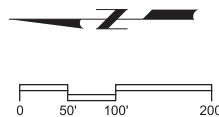


Plot Date: 01-MAR-2019 3:41:40 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jfevre



SITE PLAN
FILE: 10548A1001E100

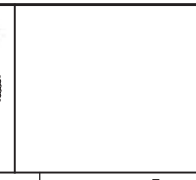
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SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

OVERALL SITE PLAN

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
GE-SE-1

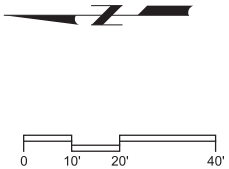
SHEET NO.
48 OF 159

Plot Date: 01-MAR-2019 3:40:21 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 2:1

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KEY NOTES:
1 PENETRATE WALL OF CB-107 WITH NEW DIRECT BURIED CONDUITS AND CORE DRILL WALL SEPARATING CB-107 AND PB-107 PER TYPICAL DETAIL EM133. NEW POWER CONDUCTORS SHALL TRAVEL THROUGH CB-107 TO ENTER PB-107.

A PLAN
GE-SE-1 SCALE: 1"=20'
FILE: 10548A1001E100

MATCH LINE ON DWG GE-SE-19

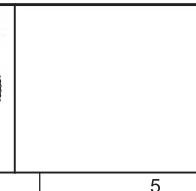
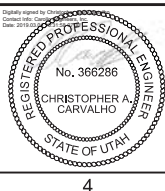
REV	DATE	BY	DESCRIPTION

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BJR

DATE
MARCH 2019



SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

SITE PLAN

AREA 18

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
GE-SE-18

SHEET NO.
49 OF 159

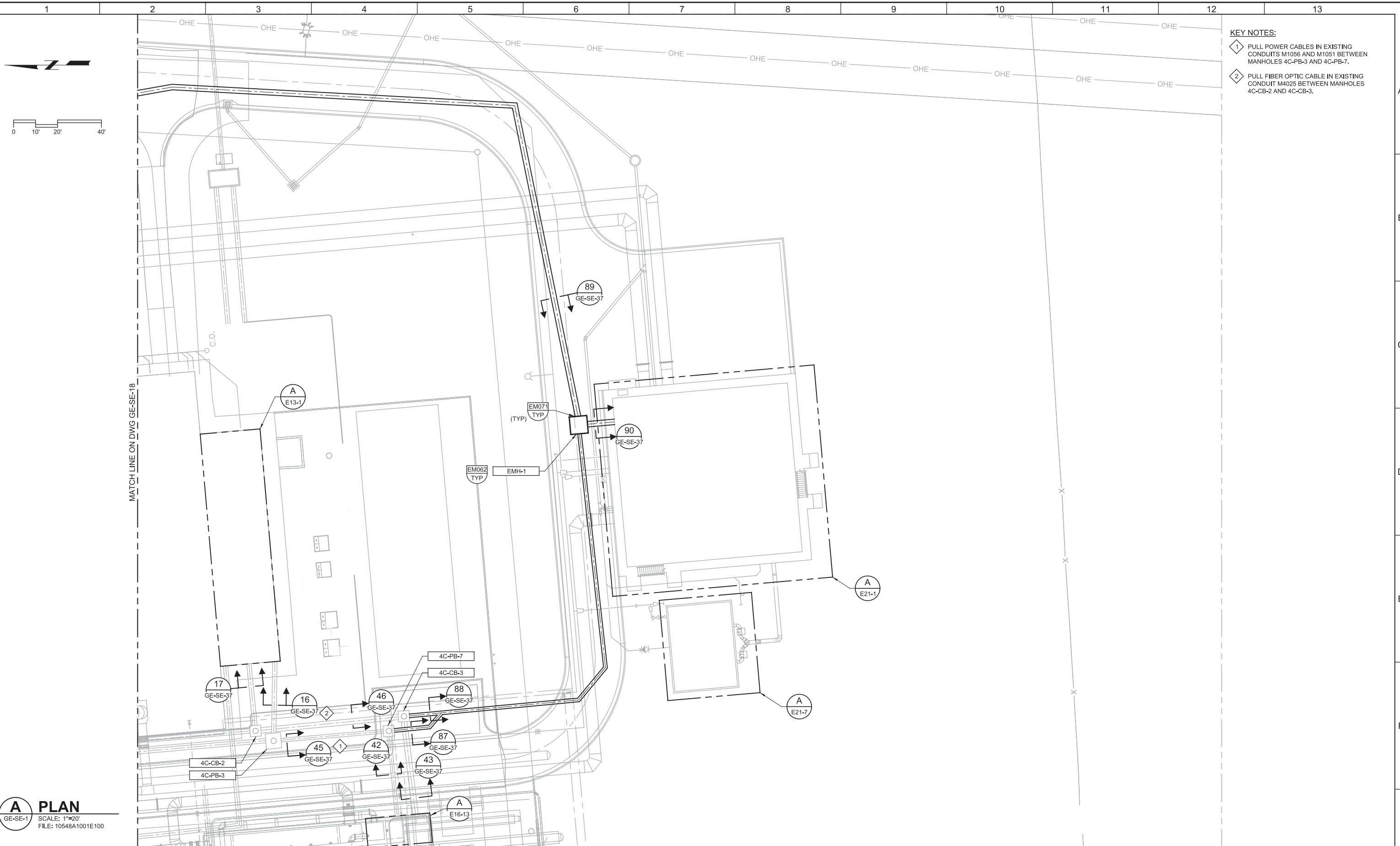
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User: svcPW

PlotScale: 2:1

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LAST SAVED BY: jfevre

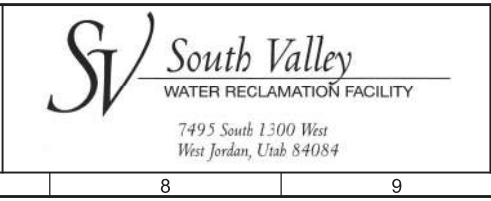
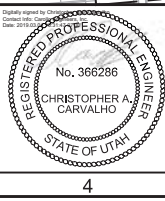


- KEY NOTES:**
- 1 PULL POWER CABLES IN EXISTING CONDUITS M1056 AND M1051 BETWEEN MANHOLES 4C-PB-3 AND 4C-PB-7.
 - 2 PULL FIBER OPTIC CABLE IN EXISTING CONDUIT M4025 BETWEEN MANHOLES 4C-CB-2 AND 4C-CB-3.

