

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application Of Kentucky Power Company)	
For Approval of A Certificate of Public Convenience)	
And Necessity For Environmental Project)	
Construction At The Mitchell Generating Station, An)	Case No. 2021-00004
Amended Environmental Compliance Plan, And)	
Revised Environmental Surcharge Tariff Sheets)	

DIRECT TESTIMONY OF
BRIAN D. SHERRICK
ON BEHALF OF KENTUCKY POWER COMPANY

**DIRECT TESTIMONY OF
BRIAN D. SHERRICK, ON BEHALF OF
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BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

CASE NO. 2021-00004

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
I. INTRODUCTION AND BACKGROUND	1
II. PURPOSE OF TESTIMONY	2
III. THE MITCHELL PLANT.....	3
IV. PROJECT SCHEDULE AND PLANNING.....	6
V. CCR AND ELG PROJECT COSTS.....	10
VI. CCR ONLY PROJECT.....	11
VII. PROJECT STATUS.....	12

EXHIBITS

EXHIBITS	DESCRIPTION
EXHIBIT BDS-1	Mitchell Project Details
EXHIBIT BDS-2	Mitchell Project Schedule
EXHIBIT BDS-3	Mitchell CCR - ELG Project Cost Estimate
EXHIBIT BDS-4	CCR Only Cost Estimate

**DIRECT TESTIMONY OF
BRIAN D. SHERRICK, ON BEHALF OF
KENTUCKY POWER COMPANY
BEFORE THE PUBLIC SERVICE COMMISSION OF KENTUCKY**

I. INTRODUCTION AND BACKGROUND

1 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS, AND POSITION.**

2 A. My name is Brian Sherrick, and my business address is 1 Riverside Plaza,
3 Columbus, Ohio 43215. I am employed by American Electric Power Service
4 Corporation (“AEPSC”) as the Managing Director of Projects for the American
5 Electric Power Company, Inc. (“AEP”) Generation Projects, Controls and
6 Construction organization (“AEP Generation”). AEPSC is a wholly-owned
7 subsidiary of AEP, the parent of Kentucky Power Company (“Kentucky Power” or
8 the “Company”).

9 **Q. PLEASE BRIEFLY DESCRIBE YOUR EDUCATIONAL BACKGROUND
10 AND BUSINESS EXPERIENCE.**

11 A. I received a Bachelor of Science Degree in Civil Engineering from the United States
12 Military Academy in 1997 and a Master’s of Civil Engineering Degree from
13 University of Missouri Rolla in 2002. I hold a Project Management Professional
14 certification from the Project Management Institute. My professional experiences
15 include over 7 years as an Engineer in the U.S. Army and over 16 years working
16 for AEP on new build and retrofit projects for coal, natural gas, solar, and wind
17 power plants and their associated environmental controls. During my
18 approximately 16 years at AEP, I have held various positions of increasing
19 responsibility including Project Manager, Project Controls Manager, Startup and

1 Commissioning Manager, Project Director, Director of Construction, and in 2020,
2 I assumed my current position of Managing Director of Projects.

3 **Q. PLEASE BRIEFLY DESCRIBE YOUR DUTIES AND RESPONSIBILITIES**
4 **AS MANAGING DIRECTOR OF PROJECTS FOR AEP GENERATION**
5 **PROJECTS, CONTROLS AND CONSTRUCTION ORGANIZATION.**

6 A. I am responsible for the safe and efficient initiation, planning, execution,
7 monitoring and control, and closeout of capital and retirement obligation projects
8 that serve the needs of the AEP generation fleet. Reporting to me and under my
9 responsibility are Project Directors and Project Managers responsible for projects
10 and programs.

11 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN ANY**
12 **REGULATORY PROCEEDINGS?**

13 A. Yes, I submitted testimony before the Virginia State Corporation Commission in
14 Case. No. PUR-2020-00258 and before the Public Service Commission of West
15 Virginia in Case No. 20-1040-E-CN.

II. PURPOSE OF TESTIMONY

16 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
17 **PROCEEDING?**

18 A. The purpose of my testimony is to:

- 19 • Describe the potential Coal Combustion Residual (“CCR”) and Steam Electric
20 Effluent Limitations Guidelines (“ELG”) compliance projects at the Mitchell
21 Generating Station (the “Mitchell Plant” or the “Plant”).
- 22 • Describe AEPSC’s project stages and planning processes applicable to
23 environmental projects at AEP’s generating facilities and provide the current
24 status of the proposed CCR and ELG projects.

- 1 • Describe the costs of the proposed CCR and ELG projects and the alternatives
2 considered.

3 **Q. WHAT EXHIBITS ARE YOU SPONSORING IN THIS PROCEEDING?**

4 A. I am sponsoring the following exhibits:

- 5 • Exhibit BDS-1 – Mitchell Project Details
6 • Exhibit BDS-2 – Mitchell Project Schedule
7 • Exhibit BDS-3 – Mitchell CCR-ELG Project Cost Estimate
8 • Exhibit BDS-4 – CCR Only Cost Estimate

III. THE MITCHELL PLANT

9 **Q. PLEASE DESCRIBE THE MITCHELL PLANT.**

10 A. The Mitchell Plant is located approximately 12 miles south of Moundsville, West
11 Virginia on the Ohio River. Kentucky Power and Wheeling Power Company
12 (“Wheeling Power”) each own an undivided 50% interest in the Mitchell Plant.
13 The plant comprises two super-critical pulverized coal-fired base-load generating
14 units. Mitchell Unit 1 has a capacity of 770 MW and Mitchell Unit 2 has a capacity
15 of 790 MW for a total capacity of 1,560 MW. Both units were placed in service in
16 1971. Each unit is equipped with an electrostatic precipitator for control of
17 particulate matter, a flue gas desulfurization (“FGD”) system for sulfur dioxide
18 control, and both selective catalytic reduction technology and low-nitrogen oxide
19 (“NO_x”) burners for control of NO_x emissions. Both units also utilize a dry fly ash
20 handling system. Both units currently transport bottom ash and miscellaneous
21 wastewater streams to a shared pond system where the bottom ash is later dredged
22 and trucked to a permitted landfill. The bottom ash transport water (“BATW”) and
23 miscellaneous wastewater streams are then discharged to the Ohio River through a
24 National Pollution Discharge Elimination System permitted outfall.

1 **Q. HOW WERE THE PROPOSED CCR AND ELG PROJECTS AT THE**
2 **MITCHELL PLANT IDENTIFIED?**

3 A. The proposed CCR and ELG compliance projects were identified through
4 collaboration among AEPSC's Environmental Services, Engineering Services,
5 Fossil & Hydro Generation, and Projects departments on behalf of Kentucky Power
6 and Wheeling Power. As described in the testimony of Company Witness Gary O.
7 Spitznogle, the Environmental Services department analyzed the rules, then the
8 project teams (comprised of members from the other departments) defined the
9 operational changes at the Plant that would be required to comply with the CCR
10 and ELG rules under the various compliance scenarios laid out under the rules.
11 Considering the timing requirements of various compliance scenarios established
12 under the regulations, the Projects department then worked with a third party
13 vendor to develop schedules and cost estimates for the various compliance projects
14 at the Plant.

15 The compliance projects then were submitted to the management of
16 Kentucky Power and Wheeling Power for review and decision.

17 **Q. PLEASE BRIEFLY DESCRIBE THE SCOPE OF THE CCR AND ELG**
18 **PROJECTS PROPOSED BY KENTUCKY POWER FOR THE MITCHELL**
19 **PLANT.**

20 A. To operate under the new CCR requirements as described by Company Witness
21 Spitznogle, the Mitchell Plant would be required to (i) remove ash from the existing
22 ponds; (ii) over-excavate the ponds to ensure closure by removal; (iii) install a new
23 liner system in the footprint of the existing bottom ash pond to accept current CCR

1 and non-CCR wastewater streams; and (iv) install a chemical treatment system for
2 non-CCR wastewater streams.

3 Additionally, to operate the Mitchell Plant under the new ELG requirements
4 as described in the testimony of Company Witness Spitznogle, the Company must
5 (i) modify the bottom ash handling systems to no longer allow the discharge of
6 BATW, including the installation of submerged grind conveyor systems; (ii) install
7 a new ash bunker; and (iii) install a new FGD Biological Treatment System with
8 Ultrafiltration.

9 General arrangement drawings of the project options along with high level
10 plans and specifications are attached as Exhibit BDS-1 –Mitchell Project Details.

11 **Q. DID AEPSC EVALUATE ALTERNATE OPTIONS OR TECHNOLOGIES**
12 **TO COMPLY WITH BOTH THE CCR AND ELG RULE?**

13 A. Yes. AEPSC, on behalf of the Company, evaluated CCR project options including
14 installing large concrete troughs and remote dewatering conveyors. The ELG
15 compliance options involved evaluating different vendor options to convert the wet
16 bottom ash handling systems to dry systems. AEPSC also evaluated closed loop
17 recycle systems for ELG compliance. However, given the CCR and ELG rules and
18 operational requirements for the Mitchell Plant, the project teams selected the
19 proposed CCR and ELG projects for consideration by Kentucky Power and
20 Wheeling Power as they are the most technically feasible, least life cycle
21 technology cost options.

IV. PROJECT SCHEDULE AND PLANNING

1 **Q. DOES AEP GENERATION HAVE A STANDARD PROCESS THAT IT**
2 **FOLLOWS TO PLAN AND CONSTRUCT ENVIRONMENTAL**
3 **PROJECTS FOR THE PROJECTS YOU DISCUSS IN YOUR**
4 **TESTIMONY?**

5 A. Yes. All project execution is governed by AEP's commitment to safety and utilizes
6 a phased planning and construction process. The process includes management of
7 procurement, cost, schedule, quality, and risk in accordance with quality assurance
8 documents that follow industry standard project management practices.

9 **Q. PLEASE DESCRIBE THE PHASED APPROACH TO PROJECT**
10 **PLANNING AND EXECUTION.**

11 A. Projects are executed from planning through completion using the same phased
12 (stage) approach that has been successfully employed by AEP on many past
13 projects:

- 14 • Stages 0 (Initiation) and 1 (Business Planning & Screening) are conducted
15 during long range planning activities and typically before the first Capital
16 Improvement Requisition (CI) funding gate. Stage 1 may include feasibility
17 studies as required to meet project schedules.
- 18 • Stage 2 (Scope Selection) includes conducting and/or closing out feasibility
19 studies and evaluation of risk balanced technical options.
- 20 • Stages 3 (Preliminary Engineering) and 4 (Detailed Engineering) consists
21 of completing conceptual engineering, detailed engineering and design,
22 permitting, and procurement of long lead-time equipment and supplies. It
23 may include initial site construction activities.
- 24 • Stages 5 (Construction), 6 (Commissioning and Startup), and 7 (Close Out)
25 consists of full-scale construction, startup, commissioning, and close out
26 activities.

27 A detailed evaluation and review of the scope, schedule, and cost estimate
28 are conducted between each funding request (Capital Improvement Requisition) to

1 confirm the project is meeting project objectives. It also allows the project team to
2 report progress to Kentucky Power's management with respect to project success
3 criteria, and any critical risks or opportunities that may have been identified, before
4 obtaining financial authorization to proceed.

5 **Q. PLEASE DESCRIBE THE ACTIVITIES THAT OCCUR DURING**
6 **STAGE 2.**

7 A. Stage 2 begins with the preparation and approval of a Capital Improvement
8 Requisition (funding request) approving funding for Stage 2 activities. An
9 architect/engineer is then contracted to perform the engineering, design, and
10 feasibility studies for Stage 2 and the ensuing stages of the project. The intent of
11 the Stage 2 feasibility studies is to investigate the technical options and factors
12 driving the project cost and schedule. During Stage 2, the architect/engineer, with
13 input from a team of AEPSC engineers and managers, defines the scope of the
14 project, prepares work plans, and develops a budgetary cost estimate and schedule
15 for implementation. In addition, preliminary environmental permitting activities
16 begin, any necessary regulatory approvals are identified, and AEPSC begins
17 conceptual engineering.

18 The results of the Stage 2 conceptual engineering and feasibility studies are
19 then presented to senior management of Kentucky Power, Wheeling Power, and
20 AEP Generation; and authorization is sought to proceed to Stages 3 and 4.
21 Approval to proceed is accomplished by an Improvement Requisition revision
22 request, which typically includes a formal management meeting.

1 **Q. WHAT ARE THE ACTIVITIES THAT TAKE PLACE IN STAGES 3**
2 **AND 4?**

3 A. Stages 3 and 4 consist of preliminary engineering, detailed engineering and design,
4 regulatory approval, permitting, and procurement work. During these stages,
5 AEPSC on behalf of Kentucky Power refines the cost estimate and schedule,
6 awards the Original Equipment Manufacturer contract, procures long lead-time
7 equipment, and develops engineering drawings to the point that detailed design
8 work can begin.

