Anderson~Montgomery
CONSULTING ENGINEERS

ADDENDUM NO. 2

Project: Montana State Hospital Upgrade Wastewater Treatment System

Owner: State of Montana

Engineer: Anderson-Montgomery Consulting Engineers
1064 N. Warren
Helena, MT 59601

Date of Addendum: February 11, 2021
Bid Opening Date: February 18, 2021 at 2:00 p.m.

The following corrections, clarifications, and/or alterations to the specifications for the project are as such a part and parcel of said plans and specifications as if included therein.

TECHNICAL SPECIFICATIONS:

Modification to Language in Specification (~~stricken~~ language removed, **bold underline** language inserted):

1. **Special Provisions, SP33 NATURAL GAS & POWER EXTENSION**
   Cost associated with extending Natural Gas to the new Blower/UV Building for the new wastewater treatment facility will be outside the contract for the project. The Contractor will be responsible for coordinating with North Western Energy to schedule the extension of the Natural Gas to the new building.

   ~~The Contractor will be responsible for coordinating with North Western Energy to install underground conduit for 3-phase power extension. The extension shall originate at the substation located on the Montana State Hospital campus downstream from the Montana State Hospital's main meter. The Contractor will install the conduit from the substation to the new buildings as shown on the Contract Drawings. Northwestern Energy will install the wire in the conduit~~. **An underground primary power transmission line (12,470 volts) shall be installed by an electrical contractor suitably licensed to perform medium voltage electrical work. The power line shall be owned by the Montana State Hospital, not the local utility company. This unregulated 3-phase transmission line must be installed downstream of the State Hospital's primary meter near the utility substation (approximately 1,000 feet south) and extended to a 3-phase junction can at the approximate location shown here. The contractor shall be responsible for all medium voltage work between the substation and transformer T1, including the feeder extension to the site and terminations at both ends. Coordinate any necessary utility work at or near the substation with Corey Eisenzimer (406) 565-7778 at Northwestern Energy. Coordination with Raul shall be completed prior to any disruption in electrical service to the Montana State Hospital Campus. See Sheet E4 of the Contract Documents.**

2. **Division 03, Section 03 11 15 – Corrosion-Resistant Manhole Liner**
   Studliner manufactured by Solmax has been pre-approved to supply the corrosion-resistant manhole liner. All pre-qualification measures have been satisfied. Liner shall be installed per manufacturer's recommendations.

3. **Division 08, Section 08 71 00 – Door Hardware**
   Remove Specification 08 71 00 – Door Hardware in its entirety and replace with the attached Section 08 71 01 – Door Hardware.

4. **Division 40, Section 40 68 26 – Remote Monitoring System, Section 2.01 A. 3.**
   Section 2.01 A. 3. – Plan - Cost for plan shall be locked in at the time of startup for 3 years and billed annually (costs shall be equal year to year with no increases) with the option to opt out at any time with no additional penalty costs to the Owner. **The annual plan costs shall not exceed $400 per building for the first 3 years of operation. The annual plan cost is all inclusive and shall not have additional costs outside of the plan such as fees, taxes, etc.** The Owner shall have the right to upgrade/downgrade the plan at anytime during the 3 year period to a price point provided to the Owner at the time of startup for the remaining portion of the 3 years. The upgrade/downgrade costs shall be prorated for the remaining portion of the annual billing cycle.

   a. Building #1: Standard Yearly Cell Plan
   b. Building #2: Standard Yearly Cell Plan

PROJECT DRAWINGS:

1. **Sheet GC-31**
   Detail 2 depicting the 18 Foot Vehicular Gate stated the gate frame to be constructed using 2-3/8" Dia. CQ-20 pipe. The gate frame material is herein changed to be constructed using 1-7/8" Dia. ASTM F1043 Group IC pipe. Revised Sheet GC-31 is attached.

2. **Sheet E4**
   See revisions made to Sheet E4 the electrical site plan. Note the language in Key Note #1 – An underground primary power transmission line (12,470 volts) shall be installed by an electrical contractor suitably licensed to perform medium voltage electrical work. The power line shall be owned by the Montana State Hospital, not the local utility company. This unregulated 3-phase transmission line must be installed downstream of the State Hospital's primary meter near the utility substation (approximately 1,000 feet south) and extended to a 3-phase junction can at the approximate location shown here. The contractor shall be responsible for all medium voltage work between the substation and transformer T1, including the feeder extension to the site and terminations at both ends. Coordinate any necessary utility work at or near the substation with Corey Eisenzimer (406) 565-7778 at Northwestern Energy. Revised sheet E4 is attached.

3. **Sheet E8**
   See revisions made to Sheet E8 the electrical schedules. Revise Tag F00 in the Conduit & Wire Schedule to read From: Utility Substation. Revised sheet E8 is attached.

Please Remember To Note Receipt Of This Addendum On The Bid Form. Failure To Do So Will Result In Disqualification.

Issued By: ANDERSON-MONTGOMERY, 1064 N. WARREN, HELENA, MT 59601,
Adam Eckhart, P.E., Project Manager

Office: (406)-449-3303, Fax (406)-449-3304
Adam@a-mce.com

END OF ADDENDUM NO. 2

SECTION 08 71 01
DOOR HARDWARE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and Special Provisions of the Contract, including general and Supplementary Conditions and Division 1 Specifications Sections, apply to this Section.

