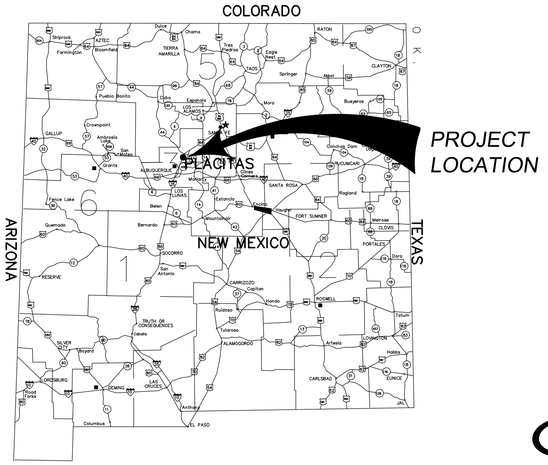
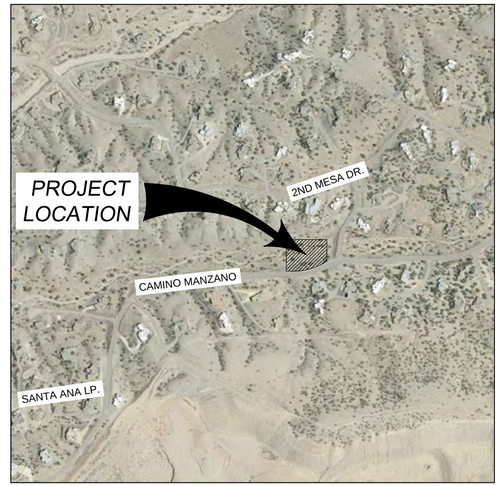


LOCATION MAP

NOT TO SCALE

LA MESA WATER COOPERATIVE,
BOX 53, PLACITAS, NM 87043



VICINITY MAP

NOT TO SCALE

CONSTRUCTION PLANS FOR

LMWC WELL 3 ARSENIC TREATMENT FACILITY

DRAWING INDEX:

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G-002	GENERAL NOTES AND SYMBOL LEGEND
G-101	SURVEY PLAT
G-102	OVERALL SITE PLAN
G-103	ARSENIC TREATMENT BUILDING CODE PLAN
CIVIL	
C-101	YARD PIPING PLAN
C-102	YARD PIPING PROFILE
C-103	GRADING AND DRAINAGE
C-104	SITE SECTIONS AND SITE DETAILS
C-105	WATER PIPING DETAILS
STRUCTURAL	
S-101	FOUNDATION PLAN
S-102	ROOF FRAMING PLAN
S-301	STRUCTURAL DETAILS
ARCHITECTURAL	
A-101	FLOOR PLAN
A-102	ROOF PLAN
A-201	EXTERIOR ELEVATIONS
A-202	EXTERIOR ELEVATIONS
A-301	WALL SECTIONS
A-501	WALL SECTIONS AND DETAILS
A-601	DOOR AND FINISH SCHEDULES
PROCESS	
D-101	BUILDING EQUIPMENT AND PIPING PLAN
D-102	BUILDING EQUIPMENT LAYOUT

SHEET NUMBER	SHEET TITLE
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D-201	BUILDING PROCESS EQUIPMENT
D-202	BUILDING PROCESS EQUIPMENT
D-203	PROCESS PIPING SECTIONS
D-204	PROCESS PIPING ELEVATIONS
D-205	PROCESS PIPING ELEVATIONS
D-206	WSL AND TWL SKID CONNECTIONS
D-207	BWSL AND BWL SKID CONNECTIONS
D-208	FINISHED WATER TANK PLAN
D-209	FINISHED WATER TANK SECTIONS
D-210	FINISHED WATER TANK AND SUMP SECTIONS
D-211	BACKWASH TANK PLAN
D-212	BACKWASH TANK SECTIONS
D-213	WASTE TANK PLAN
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D-602	PROCESS FLOW DIAGRAM 1
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D-607	ADEDGE COVER SHEET
D-608	ADEDGE GENERAL NOTES

SHEET NUMBER	SHEET TITLE
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D-610	ADEDGE ISO GENERAL ARRANGEMENT
D-611	ADEDGE BACKWASH RECYCLE PUMP SKID
D-612	ADEDGE BACKWASH RECYCLE PUMP SKID
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PLUMBING	
P-001	PLUMBING NOTES AND LEGEND
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MECHANICAL	
M-001	MECHANICAL NOTES AND LEGEND
M-002	MECHANICAL SPECIFICATIONS
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E-001	ELECTRICAL SYMBOL LEGEND AND GENERAL NOTES
E-002	ELECTRICAL SPECIFICATION NOTES
E-003	ELECTRICAL SPECIFICATION NOTES
E-101	ELECTRICAL LIGHTING PLAN
E-102	ELECTRICAL POWER PLAN
E-103	ELECTRICAL CONTROL PLAN
E-104	INSTRUMENTATION SCHEDULE
E-501	ONE-LINE AND GROUNDING DIAGRAMS
E-601	ELECTRICAL FIXTURE SCHEDULE AND PANEL SCHEDULE
I-501	INSTRUMENTATION CP-1
I-502	INSTRUMENTATION CP-SCADA
I-600	INSTRUMENTATION GROUNDING DIAGRAM

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CONSULTANTS

SEAL

BRIAN J. AMBROSI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

COVER SHEET

SHEET NO:

G-001

1/7/2021

GENERAL NOTES

1. THE IMPROVEMENTS AS SHOWN ON THESE PLANS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NEW MEXICO "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," 2006 EDITION AS AMENDED. SPECIFICATIONS PREPARED BY THE NEW MEXICO CHAPTER, AMERICAN PUBLIC WORKS ASSOCIATION, EXCEPT AS MODIFIED BY THESE PLANS AND TECHNICAL SPECIFICATIONS.

2. A COPY OF THE NEW MEXICO STANDARD SPECIFICATIONS, THE CONTRACT DOCUMENTS, AND THE PROJECT PLANS, SHALL BE KEPT AT THE JOB SITE BY THE CONTRACTOR AT ALL TIMES DURING CONSTRUCTION ACTIVITIES.

3. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE DRAWINGS HAVE BEEN OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS AND FROM INFORMATION PROVIDED BY THE OWNER. LOCATIONS ARE APPROXIMATE. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OF THE DEPICTED LOCATION AND THE EXISTENCE OR NONEXISTENCE OF UTILITY LINES.

4. THE CONTRACTOR SHALL NOTIFY LA MESA WATER COOPERATIVE AT (505) 771-2330 AT LEAST TEN (10) WORKING DAYS PRIOR TO STARTING WORK ON THIS PROJECT. ALSO, TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT THE NEW MEXICO ONE-CALL SYSTEM, STATEWIDE, 1-800-321-2537, AND LA MESA AT (505) 771-2330 FOR LOCATION ON EXISTING UTILITIES.

5. PRIOR TO CONSTRUCTION IN ANY AREA, THE CONTRACTOR SHALL VERIFY, BY WHATEVER MEANS NECESSARY, THE HORIZONTAL AND VERTICAL LOCATION OF EXISTING UTILITIES AND OBSTRUCTIONS. IN PARTICULAR, THE EXACT LOCATIONS AND MATERIALS OF ALL EXISTING WATER LINES AT PROPOSED CONNECTIONS SHALL BE VERIFIED BY THE DIRECT EXCAVATION OR "POT HOLING" IN ORDER TO IDENTIFY THE DETAILS OF CONNECTION PRIOR TO THE PARTICULAR SEQUENCE OF WORK. SHOULD A CONFLICT BE VERIFIED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER SO THE CONFLICT MAY BE RESOLVED. THE OWNER OR ENGINEER SHALL NOT BE RESPONSIBLE FOR DELAY OR ADDITIONAL COST RESULTING FROM CONTRACTORS FAILURE TO FOLLOW THIS PROCEDURE. LINE LOCATION OF EXISTING UTILITIES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT COST.

6. ALL GAS, ELECTRIC, TELEPHONE LINE CABLES, AND APPURTENANCES ENCOUNTERED DURING CONSTRUCTION THAT REQUIRE RELOCATION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF ALL NECESSARY UTILITY RELOCATIONS, ENCROACHMENTS, TEMPORARY ACCESS, AND ADJUSTMENT TO GRADE OF MANHOLES AND VALVE COVERS.

7. TRAFFIC CONTROL WILL BE IMPLEMENTED BY CONTRACTOR PER NMMUTCD. CONTRACTOR SHALL PREPARE A TRAFFIC CONTROL PLAN TO COINCIDE WITH SEQUENCING OF CONSTRUCTION ACTIVITIES. CONTRACTOR MUST MAINTAIN ACCESS TO ALL PRIVATE RESIDENCES. CONTRACTOR SHALL FURNISH A TRAFFIC CONTROL PLAN (DRAWING) WITH ANY DETOUR ARRANGEMENTS TO LA MESA WATER COOPERATIVE, (505) 771-2330 PRIOR TO COMMENCING WORK. CONTRACTOR MUST NOTIFY SANDOVAL COUNTY SHERIFF 72 HOURS IN ADVANCE OF STARTING OR ALTERING ANY TRAFFIC CONTROL PROGRAM.

8. DRIVEWAY ACCESS TO RESIDENTIAL HOMES SHALL BE AVAILABLE DURING THE HOURS OF 6:00 PM TO 8:00 AM, AND ALL BUSINESSES SHALL HAVE 24 HOUR ACCESS EXCEPT IN EMERGENCIES. CONTRACTOR SHALL ASSIST IN ANY ARRANGEMENTS FOR "SPECIAL NEEDS" RESIDENTS, AND SHALL AT ALL TIMES PROVIDE NOTIFICATION TO AFFECTED RESIDENTS PRIOR TO ANY DRIVEWAY ACCESS SHUTDOWNS OR WATER AND SEWER SERVICE SHUTDOWNS, THROUGH "DOOR HANGER" NOTICES AND PUBLIC INFORMATION ANNOUNCEMENTS, AT LEAST 48 HOURS IN ADVANCE.

9. THE CONTRACTOR SHALL NOT ALLOW HIS CONSTRUCTION, STORAGE, OR PARKING OF EQUIPMENT OR VEHICLES TO ENCROACH ON PRIVATE PROPERTY EXCEPT WHERE PERMANENT OR TEMPORARY EASEMENTS HAVE BEEN GRANTED. IN ANY CASE, THE CONTRACTOR SHALL OBSERVE THE FOLLOWING CONDITIONS:

   A. THE CONSTRUCTION AREA SHALL BE KEPT TO THE MINIMUM WIDTH REQUIRED FOR THE OPERATION.
   B. NO TREES OVER 6 INCH DIAMETER SHALL BE REMOVED, UNLESS AUTHORIZED BY THE OWNER.
   C. ALL DISTURBED, UNPAVED AREAS SHALL BE MULCHED, FERTILIZED, AND RESEEDED WITH NATIVE GRASSES.
   D. ANY DAMAGE DONE TO STRUCTURES, PAVING, GRAVEL, FENCES, UTILITY POLES, CULVERTS, ETC. SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR AT NO COST TO LA MESA WATER COOPERATIVE.

10. ALL NEW WATER LINES SHALL BE CONSTRUCTED WITH A MINIMUM OF 4.0 FT. COVER MEASURED FROM FINISH GRADE TO THE TOP OF THE PIPE, UNLESS OTHERWISE NOTED. UNDERGROUND INSTALLATION OF PVC PIPE PER AWWA C-605-94 (IN MANY LOCATIONS, ELEVATIONS OF TOP OF PIPES ARE GIVEN).

11. ALL NEW PIPING THRUST RESTRAINT SHALL BE PROVIDED BY RESTRAINED JOINT SYSTEMS. IN ADDITION, CONCRETE THRUST BLOCKING SHALL BE UTILIZED IN THOSE LOCATIONS WHERE EXISTING PIPING CONNECTIONS PREVENT FULL DEVELOPMENT OF RESTRAINED LENGTH OF PIPE BY NEW PIPE CONNECTIONS. ALL THRUST RESTRAINTS ARE TO MEET 200 PSI TEST PRESSURE CONDITIONS.

12. ALL PVC PIPE FOR WATERMAIN SHALL BE MINIMUM AWWA C-900, DR-18 FOR THIS PROJECT. ALL DUCTILE IRON PIPE SHALL BE AWWA C-150, THICKNESS CLASS 50 OR BETTER ALL FITTINGS SHALL BE DUCTILE IRON, CLASS 250 PSI, OR BETTER. WELDED STEEL PIPE SHALL BE STANDARD CLASS OR BETTER.

13. CHANGES SHALL NOT BE MADE TO THESE PLANS WITHOUT THE SPECIFIC APPROVAL OF LA MESA WATER COOPERATIVE AND THE ENGINEER. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION METHODS OR TECHNIQUES OR FOR THE EXECUTION OF THE WORK AS SHOWN ON THESE PLANS. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS, OR OTHER PERSONS PERFORMING ANY OF THE WORK OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

14. GEOTECHNICAL REPORT "GEOTECHNICAL ENGINEERING SERVICES JOB NO. 1-91210 WELL #3 ARSENIC TREATMENT BUILDING, PLACITAS, NEW MEXICO" HAS BEEN COMPLETED BY GEO-TEST, INC. DATE JANUARY 17, 2020. THIS REPORT IS INCLUDED IN THE PROJECT MANUAL AND IS CONSIDERED PART OF THE CONTRACT DOCUMENTS TO THE SAME EXTENT AS THE PLANS AND TECHNICAL SPECIFICATIONS. THE CONTRACTOR SHALL ADHERE TO RECOMMENDATIONS OF THE GETOTECHNICAL REPORT FOR ALL ON-SITE SUB-SURFACE CONSTRUCTION.

15. ALL PIPING, VALVES, FITTINGS, AND SERVICES UTILIZED FOR POTABLE WATER SERVICE, SHALL BE DISINFECTED IN ACCORDANCE WITH NMED REQUIREMENTS. PIPELINES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C-651. WITH LIQUID CHLORINE SOLUTION. ADDITIONAL DISINFECTION, FLUSHING AND SAMPLING REQUIREMENTS AND DETAILS ARE REFERENCED IN SECTION 801.17 OF THE STANDARD SPECIFICATIONS.

16. PROCESS PIPING SHALL BE LABELED WITH LINE TYPE(AS SHOWN ON THIS SHEET), e.g. BYPASS LINE, AND FLOW DIRECTION. LABELS SHALL BE IN MIDDLE OF RUNS 6' OR LESS, THERE SHALL BE A LABEL EVERY 6'.

17. ALL PROCESS PIPING, FITTINGS, AND EQUIPMENT MUST BE NSF CERTIFIED.

18. CONTRACTOR AND ALL SUBCONTRACTORS MUST COMPLY WITH RELEVANT SUNDANCE MESA HOME OWNER ASSOCIATION POLICIES, SPECIFICALLY:

    CONSTRUCTION DEBRIS POLICY
    EFFECTIVE AUGUST 15, 2020, ALL PROJECTS MUST HAVE AT LEAST ONE TRASH CONTAINER OR OTHER RECEPTACLE ON THE SITE FOR THE ACCUMULATION OF TRASH AND PROJECT DEBRIS. THE CONTAINER OR RECEPTACLE SHOULD BE APPROPRIATE TO THE SIZE OF THE PROJECT (i.e., A COVERED TRASH CAN MAY SUFFICE FOR A SMALL PROJECT; A DUMPSTER OR ROLLOFF MAY BE NECESSARY FOR A LATER PROJECT). CONTAINER(S) AND/OR OTHER RECEPTACLE(S) MUST BE SECURELY COVERED AT ALL TIMES, EXCEPT WHEN DEBRIS IS BEING ACTIVELY PLACED IN TEH CONTAINER OR RECEPTACLE. THE JOB SITE AND SURROUNDING AREAS MUST BE INSPECTED AND PICKED UP AS NECESSARY ON A DAILY BASIS. THE LAST CONTRACTOR OR SUB-CONTRACTOR TO WORK THE SITE IS RESPONSIBLE FOR MAKING SURE THIS CLEANUP IS DONE. OPEN PILES OF TRASH OR SCRAP BUILDING MATERIALS ARE NOT ACCEPTABLE.

    OUTDOOR COMMERCIAL WORK POLICY
    ALL OUTDOOR COMMERCIAL WORK, INCLUDING BUT LIMITED TO BUILDING MAINTENANCE, CONSTRUCTION, DEMOLITION, DRILLING, EXCAVATION, LANDSCAPING, LANDSCAPE MAINTENANCE, LAWN OR YARD WORK, PEST CONTROL, POOL SERVICE, REMODELING, REPAIR, STRUCTURE MAINTENANCE, OR WOOD CUTTING SHALL BE CONDUCTED BETWEEN THE HOURS OF 7:00 AM AND 7:00 PM (MOUNTAIN) MONDAY THROUGH SATURDAY.

LINETYPES

BPL	BYPASS LINE - 4"
BWL	BACKWASH LINE - 4"
BWSL	BACKWASH SUPPLY LINE - 4"
BWRL	BACKWASH RECYCLE LINE - 1" AND 2"
CO2FL	CO2 FEED LINE - 3/8" TUBING
DSL	DISTRIBUTION SYSTEM LINE - 4"
FWL	FINISHED WATER LINE - 4"
SPDL	SUMP PUMP DRAIN LINE - 2"
TWL	TREATED WATER LINE - 4"
WFL	WELL FLUSH LINE - 4"
WSL	WELL SUPPLY LINE - 4"
WTPO	WASTE TANK PUMP OUT - 4"
WL	WASTE LINE - 1-1/2"
DSDL	DOWNSPOUT DRAIN LINE - 6"
FSL	FACILITY SERVICE LINE - 1"
FDP	FLOOR DRAIN PIPE - 3"
TDP	TRENCH DRAIN PIPE - 6"

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CONSULTANTS

SEAL
BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE
GENERAL NOTES AND SYMBOL LEGEND

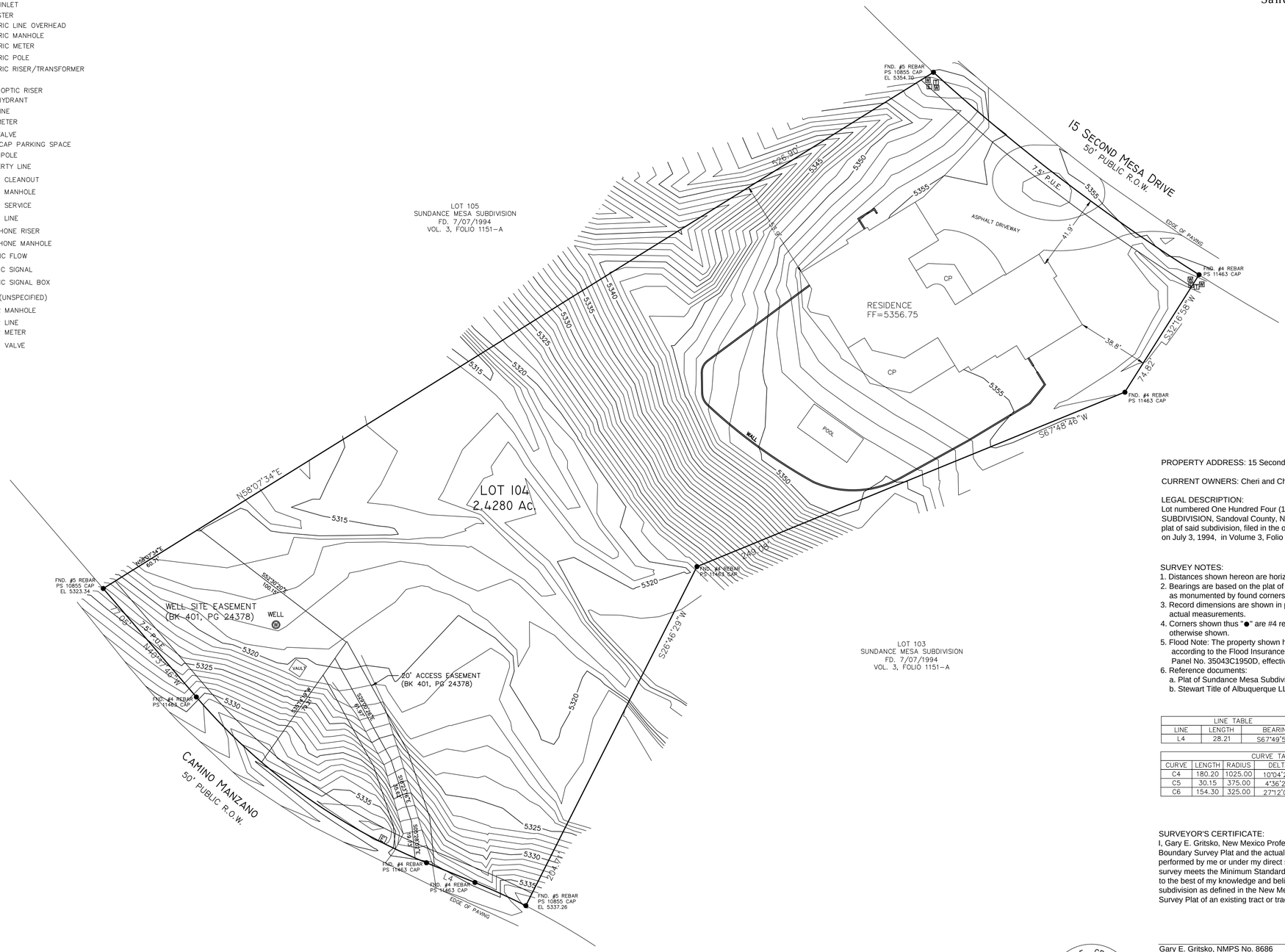
SHEET NO:
G-002

1/7/2021

BOUNDARY SURVEY PLAT
&
TOPOGRAPHIC MAP
LOT 104, SUNDANCE MESA SUBDIVISION
Section 26, T13N, R4E, NMPM
Sandoval County, New Mexico

SYMBOLS LEGEND

- = ANCHOR
- = BLOCK WALL
- = CABLE RISER
- = CENTERLINE
- = DRAINAGE MANHOLE
- = DROP INLET
- = DUMPSTER
- = ELECTRIC LINE OVERHEAD
- = ELECTRIC MANHOLE
- = ELECTRIC METER
- = ELECTRIC POLE
- = ELECTRIC RISER/TRANSFORMER
- = FENCE
- = FIBER OPTIC RISER
- = FIRE HYDRANT
- = GAS LINE
- = GAS METER
- = GAS VALVE
- = HANDICAP PARKING SPACE
- = LIGHT POLE
- = PROPERTY LINE
- = SEWER CLEANOUT
- = SEWER MANHOLE
- = SEWER SERVICE
- = SEWER LINE
- = TELEPHONE RISER
- = TELEPHONE MANHOLE
- = TRAFFIC FLOW
- = TRAFFIC SIGNAL
- = TRAFFIC SIGNAL BOX
- = TREE (UNSPECIFIED)
- = WATER MANHOLE
- = WATER LINE
- = WATER METER
- = WATER VALVE
- = WELL



SCALE: 1"=30'
0' 30' 60'

PROPERTY ADDRESS: 15 Second Mesa Court, Placitas, NM

CURRENT OWNERS: Cheri and Chad Kizer

LEGAL DESCRIPTION:
Lot numbered One Hundred Four (104), of the Final Plat of Lots 1 thru 196, SUNDANCE MESA SUBDIVISION, Sandoval County, New Mexico, as the same is shown and designated on the plat of said subdivision, filed in the office of the County Clerk of Sandoval County, New Mexico on July 3, 1994, in Volume 3, Folio 1151-A.

SURVEY NOTES:
1. Distances shown hereon are horizontal ground distances in US Survey feet.
2. Bearings are based on the plat of Sundance Mesa Subdivision (Vol. 3, folio 1151-A), as monumented by found corners.
3. Record dimensions are shown in parenthesis ( ), where record dimensions differ from actual measurements.
4. Corners shown thus "●" are #4 rebar w/cap stamped "G. Gritsko, PS 8686", unless otherwise shown.
5. Flood Note: The property shown hereon is located in Zone X, areas of minimal flood hazard, according to the Flood Insurance Rate Map of Sandoval County, New Mexico, Panel No. 35043C1950D, effective date March 18, 2008.
6. Reference documents:
   a. Plat of Sundance Mesa Subdivision, filed 7/03/1994, Vol. 3, Folio 1151-A.
   b. Stewart Title of Albuquerque LLC title commitment No. 01147-2524.

LINE TABLE		
LINE	LENGTH	BEARING
L4	28.21	S67°49'54"E

CURVE TABLE					
CURVE	LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD
C4	180.20	1025.00	10°04'23"	S52°40'51"E	179.97
C5	30.15	375.00	4°36'26"	N65°31'41"W	30.15
C6	154.30	325.00	27°12'08"	S54°13'50"E	152.85

SURVEYOR'S CERTIFICATE:
I, Gary E. Gritsko, New Mexico Professional Surveyor No. 8686, do hereby certify that this Boundary Survey Plat and the actual survey on the ground upon which it is based were performed by me or under my direct supervision; that I am responsible for this survey; that this survey meets the Minimum Standards for Surveying in New Mexico; and that it is true and correct to the best of my knowledge and belief. I further certify that this survey is not a land division or subdivision as defined in the New Mexico Subdivision Act and that this instrument is a Boundary Survey Plat of an existing tract or tracts.

June 29, 2018
Gary E. Gritsko, NMPS No. 8686 — Date

GARY E. GRITSKO · NEW MEXICO · 8686 · LICENSED PROFESSIONAL SURVEYOR

ALPHA PRO SURVEYING LLC
1436 32ND CIRCLE SE, RIO RANCHO, NEW MEXICO 87124
PHONE (505) 892-1076 ALPHAPROSURVEYING.COM
DRAWN BY: GG FILE NO.:16-362

WILSON & COMPANY
4401 MASTHEAD ST. NE, SUITE 150
ALBUQUERQUE, NM 87109
PHONE: 505-348-4000
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CONSULTANTS

SEAL
BRIAN J. AMBROGI · NEW MEXICO · 17610 · LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE
SURVEY PLAT

SHEET NO:
G-101

1/7/2021

A1 OVERALL SITE PLAN

SCALE: 1" = 20'

CONTROL POINT DATA

CP-100	CP-101
N: 10815.71	N: 10644.75
E: 10102.29	E: 10330.05
EL: 5323.34	EL: 5337.26
FND #5 REBAR	FND #5 REBAR
PS 10855 CAP	PS 10855 CAP

1. CONTROL POINTS, ELEVATIONS, COORDINATES SHOWN ON THIS SHEET, AND PROPERTY BOUNDARY BEARINGS AND DISTANCES HAVE BEEN OBTAINED FROM SURVEY DATA PROVIDED BY ALPHA PRO SURVEYING LLC, (505) 892-1076, AS SHOWN ON SHEET G-101 OF THIS PLANSET.
2. CONTRACTOR SHALL MAKE OWNER AND ENGINEER AWARE OF ANY DISCREPANCIES WITH THE SITE LAYOUT PRIOR TO FINAL CONSTRUCTION STAKING OF PROJECT SITE.

WILSON & COMPANY
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ALBUQUERQUE, NM 87109
PHONE: 505-348-4000
FAX: 505-348-4072
www.wilsonco.com

CONSULTANTS

SEAL

BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

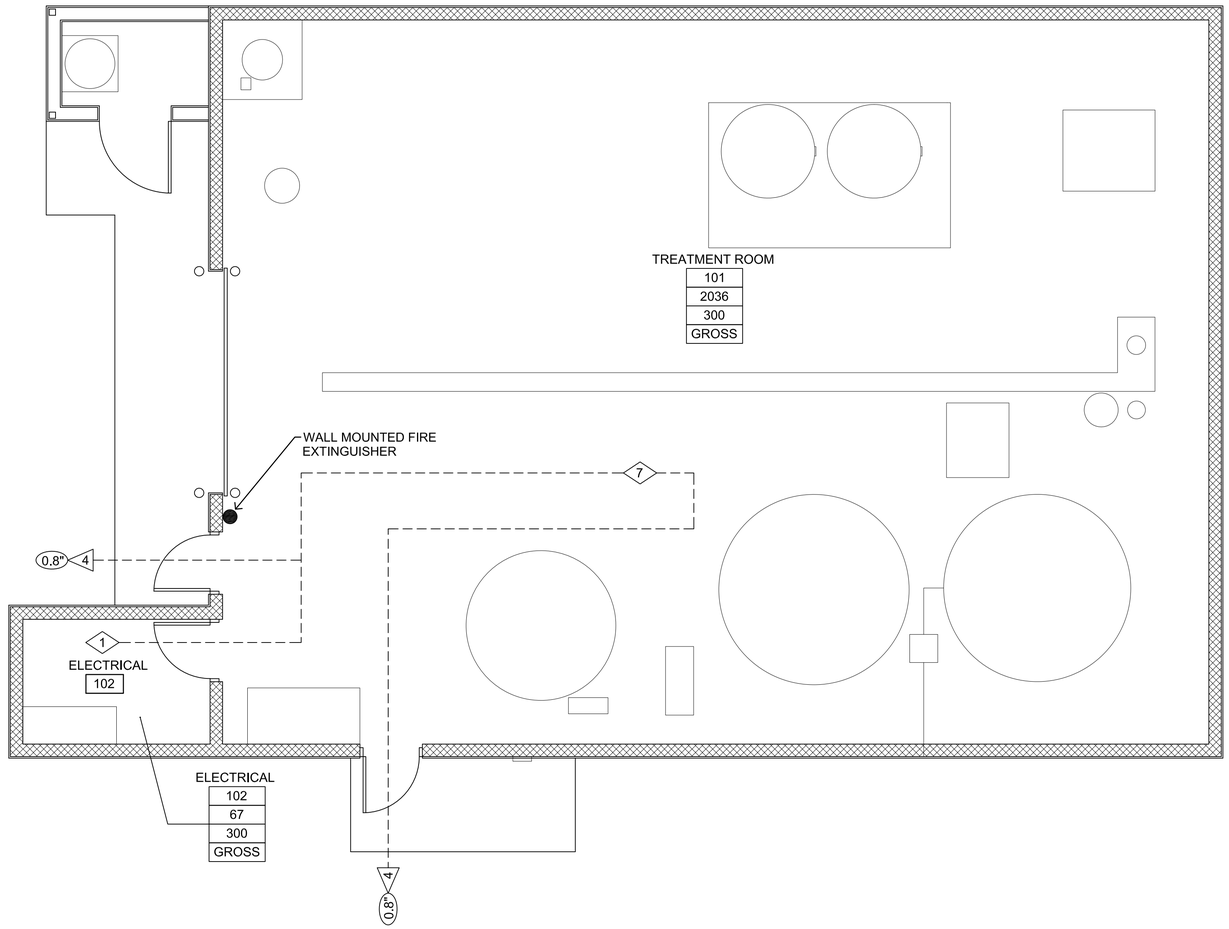
SHEET TITLE

OVERALL
SITE PLAN

SHEET NO:

G-102

1/7/2021



E5 CODE PLAN
1/4"=1'-0"
0 1 2 4 8

PLAN NORTH

NORTH

GENERAL SHEET NOTES

1. SEE SHEET A-601 FOR DOOR SCHEDULE
2. SEE SHEET A-601 FOR ROOM FINISH SCHEDULE

CODE INFORMATION

SCOPE OF WORK	NEW BUILDING
OCCUPANCY GROUP	U (UTILITY)
CONSTRUCTION TYPE	5 B
ALLOWABLE AREA	5,500 SQUARE FEET
BUILDING AREA	2,263 SQUARE FEET
NUMBER OF STORIES	ONE
NUMBER OF EXITS REQUIRED	ONE
NUMBER OF EXITS PROVIDED	TWO
OCCUPANT LOAD	EIGHT
FIRE SPRINKLER	NOT PROVIDED

NOTE: UNOCCUPIED BUILDING, NO RESTROOMS

LEGEND

TREATMENT ROOM
ROOM #
ROOM SF
SF FACTOR
OCC LOAD
INDIVIDUAL ROOM CODE INFORMATION

1 IBC 2015 OCCUPANT LOAD

4 ACCUMULATED OCCUPANT LOAD IN DIRECTION OF EGREE

0.8" INDIVIDUAL ROOM CODE INFORMATION

PATH OF EGRESS

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PHONE: 505-348-4000
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CONSULTANTS

SEAL
STATE OF NEW MEXICO
TIMOTHY J. RUGG
NO. 005669
REGISTERED ARCHITECT
1/5/2021

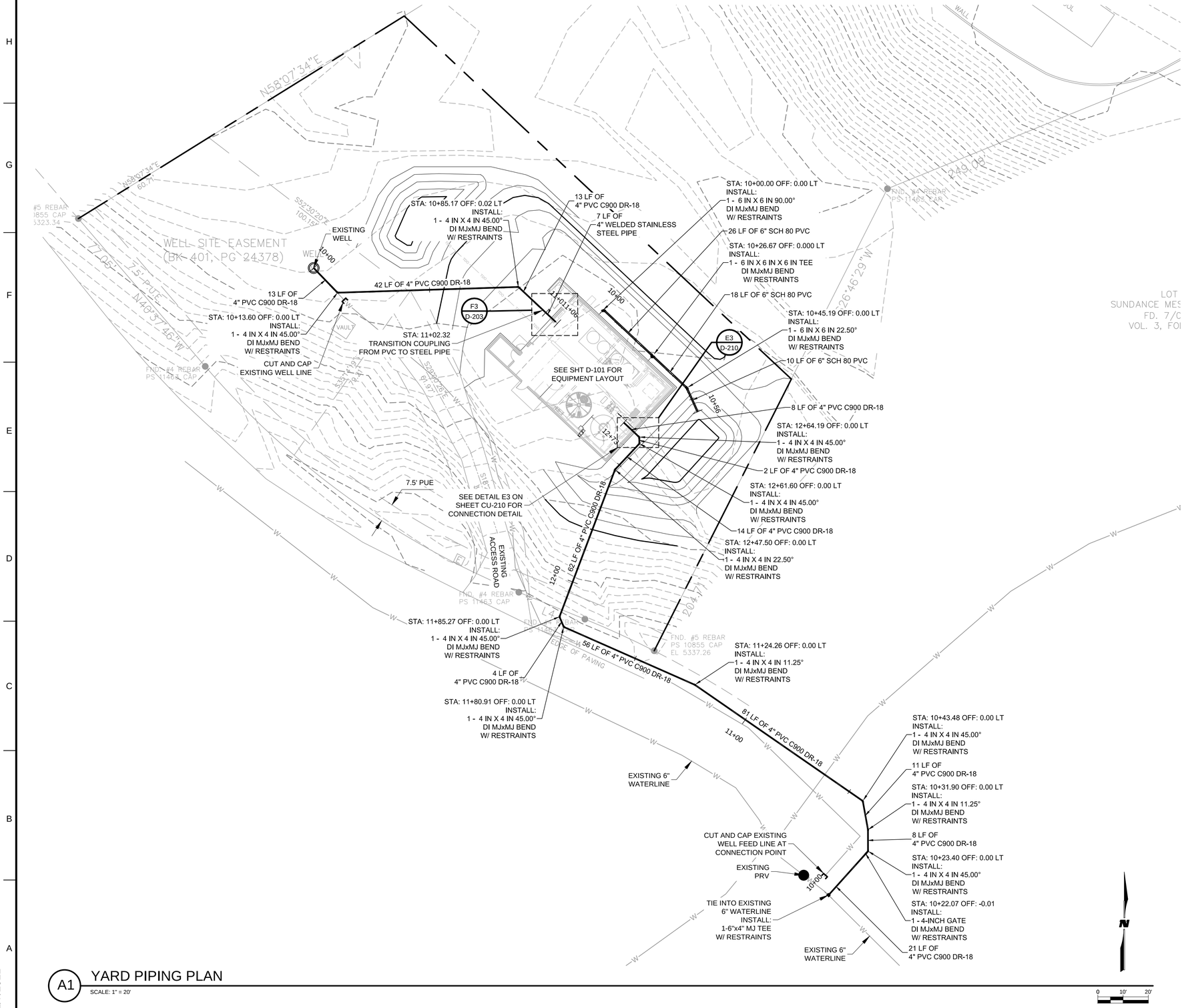
PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE
ARSENIC TREATMENT BUILDING CODE PLAN

SHEET NO:
G-103



A1 YARD PIPING PLAN

SCALE: 1" = 20'

1/7/2021

GENERAL NOTES

1. DEFLECT PIPE JOINTS AS NECESSARY TO MAINTAIN ALIGNMENT SHOWN. MAXIMUM DEFLECTION SHALL BE NO MORE THAN 75% OF PIPE MANUFACTURERS RECOMMENDATION.
2. ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING WORK.
3. ALL FITTINGS AND VALVES SHALL BE RESTRAINED PER PRESSURE PIPE RESTRAINED JOINT LENGTH REQUIREMENTS ON SHEET C-105. WHERE FULL JOINT RESTRAINT LENGTH CANNOT BE CONSTRUCTED, CONCRETE BLOCKING SHALL BE USED PER SHEET C-105.

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CONSULTANTS

SEAL

BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

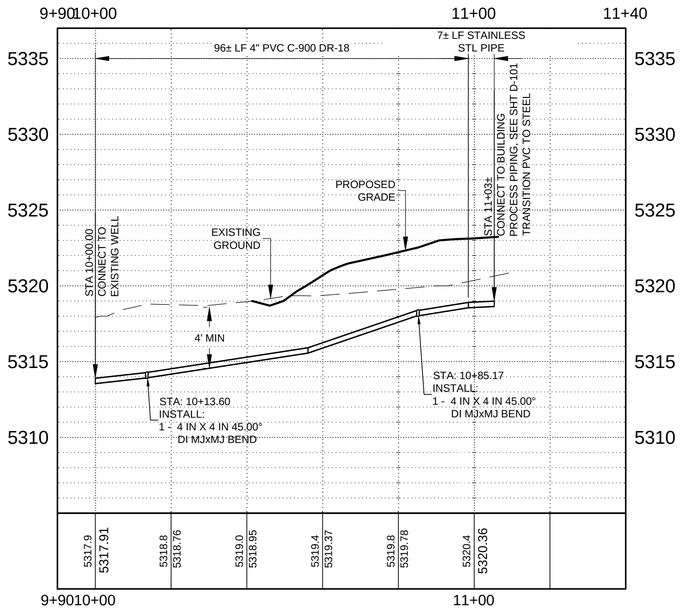
PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

YARD PIPING PLAN

SHEET NO:

C-101

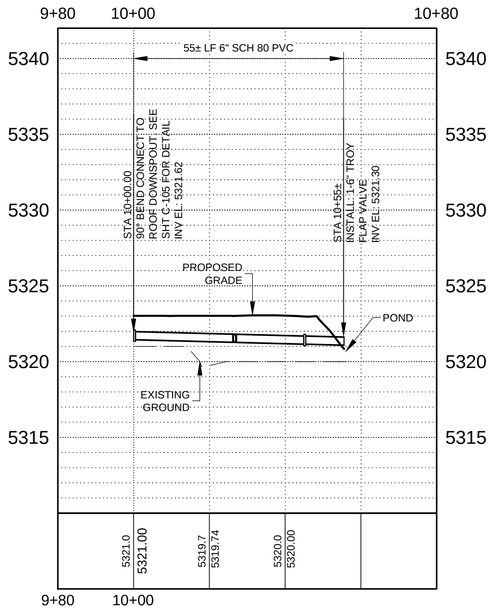


E1 WELL SUPPLY LINE PROFILE VIEW

SCALE: 1" = 20'

VERTICAL 0 2.5' 5'

HORIZONTAL 0 10' 20'

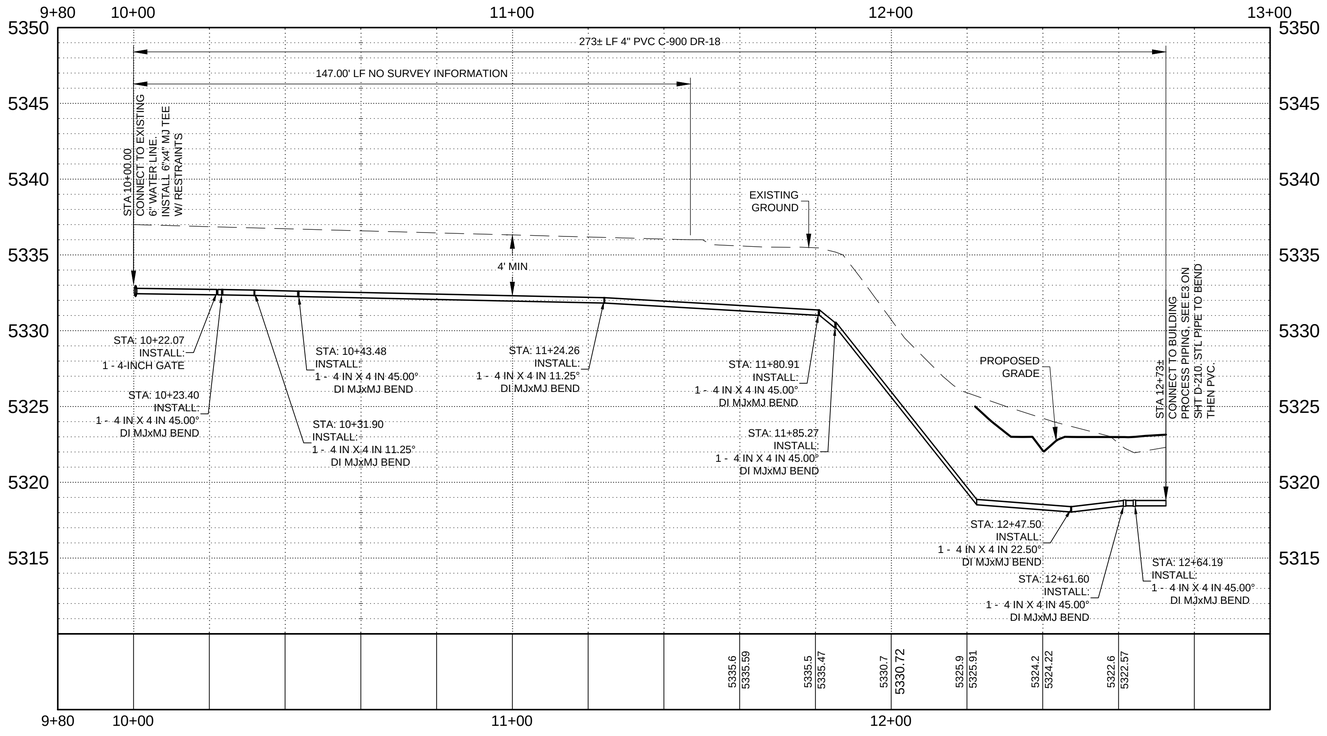


E6 6" DOWNSPOUT DRAIN LINE PROFILE VIEW

SCALE: 1" = 20'

VERTICAL 0 2.5' 5'

HORIZONTAL 0 10' 20'



A2 DISTRIBUTION SYSTEM LINE PROFILE VIEW

SCALE: 1" = 20'

VERTICAL 0 2.5' 5'

HORIZONTAL 0 10' 20'

GENERAL NOTES

1. DEFLECT PIPE JOINTS AS NECESSARY TO MAINTAIN ALIGNMENT SHOWN. MAXIMUM DEFELCTION SHALL BE NO MORE THAN 75% OF PIPE MANUFACTURERS RECOMMENDATION.
2. ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING WORK.
3. ALL FITTINGS AND VALVES SHALL BE RESTRAINED PER PRESSURE PIPE RESTRAINED JOINT LENGTH REQUIREMENTS ON SHEET C-105. WHERE FULL JOINT RESTRAINT LENGTH CANNOT BE CONSTRUCTED, CONCRETE BLOCKING SHALL BE USED PER SHEET C-105.
4. UNLESS OTHERWISE NOTED PIPING SCHEDULE SHALL BE AS FOLLOWS:

YARD PIPING	C-900 PVC DR-18 DUCTILE IRON MJ FITTINGS
UNDER SLAB PROCESS PIPING	WELDED STAINLESS STEEL
BUILDING PROCESS PIPING	SCH 80 PVC PIPE
DRAIN PIPING	SCH 80 PVC PIPE

WILSON & COMPANY
4401 MASTHEAD ST. NE, SUITE 150
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CONSULTANTS

SEAL

BRIAN J. AMBROGI NEW MEXICO 17610 LICENSED PROFESSIONAL ENGINEER 1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

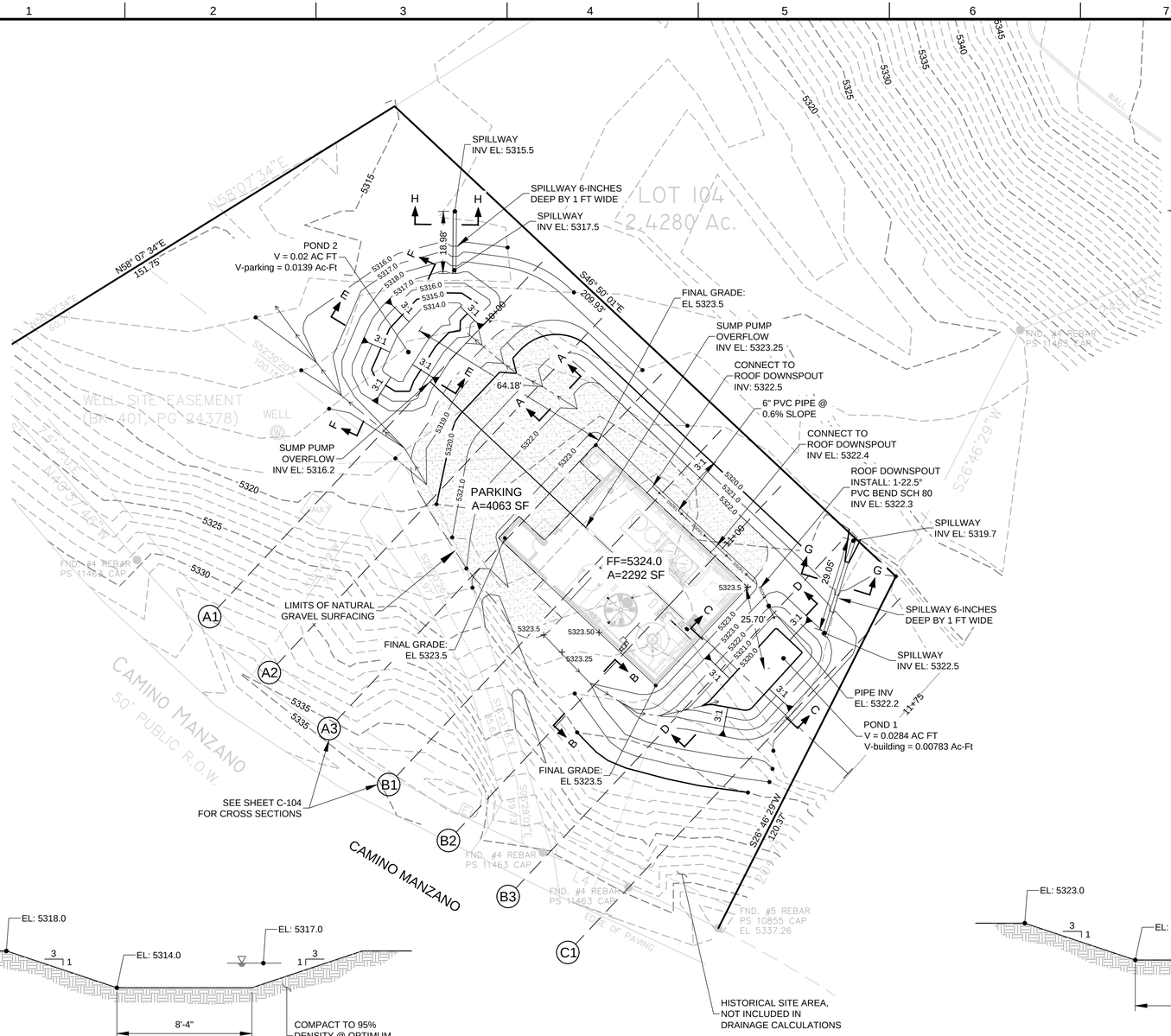
SHEET TITLE

YARD PIPING PROFILE

SHEET NO:

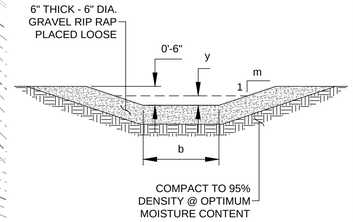
C-102

1/7/2021

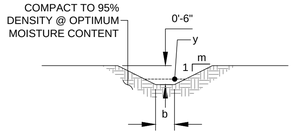


SURVEY DATA: VERTICAL DATUM IS SEA LEVEL DATUM 1929 (SLD29). SURVEY CONTROL POINTS:

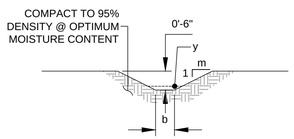
NO.	NORTH	EAST	ELEV	ELEV
5000	14721.00	8222.992	5583.203	BASE
5001	10000.01	9999.998	5819.567	NMSHC 0165-5
5002	17712.20	4036.291	5337.322	#4RB 8686
5003	17699.78	4063.876	5340.156	5RB 10855-SE LOT 104



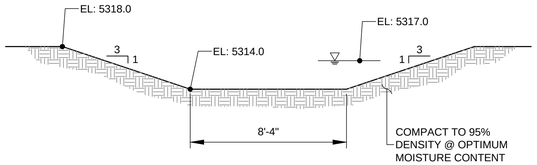
SECTION G-G/H-H
NOT TO SCALE



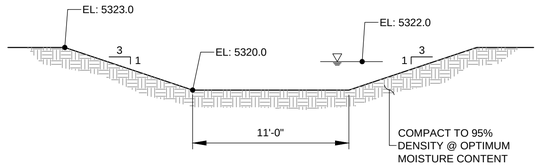
SECTION A-A
NOT TO SCALE



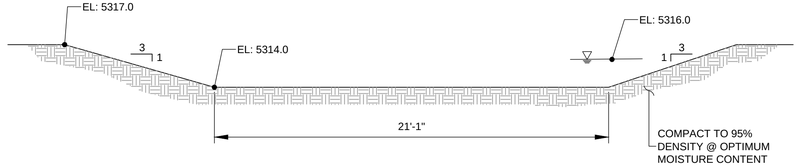
SECTION B-B
NOT TO SCALE



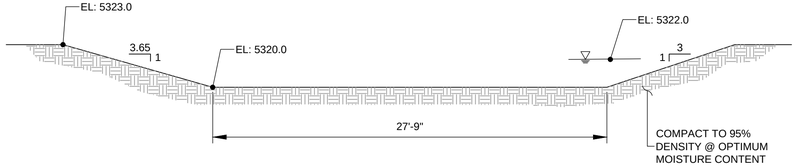
SECTION E-E
NOT TO SCALE



SECTION C-C
NOT TO SCALE



SECTION F-F
NOT TO SCALE



SECTION D-D
NOT TO SCALE

A1 SITE GRADING PLAN
SCALE: 1:20

0 10' 20'

GENERAL NOTES

1. DEFLECT PIPE JOINTS AS NECESSARY TO MAINTAIN ALIGNMENT SHOWN. MAXIMUM DEFLECTION SHALL BE NO MORE THAN 75% OF PIPE MANUFACTURER'S RECOMMENDATION.
2. ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE LOCATIONS. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING WORK.
3. ALL FITTINGS AND VALVES SHALL BE RESTRAINED PER PRESSURE PIPE RESTRAINED JOINT LENGTH REQUIREMENTS ON SHEET C-105. WHERE FULL JOINT RESTRAINT LENGTH CANNOT BE CONSTRUCTED, CONCRETE BLOCKING SHALL BE USED PER SHEET C-105.
4. CONTRACTOR SHALL CONSTRUCT DRAINAGE IMPROVEMENTS TO ACTIVELY DRAIN WATER AWAY FROM FOUNDATIONS AND MANHOLES.
5. CONTRACTOR SHALL FOLLOW NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2006 EDITION, BY THE AMERICAN PUBLIC WORKS ASSOCIATION, UNLESS OTHERWISE INDICATED.

SURFACE TREATEMENTS

1. NATIVE GRASS SEEDING - UNLESS OTHERWISE NOTED IN THIS GRADING PLAN, CONTRACTOR SHALL RESEED ALL DISTURBED AREAS IN ACCORDANCE WITH SECTION 1012 NATIVE GRASS SEEDING.
2. NATURAL GRAVEL SURFACING - WHERE NATURAL GRAVEL SURFACING IS CALLED OUT ON THIS GRADING PLAN THE CONTRACTOR SHALL PLACE THE FOLLOWING:
   - 2.1. 12-INCHES OF SUBGRADE PREPARATION, PER SECTION 301, WITH 95% RELATIVE DENSITY AT OPTIMAL MOISTURE CONTENT.
   - 2.2. 6-INCHES OF NATURAL GRAVEL SURFACING FOR UNPAVED ROADWAYS, PER SECTION 308, TO 95-PERCENT RELATIVE DENSITY.

DRAINAGE CALCULATIONS

1. DRAINAGE CALCULATION S ARE BASED UPON CITY OF ALBUQUERQUE DESIGN PROCESS MANUAL, CHAPTER 22, PART A

   PRECIPITATION ZONE: 4 - EAST OF EUBANK, NORTH OF INTERSTATE 40

   DESIGN STORM: 100-YR

   TOTAL AREA = 0.728-AC

EXISTING CONDITION CALCULATIONS:

Treatment Type	Measured Area (A) Ac.	100-yr Excess Runoff ('E) in.	=A*E Ac.-in.		100-yr Peak Discharge (Qd) cfs/Ac	100-yr Peak Flow (Qp) cfs
A	0.000	0.800	0.000		2.2	0
B	0.489	1.080	0.528		2.92	1.42788
C	0.239	1.460	0.349		3.73	0.89147
D	0.000	2.640	0.000		5.25	0
		ΣA*E =	0.877		ΣQpe =	2.32 cfs
		Weighted E (Ew) =	1.205	in		

Volume: **Ve=ΣA*Ew = 0.073 Ac-Ft.**

DESIGN CONDITION CALCULATIONS:

Treatment Type	Measured Area (A) Ac.	100-yr Excess Runoff ('E) in.	=A*E Ac.-in.		100-yr Peak Discharge (Qd) cfs/Ac	100-yr Peak Flow (Qp) cfs
A	0.000	0.800	0.000		2.2	0
B	0.271	1.080	0.293		2.92	0.79132
C	0.306	1.460	0.447		3.73	1.14138
D	0.151	2.640	0.399		5.25	0.79275
		ΣA*E =	1.138		ΣQpi =	2.73 cfs
		Weighted E (Ew) =	1.563	in		

Volume: **Vi=ΣA*Ew = 0.095 Ac-Ft.**

NET DIFFERENCE:

Δ Volume:	= Vi-Ve =	0.022	Ac-Ft. (7090-gal.)
Δ Flow:	=Qpi-Qpe =	0.41	cfs (182-gpm)

POND SIZING CALCULATIONS:

Building Area:		Parking Area:	
A =	2291.16 SF	A =	4062.77 SF
% of Area D =	36%	% of Area D =	64%
$Q_{building}$ =	0.146 cfs	$Q_{parking}$ =	0.260 cfs
$V_{building}$ =	0.00783 Ac-Ft	$V_{parking}$ =	0.0139 Ac-Ft

SWALE SIZING CALCULATION:

Channel	Q	n	A	P	R	S	b	m	x	y	B	Q_{calc}	V
	cfs	-	sf	ft	ft	ft/ft	ft	-	ft	ft	ft	cfs	ft/s
A-A	0.260	0.025	0.114	2.22	0.05	0.079	0.5	2	0.289	0.144	1.077	0.261	2.29
B-B	0.146	0.025	0.070	1.85	0.04	0.096	0.5	2	0.201	0.101	0.902	0.146	2.07
G-G	0.406	0.04	0.390	4.84	0.08	0.093	1	3	0.692	0.231	2.385	0.820	2.10
H-H	0.406	0.04	0.387	4.83	0.08	0.095	1	3	0.688	0.229	2.376	0.820	2.12

Q = target flow
n = manning's coef.
A = Wetted Area
P = Wetted Perimeter
S = Slope
b = base dimension
m = side slope ratio (m:1)
x = calculated horizontal side slope
y = calculated vertical flow depth
B = Width of surface flow
Q_{calc} = flow rate calculated given dimensions

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CONSULTANTS

SEAL

BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

GRADING AND DRAINAGE

SHEET NO:

C-103

1/7/2021

SITE GRADING:

Cut/Fill Summary

Name	Cut Factor	Fill Factor	2d Area	Cut	Fill	Net
LA MESA FG VS EG	**1.000**	**1.000**	16157.74 Sq. Ft.	211.03 Cu. Yd.	706.60 Cu. Yd.	495.58 Cu. Yd.<Fill>
Totals			16157.74 Sq. Ft.	211.03 Cu. Yd.	706.60 Cu. Yd.	495.58 Cu. Yd.<Fill>

STRUCTURAL CUT/ FILL:

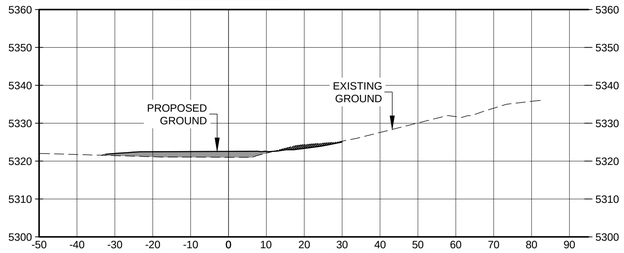
1. STRUCTURAL CUT AND FILL SHALL BE COMPLETED PER THE RECOMMENDATION OF THE GEOTECHNICAL INVESTIGATION; "GEOTECHNICAL ENGINEERING SERVICES, JOB NO. 1-91210, LA MESA WATER COOPERATIVE ARSENIC TREATMENT BUILDING, PLACITAS, NEW MEXICO", DATD JANUARY 17, 2020, COMPLETED BY GEO-TEST, INC.

2. STRUCTURAL CUT SHALL BE A MINIMUM OF 1' BELOW THE BUILDING FOOTING AND SLAB, OR DOWN THE NATIVE SOIL, WHICHEVER IS GREATER. THE EXCAVATION ENVELOPE SHALL BE A MINIMUM OF 6' OUTSIDE OF THE BUILDING MEASURED FROM THE OUTSIDE OF THE WALL.

GRADING KEY:

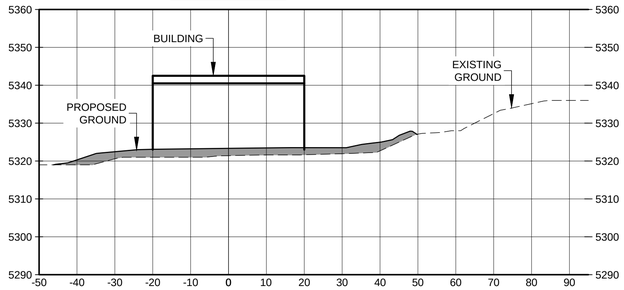
- FILL AREA
- CUT AREA
- EXISTING GROUND
- PROPOSED GROUND

11+50.00



C1 GRADING SECTION

10+75.00



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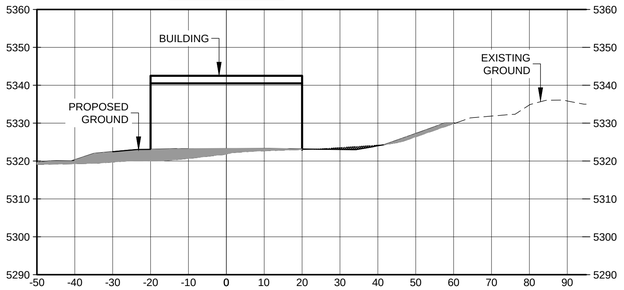
11+00.00



B2 GRADING SECTION

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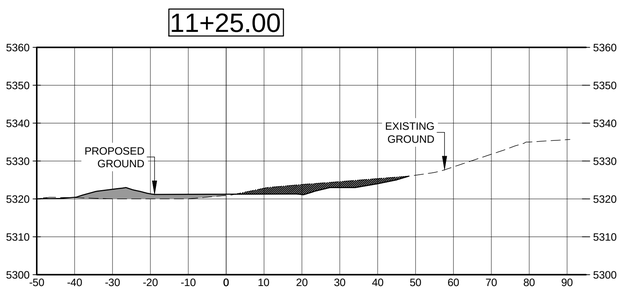
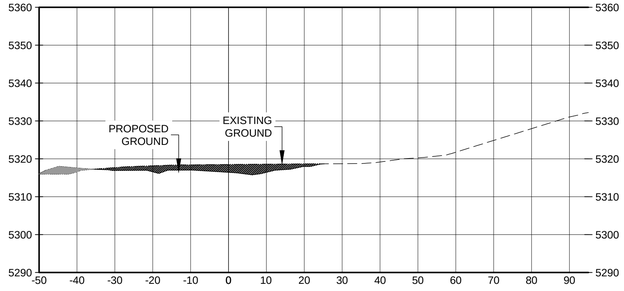


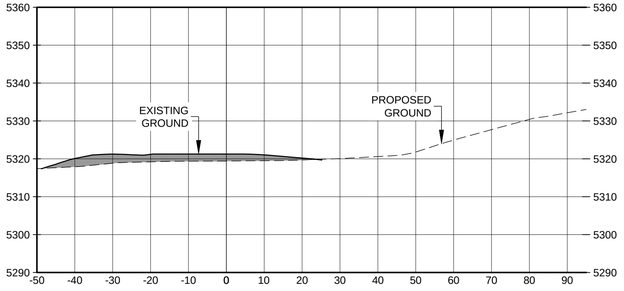
B3 GRADING SECTION

10+00.00



A1 GRADING SECTION

10+25.00



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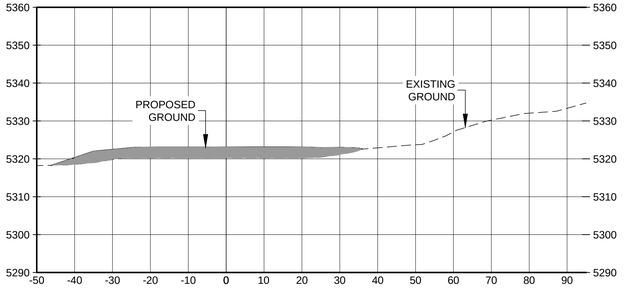

A3 GRADING SECTION

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FAX: 505-348-4072
www.wilsonco.com

CONSULTANTS

SEAL

BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

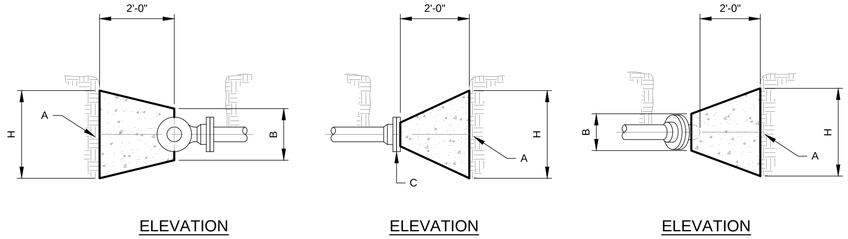
SHEET TITLE

SITE SECTIONS AND SITE DETAILS

SHEET NO:

C-104

1/7/2021



CONCRETE BLOCKING DETAILS

NOT TO SCALE

GENERAL NOTES:

1. ALL THRUST CONTROL BY RESTRAINED JOINTS ONLY UNLESS DIRECTED BY ENGINEER..
2. CONCRETE BLOCKING SHALL BE f'c=3,000 PSI @ 28-DAYS. MIX DESIGN SHALL BE IN ACCORDANCE WITH SECTION 101 OF NEW MEXICO STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION, 2006 EDITION, AS PUBLISHED BY AMERICAN PUBLIC WORKS ASSOCIATION.

