EXHIBIT *3*

Facilities Expansion
Scope of Work

AMENDMENT TO

CONTRACT NO. CRCPDP-200

BETWEEN THE

COLORADO RIVER COMMISSION OF NEVADA

AND THE

CLARK COUNTY WATER RECLAMATION DISTRICT

FOR THE

CONSTRUCTION, OPERATION AND MAINTENANCE

OF ELECTRIC FACILITIES

CLARK COUNTY WATER RECLAMATION DISTRICT
SCOPE OF WORK

Table of Contents

CLARK COUNTY WATER RECLAMATION DISTRICT
SCOPE OF WORK

A. EXECUTIVE SUMMARY

The Clark County Water Reclamation District (CCWRD) has requested that the Colorado River Commission of Nevada (CRC) purchase materials, and design, construct, operate and maintain CCWRD-owned substations and medium voltage distribution facilities to be located at the CCWRD Central Plant and Advanced Water Treatment facilities at 5857 East Flamingo Road in Las Vegas, Nevada 89122.

CRC is agreeable to purchasing materials, and designing, constructing, operating and maintaining CCWRD's facilities, subject to the terms set forth in the Interlocal Agreement Contract No. CRCPDP-200 between the CCWRD and the CRC to establish specific roles and responsibilities.

As indicated in this Scope of Work, CRC will design, construct and energize the expansion to the AWT Substation and Rochelle Substation, for an estimated pass through Cost of Six hundred thousand dollars ($600,000.00). This amount does not include previous funds expended by CCWRD on materials and designs. It further does not include the cost of work to be performed by the CCWRD on the distribution circuits.

B. BACKGROUND

The CCWRD is currently planning the construction of additional facilities and rehabilitation at its Central Plant West Campus and East Campus facilities. These facilities will increase electrical load and will necessitate the construction of additional substation capacity and distribution feeders within the site.

The existing Rochelle and AWT Substations are currently served from several substations and distribution feeders owned and operated by NV Energy.

The CCWRD desires to add additional circuits to add reliability to CCWRD facilities and loads.

Three substations serve the existing and planned increase in load. These substations are:

- Surge Pond
- Rochelle
- AWT

From these substations, underground distribution circuits will be constructed that will tie to the existing underground feeders at the site and to new 15-kV switchgear. Single line diagrams depicting the planned substation facilities and the new underground distribution circuits are provided in Appendix A.

The proposed substations will continue to be interconnected to existing NV Energy 69-kV transmission lines. Through an agreement between CCWRD and NV Energy, NV Energy has provided the loop-in and loop-out of its Winterwood-Clark 69-kV transmission line to serve the Surge Pond Substation. NV Energy has provided a loop-in and loop-out of its Winterwood-Henderson 69-kV transmission line to serve the Rochelle Substation and a loop-in and loop-out of its Winterwood-Linquist 69-kV transmission line to serve the AWT Substation.

C. UTILITY RESPONSIBILITY

NV Energy is currently the electric utility responsible for electric transmission service to the CCWRD at the FWRC. No change in utility responsibility is being considered at this time. The purchase of energy from the CRC is pursuant to a separate agreement.

There is no change to the service or transmission required with this Scope of Work.

D. CRC ROLE AND RESPONSIBILITY

The CCWRD has requested the CRC purchase materials, and design, construct, operate and maintain electric facilities for the required substations and medium voltage distribution circuits to designated demarcation points as discussed later in this Scope of Work. The electrical facilities located at FWRC will remain under the ownership of the CCWRD.

The details of CRC's roles and responsiblities will be provided in the Interlocal Agreement Contract No. CRCPDP-200 between the CCWRD and the CRC. The details will be based upon the Scope of Work, demarcation points, schedules and costs contained within this Scope of Work.

No change in responsibility for the 69-kV transmission line is contemplated. These existing NV Energy 69-kV transmission lines will continue to be owned and operated by NV Energy.

E. FUNDING

The CCWRD will provide advance monthly payment to the CRC for design, purchase of materials and construction of the distribution circuit facilities and their operation and maintenance. As discussed later in this Scope of Work, the CRC has prepared an initial project cost estimate. This estimate will be used to develop a cash flow statement that will serve as the basis for payments. As project work progresses, the CRC will prepare updates of the project cost estimate and cash flow statement and once approved by the CCWRD, these will serve as the basis for future payments. CRC will provide CCWRD with monthly updates of invoices and payroll expenses.

F. PRIOR SUBSTATION DESIGN AND MATERIAL PROCUREMENT

Under an agreement with a Consultant, CCWRD has funded design efforts for circuits from the Rochelle and AWT Substations. The CCWRD has requested the CRC utilize these plans to add the circuits requested. These designs will be supplemented and completed as necessary by the CRC. No prior material has been procured.

G. PRIOR DISTRIBUTION CIRCUIT DESIGN

The design drawings prepared by the Consultant for the planned distribution circuit ductbanks are provided in Appendix A to this Scope of Work. The CRC has reviewed these previously prepared designs and believes additional details must be provided for construction of new circuits at the substations and will provide documents as required.

H. SUBSTATION DESIGN AND CONSTRUCTION SCOPE OF WORK

The CRC will prepare designs, estimates, material specifications and construction specifications and provide related services for the design and construction of the new circuits at the existing substations. Such designs and specifications will include at a minimum, bills of materials, equipment sizes and ratings, material requirements, and all other information required to procure, install, erect and construct the circuits at the Rochelle and AWT substations. In completion of its responsibilities, the CRC may perform the following activities.

- Prepare periodic updates of the initial conceptual substation cost estimate and cash flow statement.
- Prepare periodic updates of the initial substation construction schedule.
- Prepare engineering studies necessary to size equipment, select fuses and determine relay settings.
- The CRC will issue purchase contracts to selected vendors for material procurement.
- Review and approve submittals from vendors.
- Conduct factory inspections of materials as deemed appropriate and necessary.
- Provide construction management services during construction of the substation circuits.
- Conduct field testing and inspection of substation equipment and facilities, and complete functional testing and energization of all substation circuits.
- Prepare as-built drawings for the substations.

I. DISTRIBUTION FEEDER DESIGN AND CONSTRUCTION SCOPE OF WORK

The CCWRD will design and construct the distribution feeder ductbanks from the switch vaults to the termination of the feeder at the CCWRD switchgear. The CRC will furnish and install all necessary cable, and terminations between the substations and the CCWRD connection point.

In completion of its responsibilities, the CRC may perform the following activities.

- Prepare periodic updates of the initial conceptual distribution circuit cost estimate and cash flow statement.
- Prepare periodic updates of the initial distribution circuit construction schedule.
- Prepare engineering studies necessary to verify cable sizes
- The CRC will issue material contracts to selected vendors for material procurement.

J. PERMITING

As part of the CCWRD's overall expansion and modification of the FWRC facilities, the CCWRD will obtain any necessary permits.

K. SUBSTATION DESIGN

The CRC has reviewed the designs prepared by the Consultant and will modify the existing substations to add the circuits required.

L. DEMARCATION POINTS CRC – NV ENERGY

For design and construction purposes, the demarcation point between NV Energy responsibility and CRC responsibility is the three-pole, self-supporting, 69-kV line termination structures set inside the substation fence. CRC proposes NV Energy retain all work associated with these structures. CRC proposes all work downstream of these structures to be performed by CRC within the substation.

For operation and maintenance purposes, it is proposed the operational demarcation is the 69-kV line isolating switches on the line side of the 69-kV breakers.

M. DEMARCATION POINTS CRC - CCWRD

For design and construction purposes, the proposed demarcation point for ductbank construction responsibility between CCWRD and CRC will be the first vault located outside of each substation as shown by Appendices A. The CCWRD will set and install these designated vaults and all downstream ductbanks.

For 15-kV cable installation, the CRC will be responsible for installation and termination of all cable between the substations and the CCWRD 15-kV intermediate switches, if any.

For operation and maintenance purposes, CRC will operate and maintain all CCWRD equipment and devices within the substation fences. CRC will operate and maintain all distribution feeders between the substation and the CCWRD switchgear, unless CCWRD requests to retain this responsibility in any subsequent operation and maintenance agreement.

N. METERING

CRC will maintain existing metering in the substation. No changes are required in this scope.

O. CRC COMMUNICATIONS

The CRC will continure to remotely monitor and operate the planned substation facilities. This is accomplished from CRC's control center located at the Newport Substation complex in Henderson, Nevada.

P. NV ENERGY COMMUNICATIONS

CRC is unaware of NV Energy required communications to primary metering at the new substations. The nature of required communication will be determined in consultation with the CCWRD and NV Energy. The cost of any equipment to support NV Energy communication requirements has not been included in the cost estimates in this Scope of Work.

Q. STATION SERVICE POWER

Station service power for each of the substations comes from single phase, completely self protected 7200-240/120 volt, 100 kVA station power transformer located at each substation. No changes are required.

R. FENCING

No changes to existing Fencing will be required.

S. SCHEDULE

On-site construction of the required substation expansions is expected to commence in 2021.

T. ESTIMATED COST

For planning purposes, CRC has estimated the costs to construct the expansion of the 15-kV distribution circuits. These costs are summarized in the following table. All costs listed below are in 2021 dollars.

Facility	Costs
Surge Pond Substation	$0
Rochelle Substation Expansion	$163,400
AWT Substation Expansion	$206,000
Mobilization & Demobilization	$28,500
Total	$397,900

The above costs do not include any amounts for project permitting other than the supply of technical data to the CCWRD.

The costs quoted are for planning purposes only. **Actual costs will vary from those quoted.** Additional estimates will be prepared by CRC and provided to the CCWRD during construction of the electrical expansion for actual costs.

Appendix A

Existing Electrical System Changes

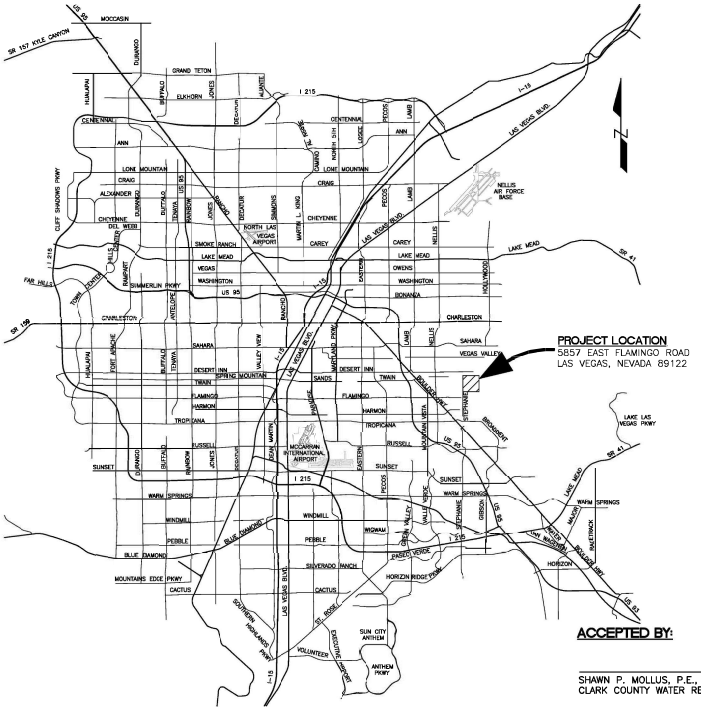
Approved:

CCWRD	**Date**	**CRC**	**Date**

CLARK COUNTY WATER RECLAMATION DISTRICT

The "Clean Water Team"

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION PROJECT FY19-20
SHEETS FROM VOLUME 3 OF 3
CRC REFERENCE DRAWINGS
PWP NO. CL-2021-08



LOCATION MAP
NOT TO SCALE

CCWRD BOARD OF TRUSTEES
TICK SEGERBLOM (CHAIRMAN)
JUSTIN JONES (VICE-CHAIRMAN)
JAMES B. GIBSON
MARILYN KIRKPATRICK
WILLIAM MCCURDY II
ROSS MILLER
MICHAEL NAFT

ACCEPTED BY:

SHAWN P. MOLLUS, P.E., DEPUTY GENERAL MANAGER, ENGINEERING AND CONSTRUCTION DATE
CLARK COUNTY WATER RECLAMATION DISTRICT

Call before you do UnderGround 1-702-455-7511 CLARK COUNTY TRAFFIC OPERATIONS AND 1-702-432-5300 REGENT AND NEVADA POWER & TIMEWARNER

Call before you Dig Avoid cutting underground utility lines. It's costly. Call 811 or 1-800-227-2600 AND CLARK COUNTY TRAFFIC OPERATIONS 1-702-455-7544

AVOID HITTING OVERHEAD POWER LINES. IT'S COSTLY. CALL BEFORE YOU DO OVERHEAD 1-702-227-2929

ALWAYS THINK SAFETY

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 320
LAS VEGAS, NV 89119 (702) 214-2580

DRAWN BY: ADA/JDA DESIGNED BY: ADA/JDA APPROVED BY: BDD

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION FY19-20
GENERAL
COVER SHEET

0001-19008-G01.dwg

	APP	DATE
CHECKED BY:		
CCWRD SENIOR CIVIL ENGINEER RECOMMENDED BY:		DATE
CCWRD PRINCIPAL ENGINEER RECOMMENDED BY:		DATE
CCWRD DESIGN MANAGER		DATE

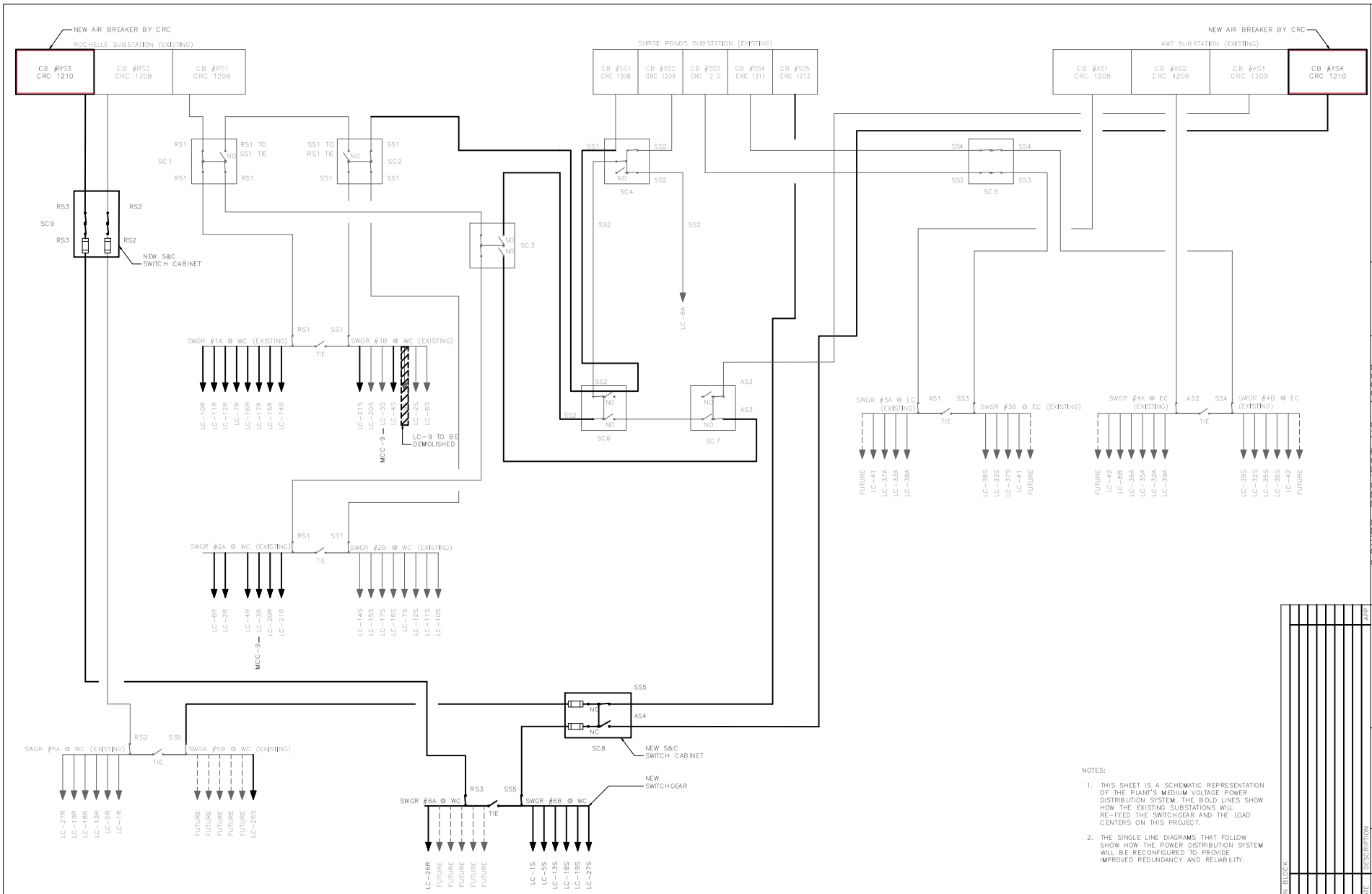
PROFESSIONAL ENGINEER - STATE OF NEVADA
BRIAN D. DOWNING
Exp: 12/31/22
ELECTRICAL
No. 13999
DATE 08/06/21

PROJECT NO.
D2108.19

DRAWING
G01

SHEET 1 OF 76

REVISION BLOCK	NO.	DATE	DESCRIPTION



NOTES:

1. THIS SHEET IS A SCHEMATIC REPRESENTATION OF THE PLANT'S MEDIUM VOLTAGE POWER DISTRIBUTION SYSTEM. THE BOLD LINES SHOW HOW THE EXISTING SUBSTATIONS WILL RE-FEED THE SWITCHGEAR AND THE LOAD CENTERS ON THIS PROJECT.
2. THE SINGLE LINE DIAGRAMS THAT FOLLOW SHOW HOW THE POWER DISTRIBUTION SYSTEM WILL BE RECONFIGURED TO PROVIDE IMPROVED REDUNDANCY AND RELIABILITY.