1.02 SUMMARY

A. The Contractor shall furnish all tools, equipment, materials, supplies and manufactured items, and shall perform all labor required to furnish and install, complete, finish hardware as indicated on the Drawings and specified herein.

B. Related Sections include the following:

1. Division 06 Section “Rough Carpentry”.
2. Division 07 Section “Joint Sealants”.
3. Division 09 Sections for touchup, finishing or refinishing of existing openings modified by this section.

1.03 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

A. Comply with the reference specifications of the GENERAL REQUIREMENTS.

B. Comply with the current provisions of the following Codes and Standards.

1. Commercial Standards: Underwriter's Laboratories, Inc. requirements and approvals. Hardware Institute (DHI) Recommended Procedure for Processing Hardware Schedules and Templates and Architectural Hardware Scheduling and Format. BHMA Builders' Hardware Manufacturers' Association
2. Manufacturers' Standards: In addition to the standards listed above, the finish hardware and its installation shall be in accordance with the manufacturers' published recommendations and specifications.

1.04 SUBMITTALS

A. The following submittals and specific information shall be provided.

1. Manufacturer's information: The CONTRACTOR shall submit a complete detailed hardware list and a schedule along with manufacturer's literature on each item for approval. No hardware shall be delivered until the hardware schedule has been approved by the ENGINEER.
2. The hardware schedule submitted by the CONTRACTOR shall list the actual product series numbers. Manufacturer's catalog requirements for

actual size of door closers, brackets, and holders shall be observed. All door sizes shall be noted on the hardware schedule and all hardware shall be in strict accordance with height, width, and thickness requirements.

3. The schedule shall indicate groups, type, manufacturer's name, catalog number, location, and finish of each item to be provided, all in accordance with the DHI "Architectural Hardware Scheduling Sequence and Format".

4. The schedule shall also include a complete template list showing template references and data for each item requiring preparation of metal doors and frames.

1.05 QUALITY ASSURANCE

A. Manufacturer's product names, numbers, and models are given herein for the purpose of indicating the requirements for the type, general construction, material and operation of the specific item, not with the intention of limiting the item to the manufacturer's listed product. Substitution of another manufacturer's product that is fully equivalent in all respects may be made subject to the approval of the ENGINEER. It shall be the CONTRACTOR's responsibility to supply detailed and complete data to the ENGINEER as required to facilitate appropriate evaluation of all proposed substitute items.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Except where otherwise specified all hardware shall be delivered to the jobsite.

B. Each unit of hardware specified herein shall be individually packaged complete with fastenings and all appurtenances. Each package shall be clearly marked on the outside to indicate its contents and its specific location in the work, and shall be identified by its related number from the reviewed hardware list.

C. Contractor shall store hardware in a safe place at the jobsite where directed by the ENGINEER to prevent loss or damage until installation.

PART 2 - PRODUCTS

2.01 GENERAL

A. Manufacturer's product names, numbers and models given herein are for the purpose of indicating the basic requirements for type, construction, material, operation, durability and functional adequacy of the specific item. Substitution of another manufacturer's product that is fully equivalent in all respects will be made subject to the approval of the ENGINEER.

B. Provide end products of one manufacturer for each item in order to achieve standardization for appearance, maintenance, and replacement.

C. When deemed necessary for product evaluation prior to review, the ENGINEER may require submittal of full size standard production units for inspection and check. Such samples will be returned to the Contractor and may be installed on the project if identified for location in conformance with specified requirements.

D. Contractor shall check kinds and quantities of hardware products to determine conditions, completeness, and conformance to the Specifications.

2.02 PRODUCT TYPES

A. Locks and Latches: All locks shall be mortise-style, security type with stainless steel mechanism for all exterior insulated metal doors.

B. Lock Uniformity: Except as otherwise specified, Contractor shall furnish locksets, cylinders, and component parts as hereinbefore specified, by one manufacturer.

C. Lock Strikes: Shall be boxed type with curved tip of sufficient length to protect trim and/or jamb. Lock strikes shall be delivered to the jobsite with the locksets.

D. Fasteners: Bolts, screws, fittings, and other fasteners, including soffit plates for door closers, shall be provided for proper and secure attachment with specified hardware.

E. Door Closers (N/A).

F. Door Swings: Door swings indicated on the Contract drawings are standard door swings. If a door hand is changed during Construction the Contractor shall make necessary changes in hardware at no additional expense to the Owner, subject to the approval of the ENGINEER.

G. Door Butts shall be of proper width to clear trim and other features when door swings to 180 degrees and shall have oil-impregnated ball bearings.

1. Door 1-3/4-inch thick up to 7-feet 0-inch to have 1-1/2 pair of 4-1/2-inch X 4-1/2-inch butts.

2. Exterior doors to have butts with oil-impregnated bearings.

3. Provide template hinges for use on metal door frames.

H. Kickplates: 16-gauge stainless steel with edges beveled four (4) sides. Kickplates to be 10- inches high x door width less 1-inch.

I. Lock Astragal: Provide astragal for exterior in swinging 1-3/4-inch metal doors, of 9-3/8-inch x 1- 1/2-inch size with US 10 finish designed to prevent tampering of lock bolts from the exterior.

