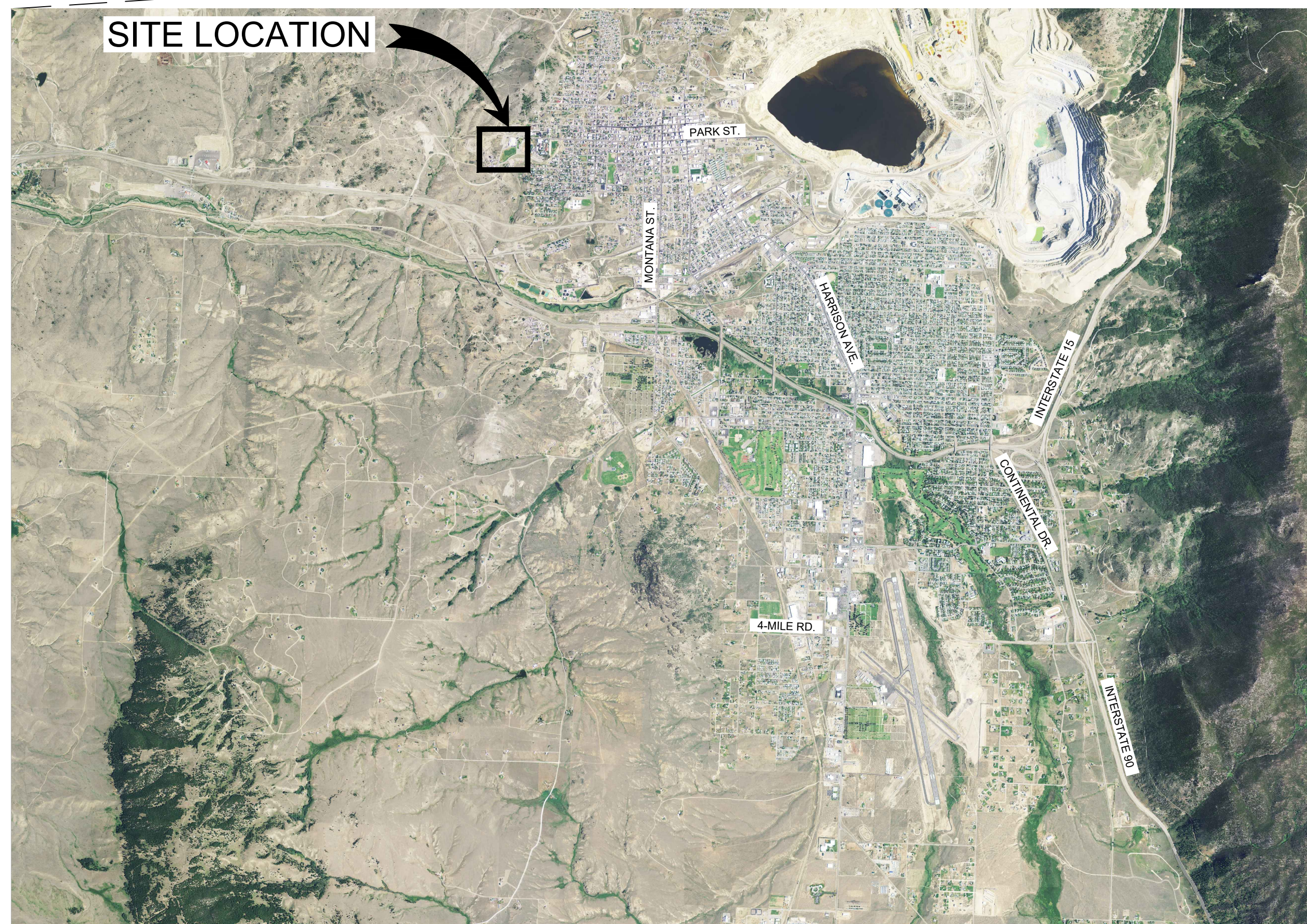
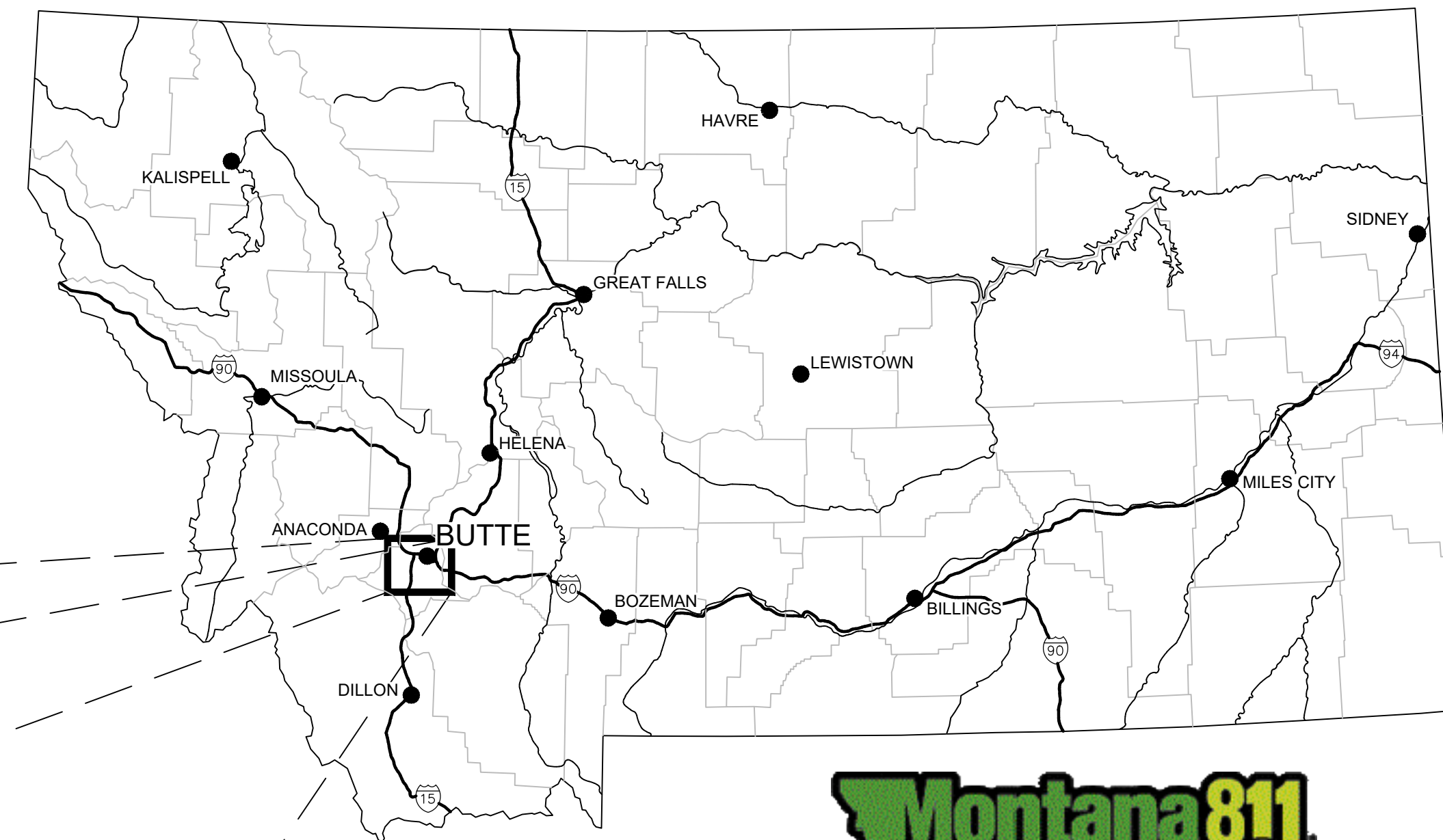


WORLD MUSEUM OF MINING PAVILION WATER MAIN AND SANITARY SEWER MAIN EXTENSIONS

LOCATED IN SILVER BOW COUNTY, MONTANA

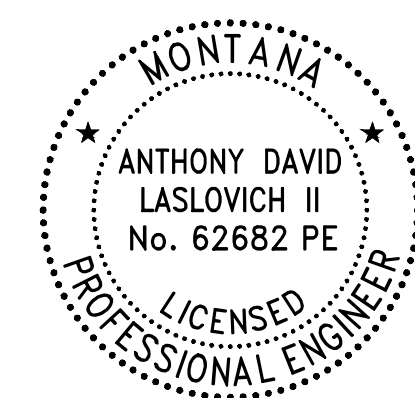


**Know what's below.
Call 811 before you dig.**

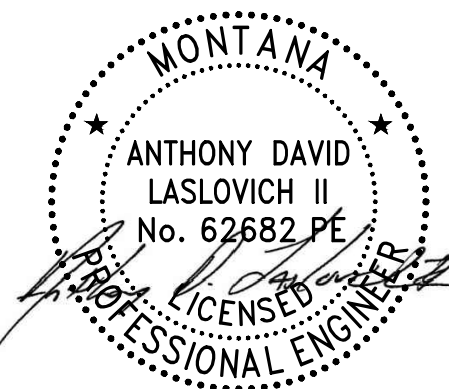
SHEET INDEX	
SHT. No.	DRAWING TITLE
C100	CIVIL TITLE SHEET
C200	CIVIL NOTES AND LEGEND
C300	WATER MAIN EXTENSION PLAN
C400	WATER MAIN EXTENSION PLAN AND PROFILE
C500	WATER MAIN EXTENSION TYPICAL DETAILS
C600	SANITARY SEWER MAIN EXTENSION PLAN
C700	SANITARY SEWER MAIN EXTENSION PLAN AND PROFILE
C800	SANITARY SEWER MAIN TYPICAL DETAILS

PREPARED BY:
Water & Environmental TECHNOLOGIES
 480 E. Park Street
 Butte, MT 59701
 (406) 782-5220
 WATERENVTECH.COM

PREPARED FOR:
 WORLD MUSEUM OF MINING
 155 MUSEUM WAY
 PROJECT NO. WMOMM01
 JUNE 2020



Anthony D. Laslovich II
 ANTHONY DAVID LASLOVICH II No. 62682 PE



#	DATE	REVISION



Water & Environmental TECHNOLOGIES
 480 E. Park Street
 Butte, MT 59701
 (406) 782-5220
 WATERENVTECH.COM

WMM RESTROOM PAVILION & UTILITY SERVICES

155 MUSEUM WAY, BUTTE, MT
 CIVIL TITLE SHEET

DATE: June 29, 2020

100% CONSTRUCTION DOCUMENTS
 SHEET: **C100**

BUTTE-ANACONDA LDP SURVEY NOTES:

- VERTICAL DATUM: NAVD88 GEOID 12B
- LINEAR UNIT: INTERNATIONAL FEET (IFT).
- GEODETTIC DATUM: NORTH AMERICAN DATUM OF 1983.
- PROJECTION: TRANSVERSE MERCATOR
 LATITUDE OF ORIGIN: 46° 00' 00" N
 LONGITUDE OF CENTRAL MERIDIAN: 112° 48' 00" W
 FALSE NORTHING: 400,000.00 IFT
 FALSE EASTING: 200,000.00 IFT
 SCALE FACTOR AT ORIGIN: 1.00026
- COORDINATES ARE SHOWN IN UNITS OF INTERNATIONAL FEET UNLESS INDICATED OTHERWISE.