PIPE SIZE	ELBOW ANGLE	ELBOW (B) DIM.	ELBOW (A) DIM.	TEE OR PLUG (B) DIM.	TEE OR PLUG (H) DIM.
4"				2'	1'
4"	90° 45°	2'	2'		
4"	22.5° 11.25°	2'	2'		
6"				2'	2'
6"	90° 45°	2'	2'		
6"	22.5° 11.25°	2'	2'		

CONSTRUCTION NOTES:

A. UNDISTURBED EARTH.

B. OD OF PIPE + 8".

C. OD OF CAP OR PLUG, MIN 12"x12".

D. ALL THRUST BLOCKING ONLY FOR EXCEPTIONAL SITUATIONS, USE OF MECHANICAL RESTRAINTS TAKES PRECEDENCE.

PRESSURE PIPE RESTRAINED JOINT LENGTH REQUIREMENTS-THIS PROJECT ONLY

TEST PRESSURE @ 150 PSI

LENGTHS OF PIPE TO BE RESTRAINED IN FEET
(APPLIES TO PVC AND DI)

FITTING TYPE								VERTICAL BEND					
					TEE (2)	FIRE HYDRANT TEE (3)		45°		22 1/2°		11 1/4°	
PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	RESTRAINED LENGTH ALONG BRANCH (Lb)	STD. 6-INCH BRANCH LINE	DEAD END OR VALVE (4)	UPPER BEND RESTRAINT	LOWER BEND RESTRAINT	UPPER BEND RESTRAINT	LOWER BEND RESTRAINT	UPPER BEND RESTRAINT	LOWER BEND RESTRAINT
4" (1)(6)	14'	6'	3'	2'	1'	FOR ALL PIPE MAIN LINE SIZES, ALL FITTINGS AND PIPE JOINTS FROM	30'	13'	6'	6'	3'	3'	2'
6" (1)(6)	19'	8'	4'	2'	1'	TEE TO FIRE HYDRANT FLANGE SHALL BE RESTRAINED	42'	18'	8'	9'	4'	5'	2'

(1) ASSUMES MINIMUM DEPTH OF BURY = 4 FT.
(2) ASSUMES MINIMUM FULL PIPE JOINT LENGTH ON EITHER SIDE OF TEE RUN (Lr) IS 20 FT. ASSUMES BRANCH AND RUN PIPE DIAMETERS ARE EQUAL.
(3) ASSUMES MINIMUM FULL PIPE JOINT LENGTH ON EITHER SIDE OF TEE RUN (Lr) IS 20 FT. ASSUMES TEE RUN PIPE DIAMETER IS EQUAL TO PIPE SIZE AND BRANCH PIPE DIAMETER IS 6 INCHES.
(4) RESTRAINED LENGTH FOR VALVES SHALL BE PROVIDED ON BOTH SIDES OF VALVE.
(5) WHERE POSSIBLE, CONTRACTOR SHALL INSTALL FULL 20-FT JOINT OF PIPE ON EITHER SIDE OF ALL MECHANICAL JOINT VALVES, FITTINGS, AND APPURTENANCES. FOR ALL CIRCUMSTANCES WHERE A 20-FT JOINT CAN BE UTILIZED AND THE CONTRACTOR ELECTS TO USE A SHORTER PIPE JOINT, CONTRACTOR SHALL PROVIDE, AT CONTRACTOR'S SOLE EXPENSE, ALL NECESSARY JOINT RESTRAINTS REQUIRED BY TABLE ABOVE. NUMBER OR WEIGHT OF EXTRA JOINT RESTRAINTS SHALL NOT BE INCLUDED IN MEASUREMENT NOR PAYMENT.
(6) PVC PIPE
(7) DUCTILE IRON PIPE

THRUST RESTRAINT NOTE:

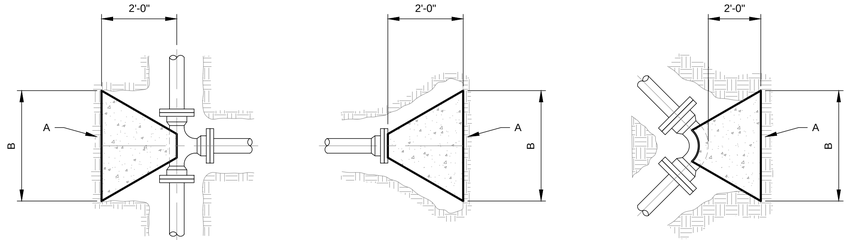
ALL BURIED VALVES, FITTINGS, AND APPURTENANCES SHALL BE MECHANICAL JOINT-TYPE UTILIZING "MEGA-LUG"® STYLE MECHANICAL JOINT RESTRAINTS IN CONJUNCTION WITH "MEGA-LUG"® PIPE BELL-HARNESS RESTRAINTS WHEN ADEQUATE RESTRAINED LENGTH CAN BE OBTAINED. IN THE EVENT ADEQUATE RESTRAINED LENGTHS CANNOT BE OBTAINED, CONTRACTOR SHALL IMMEDIATELY CONTACT ENGINEER FOR DETERMINATION OF APPROPRIATE ACTION TO BE TAKEN. THE EBAA IRON "RESTRAINED LENGTH CALCULATION" PROGRAM (VERSION 7.1.2) HAS BEEN USED TO DETERMINE MINIMUM RESTRAINED LENGTHS SHOWN IN TABLE ABOVE. THE FOLLOWING GENERAL ASSUMPTIONS APPLY TO ALL CALCULATIONS:

TRENCH TYPE 3
SOIL TYPE SM (SILTY SANDS, SAND SILT MIXTURE)
SAFETY FACTOR 1.5 TO 1

TYPICAL BURY DEPTH:
4" THROUGH 12" DIAMETER PIPE 4 FT MINIMUM

TYPICAL BURY DEPTHS FOR VERTICAL OFFSETS:
4" THROUGH 12" DIAMETER PIPE 4 FT TO TOP OF UPPER BRANCH
4 FT TO TOP OF LOWER BRANCH

CONTRACTOR MAY SUBMIT SUBSTITUTE REDUCED RESTRAINED JOINT LENGTHS IF SOIL AND DEPTH OF BURY CONDITIONS WARRANT. CONTRACTOR SHALL PROVIDE SOIL TEST RESULTS AND APPROPRIATE CALCULATIONS TO SUPPORT THE LENGTH REDUCTION. SUCH SOIL TESTING AND CALCULATIONS SHALL BE PERFORMED AT CONTRACTOR'S SOLE EXPENSE.

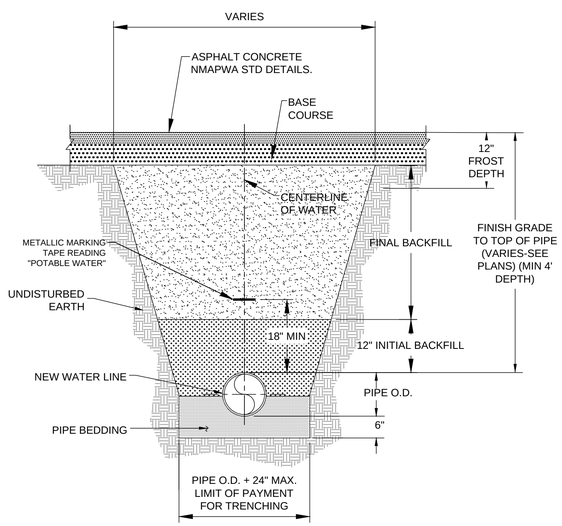


NOTE:

UPON COMPLETION OF PIPELINE CONSTRUCTION, ALL ALIGNMENTS IN ALL DIRT AREAS SHALL HAVE THE SURFACE COMPACTED SMOOTHED AND BLADED TO PROVIDE SUITABLE MAINTENANCE ACCESS FOR VEHICLES.

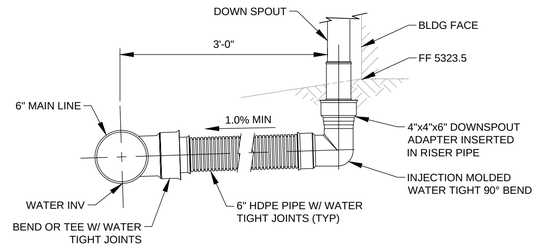
TYPICAL TRENCH DETAIL - UNPAVED AREAS

NOT TO SCALE



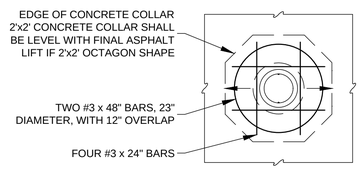
PIPE TRENCH DETAIL WITH PAVEMENT CUT

NOT TO SCALE



ROOF DOWNSPOUT BOOT DETAIL

NOT TO SCALE



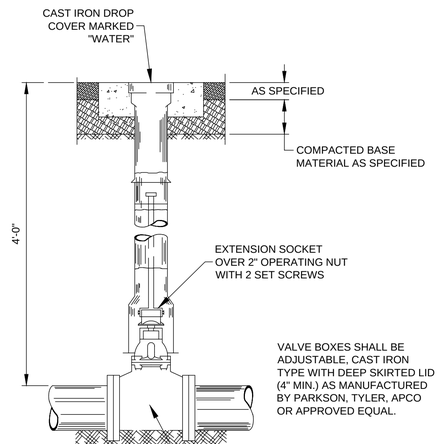
VALVE BOXES SHALL BE ADJUSTED TO THE FINISHED GRADE PRIOR TO PLACING OF THE ASPHALTIC CONCRETE SURFACE COURSE.

NOTES:

1. MECHANICAL RESTRAINTS REQUIRED ON ALL FITTINGS AND VALVES.
2. ALL FITTINGS SHALL USE MEGA LUGS RESTRAINTS.
3. GATE VALVE AND BOXES IN UNIMPROVED ROADS OR EASMENTS SHALL HAVE A 2'x2' CONCRETE COLLAR INSTALLED AT ONE FOOT BELOW EXISTING GRADE OR NATURAL GRADE.
4. A MECHANICAL RESTRAINT SYSTEM SHALL BE UTILIZED ON FITTINGS AND PIPING FOR THRUST RESTRAINT. CONCRETE THRUST BLOCKING TO BE USED ONLY FOR SPECIAL CONDITIONS, (SUCH AS, CAPS WHERE MAIN WILL BE EXTENDED IN THE FUTURE) OR AS SPECIFICALLY APPROVED BY THE ENGINEER.
5. FOR VALVES IN UNIMPROVED ROADS, THE VALVE BOX AND COVER SHALL BE BURIED 12" BELOW EXISTING GRADE AND SHALL ALSO BE MARKED (FOR LOCATION PURPOSES) BY TWO REBAR.

VALVE BOX ASSEMBLY DETAIL

NOT TO SCALE



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1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

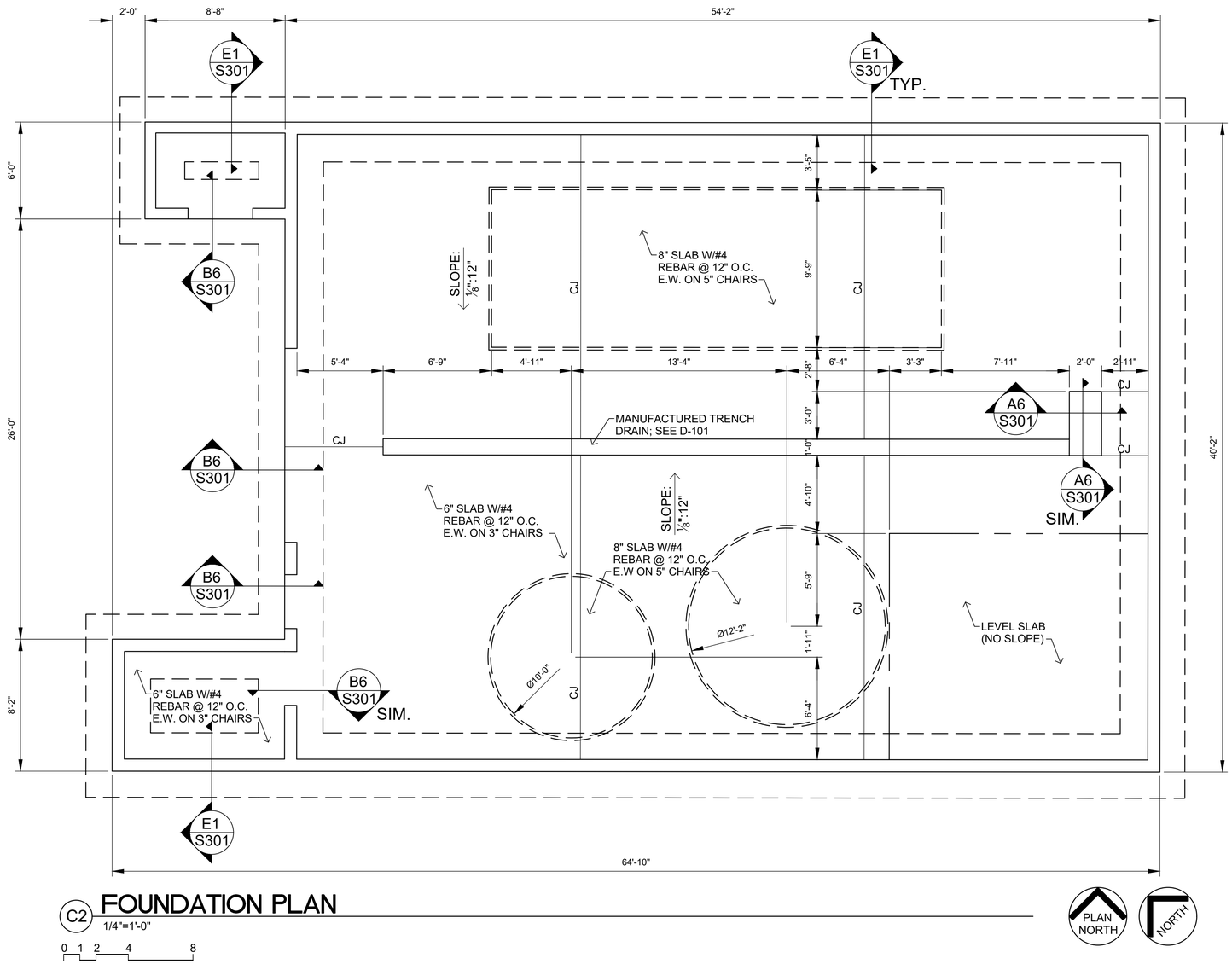
SHEET TITLE

WATER PIPING DETAILS

SHEET NO:

C-105

1/7/2021



C2 FOUNDATION PLAN

1/4"=1'-0"

0 1 2 4 8

PLAN NORTH

NORTH

STRUCTURAL NOTES

THE STRUCTURAL DESIGN WAS PREPARED USING THE FOLLOWING DATA:

A. CODE
- INTERNATIONAL BUILDING CODE - 2009 EDITION
- RISK CATAGORY: II

B. DESIGN DEAD LOADS
- ROOF DEAD LOAD: 20 PSF

C. DESIGN ROOF LIVE LOAD
- REDUCIBLE PER TRIBUTARY AREA: 20 PSF

D. DESIGN ROOF SNOW LOAD
- GROUND SNOW LOAD - P_g: 10 PSF
- FLAT ROOF SNOW LOAD - P_f: 10 PSF
- SNOW EXPOSURE FACTOR - C_e: 1.0
- SNOW THERMAL FACTOR - C_t: 1.0
- SNOW IMPORTANCE FACTOR - I_s: 1.0

E. DESIGN WIND LOAD
- ULTIMATE WIND SPEED (3 SEC GUST): 115 MPH
- NOMINAL WIND SPEED (3 SEC GUST): 90 MPH
- WIND EXPOSURE CATEGORY: C

F. DESIGN SEISMIC LOAD
- MAPPED RESPONSE ACCETERATION PARAMETERS
  - S_s: .552
  - S_1: .171
- SOIL SITE CLASS: D
- MAXIMUM RESPONE ACCELERATION PARAMETER
  - S_{MS}: .749
  - S_{M1}: .362
- DESIGN RESPONSE ACCELERATION PARAMETERS
  - S_{DS}: .500
  - S_{D1}: .241
- SEISMIC IMPORTANCE FACTOR - I_s: 1.0
- RESPONSE MODIFICATION COEFFICIENT - R: 3.5
- SEISMIC DESIGN CATEGORY: D
- DEISMIC RESPONSE COEFFICIENT - C_s: .143
- SEISMIC BASE SHEAR: C_s x DL

G. DESIGN STRESSES
- CONCRETE: f'_c = 3,500 PSI
- REINFORCING STEEL: f_y = 60,000 PSI
- CONCRETE MASONRY: f'_m = 1,500 PSI
- MASONRY GROUT: f'_c = 2,000 PSI

H. FOUNDATIONS
- ALLOWABLE SOIL PRESSURE: 2,000 PSI

FOUNDATIONS AND SLABS-ON-GRADE:

1. CENTER ALL FOOTINGS UNDER WALLS, UNLESS NOTED OTHERWISE.
2. PLACE ONE LAYER OF 30# FELT IN JOINTS BETWEEN THE EDGE OF INTERIOR FLOOR SLABS-ON-GRADE AND ADJACENT FOUNDATION WALLS.
3. THE CONTRACTOR SHALL EMPLOY A SOILS ENGINEER TO TEST AND APPROVE THE FILL MATERIALS AND PLACEMENT UNDER INTERIOR FLOOR SLABS-ON-GRADE AND THE BEARING CAPACITY OF SOILS UNDER ALL FOOTINGS.

CAST-IN-PLACE CONCRETE:

1. SEE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR SLEEVES AND OPENINGS REQUIRED IN CONCRETE WORK.
2. PROVIDE CORNER BARS AT OUTSIDE FACE OF CONCRETE WALLS AND GRADE BEAMS. CORNER BARS SHALL BE 4'-0" LONG, LAPPING WITH AND MATCHING THE SIZE OF THE HORIZONTAL BARS.
3. LAP ALL REINFORCING STEEL MARKED CONTINUOUS 36 BAR DIAMETERS AT SPLICES, UNLESS SHOWN OTHERWISE.
4. THE CONTRACTOR SHALL EMPLOY INSPECTORS TO PROVIDE SPECIAL INSPECTIONS OF CONCRETE ONCSTRUCTION PER TABLE 1704.4 OF THE INTERNATIONAL BUILDING CODE

CONCRETE MASONRY

1. PROVIDE BOND BEAMS IN 8 INCH MASONRY WALLS WITH 1 - #5 CONTINUOUS HORIZONTAL REINFORCEMENT AT ROOF LEVELS AND AT THE TOP OF MASONRY PARAPET WALLS.
2. PROVIDE BOND BEAMS IN 8 INCH MASONRY WALLS WITH 1 - #5 CONTINUOUS REINFORCEMENT AT A VERTICAL SPACING OF 48 INCHES ON CENTER.
3. PROVIDE HORIZONTAL CORNER REINFORCING BARS IN BOND BEAMS. BARS SHALL BE 4'-0" LONG, LAPPING WITH AND MATCHING THE SIZE OF THE CONTINUOUS BARS.
4. PROVIDE CONTINUOUS JOINT WIRE REINFORCEMENT WITH #9 SIDE RODS AT A MAXIMUM VERTICAL SPACING OF 16 INCHES ON CENTER FOR ALL MASONRY WALLS. PROVIDE PREFABRICATED WIRE SECTIONS AT ALL MASONRY WALL CORNERS.
5. PROVIDE FULL MORTAR BEDDING AT FACE SHELL LOCATIONS. PROVIDE FULL MORTAR BEDDING AT CROSS WEBS AT LOCATIONS OF GROUTED CELLS. REMOVE EXCESS MORTAR AS WORK PROGRESSES.
6. TERMINATE GROUT POURS 1 1/2 INCHES BELOW TOP OF UPPER MASONRY UNIT TO FORM A POSITIVE KEY FOR SUBSEQUENT GROUT PLACEMENT.
7. GROUT ALL EMBEDDED BOLTS IN PLACE WITH A MINIMUM OF 1/2 INCH OF GROUT BETWEEN THE BOLT AND MASONRY.
8. SPLICE VERTICAL REINFORCEMENT 48 BAR DIAMETERS. SECURE REINFORCEMENT IN PLACE WITH WIRE POSITIONERS AT THE TOP AND BOTTOM OF CELLS FOR EACH POUR PRIOR TO GROUTING. CONSOLIDATE GROUT BY MECHANICAL VIBRATION DURING PLACEMENT. USE LOW LIFT GROUTING TECHNIQUES. LIMIT GROUT POURS TO 5 FEET VERTICAL HEIGHT.
9. FOR ALL OPENINGS 4'-0" OR LESS IN MASONRY WALLS NOT OTHERWISE SHOWN USE AN 8 INCH DEEP BOND BEAM REINFORCED WITH 1- #5 BARS. FOR ALL OPENINGS GREATER THAN 4'-0" USE A 16" DEEP BOND BEAM REINFORCED WITH 2- #5 BARS.
10. SPECIAL INSPECTIONS AND TESTS OF MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE QUALITY ASSURANCE PROGRAM OF TMS 402/ACI 530/ASCE 5 AND TMS 602/ACI 530/ASCE 6 TABLE 3.1.2 - LEVEL B QUALITY ASSURANCE.

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1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	GMG
DRAWN BY:	GMG
CHECKED BY:	JAU
DATE:	JANUARY 05, 2021

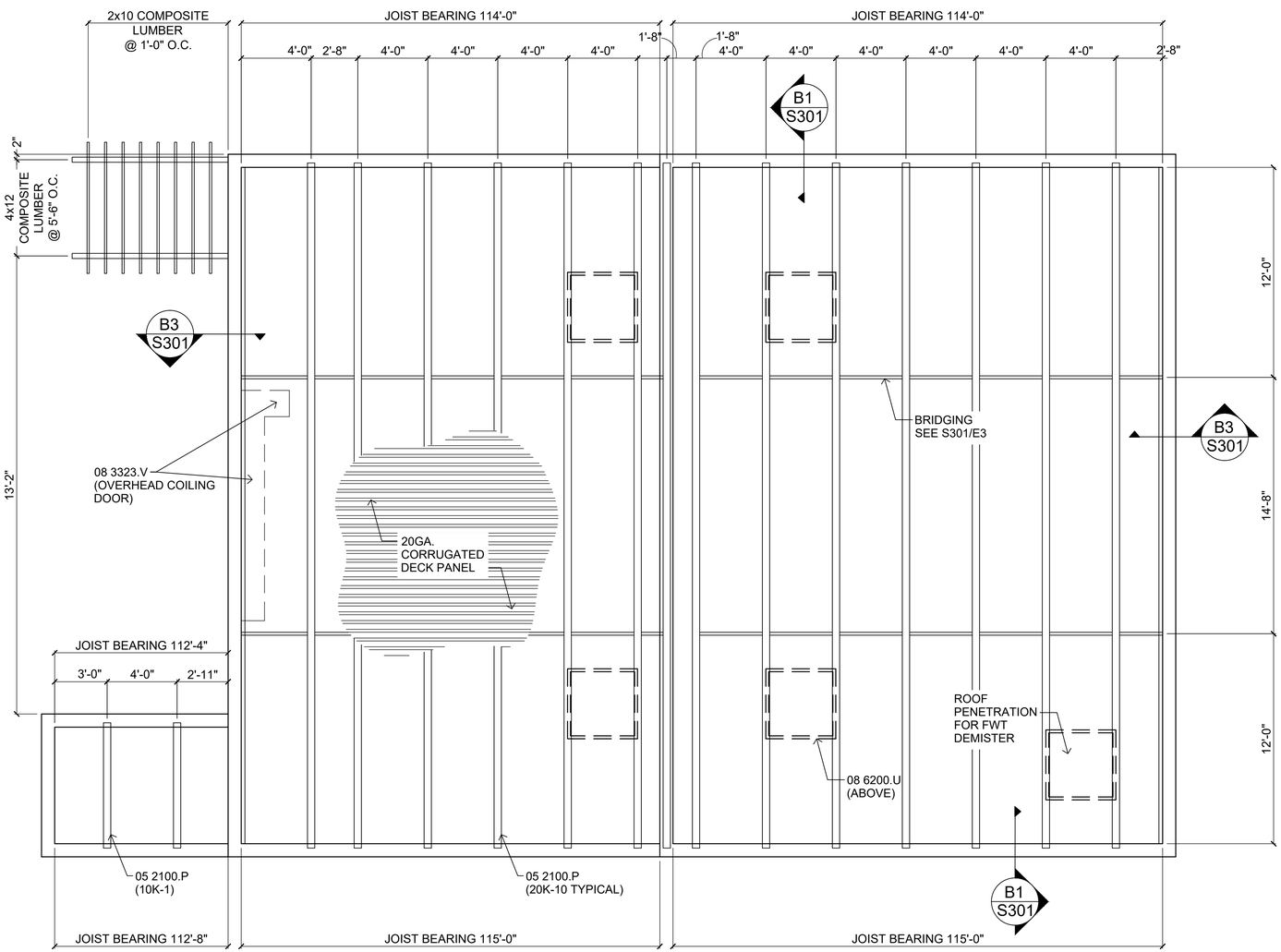
SHEET TITLE

FOUNDATION PLAN

SHEET NO:

S-101

1/6/2021



C2 ROOF FRAMING PLAN

1/4"=1'-0"

0 1 2 4 8

PLAN NORTH

NORTH

GENERAL SHEET NOTES

1. SEE S0391 ANS A–301 FOR WALL DETAILS
2. SEE SHEET A–501 FOR ROOF DETAILS

REFERENCE KEYNOTES

05 2100.P	OPEN WEB JOIST
08 6200.U	TAPERED INSULATION BOARD

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1/5/2021

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PROJECT NO:	16-600-204-00
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DRAWN BY:	GMG
CHECKED BY:	JAU
DATE:	JANUARY 05, 2021

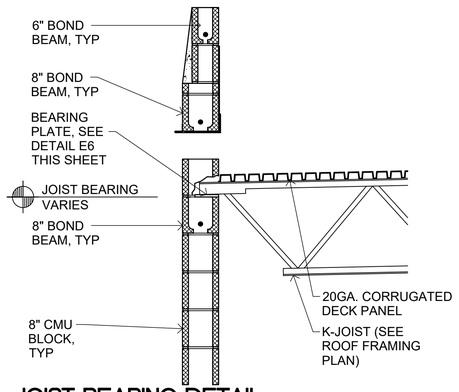
SHEET TITLE

ROOF FRAMING PLAN

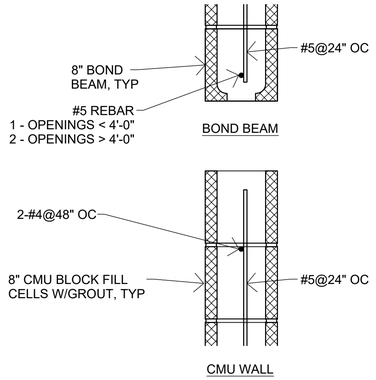
SHEET NO:

S-102

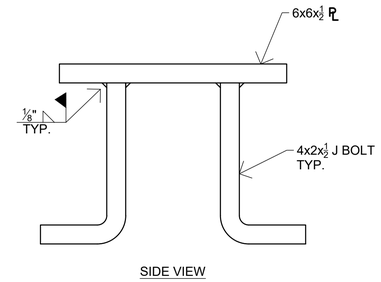
1/6/2021

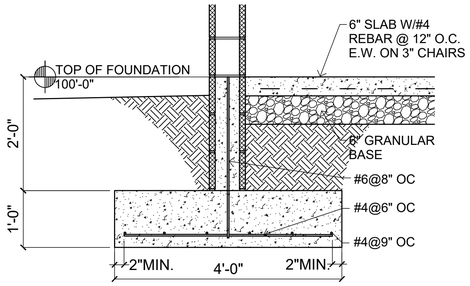


F1 **JOIST BEARING DETAIL**
3/4"=1'-0"

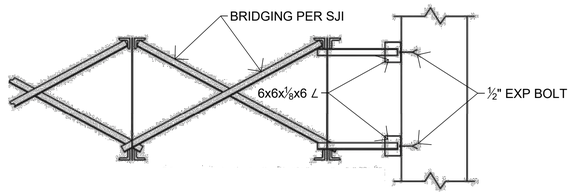


F3 **CMU REINFORCEMENT DETAIL**
1 1/2"=1'-0"



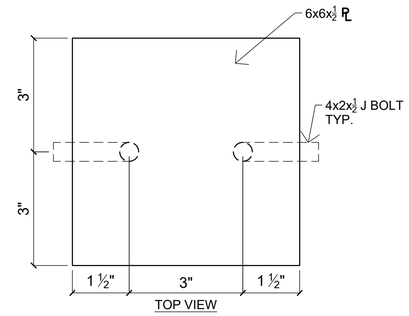


E1 **FOOTING DETAIL**
3/4"=1'-0"

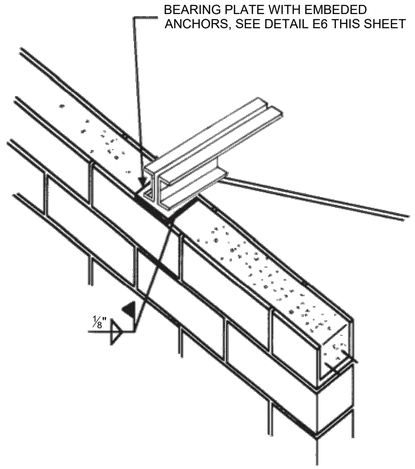


- HORIZONTAL BRIDGING SHALL BE USED IN SPACE ADJACENT TO THE WALL TO ALLOW FOR PROPER DEFLECTION OF THE JOIST NEAREST WALL.

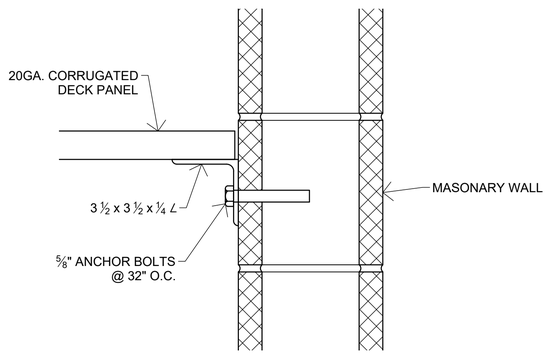
E3 **HORIZONTAL BRIDGING DETAIL**
N.T.S.



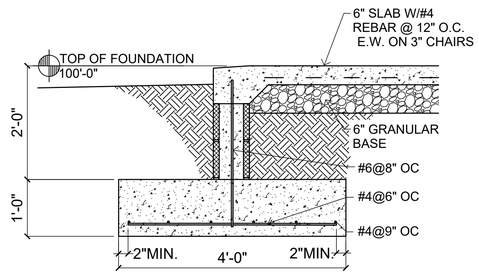
E6 **BEARING PLATE DETAIL**
6"=1'-0"



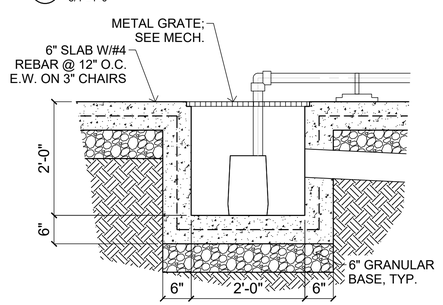
B1 **JOIST BEARING DETAIL**
N.T.S.



B3 **BEARING ANGLE DETAIL**
3" = 1'-0"



B6 **FOOTING DETAIL**
3/4"=1'-0"



A6 **SUMP DETAIL**
3/4"=1'-0"

GENERAL SHEET NOTES

1. ELEVATIONS INDICATED (i.e. XXX'–X") ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'–0" – REFER TO CIVIL DRAWINGS AND DRAINAGE PLANS FOR ACTUAL CONTROL DATUM AND BENCHMARK INFORMATION.
2. BOND BEAMS OVER WALL OPENINGS ARE TO EXTEND 2'–8" BEYOND OPENING ON EACH SIDE, TYP.
3. MAINTAIN 2" CLEARANCE AROUND ALL SIDES OF REINFORCING BARS.

REFERENCE KEYNOTES

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1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	GMG
DRAWN BY:	GMG
CHECKED BY:	JAU
DATE:	JANUARY 05, 2021

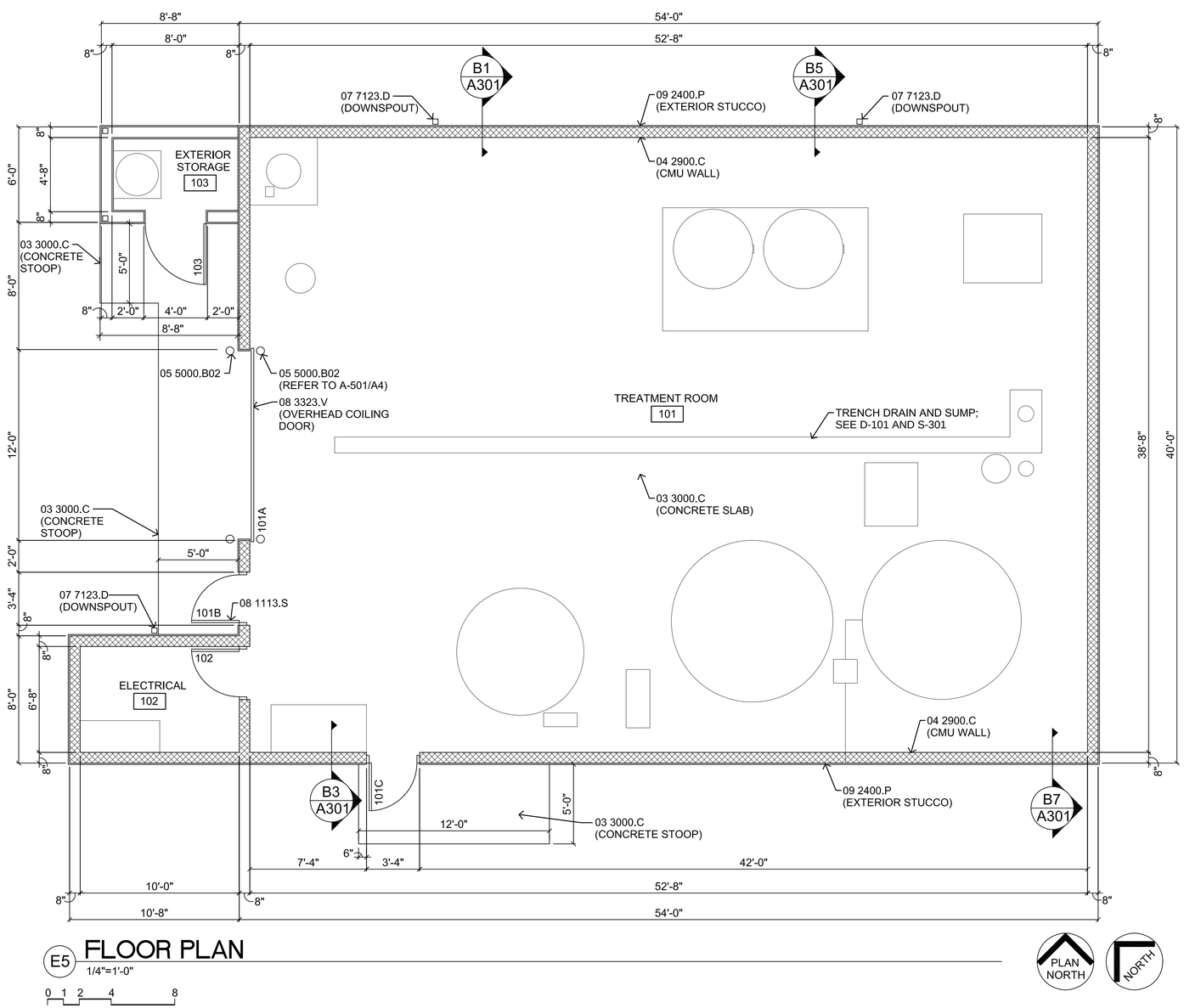
SHEET TITLE

STRUCTURAL DETAILS

SHEET NO:

S-301

1/6/2021



E5 **FLOOR PLAN**
1/4"=1'-0"

0 1 2 4 8

PLAN NORTH

NORTH

GENERAL SHEET NOTES

1. DIMENSIONS ARE FROM FACE OF CMU.
2. SEE SHEET A-601 FOR DOOR SCHEDULE.
3. SEE SHEET A-601 FOR ROOM FINISH SCHEDULE.
4. SEE SHEET P-102 FOR LOCATION OF FLOOR DRAINS.

REFERENCE KEYNOTES

03 3000.C	CONCRETE
04 2900.C	CONCRETE MASONRY UNIT WALL
05 5000.B02	BOLLARD
07 7123.D	DOWNSPOUT
08 1113.S	STEEL DOOR
08 3323.V	OVERHEAD COILING DOOR
09 2400.P	PORTLAND CEMENT PLASTER

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NO. 015660
REGISTERED ARCHITECT
1/5/2021

PROJECT NAME

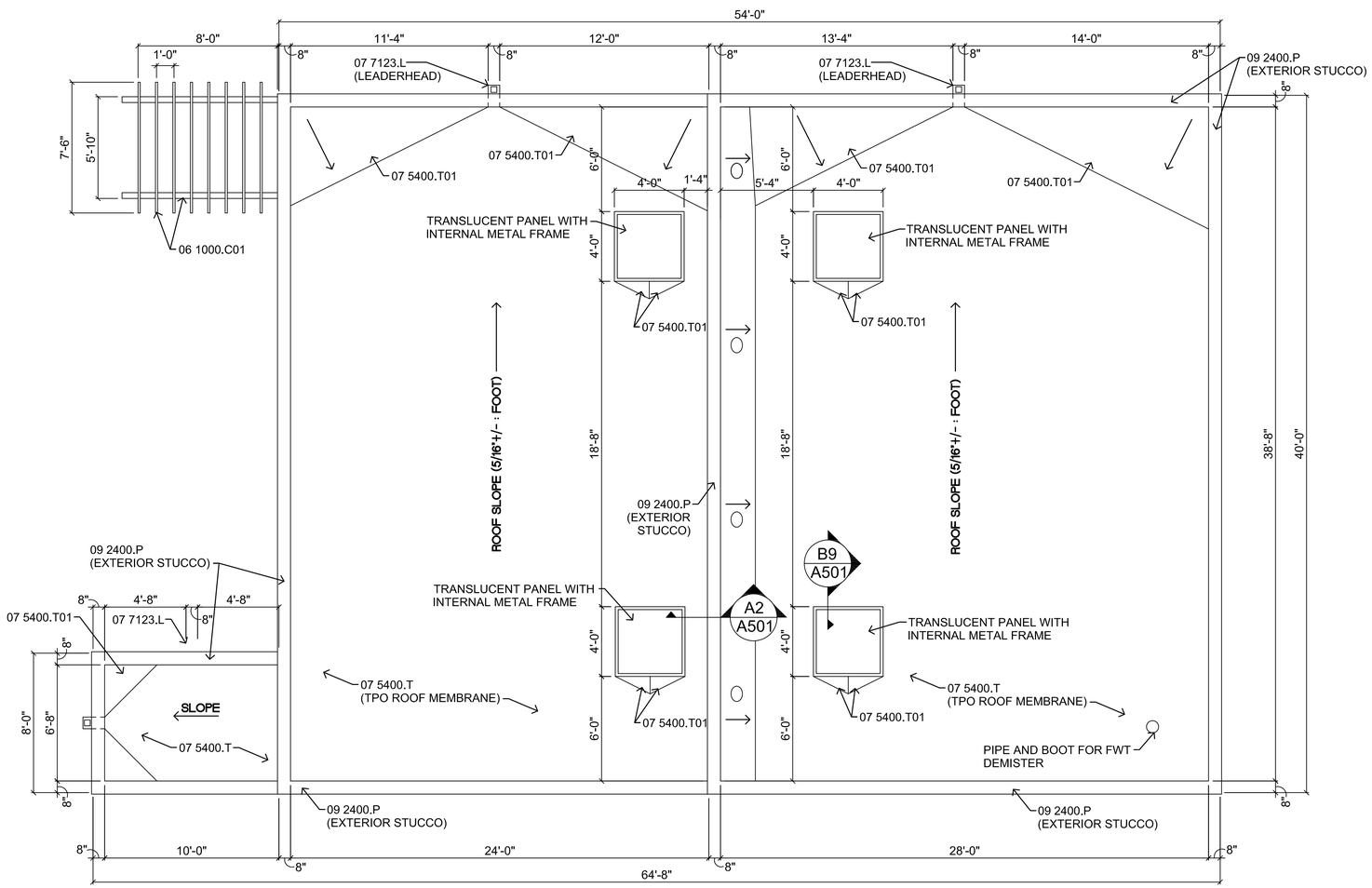
LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE
FLOOR PLAN

SHEET NO:
A-101



E5 ROOF PLAN

1/4"=1'-0"

0 1 2 4 8

PLAN NORTH

NORTH

GENERAL SHEET NOTES

1. SEE SHEET A-501 FOR ROOF DETAILS

REFERENCE KEYNOTES

06 1000.C01	COMPOSITE DIMENSIONAL LUMBER
07 5400.T	TPO MEMBRANE
07 5400.T01	TAPERED INSULATION BOARD
07 7123.L	LEADERHEAD
09 2400.P	PORTLAND CEMENT PLASTER

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CONSULTANTS

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STATE OF NEW MEXICO
TIMOTHY J. RUGG
NO. 005600
REGISTERED ARCHITECT
1/5/2021

PROJECT NAME

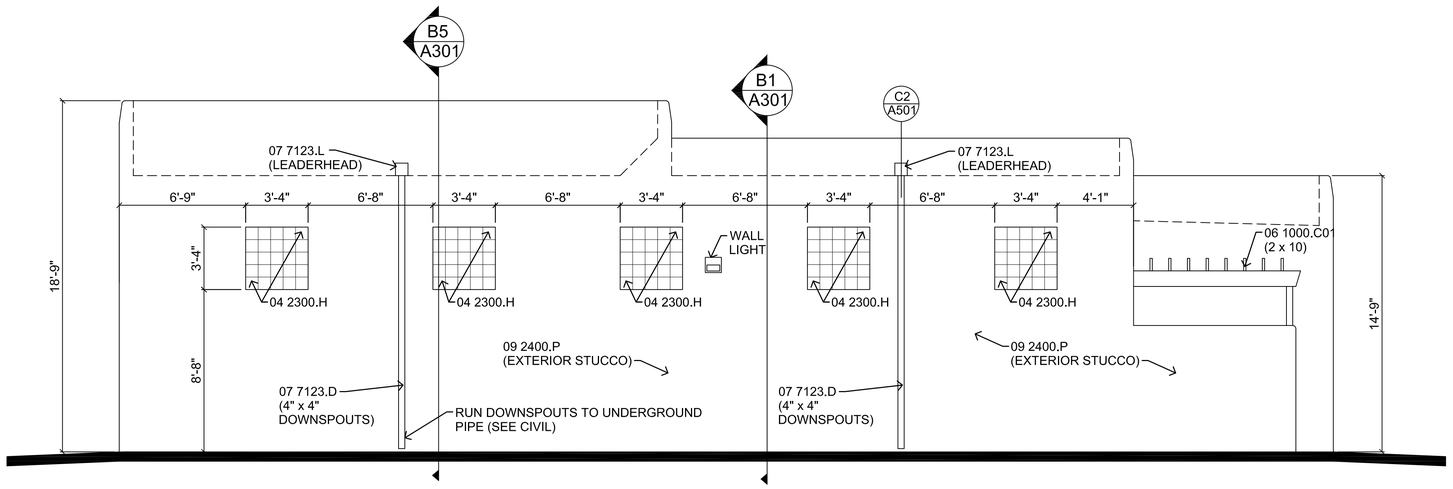
LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE
ROOF PLAN

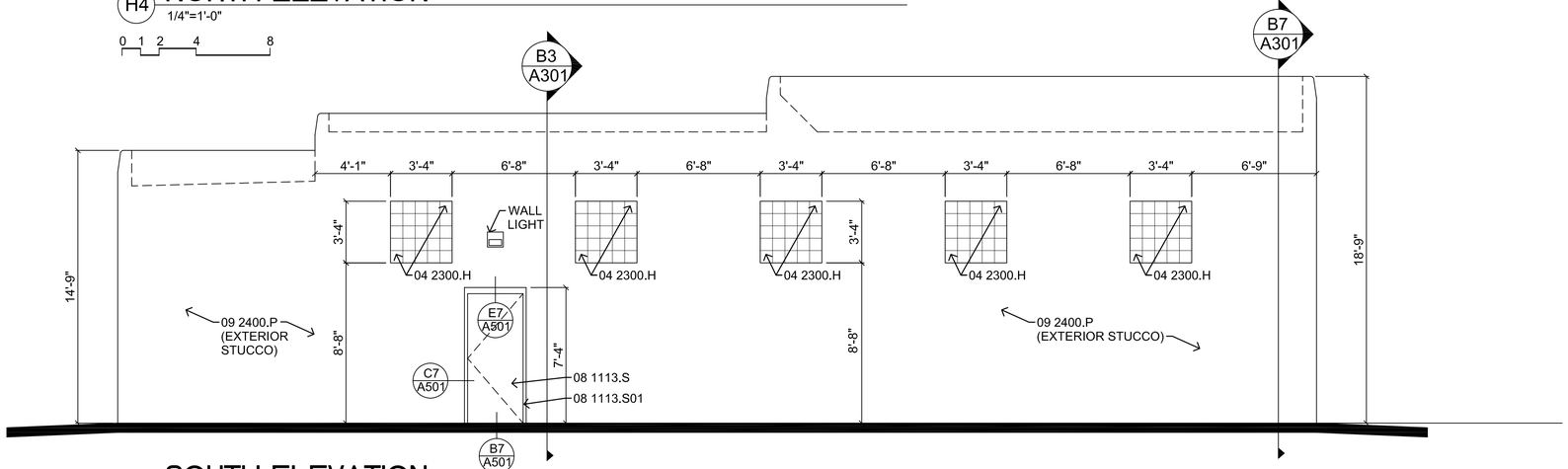
SHEET NO:
A-102



H4 NORTH ELEVATION

1/4"=1'-0"

0 1 2 4 8



F4 SOUTH ELEVATION

1/4"=1'-0"

GENERAL SHEET NOTES

1. ELEVATION INDICATED (i.e. XXX'-X") ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'-0" – REFER TO CIVIL DRAWINGS AND DRAINAGE PLANS FOR ACTUAL CONTROL DATUM AND BENCHMARK INFORMATION
2. SEE SHEET A-601 FOR DOOR SCHEDULE
3. SEE SHEET A-601 FOR ROOM FINISH SCHEDULE

REFERENCE KEYNOTES

03 3000.C	CONCRETE
04 2300.H	HOLLOW GLASS UNITS
06 1000.C01	COMPOSITE DIMENSION LUMBER
07 7123.D	DOWNSPOUT
07 7123.L	LEADERHEAD
08 1113.S	STEEL DOOR
08 1113.S01	STEEL FRAME
09 2400.P	PORTLAND CEMENT PLASTER

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CONSULTANTS

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TIMOTHY J. RUGG
NO. 005669
REGISTERED ARCHITECT
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

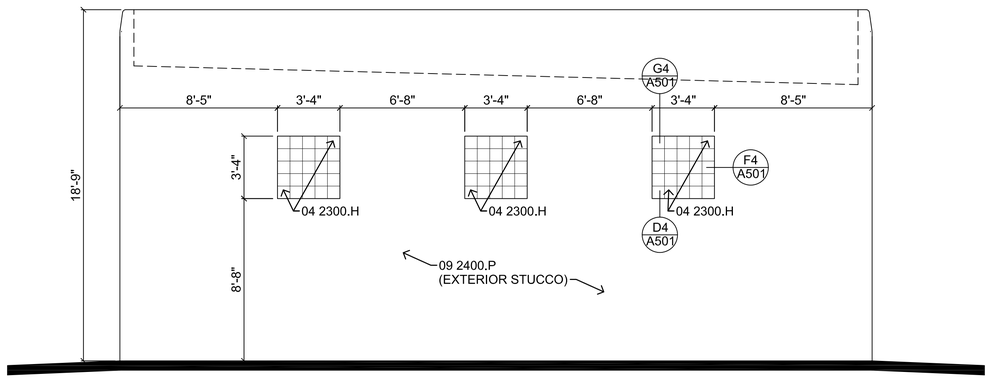
PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE

EXTERIOR
ELEVATIONS

SHEET NO:

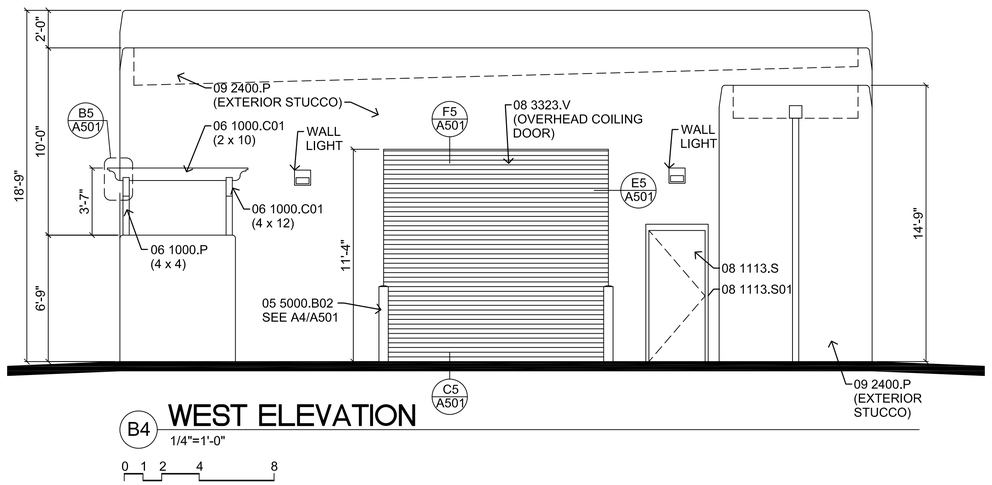
A-201



D4 EAST ELEVATION

1/4"=1'-0"

0 1 2 4 8



B4 WEST ELEVATION

1/4"=1'-0"

0 1 2 4 8

GENERAL SHEET NOTES

1. ELEVATION INDICATED (i.e. XXX'-X") ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'-0" – REFER TO CIVIL DRAWINGS AND DRAINAGE PLANS FOR ACTUAL CONTROL DATUM AND BENCHMARK INFORMATION
2. SEE SHEET A-601 FOR DOOR SCHEDULE
3. SEE SHEET A-601 FOR ROOM FINISH SCHEDULE

REFERENCE KEYNOTES

03 3000.C	CONCRETE
04 2300.H	HOLLOW GLASS UNITS
05 5000.B02	BOLLARD
06 1000.P	PRESSURE TREATED DIMENSION LUMBER
07 7123.D	DOWNSPOUT
07 7123.L	LEADERHEAD
08 1113.S	STEEL DOOR
08 1113.S01	STEEL FRAME
08 3323.V	OVERHEAD COILING DOOR
09 2400.P	PORTLAND CEMENT PLASTER

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TIMOTHY J. RUGG
NO. 005660
REGISTERED ARCHITECT
1/5/2021

PROJECT NAME

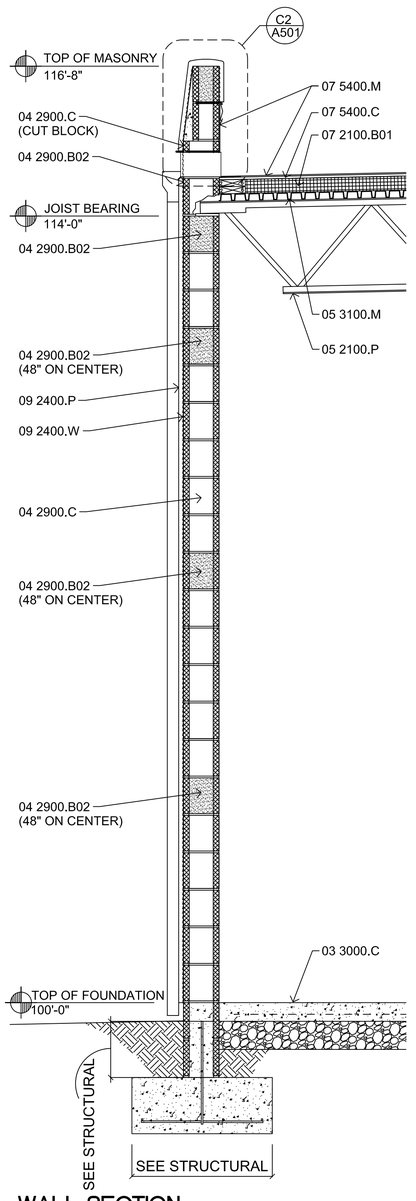
LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

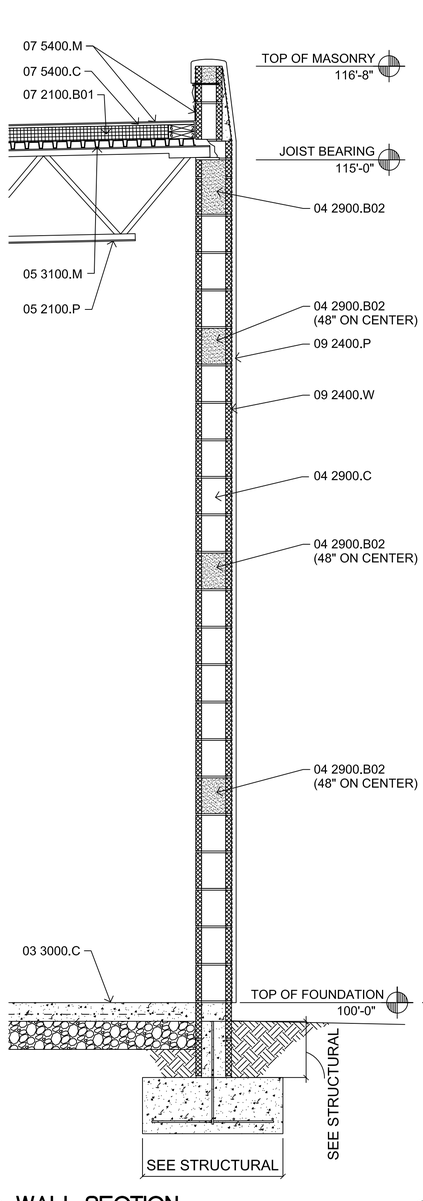
PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE
EXTERIOR
ELEVATIONS

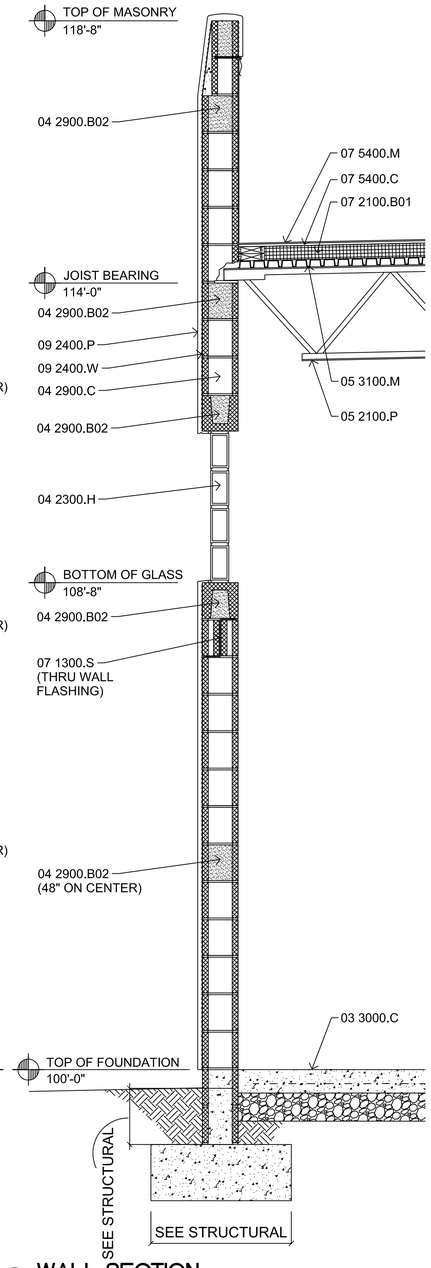
SHEET NO:
A-202



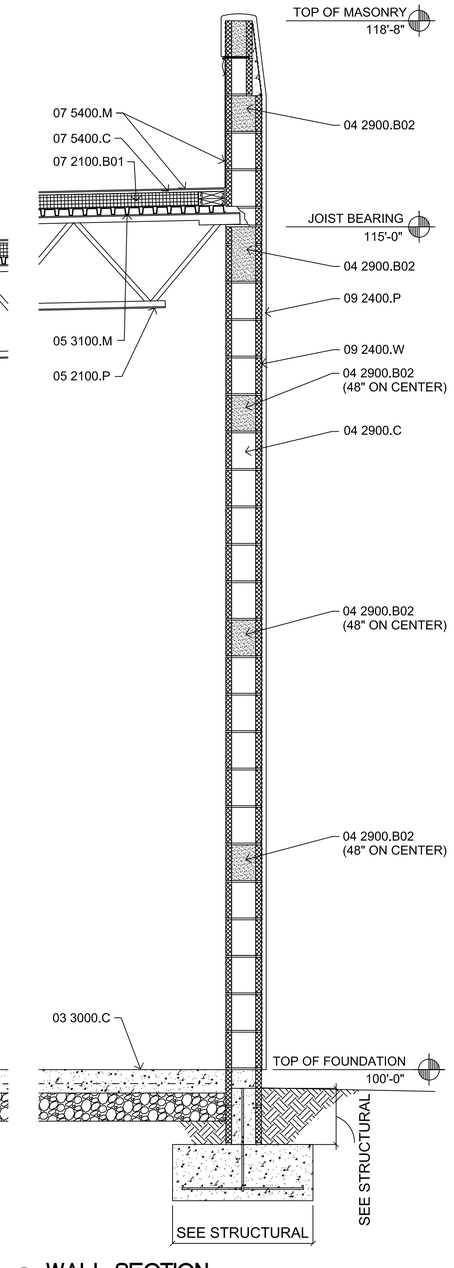
B1 WALL SECTION
3/4"=1'-0"



B3 WALL SECTION
3/4"=1'-0"



B5 WALL SECTION
3/4"=1'-0"



B7 WALL SECTION
3/4"=1'-0"

GENERAL SHEET NOTES

1. ELEVATIONS INDICATED (i.e. XXX'-X") ARE BASED ON A FINISHED FLOOR ELEVATION OF 100'-0" – REFER TO CIVIL DRAWINGS AND DRAINAGE PLANS FOR ACTUAL CONTROL DATUM AND BENCHMARK INFORMATION.
2. REFER TO STRUCTURAL FOR FOUNDATION AND REINFORCING INFORMATION.

REFERENCE KEYNOTES

03 2000.R	REINFORCING STEEL
03 2000.R01	REINFORCING STEEL DOWEL
03 3000.C	CAST IN PLACE CONCRETE
03 3000.J	JOINT FILLER
04 2300.H	HOLLOW GLASS UNITS
04 2300.M	MORTOR
04 2900.B01	BOND BEAM
04 2900.C	CONCRETE MASONRY UNIT
04 2900.G	GROUT
05 2100.P	OPEN WEB JOIST
05 3100.M	METAL FORM DECK
05 4000.S	STEEL STUD
05 5000.B02	BOLLARD
06 1000.G	GLASS MAT FACED GYPSUM SHEATHING
07 1300.S	SHEET WATERPROOFING
07 2100.B01	BOARD INSULATION
07 5400.C	COVER BOARD
07 5400.M	MEMBRANE ADHESIVE
07 5400.T	TPO MEMBRANE
07 5400.T03	TPO COATED METAL
07 5400.T04	THRU WALL SCUPPER
07 6200.C03	COUNTER FLASHING
07 6200.S02	STUCCO TYPE REGLET FLASHING
07 7123.D	DOWNSPOUT
07 7123.G	GUTTER
07 9200.J	JOINT SEALANT
09 2400.F	FINISH COAT
09 2400.M	MESH REINFORCING
09 2400.W	WATER RESISTIVE BARRIER BASE COAT
31 2200.F	FINISH GRADE

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CONSULTANTS

SEAL
STATE OF NEW MEXICO
TIMOTHY J. RUGG
NO. 005600
REGISTERED ARCHITECT
1/5/2021

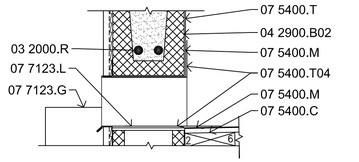
PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE
WALL SECTIONS

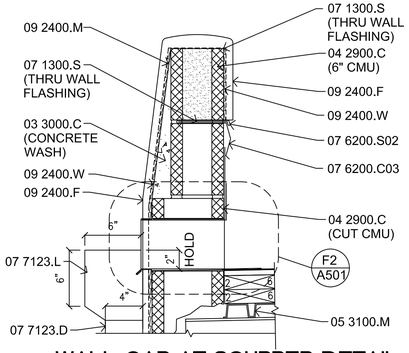
SHEET NO:
A-301



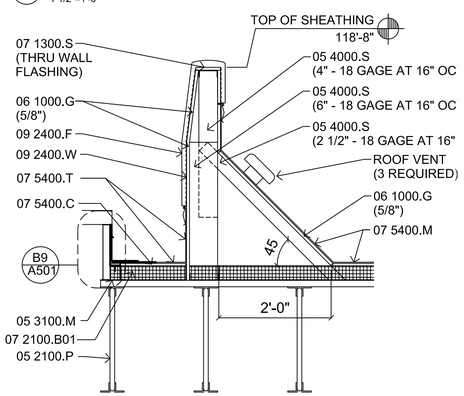
F2 THRU-WALL SCUPPER DETAIL
1 1/2"=1'-0"

G4 GLASS BLOCK HEAD DETAIL
1 1/2"=1'-0"

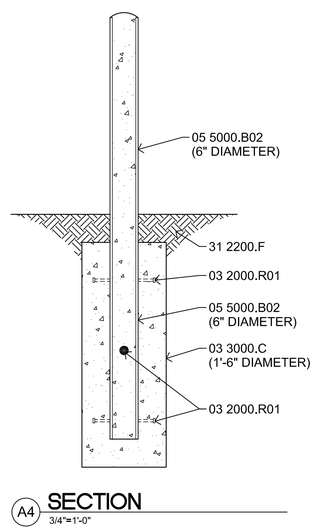
F4 GLASS BLOCK JAMB DETAIL
1 1/2"=1'-0"



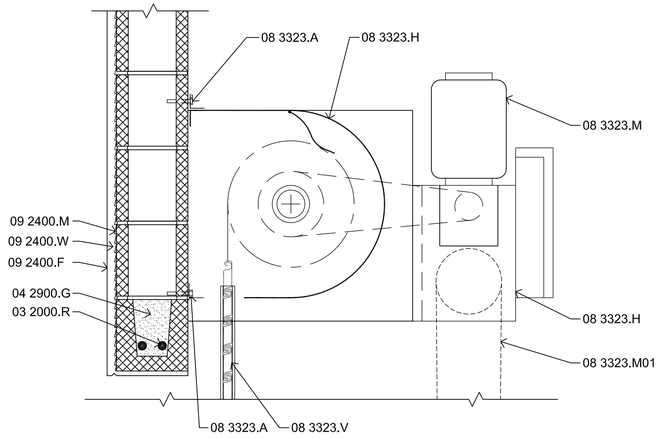
C2 WALL CAP AT SCUPPER DETAIL
1 1/2"=1'-0"



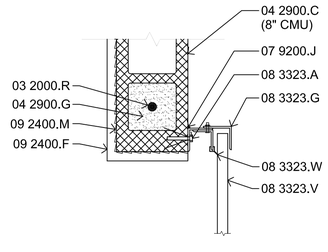
A2 WALL SECTION
3/4"=1'-0"



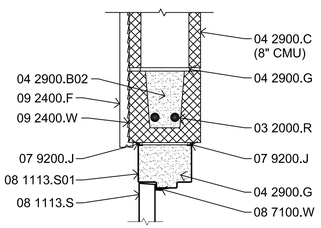
A4 SECTION
3/4"=1'-0"



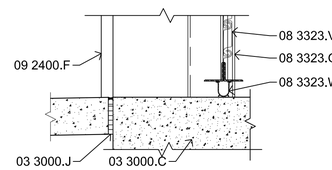
F5 OHC DOOR HEAD DETAIL
1 1/2"=1'-0"



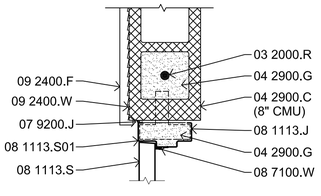
E5 OHC DOOR JAMB DETAIL
1 1/2"=1'-0"



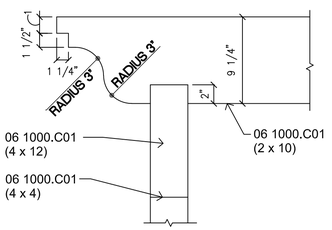
E7 DOOR HEAD DETAIL
1 1/2"=1'-0"



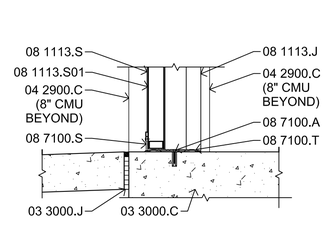
C5 OHC DOOR SILL DETAIL
1 1/2"=1'-0"



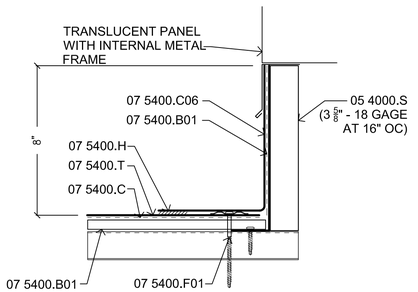
C7 DOOR JAMB DETAIL
1 1/2"=1'-0"



B5 PERGULA DETAIL
1 1/2"=1'-0"



B7 DOOR SILL DETAIL
1 1/2"=1'-0"



B9 SKYLIGHT CURB DETAIL
3"=1'-0"

REFERENCE KEYNOTES

03 2000.R	REINFORCING STEEL
03 2000.R01	REINFORCING STEEL DOWEL (HAS)
03 3000.C	CAST IN PLACE CONCRETE
03 3000.J	JOINT FILLER
04 2300.H	HOLLOW GLASS UNITS
04 2300.M	MORTOR
04 2900.B02	BOND BEAM
04 2900.C	CONCRETE MASONRY UNIT
04 2900.G	GROUT
05 5000.B02	BOLLARD
06 1000.G	GLASS MAT FACED GYPSUM SHEATHING
06 1000.C01	COMPOSITE DIMENSIONAL LUMBER
07 1300.S	SHEET WATERPROOFING
07 2100.B01	BOARD INSULATION
07 5400.C	COVER BOARD
07 5400.C06	CURB FLASHING
07 5400.F01	FASTENER
07 5400.H	HOT AIR WELD
07 5400.M	MEMBRANE ADHESIVE
07 5400.T	TPO MEMBRANE
07 5400.T04	THRU WALL SCUPPER
07 6200.C03	COUNTER FLASHING
07 6200.S02	STUCCO TYPE REGLET FLASHING
07 7123.D	DOWNSPOUT
07 7123.G	GUTTER
07 7123.L	LEADERHEAD
07 9200.J	JOINT SEALANT
08 1113.J	DOOR JAMB
08 1113.S	HOLLOW METAL FRAME
08 1113.S01	HOLLOW METAL DOOR
08 3323.A	ANCHOR
08 3323.G	GUIDE RAIL
08 3323.H	HOOD ENCLOSURE
08 3323.M	MOTOR ENCLOSURE
08 3323.M01	MANUAL HAND CHAIN
08 3323.W	WEATHER STRIP
08 3323.V	OVERHEAD COILING DOOR
08 6200.U	UNIT SKYLIGHT
08 7100.A	ANCHOR
08 7100.S	DOOR SWEEP
08 7100.T	THRESHOLD
08 7100.W	WEATHERSTRIPPING
09 2400.F	FINISH COAT
09 2400.M	MESH REINFORCING
09 2400.W	WATER RESISTIVE BARRIER BASE COAT
31 2200.F	FINISH GRADE

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STATE OF NEW MEXICO
TIMOTHY J. RUGG
NO. 005669
REGISTERED ARCHITECT
1/5/2021

PROJECT NAME
LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

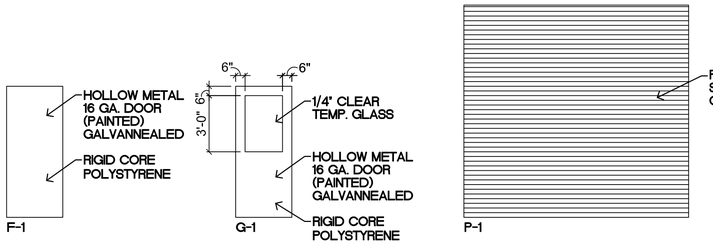
PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE
WALL SECTIONS
AND DETAILS

SHEET NO:
A-501

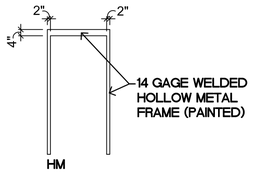
DOOR SCHEDULE

NO.	SIZE (w x h x t)	DOOR	FRAME	HARDWARE	REMARKS
101A	12'-0" x 11'-4"	P-1	CMU	BY SUPPLIER	SEE DETAILS ON A-501
101B	3'-0" x 7'-0" x 1 3/4"	F-1	HM	H-1	
101C	3'-0" x 7'-0" x 1 3/4"	F-1	HM	H-1	
102	3'-0" x 7'-0" x 1 3/4"	G-1	HM	H-2	
103	4'-0" x 6'-0"	GATE	CMU	H-3	



DOOR TYPES

1/4"=1'-0"



FRAMES TYPES

1/4"=1'-0"

ROOM FINISH SCHEDULE

NO.	ROOM NAME	FLOOR	BASE	WALLS	CEILING	CEILING HT.	REMARKS
101	TREATMENT ROOM	SEAL CONC	-	PAINTED CMU	EXPOSED	14'-6"and 16'-6" +/-	CEILING HEIGHT VARIES
102	ELECTRICAL	SEAL CONC	-	PAINTED CMU	EXPOSED	12'-6" +/-	CEILING HEIGHT VARIES
103	EXTERIOR STORAGE	SEAL CONC	-	STUCCO	PAINTED WOOD		

SEAL CONC — SEALED CONCRETE FLOOR WITH TWO COAT OF NON-SLIP WHEN WET FINISH, TO BE APPROVED BY OWNER
PAINTED CMU — PRIME AND PAINTED CONCRETE MASONRY UNITS WALL
EXPOSED — EXPOSED STEEL DECK AND STEEL BAR JOIST
SKYLIGHT — 4'-0" X 4'-0" KALWALL SKYLIGHT; OR EQUAL.
STUCCO — COLOR/ TYPE SELECTED BY OWNER.