J. Flush Extension Bolt: Two point concealed automatic type for exit operation only with control knob located on the inside, provided with top and bottom strikes, Underwriters Laboratories (UL) Listed, bronze components with 626 finish and designed for use on 1-3/4-inch thick hollow metal doors.

K. Bumpers: Bumpers shall be wall-mounted on all interior doors swinging into a wall or partition. Floor or slab mounted bumpers shall be provided on exterior doors to prevent door swing beyond 120 degrees or to point 4” before obstruction.

L. Threshold: Threshold shall be sized to match the door. Extruded aluminum alloy 6063 T5.

2.03 FINISHES

A. All finishes hereinafter specified are "BHMA" numbers as specified by the "Building Hardware Manufacturer's Association".

1. 600 - Prime Coat
2. 626 - Dull Chromium
3. 629 - Bright Stainless Steel
4. 630 - Satin Stainless Steel

B. All items not specified herein shall have BHMA 630 finish.

C. Locksets and Deadlocks shall have BHMA 630 finish.

D. All hinges to have BHMA 630 finish

E. Kickplates, Push and Pulls to have BHMA 630 finish.

F. Closer cover plates to have dull bronze lacquer finish.

G. Miscellaneous Finishes shall be as specified.

2.04 KEYING

A. All locksets shall be keyed alike and CONTRACTOR shall furnish three (3) keys for each lock, or a total of ten (10) keys, whichever is less.

2.05 HARDWARE SCHEDULE

A. The following hardware schedule is intended to represent the hardware required. Provide the following hardware or their equal:

Door Opening	Hardware	No. Each Door
Exterior Doors	Butts	3
	Lockset	1
	Closer	0
	Threshold	1
	Drip Cap	1
	Bumpers	1
Interior Door	Butts	3
	Lockset	0
	Closer	0
	Bumper	1

2.06 TEMPLATES

A. All hardware for metal doors and metal frames shall be fabricated to template. Templates, or physical hardware items, shall be furnished sufficiently in advance to avoid any work delay.

PART 3 - EXECUTION

3.01 GENERAL

A. Prior to completion of construction, and after final installation of hardware, the CONTRACTOR shall demonstrate to the ENGINEER that all items of operable hardware function properly, that doors swing smoothly, and that keys lock and unlock their respective doors.

B. The CONTRACTOR, upon completion of the work herein, shall remove all oil, grease, or other soiling from exposed surfaces of finish hardware and shall remove all cartons, wrappings, and other debris resulting from the work herein, and shall leave the facility in a neat, clean, and acceptable condition subject to approval by the ENGINEER.

3.02 INSTALLATION

A. All hardware shall be installed accurately and in accordance with manufacturer's instructions.

B. Hardware shall be securely tightened to develop full strength of components and provide for proper operation.

C. Make work neat and secure.

D. Prevent marring, scratching, or otherwise damaging adjacent finishes during hardware installation.

E. Latchbolts:

1. Install to engage in strikes automatically, whether activated by closers or manually.

2. Additional manual pressure shall not be required to engage latchbolt in strike.

F. Stops and Holders: Set to allow doors to open as far as possible.

G. Wall Mounted Hardware: Install over solid structural backing or solid blocking in hollow walls.

H. Thresholds:

1. Cope ends neatly to profile of jamb.

2. Set in sealant and seal ends to jambs.

3. Where fastened to concrete, anchors shall be 5/16 stainless steel flat head countersunk machine screws anchors spaced at 6 inches on center. Thresholds shall be set in mastic conforming with Fed Spec SS-C-153.

I. Hardware: Adjust for easy, noise-free operation.

J. Replace damaged hardware items.

3.03 PROTECTION

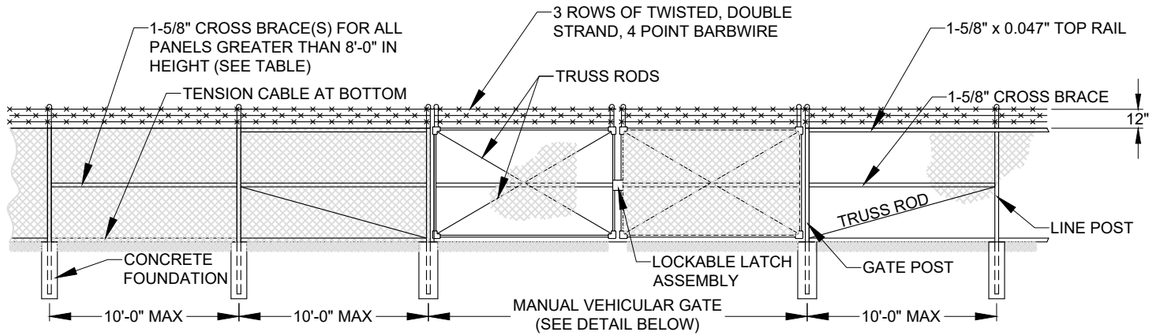
A. Cover and protect exposed surfaces of hardware during installation and until substantial completion.

