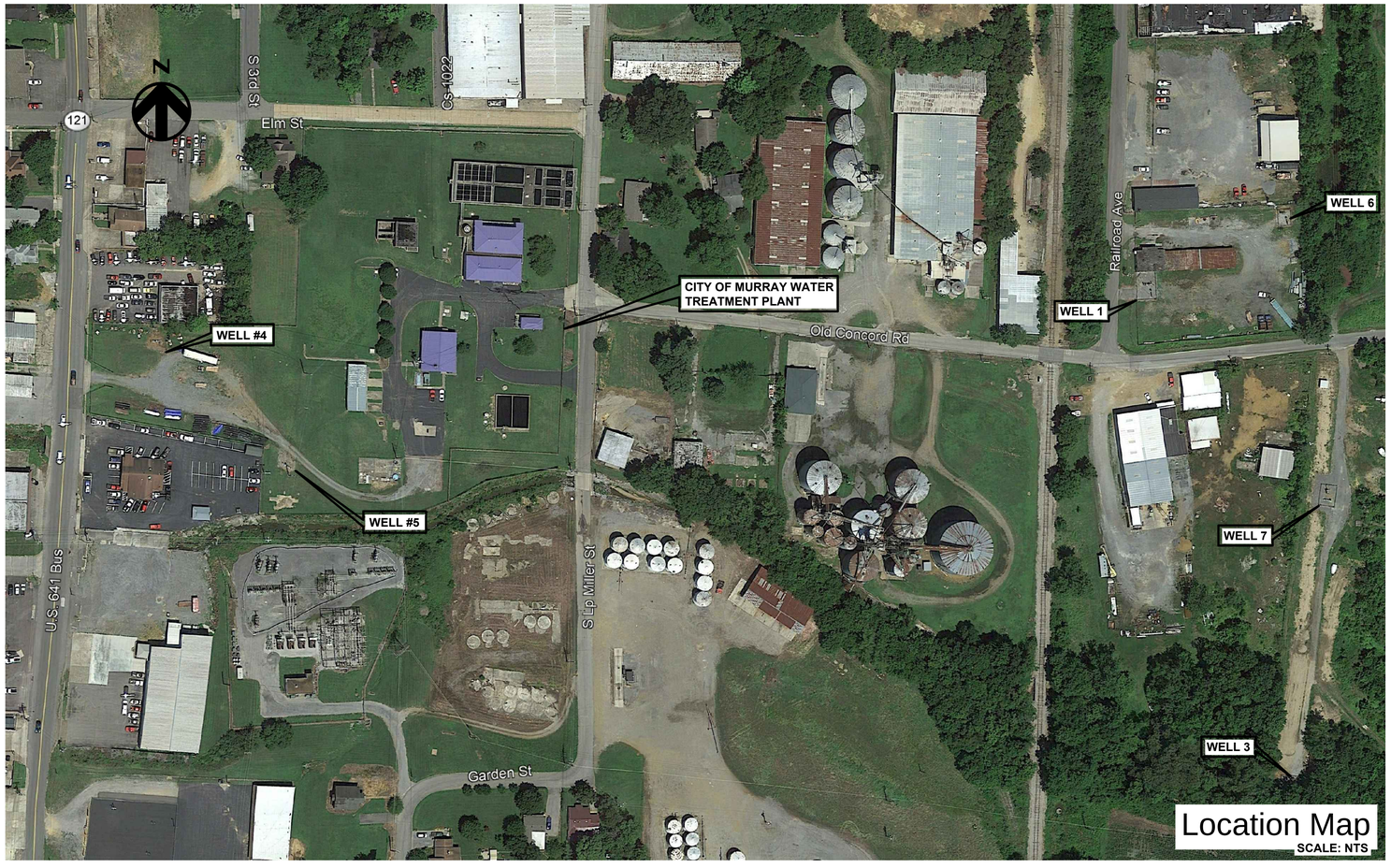

Location Map
SCALE: NTS

Contract Drawings For

MURRAY WTP ELECTRICAL IMPROVEMENTS

Murray, Kentucky

Structural / Architectural /
Instrumentation and Electrical

OWNER REVIEW

Project No.
10114225
SEPTEMBER 2020

PRELIMINARY - NOT FOR CONSTRUCTION

EROSION AND SEDIMENT CONTROL

1. MINIMIZE SITE DISTURBANCE TO THAT REQUIRED FOR CONSTRUCTION OF THE PROJECT.
2. REMOVE SILT, MUD AND DEBRIS TRACKED ONTO ADJACENT STREETS AND ROADWAYS AT THE END OF EACH WORK DAY, OR AS SUCH MATERIAL BECOMES OBJECTIONABLE AS DETERMINED BY THE FIELD ENGINEER/OWNER.
3. USE WATER OR OTHER METHODS TO CONTROL EXCESSIVE DUST FROM LEAVING THE SITE.
4. EROSION CONTROL SHALL BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH KENTUCKY BEST MANAGEMENT PRACTICES AND THE SEDIMENT CONTROL FIELD GUIDE.

SURVEYING

1. EXISTING CONTOUR AND ELEVATION DATA WAS OBTAINED BY SITEWORX SURVEY AND DESIGN LLC. THROUGH FIELD SURVEY PERFORMED. MINIMUM TOPOGRAPHY WAS PERFORMED. PROPERTY SURVEYS WERE NOT PERFORMED.
2. THE CONTRACTOR SHALL REVIEW THE HORIZONTAL AND VERTICAL CONTROL MONUMENTATION AND LAYOUT DATA PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS IMMEDIATELY UPON OBSERVING SUCH.
3. THE BASIS FOR NORTH SHOWN ON THE DRAWINGS AND ALL COORDINATES SHOWN HAVE BEEN DERIVED FROM A GPS OBSERVATION PROCESSED THROUGH THE NGS OPUS SOLUTION METHOD FOR OBSERVATION PERFORMED BY SITEWORX SURVEY AND DESIGN LLC.
4. HORIZONTAL COORDINATES ARE REFERENCED TO KENTUCKY STATE PLANE SOUTH ZONE NAD 83. VERTICAL CONTROL / ELEVATIONS ARE REFERENCED TO NAVD 88.
5. ANY EXISTING BOUNDARY MARKERS DESTROYED DURING CONSTRUCTION SHALL BE REPLACED IN THEIR EXACT LOCATION BY THE CONTRACTOR AT HIS OWN EXPENSE BY A COMPETENT REGISTERED LAND SURVEYOR.

GENERAL CONSTRUCTION

1. CONDUCT ALL CONSTRUCTION ACTIVITIES IN ACCORDANCE WITH ALL APPLICABLE OSHA. REGULATIONS AND OTHER PREVAILING HEALTH & SAFETY STANDARDS.
2. PROVIDE ALL MISCELLANEOUS ITEMS, NOT LISTED BUT REQUIRED FOR CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
3. REPLACE ALL DRAINAGE PIPES DISTURBED DURING CONSTRUCTION IN-KIND AT NO ADDITIONAL COST TO THE OWNER.
4. REPAIR ANY FENCE, OR PORTION THEREOF, DISTURBED DURING CONSTRUCTION TO A CONDITION EQUAL TO OR EXCEEDING THE PRE-CONSTRUCTION CONDITION.
5. REMOVE ALL DEBRIS, EXCESS MATERIALS, ETC. FROM THE PROJECT SITE AND DISPOSE OF AT AN APPROVED LOCATION AT NO ADDITIONAL COST TO THE OWNER. NO OPEN BURNING WILL BE PERMITTED ON THE SITE.
6. MAINTAIN A CLEAN AND ORDERLY JOB SITE AT ALL TIMES.
7. WORK HOURS SHALL BE LIMITED TO MONDAY THROUGH FRIDAY - 7:30 A.M. TO 4:30 P.M. UNLESS REQUESTED BY THE CONTRACTOR AND APPROVED IN WRITING BY THE OWNER.
8. WORKING ON THE SITE DURING FEDERALLY OBSERVED HOLIDAYS IS PROHIBITED UNLESS REQUESTED BY THE CONTRACTOR AND APPROVED IN WRITING BY THE OWNER.
9. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS, ACCESS ROADS AND STAGING AREAS TO A CONDITION EQUAL TO OR BETTER THAN THAT PRIOR TO INITIATION OF THE PROJECT.
10. MAINTAIN EQUIPMENT, MATERIALS, SPOIL/SOIL ON CITY PROPERTY. CONTRACTOR IS RESPONSIBLE FOR HAULING OFF ALL EXCESS MATERIALS AT THE CONCLUSION OF THE PROJECT.
11. ALL INTERIOR UNFINISHED SURFACES SHALL BE PAINTED, SEE SPECIFICATIONS.
12. COLOR SPECIFICATIONS TO BE DETERMINED BY THE OWNER.
13. EXTERIOR BLOCK SURFACES TO BE SPRAYED WITH TWO COATS OF CLEAR WATER SEALER.
14. ALL HARDWARE FOR DOORS TO BE PROVIDED BY CITY OF MURRAY.

EARTHWORK AND GRADING

1. DEMOLITION AND REMOVAL OF EXISTING MATERIAL IS TO BE CONSIDERED INCIDENTAL TO THE PROJECT.
2. PRIOR TO PLACEMENT OF ANY GRANULAR BASE MATERIAL ON EXISTING SUBGRADE, THE CONTRACTOR SHALL VERIFY THAT THE UPPERMOST 12 INCHES OF THE EXISTING SUBGRADE HAS BEEN COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY AS PER ASTM D698. AS AN ALTERNATE, THE CONTRACTOR MAY PROOF-ROLL THE EXISTING SUBGRADE WITH A FULLY-LOADED TRI-AXLE DUMP TRUCK IN THE PRESENCE OF THE FIELD ENGINEER. SOFT AREAS THAT EXHIBIT RUTTING IN EXCESS OF 1 INCH SHALL BE REWORKED/REPLACED AS DIRECTED BY THE FIELD ENGINEER AND TEST REPEATED UNTIL SATISFACTORY RESULTS ARE ACHIEVED.
3. THE CONTRACTOR SHALL STRIP 4 INCHES OF TOPSOIL FROM ALL DISTURBED AREAS PRIOR TO PLACEMENT OF FILL MATERIAL AND STORE THE TOPSOIL ONSITE IN A PROTECTED LOCATION THAT DOES NOT INTERFERE WITH EXISTING DRAINAGE. SUCH TOPSOIL STOCKPILE SHALL BE SUITABLY PROTECTED FROM EROSION AND SEDIMENT RUNOFF FOR THE DURATION OF THE PROJECT. THIS TOPSOIL SHALL BE REAPPLIED AS THE UPPERMOST 4 INCHES OF ALL FILL AREAS THAT WILL BE SEEDED IN GRASS. EXCESS TOPSOIL SHALL EITHER BE REMOVED FROM THE SITE OR ALLOWED TO REMAIN AS DIRECTED BY THE OWNER.
4. WITHOUT REGARD TO THE MATERIALS ENCOUNTERED, ALL EXCAVATION ON THIS PROJECT SHALL BE UNCLASSIFIED. ANY REFERENCE TO ROCK, EARTH, OR ANY OTHER MATERIAL ON THE PLAN WHETHER IN NUMBERS, WORDS, LETTERS, OR LINES IS FOR INFORMATION ONLY AND IS NOT TO BE TAKEN AS AN INDICATION OF CLASSIFIED EXCAVATION. UNAUTHORIZED EXCAVATION SHALL BE BACKFILLED AT THE CONTRACTOR'S EXPENSE WITH COMPACTED EARTH, GRAVEL, OR OTHER MATERIAL AS APPROVED AND DIRECTED BY THE ENGINEER. ANY UNSUITABLE MATERIAL ENCOUNTERED SHALL BE ADDRESSED AS PER SECTION 603 OF THE KYTC SPEC BOOK.
5. ALL EXCAVATED MATERIAL NOT DESIGNATED FOR RE-INSTALLATION SHALL BE PROPERLY DISPOSED OF AT AN UPLAND, OFF-SITE DESIGNATION.
6. CONDUCT CLEARING, GRUBBING AND CONSTRUCTION ACTIVITIES IN A MANNER MINIMIZING, TO THE EXTENT PRACTICAL, THE DESTRUCTION OF TREES, SHRUBBERY, ETC. THAT MAY BE IN THE PATH OF THE PROPOSED CONSTRUCTION.
7. RESTORE ALL SOIL AREAS, ROADWAYS, OR DRIVEWAYS DISTURBED AS A RESULT OF ANY CONSTRUCTION PROCESS TO A CONDITION EQUAL TO OR EXCEEDING PRE-CONSTRUCTION CONDITIONS.
8. DO NOT STORE EXCAVATED MATERIAL IN LOCATIONS THAT BLOCK THE EXISTING STORM DRAINAGE.
9. RESHAPE ALL DITCH LINES DAMAGED DURING CONSTRUCTION TO ORIGINAL LINES AND GRADES.

UTILITIES

1. ALL UTILITIES ARE SHOWN IN THEIR GENERAL LOCATION ONLY. PRIOR TO INITIATING CONSTRUCTION, ALL UTILITIES SHALL BE FIELD LOCATED. EXPOSE UTILITIES LOCATED WITHIN THE DISTURBED LIMITS UTILIZING MANUAL EXCAVATION WHERE NEEDED TO AVOID DAMAGE TO THE UTILITY. NOTIFY THE ENGINEER OF CONFLICTS WHICH MAY AFFECT PROPER COMPLETION OF THE WORK ASSOCIATED WITH THIS PROJECT. TAKE MEASURES TO PROTECT THE UTILITIES FROM DAMAGE DURING CONSTRUCTION. COORDINATE REPAIRS OF DAMAGED UTILITIES WITH THE OWNERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REQUIRED REPAIR OR REPLACEMENT.
2. THE CONTRACTOR IS ADVISED THAT HE/SHE MUST CALL 811 TOLL FREE A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION FOR INFORMATION ON THE LOCATION OF EXISTING UNDERGROUND UTILITIES WHICH SUBSCRIBE TO THE BEFORE-YOU-DIG (BUD) SERVICE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE EXCAVATION WITH ALL UTILITY OWNERS, INCLUDING THOSE WHO DO NOT SUBSCRIBE TO THE ONE-CALL LOCATION SERVICE.
3. A LIST OF UTILITY OWNERS THAT MAY HAVE UTILITIES IN THE VICINITY OF THE PROPOSED PROJECT IS PROVIDED.

SPECIFICATIONS

1. UNLESS OTHERWISE NOTED, ALL CONSTRUCTION MATERIALS AND METHODS SHALL BE IN ACCORDANCE WITH THE "KENTUCKY TRANSPORTATION CABINET'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2012 EDITION, KYTC STANDARD DRAWINGS - LATEST EDITION.

CONCRETE NOTES

1. PROVIDE 4000 PSI CONCRETE FOR FOOTINGS AS DESIGNATED BY THE STANDARD SPECIFICATIONS.
2. CONCRETE DESIGN, MIXING AND PLACEMENT SHALL BE IN ACCORDANCE WITH LATEST ACI 318.
3. REINFORCING STEEL SHALL BE ASTM A615, GRADE 60. LAP REINFORCING BARS PER ACI 318.
4. A MINIMUM OF 3 TESTS WILL BE TAKEN FROM EACH CONCRETE PLACEMENT AND WILL BE MARKED FOR IDENTIFICATION, ONE TO BE TESTED AT SEVEN DAYS FOR INFORMATION AND TWO TO BE TESTED AT TWENTY-EIGHT (28) DAYS FOR ACCEPTANCE.
5. FLOOR SLABS SHALL RECEIVE A DISSIPATING CURING AND SEALING COMPOUND.
6. PROVIDE CORNER REINFORCING IN ALL CONTINUOUS FOOTINGS WHERE THEY CHANGE DIRECTIONS.
7. PROVIDE 5% - 7% AIR CONTENT FOR CONCRETE SUBJECT TO FREEZING AND THAWING.
8. DO NOT ADD CALCIUM CHLORIDE TO ANY CONCRETE.

MASONRY NOTES

1. CONCRETE MASONRY UNITS SHALL BE SPLIT FACED ON EXTERIOR AND HAVE A 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
2. REINFORCED CELLS SHALL BE FILLED WITH GROUT AND PLACED IN LIFTS AS RECOMMENDED BY ACI 530. VERTICAL REBAR SHALL BE CENTERED IN THE CONCRETE MASONRY UNITS.
3. MORTAR USED IN BRICK AND BLOCK JOINTS SHALL BE TYPE "S".
4. FOOTING SHALL BE CONSTRUCTED TO ELEVATIONS AS SHOWN ON THE PLAN.
5. HORIZONTAL MORTAR JOINTS SHALL BE REINFORCED AT 16" ON CENTER WITH GALVANIZED DUR-O-WAL LADUR TYPE JOINT REINFORCING OR EQUAL. THE REINFORCING IS CLASSIFIED AS STANDARD DUTY AND CONSISTS OF TWO LONGITUDINAL NO. 9 SIDE RODS AND NO. 9 CROSS RODS AT 16" ON CENTER.
6. DUR-O-WAL LADUR REINFORCING TO BE CONTINUOUS THROUGH BLOCK WALL AND WHERE WALLS CHANGE DIRECTIONS.
7. LAP REINFORCING BARS PER ACI 530.
8. THE LONGITUDINAL REINFORCING STEEL IN THE BOND BEAMS AND WALLS SHALL BE CONTINUOUS AROUND CORNERS WITH 2'-0" X 2'-0" CORNER BARS MINIMUM.
9. PROVIDE 2 - #4 BARS VERTICAL FROM ROOF TO FLOOR AT ALL CORNERS AND AROUND DOOR OPENINGS.

UTILITY OWNERS

MURRAY MUNICIPAL UTILITIES	270-762-0300
WK&T COMMUNICATIONS	270-492-1000
WEST KY. RURAL TELEPHONE	270-489-1000
WEST KY. RURAL ELECTRIC	270-753-2573
WKRECC	270-247-1321
MURRAY ELECTRIC SYSTEM	270-753-5312
MURRAY WATER SYSTEM	270-762-0336
MURRAY NATURAL GAS SYSTEM	270-762-0336
MURRAY SANITARY SEWER SYSTEM	270-762-0336
BUD	811

CALL BUD TO HAVE UNDERGROUND UTILITIES LOCATED. PROPER NOTICE MUST BE GIVEN 48 HOURS IN ADVANCE OF INITIATING WORK.

ISSUE	DATE	DESCRIPTION
1	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Mike Hansen
DRAWN	Mike Hansen
QA/QC	Doug Hawes
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

CIVIL GENERAL NOTES

FILENAME	00G-01.dwg
SCALE	NO SCALE
SHEET	00G-01

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STRUCTURAL GENERAL NOTES:

G1 SCOPE

THE NOTES ON THIS SHEET AND ALL THE STANDARD STRUCTURAL DETAILS ARE GENERAL AND APPLY TO THE ENTIRE PROJECT WHETHER SPECIFICALLY CALLED OUT OR NOT, UNLESS OTHERWISE SPECIFIED. IF THERE ARE QUESTIONS, THEY SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER AND ANSWERED IN WRITING PRIOR TO CONSTRUCTION.

G2 APPLICABLE SPECIFICATIONS AND CODES

1. KENTUCKY BUILDING CODE, 2018 EDITION (IBC 2015), INCLUDING LOCAL JURISDICTIONAL AMENDMENTS.
2. ACI 318-14
3. ASCE 7-10
4. AISC STEEL CONSTRUCTION MANUAL 14th EDITION; 360-10
5. AMERICAN WELDING SOCIETY (AWS) - LATEST VERSION
6. OCCUPATIONAL SAFET AND HEALTH ADMINISTRATION (OSHA)

G3 DESIGN CRITERIA

1. MINIMUM VERTICAL LIVE LOADS: SEE INDIVIDUAL PLANS.

   A. UNIFORM LIVE LOAD INCLUDES ALLOWANCE FOR:
      * UNIFORM SNOW LOAD.

   B. FOR ROOF LOADS OTHER THAN LIVE LOAD;
      REFER TO SPECIFICATIONS AND OTHER DISCIPLINE'S REQUIREMENTS.

   ADDITIONAL LOADS FROM OTHER DISCIPLINE DRAWINGS INCLUDE:
      * UNIFORM DEAD LOADS
      * CONCENTRATED EQUIPMENT LOADS

2. WIND LOADS:

A.	RISK CATEGORY:	III
B.	BASIC WIND SPEED:	120 MPH
C.	WIND EXPOSURE:	C
D.	WIND IMPORTANCE FACTOR (Iw):	1.0

3. SEISMIC:

A.	SITE CLASS:	D
B.	RISK CATEGORY:	III
C.	SEISMIC IMPPORTANCE FACTOR (Ie):	1.25
D.	SPECTRAL RESPONSE COEFF:	SDS=0.657, SD1=0.353
E.	SEISMIC DESIGN CATEGORY:	C

3. SNOW LOAD:

A.	GROUND SNOW (PG):	15 PSF
B.	FLAT ROOF SNOW (PF):	12.5 PSF
C.	EXPOSURE FACTOR:	1.0
D.	IMPORTANCE FACTOR (Is):	1.1
E.	THERMAIL FACTOR (Ct):	1.2

5. FUTURE LOADS:
   UNLESS SPECIFICALLY NOTED, THERE ARE NO PROVISIONS MADE FOR FUTURE ROOF, OR OTHER LOADS.

G4 SAFETY

SAFETY AND STRUCTURE STABILITY DURING CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURES HAVE BEEN DESIGNED TO RESIST THE DESIGN LIVE LOADS ONLY AS A COMPLETED STRUCTURE.
EXAMINE WORK-IN-PLACE ON WHICH SPECIFIED WORK IS IN ANY WAY DEPENDENT TO ENSURE THAT CONDITIONS ARE SATISFACTORY FOR THE INSTALLATION OF THE WORK.
REPORT DEFECTS IN WORK-IN-PLACE WHICH MAY INFLUENCE SATISFACTORY COMPLETION OF THE WORK.

G5 STANDARD DETAILS

THE STANDARD DETAILS DEPICT TYPICAL DETAILING TO BE USED ON THIS PROJECT. IF CONDITIONS ARE NOT EXPLICITLY SHOWN ON THE DRAWINGS THEY SHALL BE MADE SIMILAR TO THE STANDARD DETAILS. OBTAIN ENGINEER APPROVAL IN WRITING FOR SIMILAR CONDITIONS PRIOR TO CONSTRUCTION.

G6 CONFLICTS

IF THERE ARE CONFLICTS BETWEEN CONTRACT DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT INTERPRETATION SHALL CONTROL.

G7 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION AS REQUIRED TO COORDINATE NEW CONSTRUCTION. IF ANY, SUBMIT REQUIRED CHANGES FOR APPROVAL.

STEEL

S1 STRUCTURAL STEEL DESIGN PROPERTIES (UNLESS NOTED OTHERWISE):

WIDE FLANGE:	Fy=50 KSI
PLATES AND SHAPES:	Fy=36 KSI
BOLTS AND NUTS:	ASTM A325 & A563 (GALVANIZED)
WASHERS:	ASTM F436 (GALVANIZED)

S2 DIMENSIONS:
TO CEMTERLINES OF COLUMNS AND BEAMS, TOP AND BACKSURFACES OF PLATES.

S3 ELEVATIONS:
REFER TO TOP SURFACE OF MEMBER OR FLANGE UNLESS NOTED OTHERWISE.

S4 UNLESS NOTED OTHERWISE, BOLTED STEEL CONNECTIONS SHALL BE IN ACCORDANCE WITH THE AISC MANUAL OF STEEL CONSTRUCTION LATEST EDITION USING ASTM A325 GALVANIZED BOLTS. ALL BOLTED STRUCTURAL CONNECTIONS SHALL BE BEARING TYPE CONNECTIONS.

S5 WHEN FILLET WELD IS NOT INDICATED, PROVIDE MAXILMUM WELD SIZE IN ACCORDANCE WITH AISC SPECIFICATIONS.

S6 GROUT UNDER COLUMP/POST BASE SHALL NOT EXTEND ABOVE BOTOM OF BASE PLATE. CHAMFER GROUT AT 45 DEGREES.

S7 DELIVER AND HANDLE FABRICATION TO AVOID DAMAGE. STORE FABRICATED PRODUCTS AND MATERIALS ABOVE GROUND ON SKIDS OR OTHER SUPPORTS TO KEEP ITEMS FREE OF DIRT AND OTHER FOREIGN DEBRIS AND TO PROTECT AGAINST CORROSION.

S8 GALVANIZING REPAIR PAINT;
HIGH ZINC CONTENT PAINT FOR REGALVANIZING WELDS AND ABRASIONS ASTM A780. ZINC CONTENT: MINIMUM 92 % IN DRY FILM.

FABRICATION & ERECTION

F1 THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS OF EXISTING CONSTRUCTION AS REQUIRED TO COORDINATE NEW CONSTRUCTION. IF ANY, SUBMIT REQUIRED CHANGES FOR APPROVAL.

F2 PROVIDE DRILLED OR PUNCHED HOLES WITH SMOOTH EDGES AND GRIND SMOOTH ALL ROUGH WELDS AND SHARP EDGES PRIOR TO GLAVANIZING.

F3 ALL WELDS TO BE CONTUNUOUS FILLET TYPE IN ACCORDANCE WITH AWS D1.1 UNLESS INDICATED OTHERWISE.

F4 ALL FINISHED PRODUCTS SHALL BE FREE FROIM TWISTS AND BENDS.

F5 ALL STEEL SHALL BE ERECETED BLUMB AND LEVEL.

F6 CLEAN STORED MATERIAL OF ALL FOREIGH MATTER ACCUMULATED PRIOR TO COMPLETION OF ERECTION.

F7 PROVIDE WASHERS FOR ALL BOLTED CONNECTIONS.

F8 INSTALL AND TIGHTEN ASTM A325 BOLTS IN ACCORDANCE WITH THE AISC 325, ALLOWABLE STRESS DESIGN (ASD).

F9 AFTER FABRICATION, ERECTION, INSTALLATION OR APPLICATION, CLEAN ALL SURFACES OF ALL DIRT, WELD SLAG, AND OTHER FOREIGH MATERIALS.

POST-INSTALLED ANCHORS

PA1 POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONTRACT DRAWINGS AND SHALL BE ZINC COATED CARBON STEEL ANCHORS WITH MATCHING NUTS AND WASHERS.

PA2 CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REBAR. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.

PA3 SPECIAL INSPECTION SHALL BE PROVIDED FOR ALL ADHESIVE ANCHOR INSTALLATIONS AS REQUIRED BY THE BUILDING CODE.

PA4 SUBSTITUTION REQUESTS, FOR PRODUCTS OTHER THAN THOSE SPECIFIFED BELOW, SHALL BE SUBMITTED BY THE CONTRACTOR TO THE EOR ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE. PRODUCT ICC-ES CODE REPORTS SHALL BE INCLUDED WITH THE SUBMITTAL PACKAGE.

PA5 DELIVER PRODUCTS TO JOB SITE IN MANUFACTURER'S OR DESTRIBUTOR'S PACKAGING UNDAMAGED AND COMPLETE WITH INSTALLATION INSTRUCTIONS.

PA6 STORE ABOVE GROUND AND PROTECT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS TO PREVENT DAMAGE OR DETERIORATION.

PA7 WHERE EXPOSED, EXTEND THREADED ANCHORAGE A MAXIMUM OF 3/4 INCH AND A MINIMUM OF 1/2 INCH ABOVE THE TOP OF THE FULLY ENGAGED NUT. IF ANCHORAGE IS CUT OFF TO THE REQUIRED MAXIMUM HEIGHTM THREADS MUST BE DRESSED TO ALLOW NUTS TO BE REMOVED WITHOUT DAMAGE TO THE NUTS AND RECOATED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND ASTM A780.

PA8 INSTALLER FOR POST-INSTALLED ANCHORS SHALL BE TRAINED BY THE MANUFACTURER OR CERTIFIED BY A TRAINING PROGRAM APPROVED BY THE ENGINEER. SUBMIT CERITIFICATION OF QUALIFICATIONS FOR EACH INSTALLER FOR REVIEW PRIOR TO INSTALALTION OF POST-INSTALLED ANCHORS.

NOTE:

THE STRUCTURAL NOTES ON THIS SHEET CORRESPOND WITH THE CANOPY DETAILS AS SHOWN ON SHEET 00E-05

ISSUE	DATE	DESCRIPTION
1	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Mike Hansen
DRAWN	Mike Hansen
QA/QC	Doug Hawes
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

STRUCTURAL GENERAL NOTES

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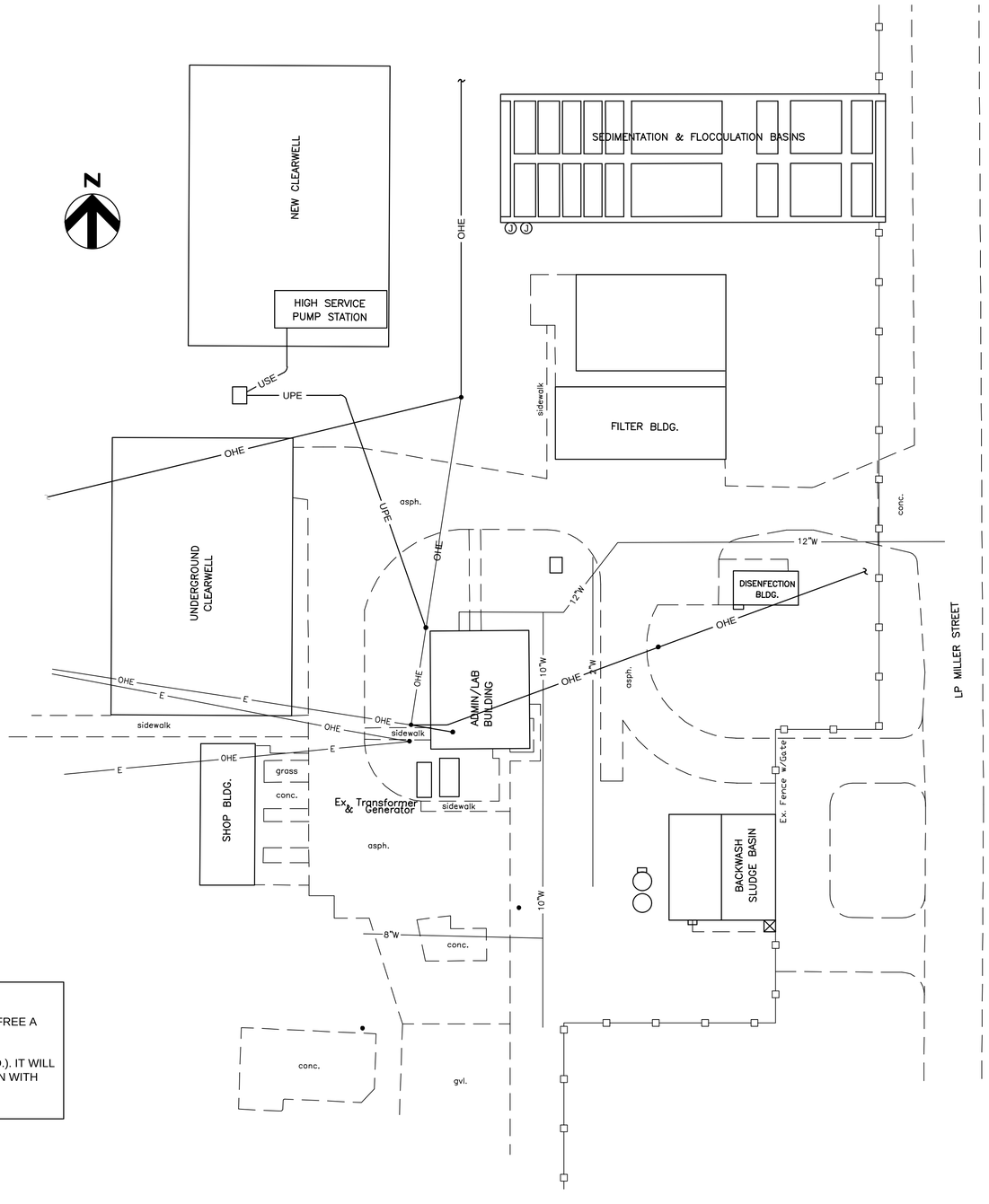
SHEET	00G-02



CALL BEFORE YOU DIG

THE CONTRACTOR IS REQUIRED TO CALL 811 OR 1-800-752-6007 TOLL FREE A MINIMUM OF TWO AND NO MORE THAN TEN BUSINESS DAYS PRIOR TO EXCAVATION FOR INFORMATION ON THE LOCATION OF EXISTING UNDERGROUND UTILITIES WHICH SUBSCRIBE TO KENTUCKY 811 (B.U.D.). IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE EXCAVATION WITH ALL UTILITY OWNERS, INCLUDING THOSE WHO DO NOT SUBSCRIBE TO KENTUCKY 811.

GENERAL NOTES

1. MINIMUM TOPOGRAPHY PERFORMED, ALL TREES AND SHRUBS THAT MAY NEED TO BE REMOVED FOR CONSTRUCTION MAY NOT BE SHOWN.
2. THIS PLANT LAYOUT IS SHOWN FOR GENERAL INFORMATION ONLY. LOCATION OF FEATURES WAS TAKEN FROM EXISTING DRAWINGS PROVIDED BY THE OWNER.

ISSUE	DATE	DESCRIPTION
1	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Mike Hansen
DRAWN	Lorie Lightfoot
QA/QC	Doug Hawes
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

PLANT LAYOUT

0 1" 2"

FILENAME 01C-01.dwt

SCALE 1"=30'

SHEET 01C-01

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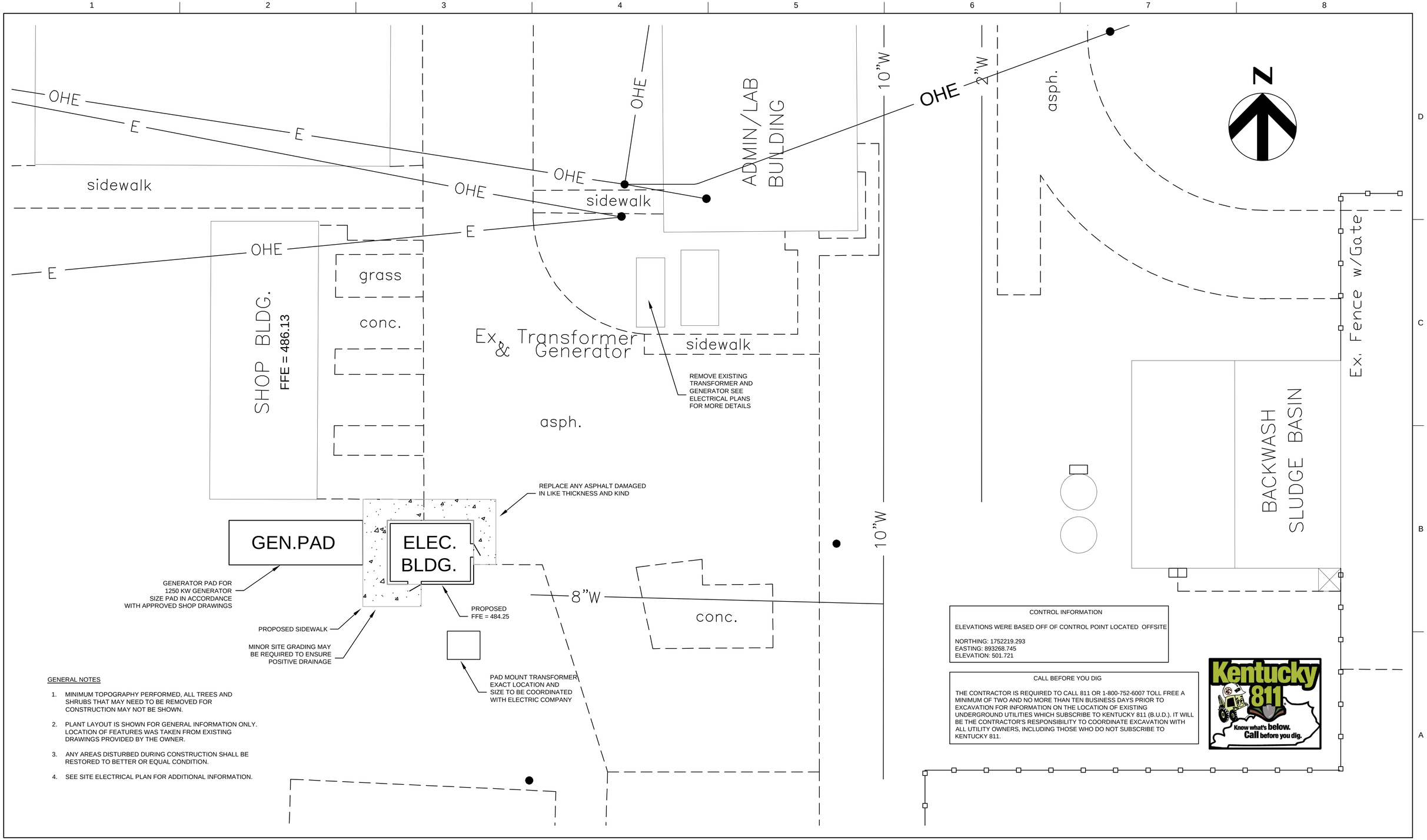

GENERAL NOTES

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2. PLANT LAYOUT IS SHOWN FOR GENERAL INFORMATION ONLY. LOCATION OF FEATURES WAS TAKEN FROM EXISTING DRAWINGS PROVIDED BY THE OWNER.
3. ANY AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO BETTER OR EQUAL CONDITION.
4. SEE SITE ELECTRICAL PLAN FOR ADDITIONAL INFORMATION.

CONTROL INFORMATION

ELEVATIONS WERE BASED OFF OF CONTROL POINT LOCATED OFFSITE

NORTHING: 1752219.293
EASTING: 893268.745
ELEVATION: 501.721

CALL BEFORE YOU DIG

THE CONTRACTOR IS REQUIRED TO CALL 811 OR 1-800-752-6007 TOLL FREE A MINIMUM OF TWO AND NO MORE THAN TEN BUSINESS DAYS PRIOR TO EXCAVATION FOR INFORMATION ON THE LOCATION OF EXISTING UNDERGROUND UTILITIES WHICH SUBSCRIBE TO KENTUCKY 811 (B.U.D.). IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE EXCAVATION WITH ALL UTILITY OWNERS, INCLUDING THOSE WHO DO NOT SUBSCRIBE TO KENTUCKY 811.