SURVEY NOTES:

- UTILITIES SHOWN ARE BASED ON AVAILABLE RECORD DRAWINGS AND UTILITIES LOCATED BY ELECTRONIC METHOD IN THE FIELD. NO GUARANTEE IS GIVEN OR IMPLIED AS TO THE ACCURACY OF LOCATIONS PROVIDED OR THAT ALL UTILITIES ARE SHOWN. ALL UTILITY LOCATIONS ARE SUBJECT TO THE ACCURACY OF THE LOCATION METHOD, AND SUBJECT TO RELOCATION PRIOR TO ANY CONSTRUCTION ACTIVITIES. NO EXCAVATION WAS PERFORMED TO VERIFY UTILITIES. CONTRACTOR RESPONSIBLE FOR VERIFICATION OF LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- NO BOUNDARY SURVEY WAS CONDUCTED AS PART OF THIS PROJECT, ALL BOUNDARY LINES SHOWN WERE APPROXIMATED FROM RECORDS AND/OR MONTANA STATE LIBRARY CADASTRAL FRAMEWORK. BOUNDARY LINES ON THIS MAP DO NOT REPRESENT A LEGAL SURVEY AND SHOULD BE CONSIDERED APPROXIMATE. THESE BOUNDARY LINES ARE TO BE USED FOR GENERAL REFERENCE ONLY. NO LIABILITY IS ASSUMED BY WET FOR THE ACCURACY OF THESE BOUNDARY LINES.

SANITARY CONSTRUCTION NOTES:

- PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF SANITARY SEWER MAINS, LIFT STATION, FORCE MAIN AND SANITARY SEWER SERVICES. ALL COMPONENTS MUST BE OPERATED AND MAINTAINED PER THE MANUFACTURER'S SPECIFICATIONS.
- CONTRACTOR TO INSTALL SANITARY SERVICE CLEANOUT IN CLOSE PROXIMITY TO THE SERVICE LEAVING THE BUILDING IN ACCORDANCE WITH LOCAL PLUMBING CODE.
- MANHOLES WILL BE PRECAST CONCRETE MADE WITH TYPE V LOW ALKALINE CEMENT. CONCRETE SHALL HAVE A MINIMUM 28 DAY STRENGTH OF 5000 PSI.
- ALL JOINTS BETWEEN MANHOLE SECTIONS, ADJUSTING RINGS, MANHOLE RING AND COVER, AND AROUND PIPE INTO MANHOLE WILL BE WATER TIGHT. JOINT SEALING MATERIAL WILL BE ALL WEATHER BUTYL RUBBER SEALANT (ASTM C-990) FOR ALL JOINTS EXCEPT BETWEEN PIPE AND MANHOLE WALL. OPENINGS FOR PVC PIPE ON NEW MANHOLES AND OTHER PRECAST STRUCTURES WILL BE PRECAST WITH A-LOK, Z-LOK, OR PSX BOOT GASKETS.
- MANHOLE RING AND COVER WILL BE EJ3771 OR EQUIVALENT. MANHOLE IDENTIFICATION WILL INCLUDE SANITARY SEWER.
- AREAS AROUND MANHOLE, CLEANOUTS, AND OTHER ACCESS PORTS WILL BE GRADED SUCH THAT DRAINAGE IS ROUTED AWAY FROM THESE AREAS.
- EXCAVATION AND BACKFILLING METHODS MUST CONFORM TO SECTIONS 02221 AND 02230 OF SPECIFICATIONS.
- GRAVITY MAIN SEWER PIPE MATERIAL SHALL BE SDR-35 PVC (8-INCH) AND MUST MEET THE REQUIREMENTS OF ASTM D 3034 AND MUST BE JOINED BY AN INTEGRAL BELL AND SPIGOT JOINT WITH RUBBER ELASTOMERIC GASKET OR SOLVENT CEMENT JOINTS.
- CONTRACTOR IS RESPONSIBLE FOR A 7-DAY MANDREL TEST WITH A MANDREL AT LEAST 95% OF THE INSIDE PIPE DIAMETER. CONTRACTOR IS REQUIRED TO FOLLOW DEQ-2 SECTION 33.85 OR SECTION 02730. THE TEST MUST BE PERFORMED WITHOUT MECHANICAL PULLING DEVICES.
- CONTRACTOR IS RESPONSIBLE FOR LEAKAGE TESTING OF PVC PIPE IN ACCORDANCE WITH SECTION 02730. CONTRACTOR MUST NOTIFY ENGINEER 1 WEEK IN ADVANCE OF SCHEDULED TESTS.
- CONTRACTOR IS RESPONSIBLE FOR HYDROSTATIC TESTING OR VACUUM TESTING MANHOLES ACCORDING TO SECTIONS 02733. OR 02732, RESPECTIVELY. CONTRACTOR MUST NOTIFY ENGINEER 1 WEEK IN ADVANCE OF SCHEDULED TESTS.
- CONTRACTOR SHALL REMOVE ALL STANDING WATER IN TRENCHES AND EXCAVATIONS BY ADEQUATELY DEWATERING DURING PLACEMENT AND BACKFILLING OF PIPE AND STRUCTURES.
- NEW MANHOLES MUST BE VACUUM TESTED ACCORDING TO SECTION 02732 OF SPECIFICATIONS

WATER CONSTRUCTION NOTES:

- OWNER IS RESPONSIBLE FOR MAINTENANCE OF EACH SERVICE LINE.
- ALL FITTINGS WILL MEET OR EXCEED AWWA C153/A21.33.
- WATER MAIN SHALL BE CLASS 235 C900 PVC PIPE.
- ALL METAL IN CONTACT WITH THE SOIL WILL BE DOUBLE POLY-WRAPPED.
- A MINIMUM OF 6 FEET, 6 INCHES IS TO BE MAINTAINED OVER ALL WATER LINES UNLESS SHOWN OTHERWISE ON THE DRAWINGS.
- CONTRACTOR IS RESPONSIBLE FOR HYDROSTATIC TESTING, CLEANING, AND DISINFECTING WATER MAINS, VALVES, AND FITTINGS PER SECTION 02660 AND MUST NOTIFY ENGINEER 1 WEEK IN ADVANCE OF SCHEDULED TESTS.
- MAXIMUM ALLOWABLE DEFLECTION FOR WATER PIPING MUST NOT EXCEED MANUFACTURER'S RECOMMENDATIONS.
- A MINIMUM OF 10" HORIZONTAL AND 18" VERTICAL SEPARATION MUST BE MAINTAINED BETWEEN WATER AND SEWER MAINS FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE. NOTIFY ENGINEER IF THESE SEPARATION DISTANCES ARE NOT OBSERVED DURING CONSTRUCTION.
- ALL TEES, PLUGS, VALVES, REDUCERS, CAPS AND BENDS SHALL HAVE THRUST BLOCKS PER MPWSS SECTION 02660.
- PRIOR TO COMMENCING CONSTRUCTION THAT WILL INTERRUPT THE EXISTING WATER SYSTEM, ALL MATERIALS AND PRODUCTS NECESSARY TO MAKE THE INTENDED CONNECTION MUST BE ONSITE.
- SERVICE LINES MUST BE INSTALLED PER BSB STANDARDS AND UNIFORM PLUMBING CODE.

CAUTION:

ENTRY INTO ANY MANHOLE MAY RESULT IN DEATH IF APPROPRIATE CONFINED SPACE ENTRY PROCEDURES ARE NOT IN PLACE AND FOLLOWED. DO NOT UNDER ANY CIRCUMSTANCES ENTER A CONFINED SPACE WITHOUT A CONFINED SPACE ENTRY PROGRAM, EVENT PLAN, BACKUP PERSONNEL, AND EQUIPMENT INCLUDING MONITORS PER OSHA REQUIREMENTS.

EXISTING SITE CONDITIONS LEGEND				
	PL	PROPERTY LINE		UTILITY POLE
	OE	OVERHEAD ELECTRIC LINES		WATER VALVE
	E	UNDERGROUND ELECTRIC LINES		WATER HYDRANT
	WA	WATER LINES		WATER CURBSTOP
	WA?	GIS WATERLINES (APPROXIMATE)		GAS METER
	NG	GAS LINES		COMMUNICATION PEDESTAL
	SAN	SANITARY SEWER LINES		SANITARY SEWER MANHOLE
	C	UNDERGROUND TV/COMMUNICATION LINES		
		EDGE OF ASPHALT		

PROPOSED SITE CONDITIONS LEGEND				
	WA	WATER LINES		
	WA	WATER SERVICE LINES		
	SAN	SANITARY SEWER LINES		
	SAN	SANITARY SEWER SERVICE LINES		
		WATER VALVE		
		FIRE HYDRANT		
		WATER CURBSTOP		
		SANITARY SEWER MANHOLE		

CONSTRUCTION NOTES:

- CONTRACTOR MUST CONFORM TO BUTTE-SILVER BOW'S EXCAVATION AND DIRT MOVING PROTOCOLS AND OBTAIN NECESSARY PERMIT(S).
- SEWER CROSSING WATER MAINS MUST BE LAID WITH A MINIMUM VERTICAL DISTANCE OF 18 INCHES BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. IF 18 INCHES IN UNACHIEVABLE, THEN A MINIMUM VERTICAL SEPARATION OF 6 INCHES MUST BE MET.
 - VERTICAL SEPARATION AT CROSSINGS BETWEEN WATER AND SEWER MAINS WILL BE AT LEAST 6 INCHES. IF 6 INCHES OF SEPARATION DOES NOT EXIST, THE WATER MAIN WILL BE COVERED TO ACHIEVE AT LEAST 18 INCHES OF SEPARATION. IF THIS IS THE CASE, B, C, D, AND E BELOW ARE NOT NECESSARY. IF 6 TO 18 INCHES OF SEPARATION CAN BE ACHIEVED, THEN B, C, AND D BELOW WOULD BE NEEDED OR E BELOW WOULD BE NEEDED (B, C, AND D WOULD NOT BE NECESSARY IF E IS THE CHOSEN OPTION).
 - SEWER PIPES WILL BE CONSTRUCTED OF SLIP-ON WATER TIGHT BELL AND GASKET JOINTS, AND C900 PVC OR C151DIP MATERIAL TO BE USED.
 - PERPENDICULAR ALIGNMENT AND ONE STANDARD PIPE LENGTH WILL BE CENTERED AT THE WATER MAIN CROSSING AS POSSIBLE.
 - IN-LINE FITTINGS EXTENDING TO AT LEAST THE EDGE OF THE TRENCH (PER BSB PROTOCOL) WILL BE INSTALLED IN THE AREA OF ENCROACHMENT.
 - THE SEWER MAIN MUST BE ENCASED IN A MINIMUM OF 6 INCHES OF FLOWABLE FILL FOR A MINIMUM OF 10 FEET EACH SIDE OF THE CROSSING PIPES.
- UTILITY LOCATIONS ARE TAKEN FROM SITE SURVEY EXCAVATIONS. CONTRACTOR RESPONSIBLE FOR VERIFICATION OF LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL ALTER OR DISTURB EXISTING MUSEUM PROPERTY (I.E. HISTORICAL FENCING, GATES, MONUMENTS, PAVERS, ETC.) WITHOUT WRITTEN PERMISSION FROM MUSEUM DIRECTOR.
- MUSEUM WILL BE FULLY OPERATIONAL DURING CONSTRUCTION. CONTRACTOR SHALL PROTECT ALL MUSEUM VISITORS AND PERSONNEL FROM CONSTRUCTION ACTIVITIES AND PROVIDE TRAFFIC CONTROL.
- CONTRACTOR SHALL PROVIDE TEMPORARY SECURITY FENCING TO PROTECT MUSEUM PROPERTY DURING CONSTRUCTION.
- CONTRACTOR SHALL KEEP CONTINUOUS ACCESS OPEN TO VISITOR'S CENTER DURING MUSEUM OPERATING HOURS.
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.
- CONTRACTOR IS RESPONSIBLE FOR ALL QUALITY CONTROL TESTING.
- CONTRACTOR IS RESPONSIBLE FOR ALL SEWER AND WATER SERVICE CONNECTION FEES.
- CONTRACTOR IS RESPONSIBLE FOR SEEDING DISTURBED AREAS TO A CONDITION THAT IS CONSIDERED "IN-KIND" OR BETTER.