9 Applicable modifications to existing air, water, and waste environmental
10 permits are submitted to the state regulatory body to begin the evaluation and
11 approval process. In addition, construction and site management teams begin
12 design evaluations to ensure that the proposed scope of work is optimized for
13 constructability. AEPSC on behalf of Kentucky Power also defines site preparation
14 plans, determines which, if any, facilities will need to be relocated, selects site
15 preparation contractor(s), and completes studies to support the various permitting
16 activities that will be required.

17 The project team then proceeds to detailed engineering, design, contracting,
18 and initial site construction work that can be performed prior to the final approval
19 of applicable permits. During this stage, as detailed design progresses, construction
20 bid packages are prepared and major equipment is specified, bid, and purchased.
21 The construction and site management teams are mobilized and begin site
22 construction work, and the team proceeds through the process of selecting and
23 awarding the major construction contracts. Upon completion of Stages 3 and 4, the

1 project is evaluated once again, and an Improvement Requisition revision is
2 prepared for management approval to proceed with Stages 5 through 7.

3 **Q. PLEASE DESCRIBE AEP'S PROJECT SCHEDULE MANAGEMENT**
4 **PROCESS.**

5 A. Schedule management ensures that the overall project is executed in support of the
6 initial operation date. This is accomplished through scheduling tools, monitoring
7 of critical milestones, and establishment and monitoring of specific performance
8 and production metrics.

9 An integrated project schedule is developed using activities and criteria for
10 planning, execution, monitoring, and control. The project schedule development
11 involves activity sequencing and activity duration estimating to develop detailed
12 project schedules so that monitoring and controls are in place to complete the
13 project on or ahead of schedule. The scope of work for the project is subdivided
14 into manageable work packages using a project Work Breakdown Structure, which
15 facilitates project cost estimating, scheduling, and controlling activities.

16 AEPSC, acting on behalf of Kentucky Power, assumes the primary
17 responsibility for schedule management as the Schedule Integrator for the project.
18 In that role, AEPSC accounts for its activities, along with those of the
19 architect/engineering contractor, equipment suppliers, and the construction
20 contractors for the development of a fully integrated schedule. The contractors and
21 vendors provide AEPSC with weekly comprehensive schedule activity updates
22 along with monthly reports on project progress, a 30-day look ahead schedule,
23 status of major activities, cost status updates, and other pertinent data. The Mitchell
24 Plant compliance project schedule is shown in Exhibit BDS-2 – Mitchell Project

1 Schedule. The Mitchell Project Schedule was submitted to the United States
2 Environmental Protection Agency as discussed in more detail by Company Witness
3 Spitznogle.

4 **Q. PLEASE DESCRIBE AEP'S PROJECT SAFETY MANAGEMENT.**

5 A. All projects are conducted with AEP's 'Zero Harm' safety culture in mind. Zero
6 Harm distills safety into a simple idea – “No one gets hurt and everyone goes home
7 in the same or better condition than they came to work.” On a project, it means
8 every employee, contractor and visitor, regardless of work location, is held
9 accountable for the safety of themselves and each other. With this practice, a
10 project can avoid unsafe activities and conditions that lead to accidents.

V. CCR AND ELG PROJECT COSTS

11 **Q. PLEASE BRIEFLY DESCRIBE THE COSTS OF THE CCR AND ELG**
12 **PROJECTS THE COMPANY IS PROPOSING.**

13 A. The total estimated cost of compliance that would allow the Mitchell Plant to
14 continue to operate under the CCR and ELG requirements (Case 1) is \$133.5
15 million, including \$131.5 million in capital, \$1.8 million in other charges, and
16 \$166,000 in Asset Retirement Obligation (“ARO”) costs. A detailed breakdown of
17 the Mitchell Plant project can be found in Exhibit BDS-3 – Mitchell CCR-ELG
18 Project Cost Estimate. I provided this cost estimate to Company Witness Mark A.
19 Becker for the purposes of the economic analysis he provided to management of
20 Kentucky Power and Wheeling Power for their consideration and that Company
21 Witness Becker supports in this proceeding. I also provided the cost information
22 to Company Witness Lerah M. Scott for calculation of the revenue requirement in
23 connection with this filing.

1 There will be new ARO costs estimated for future closure of the new
2 construction as part of the CCR and ELG projects. This additional ARO cannot be
3 accurately estimated, but will be after detailed engineering and construction are
4 complete and the projects are placed into service.

5 **Q. PLEASE BRIEFLY DESCRIBE HOW THE CCR AND ELG PROJECT**
6 **COST ESTIMATES WERE DEVELOPED.**

7 A. The cost estimates were developed by an independent engineering firm with inputs
8 and oversight from AEPSC. AEPSC reviewed the independent consultant's
9 estimate for completeness and included AEPSC's costs and a contingency amount
10 to arrive at the total project cost estimate. AEPSC has successfully used this cost
11 estimation procedure for other construction projects throughout the AEP system.

VI. CCR ONLY PROJECT

12 **Q. PLEASE DETAIL THE CCR ONLY PROJECT THAT RESULTS IN THE**
13 **CESSATION OF OPERATIONS BY DECEMBER 31, 2028.**

14 A. The CCR Only option (Case 2) would involve removing ash from the existing
15 ponds, over-excavating the ponds to ensure closure by removal, and installing new
16 chemical treatment equipment and lined pond systems to accept BATW and other
17 current wastewater streams. As described by Company Witness Spitznogle, the
18 Company would have up to 5 years to close, by removal, the new pond systems.
19 This would also include newly established ARO costs of those CCR projects.

20 **Q. PLEASE BRIEFLY DESCRIBE THE COST OF THE CCR ONLY**
21 **PROJECT.**

22 A. Under this option, the total estimated cost of the CCR Only project (Case 2) is \$35.1
23 million, including \$25.2 million in capital, \$2.4 million in other charges, and \$7.5

1 million in ARO costs. A detailed breakdown of this project can be found in Exhibit
2 BDS-4 – CCR Only Cost Estimate. I provided this cost estimate to Company
3 Witness Becker for the purposes of the economic analysis he provided to
4 management of Kentucky Power and Wheeling Power for their consideration and
5 that Company Witness Becker supports in this proceeding. I also provided the cost
6 information Company Witness Scott for calculation of the revenue requirement in
7 connection with this filing.

VII. PROJECT STATUS

8 **Q. IN WHAT STAGE IS THE MITCHELL CCR AND ELG PROJECT**
9 **CURRENTLY?**

10 A. The project teams are currently performing Stage 3 and 4 activities as Kentucky
11 Power awaits receipt of permits, along with any necessary regulatory approvals to
12 start Stage 5 activities.

13 **Q. WHAT COSTS HAVE BEEN INCURRED ON THE ELG PROJECT AT**
14 **THE MITCHELL PLANT?**

15 A. Through October 2020, the Mitchell ELG Project has incurred approximately \$2.8
16 million in Mitchell Plant ELG costs. The ELG costs incurred are for Stages 1
17 through 3 activities as discussed earlier in my testimony. Those activities include
18 project initiation, technology feasibility studies, evaluation of risk balanced
19 technical options, conceptual engineering, permitting, and site investigations
20 (surveying, verifying as-built conditions, and geotechnical investigations). These
21 costs were unavoidable prior to regulatory approval as they were necessary to
22 establish the scope, schedule, and budget for the projects and to meet environmental

1 compliance deadlines. No physical construction related to the projects has begun
2 at the Mitchell Plant.

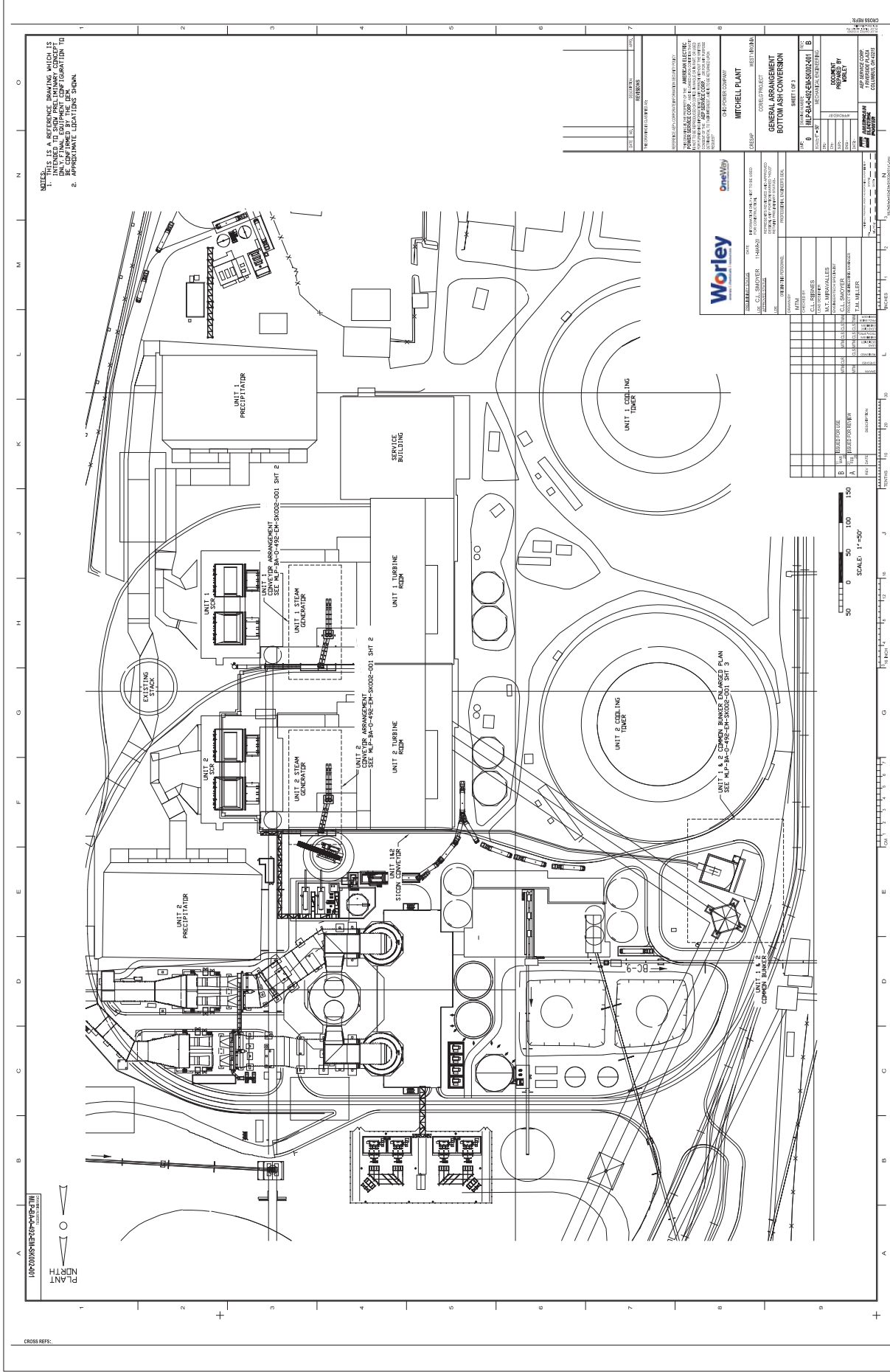
3 **Q. PLEASE DESCRIBE THE COSTS AND SCOPE OF THE ELG PROJECT**
4 **FORECASTED TO BE INCURRED THROUGH AUGUST 2021.**

5 A. Through August 2021, the Mitchell ELG Project is projected to incur
6 approximately \$2.0 million in additional Mitchell Plant ELG costs to finish
7 preliminary engineering; work through the permitting process; issue purchase
8 orders to get engineering information from long lead equipment suppliers; and
9 establish a contract for the engineering firm to complete detailed engineering.

10 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

11 A. Yes, it does.

NOTES:
 1. THIS IS A REFERENCE DRAWING WHICH IS INTENDED TO SHOW PRELIMINARY CONCEPTS. IT IS NOT TO BE CONSIDERED A CONTRACT DOCUMENT. IT IS TO BE USED FOR INFORMATION ONLY.
 2. APPROPRIATE LIGHTING SHALL BE PROVIDED.



