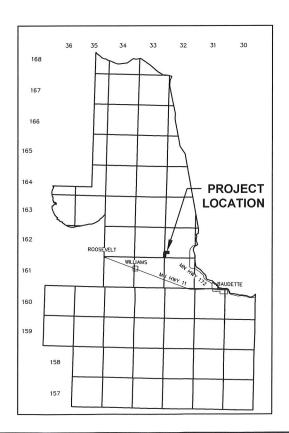
# **CONSTRUCTION PLANS FOR**

# **BOSTIC CREEK GRADE STABILIZATION** LAKE OF THE WOODS SWCD

LAKE OF THE WOODS COUNTY, MINNESOTA

STATE COUNTY MAP





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STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

SHT. EROSION CONTROL DETAILS

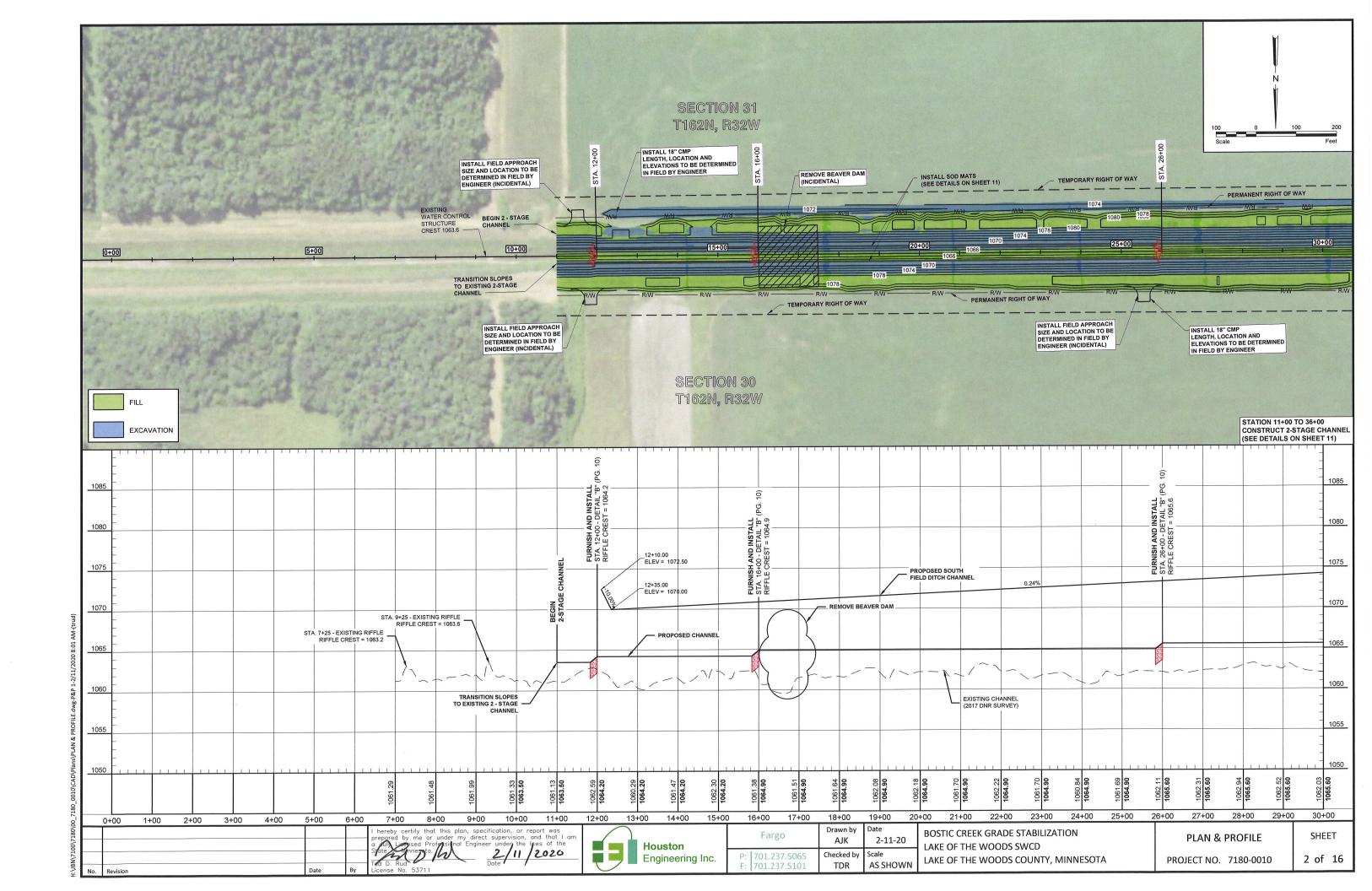
> I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