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.9990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

ELECTRICAL SERVICE AND SUBSTATIONS SINGLE LINE

19008-E02.dwg

CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER DATE

APP

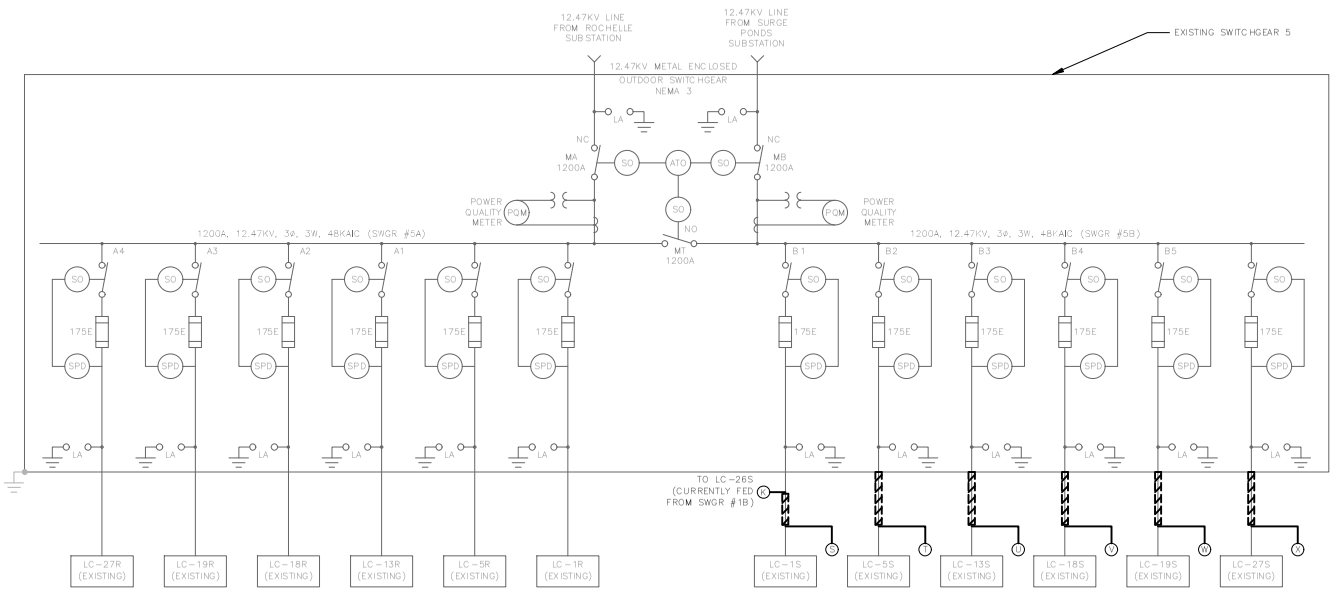
REVISION BLOCK
NO. DATE DESCRIPTION

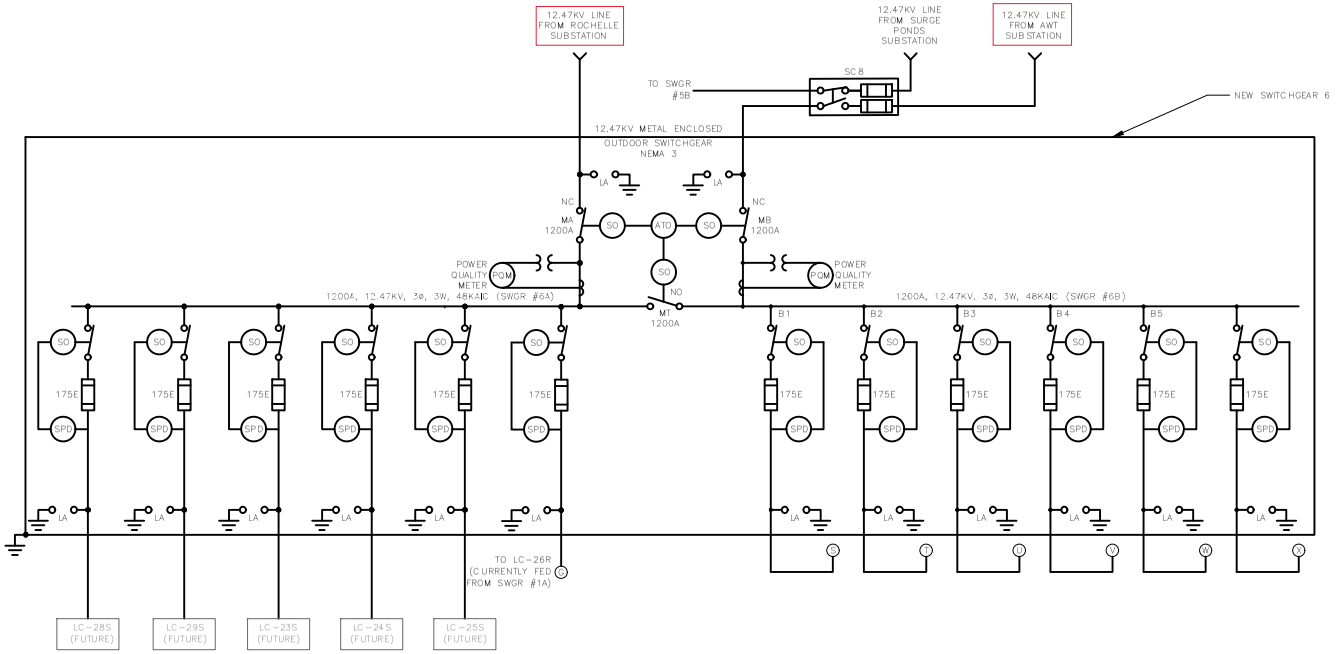
PROFESSIONAL ENGINEER
BRIAN D. DOWNING
No. 13696
Exp. 12/31/22
STATE OF NEVADA
DATE 08/2021

PROJECT NO.
D2108.19

DRAWING
E02

SHEET 24 OF 76





NOTES:

1. AT SWITCHGEAR 5B, EXISTING CIRCUITS FEEDING LOAD CENTERS 1S, 5S, 13S, 18S, 19S, AND 27S SHALL BE DISCONNECTED FROM SWITCHGEAR 5B BREAKERS. RECONNECT ABOVE LISTED LOAD CENTERS TO NEW SWITCHGEAR 6B BREAKERS AS SHOWN. SPLICE EXISTING 15KV CABLES TO ABOVE LISTED LOAD CENTERS AS NEEDED TO RECONNECT TO SWITCHGEAR 6B.
2. LOAD CENTER 26S SHALL BE DISCONNECTED FROM SWITCHGEAR 1B BREAKER AND RECONNECTED TO SWITCHGEAR 5B BREAKER AS SHOWN. INSTALL NEW 15KV CONDUCTORS FROM SWITCHGEAR 5B TO LOAD CENTER 26S.
3. LOAD CENTER 26R SHALL BE DISCONNECTED FROM SWITCHGEAR 1A BREAKER AND RECONNECTED TO SWITCHGEAR 6A BREAKER AS SHOWN. INSTALL NEW 15KV CONDUCTORS FROM SWITCHGEAR 6A TO LOAD CENTER 26R.

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

SWITCHGEAR NO. 5 AND 6 SINGLE LINE DIAGRAM

19008-E04.dwg

REVISION BLOCK	NO	DATE	DESCRIPTION	APP

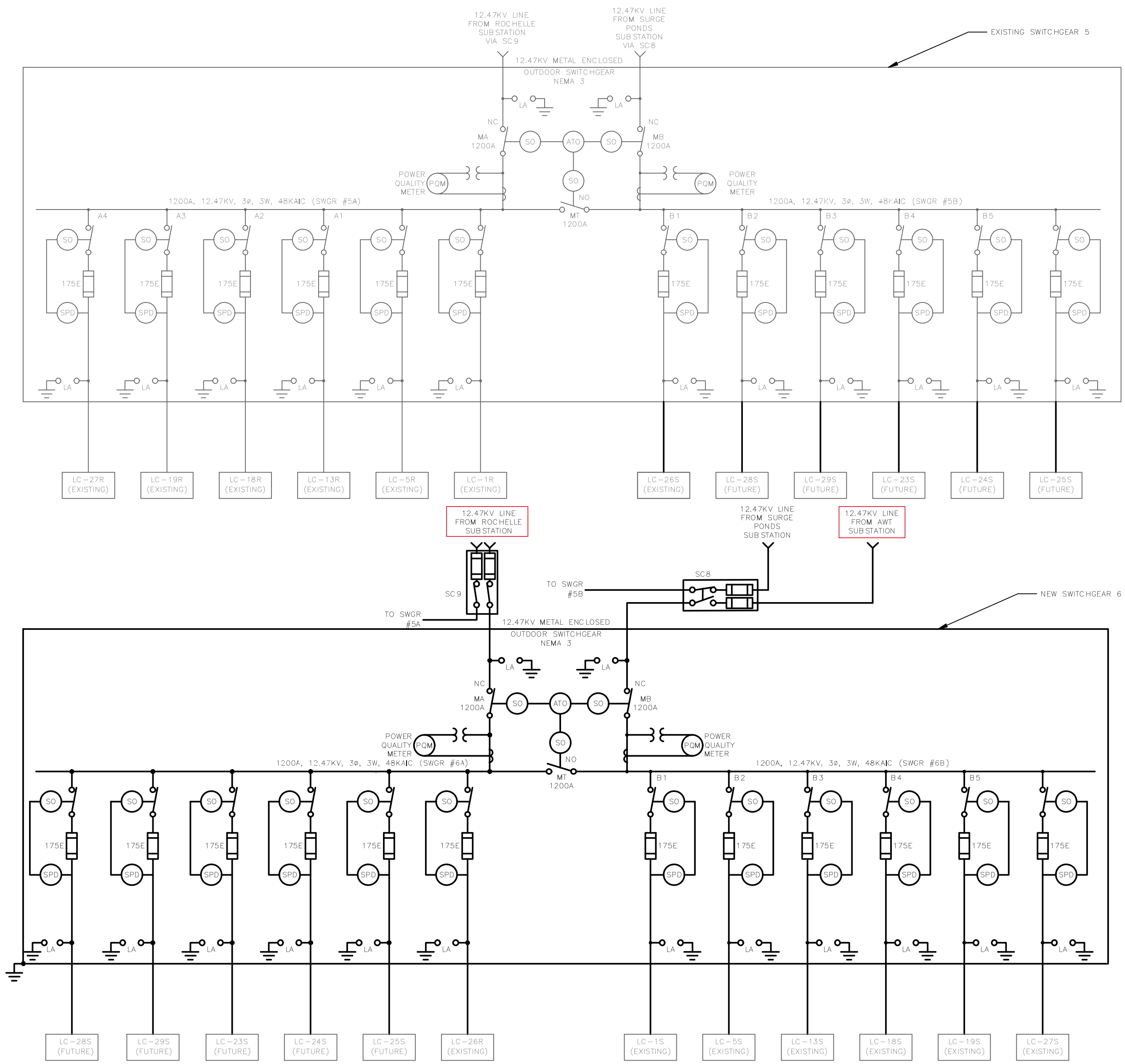
CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER — DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER — DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER — DATE

PROFESSIONAL ENGINEER — BRIAN D. DOWNING — No. 13696 — STATE OF NEVADA
DATE 08/2021

PROJECT NO.
D2108.19

DRAWING
E04

SHEET 27 OF 76


EXISTING SWITCHGEAR 5
12.47KV LINE FROM ROCHELLE SUBSTATION VIA SC9
12.47KV LINE FROM SURGE PONDS SUBSTATION VIA SC8
12.47KV METAL ENCLOSED OUTDOOR SWITCHGEAR NEMA 3
NC
MA 1200A
MB 1200A
ATO
SO
NO
MT 1200A
POWER QUALITY METER
PQM
1200A, 12.47KV, 3ø, 3W, 48KAIC (SWGR #5A)
1200A, 12.47KV, 3ø, 3W, 48KAIC (SWGR #5B)
A4
A3
A2
A1
B1
B2
B3
B4
B5
175E
SPD
LA
LC-27R (EXISTING)
LC-19R (EXISTING)
LC-18R (EXISTING)
LC-13R (EXISTING)
LC-5R (EXISTING)
LC-1R (EXISTING)
LC-26S (EXISTING)
LC-28S (FUTURE)
LC-29S (FUTURE)
LC-23S (FUTURE)
LC-24S (FUTURE)
LC-25S (FUTURE)
12.47KV LINE FROM ROCHELLE SUBSTATION
12.47KV LINE FROM SURGE PONDS SUBSTATION
12.47KV LINE FROM AWT SUBSTATION
SC9
SC8
TO SWGR #5B
TO SWGR #5A
NEW SWITCHGEAR 6
1200A, 12.47KV, 3ø, 3W, 48KAIC (SWGR #6A)
1200A, 12.47KV, 3ø, 3W, 48KAIC (SWGR #6B)
LC-28S (FUTURE)
LC-29S (FUTURE)
LC-23S (FUTURE)
LC-24S (FUTURE)
LC-25S (FUTURE)
LC-26R (EXISTING)
LC-1S (EXISTING)
LC-5S (EXISTING)
LC-13S (EXISTING)
LC-18S (EXISTING)
LC-19S (EXISTING)
LC-27S (EXISTING)

NOTES:

1. AT SWITCHGEAR 5B, EXISTING CIRCUITS FEEDING LOAD CENTERS 1S, 5S, 13S, 18S, 19S, AND 27S SHALL BE DISCONNECTED FROM SWITCHGEAR 5B BREAKERS. RECONNECT ABOVE LISTED LOAD CENTERS TO NEW SWITCHGEAR 6B BREAKERS AS SHOWN. SPLICE EXISTING 15KV CABLES TO ABOVE LISTED LOAD CENTERS AS NEEDED TO RECONNECT TO SWITCHGEAR 6B.

2. LOAD CENTER 26S SHALL BE DISCONNECTED FROM SWITCHGEAR 1B BREAKER AND RECONNECTED TO SWITCHGEAR 5B BREAKER AS SHOWN. INSTALL NEW 15KV CONDUCTORS FROM SWITCHGEAR 5B TO LOAD CENTER 26S.

3. LOAD CENTER 26R SHALL BE DISCONNECTED FROM SWITCHGEAR 1A BREAKER AND RECONNECTED TO SWITCHGEAR 6A BREAKER AS SHOWN. INSTALL NEW 15KV CONDUCTORS FROM SWITCHGEAR 6A TO LOAD CENTER 26R.

4. CONTRACTOR SHALL PROVIDE GENERATORS FOR OPERATION OF LOAD CENTERS DURING REPLACEMENT OF CONDUCTORS. MAXIMUM ACCEPTABLE DOWN TIME OF LOAD CENTERS IS ONE HOUR. APPROXIMATE SIZE OF GENERATOR SHALL BE 2MW. PROVIDE ONE OR MORE GENERATORS TO ENSURE TEMPORARY POWER IS SUFFICIENT MAINTAIN PLANT PROCESS AREA OPERATIONS.