B. Fit, dismantle, and reinstall finish hardware as required for finish painting work.

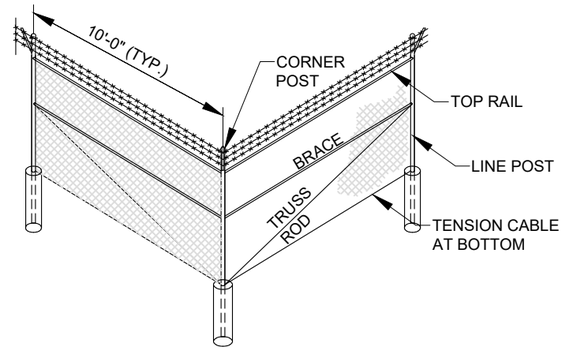
C. Protect and prevent staining of hardware during construction in accordance with manufacturer's recommendations.

D. Remove protective measures on permanent lock cylinders installed prior to final cleaning.

END OF SECTION 08 71 01



CHAIN LINK FENCE | **SWING GATES** FOR USE WITH FENCE WHERE SPECIFIED | **SINGLE PANEL**



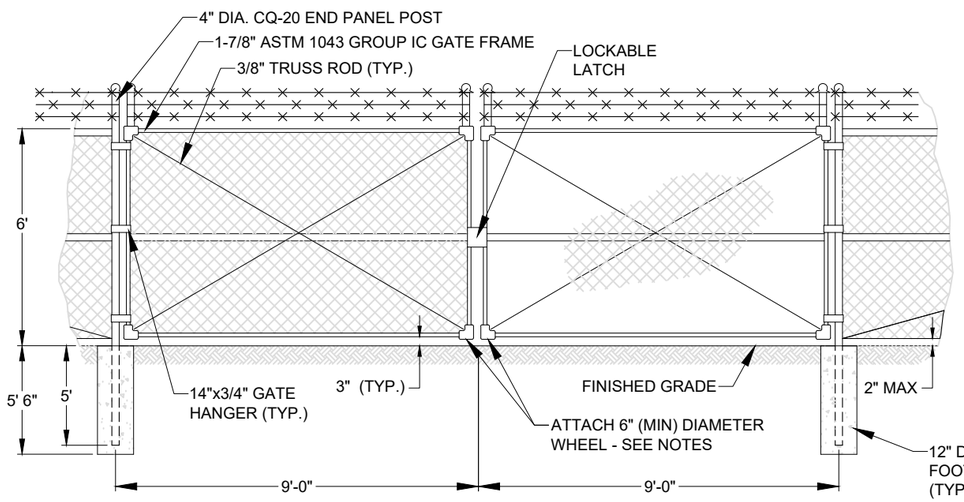
DOUBLE PANEL
PULL POST & CORNER POST BRACING

CHAIN LINK FENCE MINIMUM REQUIREMENTS

FENCE HEIGHT (FEET)	TERMINAL POST DIM. (IN INCHES) (O.D. x WALL THICKNESS)	LINE POST DIM. (IN INCHES) (O.D. x WALL THICKNESS)	TERMINAL POST CONCRETE FOUNDATION SIZE (IN INCHES) (DIA. x DEPTH)	LINE POST CONCRETE FOUNDATION SIZE (IN INCHES) (DIA. x DEPTH)	NO. OF CROSS BRACES REQ'D FOR ALL PANELS. BRACES TO BE EQUALLY SPACED, VERTICALLY
UP TO 4	2-3/8 x 0.042	1-5/8 x 0.047	10 x 24	8 x 24	NA
OVER 4 TO 5	2-3/8 x 0.042	1-7/8 x 0.055	10 x 24	8 x 24	NA
OVER 5 TO 6	2-3/8 x 0.042	1-7/8 x 0.065	10 x 24	8 x 24	NA
OVER 6 TO 8	2-3/8 x 0.110	2-3/8 x 0.095	10 x 36	10 x 36	NA
OVER 8 TO 10	2-7/8 x 0.160	2-3/8 x 0.130	12 x 40	10 x 40	1
OVER 10 TO 12	2-7/8 x 0.160	2-Z7/8 x 0.120	12 x 42	12 x 42	1
OVER 12 TO 16	4 x 0.230	4 x 0.230	18 x 60	18 x 60	2

Chain Link Fence Details (1) GC-17
NO SCALE

NOTES:
- SEE TECHNICAL SPECIFICATIONS FOR MATERIALS.
- A SINGLE PANEL SHALL BE PLACED AT EVERY END OF CHAIN LINK FENCE.
- TENSION BANDS ON TERMINAL POSTS TO BE INSTALLED AT 12" SPACING ON CENTER.
- ALL CONCRETE SHALL BE MADE USING 3/4" AGGREGATE AND 602 POUNDS OF CEMENT PER CUBIC YARD OF CONCRETE AND SHALL HAVE A SLUMP OF 5" WITH COMPRESSIVE STRENGTH OF 3,000 PSI. ALL CONCRETE SHALL BE ENCASED IN A MINIMUM OF 4" OF STRUCTURAL FILL TO ISOLATE THE CONCRETE FROM THE NATIVE SOILS.
- DOUBLE PANELS SHALL BE INSTALLED NO MORE THAN 300'-0" APART ON TANGENT AND USED FOR PULLING. SUCH PANELS SHALL BE PLACED AT EACH CORNER SHAPER THAN 5 DEGREES AND BE EVENLY SPACED BETWEEN 20'-0" OF CENTRAL ANGLE (10'-0" DEFLECTION) APART, BUT NO MORE THAN 250'-0" APART ON ANY CURVE.
- THE HEIGHT OF THE FABRIC SHALL BE NO GREATER THAN 2" FROM THE GROUND UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- CONTRACTOR SHALL ATTACH FABRIC TO POSTS USING WIRE TIES.
- CONCRETE GATE POST ENCASEMENTS SHALL MEET MANUFACTURER'S REQUIREMENTS.
- INSTALL COPPER CLAD GROUNDING RODS EVERY 500'-0".
- GAPS NO GREATER THAN 2" WILL BE PERMITTED IN ALL LOCATIONS.
- A LATCH ASSEMBLY LOCKING DEVICE IS REQUIRED FOR ALL GATE INSTALLATIONS.