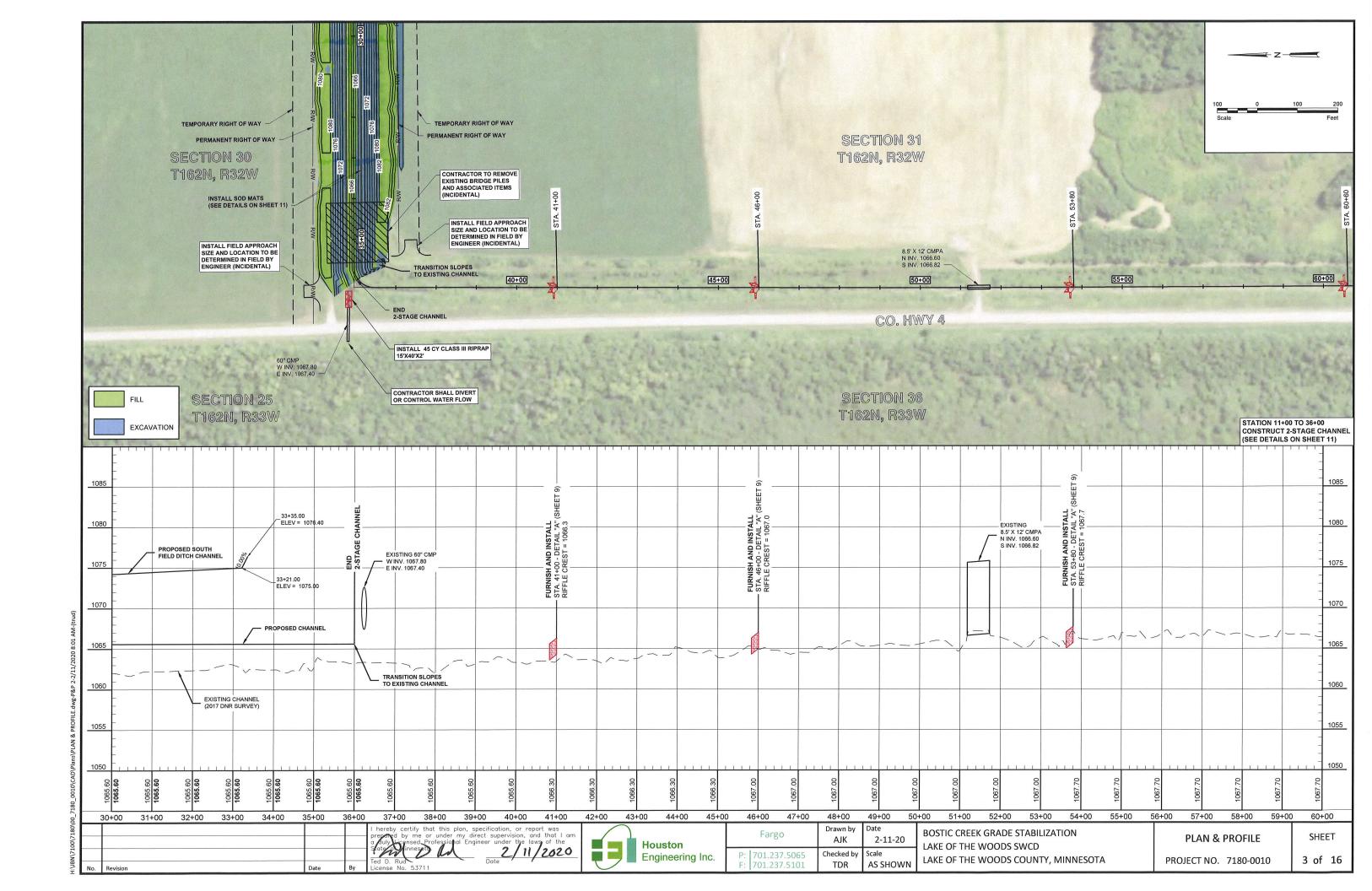
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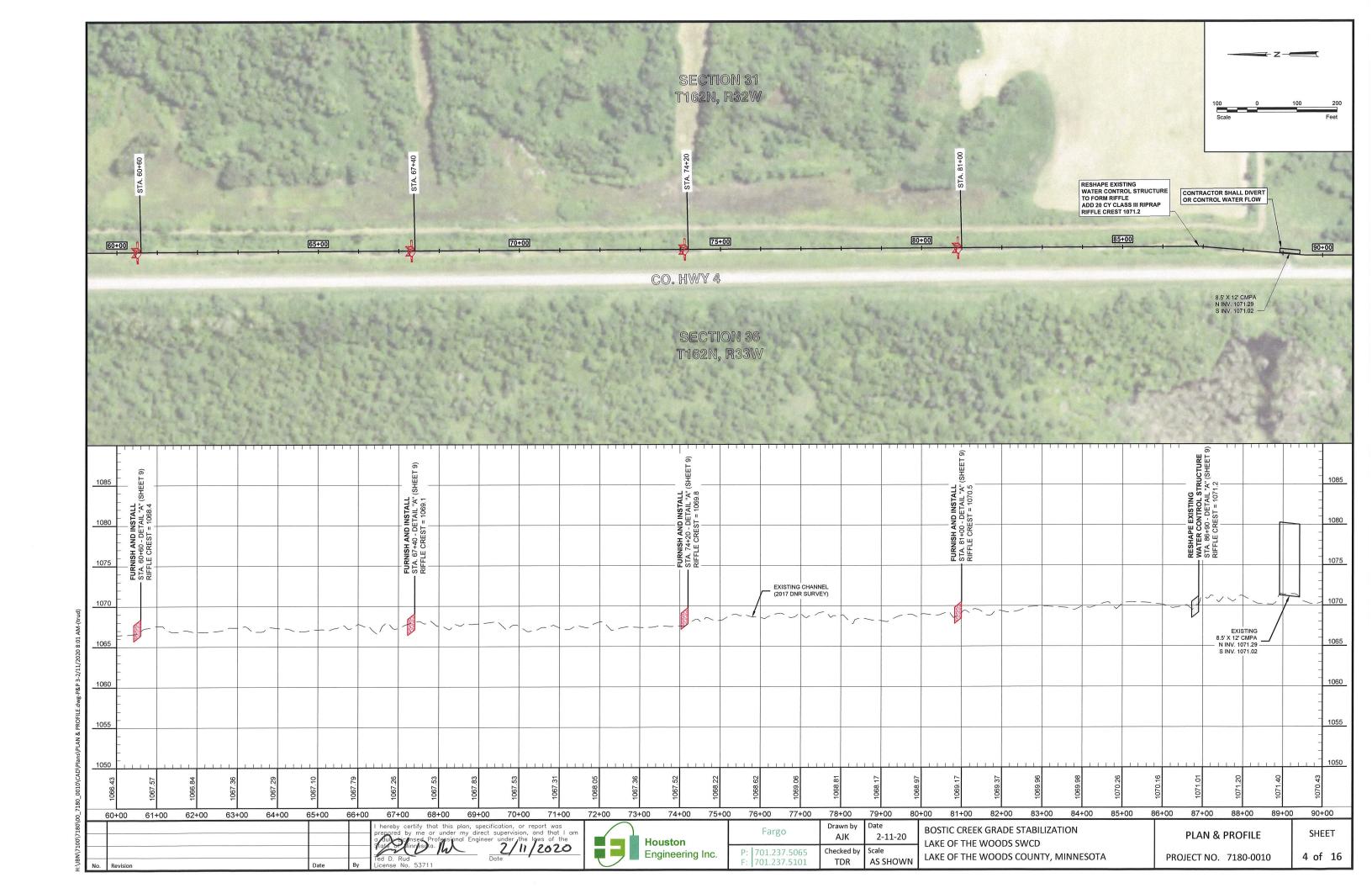
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**VERTICAL DATUM BASED ON NAVD88** 