NO	DATE	DESCRIPTION	APP

REVISION BLOCK

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
0 1/2 1

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

SWITCHGEAR NO. 5 AND 6
FINAL SINGLE LINE DIAGRAM

19008-E04A.dwg

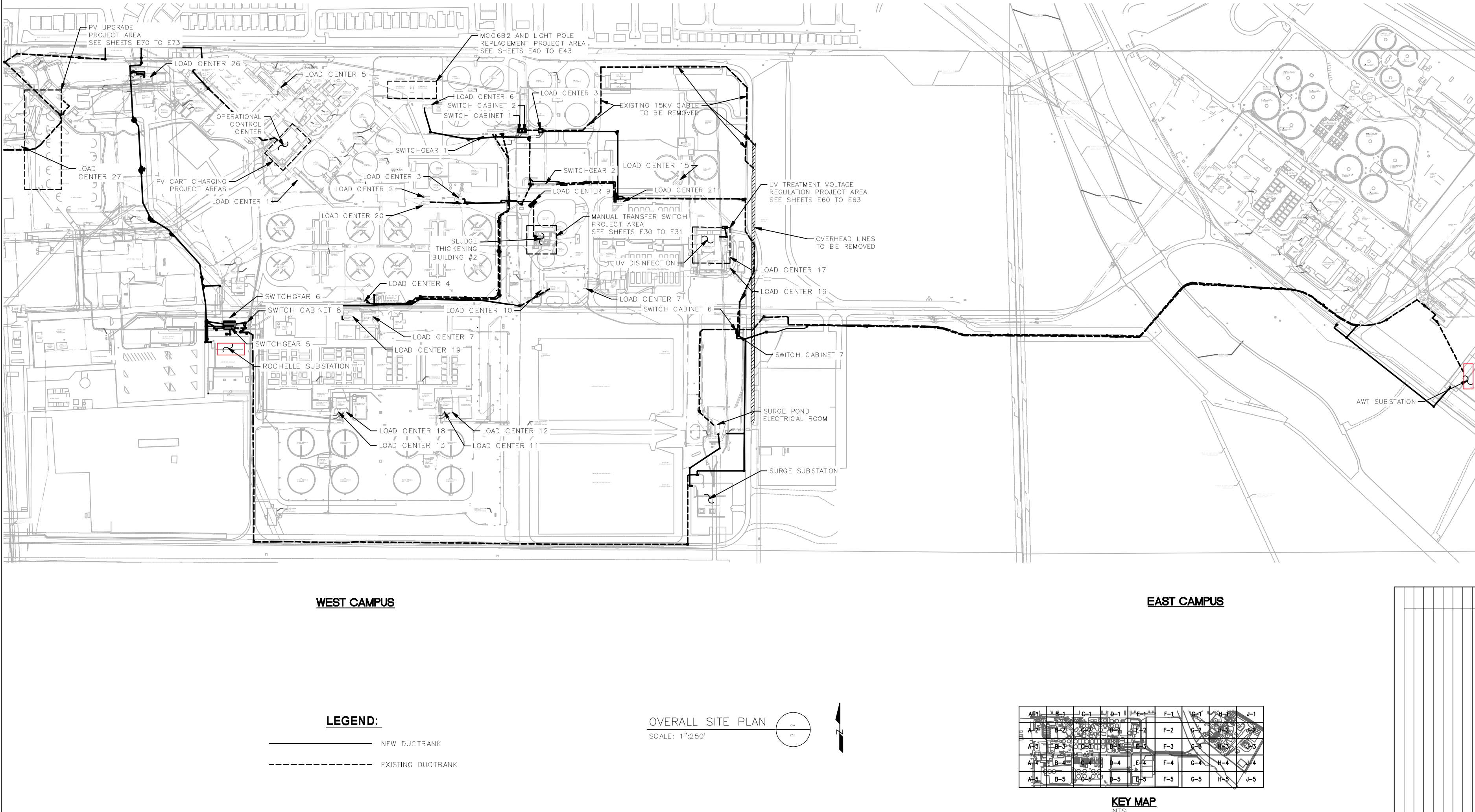
CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER DATE

BRIAN D. DOWNING Exp. 12/31/22 ELECTRICAL No. 13999

DATE: 03/01/2021

PROJECT NO.
D2108.19

DRAWING
E04A
SHEET 28 OF 76


PV UPGRADE
PROJECT AREA
SEE SHEETS E70 TO E73
LOAD CENTER 26
LOAD CENTER 5
MCC6B2 AND LIGHT POLE
REPLACEMENT PROJECT AREA
SEE SHEETS E40 TO E43
LOAD CENTER 6
SWITCH CABINET 2
SWITCH CABINET 1
LOAD CENTER 3
EXISTING 15KV CABLE
TO BE REMOVED
OPERATIONAL
CONTROL
CENTER
SWITCHGEAR 1
SWITCHGEAR 2
LOAD CENTER 15
LOAD
CENTER 27
PV CART CHARGING
PROJECT AREAS
LOAD CENTER 1
LOAD CENTER 3
LOAD CENTER 2
LOAD CENTER 9
LOAD CENTER 21
UV TREATMENT VOLTAGE
REGULATION PROJECT AREA
SEE SHEETS E60 TO E63
LOAD CENTER 20
MANUAL TRANSFER SWITCH
PROJECT AREA
SEE SHEETS E30 TO E31
OVERHEAD LINES
TO BE REMOVED
SLUDGE
THICKENING
BUILDING #2
UV DISINFECTION
LOAD CENTER 17
LOAD CENTER 4
LOAD CENTER 16
SWITCHGEAR 6
LOAD CENTER 7
SWITCH CABINET 8
LOAD CENTER 10
SWITCH CABINET 6
LOAD CENTER 7
SWITCHGEAR 5
LOAD CENTER 19
SWITCH CABINET 7
ROCHELLE SUBSTATION
AWT SUBSTATION
SURGE POND
ELECTRICAL ROOM
LOAD CENTER 18
LOAD CENTER 12
LOAD CENTER 13
LOAD CENTER 11
SURGE SUBSTATION
WEST CAMPUS
EAST CAMPUS
LEGEND:
NEW DUCTBANK
EXISTING DUCTBANK
OVERALL SITE PLAN
SCALE: 1"=250'
KEY MAP
NTS

REVISION BLOCK

NO	DATE	DESCRIPTION	APP

CHECKED BY:

CCWRD SENIOR CIVIL ENGINEER DATE
RECOMMENDED BY:

CCWRD PRINCIPAL ENGINEER DATE
RECOMMENDED BY:

CCWRD DESIGN MANAGER DATE

BRIAN D. DOWNING
Exp. 12/31/22
ELECTRICAL
No. 13999
PROFESSIONAL ENGINEER – STATE OF NEVADA

DATE: 03/01/2021

PROJECT NO.
D2108.19

DRAWING
E10
SHEET 30 OF 76

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

OVERALL DUCT BANK ROUTING PLAN

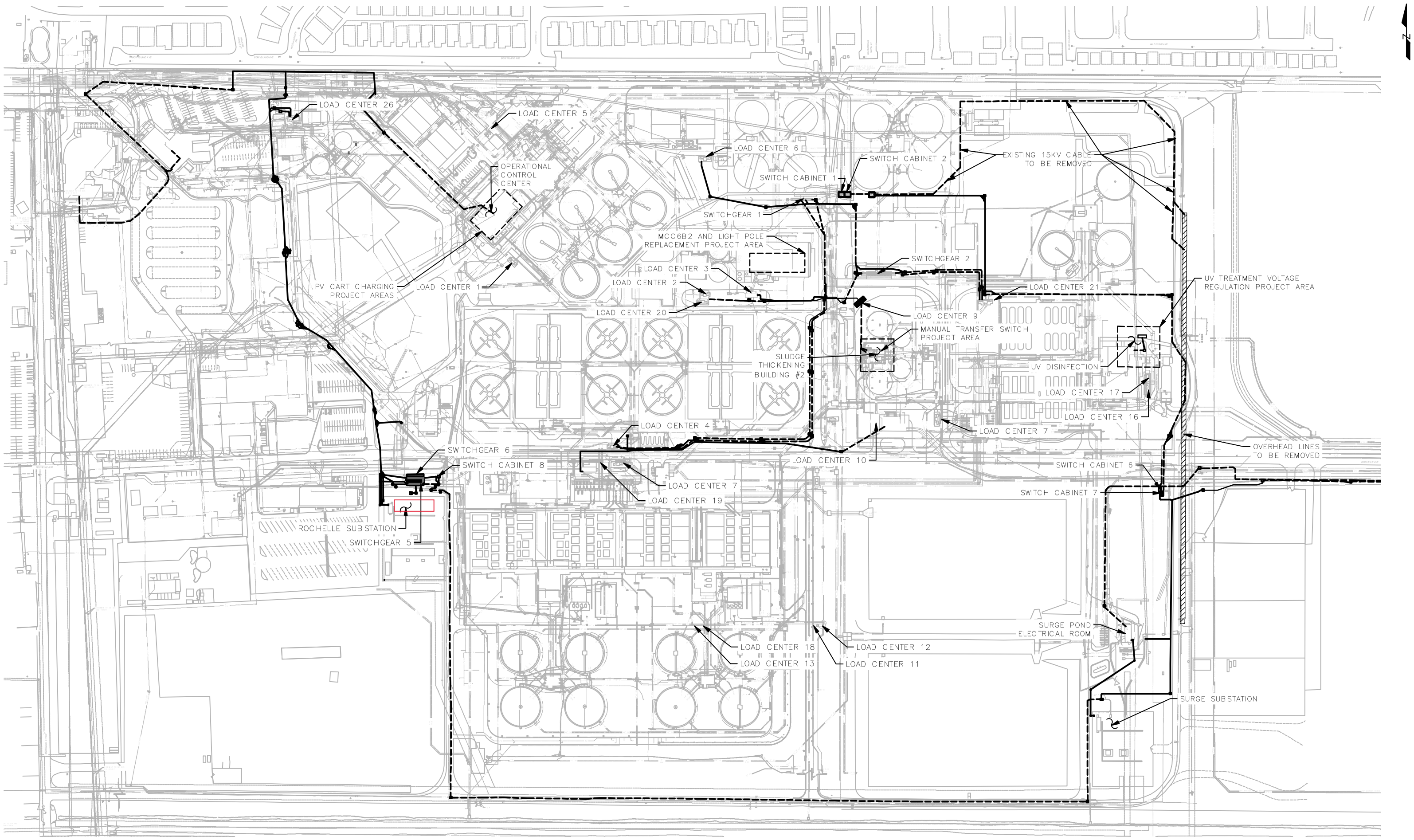
19008-E10-E29.dwg

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD



LOAD CENTER 26
LOAD CENTER 5
OPERATIONAL CONTROL CENTER
LOAD CENTER 6
SWITCH CABINET 1
SWITCH CABINET 2
EXISTING 15KV CABLE TO BE REMOVED
SWITCHGEAR 1
MCC6B2 AND LIGHT POLE REPLACEMENT PROJECT AREA
SWITCHGEAR 2
PV CART CHARGING PROJECT AREAS
LOAD CENTER 1
LOAD CENTER 3
LOAD CENTER 2
LOAD CENTER 21
UV TREATMENT VOLTAGE REGULATION PROJECT AREA
LOAD CENTER 20
LOAD CENTER 9
MANUAL TRANSFER SWITCH PROJECT AREA
SLUDGE THICKENING BUILDING #2
UV DISINFECTION
LOAD CENTER 17
LOAD CENTER 16
LOAD CENTER 4
LOAD CENTER 7
SWITCHGEAR 6
SWITCH CABINET 8
LOAD CENTER 10
OVERHEAD LINES TO BE REMOVED
SWITCH CABINET 6
LOAD CENTER 7
SWITCH CABINET 7
LOAD CENTER 19
ROCHELLE SUBSTATION
SWITCHGEAR 5
SURGE POND ELECTRICAL ROOM
LOAD CENTER 18
LOAD CENTER 12
LOAD CENTER 13
LOAD CENTER 11
SURGE SUBSTATION
N

LEGEND:

NEW DUCTBANK

EXISTING DUCTBANK

WEST CAMPUS PLAN

SCALE: 1/16":12'

NO.	DATE	DESCRIPTION	APP

REVISION BLOCK

CHECKED BY:

CCWRD SENIOR CIVIL ENGINEER DATE

RECOMMENDED BY:

CCWRD PRINCIPAL ENGINEER DATE

RECOMMENDED BY:

CCWRD DESIGN MANAGER DATE

BRIAN D. DOWNING

No. 13999

DATE: 03/01/2021

PROJECT NO.

D2108.19

DRAWING

E10A

SHEET 31 OF 76

CCWRD PROJECT NO. 19008

FWRC ELECTRICAL REHABILITATION

FY19-20

WESTERN SECTION DUCT BANK ROUTING AND PLAN

19008-E10-E29.dwg

0 1/2 1

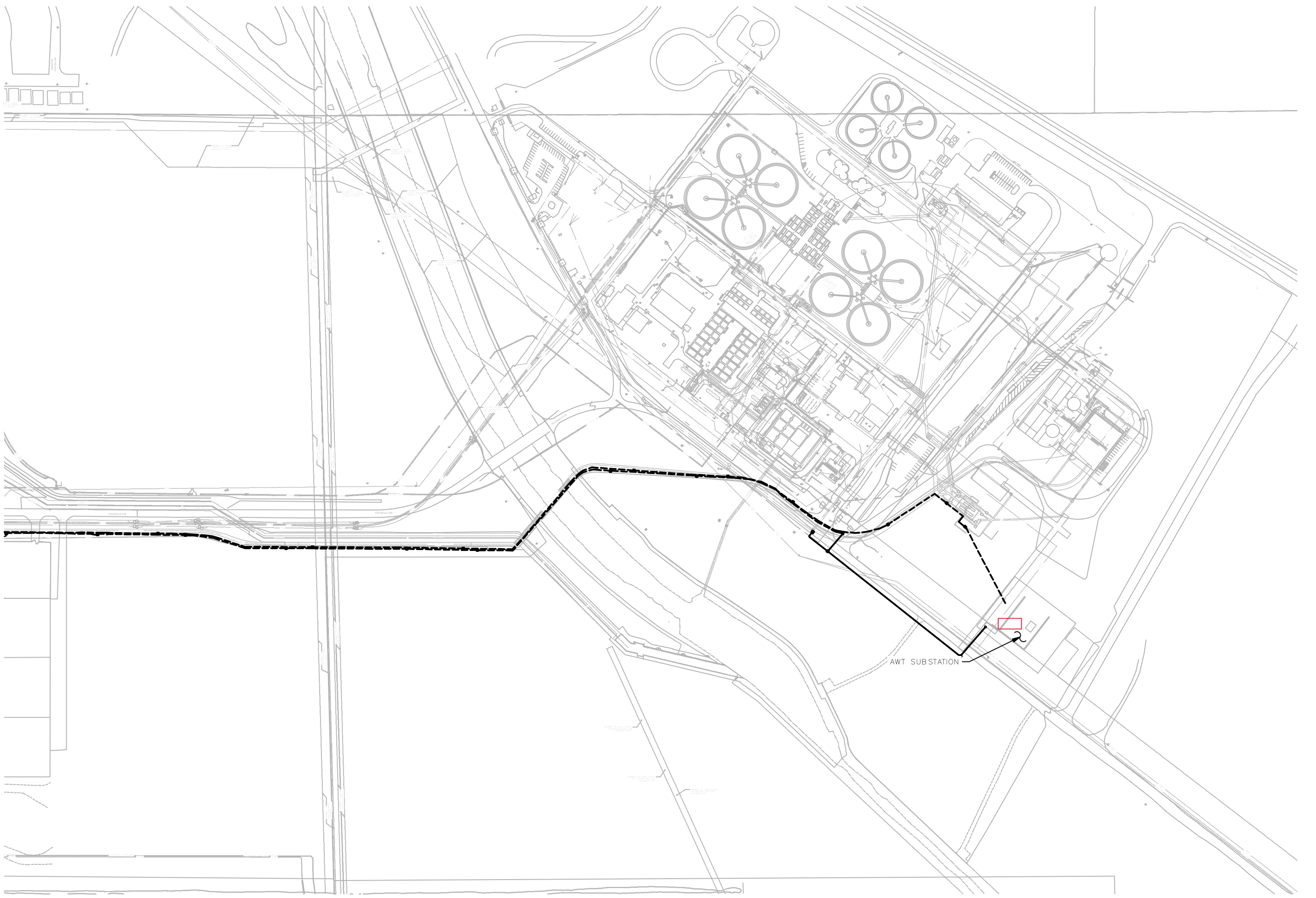
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS

2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD



EAST CAMPUS PLAN
SCALE: 1/16":12'

LEGEND:

——— NEW DUCTBANK

- - - - - EXISTING DUCTBANK

NO.	DATE	DESCRIPTION	APP

REVISION BLOCK

CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER — DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER — DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER — DATE

BRIAN D. DOWNING
No. 13999
DATE: 03/01/2021

PROJECT NO.
D2108.19

DRAWING
E10B
SHEET 32 OF 76

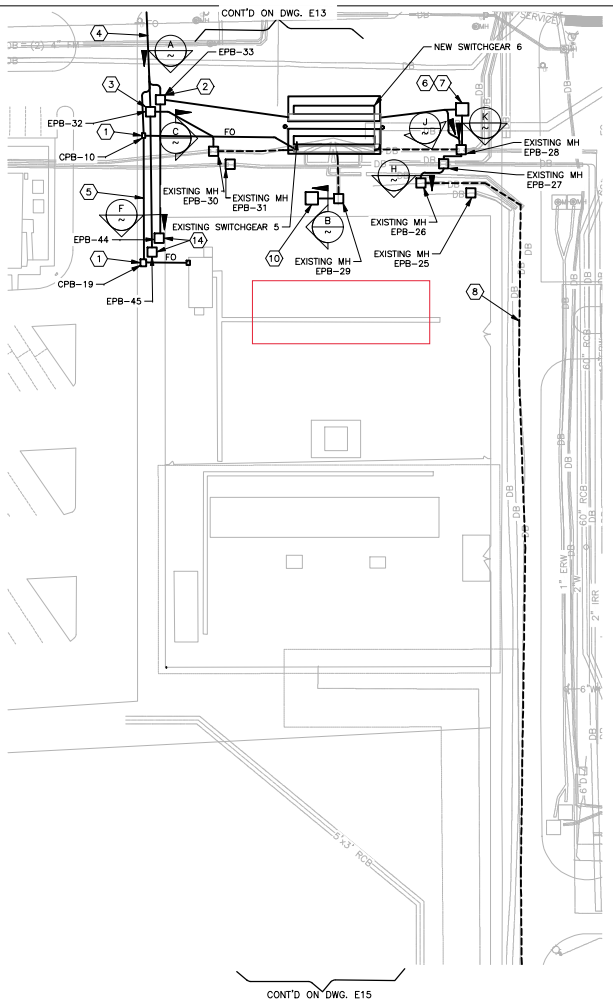
CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

EASTERN SECTION DUCT BANK ROUTING AND PLAN

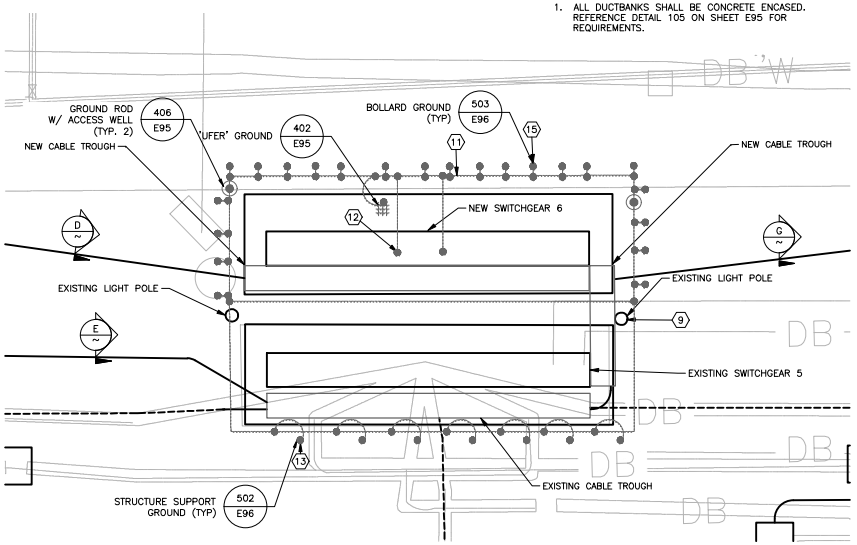
19008-E10-E29.dwg

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CLARK COUNTY WATER RECLAMATION DISTRICT
DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990
DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD



ENLARGED PLAN (B-4)
SCALE: 1":40'



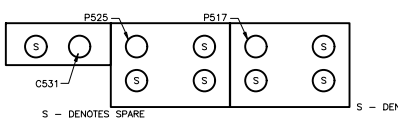
DUCT BANK AND GROUNDING PLAN (B-4)
SCALE: 1":10'

NOTES:

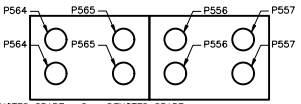
1. ALL DUCTBANKS SHALL BE CONCRETE ENCASED. REFERENCE DETAIL 105 ON SHEET E95 FOR REQUIREMENTS.