18 Foot Vehicular Gate (2) GC-17
NO SCALE

NOTES:
- INSTALL LOCKABLE SLIDING GATE LATCH PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL ATTACH A 6" (MIN) DIAMETER WHEEL ASSEMBLY TO THE END OF EACH GATE. THE CONTRACTOR SHALL GET APPROVAL FOR THE PROPOSED ASSEMBLY PRIOR TO FABRICATION.
- GATE SHALL BE CENTERED OVER THE ACCESS ROAD.

MONTANA ADAM ECKHART 26012PE LICENSED PROFESSIONAL ENGINEER

Revision	Date	By
Draft	7/21/20	AE
Draft	8/28/20	AE
Final	9/30/20	AE
Add. #2	2/11/21	AE

Revision: Addendum #2
Plot Scale: 1:2
Drawn By: A.Eckhart, P.E.
Approved By: A.Eckhart, P.E.
Checked By: P.Montgomery, P.E.
Checked By: S.Anderson, P.E.
Designed By: A.Eckhart, P.E.

Engineer
Anderson~Montgomery CONSULTING ENGINEERS
1064 N. Warren
Helena, Mt 59601
Phone (406) 449-3303
Fax (406) 449-3304

Owner
State Of Montana

Project Title
Montana State Hospital Upgrade Wastewater System

Sheet Title
Fence Details

Sheet
GC-31

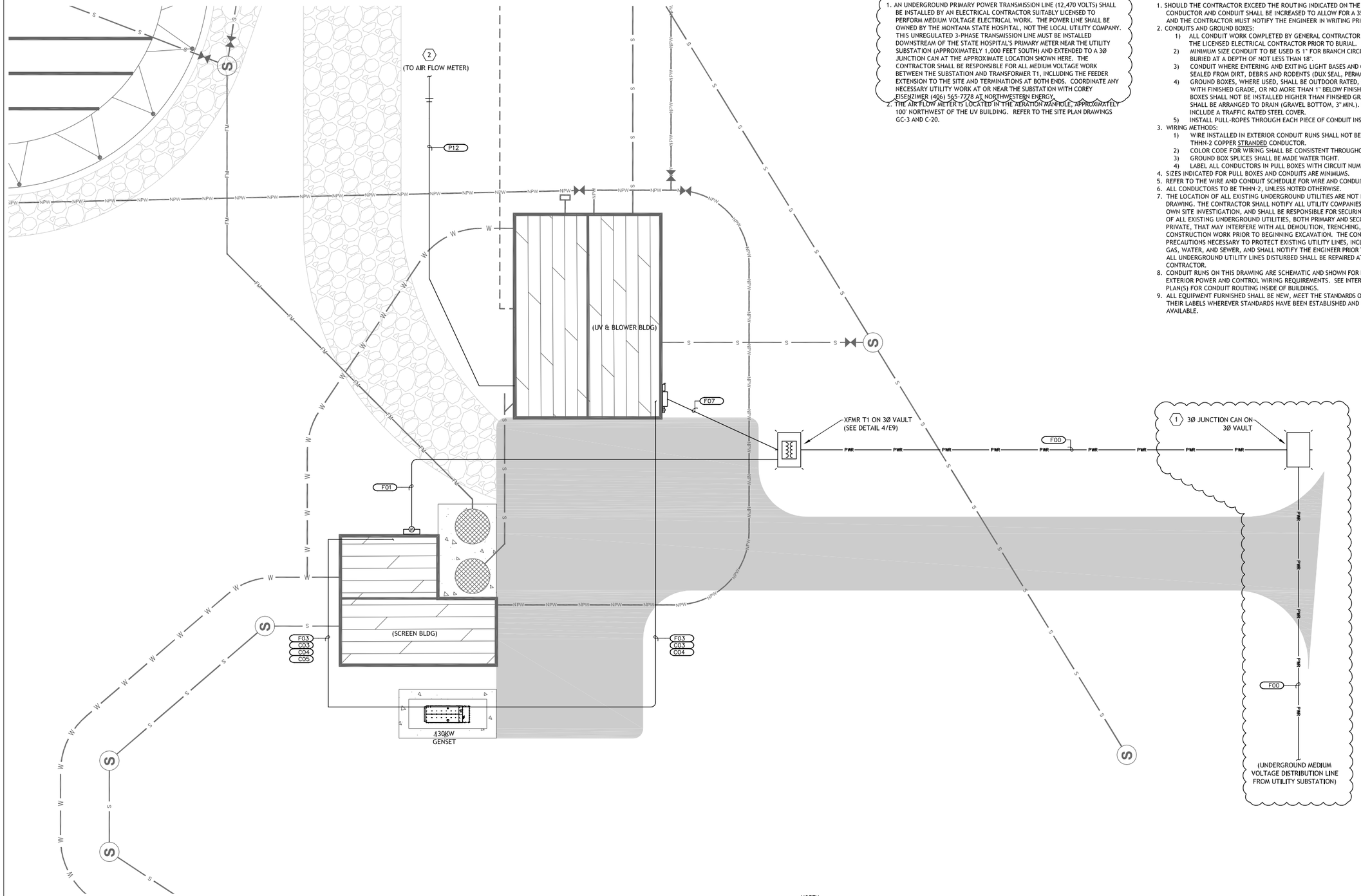
X:\Adam\MSH WW Design 2019\DESIGN DRAWINGS\Sheets\Gerneral Civil\GC-31.dwg SAVED: 2/10/21 PRINTED: 2/10/21 BY: ADAM