A PLAN
 GE-SE-1 SCALE: 1"=20'
 FILE: 10548A1001E100

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SOUTH VALLEY WATER RECLAMATION FACILITY
 PROJECT 5
 ELECTRICAL
 SITE PLAN
 AREA 19

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10
 DRAWING NO.
GE-SE-19
 SHEET NO.
50 OF 159

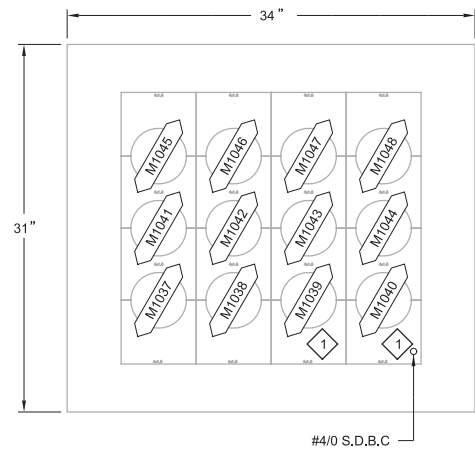
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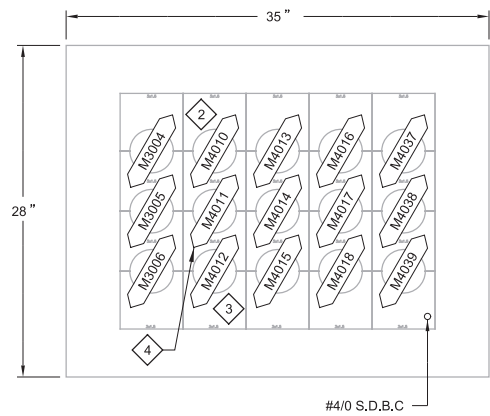
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LAST SAVED BY: jefevre



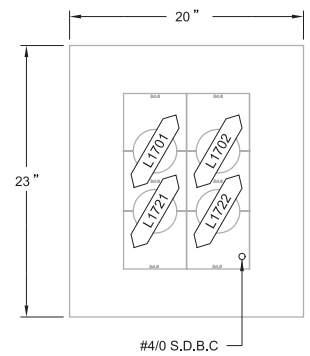
16 EXISTING DUCT BANK SECTION

E13-1, GE-SE-19



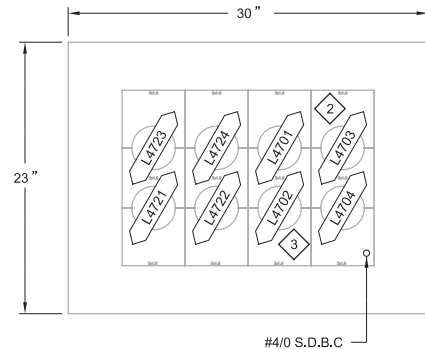
17 EXISTING DUCT BANK SECTION

E13-1, GE-SE-19



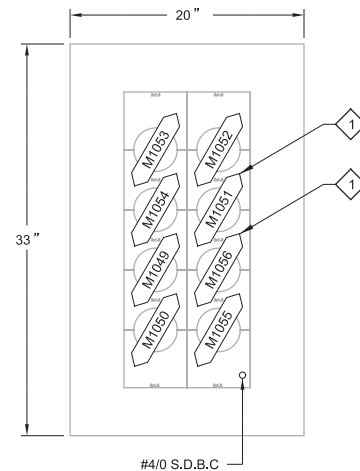
42 EXISTING DUCT BANK SECTION

GE-SE-19



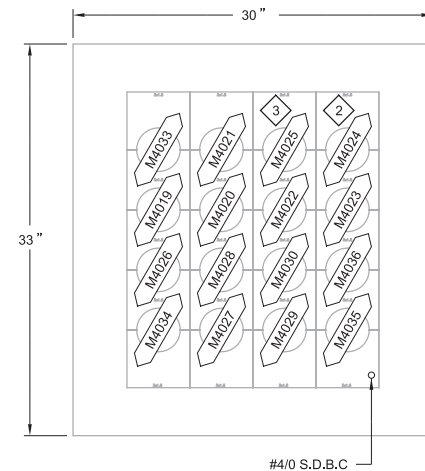
43 EXISTING DUCT BANK SECTION

GE-SE-19



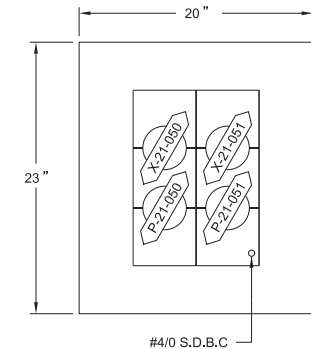
45 EXISTING DUCT BANK SECTION

GE-SE-19



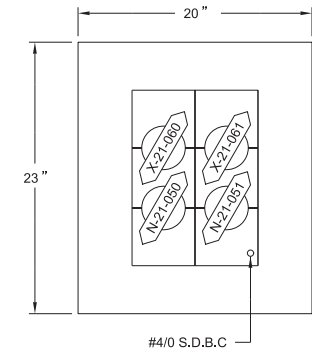
46 EXISTING DUCT BANK SECTION

GE-SE-19



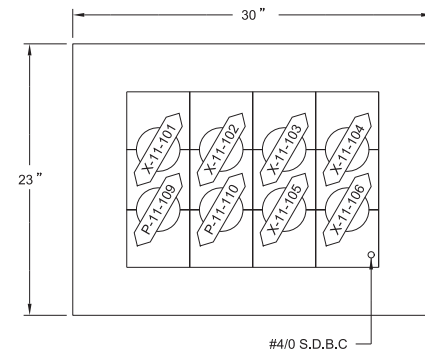
87 DUCT BANK SECTION

GE-SE-19



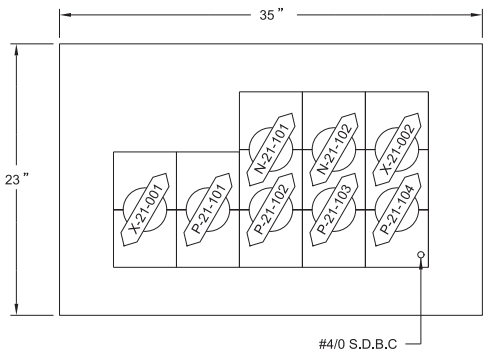
88 DUCT BANK SECTION

GE-SE-19



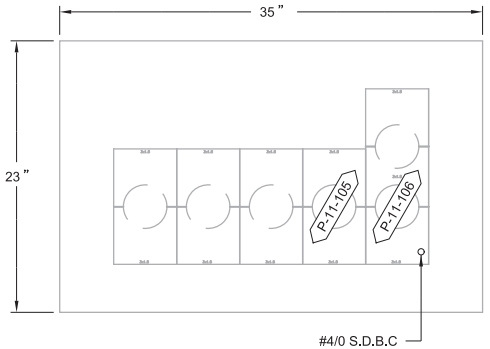
89 DUCT BANK SECTION

GE-SE-18, GE-SE-19



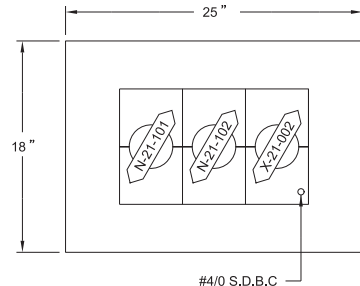
90 DUCT BANK SECTION

GE-SE-19



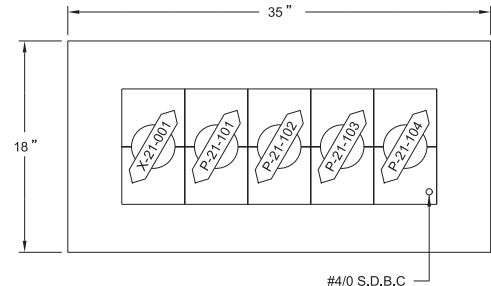
91 EXISTING DUCT BANK SECTION

GE-SE-18



92 DUCT BANK SECTION

E21-1



93 DUCT BANK SECTION

E21-1

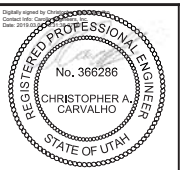
GENERAL NOTES:

- CONSTRUCT DUCTBANK IN ACCORDANCE WITH EM001 UNLESS OTHERWISE INDICATED.