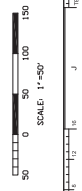
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 SHEET: 01-01-01
 DATE: 12/15/2011

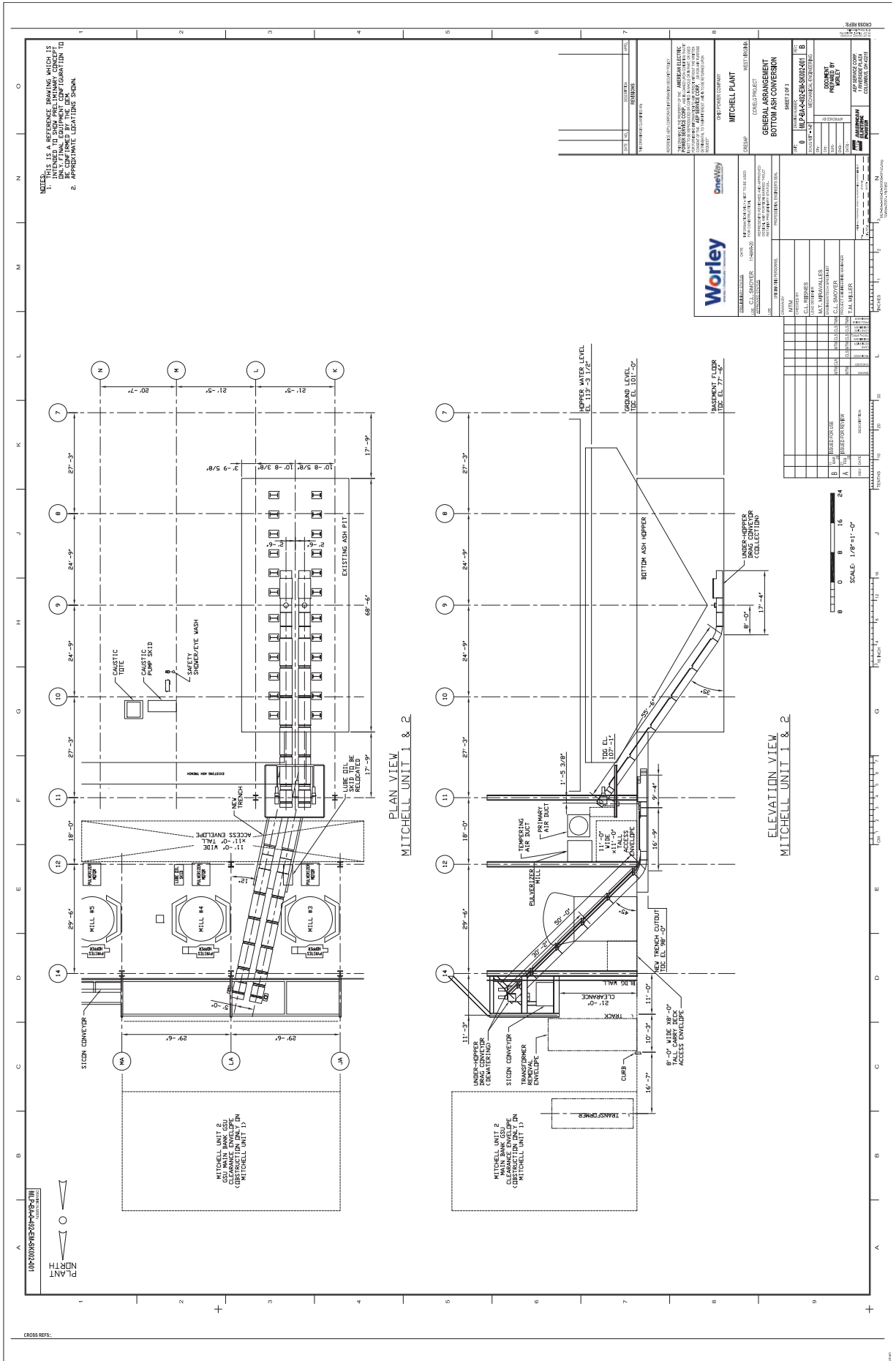
DESIGNED BY: J. M. MILLER
 CHECKED BY: J. M. MILLER
 APPROVED BY: J. M. MILLER

SCALE: 1" = 50'

NO.	DESCRIPTION	DATE
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2	ISSUED FOR CONSTRUCTION	12/15/2011
3	ISSUED FOR OPERATION	12/15/2011



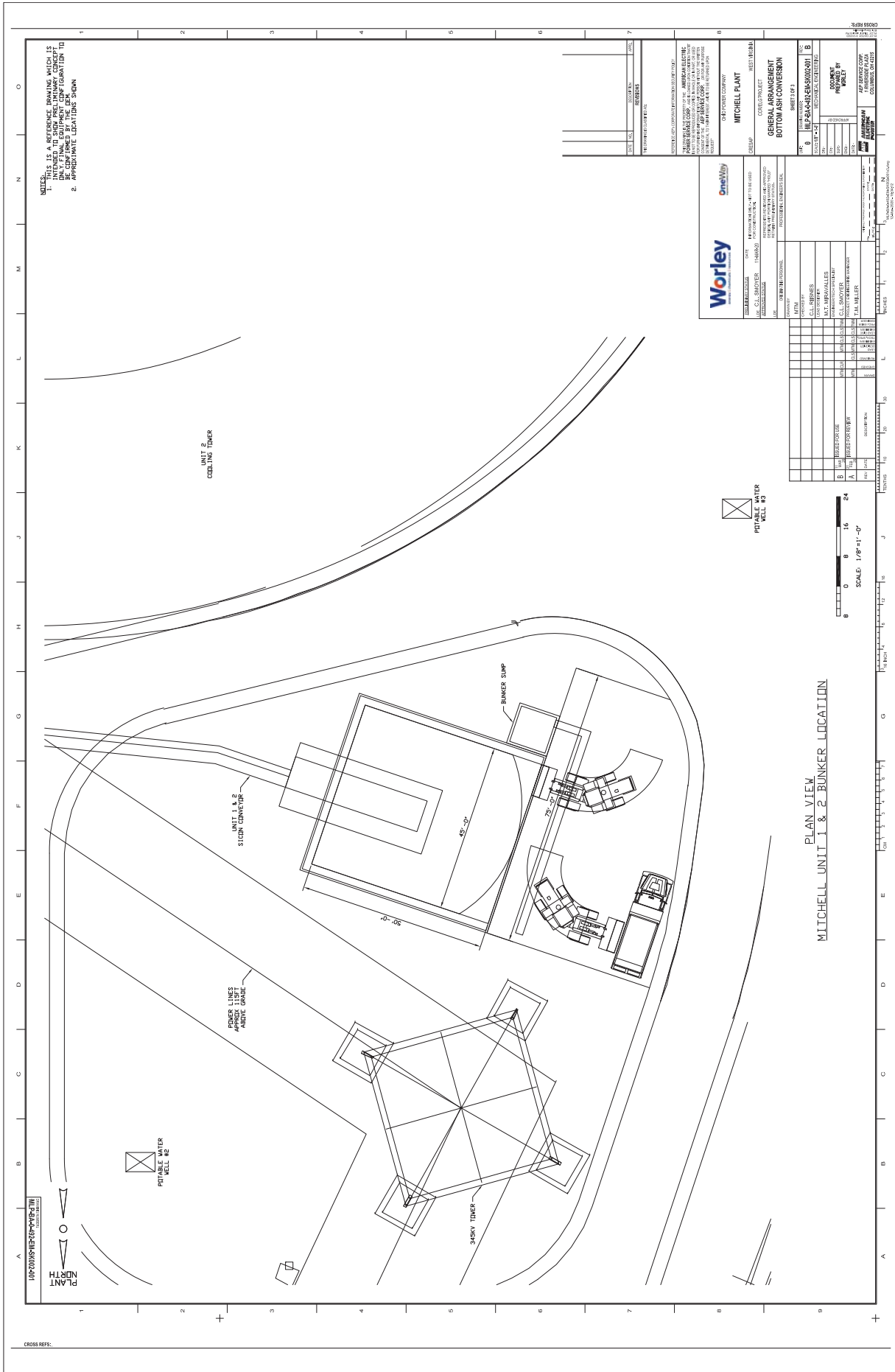
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Worley
 PROJECT: Mitchell Plant
 CLIENT: AMERICAN ELECTRIC
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CROSS REFS:



NOTES:
 THIS IS A REFERENCE DRAWING WHICH IS
 INTENDED TO SHOW PRELIMINARY CONCEPT
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 THE CLIENT FOR REVIEW AND COMMENT.
 2. APPROPRIATE LIGHTING SHALL

Worley
 A PARSONS BRINCKERHOFF COMPANY

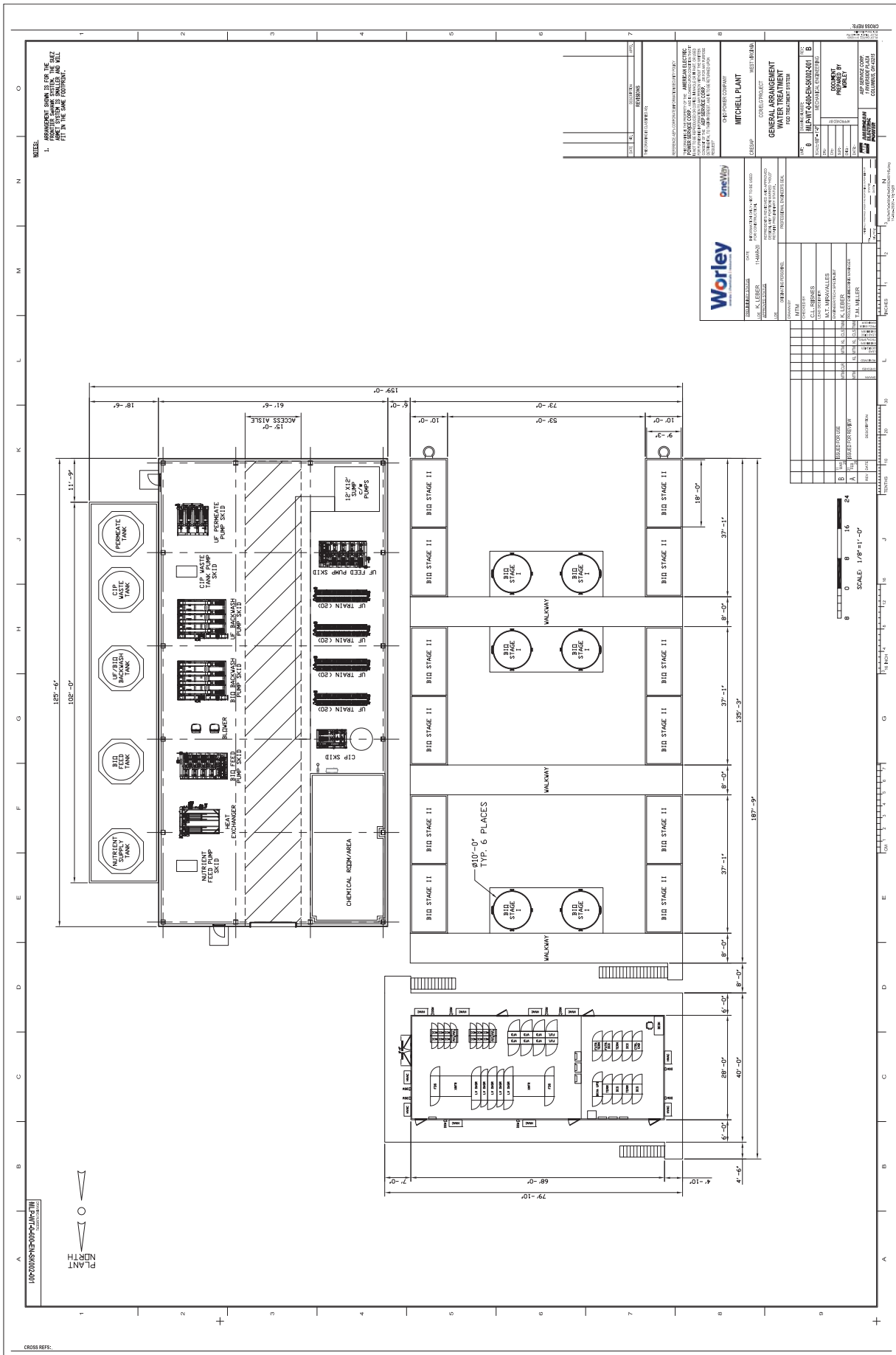
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 CLIENT: AMERICAN ELECTRIC
 LOCATION: WYOMING