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

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PROJECT MANAGER	Mike Hansen
DESIGNED	Mike Hansen
DRAWN	Lorie Lightfoot
QA/QC	Doug Hawes
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

SITE LAYOUT

0 1" 2"

FILENAME 01C-02.dwt
SCALE 1"=10'

SHEET 01C-02

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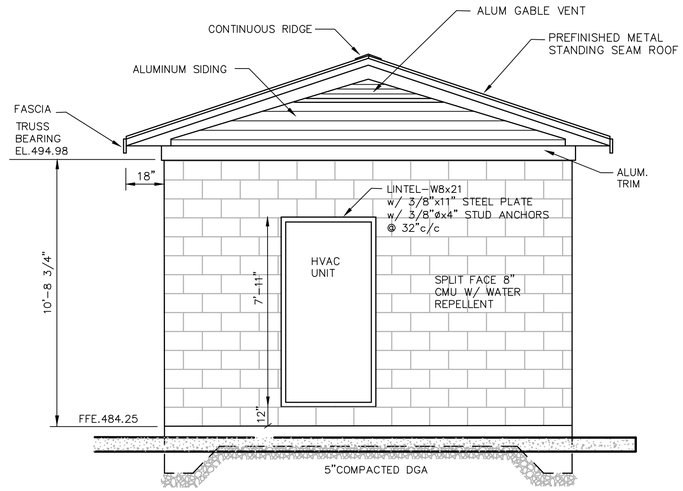
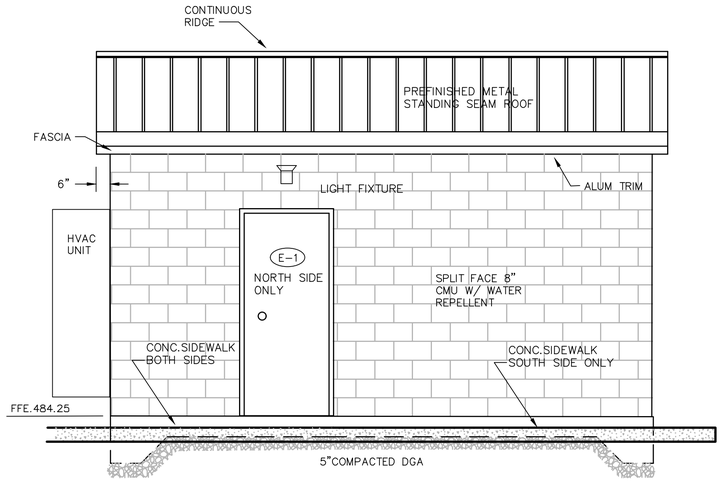
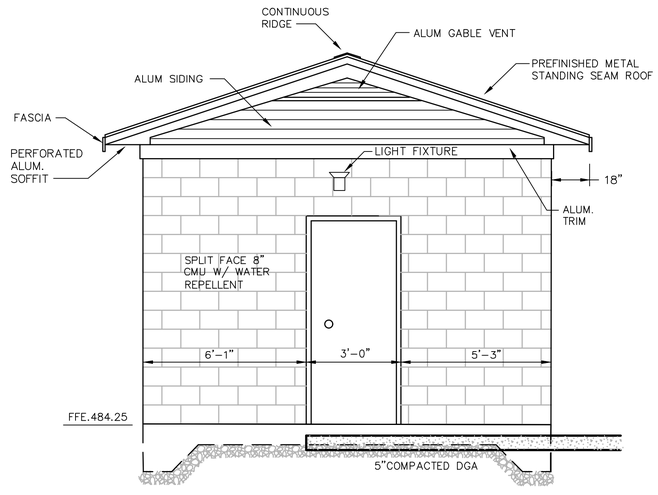


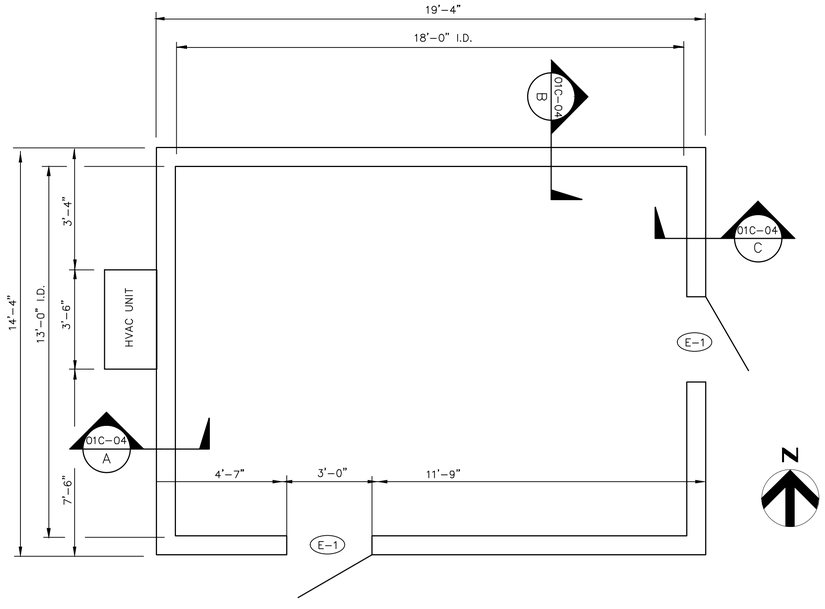
WEST ELEVATION



NORTH & SOUTH ELEVATION



EAST ELEVATION



FLOOR PLAN

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Mike Hansen
DRAWN	Lorie Lightfoot
QA/QC	Doug Hawes
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

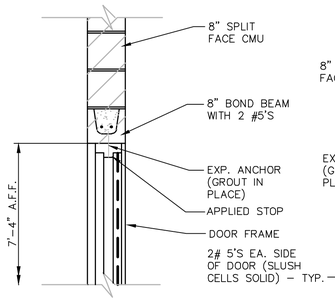
MURRAY, KENTUCKY

NEW ELECTRICAL BUILDING PLAN & ELEVATIONS

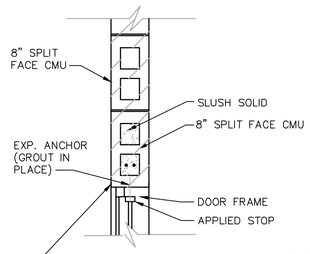
FILENAME	01C-03.dwg
SCALE	N.T.S.

SHEET **01C-03**

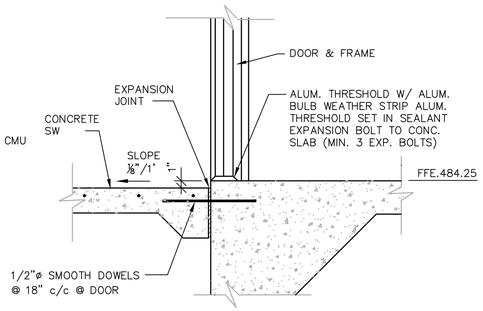
C:\pwworking\east01\d0556695\01C-03.dwg, 01C-03, 9/7/2020 12:04:15 PM, MIHANSEN



HEAD



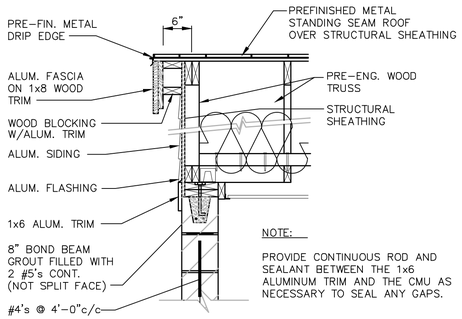
JAMB



SILL

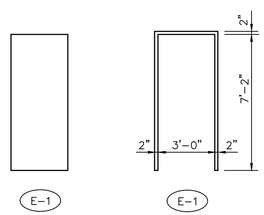
DOOR DETAILS

SCALE: 3/4"=1'–0"



SECTION 01C–03 A

SCALE: 3/4"=1'–0"

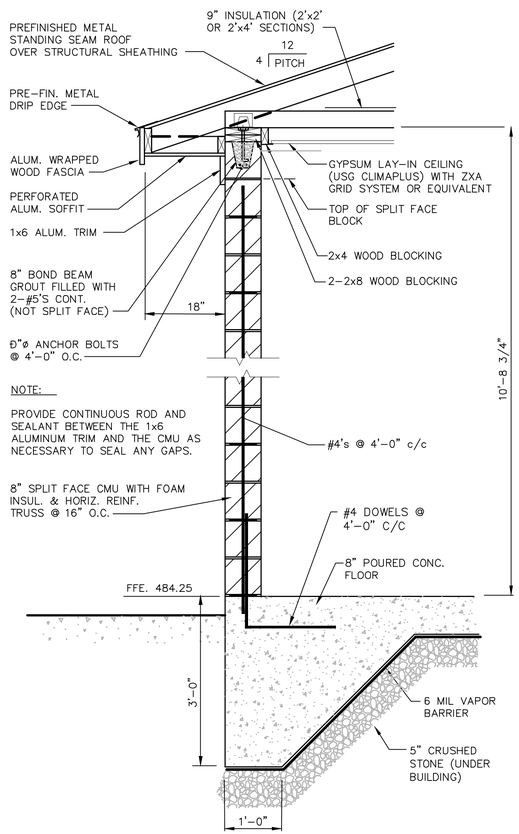


DOOR TYPE DETAIL

SCALE: 1/4" = 1'–0"

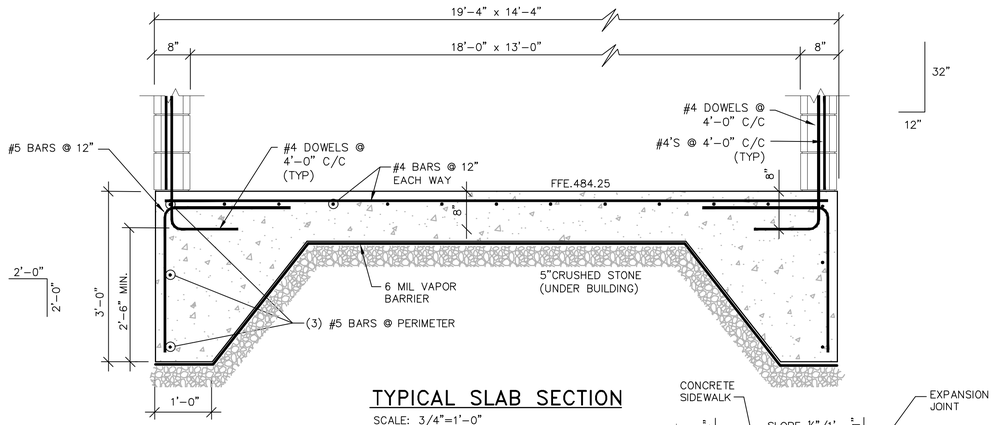
FRAME TYPE DETAIL

SCALE: 1/4" = 1'–0"



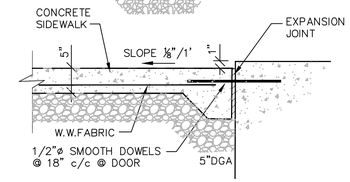
TYPICAL WALL SECTION

SCALE: 3/4"=1'–0"

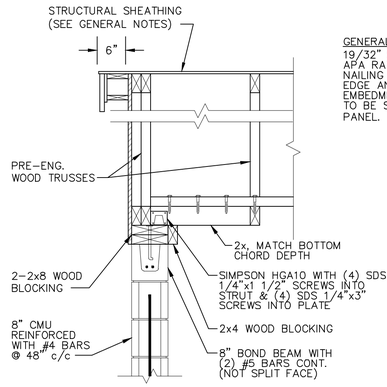


TYPICAL SLAB SECTION

SCALE: 3/4"=1'–0"



SIDEWALK

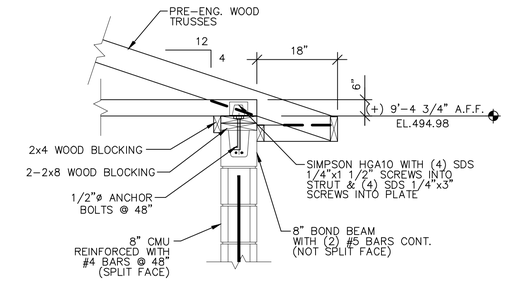


SECTION 01C–03 B

SCALE: 3/4"=1'–0"

GENERAL NOTE:

19/32" STRUCTURAL SHEATHING APA RATED 48/24 EXPOSURE 1 PS1 NAILING SHALL BE 10D @ 6" c/c AT EDGE AND 12" c/c FIELD WITH MIN. EMBEDMENT OF 1 1/2". NAILS ARE TO BE STAGGERED @ ADJOINING PANEL.



SECTION 01C–03 C

SCALE: 3/4"=1'–0"

NOTE:

DOOR TO BE FIBERGLASS REINFORCED POLYMER PANEL WITH FACTORY APPLIED GEL COATING. (HARDWARE PROVIDED BY CITY OF MURRAY)

ROOM FINISH SCHEDULE

FLOOR	BASE	WALL	CEILING
CONC. W/SEALER	NONE	PAINT ON CMU (INSIDE) SEALER ON CMU (OUTSIDE)	PAINT ON 5/8 F.C. GYP BOARD

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Mike Hansen
DRAWN	Lorie Lightfoot
QA/QC	Doug Hawes
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

NEW ELECTRICAL BUILDING STRUCTURAL DETAILS

FILENAME 01C-03.dwg

SCALE AS SHOWN

SHEET 01C-04

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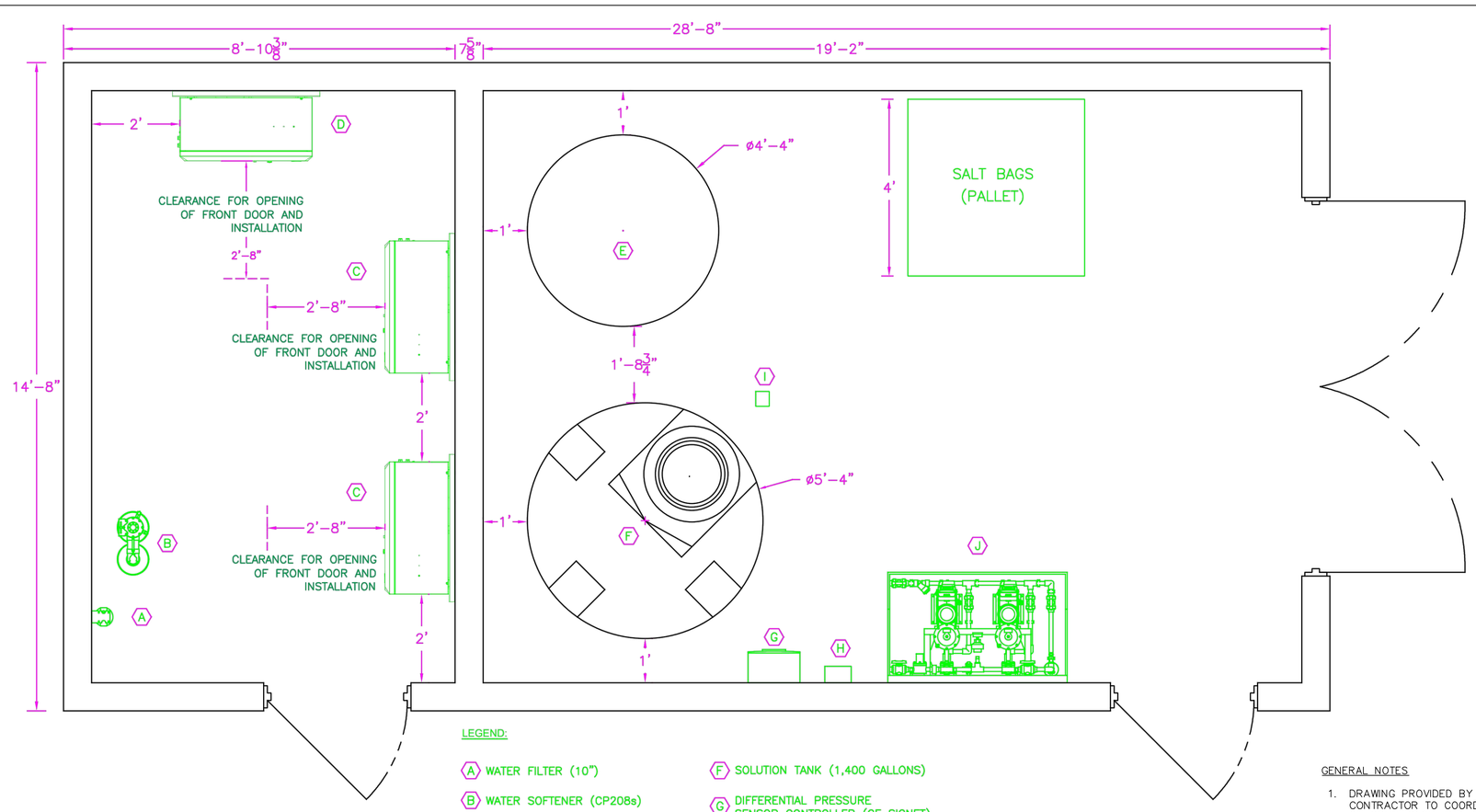


LEGEND:

- A WATER FILTER (10")
- B WATER SOFTENER (CP208s)
- C MIOX VAULT H100
- D FUTURE MIOX VAULT H100
- E BRINE GENERATOR (500 GALLONS)
- F SOLUTION TANK (1,400 GALLONS)
- G DIFFERENTIAL PRESSURE SENSOR CONTROLLER (GF SIGNET)
- H HYDROGEN MONITOR
- I HYDROGEN SENSOR (HIGHEST POINT ON CELING)
- J INJECTION SYSTEM

GENERAL NOTES

1. DRAWING PROVIDED BY THE CITY OF MURRAY. CONTRACTOR TO COORDINATE WITH MIOX ON CONVERSION AND INCLUDE AND INSTALL ALL ITEMS, MATERIALS, PIPING, AND EQUIPMENT NECESSARY FOR CONVERSION.
2. CONTRACTOR RESPONSIBLE FOR ANY DEMOLITION OF ANY EXISTING EQUIPMENT NECESSARY FOR INSTALLATION OF NEW SYSTEM.

REV	DESCRIPTION	DATE	BY
-	-	-	-
-	-	-	-
-	-	-	-

_X PRELIMINARY __ APPROVAL

_X INFORMATION __ CERTIFIED

THIS DRAWING IS LIMITED TO FUNCTIONAL DESIGN, GENERAL ARRANGEMENT AND CLEARANCE. NO RESPONSIBILITY IS ACCEPTED BY MIOX CORPORATION FOR OTHERDIMENSIONS, QUANTITIES OR COORDINATIONWITH OTHER EQUIPMENTOR DRAWINGS EXCEPT AS STATED IN PURCHASE ORDER.

DESIGN:	RDO	11/10/18
DRAWN:	RDO	11/10/18
CHECKED:		
SCALE:	NTS	SIZE: B

MIOX
THE FUTURE OF WATER IS CLEAR
5601 Balloon Fiesta Parkway, NE
Albuquerque, NM 87113
(505) 343-0090

PROJECT NAME: - WTP MURRAY, KY

TITLE: MIOX ON-SITE GENERATOR ROOM LAYOUT

REFERENCE INFORMATION

DWG. NO.: KY-BP110918RFN-01 SHEET 6 OF 6 REV: 0

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Mike Hansen
DRAWN	Mike Hansen
QA/QC	Doug Hawes
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

MIOX CONVERSION

FILENAME: 01D-01.dwg
SCALE: N.T.S.
SHEET: 01D-01

SYMBOL	DESCRIPTION
	EMERGENCY LIGHT FIXTURE (ADJUSTABLE, DOUBLE-HEAD)
	LIGHTING FIXTURE, ENCLOSED 2'x4' LED, RECESSED MOUNTED. DARK CENTER INDICATES EMERGENCY BATTERY AND BALLAST IN FIXTURE.
	LIGHTING FIXTURE, LED, WALL MOUNTED
	LIGHTING FIXTURE, LED, SURFACE OR PENDENT MOUNTED
	LIGHTING FIXTURE, WALL MOUNTED LED
	LIGHTING FIXTURE, CEILING MOUNT LED
	LIGHTING FIXTURE, POLE MOUNTED LED
	EXIT LIGHT, WALL MOUNTED, SINGLE FACE, ARROW INDICATES DIRECTION.
	EXIT LIGHT,CEILING MOUNTED, DOUBLE FACE, ARROWS INDICATE DIRECTION
$	WALL SWITCH, 120-VOLT, 20-AMPERE, SINGLE POLE
$3	WALL SWITCH, 120-VOLT, 20-AMPERE, 3-WAY
$4	4-WAY LIGHT SWITCH.
$WP	WEATHERPROOF SWITCH
OC	OCCUPANCY SENSOR
PP	POWER PACK
#10	CONDUIT CONCEALED IN WALL OR CEILING WHERE POSSIBLE, NUMBER AND SIZE OF WIRE AS INDICATED. 2-#12, 1-#12GND, 3/4"C. IF NOT NOTED.
	CONDUIT RUN BELOW FLOOR SLAB
LP-4	HOME RUN TO PANEL LP. INDICATED AS CIRCUITS 4
	CONDUIT TURNED UP
	CONDUIT TURNED DOWN
G	GROUND CONNECTION
10-3/4	GROUND ROD. 10-FOOT LENGTH AND 3/4" DIA. UNLESS OTHERWISE NOTED
T	THERMOSTAT
S	HVAC CONTROL SWITCH
	TELEPHONE OUTLET, WALL MOUNTED FLUSH 16"AFF TO TOP OF BOX UNLESS OTHERWISE NOTED WITH Ø" CONDUIT AND 4-PAIR CABLE TO TELEPHONE BACKBOARD
	DATA OUTLET, WALL MOUNTED FLUSH 16"AFF TO TOP OF BOX UNLESS OTHERWISE NOTED WITH Ø" CONDUIT AND 4-PAIR CAT 5E CABLE TO PLC-OB
	SELECTOR SWITCH
	PUSHBUTTON STATION
	DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH
	THERMAL OVERLOAD PROTECTION
	RELAY CONTACTS (NORMALLY CLOSED)
	RELAY CONTACTS (NORMALLY OPEN)
MC-MCP	CIRCUIT BREAKER (MC-MOLDED CASE, MCP-MOTOR CIRCUIT PROTECTOR)

SYMBOL	DESCRIPTION
OR	TRANSFORMER
	GROUND
	CAPACITOR
	INDICATES TERMINALS FOR REMOTE WIRING
	DOT INDICATES A CONNECTION
	AUDIBLE ALARM
M	MOTOR STARTER COIL
R	INDICATING LIGHT (R=RED, G=GREEN, A=AMBER)
ETM	ELAPSED TIME METER
	SURGE SUPPRESSER (FOR STARTER COIL SURGE)
	LIMIT SWITCH
	TEMPERATURE SWITCH
	PRESSURE SWITCH
	FLOAT SWITCH
C	CAPACITOR
TS	THERMAL SENSOR
MS	MOISTURE SENSOR
SA	SEAL ALARM
SV	SOLENOID VALVE
PS	PRESSURE SWITCH
FIT	FLOW INSTRUMENT TRANSMITTER
PSL	PSL-PRESSURE SWITCH LOW: PSH-PRESSURE SWITCH HIGH
TDR	TIME DELAY RELAY
CR1	CONTROL RELAY (NO. 1 INDICATED)
GFI	DUPLEX RECEPTACLE, 20 AMP, 3-WIRE GROUNDING TYPE, NEMA 5-20R MOUNTED 16" AFF TO TOP OF BOX UNLESS OTHERWISE NOTED. GFI INDICATES GROUND FAULT INTERRUPTER TYPE RECEPTACLE.
WP	DUPLEX RECEPTACLE, 20 AMP, 3-WIRE GROUNDING TYPE, NEMA 5-20R MOUNTED 16" AFF TO TOP OF BOX UNLESS OTHERWISE NOTED. WP INDICATES WEATHERPROOF TYPE RECEPTACLE.
	240V RECEPTACLE 16" AFF TO TOP OF BOX UNLESS OTHERWISE NOTED.
	240V 30A DRYER RECEPTACLE 16" AFF TO TOP OF BOX UNLESS OTHERWISE NOTED.
	QUADRUPLEX RECEPTACLE, 20 AMP, 3-WIRE GROUNDING TYPE, NEMA 5-20R MOUNTED 16" AFF TO TOP OF BOX UNLESS OTHERWISE NOTED.
	UTILITY POLE
J	JUNCTION BOX MOUNTED IN CEILING OR STRUCTURE SIZED PER NEC 370-6
5	MOTOR (5 HP INDICATED)
$M	MANUAL MOTOR STARTER, FRACTIONAL HORSEPOWER TYPE, WITH OVERLOAD PROTECTION. "XP" DENOTES EXPLOSION PROOF.
	GENERATOR

SYMBOL	DESCRIPTION
31/15/3R	COMBINATION MOTOR STARTER DISCONNECT SWITCH (FUSIBLE OR NON-FUSIBLE) ENCLOSURE NOTED WHEN OTHER THAN NEMA 1 FUSE RATING STARTER SIZE - NEMA 00, 0, 1, 2, ETC. POLES
361/20/3R	DISCONNECT SWITCH (FUSIBLE OR NON-FUSIBLE) ENCLOSURE NOTED WHEN OTHER THAN NEMA 1. FUSE SIZE WHERE USED.* SWITCH AMP RATING 1-30A 4-200A 2-60A 5-400A 3-100A 6-600A VOLTAGE RATING 2-240V 6-600V POLES *WHEN NON-FUSED, DESIGNATION SHOWN AS 361//3R
UG	UNDERGROUND CONDUIT AND WIRE
UPE	UNDERGROUND PRIMARY ELECTRIC
USE	UNDERGROUND SECONDARY ELECTRIC
OHE	OVERHEAD ELECTRIC

ABBREVIATION	DESCRIPTION
AFF	ABOVE FINISHED FLOOR TO CENTERLINE
AFG	ABOVE FINISHED GRADE TO CENTERLINE
CKT	CIRCUIT
DISC	DISCONNECT
DN	DOWN
EF	EXHAUST FAN
EOP	EXISTING OVERHEAD PRIMARY
EOS	EXISTING OVERHEAD SECONDARY
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WALL HEATER OR ELECTRIC WATER HEATER
FOR	FORWARD-OFF-REVERSE
FVNR	FULL VOLTAGE, NON-REVERSING
FVR	FULL VOLTAGE, REVERSING
GFI	GROUND FAULT INTERRUPTING
GND	GROUND
HOA	HAND-OFF-AUTOMATIC SELECTOR SWITCH
HOR	HAND-OFF-REMOTE SELECTOR SWITCH
HP	HORSEPOWER
JB	JUNCTION BOX
LF	LIGHTING FIXTURE (LUMINAIRE)
LP	LIGHTING PANEL
MCC	MOTOR CONTROL CENTER
MH	MANHOLE
MLO	MAIN LUGS ONLY
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
OC	OPEN CONDUIT WITH PULL WIRE
OH	OVERHEAD
OHP	OVERHEAD PRIMARY
OL	OVERLOAD OR OUTSIDE LIGHTING AS APPLICABLE
PP	POWER PANEL
PS	PRESSURE SWITCH
PSH	PRESSURE SWITCH HIGH
PSL	PRESSURE SWITCH LOW
RGS	RIGID GALVANIZED STEEL
SW	SWITCH
TOL	TORQUE OVERLOAD
UG	UNDERGROUND
UGP	UNDERGROUND PRIMARY
UGS	UNDERGROUND SECONDARY
W/	WITH
WP	WEATHERPROOF
XFMR	TRANSFORMER

GENERAL NOTES

1. ALL DISCONNECT SWITCHES SHALL BE MOUNTED ON 1" UNISTRUT TO PROVIDE AN AIR SPACE AT THE REAR.
2. ALL RUNS OF NON-METALLIC CONDUIT SHALL HAVE AN EXTRA WIRE PULLED FOR GROUNDING.
3. ALL INSTRUMENT CASES AND PANELS SHALL BE GROUNDED.
4. BOND ALL CONDUITS, ENCLOSURES, AND GROUND WIRE TO FORM A CONTINUOUS GROUND.
5. ALL CONDUITS ENTERING AND LEAVING INSTRUMENT CASES SHALL BE SEALED WITH SILICONE AROUND THE WIRES TO PRECLUDE THE ENTRANCE OF WATER CONDENSATION.
6. WHERE ALUMINUM IS IN CONTACT WITH CONCRETE, THE CONTRACTOR SHALL PAINT THE ALUMINUM WITH BITUMASTIC #50 COATING, OR EQUIVALENT.
7. SOME OF THE CONTROL WIRING IS NOT SHOWN ON THE PLANS, HOWEVER THIS DOES NOT RELIEVE THE CONTRACTOR FROM INSTALLING THE CONDUIT AND WIRE FROM DEVICE TO DEVICE, OR FROM DEVICE TO CONTROLLER AS REQUIRED BY THE SPECIFICATIONS.
8. ALL FINAL CONNECTIONS TO MOTORS TO BE IN PVC COATED FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

ELECTRICAL LEGEND, ABBREVIATIONS & NOTES

FILENAME	00E-01.dwg
SCALE	NO SCALE

SHEET **00E-01**

Light Fixture Schedule

Fixture Tag	Description	Lamps	Wattage	Manufacturer	Catalog Number
LF1	4' LONG LED FIXTURE WITH INJECTION MOLDED, IMPACT RESISTANT FROSTED POLYCARBONATE HOUSING WITH POURED IN PLACE CLOSED CELL GASKET WITH STAINLESS STEEL LATCHES. INJECTION MOLDED FROSTED POLYCARBONATE LENS, 4000 LUMENS, MEDIUM DISTRIBUTION.	LED	32.9	HOLOPHANE	EVT4-4000LM-FST-MD-120-40K-80CRI-SF-STSL
LF1A	SAME AS LF1 BUT WITH EMERGENCY BATTERY PACK.	LED	32.9	HOLOPHANE	EVT4-4000LM-FST-MD-120-40K-80CRI-SF-STSL WITH BSL520 BATTERY PACK
LF2	LED WALL PACK FIXTURE WITH 30 LEDs, 1000 mA DRIVER, TYPE III MEDIUM DISTRIBUTION, PRISMATIC GLASS REFRACTOR, DIE-CAST ALUMINUM HOUSING, WHITE FINISH. UL LISTED FOR WET LOCATIONS.	LED	104	HOLOPHANE	W4GLED-30C-1000-40K-T3M-120-SF-WHSDP
LF2A	SAME AS LF2 BUT WITH EMERGENCY BATTERY PACK.	LED	104	HOLOPHANE	W4GLED-30C-1000-40K-T3M-120-SF-WHSDP WITH ELSW BATTERY PACK
LF3	STANCHION MOUNTED LED AREA LIGHT WITH 30 LEDs, 4000K, TYPE II MEDIUM DISTRIBUTION, DIE-CAST ALUMINUM HOUSING, DARK BRONZE FINISH	LED	125	LITHONIA	DSX1 LED P4 40K T2M MVOLT SPA DDBXD
LF3A	SAME AS LF3 BUT WITH HOUSESIDE SHIELD	LED	125	LITHONIA	DSX1 LED P4 40K T2M MVOLT SPA HS DDBXD
LF4	STANCHION MOUNTED LED AREA LIGHT WITH 30 LEDS, 4000K, TYPE II SHORT DISTRIBUTION, DIE-CAST ALUMINUM HOUSING, DARK BRONZE FINISH	LED	54	LITHONIA	DSX1 LED P1 40K T2S MVOLT SPA DDBXD
LF5	4' LONG LED FIXTURE WITH INJECTION MOLDED, IMPACT RESISTANT FROSTED POLYCARBONATE HOUSING WITH POURED IN PLACE CLOSED CELL GASKET WITH STAINLESS STEEL LATCHES. INJECTION MOLDED FROSTED POLYCARBONATE LENS, 4000 LUMENS, WIDE DISTRIBUTION.	LED	32.9	HOLOPHANE	EVT4-4000LM-FST-WD-120-40K-80CRI-SF-STSL
LF5A	SAME AS LF5 BUT WITH EMERGENCY BATTERY PACK	LED	32.9	HOLOPHANE	EVT4-4000LM-FST-WD-120-40K-80CRI-SF-STSL WITH BSL520 BATTERY PACK
LF6	LED EMERGENCY EXIT SIGN AND UNIT, HIGH OUTPUT NICKEL-CADMIUM BATTERY, THERMOPLASTIC HOUSING, WHITE COLOR, RED LETTERING, UL LISTED.	LED	4.3	LITHONIA	LHQM-LED-R-HO
LF7	TWIN LED WEATHER PROOF REMOTE HEAD, GRAY CAST ALUMINUM HOUSING	LED	3	LITHONIA	ELA-T-QWP-L0309

PANELBOARD NO: PP-AD

VOLTAGE (L-L): 480 **BUS RATING (A):** 225 **ENCLOSURE:** NEMA 12
VOLTAGE (L-N): 277 **MAIN OC DEVICE (A/PHASE):** 150 **MOUNTING:** SURFACE
PHASE / WIRE: 3 / 4+G **INTERRUPTING RATING (KA):** **LOCATION:** LOWER LEVEL
200% NEUTRAL: NO **SERVICE ENTRANCE LABEL:** **BUILDING:** FILTER BUILDING

WIRING PHASE	NEUT.	GRND.	COND.	CKT NO.	DESCRIPTION	CONNECTED LOAD (VA) LTS	REC	MECH	MISC	OCP AMPS	P		OCP AMPS	P	CONNECTED LOAD (VA) LTS	REC	MECH	MISC	DESCRIPTION	CKT NO.	WIRING PHASE	NEUT.	GRND.	COND.
				1					15,290			A								2				
2	2	8	1-1/2"	3	45KVA 480-120/208V XFMR FOR LP-AD				15,540	70	3	B		3					SPACE	4				
				5					14,120			C								6				
				7								A								8				
				9	SPACE						3	B		3					SPACE	10				
				11								C								12				
				13								A								14				
				15	SPACE						3	B		3					SPACE	16				
				17								C								18				
				19	SPACE						1	A		1					SPACE	20				
				21	SPACE						1	B		1					SPACE	22				
				23	SPACE						1	C		1					SPACE	24				
												A								L1				
					SPD (TVSS)					N/A	3	B	N/A	3						L2				
					CONNECTED TO BUS							C								L3				

NOTES:

LOAD SUMMARY

	LTS	REC	MECH	MISC**	SPARE	TOTAL
CONNECTED LOAD (KVA)	0.0	0.0	0.0	45.0	---	45.0
DEMAND FACTOR	1.25	NEC	---	1.06	20%	---
DESIGN LOAD (KVA)	0.0	0.0	0.0	47.9	9.0	56.8

480	LINE-TO-LINE VOLTS	PHASE A (KVA)	15
54	CONNECTED AMPS	PHASE B (KVA)	16
68	DESIGN AMPS	PHASE C (KVA)	14

NOTES:
* REFER TO ONE-LINE DIAGRAM
** MISC DEMAND INCLUDES 25% OF LARGEST MOTOR KVA

PANELBOARD NO: LP-AD

VOLTAGE (L-L): 208 **BUS RATING (A):** 225 **ENCLOSURE:** NEMA 12
VOLTAGE (L-N): 120 **MAIN OC DEVICE (A/PHASE):** 225 **MOUNTING:** SURFACE
PHASE / WIRE: 3 / 4+G **INTERRUPTING RATING (KA):** 35 **LOCATION:**
200% NEUTRAL: NO **SERVICE ENTRANCE LABEL:** NO **BUILDING:** ADMIN BUILDING

WIRING PHASE	NEUT.	GRND.	COND.	CKT NO.	DESCRIPTION	CONNECTED LOAD (VA) LTS	REC	MECH	MISC	OCP AMPS	P		OCP AMPS	P	CONNECTED LOAD (VA) LTS	REC	MECH	MISC	DESCRIPTION	CKT NO.	WIRING PHASE	NEUT.	GRND.	COND.
***	***	***	***	1	TELEMETRY				100	20	1	A	20	2		500			220V REC	2	***	***	***	***
***	***	***	***	3	POLE LIGHT				100	20	1	B				500				4	***	***	***	***
***	***	***	***	5	SUPERVISOR OFFICE				100	20	1	C	20	1	500				LIGHTS (HALOGEN)	6	***	***	***	***
***	***	***	***	7	OUTSIDE REC N				1,080	20	1	A	20	1	500				LIGHTS	8	***	***	***	***
***	***	***	***	9	RECEPTACLES				1,080	20	1	B	20	1				500	HIGH SERVICE METER PIT	10	***	***	***	***
				11							1	C	15	1		360			110V REC	12	***	***	***	***
				13				8,314			1	A	100	2				500	PANEL (LAB)	14	***	***	***	***
3	3	8	1-1/4"	15	WATER HEATER			8,314		80	1	B						500		16				
				17				8,314			1	C		1					SPACE	18				
				19	SPARE				500	20	1	A		1	395				NEW ADMIN LIGHTS	20	12	12	12	3/4"
				21	SPARE				500	20	1	B		1		720			NEW ADMIN REC	22	12	12	12	3/4"
				23	SPARE				500	20	1	C		1					SPACE	24				
				25	SPARE				500	20	1	A		1					SPACE	26				
				27	SPARE				500	20	1	B		1					SPACE	28				
				29	SPARE				500	20	1	C		1					SPACE	30				
				31	SPACE						1	A		1					SPACE	32				
				33	SPACE						1	B		1					SPACE	34				
				35	SPACE						1	C		1					SPACE	36				
				37	SPACE						1	A								38				
				39	SPACE						1	B	60	3					SPD (TVSS)	40	*	*	*	*
				41	SPACE						1	C								42				

NOTES:

LOAD SUMMARY

	LTS	REC	MECH	MISC**	SPARE	TOTAL
CONNECTED LOAD (KVA)	1.4	2.1	24.9	7.0	---	35.4
DEMAND FACTOR	1.25	NEC	1.00	1.00	20%	---
DESIGN LOAD (KVA)	1.7	2.1	24.9	7.0	7.1	42.8

208	LINE-TO-LINE VOLTS	PHASE A (KVA)	12
98	CONNECTED AMPS	PHASE B (KVA)	13
119	DESIGN AMPS	PHASE C (KVA)	10

NOTES:
* REFER TO ONE-LINE DIAGRAM
** MISC DEMAND INCLUDES 25% OF LARGEST MOTOR KVA
*** EXISTING

PANELBOARD NO: LP-EB

VOLTAGE (L-L): 208 **BUS RATING (A):** 225 **ENCLOSURE:** NEMA 12
VOLTAGE (L-N): 120 **MAIN OC DEVICE (A/PHASE):** 225 **MOUNTING:** SURFACE
PHASE / WIRE: 3 / 4+G **INTERRUPTING RATING (KA):** 35 **LOCATION:**
200% NEUTRAL: NO **SERVICE ENTRANCE LABEL:** NO **BUILDING:** ELECTRICAL BUILDING

WIRING PHASE	NEUT.	GRND.	COND.	CKT NO.	DESCRIPTION	CONNECTED LOAD (VA) LTS	REC	MECH	MISC	OCP AMPS	P		OCP AMPS	P	CONNECTED LOAD (VA) LTS	REC	MECH	MISC	DESCRIPTION	CKT NO.	WIRING PHASE	NEUT.	GRND.	COND.
12	12	12	3/4"	1	ELEC. BUILDING LIGHTS	307				20	1	A	20	1				500	GENERATOR REMOTE ANNUNCIATOR PANEL	2	12	12	12	3/4"
12	12	12	3/4"	3	ELEC. BUILDING REC		360			20	1	B	20	2			1,000		AC-1	4	12	12	12	3/4"
12	12	12	3/4"	5	LCP-EB				1,000	20	1	C					1,000			6				
				7	SPACE						1	A			100				GENERATOR PWR PANEL LP-GEN	8				
				9	SPACE						1	B	100	3		500				10	1	1	6	2"
				11	SPACE						1	C						3,000		12				
				13	SPACE						1	A	20	1				500	SPARE	14				
				15	SPACE						1	B	20	1				500	SPARE	16				
				17	SPACE						1	C	20	1				500	SPARE	18				
				19	SPACE						1	A	20	1				500	SPARE	20				
				21	SPACE						1	B	20	1				500	SPARE	22				
				23	SPACE						1	C	20	1				500	SPARE	24				
				25	SPACE						1	A		1					SPACE	26				
				27	SPACE						1	B		1					SPACE	28				
				29	SPACE						1	C		1					SPACE	30				

NOTES:

LOAD SUMMARY

	LTS	REC	MECH	MISC**	SPARE	TOTAL
CONNECTED LOAD (KVA)	0.4	0.9	2.0	7.5	---	10.8
DEMAND FACTOR	1.25	NEC	1.00	1.00	20%	---
DESIGN LOAD (KVA)	0.5	0.9	2.0	7.5	2.2	13.0

208	LINE-TO-LINE VOLTS	PHASE A (KVA)	2
30	CONNECTED AMPS	PHASE B (KVA)	3
36	DESIGN AMPS	PHASE C (KVA)	6

NOTES:
* REFER TO ONE-LINE DIAGRAM
** MISC DEMAND INCLUDES 25% OF LARGEST MOTOR KVA
*** EXISTING

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

PANELBOARD & LIGHT FIXTURE SCHEDULES

FILENAME 00E-02.dwg
SCALE 1/2"=1'-0"

SHEET **00E-02**

PANELBOARD NO: PA (EXISTING)

VOLTAGE (L-L): 208 **BUS RATING (A):** 225 **ENCLOSURE:** NEMA 12
VOLTAGE (L-N): 120 **MAIN OC DEVICE (A/PHASE):** 150 **MOUNTING:** SURFACE
PHASE / WIRE: 3 / 4+G **INTERRUPTING RATING (KA):** 35 **LOCATION:**
200% NEUTRAL: NO **SERVICE ENTRANCE LABEL:** NO **BUILDING:** FILTER BUILDING

WIRING				CKT		CONNECTED LOAD (VA)				OCP			OCP		CONNECTED LOAD (VA)					CKT	WIRING			
PHASE	NEUT.	GRND.	COND.	NO.	DESCRIPTION	LTS	REC	MECH	MISC	AMPS	P		AMPS	P	LTS	REC	MECH	MISC	DESCRIPTION	NO.	PHASE	NEUT.	GRND.	COND.
***	***	***	***	1	BLDG PERIMETER LTS & REC	1,800				20	1	A	20	1			700		UNIT HEATERS	2	***	***	***	***
***	***	***	***	3	FILTER BLDG LTS	1,900				20	1	B	20	1			500		UNIT HEATERS	4	***	***	***	***
***	***	***	***	5	FILTER BLDG LTS	1,200				20	1	C	20	1			860		EX. FAN 1	6	***	***	***	***
***	***	***	***	7	FILTER BLDG LTS	1,350				20	1	A	20	1			860		EX. FAN 6	8	***	***	***	***
***	***	***	***	9	FILTER BLDG LTS	1,600				20	1	B	20	1			900		EX. FANS 2, 3, 4, & 7	10	***	***	***	***
***	***	***	***	11	FILTER BLDG LTS	1,200				20	1	C	20	1			1,000		ELEC. WALL HEATER	12	***	***	***	***
***	***	***	***	13	FILTER BLDG LTS	1,500				20	1	A	20	2			1,300		ELEC. UNIT HEATER	14	***	***	***	***
***	***	***	***	15	FILTER BLDG REC		900			20	1	B					1,300			16	***	***	***	***
***	***	***	***	17	FILTER BLDG REC		1,080			20	1	C	20	2			1,300		ELEC. UNIT HEATER	18	***	***	***	***
***	***	***	***	19	FILTER BLDG REC		1,080			20	1	A					1,300			20	***	***	***	***
***	***	***	***	21	FILTER BLDG REC		1,080			20	1	B	20	1			1,500		AIR COND. UNIT	22	***	***	***	***
***	***	***	***	23	LOUVERS & MAG STARTERS				720	20	1	C	20	1				500	RAW WATER TURB. INST.	24	***	***	***	***
***	***	***	***	25	SPARE				500	20	1	A	20	1				500	RECPT. WATER VAULT & CONSOLE 1	26	***	***	***	***
***	***	***	***	27	SPARE				500	20	1	B	20	1				700	POT. PERM. SATURATOR	28	***	***	***	***
***	***	***	***	29	SPARE				500	20	1	C	20	1				700	FLUORIDE SATURATOR	30	***	***	***	***
***	***	***	***	31	SPARE				500	20	1	A	20	1				700	CAUSTIC METERING PUMP 1	32	***	***	***	***
***	***	***	***	33	STATUS PANEL, CLEARWELL TRANS.				1,000	20	1	B	20	1				700	CAUSTIC METERING PUMP 2	34	***	***	***	***
***	***	***	***	35	SPARE				500	20	1	C	20	1				700	ALUM METERING PUMP 1	36	***	***	***	***
***	***	***	***	37	SPARE				500	20	1	A	20	1				700	ALUM METERING PUMP 2	38	***	***	***	***
***	***	***	***	39	SPARE				500	20	1	B	20	1				860	CAUSTIC TRANS. PUMP	40	***	***	***	***
***	***	***	***	41	SPARE				500	20	1	C	20	1				860	ALUM TRANSFER PUMP	42	***	***	***	***