KEY NOTES:

- PULL NEW POWER CABLES FROM SWITCHGEAR ES-5 TO MANHOLE 4C-PB-7 USING EXISTING CONDUITS.
- REMOVE EXISTING FIBER OPTIC CABLE FROM VCP-610 TO PCM-605.
- PULL NEW FIBER OPTIC CABLE IN EXISTING CONDUIT FOR CONNECTION TO PCM-2100.
- REMOVE EXISTING FIBER OPTIC CABLE FROM VCP-610 TO PCM-600. INSTALL NEW 24 STRAND FIBER OPTIC CABLE FROM VCP-610 TO PCM-600A. USING EXISTING CONDUITS AND NEW CONDUIT SHOWN ON DRAWINGS E13-1 AND E16-10.

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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
ELECTRICAL
DUCT BANK SECTIONS

VERIFY SCALES	JOB NO.
BAR IS ONE INCH ON ORIGINAL DRAWING	10548A.10
0 1"	DRAWING NO.
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	GE-SE-37
	SHEET NO.
	51 OF 159

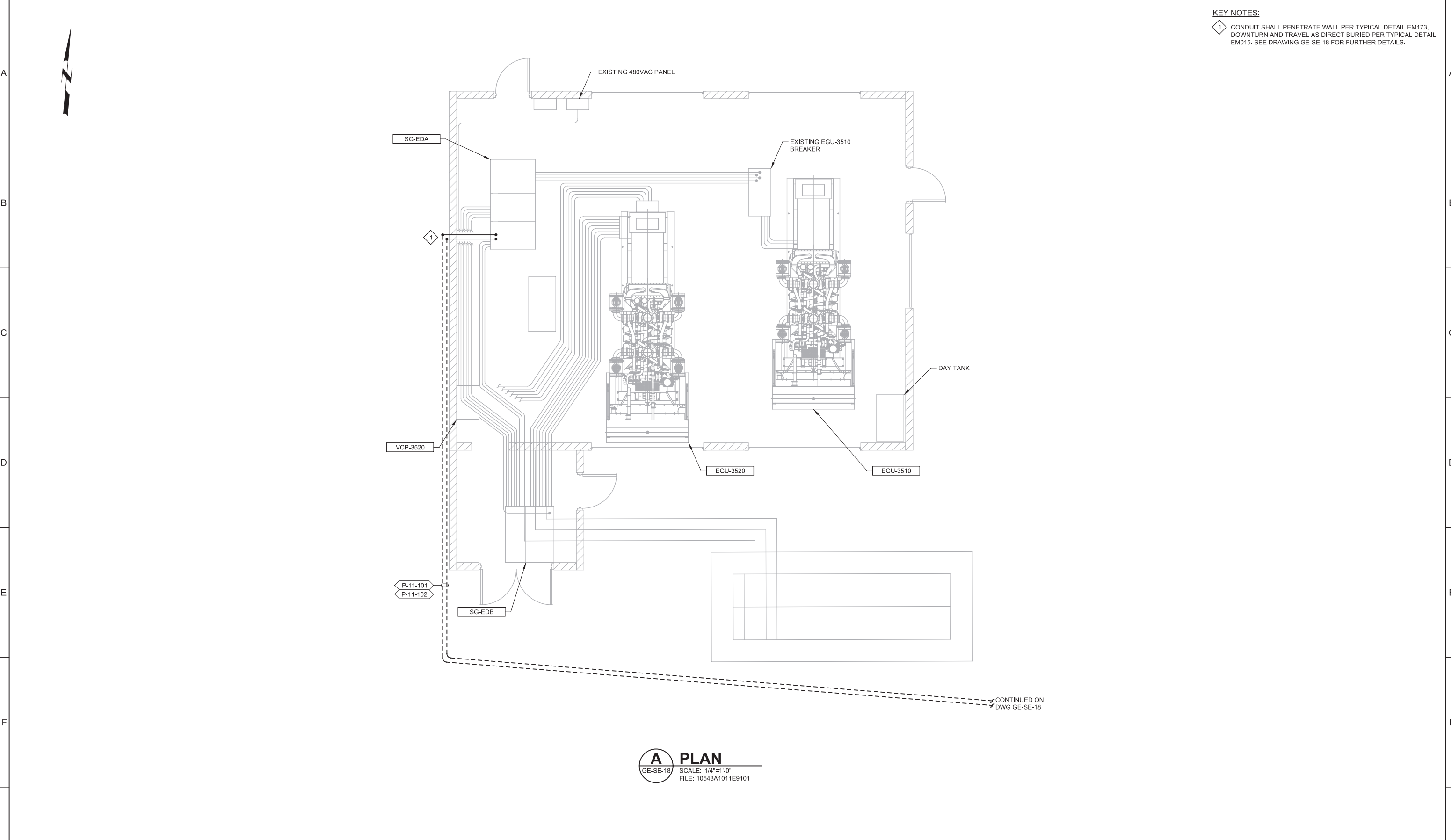
Plot Date: 01-MAR-2019 3:40:43 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jfevre

1 2 3 4 5 6 7 8 9 10 11 12 13



KEY NOTES:

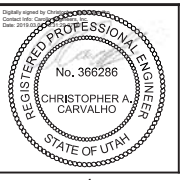
1 CONDUIT SHALL PENETRATE WALL PER TYPICAL DETAIL EM173, DOWNTURN AND TRAVEL AS DIRECT BURIED PER TYPICAL DETAIL EM015. SEE DRAWING GE-SE-18 FOR FURTHER DETAILS.