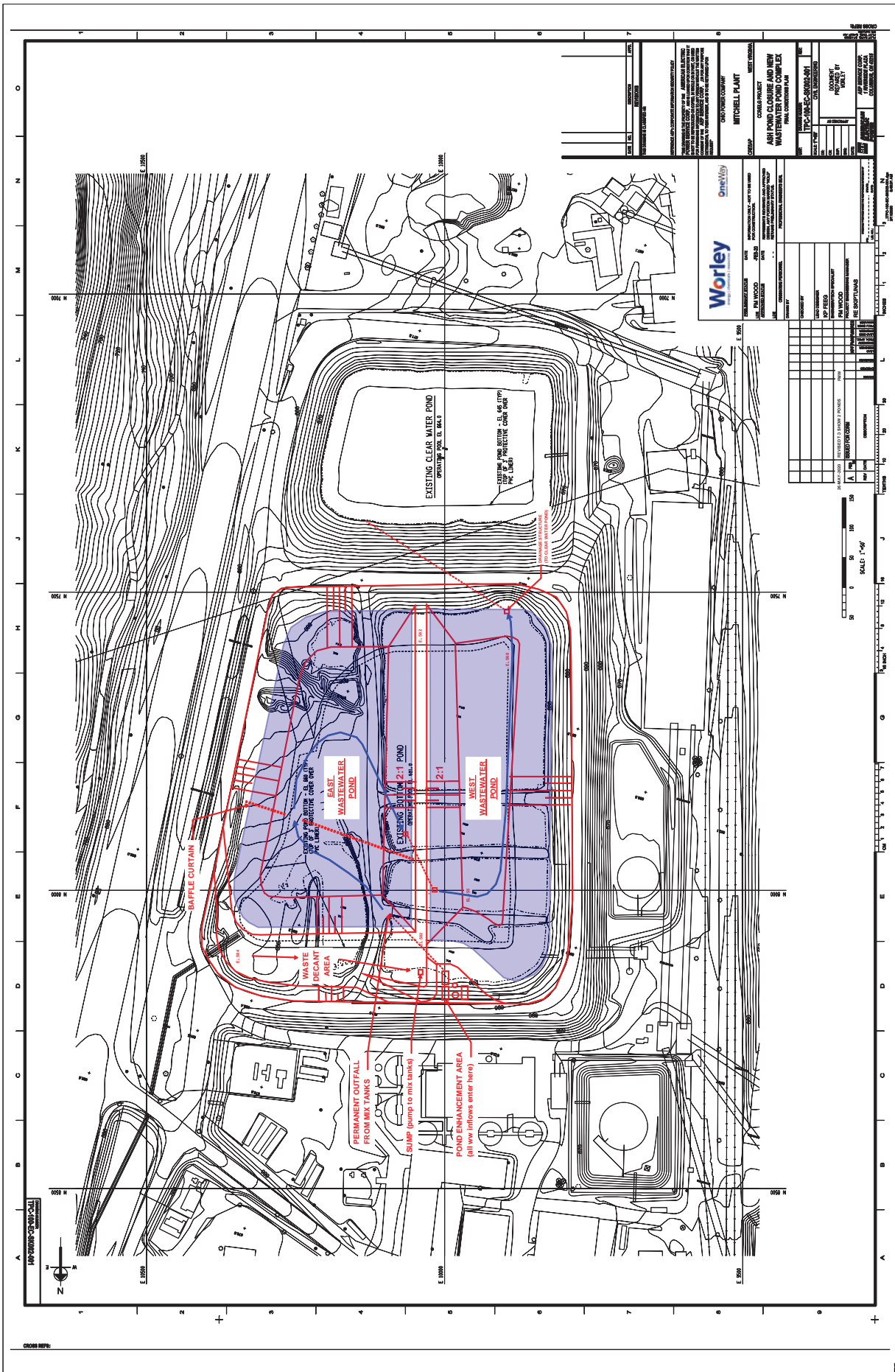
DESIGNER	W. J. MILLER
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DATE	10/20/2010

PLAN VIEW
 MITCHELL UNIT 1 & 2 BUNKER LOCATION

SCALE: 1/8"=1'-0"
 0 8 16 24

CROSS REF:





PROJECT TITLE MITCHELL PLANT	
CLIENT WASTE TREATMENT	
PROJECT LOCATION 4811 FARM ROAD, WEST YORK WASTEWATER POND COMPLEX	
DRAWING NUMBER 17P-002-0000-001	
DRAWING DATE 2017	
DRAWING SCALE AS SHOWN	
DRAWING STATUS FOR APPROVAL	
DRAWING SHEET NUMBER 05 OF 05	

PROJECT MANAGER J. WOOD	
PROJECT ENGINEER J. WOOD	
PROJECT DESIGNER J. WOOD	
PROJECT CHECKER J. WOOD	
PROJECT APPROVER J. WOOD	
PROJECT REVIEWER J. WOOD	
PROJECT SUPERVISOR J. WOOD	
PROJECT COORDINATOR J. WOOD	
PROJECT ASSISTANT J. WOOD	
PROJECT OFFICE J. WOOD	
PROJECT PHONE J. WOOD	
PROJECT FAX J. WOOD	
PROJECT EMAIL J. WOOD	
PROJECT WEBSITE J. WOOD	

PROJECT START DATE 2017	
PROJECT END DATE 2017	
PROJECT DURATION 12 MONTHS	
PROJECT BUDGET \$1,000,000	
PROJECT COST \$500,000	
PROJECT SAVINGS \$500,000	
PROJECT RISK LOW	
PROJECT COMPLIANCE YES	
PROJECT APPROVAL YES	
PROJECT REVIEW YES	
PROJECT SIGNATURE J. WOOD	
PROJECT DATE 2017	

PROJECT LOCATION 4811 FARM ROAD, WEST YORK WASTEWATER POND COMPLEX	
PROJECT AREA 100,000 SQ M	
PROJECT PERIMETER 2,000 M	
PROJECT VOLUME 1,000,000 M ³	
PROJECT WEIGHT 1,000,000 T	
PROJECT LENGTH 1,000 M	
PROJECT WIDTH 100 M	
PROJECT HEIGHT 10 M	
PROJECT DEPTH 10 M	
PROJECT TEMPERATURE 10 C	
PROJECT PRESSURE 10 BAR	
PROJECT VELOCITY 10 M/S	
PROJECT ACCELERATION 10 M/S ²	
PROJECT FREQUENCY 10 HZ	
PROJECT WAVELENGTH 10 M	
PROJECT PERIOD 10 S	
PROJECT PHASE 10 DEGREES	
PROJECT ANGLE 10 DEGREES	
PROJECT CURVATURE 10 M	
PROJECT TORSION 10 M	
PROJECT BENDING 10 M	
PROJECT TWISTING 10 M	
PROJECT SHEARING 10 M	
PROJECT COMPRESSING 10 M	
PROJECT TENSILING 10 M	

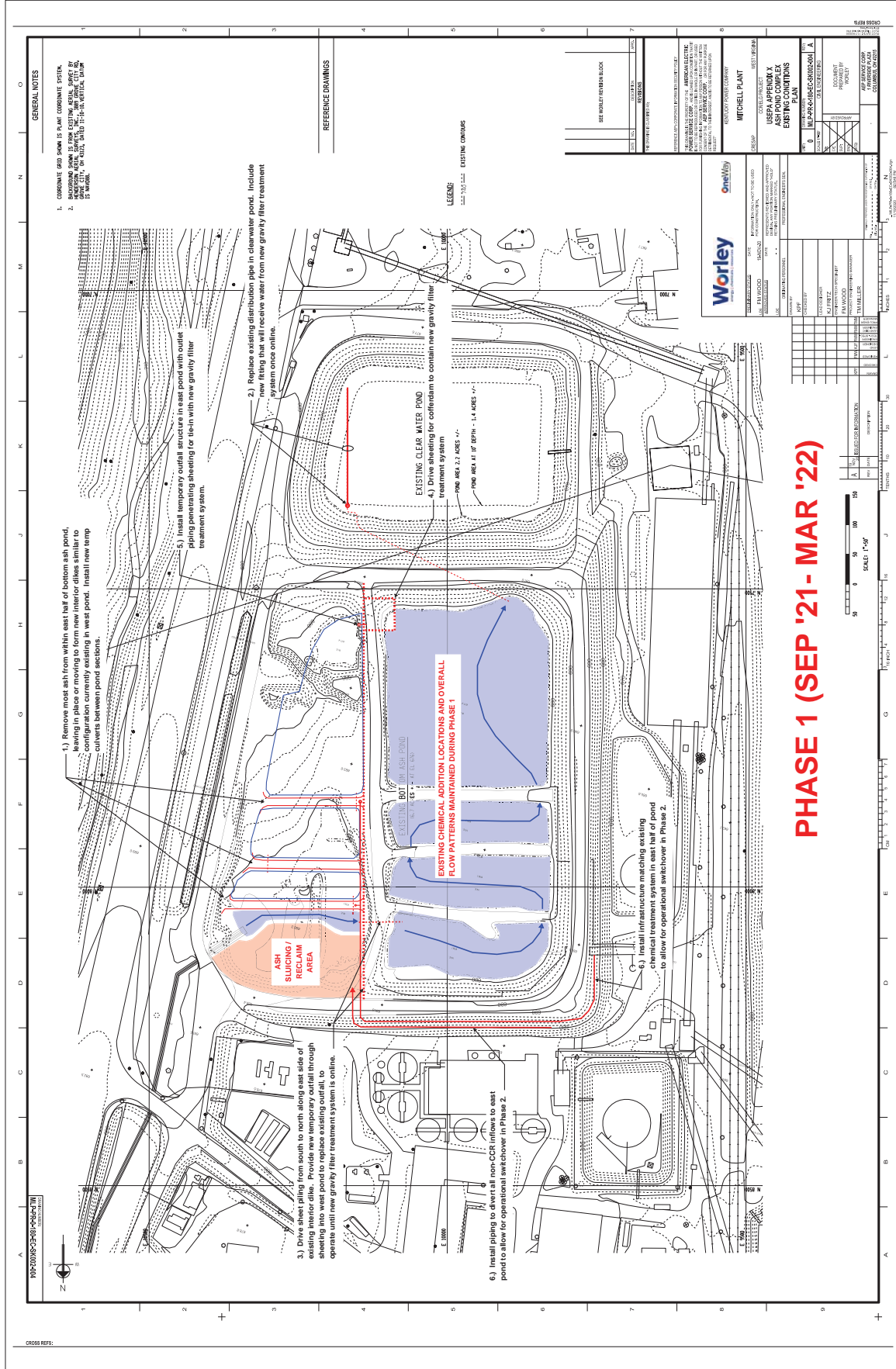
PROJECT STATUS IN PROGRESS	
PROJECT PHASE DESIGN	
PROJECT TYPE INFRASTRUCTURE	
PROJECT CATEGORY WASTEWATER TREATMENT	
PROJECT SUB-CATEGORY POND COMPLEX	
PROJECT INDUSTRY WATER TREATMENT	
PROJECT REGION WEST YORK	
PROJECT COUNTRY AUSTRALIA	
PROJECT CONTINENT AUSTRALIA	
PROJECT OCEAN INDIAN OCEAN	
PROJECT CLIMATE TEMPERATE	
PROJECT VEGETATION GRASSLAND	
PROJECT SOIL SAND	
PROJECT ROCK GRANITE	
PROJECT MINERAL NONE	
PROJECT BIOTA NONE	
PROJECT ABIOTA NONE	
PROJECT ECOSYSTEM NONE	
PROJECT BIODIVERSITY NONE	
PROJECT GENETIC DIVERSITY NONE	
PROJECT SPECIES DIVERSITY NONE	
PROJECT ECOSYSTEM DIVERSITY NONE	
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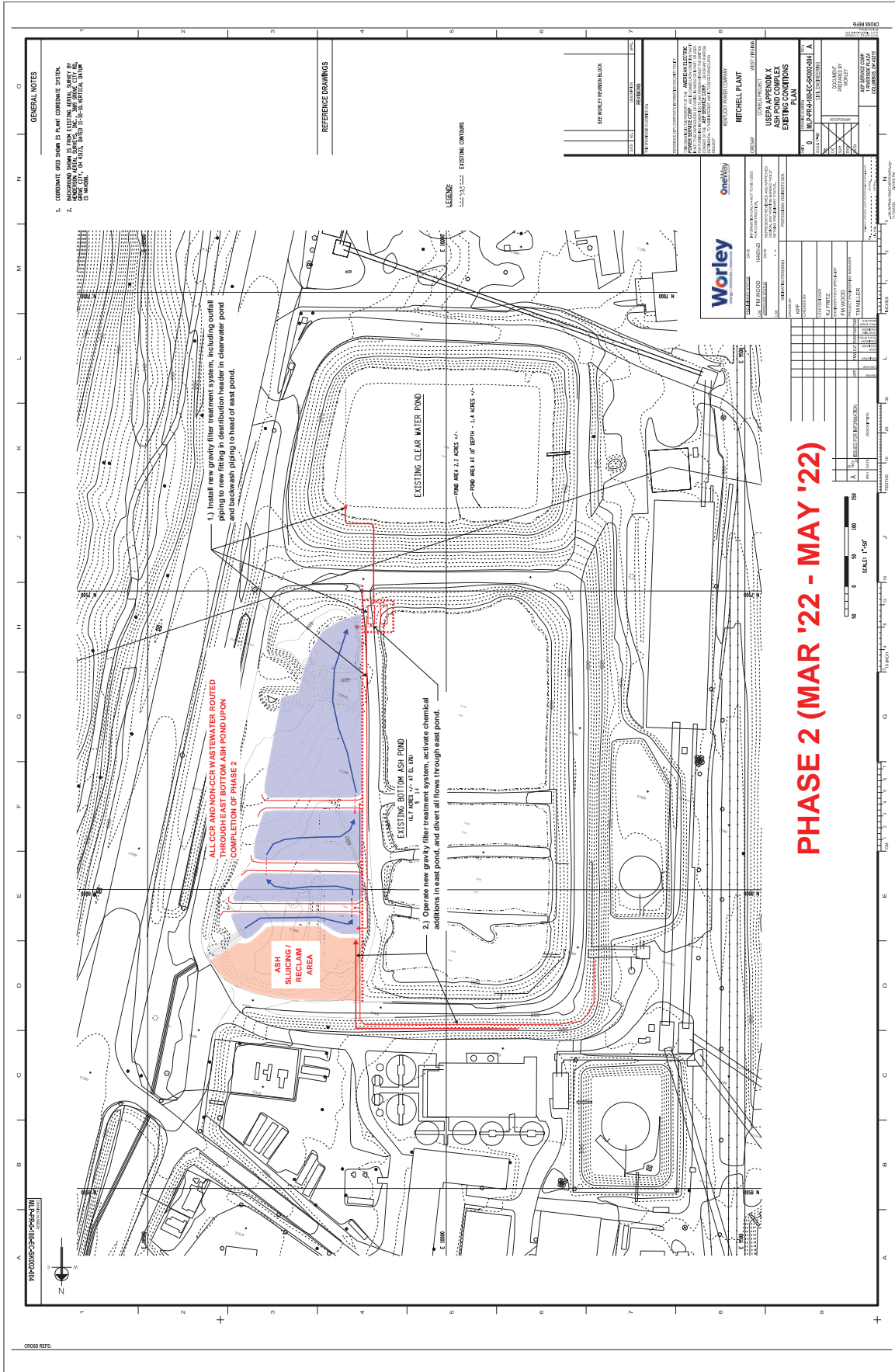
PROJECT START DATE 2017	
PROJECT END DATE 2017	
PROJECT DURATION 12 MONTHS	
PROJECT BUDGET \$1,000,000	
PROJECT COST \$500,000	
PROJECT SAVINGS \$500,000	
PROJECT RISK LOW	
PROJECT COMPLIANCE YES	
PROJECT APPROVAL YES	
PROJECT REVIEW YES	
PROJECT SIGNATURE J. WOOD	
PROJECT DATE 2017	