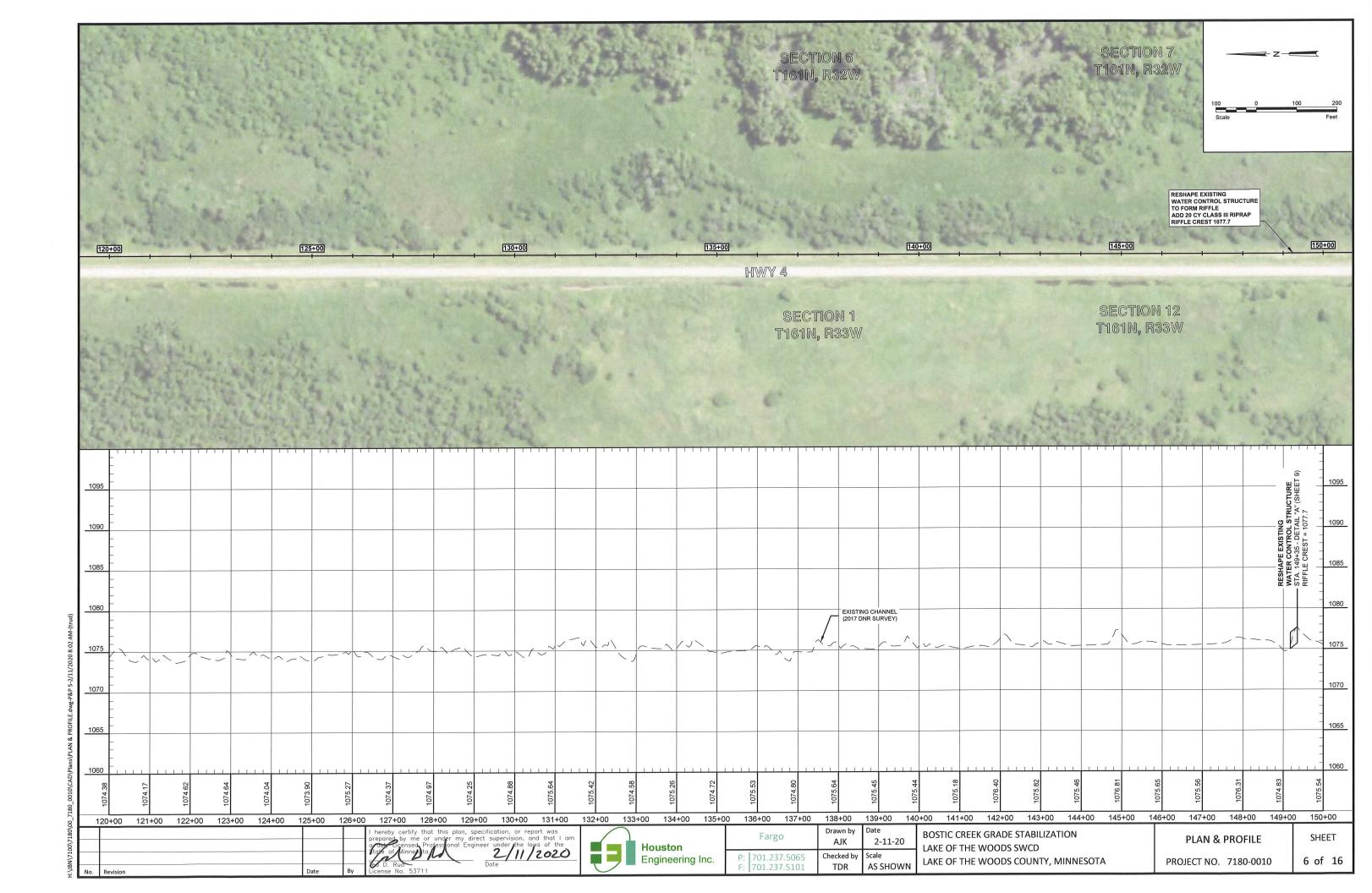


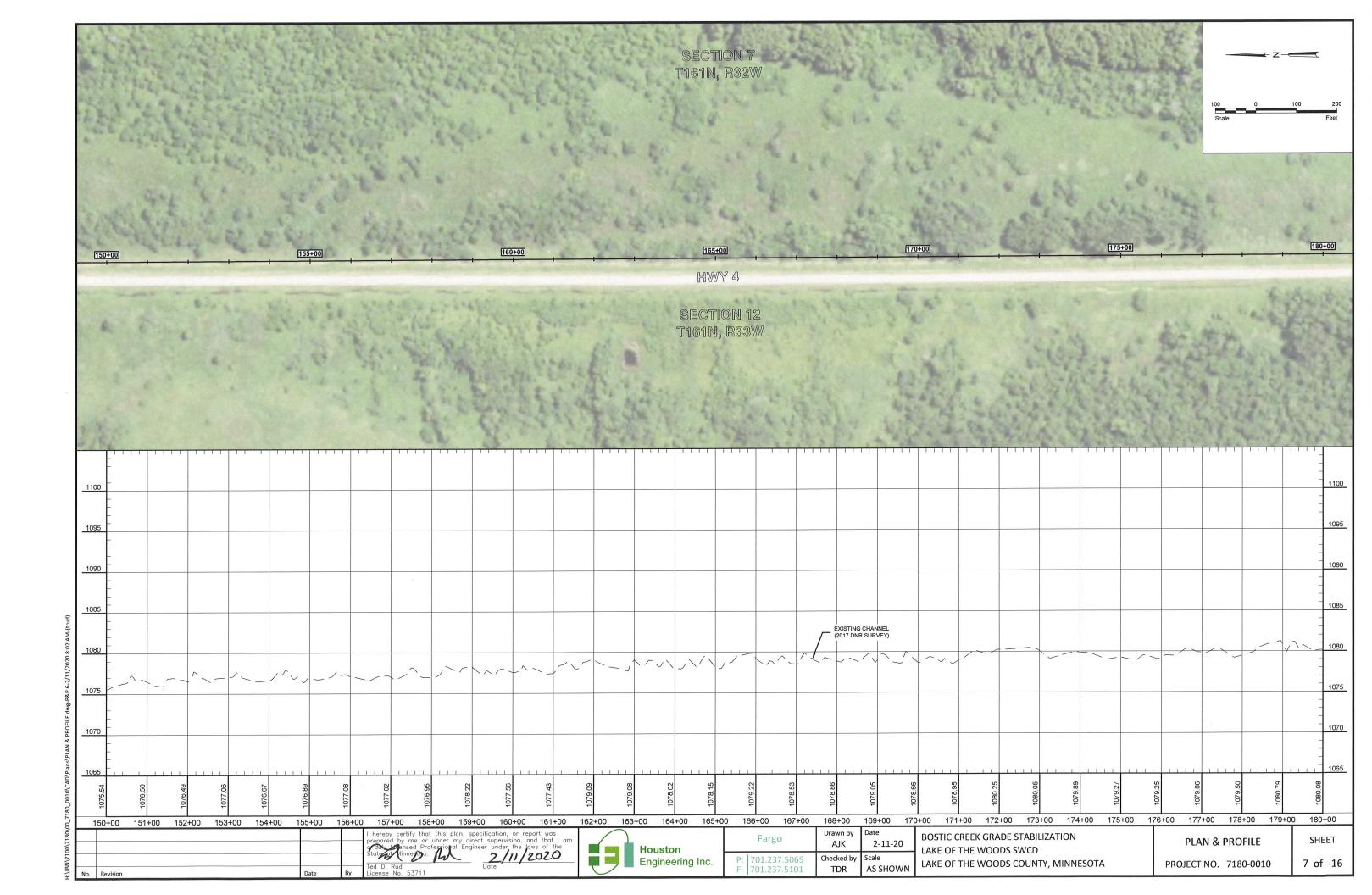


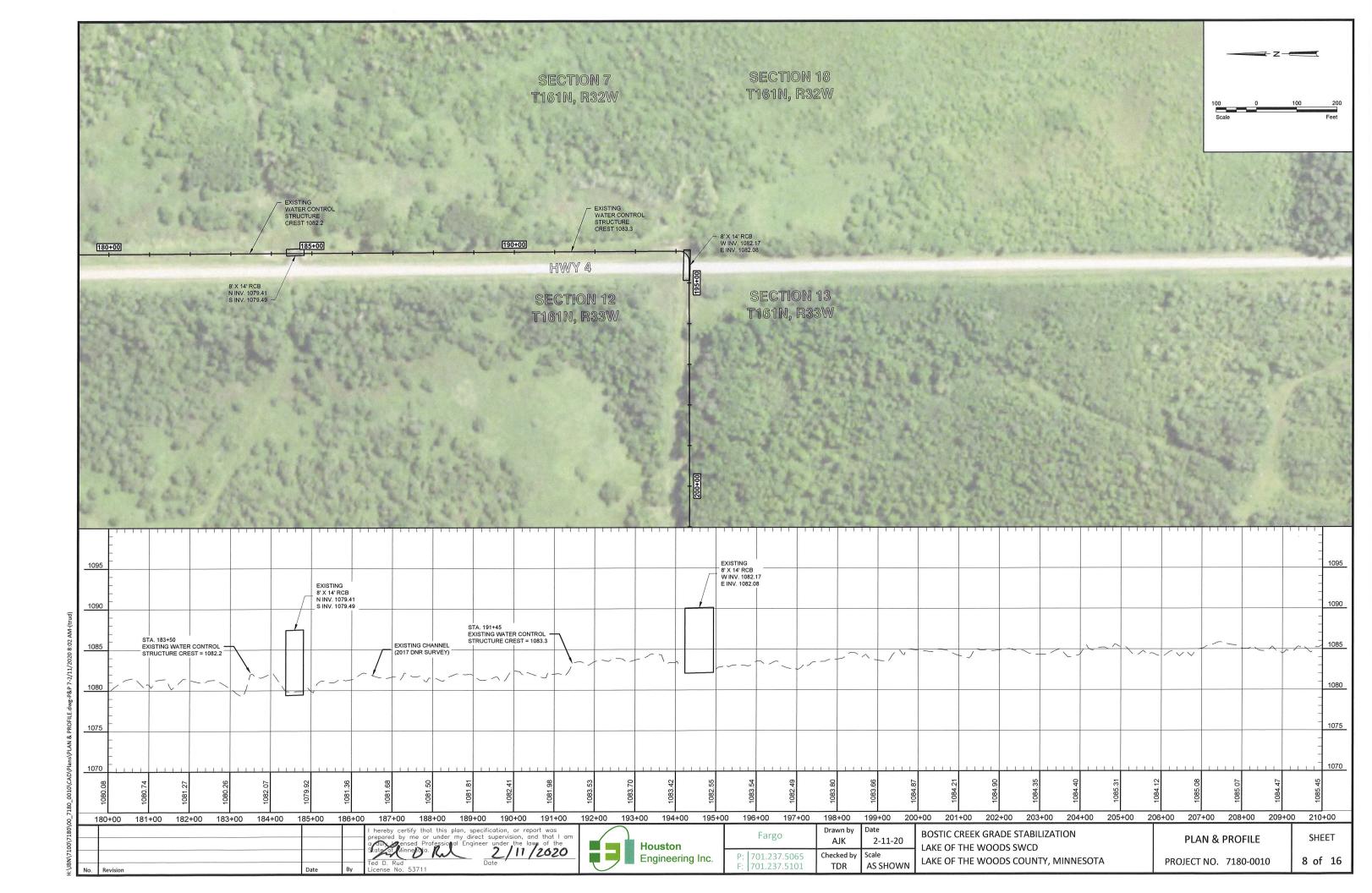


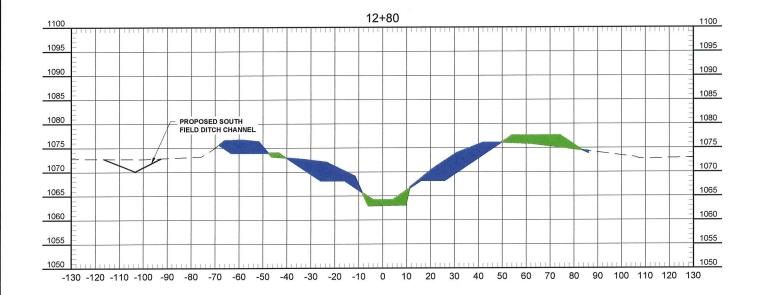


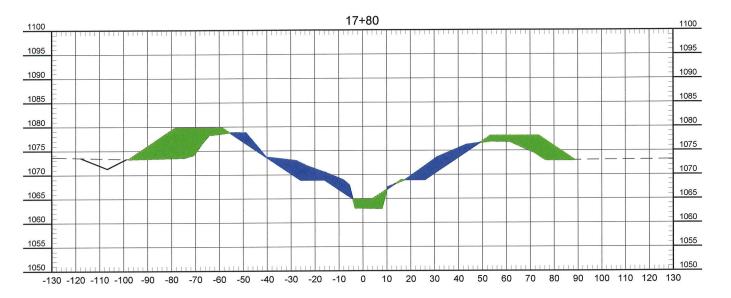


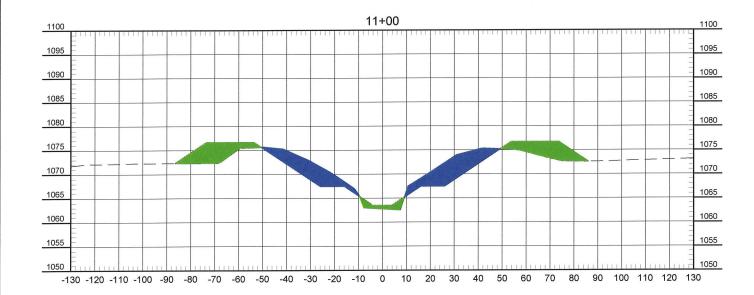