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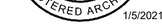


1/5/2021

PROJECT NAME

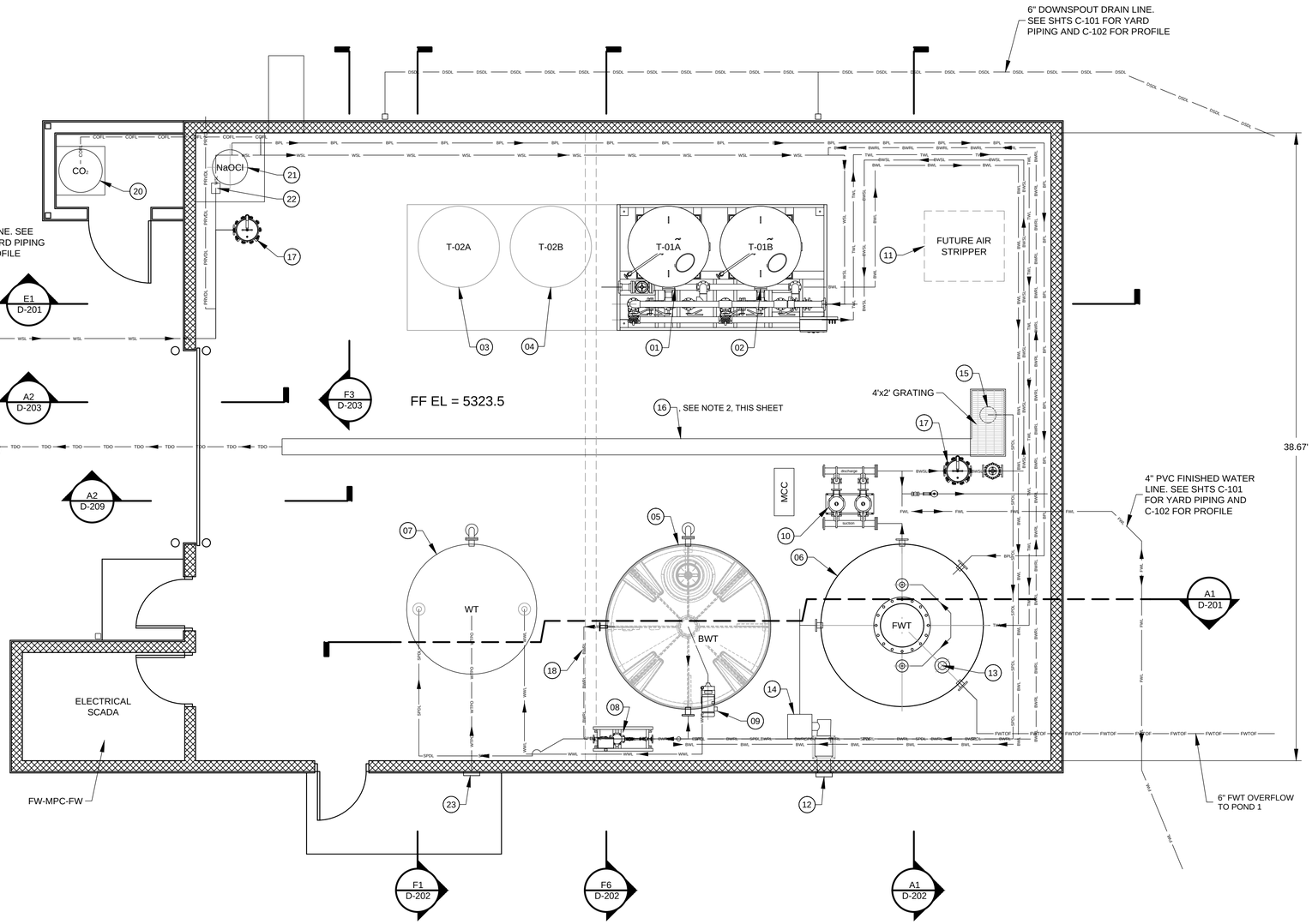
LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	TJR
DRAWN BY:	RLM
CHECKED BY:	FHM
DATE:	JAN 06, 2021

SHEET TITLE
DOOR AND FINISH SCHEDULES

SHEET NO:
A-601



GENERAL NOTES

1. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
2. TRENCH DRAIN SHALL BE A PREFABRICATED SECTIONAL WIDE REVEAL TRENCH DRAIN SYSTEM WITH STAINLESS STEEL EXTRA HEAVY-DUTY FRAME ASSEMBLY, ZURN MODEL Z886-HDS-E6-RFSC, WITH TWO (2) 6" NO-HUB END OUTLETS. GRATING SALL BE REINFORCED SLOTTED STEEL GRATE WITH DIN EN1433 CLASS C LOAD RATING.

A1 BUILDING EQUIPMENT LAYOUT PLAN

SCALE: 1:4

0 2' 4'

1/7/2021

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CONSULTANTS

SEAL

BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

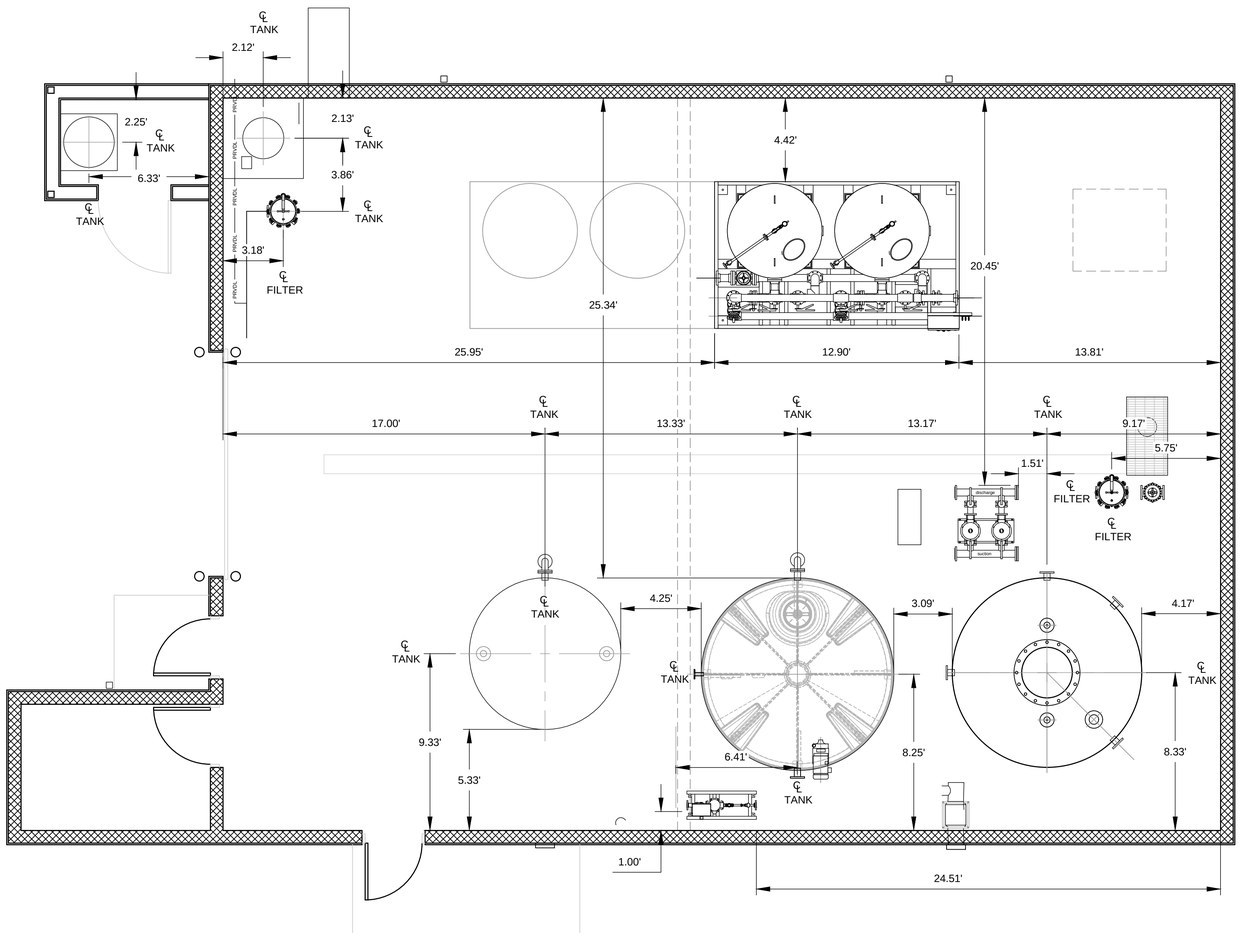
PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

BUILDING EQUIPMENT AND PIPING PLAN

SHEET NO:

D-101



A1 BUILDING EQUIPMENT LAYOUT PLAN

0 2' 4'

GENERAL NOTES

1. ALL SKIDS, EQUIPMENT, AND TANK STANDS ARE TO BE MOUNTED LEVEL, AT LEAST 1" ABOVE FINISHED FLOOR, USING BOLTS, LEVELING NUTS, AND/OR SHIMS AS APPROPRIATE, WITH GROUT UNDERNEATH.

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17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

BUILDING EQUIPMENT LAYOUT

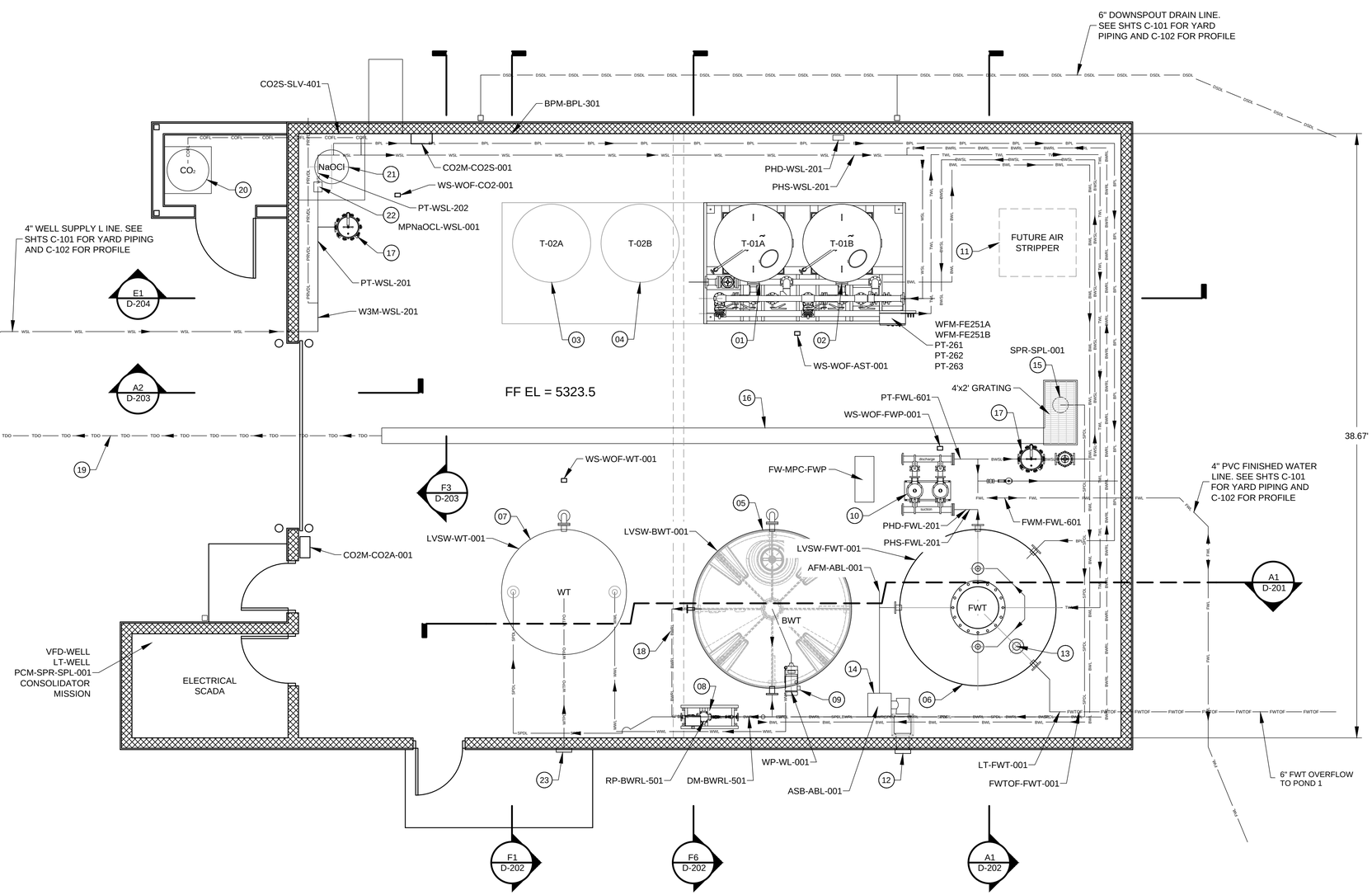
SHEET NO:

D-102

1/7/2021

GENERAL NOTES

1. PIPING SHOWN ON THIS SHEET IS SCHEMATIC.
2. SEE SHEET G-002 FOR PIPE LINE ABBREVIATIONS.
3. SEE SHEET G-606 FOR EQUIPMENT SCHEDULE.



A1 BUILDING ELECTRICAL INSTRUMENTATION LOCATION

0 2' 4'

1/7/2021

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4401 MASTHEAD ST. NE. SUITE 150
ALBUQUERQUE, NM 87109
PHONE: 505-348-4000
FAX: 505-348-4072
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CONSULTANTS

SEAL

BRIAN J. AMBROGI NEW MEXICO 17610 LICENSED PROFESSIONAL ENGINEER 1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

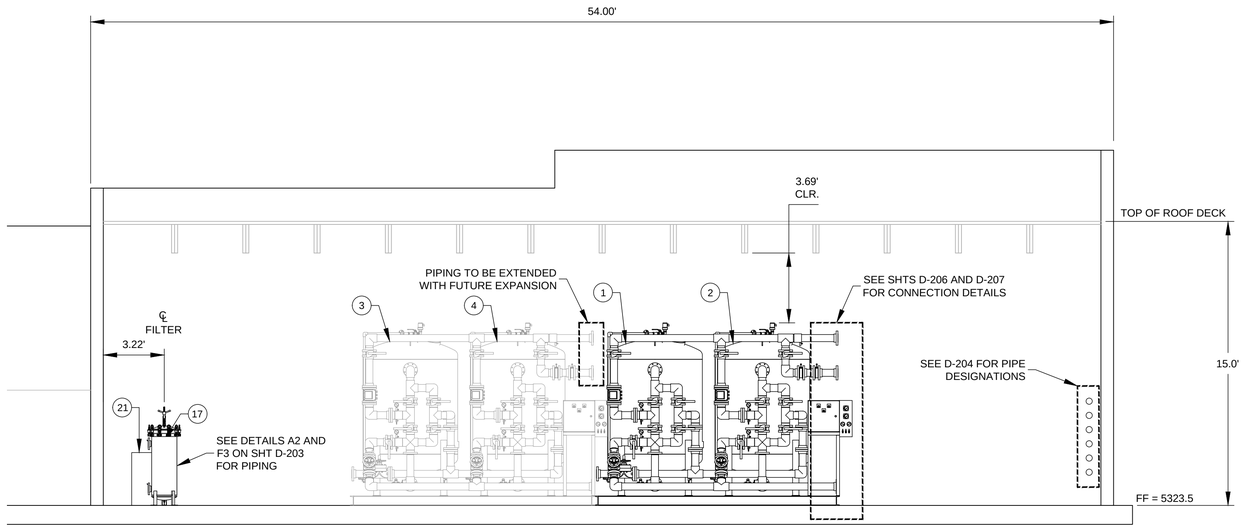
PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

BUILDING ELECTRICAL INSTRUMENTATION LOCATION

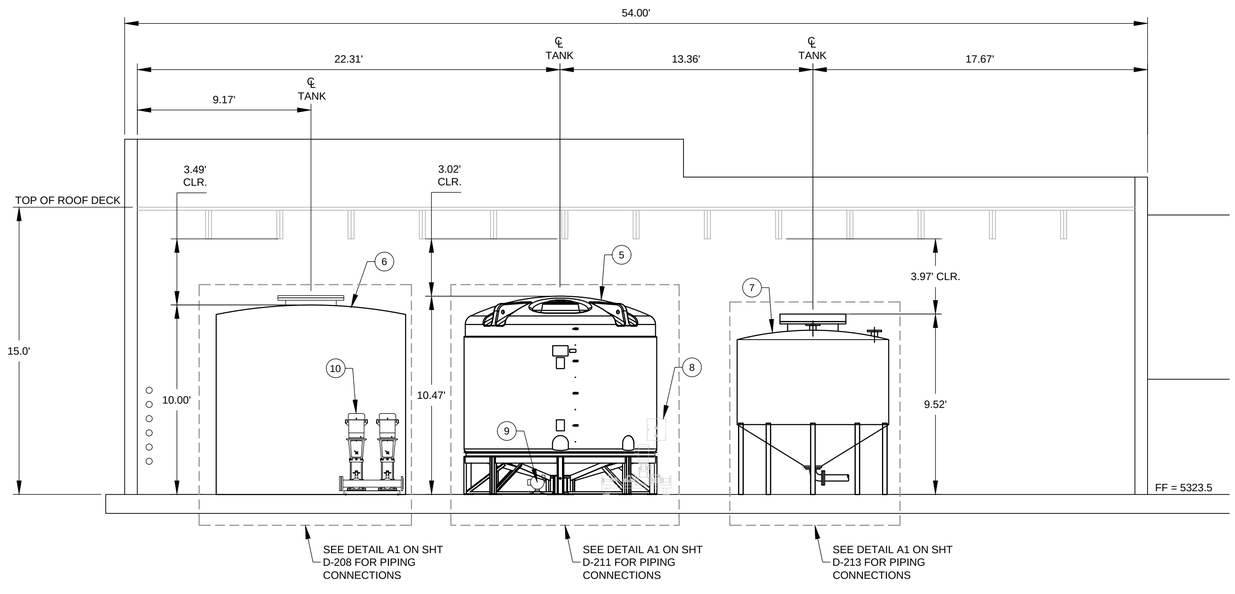
SHEET NO:

D-103



E1 EQUIPMENT SECTION LAYOUT

SCALE: 3" =
1'-0"_XREF



A1 EQUIPMENT SECTION LAYOUT

SCALE: 3" =
1'-0"_XREF

GENERAL NOTES

1. SEE SHEET D-606 FOR EQUIPMENT SCHEDULE.
2. NOT ALL PIPING IS SHOWN, TO IMPROVE CLARITY.

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17610
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1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

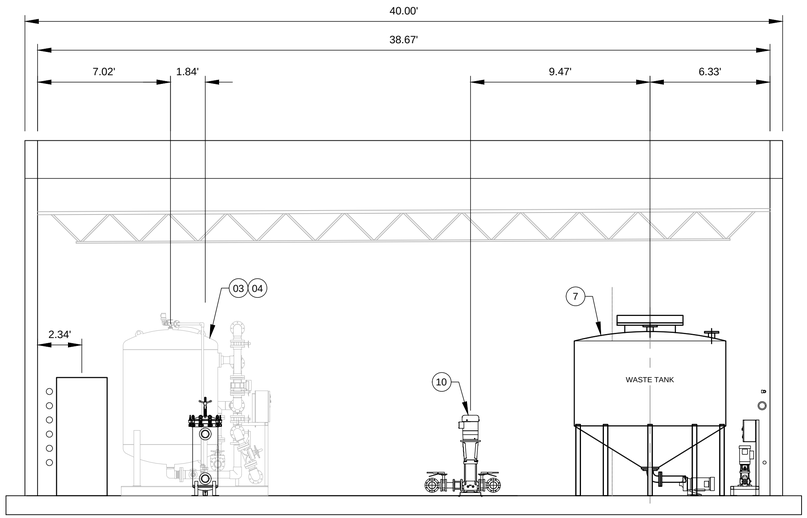
SHEET TITLE

BUILDING PROCESS
EQUIPMENT

SHEET NO:

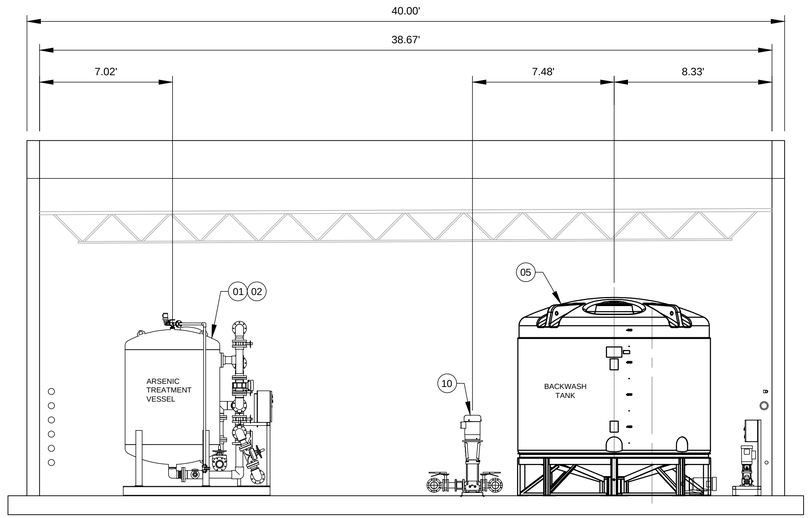
D-201

1/7/2021



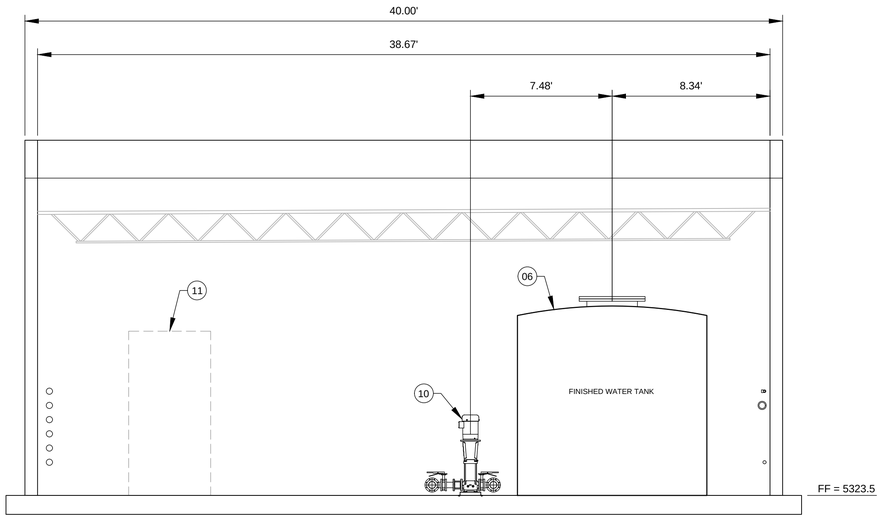
F1 EQUIPMENT SECTION, WT

SCALE: 1:4



F6 EQUIPMENT SECTION, BWT

SCALE: 1:4



A1 EQUIPMENT SECTION, FWT

SCALE: 1:4

GENERAL NOTES

1. SEE SHEET D-606 FOR EQUIPMENT SCHEDULES.
2. NOT ALL PIPING IS SHOWN, TO IMPROVE CLARITY.

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BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

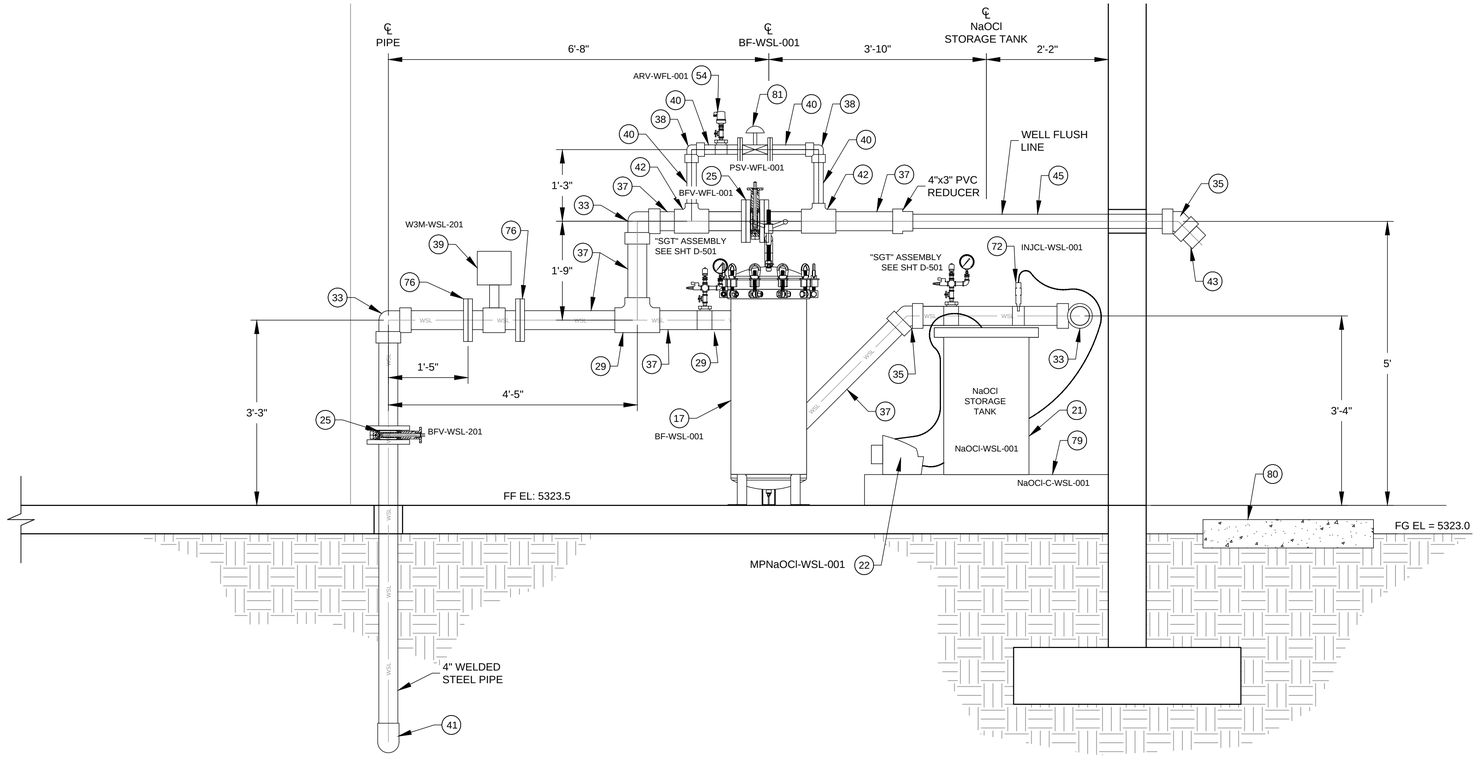
SHEET TITLE

BUILDING PROCESS EQUIPMENT

SHEET NO:

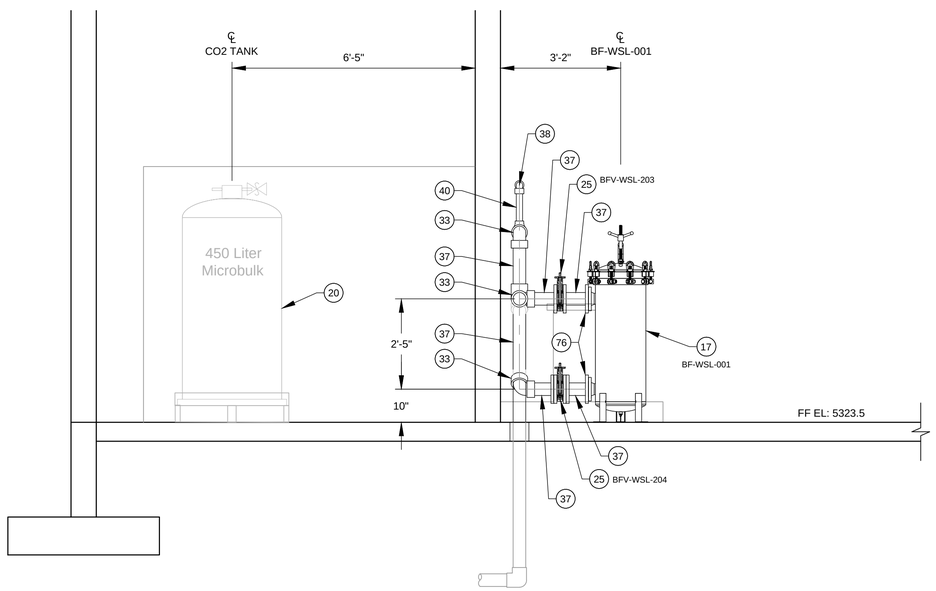
D-202

1/7/2021



F3 NORTHWEST WALL PIPING SECTION - WELL SUPPLY LINE AND FLUSH LINE

SCALE: 3/4" = 1'-0"



A2 WELL SUPPLY LINE AND FLUSH LINE SIDE VIEW

SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
2. CONTRACTOR SHALL ORIENT ALL SENSORS, PROBES, GAUGES, AND SIMILAR MONITORING EQUIPMENT TO BE EASILY ACCESSABLE, REMOVABLE, AND READABLE FROM AN UNOBSTRUCTED PERPENDICULAR LOCATION.

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CONSULTANTS

SEAL

BRIAN J. AMBROGI NEW MEXICO 17610 LICENSED PROFESSIONAL ENGINEER 1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

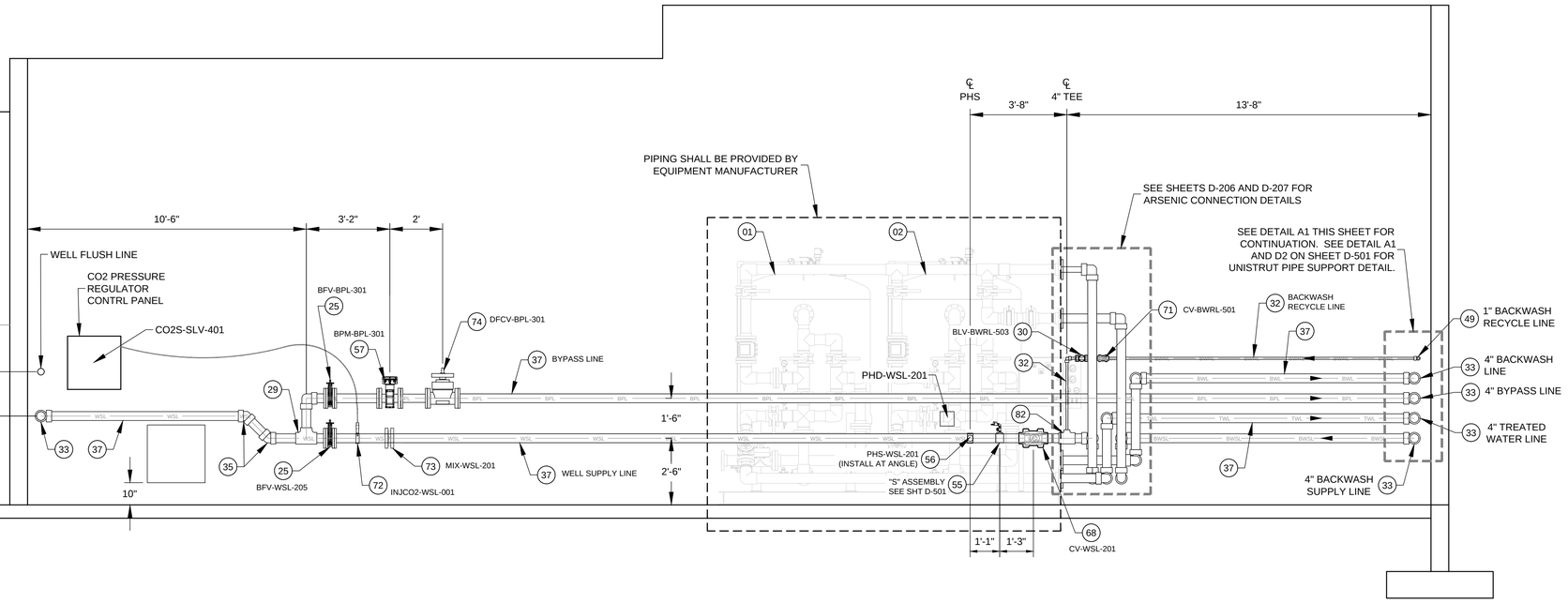
SHEET TITLE

PROCESS PIPING SECTIONS

SHEET NO:

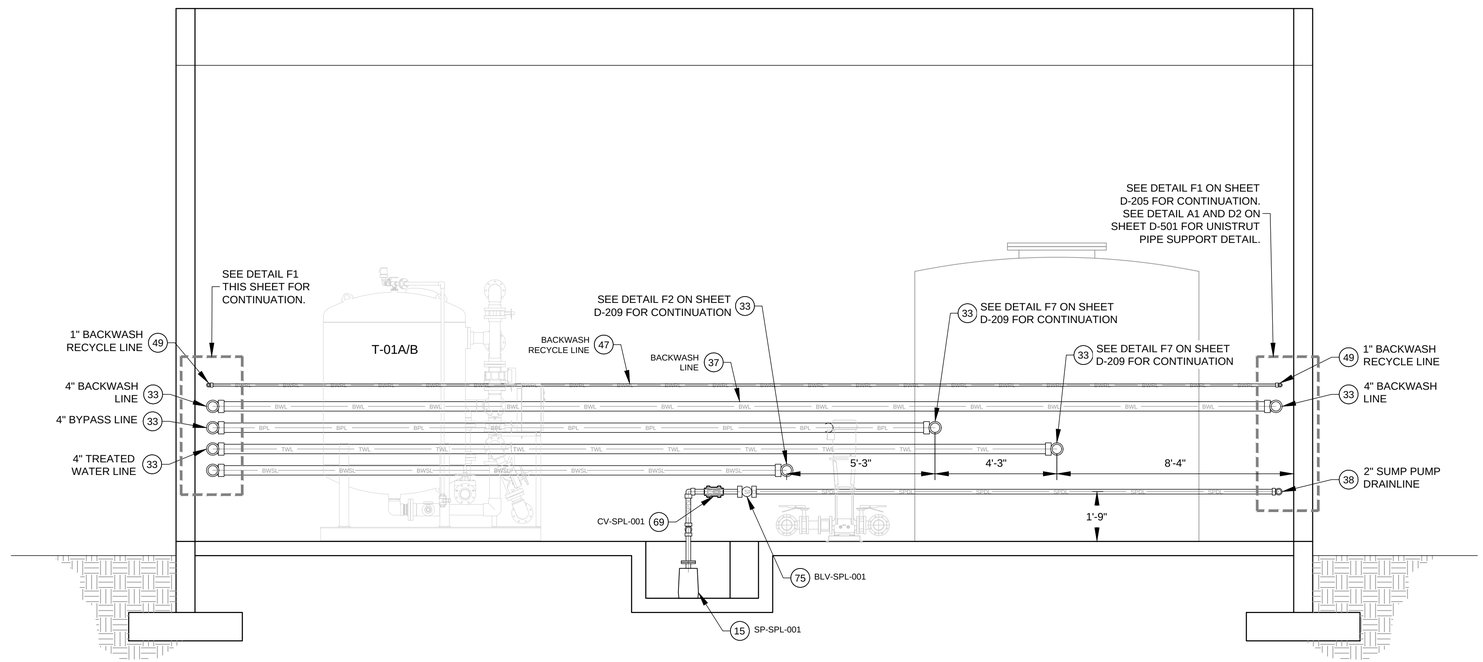
D-203

1/7/2021



F1 NORTHEAST WALL PIPING ELEVATION

SCALE: 3/8" = 1'-0"



A1 SOUTHWEST WALL PIPING SECTION

SCALE: 3/8" = 1'-0"

GENERAL NOTES

1. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
2. CONTRACTOR SHALL ORIENT ALL SENSORS, PROBES, GAUGES, AND SIMILAR MONITORING EQUIPMENT TO BE EASILY ACCESSABLE, REMOVABLE, AND READABLE FROM AN UNOBSTRUCTED PERPENDICULAR LOCATION.

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DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

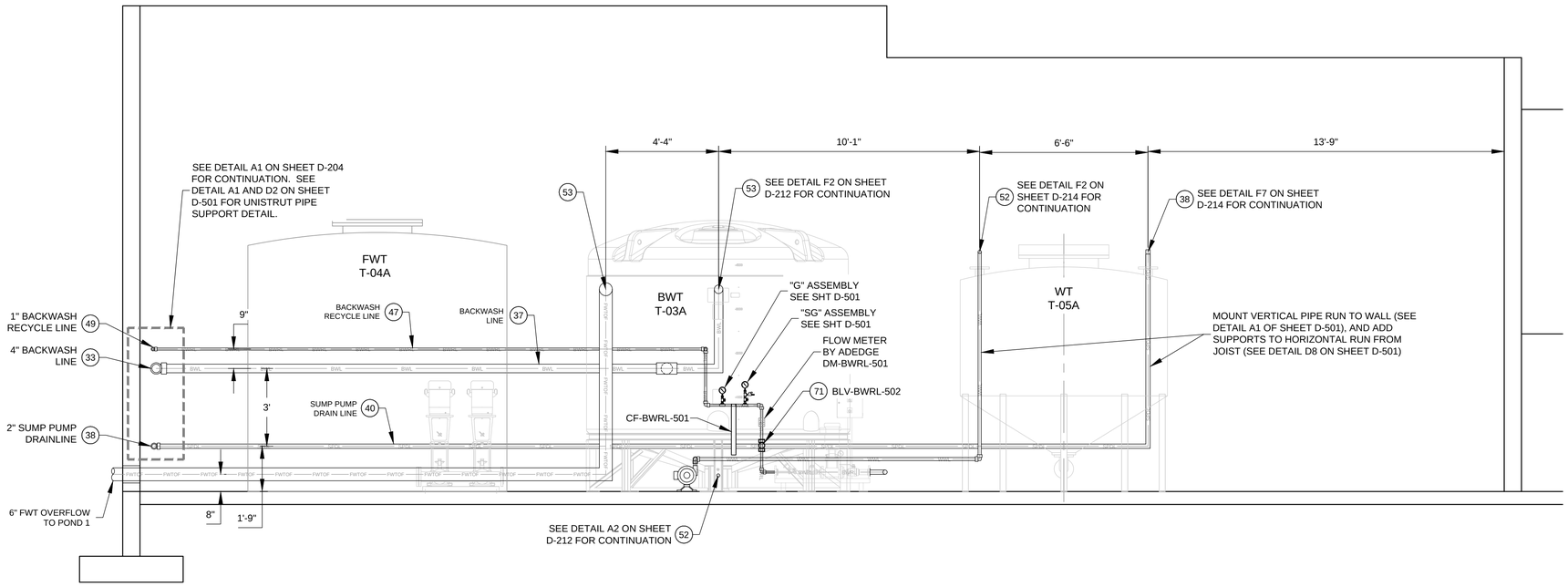
SHEET TITLE

PROCESS PIPING ELEVATIONS

SHEET NO:

D-204

1/7/2021



F1 SOUTHWEST WALL PIPING ELEVATION

SCALE: 3/8" = 1'-0"

GENERAL NOTES

1. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
2. CONTRACTOR SHALL SUPPORT ALL HORIZONTAL PIPE RUNS, WHERE NOT MOUNTED ON WALL, SHALL BE SUPPORTED WITH PIPE SUPPORTS AND PIPE HANGERS AS NECESSARY. VERTICAL PIPE RUNS, WHERE NOT MOUNTED ON WALL, SHALL BE SUPPORTED BY MOUNTING TO TANKS, STRUCTURES, OR UNI-STRUT SUPPORT ANCHOR TO FLOOR AND ROOF JOISTS. PIPE SUPPORTS AND PIPE HANGERS NOT SHOWN FOR CLARITY.

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DATE:	JANUARY 05, 2021

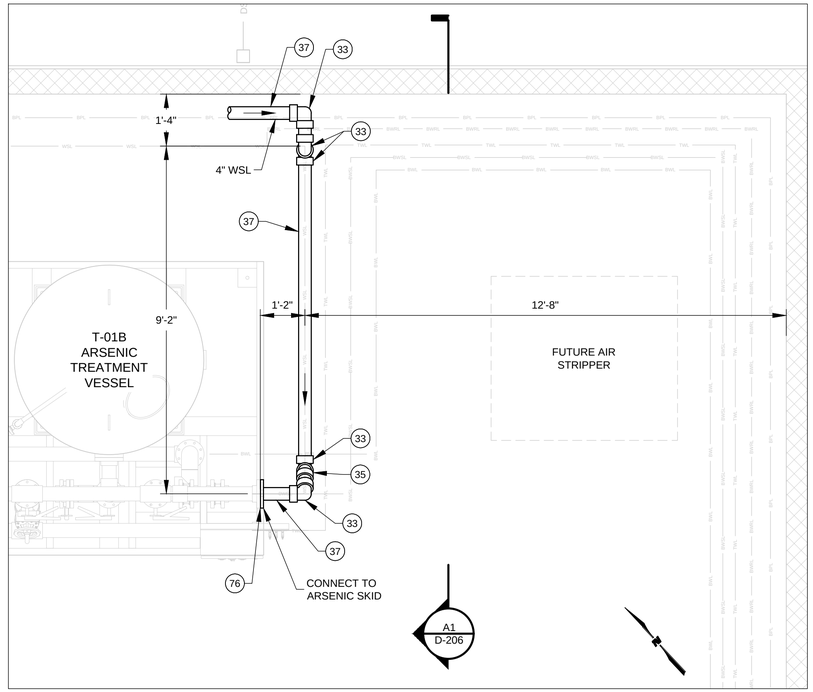
SHEET TITLE

PROCESS PIPING ELEVATIONS

SHEET NO:

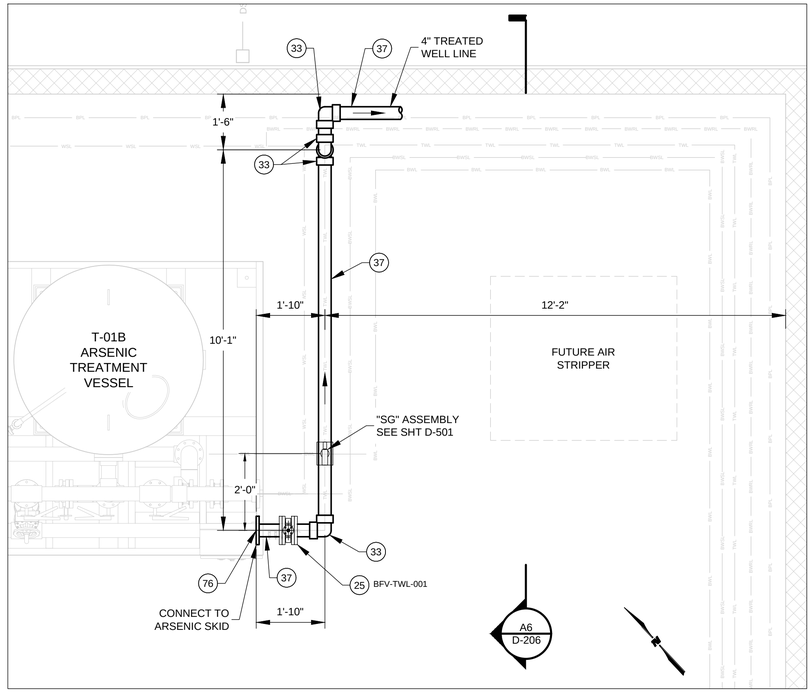
D-205

1/7/2021



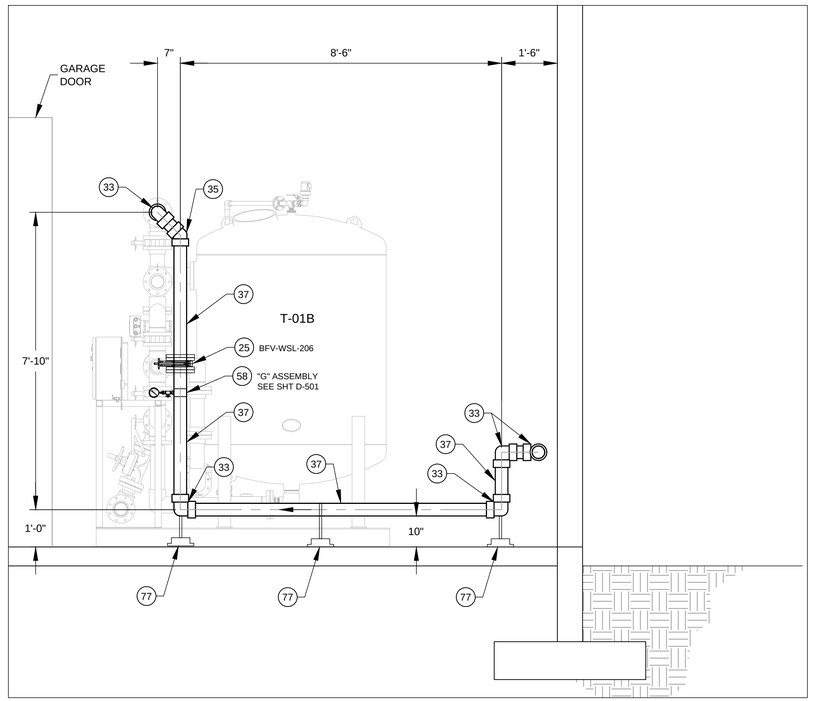
E1 WSL TO T-01A/B PLAN VIEW

SCALE: 1/2" = 1'-0"



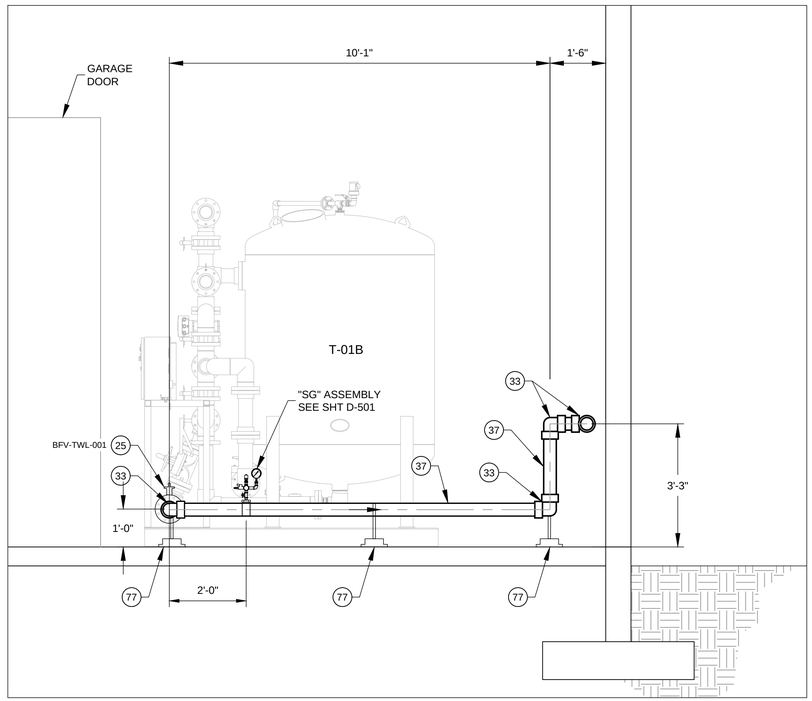
E6 TWL TO FWT PLAN VIEW

SCALE: 1/2" = 1'-0"



A1 WSL TO T-01A/B ELEVATION VIEW

SCALE: 1/2" = 1'-0"



A6 TWL TO FWT ELEVATION VIEW

SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE

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1/5/2021

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LMWC WELL 3 ARSENIC
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DATE:	JANUARY 05, 2021

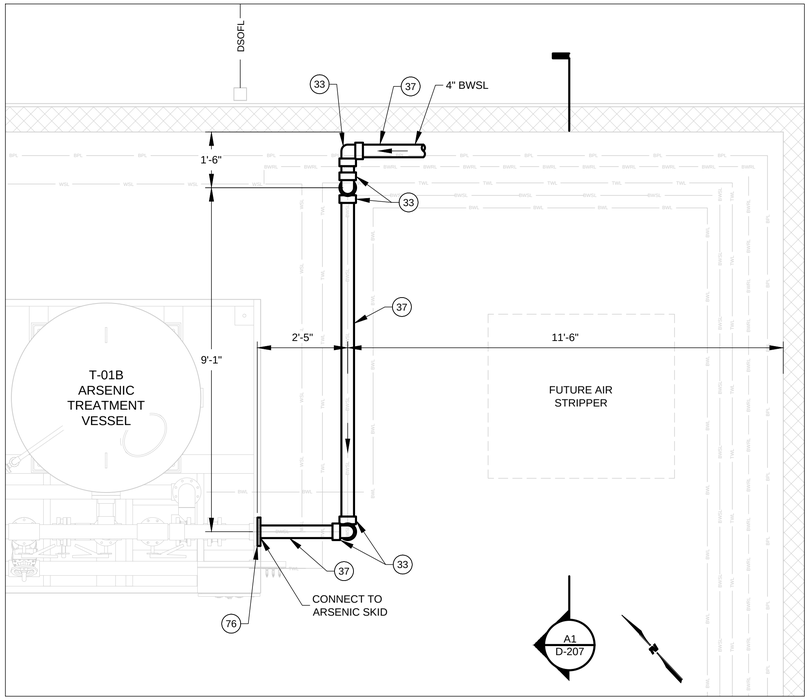
SHEET TITLE

WSL AND TWL SKID CONNECTIONS

SHEET NO:

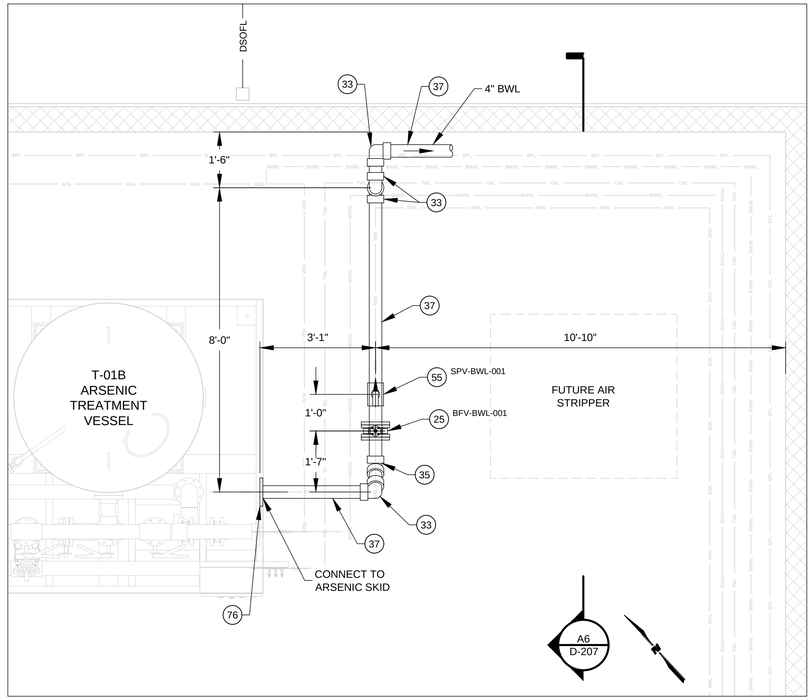
D-206

1/7/2021



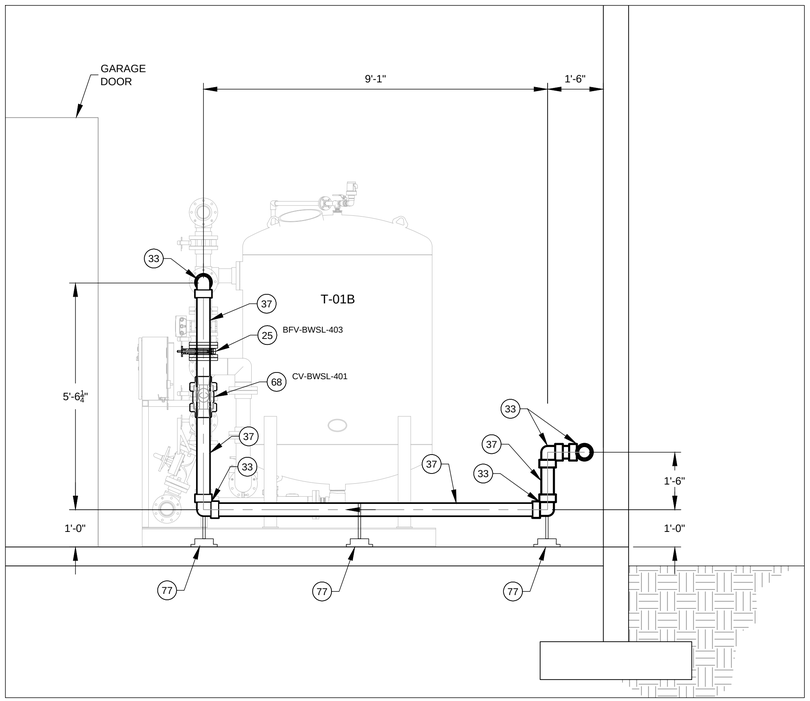
E1 BWSL TO ARSENIC TANK PLAN VIEW

SCALE: 1/2" = 1'-0"



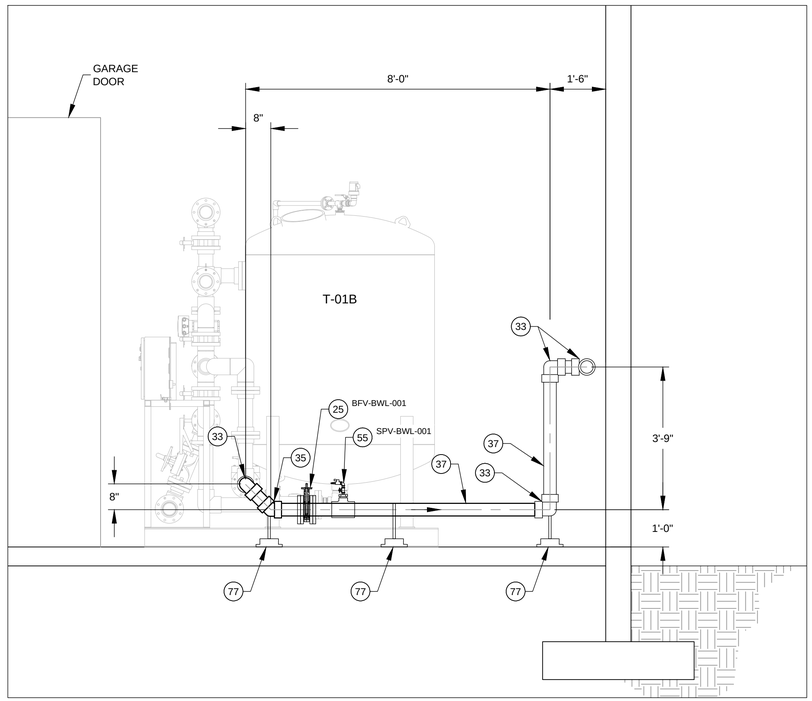
E6 BWL TO BACKWASH TANK (BWT T-03A) PLAN VIEW

SCALE: 1/2" = 1'-0"



A1 BWSL TO ARSENIC TANK ELEVATION VIEW

SCALE: 1/2" = 1'-0"



A6 BWL TO BACKWASH TANK (BWT T-03A) ELEVATION VIEW

SCALE: 1/2" = 1'-0"

GENERAL NOTES

1. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE

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PROJECT NAME

LMWC WELL 3 ARSENIC
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DATE:	JANUARY 05, 2021

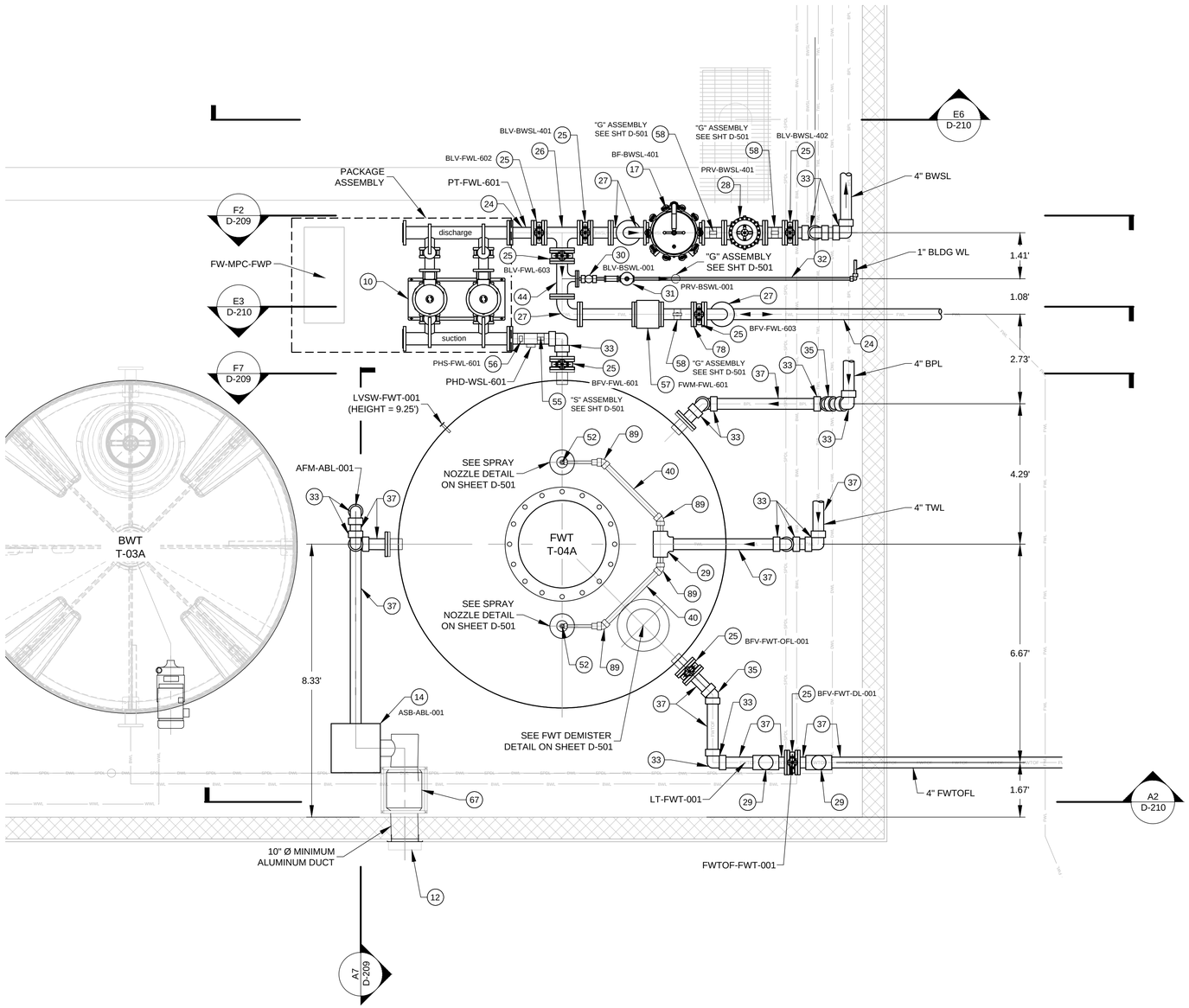
SHEET TITLE

BWSL AND
BWL SKID
CONNECTIONS

SHEET NO:

D-207

1/7/2021



GENERAL NOTES

1. CONTRACTOR SHALL USE NON-SHRINK GROUT UNDER ALL TANK LANDING POINTS TO PROVIDE A LEVEL AND STABLE FOUNDATION FOR THE TANKS.
2. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
3. CONTRACTOR SHALL MEET UNDERLAYMENT REQUIREMENTS OF FWT MANUFACTURER.
4. CONTRACTOR SHALL PLACE TANKS AND INSTALL TANK ANCHORAGE SYSTEM IN ACCORDANCE WITH TANK MANUFACTURER'S DETAILS AND RECOMMENDATIONS, ANCHORAGE SYSTEMS AND ALL APPURTENANCES NECESSARY TO SET THE TANK IN THE FINAL LOCATION AND PLACE INTO SERVICE SHALL BE CONSIDERED INCIDENTAL TO THE COST OF FURNISHING AND INSTALLING THE TANKS.