PROJECT SPECIFICATION REFERENCES:

MPWSS DIVISION 2 - SITEWORK

- SECTION 02112 - REMOVAL OF EXISTING PAVEMENT, CONCRETE CURB, SIDEWALK, DRIVEWAY AND/OR STRUCTURES
- SECTION 02113 - ADJUSTING EXISTING MANHOLES, LAMPHOLES, INLETS, WATER VALVE BOXES, WATER SERVICES, AND FIRE HYDRANTS TO GRADE
- SECTION 02114 - RELOCATING OR REWIRING UTILITY POLES, STREET SIGNS AND MAILBOXES
- SECTION 02200 - EARTHWORK
- SECTION 02221 - TRENCH EXCAVATION AND BACKFILL FOR PIPELINES AND APPURTENANT STRUCTURES
- SECTION 02225 - FLOWABLE FILL
- SECTION 02230 - STREET EXCAVATION, BACKFILL, AND COMPACTION
- SECTION 02234 - SUB BASE COURSE
- SECTION 02235 - CRUSHED BASE COURSE
- SECTION 02502 - ASPHALT PRIME AND/OR TACK COAT
- SECTION 02510 - ASPHALT CONCRETE PAVEMENT
- SECTION 02528 - CONCRETE CURB AND GUTTER
- SECTION 02529 - CONCRETE SIDEWALKS, DRIVEWAYS, APPROACHES, CURB TURN FILLETS, VALLEY GUTTERS AND MISCELLANEOUS NEW CONCRETE CONSTRUCTION
- SECTION 02581 - PAVEMENT MARKINGS AND MARKERS (PRE-FORMED PLASTIC, PAINTS AND ENAMELS)
- SECTION 02660 - WATER DISTRIBUTION SYSTEMS
- SECTION 02730 - SANITARY SEWER COLLECTION SYSTEM
- SECTION 02732 - VACUUM TESTING OF MANHOLES
- SECTION 02910 - SEEDING
- SECTION 02920 - HYDRAULIC SEEDING

BUTTE-SILVERBOW PUBLIC WORKS DEPARTMENT

MATERIAL SPECIFICATIONS FOR: WATER MAINS, WATER SERVICE LINES, AND FIRE LINES - 2015 EDITION



#	DATE	REVISION



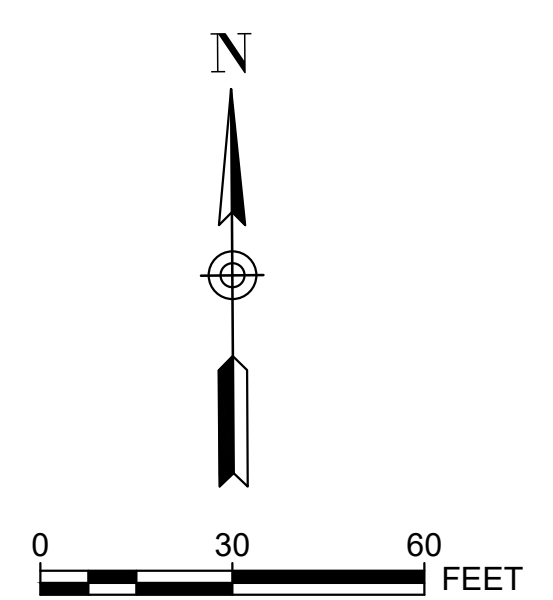
Water & Environmental
TECHNOLOGIES
480 E. Park Street
Butte, MT 59701
(406) 782-5220
WATERENVTECH.COM

WMM RESTROOM
PAVILION & UTILITY
SERVICES

155 MUSEUM WAY, BUTTE, MT
CIVIL NOTES AND
LEGEND

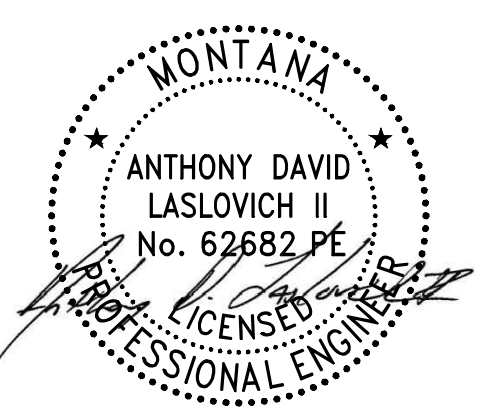
DATE: June 29, 2020

SHEET: C200



CONTROL POINT DATA

POINT NUMBER	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION
101	404844.1140	260183.0820	5759.037	C-SET-BAR
102	403394.8250	259229.4100	5857.713	C-SET-BAR
104	403541.6340	258418.0200	5616.162	C-SET-BAR
105	404426.1640	258396.3690	5623.780	C-SET-BAR
106	403874.9090	258923.3230	5654.254	C-SET-BAR
107	404052.9610	259402.5100	5691.489	C-SET-BAR
108	404282.4110	259379.9510	5720.483	C-SET-BAR
111	404370.8640	260254.1320	5720.295	C-SET-BAR
112	404371.7890	260016.0260	5736.019	C-SET-BAR



#	DATE	REVISION

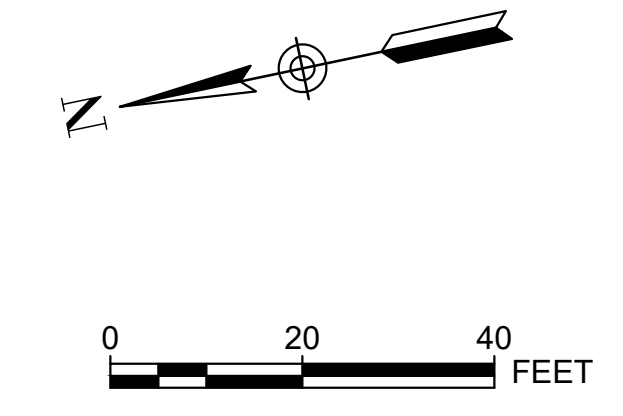
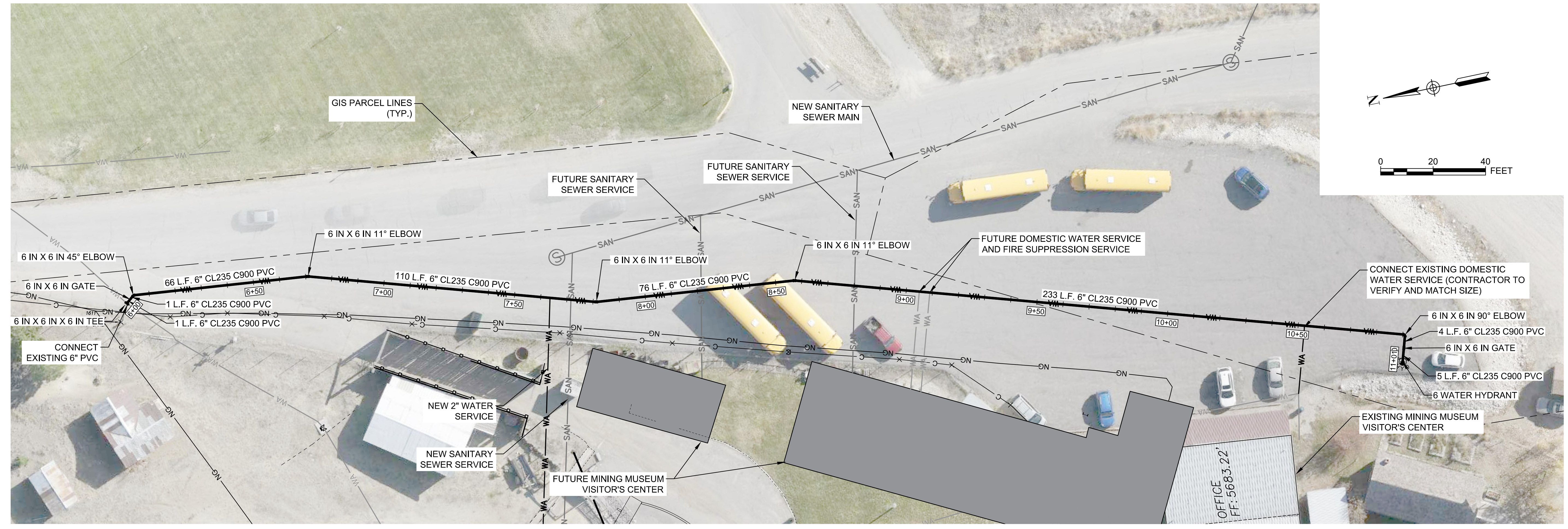


WMM RESTROOM PAVILION & UTILITY SERVICES
 155 MUSEUM WAY, BUTTE, MT
 WATER MAIN EXTENSION PLAN

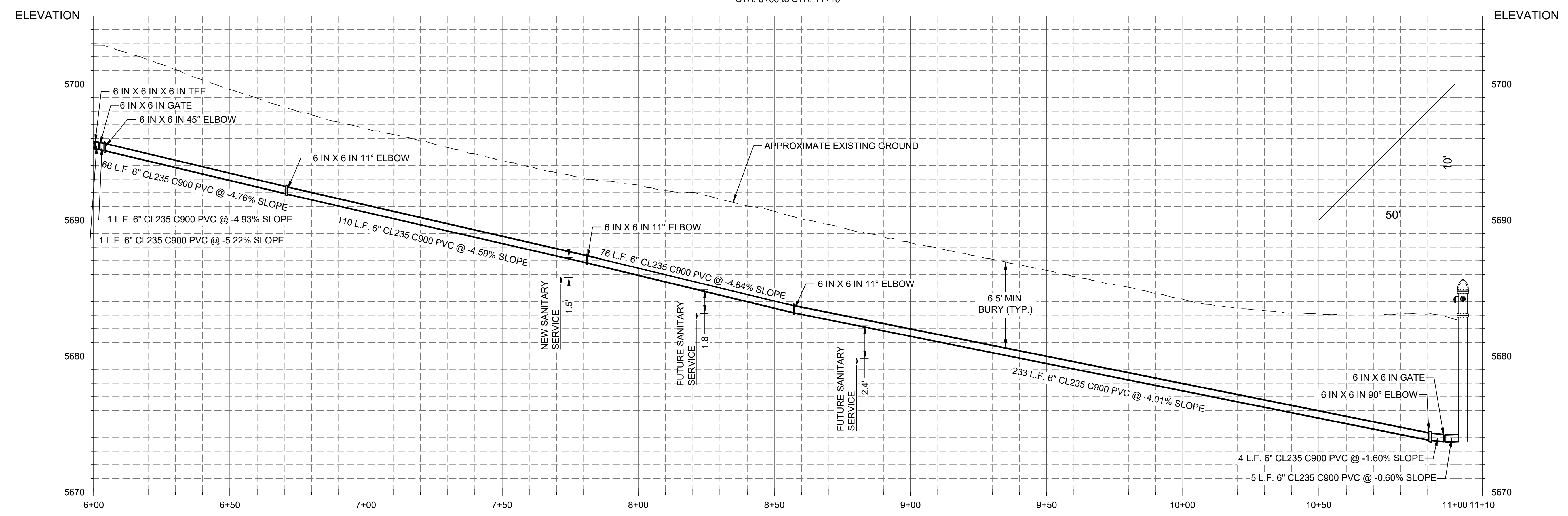
DATE: June 29, 2020

100% CONSTRUCTION DOCUMENTS SHEET: C300

DATE STAMP: M:\WMM\01\CAD\CIVIL\SC-WA01-WMM01.dwg PLOT DATE 2020-6-26 11:42 USER: dstratton