NOTES:

LOAD SUMMARY

	LTS	REC	MECH	MISC**	SPARE	TOTAL			PHASE BALANCE	
CONNECTED LOAD (KVA)	10.6	4.1	11.5	12.6	---	38.9	208	LINE-TO-LINE VOLTS	PHASE A (KVA)	13
DEMAND FACTOR	1.25	NEC	1.00	1.00	20%	---	108	CONNECTED AMPS	PHASE B (KVA)	14
DESIGN LOAD (KVA)	13.2	4.1	11.5	12.6	7.8	49.3	137	DESIGN AMPS	PHASE C (KVA)	12

NOTES:
* REFER TO ONE-LINE DIAGRAM
** MISC DEMAND INCLUDES 25% OF LARGEST MOTOR KVA
*** EXISTING

PANELBOARD NO: PB (EXISTING)

VOLTAGE (L-L): 208 **BUS RATING (A):** 100 **ENCLOSURE:** NEMA 12
VOLTAGE (L-N): 120 **MAIN OC DEVICE (A/PHASE):** 100 **MOUNTING:** SURFACE
PHASE / WIRE: 3 / 4+G **INTERRUPTING RATING (KA):** 35 **LOCATION:** ELECTRICAL RACK
200% NEUTRAL: NO **SERVICE ENTRANCE LABEL:** NO **BUILDING:** MIOX BUILDING

WIRING				CKT		CONNECTED LOAD (VA)				OCP			OCP		CONNECTED LOAD (VA)					CKT	WIRING			
PHASE	NEUT.	GRND.	COND.	NO.	DESCRIPTION	LTS	REC	MECH	MISC	AMPS	P		AMPS	P	LTS	REC	MECH	MISC	DESCRIPTION	NO.	PHASE	NEUT.	GRND.	COND.
12	12	12	3/4"	1	EXTERIOR LIGHTS	312				20	1	A	30	2			2,500		ELEC. UNIT HEATER	2	10	10	10	3/4"
12	12	12	3/4"	3	INTERIOR LIGHTS	230				20	1	B					2,500			4				
12	12	12	3/4"	5	RECEPTACLES		540			20	1	C	20	2			1,300		ELEC. UNIT HEATER	6	12	12	12	3/4"
12	12	12	3/4"	7	HYDROGEN MONITOR				500	20	1	A					1,300			8				
***	***	***	***	9	SPARE					20	1	B							SPACE	10				
***	***	***	***	11	SPARE					20	1	C							SPACE	12				

NOTES:

LOAD SUMMARY

	LTS	REC	MECH	MISC**	SPARE	TOTAL			PHASE BALANCE	
CONNECTED LOAD (KVA)	0.5	0.5	7.6	0.5	---	9.2	208	LINE-TO-LINE VOLTS	PHASE A (KVA)	5
DEMAND FACTOR	1.25	NEC	1.00	1.00	20%	---	25	CONNECTED AMPS	PHASE B (KVA)	3
DESIGN LOAD (KVA)	0.7	0.5	7.6	0.5	1.8	11.2	31	DESIGN AMPS	PHASE C (KVA)	2

NOTES:
* REFER TO ONE-LINE DIAGRAM
** MISC DEMAND INCLUDES 25% OF LARGEST MOTOR KVA
*** EXISTING

PANELBOARD NO: PP-FB

VOLTAGE (L-L): 480 **BUS RATING (A):** 225 **ENCLOSURE:** NEMA 12
VOLTAGE (L-N): 277 **MAIN OC DEVICE (A/PHASE):** 150 **MOUNTING:** SURFACE
PHASE / WIRE: 3 / 4+G **INTERRUPTING RATING (KA):** **LOCATION:** LOWER LEVEL
200% NEUTRAL: NO **SERVICE ENTRANCE LABEL:** **BUILDING:** FILTER BUILDING

WIRING				CKT		CONNECTED LOAD (VA)				OCP			OCP		CONNECTED LOAD (VA)					CKT	WIRING			
PHASE	NEUT.	GRND.	COND.	NO.	DESCRIPTION	LTS	REC	MECH	MISC	AMPS	P		AMPS	P	LTS	REC	MECH	MISC	DESCRIPTION	NO.	PHASE	NEUT.	GRND.	COND.
				1	45KVA 480V-120Y/208V XFMR FOR EXISTING PANEL PA					15,290		A					720			2				
2	2	8	1-1/2"	3						15,540	70	3	B	15	3			720		EX FAN - PIPE GALLERY	4	12	12	12	3/4"
				5						14,120			C					720			6				
				7	30KVA 480V-120Y/208V XFMR FOR NEW PANEL LP-FB					4,000		A					940			8				
6	6	8	1-1/4"	9						4,000	50	3	B	15	3			940		MECH MIXER - PIPE GALLERY	10	12	12	12	3/4"
				11						4,000			C					940			12				
				13	PANEL PPB (FLOC/SED)					6,160			A						5,000		14				
8	8	8	1-1/4"	15						6,160	30	3	B	30	3				5,000	MIOX BLDG ELECTRIC SERVICE RACK	16	8	8	8	1-1/4"
				17						6,160			C						5,000		18				
				19	SPACE								A							SPACE	20				
				21	SPACE							3	B		3					SPACE	22				
				23	SPACE								C							SPACE	24				
													A								L1				
					SPD (TVSS)						N/A	3	B	N/A	3						L2				
					CONNECTED TO BUS								C								L3				

NOTES:

LOAD SUMMARY

	LTS	REC	MECH	MISC**	SPARE	TOTAL			PHASE BALANCE	
CONNECTED LOAD (KVA)	0.0	0.0	5.0	90.4	---	95.4	480	LINE-TO-LINE VOLTS	PHASE A (KVA)	32
DEMAND FACTOR	1.25	NEC	1.00	1.03	20%	---	115	CONNECTED AMPS	PHASE B (KVA)	32
DESIGN LOAD (KVA)	0.0	0.0	5.0	93.3	19.1	117.4	141	DESIGN AMPS	PHASE C (KVA)	31

NOTES:
* REFER TO ONE-LINE DIAGRAM
** MISC DEMAND INCLUDES 25% OF LARGEST MOTOR KVA

PANELBOARD NO: LP-FB

VOLTAGE (L-L): 240 **BUS RATING (A):** 100 **ENCLOSURE:** NEMA 12
VOLTAGE (L-N): 120 **MAIN OC DEVICE (A/PHASE):** 100 **MOUNTING:** SURFACE
PHASE / WIRE: 3 / 4+G **INTERRUPTING RATING (KA):** 35 **LOCATION:** LOWER LEVEL
200% NEUTRAL: NO **SERVICE ENTRANCE LABEL:** NO **BUILDING:** FILTER BUILDING

WIRING				CKT		CONNECTED LOAD (VA)				OCP			OCP		CONNECTED LOAD (VA)					CKT	WIRING			
PHASE	NEUT.	GRND.	COND.	NO.	DESCRIPTION	LTS	REC	MECH	MISC	AMPS	P		AMPS	P	LTS	REC	MECH	MISC	DESCRIPTION	NO.	PHASE	NEUT.	GRND.	COND.
12	12	12	3/4"	1	LOWER LEVEL LIGHTS	936				20	1	A	20	1				500	LE/LIT-301	2	12	12	12	3/4"
12	12	12	3/4"	3	LOWER LEVEL LIGHTS	728				20	1	B	20	1				500	LE/LIT-302	4	12	12	12	3/4"
12	12	12	3/4"	5	UPPER LEVEL LIGHTS	1,144				20	1	C	20	1				500	LE/LIT-303	6	12	12	12	3/4"
12	12	12	3/4"	7	LCP-FB				1,000	20	1	A	20	1				500	LE/LIT-304	8	12	12	12	3/4"
				9	SPACE						1	B	20	1				1,000	SPARE	10				
				11	SPACE						1	C	20	1				1,000	SPARE	12				
				13	SPACE						1	A	20	1				1,000	SPARE	14				
				15	SPACE						1	B	20	1				1,000	SPARE	16				
				17	SPACE						1	C	20	1					SPACE	18				
				19	SPACE						1	A	20	1					SPACE	20				
				21	SPACE						1	B	20	1					SPACE	22				
				23	SPACE						1	C	20	1					SPACE	24				

NOTES:

LOAD SUMMARY

	LTS	REC	MECH	MISC**	SPARE	TOTAL			PHASE BALANCE	
CONNECTED LOAD (KVA)	2.8	0.0	0.0	7.0	---	9.8	240	LINE-TO-LINE VOLTS	PHASE A (KVA)	4
DEMAND FACTOR	1.25	NEC	---	1.00	20%	---	24	CONNECTED AMPS	PHASE B (KVA)	3
DESIGN LOAD (KVA)	3.5	0.0	0.0	7.0	2.0	12.5	30	DESIGN AMPS	PHASE C (KVA)	3

NOTES:
* REFER TO ONE-LINE DIAGRAM
** MISC DEMAND INCLUDES 25% OF LARGEST MOTOR KVA
*** EXISTING

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

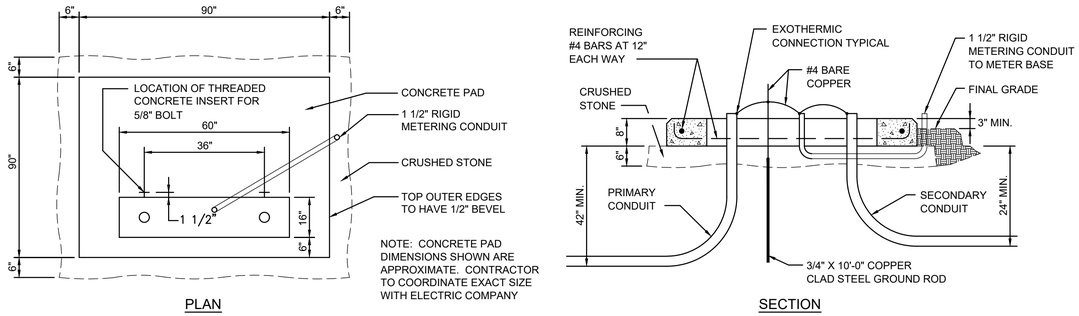
PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

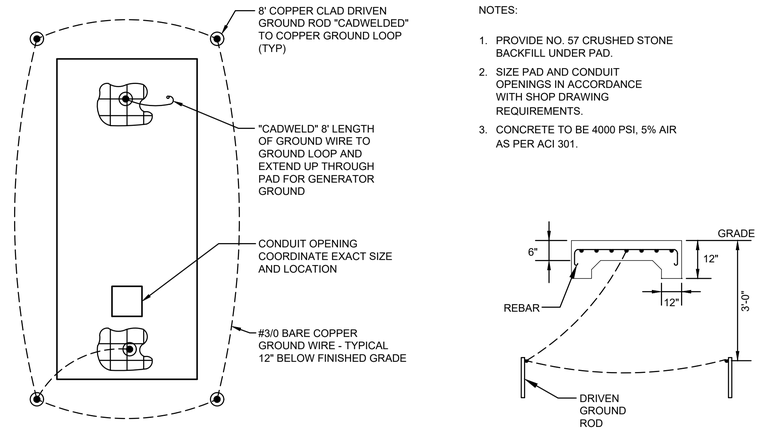
PANELBOARD SCHEDULES

FILENAME 00E-03.dwg **SCALE** NO SCALE **SHEET** 00E-03



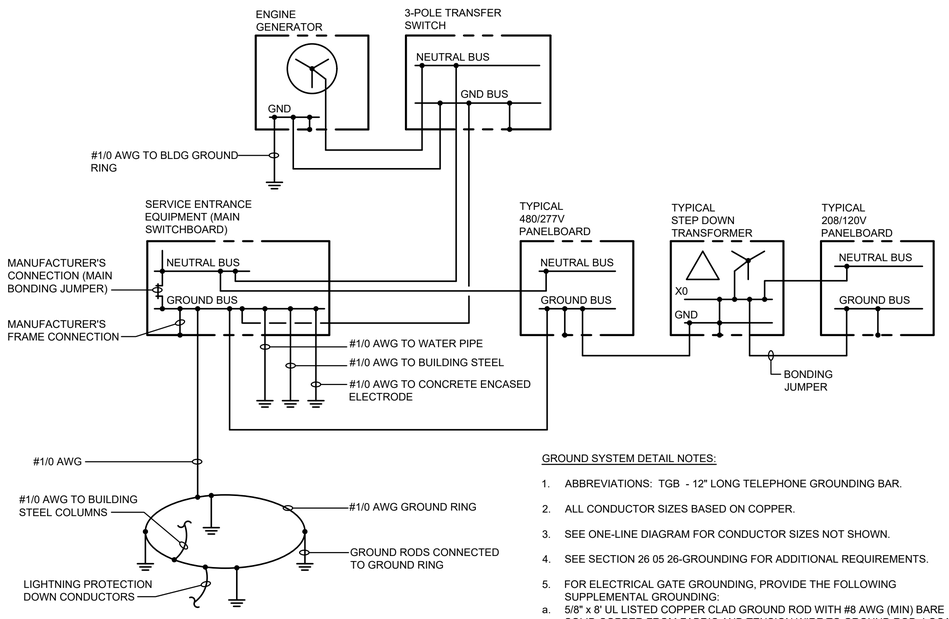
TRANSFORMER PAD DETAIL

NO SCALE



GENERATOR CONCRETE PAD/GROUNDING DETAIL

NO SCALE

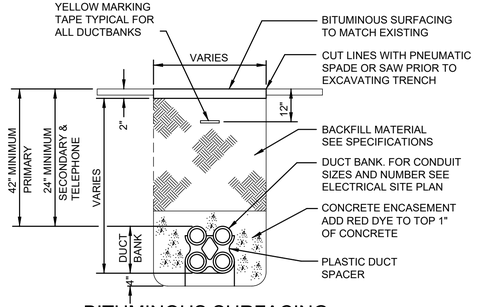


GROUND SYSTEM DETAIL NOTES:

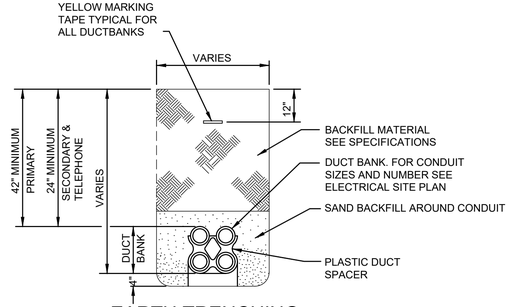
1. ABBREVIATIONS: TGB - 12" LONG TELEPHONE GROUNDING BAR.
2. ALL CONDUCTOR SIZES BASED ON COPPER.
3. SEE ONE-LINE DIAGRAM FOR CONDUCTOR SIZES NOT SHOWN.
4. SEE SECTION 26 05 26-GROUNDING FOR ADDITIONAL REQUIREMENTS.
5. FOR ELECTRICAL GATE GROUNDING, PROVIDE THE FOLLOWING SUPPLEMENTAL GROUNDING:
   a. 5/8" x 8' UL LISTED COPPER CLAD GROUND ROD WITH #8 AWG (MIN) BARE SOLID COPPER FROM FABRIC AND TENSION WIRE TO GROUND ROD. LOCATE GROUND RODS WITHIN 25' OF EACH SIDE OF THE GATE.
   b. 3/4" x 10' UL LISTED COPPER CLAD GROUND ROD WITH #6 AWG BARE COPPER GROUNDING ELECTRODE CONDUCTOR BONDED TO THE GATE OPERATOR FRAME.
   c. PROVIDE GROUND CONNECTION TO CARBON BED.

GROUNDING DIAGRAM

NOT TO SCALE



BITUMINOUS SURFACING



EARTH TRENCHING

TRENCHING DETAILS

N.T.S.

DUCT LINE NOTES

1. SURFACES MUST BE CUT PATCHED AND OTHERWISE REPAIRED TO MATCH EXISTING CONDITIONS. REMOVE CONCRETE CURBS, SIDEWALKS AND ASPHALT PAVING AS REQUIRED.
2. PROVIDE PLASTIC DUCT SPACERS AT A MINIMUM OF 8' INTERVALS. SECURE DUCT TO SPACERS AND ANCHOR EACH SPACER.
3. CONCRETE ENCASEMENT SHALL BE 2500 PSI AT 28 DAYS.
4. PITCH ALL DUCT BANKS TO DRAIN INTO PULLBOXES.
5. ALL SPARE DUCTS SHALL BE PLUGGED WITH A STANDARD DUCT PLUG FITTING.

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

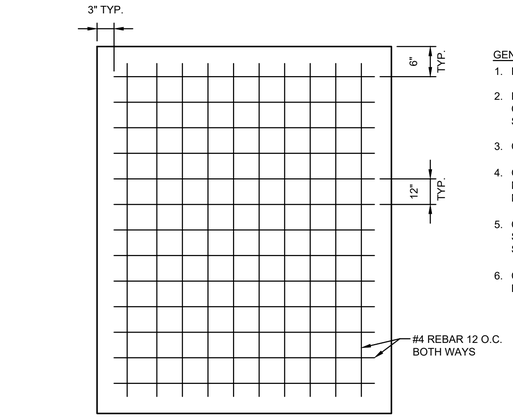
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

ELECTRICAL DETAILS

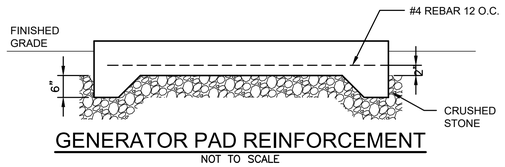
FILENAME	00E-04.dwg
SCALE	1/2"=1'-0"

SHEET **00E-04**



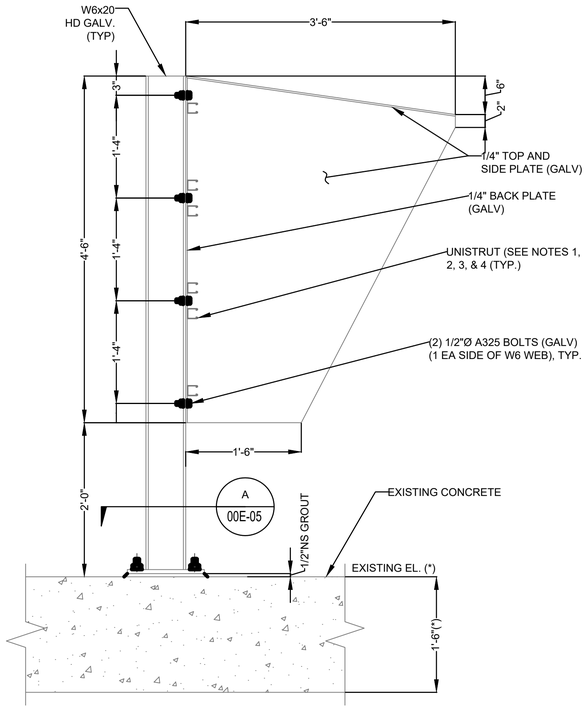
GENERATOR PAD NOTES:

1. PROVIDE CRUSHED STONE BACKFILL UNDER PAD.
2. PROVIDE OPENING IN PAD FOR CONDUITS. SIZE OPENING IN ACCORDANCE WITH SHOP DRAWING SUBMITTALS.
3. CONCRETE TO BE 4000 PSI MINIMUM.
4. GENERATOR PAD TO BE A MIN. OF 8" THICK OR MORE AS RECOMMENDED BY GENERATOR MANUFACTURER.
5. CONCRETE PAD TO EXTEND 3' BEYOND ALL FOUR SIDES OF THE GENERATOR. COORDINATE EXACT SIZE WITH GENERATOR MANUFACTURER.
6. CONCRETE PAD FOR ELECTRICAL EQUIPMENT TO BE A MINIMUM OF 6" THICK.



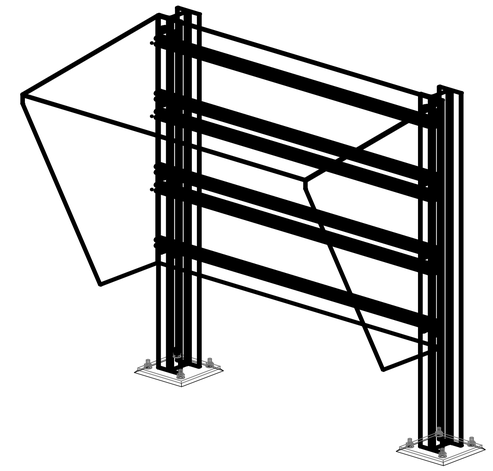
GENERATOR PAD REINFORCEMENT

NOT TO SCALE



ELECTRICAL EQUIPMENT CANOPY

1' = 1'-0"

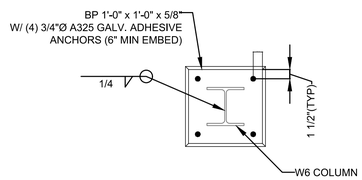


ELECTRICAL EQUIPMENT CANOPY

N.T.S.

STANCHION MOUNTED LIGHT FIXTURE DETAIL

NOT TO SCALE



SECTION A

1' = 1'-0"

NOTES:

1. UNISTRUT: P1000 (1-5/8" x 1-5/8") HD GALVANIZED.
2. ADJUST LENGTH OF UNISTRUT AS REQUIRED.
3. CONNECT UNISTRUT TO W6 MAMBERS AND TO BACK PLATE AT 2'-0" OC (MAX, TYP).
4. GC TO VERIFY WEIGHT OF ELECTRICAL EQUIPMENT AND ADJUST UNISTRUT QUANTITY AS REQUIRED.
5. (*) INDICATED DIMENSION TO BE FIELD VERIFIED PRIOR TO INSTALLATION OF STRUCTURE.
6. GC TO LOCATE ALL CONCRETE REINFORCEMENT PRIOR TO ANCHOR INSTALLATION TO AVOID DAMAGES.
7. EPOXY TO BE HILTI-HY 200 OR APPROVED EQUAL.
8. HOOD TO BE FULLY SHOP WELDED PER AWS D1.1/D1.1M PRIOR TO INSTALLATION.

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

ELECTRICAL DETAILS

FILENAME	00E-05.dwg
SCALE	NOT TO SCALE

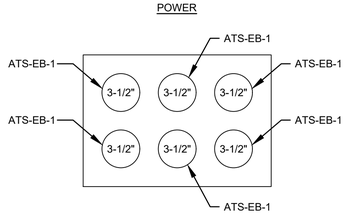
SHEET **00E-05**

GENERAL NOTES:

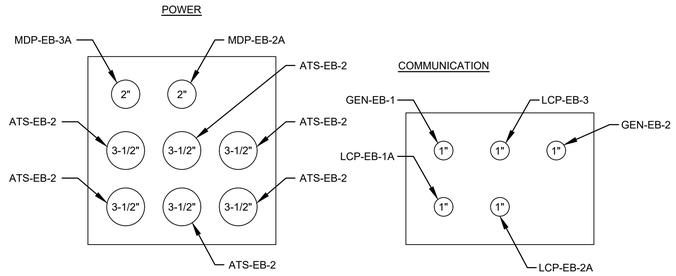
A. FOR POWER WIRE AND CONDUIT SIZES SEE ELECTRICAL ONE LINES SHEETS 01E-04 AND 01E-05, AND PANEL SCHEDULES SHEETS 00E-02 AND 00E-03.

B. FOR INSTRUMENTATION WIRE AND CONDUIT SIZES SEE INSTRUMENT ONE LINES SHEET 01E-27.

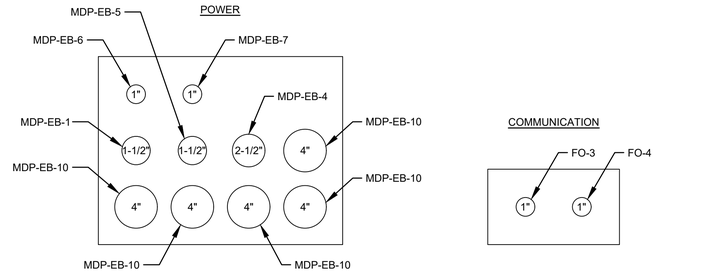
C. SEE SITE PLAN SHEET 01E-01 FOR DUCTBANK LOCATIONS.



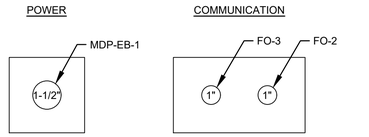
1 / 01E-01



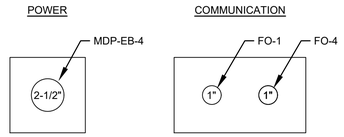
2 / 01E-01



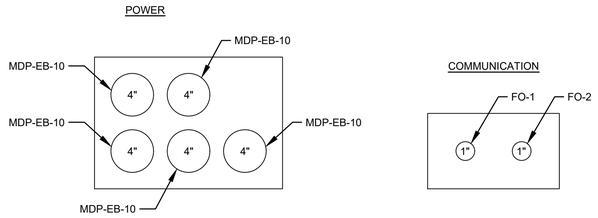
3 / 01E-01



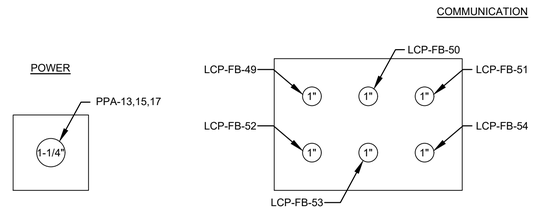
4 / 01E-01



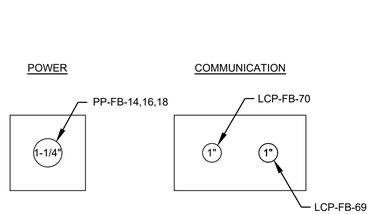
5 / 01E-01



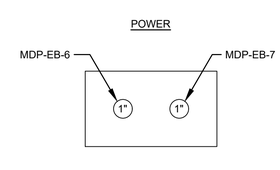
6 / 01E-01



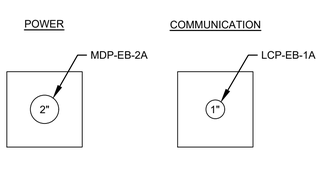
7 / 01E-01



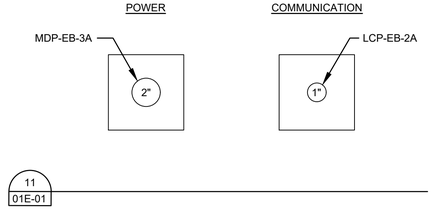
8 / 01E-01



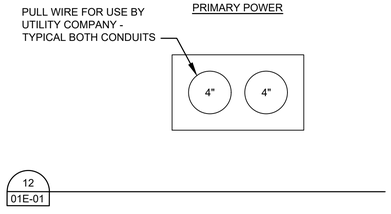
9 / 01E-01



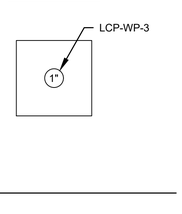
10 / 01E-01



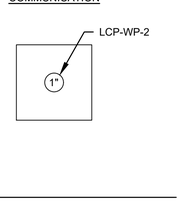
11 / 01E-01



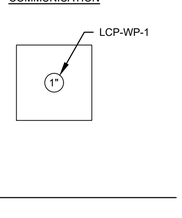
12 / 01E-01



13 / 01E-02



14 / 01E-02



15 / 01E-02

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

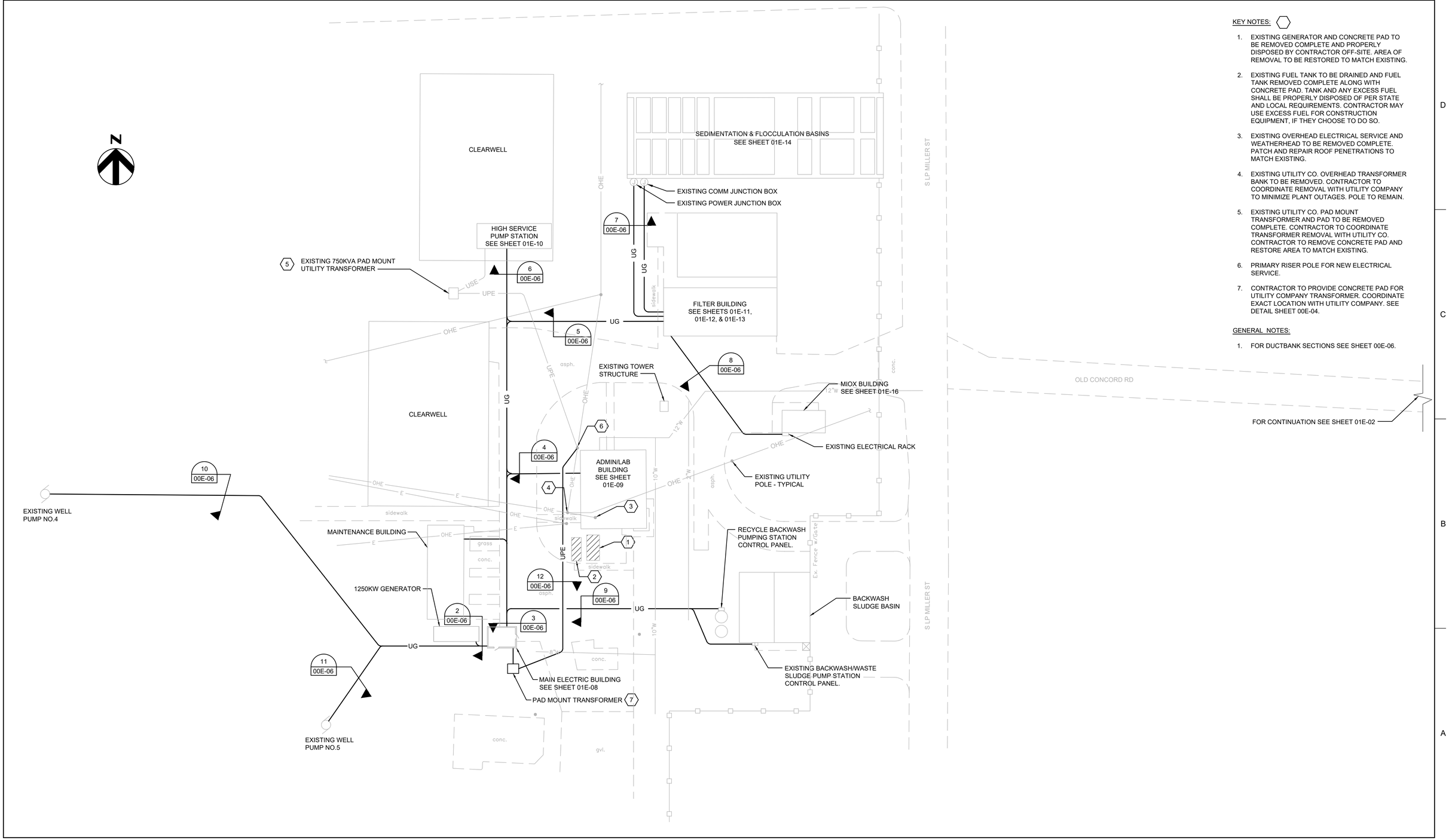
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

ELECTRICAL DUCTBANK SECTIONS

FILENAME	00E-06.dwg
SCALE	NO SCALE

SHEET **00E-06**



KEY NOTES:

1. EXISTING GENERATOR AND CONCRETE PAD TO BE REMOVED COMPLETE AND PROPERLY DISPOSED BY CONTRACTOR OFF-SITE. AREA OF REMOVAL TO BE RESTORED TO MATCH EXISTING.
2. EXISTING FUEL TANK TO BE DRAINED AND FUEL TANK REMOVED COMPLETE ALONG WITH CONCRETE PAD. TANK AND ANY EXCESS FUEL SHALL BE PROPERLY DISPOSED OF PER STATE AND LOCAL REQUIREMENTS. CONTRACTOR MAY USE EXCESS FUEL FOR CONSTRUCTION EQUIPMENT, IF THEY CHOOSE TO DO SO.
3. EXISTING OVERHEAD ELECTRICAL SERVICE AND WEATHERHEAD TO BE REMOVED COMPLETE. PATCH AND REPAIR ROOF PENETRATIONS TO MATCH EXISTING.
4. EXISTING UTILITY CO. OVERHEAD TRANSFORMER BANK TO BE REMOVED. CONTRACTOR TO COORDINATE REMOVAL WITH UTILITY COMPANY TO MINIMIZE PLANT OUTAGES. POLE TO REMAIN.
5. EXISTING UTILITY CO. PAD MOUNT TRANSFORMER AND PAD TO BE REMOVED COMPLETE. CONTRACTOR TO COORDINATE TRANSFORMER REMOVAL WITH UTILITY CO. CONTRACTOR TO REMOVE CONCRETE PAD AND RESTORE AREA TO MATCH EXISTING.
6. PRIMARY RISER POLE FOR NEW ELECTRICAL SERVICE.
7. CONTRACTOR TO PROVIDE CONCRETE PAD FOR UTILITY COMPANY TRANSFORMER. COORDINATE EXACT LOCATION WITH UTILITY COMPANY. SEE DETAIL SHEET 00E-04.

GENERAL NOTES:

1. FOR DUCTBANK SECTIONS SEE SHEET 00E-06.

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

ELECTRICAL SITE PLAN I

FILENAME	01E-01.dwg
SCALE	1"=30'

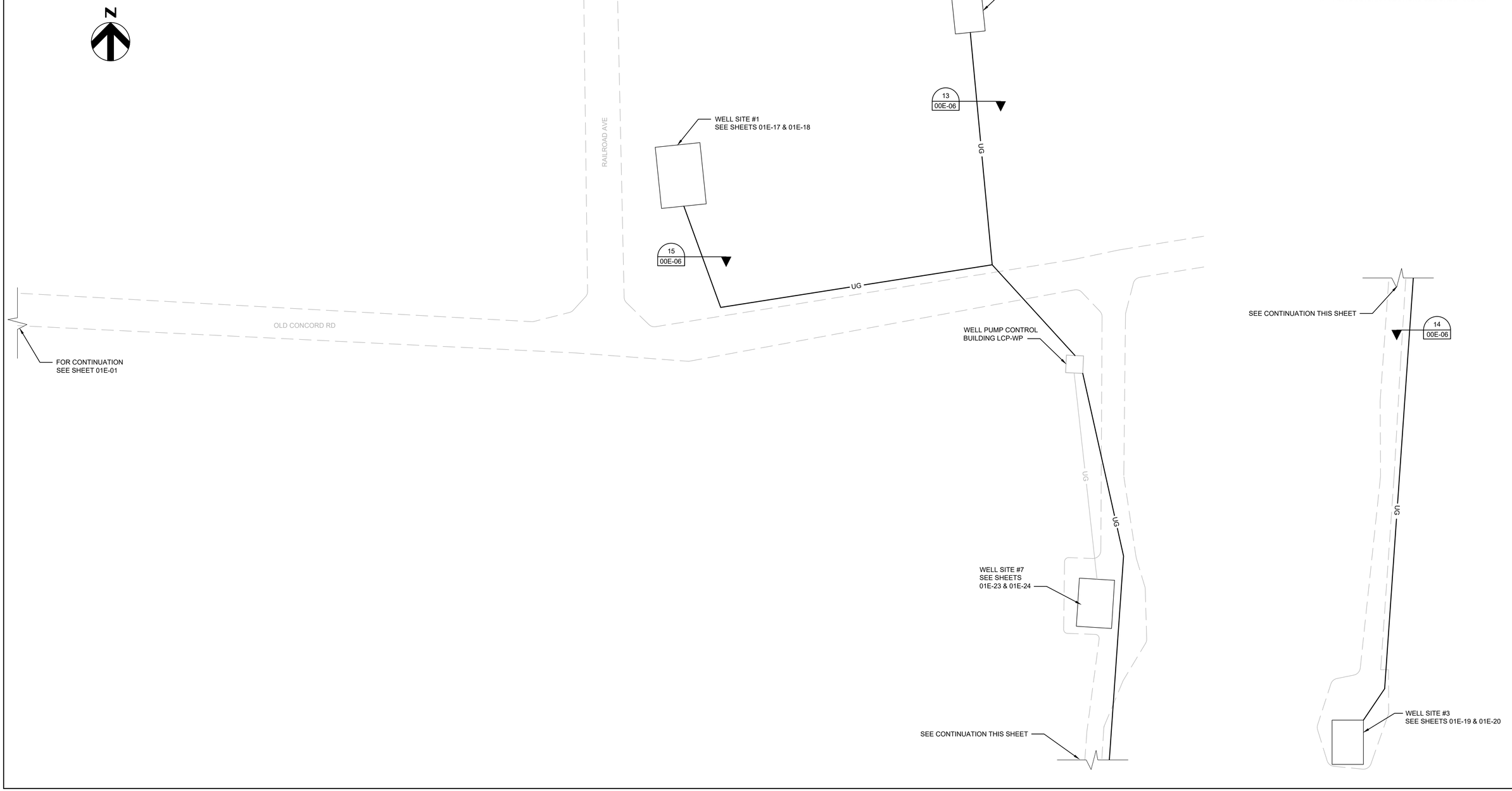
SHEET **01E-01**

KEY NOTES:

1. FOR INSTRUMENTATION WIRE AND CONDUIT SIZES, SEE SHEET 01E-27.

GENERAL NOTES:

1. FOR DUCTBANK SECTIONS SEE SHEET 00E-06.



ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

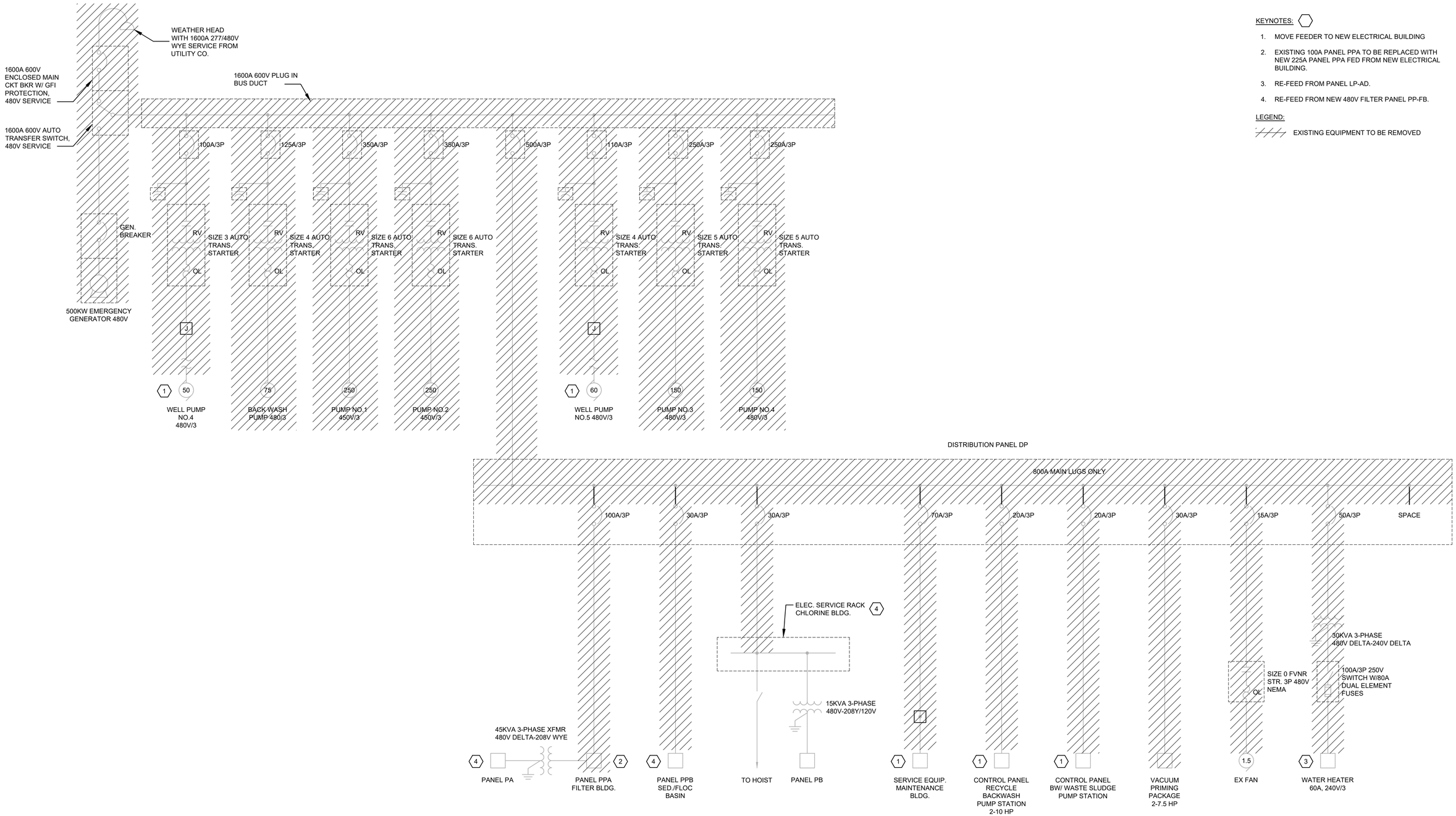
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

ELECTRICAL SITE PLAN II

FILENAME	01E-02.dwg
SCALE	1"=30'

SHEET **01E-02**



KEYNOTES: ⬡

1. MOVE FEEDER TO NEW ELECTRICAL BUILDING
2. EXISTING 100A PANEL PPA TO BE REPLACED WITH NEW 225A PANEL PPA FED FROM NEW ELECTRICAL BUILDING.
3. RE-FEED FROM PANEL LP-AD.
4. RE-FEED FROM NEW 480V FILTER PANEL PP-FB.