A1 FINISH WATER TANK (FWT T-04A) PLAN VIEW

SCALE: 1:2

0 1' 2'

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1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
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CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

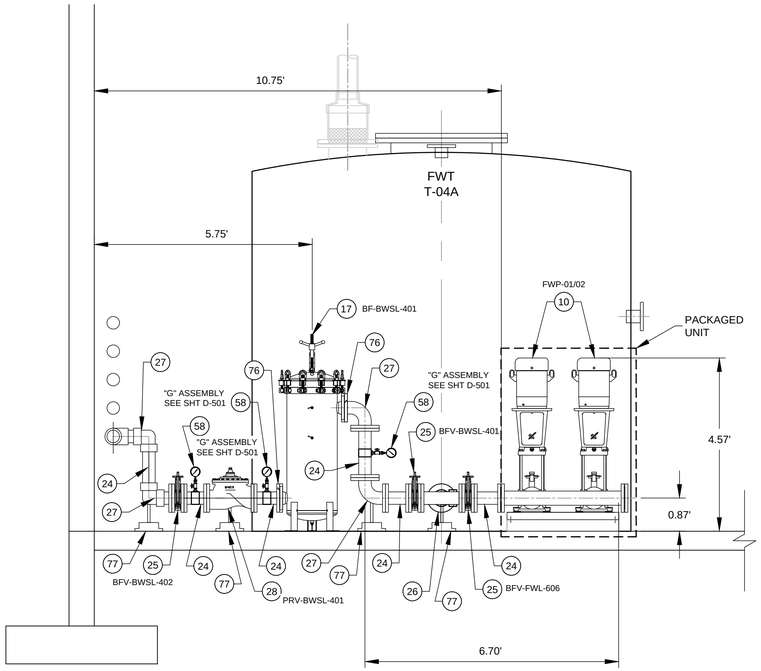
SHEET TITLE

FINISHED WATER TANK PLAN

SHEET NO:

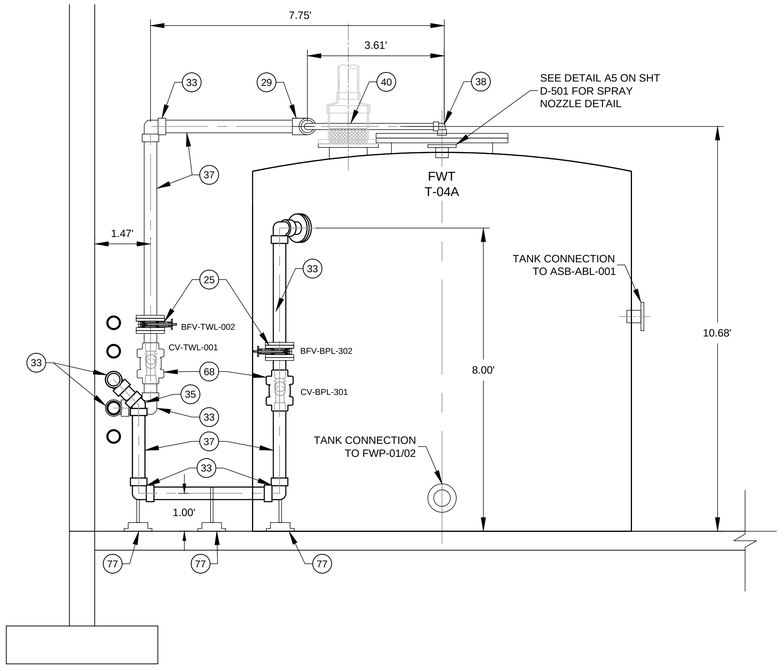
D-208

1/7/2021



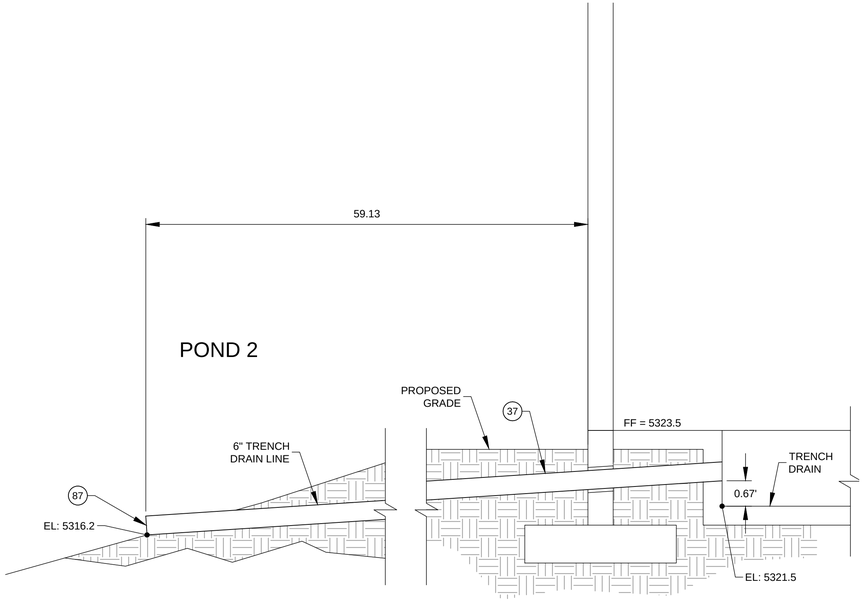
F2 4" BACKWASH SUPPLY LINE SECTION

SCALE: 1:2



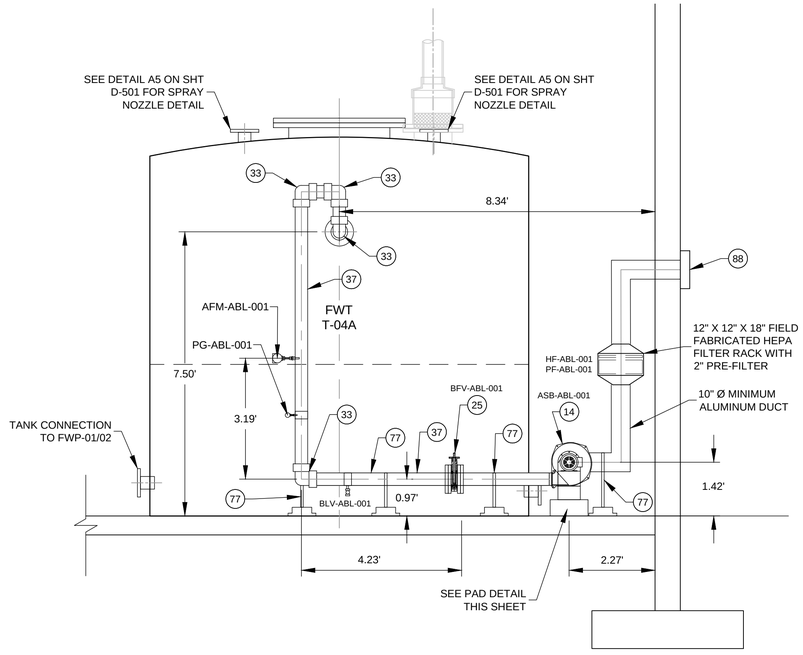
F7 4" BYPASS LINE AND 4" TREATED WATER LINE SECTION

SCALE: 1:2



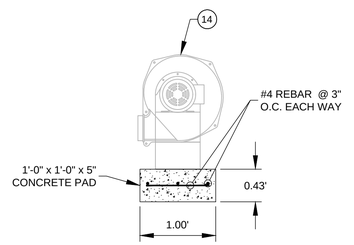
A2 FINISH WATER TANK OVERFLOW LINE SECTION

SCALE: 1:2



A7 4" AIR STRIPPER BLOWER LINE SECTION

SCALE: 1:2



AIR STRIPPER SUPPORT PAD

NTS

GENERAL NOTES

1. CONTRACTOR SHALL USE NON-SHRINK GROUT UNDER ALL TANK LANDING POINTS TO PROVIDE A LEVEL AND STABLE FOUNDATION FOR THE TANKS.
2. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
3. EQUIP AIR STRIPPER BLOWER WITH ACOUSTIC ENCLOSURE TO REDUCE BLOWER NOISE 5 dBA MINIMUM 3 FEET FROM BLOWER WHILE IN NORMAL OPERATION. ENCLOSURE TO BE APPROXIMATELY 2'W x 2'L x 2'H.

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1/5/2021

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LMWC WELL 3 ARSENIC
TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
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DATE:	JANUARY 05, 2021

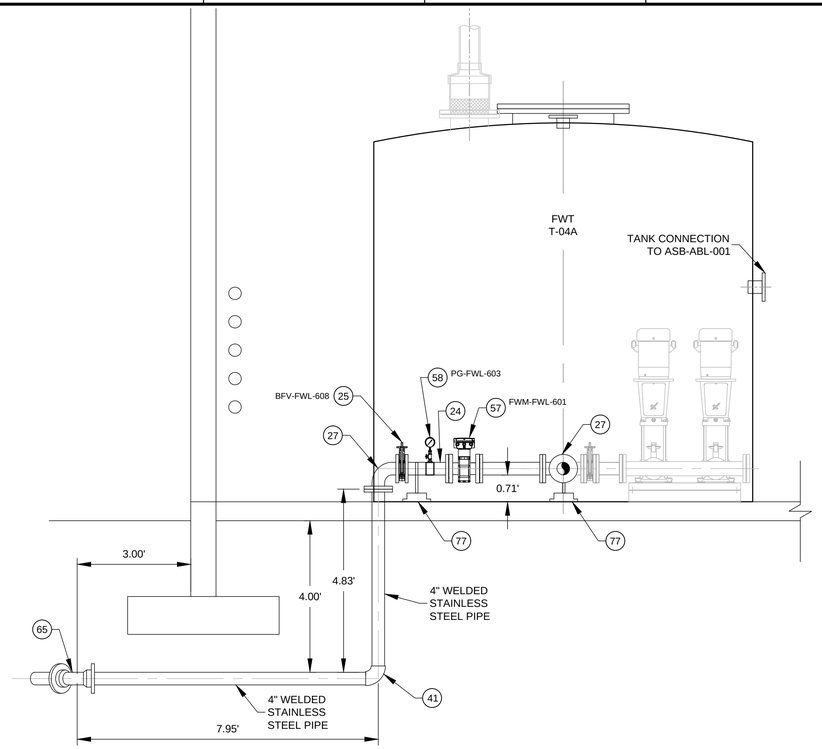
SHEET TITLE

FINISHED WATER
TANK SECTIONS

SHEET NO:

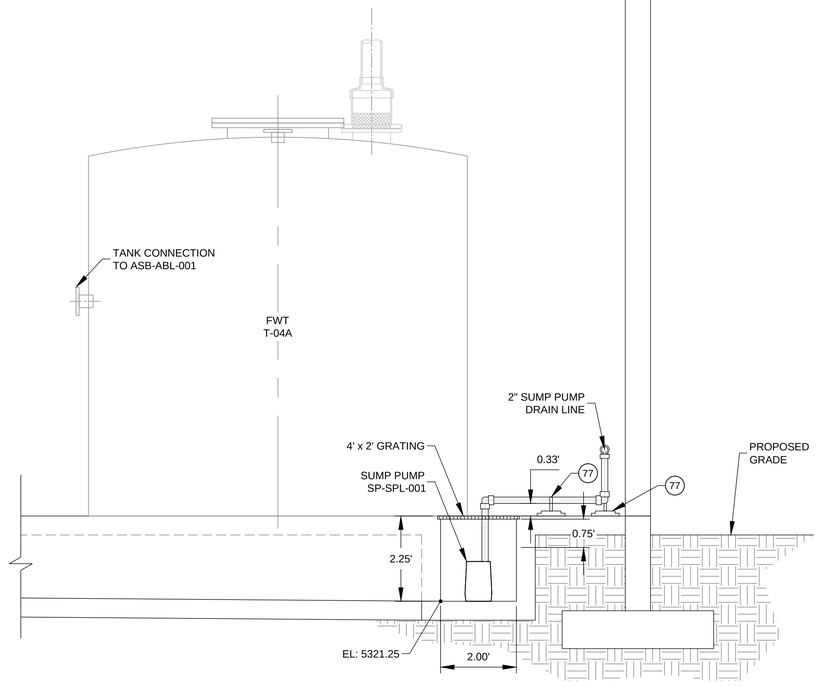
D-209

1/7/2021



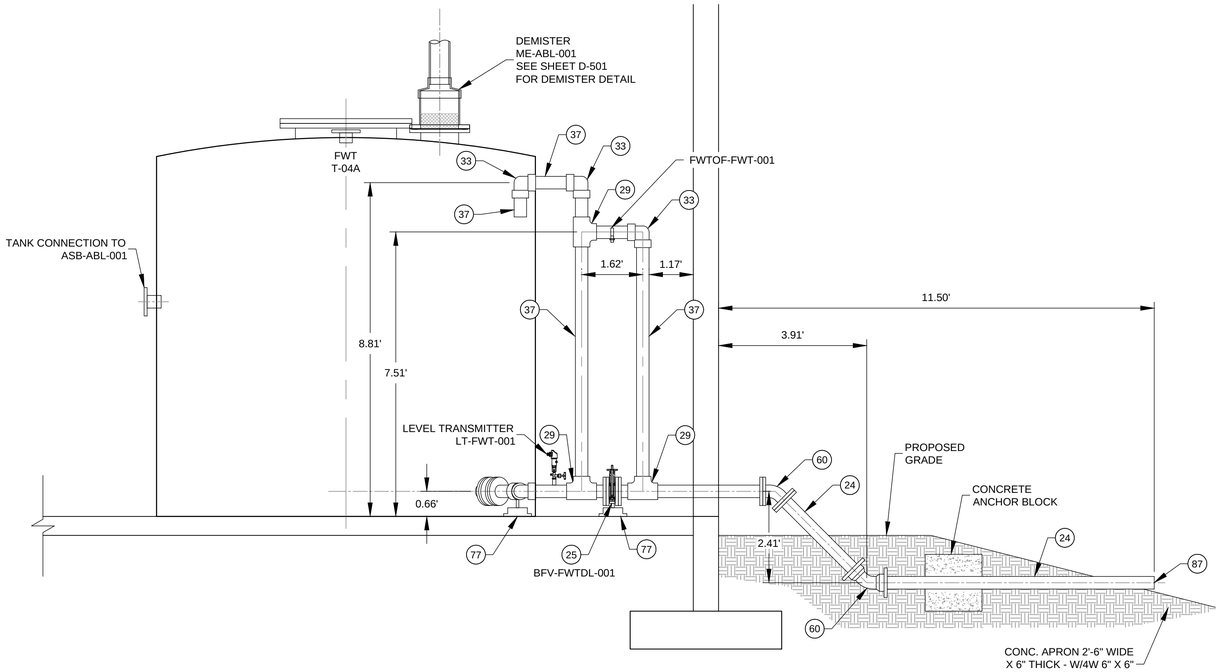
E3 4" FINISH WATER LINE

SCALE: 1:2



E6 6" TRENCH DRAIN LINE

SCALE: 1:2



A2 FINISH WATER TANK OVERFLOW LINE SECTION

SCALE: 1:2

GENERAL NOTES

1. CONTRACTOR SHALL USE NON-SHRINK GROUT UNDER ALL TANK LANDING POINTS TO PROVIDE A LEVEL AND STABLE FOUNDATION FOR THE TANKS
2. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE

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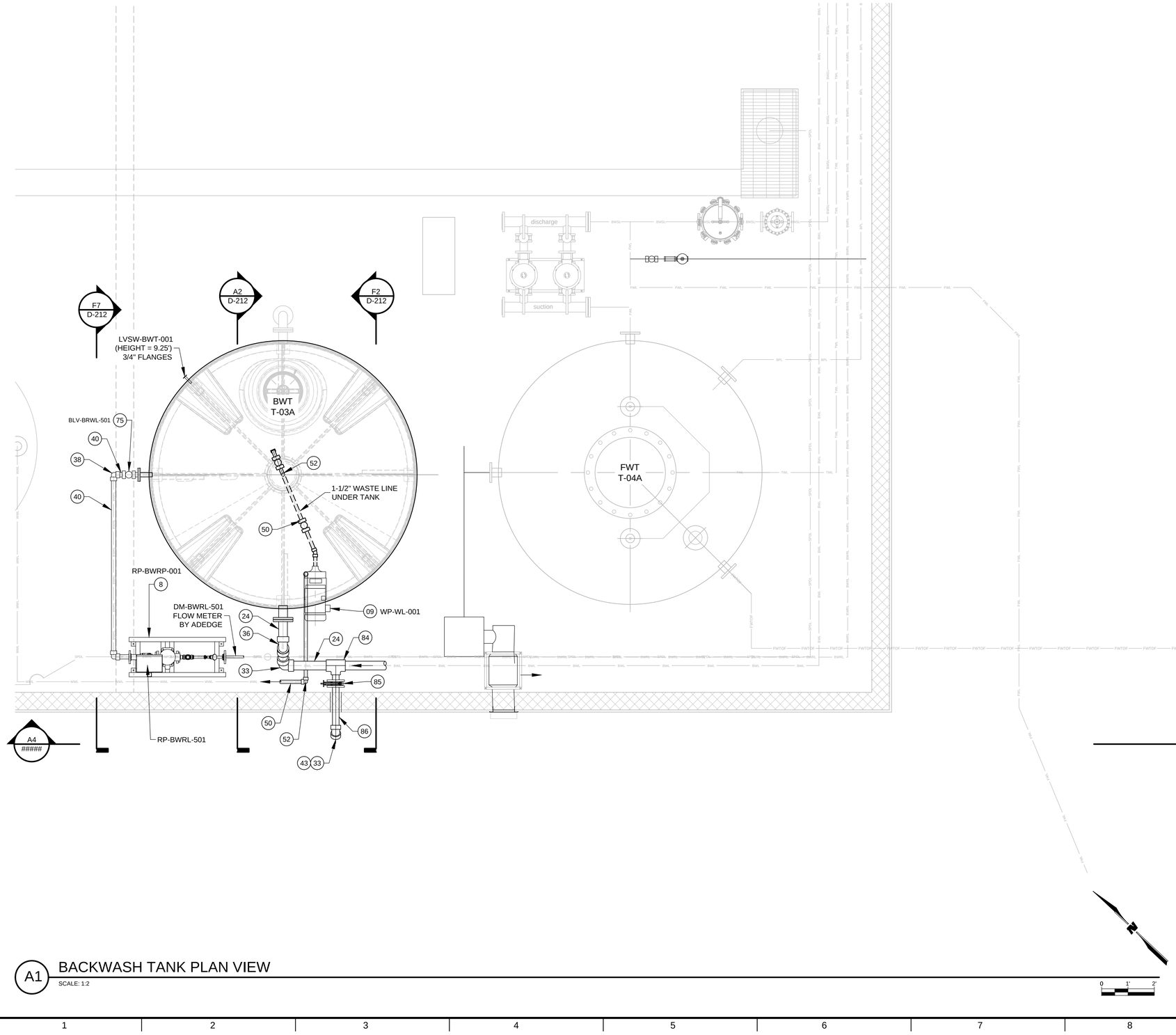
SHEET TITLE

FINISHED WATER TANK AND SUMP SECTIONS

SHEET NO:

D-210

1/7/2021



GENERAL NOTES

1. CONTRACTOR SHALL USE NON-SHRINK GROUT UNDER ALL TANK LANDING POINTS TO PROVIDE A LEVEL AND STABLE FOUNDATION FOR THE TANKS
2. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE

A1 BACKWASH TANK PLAN VIEW

SCALE: 1:2

0 1' 2'

1/7/2021

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PROJECT NAME

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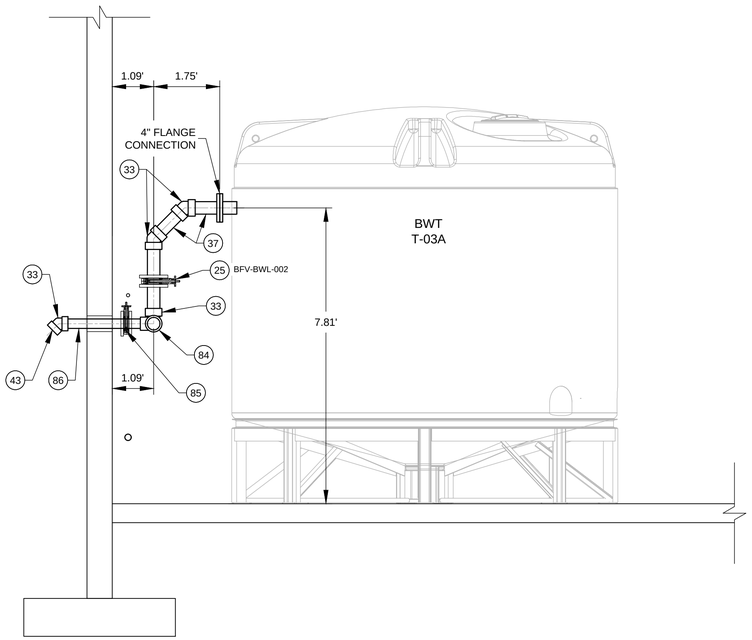
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

BACKWASH
TANK PLAN

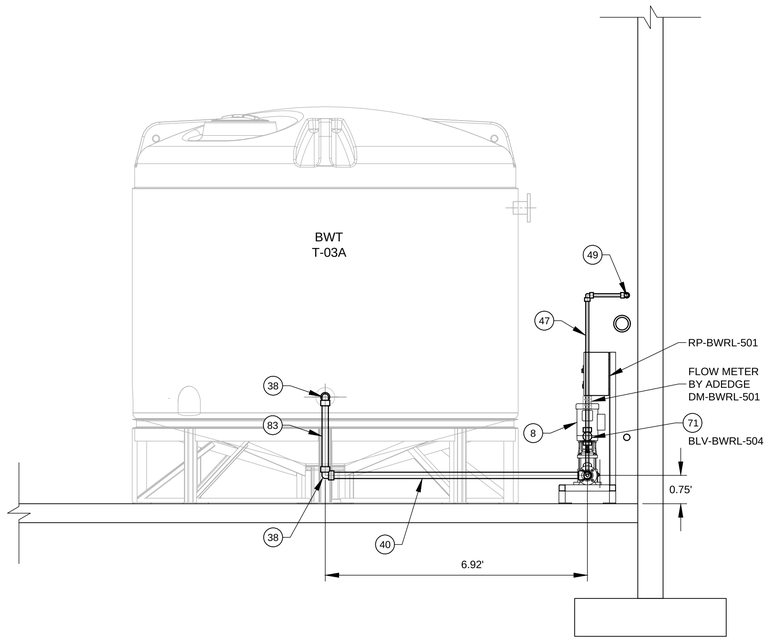
SHEET NO:

D-211



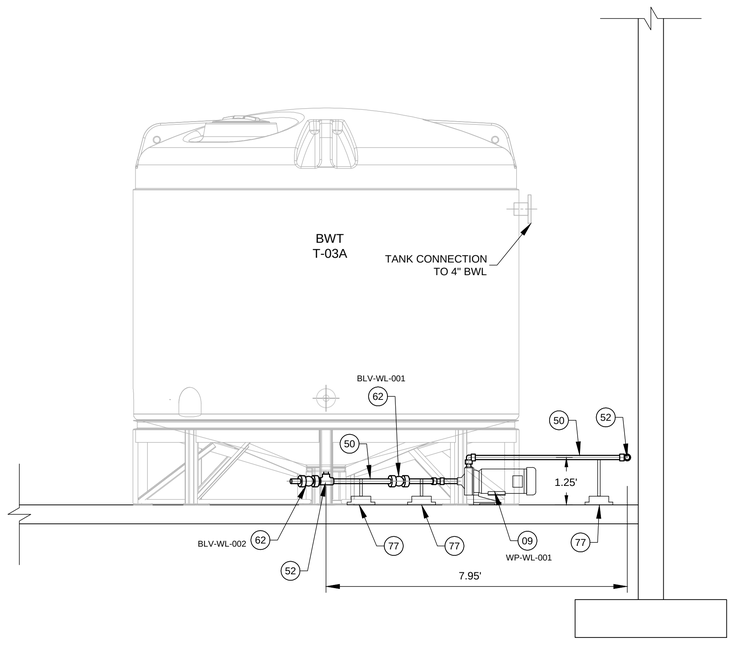
F2 4" BWL SECTION VIEW

SCALE: 1:2



F7 1" BWRL SECTION VIEW

SCALE: 1:2



A2 1-1/2" WL SECTION VIEW

SCALE: 1:2

GENERAL NOTES

1. CONTRACTOR SHALL USE NON-SHRINK GROUT UNDER ALL TANK LANDING POINTS TO PROVIDE A LEVEL AND STABLE FOUNDATION FOR THE TANKS
2. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE

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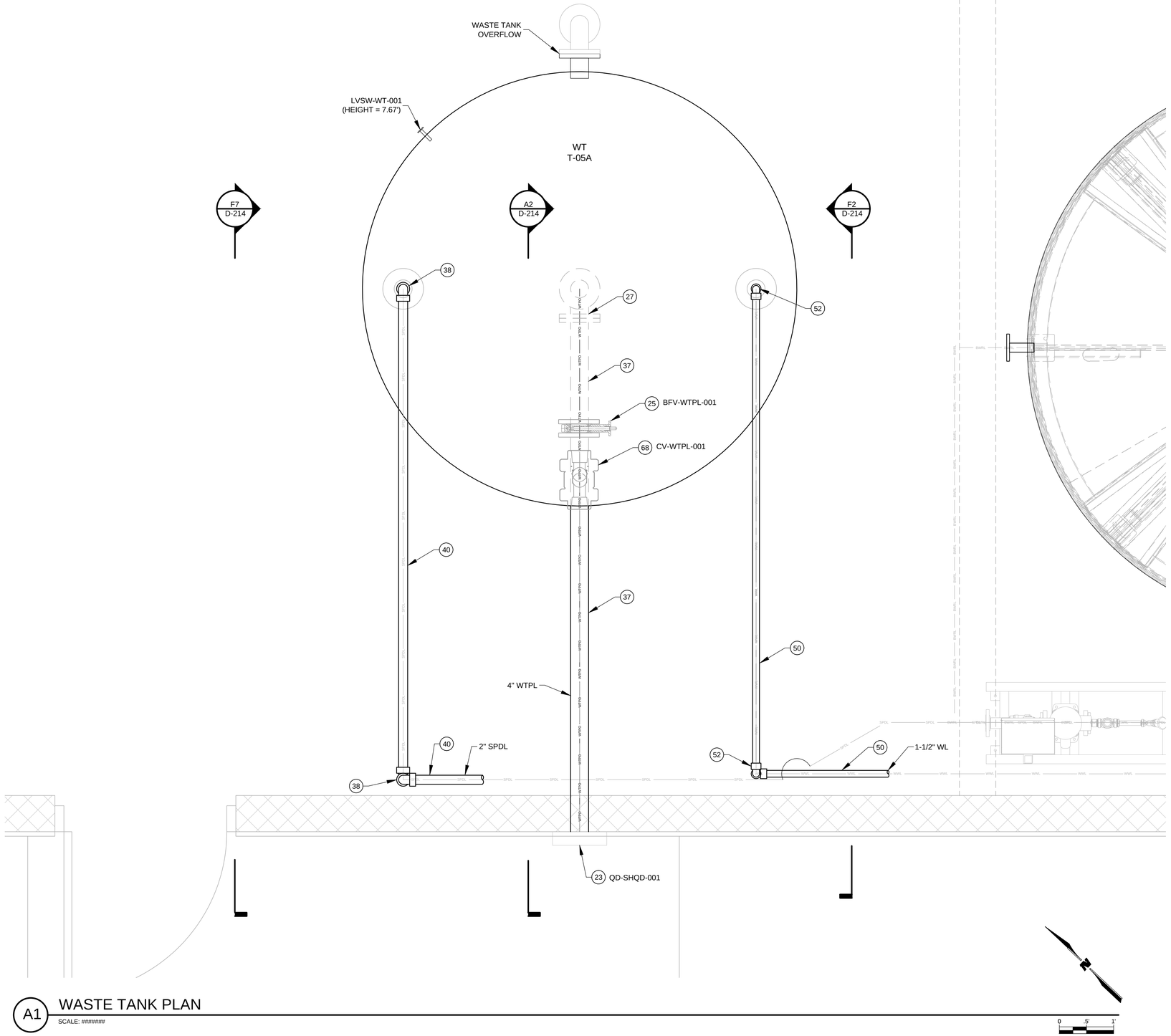
SHEET TITLE

BACKWASH TANK SECTIONS

SHEET NO:

D-212

1/7/2021



A1 WASTE TANK PLAN

SCALE: ########

0 5' 1'

GENERAL NOTES

1. CONTRACTOR SHALL USE NON-SHRINK GROUT UNDER ALL TANK LANDING POINTS TO PROVIDE A LEVEL AND STABLE FOUNDATION FOR THE TANKS.
2. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
3. MOUNT VERTICAL PIPE RUN TO WALL (SEE DETAIL A1 OF SHEET D-501), AND ADD SUPPORTS TO HORIZONTAL RUN FROM JOIST (SEE DETAIL D8 ON SHEET D-501).

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CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

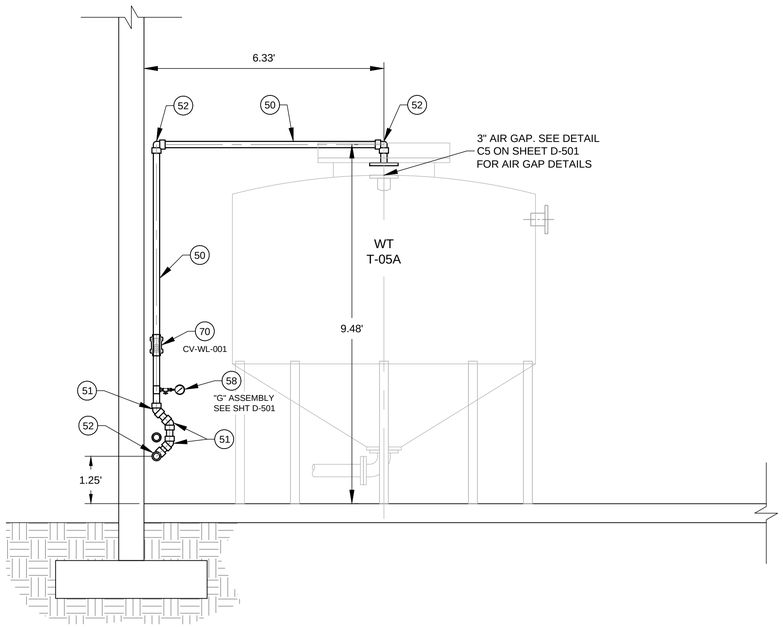
SHEET TITLE

WASTE TANK PLAN

SHEET NO:

D-213

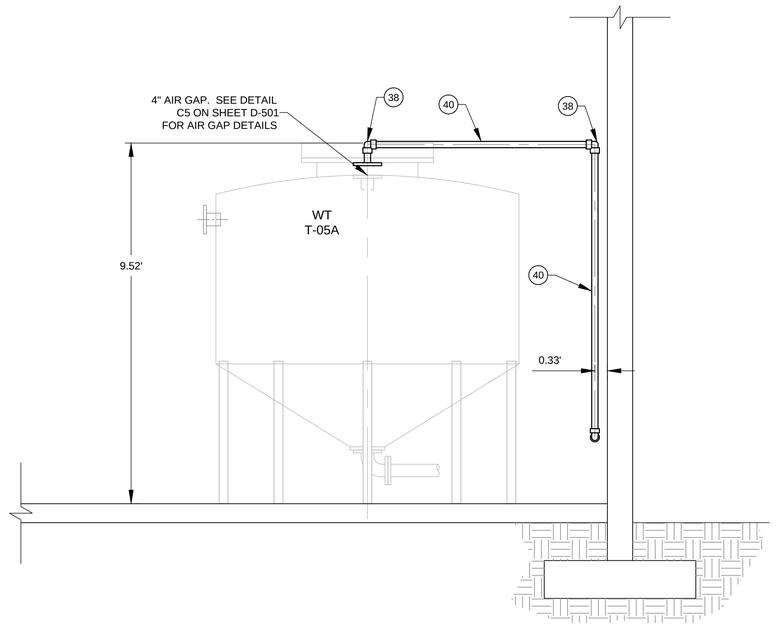
1/7/2021



F2 1-1/2" WL ELEVATION VIEW

SCALE: 1:2

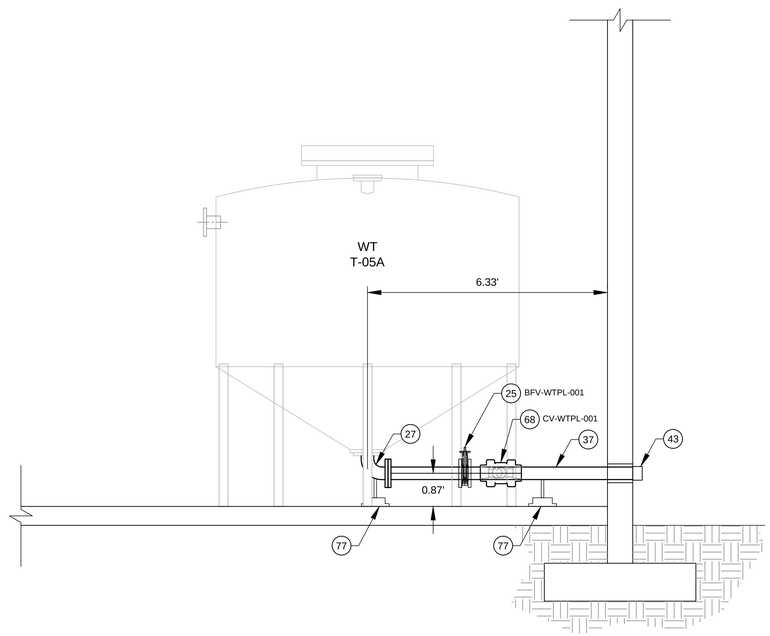
0 1' 2'



F7 2" SPDL ELEVATION VIEW

SCALE: 1:2

0 1' 2'



A2 4" WTPO ELEVATION VIEW

SCALE: 1:2

0 1' 2'

GENERAL NOTES

1. CONTRACTOR SHALL USE NON-SHRINK GROUT UNDER ALL TANK LANDING POINTS TO PROVIDE A LEVEL AND STABLE FOUNDATION FOR THE TANKS.
2. SEE SHEET D-606 FOR KEY NOTE EQUIPMENT SCHEDULE.
3. MOUNT VERTICAL PIPE RUN TO WALL (SEE DETAIL A1 OF SHEET D-501), AND ADD SUPPORTS TO HORIZONTAL RUN FROM JOIST (SEE DETAIL D8 ON SHEET D-501).

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CONSULTANTS

SEAL

BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

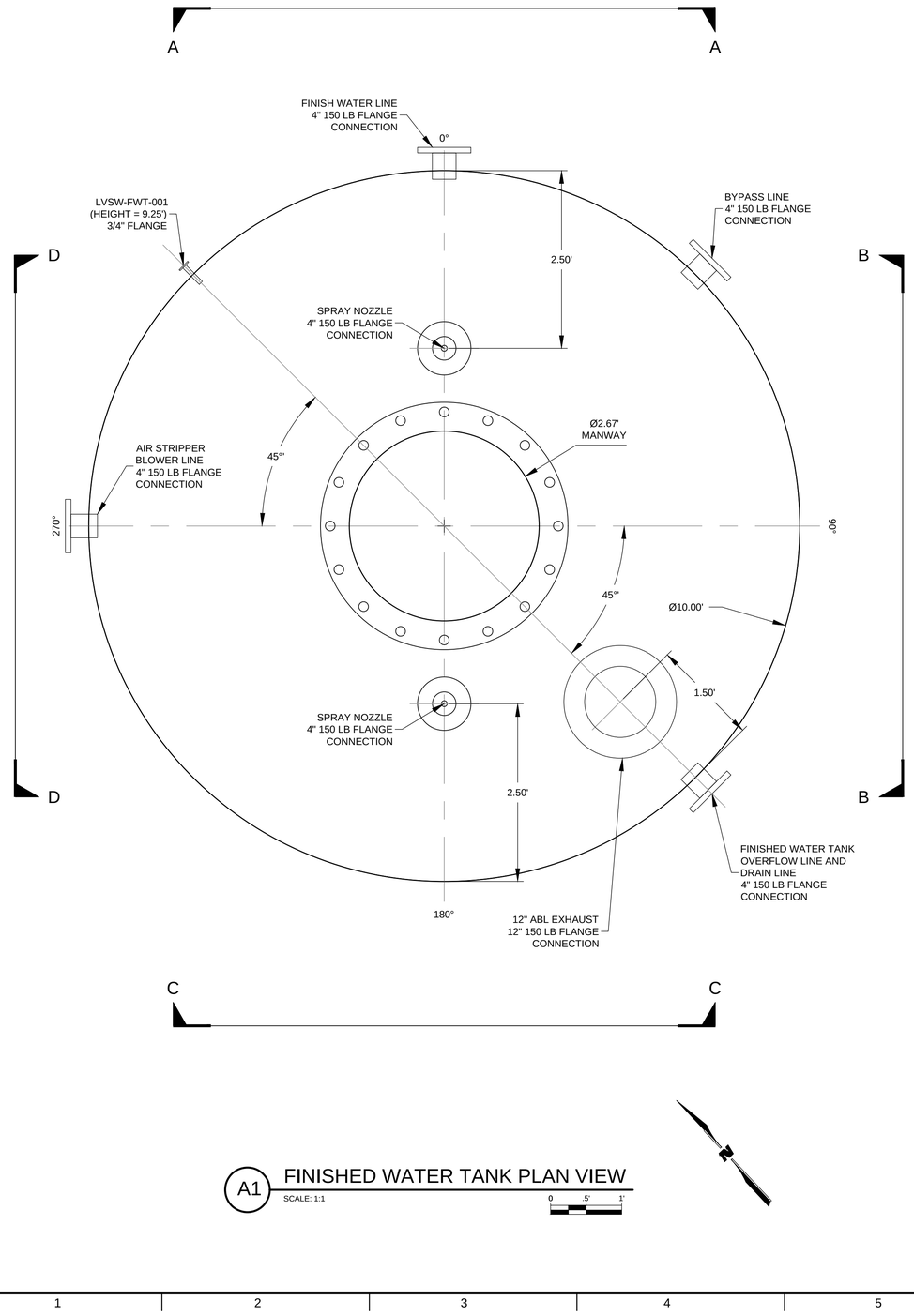
SHEET TITLE

WASTE TANK
ELEVATION VIEW

SHEET NO:

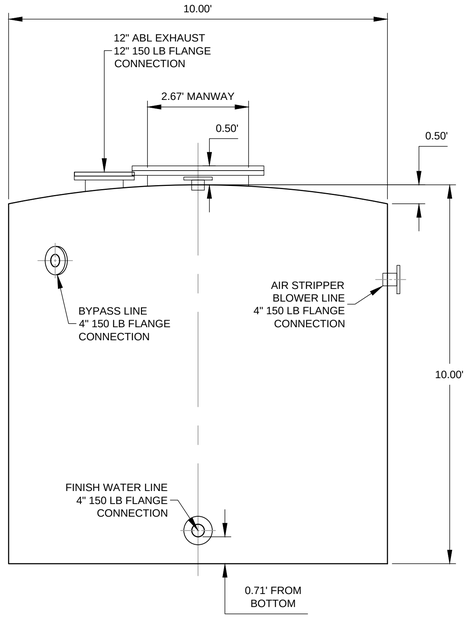
D-214

1/7/2021



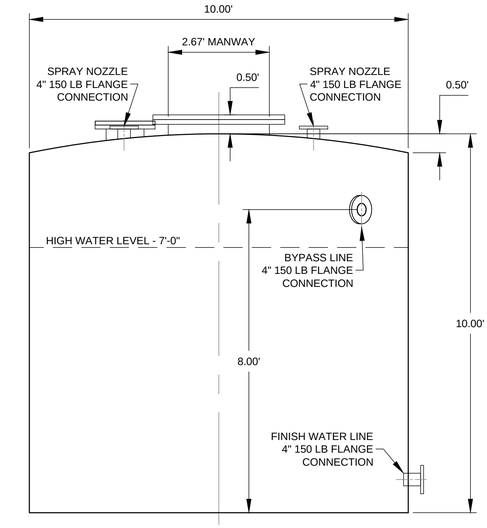
A1 FINISHED WATER TANK PLAN VIEW

SCALE: 1:1 (0, .5', 1')



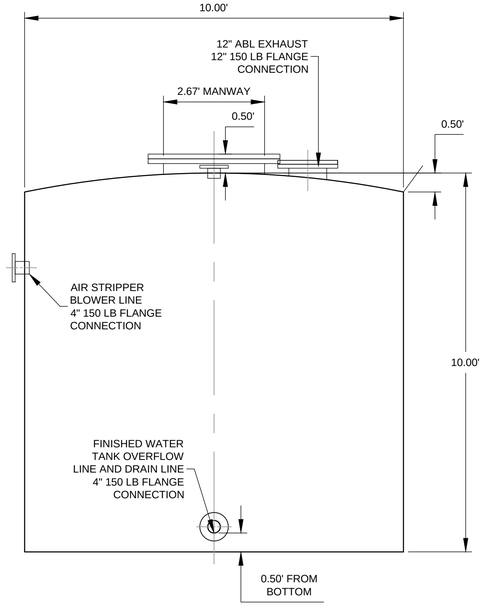
A SECTION A-A

SCALE: 1:2 (0, 1', 2')



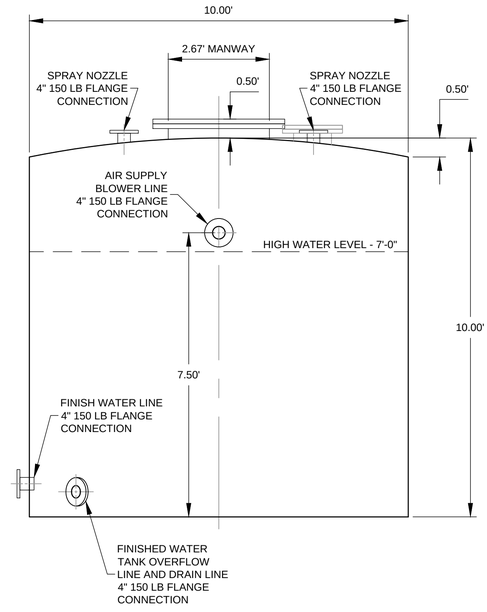
B SECTION B-B

SCALE: 1:2 (0, 1', 2')



C SECTION C-C

SCALE: 1:2 (0, 1', 2')



D SECTION D-D

SCALE: 1:2 (0, 1', 2')

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LMWC WELL 3 ARSENIC
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	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
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DATE:	JANUARY 05, 2021

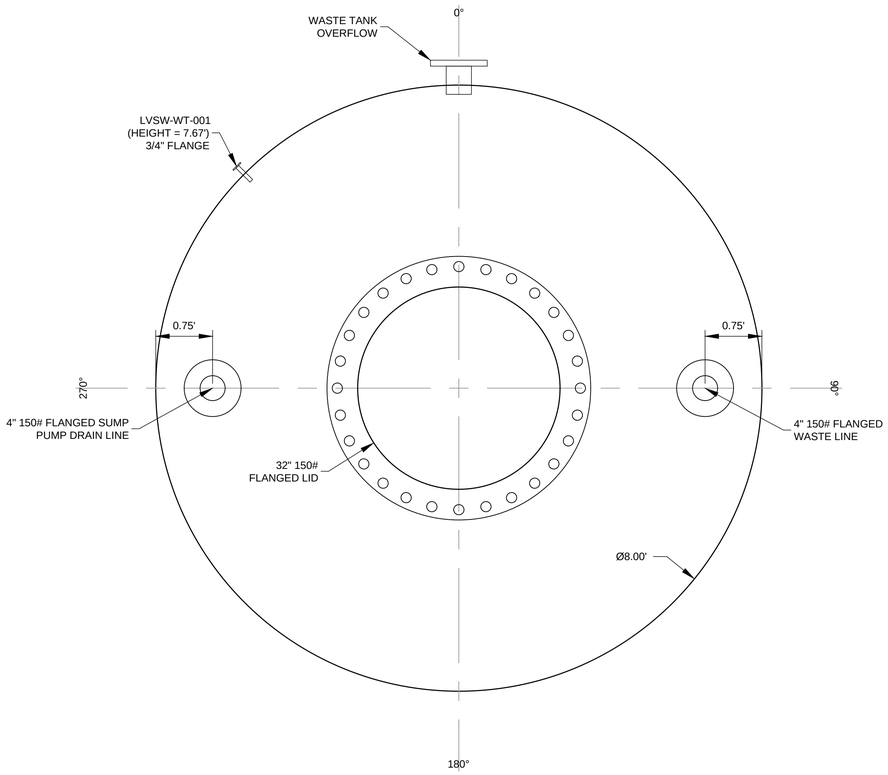
SHEET TITLE

FINISHED WATER
TANK DETAILS

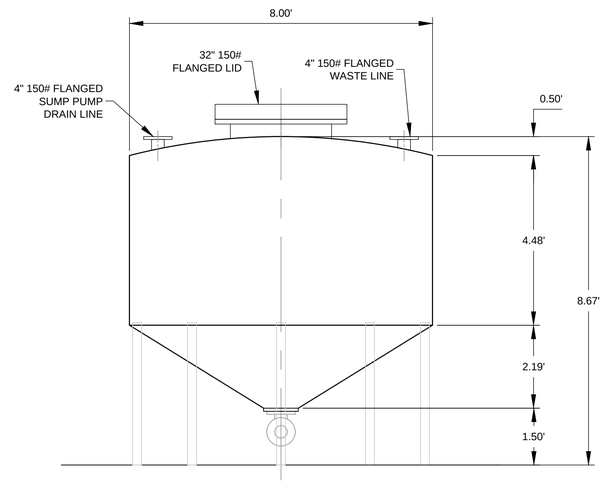
SHEET NO:

D-215

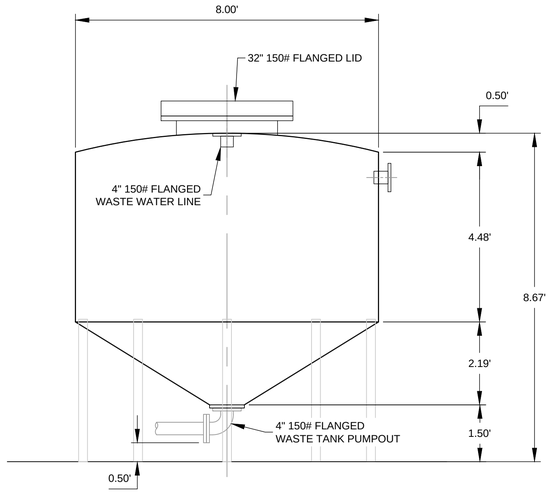
1/7/2021



A1 WASTE TANK PLAN VIEW
SCALE: ###



A SECTION A-A
SCALE: ###



B SECTION B-B
SCALE: ###

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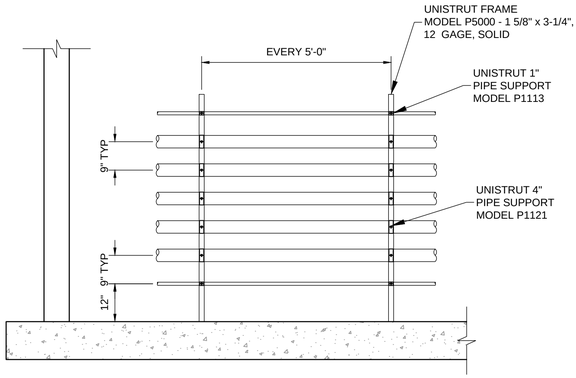
SHEET TITLE
WASTE TANK
DETAILS

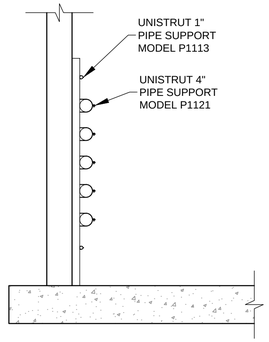
SHEET NO:
D-216

1/7/2021

PIPE DETAIL PLAN VIEW
NOT TO SCALE



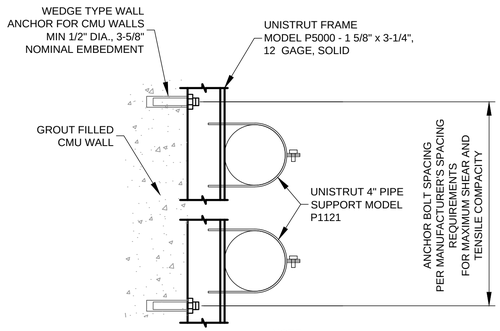
PIPE DETAIL ELEVATION VIEW
NOT TO SCALE



PIPE DETAIL ELEVATION VIEW
NOT TO SCALE

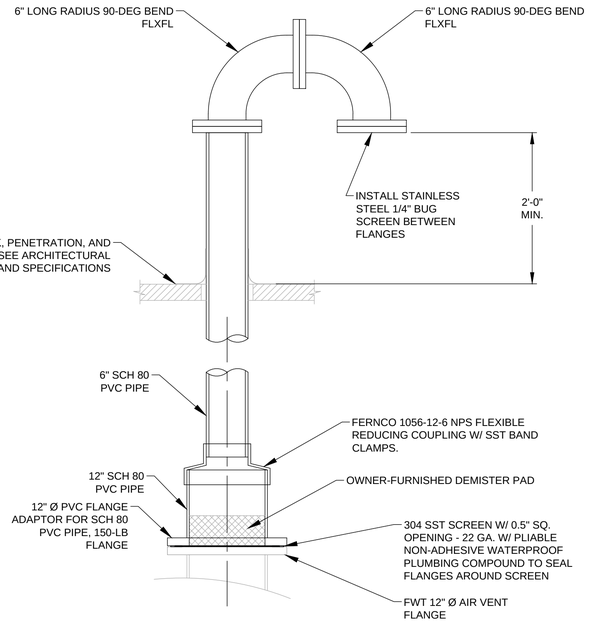
UNISTRUT FRAMES TO BE
SET ON CONCRETE BRICKS
GLUED TO FLOOR.

D2 UNISTRUT PIPE SUPPORT TYPICAL DETAIL
NOT TO SCALE

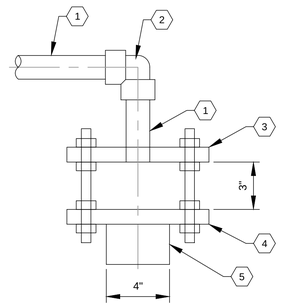


NOTE:
WALL ANCHOR SIZE AND SPACING IS BASED UPON KWIK BOLT TZ CARBON STEEL EXPANSION ANCHORS, BY HILITI CORPORATION AS A BASIS OF DESIGN.

A1 UNISTRUT PIPE SUPPORT WALL ANCHOR DETAIL
NOT TO SCALE



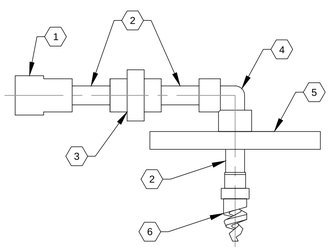
E6 FWT DEMISTER DETAIL
NOT TO SCALE



KEYED NOTES:

1. 1-1/2" PVC PIPE, SCH 80
2. 1-1/2" 90° PVC BEND
3. PVC BLIND FLANGE, 4" PIPE SIZE 1-1/2" PVC THREADED
4. 4" DI FLANGE
5. TOP OF WASTE TANK 4" CONNECTION

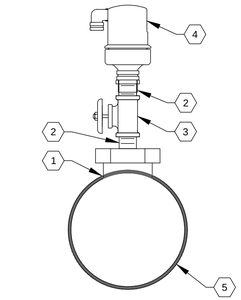
C5 WASTE LINE 3" AIR GAP
NOT TO SCALE



KEYED NOTES:

1. PVC REDUCING BUSHING SPIGOT x FNPT 2" x 1-1/2" PIPE SIZE
2. 1-1/2" PVC THREADED NIPPLE 3" LONG
3. PVC UNION SOCKET x FNPT, 1-1/2" PIPE SIZE
4. PVC ELBOW, 90° FNPT x FNPT 1-1/2" PIPE SIZE
5. PVC BLIND FLANGE, 4" PIPE SIZE
6. BETE PERFORMANCE SPRAY ENGINEERING. 1-1/2" FEMALE, NOZZLE NUMBER TF48, FULL CONE 60°

A5 SPRAY NOZZLE
NOT TO SCALE

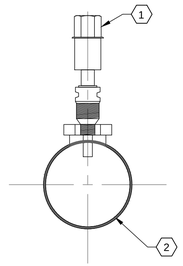


KEYED NOTES:

1. SERVICE SADDLE W/ 1" NPT OUTLET
2. 1" NIPPLE, THREADED
3. 1" BALL VALVE
4. 1" AIR RELEASE VALVE. BY A.R.I. MODEL NO. D040.
5. CARRIER PIPE

NOTE:
SEE SPECS FOR MATERIALS.

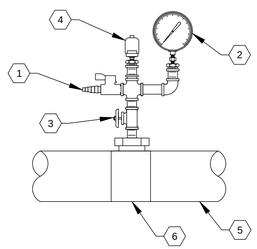
F8 1" AIR RELEASE VALVE ASSEMBLY DETAIL
NOT TO SCALE



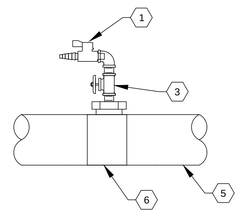
NOTES:

1. STENNER PUMPS CHECK VALVE INJECTOR. PART NUMBER UCDBINJ.
2. 4" x 1/2" TAPPING SADDLE WITH FPT PORT

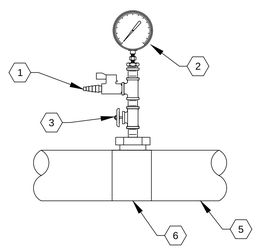
E8 NaOCl INJECTION W/ SPACER DETAIL
NOT TO SCALE



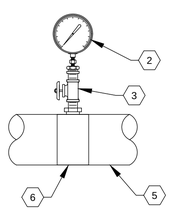
"SGT" ASSEMBLY



"S" ASSEMBLY



"SG" ASSEMBLY



"G" ASSEMBLY

KEYED NOTES:

1. SAMPLE PORT VALVE
2. PRESSURE GAUGE
3. 1/4" STAINLESS STEEL BALL VALVE
4. PRESSURE TRANSMITTER
5. CARRIER PIPE
6. 4" x 1/2" TAPPING SADDLE WITH FPT PORT

A8 PRESSURE GAUGE AND SAMPLE VALVE DETAILS
NOT TO SCALE

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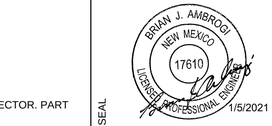


PROJECT NAME
LMWC WELL 3 ARSENIC
TREATMENT FACILITY

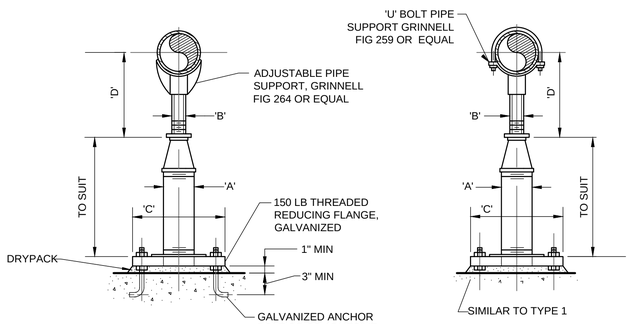
REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE
PROCESS
PIPING
DETAILS

SHEET NO:
D-501

1/7/2021



TYPE 1

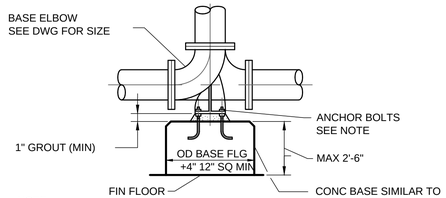
TYPE 2

ADJUSTABLE PIPE SUPPORT APPROX DIMENSIONS IN INCHES					
PIPE SIZE	A	B	C	D MIN	D MAX
2 1/2	2 1/2	1 1/2	9	8	11 1/2
3	2 1/2	1 1/2	9	8 1/4	11 3/4
3 1/2	2 1/2	1 1/2	9	8 1/2	12
4	3	2 1/2	9	10 1/4	14
6	3	2 1/2	9	11 5/8	15 1/4

NOTES:

1. UNDER VALVES, METERS OR OTHER SPECIAL APPURTENANCES A FABRICATED SUPPORT PIECE MAY BE UTILIZED AS ACCEPTABLE TO ENGINEER

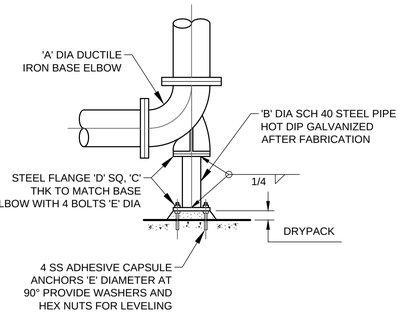
F2 PIPE SUPPORT DETAIL
NOT TO SCALE



NOTE:

(4) GALVANIZED 'E' DIA ANCHOR BOLTS WITH
(2) HEX NUTS AND WASHERS FOR LEVELING AFTER INSTALLATION
SEE DETAIL 15140019 FOR 'E' DIA

D1 FLOOR SUPPORT DETAIL
NOT TO SCALE



DUCTILE IRON ELBOW

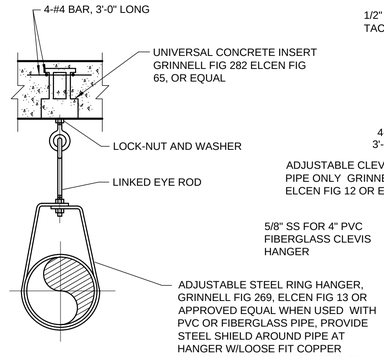
A7 ELBOW SUPPORT DETAIL
NOT TO SCALE

PIPE HANGER RODS & SUPPORT SPACING					
PIPE DIA (INCHES)	ROD DIA (INCHES)	MAX SUPPORT SPACING (FEET)		WEIGHT LIMIT (LBS)	
		STL PIPE	CI/DI PIPE	TYPE 'A'	TYPE 'B'
1 & SMALLER	3/8	5	MIN 1 HANGER PER PIPE LENGTH AND FITT MAX SPACING 5 FEET- LOCATE HANGER CLOSE TO EACH CONNECTION	610	——
1 1/2 TO 2	3/8	5		610	——
2 1/2 TO 3 1/2	1/2	10		1130	——
4 TO 5	5/8	10*		1430	——
6	3/4	10		1430	3800

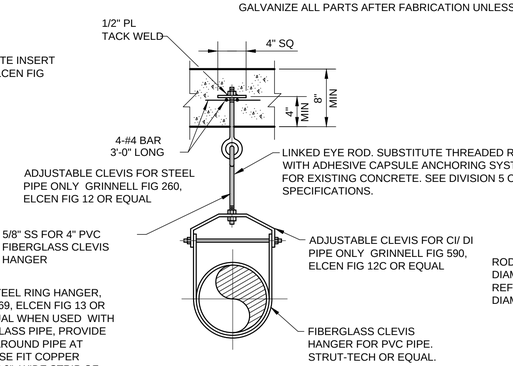
* 7.5' MAX. SPACING FOR 4" SCH. 80 PVC

NOTE:

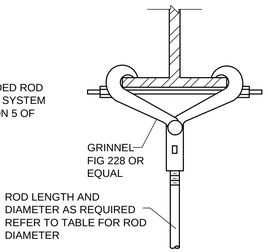
GALVANIZE ALL PARTS AFTER FABRICATION UNLESS OTHERWISE NOTED.