WATER MAIN EXT PROFILE
STA: 6+00 TO STA: 11+10



#	DATE	REVISION

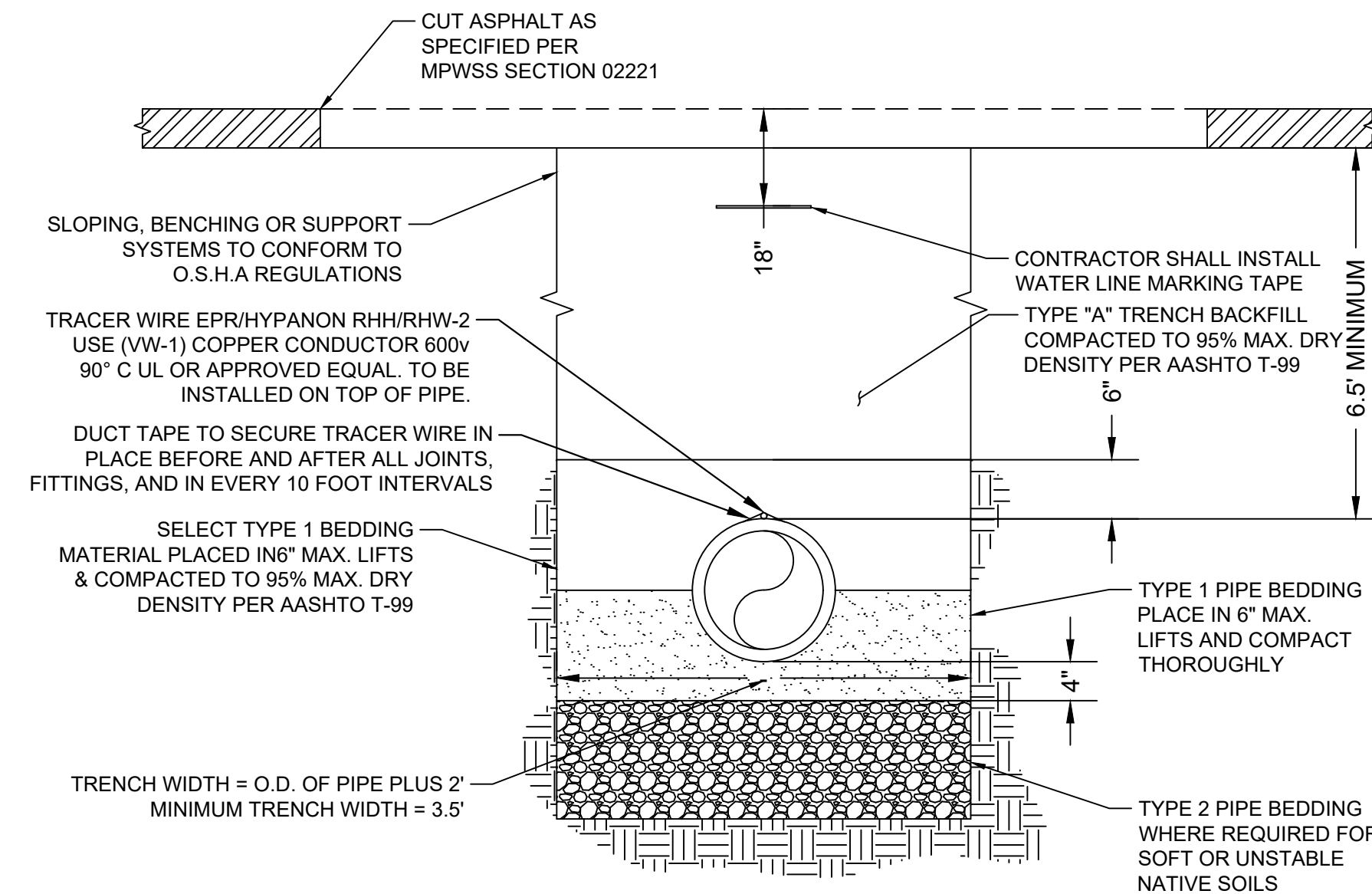


WMM RESTROOM
PAVILION & UTILITY
SERVICES
155 MUSEUM WAY, BUTTE, MT
WATER MAIN EXTENSION
PLAN AND PROFILE

