches in diameter in lifts of 9 inches before compaction. Final fill material shall be compacted to a density equal to adjoining undisturbed ground. Dozer compaction will require at a minimum complete coverage of area with the track and lift not to exceed 5 inches before compaction.
6. Fill material shall be placed alternately on each side of the pipe at equal elevations. Hand equipment or mechanical tampers are required for final fill compaction. The moisture content of the backfill material should form a ball when kneaded by hand and will not readily separate.
7. Connecting bands shall be free of soil during installation and tapped with a mallet while tightening to insure a tight joint.
8. Trench depths greater than 5 feet require OSHA approved trenching procedures.
$9_{\text{TWP}} \quad 152 \text{ N. R. 48 W.} \quad (\text{KEYSTONE TWP.})$

$\text{POLK CSAH 65}$

$\text{SEC. 75}$

$\text{TWP. 152 N. R. 48 W.} \quad (\text{KEYSTONE TWP.})$

$\text{POLK CSAH 65}$

$\text{SEC. 10}$

$\text{TWP. 152 N. R. 48 W.} \quad (\text{KEYSTONE TWP.})$

$\text{POLK CSAH 65}$

$\text{SCALE: AS SHOWN}$

$\text{REVISED: \quad DRAWN BY: \quad BP / NP}$

$\text{APPROVED BY:}$

$\text{RED LAKE WATERSHED DISTRICT}$

$\text{PRIBULA ENGINEERING, PLLC}$

$\text{208 3RD AVENUE NW}$

$\text{EAST GRAND FORKS, MN 56721}$

$\text{DATE: 12-30-2019}$

$\text{LEGAL DRAWING NO. 17}$

$\text{FOXX COUNTY, MINNESOTA}$

$\text{BED LAKE WATERSHED DISTRICT}$

$\text{PAGE NUMBER: 701-772-7058}$
CHANNEL STA 585+95 TO 639+27

A = 3.25 SQUARE MILES

IN SLOPE = 1:4
BACK SLOPE = 1:4
BOTTOM = 20 FT

MANNING = 0.04
CHANNEL SLOPE = 0.0071

\[ Q_{10} = 70 \text{ CFS} \]

\[ \text{CHANNEL DEPTH AT } Q_{10} = 1.95 \text{ FT} \]

\[ \text{CHANNEL VELOCITY AT } Q_{10} = 1.3 \text{ FT/S} \]

DESIGN WATER SURFACE

CENTERLINE 120TH ST SW

EXISTING GROUND AT CENTERLINE DRAIN

EXISTING FIELD ELEVATION

POLK COUNTY, MINNESOTA
LEGAL DRAIN NO. 17

RED LAKE WATERSHED DISTRICT

PRIBULA ENGINEERING, PLLC

208 3RD AVENUE NW
EAST GRAND FORKS, MN 56721

PAGE NUMBER: 701-772-7058

SCALE: AS SHOWN

REVISED: DRAWN BY: BP / NP
APPROVED BY:

DATE: 12-30-2019
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