LEGEND:

EXISTING EQUIPMENT TO BE REMOVED

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

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QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

EXISTING ONE-LINE DIAGRAM

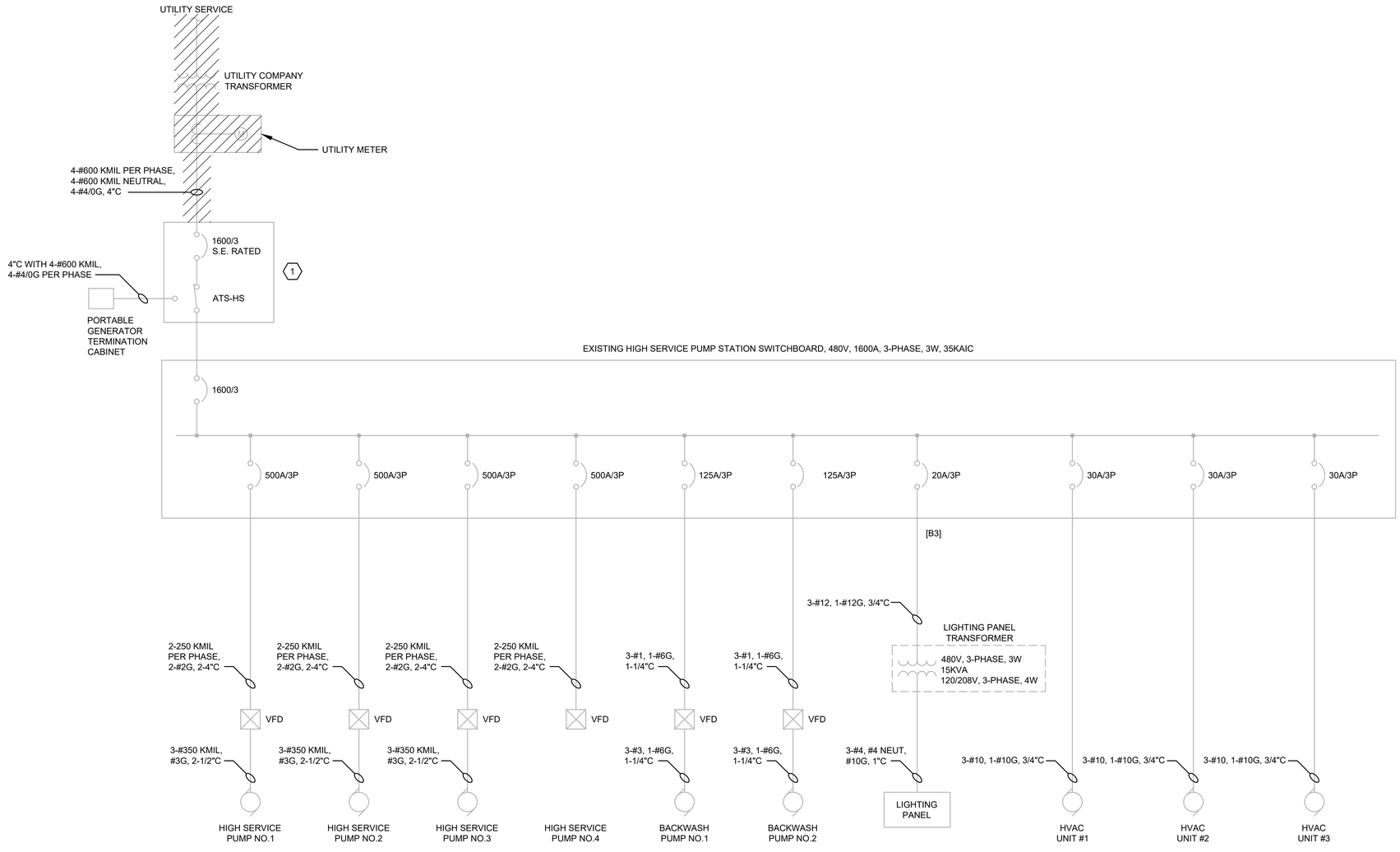
FILENAME	01E-03.dwg
SCALE	NO SCALE
SHEET	01E-03

GENERAL NOTES:

1. FOR MODIFICATIONS TO HIGH SERVICE PUMP STATION FEEDER, SEE SHEET 01E-05.

KEYNOTES: ⬡

1. TRANSFER SWITCH TO OPERATE IN MANUAL MODE ONLY FOR CONNECTION TO PORTABLE GENERATOR HOOK-UP.



ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
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QA/QC	
PROJECT NUMBER	10114225

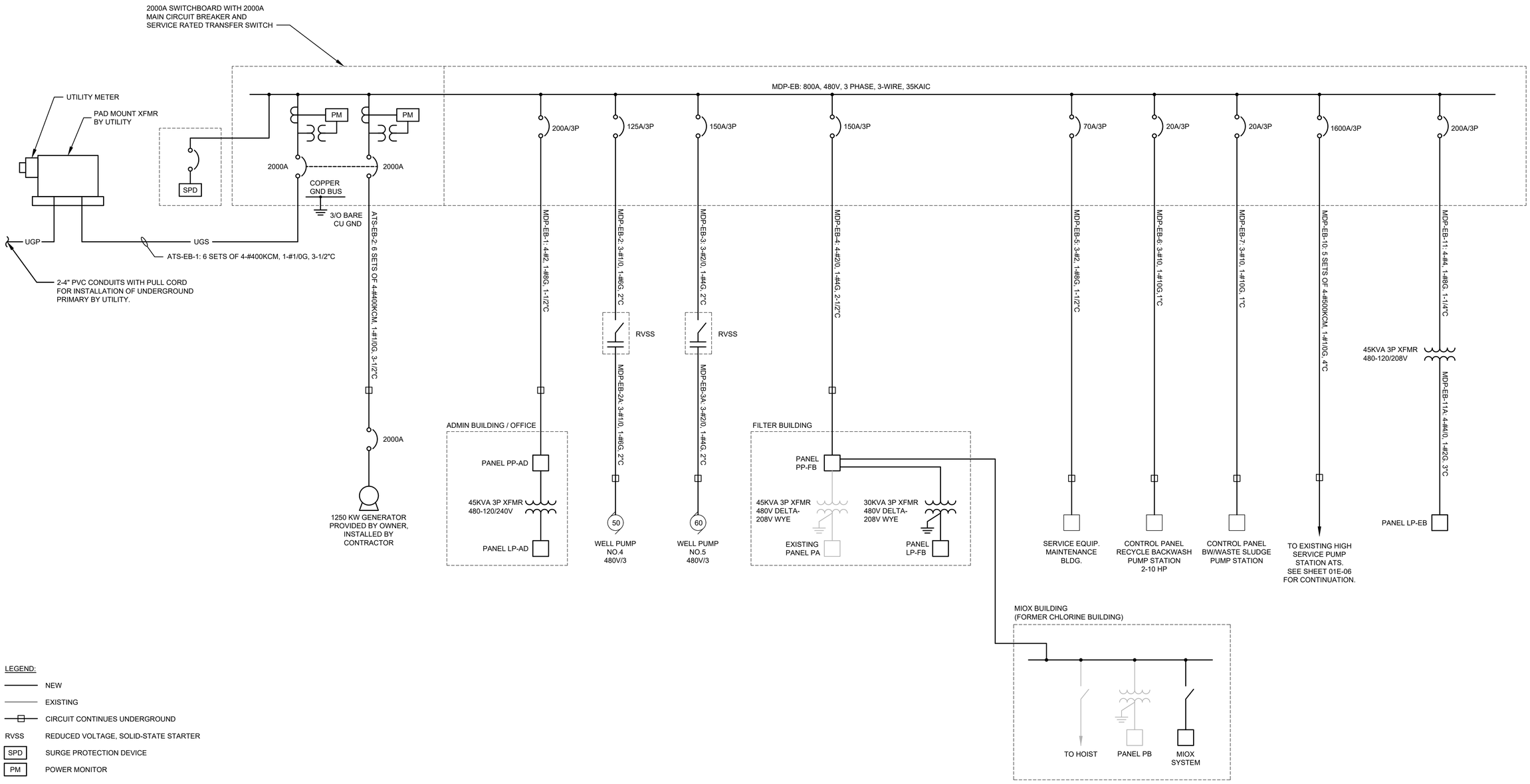
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

EXISTING HIGH SERVICE PS ELECTRICAL ONE-LINE DIAGRAM

FILENAME	01E-04.dwg
SCALE	N.T.S.

SHEET **01E-04**



ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
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DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

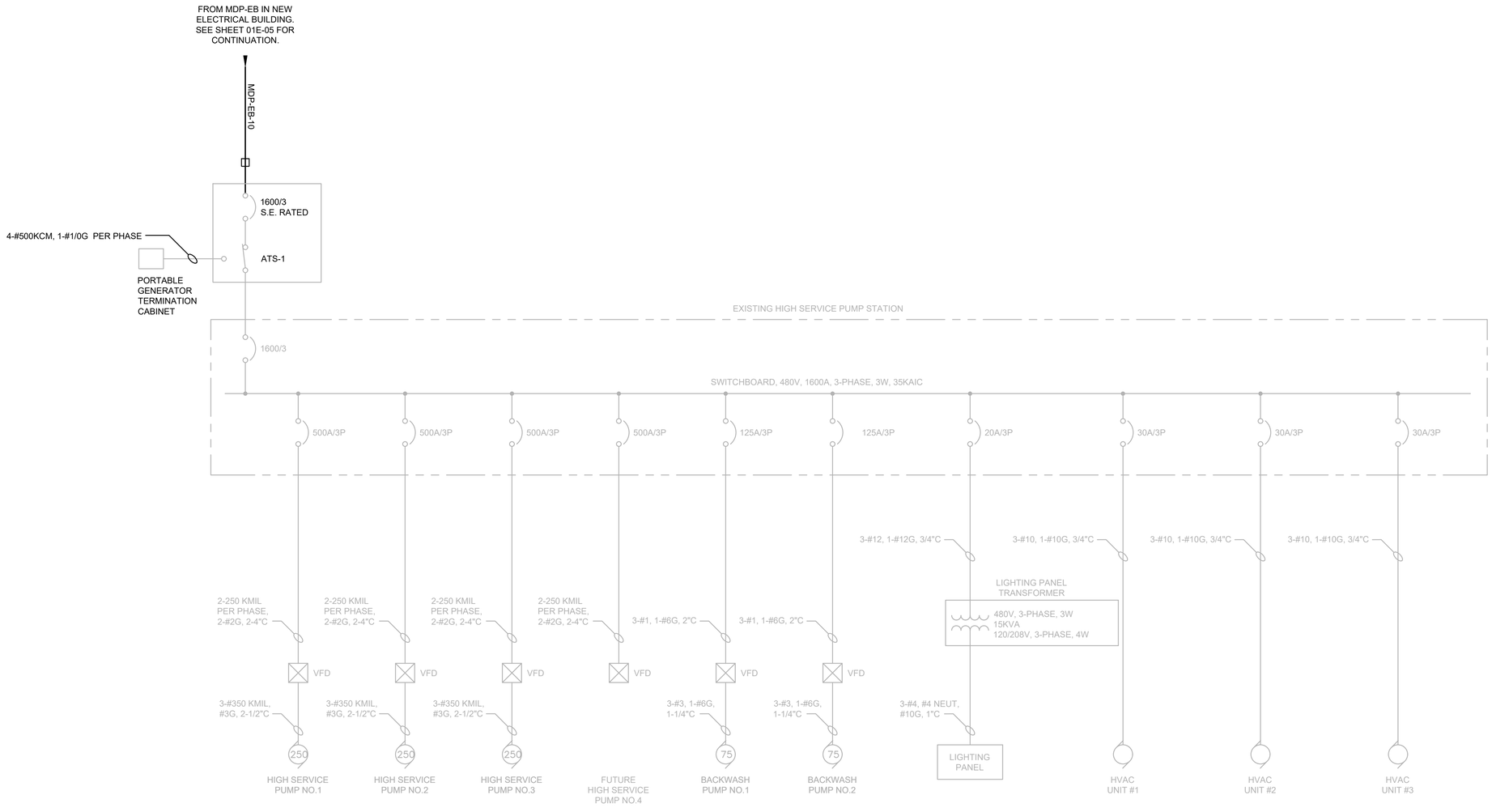
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

PROPOSED PLANT ELECTRICAL ONE-LINE DIAGRAM

FILENAME	01E-05.dwg
SCALE	N.T.S.

SHEET 01E-05



LEGEND:

- NEW
- EXISTING
- CIRCUIT CONTINUES UNDERGROUND
- PUMP CONTROLLER
- RVSS — REDUCED VOLTAGE, SOLID-STATE STARTER
- VFD — VARIABLE FREQUENCY DRIVE

ISSUE	DATE	DESCRIPTION
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QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

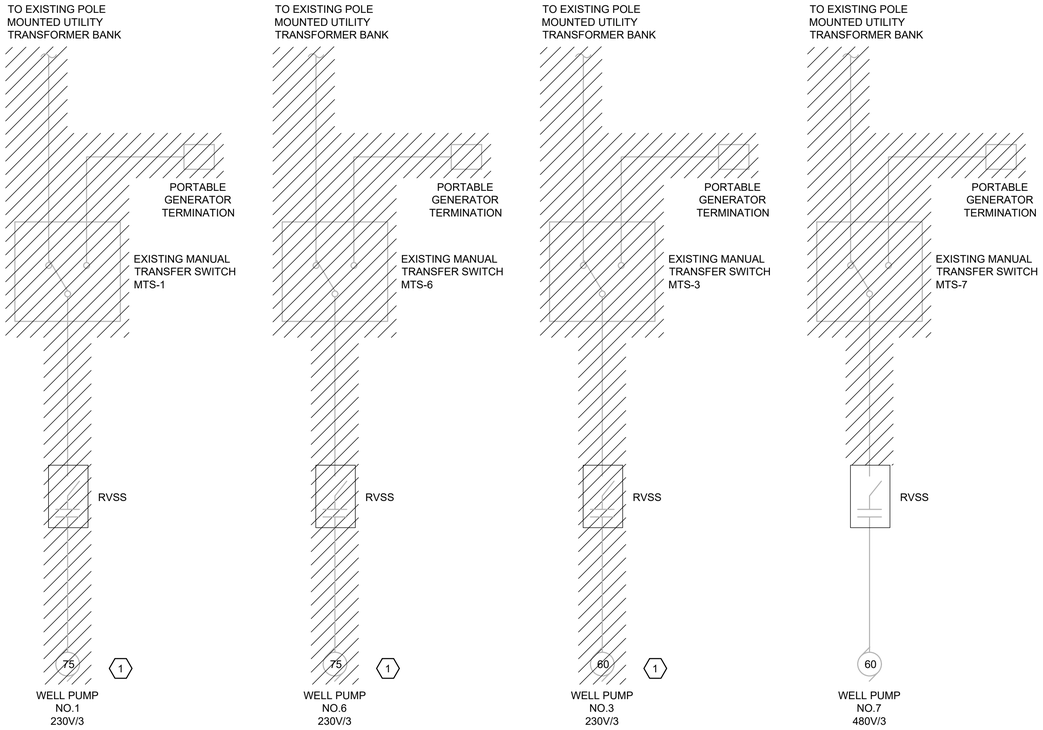
MURRAY, KENTUCKY

EXISTING HIGH SERVICE PUMP STATION ELECTRICAL ONE-LINE DIAGRAM

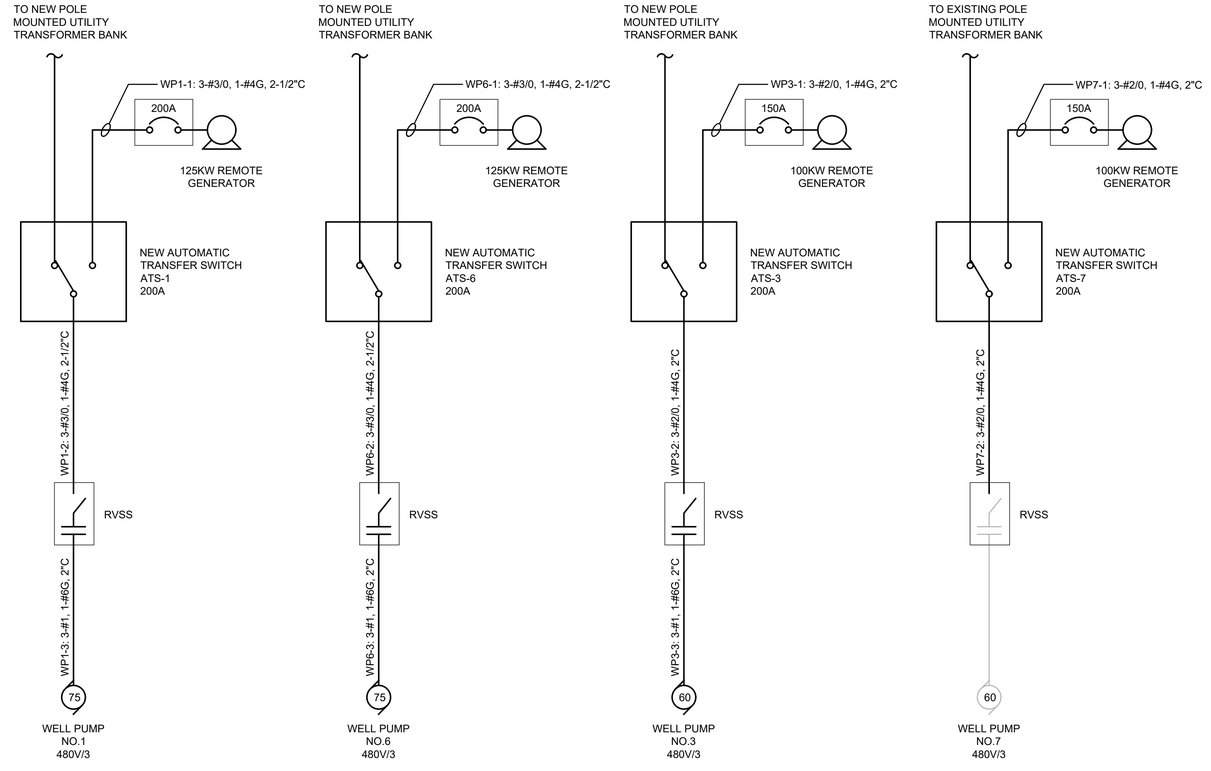
FILENAME	01E-06.dwg
SCALE	N.T.S.
SHEET	01E-06

KEYNOTES:

1. EXISTING 230V WELL PUMP MOTORS SHALL BE REPLACED WITH NEW 480V MOTORS. HORSEPOWER TO REMAIN THE SAME. FOR WIRE AND CONDUIT SIZES SEE UPDATED ONE-LINE THIS SHEET.



EXISTING REMOTE WELL SITES ONE-LINE DIAGRAMS



UPDATED REMOTE WELL SITES ONE-LINE DIAGRAMS

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

REMOTE WELL SITES ELECTRICAL ONE-LINE DIAGRAM

FILENAME	01E-07.dwg
SCALE	NO SCALE

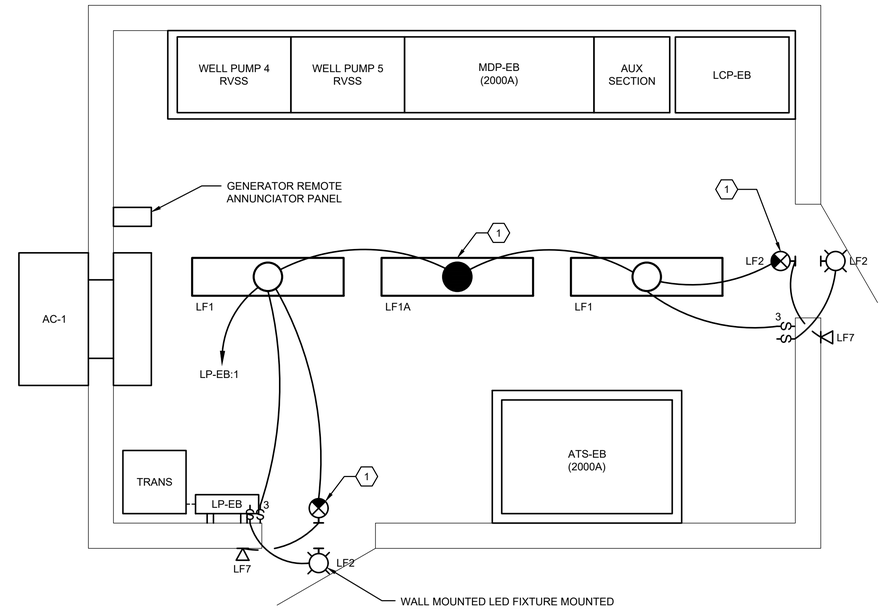
SHEET **01E-07**

GENERAL NOTES:

1. PROVIDE 4" HIGH CONCRETE HOUSEKEEPING PAD BELOW ALL FLOOR MOUNTED EQUIPMENT.
2. SEE ELECTRICAL ONE-LINE SHEET 01E-05 FOR POWER WIRE AND CONDUIT SIZES.
3. SEE INSTRUMENT ONE-LINE SHEET 01E-27 FOR INSTRUMENTATION WIRE AND CONDUIT SIZES.
4. FOR LIGHT FIXTURE SCHEDULE SEE SHEET 00E-02.

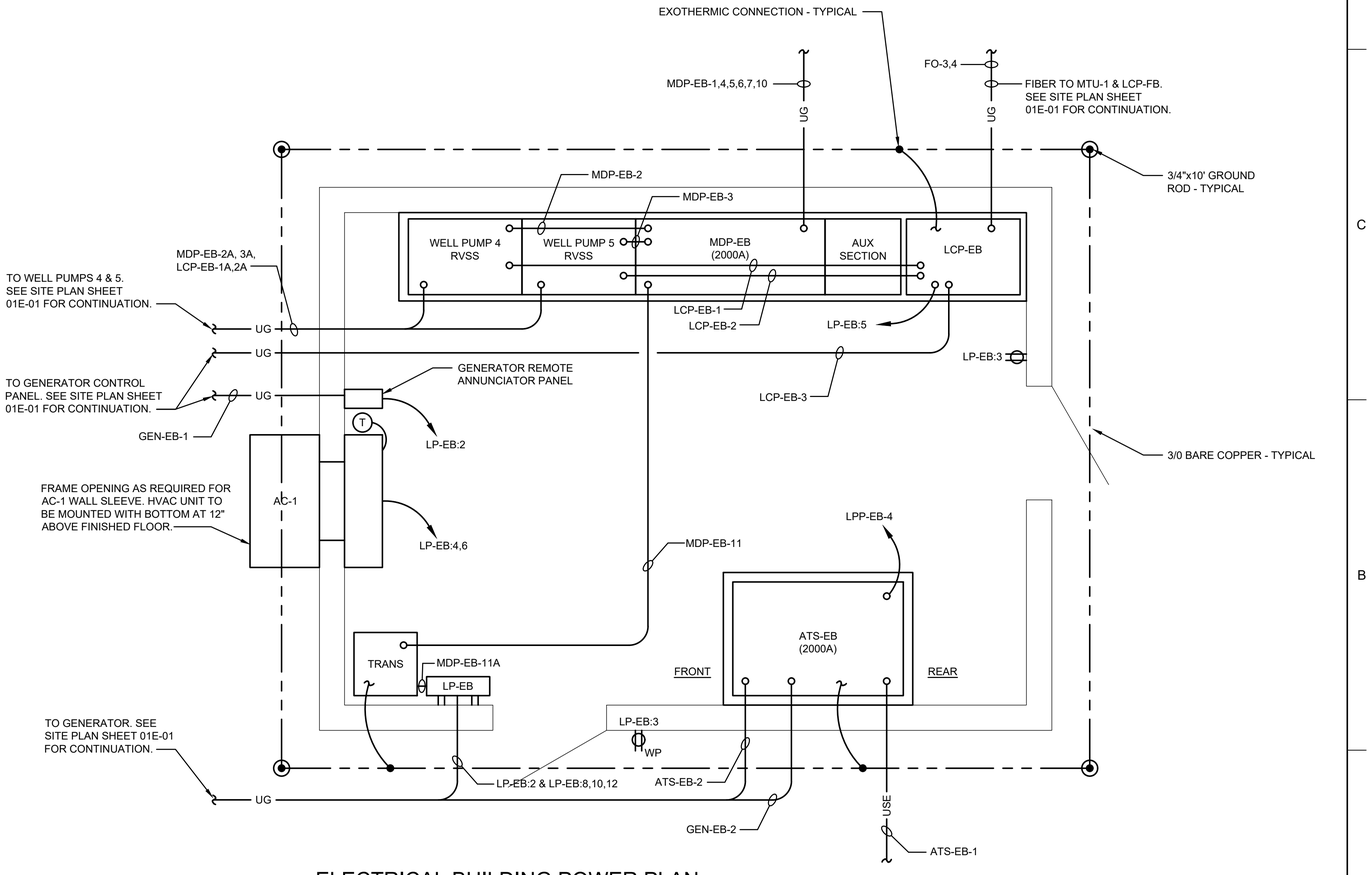
KEY NOTES: ⬡

1. CONNECT BATTERY PACK IN LIGHT FIXTURE TO UNSWITCHED CONDUCTORS.



ELECTRICAL BUILDING LIGHTING PLAN

1/2" = 1'-0"



ELECTRICAL BUILDING POWER PLAN

1/2" = 1'-0"

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

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QA/QC	
PROJECT NUMBER	10114225

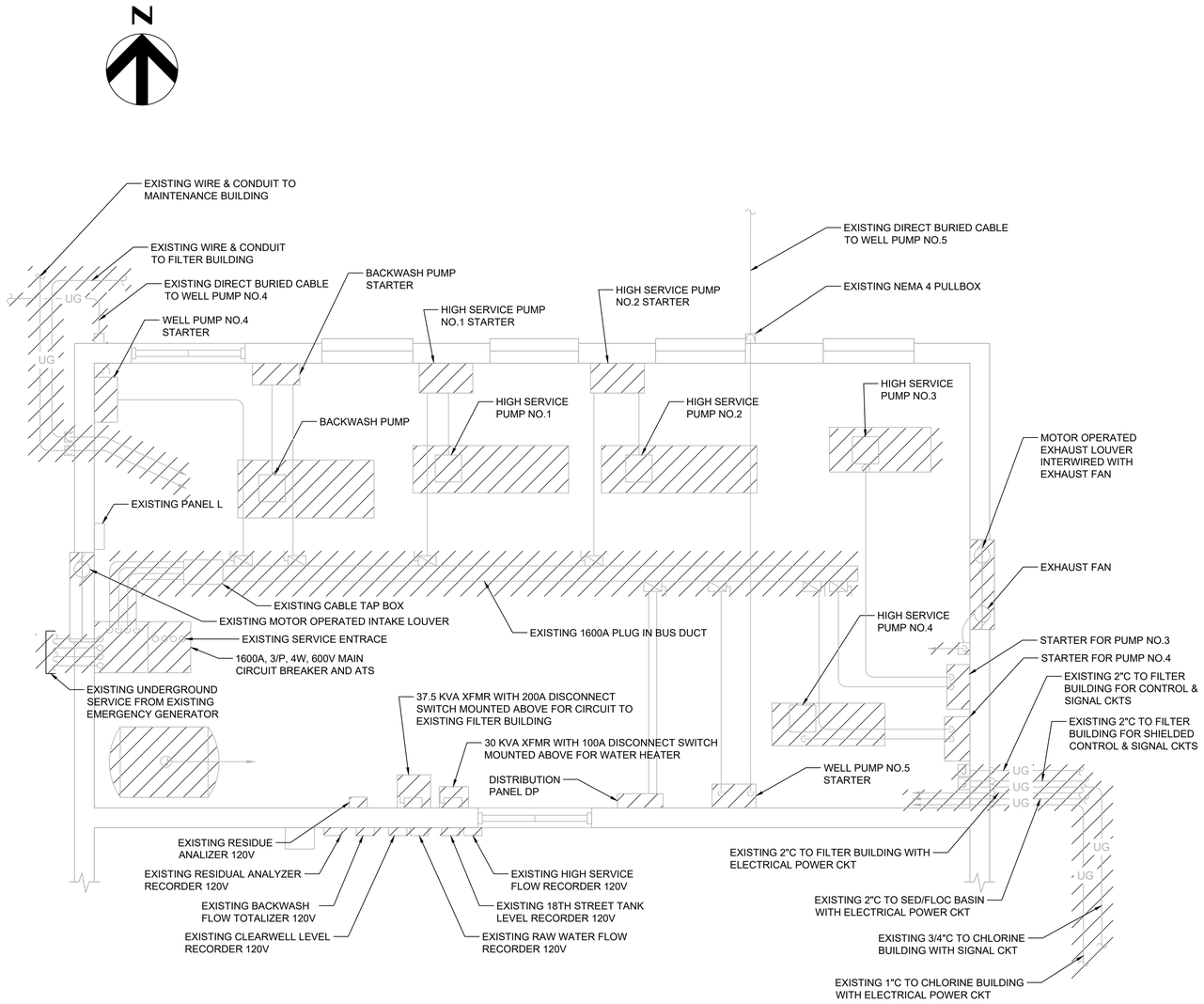
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

PROPOSED EQUIPMENT BUILDING ELECTRICAL PLAN

FILENAME	01E-08.dwg
SCALE	1/2"=1'-0"

SHEET **01E-08**



ADMINISTRATION/LAB BUILDING DEMOLITION PLAN

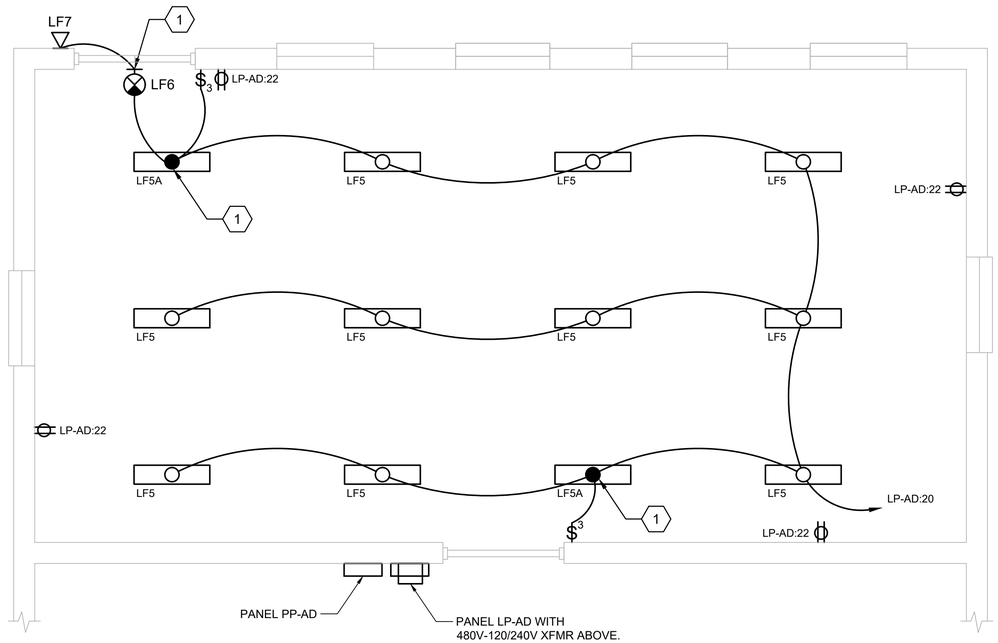
1/4" = 1'-0"

GENERAL NOTES:

1. FOR LIGHT FIXTURE AND PANEL SCHEDULES SEE SHEET 00E-02.

KEY NOTES: ⬡

1. CONNECT BATTERY PACK IN LIGHT FIXTURE TO UNSWITCHED CONDUCTORS.



ADMINISTRATION/LAB BUILDING UPDATED ELECTRICAL PLAN

1/4" = 1'-0"

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

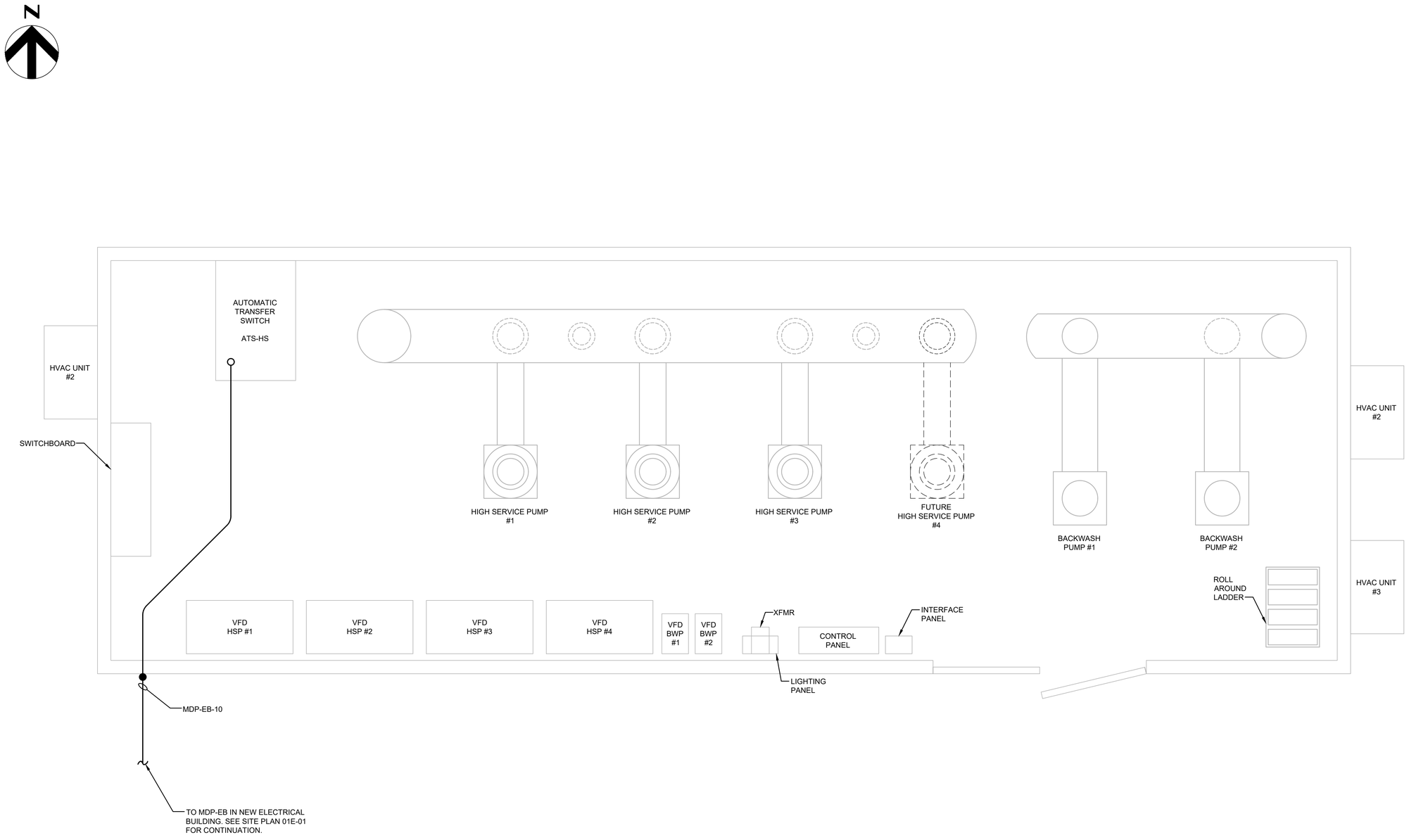
PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

EXISTING ADMINISTRATION/LAB BUILDING ELECTRICAL PLAN

FILENAME 01E-09.dwg
SCALE 1/4"=1'-0"
SHEET 01E-09



ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

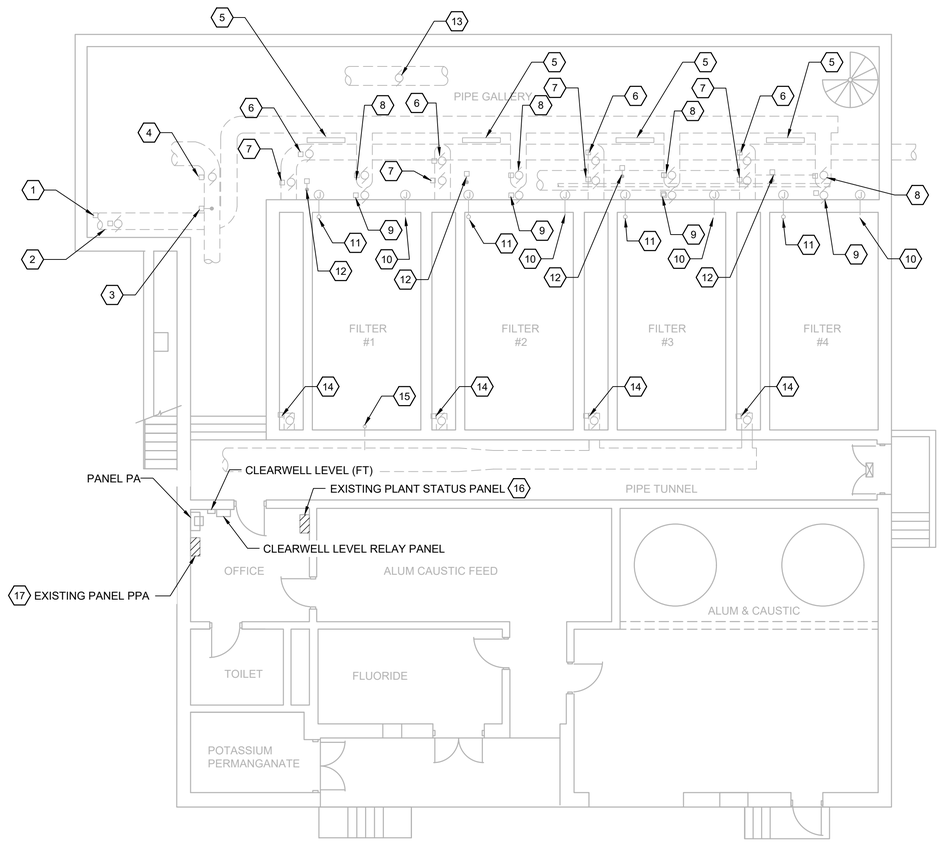
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

EXISTING HIGH SERVICE PS ELECTRICAL PLAN

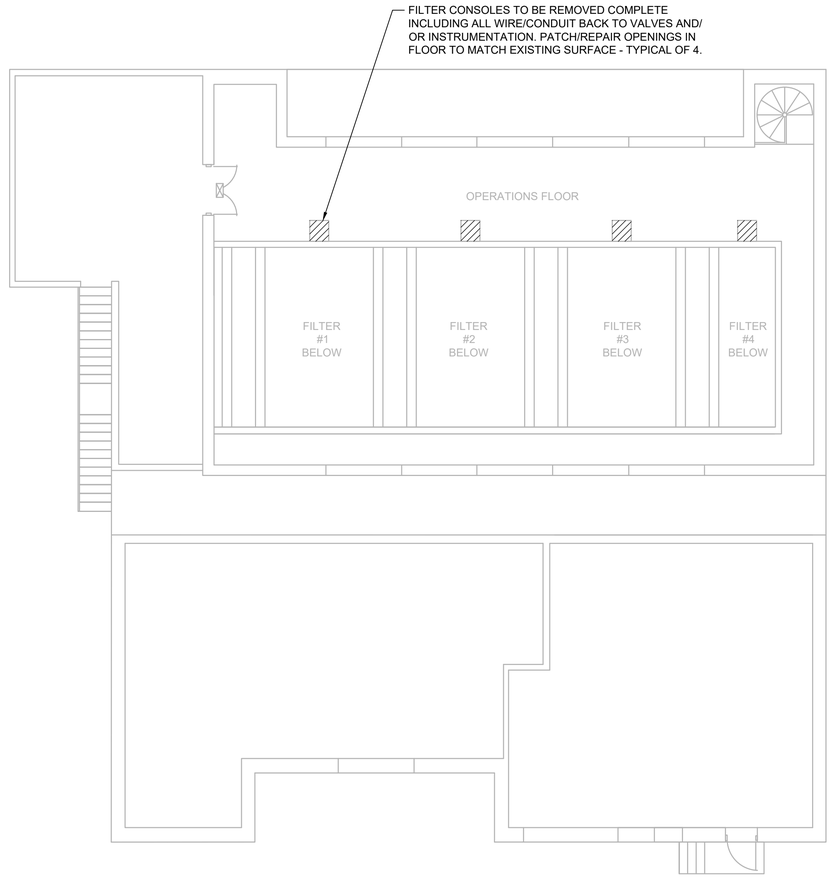
FILENAME	01E-10.dwg
SCALE	1/2"=1'-0"

SHEET **01E-10**



FILTER BUILDING LOWER LEVEL EXISTING PLAN

1/8" = 1'-0"



FILTER BUILDING UPPER LEVEL EXISTING PLAN

1/8" = 1'-0"

KEYNOTES:

1. BACKWASH RATE OF FLOW INDICATOR TO REMAIN.
2. MODULATING BACKWASH VALVE TO REMAIN.
3. RAW WATER RATE OF FLOW INDICATOR TO REMAIN.
4. RAW WATER MODULATING VALVE TO REMAIN.
5. TURBIDITY MONITOR TO BE REMOVED COMPLETE.
6. BACKWASH DRAIN VALVE TO REMAIN.
7. MODULATING EFFLUENT VALVE TO REMAIN.
8. BACKWASH SUPPLY VALVE TO REMAIN.
9. SURFACE WASH VALVE TO REMAIN.
10. LOSS OF HEAD INDICATOR TO BE REMOVED COMLPETE.
11. LOW LEVEL INDICATOR TO BE REMOVED COMPLETE.
12. EFFLUENT RATE OF FLOW INDICATOR TO BE REMOVED COMPLETE.
13. MECHANICAL INLINE MIXER TO REMAIN.
14. INFLUENT VALVE WITH ELECTRIC OPERATOR ABOVE TO REMAIN.
15. BUBBLER TUBE IN PIPE WITH FILTER MASTER LEVEL ABOVE.
16. REMOVE EXISTING PLANT STATUS PANEL COMPLETE. EXISTING INSTRUMENTATION TO REMAIN TO BE RECONNECTED TO NEW PANEL LCP-FB.
17. REMOVE EXISTING PANEL PPA COMPLETE. RE-FEED EXISTING 480V CIRCUITS FROM NEW PANEL PP-FB. SEE PANEL SCHEDULE SHEET 00E-02 FOR DETAIL.