KEY NOTES

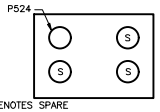
1. NEW FO MANHOLE TO ROUTE FO CABLE TO EXISTING FO LOOP.
2. NEW MANHOLE AND 12KV CABLE TO RE-FEED LOAD CENTER (26) FROM SWITCHGEAR 6A.
3. NEW MANHOLE AND 12KV CABLE TO RE-FEED LOAD CENTER (26) FROM SWITCHGEAR 5B.
4. NEW DUCT BANK TO ROUTE 12KV TO RE-FEED LOAD CENTER (26) FROM SWITCHGEAR 5 AND 6, AND CONNECT TO EXISTING FO LOOP.
5. ROUTE NEW FIBER OPTIC CABLE TO MANHOLE TO NEW FO PULLBOX AT THE ROCHELLE SUBSTATION ELECTRIC BUILDING.
6. INSTALL NEW SWITCH CABINET (8) AND INTERCEPT 12KV CIRCUIT FROM SURGE PONDS SUBSTATION CRC1213 FEED AND CONNECT TO NORMALLY CLOSED (NC) SWITCH. ROUTE 12KV FROM SECOND NC SWITCH TO NEW SWITCHGEAR (6B). CONNECT THIRD NC AND REROUTE 12KV POWER TO SWITCHGEAR 5B.
7. CONNECT 12KV CIRCUIT FROM AWT SUBSTATION CRC1210 AIR BREAKER TO NORMALLY OPEN SWITCH.
8. ROUTE 12KV CIRCUIT FROM AWT SUBSTATION CRC1210 IN EXISTING SPARE CONDUIT TO NEW SWITCH CABINET 8.
9. RELOCATE EXISTING LIGHT POLE AS NECESSARY TO FACILITATE INSTALLATION OF NEW CABLE TROUGH. ABANDON IN PLACE, ON POLE, EXISTING ANTENNA AND WIRELESS SCADA NODE.
10. INSTALL NEW SWITCH CABINET (9) AND INTERCEPT 12KV CIRCUITS FROM ROCHELLE 1208 AND 1210. ROUTE EACH CIRCUIT THROUGH NC SWITCH TO PROVIDE DISCONNECTING CAPABILITY FOR SWITCHGEAR 5 AND SWITCHGEAR 6.
11. PROVIDE 4/0 BARE CU GROUNDING CONDUCTOR. TIE GROUND LOOP INTO EXISTING GROUNDING FOR SWITCHGEAR 5.
12. PROVIDE 4/0 AWG. BARE CU GROUNDING CONDUCTOR FOR SWITCHGEAR 6 GROUNDING. COORDINATE WITH VENDOR FOR STUB UP LOCATIONS.
13. PROVIDE 4/0 AWG. BARE CU PIG TAIL AND EXOTHERMIC GROUND TO NEW SHADE STRUCTURE AND PIER FOUNDATION REBAR. SEE DETAIL ON DWG E96.
14. PROVIDE NEW ELECTRIC MANHOLE FOR FUTURE EXPANSION.
15. PROVIDE GROUNDING FOR NEW BOLLARDS. SEE DWG E96 FOR DETAIL.



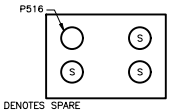
A TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



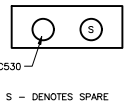
B TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



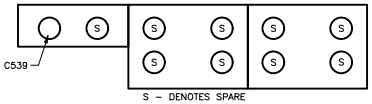
C TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



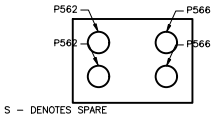
D TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



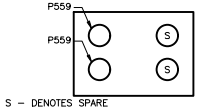
E TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



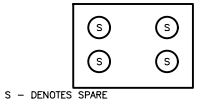
F TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



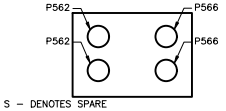
G TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



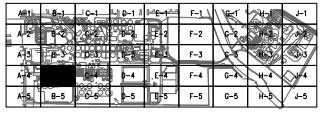
H TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



J TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



K TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



KEY MAP
NTS

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.9990

DRAWN BY: ADV/JHA | DESIGNED BY: ADV/DLN | APPROVED BY: BDD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

KEY MAP SECTION B-4 DUCT BANK ROUTING AND SECTION

19008-E10-E29.dwg

		DATE
CHECKED BY:	CCWRD SENIOR CIVIL ENGINEER	
RECOMMENDED BY:	CCWRD PRINCIPAL ENGINEER	
RECOMMENDED BY:	CCWRD DESIGN MANAGER	
APP		

PROFESSIONAL ENGINEER — BRIAN D. DOWNING — Exp: 12/31/22 — ELECTRICAL — No. 13999 — STATE OF NEVADA

DATE 03/09/2021

PROJECT NO.
D2108.19

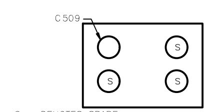
DRAWING
E14

SHEET 37 OF 76

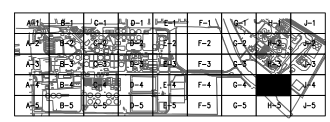
REVISION BLOCK

NO.	DATE	DESCRIPTION

ENLARGED PLAN
SCALE: 1"=40'



A TYP DUCT BANK SECTION DETAIL
NOT TO SCALE (NOTE 1)



KEY MAP
NTS

NOTES:

1. ALL DUCTBANKS SHALL BE CONCRETE ENCASED. REFERENCE DETAIL 105 ON SHEET E95 FOR REQUIREMENTS.

KEY NOTES

1. INSTALL NEW 15KV CABLE IN EXISTING SPARE CONDUIT AS REQUIRED TO CONNECT NEW SWITCH CABINET 8 FEEDERS TO AWT SUBSTATION.
2. EXISTING MANHOLE WITH SPARE CONDUITS FROM AWT SUBSTATION. CONTRACTOR SHALL PROVIDE AND PULL CONDUCTORS INTO COLORADO RIVER COMMISSION (CRC) YARD. COIL AND LEAVE IN PLACE FOR CRC TO MAKE FINAL TERMINATION TO CRC OWNED EQUIPMENT.
3. PROVIDE NEW FIBER MANHOLE.
4. INSTALL NEW NEMA 4X TDU ON EXTERIOR WALL OF AWT SUBSTATION ELECTRICAL BUILDING.

REVISION BLOCK

NO	DATE	DESCRIPTION	APP

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

KEY MAP SECTION H-4 DUCT BANK ROUTING AND SECTIONS

19008-E10-E29.dwg

CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER DATE

BRIAN D. DOWNING
Exp. 12/31/22
ELECTRICAL
No. 13999
DATE: 03/01/2021

PROJECT NO.
D2108.19

DRAWING
E29
SHEET 52 OF 76

LEGEND:

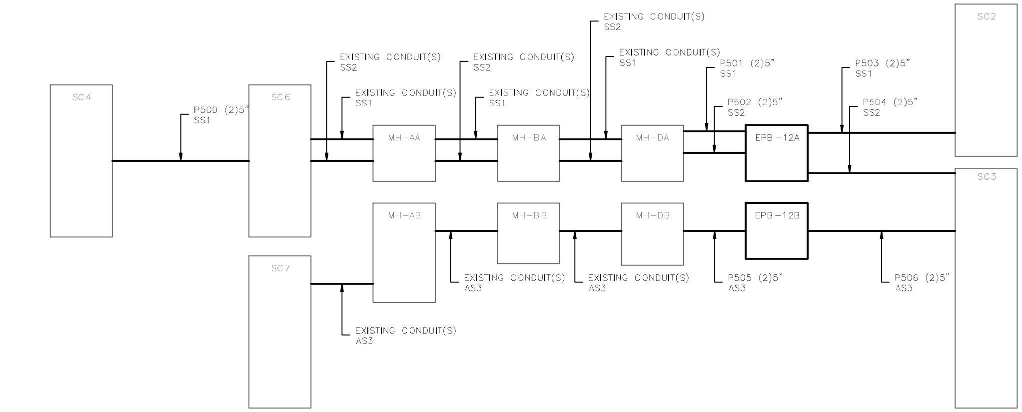
C100 1" — CONDUIT NUMBER & SIZE
LP100-4 — CIRCUIT NUMBER(S)

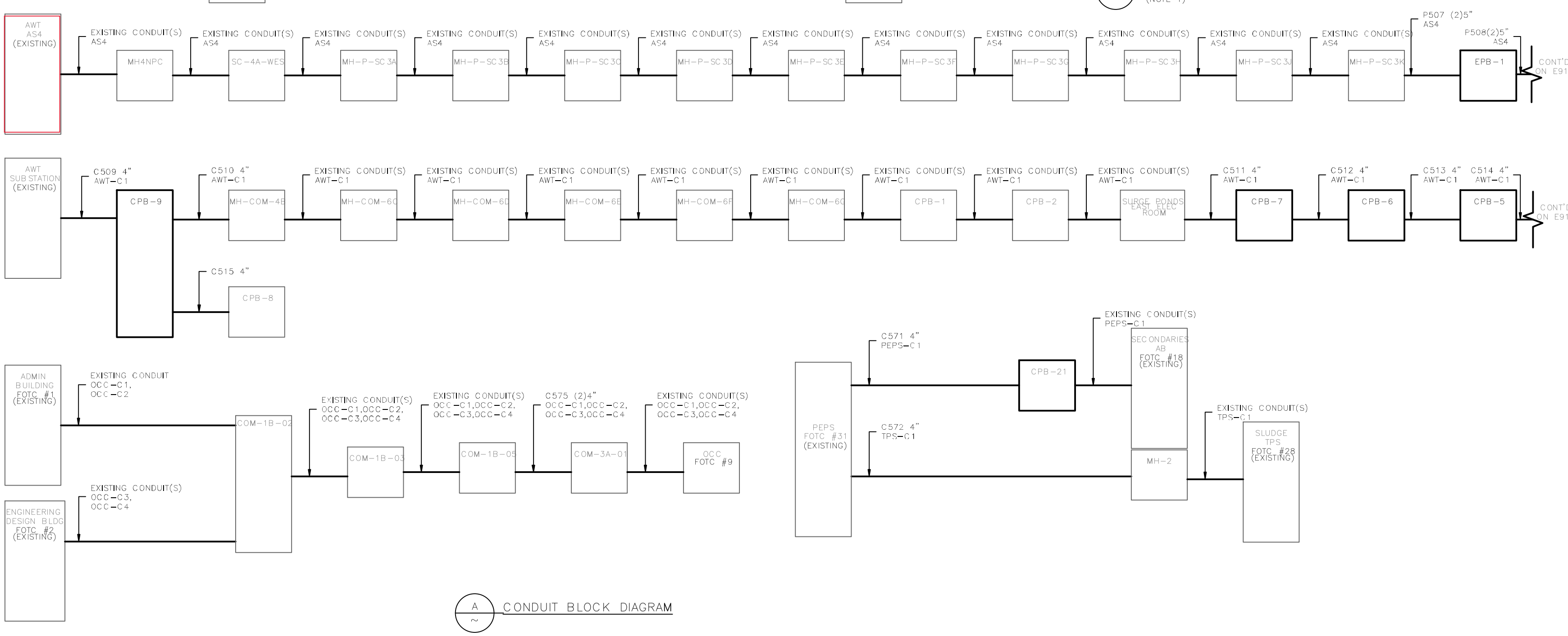
KEY NOTES

1. SEE SPECIFICATION 26_05_19 AND 27_13_23 FOR TELCO AND FIBER CABLING REQUIREMENTS, RESPECTIVELY.
2. 2 – CAT3 FOR TELCO POTS LINES.

CALLOUT NO.	NO. SETS	CONDUIT SIZE	CIRCUIT CONDUCTORS	CIRCUIT NO.'S
P500	2	5"	750MCM 15kV, #4/0 GND	SS1
P501	2	5"	750MCM 15kV, #4/0 GND	SS1
P502	2	5"	750MCM 15kV, #4/0 GND	SS2
P503	2	5"	750MCM 15kV, #4/0 GND	SS1
P504	2	5"	750MCM 15kV, #4/0 GND	SS2
P505	2	5"	750MCM 15kV, #4/0 GND	AS3
P506	2	5"	750MCM 15kV, #4/0 GND	AS3
P507	2	5"	750MCM 15kV, #4/0 GND	AS4
P508	2	5"	750MCM 15kV, #4/0 GND	AS4
C509	1	4"	24 STR SMF, 3-1.25" INNER DUCT	AWT-C1
C510	1	4"	24 STR SMF, 3-1.25" INNER DUCT	AWT-C1
C511	1	4"	24 STR SMF, 3-1.25" INNER DUCT	AWT-C1
C512	1	4"	24 STR SMF, 3-1.25" INNER DUCT	AWT-C1
C513	1	4"	24 STR SMF, 3-1.25" INNER DUCT	AWT-C1
C514	1	4"	24 STR SMF, 3-1.25" INNER DUCT	AWT-C1
C515	1	4"	SPARE	
C571	1	4"	24 STR SMF, 3-1.25" INNER DUCT	PEPS-C1
C572	1	4"	24 STR SMF, 3-1.25" INNER DUCT	TPS-C1
C575	2	4"	24 STR SMF, 3-1.25" INNER DUCT (2) BELDEN 9844 TELCO 24 STR SMF, 3-1.25" INNER DUCT (2) BELDEN 9844 TELCO	OCC-C1 OCC-C2 OCC-C3 OCC-C4

B ~ CALLOUT SCHEDULE
(NOTE 1)




AWT AS4 (EXISTING)
EXISTING CONDUIT(S) AS4
MH4NPC
SC-4A-WES
MH-P-SC3A
MH-P-SC3B
MH-P-SC3C
MH-P-SC3D
MH-P-SC3E
MH-P-SC3F
MH-P-SC3G
MH-P-SC3H
MH-P-SC3J
MH-P-SC3K
P507 (2)5" AS4
P508(2)5" AS4
EPB-1
CONT'D ON E91
AWT SUB STATION (EXISTING)
C509 4" AWT-C1
CPB-9
C510 4" AWT-C1
EXISTING CONDUIT(S) AWT-C1
MH-COM-4B
MH-COM-6C
MH-COM-6D
MH-COM-6E
MH-COM-6F
MH-COM-6G
CPB-1
CPB-2
SURGE BONDS EAST ELEC ROOM
C511 4" AWT-C1
CPB-7
C512 4" AWT-C1
CPB-6
C513 4" AWT-C1
C514 4" AWT-C1
CPB-5
CONT'D ON E91
C515 4"
CPB-8
ADMIN BUILDING FOTC #1 (EXISTING)
EXISTING CONDUIT OCC-C1, OCC-C2
ENGINEERING DESIGN BLDG FOTC #2 (EXISTING)
EXISTING CONDUIT(S) OCC-C3, OCC-C4
COM-1B-02
EXISTING CONDUIT(S) OCC-C1,OCC-C2, OCC-C3,OCC-C4
COM-1B-03
COM-1B-05
C575 (2)4" OCC-C1,OCC-C2, OCC-C3,OCC-C4
COM-3A-01
OCC FOTC #9
PEPS FOTC #31 (EXISTING)
C571 4" PEPS-C1
CPB-21
EXISTING CONDUIT(S) PEPS-C1
SECONDARIES AB FOTC #18 (EXISTING)
C572 4" TPS-C1
MH-2
EXISTING CONDUIT(S) TPS-C1
SLUDGE TPS FOTC #28 (EXISTING)