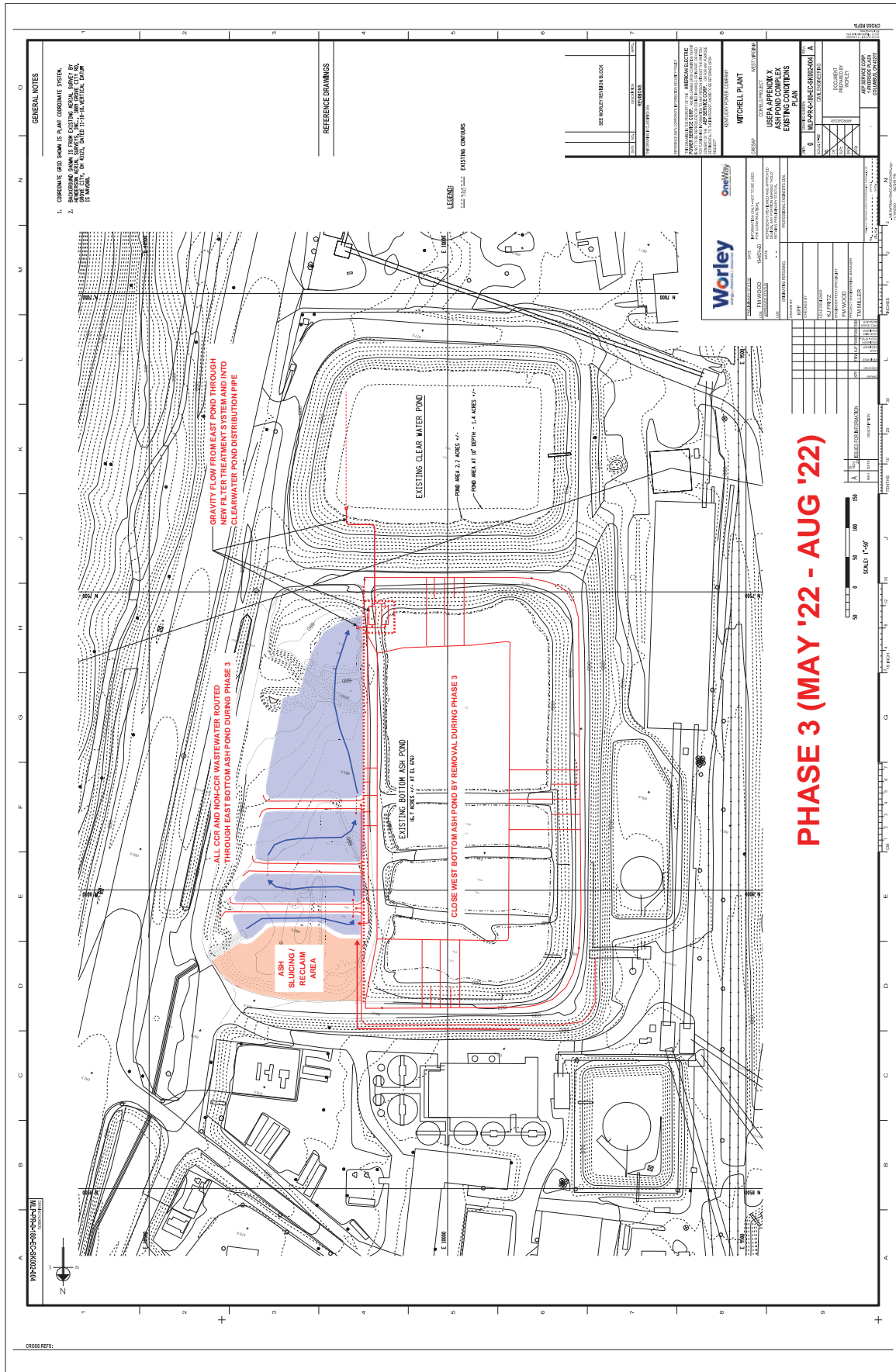
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PROJECT AREA 100,000 SQ M	
PROJECT PERIMETER 2,000 M	
PROJECT VOLUME 1,000,000 M ³	
PROJECT WEIGHT 1,000,000 T	
PROJECT LENGTH 1,000 M	
PROJECT WIDTH 100 M	
PROJECT HEIGHT 10 M	
PROJECT DEPTH 10 M	
PROJECT TEMPERATURE 10 C	
PROJECT PRESSURE 10 BAR	
PROJECT VELOCITY 10 M/S	
PROJECT ACCELERATION 10 M/S ²	
PROJECT FREQUENCY 10 HZ	
PROJECT WAVELENGTH 10 M	
PROJECT PERIOD 10 S	
PROJECT PHASE 10 DEGREES	
PROJECT ANGLE 10 DEGREES	
PROJECT CURVATURE 10 M	
PROJECT TORSION 10 M	
PROJECT BENDING 10 M	
PROJECT TWISTING 10 M	
PROJECT SHEARING 10 M	
PROJECT COMPRESSING 10 M	
PROJECT TENSILING 10 M	

PROJECT STATUS IN PROGRESS	
PROJECT PHASE DESIGN	
PROJECT TYPE INFRASTRUCTURE	
PROJECT CATEGORY WASTEWATER TREATMENT	
PROJECT SUB-CATEGORY POND COMPLEX	
PROJECT INDUSTRY WATER TREATMENT	
PROJECT REGION WEST YORK	
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PROJECT OCEAN INDIAN OCEAN	
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PROJECT VEGETATION GRASSLAND	
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PROJECT ROCK GRANITE	
PROJECT MINERAL NONE	
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PROJECT ABIOTA NONE	
PROJECT ECOSYSTEM NONE	
PROJECT BIODIVERSITY NONE	
PROJECT GENETIC DIVERSITY NONE	
PROJECT SPECIES DIVERSITY NONE	
PROJECT ECOSYSTEM DIVERSITY NONE	

PROJECT START DATE 2017	
PROJECT END DATE 2017	
PROJECT DURATION 12 MONTHS	
PROJECT BUDGET \$1,000,000	
PROJECT COST \$500,000	
PROJECT SAVINGS \$500,000	
PROJECT RISK LOW	
PROJECT COMPLIANCE YES	
PROJECT APPROVAL YES	
PROJECT REVIEW YES	
PROJECT SIGNATURE J. WOOD	
PROJECT DATE 2017	







GENERAL NOTES

1. COORDINATE GRID SHOWN IS PLANT COORDINATE SYSTEM.
2. SURROUNDING POND IS FROM EXISTING UTILITY SERVICE BY DRAIN CITY OF MILWAUKEE. THIS IS AN UTILITY, WATER MAIN.

REFERENCE DRAWINGS

LEGEND

--- EXISTING CONTOUR

SEE SHEET FROM BACK

DATE: 05.23.22
 SHEET: 08
 PROJECT: MITCHELL PLANT
 CLIENT: WEST WISCONSIN WATER TREATMENT & REUSE AUTHORITY
 DESIGNER: WORLEY PARSONS
 CHECKED BY: [Name]
 APPROVED BY: [Name]

MITCHELL PLANT

USE A APPENDIX X
 ASH POND COMPLEX
 EXISTING CONDITIONS

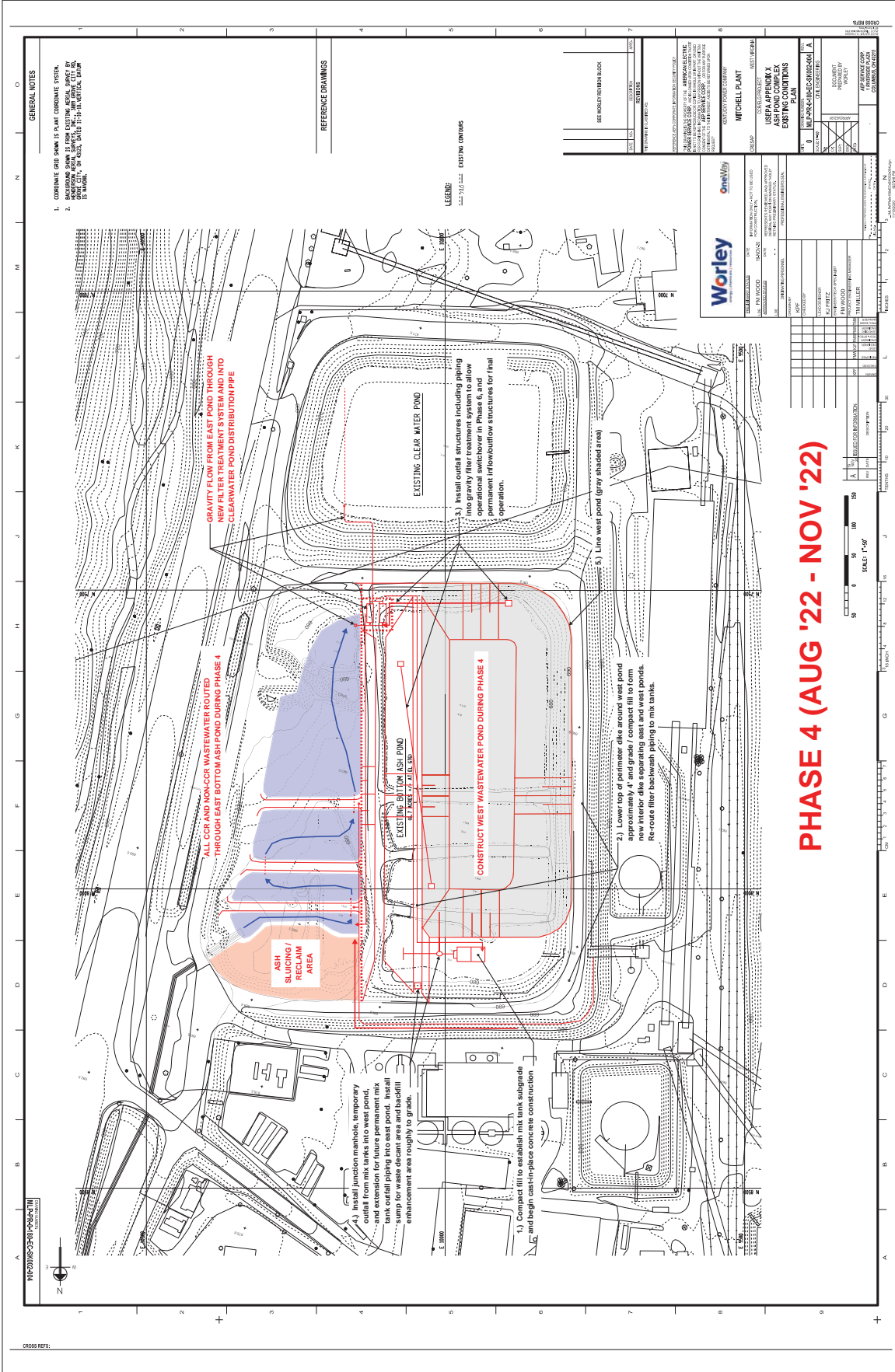
DATE: 05.23.22
 SHEET: 08
 PROJECT: MITCHELL PLANT
 CLIENT: WEST WISCONSIN WATER TREATMENT & REUSE AUTHORITY
 DESIGNER: WORLEY PARSONS
 CHECKED BY: [Name]
 APPROVED BY: [Name]