CONTINUED ON
DWG GE-SE-18

A PLAN
GE-SE-18 SCALE: 1/4"=1'-0"
FILE: 10548A1011E9101

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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
ELECTRICAL
EMERGENCY GENERATOR BUILDING PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

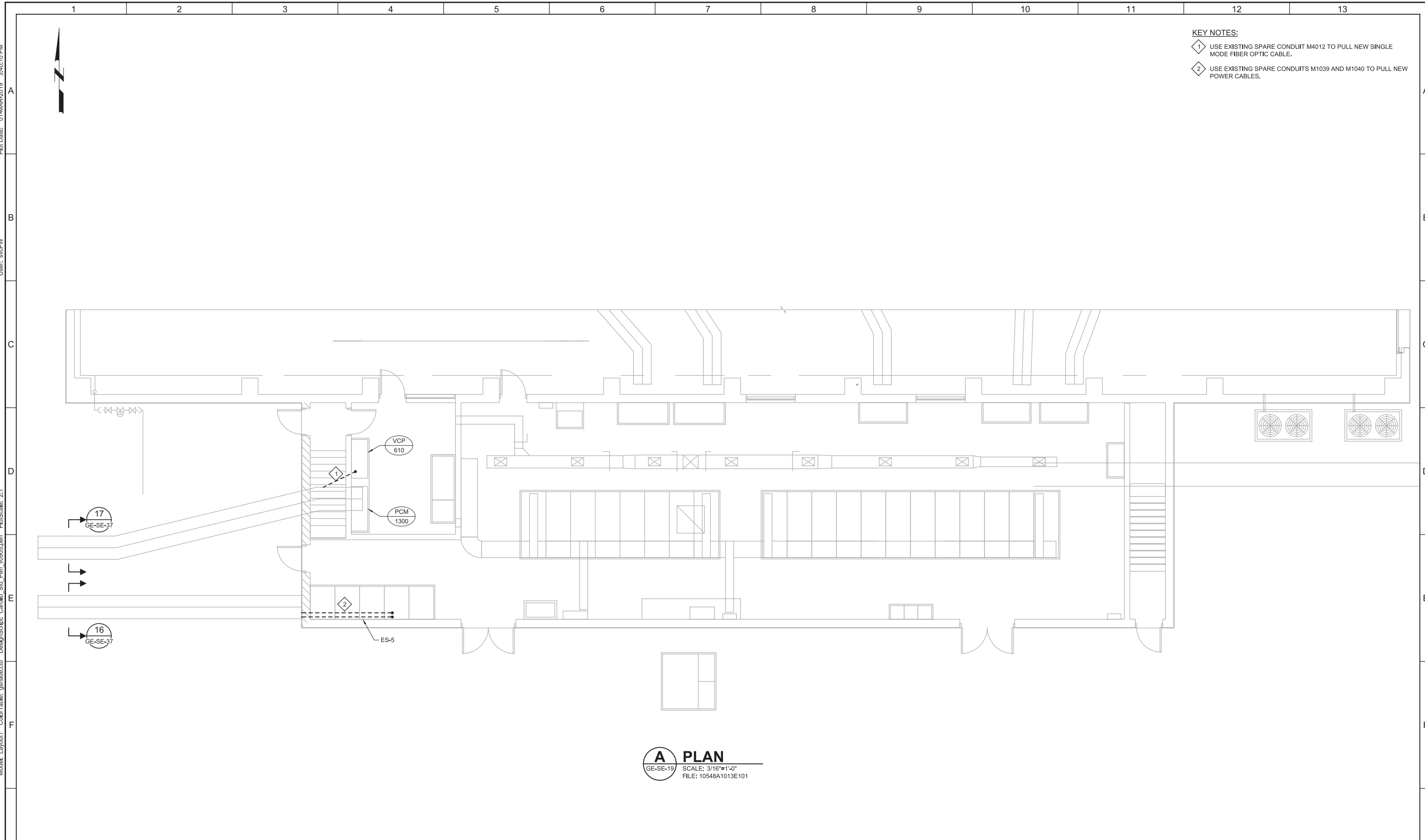
JOB NO.
10548A.10
DRAWING NO.
E11-1
SHEET NO.
52 OF 159

Plot Date: 01-MAR-2019 3:40:10 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jfeivre



A PLAN
 GE-SE-19 SCALE: 3/16"=1'-0"
 FILE: 10548A1013E101

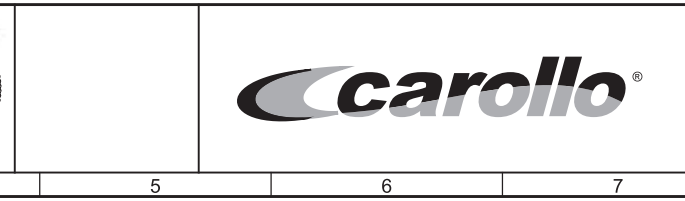
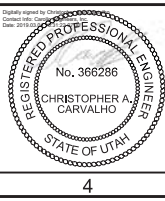
REV	DATE	BY	DESCRIPTION

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SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

BLOWER BUILDING NO. 3

PARTIAL PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E13-1

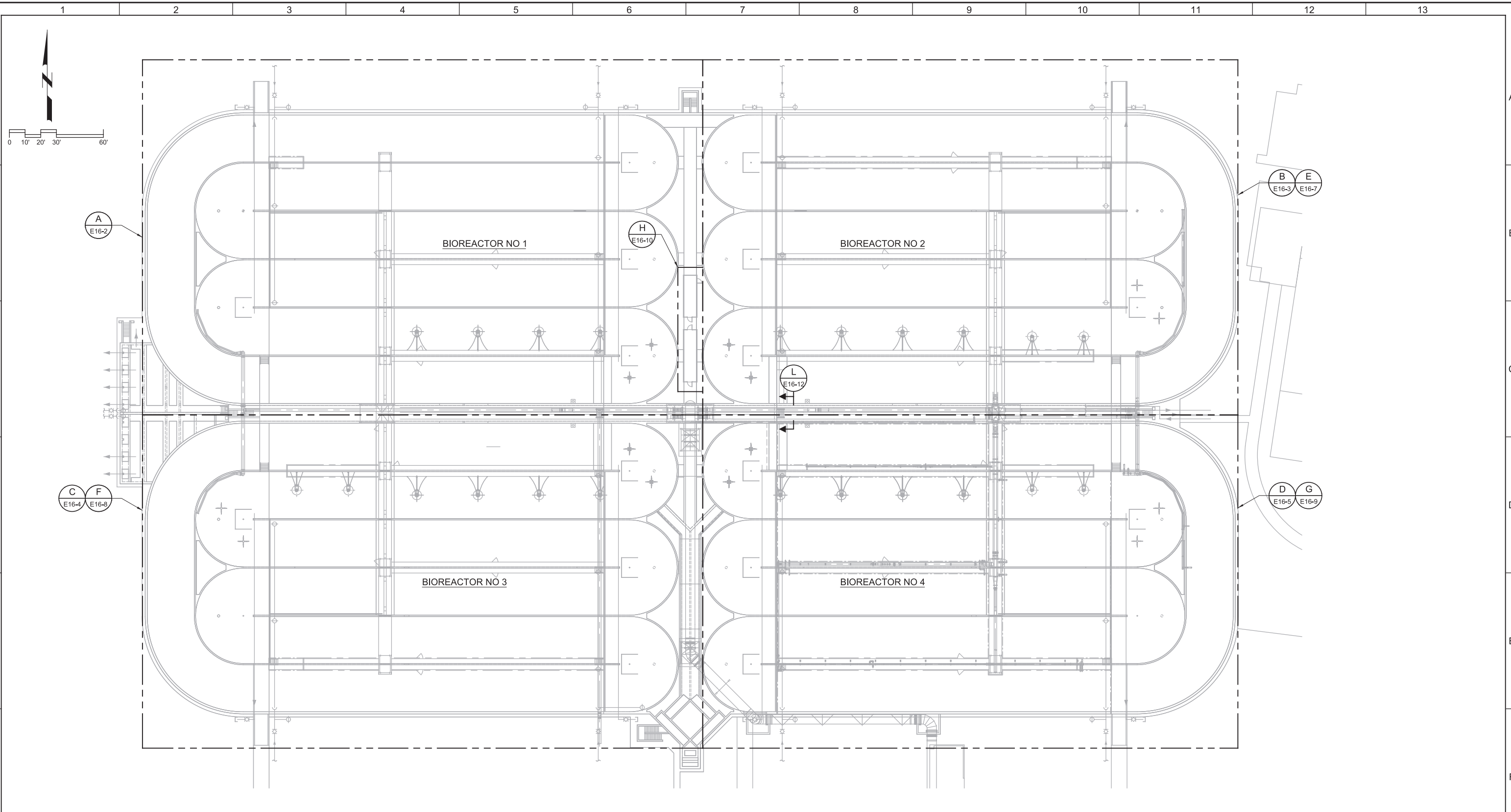
SHEET NO.
53 OF 159

Plot Date: 01-MAR-2019 3:40:43 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jfeivre