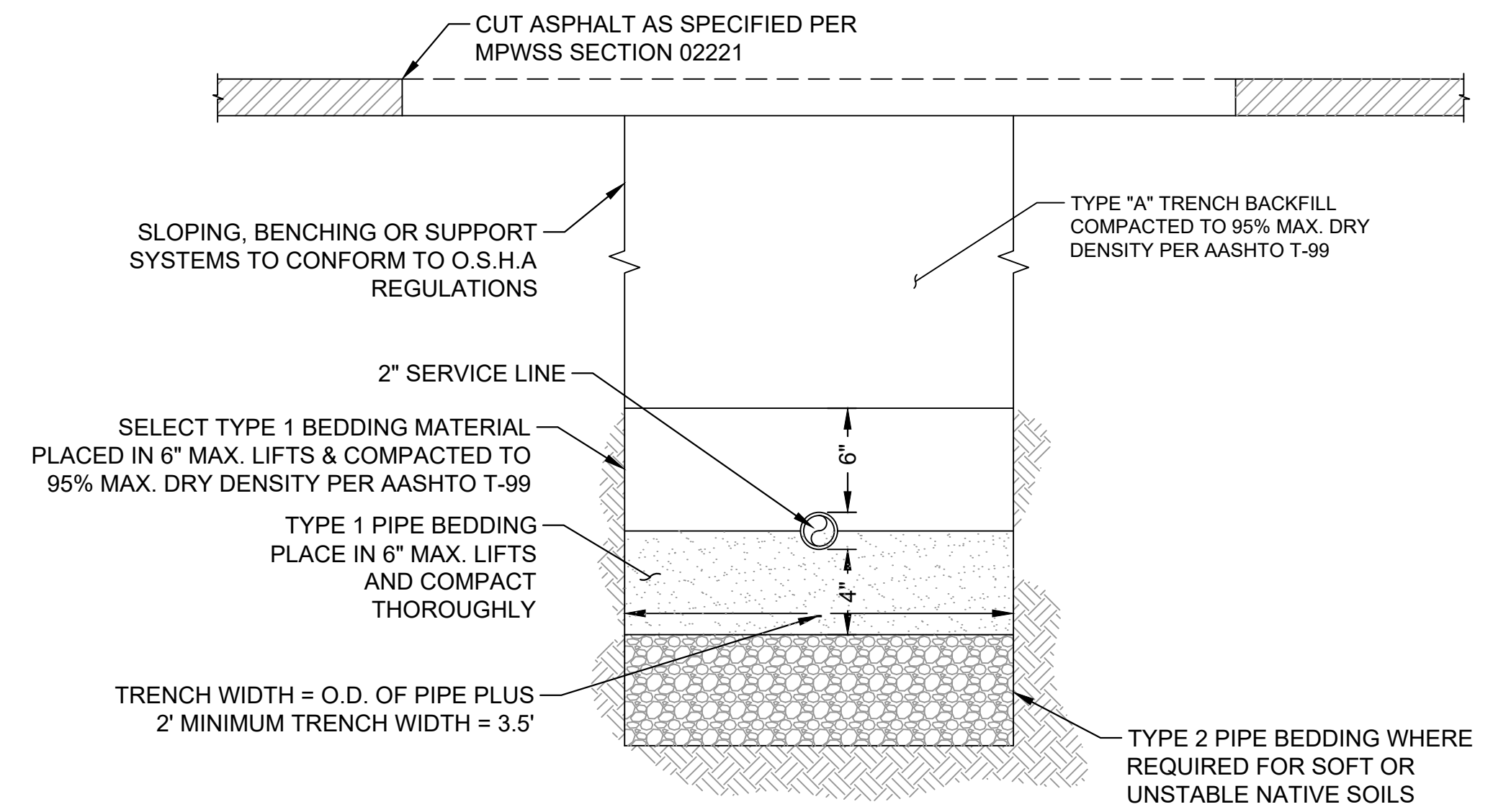
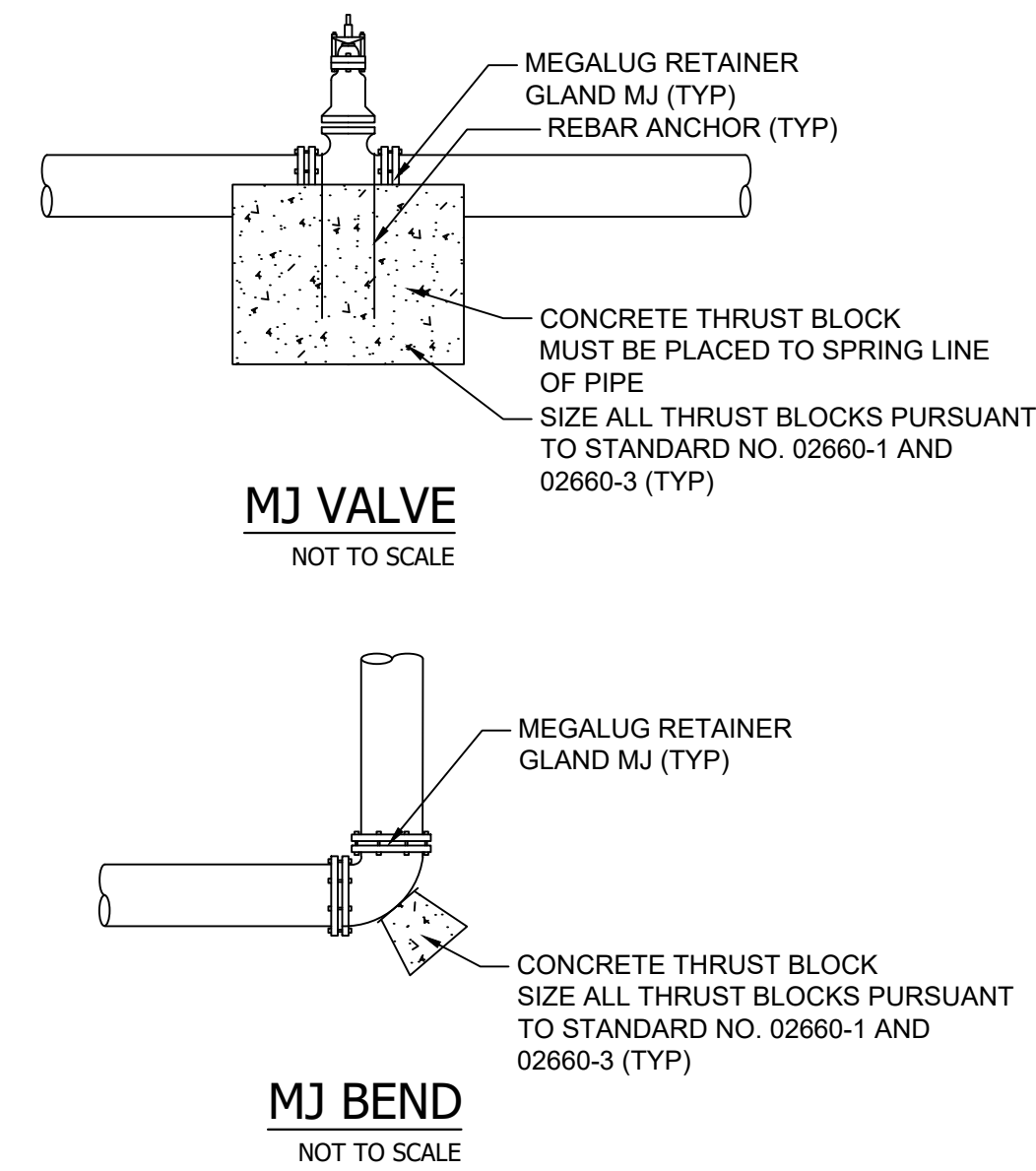
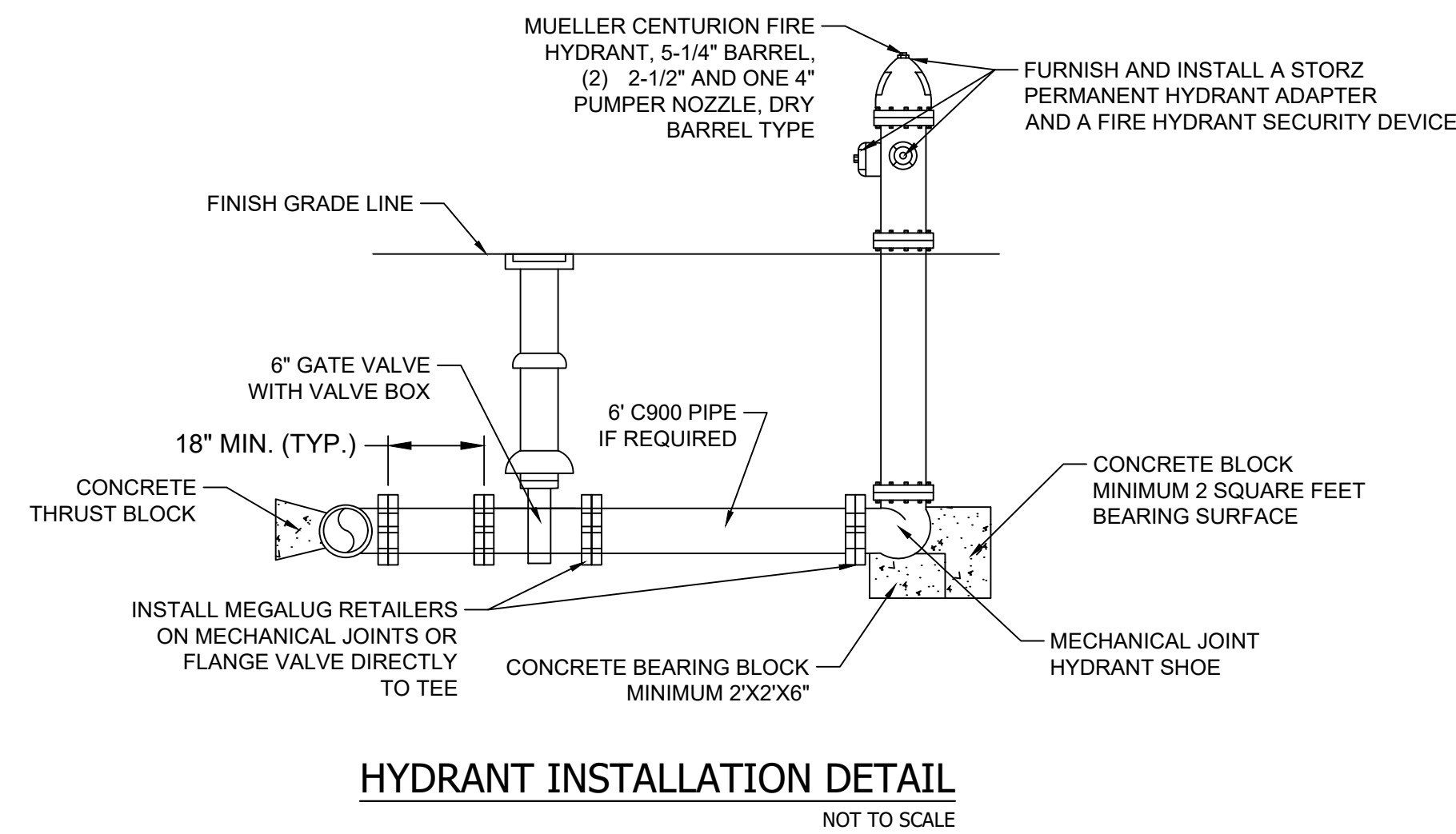
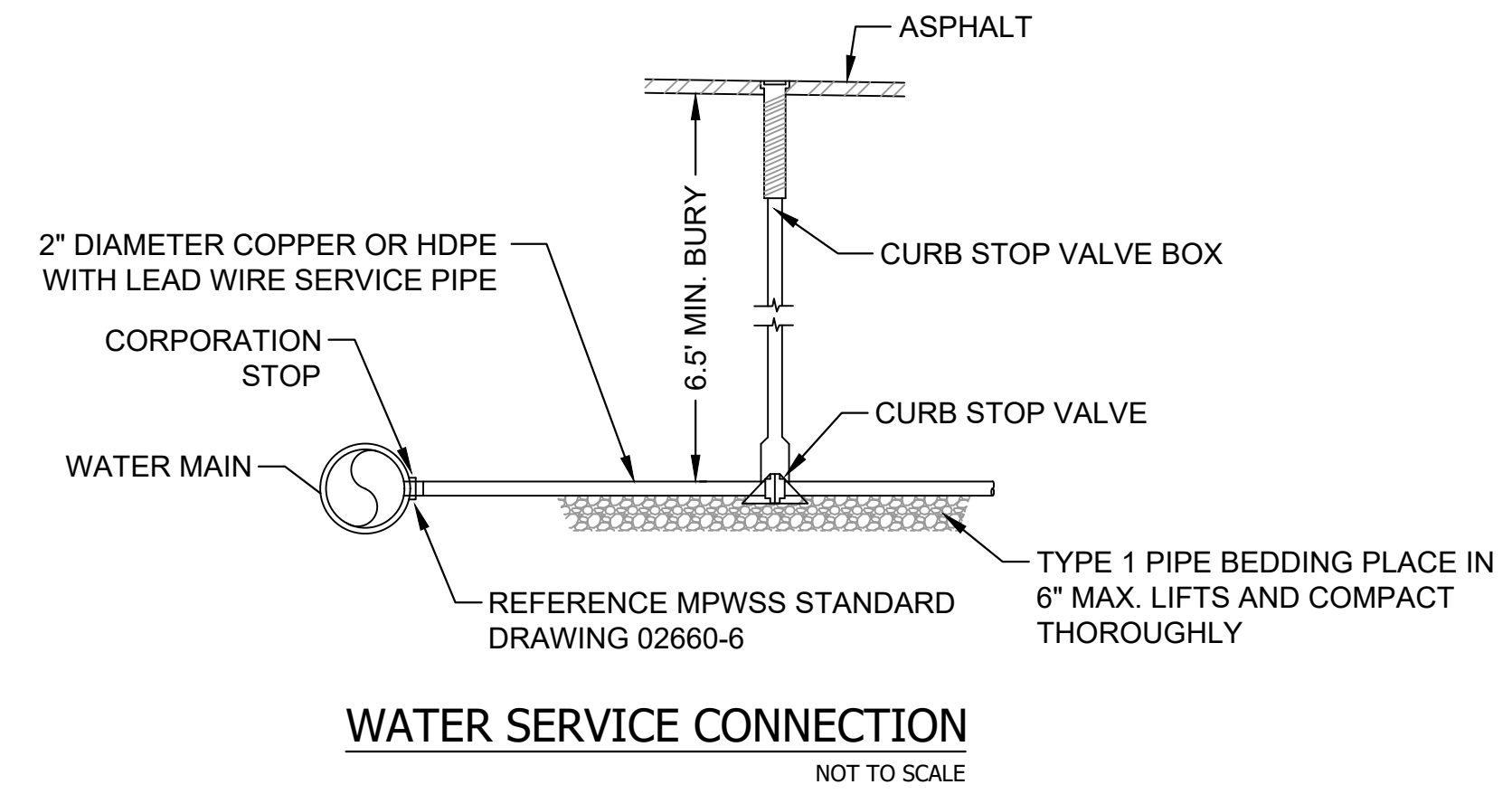
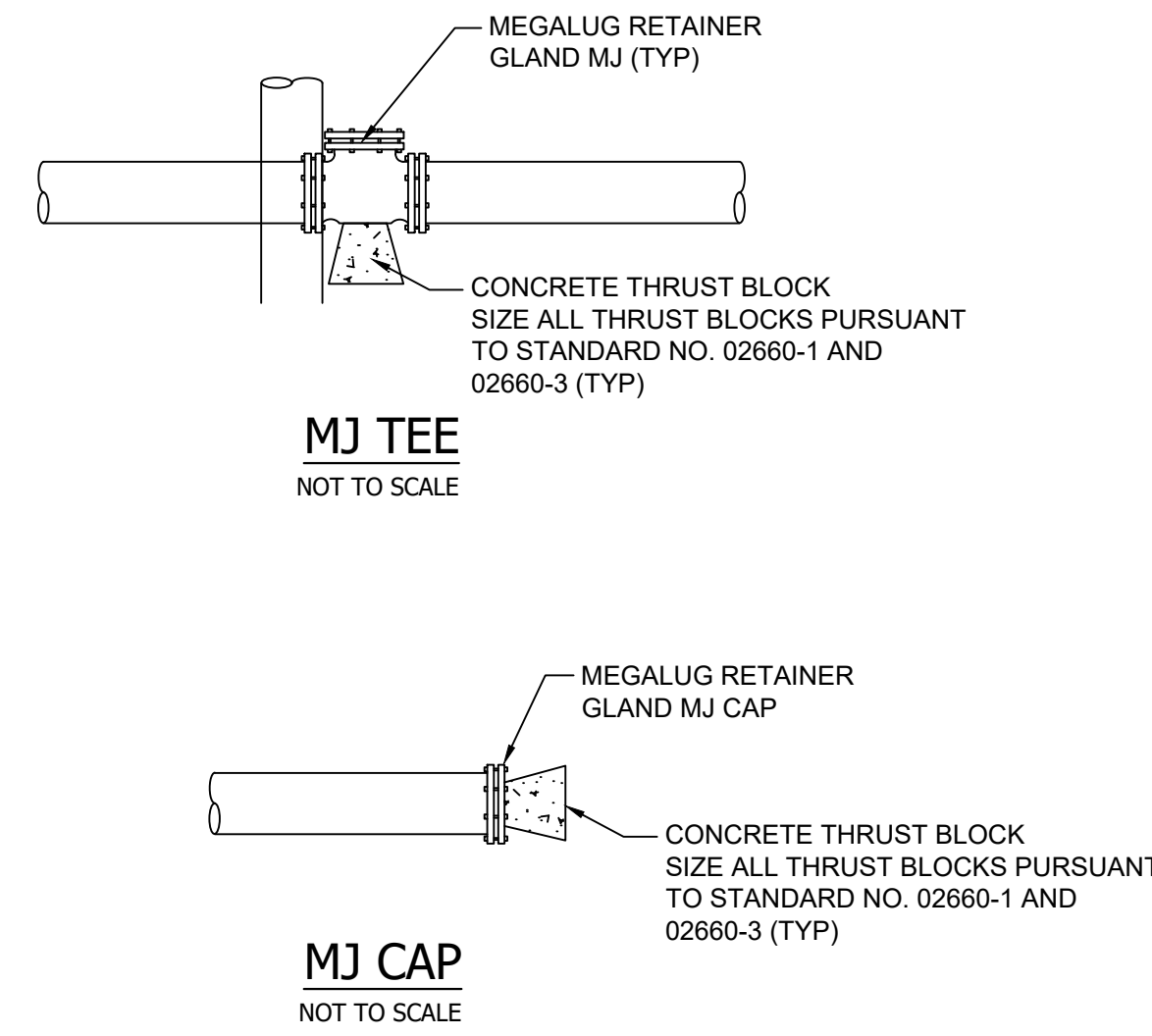
DATE: June 29, 2020

