MONTANA STATE UNIVERSITY
BOZEMAN, MT

MARSH LAB
VET CLINIC SEWER UPGRADES
PPA#19-0083

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OWNER:
MONTANA STATE UNIVERSITY-BOZEMAN
BOZEMAN, MT 59717
CONTACT: LORAS O'TOOLE, (406) 994-7092

CONSULTANT:
MORRISON-MAIERLE, INC.
2880 TECHNOLOGY BLVD. W.
BOZEMAN, MT 59718
(406) 587-0721

DATE: 10-14-19
MARSH LAB VET CLINIC
SEWER UPGRADES

EXISTING SITE AND UTILITIES

NOTE: -2.6 TO PIPE INVERT

TOP OF STATIC WATER ELEV=4895.19'

BM TOP ANCHOR BOLT BOTTOM
BOLT HINGE. ELEV=4890.58'

BM TOP OF NORTH SIDE OF
EXIT GATE HINGE. ELEV=4891.17'

BM NORTH MHS RIM
ELEV=4897.75'

BM NORTH MHS RIM ELEV=4897.79'

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KEY NOTES

CONTRACTOR TO EXPOSE EXISTING SEWER STUB AS NEEDED TO MAKE THE CONNECTION. THE EXISTING STUB IS INSTALLED WITH VERTICAL 45 DEGREE BENDS AS SHOWN ON DETAIL 1 ON SHEET 6. POINT OF CONNECTION WILL NEED TO FIELD DETERMINED BASED ON THE ACTUAL CONFIGURATION OF THE EXISTING STUB. THE INVERT OF THE NEW SERVICE AT THE POINT OF CONNECTION WILL BE APPROXIMATELY 4890.0.
KEY NOTES

EXISTING BRIDGE (TYP)

HORSE AT BEND

HORSE AT BEND

PROPOSED CLEANOUT

STA: 1+71.80

PROPOSED CLEANOUT

STA: 1+62.35

HORIZ. 45° BEND

STA: 1+56.75

HORIZ. 45° BEND

STA: 2+40.29

HORIZ. 45° BEND

STA: 2+45.94

HORIZ. 45° BEND

STA: 2+54.94

PROPOSED 2-WAY SEWER CLEANOUT

MARSH FACILITY

EXISTING GRADE (TYP)

BM TOP ANCHOR BOLT BOTTOM HINGE. ELEV=4897.86'

BM TOP OF NUT NORTH SIDE OF EAST GATE HINGE. ELEV=4898.11'

ELEVATION OF SERVICE AT BUILDING WALL ASSUMED TO BE AT ELEVATION 4895.0'. CONTRACTOR TO CONFIRM AND BEGIN NEW SERVICE AT THIS LOCATION.

5.59 LF 4" PVC @ 2.00%

77.94 LF 4" PVC @ 2.00%

5.66 LF 4" PVC @ 2.00%

12.00 LF 4" PVC @ 2.00%

REVIEWED BY: JRN

DRAWN BY: CJF

MSU-CPDC

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Morrison Maierle

CONSTRUCTION DOCUMENTS

PPAR 19-0083

MM# 0747.072

SEWER SERVICE

PLAN PRO

SEWER UPGRADES

SEWER SERVICE PLN PRO

DATE

10-14-19
NOTES:

1. INSTALL INSULATION OVER ALL WATER OR SEWER LINES WITH LESS THAN 6.0' OR 5.0' COVER, RESPECTIVELY, TO FINISHED GRADE OR CULVERT.

2. INSTALL INSULATION IN TWO 2"-THICK LAYERS. ROTATE OR STAGGER JOINTS TO PROVIDE 2' MIN. OVERLAP BETWEEN JOINTS.

3. INSULATION BOARD SHALL BE 2" THICK EXTRUDED POLYSTYRENE INSULATION BOARD PER AASHTO M230-70.

6" MIN. - 12" MAX.

GRANULAR TRENCH WALL BEDDING

8"

4' GROUND SURFACE

5' MIN.

BACKFILL TRENCH BOTTOM

SEWER LINE

CULVERT

INSULATION TABLE FOR WATER/SEWER LINE (SIZES 2" TO 12")

2.5'-5.0'

8" X 3' ROUND CONCRETE SLAB

SEAL JOINT WITH RAM-NEK GRAVEL AS REQUIRED

HEAVY DUTY MONUMENT BOX, SIMILAR TO CAIRD ENG. NO. 50608-1

END OF TRENCH

SERVICE PIPE

GASKETED WYE OR TEE

1/4" BELOW TOP OF NEW SURFACE

SET TOP OF CLEANOUT 1" BELOW BOTTOM OF FRAME

1"

2-WAY SANITARY SEWER CLEANOUT

SCALE: N.T.S.

SANITARY SEWER END OF LINE CLEANOUT IF REQUIRED USE PLUG

3' - 0" MIN.

45° 1/8 BEND

CLEANOUT PIPE (SAME SIZE AS SERVICE PIPE)

FROST EXPANSION SLEEVE

SLIP HUB TO THREADED ADAPTOR THREADED PLUG

8" X 3' ROUND CONCRETE SLAB