A ~ CONDUIT BLOCK DIAGRAM

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
0 1/2 1

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

CONDUIT BLOCK DIAGRAM - SHEET 1

19008-E90.dwg

NO	DATE	DESCRIPTION	APP

REVISION BLOCK

CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER DATE

BRIAN D. DOWNING
No. 13899
DATE: 03/01/2021

PROJECT NO.
D2108.19

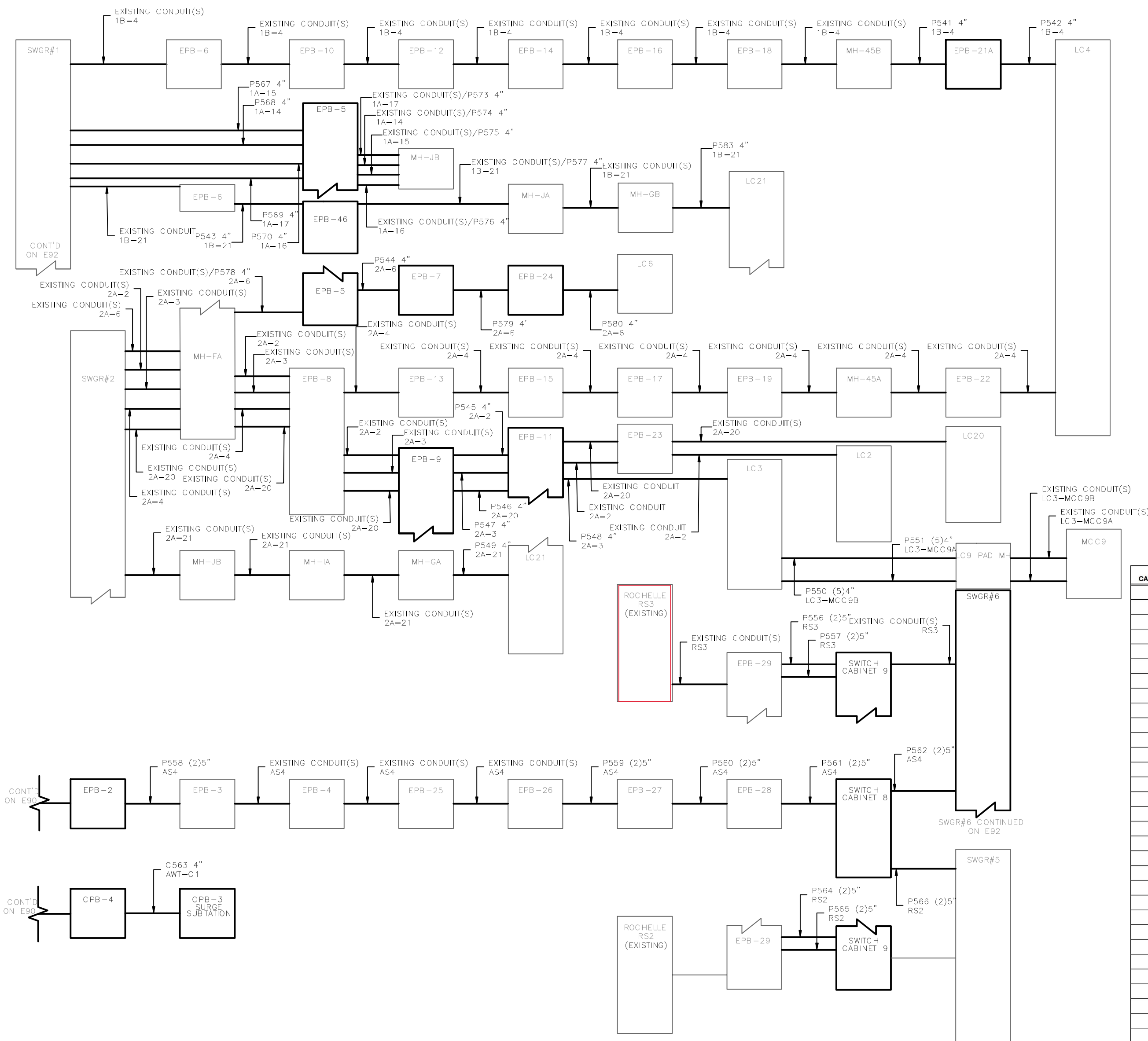
DRAWING
E90
SHEET 72 OF 76

KEY NOTES

1. SEE SPECIFICATION 26_05_19 AND 27_13_23 FOR TELCO AND FIBER CABLING REQUIREMENTS, RESPECTIVELY.

LEGEND:

C100 1" — CONDUIT NUMBER & SIZE
LP100-4 — CIRCUIT NUMBER(S)



SWGR#1
CONT'D ON E92
EPB-6
EPB-10
EPB-12
EPB-14
EPB-16
EPB-18
MH-45B
EPB-21A
LC4
EPB-5
MH-JB
EPB-46
MH-JA
MH-GB
LC21
EPB-7
EPB-24
LC6
SWGR#2
MH-FA
EPB-8
EPB-13
EPB-15
EPB-17
EPB-19
MH-45A
EPB-22
EPB-9
EPB-11
EPB-23
LC3
LC2
LC20
MH-JB
MH-IA
MH-GA
MCC9
LC9 PAD MH
SWGR#6
ROCHELLE RS3 (EXISTING)
EPB-29
SWITCH CABINET 9
EPB-2
EPB-3
EPB-4
EPB-25
EPB-26
EPB-27
EPB-28
SWITCH CABINET 8
SWGR#6 CONTINUED ON E92
CPB-4
CPB-3 SURGE SUBTATION
ROCHELLE RS2 (EXISTING)
SWGR#5
SWGR#5 CONTINUED ON E92
CONT'D ON E90
EXISTING CONDUIT(S) 1B-4
P541 4" 1B-4
P542 4" 1B-4
P567 4" 1A-15
P568 4" 1A-14
P569 4" 1A-17
P570 4" 1A-16
P543 4" 1B-21
P583 4" 1B-21
P544 4" 2A-6
P579 4' 2A-6
P580 4" 2A-6
P545 4" 2A-2
P546 4" 2A-20
P547 4" 2A-3
P548 4" 2A-3
P549 4" 2A-21
P550 (5)4" LC3-MCC9B
P551 (5)4" LC3-MCC9A
P556 (2)5" RS3
P557 (2)5" RS3
P558 (2)5" AS4
P559 (2)5" AS4
P560 (2)5" AS4
P561 (2)5" AS4
P562 (2)5" AS4
C563 4" AWT-C1
P564 (2)5" RS2
P565 (2)5" RS2
P566 (2)5" RS2

A ~ CONDUIT BLOCK DIAGRAM

CALLOUT NO.	NO. SETS	CONDUIT SIZE	CIRCUIT CONDUCTORS	CIRCUIT NO.'S
P541	1	4"	3-#2/0 15KV, #4 GND	1B-4
P542	1	4"	3-#2/0 15KV, #4 GND	1B-4
P543	1	4"	3-#2/0 15KV, #4 GND	1B-21
P544	1	4"	3-#2/0 15KV, #4 GND	2A-6
P545	1	4"	3-#2/0 15KV, #4 GND	2A-2
P546	1	4"	3-#2/0 15KV, #4 GND	2A-20
P547	1	4"	3-#2/0 15KV, #4 GND	2A-3
P548	1	4"	3-#2/0 15KV, #4 GND	2A-3
P549	1	4"	3-#2/0 15KV, #4 GND	2A-21
P550	5	4"	3-600MCM, #250MCM GND	LC3-MCC9B
P551	5	4"	3-600MCM, #250MCM GND	LC3-MCC9A
P556	2	5"	3-750MCM 15KV, #4/0 GND	RS3
P557	2	5"	3-750MCM 15KV, #4/0 GND	RS3
P558	2	5"	3-750MCM 15KV, #4/0 GND	AS4
P559	2	5"	3-750MCM 15KV, #4/0 GND	AS4
P560	2	5"	3-750MCM 15KV, #4/0 GND	AS4
P561	2	5"	3-750MCM 15KV, #4/0 GND	AS4
P562	2	5"	3-750MCM 15KV, #4/0 GND	AS4
C563	1	4"	24 STR SMF, 3-1.25" INNER DUCT	AWT-C1
P564	2	5"	3-750MCM 15KV, #4/0 GND	RS2
P565	2	5"	3-750MCM 15KV, #4/0 GND	RS2
P566	2	5"	3-750MCM 15KV, #4/0 GND	SS5
P567	1	4"	3-#2/0 15KV, #4 GND	1A-15
P568	1	4"	3-#2/0 15KV, #4 GND	1A-14
P569	1	4"	3-#2/0 15KV, #4 GND	1A-17
P570	1	4"	3-#2/0 15KV, #4 GND	1A-16
P573	1	4"	3-#2/0 15KV, #4 GND	1A-17
P574	1	4"	3-#2/0 15KV, #4 GND	1A-14
P575	1	4"	3-#2/0 15KV, #4 GND	1A-15
P576	1	4"	3-#2/0 15KV, #4 GND	1A-16
P577	1	4"	3-#2/0 15KV, #4 GND	1B-21
P578	1	4"	3-#2/0 15KV, #4 GND	2A-6
P583	1	4"	3-#2/0 15KV, #4 GND	1B-21

B ~ CALLOUT SCHEDULE
(NOTE 1)

REVISION BLOCK

NO	DATE	DESCRIPTION	APP

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.4990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE
0 1/2 1

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION
FY19-20

CONDUIT BLOCK DIAGRAM - SHEET 2

19008-E91.dwg

CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER DATE

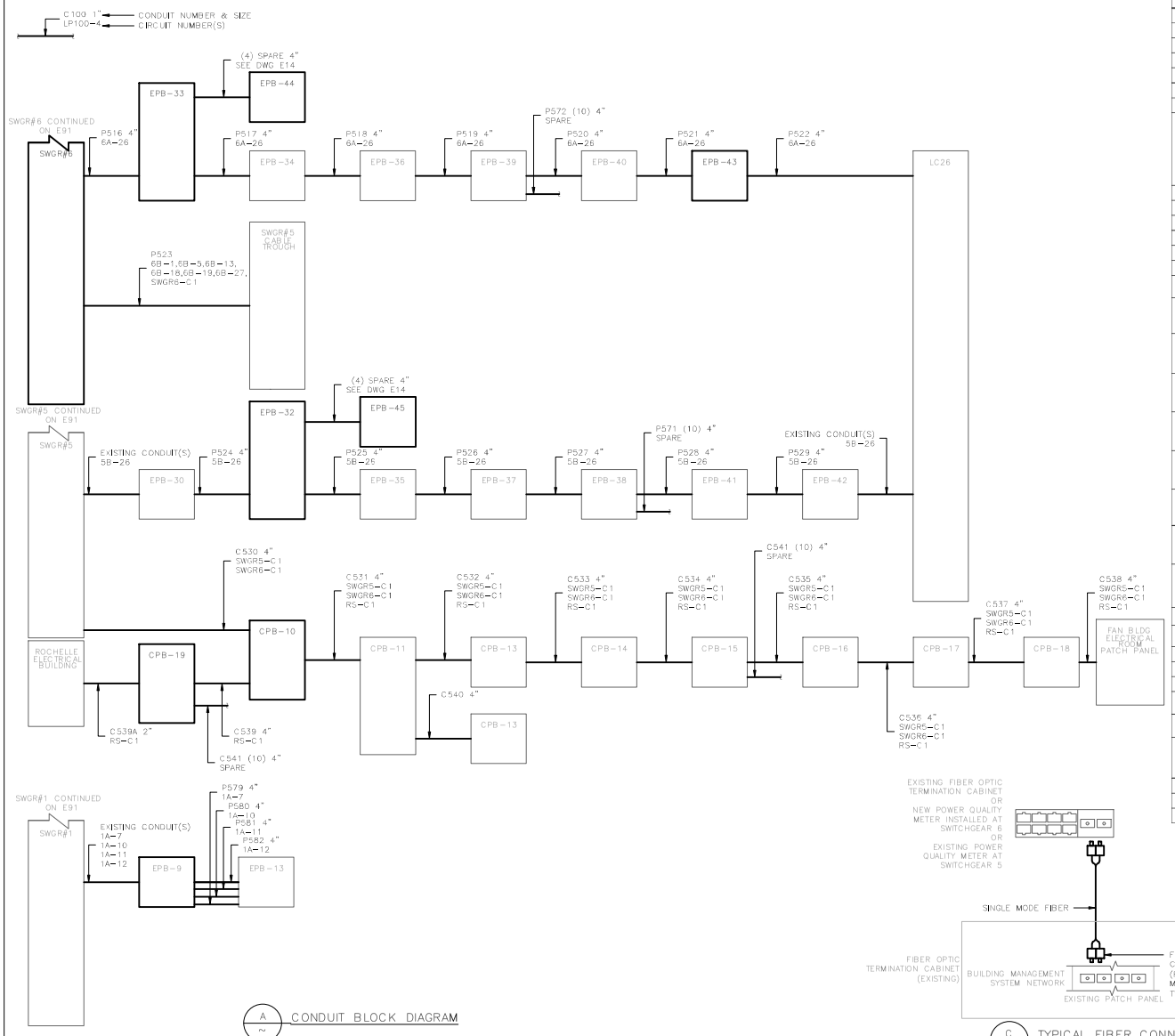
BRIAN D. DOWNING
DATE: 03/01/2021

PROJECT NO.
D2108.19

DRAWING
E91
SHEET 73 OF 76

LEGEND:

C100 1" ← CONDUIT NUMBER & SIZE
LP100-4 ← CIRCUIT NUMBER(S)



A CONDUIT BLOCK DIAGRAM

KEY NOTES

1. SEE SPECIFICATION 26_05_19 AND 27_13_23 FOR TELCO AND FIBER CABLING REQUIREMENTS, RESPECTIVELY.

CALLOUT NO.	NO. SETS	CONDUIT SIZE	CIRCUIT CONDUCTORS	CIRCUIT NO.'S
P516	1	4"	3-#2/0MCM 15kV, #4 GND	6A-26
P517	1	4"	3-#2/0MCM 15kV, #4 GND	6A-26
P518	1	4"	3-#2/0MCM 15kV, #4 GND	6A-26
P519	1	4"	3-#2/0MCM 15kV, #4 GND	6A-26
P520	1	4"	3-#2/0MCM 15kV, #4 GND	6A-26
P521	1	4"	3-#2/0MCM 15kV, #4 GND	6A-26
P522	1	4"	3-#2/0MCM 15kV, #4 GND	6A-26
P523	1	CABLE TROUGH	3-#2/0MCM 15kV, #4 GND 3-#2/0MCM 15kV, #4GND 3-#2/0MCM 15kV, #4GND 3-#2/0MCM 15kV, #4GND 3-#2/0MCM 15kV, #4GND 3-#2/0MCM 15kV, #4GND 24 STRAND SMF	6B-1 6B-5 6B-13 6B-18 6B-19 6B-27 SWGR6-C1
P524	1	4"	3-#2/0MCM 15kV, #4 GND	5B-26
P525	1	4"	3-#2/0MCM 15kV, #4 GND	5B-26
P526	1	4"	3-#2/0MCM 15kV, #4 GND	5B-26
P527	1	4"	3-#2/0MCM 15kV, #4 GND	5B-26
P528	1	4"	3-#2/0MCM 15kV, #4 GND	5B-26
P529	1	4"	3-#2/0MCM 15kV, #4 GND	5B-26
C530	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1
C531	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C532	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C533	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C534	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C535	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C536	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C537	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C538	1	4"	24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT 24 STR SMF, 3-1.25" INNER DUCT	SWGR5-C1 SWGR6-C1 RS-C1
C539	1	4"	24 STR SMF, 3-1.25" INNER DUCT	RS-C1
C539A	1	2"	24 STR SMF, 1-1.25" INNER DUCT	RS-C1
C540	1	4"	SPARE	
C541	10	4"	SPARE	
C542	4	4"	SPARE	
P571	2 2	4" 5"	SPARE SPARE	
P572	2 2	4" 5"	SPARE SPARE	
P579	1	4"	3-#2/0MCM 15kV, #4 GND	1A-7
P580	1	4"	3-#2/0MCM 15kV, #4 GND	1A-10
P581	1	4"	3-#2/0MCM 15kV, #4 GND	1A-11
P582	1	4"	3-#2/0MCM 15kV, #4 GND	1A-12

B CALLOUT SCHEDULE (NOTE 1)

C TYPICAL FIBER CONNECTION DIAGRAM

CLARK COUNTY WATER RECLAMATION DISTRICT

DELTA SYSTEMS
2110 E. FLAMINGO ROAD, SUITE 301
LAS VEGAS, NV 89119 702.745.9990

DRAWN BY: ADA/JHA DESIGNED BY: ADA/DLN APPROVED BY: BDD

0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO FULL SCALE

CCWRD PROJECT NO. 19008
FWRC ELECTRICAL REHABILITATION FY19-20

CONDUIT BLOCK DIAGRAM - SHEET 3

19008-E92.dwg

REVISION BLOCK

NO.	DATE	DESCRIPTION	APP.