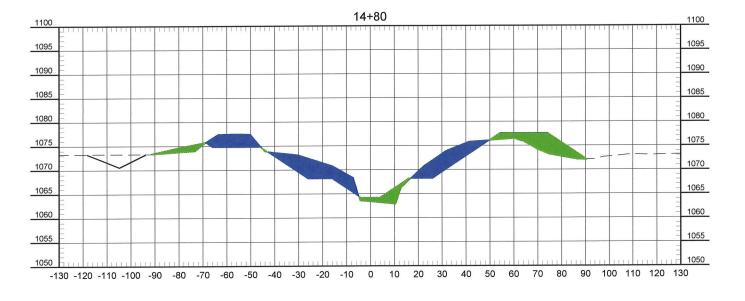
















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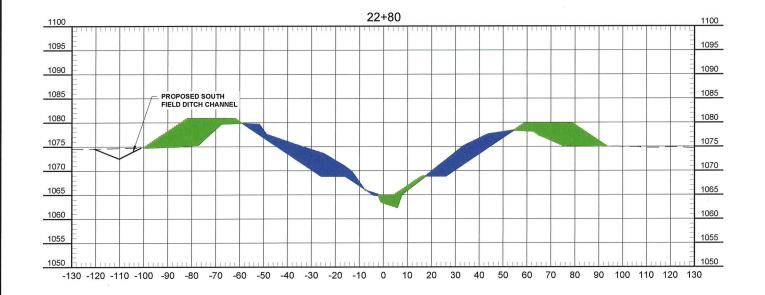
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AKE OF THE WOODS SWCD	
AKE OF THE WOODS COUNTY, MINNESOTA	