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

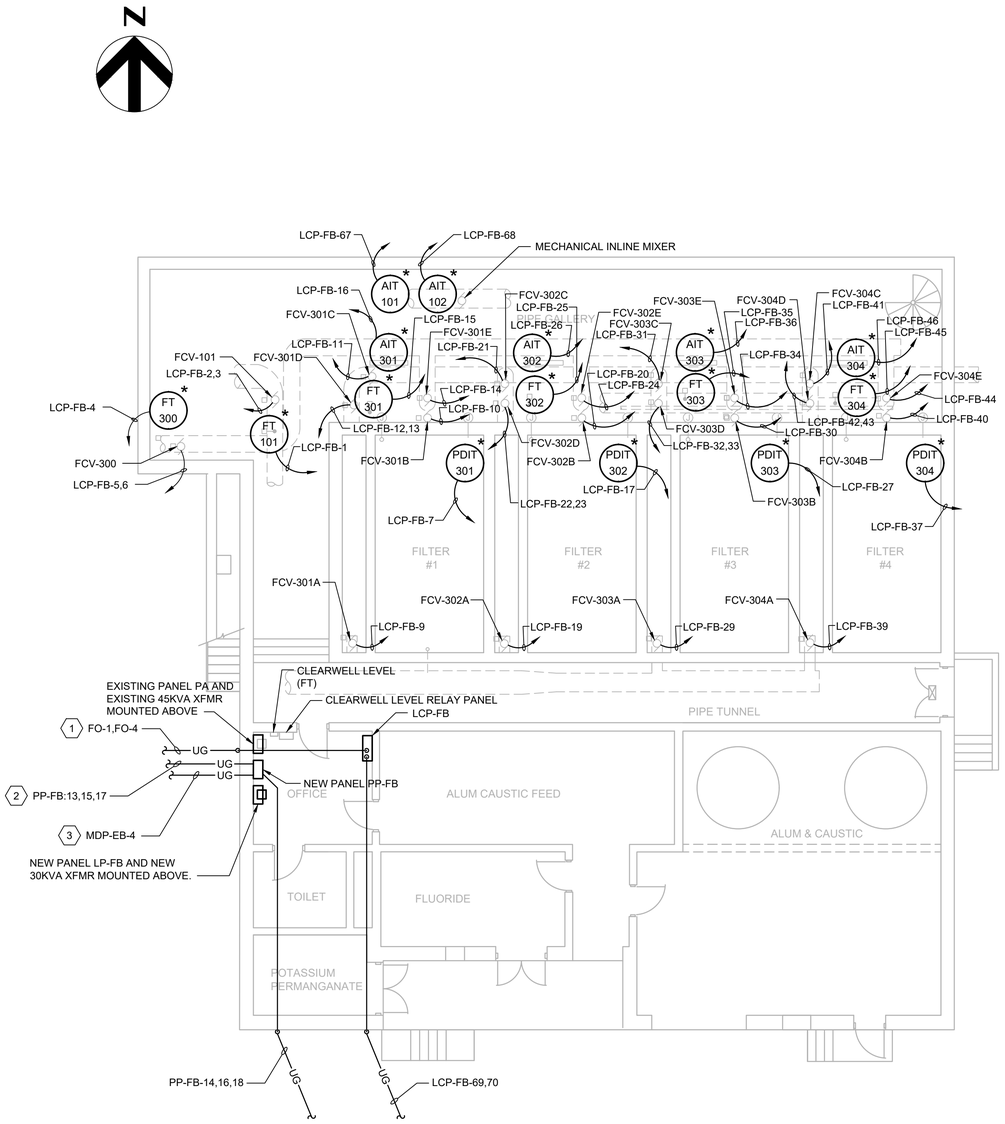
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

FILTER BUILDING ELECTRICAL PLAN

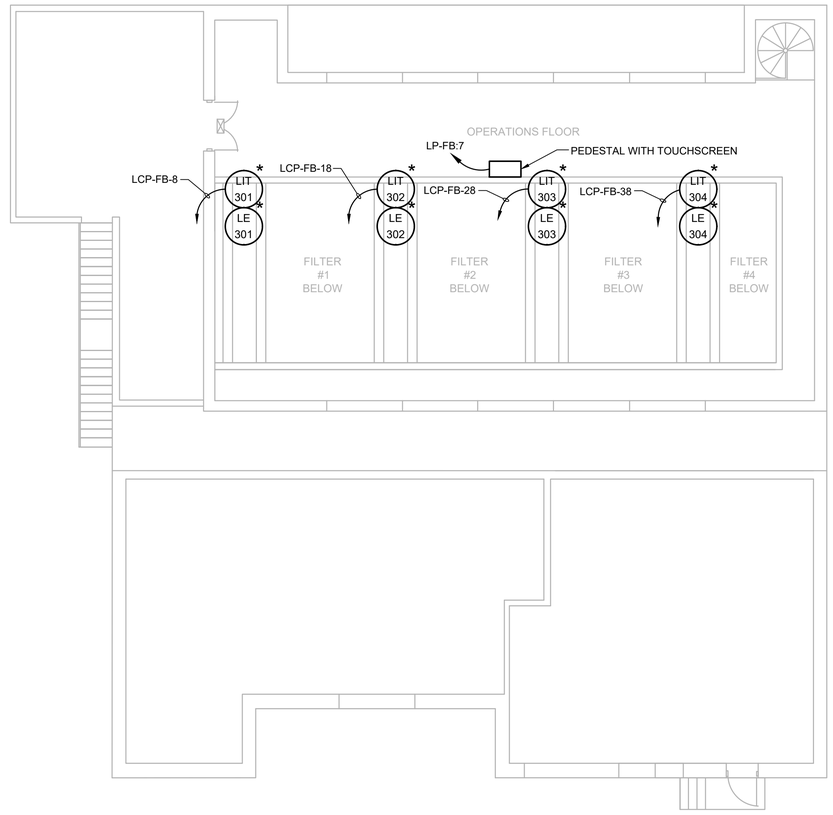
FILENAME	01E-11.dwg
SCALE	1/2"=1'-0"

SHEET **01E-11**



FILTER BUILDING LOWER LEVEL ELECTRICAL PLAN

1/8" = 1'-0"



FILTER BUILDING UPPER LEVEL ELECTRICAL PLAN

1/8" = 1'-0"

GENERAL NOTES:

1. FOR LIGHT FIXTURE SCHEDULE SEE SHEET 00E-02.
2. FOR POWER WIRE AND CONDUIT SIZES SEE PANEL SCHEDULES, SHEET 00E-03.
3. FOR INSTRUMENTATION WIRE AND CONDUIT SIZES SEE INSTRUMENTATION ONE-LINE SHEET 01E-27.

KEY NOTES:

1. FIBER OPTIC CABLE TO HIGH SRVICE PUMP STATION LCP-HS AND ELECTRICAL BUILDING LCP-EB. SEE SITE PLAN SHEET 01E-01 FOR CONTINUATION.
2. 480V FEED TO PANEL PPB AT FLOCULATION AND SEDIMENTATION BASINS. SEE SITE PLAN SHEET 01E-01 FOR CONTINUATION.
3. 480V FEED FROM NEW ELECTRICAL BUILDING. SEE SITE PLAN SHEET 01E-01 FOR CONTINUATION.

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DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
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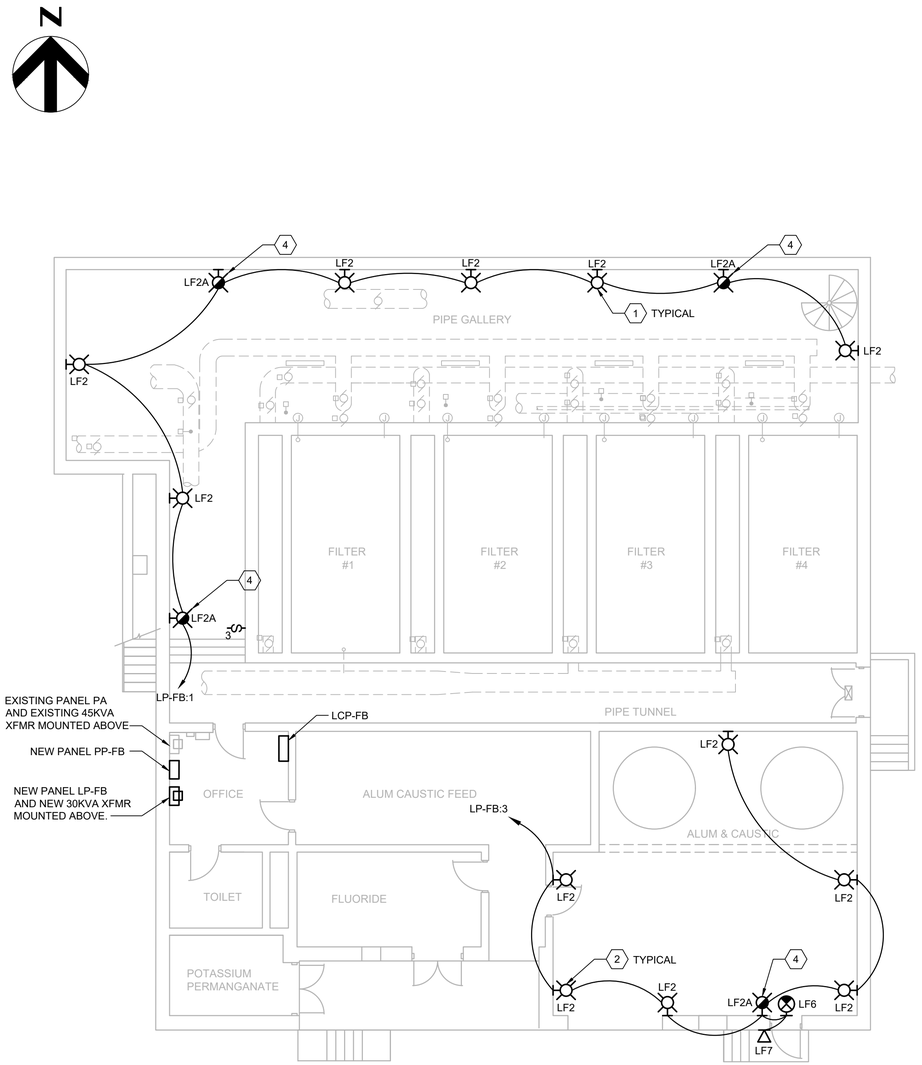
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

FILTER BUILDING ELECTRICAL PLAN

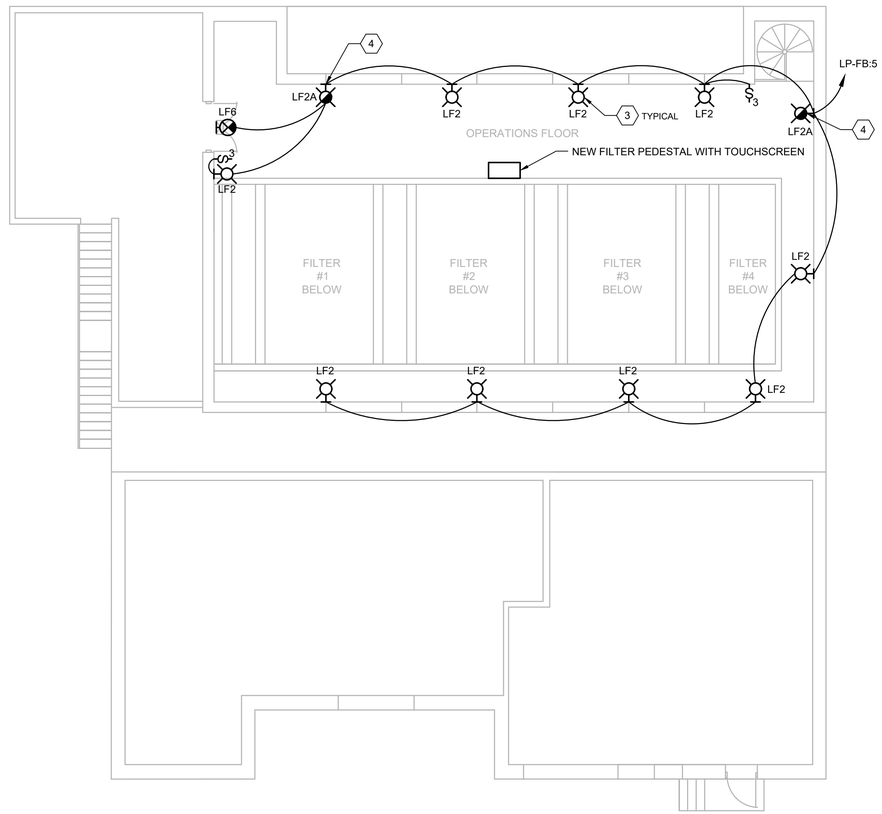
FILENAME	01E-12.dwg
SCALE	1/2"=1'-0"

SHEET 01E-12



FILTER BUILDING LOWER LEVEL LIGHTING PLAN

1/8" = 1'-0"



FILTER BUILDING UPPER LEVEL LIGHTING PLAN

1/8" = 1'-0"

GENERAL NOTES:

1. FOR LIGHT FIXTURE SCHEDULE SEE SHEET 00E-02.
2. FOR PANEL SCHEDULES SEE SHEET 00E-03.

KEYNOTES:

1. WALL MOUNT LIGHT FIXTURES IN PIPE GALLERY AT 10'-0" AFF.
2. WALL MOUNT LIGHT FIXTURES IN ALUM & CAUSTIC ROOM AT 12'-0" AFF.
3. WALL MOUNT LIGHT FIXTURES IN FILTER BUILDING UPPER LEVEL AT 7'-0" AFF.
4. CONNECT BATTERY PACK IN LIGHT FIXTURE TO UNSWITCHED CONDUCTORS.

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

FILTER BUILDING LIGHTING PLAN

FILENAME	01E-13.dwg
SCALE	1/2"=1'-0"

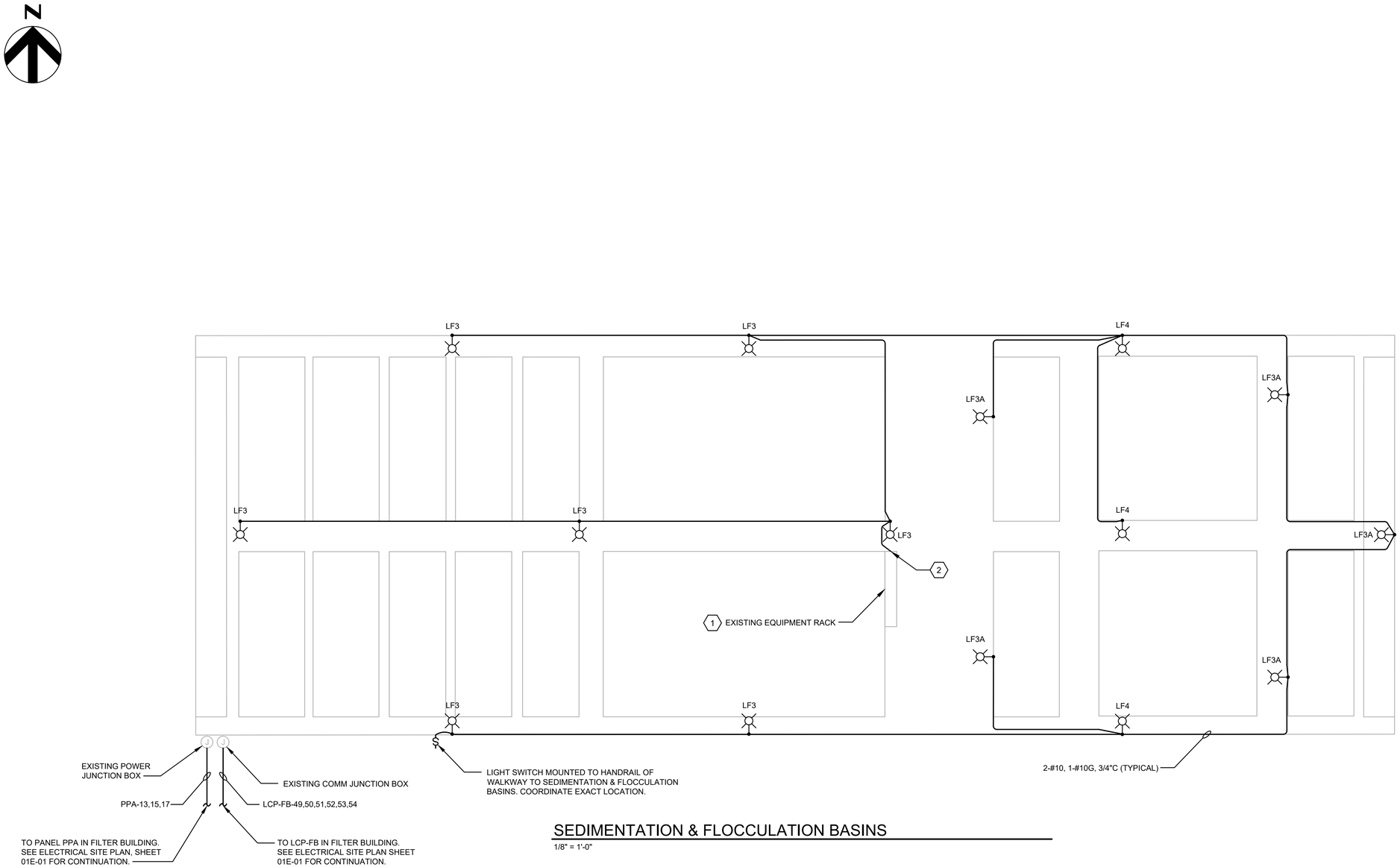
SHEET 01E-13

GENERAL NOTES:

1. FOR LIGHT FIXTURE AND PANEL SCHEDULES, SEE SHEET 00E-02.
2. FOR INSTRUMENT WIRE AND CONDUIT SIZES SEE INSTRUMENTATION ONE LINES SHEET 01E-27.

KEYNOTES: (#)

1. INSTALL ROOF OVER EXISTING EQUIPMENT RACK. SEE DETAIL SHEET 01E-15.
2. POWER NEW POLE LIGHT FIXTURES FROM EXISTING LIGHTING CIRCUIT IN PANEL PPB, LOCATED ON EXISTING EQUIPMENT RACK.



SEDIMENTATION & FLOCCULATION BASINS

1/8" = 1'-0"

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

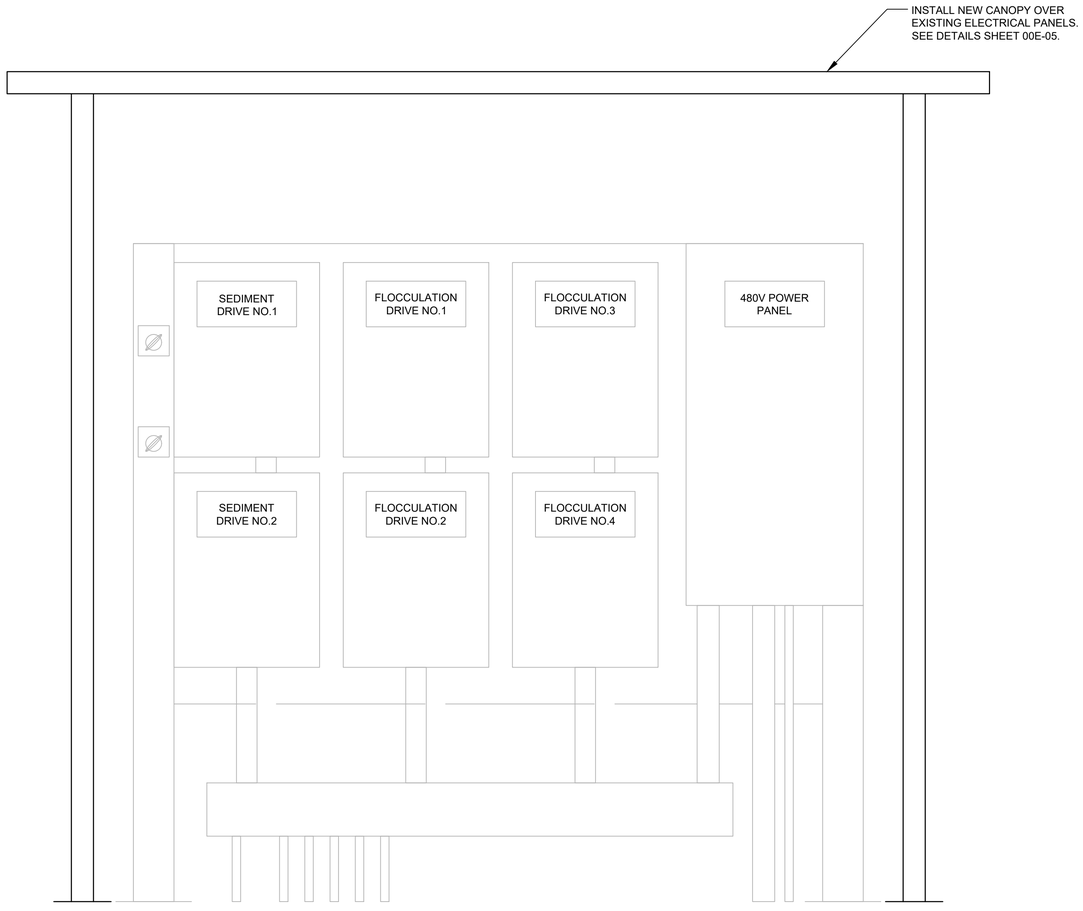
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

SEDIMENTATION & FLOCCULATION BASINS ELECTRICAL PLAN

FILENAME	01E-14.dwg
SCALE	1/8"=1'-0"

SHEET **01E-14**



ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

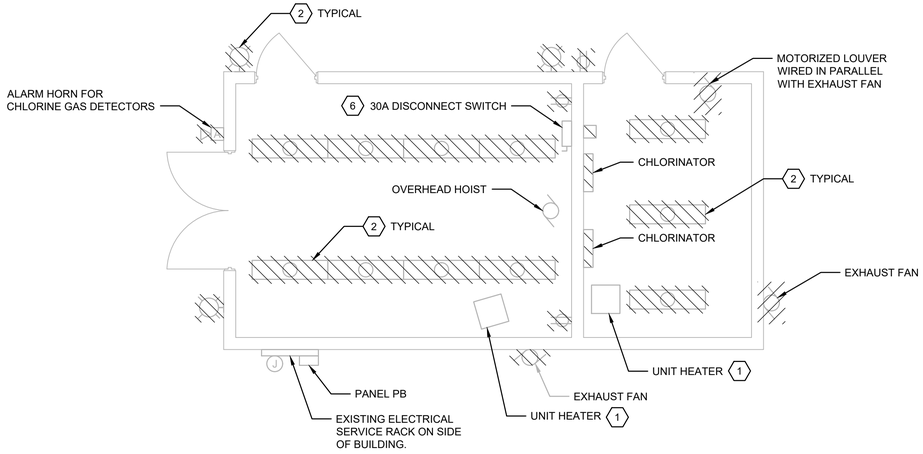
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

SEDIMENTATION AND FLOCCULATION BASIN ELECTRICAL RACK DETAIL

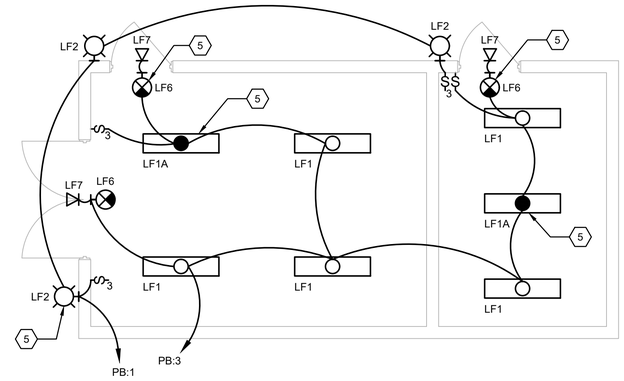
FILENAME	01E-15.dwg
SCALE	NOT TO SCALE

SHEET 01E-15



EXISTING CHLORINE BUILDING DEMOLITION PLAN

1/4" = 1'-0"



MIOX BUILDING LIGHTING PLAN

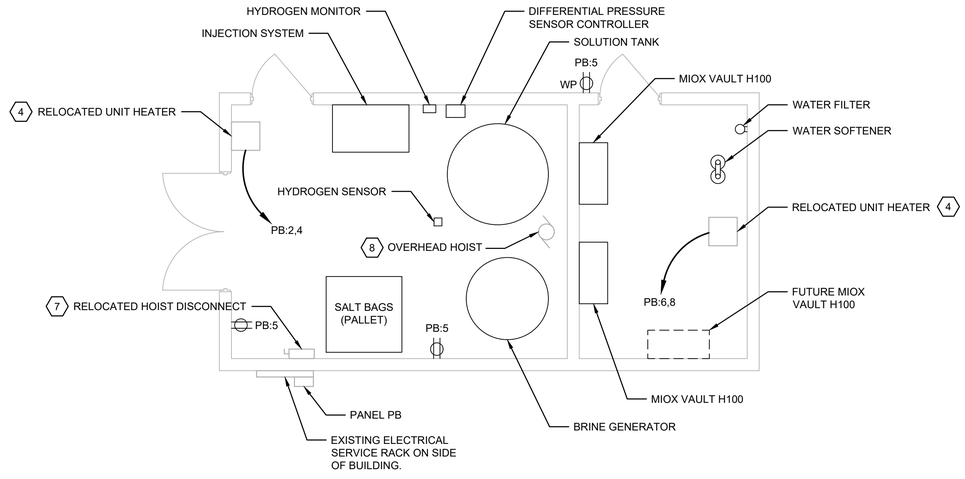
1/4" = 1'-0"

GENERAL NOTES:

1. THE EXISTING CHLORINE BUILDING IS TO BE CONVERTED TO A MIOX FACILITY.
2. FOR LIGHT FIXTURE SCHEDULE SEE SHEET 00E-02.
3. FOR POWER WIRE & CONDUIT SIZES SEE PANEL SCHEDULES SHEET 00E-03.

KEY NOTES:

1. RELOCATE UNIT HEATER AS NECESSARY TO ACCOMMODATE NEW TANKS AND EQUIPMENT.
2. DEMOLISH EXISTING LIGHT FIXTURES. REMOVE WIRE AND CONDUIT BACK TO SOURCE.
3. RE-FEED NEW LIGHT LIGHT FIXTURES FROM EXISTING LIGHTING CIRCUITS LOCATED IN PANEL PB ON BUILDING EXTERIOR. SEE PANEL SCHEDULE SHEET 00E-03 FOR WIRE AND CONDUIT SIZES.
4. RE-FEED RELOCATED UNIT HEATERS FROM EXISTING CIRCUITS IN PANEL PB. SEE PANEL SCHEDULE SHEET 00E-03 FOR WIRE AND CONDUIT SIZES.
5. CONNECT LIGHT FIXTURE BATTERY PACK TO UNSWITCHED CONDUCTORS.
6. RELOCATE HOIST DISCONNECT SWITCH AS NECESSARY TO ACCOMMODATE NEW TANKS AND EQUIPMENT.
7. RE-FEED RELOCATED HOIST DISCONNECT SWITCH WITH 3-#10, 1-#10G, 3/4"C FROM EXISTING ELECTRICAL RACK ON SIDE OF MIOX BUILDING.
8. RE-FEED HOIST FROM RELOCATED DISCONNECT SWITCH WITH 3-#10, 1-#10G, 3/4"C.



MIOX BUILDING POWER PLAN

1/4" = 1'-0"

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

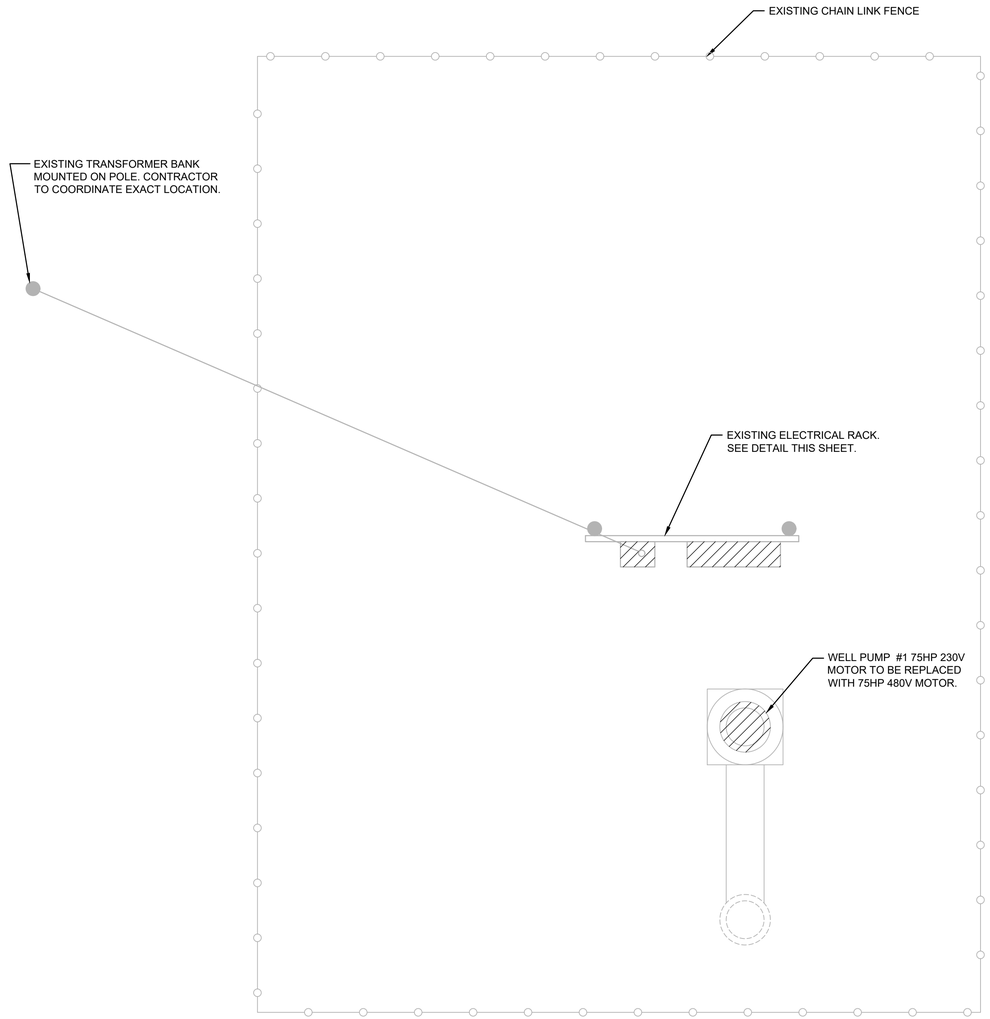
MIOX BUILDING

FILENAME	01E-16.dwg
SCALE	1/4"=1'-0"

SHEET **01E-16**

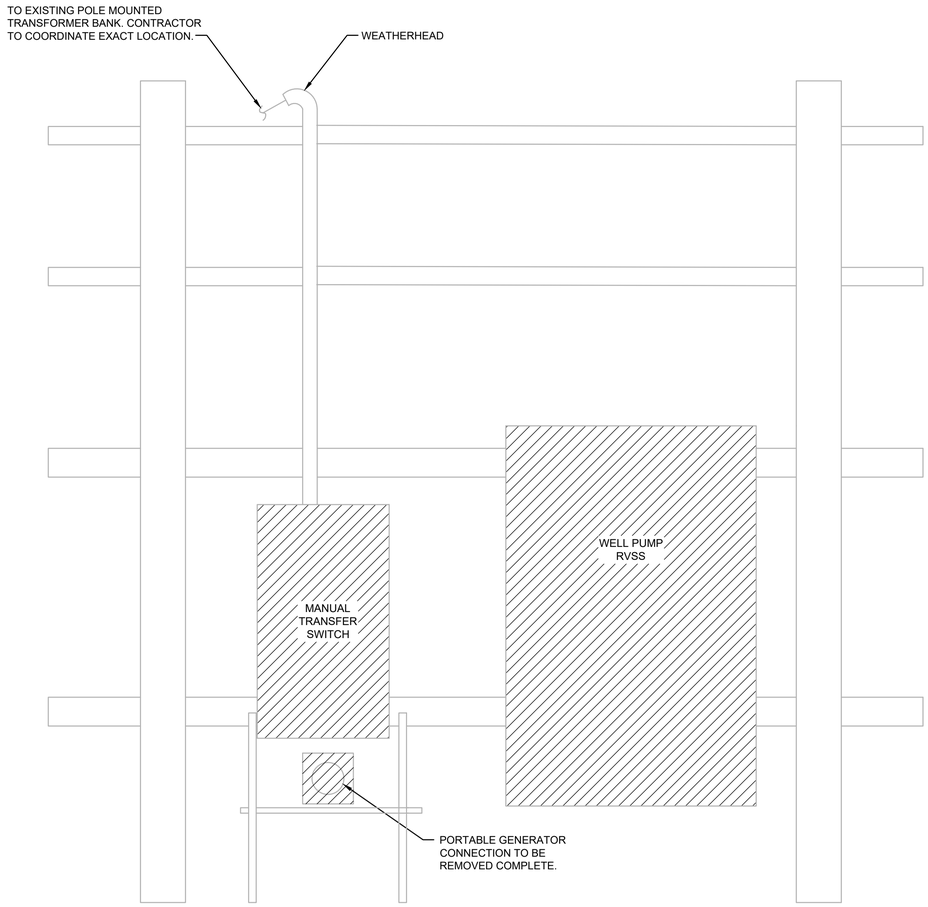
GENERAL NOTES:

1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT MODIFICATIONS.



REMOTE WELL SITE #1 EXISTING ELECTRICAL PLAN

NO SCALE



REMOTE WELL SITE #1 EXISTING ELECTRICAL RACK DETAIL

NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

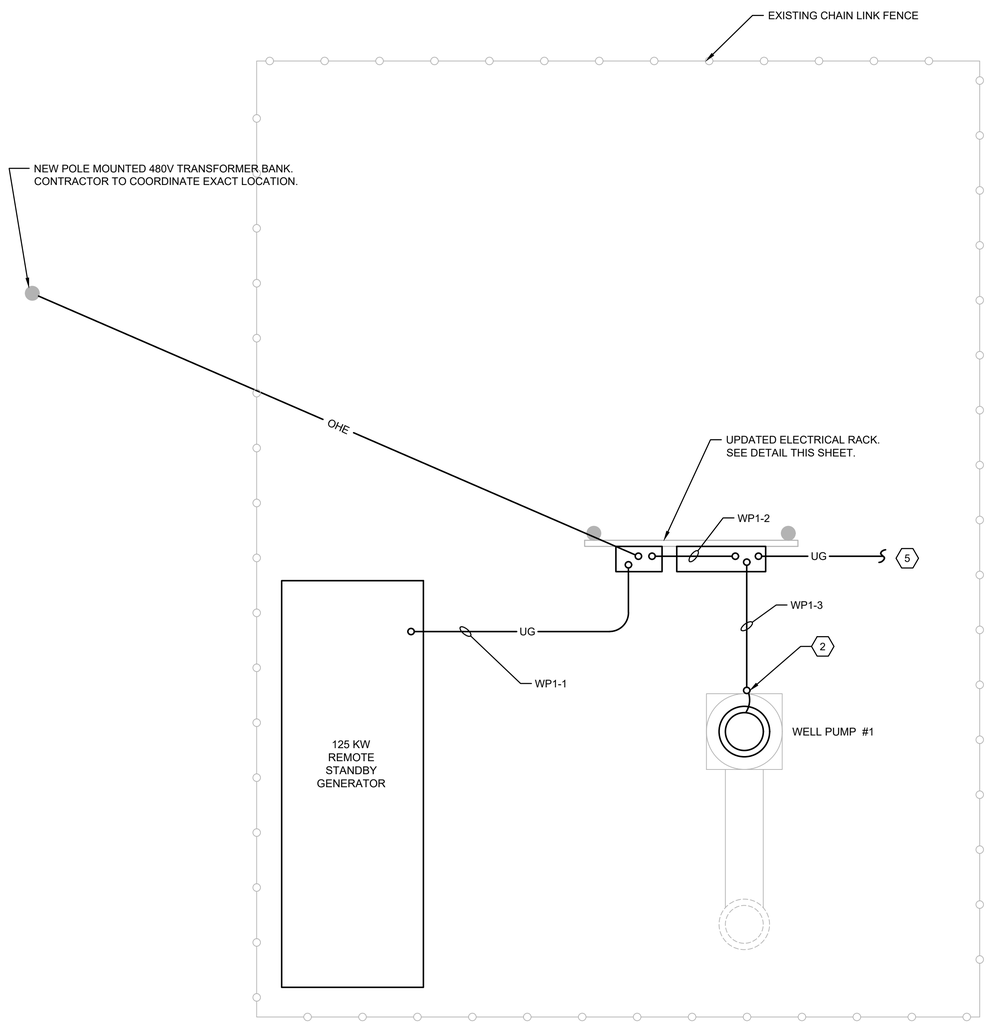
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

WELL SITE NO.1 DEMOLITION PLAN

FILENAME	01E-17.dwg
SCALE	NOT TO SCALE

SHEET **01E-17**



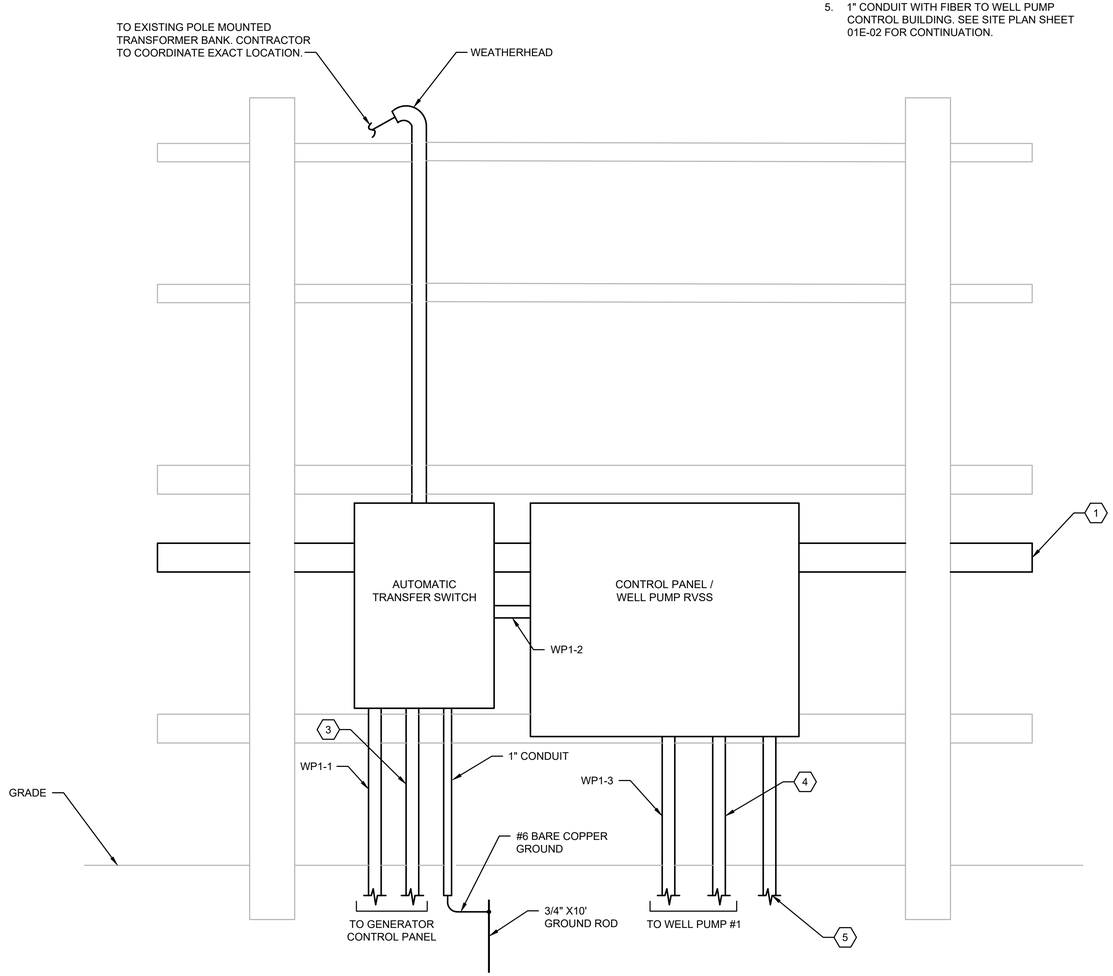
REMOTE WELL SITE #1 UPDATED ELECTRICAL PLAN
NO SCALE

GENERAL NOTES:

1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT SIZES.