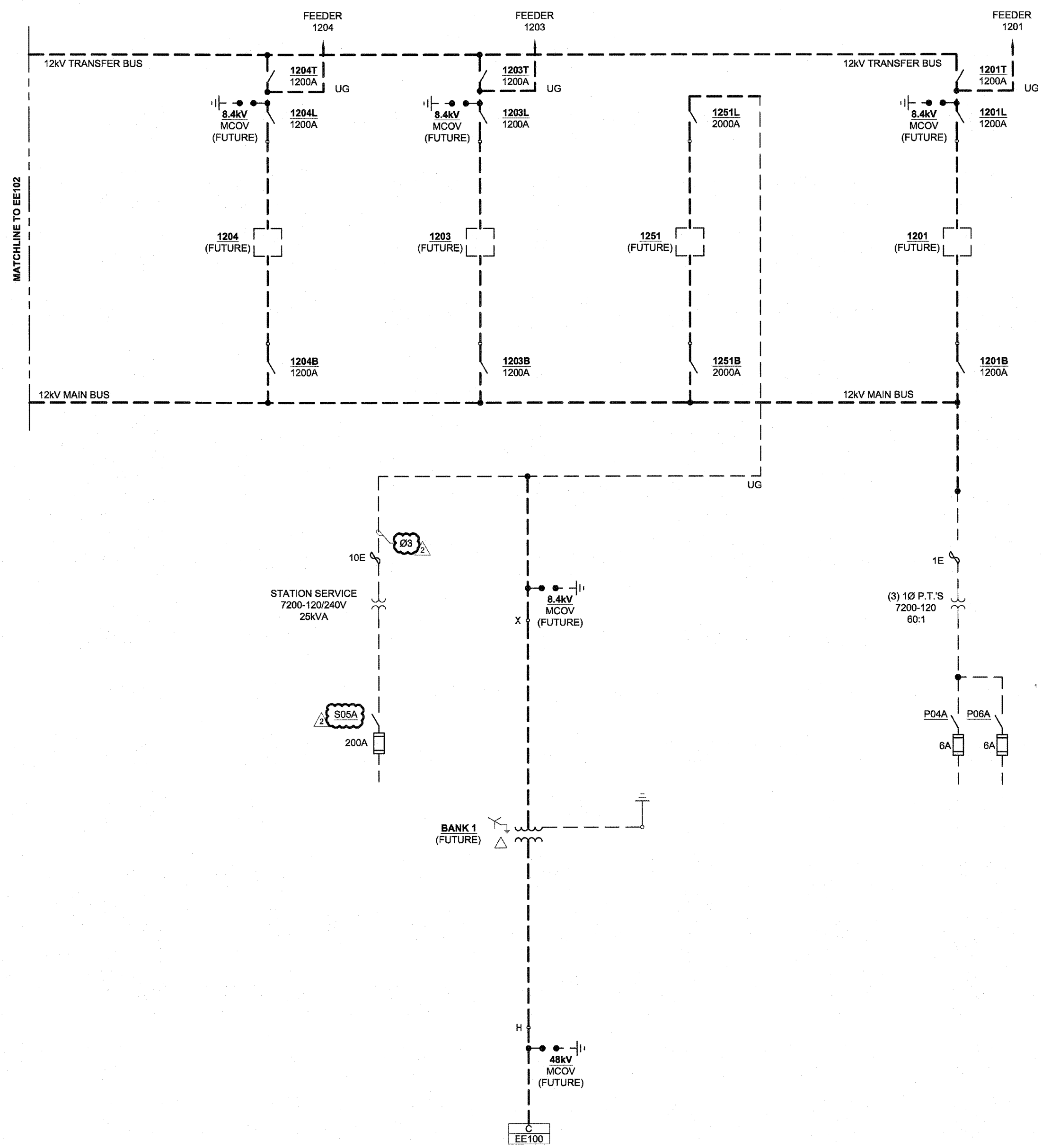
CHECKED BY:
CCWRD SENIOR CIVIL ENGINEER DATE
RECOMMENDED BY:
CCWRD PRINCIPAL ENGINEER DATE
RECOMMENDED BY:
CCWRD DESIGN MANAGER DATE

REGISTERED PROFESSIONAL ENGINEER
BRIAN D. DOWNING
No. 13696
STATE OF NEVADA

DATE 08/09/2021

PROJECT NO.
D2108.19

DRAWING
E92
SHEET 74 OF 76



no.	date	by	ckd	description
0	10/30/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-201
1	11/24/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-205
	01/12/10	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-204
2	03/22/10	PRH	-	CHANGED PHASING FOR SSVT
	04/28/10	JLW	JWM	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell SINCE 1898

date OCTOBER 23, 2009
detailed P. HIATT
designed R. TOOKER
checked J. MCCREARY

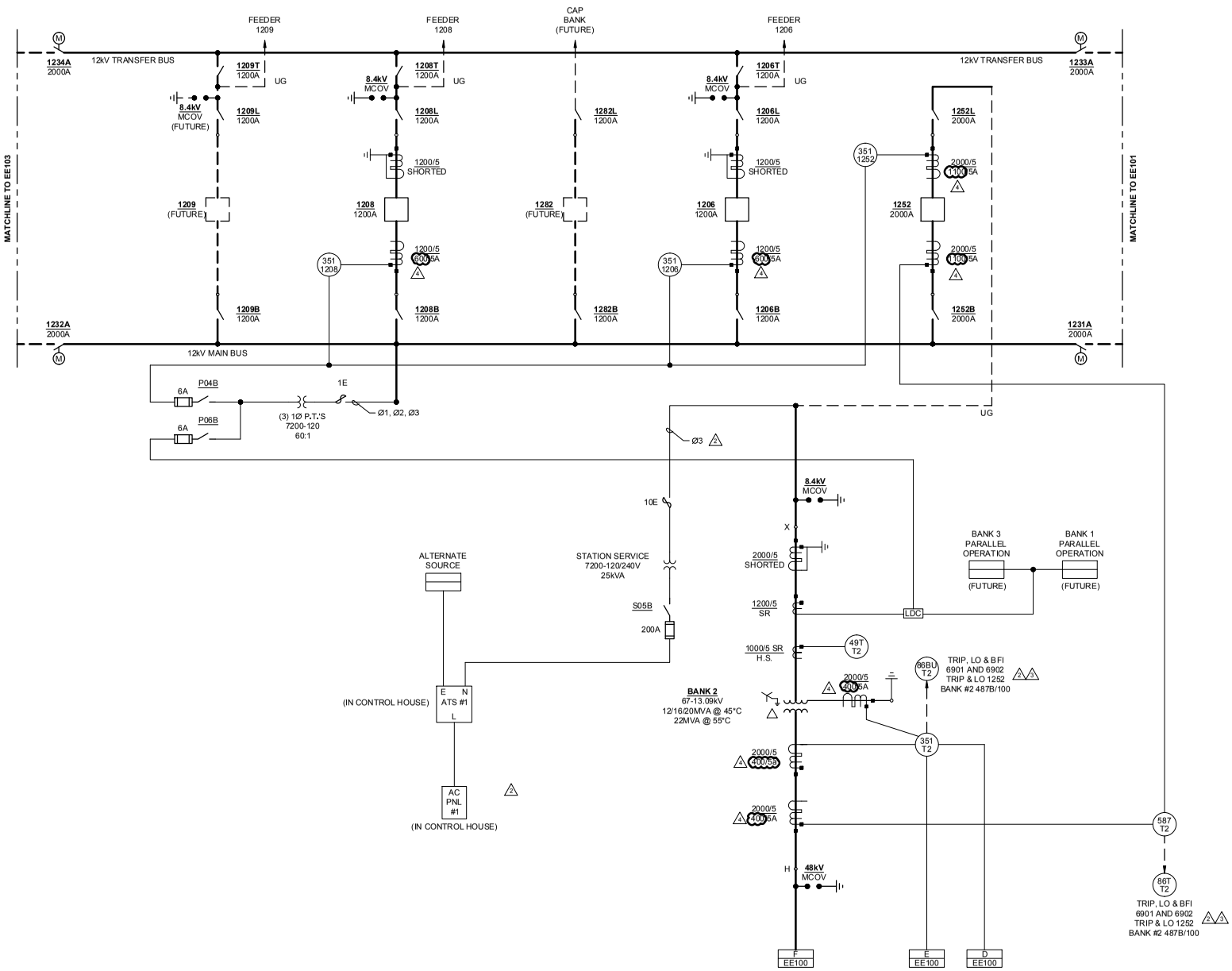
COLORADO RIVER COMMISSION

CCWRD PROJECT
ROCHELLE SUBSTATION
12kV ONE LINE DIAGRAM
POSITIONS 1-4

project 53249
contract CRCPDP-205
drawing **R-EE101 —** rev. **2**
sheet of sheets
file 53249REE101.DWG

PROFESSIONAL ENGINEER STATE OF NEVADA JOSEPH M. LEGGIO EXP 12/31/11 ELECTRICAL No. 010920 4-28-10

N:\CRC\53249\CADD\ROCHELLE\DIA\53249REE101.DWG 04-26-2010 13:23 PHIATT



no.	date	by	ckd	description
0	10/30/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-201
1	11/24/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-205
	01/12/10	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-204
2	03/15/10	PRH		REVISED AC PANELS
	03/22/10	PRH	-	CHANGED PHASING FOR SSVT, TRIPPING SCHEDULE
	04/28/10	JLW	JWM	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205
3	10/04/10	RAD	-	REVISED STATUS CONTACTS
	10/04/10	JLM	SEC	RE-ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205
4	07/22/11	MDL	JEB	CONFORMING TO CONSTRUCTION RECORDS

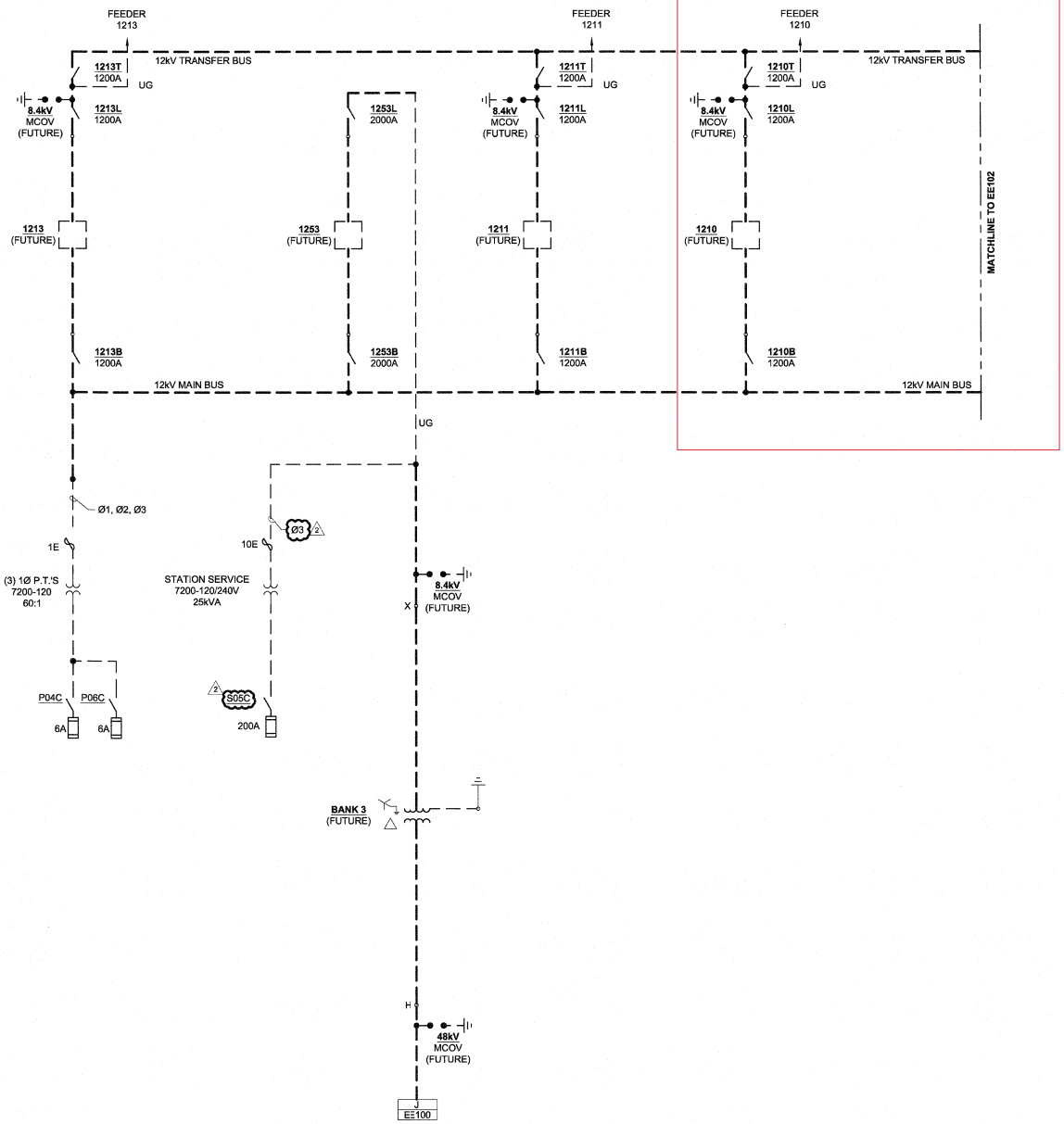
date: OCTOBER 23, 2009 | detailed: P. HIATT
designed: R. TOOKER | checked: J. MCCREARY

COLORADO RIVER COMMISSION

CCWRD PROJECT
ROCHELLE SUBSTATION
12kV ONE LINE DIAGRAM
POSITIONS 5-9

project: 53249 | contract: CRCPDP-205
drawing: R-EE102 | rev.: 4
sheet | of | sheets
file: 53249REE102.DWG

N:\CRC\53249\CAD\DROCHELLE\DIA\53249REE102.DWG 04-26-2010 13:23 PHIATT



no.	date	by	ckd	description
0	10/30/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-201
1	11/24/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-205
	01/12/10	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-204
2	03/15/10	PRH		REVISED SWITCH NAME
	03/22/10	PRH	-	CHANGED PHASING FOR SSVT
	04/28/10	JLW	JWM	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell
SINCE 1898

date OCTOBER 23, 2009	detailed P. HIATT
designed R. TOOKER	checked J. MCCREARY

COLORADO RIVER COMMISSION

CCWRD PROJECT
ROCHELLE SUBSTATION
12kV ONE LINE DIAGRAM
POSITIONS 10-13

project	contract
53249	CRCPDP-205

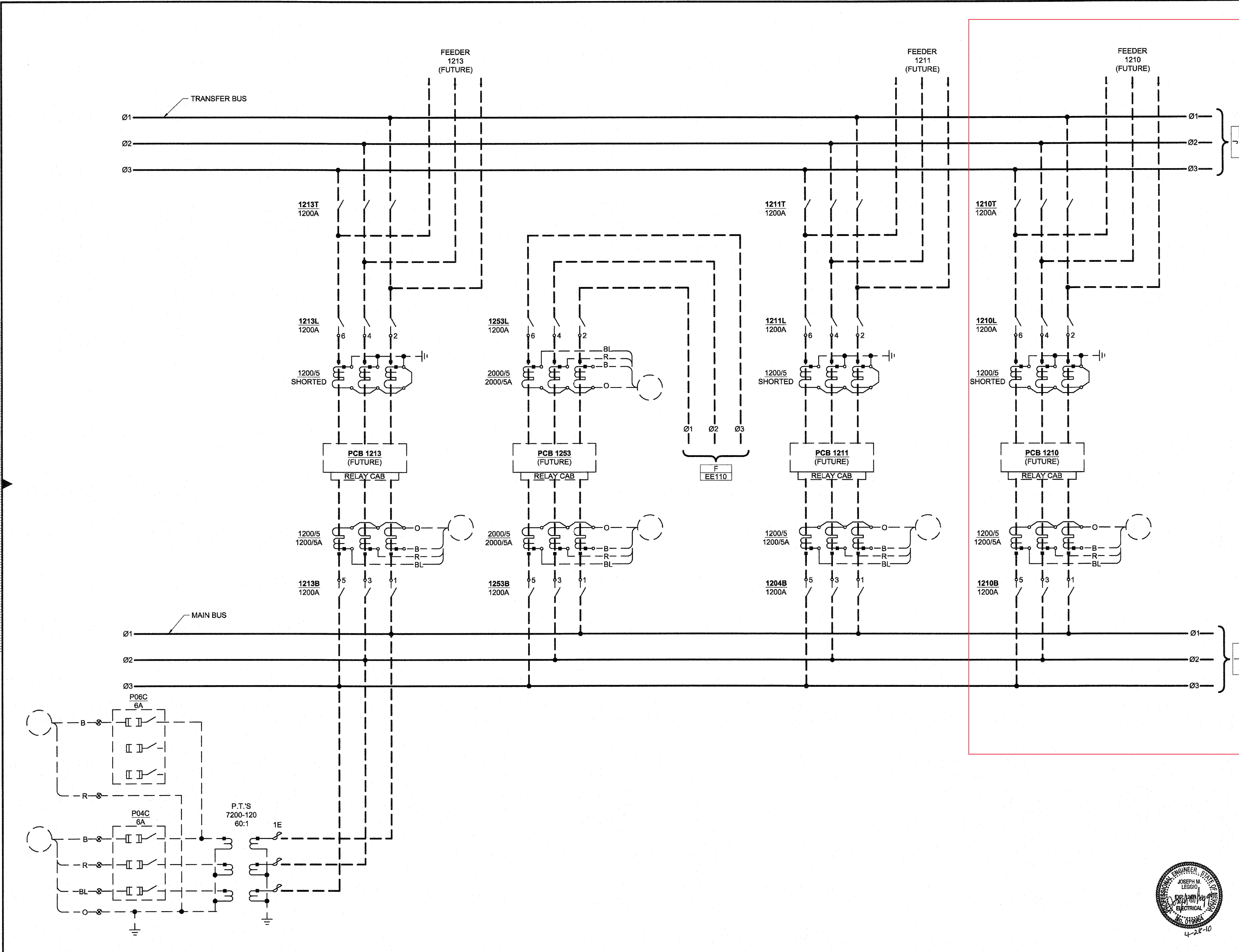
drawing **R-EE103** — rev. **2**

sheet of sheets

file 53249REE103.DWG

JOSEPH M. LEGGIO — EXP. 12/31/10 — ELECTRICAL — 4-28-10

N:\CRC\53249\CADD\ROCHELLE\DIA\53249REE103.DWG 04-26-2010 13:23 PHIATT



no.	date	by	ckd	description
0	04/28/10	JLW	SEC	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell
SINCE 1898