SHEET: C400

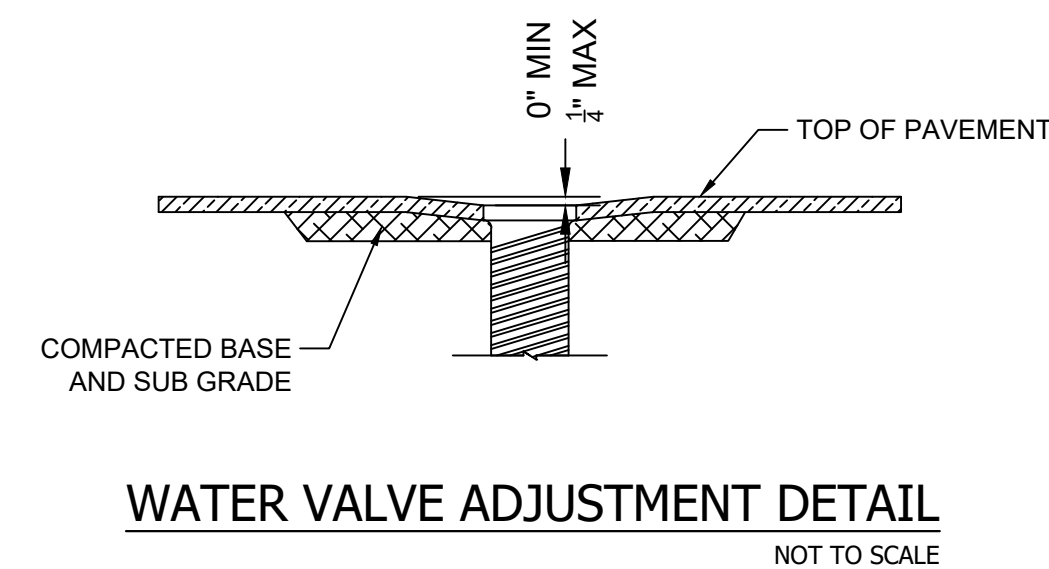
DATE STAMP: M:\WMM\01\CAD\CIVIL\SC-WA01-WMM01.dwg PLOT DATE 2020-6-26 11:45 USER: dstratton



WATER MAIN TYPICAL TRENCH SECTION
NOT TO SCALE



WATER SERVICE TYPICAL TRENCH SECTION
NOT TO SCALE



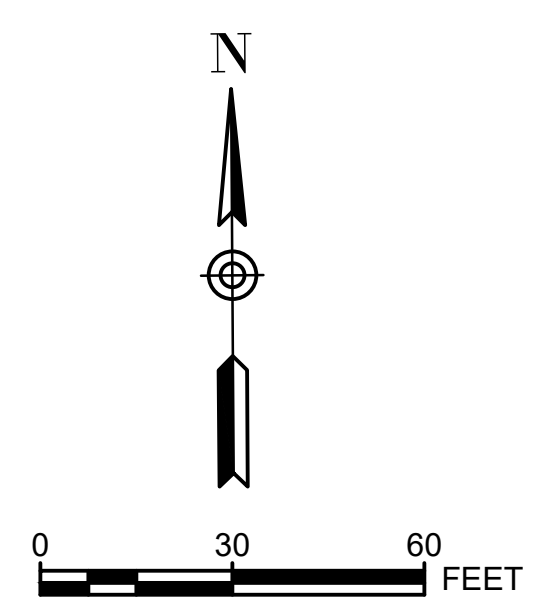
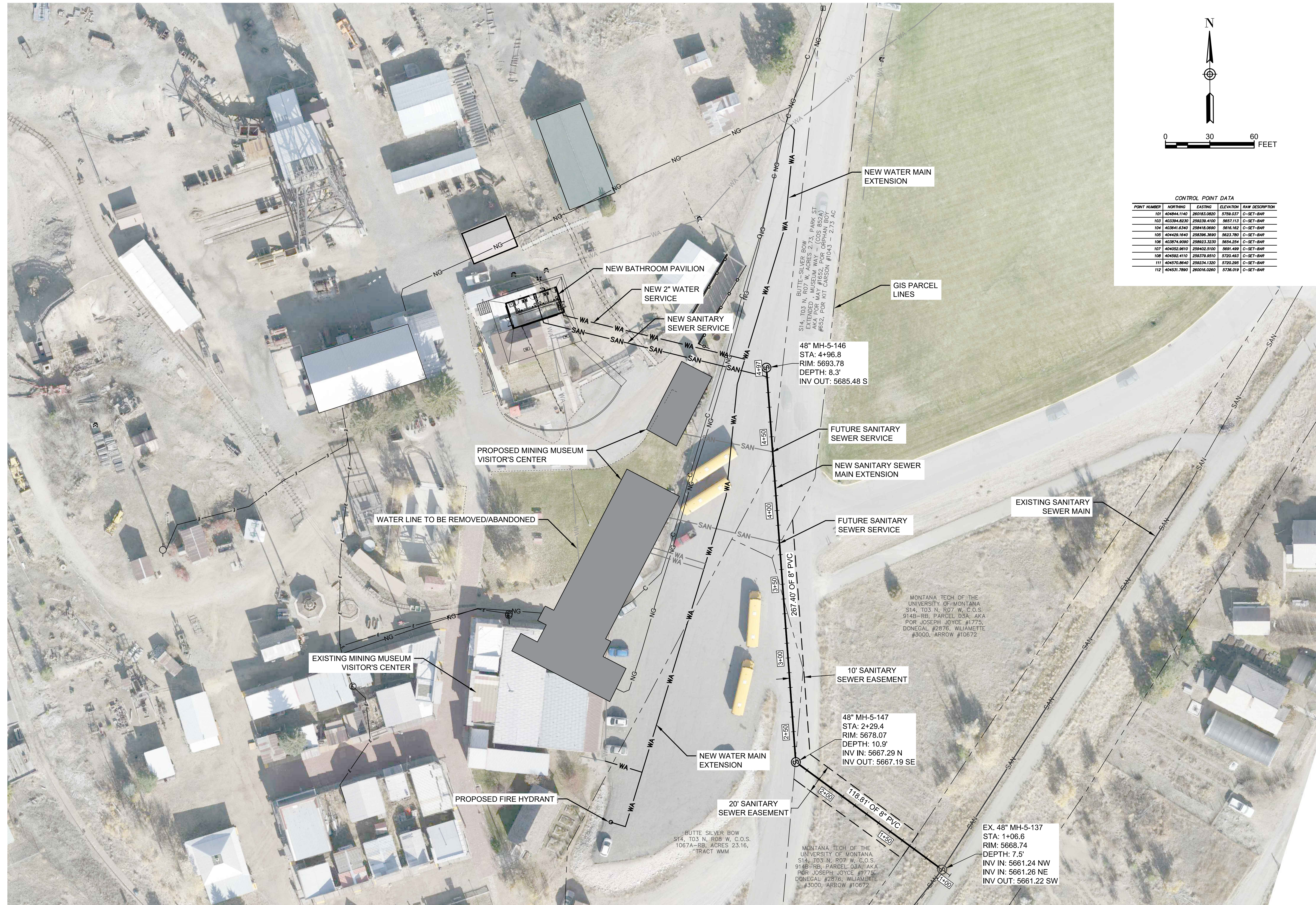
#	DATE	REVISION



WMM RESTROOM PAVILION & UTILITY SERVICES
155 MUSEUM WAY, BUTTE, MT
WATER MAIN EXTENSION TYPICAL DETAILS

DATE: June 29, 2020

DATE STAMP: M:\WMM\01\CAD\CIVIL\SC-DT01-1\WMM01.dwg PLOT DATE 2020-06-26 13:38 USER: dstratton



CONTROL POINT DATA

POINT NUMBER	NORTHING	EASTING	ELEVATION	RAW DESCRIPTION
101	40484.1140	260183.0820	5759.037	C-SET-BAR
102	403394.8250	259229.4100	5657.713	C-SET-BAR
104	403641.6340	258418.0200	5616.162	C-SET-BAR
105	404426.1640	258396.3690	5623.780	C-SET-BAR
106	403874.9090	258923.3230	5654.254	C-SET-BAR
107	404052.9610	259402.5100	5681.489	C-SET-BAR
108	404282.4110	259378.9510	5720.483	C-SET-BAR
111	404570.8640	259254.1320	5725.295	C-SET-BAR
112	404531.7890	260016.0260	5736.019	C-SET-BAR

DATE STAMP: M:\W\MM01\CAD\CIVIL\SC-BM01-W\MM01.dwg PLOT DATE 2020-6-26 13:26 USER: dsrstron