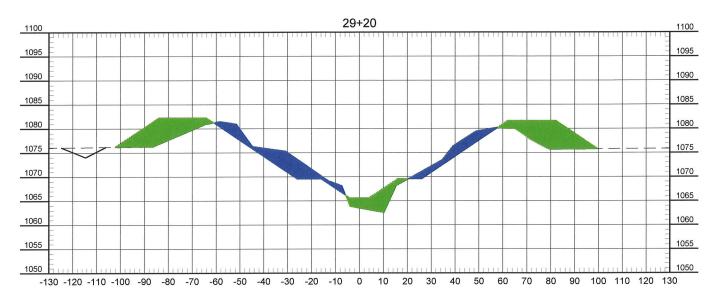
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PROJECT NO.	7180-0010	

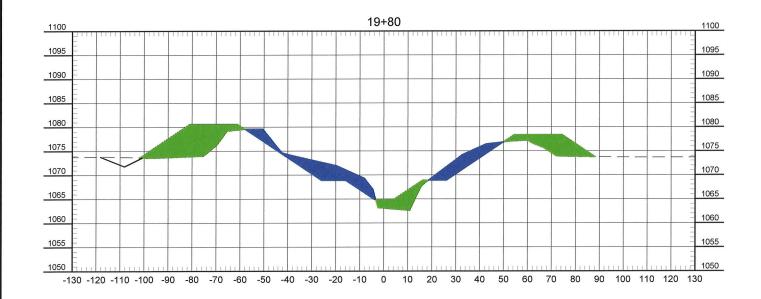
SHEET
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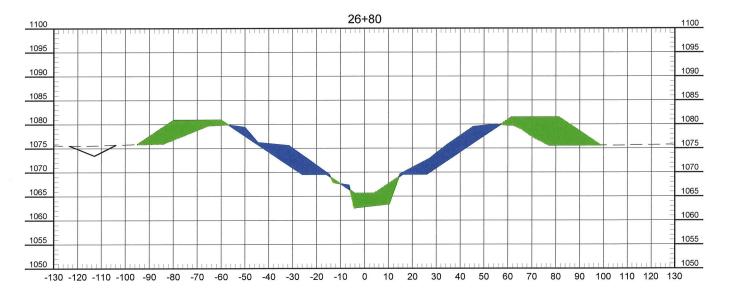
**EXCAVATION** 

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					prepared by me or under my direct supervision, and that I am a sulf transfer protestional Engineer under the lows of the State of Minnesta.	
					I hereby certify that this plan, specification, or report was	

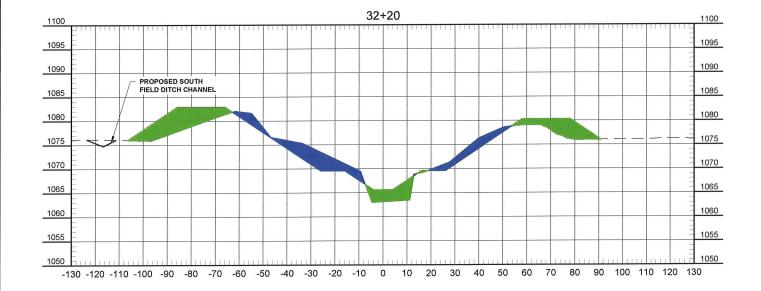


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OSTIC CREEK GRADE STABILIZATION	
AKE OF THE WOODS SWCD	
AKE OF THE WOODS COUNTY, MINNESOTA	

CROSS SECTIONS			
PROJECT NO.	7180-0010		

SHEET 10 of 16



FILL

			I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a dily shised Professional Engineer under the lays of the
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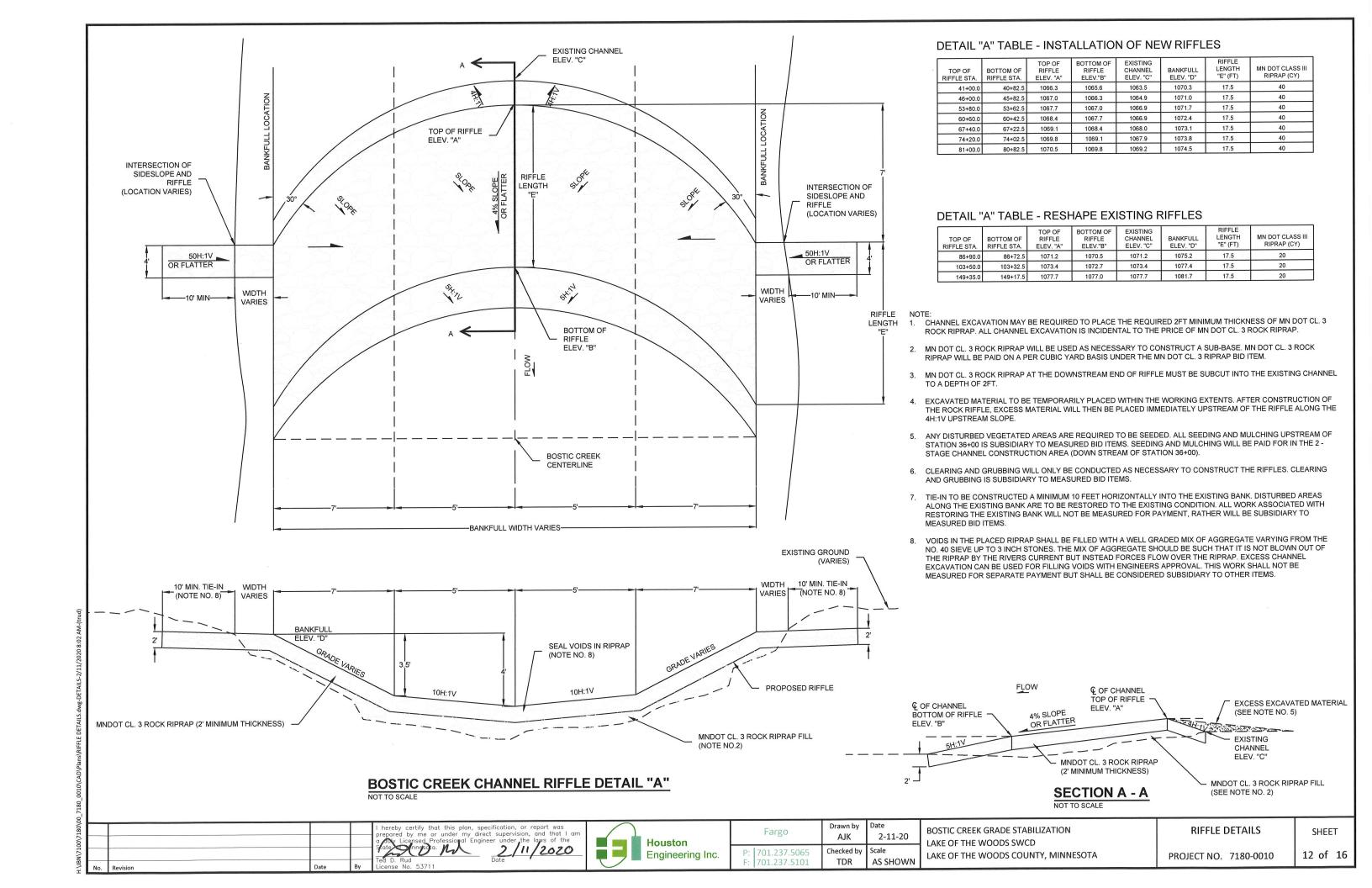