A SITE PLAN
FILE: 10548A1016E105

REV	DATE	BY	DESCRIPTION

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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
ELECTRICAL
BIOREACTOR 1-4
SITE PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

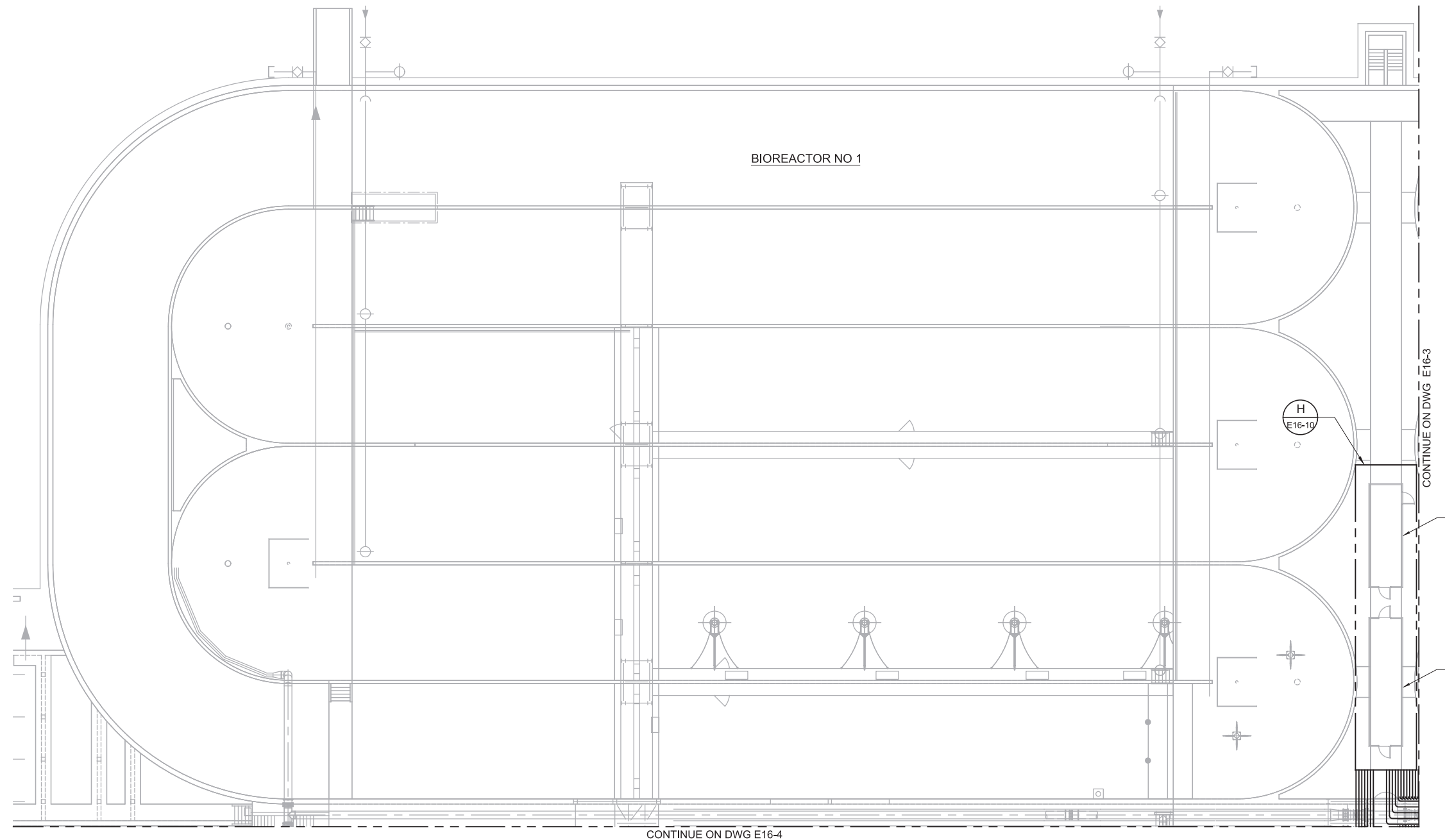
JOB NO.
10548A.10
DRAWING NO.
E16-1
SHEET NO.
54 OF 159

Plot Date: 01-MAR-2019 3:41:06 PM

User: svcPW

PlotScale: 2:1

LAST SAVED BY: jfeivre



- GENERAL NOTES:**
1. THE AREA INCLUDING THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 INCHES ABOVE THE TOP OF THE TANK AND EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL; ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET FROM THE EXTERIOR TANK WALLS IS CLASSIFIED AS CLASS 1 DIV. 2.
 2. ROUTE ALL EXPOSED CONDUITS A MINIMUM OF 18 INCHES ABOVE WALKWAY. WHERE REQUIRED, USE CONDUIT SEALS PER TYPICAL DETAIL EM108.
 3. NO MODIFICATIONS ARE BEING MADE TO BIOREACTOR NO. 1.

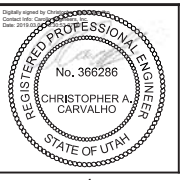
CONTINUE ON DWG E16-4

CONTINUE ON DWG E16-3

A PLAN
 E16-1 SCALE: 1/16" = 1'-0"
 FILE: 10548A1016E102

REV	DATE	BY	DESCRIPTION

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SOUTH VALLEY WATER RECLAMATION FACILITY
 PROJECT 5
 ELECTRICAL
BIOREACTOR 1 POWER PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10
 DRAWING NO.
E16-2
 SHEET NO.
55 OF 159

Plot Date: 01-MAR-2019 3:40:53 PM

User: svcPW

Model: Layout1

ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

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CONTINUE ON DWG E16-2

CONTINUE ON DWG E16-5

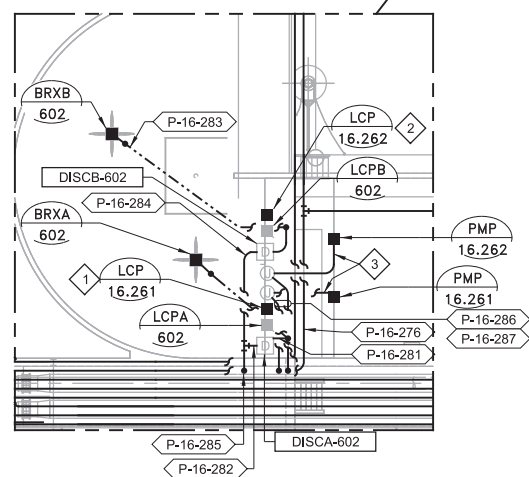
B PLAN
E16-1 SCALE: 1/16" = 1'-0"
FILE: 10548A1016E102