TYPE 'A'
FOR HANGER RODS 3/4" DIA AND SMALLER



TYPE 'B'
FOR HANGER RODS 7/8" DIA AND LARGER, AND MIN 8" THICK CONCRETE



NOTE: PIPE HANGER SIMILAR TO TYPE 'A' OR 'B'

TYPE 'C'
BEAM CLAMP

D8 PIPE HANGER DETAIL
NOT TO SCALE

ELBOW 'A' DIA	DIMENSIONS IN INCHES			
	'B' DIA	'C' THICK	'D' SQ	'E' DIA
4	2		6	5/8
6	2 1/2		7	5/8
8	4	1/2	9	5/8
10	4	1/2	9	5/8
12	6	1/2	11	3/4
14	6	1/2	11	3/4
16	6	1/2	11	3/4
18	8	1/2	13 1/2	3/4
20	8	1/2	13 1/2	3/4
24	8	1/2	13 1/2	3/4
30	10	3/4	16	7/8
36	12	3/4	19	7/8
42	16	3/4	23 1/2	1
48	18	3/4	25	1 1/8

NOTE:

MATERIAL FINISH TO MATCH PIPE

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CONSULTANTS

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

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PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

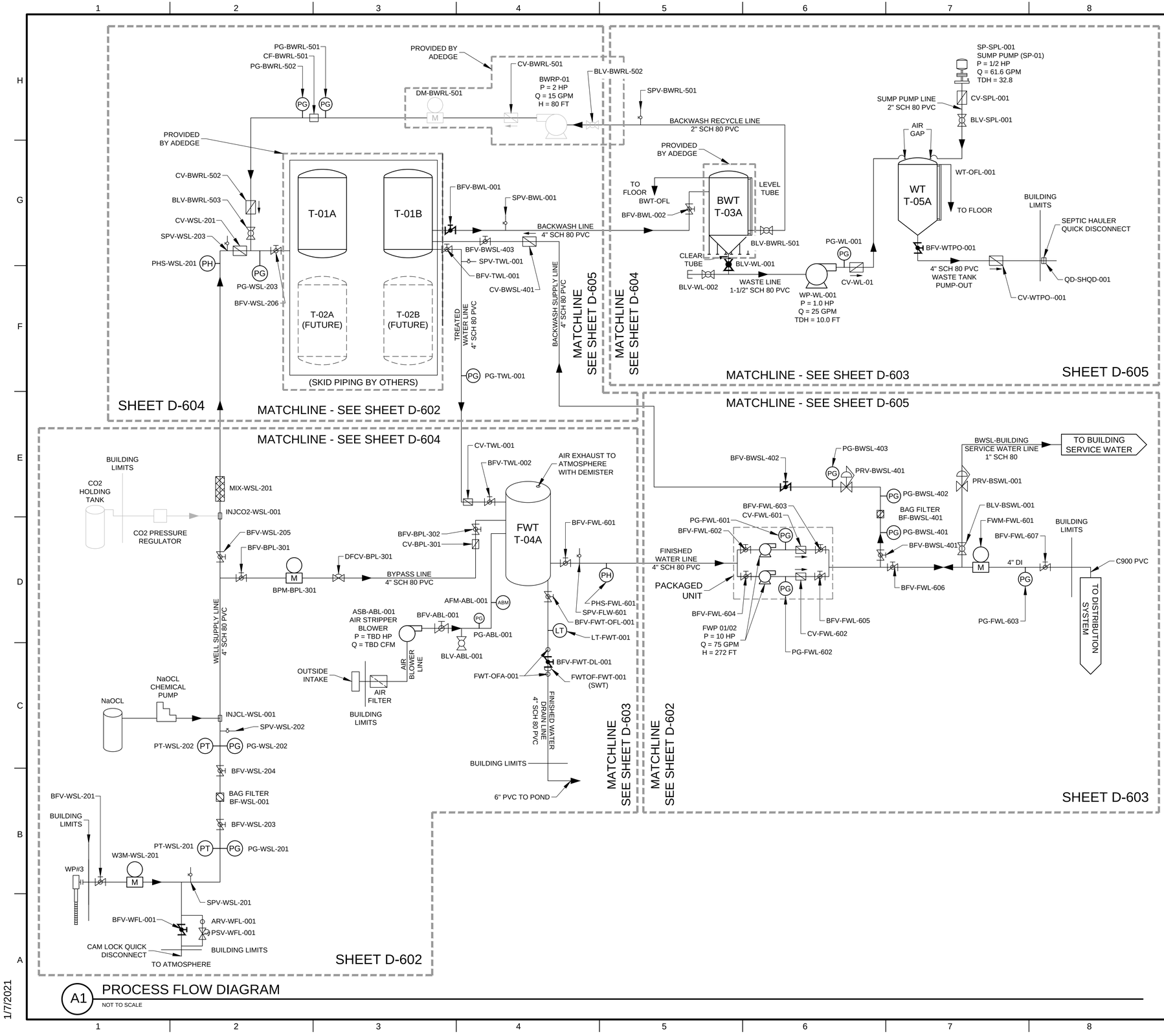
SHEET TITLE

PIPE SUPPORT DETAILS

SHEET NO:

D-502

1/7/2021



TYPICAL COMPONENT NOMENCLATURE

AFD:	AIR FLOW DAMPER
APG:	AIR PRESSURE GAUGE
ARV:	AIR RELEASE VALVE
BF:	BAG FILTER
BFV:	BUTTERFLY VALVE
BLV:	BALL VALVE
BPL:	BYPASS LINE
BSWL:	BUILDING SERVICE WATER LINE
BWL:	BACK WASH L INE
BWRL:	BACK WASH RECYCLE LINE
BWSL:	BACK WASH SUPPLY LINE
CF:	CARTRIDGE FILTER
CFP:	CHEMICAL FEED PUMP
CV:	CHECK VALVE
DFCV:	DIAPHRAGM FLOW CONTROL VALVE
FWL:	FINISHED WATER LINE
FWTDL:	FINISHED WATER TANK DRAIN LINE
FWTOFL:	FINISHED WATER TANK OVER FLOW LINE
INJCL2:	INJECTION ASSEMBLY
INJCO2:	INJECTION ASSEMBLY
MIX:	STATIC MIXER
OFAFWT:	
PG:	PRESSURE GAUGE
PHS:	pH SENSOR
PRV:	PRESSURE REDUCING VALVE
PSV:	PRESSURE SAFETY VALVE
PT:	PRESSURE TRANSMITTER
QD:	QUICK DISCONNECT
SPL:	SUMP PUMP LINE
SPV:	SAMPLE PORT VALVE
WL:	WASTE LINE
WSL:	WELL SUPPLY LINE
WTPO:	WASTE TANK PUMP OUT
CO2:	CARBON DIOXIDE TANK
NaCOI:	SODIUM HYPOCHLORITE TANK

EQUIPMENT SCHEDULE

TAG	DESCRIPTION
T-01A	ARSENIC TREATMENT PRESSURE VESSEL 1
T-01B	ARSENIC TREATMENT PRESSURE VESSEL 2
T-02A	ARSENIC TREATMENT PRESSURE VESSEL 1 (FUTURE)
T-02B	ARSENIC TREATMENT PRESSURE VESSEL 2 (FUTURE)
T-03A	BACKWASH TANK
T-04A	FINISHED WATER TANK
T-05A	WASTE TANK

LEGEND

- NORMALLY OPEN BUTTERFLY VALVE (MANUALLY)
- NORMALLY CLOSED BUTTERFLY VALVE (MANUALLY)
- OPEN BALL VALVE
- CLOSED BALL VALVE
- SAMPLE VALVE
- METER (M)
- PRESSURE TRANSMITTER (PT)
- PRESSURE GAUGE (PG)
- CHECK VALVE
- PUMP

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CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

OVERALL PROCESS FLOW DIAGRAM

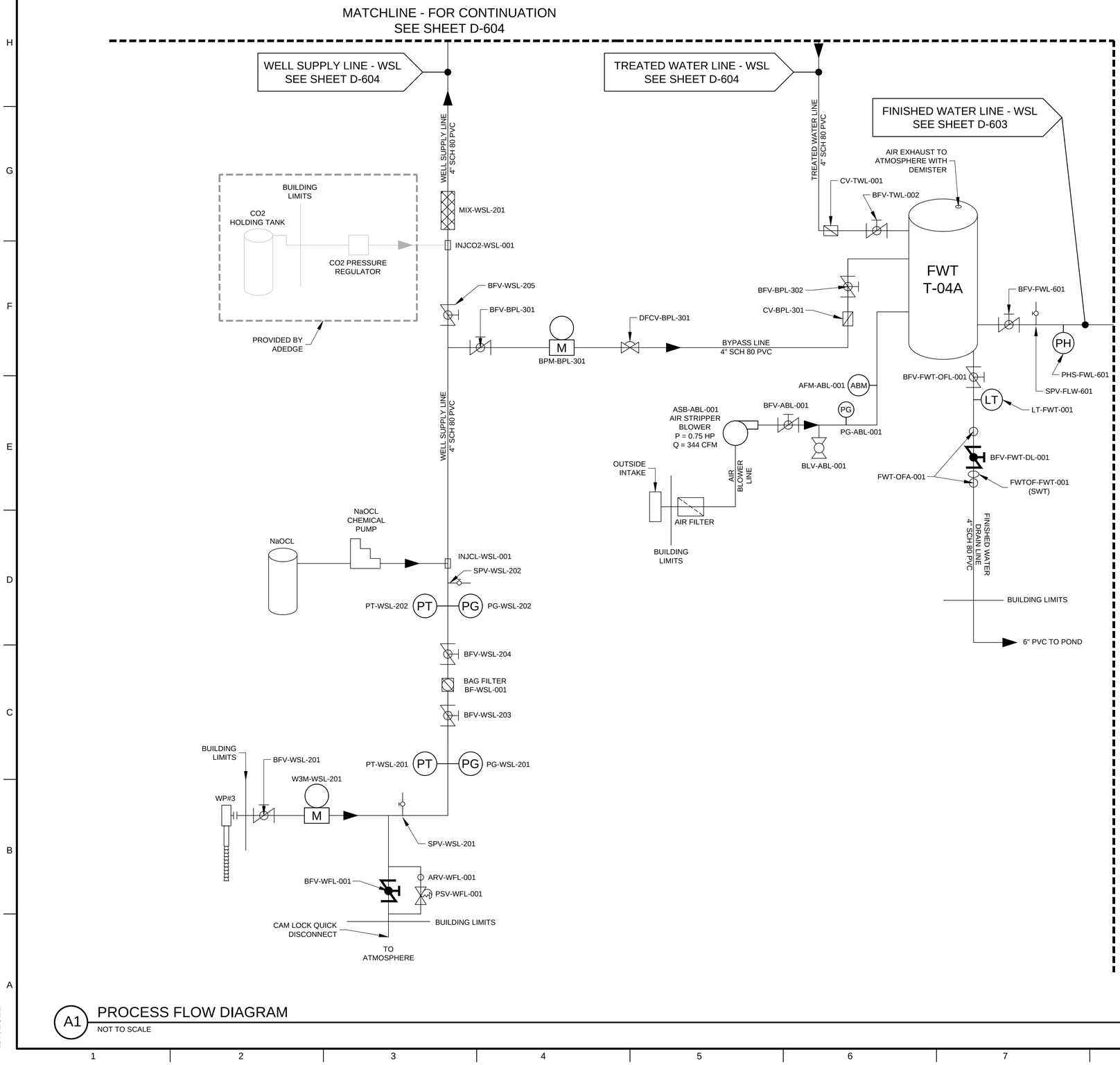
SHEET NO:

D-601

A1 PROCESS FLOW DIAGRAM

NOT TO SCALE

1/7/2021



A1 PROCESS FLOW DIAGRAM

NOT TO SCALE

1/7/2021

TYPICAL COMPONENT NOMENCLATURE

AFD:	AIR FLOW DAMPER
APG:	AIR PRESSURE GAUGE
ARV:	AIR RELEASE VALVE
BF:	BAG FILTER
BFV:	BUTTERFLY VALVE
BLV:	BALL VALVE
BPL:	BYPASS LINE
BSWL:	BUILDING SERVICE WATER LINE
BWL:	BACK WASH L INE
BWRL:	BACK WASH RECYCLE LINE
BWSL:	BACK WASH SUPPLY LINE
CF:	CARTRIDGE FILTER
CFP:	CHEMICAL FEED PUMP
CV:	CHECK VALVE
DFCV:	DIAPHRAGM FLOW CONTROL VALVE
FWL:	FINISHED WATER LINE
FWTDL:	FINISHED WATER TANK DRAIN LINE
FWTOFL:	FINISHED WATER TANK OVER FLOW LINE
INJCL2:	INJECTION ASSEMBLY
INJCO2:	INJECTION ASSEMBLY
MIX:	STATIC MIXER
OFAFWT:	
PG:	PRESSURE GAUGE
PHS:	pH SENSOR
PRV:	PRESSURE REDUCING VALVE
PSV:	PRESSURE SAFETY VALVE
PT:	PRESSURE TRANSMITTER
QD:	QUICK DISCONNECT
SPL:	SUMP PUMP LINE
SPV:	SAMPLE PORT VALVE
WL:	WASTE LINE
WSL:	WELL SUPPLY LINE
WTPO:	WASTE TANK PUMP OUT
CO2:	CARBON DIOXIDE TANK
NaCOI:	SODIUM HYPOCHLORITE TANK

EQUIPMENT SCHEDULE

TAG	DESCRIPTION
T-01A	ARSENIC TREATMENT PRESSURE VESSEL 1
T-01B	ARSENIC TREATMENT PRESSURE VESSEL 2
T-02A	ARSENIC TREATMENT PRESSURE VESSEL 1 (FUTURE)
T-02B	ARSENIC TREATMENT PRESSURE VESSEL 2 (FUTURE)
T-03A	BACKWASH TANK
T-04A	FINISHED WATER TANK
T-05A	WASTE TANK

LEGEND

- NORMALLY OPEN BUTTERFLY VALVE (MANUALLY)
- NORMALLY CLOSED BUTTERFLY VALVE (MANUALLY)
- OPEN BALL VALVE
- CLOSED BALL VALVE
- SAMPLE VALVE
- METER (M)
- PRESSURE TRANSMITTER (PT)
- PRESSURE GAUGE (PG)
- CHECK VALVE
- PUMP

WILSON & COMPANY
4401 MASTHEAD ST. NE, SUITE 150
ALBUQUERQUE, NM 87109
PHONE: 505-348-4000
FAX: 505-348-4072
www.wilsonco.com

CONSULTANTS

SEAL

BRIAN J. AMBROGI
NEW MEXICO
17610
LICENSED PROFESSIONAL ENGINEER
1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

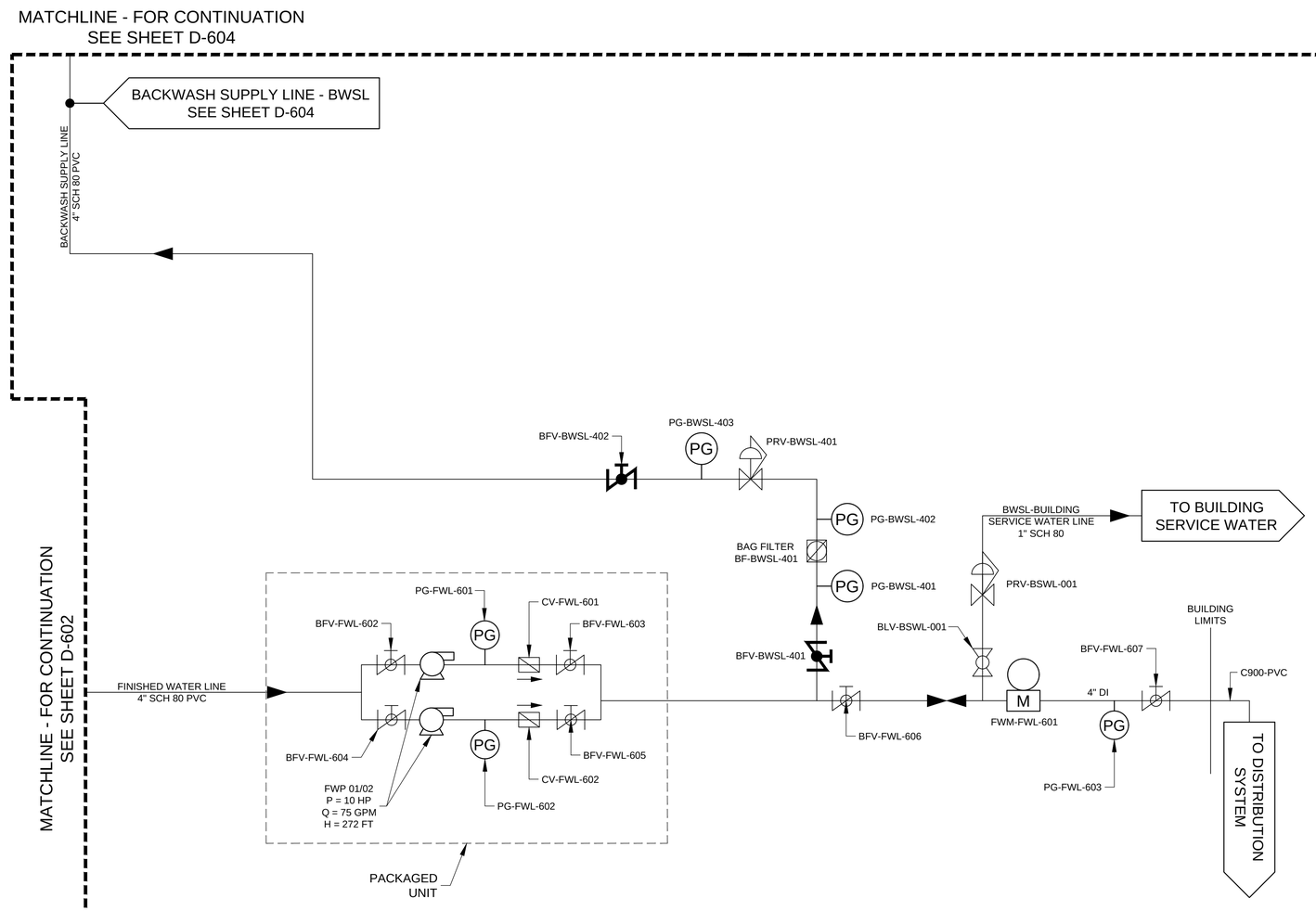
PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

PROCESS FLOW DIAGRAM 1

SHEET NO:

D-602



A1 PROCESS FLOW DIAGRAM

NOT TO SCALE

1/7/2021

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INJCL2:	INJECTION ASSEMBLY
INJCO2:	INJECTION ASSEMBLY
MIX:	STATIC MIXER
OFAFWT:	
PG:	PRESSURE GAUGE
PHS:	pH SENSOR
PRV:	PRESSURE REDUCING VALVE
PSV:	PRESSURE SAFETY VALVE
PT:	PRESSURE TRANSMITTER
QD:	QUICK DISCONNECT
SPL:	SUMP PUMP LINE
SPV:	SAMPLE PORT VALVE
WL:	WASTE LINE
WSL:	WELL SUPPLY LINE
WTPO:	WASTE TANK PUMP OUT
CO2:	CARBON DIOXIDE TANK
NaCOI:	SODIUM HYPOCHLORITE TANK

EQUIPMENT SCHEDULE

TAG	DESCRIPTION
T-01A	ARSENIC TREATMENT PRESSURE VESSEL 1
T-01B	ARSENIC TREATMENT PRESSURE VESSEL 2
T-02A	ARSENIC TREATMENT PRESSURE VESSEL 1 (FUTURE)
T-02B	ARSENIC TREATMENT PRESSURE VESSEL 2 (FUTURE)
T-03A	BACKWASH TANK
T-04A	FINISHED WATER TANK
T-05A	WASTE TANK

LEGEND

- NORMALLY OPEN BUTTERFLY VALVE (MANUALLY)
- NORMALLY CLOSED BUTTERFLY VALVE (MANUALLY)
- OPEN BALL VALVE
- CLOSED BALL VALVE
- SAMPLE VALVE
- METER
- PRESSURE TRANSMITTER
- PRESSURE GAUGE
- CHECK VALVE
- PUMP

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
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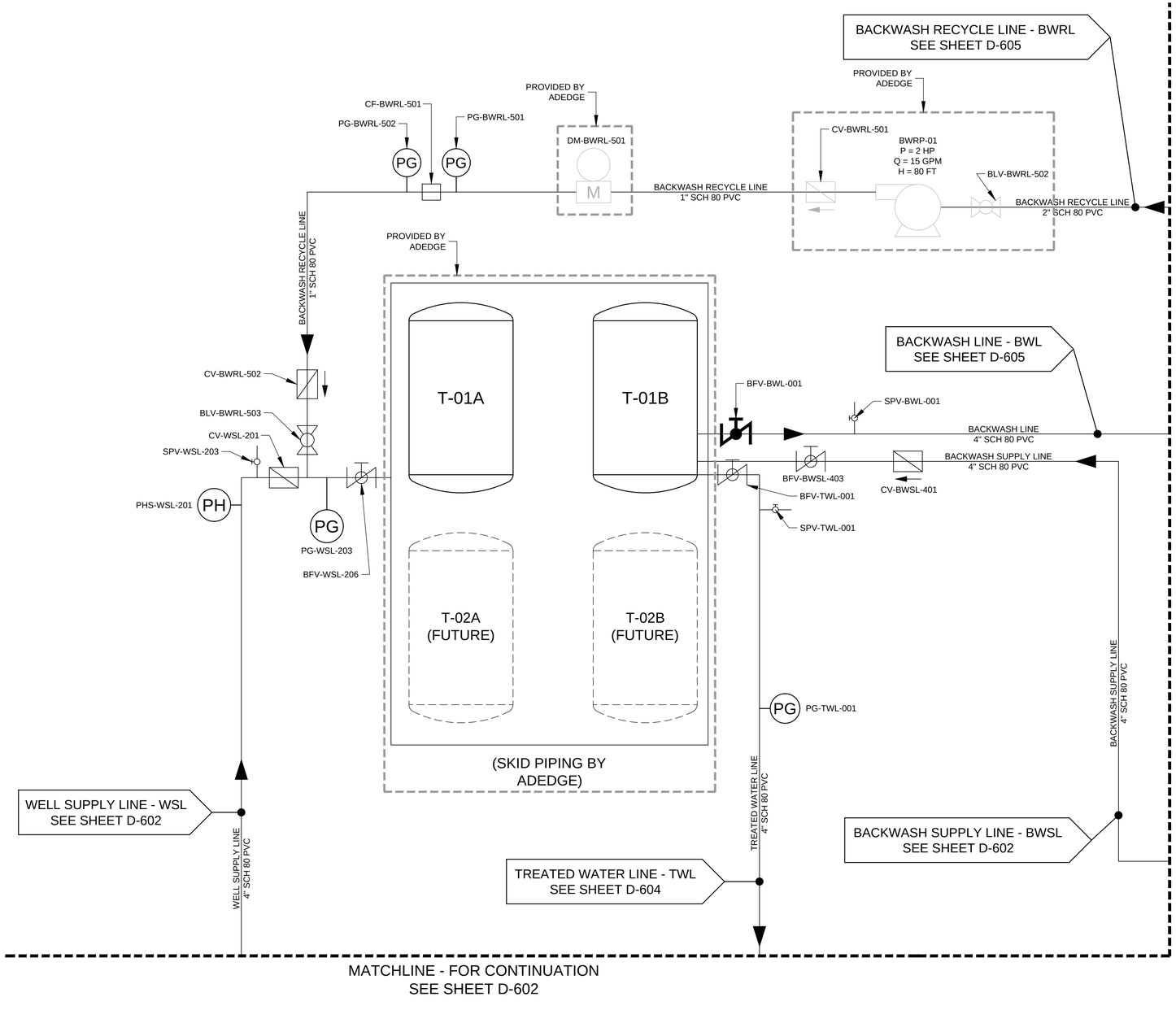
DATE:	JANUARY 05, 2021

SHEET TITLE

PROCESS FLOW DIAGRAM 2

SHEET NO:

D-603



A1 PROCESS FLOW DIAGRAM
NOT TO SCALE

1/7/2021

TYPICAL COMPONENT NOMENCLATURE

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WTPO:	WASTE TANK PUMP OUT
CO2:	CARBON DIOXIDE TANK
NaCOI:	SODIUM HYPOCHLORITE TANK

EQUIPMENT SCHEDULE

TAG	DESCRIPTION
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T-01B	ARSENIC TREATMENT PRESSURE VESSEL 2
T-02A	ARSENIC TREATMENT PRESSURE VESSEL 1 (FUTURE)
T-02B	ARSENIC TREATMENT PRESSURE VESSEL 2 (FUTURE)
T-03A	BACKWASH TANK
T-04A	FINISHED WATER TANK
T-05A	WASTE TANK

LEGEND

- NORMALLY OPEN BUTTERFLY VALVE (MANUALLY)
- NORMALLY CLOSED BUTTERFLY VALVE (MANUALLY)
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1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
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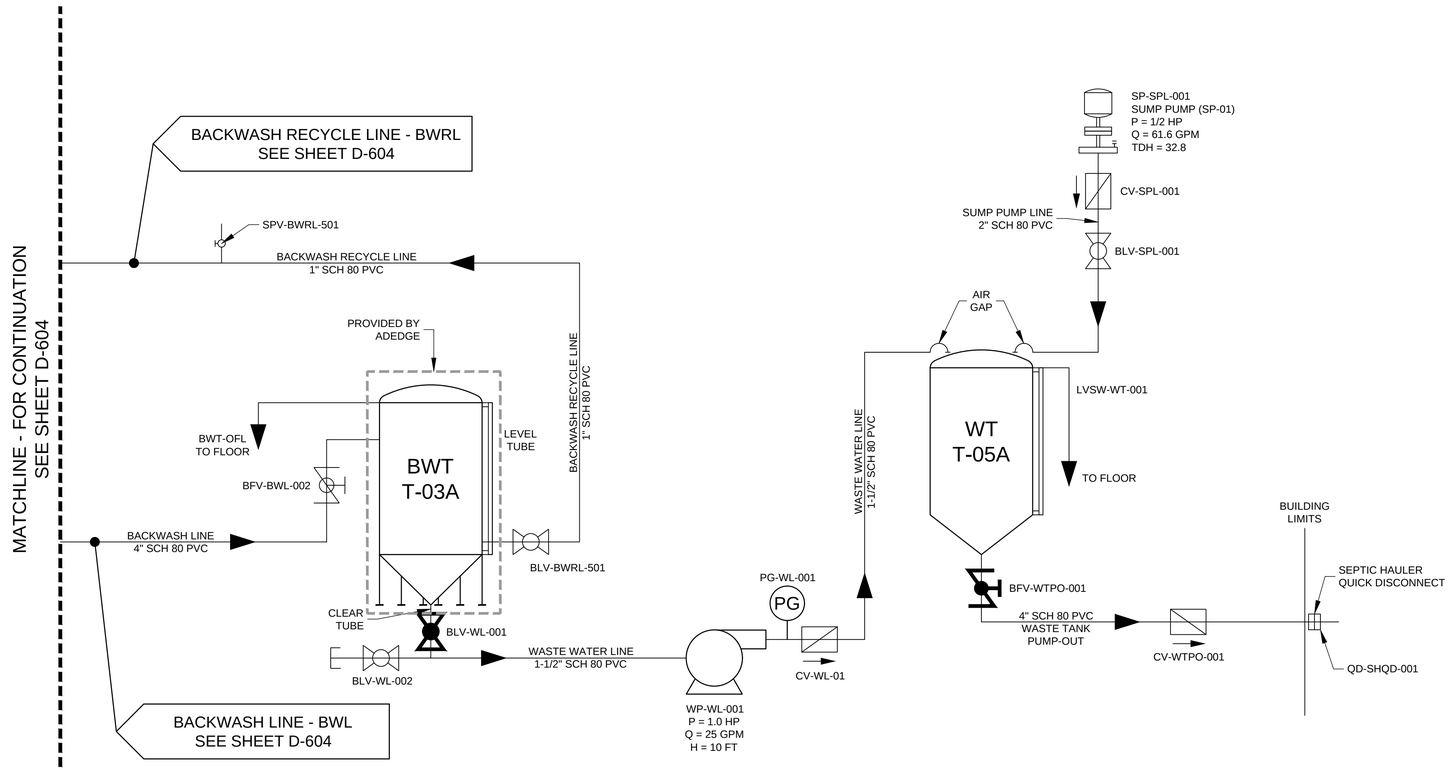
SHEET TITLE

PROCESS FLOW DIAGRAM 3

SHEET NO:

D-604



A1 PROCESS FLOW DIAGRAM

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1/7/2021

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PHS:	pH SENSOR
PRV:	PRESSURE REDUCING VALVE
PSV:	PRESSURE SAFETY VALVE
PT:	PRESSURE TRANSMITTER
QD:	QUICK DISCONNECT
SPL:	SUMP PUMP LINE
SPV:	SAMPLE PORT VALVE
WL:	WASTE LINE
WSL:	WELL SUPPLY LINE
WTPO:	WASTE TANK PUMP OUT
CO2:	CARBON DIOXIDE TANK
NaCOI:	SODIUM HYPOCHLORITE TANK

EQUIPMENT SCHEDULE

TAG	DESCRIPTION
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T-01B	ARSENIC TREATMENT PRESSURE VESSEL 2
T-02A	ARSENIC TREATMENT PRESSURE VESSEL 1 (FUTURE)
T-02B	ARSENIC TREATMENT PRESSURE VESSEL 2 (FUTURE)
T-03A	BACKWASH TANK
T-04A	FINISHED WATER TANK
T-05A	WASTE TANK

LEGEND

- NORMALLY OPEN BUTTERFLY VALVE (MANUALLY)
- NORMALLY CLOSED BUTTERFLY VALVE (MANUALLY)
- OPEN BALL VALVE
- CLOSED BALL VALVE
- SAMPLE VALVE
- METER
- PRESSURE TRANSMITTER
- PRESSURE GAUGE
- CHECK VALVE
- PUMP

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1/5/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
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SHEET TITLE

PROCESS FLOW DIAGRAM 4

SHEET NO:

D-605

VALVES

Water Supply Line (WSL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-WSL-201	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-WSL-203	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-WSL-204	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-WSL-205	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-WSL-206	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
SPV-WSL-201	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
SPV-WSL-202	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
SPV-WSL-203	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
CV-WSL-201	Check Valve	4"	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve

Back Wash Recycle Line (BWRL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BLV-BWRL-501	Ball Valve	2"	Hayward Flow Control	True Union Ball Valve
SPV-BWRL-501	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
BLV-BWRL-501	Ball Valve	1.0"	Hayward Flow Control	True Union Ball Valve
BLV-BWRL-502	Ball Valve	1.0"	Hayward Flow Control	True Union Ball Valve
CV-BWRL-501	Check Valve	1"	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve
SPV-BWRL-001	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)

Back Wash Line (BWL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-BWL-001	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-BWL-002	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFL-BWL-003	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
SPV-BWL-001	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)

Back Wash Supply Line (BWSL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-BWSL-401	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
PRV-BWSL-401	PRV	2"		
BFV-BWSL-402	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
CV-BWSL-401	Check Valve	4"	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve
BFV-BWSL-403	Butterfly	4"	Bray	RCEL-15,Series 31 Lug

Waste Line (WL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BLV-WL-001	Ball Valve	1.5"	Hayward Flow Control	True Union Ball Valve
BLV-WL-002	Ball Valve	1.5"	Hayward Flow Control	True Union Ball Valve
CV-WL-001	Check Valve	1.5	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve

Sump Pump Line (SPL)				
Valve ID	Type of Valve	Size	Mfg.	Model
CV-SPL-001	Check Valve	2"	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve
BLV-SPL-001	Ball Valve	2"	Hayward Flow Control	True Union Ball Valve

Bypass Line (BPL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-BPL-301	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
CV-BPL-301	Check Valve	4"	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve
BFV-BPL-302	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
DFCV-BPL-301	diaphragm Flow Control Valve	4"	George Fischer	Type 317

Finished Water Line (FWL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-FWL-601	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-FWL-602	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-FWL-603	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
BFV-FWL-604	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
SPV-FWL-601	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)

Waste Tank Pump Out (WTPO)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-WTPO-001	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
CV-WTPO-001	Check Valve	4"	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve

Building Service Water Line (BSWL)				
Valve ID	Type of Valve	Size	Mfg.	Model
PRV-BSWL-001	PRV	1"	Watts	LF123LP
BLV-BSWL-001	Ball Valve	1"	Hayward Flow Control	True Union Ball Valve

Well Flush Line (WFL)				
Valve ID	Type of Valve	Size	Mfg.	Model
PSV-WFL-001	Pressure Relief Safety Valve	4"	Singer	106-RPS
BFV-WFL-001	Butterfly	4"	Bray	RCEL-15,Series 31 Lug

Treated Water Line (TWL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-TWL-001	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
SPV-TWL-001	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
BFV-TWL-002	Butterfly	4"	Bray	RCEL-15,Series 31 Lug
CV-TWL-001	Check Valve	4"	Ritepro Corporation	Model XEZNSF-Check Rite Wafer Type Swing Check Valve

Finished Water Tank Over Flow Line (FWTOFL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-FWTOFL-001	Butterfly	4"	Bray	RCEL-15,Series 31 Lug

Finished Water Tank Drain Line (FWTDL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-FWTDL-001	Butterfly	4"	Bray	RCEL-15,Series 31 Lug

Air Blower Line (ABL)				
Valve ID	Type of Valve	Size	Mfg.	Model
BFV-ABL-001	Butterfly	4"	Bray	RCEL-15,Series 31 Lug

Downspout Drain Line(DSDL)				
Valve ID	Type of Valve	Size	Mfg.	Model
FV-DSDL-001	Flap Valve	6"	Waterman	PF-25

Trench Drain Line(TDL)				
Valve ID	Type of Valve	Size	Mfg.	Model
FV-TDL-001	Flap Valve	6"	Waterman	PF-25

Specialty Equipment

Water Suppy Line (WSL)				
Equipment ID	Detail	Size	Mfg.	Model
PT-WSL-201	4-20mA	0-100	Endress + Hauser	PMP21-1W11/0
PT-WSL-202	4-20mA	0-100	Endress + Hauser	PMP21-1W11/0
PG-WSL-201	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PG-WSL-202	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PG-WSL-203	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PHS-WSL-201	pH Sensor	NPT 1 1/2	GF Signet	3719 pH/ORP
PHD-WSL-201	pH Display	8052 mount kit	GF Signet	9900 Samrt Transmitter
BF-WSL-001	Bag Filter	4"	Shelco Filters	2BFS=25B-3F-316
INJCO2-WSL-001	CO2 Injector		By Adedge	
CO2S-SLV-401	CO2 Solenoid Valve	1/4- SS	Asco, Red Hat	8262H084,120v
INJCl-WSL-001	NaOCl Injector		Stenner Duckbill	UCDBINJ
MPNaOCl-WSL-001	NaOCl Metering Pump	9 gpd (1.4 iph)	Chemtech Series XP	XP009
NaOCl-C-WSL-001	Containment	40" X 40"	Ultra Tech	9606
MIX-WSL-201	Mixer	4"	Westfall Mfg.	2800

Backwash Recycle Line (BWRL)				
Equipment ID	Detail	Size	Mfg.	Model
CF-BWRL-501	Cartridge Filter	in/out 1"	Pentair/Pentek	150233-75
PG-BWRL-501	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PG-BWRL-502	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53

Backwash Supply Line (BWSL)				
Equipment ID	Detail	Size	Mfg.	Model
PG-BWSL-401	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PG-BWSL-402	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PG-BWSL-403	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
BF-BWSL-401	Bag Filter	4"	Shelco Filters	2BFS=25B-3F-316

Waste Line (WL)				
Equipment ID	Detail	Size	Mfg.	Model
PG-WL-001	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53

Finished Water Line (FWL)				
Equipment ID	Detail	Size	Mfg.	Model
PG-FWL-601	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PG-FWL-602	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
PHS-FWL-601	pH Sensor	NPT 1 1/2	GF Signet	3719 pH/ORP
PHD-FWL-601	pH Display	8052 mount kit	GF Signet	9900 Samrt Transmitter
LT-FWT-001	4-20 mA	1-10 feet	Endress + Hauser	PMP21-1W11/0
PT-FWL-601	4-20mA	0-100 feet	Endress + Hauser	PMP21-1W11/0

Treated Water Line (TWL)				
Equipment ID	Detail	Size	Mfg.	Model
PG-TWL-001	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53

Air Blower Line (ABL)				
Equipment ID	Detail	Size	Mfg.	Model
PF-ABL-001	Pre Air Filter	12"X12"x2"	Dayton	2HNT8
HF-ABL-001	HEPA Air Filter	12"X12"x11.5"	Air Handler	2GJC6
PG-ABL-001	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
AFM-ABL-001	Air Flow Meter	4-20mA	FCI	ST50 Mas Flow Meter
ME-ABL-001	Mesh Mist Eliminator	12" X 6"	ACS Industries	Style 4CA

Septic Hauler Quick Disconnect (SHQD)				
Equipment ID	Detail	Size	Mfg.	Model
QD-SHQD-001	Quick Disconnect	4"	Grainger	3LX73

Tank Level Switches				
Equipment ID	Detail	Size	Mfg.	Model
LVSW-BWT-001	Ultrasonic Point Level Switch	3/4 NPT	Omega	LVSW-701
LVSW-WT-001	Ultrasonic Point Level Switch	3/4 NPT	Omega	LVSW-701
LVSW-FWT-001	Ultrasonic Point Level Switch	3/4 NPT	Omega	LVSW-701
FWTOF-FWT-001	Ultrasonic Point Level Switch	3/4 NPT	Omega	LVSW-701

Building Service Water Line (BSWL)				
PG-BSWL-001	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53

SGT Assembly- Sampling Port, Gauge , Pressure Transmitter

Equipment ID	Detail	Size	Mfg.	Model
Sampling Port	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
Gauge	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
Pressure Transmitter	4-20mA	0-100	Endress + Hauser	PMP21-1W11/0

SG Assembly- Sampling Port, Gauge

Equipment ID	Detail	Size	Mfg.	Model
Sampling Port	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
Gauge	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53

S Assembly- Sampling Port

Equipment ID	Detail	Size	Mfg.	Model
Sampling Port	Sampling Port	1/4"	Asahi/ America	Labcock Series Valve (PVC)
Gauge	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53
Pressure Transmitter	4-20mA	0-100	Endress + Hauser	PMP21-1W11/0

G Assembly- Gauge

Equipment ID	Detail	Size	Mfg.	Model
Gauge	2" oil filled PSI Gauge	0-100 psig	WIKA	Type 233.53

CO2 Alarm System				
Equipment ID	Detail	Size	Mfg.	Model
CO2M-CO2A-001	CO2 Remote Alarm	Remote	CO2Meter	RAD-0102-6
CO2M-CO2S-001	CO2 Sensor	1-5000 ppm	CO2Meter	RAD-0102-6

Water Sensors (Water on Floor)				
WS-WOF-CO2-001	Moisture Detector	MX1 Series	Veris Industries	MX1B
WS-WOF-AST-001	Moisture Detector	MX1 Series	Veris Industries	MX1B
WS-WOF-FWP-001	Moisture Detector	MX1 Series	Veris Industries	MX1B
WS-WOF-WT-001	Moisture Detector	MX1 Series	Veris Industries	MX1B

Well#3 Well Level Transmitter				
LT-Well	Submersible Pressure Transducer	7.1"	Dynotek	SLIMLINE

Well #3 VFD				
VFD-Well	VFD Driver		ABB	ACH550

GENERAL NOTES

1. FLANGE CONNECTIONS (VALVES, METERS, SKIDS, etc.) TO PVC PIPE SHALL USE VAN STONE FLANGES.
2. SEE SHEET E-103 FOR INSTRUMENT LIST.
3. INSTALLATION, OPERATION AND MAINTENANCE MANUALS OR INSTRUCTIONS, AS AVAILABLE, TO BE PROVIDED TO OWNER AS PART OF FACILITY COMMISSIONING.
4. SEE SHEET D-610/ ATTACHMENT FOR ITEMS INCLUDED IN TREATMENT SKID BY ADEDGE.
5. SEE SHEET D-611/ ATTACHMENT FOR ITEMS INCLUDED IN BACKWASH RECYCLE PUMP SKID BY ADEDGE.

TYPICAL COMPONENT NOMENCLATURE

AFD	AIR FLOW DAMPER
APG	AIR PRESSURE GUAGE
ARV	AIR RELEASE VALVE
BF	BAG FILTER
BFV	BUTTERFLY VALVE
BLV	BALL VALVE
BPL	BYPASS LINE
BSWL	BUILDING SERVICE WATER LINE
BWL	BACK WASH LINE
BWRL	BACK WASH RECYCLE LINE
BWSL	BACK WASH SUPPLY LINE
CF	CARTRIDGE FILTER
CO2	CARBON DIOXIDE TANK
CV	CHECK VALVE
DFCV	DIAPHRAGM FLOW CONTROL VALVE
DSDL	DOWN SPOUT DRAIN LINE
FDP	FLOOR DRAIN LINE
FSL	FACILITY SERVICE LINE
FWL	FINISHED WATER LINE
FWTDL	FINISHED WATER TANK DRAIN LINE
FWTOFL	FINISHED WATER TANK OVER FLOW LINE
INJCL2	NaOCL INJECTION ASSEMBLY
INJCO2	CO2 INJECTION ASSEMBLY
LVSW	LEVEL SWITCH
MIX	STATIC MIXER
NaOCl	SODIUM HYPOCHLORITE TANK
OFAFWT	AIR RELIEF VALVE
PG	PRESSURE GUAGE
PHS	pH SENSOR
PRV	PRESSURE REDUCING VALVE
PSV	PRESSURE SAFETY VALVE
PT	PRESSURE TRANSMITTER
QD	QUICK DISCONNECT
SPL	SUMP PUMP LINE
SPV	SAMPLE PORT VALVE
TDP	TRENCH DRAIN LINE
WL	WASTE LINE
WSL	WELL SUPPLY LINE
WTPO	WASTE TANK PUMP OUT

Tanks

Tank ID	Type of Tank	Volume usable (gallons)	Bottom	Height (cone)	Height (inches)	Diameter (inches)	Mfg.	Model	Weight
BWT-T03A	Polyethylene	3933	Cone 15º	16.67"	126"	122.0 "	Den Hartog	CB4200-122	32,801
WT-T-05A	Polyethylene	1958	Cone 32º	26.28"	53.75"	96.0"	Miller Plastics	Custom	16,330
FWT-T-04A	Polyethylene	2350	Flat	n/a	120.0"	120.0"	Miller Plastics	Custom	19,599
NaOCl-T-WSL-001	Polyethylene	30	Flat	n/a	31.2"	18"	Snyder	1541000N	

Pumps

Pump ID	Supplied by	HP	GPM	Voltage	TDH	Mfg.	Model
RP-BWRL-501	Adedge		15	230/1PH	87 ft	Grunfos	
WP-WL-001	Bid Item	1 hp	25	230/1PH	10	Grunfos	10707 LC
SPR-SPL-001	Bid Item	0.5 hp	61.6	230/1PH	32.8	Grundfos/ Unilift	AP12.40.04.A1
FWP-FWL-001	Bid Item	20 hp	150	230/1PH	273	Grunfos	2 CR32-4
FWP-FWL-002	Bid Item	20 hp	150	230/1PH	273	Grunfos	2 CR32-4
FWP Includes MPC 2CR 32-4,4"Ansi Manifolds, (2) 4" Flex Connectors, Liquid Level Switch, (4) Isolqtion valves, Check Valve							
FW-MPC-FWP	Finish Water Pump VFD						

Blower

Blower ID	Supplied by	HP	CFM	RPM	in/out	Mfg.	Model
ASB-ABL-001	Bid Item	0.75hp, 230v	344	3750	5.75/4.0	Chicago Blower	900-8.5x2.75

Metering Pump

MPNaOCl-WSL-001	Bid Item	n/a	9GPD/1.4 LPH	115	n/a	Chemtec	Series XP009
AC Current sensor for Sump Pump							
PCM-SPR-SPL-001	Current Sensor					ACUAMP	ACT050

Meters

Meter ID	Type of Meter	Size	Mfg.	Model
AFM-ABL-001	AFM-ABL-001	4"	FCI	ST50 4M11A000 Mass Flow Meter
W3M-WSL-201	ModMag	4"	Badger	M2000
BPM-BPL-301	Electromagnetic	4"	Endress+Hauser	Promag L 400
DM-BWRL-501-Adedge	Electromagnetic	1"	Endress+Hauser	Promag L 400
FWM-FWL-601	Electromagnetic	4"	Endress+Hauser	Promag L 400
WFM-FE251A-Adedge	Electromagnetic	4"	Endress+Hauser	Promag L 400
WFM-FE251B-Adedge	Electromagnetic	4"	Endress+Hauser	Promag L 400

EQUIPMENT SCHEDULE

I.D. NO.	ITEM DESCRIPTION
01	T-01A - ARSENIC TREATMENT VESSEL 1
02	T-01B - ARSENIC TREATMENT VESSEL 2
03	T-02A - ARSENIC TREATMENT VESSEL 3 (FUTURE)
04	T-02B - ARSENIC TREATMENT VESSEL 4 (FUTURE)
05	BWT - BACKWASH WATER TANK (10.16' DIA. - 10.5' HEIGHT)
06	FWT - FINISHED WATER TANK (10' DIA. - 10' HEIGHT)
07	WT - WASTE TANK (8' DIA. - 8'-8" HEIGHT)
08	BWRL - BACKWASH RECYCLE PUMP (BWRP-01)
09	WP - WASTE WATER PUMP (WP-01)
10	FWP - FINISHED WATER PUMP (FWP 01/02)
11	AIR STRIPPER (FUTURE)
12	BLOWER INTAKE
13	AIR EXHAUST TO ATMOSPHERE WITH DEMISTER
14	AIR STRIPPER BLOWER (ASB-001)
15	SUMP PUMP (SPL-001)
16	TRENCH DRAIN
17	BAG FILTER
18	BACKWASH RECYCLE WATER FILTER CARTRIDGE
19	TRENCH DRAIN OVERFLOW
20	C02 SUPPLY STORAGE
21	NaOCl STORAGE TANK
22	NaOCl METERING PUMP
23	4" QUICK DISCONNECT
24	4" DI SPOOL
25	4" BUTTERFLY VALVE (FLxFL) W/ PVC PIPE FLANGE ADAPTORS
26	4" DI TEE FLxFL
27	4" 90° DI BEND W/ RESTRAINTS (FLxFL)
28	4" PRESSURE REDUCING VALVE
29	4" PVC TEE
30	1" BALL VALVE NPT
31	1" PRESSURE REDUCING VALVE W/ STRAINER
32	1" PVC SPOOL
33	4" 90° PVC BEND
34	4" PVC DISTRIBUTION SUPPLY LINE
35	4" 45° PVC BEND
36	4" 45° DI BEND W/ RESTRAINTS (FLxFL)
37	4" PVC SPOOL
38	2" 90° PVC BEND
39	4" MAG METER
40	2" PVC SPOOL
41	4" 90° BEND WELDED STAINLESS STEEL PIPE
42	4" x 2" PVC TEE
43	3" CAM LOCK FITTING WITH REMOVABLE STAINLESS STEEL SCREEN
44	4" x 2" DI TEE
45	3" DI SPOOL
46	3" 45° DI BEND W/ RESTRAINTS (FLxFL)
47	1" PVC SPOOL
48	1" 45° PVC BEND
49	1" 90° PVC BEND
50	1-1/2" PVC SPOOL
51	1-1/2" 45° PVC
52	1-1/2" 90° PVC
53	4" x 6" 90° DI BEND
54	1" AIR RELEASE VALVE
55	1/4" PV SAMPLE TAP ASSEMBLY
56	PH SENSOR
57	4" ENDRESS HAUSER FLOW METER
58	PRESSURE GAUGE ASSEMBLY
59	6" PVC SPOOL
60	4" 45° DI BEND W/ RESTRAINTS (MJxMJ)
61	4" 90° DI BEND W/ RESTRAINTS (MJxMJ)
62	1-1/2" BALL VALVE
63	6" DI TEE (FLxFL)
64	6" 90° DI BEND W/ RESTRAINTS (FL xFL)
65	6" 45° DI BEND W/ RESTRAINTS (MJ x MJ)
66	6" 45° DI BEND W/RESTRAINTS (FL xFL)
67	12"x12"x18" FIELD FABRICATED HEPA FILTER RACK WITH 2" PRE-FILTER
68	4" CHECK VALVE
69	2" CHECK VALVE
70	1-1/2" CHECK VALVE
71	1" CHECK VALVE
72	DUCKBILL CHECK VALVE - INJECTOR
73	4" 2800 MIXER - WESTFALL MANUFACTURING CO.
74	4" DIAPHRAGM FLOW CONTROL VALVE
75	2" BALL VALVE
76	4" PVC VANSTONE FLANGE ADAPTOR
77	ADJUSTABLE PIPE SUPPORT
78	4" DI FLANGE ADAPTOR
79	4 DRUM LOW PROFILE CONTAINMENT PALLET. MODEL NO. 1645
80	6" x 36" CONCRETE SPLASH PAD
81	2" PRESSURE SAFETY VALVE
82	4" x 1" PVC TEE
83	4" CLEAR PVC SCH 80 PIPE
84	4" x 3" PVC TEE
85	3" BUTTERFLY VALVE
86	3" PVC SPOOL
87	FLAP VALVE
88	10" ROUND SOFFIT VENT COVER W/ LOUVERS AND BUG SCREEN - COLOR TO MATCH BUILDING
89	2" 45° PVC BEND

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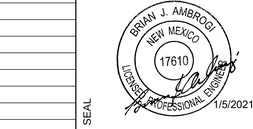


PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

EQUIPMENT SCHEDULES

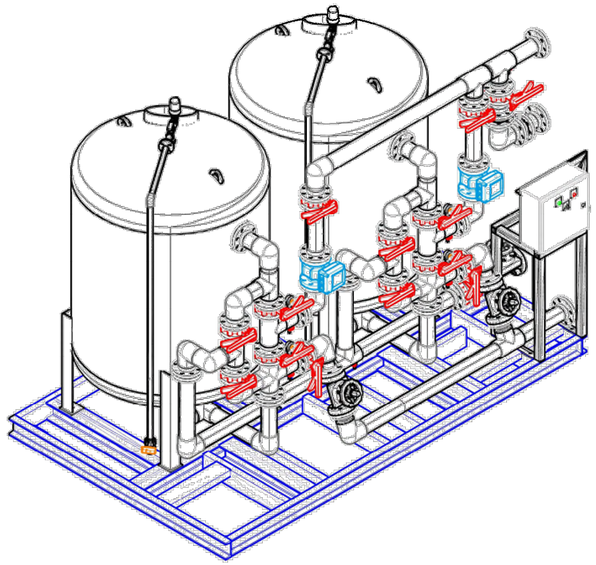
SHEET NO:

D-606

1/7/2021

LA MESA CO-OP WELL 3, NM

ADEDGE TREATMENT SYSTEM



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CONTRACTOR/CONTRATISTA: ------

SHEET INDEX

DRAWING NO.	TITLE	SHEET NO.

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	--	TBD-TBD	12/12/19	NTS

MODEL: ADEDGE TREATMENT SYSTEM
MODEL: APU33-6060CS-2-MVH

CUSTOMER: LA MESA CO-OP WELL 3, NM

TITLE: COVER

Note: this drawing has been provided by an equipment manufacturer as the basis of design, the engineering seal does not apply to the specific design of the included equipment, design process, or details.

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PROJECT NAME: LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE: ADEDGE COVER SHEET

SHEET NO: D-607

1/7/2021

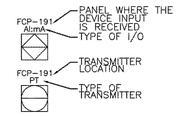
LOCATION / ACCESSIBILITY	DISCRETE SYMBOL	SHARED DISPLAY & CONTROL (DCS)	PROGRAM-ABLE LOGIC CONTROLLER	DISCRETE HARDWARE INTERLOCK
FIELD MOUNTED 1) FIELD OR LOCALLY MOUNTED 2) ACCESSIBLE TO AN OPERATOR AT THE DEVICE	◯	▢	◇	◇
PRIMARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR 1) CENTRAL OR MAIN CONTROL ROOM 2) FRONT OF MAIN PANEL OR CONSOLE MOUNTED 3) VISIBLE ON VIDEO DISPLAY 4) ACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE	⊖	⊖	⊖	
PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR 1) CENTRAL OR MAIN CONTROL ROOM 2) REAR OF PANEL OR CABINET MOUNTED 3) NOT VISIBLE ON VIDEO DISPLAY 4) INACCESSIBLE TO AN OPERATOR AT DEVICE OR CONSOLE	⊖	⊖	⊖	
AUXILIARY LOCATION NORMALLY ACCESSIBLE TO OPERATOR 1) SECONDARY OR LOCAL CONTROL ROOM 2) FIELD OR LOCAL CONTROL PANEL 3) FRONT OF SECONDARY OR LOCAL PANEL MOUNTED 4) VISIBLE ON VIDEO DISPLAY 5) ACCESSIBLE TO OPERATOR AT DEVICE OR CONSOLE	⊖	⊖	⊖	
AUXILIARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR 1) SECONDARY OR LOCAL CONTROL ROOM 2) FIELD OR LOCAL CONTROL PANEL 3) REAR OF SECONDARY/LOCAL OR CABINET PANEL MOUNTED 4) NOT VISIBLE ON VIDEO DISPLAY 5) NOT ACCESSIBLE TO OPERATOR AT DEVICE OR CONSOLE	⊖	⊖	⊖	

TYPICAL TRANSMITTER NOMENCLATURE AND TRANSMITTER LOCATION ARE AS FOLLOWS:

IF THE TRANSMITTER IS CONTROL PANEL MOUNTED THE PANEL TAG NUMBER WILL BE PROVIDED (E.G. FCP-191); IF THE TRANSMITTER IS LOCALLY MOUNTED ON THE SENSOR, THE DESIGNATION "LOCAL" WILL BE PROVIDED. IF THE TRANSMITTER IS MOUNTED ON A LOW FLOW PANEL THEN THE TAG WILL BE PROVIDED (E.G. LFP-175).

TYPICAL PANEL I/O NOMENCLATURE

AI ANALOG INPUT (E.G. mA OR mV)
AO ANALOG OUTPUT (E.G. mA OR mV)
DI DIGITAL INPUT (E.G. NS OR HSI)
NS NORMAL SPEED; SINGLE CONTACT CLOSURE
HSI HIGH SPEED INPUT; MULTIPLE CONTACT CLOSURES
DO DIGITAL OUTPUT
1) RELAY FOR VALVE OR PUMP ON/OFF CONTROL
2) PULSE FOR DOSING PUMP AND FLOW CONTROL
SI DATA OR SCADA INPUT (E.G. MODBUS OR EIP)
SO DATA OR SCADA OUTPUT (E.G. MODBUS OR EIP)



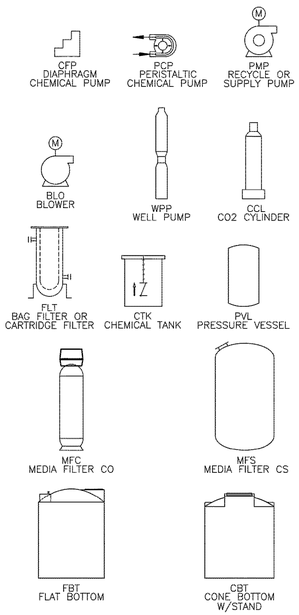
TYPICAL NOMENCLATURE	
AE	ANALYTICAL SENSOR
AIT	ANALYTICAL TRANSMITTER
BFV	BUTTERFLY VALVE
BLO	BLOWER
BLV	BALL VALVE
CBT	CONE BOTTOM TANK
CCL	CO_2 CYLINDER
CFP	CHEMICAL FEED PUMP
CKV	CHECK VALVE
CST	CORPORATION STOP
CTK	CHEMICAL STORAGE TANK
DMV	DIAPHRAGM VALVE
DTK	CHEMICAL DAY TANK
EDC	EDUCATOR/EJECTOR (CHEMICAL DRAW)
FBT	FLAT BOTTOM TANK
FCP	FILTER CONTROL PANEL
FCV	FLOW CONTROL VALVE
GV	GATE VALVE
FG	SIGHT GLASS (PVC/STAINLESS)
FKV	FLECK VALVE
FIT	FLOW TRANSMITTER
FLT	BAG OR CARTRIDGE FILTER HOUSING
FME	FLOW METER
FQT	FLOW TOTALIZING TRANSMITTER
HET	HEATING ELEMENT
INJ	INJECTION ASSEMBLY
LCP	LOCAL CONTROL PANEL
LG	LEVEL VIEWING
LIT	LEVEL INDICATION TRANSMITTER
LSH	LEVEL SWITCH HIGH
LSL	LEVEL SWITCH LOW
LT	LEVEL TRANSMITTER
FCP	MASTER CONTROL PANEL
MEL	MEMBRANE ELEMENT
MFO	MEDIA FILTER COMPOSITE VESSEL
MFS	MEDIA FILTER CARBON STEEL VESSEL
MIX	STATIC MIXER
PCP	PERISTALTIC CHEMICAL PUMP
PDIS	PRESSURE DIFFERENTIAL INDICATING SWITCH
PI	PRESSURE INDICATION (LOCAL READING)
PMP	PUMP
PSE	PRESSURE REDUCING VALVE
PSV	PRESSURE RELIEF VALVE
PT	PRESSURE TRANSDUCER
PVL	PRESSURE VESSEL
RP	RELAY PANEL
SPV	SAMPLE VALVE

TYPICAL SYMBOLS

AIR RELEASE VALVE
BALL VALVE (MANUAL / NORMALLY OPEN)
BALL VALVE (MANUAL / NORMALLY CLOSED)
BALL VALVE (ELECTRIC ACTUATED)
BUTTERFLY VALVE (MANUAL)
BUTTERFLY VALVE (ELECTRIC ACTIVATED)
BUTTERFLY VALVE (PNEUMATIC ACTIVATED)
CHECK VALVE
CIRCUIT BALANCING VALVE (MANUAL)
CROSSOVER VALVE
DIAPHRAGM VALVE (MANUAL)
FLOW CONTROL VALVE
GATE VALVE
GLOBE VALVE
NEEDLE OR TOGGLE VALVE (NORMALLY CLOSED)
PILOT OPERATED DIAPHRAGM VALVE
PRESSURE REDUCING VALVE
PRESSURE RELIEF VALVE
SOLENOID CONTROL VALVE
THREE-WAY VALVE (MANUAL)
VACUUM RELIEF VALVE
V-PORT BALL VALVE

FLOAT LEVEL INDICATOR
MAGNETIC FLOW METER
TURBINE/IMPELLER FLOW METER
VARIABLE AREA FLOW INDICATOR
CORPORATION STOP
STATIC MIXER
PIPE REDUCER
UNION
DRAIN
FLEXIBLE TUBING/HOSE

MAIN PROCESS LINE
SECONDARY PROCESS LINE
PIPING BY OTHER
HYDRAULIC SIGNAL
DISCRETE CONTROL SIGNAL
PNEUMATIC SIGNAL
POWER SUPPLY SIGNAL
ANALOG CONTROL SIGNAL
INSTRUMENT SUPPLY/CONNECTION TO PROCESS
ELECTRIC SIGNAL
CAPILLARY TUBE
SOFTWARE / DATA LINK
MECHANICAL LINK
SKID BOUNDARIES



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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	–	–
B	–	–
C	–	–
D	–	–
E	–	–
F	–	–
G	–	–

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	–	TBD	12/12/19	NTS

MODEL: ADEDGE TREATMENT SYSTEM MODEL: APU33-6060CS-2-MVH

CUSTOMER: LA MESA CO-OP WELL 3, NM

TITLE: GENERAL NOTES

DRAWING NUMBER: G-001

SHEET: 1 OF 7

Note: this drawing has been provided by an equipment manufacturer as the basis of design, the engineering seal does not apply to the specific design of the included equipment, design process, or details.

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PROJECT NAME: LMWC WELL 3 ARSENIC TREATMENT FACILITY

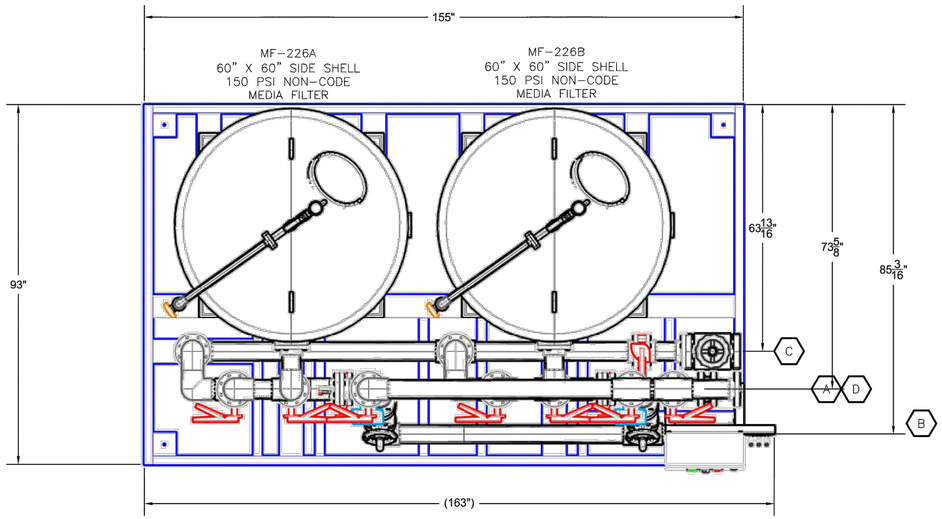
REV.	DATE	DESCRIPTION	BY

PROJECT NO: 16-600-204-00
DESIGNED BY: PAR
DRAWN BY: CRU
CHECKED BY: BJA
DATE: JANUARY 05, 2021

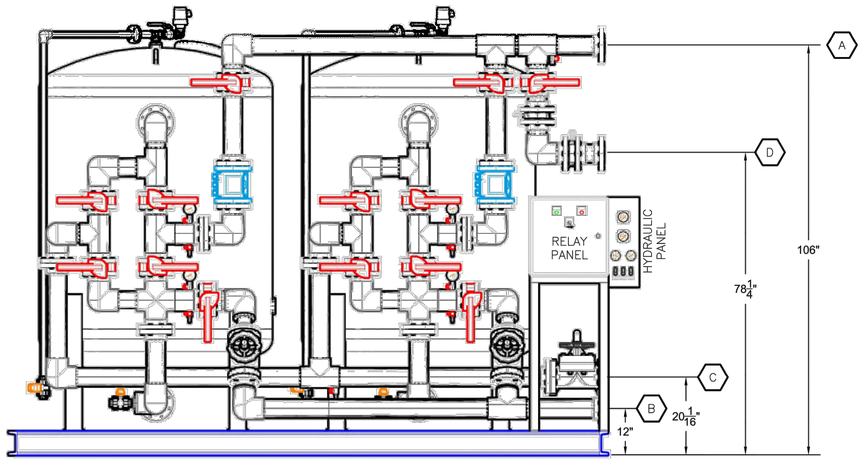
SHEET TITLE: ADEDGE GENERAL NOTES

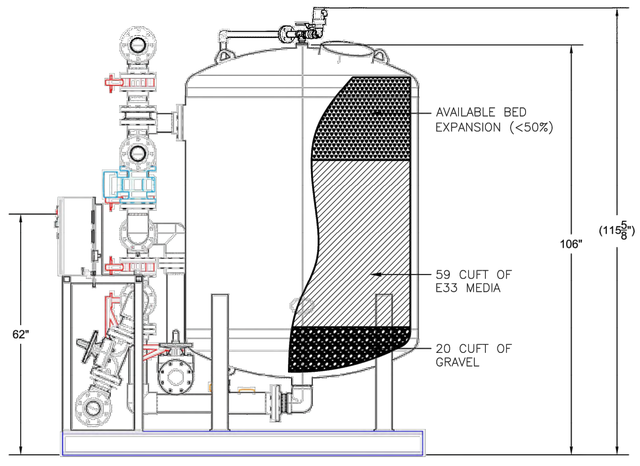
SHEET NO: D-608

1/7/2021



Valve Table						
Valve Tag	Vessel A in Lead	Vessel B in Lead	Vessel A		Vessel B	
			Backwash	Rinse	Backwash	Rinse
011A	O	C	C	O	C	C
012A	C	O	C	C	C	C
013A	C	C	O	C	C	C
014A	C	O	O	C	C	C
015A	O	C	C	O	C	C
011B	C	O	C	C	C	O
012B	O	C	C	C	C	C
013B	C	C	C	C	O	C
014B	O	C	C	C	O	C
015B	C	O	C	C	C	O
217	C	C	O	O	O	O
216	C	C	O	O	O	O





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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	RAW WATER INLET	4" SCH80 PVC 150# FLANGE
B	TREATED WATER OUTLET	4" SCH80 PVC 150# FLANGE
C	BACKWASH OUTLET	4" SCH80 PVC 150# FLANGE
D	AUX. BACKWASH INLET	4" SCH80 PVC 150# FLANGE

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	–	TBD	12/12/19	NTS

MODEL: ADEDGE TREATMENT SYSTEM
MODEL: APU33-6060CS-2-MVH

CUSTOMER: LA MESA CO-OP WELL 3, NM

TITLE: GENERAL ARRANGEMENT

DRAWING NUMBER: M-001

SHEET: 5 OF 7

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

ADEDGE GENERAL ARRANGEMENT

SHEET NO:

D-609

1/7/2021

DESCRIPTION:

1. SYSTEM MODEL: APU33-6060CS-2-MVH
2. SKID-MOUNTED SYSTEM
3. MEDIA: E33 ABSORPTION MEDIA
4. CONTROL VALVES: 4" LUG-STYLE BUTTERFLY
5. SYSTEM CONTROL: MANUAL
6. VESSELS: TWO (2) 60" DIAMETER X 60" SIDESHELL
7. SYSTEM PRESSURE: 100 PSI MAX

DIMENSIONAL NOTES:

5. ALL DIMENSIONS ARE +/- 2".
6. DO NOT SCALE DRAWING. REFER TO ADEDGE ENGINEERING DEPT FOR ALL DIMENSIONS.
7. (##): REFERENCE DIMENSION

GENERAL SYSTEM SPECIFICATIONS:

1. 4" SCH80 PVC INLET/OUTLET HEADERS WITH FLANGED TIE POINTS
2. 4" SCH80 PVC HARNESS PIPING ON EACH VESSEL
3. 4" BRAY S31 LUG-STYLE BUTTERFLY VALVES WITH RCEL ACTUATED VALVE HARNESS
4. 3" BRAY S31 LUG-STYLE BUTTERFLY VALVES WITH MANUAL OPERATOR FOR VESSEL ISOLATION
5. 4" GF MANUAL DIAPHRAGM VALVE FOR THROTTLING ON EACH TREATED OUTLET
6. 3" GF MANUAL DIAPHRAGM VALVE FOR THROTTLING ON SYSTEM BACKWASH OUTLET
7. CLEAR SIGHT WINDOW ON COMMON BACKWASH OUTLET

VESSEL SPECIFICATIONS:

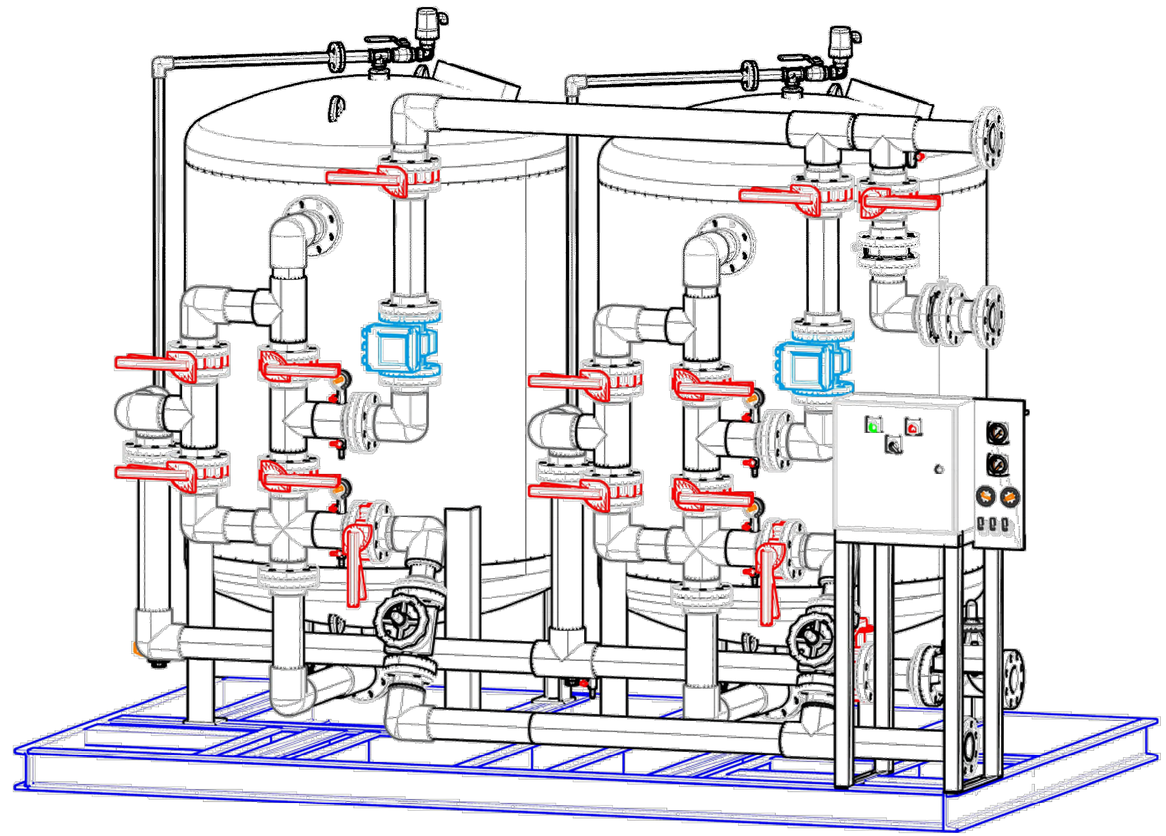
1. NON-CODE CARBON STEEL PRESSURE VESSELS
2. DESIGN PRESSURE: 118 PSI MAX
3. F&D HEADS
4. DESIGN TEMPERATURE: AMBIENT
5. NO TANK LINING WARRANTY ABOVE 120F
6. 12"X16" TOP MANWAY FOR MEDIA LOADING
7. 6"X8" SIDE HANDHOLE
8. VESSEL INTERIOR: SSPC-SP5 FULL WHITE METAL BLAST (IMMERSION) 10-16 MILS DFT DEVOE 233H EPOXY, CERTIFIED TO ANSI/NSF61
9. VESSEL EXTERIOR: SSP-SP10 NEAR WHITE METAL BLAST (IMMERSION) 5-8 MILS DFT TNEMEC N69F, PRIMER, SAFETY BLUE COLOR
10. 4" SCH80 PVC HUB AND LATERAL OUTLET COLLECTION
11. 4" SCH80 PVC INLET DISTRIBUTOR
12. MEDIA QUANTITIES: (SEE SIDE VIEW)

INSPECTION & TESTS:

1. SYSTEM HYDROTEST PRESSURE: 150 PSI @ AMBIENT

OPERATING CONDITIONS:

1. FLOW CONFIGURATION: SERIES OR PARALLEL
2. WELL FLOW RATE: 150 GPM
3. BACKWASH FLOW RATE: 220 GPM PER VESSEL
4. BACKWASH SOURCE AND FAST RINSE SOURCE: TREATED WATER BACK FROM PRESSURIZED DISTRIBUTION THROUGH AUXILIARY INLET CONNECTION
5. BACKWASH OPERATION:
   A. ONLY ONE VESSEL SHALL BE BACKWASHED AT A TIME
   B. VESSELS NOT IN BACKWASH SHALL BE OFFLINE
   C. WELL PUMP SHALL BE LOCKED OUT DURING BACKWASH AND FAST RINSE
6. SHIPPING WEIGHT OF SYSTEM: APPROX. 5,000 LBS EMPTY



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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	RAW WATER INLET	4" SCH80 PVC 150# FLANGE
B	TREATED WATER OUTLET	4" SCH80 PVC 150# FLANGE
C	BACKWASH OUTLET	4" SCH80 PVC 150# FLANGE
D	AUX. BACKWASH INLET	4" SCH80 PVC 150# FLANGE

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	–	TBD	12/12/19	NTS

MODEL: ADEDGE TREATMENT SYSTEM
MODEL: APU33-6060CS-2-MVH

CUSTOMER: LA MESA CO-OP WELL 3, NM

TITLE: ISO GENERAL ARRANGEMENT

DRAWING NUMBER: M-002

SHEET: 6 OF 7

Note: this drawing has been provided by an equipment manufacturer as the basis of design, the engineering seal does not apply to the specific design of the included equipment, design process, or details.