KEY NOTES (X)

1. AN UNDERGROUND PRIMARY POWER TRANSMISSION LINE (12,470 VOLTS) SHALL BE INSTALLED BY AN ELECTRICAL CONTRACTOR SUITABLY LICENSED TO PERFORM MEDIUM VOLTAGE ELECTRICAL WORK. THE POWER LINE SHALL BE OWNED BY THE MONTANA STATE HOSPITAL, NOT THE LOCAL UTILITY COMPANY. THIS UNREGULATED 3-PHASE TRANSMISSION LINE MUST BE INSTALLED DOWNSTREAM OF THE STATE HOSPITAL'S PRIMARY METER NEAR THE UTILITY SUBSTATION (APPROXIMATELY 1,000 FEET SOUTH) AND EXTENDED TO A 3Ø JUNCTION CAN AT THE APPROXIMATE LOCATION SHOWN HERE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MEDIUM VOLTAGE WORK BETWEEN THE SUBSTATION AND TRANSFORMER T1, INCLUDING THE FEEDER EXTENSION TO THE SITE AND TERMINATIONS AT BOTH ENDS. COORDINATE ANY NECESSARY UTILITY WORK AT OR NEAR THE SUBSTATION WITH COREY EISENZIMMER (406) 565-7778 AT NORTHWESTERN ENERGY.
2. THE AIR FLOW METER IS LOCATED IN THE AERATION MANHOLE, APPROXIMATELY 100' NORTHWEST OF THE UV BUILDING. REFER TO THE SITE PLAN DRAWINGS GC-3 AND C-20.

GENERAL NOTES

1. SHOULD THE CONTRACTOR EXCEED THE ROUTING INDICATED ON THE DRAWING, THE CONDUCTOR AND CONDUIT SHALL BE INCREASED TO ALLOW FOR A 3% (MAX) VOLTAGE DROP, AND THE CONTRACTOR MUST NOTIFY THE ENGINEER IN WRITING PRIOR TO ANY DEVIATION.
2. CONDUITS AND GROUND BOXES:
   1) ALL CONDUIT WORK COMPLETED BY GENERAL CONTRACTOR IS TO BE INSPECTED BY THE LICENSED ELECTRICAL CONTRACTOR PRIOR TO BURIAL.
   2) MINIMUM SIZE CONDUIT TO BE USED IS 1" FOR BRANCH CIRCUITS, SCHEDULE 40 PVC BURIED AT A DEPTH OF NOT LESS THAN 18".
   3) CONDUIT WHERE ENTERING AND EXITING LIGHT BASES AND GROUND BOXES SHALL BE SEALED FROM DIRT, DEBRIS AND RODENTS (DUX SEAL, PERMA SEAL, ETC.).
   4) GROUND BOXES, WHERE USED, SHALL BE OUTDOOR RATED, AND INSTALLED FLUSH WITH FINISHED GRADE, OR NO MORE THAN 1" BELOW FINISHED GRADE. GROUND BOXES SHALL NOT BE INSTALLED HIGHER THAN FINISHED GRADE. GROUND BOXES SHALL BE ARRANGED TO DRAIN (GRAVEL BOTTOM, 3" MIN.). GROUND BOXES SHALL INCLUDE A TRAFFIC RATED STEEL COVER.
   5) INSTALL PULL-ROPES THROUGH EACH PIECE OF CONDUIT INSTALLED.
3. WIRING METHODS:
   1) WIRE INSTALLED IN EXTERIOR CONDUIT RUNS SHALL NOT BE SMALLER THAN #10 THHN-2 COPPER STRANDED CONDUCTOR.
   2) COLOR CODE FOR WIRING SHALL BE CONSISTENT THROUGHOUT INSTALLATION.
   3) GROUND BOX SPLICES SHALL BE MADE WATER TIGHT.
   4) LABEL ALL CONDUCTORS IN PULL BOXES WITH CIRCUIT NUMBERS AND DESCRIPTION.
4. SIZES INDICATED FOR PULL BOXES AND CONDUITS ARE MINIMUMS.
5. REFER TO THE WIRE AND CONDUIT SCHEDULE FOR WIRE AND CONDUIT TAGS.
6. ALL CONDUCTORS TO BE THHN-2, UNLESS NOTED OTHERWISE.
7. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES ARE NOT REPRESENTED ON THIS DRAWING. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN WRITING, MAKE HIS OWN SITE INVESTIGATION, AND SHALL BE RESPONSIBLE FOR SECURING THE EXACT LOCATION OF ALL EXISTING UNDERGROUND UTILITIES, BOTH PRIMARY AND SECONDARY, PUBLIC AND PRIVATE, THAT MAY INTERFERE WITH ALL DEMOLITION, TRENCHING, EXCAVATION, AND NEW CONSTRUCTION WORK PRIOR TO BEGINNING EXCAVATION. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT EXISTING UTILITY LINES, INCLUDING POWER, PHONE, GAS, WATER, AND SEWER, AND SHALL NOTIFY THE ENGINEER PRIOR TO ALL EXCAVATIONS. ALL UNDERGROUND UTILITY LINES DISTURBED SHALL BE REPAIRED AT THE EXPENSE OF THE CONTRACTOR.
8. CONDUIT RUNS ON THIS DRAWING ARE SCHEMATIC AND SHOWN FOR IDENTIFICATION OF EXTERIOR POWER AND CONTROL WIRING REQUIREMENTS. SEE INTERIOR BUILDING ELECTRICAL PLAN(S) FOR CONDUIT ROUTING INSIDE OF BUILDINGS.
9. ALL EQUIPMENT FURNISHED SHALL BE NEW, MEET THE STANDARDS OF NEMA AND UL, BARE THEIR LABELS WHEREVER STANDARDS HAVE BEEN ESTABLISHED AND LABEL SERVICE IS AVAILABLE.