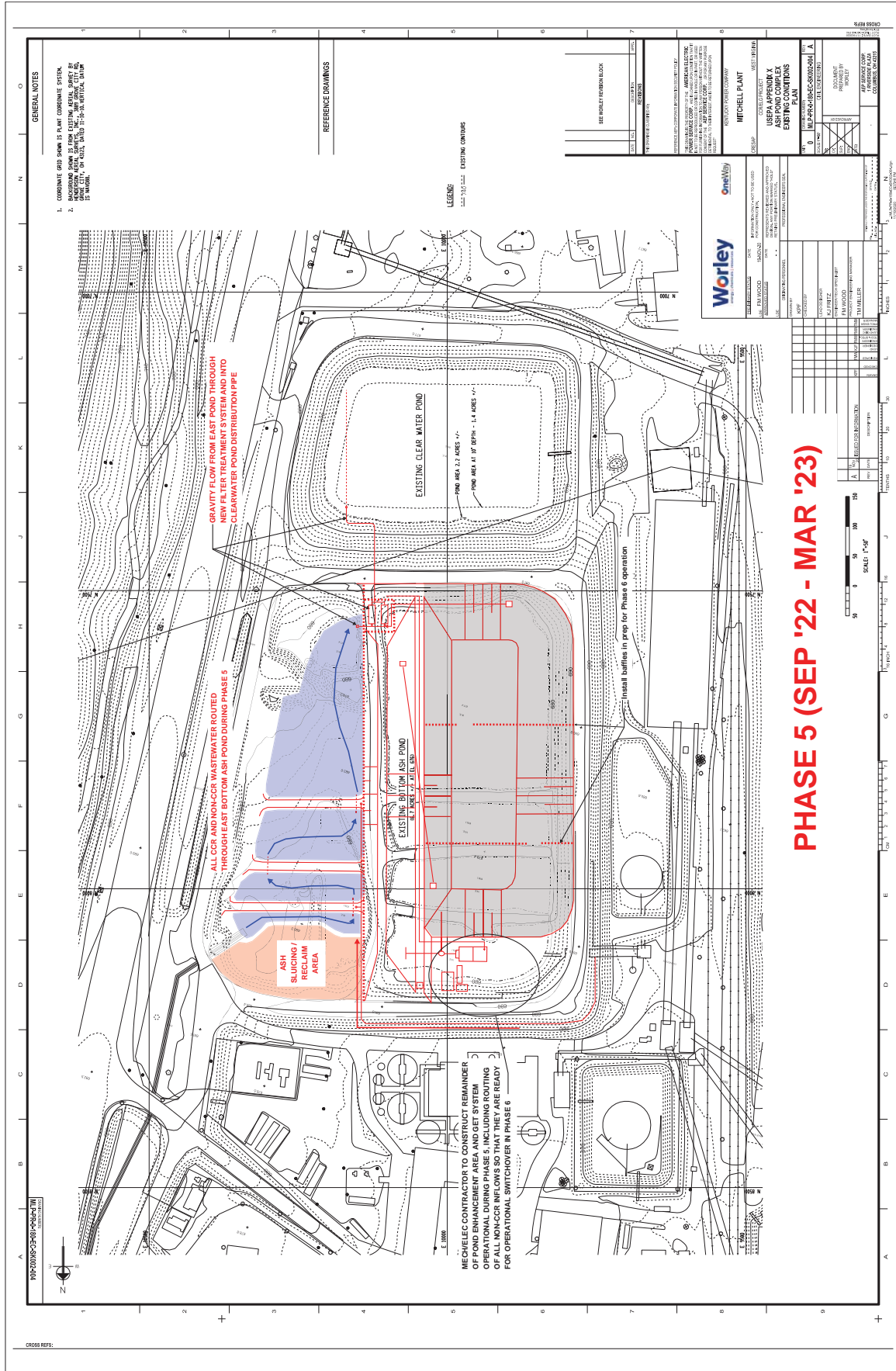
PHASE 3 (MAY '22 - AUG '22)

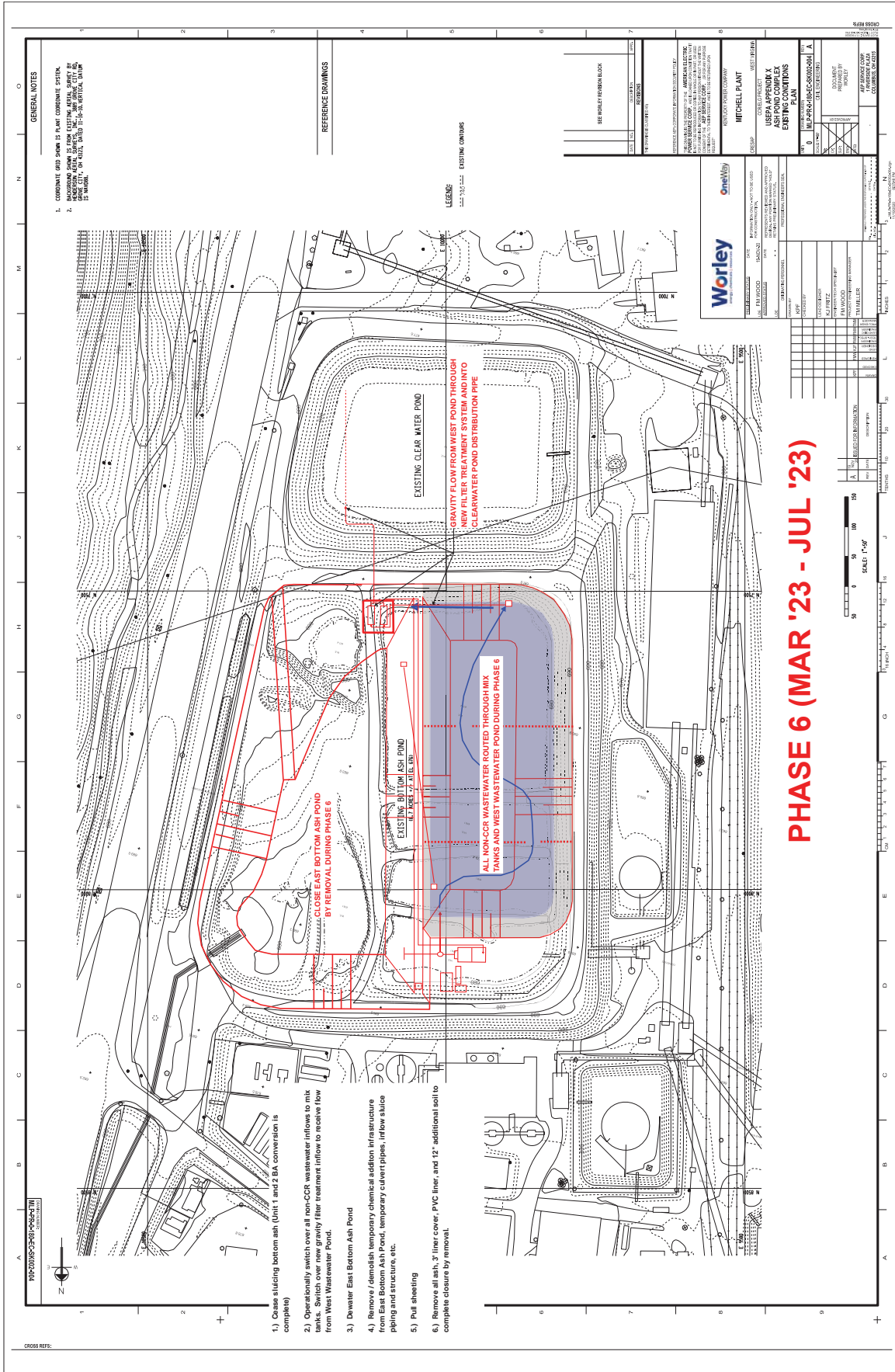
SCALE: 1" = 50'



CROSS REFS:







GENERAL NOTES

1. COORDINATE GRID SHOWN IS PLANT COORDINATE SYSTEM.
2. SURROUNDING ZONES IS FROM EXISTING UTIL. SERVICE BY STATE, COUNTY, OR LOCAL, WATER, TELEPHONE, GAS, AND CABLE.

REFERENCE DRAWINGS

LEGEND

SEE SHEET FOR MORE INFO

NO.	DATE	DESCRIPTION
1	02/28/23	ISSUED

MITCHELL PLANT

US EPA APPENDIX X
 ASH POND COMPLEX
 EXISTING CONDITIONS



Worley
 ONEWILY
 10000 W. 10th Avenue, Suite 100
 Denver, CO 80202
 TEL: 303.440.1234
 FAX: 303.440.1235
 WWW.WORLEYONEWILY.COM

PROJECT INFORMATION

PROJECT NO. 2018-0001
 SHEET NO. 11 OF 13
 SCALE: 1" = 50'
 DATE: 03/01/23

DESIGNER
 PROJECT MANAGER: [Name]
 DESIGNER: [Name]

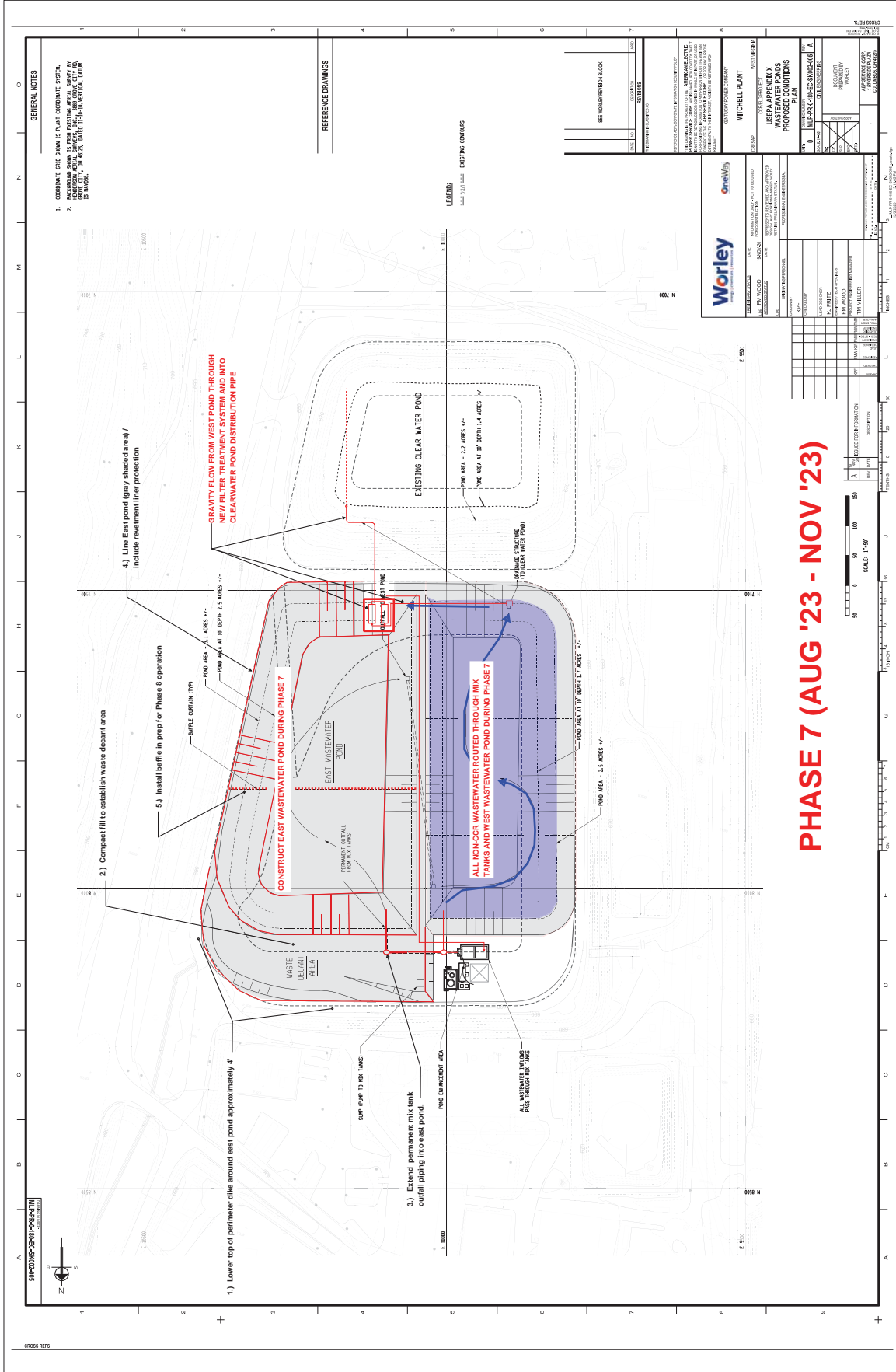
CHECKED BY
 [Name]