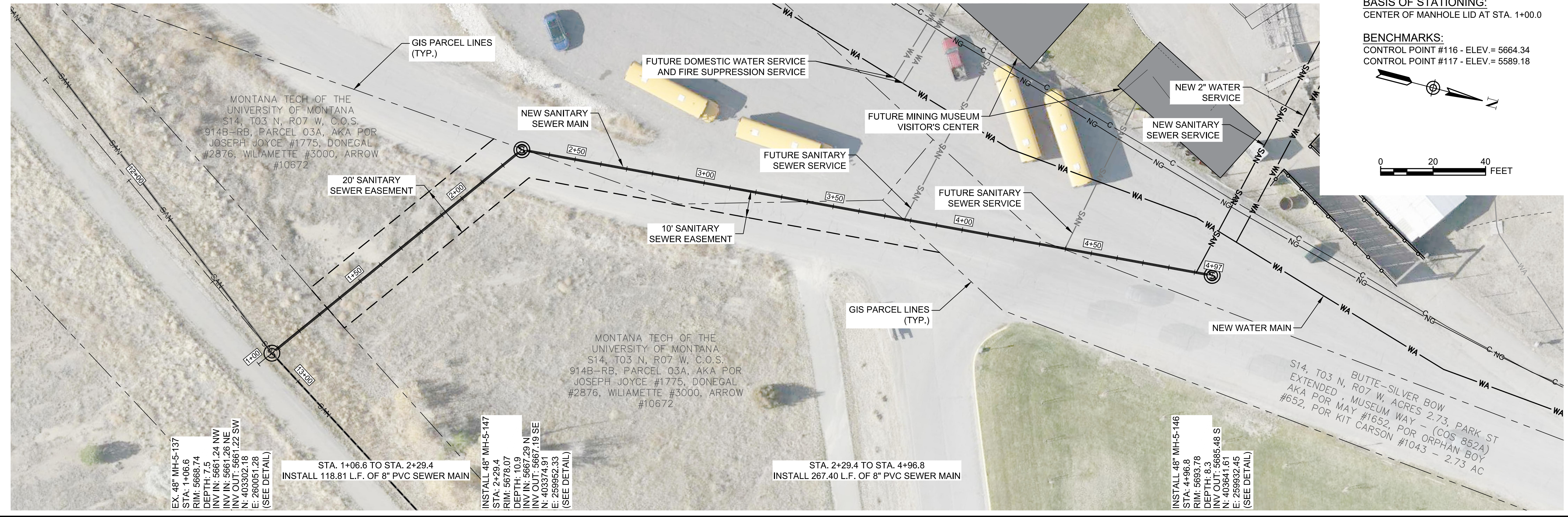
#	DATE	REVISION



WMM RESTROOM PAVILION & UTILITY SERVICES
 155 MUSEUM WAY, BUTTE, MT
 SANITARY SEWER MAIN EXTENSION PLAN

DATE: June 29, 2020

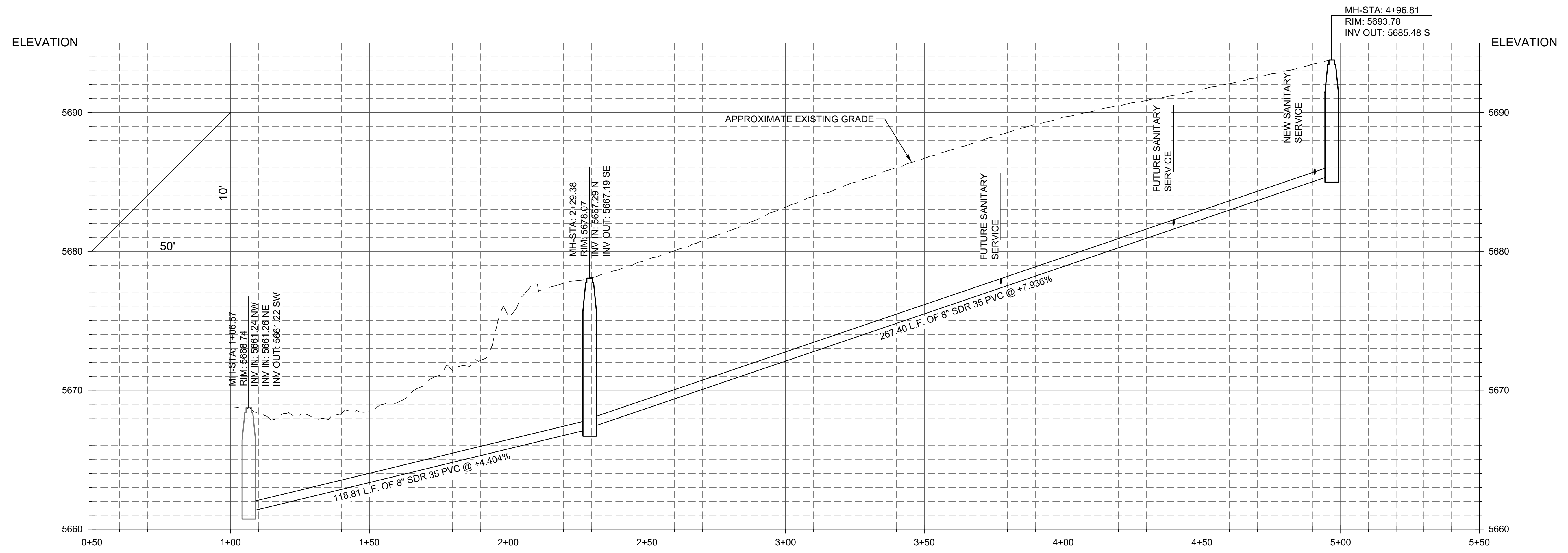
100% CONSTRUCTION DOCUMENTS SHEET: C600



BASIS OF STATIONING:
CENTER OF MANHOLE LID AT STA. 1+00.0

BENCHMARKS:
CONTROL POINT #116 - ELEV.= 5664.34
CONTROL POINT #117 - ELEV.= 5589.18

0 20 40 FEET



#	DATE	REVISION

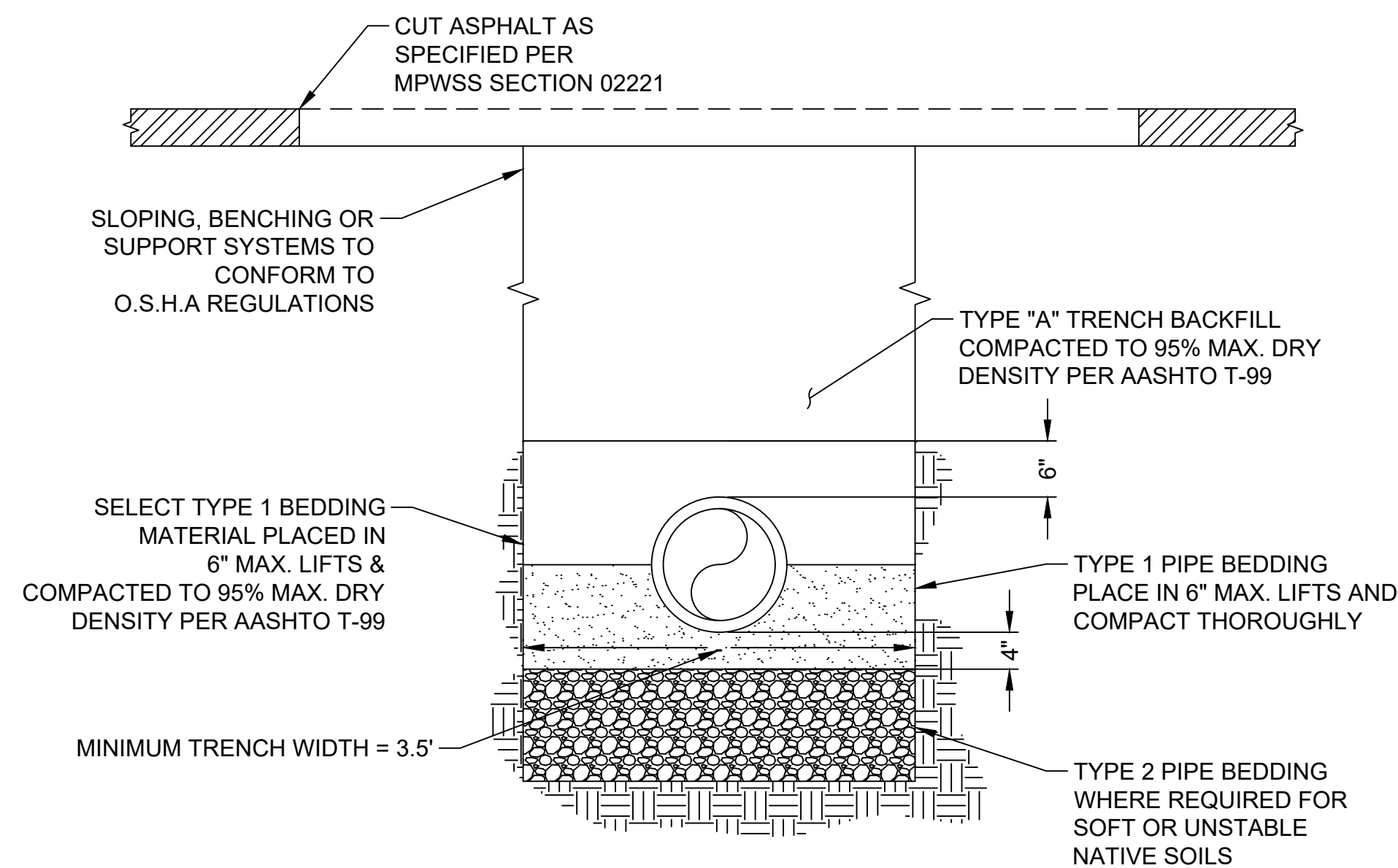


WMM RESTROOM PAVILION & UTILITY SERVICES
155 MUSEUM WAY, BUTTE, MT
SANITARY SEWER MAIN EXTENSION PLAN AND PROFILE

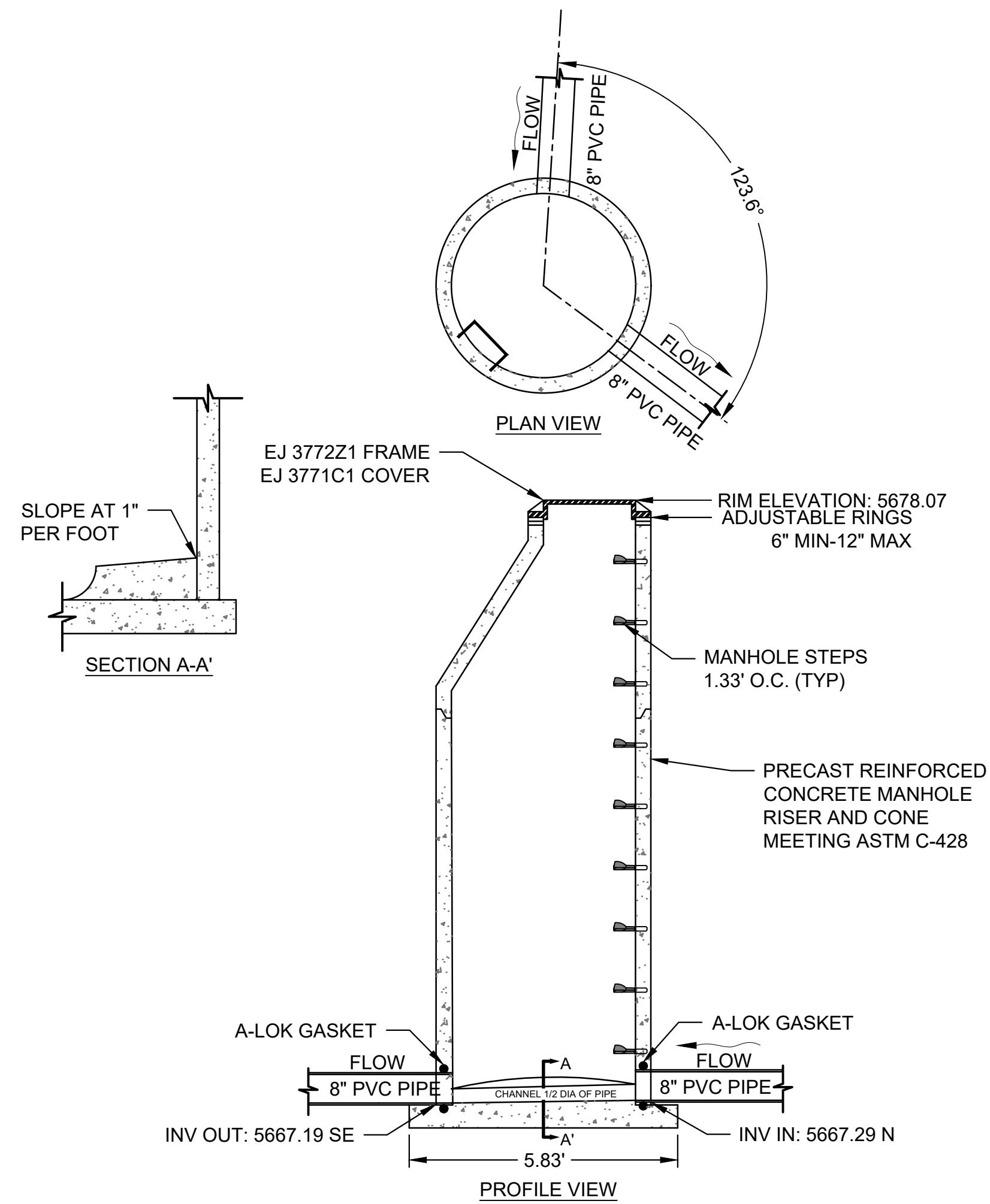
DATE: June 29, 2020

100% CONSTRUCTION DOCUMENTS SHEET: C700

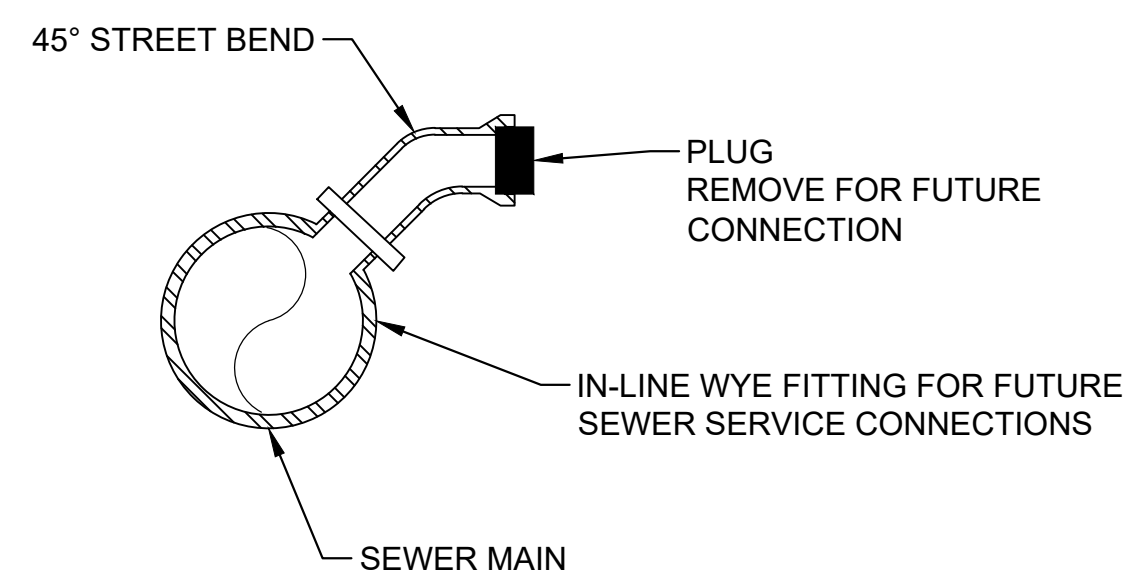