1 ELECTRICAL SITE PLAN
SCALE: 1" = 10'-0"

MONTANA
DANIEL LEE TINTZMAN
NO. 15453PE
LICENSED PROFESSIONAL ENGINEER
09/30/20

Revision	Date	By
Draft	9/18/20	DT
Final	9/30/20	DT
Add. #2	2/11/21	DT

Revision: Addendum #2
Plot Scale: 1:2
Drawn By: D.Tintzman, P.E.
Approved By: D.Tintzman, P.E.
Checked By: D.Tintzman, P.E.
Designed By: D.Tintzman, P.E.

Engineer
KB ENGINEERING
P.O. Box 8694
Kalispell, MT 59904
Phone (406) 212-1624
KBengineers@centurytel.net

Owner
State Of Montana

Project Title
Montana State Hospital Upgrade Wastewater System

Sheet Title
Electrical Site Plan

Sheet
E4

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS PER FIXTURE	WATTS PER LAMP	LAMP SIZE	VOLTS	MAX WATTS	MOUNTING	MFG & P/N	NOTES
F1	Vaportight Industrial Surface LED	1	107	11,000 Lumen LED 4000k	120	107	Surface	Lithonia VAP-12000LM-PCL-MD-MVOLT-GZ10-40K-80CRI	
F2	Wall Pack	1	50	6,600 Lumen LED 4000k	120	50	Wall	Lithonia WST LED P3 40K VW MVOLT PE DDBXD	Switch on photo-cell; Feed-thru wiring; Bronze in color
F3	Class I, Div I Hazardous Fixture	1	40	4,000 Lm/4ft LED 4000k	120	40	Surface	IRL: IR4-4-2-LED-UNV	Fixture must be explosion proof
F4	Vanity Light	1	30	4,000 Lumen LED 4000k	120	30	Wall	Williams: WMA-4-L40-840-AFDRV-UNV	

TRANSFORMER SCHEDULE

TAG	KVA	PHASE	PRIMARY VOLTAGE	SECONDARY VOLTAGE	MOUNTING	GROUND CONDUCTOR	NOTES
T1	300	3 PH	12,470	480Y/277	VAULT	#1/0	---
T2	25	1 PH	480	120/240	FLOOR/WALL	#6	---
T3	25	1 PH	480	120/240	FLOOR/WALL	#6	---