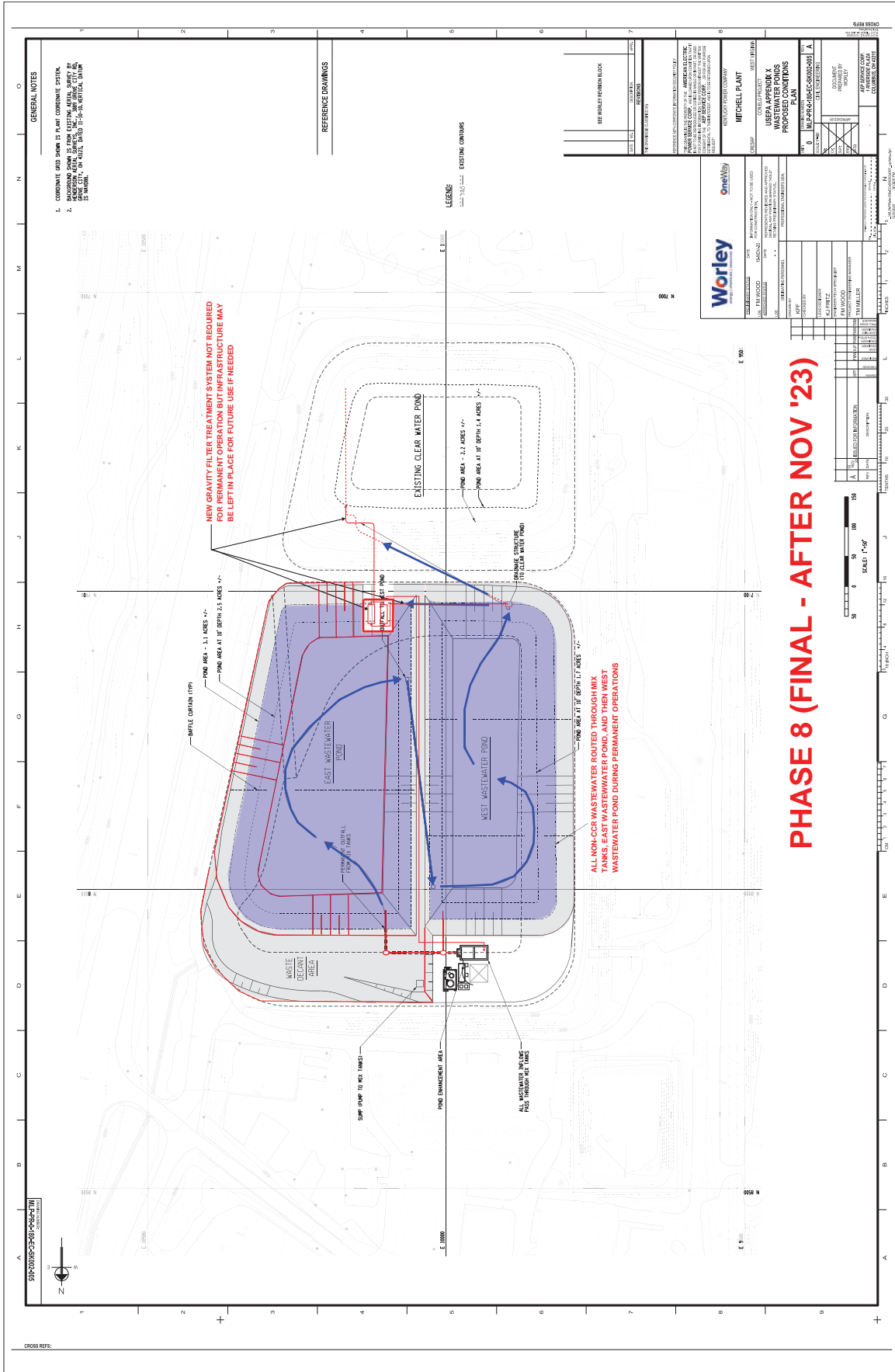
APPROVED BY
 [Name]

PHASE 6 (MAR '23 - JUL '23)

- 1.) Cease sliding bottom ash (Unit 1 and 2A conversion is complete)
- 2.) Operationally switch over all non-CCR wastewater inflows to mix tanks. Switch over new gravity filter treatment inflow to receive flow from West Wastewater Pond.
- 3.) Dewater East Bottom Ash Pond
- 4.) Remove / demolish temporary chemical addition infrastructure from East Bottom Ash Pond, temporary culvert pipes, inflow sluice piping and structure, etc.
- 5.) Pull sheeting
- 6.) Remove all ash, 3" liner cover, PVC liner, and 12" additional soil to complete closure by removal.

CROSS REF:





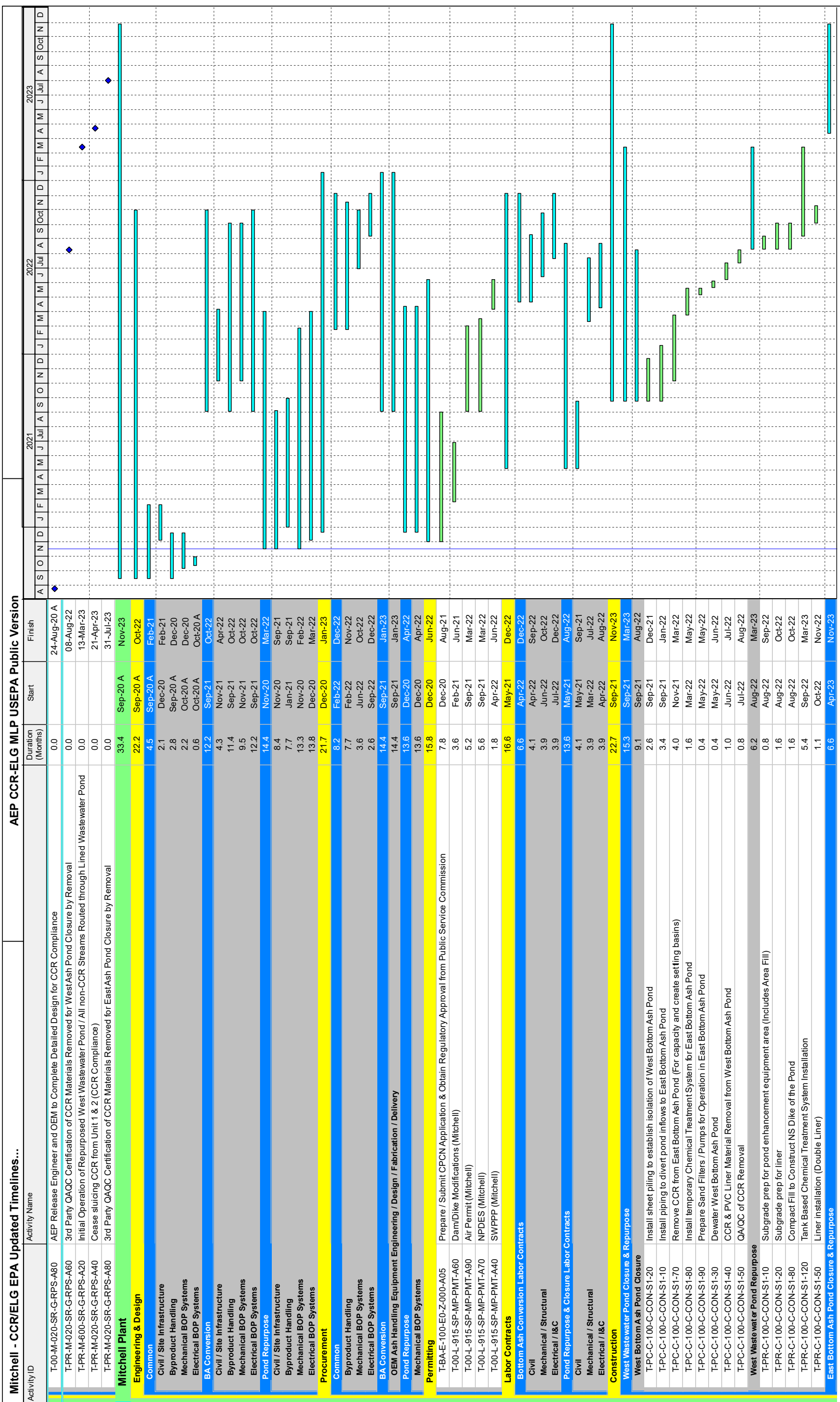
Worley
PROJECT: MITCHELL PLANT
SHEET: WASTE TREATMENT TANKS
DATE: 11/15/23
SCALE: 1"=40'
DRAWN BY: [Name]
CHECKED BY: [Name]
APPROVED BY: [Name]

PHASE 8 (FINAL - AFTER NOV '23)

Exhibit BDS-2

(Mitchell Project Schedule – Previously Filed With The United States Environmental Protection Agency In Connection With The Company’s November 30, 2020 Notice of Intent To Comply With The Site-Specific Alternative To Initiation Of Closure)¹

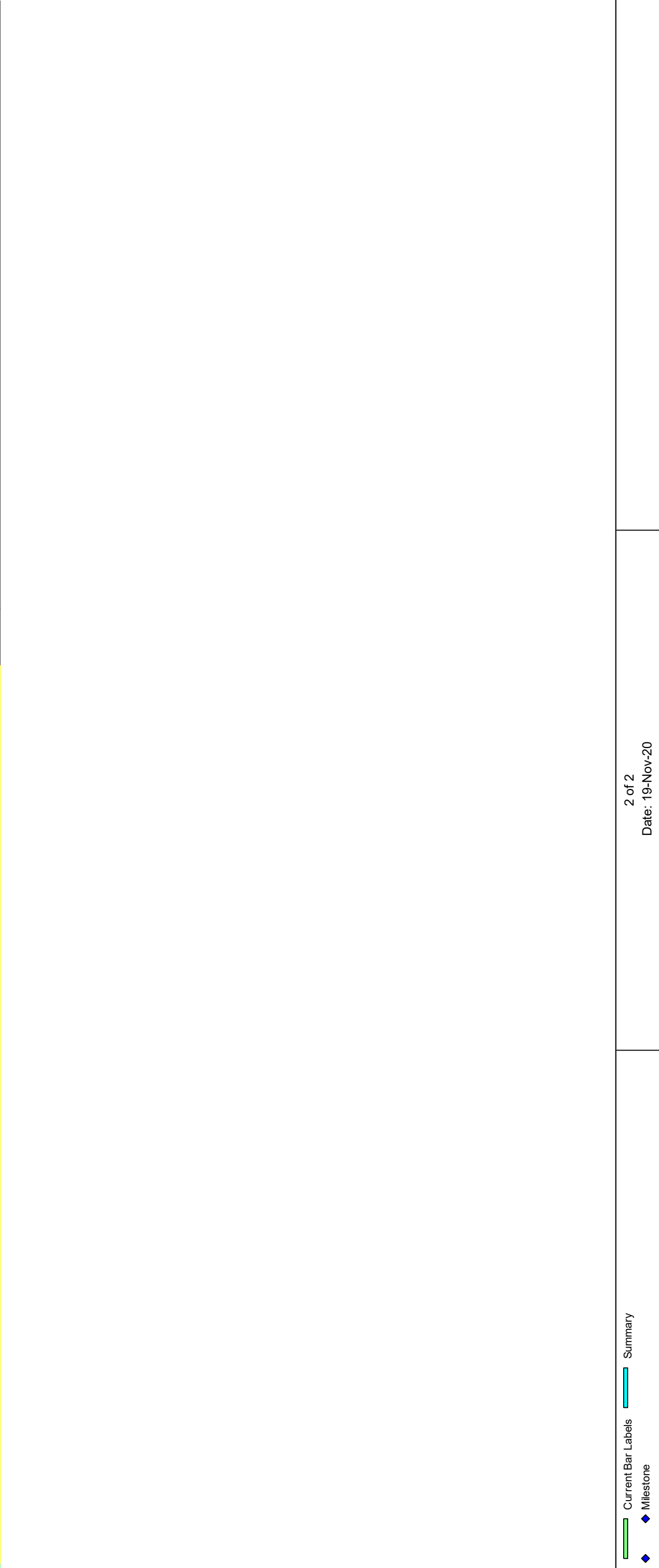
¹ The yellow highlighting on BDS-2 was contained in the original filing with the United States Environmental Protection Agency and *does not* denote confidential information.