date MARCH 19, 2010 | detailed P. HIATT
designed J. WEBB | checked S. CRAKER

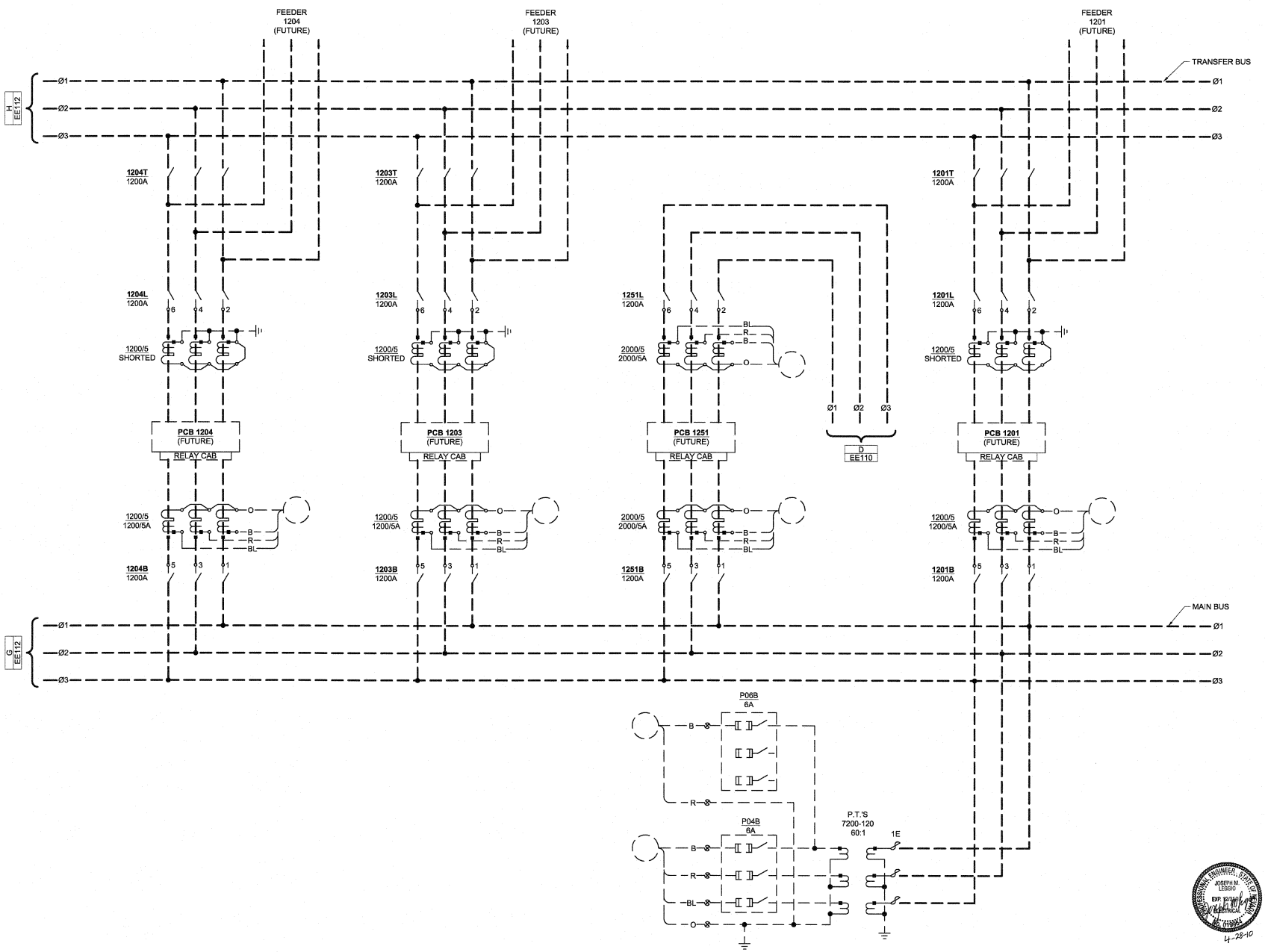
COLORADO RIVER COMMISSION

CCWRD PROJECT
ROCHELLE SUBSTATION
12kV THREE LINE DIAGRAM
POSITIONS 10 - 13

project 53249 | contract CRCPDP-205
drawing **R-EE113 —** rev. **0**
sheet | of | sheets
file 53249REE113.DWG

JOSEPH M. LEGGIO ELECTRICAL 4-28-10

N:\CRC\53249\CADD\ROCHELLE\DIA\53249REE113.DWG 04-23-2010 9:50 PHIATT



no.	date	by	ckd	description
0	04/28/10	JLW	SEC	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell
SINCE 1898

date MARCH 19, 2010	detailed P. HIATT
designed J. WEBB	checked S. CRAKER

COLORADO RIVER COMMISSION

CCWRD PROJECT
ROCHELLE SUBSTATION
12kV THREE LINE DIAGRAM
POSITIONS 1 - 4

project	contract
53249	CRCPDP-205

drawing **R-EE111 –** rev. **0**

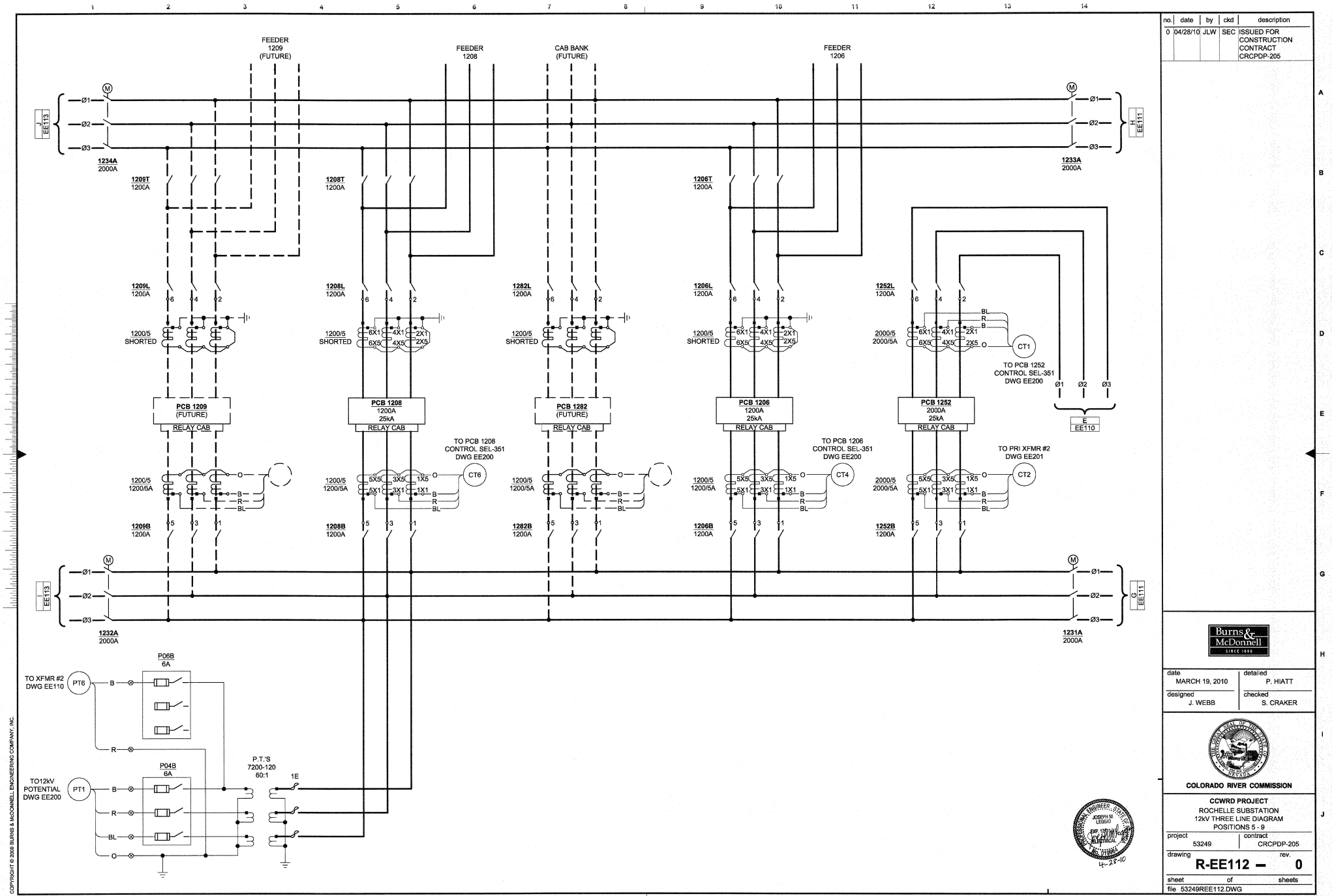
sheet of sheets

file 53249REE111.DWG

JOSEPH M. LEGGIO — EXP. 12/31/11 — ELECTRICAL — 4-28-10

Millimeters
Scale For Microfilming
Inches

N:\CRC\53249\CADD\ROCHELLE\DIA\53249REE111.DWG 04-23-2010 9:50 PHIATT



no.	date	by	ckd	description
0	04/28/10	JLW	SEC	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell SINCE 1898

date	detailed
MARCH 19, 2010	P. HIATT
designed	checked
J. WEBB	S. CRAKER

COLORADO RIVER COMMISSION

CCWRD PROJECT

ROCHELLE SUBSTATION
12kV THREE LINE DIAGRAM
POSITIONS 5 - 9

project	contract
53249	CRCPDP-205

drawing **R-EE112 –** rev. **0**

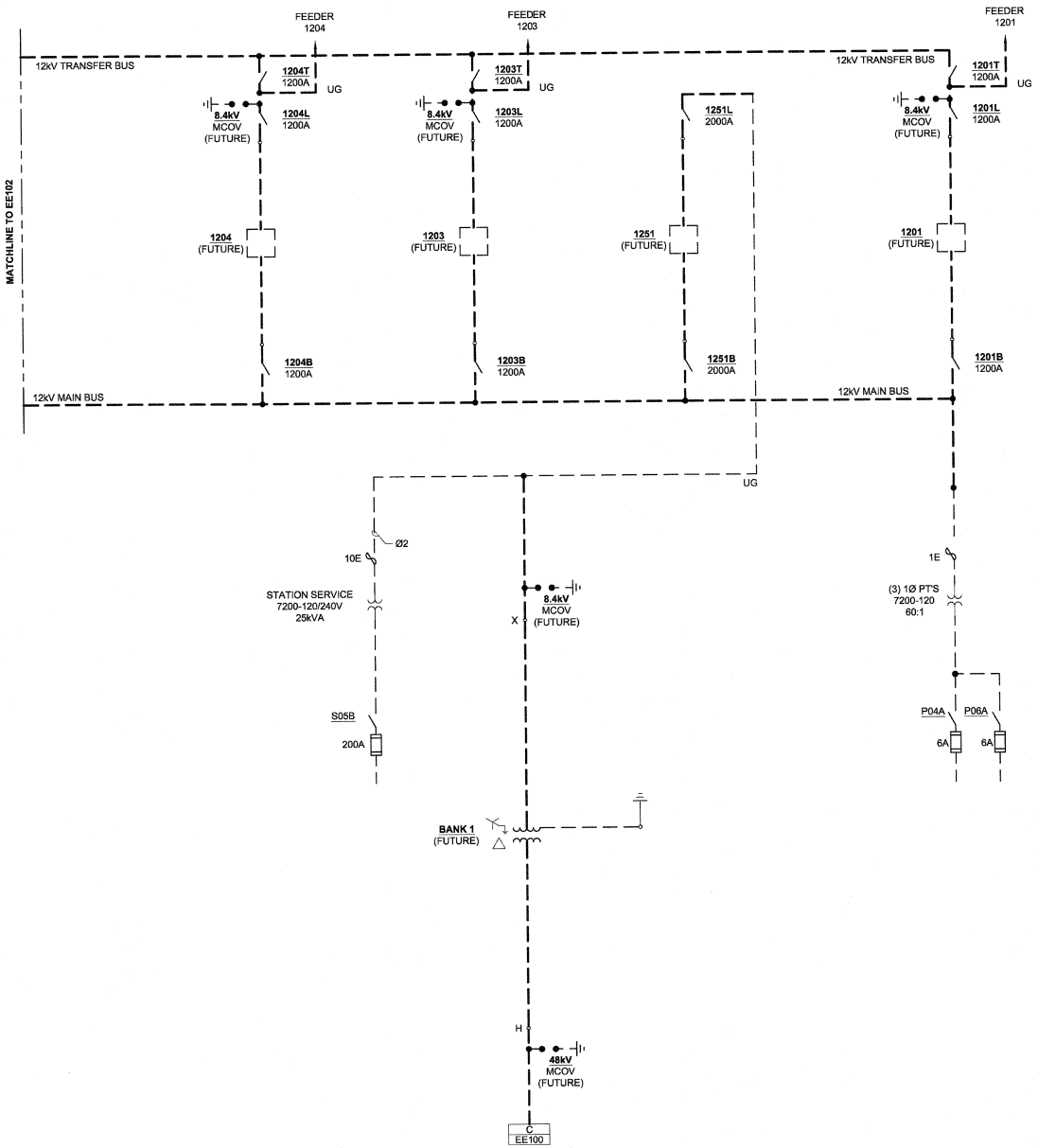
sheet of sheets

file 53249REE112.DWG

JOSEPH M. LEGGIO — PROFESSIONAL ENGINEER — ELECTRICAL — 4-28-10

Millimeters Inches Scale For Modifying

N:\CRC\53249\CADD\ROCHELLE\DIA\53249REE112.DWG 04-23-2010 9:50 PHIATT



no.	date	by	ckd	description
0	10/30/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-201
1	11/24/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-205
	01/12/10	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-204
	04/12/10	JLW	JWM	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell SINCE 1898