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CONSULTANTS

SEAL

FOR REFERENCE ONLY

PROJECT NAME: LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE: ADEDGE ISO GENERAL ARRANGEMENT

SHEET NO: D-610

1/7/2021

DESCRIPTION:

1. SKID–MOUNTED PUMP ASSEMBLY
2. VERTICAL CENTRIFUGAL MULTI–STAGE PUMP
3. SYSTEM PRESSURE: 30 PSI MAX

DIMENSIONAL NOTES:

1. ALL DIMENSIONS ARE +/– 2".
2. DO NOT SCALE DRAWING. REFER TO ADEDGE ENGINEERING DEPT FOR ALL DIMENSIONS.
3. (##): REFERENCE DIMENSION

GENERAL SYSTEM SPECIFICATIONS:

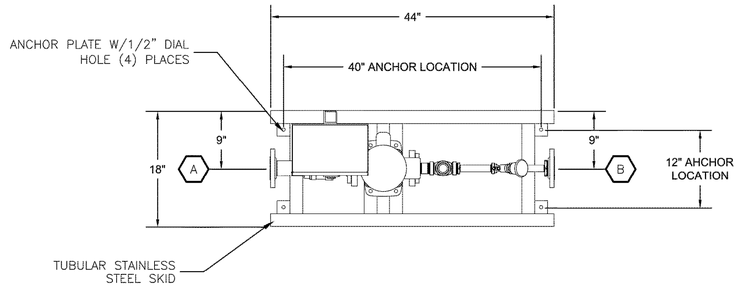
1. 304SS TUBULAR SKID FRAME
2. 2" 304SS ANSI 150# FLANGED INLET SKID CONNECTION
3. 2" 304SS ANSI 150# FLANGED OUTLET SKID CONNECTION
4. 2" 304SS BALL VALVE ON SUCTION
5. 3/4" CIRCUIT BALANCING VALVE ON DISCHARGE
6. 1 1/4" SHARPE SWING CHECK VALVE ON DISCHARGE

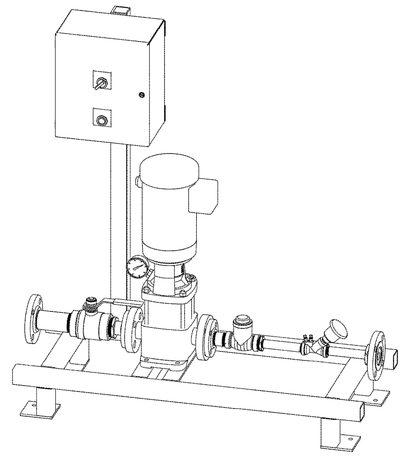
PUMP SPECIFICATIONS:

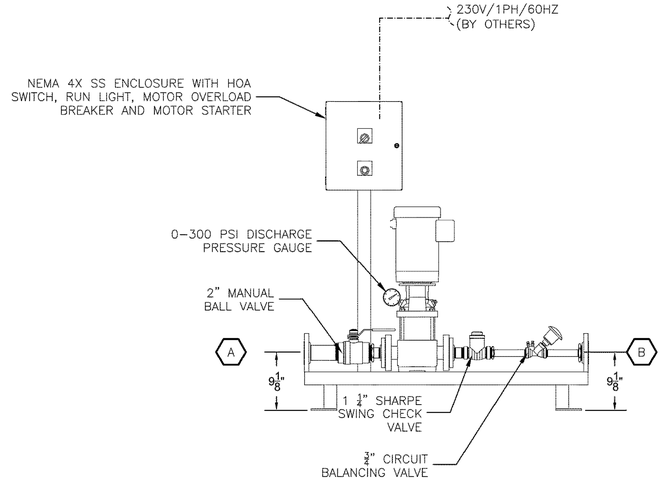
1. GRUNDFOS VERTICAL CENTRIFUGAL MULTI–STAGE
2. CAST IRON HOUSING
3. 304SS IMPELLER
4. HQQE SHAFT SEAL
5. ANSI FLANGE STANDARD
6. BALDOR TEFC MOTOR
7. 15 GPM @ 87' TDH

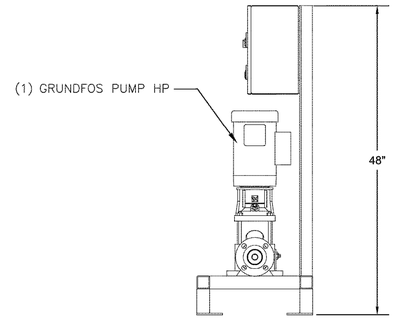
SHIPPING WEIGHT:

1. APPROX 400 LBS









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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	BW RECYCLE PUMP INLET	2" FLANGE, 304SS
B	BW RECYCLE PUMP OUTLET	2" FLANGE, 304SS

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	–	TBD	12/12/19	

MODEL:
ADEDGE TREATMENT SYSTEM
MODEL:
APU33–6060CS–2–MVH

CUSTOMER:
LA MESA CO–OP
WELL 3, NM

TITLE: BACKWASH RECYCLE PUMP SKID

DRAWING NUMBER: M–003

SHEET: 7 OF 7

Note: this drawing has been provided by an equipment manufacturer as the basis of design, the engineering seal does not apply to the specific design of the included equipment, design process, or details.

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CONSULTANTS

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

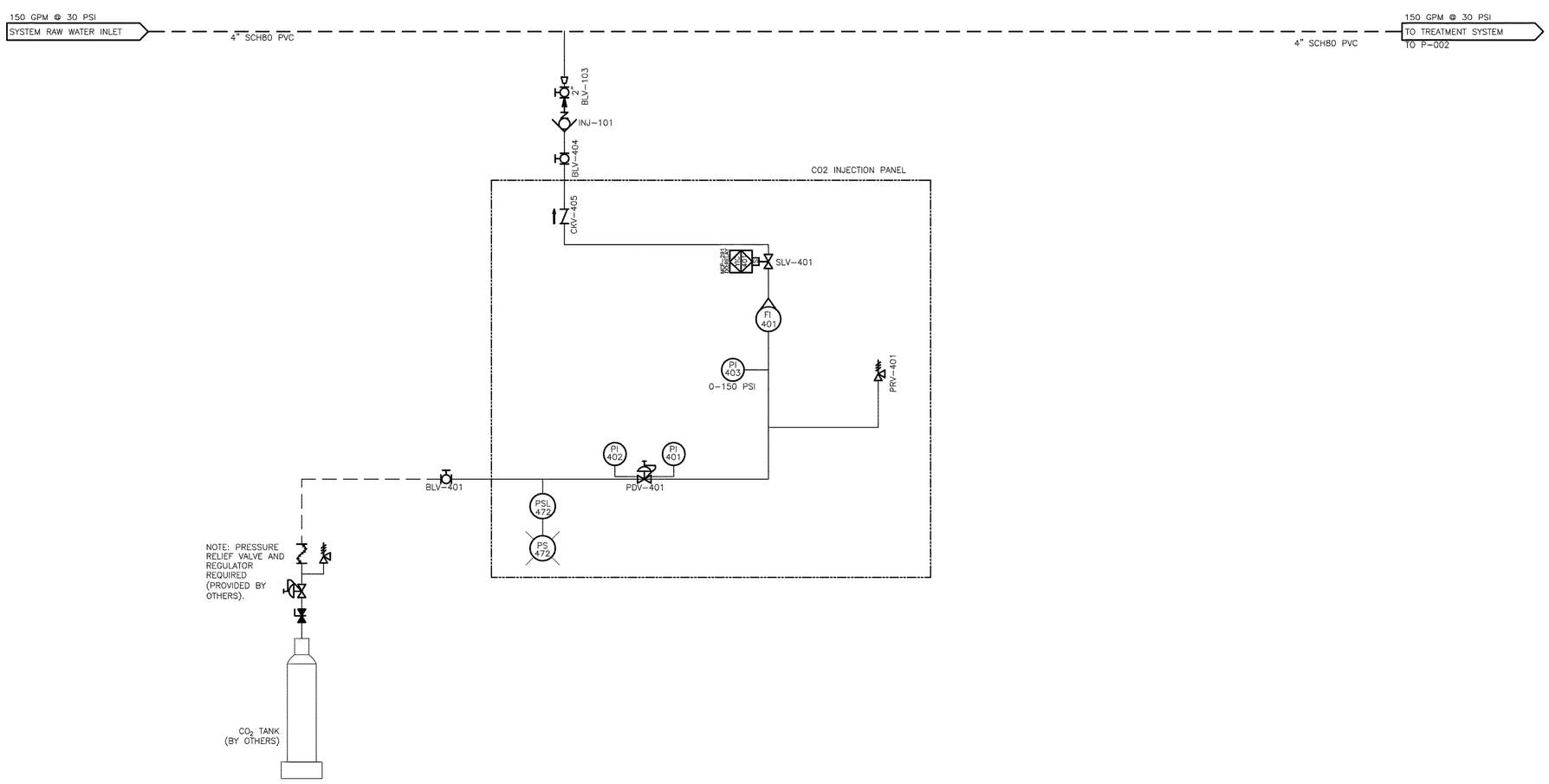
SHEET TITLE

ADEDGE BACKWASH RECYCLE PUMP SKID

SHEET NO:

D-611

1/7/2021



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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	RAW WATER INLET	4" SCH80 PVC 150# FLANGE
B	TREATED WATER OUTLET	4" SCH80 PVC 150# FLANGE
C	BACKWASH OUTLET	4" SCH80 PVC 150# FLANGE
D	AUX. BACKWASH INLET	4" SCH80 PVC 150# FLANGE

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	–	TBD	12/12/19	

MODEL:
ADEDGE TREATMENT SYSTEM
MODEL:
APU33-6060CS-2-MVH

CUSTOMER:
LA MESA CO-OP
WELL 3, NM

TITLE:

DRAWING NUMBER: P-001

SHEET: 2 OF 7

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

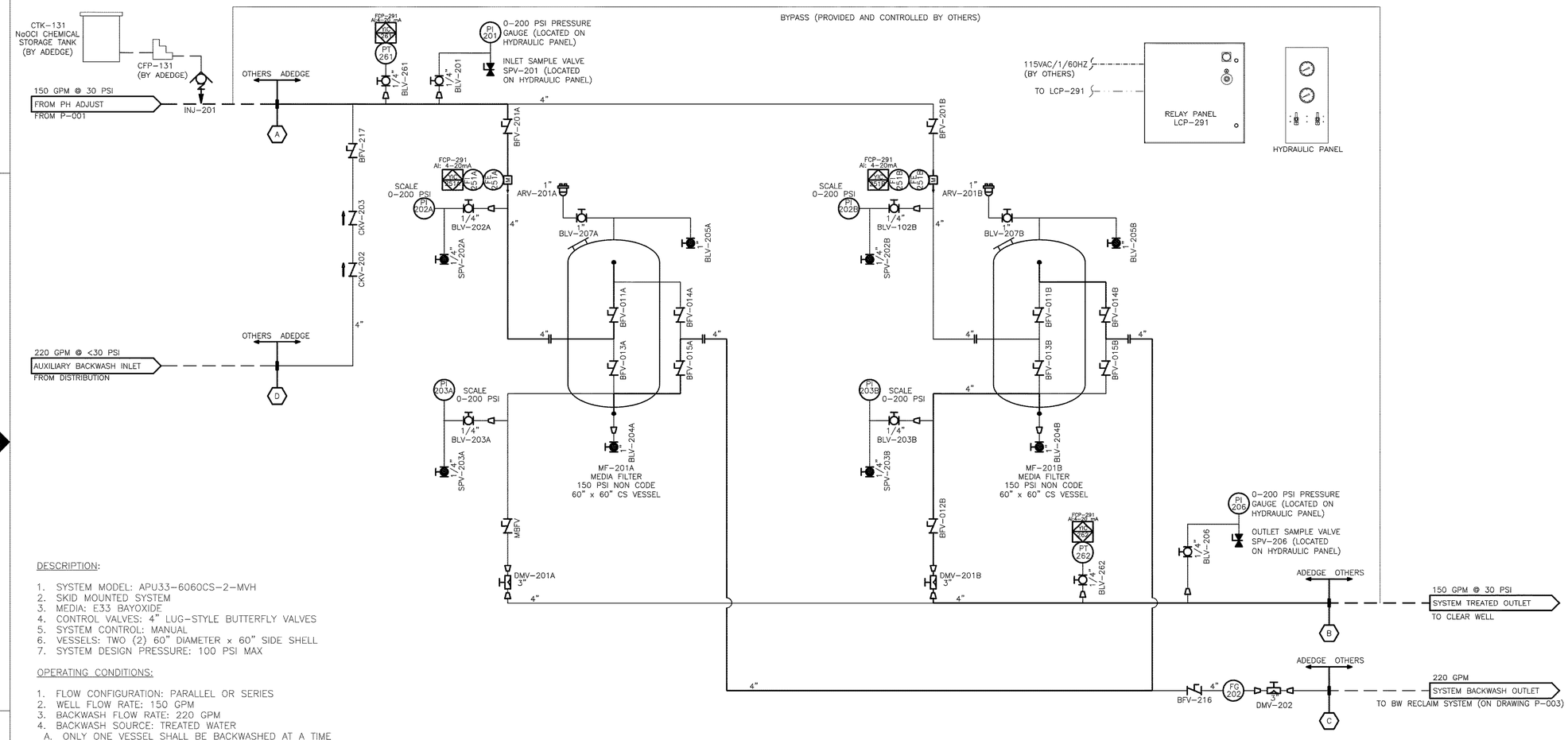
ADEDGE BACKWASH RECYCLE PUMP SKID

SHEET NO:

D-612

TBD-TBD.PID.02_A

1/7/2021



DESCRIPTION:

1. SYSTEM MODEL: APU33-6060CS-2-MVH
2. SKID MOUNTED SYSTEM
3. MEDIA: E33 BAYOXIDE
4. CONTROL VALVES: 4" LUG-STYLE BUTTERFLY VALVES
5. SYSTEM CONTROL: MANUAL
6. VESSELS: TWO (2) 60" DIAMETER x 60" SIDE SHELL
7. SYSTEM DESIGN PRESSURE: 100 PSI MAX

OPERATING CONDITIONS:

1. FLOW CONFIGURATION: PARALLEL OR SERIES
2. WELL FLOW RATE: 150 GPM
3. BACKWASH FLOW RATE: 220 GPM
4. BACKWASH SOURCE: TREATED WATER
   A. ONLY ONE VESSEL SHALL BE BACKWASHED AT A TIME
   B. VESSELS NOT IN BACKWASH SHALL BE OFF LINE
7. OPERATING PRESSURE: 118 PSI
8. PIPING CONFIGURATION ALLOWS SYSTEM OPERATION IN BOTH SERIES AS WELL AS PARALLEL OPERATION

PRELIMINARY: NOT FOR CONSTRUCTION

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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	RAW WATER INLET	4" SCH80 PVC 150# FLANGE
B	TREATED WATER OUTLET	4" SCH80 PVC 150# FLANGE
C	BACKWASH OUTLET	4" SCH80 PVC 150# FLANGE
D	AUX. BACKWASH INLET	4" SCH80 PVC 150# FLANGE

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	–	TBD	12/12/19	NTS

MODEL: ADEDGE TREATMENT SYSTEM
MODEL: APU33-6060CS-2-MVH

CUSTOMER: LA MESA CO-OP WELL 3, NM

TITLE: TREATMENT SYSTEM

DRAWING NUMBER: P-002

SHEET: 3 OF 7

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CONSULTANTS

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PROJECT NAME: LMWC WELL 3 ARSENIC TREATMENT FACILITY

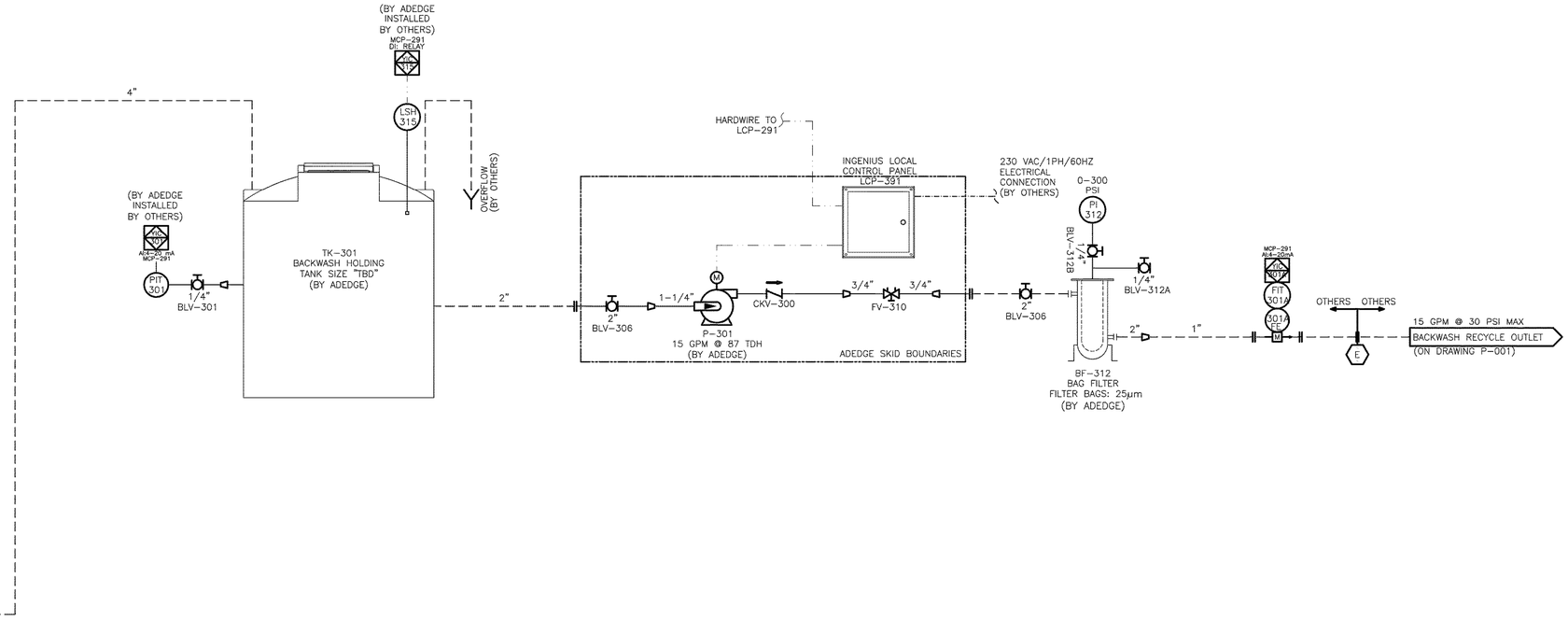
REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE: ADEDGE TREATMENT SYSTEM

SHEET NO: D-613

1/7/2021



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TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:
A	RAW WATER INLET	4" SCH80 PVC 150# FLANGE
B	TREATED WATER OUTLET	4" SCH80 PVC 150# FLANGE
C	BACKWASH OUTLET	4" SCH80 PVC 150# FLANGE
D	AUX. BACKWASH INLET	4" SCH80 PVC 150# FLANGE
E	BACKWASH RECYCLE CONNECTION	1" SCH80 PVC 150# FLANGE

TP.	SERVICE CONNECTIONS:	TYPE/MATERIAL:

REV. #	DATE:	BY:	APPROVED BY:	REVISION DESCRIPTION:

DRAWN BY:	CHECKED BY:	APPROVED BY:	PROJECT #:	DATE:	SCALE:
TJ	SM	–	TBD	12/12/19	

MODEL: ADEDGE TREATMENT SYSTEM
MODEL: APU33-6060CS-2-MVH

CUSTOMER: LA MESA CO-OP WELL 3, NM

TITLE: BACKWASH RECYCLE SYSTEM

DRAWING NUMBER: P-003

SHEET: 4 OF 7

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PROJECT NAME

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REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

ADEDGE BACKWASH RECYCLE SYSTEM

SHEET NO:

D-614

1/7/2021

SYMBOL LEGEND

SYMBOL	DESCRIPTION
SS	SANITARY SEWER
	SANITARY VENT
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RECIRC LINE
G	NATURAL GAS - LOW PRESSURE (7"W.C.)
	BALL VALVE
	CAPPED OR PLUGGED TEE
	UNION (SCREWED)
	UNDERGROUND VALVE WITH VALVE BOX EXTENDED TO FINISH GRADE
	GAS COCK, GAS STOP
	CLEAN-OUT TO GRADE WITH CONCRETE COLLAR
G	GAS PRESSURE REGULATOR
	FLOW - IN DIRECTION OF ARROW
	VALVE IN RISER (TYPE AS SPECIFIED OR NOTED)
	RISER DOWN (ELBOW)
	RISER UP (ELBOW)
	RISE OR DROP
	BRANCH - TOP CONNECTION
	BRANCH - BOTTOM CONNECTION
	BRANCH - SIDE CONNECTION
VTW	VENT THRU WALL
	HOT WATER RECIRCULATOR
	WATER HAMMER ARRESTOR
	HOSE BIB
	RECESSED BOX HOSE BIBB OR WALL HYDRANT
	POINT OF CONNECTION
	FLOOR DRAIN

PLUMBING ABBREVIATIONS

ABBREVIATION	DEFINITION
CW	COLD WATER
DCO	DOUBLE CLEANOUT
EWC	ELECTRIC WATER COOLER
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FDC	FIRE DEPARTMENT CONNECTION
FS	FLOOR SINK
HB	HOSE BIBB
HW	HOT WATER (110°F UNO)
HWR	HOT WATER RETURN (110°F UNO)
L	LAVATORY
MS	MOP SINK
SK	SINK
SS	SANITARY SEWER
UR	URINAL
WC	WATER CLOSET
WH	WATER HEATER
WCO	WALL CLEANOUT

GENERAL PLUMBING NOTES:

A. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND WITH THE LATEST EDITION OF THE PREVAILING STATE PLUMBING AND BUILDING CODES AS WELL AS ALL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.

B. DO NOT ROUTE ANY PLUMBING, PIPING, DUCTWORK, ETC. OVER ANY ELECTRICAL PANELS.

C. COORDINATE ALL PLUMBING AND PIPING WITH OTHER EQUIPMENT.

D. INSTALL ALL MATERIALS IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

E. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND INSTALLATION HEIGHT OF ALL PLUMBING FIXTURES & EXACT BUILDING DIMENSIONS.

F. INSULATE ALL HOT WATER, COLD WATER AND P-TRAPS WITH TRAP WRAP TO ADA REQUIREMENTS.

G. SEE SHEET P-501 FOR PLUMBING FIXTURE SCHEDULES AND DETAILS. ALL PLUMBING FIXTURE SUBSTITUTIONS SHALL BE BY ENGINEER APPROVAL.

H. CONTRACTOR TO COORDINATE AND VERIFY SERVICE CONNECTIONS ON ALL FIXTURES.

I. MANIFOLD ALL PLUMBING VENTS ABOVE FLOOD LEVEL OF PLUMBING FIXTURES.

J. PROVIDE CHROME-PLATE STEEL ESCUTCHEONS FOR PIPES AT WALL PENETRATIONS.

K. HOT AND COLD WATER BRANCHES TO FIXTURES ARE 1/2" UNLESS OTHERWISE SPECIFIED.

L. ALL WATER RUNS ARE OVERHEAD. ANY EXPOSED PIPING SHALL BE COORDINATED WITH STRUCTURE AND OTHER TRADES. PAINT PIPING BLACK. SLOPE TO DRAIN.

M. COLD WATER PIPING IS TO BE INSTALLED ACCORDING TO UPC, IBC & IPC. INSULATE COLD WATER SUPPLY PIPING UNDER 2" WITH R-4 FIBERGLASS INSULATION AND R-6 FOR PIPES 2" AND ABOVE. FOR AUTOMATIC CIRCULATING HOT WATER SYSTEMS (HOT WATER PIPING), PIPING SHALL BE INSULATED WITH 1" OF INSULATION HAVING CONDUCTIVITY NOT EXCEEDING 0.27 BTU PER 1"HxSFxF DEG.

N. PIPE MATERIAL: TYPE L COPPER PIPE FOR DOMESTIC WATER.

O. MECHANICAL WATER HAMMER ARRESTORS SHALL BE LOCATED AT EACH WATER CLOSET OR ONE PER BACK TO BACK SET.

P. CONTRACTOR RESPONSIBLE FOR LOCATING ALL UTILITY LINES.

Q. ALL AIR VENTS, GAUGES, THERMOMETERS, AND TRAP PRIMERS SHALL BE MOUNTED IN AN ACCESSIBLE LOCATION, OR BEHIND AN ACCESS PANEL, PROVIDED BY CONTRACTOR.

R. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE INTENT OF THE DESIGN AS SHOWN ON THE PLANS. ACTUAL CONDITIONS SHALL GOVERN OVER WRITTEN DIMENSIONS, WRITTEN DIMENSIONS SHALL GOVERN OVER ACTUAL DRAWING REPRESENTATION. ATTEMPTS TO UTILIZE SCALING OR ELECTRONIC MEANS TO DETERMINE QUANTITY TAKE-OFF MAY BE AFFECTED BY NOT-TO-SCALE ITEMS. THE ENGINEER IS NOT RESPONSIBLE FOR, AND SHALL NOT BE HELD LIABLE FOR THE ACCURACY OF RESULTS OF SUCH TAKE OFFS.

S. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.

T. THE CONTRACTOR SHALL NOT INSTALL ITEMS AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS THAT FIELD CONDITIONS ARE DIFFERENT THAN SHOWN IN THE DESIGN. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. THE ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NOR SHALL THE ENGINEER BE REQUIRED TO SUPERVISE THE CONDUCT OF THE WORK OR THE CONSTRUCTION PROCEDURES AND SAFETY PROCEDURES FOLLOWED BY THE CONTRACTOR OR THE SUBCONTRACTOR OR THEIR RESPECTIVE EMPLOYEES OR BY ANY OTHER PERSON AT THE JOB SITE OTHER THAN THAT OF THE ENGINEER'S EMPLOYEES.

U. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY 24 HOURS A DAY AND NOT BE LIMITED TO NORMAL WORKING HOURS. ANY DAMAGE TO PROPERTY AND/OR ITEMS ON PROPERTY, EXISTING OR NEW, SHALL BE REPAIRED AND/OR PAID FOR BY THE RESPONSIBLE PARTY.

V. WATER LINES ON EXTERIOR WALLS SHALL BE ROUTED ON INTERIOR SIDE OF INSULATION.

W. ALL SEWER VENTS THROUGH ROOF SHALL BE A MINIMUM OF 10'-0" FROM ANY MECHANICAL OR NATURAL FRESH AIR INTAKE.

X. ALL EXPOSED PIPING AND HANGERS SHALL BE FIELD PAINTED BLACK EXCEPT WHERE REQUIRED COLOR CODED.

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PHONE: 505-348-4000
FAX: 505-348-4072
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CONSULTANTS

SEAL

MARK W. WENTZEL — NEW MEXICO — 17012 — LICENSED PROFESSIONAL ENGINEER — 01-05-2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	CJG
DRAWN BY:	CJG
CHECKED BY:	EJV
DATE:	JANUARY 05, 2021

SHEET TITLE

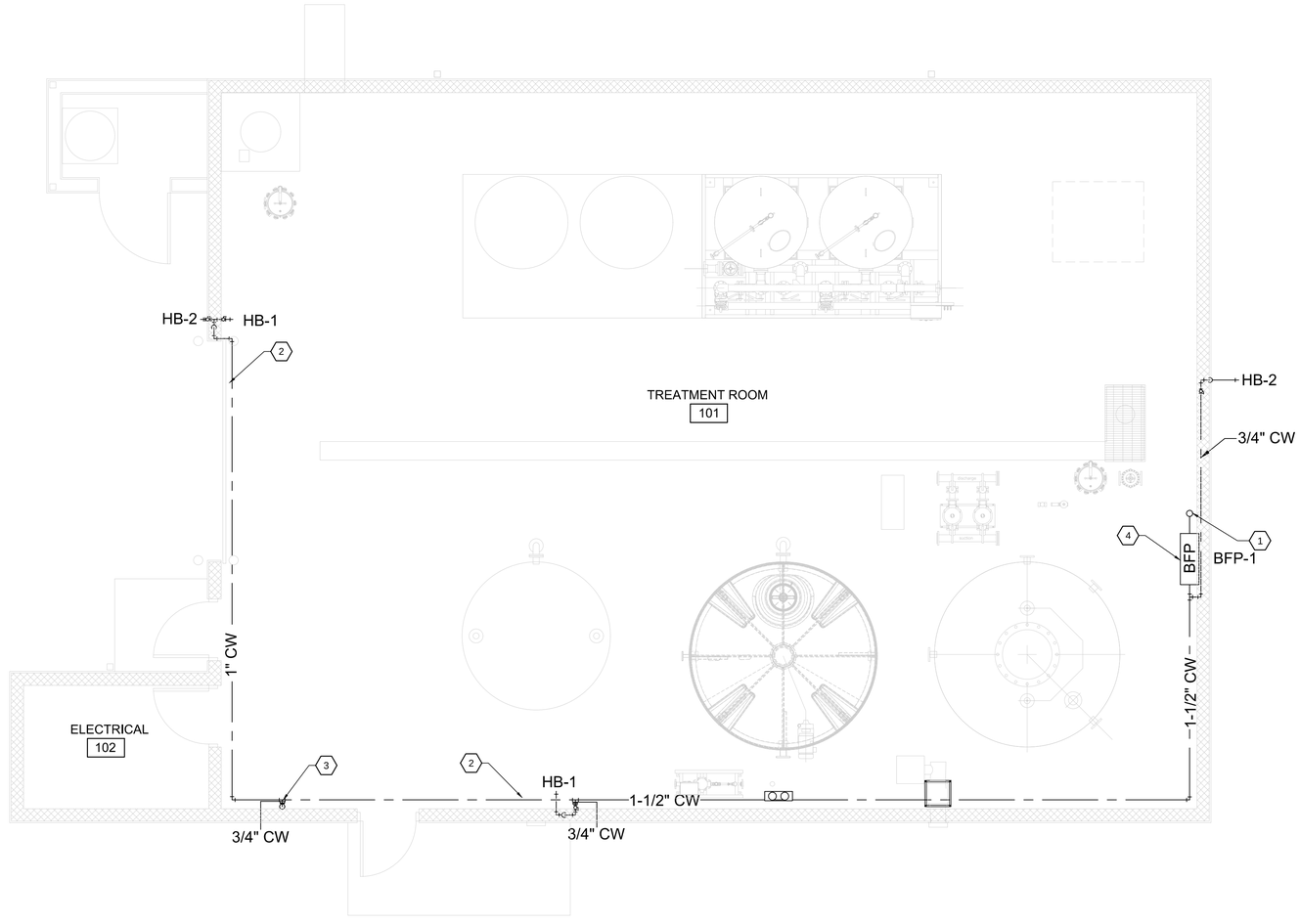
PLUMBING NOTES AND LEGENDS

SHEET NO:

P-001

M:\MSD\16-600-204-00\2_Disciplines_SHEETS\8_sheets - mechanical\P-001 PLUMBING NOTES AND LEGENDS.dwg

1/7/2020



PLAN NORTH

A1 DOMESTIC WATER PLAN

SCALE: 1" = 4'

1/7/2021

GENERAL SHEET NOTES

A. SEE RISER DIAGRAM FOR DETAILED SEWER AND VENT PIPE SIZING.

B. COORDINATE EXACT LOCATION OF ROOF PENETRATIONS WITH ROOF STRUCTURE LOCATIONS. ALL PENETRATIONS TO BE A MIN. OF 18" FROM WALLS, CURBS, PIPES, VENT STACKS, AND OTHER ROOF PENETRATIONS.

C. COORDINATE ALL PLUMBING AND PIPING WITH OTHER EQUIPMENT.

D. INSTALL ALL MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

E. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION AND INSTALLATION HEIGHT OF ALL PLUMBING FIXTURES & EXACT BUILDING DIMENSIONS.

F. INSULATE ALL HOT WATER, COLD WATER AND P-TRAPS WITH TRAP WRAP TO ADA REQUIREMENTS.

G. SEE SHEET P-501 FOR PLUMBING FIXTURE SCHEDULE. ALL PLUMBING FIXTURE SUBSTITUTION SHALL BE BY ENGINEER APPROVAL.

H. CONTRACTOR TO COORDINATE AND VERIFY SERVICE CONNECTIONS ON ALL FIXTURES.

I. MANIFOLD ALL PLUMBING VENTS ABOVE FLOOD LEVEL OF PLUMBING FIXTURES.

J. PROVIDE CHROME-PLATE STEEL ESCUTCHEONS FOR PIPES AT WALL PENETRATIONS.

K. SEWER AND VENT RUNS ARE 3" UNLESS OTHERWISE SPECIFIED.

L. CONTRACTOR TO ROUTE ALL VENT LINES THROUGH ROOF TO BE A MINIMUM OF 10'-0" FROM ANY HVAC EQUIPMENT INTAKES INTO BUILDING. MAINTAIN 1/8" PER FOOT SLOPE.

M. CONTRACTOR RESPONSIBLE FOR LOCATING ALL UTILITY LINES.

N. ALL FLOOR DRAINS SHALL BE EQUIPPED WITH PROSET TRAP GUARD.

O. UTILITY EXPANSION CHARGES SHALL BE PAID FOR BY OWNER AND ARE NOT TO BE INCLUDED IN THIS CONTRACT.

P. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND CONDITIONS OF EXISTING CONSTRUCTION AND REPORT ANY INCONSISTENCIES TO THE ENGINEER BEFORE PROCEEDING WITH WORK AFFECTED BY SUCH INCONSISTENCIES. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE INTENT OF THE DESIGN AS SHOWN ON THE PLANS. ACTUAL CONDITIONS SHALL GOVERN OVER WRITTEN DIMENSIONS, WRITTEN DIMENSIONS SHALL GOVERN OVER ACTUAL DRAWING REPRESENTATION. ATTEMPTS TO UTILIZE SCALING OR ELECTRONIC MEANS TO DETERMINE QUANTITY TAKE-OFF MAY BE AFFECTED BY NOT-TO-SCALE ITEMS. THE ENGINEER IS NOT RESPONSIBLE FOR, AND SHALL NOT BE HELD LIABLE FOR THE ACCURACY OF RESULTS OF SUCH TAKE OFFS.

SHEET KEYNOTES

1. CONNECT NEW 1" CW LINE TO DISTRIBUTION SYSTEM LINE.
2. INSTALL PIPING TIGHT TO BOTTOM OF STRUCTURE. TYPICAL.
3. ROUTE NEW 3/4" CW LINE TO LOCATION SHOWN AND CAP FOR FUTURE USE. PROVIDE WITH ISOLATION BALL VALVE.
4. FOR PIPING IN THIS AREA, REFER TO DETAIL A6 ON SHEET P-501.

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01-05-2021

PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

DOMESTIC WATER PLAN

SHEET NO:

P-101

MECHANICAL ABBREVIATIONS	
ABBREVIATION	**DEFINITION**
IU	INDOOR UNIT
OU	OUTDOOR UNIT
T	THERMOSTAT
UH	UNIT HEATER

HVAC CONTROLS LEGEND	
MARK	**DEFINITION**
(T)	THERMOSTAT

GENERAL MECHANICAL REQUIREMENTS:

1. UNLESS OTHERWISE NOTED, THE WORK DESCRIBED ON THE PLANS AND SPECIFICATIONS SHALL INCLUDE THE FURNISHING AND INSTALLATION OF ALL LABOR AND MATERIALS NECESSARY FOR COMPLETE AND OPERATIONAL HVAC AND PLUMBING SYSTEMS. CONTRACTOR SHALL FURNISH THESE EVEN IF ITEMS REQUIRED TO ACHIEVE THIS (I.E. OFFSETS, ISOLATION AND BALANCING DEVICES, MAINTENANCE CLEARANCES, ETC.) ARE NOT SPECIFICALLY SHOWN.
2. DATA GIVEN ON THE DRAWINGS IS AS EXACT AS COULD BE SECURED. ABSOLUTE ACCURACY IS NOT GUARANTEED AND THE CONTRACTOR SHALL OBTAIN AND VERIFY EXACT LOCATIONS, MEASUREMENTS, LEVELS, SPACE REQUIREMENTS, POTENTIAL CONFLICTS WITH OTHER TRADES, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT HIS WORK TO ACTUAL CONDITIONS AT THE BUILDINGS. THE DRAWINGS ARE DIAGRAMMATICAL IN NATURE AND SHALL NOT BE SCALED. HOWEVER, THIS DOES NOT RELIEVE ANY SUB-CONTRACTOR FROM COORDINATING HIS WORK WITH ALL OTHER TRADES AND FROM ADJUSTING HIS WORK AS REQUIRED BY THE ACTUAL CONDITIONS OF THE PROJECT. THE CONTRACTOR SHALL VISIT THE SITE BEFORE SUBMITTING A BID TO BECOME THOROUGHLY FAMILIAR WITH THE ACTUAL CONDITIONS OF THE PROJECT.
3. COORDINATE AND ADJUST ALL WORK BETWEEN TRADES AND EXISTING CONDITIONS IN ORDER TO ACCOMPLISH A NEAT, INTEGRATED AND EFFICIENT INSTALLATION. EXAMINE THE CONTRACT DOCUMENTS OF ALL TRADES (I.E. THE ARCHITECTURAL REFLECTED CEILING PLAN, ELECTRICAL LIGHTING PLAN, ETC.). COORDINATE NECESSARY EQUIPMENT, DUCTWORK AND PIPING LOCATIONS SO THAT THE FINAL INSTALLATION IS COMPATIBLE WITH THE MATERIALS AND EQUIPMENT OF THE OTHER TRADES. PREPARE SHOP DRAWINGS FOR INSTALLATION OF ALL NEW WORK BEFORE INSTALLATION TO VERIFY COORDINATION OF WORK BETWEEN TRADES.
4. ALL CAPACITIES ARE SCHEDULED AT JOBSITE ALTITUDE OF 5,300 FT.
5. VERIFY THE ELECTRICAL SERVICE PROVIDED BY THE ELECTRICAL CONTRACTOR BEFORE ORDERING ANY MECHANICAL EQUIPMENT REQUIRING ELECTRICAL CONNECTIONS.
6. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY INDICATED OTHERWISE OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
7. PROVIDE MANUFACTURER'S RECOMMENDED SERVICE CLEARANCE AROUND ALL EQUIPMENT REQUIRING SAME.
8. PROVIDE FOR SAFE CONDUCT OF THE WORK, CAREFUL REMOVAL AND DISPOSITION OF MATERIALS AND PROTECTION OF PROPERTY WHICH IS TO REMAIN UNDISTURBED.
9. PROVIDE ACCESS DOORS FOR ALL EQUIPMENT, VALVES, CLEANOUTS, ACTUATORS AND CONTROLS WHICH REQUIRE ACCESS FOR ADJUSTMENT OR SERVICING AND WHICH ARE LOCATED IN OTHERWISE UNACCESSIBLE LOCATIONS. FOR EQUIPMENT LOCATED IN "ACCESSIBLE LOCATIONS" SUCH AS LAY-IN CEILINGS: LOCATE EQUIPMENT TO PROVIDE ADEQUATE SERVICE CLEARANCE FOR NORMAL MAINTENANCE WITHOUT REMOVING ARCHITECTURAL, ELECTRICAL OR STRUCTURAL ELEMENTS SUCH AS THE CEILING SUPPORT SYSTEM, ELECTRICAL FIXTURES, ETC. "NORMAL MAINTENANCE" INCLUDES, BUT IS NOT LIMITED TO: FILTER CHANGING; GREASING OF BEARINGS; USING P/T PORTS FOR PRESSURE OR TEMPERATURE MEASUREMENTS; SERVICING CONTROL VALVES AND SERVICING CONTROL PANELS.
10. PROVIDE ALL REQUIRED PERMITS, INSPECTIONS AND COORDINATION WITH GOVERNING AUTHORITIES.
11. QUALITY CONTROL:
    (A) QUALIFICATION OF PRODUCTS: WHEN PRODUCTS ARE SPECIFIED BY MANUFACTURER AND MODEL NUMBER, EQUIVALENT PRODUCTS BY OTHER MANUFACTURERS LISTED MAY BE PROVIDED. PRODUCT EQUIVALENCY SHALL BE DETERMINED BY ENGINEER.
    (B) IF A PRODUCT SUBMITTED AS AN EQUIVALENT IS DEEMED UNACCEPTABLE TO THE ENGINEER, THE SPECIFIED PRODUCT SHALL BE PROVIDED AT NO EXTRA COST TO THE PROJECT.
    (C) SUBMITTALS SHALL INCLUDE REVISED AND SUPPLEMENTED CONTROL DIAGRAMS.
    (D) SUBMIT CUT-SHEETS ON ALL OF THE SPECIFIED EQUIPMENT.
12. CONTRACTOR SHALL CREATE A LOG SHEET FOR REQUIRED TESTS. THE LOG SHEET WILL HAVE A COLUMN FOR REQUIRED TESTS, A COLUMN FOR ACCEPTANCE OF TEST, A COLUMN FOR REMARKS, AND A COLUMN FOR APPROVAL SIGNATURE.
13. WHERE NEW MECHANICAL SYSTEMS ARE USED FOR TEMPORARY VENTILATION OR CLIMATE CONTROL, MECHANICAL EQUIPMENT INSTALLER SHALL PROVIDE CONSTRUCTION FILTERS, MAINTAIN EQUIPMENT, AND CLEAN, ADJUST AND PUT IN NEW CONDITION BEFORE BUILDING OCCUPANCY. PARTS AND LABOR WARRANTY SHALL NOT BE CONSIDERED TO START UNTIL ACCEPTANCE OF THE SYSTEM BY OWNER.
14. THE CONTRACTOR SHALL NOT INSTALL ITEMS AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS THAT FIELD CONDITIONS ARE DIFFERENT THAN SHOWN IN THE DESIGN. SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. IN THE EVENT THE CONTRACTOR DOES NOT NOTIFY THE ENGINEER, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY AND EXPENSE FOR ANY REVISIONS NECESSARY. THE ENGINEER OF RECORD SHALL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE CONSTRUCTION WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NOR SHALL THE ENGINEER BE REQUIRED TO SUPERVISE THE CONDUCT OF THE WORK OR THE CONSTRUCTION PROCEDURES AND SAFETY PROCEDURES FOLLOWED BY THE CONTRACTOR OR THE SUBCONTRACTOR OR THEIR RESPECTIVE EMPLOYEES OR BY ANY OTHER PERSON AT THE JOB SITE OTHER THAN THAT OF THE ENGINEER'S EMPLOYEES.
15. CONTRACTOR AGREES TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY 24 HOURS A DAY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, ARCHITECT AND ENGINEER HARMLESS OF ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, ARCHITECT OR THE ENGINEER.
16. ALL MECHANICAL PLANS, SCHEDULES, DRAWINGS AND SPECIFICATIONS SHALL BE EQUALLY CONSIDERED TO BE PART OF THE CONTRACT DOCUMENTS, WITH NO EXCEPTIONS, EXEMPTIONS OR EXCLUSIONS. THERE SHALL BE NO CONSIDERATION OF PRECEDENCE OR PREFERENCE FOR ANY OF THESE COMPONENTS AS BEING EXCLUSIVE OF THE OTHER AND ALL OF THEM SHALL COMPRISE A COMPLETE SET OF CONTRACT DOCUMENTS. EACH OF THESE COMPONENTS OF THE CONTRACT DOCUMENTS SHALL BEAR EQUAL WEIGHT, INFLUENCE AND CONSIDERATION. IF THERE ARE CONFLICTS BETWEEN ANY OF THESE COMPONENTS, THE CONTRACTOR SHALL BRING THESE TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK IN QUESTION.
17. GENERAL CONTRACTOR SHALL READ AND STUDY ALL DRAWINGS TO FAMILIARIZE THEMSELVES WITH PROJECT AND RESPONSIBILITIES PRIOR TO BIDDING.

GENERAL MECHANICAL NOTES:

A. CONTRACTOR TO VERIFY AND COORDINATE W/ ELECTRICAL ENGINEER AND CONTRACTOR FOR WIRING AND POWER REQUIRED.

B. COORDINATE EXACT LOCATION OF ALL THERMOSTATS WITH MECHANICAL ENGINEER & OWNER.

C. INSTALL THERMOSTATS AT SWITCH HEIGHTS. WHERE THERMOSTATS ARE INSTALLED ON EXTERIOR OR COLD/HOT WALLS, THERMOSTATS SHALL BE INSTALLED ON INSULATED BASES TO ENSURE PROPER OPERATION.

D. ALL EQUIPMENT SHALL BE INSTALLED LEVEL.

E. CONTRACTOR SHALL COORDINATE ALL PROPOSED MECHANICAL EQUIPMENT, WITH OTHER TRADES, TO AVOID CONFLICTS. CONTRACTOR SHALL INSTALL MAINTAIN ADEQUATE EQUIPMENT ACCESS AND SERVICEABILITY TO ALL VALVES AND EQUIPMENT.

F. ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. INSTALLATIONS SHALL BE COORDINATED WITH THE ARCHITECTURAL PLANS AND STRUCTURAL.

G. CONTRACTOR IS RESPONSIBLE FOR PROVIDING, INSTALLING AND CONFIGURING ALL DEVICES AND CONTROLS, AS WELL AS ANY ADDITIONAL CONTROL/MONITORING/SENSOR DEVICES NEEDED TO INTEGRATE THE CONTROLS AS NECESSARY TO MEET THE DESIGN INTENT AND OPERATIONAL PARAMETERS.

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01-05-2021

PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 07, 2021

SHEET TITLE
MECHANICAL NOTES AND LEGEND

SHEET NO:
M-001

MECHANICAL SPECIFICATIONS:

SMALL SPLIT SYSTEM DESIGN

1. SPLIT-SYSTEM HEATING AND COOLING UNITS: SELF-CONTAINED, PACKAGED, MATCHED FACTORY-ENGINEERED AND ASSEMBLED, PRE-WIRED INDOOR AND OUTDOOR UNITS; UL LISTED.
   HEATING AND COOLING: AIR-SOURCE ELECTRIC HEAT PUMP LOCATED IN OUTDOOR UNIT WITH EVAPORATOR.
   PROVIDE REFRIGERANT LINES INTERNAL TO UNITS AND BETWEEN INDOOR AND OUTDOOR UNITS, FACTORY CLEANED, DRIED, PRESSURIZED AND SEALED, WITH INSULATED SUCTION LINE.

2. ELECTRICAL CHARACTERISTICS:
   DISCONNECT SWITCH: FACTORY MOUNT DISCONNECT SWITCH ON EQUIPMENT UNDER PROVISIONS OF SECTION 16410 OR AS SPECIFIED ON PLANS.

INDOOR UNITS FOR DUCTLESS SYSTEMS

1. INDOOR UNITS: SELF-CONTAINED, PACKAGED, FACTORY ASSEMBLED, PRE-WIRED UNIT CONSISTING OF CABINET, SUPPLY FAN, EVAPORATOR COIL, AND CONTROLS; WIRED FOR SINGLE POWER CONNECTION WITH CONTROL TRANSFORMER.
   LOCATION: HIGH-WALL.
   CABINET: GALVANIZED STEEL.
   a. FINISH: WHITE.
   FAN: LINE-FLOW FAN DIRECT DRIVEN BY A SINGLE MOTOR.
   FILTER RETURN AIR WITH WASHABLE, ANTIOXIDANT PRE-FILTER AND A PLEATED ANTI-ALLERGY ENZYME FILTER.
   DRAIN PAN LEVEL SENSOR.

2. EVAPORATOR COILS: COPPER TUBE ALUMINUM FIN ASSEMBLY, GALVANIZED OR POLYMER DRAIN PAN SLOPED IN ALL DIRECTIONS TO DRAIN, DRAIN CONNECTION, REFRIGERANT PIPING CONNECTIONS, RESTRICTED DISTRIBUTOR OR THERMOSTATIC EXPANSION VALVE.
   CONSTRUCTION AND RATINGS: IN ACCORDANCE WITH AHRI 210/240 AND UL 207.
   MANUFACTURER: SYSTEM MANUFACTURER.

OUTDOOR UNITS

1. OUTDOOR UNITS: SELF-CONTAINED, PACKAGED, PRE-WIRED UNIT CONSISTING OF CABINET, WITH COMPRESSOR AND CONDENSER.
   CONSTRUCTION AND RATINGS: IN ACCORDANCE WITH AHRI 210/240 WITH TESTING IN ACCORDANCE WITH ASHRAE STD. 23.1 AND UL 207.

2. COMPRESSOR: INVERTER DRIVEN, RESILIENTLY MOUNTED INTEGRAL WITH CONDENSER, WITH POSITIVE LUBRICATION, CRANKCASE HEATER, HIGH PRESSURE CONTROL, MOTOR OVERLOAD PROTECTION, SERVICE VALVES AND DRIER. PROVIDE TIME DELAY CONTROL TO PREVENT SHORT CYCLING AND RAPID SPEED CHANGES.

3. AIR COOLED CONDENSER: ALUMINUM FIN AND COPPER TUBE COIL, AHRI 520 WITH DIRECT DRIVE AXIAL PROPELLER FAN RESILIENTLY MOUNTED, GALVANIZED FAN GUARD.
   CONDENSER FANS: DIRECT-DRIVE PROPELLER TYPE.

4. ACCESSORIES: FILTER DRIER, HIGH PRESSURE SWITCH MANUAL RESET, LOW PRESSURE SWITCH AUTOMATIC RESET, SERVICE VALVES AND GAGE PORTS, THERMOMETER WELL IN LIQUID LINE.
   PROVIDE THERMOSTATIC EXPANSION VALVES.
   PROVIDE HEAT PUMP REVERSING VALVES.
   PROVIDE BASE PAN HEATER.

5. OPERATING CONTROLS:
   CONTROL BY ROOM THERMOSTAT TO MAINTAIN ROOM TEMPERATURE SETTING.
   LOW AMBIENT KIT: PROVIDE REFRIGERANT PRESSURE SWITCH TO CYCLE CONDENSER FAN ON WHEN CONDENSER REFRIGERANT PRESSURE IS ABOVE 285 PSIG (1965 KPA) AND OFF WHEN PRESSURE DROPS BELOW 140 PSIG (965 KPA) FOR OPERATION TO 0 DEGREES F (-18 DEGREES C).

END OF MECHANICAL SPECIFICATIONS

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PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 07, 2021

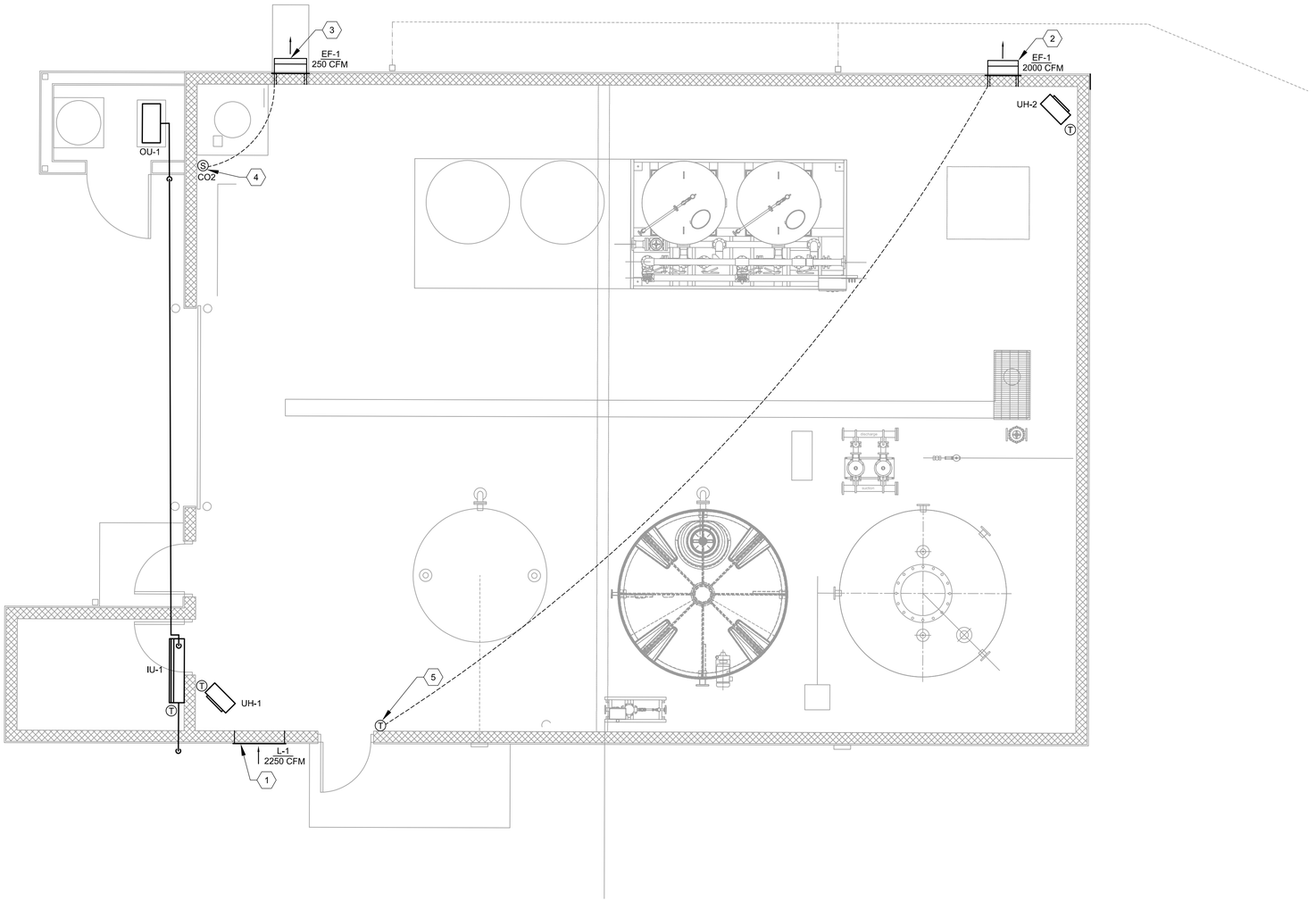
SHEET TITLE

MECHANICAL SPECIFICATIONS

SHEET NO:

M-002

11/18/2020 M:\MSD\16-600-204-00\2_Disciplines_SHEETS\8_sheets - mechanical\660204_M-002 MECHANICAL SPECIFICATIONS.dwg



A1 MECHANICAL PLAN

SCALE: 1" = 4'

GENERAL SHEET NOTES

A. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND WITH THE LATEST EDITION OF THE PREVAILING STATE MECHANICAL/PLUMBING AND BUILDING CODES AS WELL AS ALL REGULATIONS THAT MAY APPLY. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.

B. DO NOT ROUTE ANY PLUMBING, PIPING, DUCTWORK, ETC. OVER ANY ELECTRICAL PANELS.

C. SEE M-501 FOR MECHANICAL DETAILS AND SCHEDULES.

D. CONTRACTOR TO VERIFY AND COORDINATE W/ ELECTRICAL ENGINEER AND CONTRACTOR FOR WIRING AND POWER REQUIRED.

E. CONTRACTOR TO VERIFY AND COORDINATE STRUCTURAL SUPPORT AND OPENINGS IN FLOOR, ROOF, AND WALLS

F. CONTRACTOR TO COORDINATE WITH MECHANICAL ENGINEER ON ANY OBSTRUCTIONS OR CONFLICTS REGARDING THE PROPOSED MECHANICAL LAYOUT.

G. CONTRACTOR TO ENSURE MECHANICAL UNITS, VALVES AND ALL EQUIPMENT INSTALLED ARE INSTALLED WITH PROPER MAINTENANCE ACCESS.

H. COORDINATE WITH OWNER FOR EXACT LOCATION OF THERMOSTATS AND CONTROLS. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY CHANGES IN ORDER TO VERIFY FUNCTIONALITY.

SHEET KEYNOTES

1. INTAKE LOUVER L-1 FOR INTAKE OF EF-1 AND EF-2.
2. EXHAUST FAN EF-1 WITH WEATHERHOOD AND GRAVITY BACKDRAFT DAMPER MOUNTED AS HIGH AS POSSIBLE.
3. EXHAUST FAN EF-2 WITH WEATHERHOOD AND GRAVITY BACKDRAFT DAMPER MOUNTED 10" AFF.
4. 24V CO2 SENSOR FOR EF-2 INTEGRATED INTO ECM FAN CONTROL.
5. EF-1 LINE VOLTAGE THERMOSTAT.

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PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 07, 2021

SHEET TITLE

MECHANICAL PLAN

SHEET NO:

M-101

12/29/2020

GENERAL SHEET NOTES

1. ALL CONTROLS ARE 24V, UNLESS OTHERWISE SPECIFIED.
2. CONTRACTOR SHALL COORDINATE ALL DEVICES TO BE INSTALLED WITH THE ELECTRICAL CONTRACTOR FOR POWER/WIRING REQUIREMENTS.
3. CONTRACTOR IS RESPONSIBLE FOR SUPPLYING AND INSTALLING ALL 24V/120V TRANSFORMERS AS NEEDED TO CONTROL HVAC AND MECHANICAL EQUIPMENT. COORDINATE WITH ELECTRICAL.

UNIT HEATER SCHEDULE (ELECTRIC)

MARK	NO.	MANUFACTURER/ MODEL NO.	AREA SERVED	CFM	INPUT kW	OUTPUT MBH @ SL	ELECTRICAL			REMARKS
							V	PH	MCA	
UH	1	REZNOR EGEB MODEL 5	MAIN ROOM	310	5.0	17.06	240	1	40	A
UH	2	REZNOR EGEB MODEL 5	MAIN ROOM	310	5.0	17.06	240	1	40	A

REMARKS:

A. PROVIDE WITH INTERNAL THERMOSTAT.

MINI-SPLIT HEAT PUMP SCHEDULE

MARK	NO.	MANUFACTURER/ MODEL NO.	SEER	MATCHING INDOOR UNIT	TOTAL COOLING CAPACITY (MBH)	TOTAL HEATING CAPACITY (MBH)	ELECTRICAL				REMARKS
							V	PH	MCA	MOCP	
OU	1	DAIKIN RX09NMVJU	19	IU-1	9.0	10.0	230	1	12.1	15	A,B,C

GENERAL NOTES:

1. JOBSITE ELEVATION = 5,300 FT. PROVIDE NECESSARY ADJUSTMENTS FOR ALTITUDE.
2. CAPACITY BASED ON OUTDOOR TEMPERATURES OF 98°F SUMMER AND 14° WINTER.
3. PROVIDE MANUFACTURERS RECOMMENDED SERVICE CLEARANCE AROUND ENTIRE UNIT.
4. CONTRACTOR SHALL COORDINATE VRV UNIT WITH PROPOSED LOCATIONS TO BEST DETERMINE CONFIGURATION TO ENSURE ADEQUATE MAINTENANCE ACCESSIBILITY AND CLEARANCE.

REMARKS:

A. PROVIDE WITH LOW AMBIENT KIT.
B. PROVIDE WITH WIND BAFFLE.
C. PROVIDE WITH HAIL GUARD.

INDOOR UNIT SCHEDULE

MARK	NO.	MANUFACTURER/ MODEL NO.	TYPE	SUPPLY (CFM)	TOTAL COOLING CAPACITY (MBH)	TOTAL HEATING CAPACITY (MBH)	ELECTRICAL			REMARKS
							V	PH	MCA	
IU	1	DAIKIN FTX09NMVJU	WALL	297	9.0	10.0	230	1	12.1	A,B

REMARKS:

A. PROVIDE WITH CONDENSATE PUMP CAPABLE OF 5' OF LIFT MINIMUM.
B. PROVIDE WITH HARDWIRED DIGITAL PROGRAMMABLE THERMOSTAT.

EXHAUST FAN SCHEDULE

MARK	NO.	MANUFACTURER / MODEL NO.	TYPE	CFM	ESP(IN.)	DRIVE	SONES	RPM	ELECTRICAL			COMMENTS
									HP	VOLT	PHASE	
EF	1	GREENHECK / SE1-16-428-VG	SIDEWALL	2000	0.43	DIRECT	13.4	1,504	,35	120	1	GALVANIZED STEEL PANEL WITH FABRICATED GALVANIZED STEEL DRIVE FRAME. ALUMINUMM PROPELLER
EF	2	GREENHECK / AER-E20C-610-VG	SIDEWALL	250	0.26	DIRECT	6.0	808	0.05	120	1	GALVANIZED STEEL PANEL WITH FABRICATED GALVANIZED STEEL DRIVE FRAME. ALUMINUMM PROPELLER

NOTES:

1. INSTALL PER MANUFACTURER'S REQUIREMENTS.

REMARKS:

A. PROVIDE WITH GRAVITY BACKDRAFT DAMPER
B. GALVANIZED STEEL PANEL WITH FABRICATED GALVANIZED STEEL DRIVE FRAME. ALUMINUMM PROPELLER.

LOUVER SCHEDULE

MARK	NO.	MANUFACTURER / MODEL NO.	AREA SERVED	SIZE	P.D. (IN.)	MIN. FREE AREA	AIRFLOW (CFM)	DAMPER TYPE	REMARKS
L	1	GREENHECK / ESD-635-48x32	WELL ROOM	48"x 32"	0.02	5.8 ft²	2,225	BAROMETRIC	

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 07, 2021

SHEET TITLE

MECHANICAL DETAILS AND SCHEDULES

SHEET NO:

M-501

12/29/2020

ELECTRICAL SYMBOL LEGEND

GENERAL

- (1) — KEYED NOTE DESIGNATION
- AC-1 — MECHANICAL EQUIPMENT DESIGNATION
- 1 / E-100 — DETAIL DESIGNATION:
  - DETAIL NUMBER
  - SHEET DETAIL IS LOCATED

CIRCUITING / RACEWAYS

- CIRCUIT HOMERUNS:
  - GROUND CONDUCTOR
  - SWITCHED CONDUCTOR
  - PHASE CONDUCTOR(S)
  - NEUTRAL CONDUCTOR
- PP1-2 — CIRCUIT DESIGNATION:
  - CIRCUIT NUMBER(S)
  - PANELBOARD NUMBER

PANELBOARDS / EQUIPMENT

- T — PAD MOUNTED TRANSFORMER
- POWER PANELBOARD

LIGHTING

- A — EXTERIOR LIGHT POLE WITH FIXTURE, LETTER DENOTES FIXTURE TYPE
- A — EXTERIOR LIGHT POLE WITH FIXTURE, LETTER DENOTES FIXTURE TYPE
- W1 — WALL MOUNTED LUMINAIRE, WITH FIXTURE LETTER
- LED INDUSTRIAL LUMINAIRE
- W2 — EXTERIOR LIGHT WITH FIXTURE LETTER
- E1 — EMERGENCY BATTERY PACK LUMINAIRE
- EX — EXIT LUMINAIRE, SHADED SIDE INDICATES FACE SIDE. PROVIDE DIRECTIONAL ARROW(S) AS INDICATED ON PLANS

DISTRIBUTION

- CONDUIT ROUTING DOWNWARD
- CONDUIT ROUTING UPWARD
- CONDUIT CAPPED END
- —25KV— UTILITY PRIMARY
- —(EX)— EXISTING CIRCUIT
- —E— UNDERGROUND SECONDARY (ELECTRICAL)
- —OH— OVERHEAD CIRCUIT
- —EL— UNDERGROUND LIGHTING
- —UGE— UNDERGROUND ELECTRICAL
- HH — HANDHOLE
- J — JUNCTION BOX
- DISCONNECT / SAFETY SWITCH

$X — DEVICE INDICATOR LETTER. "X" EQUALS DESIGNATION BELOW (TYPICAL FOR MOST SWITCH TYPES):

- 3 =THREE-WAY SWITCH
- 4 =FOUR-WAY SWITCH
- K =KEY OPERATED SWITCH
- WP =WEATHERPROOF TOGGLE SWITCH
- D =DIMMER SWITCH

- OS — WALL OCCUPANCY SENSOR / SWITCH
- WALL MOUNTED LUMINAIRE
- LED FLOOD LIGHT
- LED INDUSTRIAL LUMINAIRE
- WALL / CEILING — EXIT LUMINAIRE, SHADED SIDE INDICATES FACE SIDE. PROVIDE DIRECTIONAL ARROW(S) AS INDICATED ON PLANS
- EMERGENCY BATTERY PACK LUMINAIRE
- PE — PHOTO CELL

X — DEVICE INDICATOR LETTER. "X" EQUALS DESIGNATION BELOW (TYPICAL FOR MOST RECEPTACLE TYPES):

- BLANK FOR NORMAL POWER
- E = EMERGENCY
- G = GFCI RATED
- IG = ISOLATED GROUND
- T = TAMPERPROOF
- WG = GFCI AND WEATHERPROOF
- WP = WEATHERPROOF

- X — DUPLEX RECEPTACLE
- X — DOUBLE DUPLEX RECEPTACLE (QUADPLEX)
- X — SIMPLEX RECEPTACLE
- X — DUPLEX RECEPTACLE
- X — DOUBLE DUPLEX RECEPTACLE (QUADPLEX)
- X — DATA RECEPTACLE
- J — WALL MOUNTED CODE SIZE J-BOX
- J — POWER CONNECTION TO EQUIPMENT MOUNTED J-BOX.
- (J) — CODE SIZE JUNCTION BOX
- P — CODE SIZE PULLBOX
- 30/1 — NON-FUSED DISCONNECT SWITCH. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE U.O.N.
- F 30/3R — FUSED DISCONNECT SWITCH. AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE U.O.N.
- 0/1 — MOTOR STARTER. STARTER SIZE INDICATED BY NUMBER/NEMA ENCLOSURE RATING, SINGLE SPEED U.O.N.
- 1/30/3R — COMBINATION DISCONNECT SWITCH AND MOTOR STARTER. NEMA STARTER SIZE/AMPERAGE/NEMA ENCLOSURE RATING, 3 POLE U.O.N.