DATE STAMP: M:\WMM\01\CAD\CIVIL\SC-BM01-WMM001.dwg PLOT DATE 2020-6-26 13:24 USER: dsrnatron



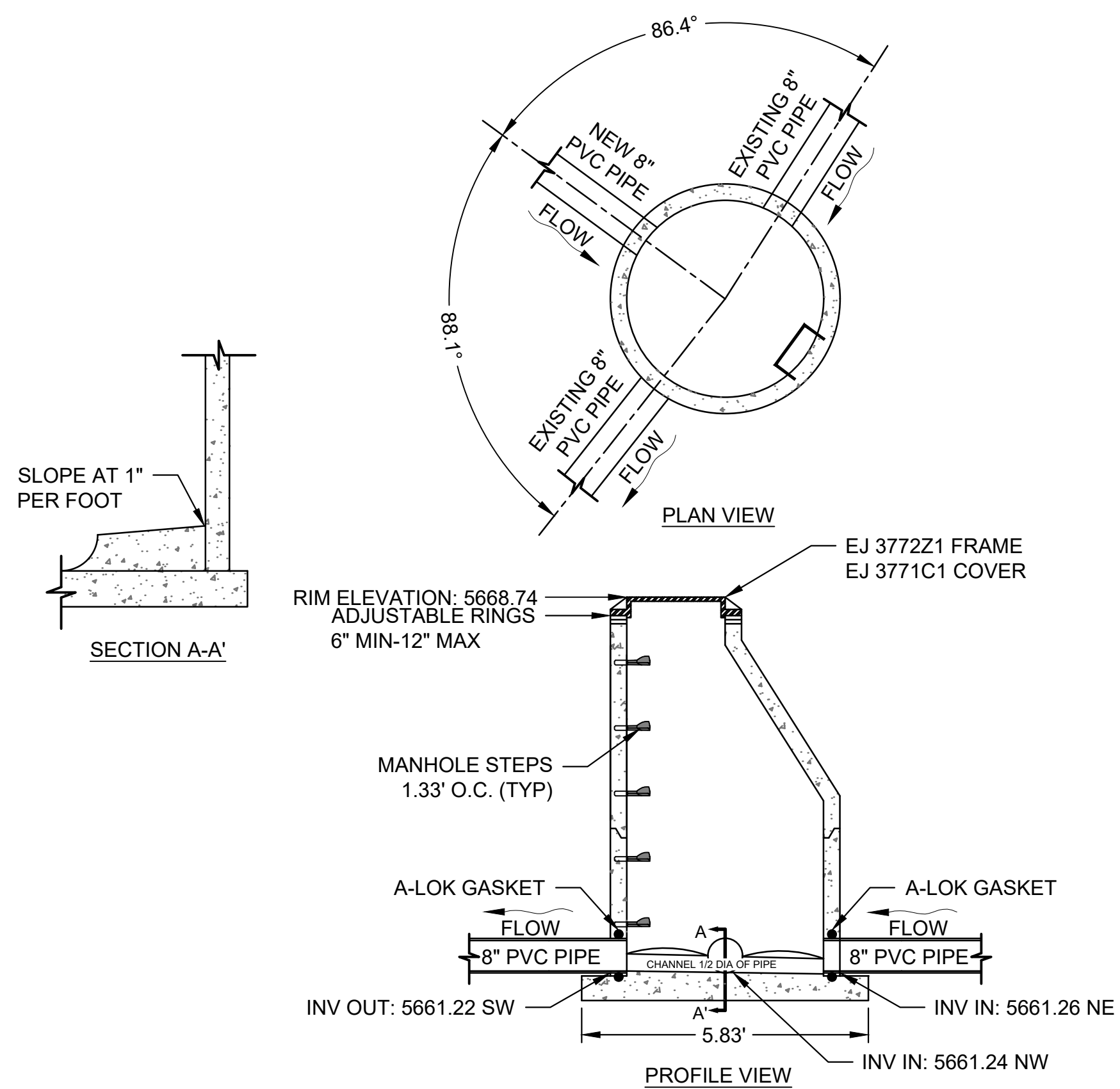
SEWER MAIN TYPICAL TRENCH SECTION
NOT TO SCALE



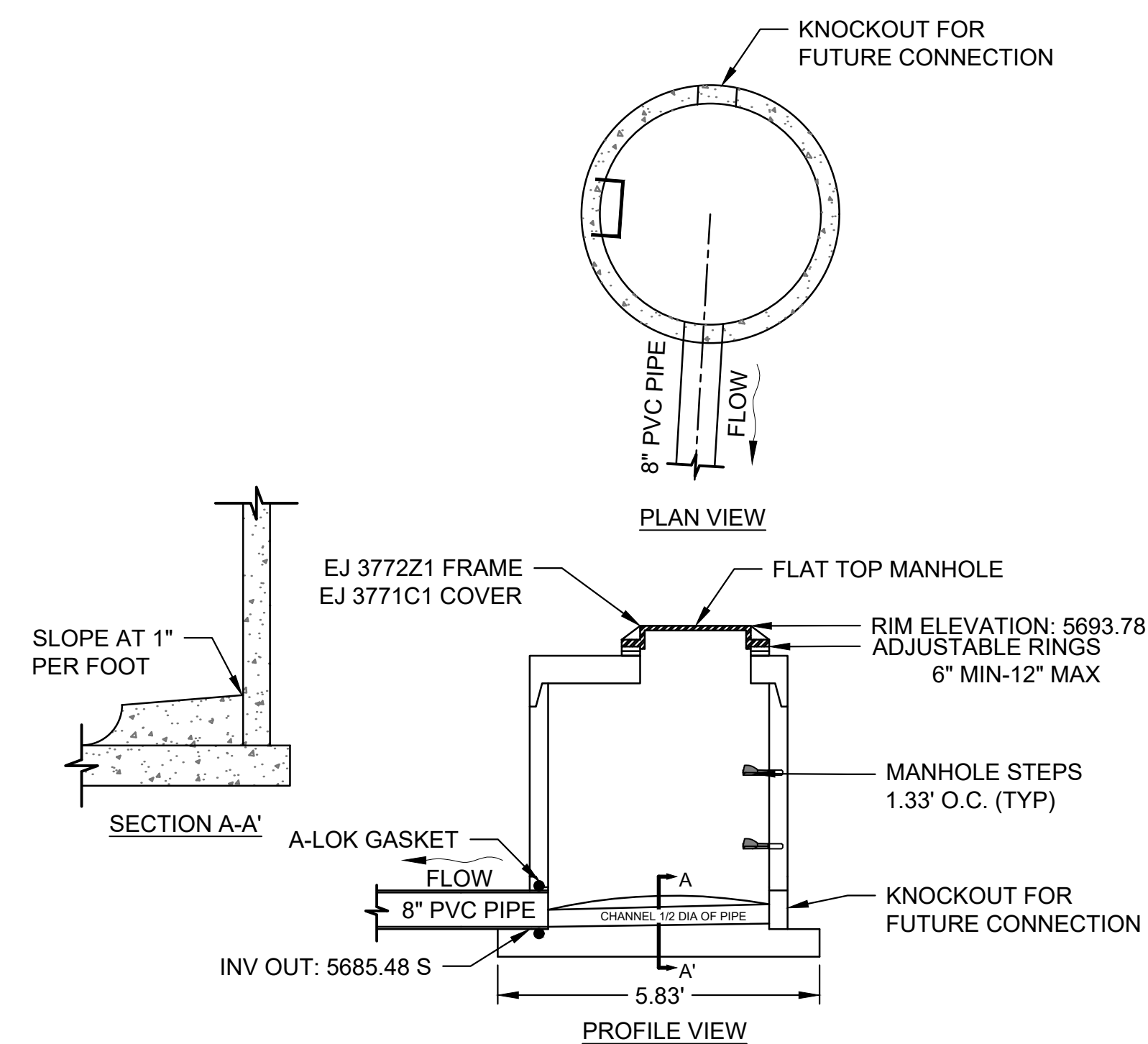
MANHOLE MH-5-147
NOT TO SCALE



FUTURE SEWER SERVICE CONNECTION
NOT TO SCALE



EXISTING MANHOLE MH-5-137
NOT TO SCALE



MANHOLE MH-5-146
NOT TO SCALE



#	DATE	REVISION

#	DATE	REVISION



Water & Environmental
TECHNOLOGIES
480 E. Park Street
Butte, MT 59701
(406) 782-5220
WATERENVTECH.COM

WMM RESTROOM
PAVILION & UTILITY
SERVICES

155 MUSEUM WAY, BUTTE, MT
SANITARY SEWER TYPICAL
DETAILS

DATE: June 29, 2020

DATE STAMP: M:\WMM\01\CAD\CIVIL\SC-DT01-1\WMM01.dwg PLOT DATE 2020-06-26 14:04 USER: dstratton