KEY NOTES: ⬡

1. ADD/REMOVE METAL SUPPORTS AS NECESSARY FOR NEW EQUIPMENT.
2. FINAL CONNECTION TO PUMP MOTOR TO BE WITH PVC-COATED FLEXIBLE CONDUIT.
3. 1" CONDUIT WITH 2-#14 FOR GENERATOR RUN COMMAND.
4. 1" CONDUIT WITH 2-#12, 1-#12G FOR HEAT TRACING AND 4-#14 FOR SOLENOID CONTROL VALVES.
5. 1" CONDUIT WITH FIBER TO WELL PUMP CONTROL BUILDING. SEE SITE PLAN SHEET 01E-02 FOR CONTINUATION.



REMOTE WELL SITE #1 UPDATED ELECTRICAL RACK DETAIL
NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

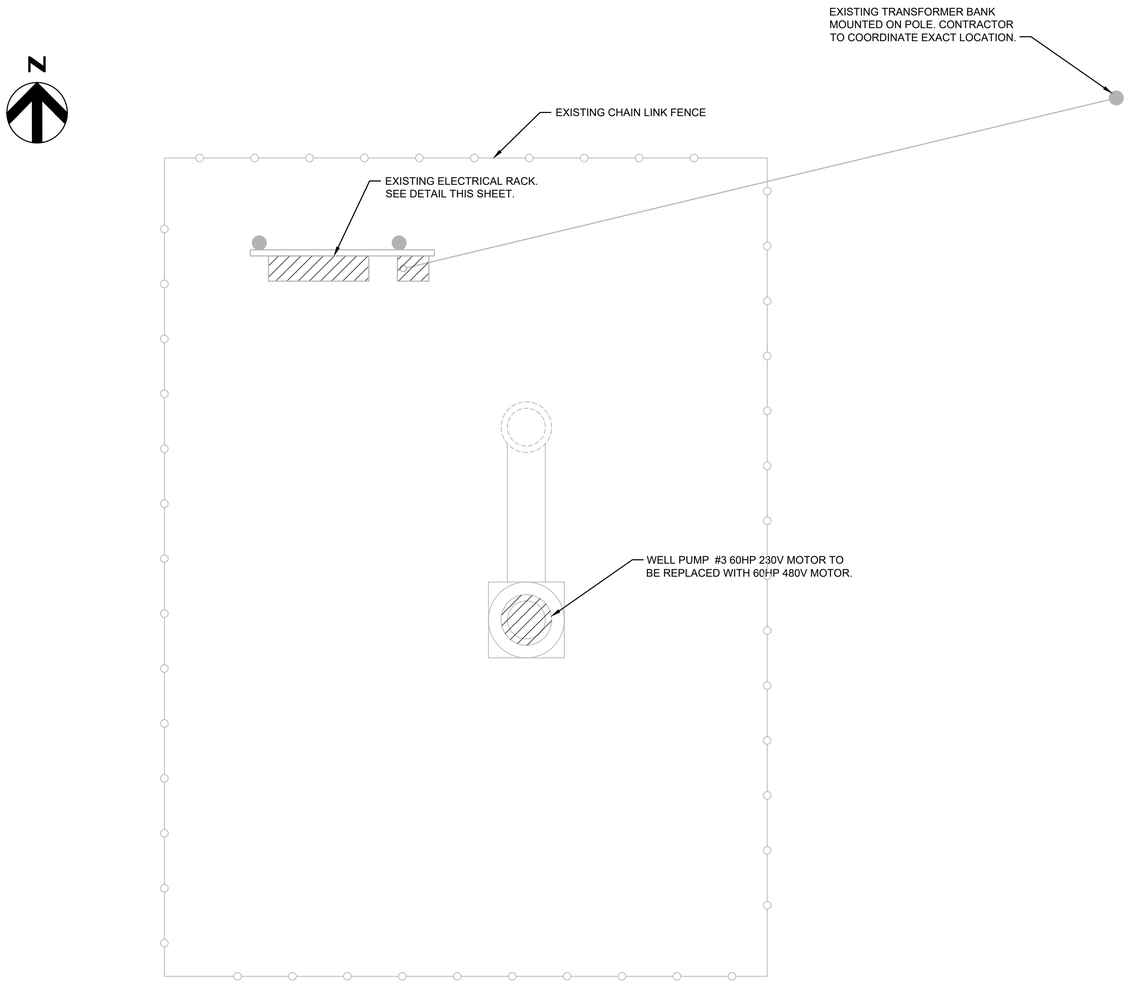
WELL SITE NO.1 ELECTRICAL PLAN

FILENAME	01E-18.dwg
SCALE	NOT TO SCALE

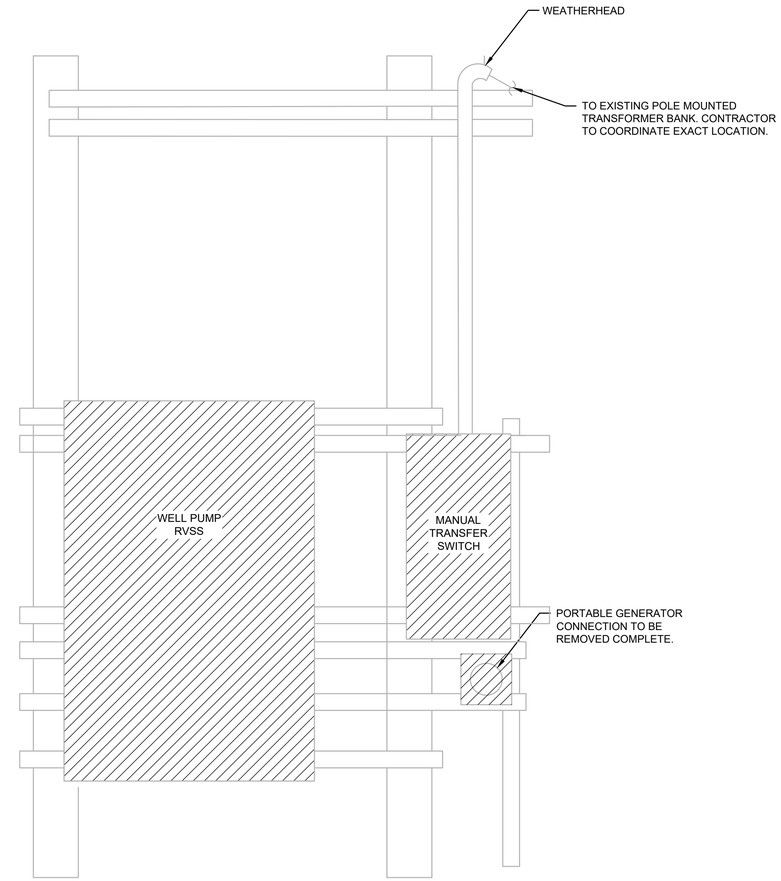
SHEET
01E-18

GENERAL NOTES:

1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT MODIFICATIONS.



REMOTE WELL SITE #3 EXISTING ELECTRICAL PLAN
NO SCALE



REMOTE WELL SITE #3 EXISTING ELECTRICAL RACK DETAIL
NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

WELL SITE NO.3 DEMOLITION PLAN

FILENAME	01E-19.dwg
SCALE	NOT TO SCALE

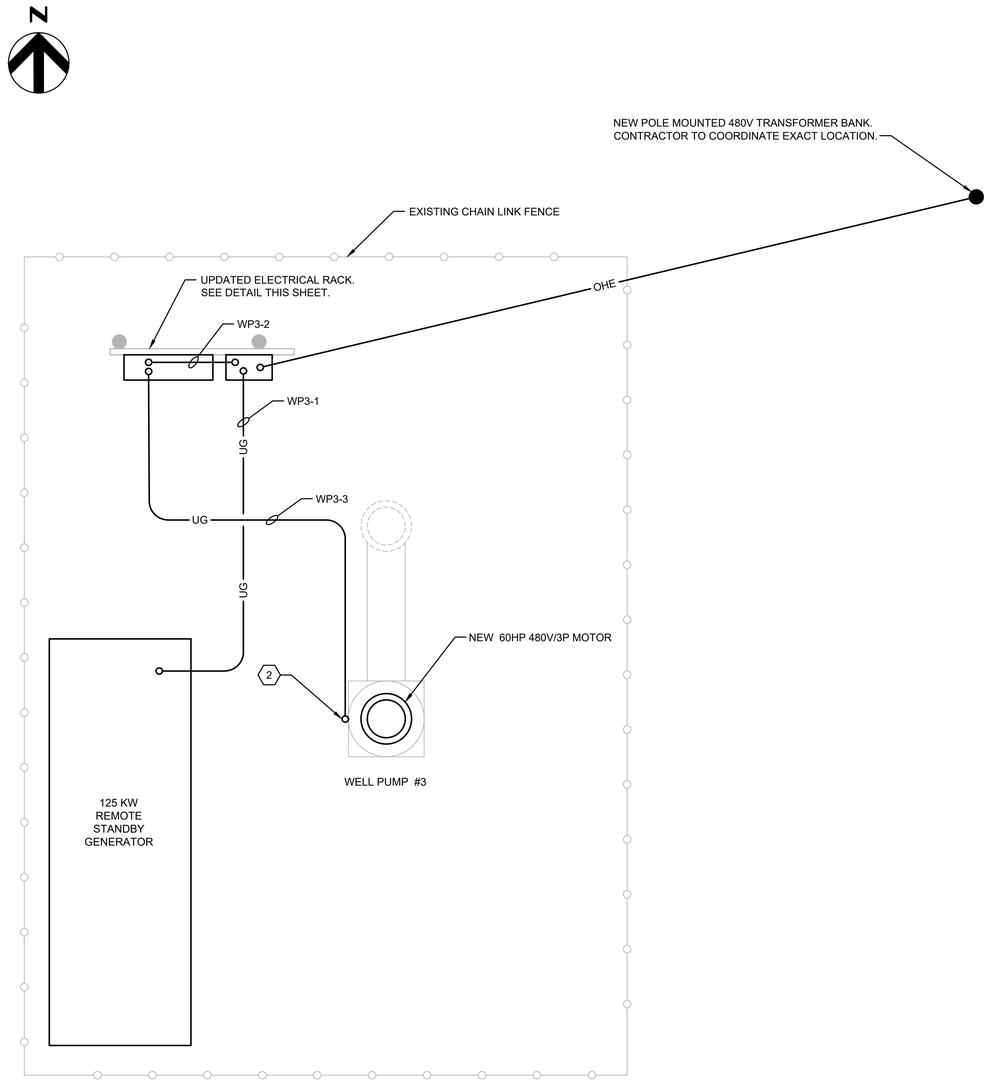
SHEET
01E-19

GENERAL NOTES:

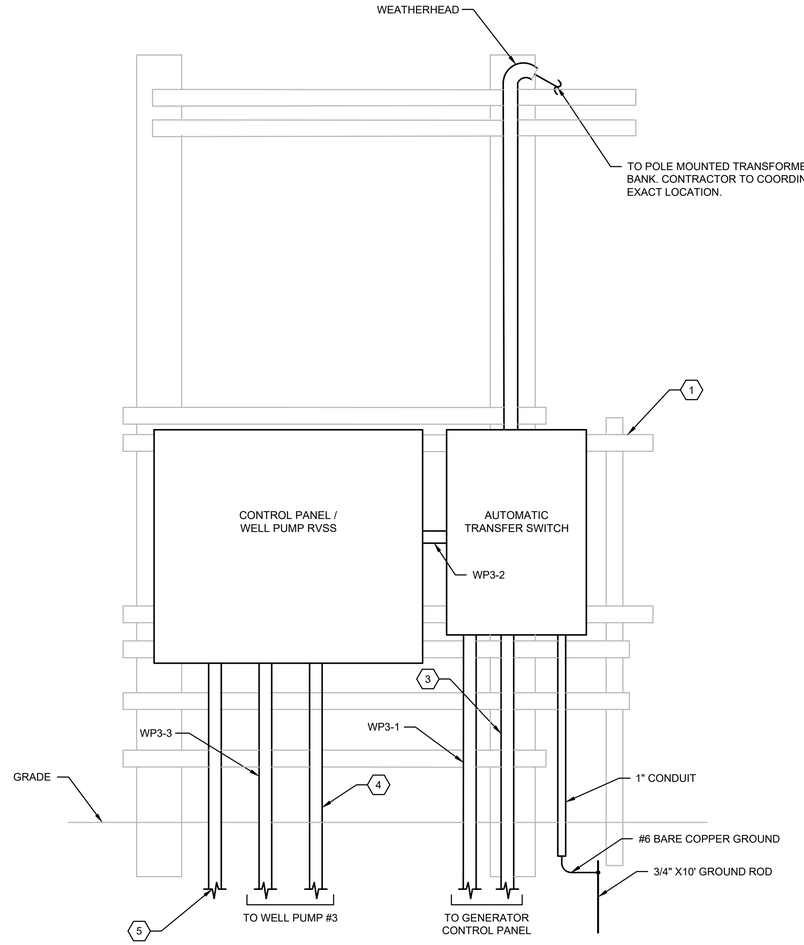
1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT SIZES.

KEY NOTES:

1. ADD/REMOVE METAL SUPPORTS AS NECESSARY FOR NEW EQUIPMENT.
2. FINAL CONNECTION TO PUMP MOTOR TO BE WITH PVC-COATED FLEXIBLE CONDUIT.
3. 1" CONDUIT WITH 2-#14 FOR GENERATOR RUN COMMAND.
4. 1" CONDUIT WITH 2-#12, 1-#12G FOR HEAT TRACING AND 4-#14 FOR SOLENOID CONTROL VALVES.
5. 1" CONDUIT WITH FIBER TO WELL PUMP CONTROL BUILDING. SEE SITE PLAN SHEET 01E-02 FOR CONTINUATION.



REMOTE WELL SITE #3 UPDATED ELECTRICAL PLAN
NO SCALE



REMOTE WELL SITE #3 UPDATED ELECTRICAL RACK DETAIL
NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

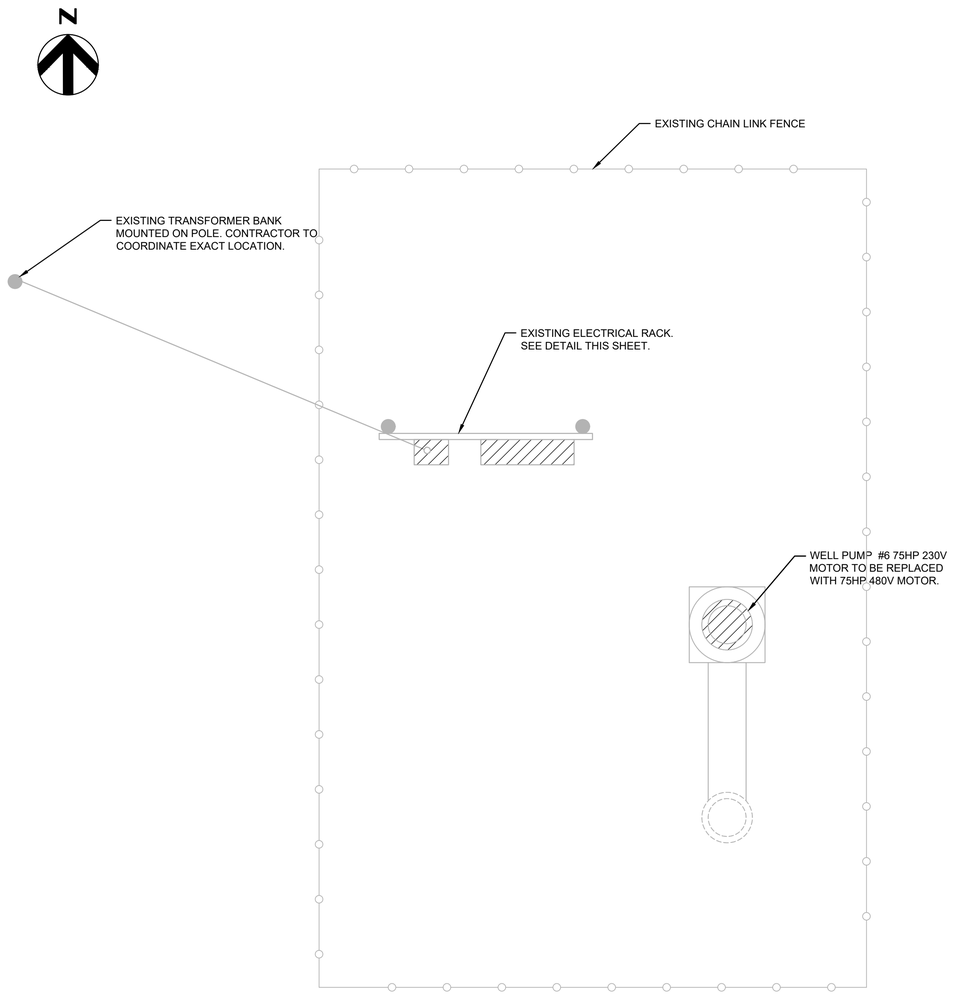
WELL SITE NO.3 ELECTRICAL PLAN

FILENAME	01E-20.dwg
SCALE	NOT TO SCALE

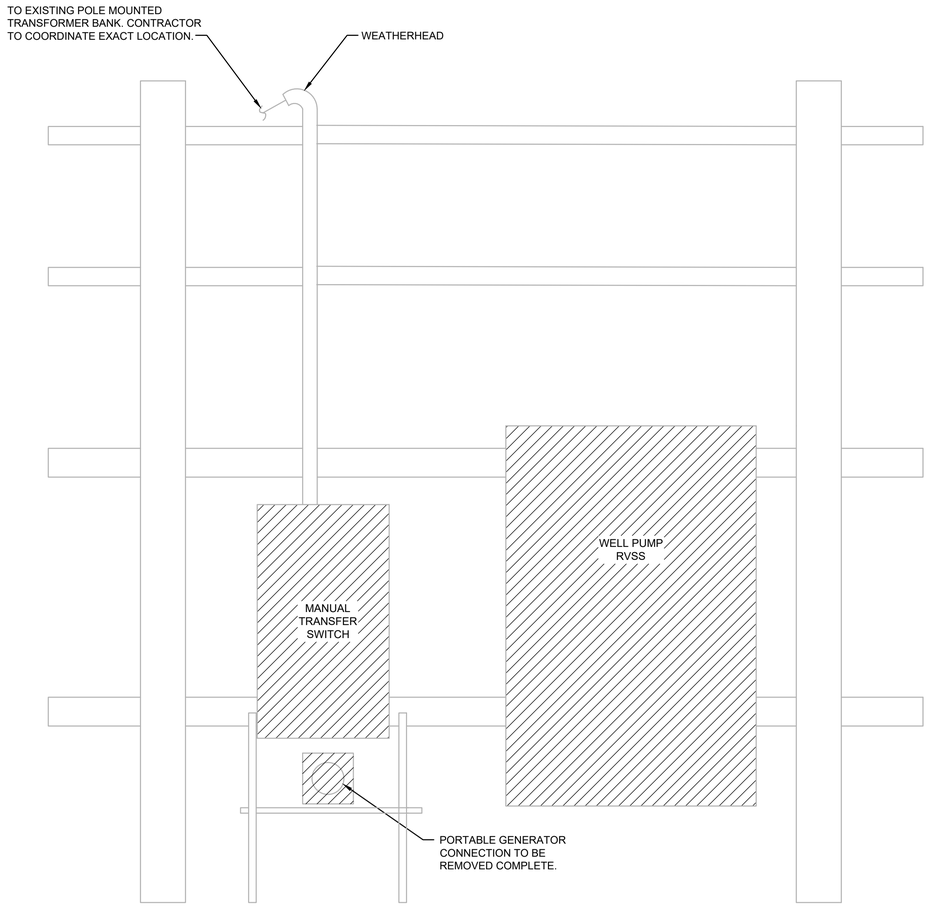
SHEET **01E-20**

GENERAL NOTES:

1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT MODIFICATIONS.



REMOTE WELL SITE #6 EXISTING ELECTRICAL PLAN
NO SCALE



REMOTE WELL SITE #6 EXISTING ELECTRICAL RACK DETAIL
NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

WELL SITE NO.6 DEMOLITION PLAN

FILENAME	01E-21.dwg
SCALE	NOT TO SCALE

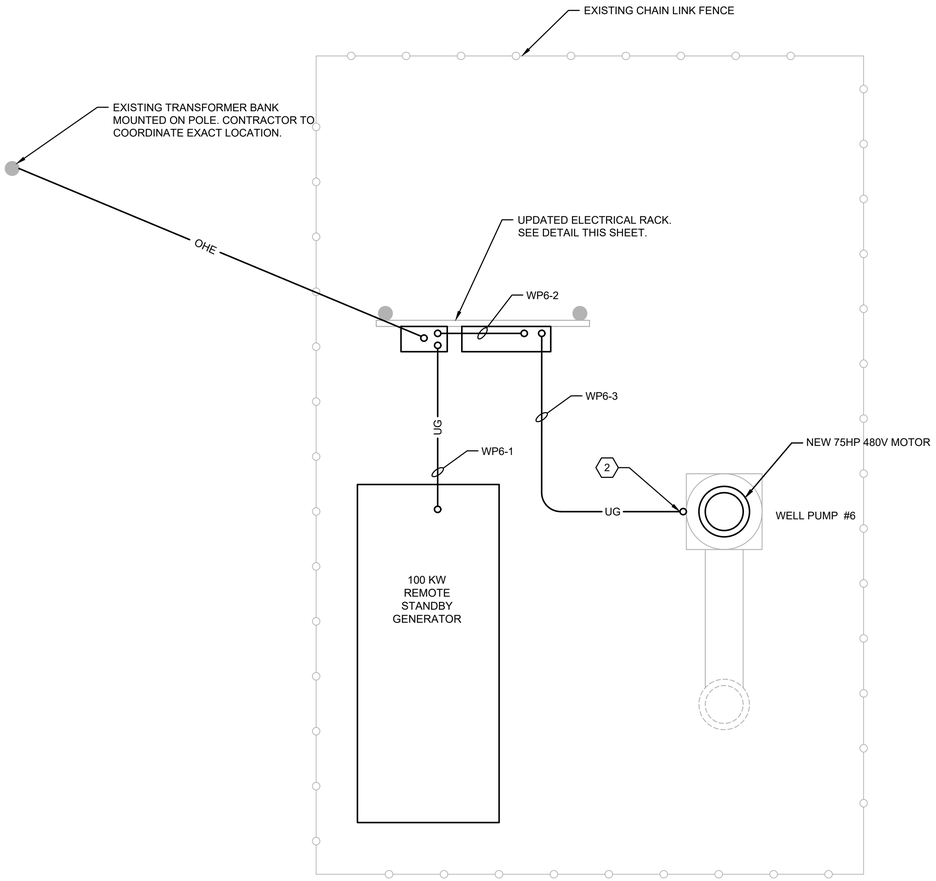
SHEET
01E-21

GENERAL NOTES:

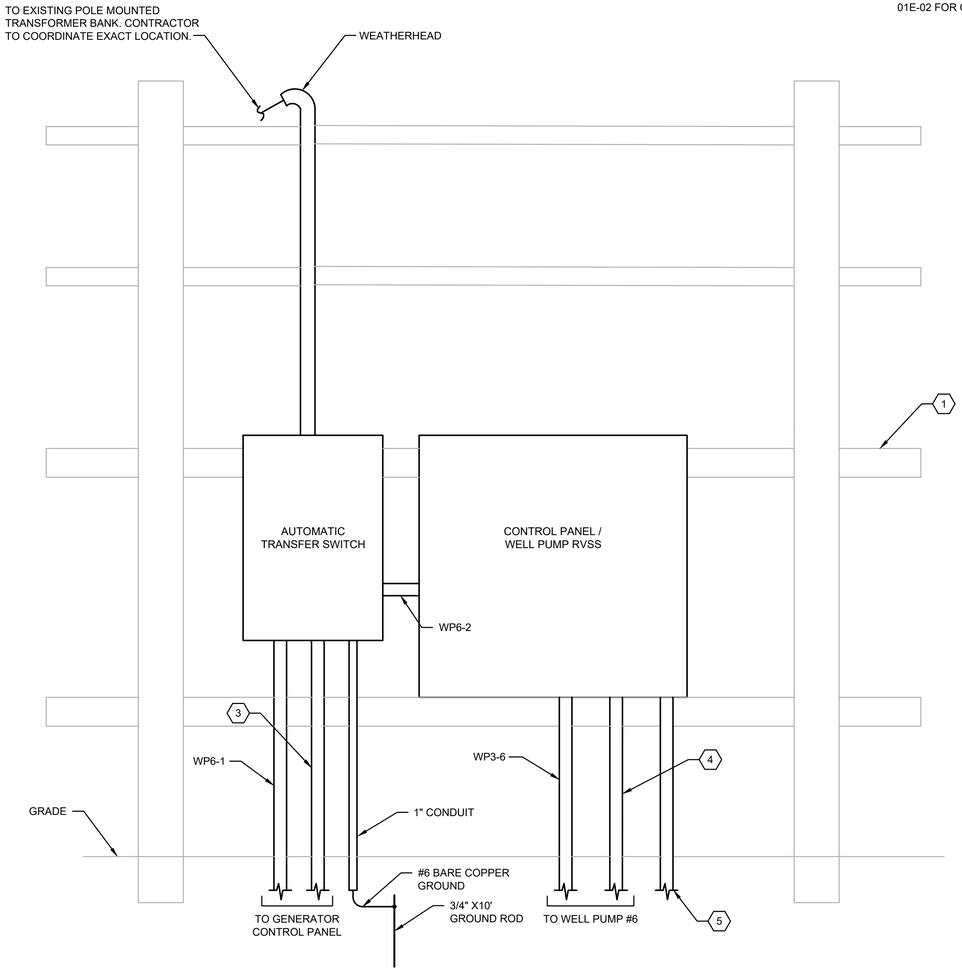
1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT SIZES.

KEY NOTES:

1. ADD/REMOVE METAL SUPPORTS AS NECESSARY FOR NEW EQUIPMENT.
2. FINAL CONNECTION TO PUMP MOTOR TO BE WITH PVC-COATED FLEXIBLE CONDUIT.
3. 1" CONDUIT WITH 2-#14 FOR GENERATOR RUN COMMAND.
4. 1" CONDUIT WITH 2-#12, 1-#12G FOR HEAT TRACING AND 4-#14 FOR SOLENOID CONTROL VALVES.
5. 1" CONDUIT WITH FIBER TO WELL PUMP CONTROL BUILDING. SEE SITE PLAN SHEET 01E-02 FOR CONTINUATION.



REMOTE WELL SITE #6 UPDATED ELECTRICAL PLAN
NO SCALE



REMOTE WELL SITE #6 UPDATED ELECTRICAL RACK DETAIL
NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

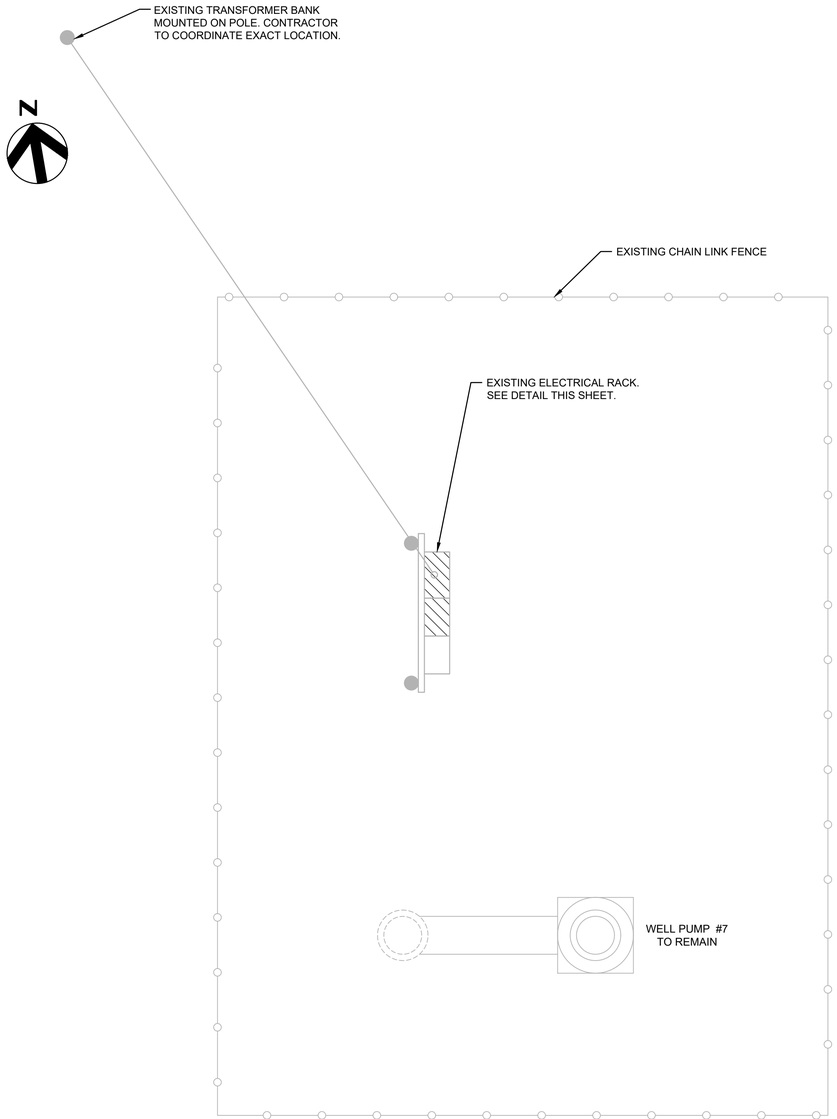
WELL SITE NO.6 ELECTRICAL PLAN

FILENAME	01E-22.dwg
SCALE	NOT TO SCALE

SHEET
01E-22

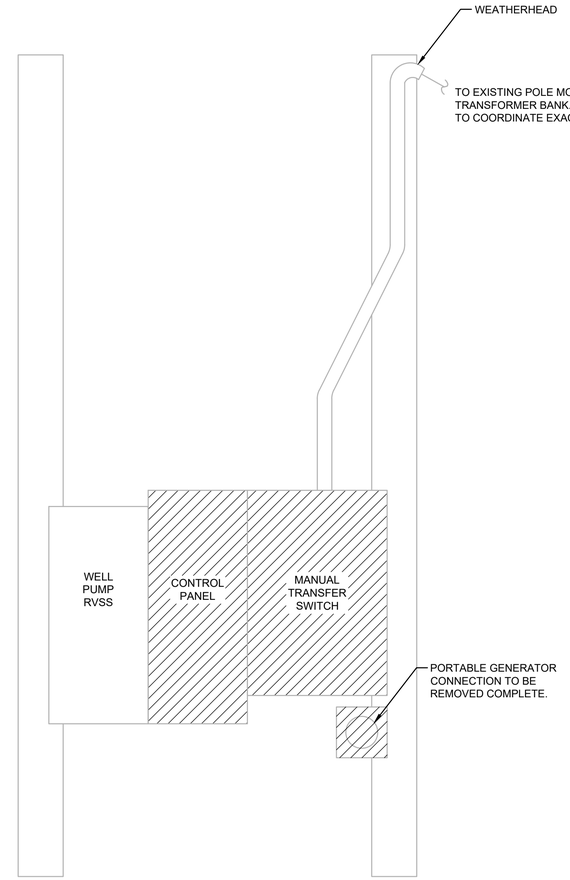
GENERAL NOTES:

1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT MODIFICATIONS.



REMOTE WELL SITE #7 EXISTING ELECTRICAL PLAN

NO SCALE



REMOTE WELL SITE #7 EXISTING ELECTRICAL RACK DETAIL

NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

WELL SITE NO.7 DEMOLITION PLAN

FILENAME	01E-23.dwg
SCALE	NOT TO SCALE

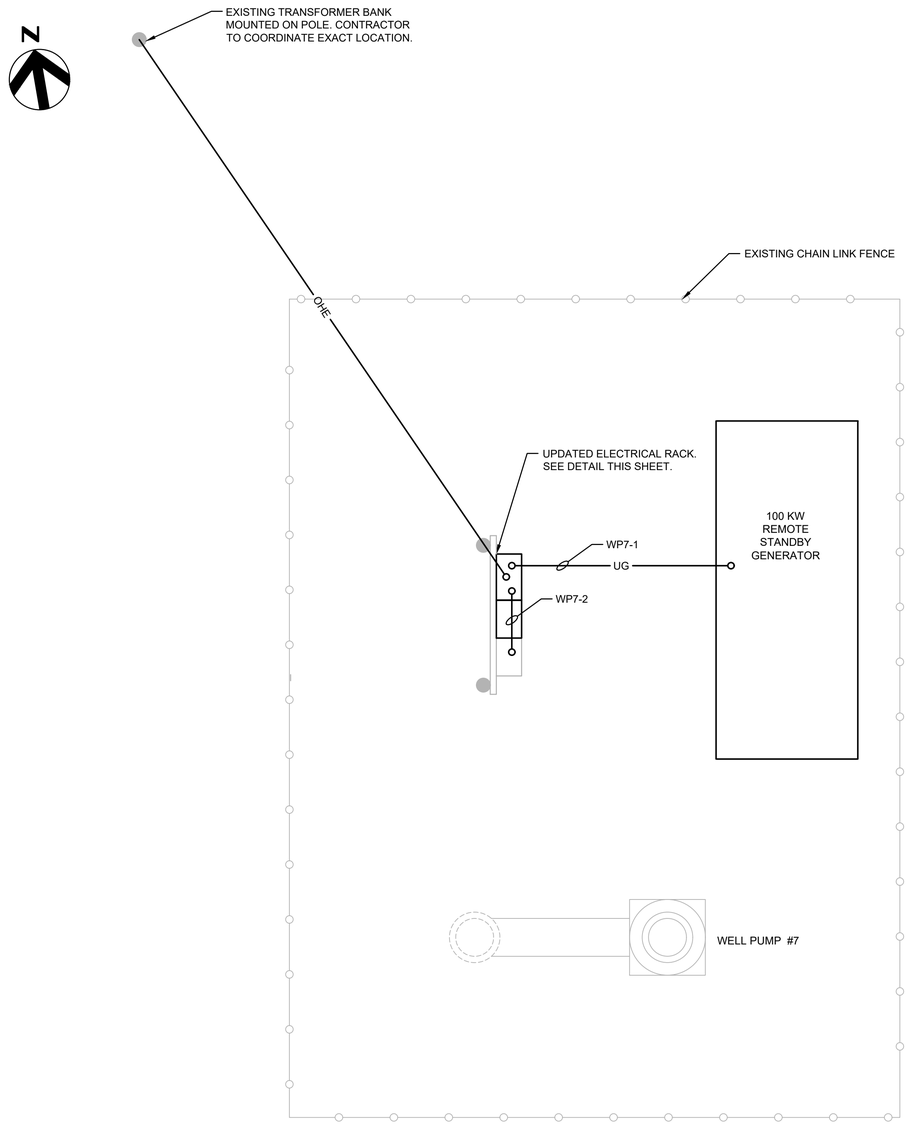
SHEET **01E-23**

GENERAL NOTES:

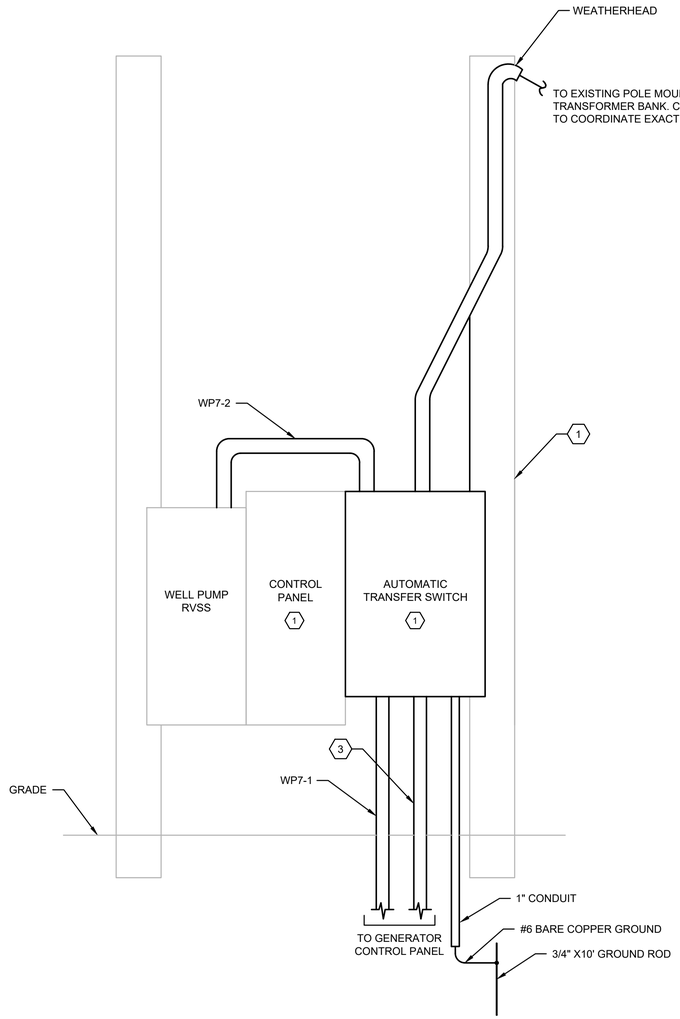
1. SEE ONE LINE DIAGRAM SHEET 01E-06 FOR WELL SITE WIRE & CONDUIT SIZES.