ALTERNATE #1:
- **NON-POTABLE WATER 2" ELECTROMAGNETIC FLOW METER**

ALTERNATE #2:
- **AIR COMPRESSOR**

CONDUIT & WIRE SCHEDULE

TAG	CONDUIT SIZE	WIRE SIZE	FROM	TO	AMPS
F00	[1] 4"	3#2 EPR AL	UTILITY SUBSTATION	XFMR T1	---
F01	[1] 4"	3#4/0, 1#1/0 AL	XFMR T1	SCREEN BLDG SERV. DISC.	200A, 3Ø,4W
F02	2"	4#3/0, 1#6 GND	SCREEN BLDG SERV. DISC.	ATS	200A, 3Ø,4W+G
F03	1-1/2"	4#1, 1#6 GND	GENERATOR	ATS	125A, 3Ø,4W+G
F04	2"	4#3/0, 1#6 GND	ATS	PANEL HP1	200A, 3Ø,4W+G
F05	1"	2#4, 1#8 GND	PANEL HP1	XFMR T2	70A, 1Ø, 2W+G
F06	1-1/4"	3#1, 1#6 GND	XFMR T2	PANEL LP1	125A, 1Ø,3W+G
F07	[1] 4"	4#350 AL	XFMR T1	UV BLDG SERV. DISC.	400A, 3Ø,4W
F08	[2] 2"	[2] 4#3/0, 1#3 GND	UV BLDG SERV. DISC.	PANEL HP2	400A, 3Ø,4W+G
F09	1-1/2"	4#1, 1#6 GND	PANEL HP2	ATS	125A, 3Ø,4W+G
F10	1-1/2"	4#1, 1#6 GND	ATS	PANEL HP3	125A, 3Ø,4W+G
F11	1"	2#4, 1#8 GND	PANEL HP3	XFMR T3	70A, 1Ø, 2W+G
F12	1-1/4"	3#1, 1#6 GND	XFMR T3	PANEL LP3	125A, 1Ø,3W+G
P01	3/4"	4#12, 1#12 GND	PANEL HP1	UV PDC	20A, 3Ø, 4W+G
P02	3/4"	3#12, 1#12 GND	PANEL HP1	AIR COMPRESSOR	20A, 3Ø, 3W+G
P03	3/4"	3#12, 1#12 GND	PANEL HP3	NON-POT. WATER PUMP	20A, 3Ø, 3W+G
P04	3/4"	2#8, 1#10 GND	PANEL LP1	WATER HEATER	40A, 1Ø, 2W+G
P05	3/4"	2#12, 1#12 GND	PANEL LP1	GENSET BATT. CHARGER	20A, 1Ø, 2W+G
		2#12, 1#12 GND	PANEL LP1	GENSET ENGINE HEATER	20A, 1Ø, 2W+G
P06	3/4"	3#12, 1#12 GND	PANEL HP1	SCREEN MOTOR	20A, 3Ø, 3W+G
P07	3/4"	3#10, 1#10 GND	PANEL HP1	15 KW UNIT HEATERS	25A, 3Ø, 3W+G
P08	3/4"	3#12, 1#12 GND	PANEL HP1	4 KW UNIT HEATER	20A, 3Ø, 3W+G
P09	3/4"	3#10, 1#10 GND	PANEL HP1	LIFT STATION CNTRL PNL	30A, 3Ø, 3W+G
P10	3" SCH 80	3#12, 1#12 GND	LIFT STATION CNTRL PNL	LIFT STATION PUMP #1	20A, 3Ø, 3W+G
		3#12, 1#12 GND	LIFT STATION CNTRL PNL	LIFT STATION PUMP #2	20A, 3Ø, 3W+G
P11	1-1/4"	3#1, 1#6 GND	PANEL HP2	BLOWERS	110A, 3Ø, 3W+G
P12	1"	2#10, 1#10 GND	PANEL LP3	AIR FLOW METER	20A, 1Ø, 2W+G
C01	1/2"	4#14 Cu STRANDED	LIFT STATION CNTRL PNL	AUDIO/VISUAL ALARMS	---
C02	3" SCH 80	4#14 Cu STRANDED	LIFT STATION CNTRL PNL	WET WELL FLOATS	---
		4#18 Cu TSP	LIFT STATION CNTRL PNL	WET WELL XDUCER	---
C03	3/4"	4#14 Cu STRANDED	ATS GENERATOR START	GENERATOR	---
C04	3/4"	4#14 Cu STRANDED	GENERATOR E-STOP	GENERATOR	---
C05	3/4"	4#18 Cu STRND/SHIELD	GENERATOR ALARM/RUN	AUTODIALER	---
C07	1/2"	4#14 Cu STRANDED	UV CNTRL PNL	AUDIO/VISUAL ALARMS	---

NOTES:
1. All other branch circuits are 2#12, 1#12 GND - 3/4"C.
2. All conductors are sized per AWG and shall be 75°C copper wire with 60°C terminals up to 100 amps and 75°C wire and terminals thereafter.
3. Aluminum conductors are acceptable for all feeders 200 Amps or larger. Upsize wire and conduit sizes accordingly to maintain the required ampacity.
4. Wire sizes and combinations are suggestions based upon available load information at the time of drawing release. The contractor shall verify all equipment name plates for actual load ratings.
5. #10AWG and smaller conductors shall be solid wire. #8AWG and larger conductors shall be stranded.
6. The contractor shall derate conductor ampacity for elevated temperatures over ambient and for multiple conductors in raceways or conduit per NEC requirements.

MONTANA
DANIEL LEE TINTZMAN
No. 15459PE
LICENSED PROFESSIONAL ENGINEER
09/30/20

P.O. Box 8694
Kalispell, MT 59904
Phone (406) 212-1624
KBengineers@centurytel.net

Revision	Date	By
Draft	9/18/20	DT
Final	9/30/20	DT
Add. #2	2/11/21	DT

Revision: Addendum #2
Plot Scale: 1:2
Drawn By: D.Tintzman, P.E.
Approved By: D.Tintzman, P.E.
Checked By: D.Tintzman, P.E.
Designed By: D.Tintzman, P.E.

Engineer

P.O. Box 8694
Kalispell, MT 59904
Phone (406) 212-1624
KBengineers@centurytel.net

Owner

State Of Montana

Project Title

Montana State Hospital Upgrade Wastewater System

Sheet Title

Electrical Schedules

Sheet

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