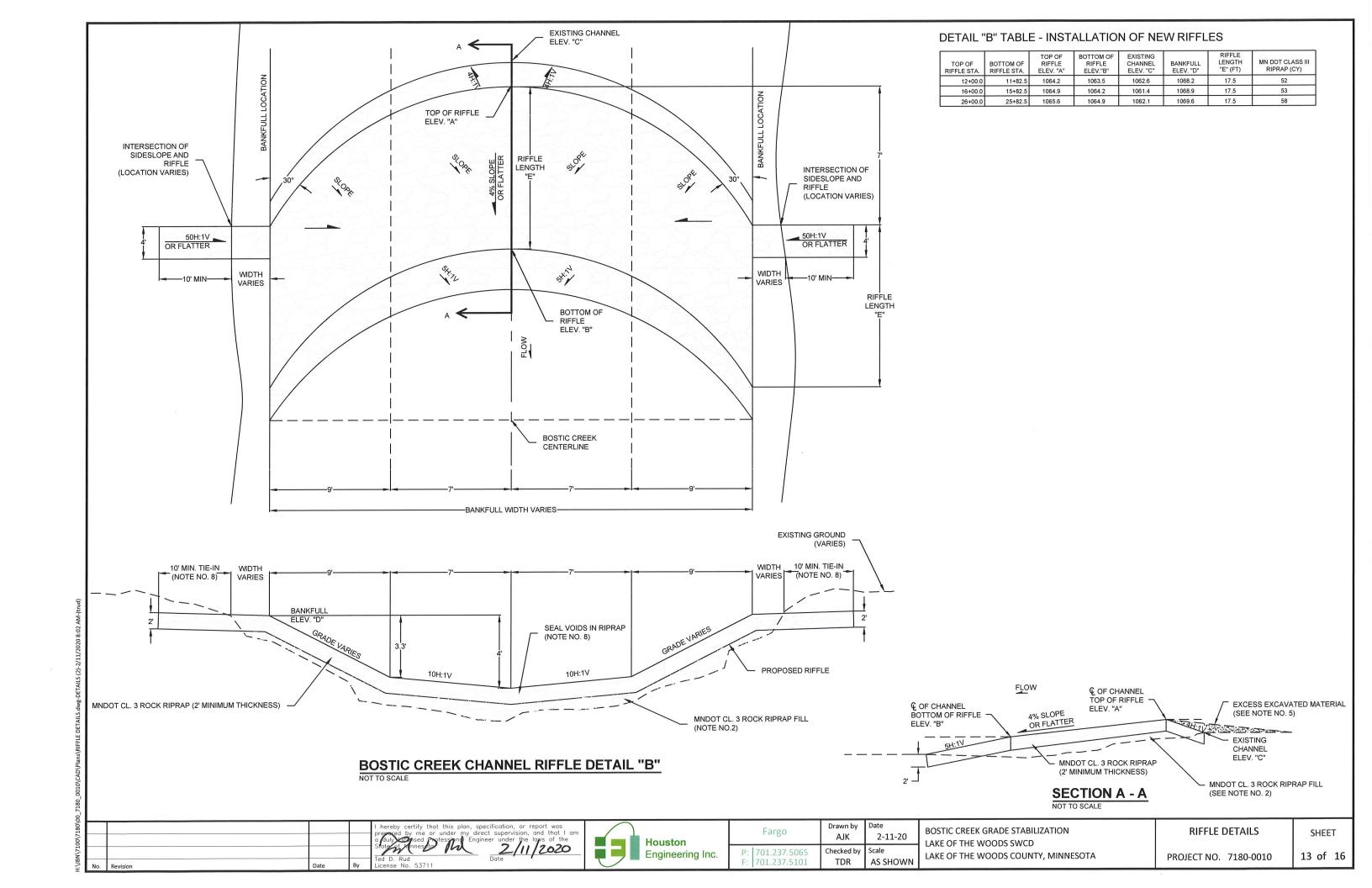
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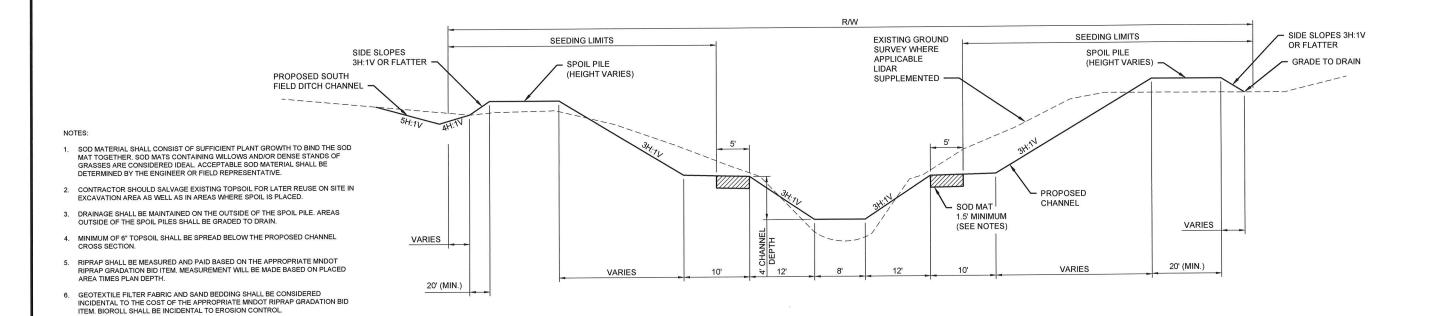
BOSTIC CREEK GRADE STABILIZATION		
LAKE OF THE WOODS SWCD		
LAKE OF THE WOODS COUNTY, MINNESOTA		

CROSS SECTIONS
PROJECT NO. 7180-0010

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7. COMMON EXCAVATION REQUIRED FOR INSTALLATION OF FIELD INLET CULVERTS SHALL BE CONSIDERED INCIDENTAL TO THE UNIT COST OF CMP BID ITEM.

8. UNLESS OTHERWISE SPECIFIED, MATERIAL EXCAVATED TO INSTALL FIELD INLET CULVERTS MAY BE USED TO BACKFILL SIDE INLET CULVERTS.