KEY NOTES: ⬡

1. ADD/REMOVE METAL SUPPORTS AS NECESSARY FOR NEW EQUIPMENT.



REMOTE WELL SITE #7 UPDATED ELECTRICAL PLAN
NO SCALE



REMOTE WELL SITE #7 UPDATED ELECTRICAL RACK DETAIL
NO SCALE

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

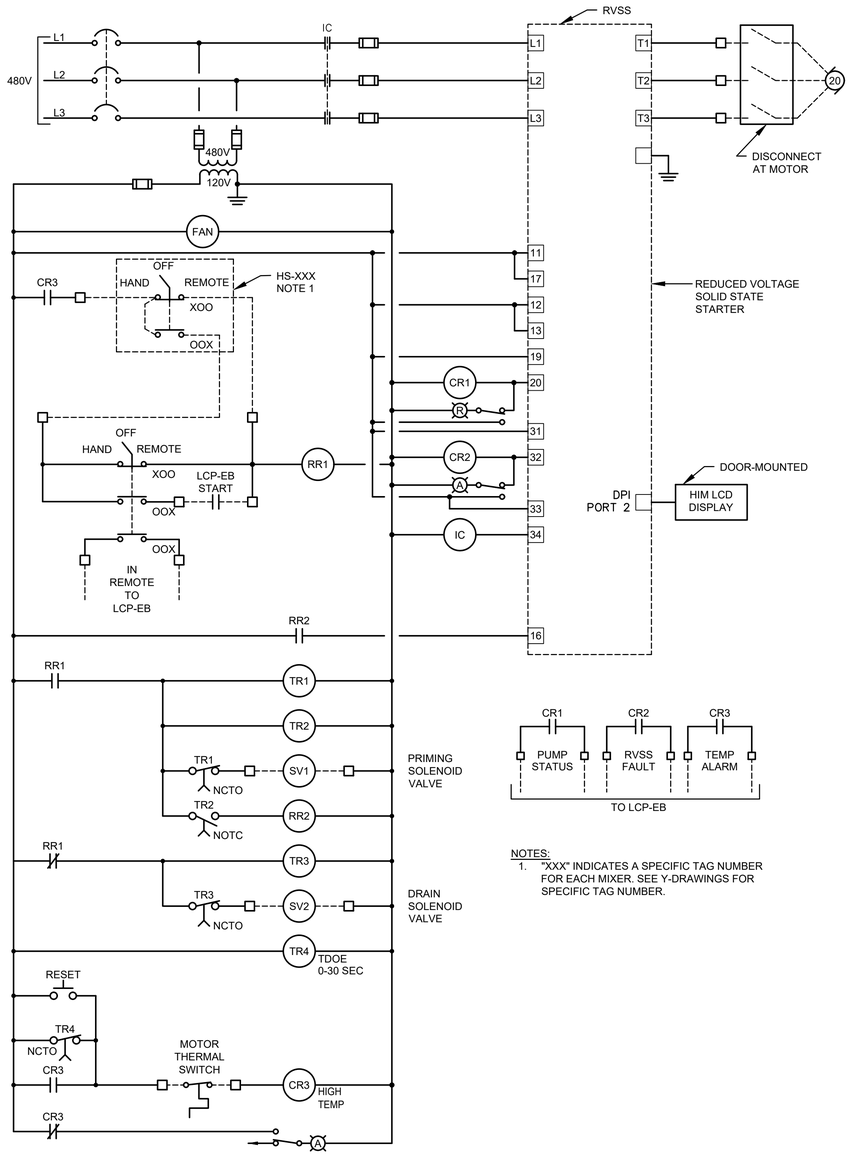
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

WELL SITE NO.7 ELECTRICAL PLAN

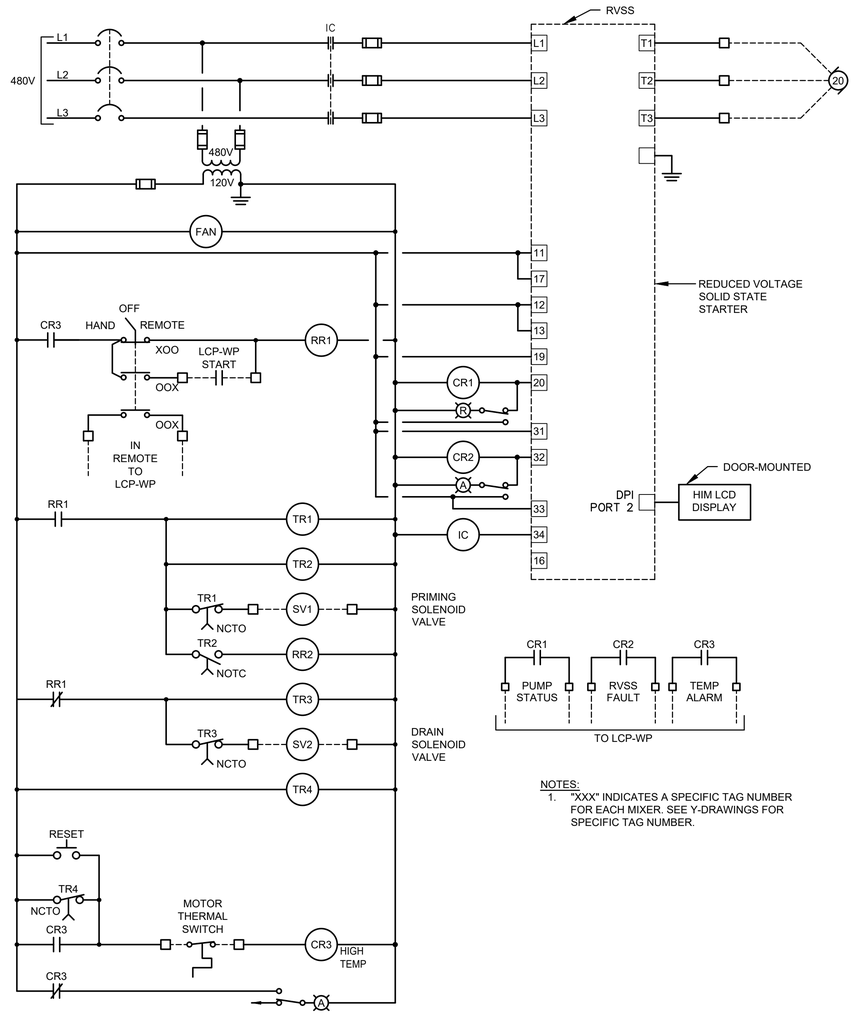
FILENAME	01E-24.dwg
SCALE	NOT TO SCALE

SHEET **01E-24**



NOTES:
1. "XXX" INDICATES A SPECIFIC TAG NUMBER FOR EACH MIXER. SEE Y-DRAWINGS FOR SPECIFIC TAG NUMBER.

WELL PUMP CONTROL SCHEMATIC
TYPICAL FOR WELL PUMPS 4 & 5



NOTES:
1. "XXX" INDICATES A SPECIFIC TAG NUMBER FOR EACH MIXER. SEE Y-DRAWINGS FOR SPECIFIC TAG NUMBER.

WELL PUMP CONTROL SCHEMATIC
TYPICAL FOR WELL PUMPS 1, 3, & 6

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
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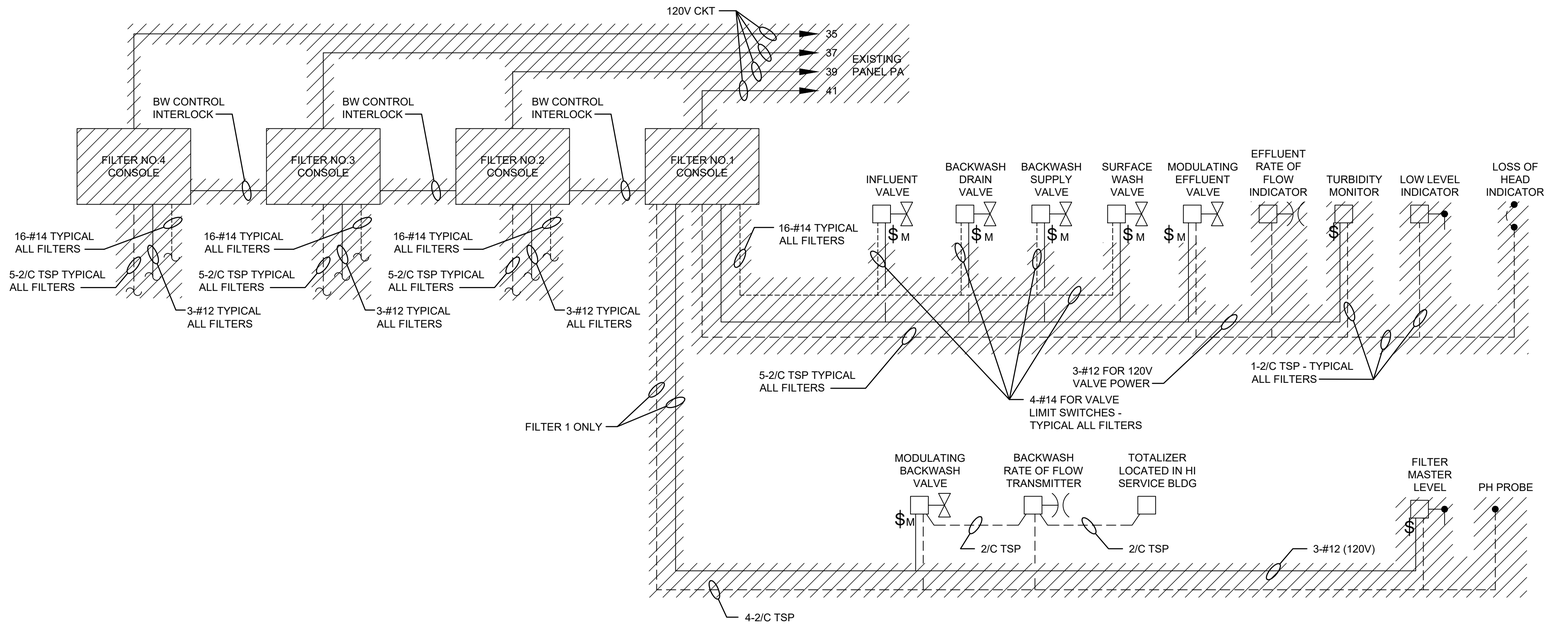
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

ELECTRICAL CONTROL DIAGRAMS

FILENAME 01E-25.dwg
SCALE NO SCALE
SHEET 01E-25



ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

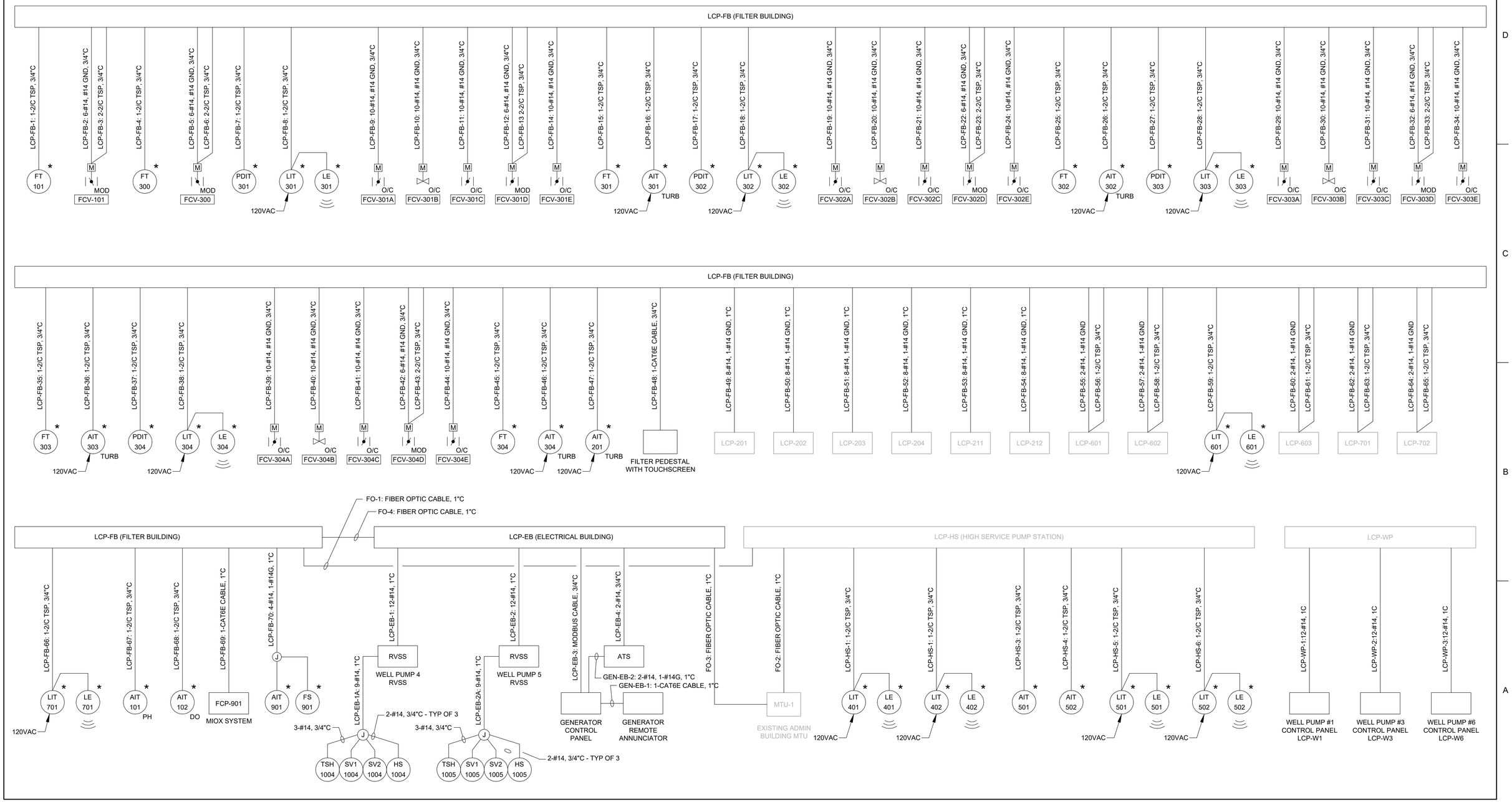
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

FILTER VALVE CONTROL WIRING MODIFICATIONS

FILENAME	01E-26.dwg
SCALE	NO SCALE

SHEET 01E-26



ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
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DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

INSTRUMENT ONE-LINE DIAGRAM

FILENAME	01E-27.dwg
SCALE	N.T.S.

SHEET **01E-27**

PRIMARY ELEMENT SYMBOLOGY

- ORIFICE PLATE
- V-CONE
- FI — ROTOMETER
- SONIC OR ULTRASONIC FLOWMETER
- M — MAGNETIC FLOWMETER
- FT — MASS DISPERSION FLOWMETER
- FLUME
- WEIR
- PROPELLER OR TURBINE METER
- VENTURI TUBE
- FLOAT SWITCH
- TE — TEMPERATURE ELEMENT WITH THERMOWELL
- FG — SIGHT FLOW GLASS

LINE TYPES

- MAIN PROCESS LINE
- SECONDARY PROCESS LINE
- AUXILIARY PROCESS LINE
- DIRECTION OF FLOW
- PNEUMATIC SIGNAL
- ELECTRICAL SIGNAL
- HYDRAULIC SIGNAL
- SOFTWARE OR DATA LINK
- SIGNAL CONNECTION
- CROSSOVER - NO CONNECTION
- CAPILLARY

CROSS REFERENCE SYMBOLOGY

- 08Y201 — CONTINUATION ON SHEET 08Y201
- 08Y201 — CONTINUATION ON SHEET 08Y201

INSTRUMENT SYMBOLOGY

- LOCALLY MOUNTED FIELD INSTRUMENTATION
- MOUNTED ON PANEL FRONT
- MOUNTED INSIDE PANEL
- XXX — FRONT PANEL MOUNTED ON AUXILIARY PANEL (SUBSCRIPT INDICATES PANEL)
- MOUNTED INSIDE AUXILIARY PANEL
- PILOT LIGHT
- INSTRUMENT FUNCTIONS SHARING COMMON HOUSING
- I — COMPLEX INTERLOCK AS DEFINED IN CONTROL DIAGRAM OR IN SPECIFICATIONS
- SHARED DISPLAY, SHARED CONTROL, FIELD MOUNTED
- SHARED DISPLAY, SHARED CONTROL, PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR
- PROGRAMMABLE LOGIC CONTROL, PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR
- PROGRAMMABLE LOGIC CONTROL, FIELD MOUNTED

ACTUATOR SYMBOLOGY

- X — OPERATOR ABBREVIATIONS:
  M = MOTOR
  P = PNEUMATIC
  S = SOLENOID
- FLOAT OPERATOR
- SPRING-OPPOSED SINGLE-ACTING PNEUMATIC CYLINDER
- DOUBLE-ACTING PNEUMATIC CYLINDER
- PNEUMATIC DIAPHRAGM
- PNEUMATIC DIAPHRAGM WITH POSITIONER

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USERS CHOICE			CONTROL	CLOSED
D	USERS CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME; RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

MISCELLANEOUS INSTRUMENTATION ABBREVIATIONS

AI	ANALOG INPUT
AO	ANALOG OUTPUT
CL2	CHLORINE (ANALYZER MODIFIER)
CO	CARBON MONOXIDE (ANALYZER MODIFIER)
CO2	CARBON DIOXIDE (ANALYZER MODIFIER)
COMB	COMBUSTIBLES (ANALYZER MODIFIER)
COND	CONDUCTIVITY (ANALYZER MODIFIER)
DEN	DENSITY (ANALYZER MODIFIER)
DI	DIGITAL INPUT
DO	DIGITAL OUTPUT
DO	DISSOLVED OXYGEN (ANALYZER MODIFIER)
E/P	VOLTAGE TO PNEUMATIC
H2S	HYDROGEN SULFIDE (ANALYZER MODIFIER)
HS	HAND SWITCH
HCL	HYDROGEN CHLORIDE (ANALYZER MODIFIER)
I/O	INPUT/OUTPUT
I/P	CURRENT TO PNEUMATIC
MCP	MOTOR CONTROL PANEL
MTS	MANUAL TRANSFER SWITCH
NOX	NITROGEN OXIDE (ANALYZER MODIFIER)
OI	OPERATOR INTERFACE
O2	OXYGEN (ANALYZER MODIFIER)
P&ID	PROCESS AND INSTRUMENTATION DIAGRAM
SS	SUSPENDED SOLIDS (ANALYZER MODIFIER)
TURB	TURBIDITY (ANALYZER MODIFIER)
WAN	WIDE AREA NETWORK

CONTROL SWITCH NOTATION ABBREVIATIONS

XXX XXX XXXX — EQUIPMENT TYPE; CONTROL SWITCH NOTATION ABREV.; SEQUENTIAL EQUIPMENT #

ACK	ACKNOWLEDGE
ESTOP	EMERGENCY STOP
(EX)	EXISTING
FAIL	FAILURE
FOR	FORWARD-OFF-REVERSE
FR	FORWARD-REVERSE
FS	FAST-SLOW
HA	HAND-AUTO
HOA	HAND-OFF-AUTO
HOR	HAND-OFF-REMOTE
LL	LEAD-LAG
LLS	LEAD-LAG-STANDBY
LOR	LOCAL-OFF-REMOTE
LR	LOCAL-REMOTE
LS	LEAD-STANDBY
MA	MANUAL-AUTO
OAC	OPEN-AUTO-CLOSE
OC	OPEN-CLOSE
OO	ON-OFF
OSC	OPEN-STOP-CLOSE
RJ	RUN-JOG
RJR	RUN-JOG-REVERSE
SIL	SILENCE
SS	START-STOP

VALVES

- BALL VALVE
- BUTTERFLY VALVE
- CONE VALVE
- CHECK VALVE
- DOUBLE-DISK CHECK VALVE
- BALL CHECK VALVE
- DIAPHRAGM VALVE
- GATE VALVE
- GLOBE VALVE
- KNIFE GATE VALVE
- NEEDLE VALVE
- PINCH VALVE
- PLUG VALVE
- THREE-WAY BALL VALVE
- THREE-WAY PLUG VALVE
- PRESSURE-REDUCING VALVE
- PRESSURE-REGULATING VALVE
- THREE-WAY CONTROL VALVE
- OR — PRESSURE-RELIEF VALVE
- X — AIR-RELEASE VACUUM VALVE
  A = AIR RELEASE
  VAC = VACUUM
- SURGE RELIEF VALVE

MISCELLANEOUS SYMBOLOGY

- SUBMERSIBLE PUMP
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- HOSE PUMP
- PUMP
- MOTOR
  CS - CONSTANT SPEED
  VS - VARIABLE SPEED

PLANT PROCESS/AREA DESIGNATORS

AREA	SYSTEM AREA NUMBER	PROCESS AREA DESCRIPTION
1	100	AERATORS/RAPID MIX
2	200	SEDIMENTATION & FLOCCULATION BASINS
3	300	FILTERS
4	400	HIGH SERVICE & BACKWASH PUMPS
5	500	CLEARWELLS
6	600	POLYMER
7	700	CAUSTIC
8	800	FLUORIDE
9	900	MIOX
10	1000	WELL PUMPS

GENERAL NOTES:

1. THIS IS A STANDARD INSTRUMENTATION SYMBOLOGY AND ABBREVIATIONS SHEET. LISTING OF SYMBOLS AND ABBREVIATIONS DOES NOT IMPLY ALL SYMBOLS AND ABBREVIATIONS HAVE BEEN USED ON THIS PROJECT.
2. SEE PROCESS, MECHANICAL AND PLUMBING LEGEND SHEET FOR MISCELLANEOUS PIPING SYMBOLS.
3. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK.REFER TO CONTEXT OF EACH SHEET FOR USAGE.
4. VALVE SYMBOLS SHOWN HERE ARE APPLICABLE ONLY TO INSTRUMENTATION DIAGRAMS. SEE PROCESS, MECHANICAL AND PLUMBING LEGEND SHEET FOR VALVE SYMBOLS USED ELSEWHERE ON THE SHEETS.
5. COMPONENTS AND PANELS SHOWN WITH A (◆) ARE TO BE PROVIDED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
6. COMPONENTS AND PANELS WITH A SINGLE ASTERISK (*) ARE TO BE PROVIDED AS PART OF SPECIFICATION DIVISION 40, INSTALLED BY THE ELECTRICAL CONTRACTOR.
7. COMPONENTS AND PANELS SHOWN WITH A DOUBLE ASTERISK (**) ARE TO BE PROVIDED AS PART OF A PACKAGED SYSTEM, INSTALLED BY ELECTRICAL CONTRACTOR.

ISSUE	DATE	DESCRIPTION
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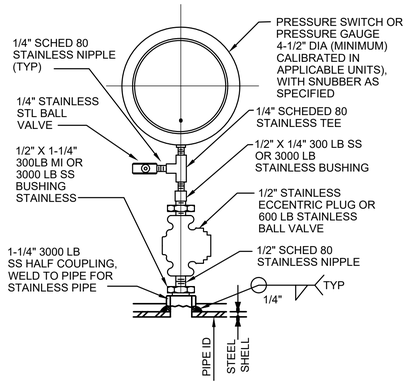
PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Duffy
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

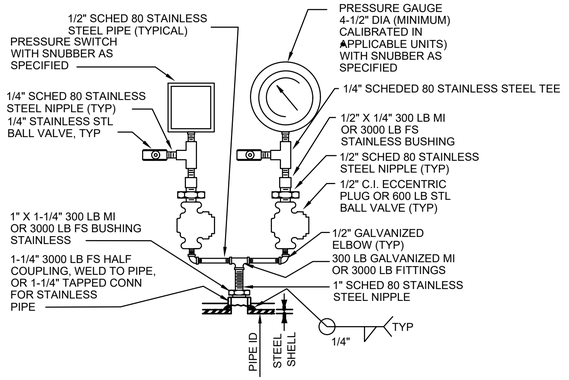
INSTRUMENTATION LEGEND

FILENAME: 00Y-01.dwg
SCALE: N.T.S.
SHEET: 00Y-01



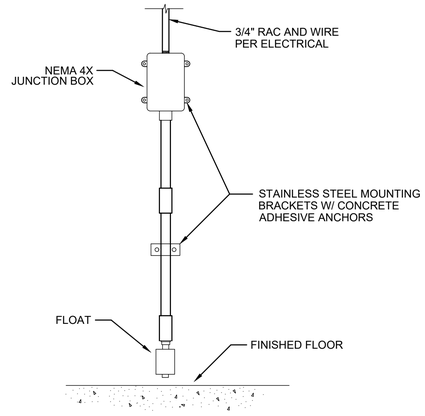
PRESSURE GAUGE OR PRESSURE SWITCH

NO SCALE



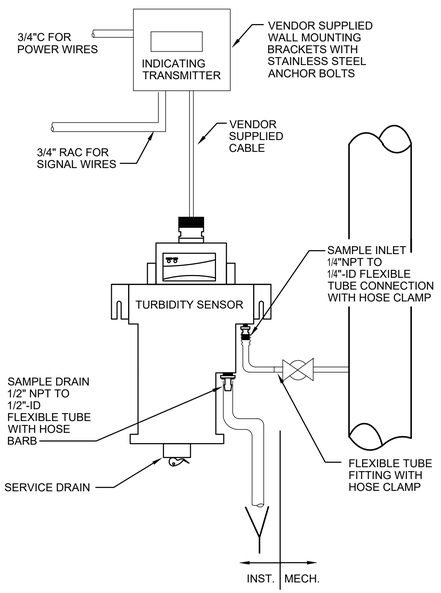
PRESSURE GAUGE AND SWITCH

NO SCALE



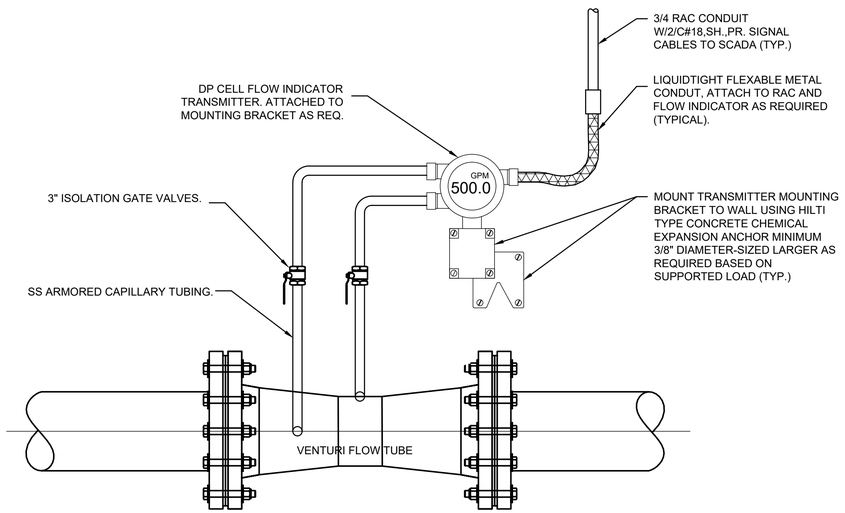
WET FLOOR SWITCH WALL MOUNTED

NO SCALE



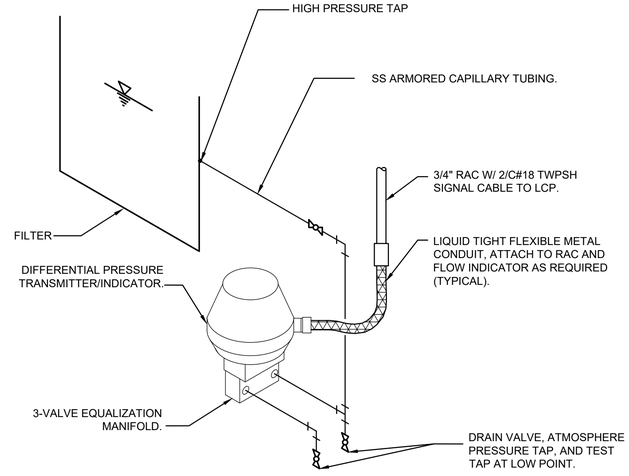
LOW RANGE TURBIDITY ANALYZER

NO SCALE



VENTURI FLOW TUBE AND DP CELL FLOW TRANSMITTER

NO SCALE



DP TRANSMITTER FOR FILTER 'LOSS OF HEAD' DETAIL

NO SCALE

NOTES:

1. FOR LIQUID SERVICE, SLOPE ALL LINES DOWNWARD TOWARD INSTRUMENT.
2. ALL LINES SHALL HAVE A CONTINUOUS SLOPE OF 1/4" PER FOOT MIN. (1" PER FOOT PREFERRED)

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MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

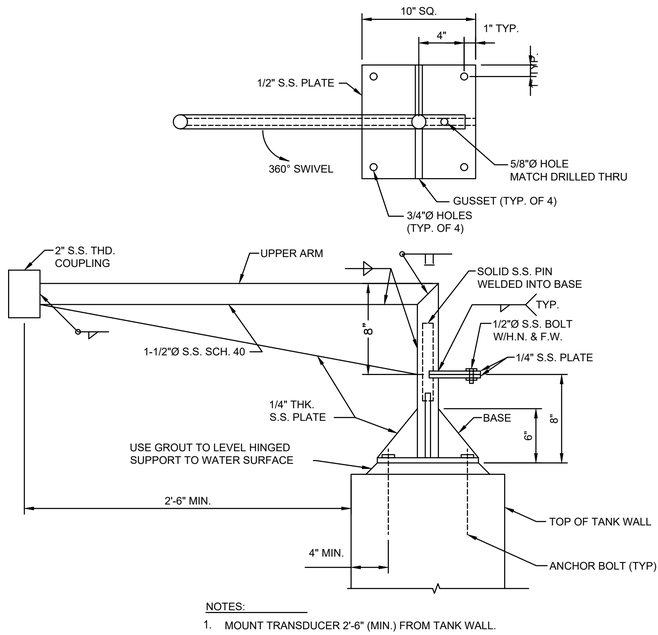
INSTRUMENTATION DETAILS

FILENAME	00Y-02.dwg
SCALE	N.T.S.

SHEET **00Y-02**

EXISTING FILTER VALVE SCHEDULE

TAG	IDENTIFICATION	TYPE
FCV-101	RAW WATER	MODULATING
FCV-300	BACKWASH	MODULATING
FCV-301A	INFLUENT VALVE	OPEN/CLOSE
FCV-301B	SURFACE WASH VALVE	OPEN/CLOSE
FCV-301C	BACKWASH DRAIN VALVE	OPEN/CLOSE
FCV-301D	EFFLUENT VALVE	MODULATING
FCV-301E	BACKWASH SUPPLY VALVE	OPEN/CLOSE
FCV-302A	INFLUENT VALVE	OPEN/CLOSE
FCV-302B	SURFACE WASH VALVE	OPEN/CLOSE
FCV-302C	BACKWASH DRAIN VALVE	OPEN/CLOSE
FCV-302D	EFFLUENT VALVE	MODULATING
FCV-302E	BACKWASH SUPPLY VALVE	OPEN/CLOSE
FCV-303A	INFLUENT VALVE	OPEN/CLOSE
FCV-303B	SURFACE WASH VALVE	OPEN/CLOSE
FCV-303C	BACKWASH DRAIN VALVE	OPEN/CLOSE
FCV-303D	EFFLUENT VALVE	MODULATING
FCV-303E	BACKWASH SUPPLY VALVE	OPEN/CLOSE
FCV-304A	INFLUENT VALVE	OPEN/CLOSE
FCV-304B	SURFACE WASH VALVE	OPEN/CLOSE
FCV-304C	BACKWASH DRAIN VALVE	OPEN/CLOSE
FCV-304D	EFFLUENT VALVE	MODULATING
FCV-304E	BACKWASH SUPPLY VALVE	OPEN/CLOSE



NOTES:

1. MOUNT TRANSDUCER 2'-6" (MIN.) FROM TANK WALL.

FILTER BASIN LEVEL SENSOR MOUNTING BRACKET

NO SCALE

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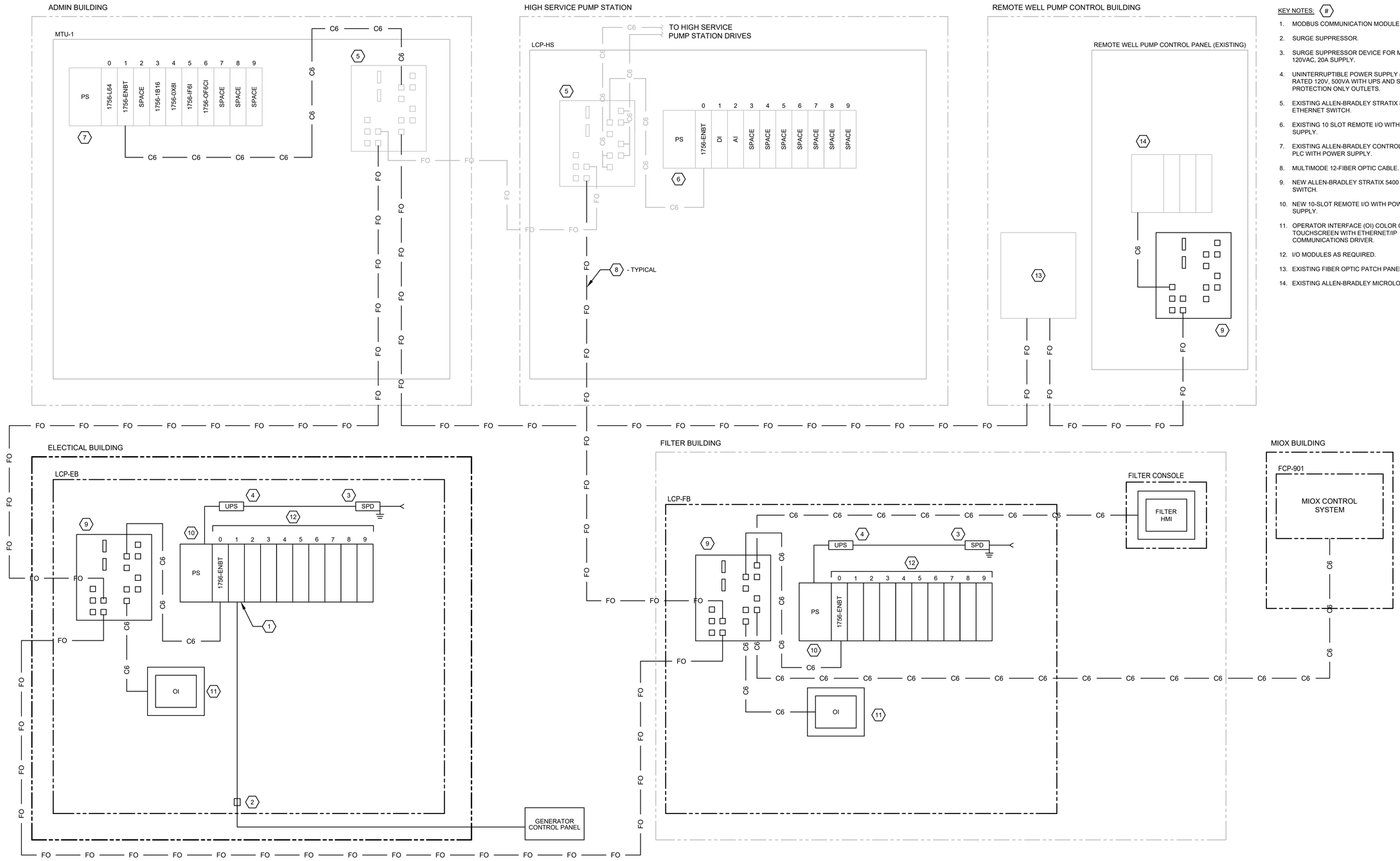
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

INSTRUMENTATION DETAILS

FILENAME	00Y-03.dwg
SCALE	N.T.S.

SHEET **00Y-03**



KEY NOTES: (#)

1. MODBUS COMMUNICATION MODULE.
2. SURGE SUPPRESSOR.
3. SURGE SUPPRESSOR DEVICE FOR MAIN 120VAC, 20A SUPPLY.
4. UNINTERRUPTIBLE POWER SUPPLY (UPS) RATED 120V, 500VA WITH UPS AND SURGE PROTECTION ONLY OUTLETS.
5. EXISTING ALLEN-BRADLEY STRATIX 8300 ETHERNET SWITCH.
6. EXISTING 10 SLOT REMOTE I/O WITH POWER SUPPLY.
7. EXISTING ALLEN-BRADLEY CONTROL LOGIX PLC WITH POWER SUPPLY.
8. MULTIMODE 12-FIBER OPTIC CABLE.
9. NEW ALLEN-BRADLEY STRATIX 5400 ETHERNET SWITCH.
10. NEW 10-SLOT REMOTE I/O WITH POWER SUPPLY.
11. OPERATOR INTERFACE (OI) COLOR CRT TOUCHSCREEN WITH ETHERNET/IP COMMUNICATIONS DRIVER.
12. I/O MODULES AS REQUIRED.
13. EXISTING FIBER OPTIC PATCH PANEL.
14. EXISTING ALLEN-BRADLEY MICROLOGIX PLC.

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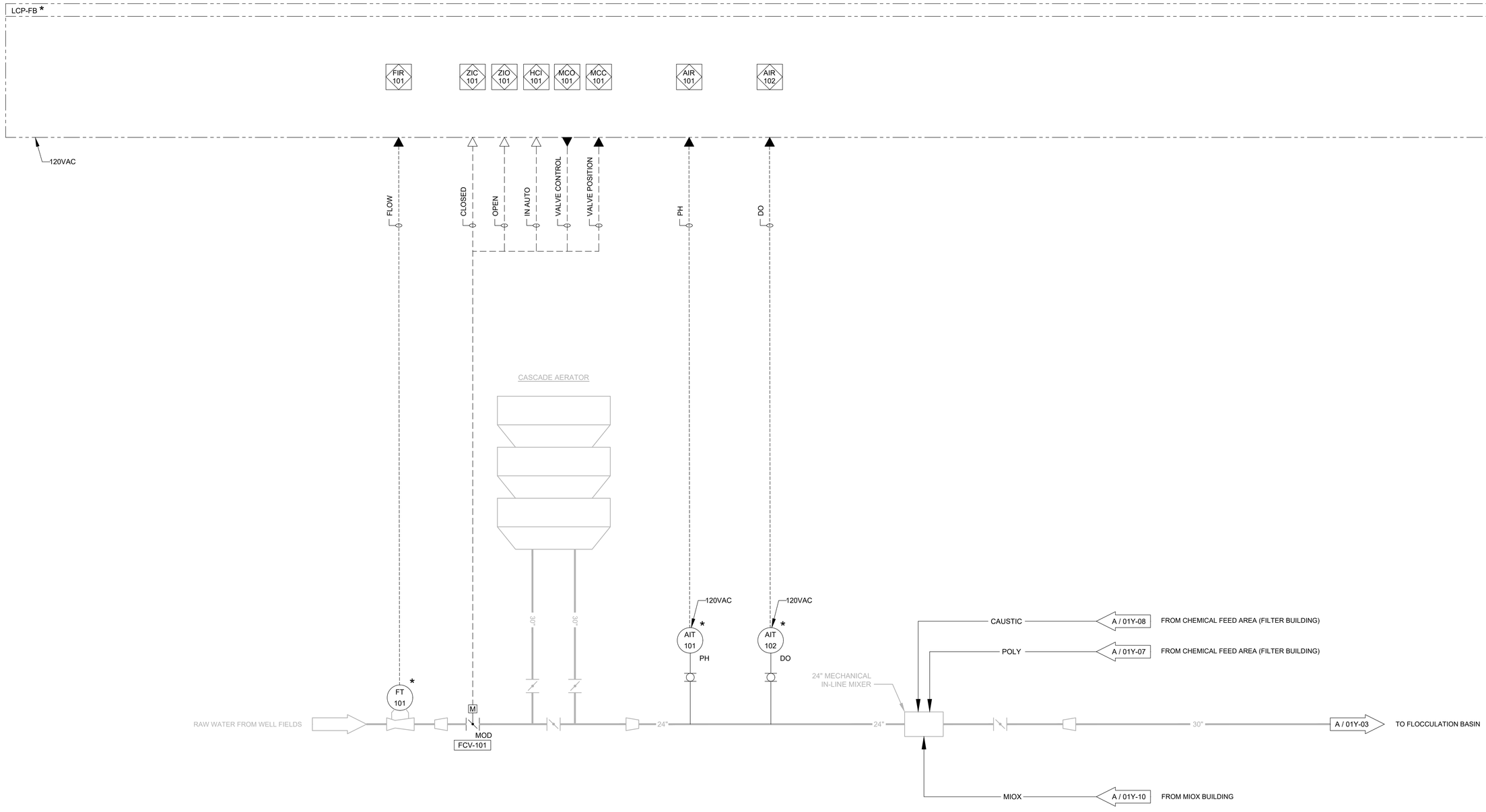
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

NETWORK ARCHITECTURE

FILENAME	01Y-01.dwg
SCALE	N.T.S.

SHEET 01Y-01



FILTER BUILDING

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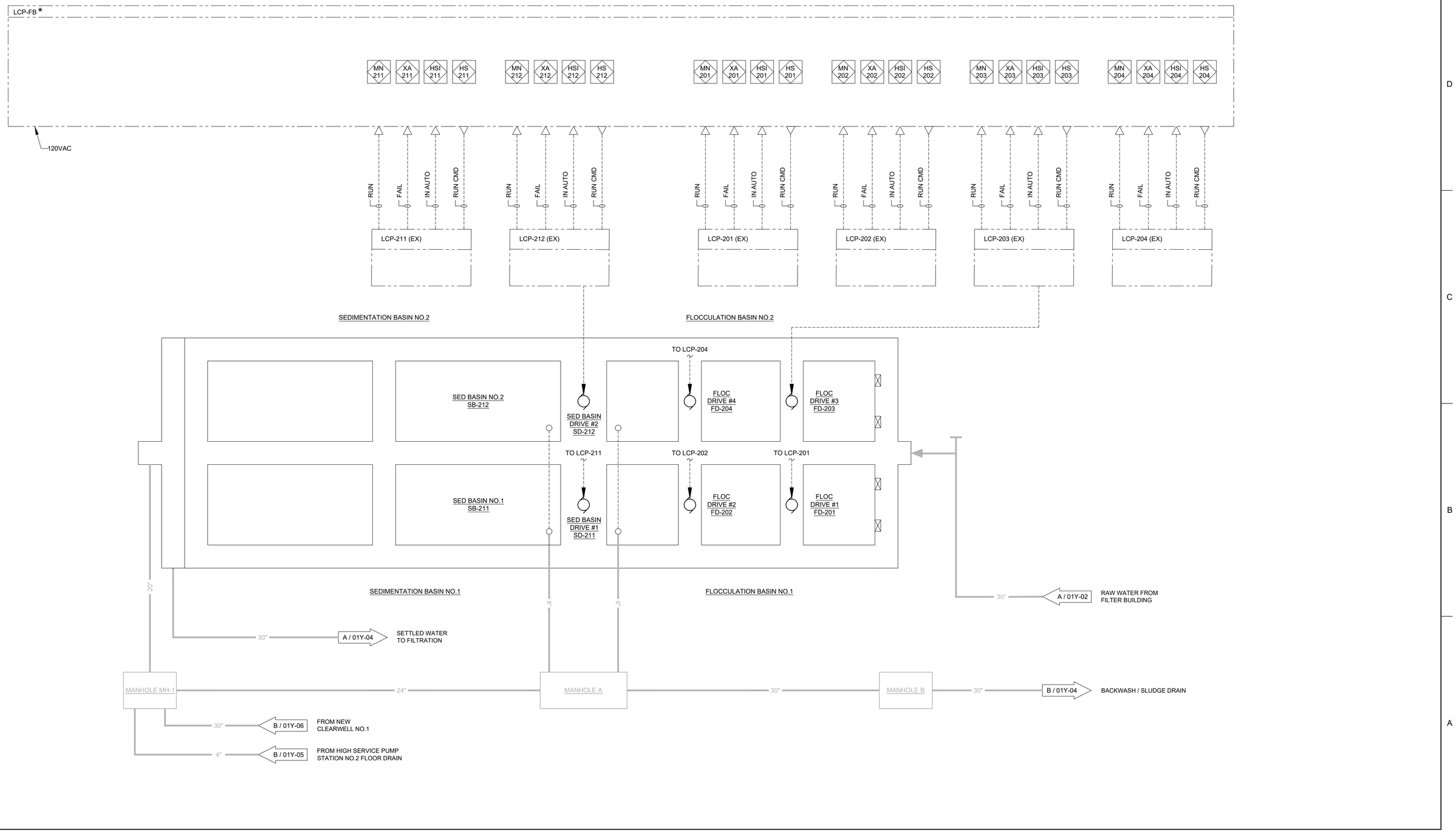
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

CASCADE AERATOR & RAPID MIX P&ID

FILENAME	01Y-02.dwg
SCALE	N.T.S.