date OCTOBER 19, 2009	detailed P. HIATT
designed R. TOOKER	checked J. MCCREARY

COLORADO RIVER COMMISSION

CCWRD PROJECT
AWT SUBSTATION
12kV ONE LINE DIAGRAM
POSITIONS 1-4

project	contract
53249	CRCPDP-205

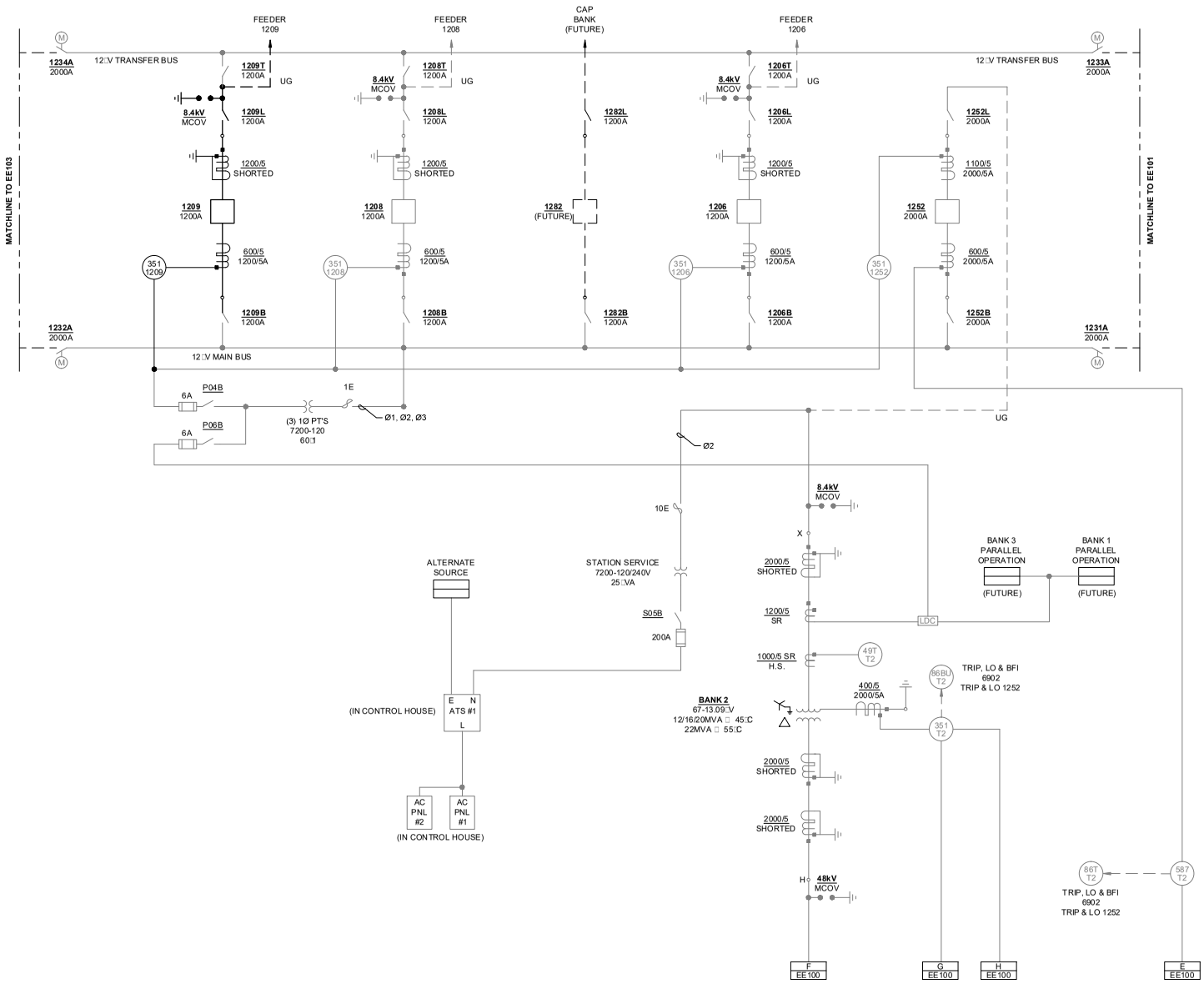
drawing **A-EE101** rev. **1**

sheet of sheets

file 53249AEE101.DWG

JOSEPH M. LEIBIG ELECTRICAL NO. 019984 — 4-12-10

N:\CRC\53249\CADD\AWT\DI\53249AEE101.DWG 04-05-2010 8:24 PHIATT



□□.	d□t□	□□	□□d	d□□r□t□□
0	05/30/12	□BQA	RR & RP	ISSUED FOR 50□ REVIEW CONTRACT CRCPDP-206X

d□t□
MAY 30, 2012

d□t□□d
□BQA

d□□□□d
□BQA

□h□□t□d
RR/RP

COLORADO RIVER COMMISSION

CCWRD PROJECT

AWT SUBSTATION 12□V BAY ADDITION
12□V ONE LINE DIAGRAM
POSITION 5-9

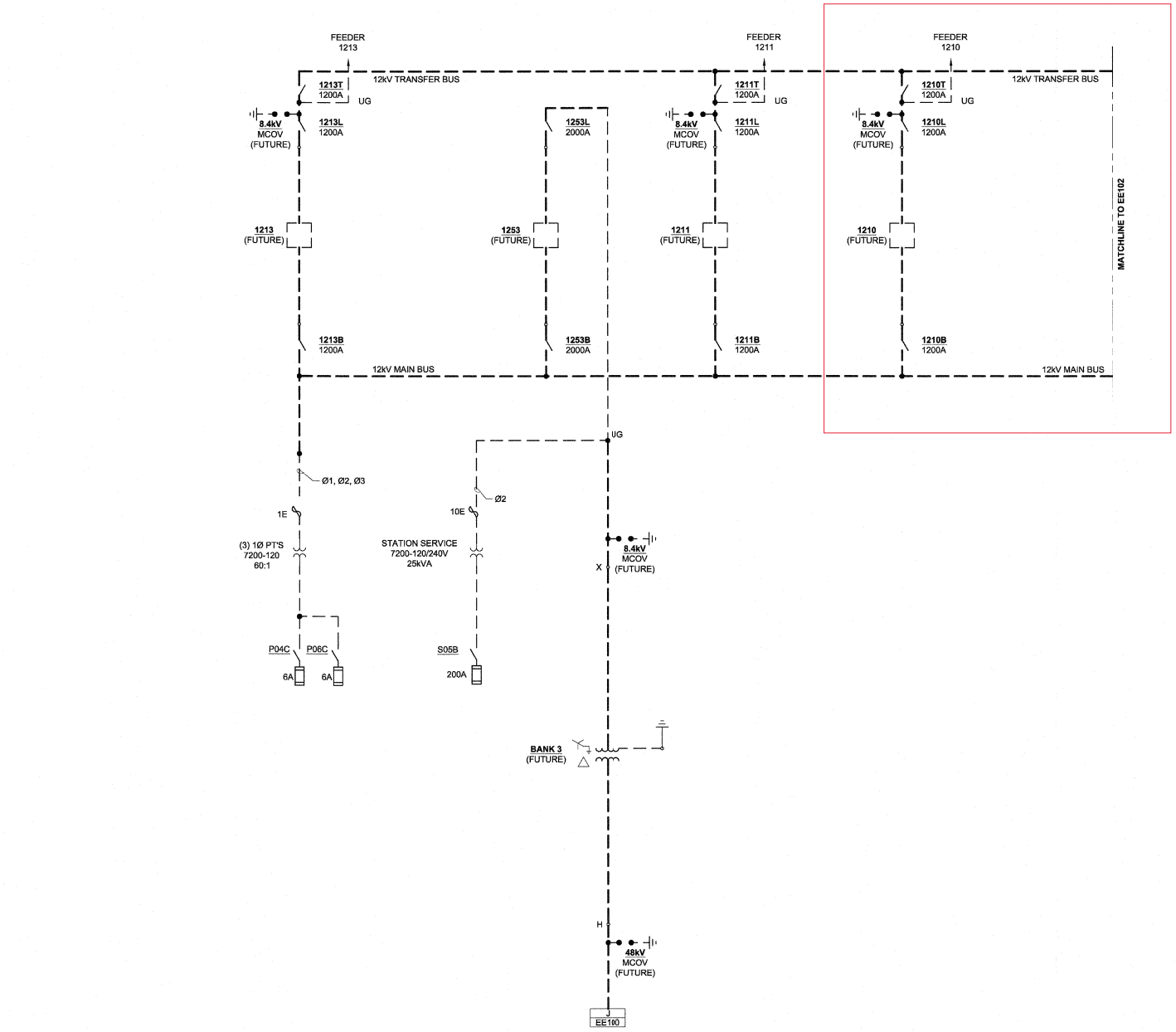
□r□□t
CRCPDP-206X

dr□ □□□
A-EE102-BA — **0**

□h□□t □□ □h□□□

□□ 53249AEE102-BA.DWG

53249AEE102-BA.DWG



no.	date	by	ckd	description
0	10/30/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-201
1	11/24/09	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-205
	01/12/10	RMT	JWM	ISSUED FOR BID CONTRACT CRCPDP-204
	04/12/10	JLW	JWM	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell
SINCE 1898

date OCTOBER 19, 2009	detailed P. HIATT
designed R. TOOKER	checked J. MCCREARY

COLORADO RIVER COMMISSION

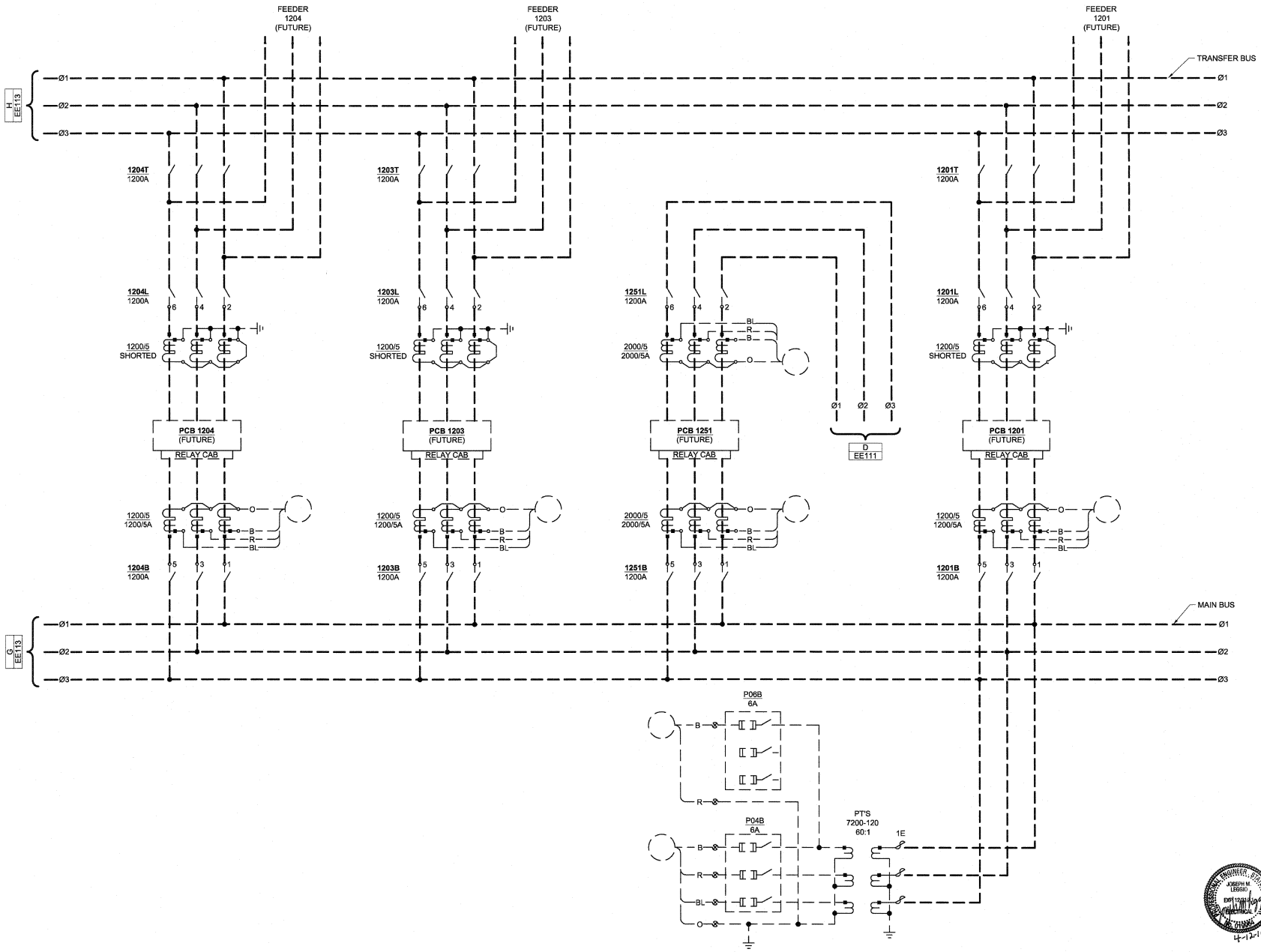
CCWRD PROJECT
AWT SUBSTATION
12kV ONE LINE DIAGRAM
POSITIONS 10-13

project 53249	contract CRCPDP-205
drawing **A-EE103**	rev. 1
sheet	of sheets
file 53249AEE103.DWG	

4-12-10

Millimeters
Scale For Microfilming
Inches

N:\CRC\53249\CADD\AWT\DIA\53249AEE103.DWG 04-05-2010 8:25 PHIATT



no.	date	by	ckd	description
0	04/12/10	JLW	SEC	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell SINCE 1898

date JANUARY 07, 2010	detailed P. HIATT
designed R. TOOKER	checked S. CRAKER

COLORADO RIVER COMMISSION

CCWRD PROJECT
AWT SUBSTATION
12kV THREE LINE DIAGRAM
POSITIONS 1 - 4

project	contract
53249	CRCPDP-205

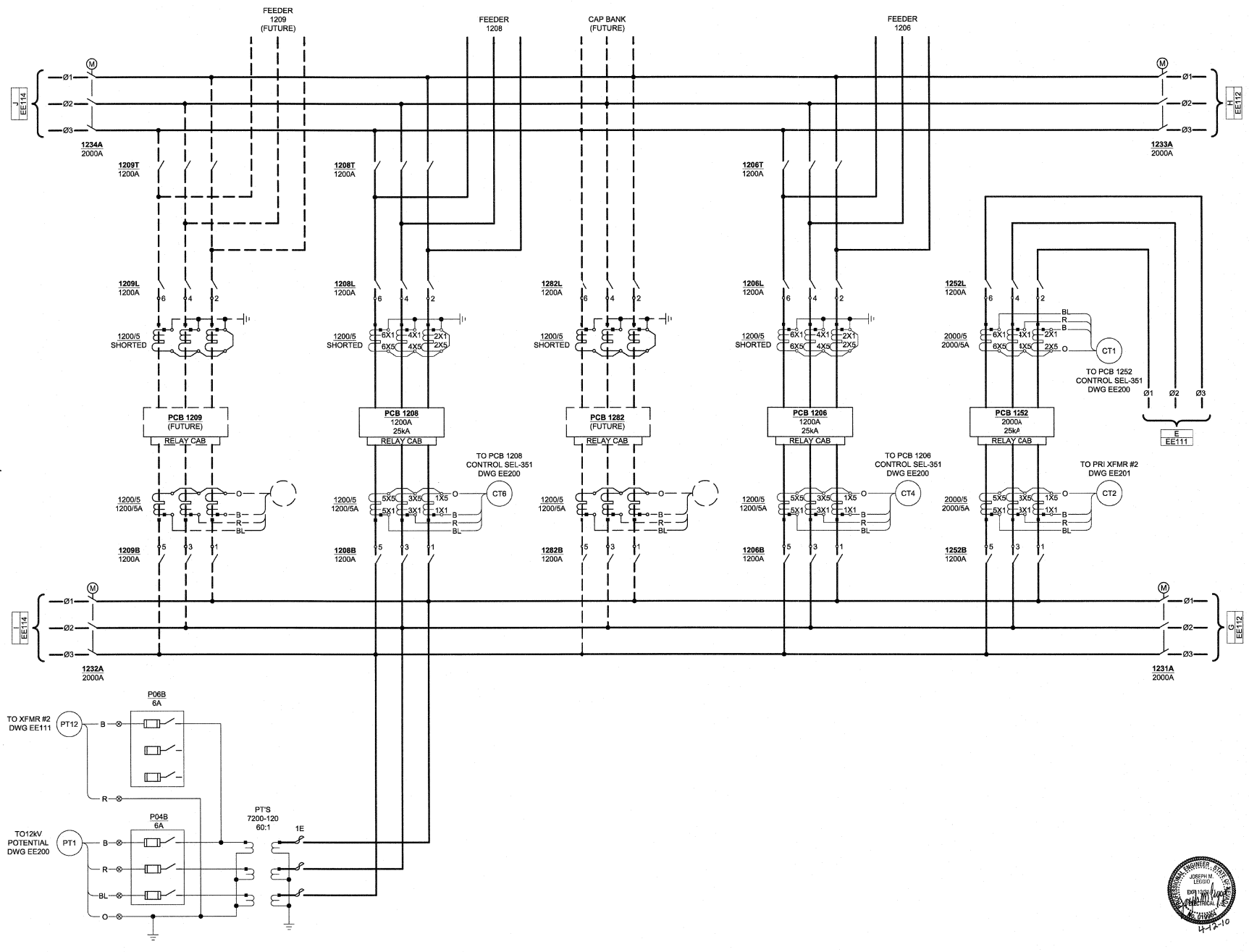
drawing **A-EE112** rev. **0**

sheet of sheets

file 53249AEE112.DWG

JOSEPH M. LEGGIO — 4-12-10

N:\CRC\53249\CADD\AWT\DIA\53249AEE112.DWG 04-05-2010 8:59 PHIATT



no.	date	by	ckd	description
0	04/12/10	JLW	SEC	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell SINCE 1898

date JANUARY 07, 2010	detailed P. HIATT
designed R. TOOKER	checked S. CRAKER

COLORADO RIVER COMMISSION

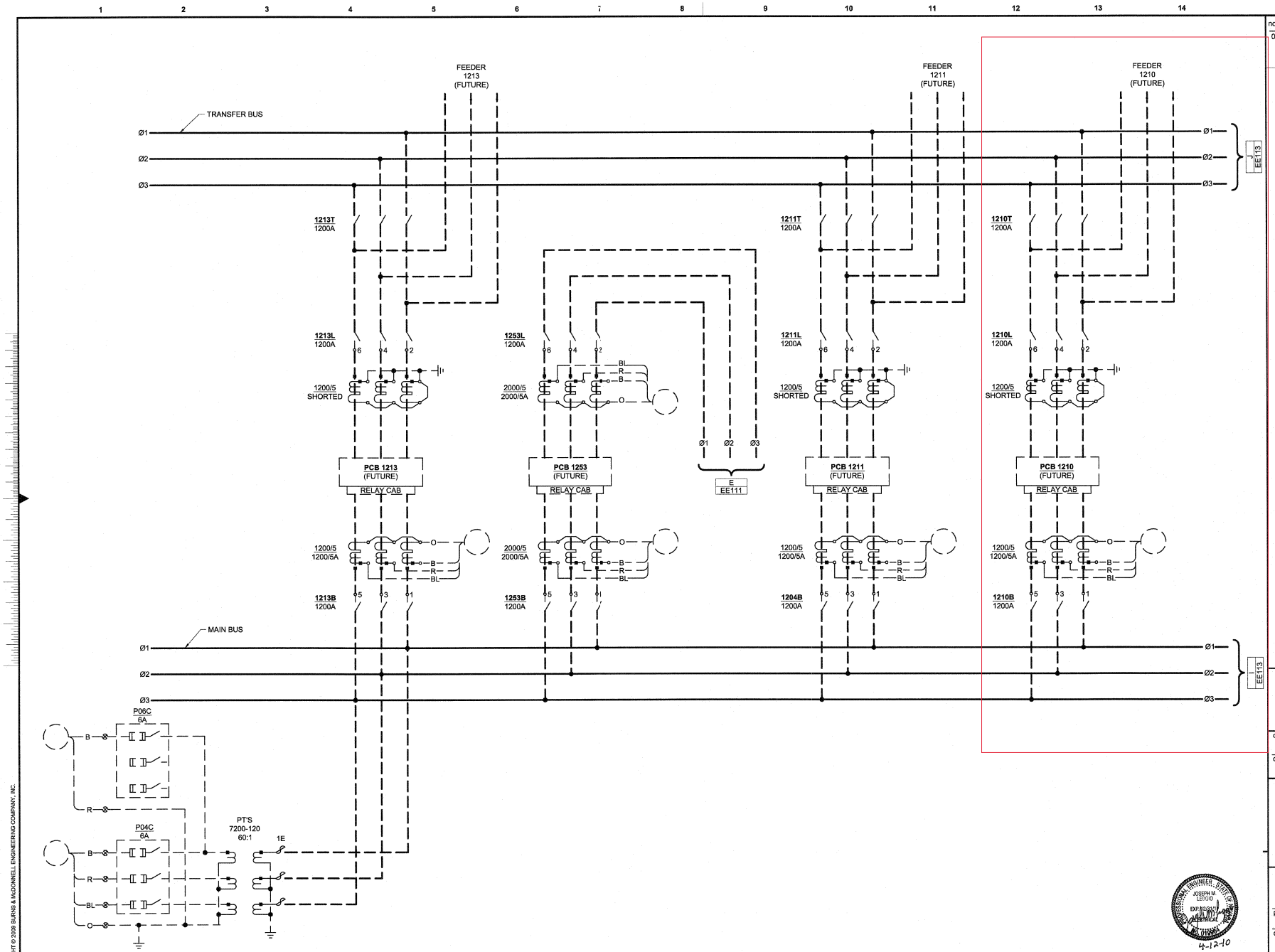
CCWRD PROJECT
AWT SUBSTATION
12kV THREE LINE DIAGRAM
POSITIONS 5 - 9

project	contract
53249	CRCPDP-205

drawing **A-EE113 –** rev. **0**

sheet of sheets
file 53249AEE113.DWG

N:\CRC\53249\CADD\AWT\DIA\53249AEE113.DWG 04-06-2010 14:46 PHIATT



no.	date	by	ckd	description
0	04/12/10	JLW	SEC	ISSUED FOR CONSTRUCTION CONTRACT CRCPDP-205

Burns & McDonnell
SINCE 1898

date JANUARY 07, 2010	detailed P. HIATT
designed R. TOOKER	checked S. CRAKER

COLORADO RIVER COMMISSION

CCWRD PROJECT
AWT SUBSTATION
12kV THREE LINE DIAGRAM
POSITIONS 10 - 13

project	contract
53249	CRCPDP-205

drawing A-EE114 — rev. 0

sheet of sheets

file 53249AEE114.DWG

4-12-10

N:\CRC\53249\CADD\AWT\DIA\53249AEE114.DWG 04-05-2010 9:00 PHIATT