ABBREVIATIONS

(NOT ALL SYMBOLS AND/OR ABBREVIATIONS SHOWN IN THIS LEGEND WILL BE USED IN THIS CONTRACT)

A, AMP	AMPERE
AC	ALTERNATING CURRENT
AC	ABOVE COUNTER
A.F.F.	ABOVE FINISH FLOOR
A.F.G.	ABOVE FINISH GRADE
AFM	AIR FLOW METER
AI	ANALOG INPUT
AIC	AMPERES INTERRUPTING CURRENT
AO	ANALOG OUTPUT
APPROX.	APPROXIMATELY
ATS	AUTOMATIC TRANSFER SWITCH
AWG.	AMERICAN WIRE GUAGE
BC	BARE COPPER
BFG	BELOW FINISHED GRADE
C	CONDUIT
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
CLG	CEILING
COMM	COMMUNICATIONS
CONC	CONCRETE
CP	CONTROL PANEL
CU	COPPER
DC	DIRECT CURRENT
DI	DIGITAL INPUT
DISC.	DISCONNECT
DN	DOWN
DO	DIGITAL OUTPUT
DWG	DRAWING
(E), (EX)	EXISTING
EF	EXHAUST FAN
EMH	ELECTRICAL MANHOLE
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
EOLD	END OF LINE DEVICE
EQP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
FA	FIRE ALARM
FACP	FIRE ALARM CONTROL PANEL
FLA	FULL LOAD AMPERES
FLEX	FLEXIBLE METAL CONDUIT
FLR	FLOOR
FO	FIBER OPTICS
FT	FEET
G, GND.	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HH	HAND HOLE
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IN	INCHES
INC	INCANDESCENT
JB	JUNCTION BOX
KCMIL	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT-AMPERE
KW	KILOWATT
KH	KILOWATT HOUR
LAN	LOCAL AREA NETWORK
LCP	LOCAL CONTROL PANEL
LP	LIGHTING PANEL
LT	LIQUID TIGHT
LTI	LEVEL TRANSMITTER
LTG	LIGHTING
LVSW	LEVEL SWITCH
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANELBOARD
M	METER
MH	MANHOLE OR METAL HALIDE
MIN	MINIMUM
MLO	MAIN LUGS ONLY
MPC	MULTI PUMP CONTROLLER
MTD	MOUNTED
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OHP	OVERHEAD POWER
O/P	OUTPUT
PA	PUBLIC ADDRESS
PB	PULL BOX
PCM	PUMP CURRENT SENSOR
PNL	PANELBOARD
PP	POWER POLE
PSI	POUNDS PER SQUARE INCH
PT	POTENTIAL TRANSFORMER
PTI	PRESSURE TRANSMITTER
PVC	POLYVINYL CHLORIDE
PWR	POWER
QTY	QUANTITY
RCPT	RECEPTACLE
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARE
SCR	SHORT CIRCUIT RATING
SHLD	SHIELDED
SPD	SURGE PROTECTION DEVICE
SPS	SUMP PUMP SENSOR
SQ	SQUARE
SW	SWITCH
SWB	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
T	TRANSFORMER
TC	TERMINAL CABINET
TEB	TELEPHONE EQUIPMENT BOARD
TELE	TELEPHONE
TTB	TELEPHONE TERMINAL BOARD
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP.	TYPICAL
UH	UNIT HEATER
UG	UNDERGROUND
UL	UNDERWRITER'S LABORATORIES
UON	UNLESS OTHERWISE NOTED
V	VOLT
VA	VOLT AMPERE
VFD	VARIABLE FREQUENCY DRIVE
W	WATT OR WIRE
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
WS	WATER SENSOR
XFMR	TRANSFORMER

GENERAL NOTES

A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE THEMSELVES WITH THE ENTIRE PROJECT PRIOR TO BID. THIS IS TO ALLOW FOR A COMPLETE AND ACCURATE BID PERTAINING TO SCOPE INDICATED ON THE DESIGN DRAWINGS & SPECIFICATIONS. ANY QUESTIONS THAT MAY ARISE IN REGARDS TO THE SCOPE OF WORK INDICATED, WHAT THE CONTRACTOR'S FUNCTIONS ARE OR ANY OTHER ISSUE RELATED TO THE PROJECT ITSELF SHALL BE IDENTIFIED DURING THE BID PERIOD AND COMMUNICATED TO THE ENGINEER FOR CLARIFICATION PRIOR TO AWARD OF CONTRACT.

B. IT WILL BE THE CONTRACTOR'S OBLIGATION TO INCLUDE IN THEIR BID THE COSTS FOR INSTALLATION OF JUNCTION BOXES, CONDUIT SUPPORTS, COORDINATION WITH OTHER TRADES, AND OTHER MISCELLANEOUS ITEMS THAT PERTAIN TO THE SCOPE OF WORK INDICATED.

C. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC).

D. LOCATIONS OF ELECTRICAL EQUIPMENT AND ALL OTHER DEVICES SHOWN ON THE PLANS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH ALL TRADES FOR EXACT LOCATION OF OTHER EQUIPMENT THAT REQUIRE ELECTRICAL CONNECTIONS.

E. ALL CONDUIT ROUTINGS SHOWN ON THE PLAN DRAWINGS ARE APPROXIMATE. EXACT ROUTINGS AND LOCATION OF CONDUITS SHALL BE COORDINATED IN THE FIELD AND INSTALLED AS FIELD CONDITIONS ALLOW.

F. ALL WIRING INDICATED ON DESIGN DRAWINGS SHALL BE THHN COPPER, UNLESS OTHERWISE NOTED.

G. CONTRACTOR SHALL INSTALL NEW PULL BOXES AND JUNCTION BOXES AS NEEDED OR WHEREVER IT IS REQUIRED BY N.E.C. ALL NEW WIRING SHALL BE IDENTIFIED AND TAGGED AT ALL PULL BOXES, JUNCTION BOXES, EQUIPMENT BOXES AND CABINETS.

H. SHOULD CONTRACTOR AT ANY TIME NOTICE THAT THE ACTUAL FIELD CONDITIONS DO NOT CORRESPOND TO THE INFORMATION INDICATED ON THE DRAWINGS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER FOR CLARIFICATION AND DIRECTION PRIOR TO COMMENCING WORK.

I. WHEREVER REQUIRED, THE CONTRACTOR SHALL FURNISH AND INSTALL UNISTRUT CHANNELS, ANGLE IRON OR ANY ADDITIONAL SUPPORTS REQUIRED TO ACCOMMODATE THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT AND MATERIALS.

J. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS DOCUMENTING ANY AND ALL CHANGES THAT HAVE BEEN MADE AS PART OF THIS CONTRACT. PROVIDE UPDATED TYPEWRITTEN SCHEDULES FOR ALL PANELS AND LABEL ALL PANELS AND EQUIPMENT AS REQUIRED.

K. CONTRACTOR SHALL SUBMIT SKETCHES OF PROPOSED ROUTING OF CONDUIT AND WIRING TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. ADDITIONAL CRITERIA FOR THE CONDUIT AND WIRING:

1. SHALL NOT CREATE A TRIPPING HAZARD OR LIMIT ACCESS TO EQUIPMENT.
2. SHALL BE ROUTED ALONG WALLS ABOVE PROCESS PIPING TO VICINITY OF EQUIPMENT, DEVICE, PANEL OR ELECTRICAL BOX, WHEREUPON CONDUIT SHALL BE ROUTED PERPENDICULAR TO WALL TO THOSE CONNECTIONS.
3. UNLESS EMBEDDED IN CONCRETE FLOOR, SHALL BE INSTALLED AT LEAST 10 FEET ABOVE FLOOR WHERE CONDUIT IS ROUTED BETWEEN A WALL AND EQUIPMENT, DEVICE, PANEL, OR ELECTRICAL BOX, UNLESS THIS DISTANCE IS LESS THAN 18 INCHES.
4. SHALL BE ROUTED ON CELING FOR CEILING-MOUNTED LIGHTING FIXTURES IN EFFICIENT MANNER.
5. SHALL BE ADEQUATELY SUPPORTED TO PROVIDE RIGID INSTALLATION IF ROUTED VERTICALLY AT LOCATIONS AWAY FROM WALLS.

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 05, 2021

SHEET TITLE

ELECTRICAL SYMBOL LEGEND AND GENERAL NOTES

SHEET NO:

E-001

1/6/2021

ELECTRICAL SPECIFICATIONS

1. PRODUCTS AND INSTALLATION SHALL COMPLY WITH ALL APPLICABLE LAWS, CODES, GOVERNMENT REGULATIONS, UTILITY COMPANY REQUIREMENTS, ETC. OF ALL AUTHORITIES HAVING JURISDICTION. WORK SHALL COMPLY WITH THE FOLLOWING CODES, STANDARDS AND ORGANIZATIONS:

   2017 NATIONAL ELECTRIC CODE
   2012 NEW MEXICO ELECTRICAL SAFETY CODE
   2009 NEW MEXICO ENERGY CONSERVATION CODE
   2012 INTERNATIONAL ENERGY CODE
   NFPA
   UNDERWRITERS LABORATORY (UL), IRI, FM
   IESNA
   IEEE
   ISA

2. ALL SPECIFICATIONS AND DRAWINGS, I.E., ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL ARE COMPLIMENTARY AND MUST BE USED IN COMBINATION TO OBTAIN COMPLETE CONSTRUCTION INFORMATION. ANY INFORMATION CONFLICTS WITHIN THE SPECIFICATIONS AND DRAWINGS SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT FITS IN THE ROOM OR SPACE SHOWN AND HAS ALL CLEARANCES REQUIRED BY THE NEC, PRIOR TO ORDER. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.

3. WORK SHALL BE EXECUTED IN A GOOD WORKMANLIKE MANNER USING MECHANICS SKILLED IN THEIR RESPECTIVE TRADES. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, FREE OF DEFECTS. SYSTEMS ARE TO BE COMPLETE AND WORKABLE IN ALL RESPECTS, PLACED IN OPERATION AND PROPERLY ADJUSTED.

4. MAINTAIN THE CONSTRUCTION PREMISES IN A NEAT AND ORDERLY CONDITION AT THE END OF EACH WORKING DAY. CLEAN UP, REMOVE AND LEGALLY DISPOSE OF ALL RUBBISH DAILY. CONTRACTOR SHALL PROTECT THEIR WORK AND EXISTING OR ADJACENT PROPERTY AGAINST WEATHER, TO MAINTAIN THEIR WORK, MATERIALS, APPARATUS AND FIXTURES FREE FROM INJURY OR DAMAGE. ANY WORK DAMAGED BY FAILURE TO PROVIDE PROTECTION REQUIRED, SHALL BE REMOVED AND REPLACED WITH NEW WORK AT THE CONTRACTOR'S EXPENSE.

5. IN CASES OF DOUBT AS TO THE WORK INTENDED, OR IN THE EVENT OF NEED FOR EXPLANATION THEREOF, THE CONTRACTOR SHALL REQUEST SUPPLEMENTARY INSTRUCTIONS FROM THE ENGINEER. NO CHANGES ARE TO BE MADE TO THE WORK OF THIS CONTRACT WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL HOLD THE OWNER AND ITS CONSULTANTS HARMLESS AGAINST ALL CLAIMS AND JUDGMENTS ARISING OUT OF THE CONTRACTORS PERFORMANCE OF THE WORK OF THIS CONTRACT. THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK, WHICH HE EXPECTS ADDITIONAL COMPENSATION BEYOND THE CONTRACT AMOUNT, WITHOUT WRITTEN AUTHORIZATION FROM THE APPROPRIATE AUTHORITY. FAILURE TO OBTAIN SUCH AUTHORIZATION SHALL INVALIDATE ANY CLAIM FOR EXTRA COMPENSATION.

SHOP DRAWING SUBMITTALS

1. COORDINATES, PREPARE AND SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND ENGINEER FOR THEIR REVIEW. CONTRACTOR SHALL REVIEW AND INDICATE HIS APPROVAL OF EACH SHOP DRAWING PRIOR TO SUBMITTAL FOR REVIEW. DO NOT ORDER, START WORK OR FABRICATION UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED BY THE ENGINEER AND RETURNED TO THE CONTRACTOR.

2. CLEARLY IDENTIFY EACH ITEM ON THE SUBMITTAL AS TO MARK, LOCATION AND USE, USING SAME IDENTIFICATION AS PROVIDED ON DESIGN DRAWINGS. ELECTRONIC SUBMITTALS SHALL BE PRESENTED WITH ALL SHEETS IN ALPHANUMERIC ORDER AND ALL SHEETS ORIENTED WITH TOP OF SHEET UP.

3. SUBMITTALS WILL BE REVIEWED ONLY FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS AND NOT FOR DIMENSIONS OR QUANTITIES. THE SUBMITTAL REVIEW SHALL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR PURCHASE OF ANY ITEM IN FULL COMPLIANCE WITH THE CONTRACT DOCUMENTS OR ITS COMPLETE AND PROPER INSTALLATION.

RECORD DRAWINGS

1. A SET OF MEP RECORD/COORDINATION DRAWINGS SHALL BE MAINTAINED IN THE GENERAL CONTRACTORS OFFICE AT THE JOB SITE. PRINTS SHALL INDICATE ADDITIONS, DELETIONS, VARIATIONS IN LOCATION, VARIATIONS IN NUMBERING ETC. ALTERATIONS SHALL BE MARKED IN RED AND DELETIONS ALL BE MARKED IN GREEN AND SHALL BE ON THE LATEST CONTRACT DRAWING ISSUED. RECORD DRAWINGS SHALL BE KEPT CLEAN AND UNDAMAGED AND SHALL NOT BE USED FOR ANY PURPOSE OTHER THAN RECORDING DEVIATIONS FROM WORKING DRAWINGS. AFTER THE PROJECT IS COMPLETED, THESE SETS OF DRAWINGS SHALL BE DELIVERED TO THE ARCHITECT IN GOOD CONDITION, AS A PERMANENT RECORD OF THE INSTALLATION AS ACTUALLY CONSTRUCTED.

EQUIPMENT

1. ALL PACKAGED EQUIPMENT SHALL BE INDEPENDENTLY THIRD PARTY LABELED AS A SYSTEM FOR ITS INTENDED USE BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) IN ACCORDANCE WITH OSHA FEDERAL REGULATIONS 29CFR1910.303 AND .399, AS WELL AS NFPA PAMPHLET NO. 70, AND THE NATIONAL ELECTRICAL CODE (NEC), ARTICLE 90-7.

2. MAKE ALL FINAL EQUIPMENT CONNECTIONS AND PROVIDE THE NECESSARY ADAPTORS, FITTINGS, DEVICES, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. PROVIDE COMPLETE WITH BASES, ISOLATORS, SUPPORTS AND OTHER REQUIRED ACCESSORIES.

3. EQUIPMENT SHALL BE INSTALLED IN FULL ACCORDANCE WITH THE MANUFACTURER'S DATA AND INSTALLATION INSTRUCTIONS, INCLUDING CLEARANCES. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO CHECK AND CONFORM TO THESE REQUIREMENTS PRIOR TO STARTING WORK.

4. THE CONTRACTOR SHALL COORDINATE WITH THE OTHER TRADES FOR ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT. COORDINATE REQUIREMENT FOR PROVISION OF MOTOR STARTERS, DISCONNECTS, CONTACTORS, CONTROL WIRING, ETC. AS REQUIRED FOR PROPER FUNCTIONING SYSTEM.

IDENTIFICATION

1. FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.

2. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH.

MOUNTING ACCESSORIES

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, RODS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.

2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED.

RACEWAYS

1. ALL WIRE SHALL BE RUN IN ACCORDANCE WITH CODE IN INTERMEDIATE METAL CONDUIT (IMC) OR ELECTRICAL METALLIC TUBING (EMT) UNLESS OTHERWISE SPECIFICALLY STATED HEREIN. CONDUIT SIZE SHALL BE 3/4" MINIMUM UNLESS NOTED OTHERWISE.

2. CONDUIT IN EXTERIOR WALLS, EXPOSED TO THE WEATHER OR OTHER DAMP/WET LOCATIONS SHALL BE RIGID, THREADED, GALVANIZED, HEAVY WALL TYPE UNLESS NOTED OTHERWISE.

3. CONDUIT UNDERGROUND SHALL BE SCHEDULE 40 PVC CONDUIT WITH GROUND WIRE. PVC CONDUIT SHALL NOT BE RUN IN OR ABOVE FLOOR SLAB. PVC CONDUIT SHALL TERMINATE BELOW FLOOR SLAB WITH RIGID, THREADED METAL CONDUIT ADAPTER. CONDUIT ABOVE SLAB SHALL BE METAL.

4. USE FLEXIBLE CONDUIT FOR THE CONNECTION TO THE RECESSED OR SEMI-RECESSED LIGHTING FIXTURES (6' LENGTH MAXIMUM). USE LIQUID TIGHT METAL CONDUIT FOR ALL CONNECTIONS TO MOTORS AND OTHER EQUIPMENT SUBJECT TO VIBRATION AND IN AREAS SUBJECT TO MOISTURE.

5. USE WATERTIGHT JOINTS WITH BURIED AND CONCRETE ENCASED CONDUIT. ALL BURIED CONDUITS OUTSIDE OF BUILDINGS SHALL HAVE A MINIMUM OF 24" OF COVER. METAL CONDUITS BURIED IN EARTH SHALL BE PAINTED WITH TWO COATS OF HEAVY ASPHALTUM PAINT.

6. CONDUIT SHALL BE SECURELY FASTENED IN PLACE. SUPPORT RUNS OF CONDUIT AS DETAILED IN THE APPROPRIATE TABLE OF THE NATIONAL ELECTRICAL CODE.

7. INSTALL EXPOSED RUNS OF CONDUIT AND CONDUIT IN CEILINGS PARALLEL OR PERPENDICULAR TO THE WALLS, STRUCTURAL MEMBERS OF INTERSECTIONS OF VERTICAL PLANES AND CEILINGS. PROVIDE RIGHT ANGLE TURNS USING FITTINGS OR SYMMETRICAL BENDS. SUPPORT CONDUITS WITHIN 1' OF ALL CHANGES IN DIRECTION.

8. IF A CONDUIT IS SUSPENDED, IT SHALL BE SUPPORTED ON TRAPEZE HANGERS, WHICH USE "ALL-THREAD" RODS FROM THE STRUCTURAL STEEL. THE USE OF CEILING SUPPORT WIRE OR SIMILAR MATERIAL WILL NOT BE ACCEPTED.

9. INSTALL EMPTY CONDUIT FOR FUTURE USE AS INDICATED ON THE DRAWINGS. CONDUIT SHALL BE COMPLETE WITH JETLINE OR PULL ROPE, JUNCTION/OUTLET BOXES, TILE RINGS AND APPROPRIATE COVER PLATES.

10. THREAD LUBRICATION/SEALANT IS REQUIRED ON OUTDOOR AND UNDERGROUND THREADED METAL JOINTS.

11. COORDINATE CONDUIT RUNS WITH OTHER TRADES AND ADJUST ROUTING TO AVOID INTERFERENCE.

12. RACEWAYS SHALL BE PROVIDED WITH EXPANSION FITTINGS WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION AND CONTRACTION.

13. SURFACE RACEWAYS SHALL BE AS INDICATED ON DRAWINGS AND INSTALLED AS A COMPLETE SYSTEM WITH ALL REQUIRED FITTINGS AND APPURTENANCES. RECEPTACLES/OUTLETS AS INDICATED ON PLAN. INSTALL RACEWAYS PARALLEL AND PERPENDICULAR TO BUILDING ELEMENTS.

BOXES

1. INSTALL PULL AND JUNCTION BOXES WHERE SHOWN ON THE DRAWINGS, AND WHERE REQUIRED FOR CHANGES IN DIRECTION, AT JUNCTION POINTS AND TO FACILITATE WIRE PULLING. FURNISH BOX SIZES IN ACCORDANCE WITH NEC UNLESS LARGER BOXES ARE INDICATED ON THE DRAWINGS.

2. ALL OTHER LOCATIONS EXCEPT BELOW GRADE - USE CAST BOXES, ZINC-CADMIUM FINISH MALLEABLE IRON. FURNISH WEATHERPROOF BOXES WHEN INSTALLED OUTSIDE OR IN DAMP/WET LOCATIONS.

3. EXTERIOR BELOW GRADE - COMPOSITE WATERPROOF ASSEMBLIES SUITABLE FOR INGROUND INSTALLATIONS.

4. WALL BOX SIZES SHALL BE MINIMUM 4" SQUARE X 2-1/2" DEEP WHERE WALL CONSTRUCTION PERMITS. FIXTURE OUTLETS IN CEILING SHALL BE MINIMUM 4" OCTAGONAL X 1-1/2" DEEP (4-11/16 OCTAGONAL X 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES). GANG BOXES SHALL BE ONE PIECE MINIMUM 2-1/8" DEEP.

5. MOUNTING HEIGHTS ON THE DRAWING ARE TO THE CENTERLINE OF THE BOXES UNLESS OTHERWISE NOTED. ADJUST LOCATIONS OF OUTLETS IN MASONRY OR TILE CONSTRUCTION TO OCCUR IN THE NEAREST JOINT TO THE HEIGHT SPECIFIED. HEIGHTS SHALL MEET ADA REQUIREMENTS.

CONDUCTORS

1. COLOR CODE CONDUCTORS (EXCEPT CONTROL AND INSTRUMENTATION CONDUCTORS) AS FOLLOWS:

	208/120 VOLT SYSTEM
PHASE A	BLACK
PHASE B	RED
PHASE C	BLUE
NEUTRAL	WHITE
GROUND	GREEN

   - #12 AND #10 CONDUCTORS SHALL HAVE CONTINUOUS INSULATION COLOR, AS LISTED ABOVE.
   - COLOR CODE CONDUCTORS LARGER THAN ABOVE, WHICH DO NOT HAVE CONTINUOUS INSULATION COLOR BY APPLICATION OF AT LEAST TWO LAPS OF COLORED TAPE ON EACH CONDUCTOR AT ALL POINTS OF ACCESS INCLUDING JUNCTION BOXES.
   - CONDUCTORS SHALL BE SOFT ANNEALED COPPER INSULATED FOR 600 VOLTS UNLESS SPECIFICALLY INDICATED OTHERWISE.
   - DRAWINGS INDICATE SIZES BASED ON COPPER CONDUCTORS.

2. INSULATION TYPE SHALL BE TYPE THW FOR WIRE SIZES #8 AWG AND LARGER AND THWN FOR #10 AWG AND SMALLER. THHN SHALL NOT BE USED IN WET OR DAMP LOCATIONS.

3. FLEXIBLE CORD SHALL BE HEAVY DUTY TYPE SO WITH AN EQUIPMENT GROUND CONDUCTOR IN ADDITION TO THE CURRENT CARRYING CONDUCTORS.

4. PROVIDE #12 CONDUCTORS, UNLESS OTHERWISE INDICATED. CONTROL CONDUCTORS SHALL BE #14 MINIMUM FOR NEC CLASS 1 AND #16 FOR NEC CLASS 11. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED.

5. CONNECT #10 AND SMALLER WIRES WITH CONSTANT PRESSURE EXPANDABLE SPRING TYPE CONNECTORS. CONNECT #8 AND LARGER WIRES WITH COMPRESSION CONNECTORS OR SPLICES.

6. INSTALL WIRING IN CONDUIT. PULL CONDUCTORS USING RECOGNIZED METHODS AND EQUIPMENT LEAVING AT LEAST 6" WIRE AT ALL JUNCTION BOXES FOR CONNECTIONS. CLEANOUT EACH CONDUIT SYSTEM TO ELIMINATE OBSTRUCTIONS OVER FULL LENGTH BEFORE PULLING WIRE.

CONDUCTORS (CONTINUED)

7. FORM AND TIE ALL WIRING IN PANELBOARDS. THERE SHALL BE NO WIRENUT JOINTS OR SPLICES MADE INSIDE SWITCHBOARDS/PANELBOARDS.

8. BRANCH CIRCUIT WIRE SIZES (AND CONDUITS) SHALL BE INCREASED FROM THOSE INDICATED ON THE PLANS TO PREVENT EXCESSIVE VOLTAGE DROP. BRANCH CIRCUITS SHALL BE INSTALLED WITH WIRES OF SUFFICIENT SIZE SO THAT VOLTAGE DROP BETWEEN THE PANEL AND THE LOADS DOES NOT EXCEED LIMIT OF 2%.

9. WIRE SIZES SHALL BE BASED ON THE 60°C. AMPACITIES FOR WIRE SIZES #14-1 AWG AND 75°C AMPACITIES FOR WIRE SIZES #1/0 AWG AND LARGER. 4. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS. RETORQUE CONNECTIONS ONE MONTH OR MORE AFTER INITIAL TORQUE.

10. ALL THREE PHASE CIRCUITS WILL BE ROUTED WITHIN DEDICATED CONDUIT FROM PANEL TO LOAD. UNLESS APPROVED BY ENGINEER PRIOR TO INSTALLATION, SINGLE PHASE CIRCUITS ONLY MAY BE MULTI-PLEXED IN CONDUIT PROVIDED WIRE IS PROPERLY DERATED AND CONDUIT SIZED PER NEC. UNDER NO CIRCUMSTANCES SHALL MORE THAN NINE (9) CURRENT CARRYING CONDUCTORS BE RUN IN A SINGLE CONDUIT. WIREMOLD SERVED BY MULTIPLE CIRCUITS SHALL BE WIRED WITH INDIVIDUAL SEPARATE NEUTRALS FOR EACH CIRCUIT.

PANELBOARDS

1. PANELBOARDS SHALL BE ENCLOSED DEAD FRONT SAFETY TYPE WITH FEATURES AND RATINGS AS SCHEDULED ON DRAWINGS. ALL BUS BARS SHALL BE RECTANGULAR SOLID COPPER. SPACE, WHERE SHOWN IN PANEL SCHEDULES, DESIGNATES SPACE FOR FUTURE PROTECTIVE DEVICES AND SHALL INCLUDE BUS AND SUPPORT. PANELS KNOWN AS "LOAD CENTERS" ARE UNACCEPTABLE. MANUFACTURER SHALL BE SQUARE D, SIEMENS, GE OR EATON.

2. MOLDED CASE CIRCUIT BREAKERS SHALL BE AS SCHEDULED ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION. ALL BREAKERS SHALL BE BOLT ON TYPE. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURERS STANDARDS. RETORQUE ALL CONNECTIONS ONE MONTH AFTER INITIAL TORQUE.

3. INSTALL CABINETS SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 6'-6" ABOVE THE FINISHED FLOOR.

4. ELECTRICAL CONTRACTOR SHALL ARRANGE CIRCUITS AS NEAR AS POSSIBLE TO CIRCUIT NUMBERS ON THE DRAWINGS. AT COMPLETION OF JOB, ELECTRICAL CONTRACTOR SHALL TAKE CURRENT READING CHECKS OF RESPECTIVE PHASES. A MINIMUM OF CIRCUIT CONNECTIONS SHALL BE REARRANGED TO BALANCE, AS CLOSELY AS POSSIBLE, THE LOAD IN THE PANEL. ENTRIES ON DIRECTORY CARDS SHALL BE TYPED, COMPLETE AND ACCURATE. FINAL ROOM NAMES/NUMBERS MAY BE DIFFERENT FROM THOSE USED ON PLANS AND SHOULD BE USED TO CREATE DIRECTORIES.

GROUNDING

1. GROUND ALL EQUIPMENT PER NEC. GROUND EACH OUTSIDE LIGHTING STANDARD SEPARATELY WITH ONE GROUND ROD AND A #6 GROUND WIRE.

2. ALL CONDUITS SHALL CONTAIN A CODE SIZED GROUND WIRE SIZE PER NEC IN ADDITION TO THE CONDUCTORS SHOWN ON THE PLANS. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONALLY.

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12673
REGISTERED PROFESSIONAL ENGINEER
1/7/2021

PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 05, 2021

SHEET TITLE
ELECTRICAL SPECIFICATION NOTES

SHEET NO:
E-002

1/6/2021

ELECTRICAL SPECIFICATIONS (CONTINUED)

DEVICES

1. WIRING DEVICE COLOR SHALL BE IVORY OR AS SELECTED BY ARCHITECT, UNLESS OTHERWISE INDICATED.
2. PROVIDE TOTALLY ENCLOSED, SPECIFICATION GRADE, 20 AMPERE, 120/277 VOLT QUIET A/C GENERAL USE SNAP SWITCHES MANUFACTURED BY HUBBELL, P&S OR LEVITON.
3. PROVIDE SPECIFICATION GRADE NEMA CONFIGURATION 5-20R DUPLEX 125-VOLT GROUNDING TYPE RECEPTACLES UNLESS OTHERWISE NOTED ON THE DRAWINGS. MANUFACTURED BY HUBBELL, P&S OR LEVITON.
4. RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS AND OF A QUALITY, MATERIAL AND CONSTRUCTION EQUAL TO THAT SPECIFIED FOR DUPLEX CONVENIENCE RECEPTACLES.
5. PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE NOTED:
   - ELECTRICAL ROOM: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL AS APPROPRIATE FOR THE TYPE OF BOX.
   - TREATMENT AND EXTERIOR AREAS: COPPER FREE ALUMINUM WITH GRAY, POWDER EPOXY FINISH, GASKETED, WEATHERPROOF.
   - ALL OUTLET AND/OR JUNCTION BOXES SHALL BE COMPLETE WITH A COVER PLATE BY THIS CONTRACTOR. WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED UNDER A COMMON COVERPLATE. UTILIZE IN USE COVERS FOR THE OUTLETS IN THE TREATMENT ROOM.
   - LOCATE THE SWITCHES APPROXIMATELY 4'-0" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITH IN ADA REQUIREMENTS) UNLESS OTHERWISE NOTED. THE LONG DIMENSION OF THE SWITCHES SHALL BE VERTICAL.
6. LOCATE RECEPTACLES APPROXIMATELY 1'-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITH IN ADA REQUIREMENTS), UNLESS OTHERWISE NOTED. THE LONG DIMENSION OF THE RECEPTACLE SHALL BE VERTICAL. ALL DEVICES SHALL BE FLUSH MOUNTED U.N.O.
7. RECEPTACLES LOCATED ON INTERIOR AND THE EXTERIOR OF THE BUILDING SHOULD BE GFCI PROTECTED.

SAFETY SWITCHES

1. PROVIDE DISCONNECT SWITCHES FOR ALL EQUIPMENT, WHERE REQUIRED BY CODE, MANUFACTURER SHALL BE SQUARE D, SIEMENS, G.E., OR CUTLER-HAMMER. ALL SAFETY SWITCHES SHALL BE BY ONE MANUFACTURER.
2. SAFETY SWITCHES SHALL BE THE ENCLOSED HEAVY-DUTY TYPE (TYPE HD) WITH QUICK-MAKE, QUICK-BREAK MECHANISM AND EXTERNAL PAD LOCKABLE OPERATING HANDLE.
3. SAFETY SWITCHES SHALL BE RATED FOR 240 OR 600 VOLTS AS APPLICABLE. THEY SHALL BE HORSEPOWER RATED WHEN USED IN MOTOR CIRCUITS. SAFETY SWITCHES SHALL BE FUSIBLE OR NONFUSIBLE 2, 3 OR 4 POLE AS INDICATED ON THE DRAWINGS. SAFETY SWITCHES SHALL BE SINGLE THROW, UNO. ENCLOSURES SHALL BE NEMA 12X INDOORS AND OUTDOORS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
4. MOUNT THE SAFETY SWITCHES SECURELY BETWEEN 3' X 6' LEVELS ABOVE THE FLOOR UNLESS OTHERWISE NOTED IN THE DRAWINGS. SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 1/4" ALUMINUM PLATE MOUNTED ON WALL OR SUPPORTED ON STANCHION WITH BASEPLATE ANCHORED TO FLOOR AND MADE OF GALVANIZED STEEL OR ALUMINUM. SWITCHES SHALL BE LOCATED NEAR EQUIPMENT OR DEVICES THEY SERVE, SUCH THAT IT SHALL BE CLEARLY EVIDENT WHICH EQUIPMENT OR DEVICE IS SERVED.
5. THE CONTRACTOR SHALL FURNISH A COMPLETE SET OF FUSES FOR ALL FUSIBLE SWITCHES, PLUS FUSIBLE EQUIPMENT FURNISHED BY OTHER TRADES. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, THE FUSES SHALL BE OF THE FOLLOWING TYPE:
   - FUSES 601 TO 6000 AMPS SHALL BE UL CLASS RK5. TRADE TYPE SHALL BE KRP-C AS MANUFACTURED BY THE BUSSMANN COMPANY.
   - FUSES 1/10 TO 600 AMPS SHALL BE UL CLASS RK1. TRADE TYPE SHALL BE LOW PEAK LPS-RK (600V) AND LPN-RK (250C) AS MANUFACTURED BY BUSSMANN COMPANY.
   - ALL OTHER FUSES SHALL BE DUAL ELEMENT CURRENT LIMITING TYPE WITH 200,000 AMPERES SYMMETRICAL INTERRUPTING CAPACITY.
6. THIS CONTRACTOR SHALL REPLACE ALL FUSES BLOWN DURING CONSTRUCTION.
7. PROVIDE ALL ARC FLASH LABELING AS REQUIRED BY NFPA 70 AND 70E FOR ALL EQUIPMENT.

MOTOR STARTERS

1. STARTERS SHALL BE SQUARE D, G.E., CUTLER-HAMMER/WESTINGHOUSE, OR SIEMENS.
2. COORDINATE ALL EQUIPMENT INDICATED ON THE ELECTRICAL DRAWINGS WITH MECHANICAL EQUIPMENT SCHEDULES AND SPECIFICATIONS. STARTERS AND DISCONNECTS SUPPLIED AS AN INTEGRAL PART OF EQUIPMENT SHALL BE FURNISHED UNDER THE DIVISION PROVIDING THE EQUIPMENT. WIRING AND EQUIPMENT CONNECTIONS SHALL BE BY THIS CONTRACTOR.
3. MOTOR STARTERS SHALL HAVE MOTOR RUNNING LIGHT.

DISTRIBUTION PANELS

1. DISTRIBUTION PANELS SHALL BE DEAD FRONT TYPE WITH CIRCUIT BREAKERS, FUSES AND HEAVY-DUTY SWITCHES OF SIZE AND NUMBER INDICATED ON THE PANELS. PANELS SHALL BE MANUFACTURED AS A COMPLETE UNIT AND NOT AN ASSEMBLY OF PARTS SECURED FROM A SUPPLY HOUSE. ALL BUS BARS SHALL BE RECTANGULAR SOLID COPPER. ALL LUGS SHALL BE UL APPROVED CU/AL TYPE. VERTICAL BUSSING SHALL BE EXTENDED THE FULL LENGTH OF THE PANEL. ALL PANELS SHALL BE CAPABLE OF ACCEPTING SWITCH SIZES UP TO AND INCLUDING 600 AMPS. DISTRIBUTION PANELS SHALL BE G.E., SQUARE "D", SIEMENS, OR WESTINGHOUSE.
2. THE INDIVIDUAL SWITCH AND FUSE UNITS SHALL BE OF THE QUICK-MAKE, QUICK-BREAK TYPE. FUSED UNITS SHALL HAVE HINGED FUSE COMPARTMENTS WITH INTERLOCKED FUSE DOORS WHEN THE EXTERNALLY OPERATED HANDLE IS IN THE OFF POSITION. THESE UNITS SHALL BE REMOVABLE AND ACCESSIBLE FROM THE FRONT SO THAT THE CABINET MAY BE WALL-MOUNTED.
3. INSTALL PANELS SUCH THAT HANDLE FOR THE TOP SWITCH DOES NOT EXCEED 6'-6" ABOVE FINISHED FLOOR. SURFACE-MOUNTED PANELS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD. FLOOR-MOUNTED PANELS SHALL BE MOUNTED ON A 4" HIGH CONCRETE PAD. PROVIDE PHENOLIC LABELS FOR EACH PANEL AND FOR EACH SWITCH.
4. CONTRACTOR TO PROVIDE SERVICE RATED EXTERNAL SPD RATED FOR 120/240VAC; 1-PHASE; 3-wire;160KA RATING. PROVIDE 2-5AMP RATED CONTACT CLOSURES (2-NO; 2-NC).

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PROJECT NAME

LMWC WELL 3 ARSENIC
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BY	DESCRIPTION	DATE	REV.

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DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 05, 2021

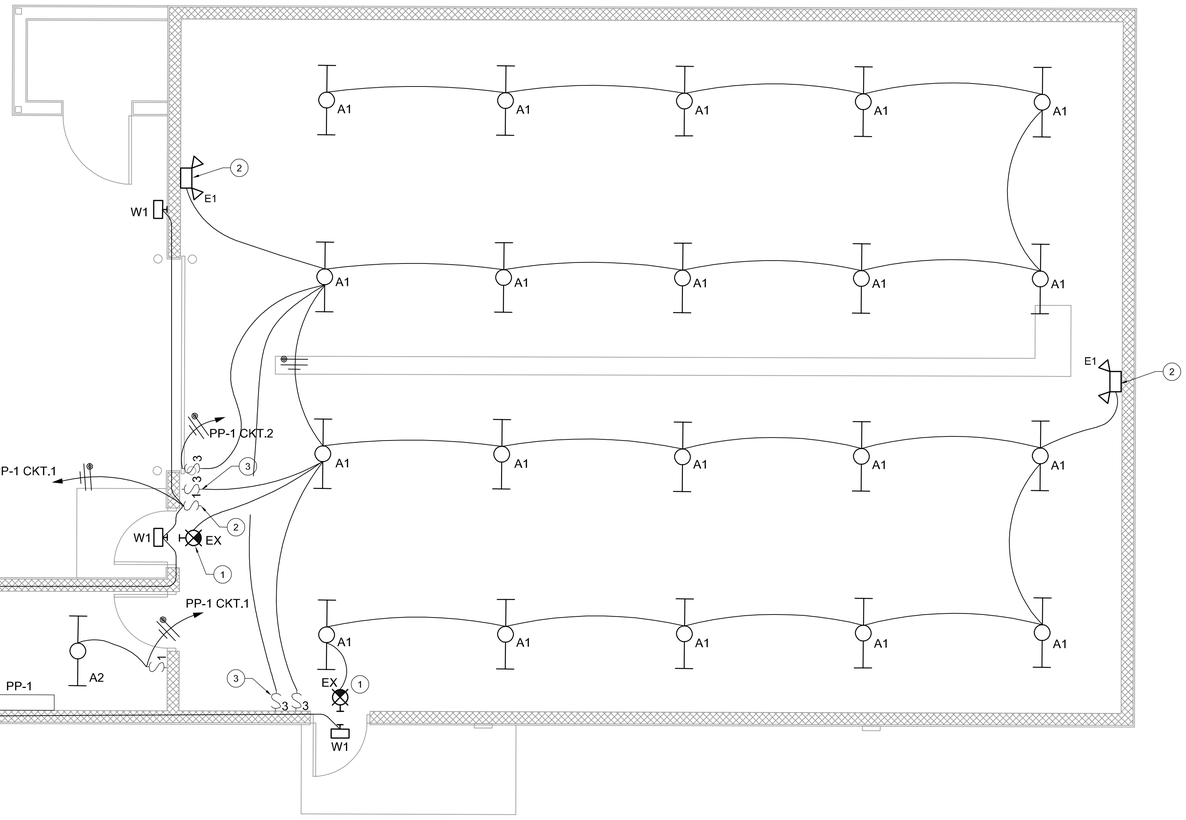
SHEET TITLE

ELECTRICAL SPECIFICATION NOTES

SHEET NO:

E-003

1/6/2021



GENERAL NOTES

A. CONTRACTOR SHALL FIELD VERIFY FINAL LOCATION OF ALL EQUIPMENT AND EQUIPMENT ELECTRICAL LOAD SIZING. IF ANY DEVIATIONS ARE DISCOVERED, COORDINATE WITH ENGINEER PRIOR TO ANY WORK PERFORMED.

B. REFER TO SHEET E-601 FOR LIGHT FIXTURE AND PANEL SCHEDULES.

C. ALL CONDUIT ROUTED ON THE INTERIOR OF THE BUILDING SHALL BE 3/4" EMT CONDUIT WITH #12 THHN CU. WIRE (MIN.), UNLESS NOTED OTHERWISE.

D. ALL CONDUIT ROUTED ON THE EXTERIOR OF THE BUILDING SHALL BE 3/4" IMC CONDUIT WITH #12 THHN CU. WIRE (MIN.), UNLESS NOTED OTHERWISE. ALL CONDUIT ROUTED ON THE EXTERIOR OF THE BUILDING SHALL BE PAINTED TO MATCH THE STUCCO FINISH COLOR.

E. CONTRACTOR SHALL PROPERLY LABEL ALL ELECTRICAL JUNCTION BOXES AND DEVICES WITH PANEL AND CIRCUIT CONNECTION INFORMATION.

F. CONTRACTOR TO COORDINATE THE MOUNTING HEIGHT OF THE INTERIOR LIGHTS AROUND OBSTRUCTIONS AND AT 15'-0" AFF MINIMUM IN THE PUMP ROOM AND AT THE CEILING HEIGHT IN THE ELECTRICAL ROOM. THE MOUNTING HEIGHT OF EXTERIOR LIGHTING TO BE 8'-0" AFG MINIMUM AND COORDINATED WITH OWNER. INSTALL FIXTURE SUPPORTS AS OUTLINED IN THE FIXTURE SCHEDULE.

KEYNOTES

1. CENTER EXIT LIGHT ABOVE DOORWAY. PROVIDE UNSWITCHED CIRCUIT TO PROVIDE CONSTANT POWER TO FIXTURE.
2. PROVIDE A SINGLE POLE, TOGGLE SWITCH TO CONTROL THE OUTSIDE LIGHTS. LABEL THE SWITCH "OUTSIDE BUILDING LIGHTING". EMERGENCY WALL LIGHT SHALL BE INSTALLED WITH A MINIMUM OF 12" CLEAR SIDE SPACE ON EITHER END OF FIXTURE. PROVIDE UNSWITCHED CIRCUIT TO PROVIDE CONSTANT POWER TO FIXTURE.
3. LIGHT SWITCHES IN THIS LOCATION SHALL CONTROL THE INTERIOR LIGHT FIXTURES A1 WITH ONE 3-WAY SWITCH CONTROLLING THE NORTHERN TWO ROWS OF LIGHT FIXTURES AND THE OTHER 3-WAY SWITCH CONTROLLING THE SOUTHERN TWO ROWS OF LIGHT FIXTURES.

A1 ELECTRICAL LIGHTING PLAN

SCALE: 1/4" = 1'-0"

1/4"=1' 0 2 4 8 12

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1/7/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

	BY	DESCRIPTION	DATE	REV.

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 05, 2021

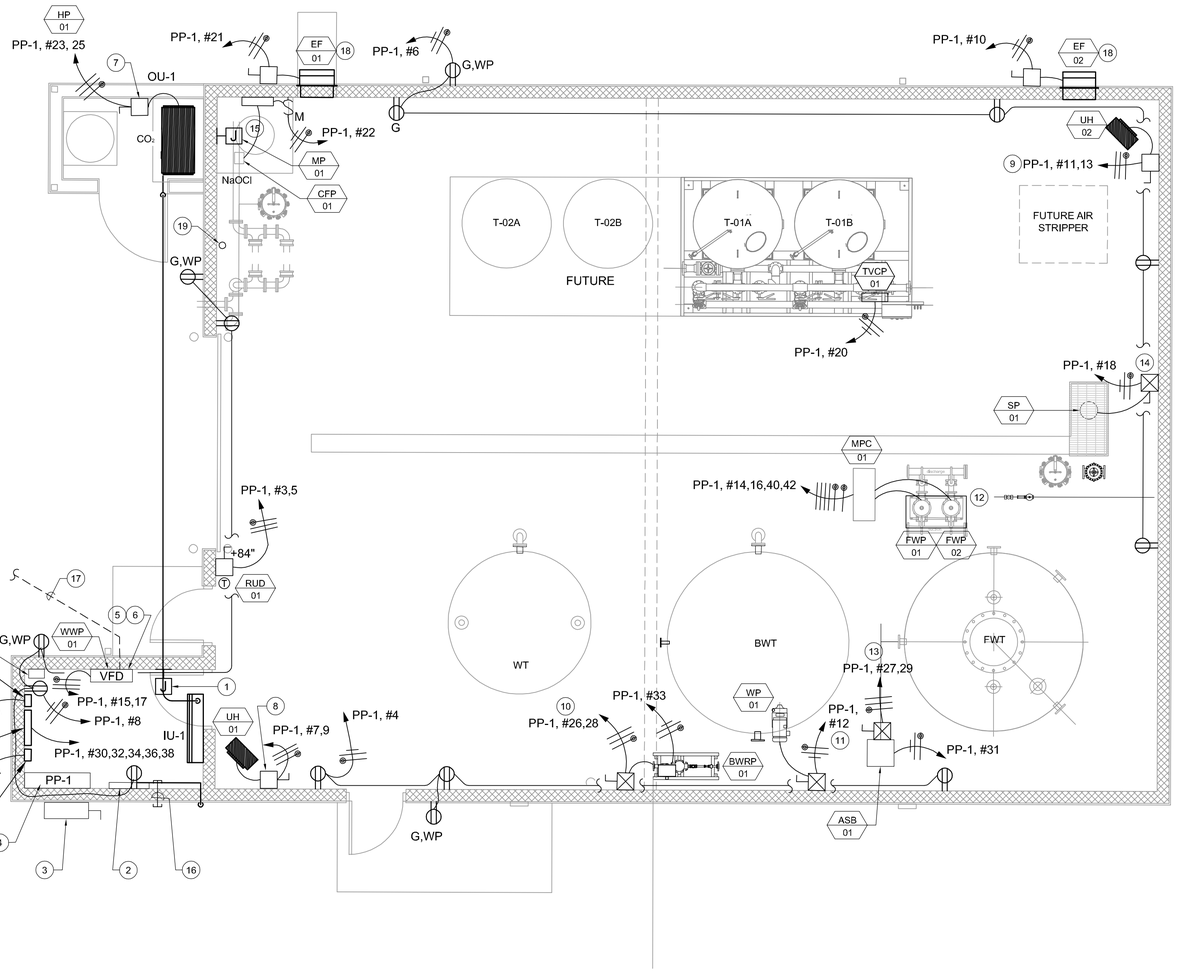
SHEET TITLE

ELECTRICAL LIGHTING PLAN

SHEET NO:

E-101

1/6/2021



KEYNOTES (CONTINUED)

19. PROVIDE AND INSTALL A 1" RGS CONDUIT STUB FOR COMMUNICATIONS ANTENNA (CELLULAR ENDPOINT). COORDINATE WITH OWNER PRIOR TO INSTALLATION REGARDING PLACEMENT THRU WALL OR ROOF.
20. PROVIDE AND INSTALL AN ENCLOSURE, APPROXIMATELY 18" X 18" X 10", TO HOLD COILED EXCESS WELL LEVEL TRANSMITTER CABLE. ADD ENCLOSURE ON FLOOR PLAN FOR EXCESS WELL LEVEL TRANSMITTER CABLE IN THE ELECTRICAL ROOM.

GENERAL NOTES

A. CONTRACTOR SHALL FIELD VERIFY FINAL LOCATION OF ALL EQUIPMENT AND EQUIPMENT ELECTRICAL LOAD SIZING. IF ANY DEVIATIONS ARE DISCOVERED, COORDINATE WITH ENGINEER PRIOR TO ANY WORK PERFORMED.

B. REFER TO SHEET E-501 FOR ELECTRICAL ONE-LINE DIAGRAM.

C. REFER TO SHEETS E-601 FOR ELECTRICAL PANEL SCHEDULES.

D. ALL CONDUIT ROUTED ON THE INTERIOR OF THE BUILDING SHALL BE 3/4" EMT CONDUIT WITH #12 THHN CU. (MIN.), UNLESS OTHERWISE NOTED.

E. ALL CONDUIT ROUTED ON THE EXTERIOR OF THE BUILDING SHALL BE 3/4" IMC CONDUIT WITH #12 THHN CU. WIRE (MIN.), UNLESS NOTED OTHERWISE.

F. LOCATIONS OF ELECTRICAL AND MECHANICAL EQUIPMENT ARE SHOWN IN THEIR APPROXIMATE LOCATION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY EXACT LOCATIONS.

G. CONTRACTOR SHALL PROPERLY LABEL ALL WIRE, JUNCTION BOXES AND DEVICES TO IDENTIFY PANEL AND CIRCUIT INFORMATION.

H. ALL RECEPTACLE LOCATIONS SHOWN ON PLAN ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF RECEPTACLE BASED ON CURRENT FIELD CONDITIONS AT TIME OF CONSTRUCTION.

I. ALL RECEPTACLES SHALL BE 20A DUPLEX (NEMA 5-20), UNLESS INDICATED ON PLANS.

J. INSTALL UNIT HEATERS 96"AFF TO THE BOTTOM OF THE UNIT.

KEYNOTES

1. WALL MOUNT J-BOX WITH CONDUIT THROUGH WALL PENETRATION FOR INTERCONNECTION TO FAN COIL FROM OUTSIDE CONDENSER.
2. COMMUNICATIONS BACK BOARD FOR SERVICE PROVIDER EQUIPMENT. MOUNT A 2' BY 2' FIRE TREATED BACK BOARD AT +42" AFF.
3. SERVICE DISCONNECT SWITCH. PROVIDE A 400A, 240V, FUSED, NEMA 3R, SINGLE PHASE DISCONNECT. PROVIDE ONE RUN OF 2-500 kCMIL W/ 1-#1/0 IN 4" SCH 80 PVC AT 36" BFG TO PNM SERVICE TRANSFORMER. REFER TO SHEET G-102 FOR ROUTING.
4. MAIN DISTRIBUTION PANEL. PROVIDE A 400A, 240V, 65kAIC, SERVICE RATED EATON PRL4B WITH 400A MAIN CIRCUIT BREAKER. PROVIDE ONE RUN OF 2-500 kCMIL W/ 1-#2 GND IN 3" EMT TO THE MAIN DISCONNECT.
5. VFD FOR WELL #3 MOTOR, #ABB ACH550-PCR-221A-2+K466. CONTRACTOR TO VERIFY VFD SELECTION WITH OWNER. CONTRACTOR TO PROVIDE AND INSTALL AN OUTPUT FILTER BETWEEN THE VFD AND WELL #3 MOTOR. PROVIDE ONE RUN OF 2-1/0 AWG W/ 1-#6 GND IN 2" EMT FROM THE PANEL PP-1 TO THE VFD TO THE OUTPUT FILTER.
6. OUTPUT FILTER TO BE INSTALLED IN A 12"X12"X8", NEMA 1, SCREW COVER JUNCTION BOX. INSTALL THIS JUNCTION BOX BESIDE THE VFD.
7. PROVIDE AND INSTALL A 60A, NEMA 3R, SINGLE PHASE, 240V, DISCONNECT SWITCH FOR THE OUTDOOR CONDENSING UNIT. PROVIDE AND INSTALL A WEATHERPROOF, FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE CONDENSING UNIT. PROVIDE (2) #8 AWG AND (1) #10 GND IN 1" EMT.
8. PROVIDE AND INSTALL A 30A, NEMA 1, SINGLE PHASE, 240V, DISCONNECT SWITCH FOR UNIT HEATER 1. PROVIDE AND INSTALL A 36" MAXIMUM FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE UNIT. PROVIDE (2) #10 AWG AND (1) #12 GND IN 3/4" GRC.
9. PROVIDE AND INSTALL A 30A, NEMA 1, SINGLE PHASE, 240V, DISCONNECT SWITCH FOR UNIT HEATER 2. PROVIDE AND INSTALL A 36" MAXIMUM FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE UNIT. PROVIDE (2) #10 AWG AND (1) #12 GND IN 3/4" GRC.
10. PROVIDE AND INSTALL A 30A, 115V, NEMA 1 DISCONNECT SWITCH FOR BACKWASH RECYCLE PUMP, BWRP-01. PROVIDE AND INSTALL A FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE PUMP CONTROLLER.
11. PROVIDE AND INSTALL A 30A, NEMA 1, SINGLE PHASE, 115V, NEMA 1 DISCONNECT SWITCH FOR WASTE PUMP, WP-01. PROVIDE AND INSTALL A 36" MAXIMUM FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE UNIT. PUMP MAY BE PROVIDED WITH A CORD.
12. PROVIDE AND INSTALL A GRUNDFOS PUMP CONTROL SYSTEM, SINGLE PHASE, 240V, FOR FINISHED WATER PUMP, FWP-01 & 02. PROVIDE AND INSTALL A 36" MAXIMUM FLEXIBLE CONNECTION BETWEEN THE CONTROL CABINET AND THE PUMPS. PROVIDE 2X (2) #2 AWG AND (1) #6 GND IN 1-1/4" EMT.
13. PROVIDE AND INSTALL A 30A, NEMA 1, SINGLE PHASE, 240V, COMBINATION STARTER-DISCONNECT SWITCH WITH HOA SWITCH, RUN PILOT LIGHT FOR AIR STRIPPER BLOWER, AB-01. PROVIDE AND INSTALL A 36" MAXIMUM FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE UNIT. MOUNT STARTER - DISCONNECT ON FREE-STANDING FLOOR MOUNTED STANCHION
14. PROVIDE AND INSTALL A 30A, NEMA 0, SINGLE PHASE, 115V, COMBINATION STARTER-DISCONNECT SWITCH FOR SUMP PUMP, SP-01. PROVIDE AND INSTALL A 36"MAXIMUM FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE UNIT.
15. PROVIDE AND INSTALL A FOUR SQUARE JUNCTION BOX, 2-GANG, WEATHER PROOF WITH 1/2" HUBS FOR THE CFP-01 PROCESS METER ELECTRICAL CONNECTION.
16. PROVIDE AND INSTALL A 1" RGS CONDUIT STUB FOR OWNER COMMUNICATIONS ANTENNA. COORDINATE WITH OWNER PRIOR TO INSTALLATION REGARDING PLACEMENT THRU WALL OR ROOF.
17. PROVIDE ONE RUN OF #3-#2 AWG W/ 1-#8 IN 1-1/4" SCH 80 PVC AT 36" BFG FROM THE OUTPUT FILTER TO THE WELL PUMP.
18. PROVIDE AND INSTALL A 30A, NEMA 3R, NON-FUSED DISCONNECT FOR EXHAUST FAN. PROVIDE AND INSTALL A 36" MAXIMUM WEATHERPROOF FLEXIBLE CONNECTION BETWEEN THE DISCONNECT SWITCH AND THE UNIT.

A1 ELECTRICAL POWER PLAN

SCALE: 1/4" = 1'-0"

1/4"=1' 0 2 4 8 12

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

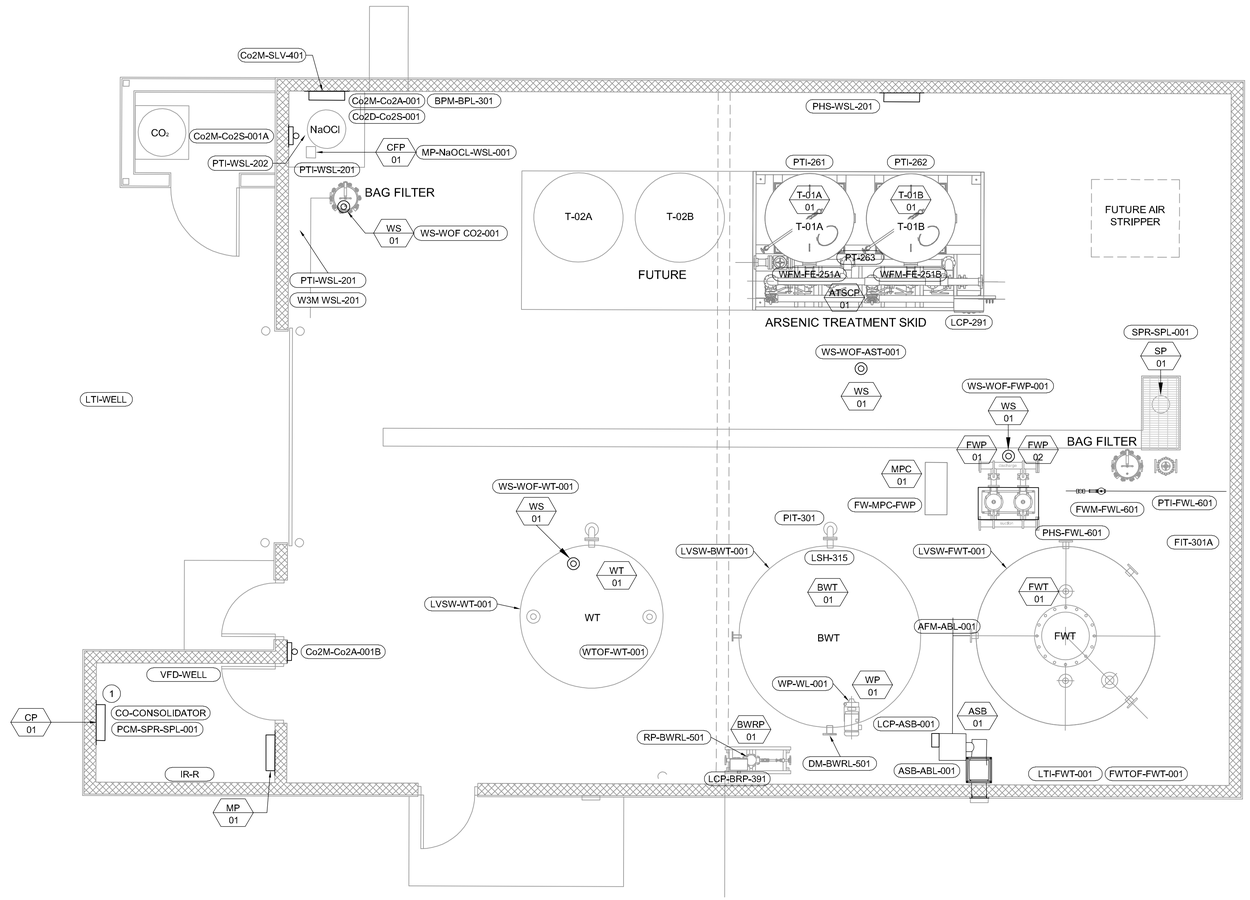
SHEET TITLE

ELECTRICAL POWER PLAN

SHEET NO:

E-102

1/6/2021



A1 ELECTRICAL CONTROL PLAN

SCALE: 1/4" = 1'-0"

1/4"=1' 0 2 4 8 12

GENERAL NOTES

A. EQUIPMENT LOCATION IS DIAGRAMMATIC. FIELD COORDINATE FINAL EQUIPMENT LOCATION AND ADJUST WIRING AS NEEDED. IF ANY ADDITIONAL WIRING ADJUSTMENTS ARE MADE IN THE FIELD DUE TO EQUIPMENT RELOCATION, ADJUST WIRING AS NEEDED.

B. PREMANUFACTURED EQUIPMENT IS PROVIDED AS PART OF THIS INSTALLATION, REFER TO MANUFACTURES INSTALLATION REQUIREMENTS FOR INSTALLATION REQUIREMENTS.

C. REFER TO INSTRUMENT SCHEDULE, INSTRUMENT I/O SCHEDULE AND INSTRUMENT CABLE SCHEDULE FOR ADDITIONAL INFORMATION.

D. REFER TO ALL DISCIPLINE DRAWINGS FOR ADDITIONAL INFORMATION.

E. CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS TO ENGINEER OF FINAL INSTALLATION AND OR DEVIATIONS FROM NEW MEXICO CONSTRUCTION INDUSTRIES DIVISION APPROVED DRAWINGS.

F. REFER TO SHEET E-104 FOR INSTRUMENT SCHEDULE.

KEYNOTES

1. CONTROL PANEL CP-1 IS TO BE PROVIDED BY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL ROUTE ALL CONDUIT AND WIRING AS NEEDED FROM CONTROL PANEL TO ALL INSTRUMENATION. ELECTRICAL CONTRACTOR SHALL LABEL ALL WIRING AT BOTH ENDS PER SPECIFICAITON. ALL TERMINATIONS SHALL BE MADE BY CONTRACTOR.