GENERAL NOTES:

1. THE AREA INCLUDING THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 INCHES ABOVE THE TOP OF THE TANK AND EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL; ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET FROM THE EXTERIOR TANK WALLS IS CLASSIFIED AS CLASS 1 DIV. 2.
2. ROUTE ALL EXPOSED CONDUITS A MINIMUM OF 18 INCHES ABOVE WALKWAY. WHERE REQUIRED, USE CONDUIT SEALS PER TYPICAL DETAIL EM108.
3. INSTALL DISCONNECTS AND ASSOCIATED CONDUIT FOR NEW FLOATING MIXERS PER TYPICAL DETAIL EM221.
4. UTILIZE EXISTING GUARD RAILS AND STEEL BEAMS FOR CONDUIT SUPPORT WHERE APPLICABLE.
5. WHEN MOUNTING MULTIPLE ELECTRICAL DEVICES TOGETHER, SUCH AS LCPs AND DISCONNECTS, USE TYPICAL DETAIL EM211. WHEN MOUNTING ONE OR TWO DEVICES AT A SINGLE LOCATION, USE TYPICAL DETAIL EM202.

KEY NOTES:

- 1 DEMOLISH EXISTING LCPG-602 AND REPLACE WITH NEW LCP-16.261.
- 2 DEMOLISH EXISTING LCPH-602 AND REPLACE WITH NEW LCP-16.262.
- 3 CONNECT NEW SUBMERSIBLE PUMP CABLE TO EXISTING JUNCTION BOXES PER TYPICAL DETAIL EM315.
- 4 ADDITIVE BID ITEM #2, REFER TO SECTION 01230 FOR DETAILS.
- 5 RELOCATE ELECTRICAL EQUIPMENT AND EQUIPMENT STANDS APPROXIMATELY FIVE FEET EAST TO NEW GUARDRAIL. INSTALL NEW CONDUIT BETWEEN DEVICES AND EXISTING WIREWAYS.



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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
ELECTRICAL
BIOREACTOR 2 POWER PLAN

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

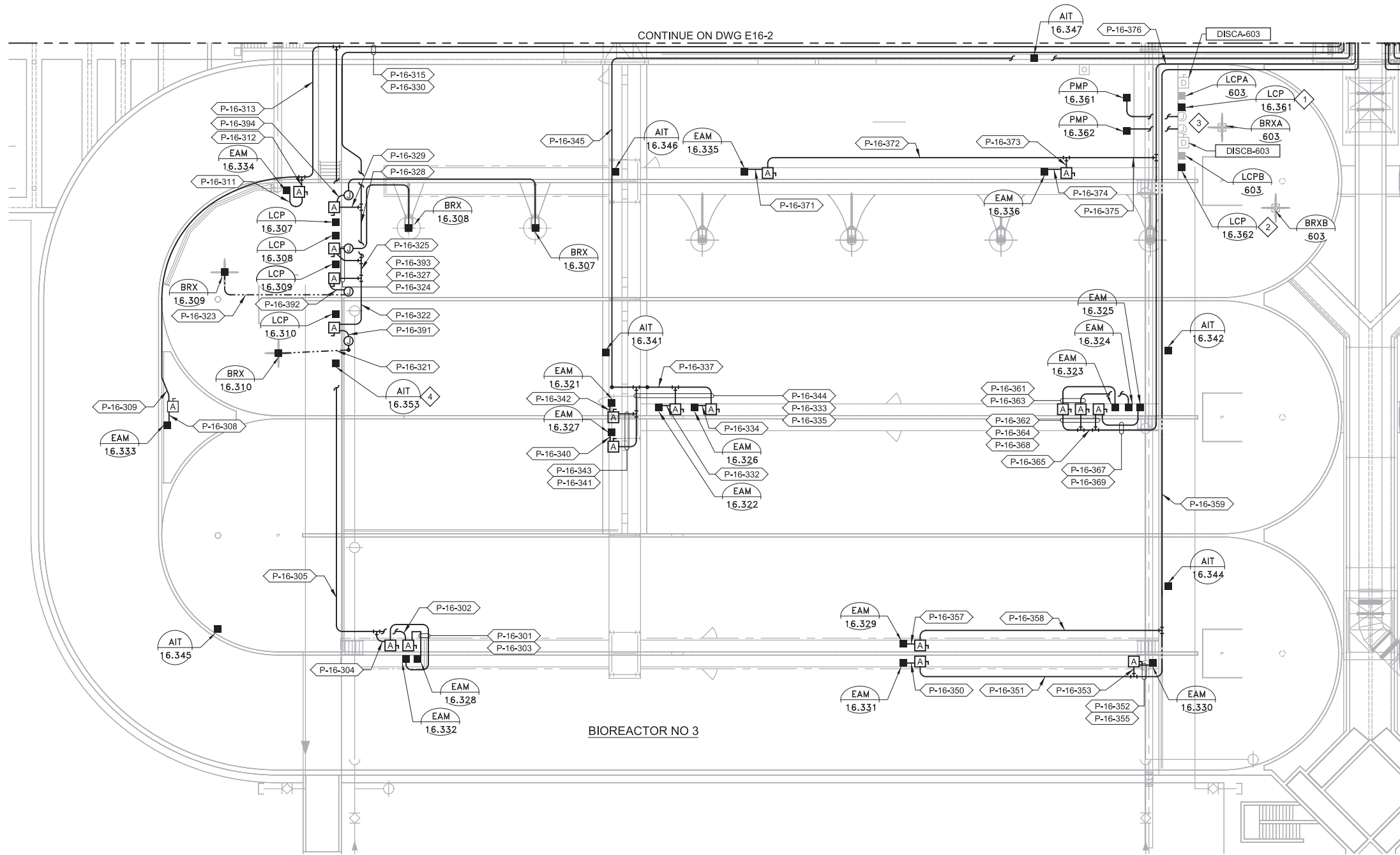
JOB NO.
10548A.10
DRAWING NO.
E16-3
SHEET NO.
56 OF 159

Plot Date: 01-MAR-2019 3:41:08 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

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- GENERAL NOTES:**
1. THE AREA INCLUDING THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 INCHES ABOVE THE TOP OF THE TANK AND EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL; ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET FROM THE EXTERIOR TANK WALLS IS CLASSIFIED AS CLASS 1 DIV. 2.
 2. ROUTE ALL EXPOSED CONDUITS A MINIMUM OF 18 INCHES ABOVE WALKWAY. WHERE REQUIRED, USE CONDUIT SEALS PER TYPICAL DETAIL EM108.
 3. INSTALL DISCONNECTS AND ASSOCIATED CONDUIT FOR NEW FLOATING MIXERS PER TYPICAL DETAIL EM221.
 4. UTILIZE EXISTING GUARD RAILS AND STEEL BEAMS FOR CONDUIT SUPPORT WHERE APPLICABLE.
 5. WHEN MOUNTING MULTIPLE ELECTRICAL DEVICES TOGETHER, SUCH AS LCPs AND DISCONNECTS, USE TYPICAL DETAIL EM211. WHEN MOUNTING ONE OR TWO DEVICES AT A SINGLE LOCATION, USE TYPICAL DETAIL EM202.