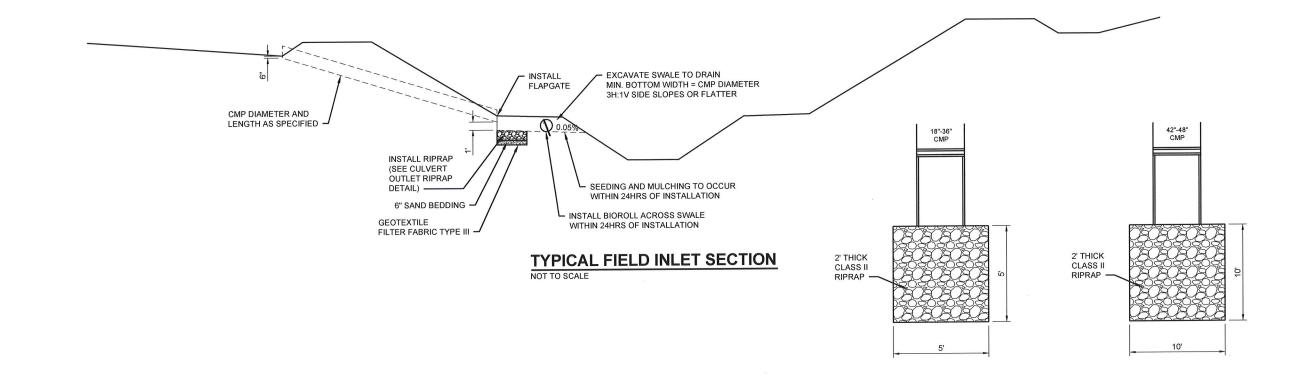
 FINISH GRADE OF THE INLET (FIELD) END OF PIPES SHALL GENERALLY BE BLENDED BACK TO EXISTING GRADE OVER 50 FEET HORIZONTALLY AND ENSURE THAT 6" MINIMUM OF TOPSOIL IS IN-PLACE WITHIN THE 50' HORIZONTAL AREA.

PROPOSED GROUND MAY VARY FROM GEOMETRY PRESENTED IN THIS DETAIL. FINISH GRADE WILL BE COORDINATED WITH THE ENGINEER.
 CULVERTS SHALL HAVE A MINIMUM 2' OF COVER OVER THE TOP OF THE PIPE.
 FIELD INLET LOCATIONS AND LENGTH WILL BE DETERMINED BY THE ENGINEER

GRADING OF THE INLET (FIELD) END OF PIPES MAY BE AJUSTED IN THE FIELD BY

## TYPICAL CHANNEL SECTION

STA. 11+00 TO STA. 36+00



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Engineering Inc.

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TDR

2-11-20

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**BOSTIC CREEK GRADE STABILIZATION** 

LAKE OF THE WOODS COUNTY, MINNESOTA

LAKE OF THE WOODS SWCD

**DETAILS** 

PROJECT NO. 7180-0010

SHEET

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# STORM WATER POLLUTION PREVENTION NARRATIVE

#### PROJECT DESCRIPTION

THE PROJECT CONSISTS OF GRADE STABILIZATION METHODS THAT INCLUDE THE INSTALLATION OF 10 NEW ROCK RIFFLES, RESHAPING AND ADDING ADDITIONAL ROCK RIPRAP TO 3 EXISTING ROCK RIFFLES, AND THE CONSTRUCTION OF A TWO-STAGE CHANNEL ALONG 2,500 FEET OF JUDICIAL DITCH 28.

#### SITE MAPS

A MAP OF THE RESTORATION CONCEPT PLAN CAN BE FOUND ON THE COVER PAGE.

#### ENVIRONMENTALLY SENSITIVE AREAS

THERE ARE NO ENVIRONMENTALLY SENSITIVE AREAS WITHIN THE PROJECT LIMITS.

#### OUTSTANDING RESOURCE VALUE WATERS (ORVWs)

THERE ARE NO OUTSTANDING RESOURCE VALUE WATERS WITHIN THE PROJECT LIMITS.

#### CALCAREOUS FENS

THERE ARE NO CALCAREOUS FENS WITHIN THE PROJECT LIMITS.

#### IMPAIRED WATERS

BOSTIC CREEK IS A HEADWATER TO LAKE OF THE WOODS. LAKE OF THE WOODS IS LISTED ON THE 2018 IMPAIRED WATERS LIST FOR NUTRIENT/EUTROPHICATION BIOLOGICAL INDICATORS.

#### LAND FEATURE CHANGES

TOTAL PROJECT AREA DISTURBED

11.6 ACRES

TOTAL EXISTING IMPERVIOUS SURFACE AREA

0.0 ACRES

TOTAL EXISTING PERVIOUS SURFACE AREA

11.6 ACRES

TOTAL PROPOSED IMPERVIOUS SURFACE AREA
TOTAL PROPOSED PERVIOUS SURFACE AREA

0.0 ACRES

## DRAINAGE COMPUTATIONS

NO DRAINAGE COMPUTATIONS WERE REQUIRED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR THIS PROJECT. SHOULD CONDITIONS IN THE FIELD WARRANT CHANGES, THE PROJECT ENGINEER SHOULD BE CONSULTED AND THE CONDITIONS NOTED IN THE CONTRACTOR'S CONSTRUCTION LOG.

#### PROJECT CONTACTS

LAKE OF THE WOODS COUNTY AND THE CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND PLACEMENT, INSPECTION AND MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL BMP'S BEFORE AND DURING CONSTRUCTION.

MPCA 24 HOUR EMERGENCY NOTIFICATION: 651-649-5451 OR 800-422-0798

COE CONTACT:

DNR CONTACT:

MPCA CONTACT:

CRAIG JARNOT 218-444-6381

BRENT MASON 218-308-2463 MATT KING 218-846-8103

#### TIMING OF BMP INSTALLATION

THE EROSION PREVENTION AND SEDIMENT CONTROL BMP'S SHALL BE PLACED PRIOR TO START OF CONSTRUCTION, AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND CAPTURE SEDIMENT ON SITE, AND SHALL MEET THE NPDES PERMIT PART IV CONSTRUCTION ACTIVITY REQUIREMENTS.

ONCE CONSTRUCTION ACTIVITY CEASES FOR 14 DAYS OR MORE IN AN AREA, THAT AREA WILL BE STABILIZED WITH TEMPORARY OR PERMANENT BMP's.

### RECEIVING WATERS

THE RECEIVING WATER FOR THE PROJECT IS LAKE OF THE WOODS. STORM WATER RUNOFF DURING CONSTRUCTION WILL BE MANAGED WITH BMP'S FOR INLET PROTECTION, AND OTHER BMP'S FOR MANAGING SEDIMENT LADEN RUNOFF. STORM WATER RUNOFF UPON COMPLETION OF THE PROJECT WILL BE MANAGED WITH GRASSY DITCHES AND SWALES, REFER TO THE EROSION CONTROL AND TURF ESTABLISHMENT SHEETS OF THE PLAN FOR DETAILS AND LOCATIONS OF TEMPORARY AND PERMANENT BMP'S.

#### SPECIAL CONDITIONS

THE CONTRACTOR SHALL PROVIDE SITE PLANS FOR CRITICAL AREAS IDENTIFIED IN THE EROSION CONTROL PLANS DETAILING HIS INTENDED CONSTRUCTION, EROSION CONTROL AND FINAL STABILIZATION METHODS PRIOR TO CONSTRUCTION COMMENCING, ALL WORK SPECIFICALLY NOT NOTED AS BEING PAID FOR SEPARATELY SHALL BE CONSIDERED INCIDENTAL WORK.

# STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NOTES

- 1) THE CONTRACTOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP, AND PLACEMENT, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMP'S BEFORE AND DURING CONSTRUCTION.
- 2) THE CONTRACTOR SHALL DEVELOP A CHAIN OF RESPONSIBILITY WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION HAS BEEN SUBMITTED TO THE MPCA.
- 3) THE CONTRACTOR SHALL PROVIDE AND SUBMIT A WRITTEN, NOT ORAL, WEEKLY SCHEDULE OF PROPOSED EROSION CONTROL ACTIVITIES FOR THE PROJECT ENGINEER'S APPROVAL AS PER MN/DOT SPEC. 1803.
- 4) THE CONTRACTOR SHALL PREPARE AND SUBMIT A SITE PLAN FOR THE PROJECT ENGINEER'S APPROVAL AS PER MN/DOT SPEC. 1803 FOR PIPE AND STRUCTURE PLACEMENT, DEWATERING, AND AREAS SHOWN IN THE PLANS OR SPECIFIED BY THE PROJECT ENGINEER.
- THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM A CONSTRUCTION SITE, OR DIVERTS WATER AROUND A SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE TO ANY SURFACE WATER. RAPID STABILIZATION MUST BE COMPLETED IMMEDIATELY AFTER CHANNEL EXCAVATION, WHERE SOD MATS OR EROSION CONTROL BLANKETS SHOULD BE PLACED IN ACCORDANCE WITH THE PLANS. THESE AREAS MUST BE KEPT STABILIZED AT ALL TIMES.
- 6) PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.
- DEWATERING AND CONCRETE TRUCK WASHING RELATED TO THE CONSTRUCTION ACTIVITY THAT MAY HAVE TURBID OR SEDIMENT LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY SEDIMENTATION BASIN ON THE PROJECT SITE. IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMP'S, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER DOWNSTREAM LANDOWNERS, THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIRRAP, SAND BAGS, PLASTIC SHEETING OR OTHER ENERGY DISSIPATION MEASURES APPROVED BY THE PROJECT ENGINEER, ADEQUATE SEDIMENTATION CONTROL MEASURES ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS.
- 8) ANY FUEL OR CHEMICAL TANK STORED ON THE PROJECT AREA MUST BE PROTECTED BY A SOIL BERM OR HAVE A NEGATIVE GRADIENT TO ANY WATER RESOURCE AREA, AS PER COE404. A CONTINGENCY PLAN MUST BE CREATED BY THE CONTRACTOR IN EVENT OF A SPILL OR LEAK OF ANY CHEMICAL, INCLUDING PETROCHEMICALS, DEEMED HARMFUL TO THE ENVIRONMENT, AND HAVE ON HAND THE MATERIALS NECESSARY TO CAPTURE AND CONTAIN SAID CHEMICALS.
- 9) A WATER APPROPRIATION PERMIT WILL BE REQUIRED FROM THE MN DNR FOR CONSTRUCTION IF DEWATERING EXCEEDS 10,000 GALLONS PER DAY.
- 10) ALL ERODIBLE STOCKPILES SHALL HAVE SEDIMENT CONTROL AND BE PLACED IN AREAS AWAY FROM SURFACE WATER.
- 11) CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING EROSION AS PER THE PLAN, PROJECT PROVISIONS, AND MN/DOT SPECIFICATIONS 1701, 1702, 1717, 2572, 2573, 2575.
- 12.) TEMPORARY SEDIMENT REQUIREMENTS SATISFIED WITH POOLS IN OUTSIDE BENDS, CONTRACTOR MAY NEED TO COME BACK AND REMOVE ANY SEDIMENT WASHING INTO POOLS AT PROJECT COMPLETION.
- 13.) EROSION CONTROL WILL BE ADDRESSED THROUGH SOD MATS, ECB ON OUTSIDE BENDS AND SEEDING AND MULCHING WITHIN 14 DAYS OF CONSTRUCTION IN AN AREA.

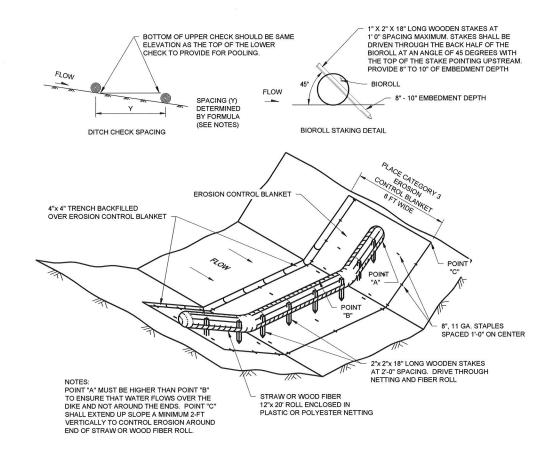
## LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	TITLE	LOCATION
SUMMARY OF PERVIOUS AND IMPERVIOUS AREAS	SWPPP SHEET	SHEET 15
EROSION CONTROL SHEETS	EROSION CONTROL DETAIL SHEET	SHEET 16
EROSION CONTROL DETAILS	DETAIL SHEETS	MNDOT
FINAL STABILIZATION	ESTIMATED QUANTITIES	SEE PLANS

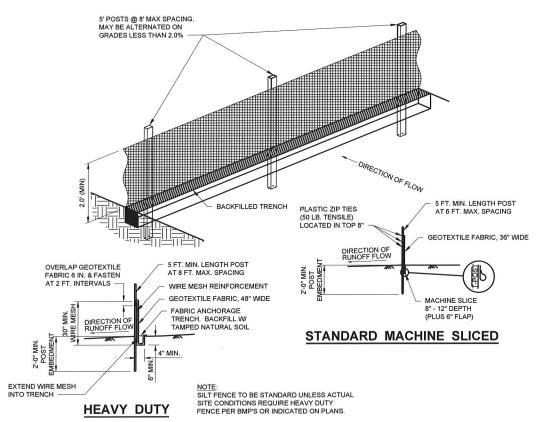


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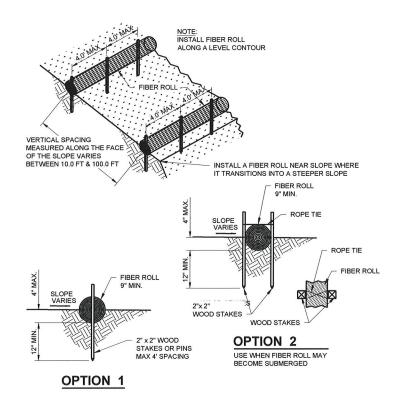
OSTIC CREEK GRADE STABILIZATION	SWPPP	SHEET	
KE OF THE WOODS SWCD  KE OF THE WOODS COUNTY, MINNESOTA	PROJECT NO. 7180-0010	15 of 16	



# TEMPORARY DITCH CHECK



SILT FENCE NOT TO SCALE



# FIBER ROLL INSTALLATION NOT TO SCALE

**CONTROL DETAILS** 

NO. 7180-0010

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	Revision Date	By	Store of Annests W 2/11/2020  Ted D. Rud  Date  Dicense No. 53711	Houston Engineering Inc.	P:   701.237.5065 F:   701.237.5101	Checked by		LAKE OF THE WOODS SWCD LAKE OF THE WOODS COUNTY, MINNESOTA	PROJECT N
-			I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a will see see a professional Engineer under the laws of the		Fargo	Drawn by AJK	Date 2-11-20	BOSTIC CREEK GRADE STABILIZATION	EROSION C