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PROJECT NAME

LMWC WELL 3 ARSENIC TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 05, 2021

SHEET TITLE

ELECTRICAL CONTROL PLAN

SHEET NO:

E-103

1/6/2021

Instrument Schedule

Instrument			Instrumentation / Communication Cabling									Power Cabling					Remarks
Tag Number	Instrument Type / Description	Instrumentation Signal Type: Ethernet	RS-485 (Modbus)	AI	DI	DO	Cable Type	Conduit Size	From	To	AC or DC Power	Cable Type (Phase/Neutral/Ground)	Conduit Size	From	To	
AFM - ABL-001	Air Flow Transmitter		X (1)	X(2)			3-4 Pairs Shielded 18 AWG CU	1"	AFM-ABL-001	CP-01	AC	3-C #12 AWG CU	3/4"	AFM-ABL-001	CP-01	
CO2M - CO2S-001 A	CO2 Sensor		X(2)				2-4 Pairs Shielded 18 AWG CU	1"	CO2M-CO2S-001	CO2M-CO2S-001	DC	3-C #12 AWG CU	3/4"	CO2M-CO2S-001	CP-01	
CO2M - CO2S-001 B	CO2 Sensor			X (1)	X (1)	X (1)	1-4 Pairs Shielded 18 AWG CU	1"	CO2M-CO2S-001	CP-01	N/A	N/A	N/A	N/A	N/A	
CO2D - CO2S-001	CO2 Sensor Display		X (1)				1-4 Pairs Shielded 18 AWG CU	1"	CO2D-CO2S-001	CP-01	N/A	N/A	N/A	N/A	N/A	
CO2M - CO2A-001	CO2 Remote Alarm			X (1)	X (3)		2-4 Pairs Shielded 18 AWG CU	1"	CO2M-CO2A-001	CP-01	AC	3-C #12 AWG CU	3/4"	CO2M-CO2A-001	CP-01	
LT - FWT-001	Level Transmitter			X (1)			2 Pairs Shielded 18 AWG CU	1"	LT-FWT-001	CP-01	n/a	n/a	n/a	n/a	n/a	
LVSW - FWT-001	Level Switch				X(2)		2 Pairs Shielded 18 AWG CU	1"	LVSW-FWT-001	CP-01	DC	3-C #12 AWG CU	3/4"	LVSW-FWT-001	CP-01	
LVSW - BWRL-001	Level Switch				X(2)		2 Pairs Shielded 18 AWG CU	1"	LVSW-BWRL-001	CP-01	DC	3-C #12 AWG CU	3/4"	LVSW-BWRL-001	CP-01	
LVSW - BWT-001	Level Switch				X(2)		2 Pairs Shielded 18 AWG CU	1"	LVSW-BWT-001	CP-01	DC	3-C #12 AWG CU	3/4"	LVSW-BWT-001	CP-01	
LVSW - WT-001	Level Switch				X(2)		2 Pairs Shielded 18 AWG CU	1"	LVSW-WT-001	CP-01	DC	3-C #12 AWG CU	3/4"	LVSW-WT-001	CP-01	
PCM - SPR-SPL-001	A/C Current Sensor			X (1)	X (1)		2 Pairs Shielded 18 AWG CU	1"	PCM-SPR-SPL-001	CP-01	N/A	N/A	N/A	N/A	N/A	
PHS - WSL-201	PH Sensor		X (1)		X (1)		2-4 Pairs Shielded 18 AWG CU	1"	PHS-WSL-201	PHD-WSL-201	N/A	N/A	N/A	N/A	N/A	
PHD - WSL-201	PH Sensor Display		X (1)		X (1)		2-4 Pairs Shielded 18 AWG CU	1"	PHD-WSL-201	CP-01	N/A	N/A	N/A	N/A	N/A	
PHS - FWL-601	PH Sensor		X (1)		X (1)		2-4 Pairs Shielded 18 AWG CU	1"	PHS-FWL-601	PHD-FWL-601	N/A	N/A	N/A	N/A	N/A	
PHD - FWL-601	PH Sensor Display		X (1)		X (1)		2-4 Pairs Shielded 18 AWG CU	1"	PHD-FWL-601	CP-01	N/A	N/A	N/A	N/A	N/A	
PT - WSL-201	Pressure Transmitter			X (1)			2 Pairs Shielded 18 AWG CU	1"	PT-WSL-201	CP-01	N/A	N/A	N/A	N/A	N/A	
PT - WSL-202	Pressure Transmitter			X (1)			2 Pairs Shielded 18 AWG CU	1"	PT-WSL-202	CP-01	N/A	N/A	N/A	N/A	N/A	
PT - 261	Pressure Transmitter			X (1)			2 Pairs Shielded 18 AWG CU	1"	PT-261	CP-01	N/A	N/A	N/A	N/A	N/A	
PT - 262	Pressure Transmitter			X (1)			2 Pairs Shielded 18 AWG CU	1"	PT-262	CP-01	N/A	N/A	N/A	N/A	N/A	
PT - 263	Pressure Transmitter			X (1)			2 Pairs Shielded 18 AWG CU	1"	PT-263	CP-01	N/A	N/A	N/A	N/A	N/A	
PT - FWL-601	Pressure Transmitter			X (1)			2 Pairs Shielded 18 AWG CU	1"	PT-FWL-601	CP-01	N/A	N/A	N/A	N/A	N/A	
WSL - 201	Magnetic Flowmeter	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	WSL-201	CP-01	AC	3-C #10 AWG CU AWG	3/4"	WFM-W3M-WSL-201	CP-01	
WFM - FE-251A	Magnetic Flowmeter	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	WFM-FE-251A	CP-01	AC	3-C #10 AWG CU AWG	3/4"	WFM-FE-251A	CP-01	
WFM - FE-251B	Magnetic Flowmeter	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	WFM-FE-251B	CP-01	AC	3-C #10 AWG CU AWG	3/4"	WFM-FE-251B	CP-01	
BPM - BPL-301	Magnetic Flowmeter	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	BPM-BPL-301	CP-01	AC	3-C #10 AWG CU AWG	3/4"	WFM-BPM-BPL-301	CP-01	
FWM - FWL-601	Magnetic Flowmeter	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	FWM-FWL-601	CP-01	AC	3-C #10 AWG CU AWG	3/4"	WFM-FWM-FWL-601	CP-01	
DM - BWRL-501	Magnetic Flowmeter	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	DM-BWRL-501	CP-01	DC	3-C #12 AWG CU AWG	3/4"	WFM-FWM-FWL-601	CP-01	
WS - WOF-CO2-001	Water Sensor				X (1)		2 Pairs Shielded 18 AWG CU	1"	WS-WOF-CO2-001	CP-01	N/A	N/A	N/A	N/A	N/A	
WS - WOF-AST-001	Water Sensor				X (1)		2 Pairs Shielded 18 AWG CU	1"	WS-WOF-AST-001	CP-01	N/A	N/A	N/A	N/A	N/A	
WS - WOF-FWP-001	Water Sensor				X (1)		2 Pairs Shielded 18 AWG CU	1"	WS-WOF-FWP-001	CP-01	N/A	N/A	N/A	N/A	N/A	
WS - WOF-WT-001	Water Sensor				X (1)		2 Pairs Shielded 18 AWG CU	1"	WS-WOF-WT-001	CP-01	N/A	N/A	N/A	N/A	N/A	
MP - NaOCL-WSL-001	Metering pump	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	MP-NaOCL-WSL-001	CP-01	AC	3-C #12 AWG CU AWG	3/4"	MP-NaOCL-WSL-001	CP-01	
IR - R	Radio Reciever				X (2)	X (2)	1-8 Pairs Shielded 18 AWG CU	1"	IR-R	CP-01	AC	3-C #12 AWG CU AWG	3/4"	IR-R	CP-01	
FW - VFD-FWP-01	Finish Water Pump-VFD	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	FW-VFD-FWP-01	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	FW-VFD-FWP-01	PP1	DEDICATED 240V/60A Branch Ckt
FW - VFD-FWP-02	Finish Water Pump-VFD	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	FW-VFD-FWP-02	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	FW-VFD-FWP-02	PP1	DEDICATED 240V/60A Branch Ckt
CO - CONSOLIDATOR	Consolidator	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	CO-CONSOLIDATOR	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	CO-CONSOLIDATOR	PP1	DEDICATED 120V/20A Branch Ckt
LT - WELL	Well Level Transmitter			X (1)			Vendor Provided-Integral to Sensor	1"	LT-WELL	CP-01	N/A	N/A	N/A	N/A	N/A	
VFD - WELL	Well VFD	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	VFD-WELL	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	Refer to Panel Schedule	PP1	DEDICATED 240V/150A Branch Ckt
CO2S - SLV-401	CO2 Solenoid Valve						N/A	N/A	N/A	N/A	AC	3-C #12 AWG CU	3/4"	CO2S-SLV-401	CP-01	
LCP - ASB-001	Air Stripper-Local Control Panel						N/A	N/A	N/A	N/A	AC	Refer to Panel Schedule	Refer to Panel Schedule	LCP-ASB-001	PP-1	DEDICATED 120V/20A Branch Ckt
LCP - BRP-291	Backwash Recycle Pump-Local Control Panel						N/A	N/A	N/A	N/A	AC	Refer to Panel Schedule	Refer to Panel Schedule	LCP-BRP-291	PP-1	DEDICATED 120V/20A Branch Ckt
WP - WL-001	Waste Pump	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	MS-WP-WL-001	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	MS-WP-WL-01	PP-1	DEDICATED 120V/20A Branch Ckt
FWTOF - FWT-001	Level Switch				X (1)		2 Pairs Shielded 18 AWG CU	1"	FWTOF-FWT-001	CP-01	N/A	N/A	N/A	N/A	N/A	
SPR - SPL-001	Sump Pump	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	MS-SPR-SPL-001	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	MS-SPR-SPL-001	PP1	DEDICATED 120V/20A Branch Ckt
ASB - ABL-001	Air Stripper Blower	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	ASB-ABL-001	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	ASB-ABL-001	PP1	DEDICATED 240V/20A Branch Ckt
RP - BWRL-501	Back Wash Recycle Pump	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	RP-BWRL-501	CP-01	AC	Refer to Panel Schedule	Refer to Panel Schedule	RP-BWR-501	PP1	DEDICATED 240V/20A Branch Ckt
PIT - 301	Back Wash PT			X (1)			2 Pairs Shielded 18 AWG CU	1"	RP-BWRL-501	CP-01	N/A	N/A	N/A	N/A	N/A	
LSH - 315	Back Wash Tank Level			X (1)			2 Pairs Shielded 18 AWG CU	1"	RP-BWRL-501	CP-01	N/A	N/A	N/A	N/A	N/A	
FIT - 301A	Magnetic Flowmeter	X (1)	X (1)	X (1)	X (1)	X (1)	1-Cat 6,2-8 Pair Shielded 18 AWG CU	2"	FIT-301A	CP-01	AC	3-C #12 AWG CU AWG	3/4"	FIT-301A	CP-01	

GENERAL NOTES

A. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

B. SOME EQUIPMENT IS PROVIDED BY 3RD PARTY VENDOR. CONTRACTOR SHALL COORDINATE WITH 3RD PARTY VENDOR AND OWNER FOR ALL REQUIRED WIRING PRIOR TO ANY WORK TO PROCEED. CONTRACTOR SHALL ADJUST ALL WIRING AS NEEDED AS REFERENCED ON I/O SCHEDULE AND CONTROL PANEL CP-01 WIRING.

C. ALL INSTRUMENTS LISTED ARE BASED ON PRELIMINARY EQUIPMENT SIZING. CONTRACTOR SHALL FIELD VERIFY ALL FINAL INSTRUMENTATION WIRING PRIOR TO ANY WORK TO BEGIN. CONTRACTOR WILL BE RESPONSIBLE FOR WIRING ALL INSTRUMENTATION WIRING PER MANUFACTURE REQUIREMENTS.

D. REFER TO CIVIL DRAWINGS FOR ADDITIONAL INFORMATION. INSTRUMENT CONTRACTOR IS RESPONSIBLE FOR THE FINAL INSTALLATION, WIRING AND CALIBRATION OF INSTRUMENTS.

E. CONTRACTOR SHALL TERMINATE AND CALIBRATE ALL INSTRUMENTS.

F. REFER TO ALL DISCIPLINE DRAWINGS FOR ADDITIONAL INFORMATION.

G. REFER TO CONTROL PANEL DRAWINGS FOR ADDITIONAL INFORMATION. COORDINATE WITH OWNER TO CONFIRM ALL WIRING QUANTITIES AND CONNECTIONS. ALL WIRING SHOWN ON I/O IS PRELIMINARY BASED ON DESIGN INFORMATION RECEIVED AT TIME OF DESIGN. CONTRACTOR SHALL COORDINATE WITH 3RD PARTY MANUFACTURE INSTRUMENTATION/CONTROL INTERCONNECTS AND ADJUST ALL WIRING AS NEEDED.

H. CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS TO OWNER OF FINAL INSTALLATION AND OR DEVIATIONS FROM NEW MEXICO CONSTRUCTION INDUSTRIES DIVISION APPROVED DRAWINGS.

WILSON & COMPANY
4401 MASTHEAD ST. NE, SUITE 150
ALBUQUERQUE, NM 87109
PHONE: 505-348-4000
FAX: 505-348-4072
www.wilsonco.com

CONSULTANTS

SEAL

DANIEL GRIJALVA
NEW MEXICO
12673
REGISTERED PROFESSIONAL ENGINEER
1/7/2021

PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

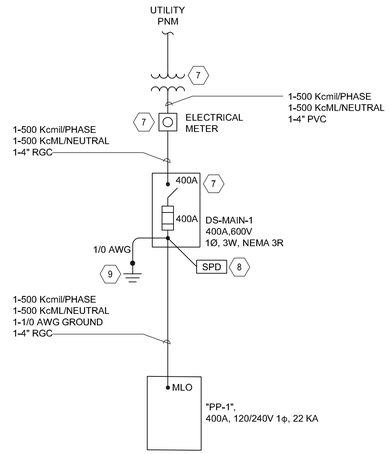
REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	EJV
DRAWN BY:	DGC
CHECKED BY:	EJV
DATE:	JANUARY 05, 2021

SHEET TITLE
INSTRUMENTATION SCHEDULE

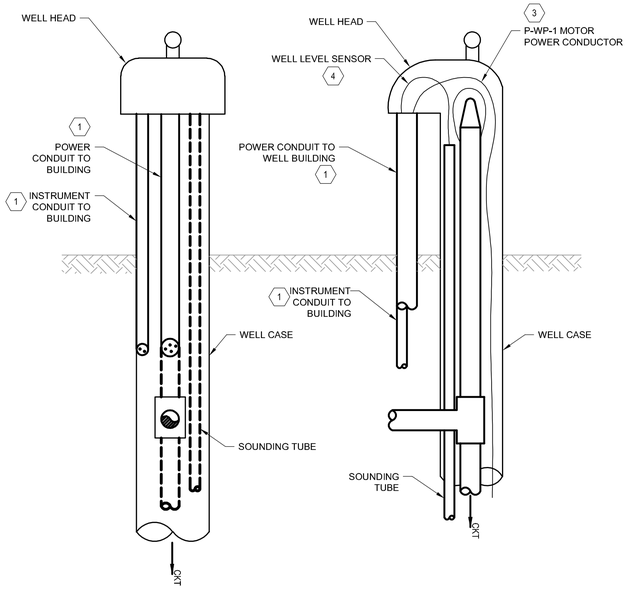
SHEET NO:
E-104

1/6/2021



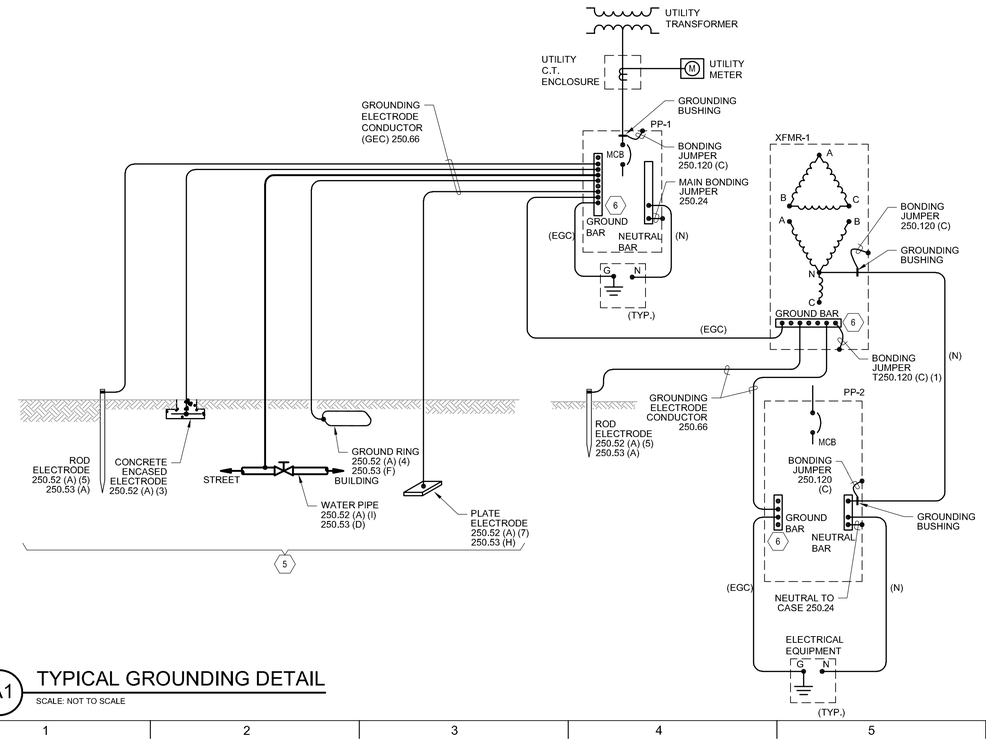
E1 ONE-LINE DIAGRAM

SCALE: NOT TO SCALE



E3 WELL WIRING DETAIL

SCALE: NOT TO SCALE



A1 TYPICAL GROUNDING DETAIL

SCALE: NOT TO SCALE

KEYED NOTES

1. REFER TO PLAN DRAWING AND INSTALLATION DETAILS FOR INSTALLATION OF CONDUIT TO WELL HEAD. SECURE CONDUIT STUB TO INDEPENDENT UNISTRUT SUPPORT PER NEC REQUIREMENTS. INSTALL 3RD PARTY PROVIDED CABLES IN CONDUITS AS REFERENCED. ALL CABLES SHALL BE TESTED FOR CONTINUITY AND DAMAGED INSULATION PRIOR TO ANY ENERGIZATION OF CABLE. IF ANY DAMAGE IS IDENTIFIED THROUGH TESTING, BRING IT TO THE IMMEDIATE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH ANY FURTHER WORK.
2. NOT USED.
3. WELL PUMP POWER CONDUCTOR IS PROVIDED BY 3RD PARTY VENDOR. ROUTE CABLE FROM WELL HEAD TO VFD-WP-01. REFER TO VFD WIRING DIAGRAM 1/E700 AND PLAN DRAWINGS. CABLE SHALL BE ROUTED INDEPENDENT OF ANY CONTROL WIRING.
4. WELL LEVEL SENSOR CONDUCTOR IS PROVIDED BY 3RD PARTY VENDOR. ROUTE CABLE FROM WELL HEAD TO CP-1. REFER TO INSTRUMENTATION DRAWINGS FOR ADDITIONAL INFORMATION. CABLE SHALL BE ROUTED INDEPENDENT OF ANY POWER WIRING.
5. A MINIMUM OF TWO (2) GROUNDING ELECTRODE SYSTEMS AND ASSOCIATED ELECTRODE GROUNDING CONDUCTORS SHALL BE REQUIRED. PRECEDENCE OF TYPE OF GROUNDING ELECTRODE SYSTEMS SHALL BE:
   a. CONCRETE ENCASED ELECTRODE
   b. ROD
   c. WATER PIPE
   d. UNDERGROUND GROUNDING RING
   e. PLATE ELECTRODE
6. UTILIZE MANUFACTURES RECOMMENDED GROUND BAR BONDING TO COMPLY WITH NEC REQUIREMENTS.
7. CONTRACTOR SHALL INSTALL ALL WIRING AND SERVICE EQUIPMENT. ALL SERVICE EQUIPMENT SHALL BE PRE-APPROVED BY LOCAL UTILITY. FINAL CONNECTIONS SHALL BE MADE BY UTILITY. INSTALL NEW ELECTRICAL SERVICE PER NEC REQUIREMENTS. CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY FOR ALL WORK. CONTRACTOR SHALL INCLUDE ALL UTILITY FEES AS PART OF COST TO OWNER IN ORIGINAL BID. NO ADDITIONAL COST WILL BE INCURRED BY OWNER.
8. INSTALL EXTERNAL MOUNTED SPD TO MDP. REFER TO SPECIFICATIONS FOR REQUIREMENTS.
9. INSTALL SERVICE GROUND AS REQUIRED BY NEC. REFER TO GROUNDING DETAIL FOR ADDITIONAL INFORMATION.

GENERAL NOTES

A. INFORMATION PROVIDED IS BASED ON 2017 NATIONAL ELECTRICAL CODE. ADDITIONAL (NEC) REQUIREMENTS MAY APPLY AS SHOWN ON THE DETAIL IN ADDITION TO THE MINIMUM REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. REFERENCE TO THE NATIONAL ELECTRICAL CODE APPLICABLE ARTICLES ARE REPRESENTED WITHIN THE DETAIL. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH LOCAL AUTHORITY HAVING JURISDICTION GROUNDING REQUIREMENTS WHICH EXCEED THOSE SHOWN.

B. A MAXIMUM OF 25 OHMS SHALL EXIST FROM ANY PORTION OF THE ELECTRICAL GROUNDING SYSTEM TO THE EARTH GROUND. CONTRACTOR SHALL CONDUCT TESTING AT ALL PANELS AND ALL MAJOR EQUIPMENT TO ENSURE THIS REQUIREMENT. ALL GROUNDING TEST RESULTS SHALL BE RECORDED AND SUBMITTED TO ENGINEER.

C. ELECTRICAL GROUNDING ELECTRODE CONDUCTORS ARE REPRESENTED AS GEC. REFER TO NEC SECTION 250.66 FOR REQUIREMENTS.

D. ELECTRICAL EQUIPMENT GROUNDING CONDUCTORS ARE REPRESENTED AS EGC. REFER TO NEC SECTION 250 PART 6 FOR REQUIREMENTS.

E. CONTRACTOR SHALL PROVIDE ALL HARDWARE FOR PROPER CONNECTIONS TO VARIOUS GROUNDING CONDUCTORS.

F. ALL GROUNDING ELECTRODE CONDUCTORS SHALL BE INSTALLED IN NON-FERROUS CONDUIT (SCH 80 PVC) INSTALLED PER NEC REQUIREMENTS.

G. ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED WITH LINE CONDUCTORS IN SAME RACEWAY.

H. ALL NEUTRALS SHALL BE SIZED AT A MINIMUM OF 100% OF PHASE CONDUCTORS. NEUTRALS SHALL BE INDEPENDENT PER CIRCUIT.

I. REFER TO PLAN DRAWINGS, WIRING DIAGRAMS, PANEL SCHEDULES AND INSTRUMENTATION DRAWINGS FOR ADDITIONAL INFORMATION.

J. ALL WELL EQUIPMENT REPRESENTATION IS DIAGRAMMATIC FOR INFORMATION ONLY. REFER TO 3RD PARTY WELL MANUFACTURER/SUPPLIER FOR ADDITIONAL WIRING REQUIREMENTS. CONTRACTOR SHALL COORDINATE ALL WIRING WITH ALL SUPPLIERS AND MANUFACTURES FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MISCELLANEOUS MATERIALS NEEDED FOR COMPLETE WIRING SYSTEM.

K. SOME MATERIALS ARE PROVIDED BY 3RD PARTY SUPPLIER. CONTRACTOR SHALL COORDINATE INSTALLATION AS NEEDED.

L. REFER TO ELECTRICAL PANEL SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

M. ALL OCPD, WIRE AND CONDUIT SIZING SHOWN IS BASED ON PRELIMINARY DESIGN INFORMATION. COORDINATE FINAL SIZING OF ALL EQUIPMENT OCPD, WIRE AND CONDUIT SIZING WITH ALL DISCIPLINES AND ADJUST TO FINAL FIELD EQUIPMENT OCPD SIZE PER MANUFACTURER RECOMMENDATIONS. IF ANY DEVIATIONS ARE DISCOVERED CONTRACTOR SHALL ADJUST OCPD, WIRE AND CONDUIT SIZING AS NEEDED PER NEC REQUIREMENTS WITHOUT ANY ADDITIONAL COST TO OWNER.

N. ALL CONDUITS SHALL BE INSTALLED WITH PLASTIC BUSHINGS UNLESS OTHERWISE REQUIRED BY NEC.

O. ALL WIRING SHALL BE THW COPPER WIRING UNLESS OTHERWISE NOTED. ALL WIRING AMPACITY IS BASED ON 75 DEG C PER NEC.

P. MAXIMUM VOLTAGE DROP SHALL NOT EXCEED 5% FROM SERVICE TO END LOAD. MAXIMUM VOLTAGE DROP FOR ANY FEEDER OR BRANCH CIRCUITS SHALL NOT EXCEED 3%. IF FINAL INSTALLATION OF WIRING EXCEEDS ALLOWABLE VOLTAGE DROP REQUIREMENTS, CONTRACTOR SHALL INCREASE CONDUCTOR SIZE AND CONDUIT TO MEET NEC FILL REQUIREMNTS.

Q. PROVIDE ALL ARC FLASH LABELING AS REQUIRED BY NFPA 70 AND 70E FOR ALL EQUIPMENT.

R. REFER TO PLAN DRAWINGS AND FOR EQUIPMENT LOCATION.

S. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS TO ENGINEER AND OWNER AT COMPLETION OF PROJECT INSTALLATION.

T. ALL WORK ASSOCIATED WITH WELL TO BE COORDINATED WITH OWNER AND 3RD PARTY WELL SERVICE COMPANY.

WILSON & COMPANY
4401 MASTHEAD ST. NE, SUITE 150
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PHONE: 505-348-4000
FAX: 505-348-4072
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CONSULTANTS

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NEW MEXICO
12673
REGISTERED PROFESSIONAL ENGINEER
1/7/2021

SEAL

PROJECT NAME
LMWC WELL 3 ARSENIC TREATMENT FACILITY

NO.	DESCRIPTION	DATE	BY
REV.			

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE
ONE-LINE AND GROUNDING DIAGRAMS

SHEET NO:
E-501

1/6/2021

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	VOLTS	MOUNTING	CCT	CRI	DIST.TYPE	LUMENS	WATTS	LAMPS	BALLAST	LENS	MANUFACTURER/MODEL NO.
A1	1'X4' LED LIGHT FIXTURE	120	SUSPENDED	4000K	82	DOWN	6300	42W	LED	120v	22 GA. WHITE POWER COATED REFLECTOR	H.E. Williams #80-4-L63/840-wg-8014-DIM LINE-120-VBY-2, LED Standard Industrial Fixture, 4',6300 lumens, CRI 80,4000K, Dimming line voltage driver, 120V, (2) Y-hangers and (2) 2' chains.
A2	1'X4' LED LIGHT FIXTURE	120	SUSPENDED	4000K	82	DOWN	6300	42W	LED	120V	22 GA. WHITE POWER COATED REFLECTOR	H.E. Williams #80-4-L63/840-wg-8014-DIM LINE-120-VBY-2, LED Standard Industrial Fixture, 4',6300 lumens, CRI 80,4000K, Dimming line voltage driver, 120V, (2) Y-hangers and (2) 2' chains.
E1	SURACE-MOUNTED THERMOPLASTIC EMERGENCY FIXTURE WITH FULLY ADJUSTABLE LAMP HEADS	120	SURFACE,WALL	4000K	82	FULLY ADJUSTABLE	6300	2.3W	LED	120-277V	CLEAR PRISMATIC STANDARD	DUAL-LITE #EVHC6, High Lumen LED Emergency light, fully adjustable LED lamp-heads, Long-Life Lithium Iron Phosphate Battery and 120 through 277VAC, 50/60Hz input with intelligent 2 wire connection.
EX	THERMOPLASTIC EXIT SIGN, RED LETTERING, LED LAMP	120	SURFACE,WALL	4000K	82	EXIT FACE ILLUMINATION	6300	3.8W	LED	120-277V	CLEAR ACRYLIC PLAQUE	DUAL-LITE #SEWRW, DIE CAST EXIT SIGN, Diffuser finish is colormatched silk-screened coating with provides optimized LED light output, Break-out chevrons are also included UL listing for 2 hour runtime, AC or Emergency operation.
W1	MEDIUM SIZED OUTDOOR WALLPACK, FULL CUT-OFF, ALUMINIUM CONSTRUCTION, TYPE III DISTRIBUTION	120	SURFACE,WALL	2700K	82	3	500	6.5W	LED	120V		Minka-Lavery 72400-615B. Dorian Bronze, Socket: GU10, BI-PIN, Twist & Lock.with single 50W 6.5W 2700K Dimmable LED GU10 MR16 Bulb.
		-		-		-		-	-	-	-	

General Notes:
1. Coordinate the installation of the lighting in the ceiling space to be below the piping installed in the ceiling.
2. Suspend the lighting from the structure and not from the piping installed.
3. Equivalent fixtures may be substitued with written approval of owner.

PANEL NAME: PP-1

VOLTAGE: 120/240 | 2 PH | 3 W | MIN AIC RATING: 22000
MAINS: 400 AMPS ■MLO □MCB ■SURFACE □FLUSH
LUGS: ■SUB-FEED □FEED-THRU ■NEMA1 □NEMA 3R
PANEL FEED FROM: SERVICE DISCONNECT
PANEL LOCATION: ELECTRICAL ROOM
PROJECT NAME:
PROJECT NUMBER:

NOTES:
1. Contractor shall field verify all final loads and adjust OCPD and wiring per NEC Requirements.

REVISION	NOTES	C"*	PHASE WIRE*	EQUIP. GND WIRE*	LOAD DESCRIPTION	kVA	BKR	CKT	A	B	CKT	BKR	kVA	LOAD DESCRIPTION	EQUIP. GND WIRE*	PHASE WIRE*	C"*	NOTES	REVISION
	1				LIGHTS	1.73	20/1	1			2	20/1	1.73	LIGHTS				1	
	1				ROLL UP DOOR	0.83	20/2	3			4	20/1	1.73	RECEPTACLES				1	
	1				ROLL UP DOOR	0.83	X	5			6	20/1	1.73	RECEPTACLES				1	
	1	3/4"	#6	#6	UNIT HEATER 1	2.50	40/2	7			8	20/1	1.73	RECEPTACLES				1	
	1		#6		UNIT HEATER 1	2.50	X	9			10	20/1	0.17	EXHAUST FAN				1	
	1	3/4"	#6	#6	UNIT HEATER 2	2.50	40/2	11			12	30/1	1.97	WASTE WATER PUMP	#10	#10	3/4"	1	
	1		#6		UNIT HEATER 2	2.50	X	13			14	60/2	6.20	VFD-FWP-01	#10	#4	2"	1	
	1	2"	#4/0	#6	VFD-WP-01	15.84	150/2	15			16	X	6.20	VFD-FWP-01		#4		1	
	1		#4/0		VFD-WP-01	15.84	X	17			18	20/1	1.18	SUMP PUMP				1	
	1				CONSOLIDATOR	0.50	20/1	19			20	20/1	1.00	TREATMENT VESSEL CONTROL PANEL				1	
	1				EXHAUST FAN	0.17	20/1	21			22	20/1	1.00	CHEMICAL FEED PUMP				1	
	1				AHU CONDENSOR	1.45	20/2	23			24	20/1	0.00	SPARE				1	
	1				AHU CONDENSOR	1.45	X	25			26	20/2	1.18	BACKWASH RECYCLE PUMP				1	
	1				AIR STRIPPER BLOWER	1.66	20/2	27			28	x	1.18	BACKWASH RECYCLE PUMP				1	
	1				AIR STRIPPER BLOWER	1.66	x	29			30	30/1	0.50	CP-1	#10	#10	3/4"	1	
	1				LCP-ASB-001	0.50	20/1	31			32	30/1	0.50	CP-1	#10	#10	3/4"	1	
	1				LCP-BRP-001	0.50	20/1	33			34	30/1	0.50	CP-1	#10	#10	3/4"	1	
					SPARE		20/1	35			36	20/1	0.50	CP-1	#10	#10	3/4"	1	
					SPARE		20/1	37			38	20/1	0.50	CP-1	#10	#10	3/4"	1	
		1"	#6	#6	SPD	0.00	50/2	39			40	60/2	6.20	VFD-FWP-02	#10	#4	2"	1	
			#6		SPD	0.00	X	41			42	X	6.20	VFD-FWP-02		#4		1	

73.9	TOTAL kVA CONNECTED
74.7	TOTAL kVA DEMAND
311.4	PHASE AMPS DEMAND @ 240V

* ALL WII
* ALL NEUTRAL SIZE CONDUCTORS WILL MATCH PHASE CONDUCTOR SIZES UNLESS OTHERWISE NOTED.
* ALL WIRE INSULATION IS THW 75 DEG C RATED

REVISION LEGEND:
A-
B-
C -

C:\Users\mmstanton\Desktop\various\Arsenic well\[Copy of PP-1 Panel Schedule (002).xls]Sheet1

GENERAL NOTES

A. REFER TO ELECTRICAL ONE-LINE DIAGRAMS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

B. FIELD VERIFY ALL EQUIPMENT SIZING SHOWN WITH FINAL EQUIPMENT INSTALLED. IF ANY DEVIATIONS ARE DISCOVERED, COORDINATE WITH OWNER PRIOR TO ANY WORK PERFORMED.

C. ALL OCPD, WIRE AND CONDUIT SIZING SHOWN IS BASED ON PRELIMINARY DESIGN INFORMATION. COORDINATE FINAL SIZING OF ALL EQUIPMENT OCPD, WIRE AND CONDUIT SIZING WITH ALL DISCIPLINES AND ADJUST TO FINAL FIELD EQUIPMENT OCPD SIZE PER MANUFACTURE RECOMMENDATIONS. IF ANY DEVIATIONS ARE DISCOVERED CONTRACTOR SHALL ADJUST OCPD, WIRE AND CONDUIT SIZING AS NEEDED PER NEC REQUIREMENTS WITHOUT ANY ADDITIONAL COST TO OWNER.

D. ALL CONDUITS SHALL BE INSTALLED WITH PLASTIC BUSHINGS UNLESS OTHERWISE REQUIRED BY NEC.

E. ALL WIRING SHALL BE THW COPPER WIRING UNLESS OTHERWISE NOTED. ALL WIRING AMPACITY IS BASED ON 75 DEG C PER NEC.

F. MAXIMUM VOLTAGE DROP SHALL NOT EXCEED 5% FROM SERVICE TO END LOAD. MAXIMUM VOLTAGE DROP FOR ANY FEEDER OR BRANCH CIRCUITS SHALL NOT EXCEED 3%. IF FINAL INSTALLATION OF WIRING EXCEEDS ALLOWABLE VOLTAGE DROP REQUIREMENTS, CONTRACTOR SHALL INCREASE CONDUCTOR SIZE AND CONDUIT TO MEET NEC FILL REQUIREMENTS.

G. PROVIDE ALL ARC FLASH LABELING AS REQUIRED BY NFPA 70 AND 70E FOR ALL EQUIPMENT.

H. REFER TO PLAN DRAWINGS AND FOR EQUIPMENT LOCATION.

I. REFER TO POWER PLANS FOR PANEL LOCATIONS.

J. ALL LIGHTING FIXTURES SHOWN ARE TO BE CONFIRMED BY CONTRACTOR AS TO FINAL LOCATION BASED ON INSTALLED EQUIPMENT AND PIPING. IF ANY FIXTURES REQUIRE RELOCATION OR ANY ADDITIONAL FIXTURES ARE REQUIRED DUE TO FINAL INSTALLED CONSTRUCTION, CONTRACTOR SHALL INSTALL ALL WIRING AND FIXTURES AT NO ADDITIONAL COST TO OWNER. COORDINATE FINAL LIGHTING FIXTURE INSTALLATION WITH ALL DISCIPLINES TO AVOID ANY CONFLICTS PRIOR TO INSTALLATION. REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

K. CONTRACTOR SHALL FIELD VERIFY PLACEMENT OF ALL EMERGENCY LIGHTING BASED ON FINAL INSTALLED EQUIPMENT AND PIPING LAYOUT.

L. CONTRACTOR SHALL CONFIRM FINAL ELECTRICAL LOAD OF ALL BRANCH CIRCUITS BASED ON FINAL INSTALLATION INCLUDING ANY ADDED FIXTURES SO AS NOT TO OVERLOAD ANY BRANCH CIRCUIT PER NEC REQUIREMENTS. NOTIFY OWNER OF ANY DEVIATIONS FROM DRAWINGS.

M. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS TO OWNER AT COMPLETION OF PROJECT INSTALLATION.

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CONSULTANTS

DANIEL GRIJALVA NEW MEXICO 12673 REGISTERED PROFESSIONAL ENGINEER 1/7/2021

PROJECT NAME: LMWC WELL 3 ARSENIC TREATMENT FACILITY

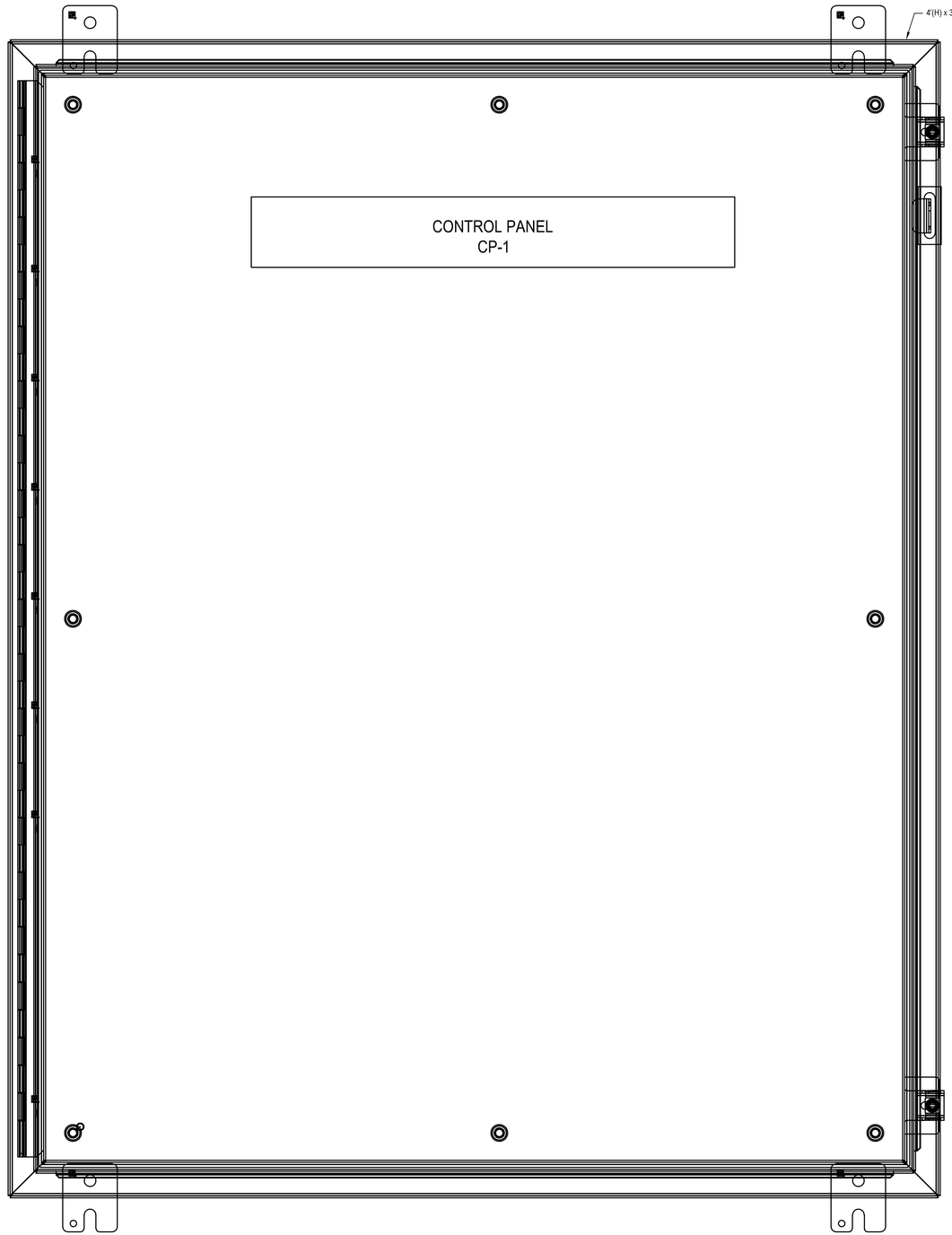
REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE: ELECTRICAL FIXTURE SCHEDULE AND PANEL SCHEDULE

SHEET NO: E-601

1/6/2021



A1 INSTRUMENTATION CP-1 EXTERIOR

SCALE: NOT TO SCALE

GENERAL NOTES

A. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

B. THIS DRAWING IS INTENDED FOR GENERAL REFERENCE ONLY AND IS NOT MEANT TO BE USED AS A FINAL DESIGN LAYOUT. CONTRACTOR IS RESPONSIBLE FOR REFERING TO THE APPROPIATE SPECIFICAITONS FOR REQUIREMENTS FOR EACH CONTROL PANEL.

C. ALL CONTROL PANELS SHALL BE BUILT TO CURRENT UL 508A STANDARDS. PANEL SHALL BE CERTIFIED AS UL 508A CONSTRUCTION INCLUDING ALL LABELING. CONTRACTOR SHALL PROVIDE FINAL UL CERTIFIED CONTROL DRAWINGS AS PART OF THE SUBMITTAL PACKAGE PRIOR TO ANY MANUFACTURING TO BEGIN FOR ENGINEERS APPROVAL. SUBMITTAL SHALL BE PROVIDED FOR ENGINEERS REVIEW WITHIN 3 WEEKS OF CONTRACTORS NOTICE TO PROCEED. . ALOW 7 BUSINESS DAYS FOR REVIEW OF DRAWINGS. ANY CLIENT CHANGES SHALL BE INCORPORATED AND VERIFIED PER UL REQUIREMENTS PRIOR TO SHIPPING. AT A MINIMUM, SUBMITTAL DRAWINGS WILL INCLUDED:

a. EXTERIOR PANEL LAYOUT (WITH BOM REFERENCES)
b. PANEL INTERIOR DOOR LAYOUT (WITH BOM REFERENCES)
c. PANEL INTERIOR BACKBOARD LAYOUT (WITH BOM REFERENCES)
d. BILL OF MATERIAL WITH PART NUMBERS, QUANTIES AS REFERECED PER DRAWING LAYOUTS
e. CABLE SCHEDULE WITH INSTRUMENT AND DRAWING REFERENCES
f. INDIVIDUAL WIRING DIAGRAMS PER TERMINAL STRIP (ONE TERMINAL STRIP PER DRAWING) (WITH BOM REFERENCES)
g. LOOP DIAGRAMS WITH ALL CABLE IDENTIFICATIONS PER CABLE
h. TORQUE RATINGS SCHEDULE OF ALL TERMINALS.
i. ALL EQUIPMENT MANUFACTURES CUT SHEETS WITH CLEAR HIGHLIGHTED PART NUMBERS TO MATCH BOM. EACH LINE ITEM IN BOM WILL BE PROVIDED WITH COORESPONDING CUT SHEET AND LABELED WITH RESPECTIVE BOM NUMBER FOR EASE OF REFERENCE BY ENGINEER.

D. PROVIDE 3 COPIES OF OPERATION AND MAINTENANCE MANUALS TO OWNER AS PART OF THE SHIPPING OF PANELS. MANUALS SHALL INCLUDED UL CERTIFIED DRAWINGS, LABELING CERTIFICATION, FINAL BILL OF MATERIAL AND CUT SHEETS OF ALL EQUIPMENT AS INSTALLED IN FINAL PANEL INSTALLATIONS.

E. DC WIRING INSULATION COLORING:

COLOR	ABBREVIATION	DEDICATED USE
BLACK	BK	
BLUE	BL	24VDC+
BROWN	BN	
GREEN	GN	GROUND
GRAY	GY	
ORANGE	OR	
RED	RD	
VIOLET	VT	
WHITE	WT	0VDC
YELLOW	YL	

F. AC WIRING INSULATION COLORING:
a. MAXIMUM LINE VOLTAGE SHALL BE 120V AC AND SHALL BE BLACK IN COLOR.
b. ALL NEUTRAL WIRING SHALL BE WHITE WIRE.
c. ALL GROUND WIRING SHALL BE GREEN WITH YELLOW STRIPE.
d. ALL AC WIRING SHALL BE IDENTIFIED AS SUCH WITH SOURCE AND VOLTAGE RATING.
e. ALL AC WIRING SHALL BE SEGREATED FROM DC WIRING THROUGHOUT ENTIRE INSTALLATION IN PANEL PER UL REQUIREMENTS.

G. GROUNDING
a. ALL DC WIRING SHALL HAVE SHIELD GROUNDS EXCLUDING POWER WIRING
b. ALL GROUNDS SHALL HAVE GREEN INSULATION IN COLOR UNLESS OTHERWISE REFERENCED.

H. WIRING SIZE
a. ALL DC WIRING SHALL BE A MINIMUM SIZE OF 18 AWG CU.
b. ALL AC WIRING SHALL BE A MINMUM SIZE OF 12 AWG CU.
c. ALL WIRING SHALL BE PER CURRENT NEC AND APPLICABLE CODES.

I. LABELING
a. ALL WIRING SHALL BE PROVIDED WITH HEAT SHINK LABELING.
b. ALL LABELING SHALL MATCH PANEL CABLE SCHEDULE.
c. ALL CABLES SHALL CONTAIN THE P&ID LABEL REFERNCE FOR EASE OF FUTURE MAINTEANCE.
d. PROVIDE BLACK AND WHIE NAME PLATES CONSTRUCTED FROM LAMINATED PHEENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM BLACK LETTERS A MINIMUM OF ¾" HIGH. PROVIDE NAME PLATES FOR PANEL DOOR, ALL MAJOR COMPONENTS, AND TERMINAL STRIPS. NAME PLATES SHALL READ AS INDICATED ON DRAWINGS.

REFERENCE DRAWINGS

I-502	CONTROL PANEL INTERIOR
I-600	TYPICAL INSTRUMENT GROUNDING SCHEME

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CONSULTANTS

SEAL

DANIEL GRIJALVA
NEW MEXICO
12673
REGISTERED PROFESSIONAL ENGINEER
1/7/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

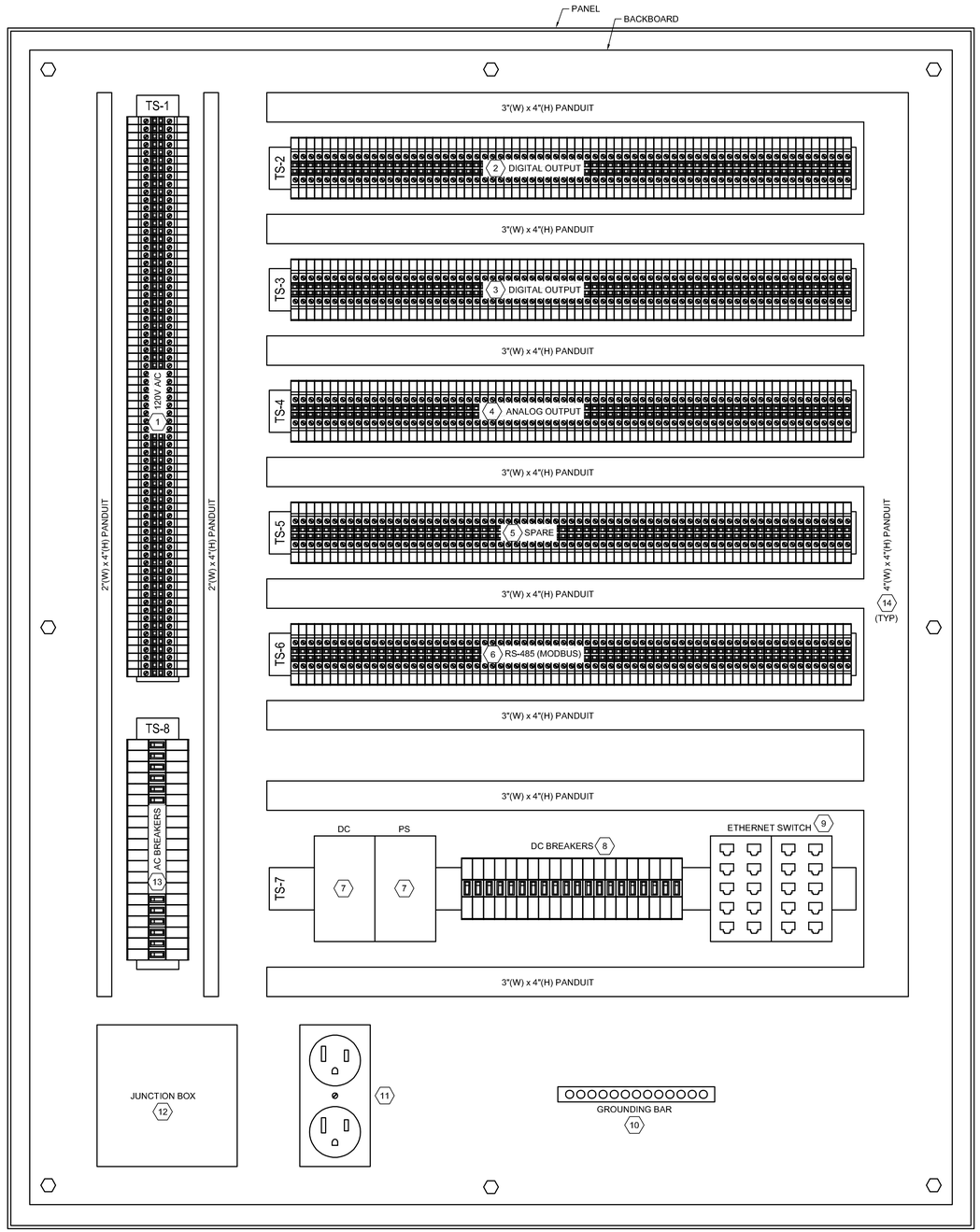
SHEET TITLE

INSTRUMENTATION
CP-1

SHEET NO:

I-501

1/6/2021



A1 INSTRUMENTATION CP-1 INTERIOR

SCALE: NOT TO SCALE

KEYED NOTES

1. CONTRACTOR SHALL PROVIDE DIN RAIL TS-1 (DEDICATED 120VAC) TERMINIAL STRIP CONSISTING OF ADJACENT 3-FUSED TERMINAL BLOCKS (HOT; NEUTRAL; GROUND) PER 120V INSTRUMENTATION AC POWER. CONTRACTOR SHALL PROVIDE A MINIMUM OF 50 SETS OF TERMINALS. FUSING PER TERMINAL BLOCKS ARE TO BE SIZED TO INTERCONNECTED INSTRUMENTATION. REFER TO I/O SCHEDULE FOR ADDITIONAL INFORMATION COORDINATE ALL WIRING WITH OWNER.
2. CONTRACTOR SHALL PROVIDE DIN RAIL TS-2 (DEDICATED DIGITAL OUTPUT) TERMINAL STRIP CONSISTING OF ADJACENT TERMINAL BLOCKS (POSITIVE; NEGATIVE; GROUND). CONTRACTOR SHALL PROVIDE A MINIMUM OF 50 SETS OF TERMINALS. REFER TO I/O SCHEDULE FOR ADDITIONAL INFORMATION. COORDINATE ALL WIRING WITH OWNER.
3. CONTRACTOR SHALL PROVIDE DIN RAIL TS-3 (DEDICATED DIGITAL INPUT) TERMINAL STRIP CONSISTING OF ADJACENT TERMINAL BLOCKS (POSITIVE; NEGATIVE; GROUND). CONTRACTOR SHALL PROVIDE A MINIMUM OF 50 SETS OF TERMINALS. REFER TO I/O SCHEDULE FOR ADDITIONAL INFORMATION. COORDINATE ALL WIRING WITH OWNER.
4. CONTRACTOR SHALL PROVIDE DIN RAIL TS-4 (DEDICATED DIGITAL OUTPUT) TERMINAL STRIP CONSISTING OF ADJACENT TERMINAL BLOCKS (POSITIVE; NEGATIVE; GROUND). CONTRACTOR SHALL PROVIDE A MINIMUM OF 50 SETS OF TERMINALS. REFER TO I/O SCHEDULE FOR ADDITIONAL INFORMATION. COORDINATE ALL WIRING WITH OWNER.
5. CONTRACTOR SHALL PROVIDE DIN RAIL TS-5 (DEDICATED ANALOG INPUT) TERMINAL STRIP CONSISTING OF ADJACENT TERMINAL BLOCKS (POSITIVE; NEGATIVE; GROUND). CONTRACTOR SHALL PROVIDE A MINIMUM OF 50 SETS OF TERMINALS. REFER TO I/O SCHEDULE FOR ADDITIONAL INFORMATION. COORDINATE ALL WIRING WITH OWNER.
6. CONTRACTOR SHALL PROVIDE DIN RAIL TS-6 (SPARE) TERMINAL STRIP CONSISTING OF ADJACENT TERMINAL BLOCKS (POSITIVE; NEGATIVE; GROUND). CONTRACTOR SHALL PROVIDE A MINIMUM OF 50 SETS OF TERMINALS. COORDINATE ALL WIRING WITH OWNER.
7. CONTRACTOR SHALL PROVIDE MINIMUM OF TWO (2) 1000W 24VDC POWER SUPPLIES FOR DC POWER TO INSTRUMENTATION. INTERCONNECTION POWER SUPPLIES FOR WIRING SUPPLY TO DC BREAKERS (REFER TO KEY NOTE 8. COORDINATE ALL WIRING WITH OWNER.
8. CONTRACTOR SHALL A MINIMUM OF 20 50VDC RATED CIRCUIT BREAKERS FOR USE FOR DC POWER SUPPLY FOR INSTRUMENTATION. INTERCONNECT ALL WIRING TO DC POWER SUPPLIES (KEY NOTE 7). COORDINATE ALL WIRING WITH OWNER.
9. CONTRACTOR SHALL A MINIMUM OF TWO (2) 16 PORT 1 GHZ UNMANAGED SWITCHES FOR USE WITH INSTRUMENTATION. REFER TO I/O SCHEDULE FOR ADDITIONAL INFORMATION. COORDINATE ALL WIRING WITH OWNER.
10. PROVIDE ONE 50 POSITION (MINIMAL) COPPER GROUNDING TERMINAL BAR. REFER TO INSTRUMENTATION GROUNDING DIAGRAM FOR ADDITIONAL INFORMATION.
11. PROVIDE DEDICATED 20A;120V SERVICE RECEPTACLE FROM ELECTRICAL PANEL. COORDINATE ALL WIRING WITH OWNER.
12. PROVIDE A MINIMUM OF FOUR (4) 20A; 120V BRANCH CIRCUITS FROM ELECTRICAL PANEL. COORDINATE ALL WIRING WITH OWNER. INTERCONNECT ALL DEVICES REQUIRING 120V POWER THROUGH AC CIRCUIT BREAKERS (REFER TO KEY NOTE 13).
13. PROVIDE A MINIMUM OF TWENTY (20) 120VAC CIRCUIT BREAKERS SIZED AS REQUIRED FOR ANY INSTRUMENTATION OR DEVICES RATED WITHIN CP-1. REFER TO I/O SCHEDULE FOR ADDITIONAL INFORMATION. COORDINATE ALL WIRING WITH OWNER.
14. PROVIDE UL RATED PANDUIT WIRING RACEWAY. REFER TO DRAWING FOR APPROXIMATE SIZING. CONTRACTOR SHALL VERIFY PROPER SIZING OF ALL PANDUIT FOR ALL FINAL WIRING REQUIRED. COORDINATE ALL WIRING WITH OWNER.

GENERAL NOTES

A. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

B. THIS DRAWING IS INTENDED FOR GENERAL REFERENCE ONLY AND IS NOT MEANT TO BE USED AS A FINAL DESIGN LAYOUT. CONTRACTOR IS RESPONSIBLE FOR REFERRING TO THE APPROPRIATE SPECIFICATIONS FOR REQUIREMENTS FOR EACH CONTROL PANEL.

C. ALL CONTROL PANELS SHALL BE BUILT TO CURRENT UL 508A STANDARDS. PANEL SHALL BE CERTIFIED AS UL 508A CONSTRUCTION INCLUDING ALL LABELING. CONTRACTOR SHALL PROVIDE FINAL UL CERTIFIED CONTROL DRAWINGS AS PART OF THE SUBMITTAL PACKAGE PRIOR TO ANY MANUFACTURING TO BEGIN FOR ENGINEERS APPROVAL. SUBMITTAL SHALL BE PROVIDED FOR ENGINEERS REVIEW WITHIN 3 WEEKS OF CONTRACTORS NOTICE TO PROCEED. ALLOW 7 BUSINESS DAYS FOR REVIEW OF DRAWINGS. ANY CLIENT CHANGES SHALL BE INCORPORATED AND VERIFIED PER UL REQUIREMENTS PRIOR TO SHIPPING. AT A MINIMUM, SUBMITTAL DRAWINGS WILL INCLUDED:
   a. EXTERIOR PANEL LAYOUT (WITH BOM REFERENCES)
   b. PANEL INTERIOR DOOR LAYOUT (WITH BOM REFERENCES)
   c. PANEL INTERIOR BACKBOARD LAYOUT (WITH BOM REFERENCES)
   d. BILL OF MATERIAL WITH PART NUMBERS, QUANTITIES AS REFERENCED PER DRAWING LAYOUTS
   e. .CABLE SCHEDULE WITH INSTRUMENT AND DRAWING REFERENCES
   f. INDIVIDUAL WIRING DIAGRAMS PER TERMINAL STRIP (ONE TERMINAL STRIP PER DRAWING) (WITH BOM REFERENCES).
   g. LOOP DIAGRAMS WITH ALL CABLE IDENTIFICATIONS PER CABLE
   h. TORQUE RATINGS SCHEDULE OF ALL TERMINALS.
   i. ALL EQUIPMENT MANUFACTURES CUT SHEETS WITH CLEAR HIGHLIGHTED PART NUMBERS TO MATCH BOM. EACH LINE ITEM IN BOM WILL BE PROVIDED WITH CORRESPONDING CUT SHEET AND LABELED WITH RESPECTIVE BOM NUMBER FOR EASE OF REFERENCE BY ENGINEER.

D. PROVIDE 3 COPIES OF OPERATION AND MAINTENANCE MANUALS TO OWNER AS PART OF THE SHIPPING OF PANELS. MANUALS SHALL INCLUDED UL CERTIFIED DRAWINGS, LABELING CERTIFICATION, FINAL BILL OF MATERIAL AND CUT SHEETS OF ALL EQUIPMENT AS INSTALLED IN FINAL PANEL INSTALLATIONS.

E. DC WIRING INSULATION COLORING:

COLOR	ABBREVIATION	DEDICATED USE
BLACK	BK	
BLUE	BL	24VDC+
BROWN	BN	
GREEN	GN	GROUND
GRAY	GY	
ORANGE	OR	
RED	RD	
VIOLET	VT	
WHITE	WT	0VDC
YELLOW	YL	

F. AC WIRING INSULATION COLORING:
   a. MAXIMUM LINE VOLTAGE SHALL BE 120V AC AND SHALL BE BLACK IN COLOR.
   b. ALL NEUTRAL WIRING SHALL BE WHITE WIRE.
   c. ALL GROUND WIRING SHALL BE GREEN WITH YELLOW STRIPE.
   d. ALL AC WIRING SHALL BE IDENTIFIED AS SUCH WITH SOURCE AND VOLTAGE RATING.
   e. ALL AC WIRING SHALL BE SEGREGATED FROM DC WIRING THROUGHOUT ENTIRE INSTALLATION IN PANEL PER UL REQUIREMENTS.

G. GROUNDING
   a. ALL DC WIRING SHALL HAVE SHIELD GROUNDS EXCLUDING POWER WIRING
   b. ALL GROUNDS SHALL HAVE GREEN INSULATION IN COLOR UNLESS OTHERWISE REFERENCED.

H. WIRING SIZE
   a. ALL DC WIRING SHALL BE A MINIMUM SIZE OF 18 AWG CU.
   b. ALL AC WIRING SHALL BE A MINIMUM SIZE OF 12 AWG CU.
   c. ALL WIRING SHALL BE PER CURRENT NEC AND APPLICABLE CODES.

I. LABELING
   a. ALL WIRING SHALL BE PROVIDED WITH HEAT SHRINK LABELING.
   b. ALL LABELING SHALL MATCH PANEL CABLE SCHEDULE.
   c. ALL CABLES SHALL CONTAIN THE P&ID LABEL REFERENCE FOR EASE OF FUTURE MAINTENANCE.
   d. PROVIDE BLACK AND WHITE NAME PLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM BLACK LETTERS A MINIMUM OF ¼" HIGH. PROVIDE NAME PLATES FOR PANEL DOOR, ALL MAJOR COMPONENTS, AND TERMINAL STRIPS. NAME PLATES SHALL READ AS INDICATED ON DRAWINGS.

REFERENCE DRAWINGS

I-501	CONTROL PANEL EXTERIOR
I-600	TYPICAL INSTRUMENT GROUNDING SCHEME
E-104	INSTRUMENTATION SCHEDULE

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CONSULTANTS

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SE-#

PROJECT NAME: LMWC WELL 3 ARSENIC TREATMENT FACILITY

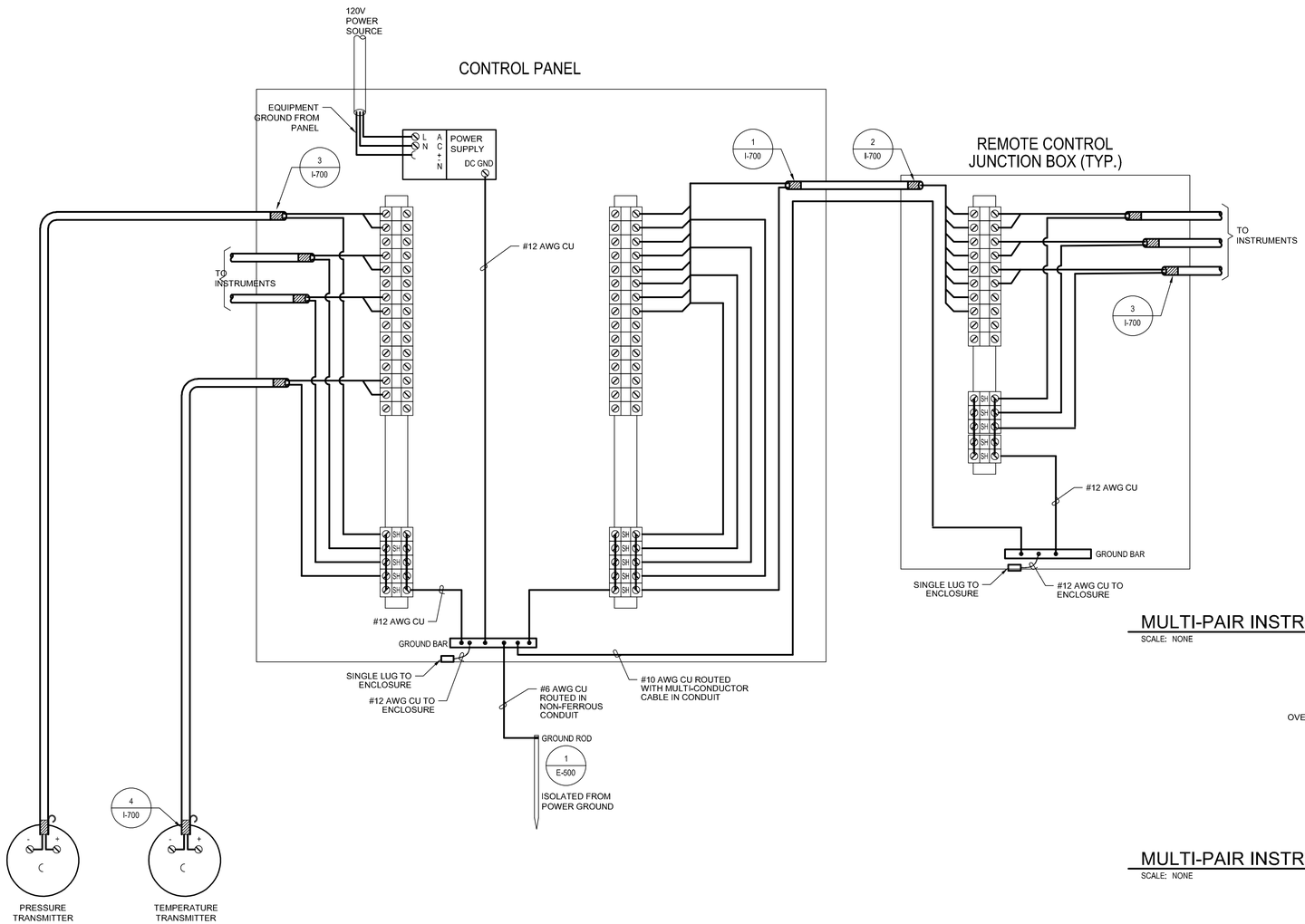
NO.	DESCRIPTION	DATE	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE: INSTRUMENTATION CP-SCADA

SHEET NO: I-502

1/6/2021



INSTRUMENT GROUNDING DIAGRAM OTOWI #2

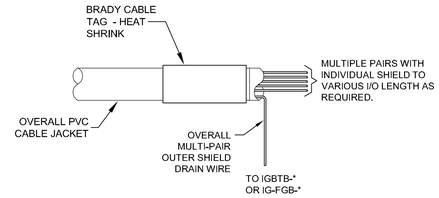
SCALE: NONE

GENERAL NOTES

A. GROUNDING SCHEME IS SHOWN FOR REFERENCE ONLY. ADAPT GROUNDING SCHEME TO SITE AS APPLICABLE. NOT ALL WIRING MAY BE SHOWN ON SCHEME. REFER TO SITE AND CONTROL PANEL DRAWINGS FOR ADDITIONAL INFORMATION.

B. ALL INSTRUMENTATION WIRING SHALL HAVE SHIELD GROUNDS EXCLUDING POWER WIRING

C. ALL ISOLATION GROUND CONDUCTORS SHALL BE CU THWN IN CONSTRUCTION WITH GREEN INSULATION IN COLOR. MINIMUM SIZE CONDUCTORS ARE SHOWN ON DRAWINGS. ANY DEVIATIONS FROM THOSE CONDUCTOR SIZES SHOWN SHALL BE PRE-APPROVED BY OWNER AND ENGINEER PRIOR TO INSTALLATION.

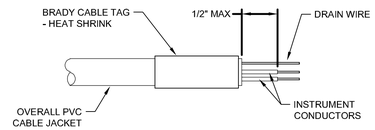


MULTI-PAIR INSTRUMENT CABLE TERMINATION - OUTER SHIELD CONNECTION

SCALE: NONE

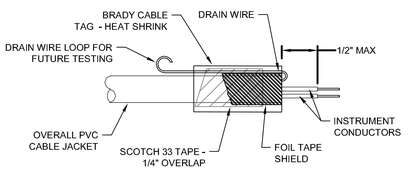
MULTI-PAIR INSTRUMENT CABLE TERMINATION-SHIELD "PEELED BACK"

SCALE: NONE



INDIVIDUAL INSTRUMENT CABLE TERMINATION - SHIELD CONNECTED

SCALE: NONE



INDIVIDUAL INSTRUMENT CABLE TERMINATION-SHIELD "PEELED BACK"

SCALE: NONE

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CONSULTANTS

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REGISTERED PROFESSIONAL ENGINEER
1/7/2021

PROJECT NAME

LMWC WELL 3 ARSENIC
TREATMENT FACILITY

REV.	DATE	DESCRIPTION	BY

PROJECT NO:	16-600-204-00
DESIGNED BY:	PAR
DRAWN BY:	CRU
CHECKED BY:	BJA
DATE:	JANUARY 05, 2021

SHEET TITLE

INSTRUMENTATION
GROUNDING
DIAGRAM

SHEET NO:

I-600

1/6/2021