1 of 2
Date: 19-Nov-20

◆ Current Bar Labels ◆ Summary
◆ Milestone

Mitchell - CCR/ELG EPA Updated Timelines...		AEP CCR-ELG MLP USEPA Public Version		
Activity ID	Activity Name	Duration (Months)	Start	Finish
East Bottom Ash Pond Closure				
T-PC-C-100-C-CON-S2-10	Dewater East Bottom Ash Pond	3.2	Apr-23	Jul-23
T-PC-C-100-C-CON-S2-15	Remove Sheet Piling	0.4	Apr-23	Apr-23
T-PC-C-100-C-CON-S2-25	CCR & PVC Liner Material Removal	0.4	Apr-23	May-23
T-PC-C-100-C-CON-S2-30	QA/QC of CCR Removal	2.0	May-23	Jul-23
East Wastewater Pond Repurpose				
T-PR-C-100-C-CON-S2-15	Compact Fill to Construct Waste Decant Area	0.8	Jul-23	Jul-23
T-PR-C-100-C-CON-S2-10	Subgrade prep for liner	3.4	Aug-23	Nov-23
T-PR-C-100-C-CON-S2-20	Liner and protective cover installation (Double liner, Revetment)	1.2	Aug-23	Sep-23
T-PR-C-100-C-CON-S2-25	QA/QC Consultant Prepare East Wastewater Pond Certification for Operation	1.6	Aug-23	Sep-23
T-PR-C-100-C-CON-S2-25	QA/QC Consultant Prepare East Wastewater Pond Certification for Operation	1.6	Sep-23	Nov-23
Bottom Ash Conversion Construction				
Construction Unit 2				
T-BA-C-492-C-CON-72	Civil (UG Piping Relocations and Installation / Foundations / Ash Bunker)	0.2	Nov-23	Nov-23
T-BA-C-492-M-CON-99	Str / Mech (AG Utility Relos / Conv Steel / Eqpmnt Install / BoP Piping)	7.8	Sep-22	Jun-23
T-BA-C-492-E-CON-80	Elec / I&C (Conduit & Cable Tray Install / DCS Eqpmnt In stall / Pull Power and Control Cabling and Terminate)	6.9	Sep-22	May-23
Construction Unit 1				
T-BA-C-492-C-CON-82	Civil (UG Piping Relocations and Installation / Foundations / Ash Bunker)	4.2	Sep-22	Feb-23
T-BA-C-492-M-CON-109	Str / Mech (AG Utility Relos / Conv Steel / Eqpmnt Install / BoP Piping)	5.6	Oct-22	May-23
T-BA-C-492-E-CON-90	Elec / I&C (Conduit & Cable Tray Install / DCS Eqpmnt In stall / Pull Power and Control Cabling and Terminate)	4.4	Dec-22	May-23
BA System Start-Up & Commissioning				
		7.8	Sep-22	Jun-23
		4.8	Sep-22	Feb-23
		6.5	Oct-22	Jun-23
		8.5	Dec-22	Jun-23
		1.8	Apr-23	Jun-23



Mitchell CCR and ELG Project Cost Estimate
 (\$000 – Total Plant)

Unit & Scope	Pre-2020	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21
ML1-2 Dry Ash Handling Capital	\$ 341	\$ 647	\$ 252	\$ 405	\$ 395	\$ 172	\$ 171	\$ 126	\$ 97	\$ 91	\$ 131	\$ 135	\$ 357	\$ (820)	\$ 34	\$ 34
ML0 FGD WWT Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1	\$ -	\$ -	\$ 1	\$ 109	\$ 302	\$ 398	\$ 23	\$ 23
ML0 Pond Repurpose Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 30	\$ 35	\$ 0	\$ 130	\$ 148	\$ 952	\$ 97	\$ 97
ML0 Pond Repurpose Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML0 Pond Repurpose ARO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Unit & Scope	Apr-21	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22
ML1-2 Dry Ash Handling Capital	\$ 34	\$ 45	\$ 159	\$ 307	\$ 397	\$ 853	\$ 997	\$ 1,088	\$ 1,742	\$ 874	\$ 654	\$ 203	\$ 1,521	\$ 2,577	\$ 2,366	\$ 1,521
ML0 FGD WWT Capital	\$ 23	\$ 34	\$ 91	\$ 136	\$ 182	\$ 709	\$ 854	\$ 2,580	\$ 2,040	\$ 904	\$ 913	\$ 937	\$ 886	\$ 869	\$ 1,378	\$ 886
ML0 Pond Repurpose Capital	\$ 97	\$ 95	\$ 97	\$ 232	\$ 83	\$ 625	\$ 618	\$ 593	\$ 1,250	\$ 646	\$ 652	\$ 669	\$ 633	\$ 620	\$ 1,227	\$ 633
ML0 Pond Repurpose Other	\$ -	\$ -	\$ -	\$ -	\$ 99	\$ 83	\$ -	\$ -	\$ -	\$ 86	\$ 86	\$ 86	\$ 86	\$ 57	\$ 57	\$ 57
ML0 Pond Repurpose ARO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 17	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 28	\$ 28	\$ 28

Unit & Scope	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
ML1-2 Dry Ash Handling Capital	\$ 203	\$ 203	\$ 639	\$ 416	\$ 896	\$ 3,975	\$ 5,565	\$ 6,701	\$ 6,701	\$ 5,565	\$ 5,565	\$ 2,278	\$ -	\$ -	\$ -	\$ -
ML0 FGD WWT Capital	\$ 937	\$ 937	\$ 914	\$ 925	\$ 5,390	\$ 1,703	\$ 1,705	\$ 1,705	\$ 1,698	\$ 1,703	\$ 3,088	\$ 1,845	\$ 2,051	\$ 1,696	\$ 1,695	\$ 1,972
ML0 Pond Repurpose Capital	\$ 669	\$ 669	\$ 637	\$ 645	\$ 1,231	\$ 807	\$ 808	\$ 808	\$ 805	\$ 807	\$ 1,729	\$ 807	\$ 802	\$ 804	\$ 803	\$ 801
ML0 Pond Repurpose Other	\$ 86	\$ 86	\$ 86	\$ 86	\$ 86	\$ 65	\$ 65	\$ 65	\$ 65	\$ 43	\$ 43	\$ 43	\$ 65	\$ 65	\$ 65	\$ 65
ML0 Pond Repurpose ARO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21	\$ 21	\$ 21	\$ -	\$ -	\$ -	\$ -

Unit & Scope	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24
ML1-2 Dry Ash Handling Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML0 FGD WWT Capital	\$ 3,588	\$ 87	\$ 87	\$ 87	\$ 87	\$ 87	\$ 549	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML0 Pond Repurpose Capital	\$ 2,196	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML0 Pond Repurpose Other	\$ 65	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML0 Pond Repurpose ARO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Unit & Scope	Pre-2020	2020	2021	2022	2023	2024	Total
ML1-2 Dry Ash Handling Capital	\$ 341	\$ 2,980	\$ 4,870	\$ 12,075	\$ 36,351	\$ -	\$ 56,616
ML0 FGD WWT Capital	\$ -	\$ 413	\$ 7,092	\$ 15,877	\$ 24,448	\$ 982	\$ 48,811
ML0 Pond Repurpose Capital	\$ -	\$ 343	\$ 4,838	\$ 8,930	\$ 11,980	\$ -	\$ 26,091
ML0 Pond Repurpose Other	\$ -	\$ -	\$ 182	\$ 941	\$ 711	\$ -	\$ 1,834
ML0 Pond Repurpose ARO	\$ -	\$ -	\$ 17	\$ 85	\$ 64	\$ -	\$ 166
Total (Direct+Allocations)	\$ 341	\$ 3,736	\$ 16,999	\$ 37,907	\$ 73,554	\$ 982	\$ 133,519

Mitchell CCR Only Cost Estimate

(\$000 – Total Plant)

Unit & Scope	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21
ML CCR Only Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 217	\$ 250	\$ 1	\$ 959	\$ 1,094	\$ 816	\$ 106	\$ 106	\$ 106
ML CCR Only Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML CCR Only ARO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Unit & Scope	May-21	Jun-21	Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22
ML CCR Only Capital	\$ 103	\$ 106	\$ 253	\$ 90	\$ 679	\$ 672	\$ 644	\$ 1,359	\$ 729	\$ 736	\$ 755	\$ 714	\$ 700	\$ 1,385	\$ 714	\$ 755
ML CCR Only Other	\$ -	\$ -	\$ -	\$ 96	\$ 168	\$ 132	\$ 132	\$ 132	\$ 90	\$ 90	\$ 90	\$ 90	\$ 60	\$ 60	\$ 60	\$ 90
ML CCR Only ARO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Unit & Scope	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
ML CCR Only Capital	\$ 755	\$ 719	\$ 728	\$ 1,390	\$ 510	\$ 510	\$ 510	\$ 508	\$ 510	\$ 1,091	\$ 509	\$ 506	\$ 508	\$ 507	\$ 506	\$ 1,386
ML CCR Only Other	\$ 90	\$ 90	\$ 90	\$ 90	\$ 67	\$ 67	\$ 67	\$ 67	\$ 45	\$ 45	\$ 45	\$ 67	\$ 67	\$ 67	\$ 67	\$ 67
ML CCR Only ARO	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Unit & Scope	Jan-29	Feb-29	Mar-29	Apr-29	May-29	Jun-29	Jul-29	Aug-29	Sep-29	Oct-29	Nov-29	Dec-29	Jan-30	Feb-30	Mar-30	Apr-30
ML CCR Only Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML CCR Only Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML CCR Only ARO	\$ 150	\$ 210	\$ 270	\$ 270	\$ 300	\$ 300	\$ 300	\$ 300	\$ 270	\$ 270	\$ 210	\$ 150	\$ 225	\$ 315	\$ 405	\$ 405

Unit & Scope	May-30	Jun-30	Jul-30	Aug-30	Sep-30	Oct-30	Nov-30	Dec-30
ML CCR Only Capital	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML CCR Only Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ML CCR Only ARO	\$ 450	\$ 450	\$ 450	\$ 450	\$ 405	\$ 405	\$ 315	\$ 225

Unit & Scope	2020	2021	2022	2023	2029	2030	Total
ML CCR Only Capital	\$ 2,520	\$ 5,040	\$ 10,080	\$ 7,560	\$ -	\$ -	\$ 25,200
ML CCR Only Other	\$ -	\$ 660	\$ 987	\$ 739	\$ -	\$ -	\$ 2,386
ML CCR Only ARO	\$ -	\$ -	\$ -	\$ -	\$ 3,002	\$ 4,502	\$ 7,504
Total (Direct+Allocations)	\$ 2,520	\$ 5,700	\$ 11,067	\$ 8,299	\$ 3,002	\$ 4,502	\$ 35,090



Sherrick Verficiation.docx

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E-Signature Summary

E-Signature 1: Brian D. Sherrick (BDS)

February 05, 2021 07:51:10 -8:00 [3982ED6C1FB2] [167.239.221.84]
 bdsherrick@aep.com (Principal) (Personally Known)

E-Signature Notary: S. Smithhisler (SRS)

February 05, 2021 07:51:10 -8:00 [F3722C29F507] [167.239.221.82]
 srsmithhisler@aep.com
 I, S. Smithhisler, did witness the participants named above electronically sign this document.



VERIFICATION

The undersigned, Brian D. Sherrick, being duly sworn, deposes and says he is the Managing Director of Projects for American Electric Power Service Corporation, that he has personal knowledge of the matters set forth in the forgoing testimony, and the information contained therein is true and correct to the best of his information, knowledge and belief after reasonable inquiry.

Brian D. Sherrick
Signed on 2021/02/05 07:51:10 -8:00

Brian D. Sherrick

STATE OF OHIO

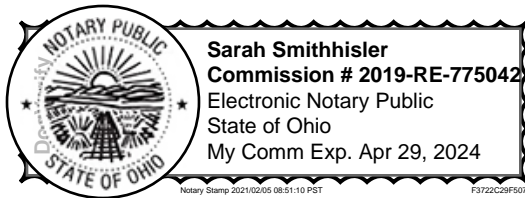
)

) Case No. 2021-00004

COUNTY OF FRANKLIN

)

Subscribed and sworn to before me, a Notary Public in and before said County and State, by Brian D. Sherrick this 5th day of February 2021.



S. Smithhisler
Signed on 2021/02/05 07:51:10 -8:00

Notary Public

Notary ID Number 2019-RE-775042

89C0F851-856E-47C4-9671-2EC5A4028090 --- 2021/02/05 07:00:54 -8:00 --- Remote Notary