- KEY NOTES:**
- 1 DEMOLISH EXISTING LCPG-603 AND REPLACE WITH NEW LCP-16.361.
 - 2 DEMOLISH EXISTING LCPH-603 AND REPLACE WITH NEW LCP-16.362.
 - 3 REUSE EXISTING CONDUITS R1320 AND R1322 BETWEEN JUNCTION BOXES AND POWER WIREWAY FOR NEW POWER CONDUCTORS FOR PMP-16.361 AND PMP-16.362. CONNECT NEW SUBMERSIBLE PUMP CABLE TO EXISTING JUNCTION BOXES PER TYPICAL DETAIL EM315.
 - 4 ADDITIVE BID ITEM #2. REFER TO SECTION 01230 FOR DETAILS.

C PLAN
 E16-1 SCALE: 1/16" = 1'-0"
 FILE: 10548A1016E102

REV	DATE	BY	DESCRIPTION
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SOUTH VALLEY WATER RECLAMATION FACILITY
 PROJECT 5
 ELECTRICAL
BIOREACTOR 3 POWER PLAN

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	JOB NO. 10548A.10 DRAWING NO. E16-4 SHEET NO. 57 OF 159
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Plot Date: 01-MAR-2019 3:41:03 PM

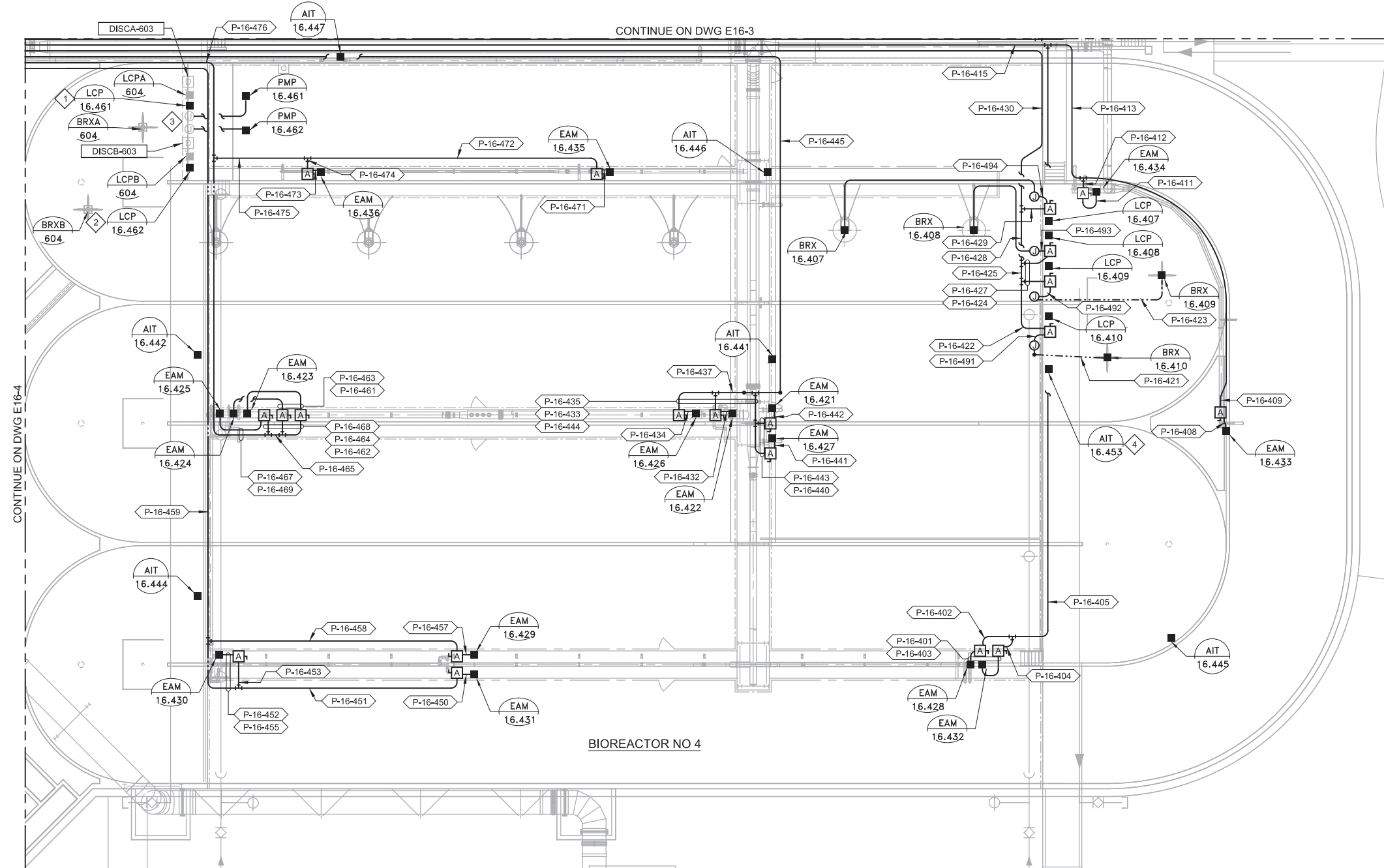
User: svcpw

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jfevre

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F G



- GENERAL NOTES:**
1. THE AREA INCLUDING THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 INCHES ABOVE THE TOP OF THE TANK AND EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL; ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET FROM THE EXTERIOR TANK WALLS IS CLASSIFIED AS CLASS 1 DIV. 2.
 2. ROUTE ALL EXPOSED CONDUITS A MINIMUM OF 18 INCHES ABOVE WALKWAY. WHERE REQUIRED, USE CONDUIT SEALS PER TYPICAL DETAIL EM108.
 3. INSTALL DISCONNECTS AND ASSOCIATED CONDUIT FOR NEW FLOATING MIXERS PER TYPICAL DETAIL EM221.
 4. UTILIZE EXISTING GUARD RAILS AND STEEL BEAMS FOR CONDUIT SUPPORT WHERE APPLICABLE.
 5. WHEN MOUNTING MULTIPLE ELECTRICAL DEVICES TOGETHER, SUCH AS LCPS AND DISCONNECTS, USE TYPICAL DETAIL EM211. WHEN MOUNTING ONE OR TWO DEVICES AT A SINGLE LOCATION, USE TYPICAL DETAIL EM202.