SHEET **01Y-02**



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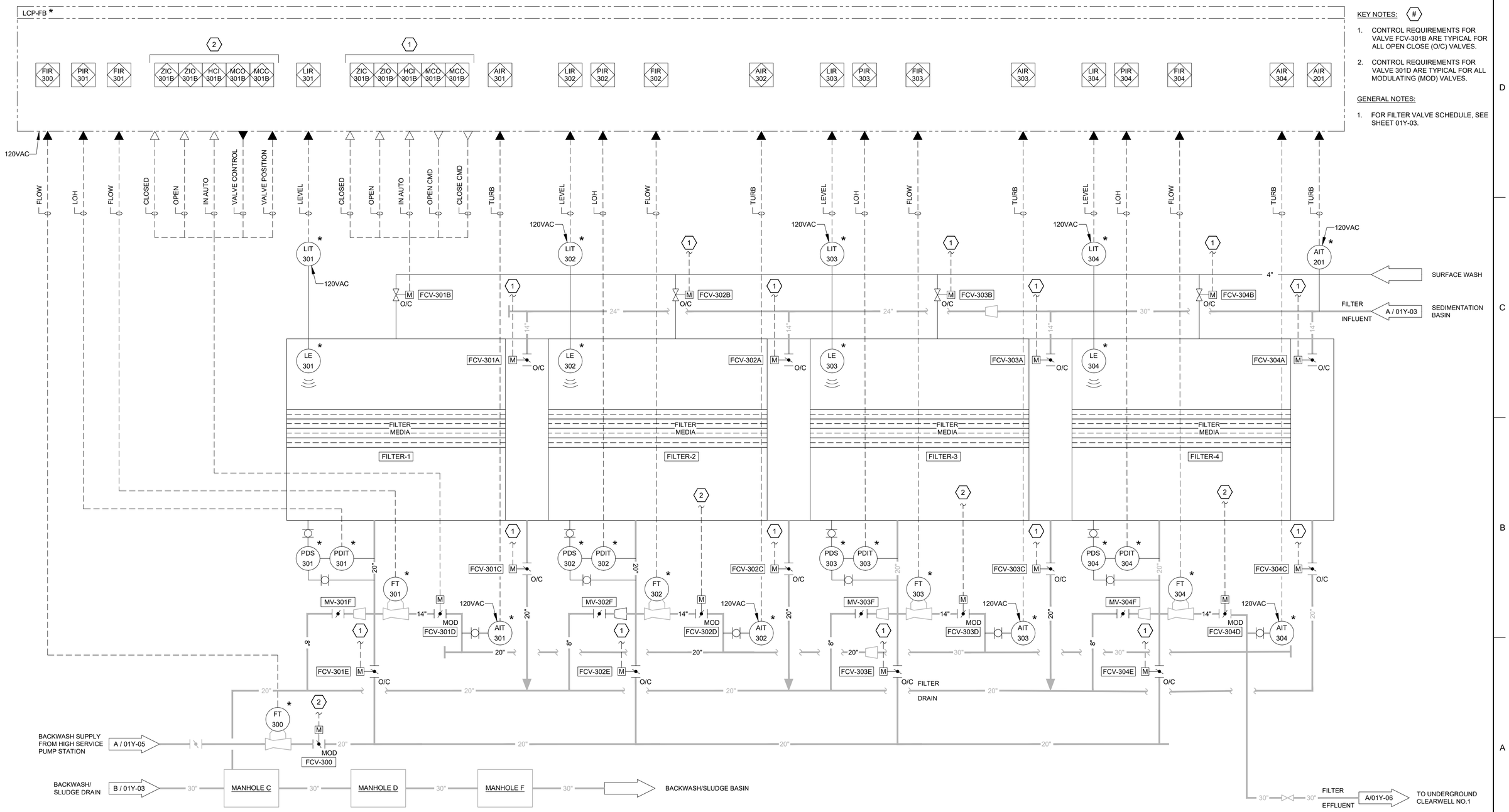
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

SEDIMENTATION & FLOCCULATION P&ID

FILENAME 01Y-03.dwg
SCALE N.T.S.
SHEET 01Y-03



FILTER BUILDING

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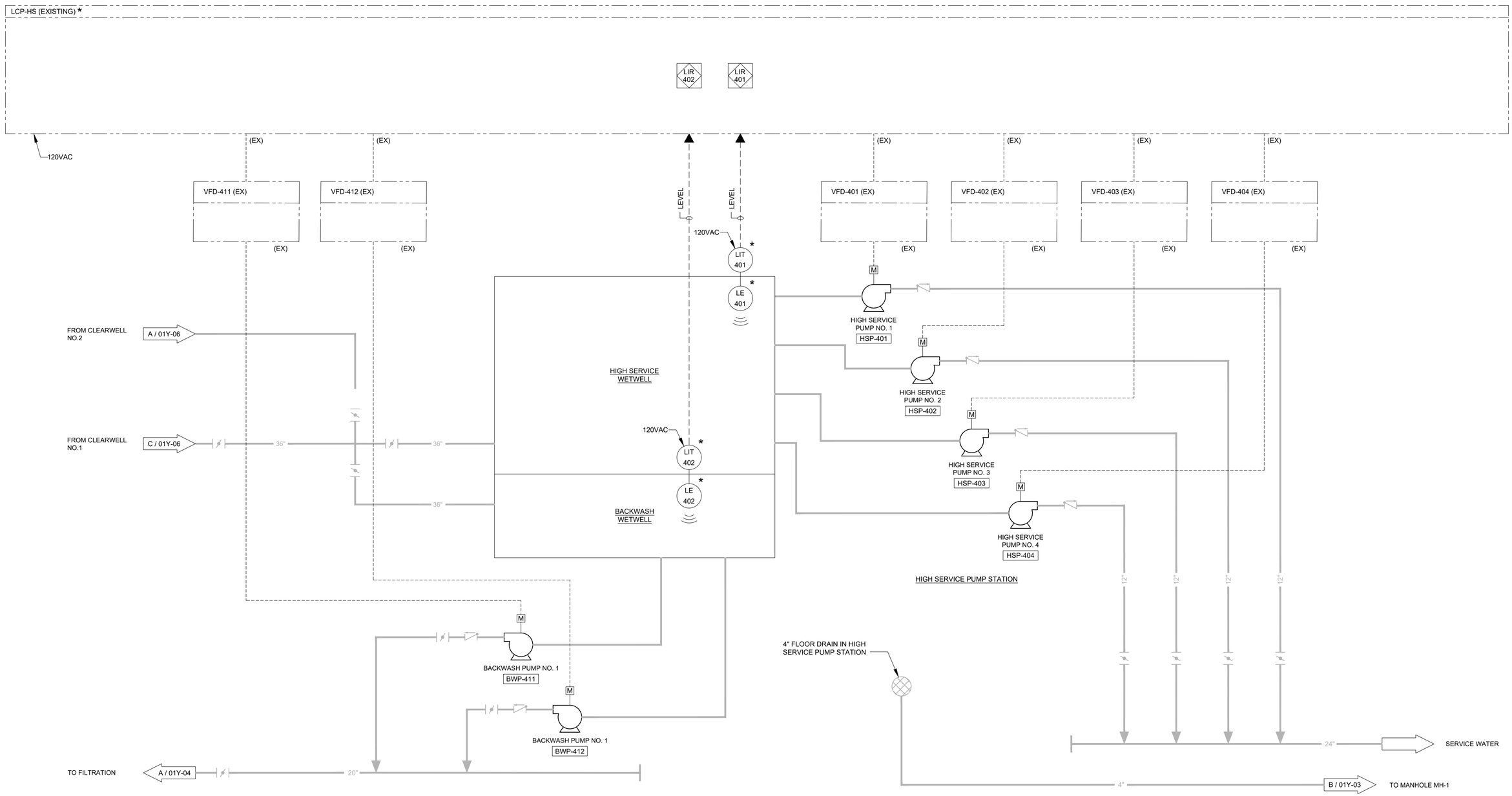
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

FILTRATION P&ID

FILENAME	01Y-04.dwg
SCALE	N.T.S.

SHEET **01Y-04**



HIGH SERVICE & BACKWASH PUMPS

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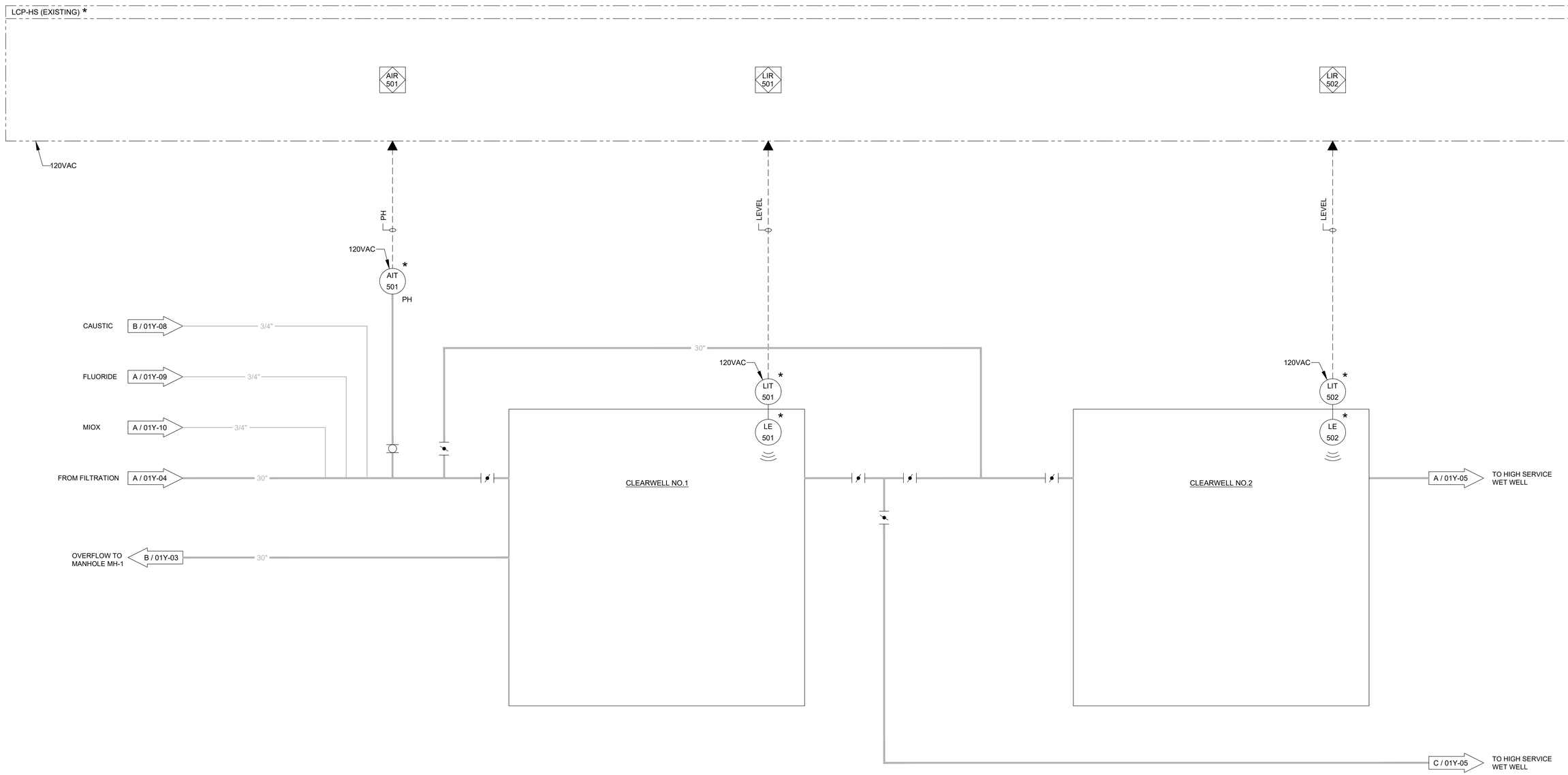
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

HIGH SERVICE & BACKWASH PUMPS P&ID

FILENAME	01Y-05.dwg
SCALE	N.T.S.

SHEET **01Y-05**



CLEARWELLS NO.1 & NO.2

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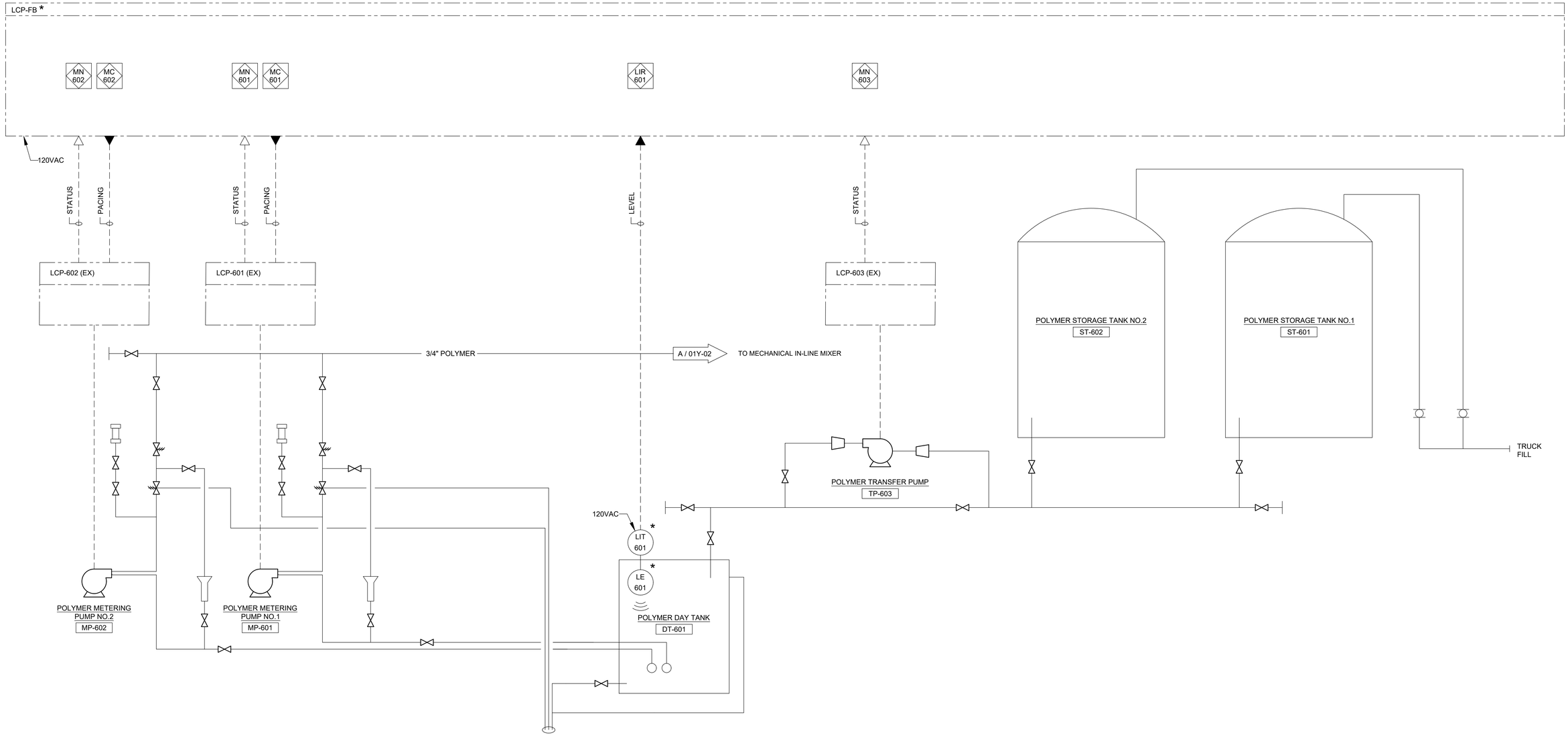
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

CLEARWELLS NO.1 & NO.2 P&ID

FILENAME	01Y-06.dwg
SCALE	N.T.S.

SHEET **01Y-06**



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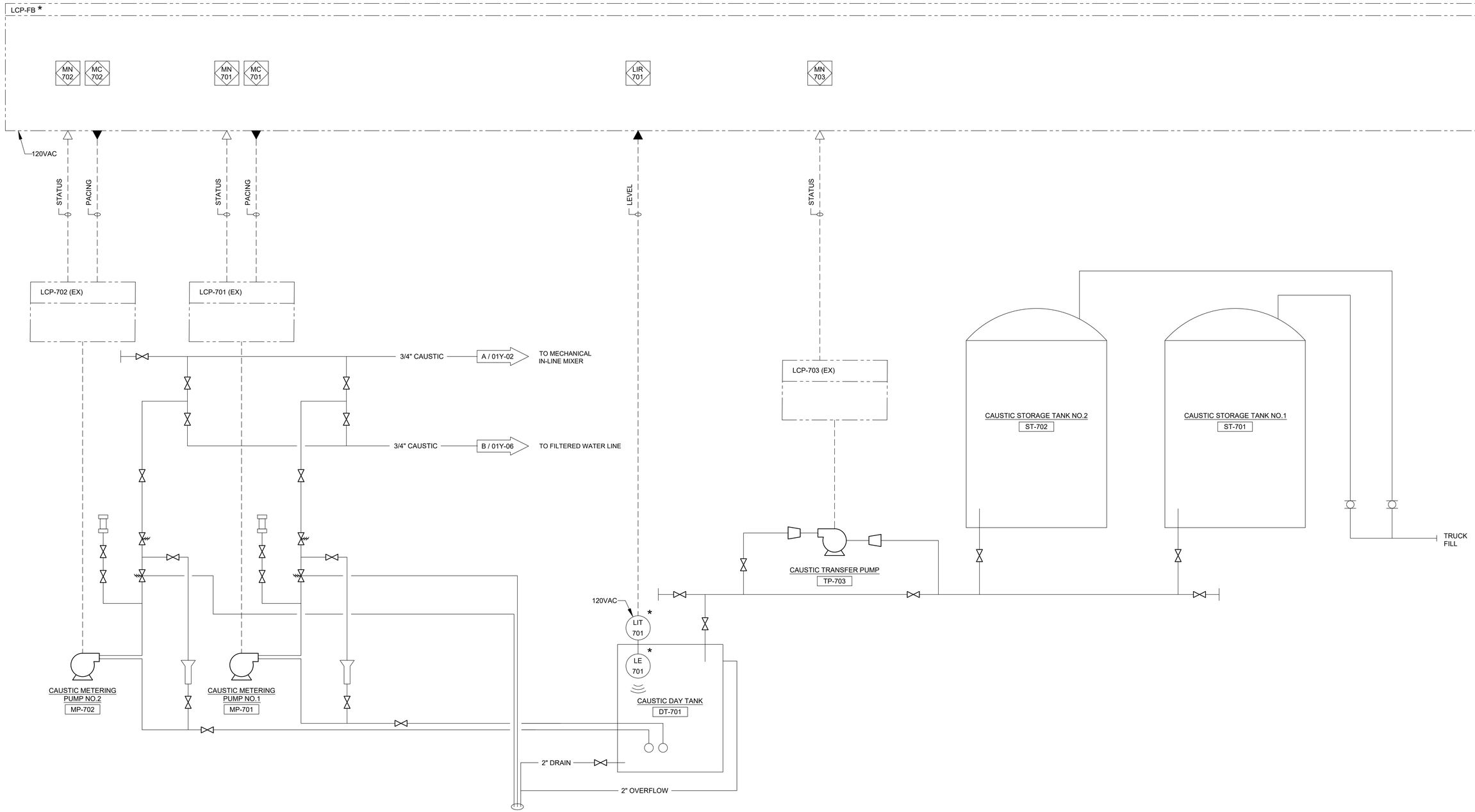
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

POLYMER P&ID

FILENAME	01Y-07.dwg
SCALE	N.T.S.

SHEET **01Y-07**



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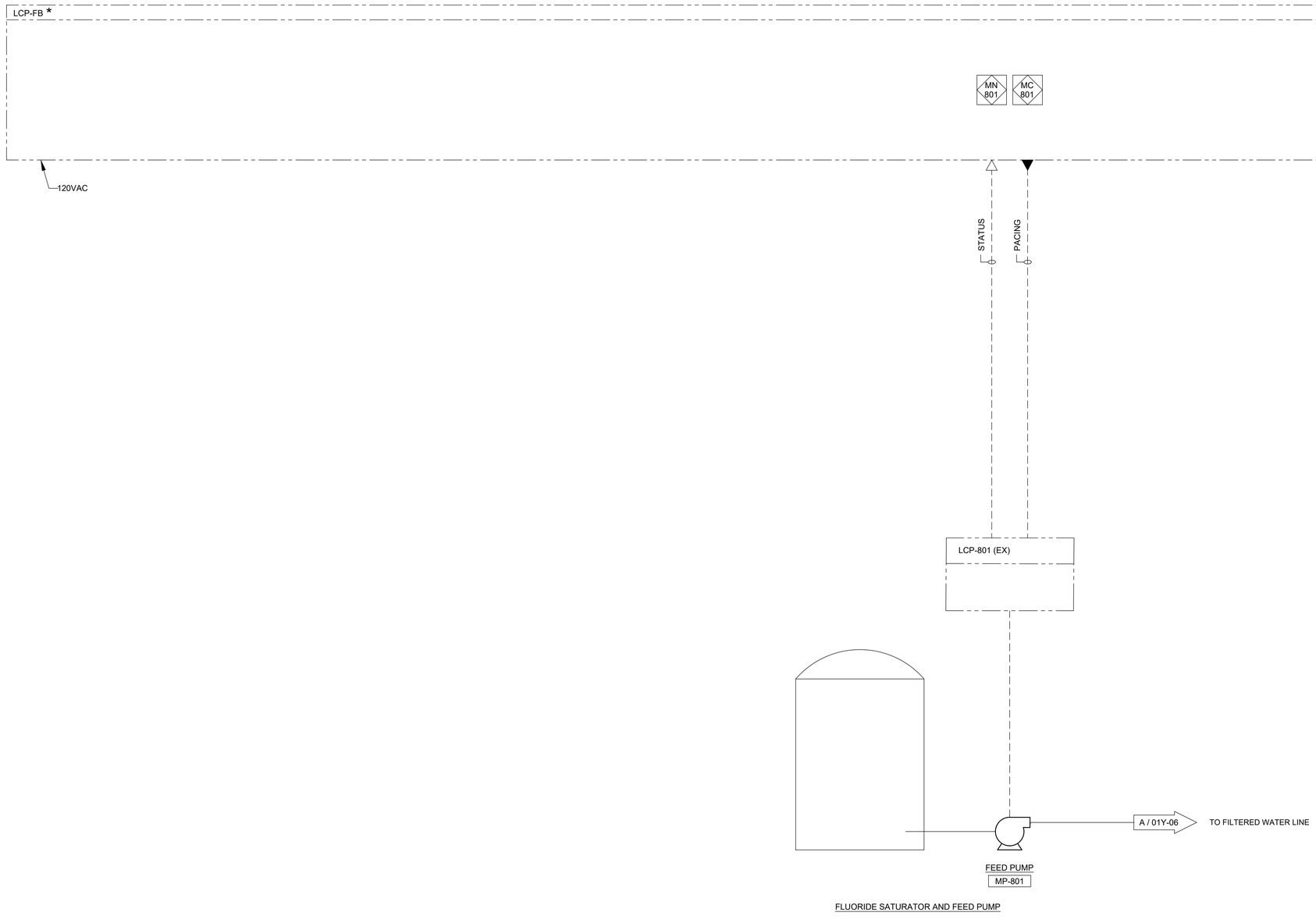
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

CAUSTIC P&ID

FILENAME	01Y-08.dwg
SCALE	N.T.S.

SHEET **01Y-08**



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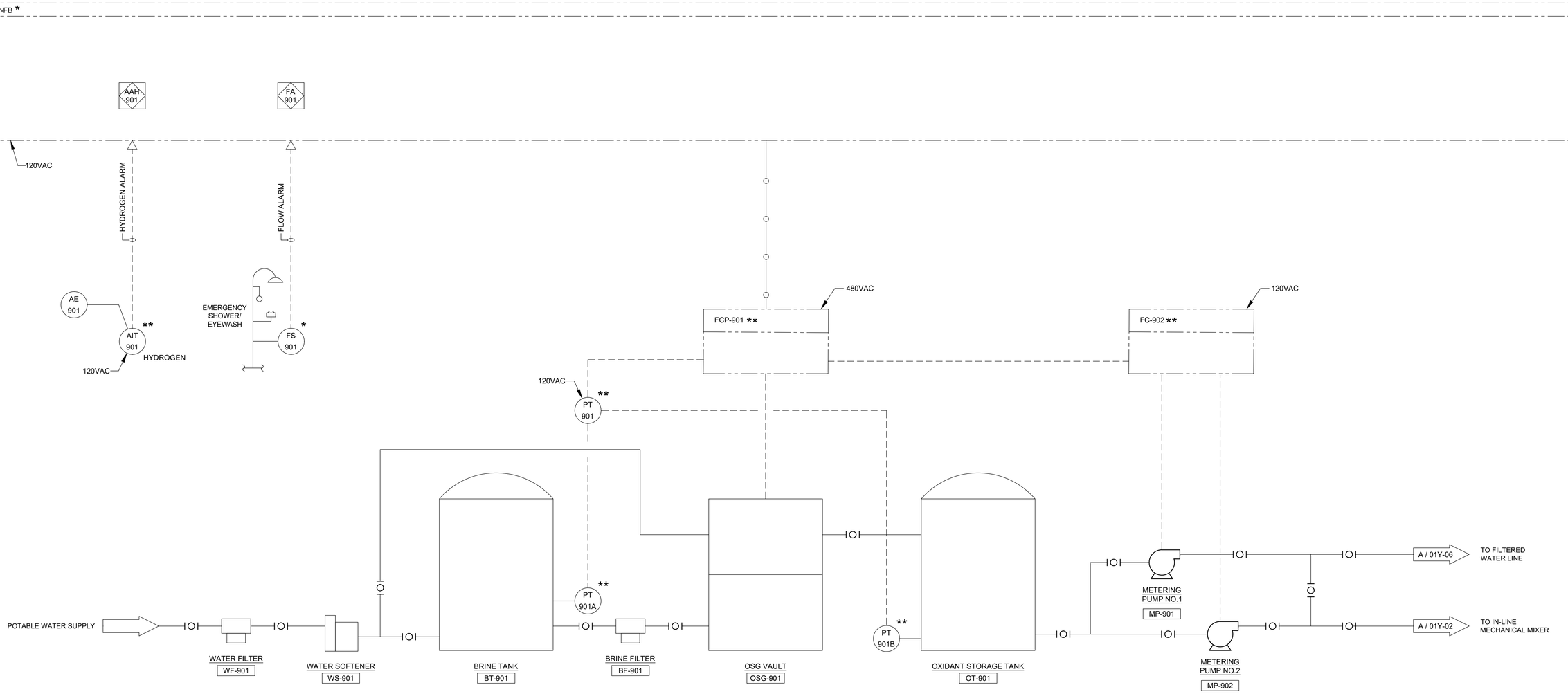
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

FLUORIDE P&ID

FILENAME 01Y-09.dwg
SCALE N.T.S.

SHEET 01Y-09



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MURRAY WTP ELECTRICAL IMPROVEMENTS

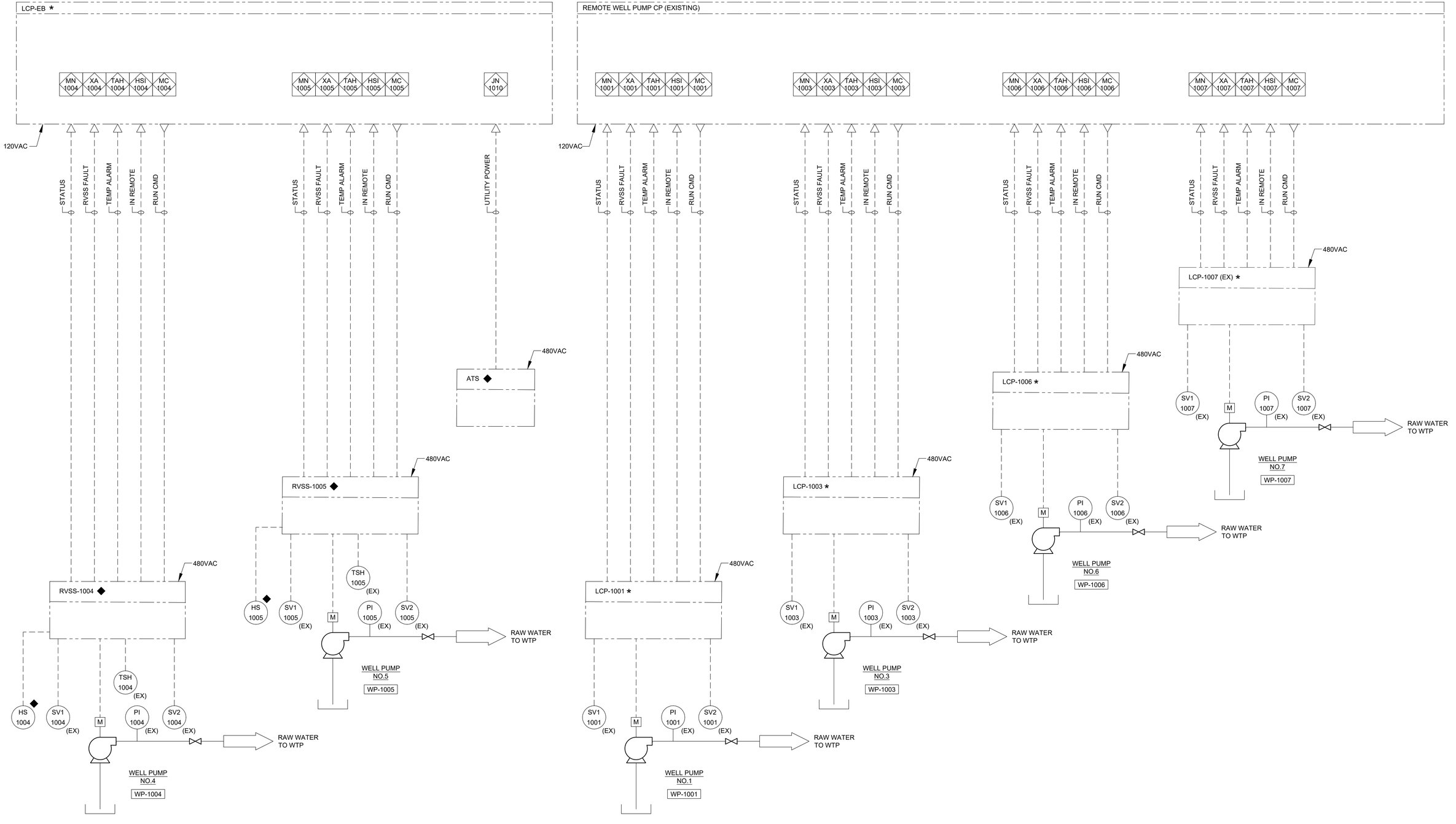
MURRAY, KENTUCKY

MIOX P&ID

FILENAME 01Y-10.dwg

SCALE N.T.S.

SHEET **01Y-10**



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MURRAY WTP ELECTRICAL IMPROVEMENTS

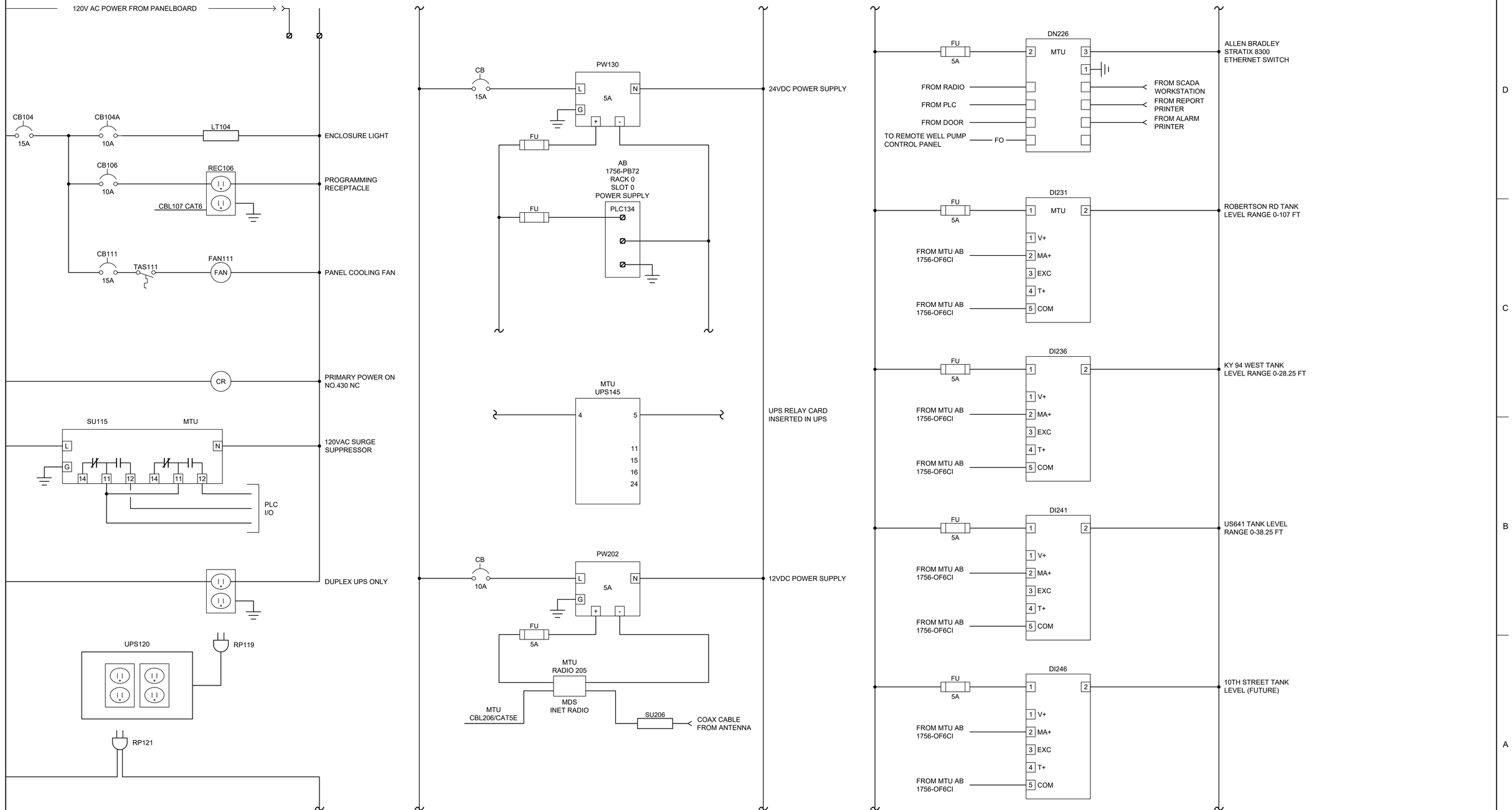
MURRAY, KENTUCKY

WELL PUMPS P&ID

FILENAME 01Y-11.dwg
SCALE N.T.S.

SHEET **01Y-11**

1. DIAGRAM INCLUDED FOR INFORMATION ONLY



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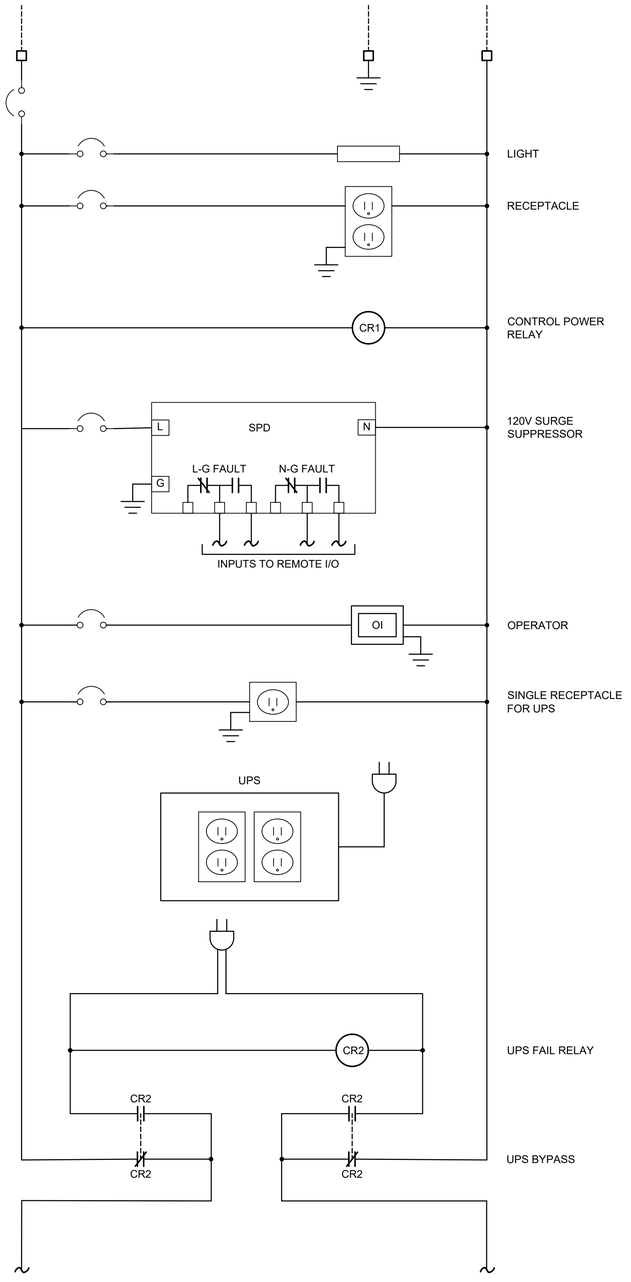
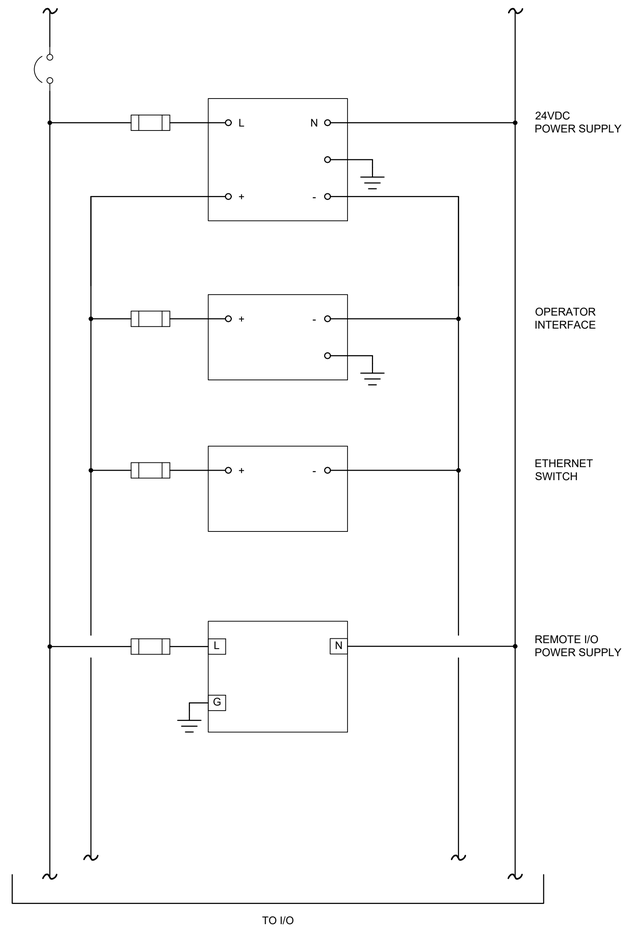
MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

MTU-1 WIRING DIAGRAM (EXISTING)

FILENAME	01Y-12.dwg
SCALE	N.T.S.
SHEET	01Y-12





REMOTE I/O WIRING DIAGRAM - TYPICAL OF 2

ISSUE	DATE	DESCRIPTION
1.	09-08-20	OWNER REVIEW

PROJECT MANAGER	Mike Hansen
DESIGNED	Larry Anderson
DRAWN	Lauren Able
QA/QC	
PROJECT NUMBER	10114225

MURRAY WTP ELECTRICAL IMPROVEMENTS

MURRAY, KENTUCKY

REMOTE I/O WIRING DIAGRAM

FILENAME	01Y-13.dwg
SCALE	N.T.S.

SHEET **01Y-13**