- KEY NOTES:**
- 1 DEMOLISH EXISTING LCPG-604 AND REPLACE WITH NEW LCP-16.461.
 - 2 DEMOLISH EXISTING LCPH-604 AND REPLACE WITH NEW LCP-16.462.
 - 3 REUSE EXISTING CONDUITS R1420 AND R1422 BETWEEN JUNCTION BOXES AND POWER WIREWAY FOR NEW POWER CONDUCTORS FOR PMP-16.461 AND PMP-16.462. CONNECT NEW SUBMERSIBLE PUMP CABLE TO EXISTING JUNCTION BOXES PER TYPICAL DETAIL EM315.
 - 4 ADDITIVE BID ITEM #2. REFER TO SECTION 01230 FOR DETAILS.

D PLAN
 E16-1 SCALE: 1/16" = 1'-0"
 FILE: 10548A1016E102

REV	DATE	BY	DESCRIPTION
1			
2			
3			

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DATE MARCH 2019	

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 7495 South 1300 West
 West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
 ELECTRICAL
BIOREACTOR 4 POWER PLAN

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 10548A.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. E16-5
	SHEET NO. 58 OF 159

Plot Date: 01-MAR-2019 3:41:16 PM

User: svcPW

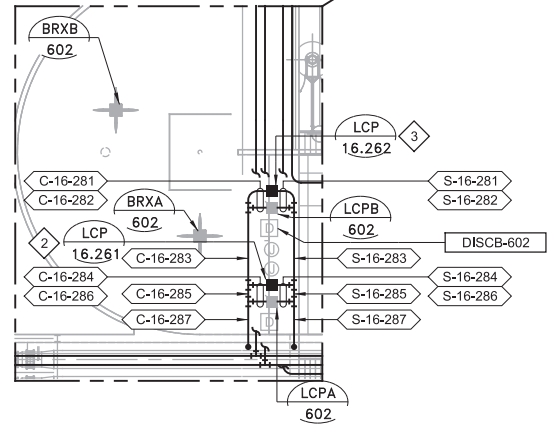
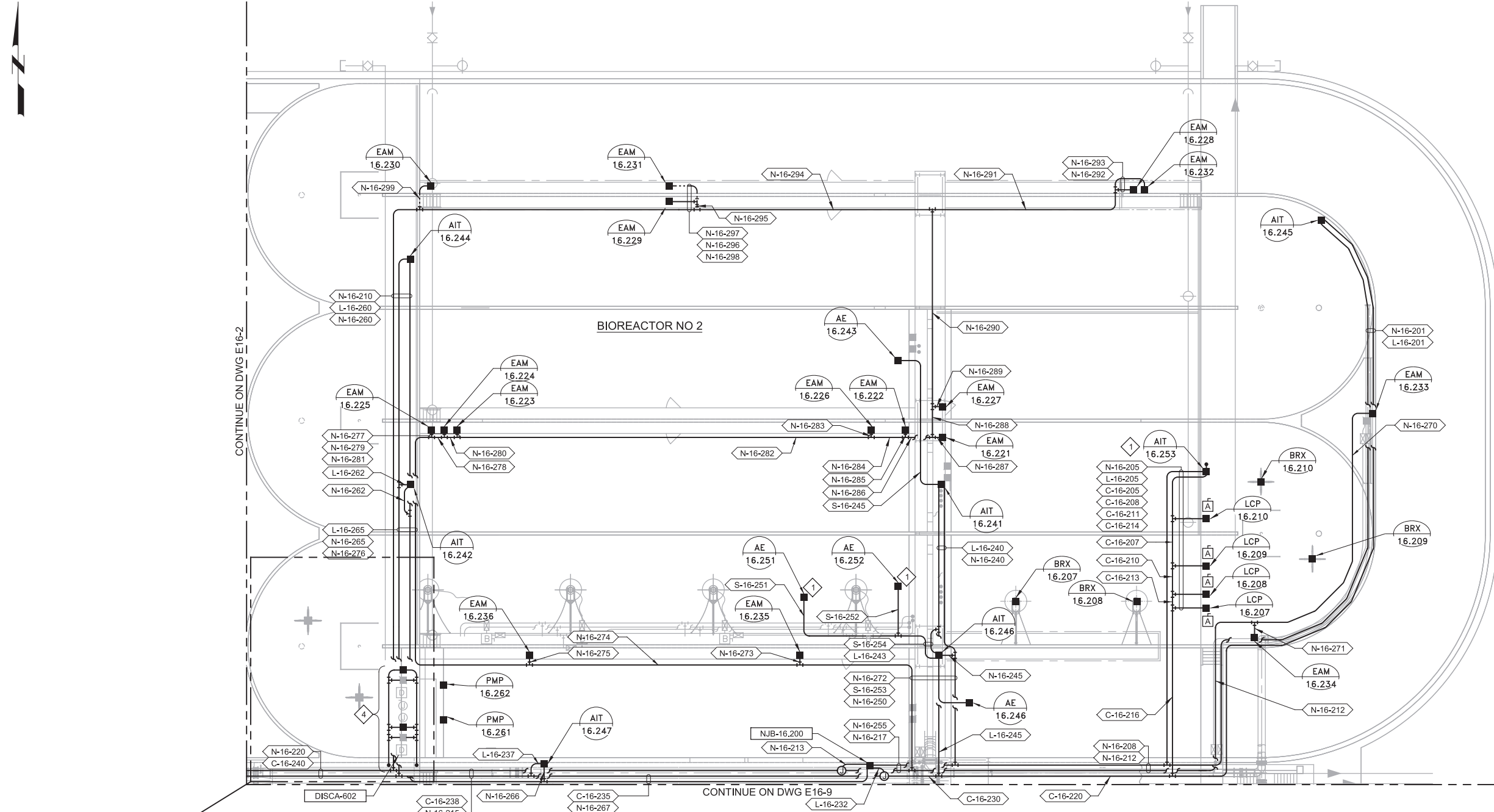
Model: Layout1

ColorTable: gshade.ctb

DesignScript: Carollo_Std_Pen_v0905.pen

PlotScale: 2:1

LAST SAVED BY: jefevre



E PLAN
 E16-1 SCALE: 1/16" = 1'-0"
 FILE: 10548A1016103

- GENERAL NOTES:**
1. THE AREA INCLUDING THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 INCHES ABOVE THE TOP OF THE TANK AND EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL; ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET FROM THE EXTERIOR TANK WALLS IS CLASSIFIED AS CLASS 1 DIV. 2.
 2. ROUTE ALL EXPOSED CONDUITS A MINIMUM OF 18 INCHES ABOVE WALKWAY. WHERE REQUIRED, USE CONDUIT SEALS PER TYPICAL DETAIL EM108.
 3. UTILIZE EXISTING GUARD RAILS AND STEEL BEAMS FOR CONDUIT SUPPORT WHERE APPLICABLE.
 4. WHEN MOUNTING MULTIPLE ELECTRICAL DEVICES TOGETHER, SUCH AS LCPs AND DISCONNECTS, USE TYPICAL DETAIL EM211. WHEN MOUNTING ONE OR TWO DEVICES AT A SINGLE LOCATION, USE TYPICAL DETAIL EM202.
- KEY NOTES:**
- 1 ADDITIVE BID ITEM #2. REFER TO SECTION 01230 FOR DETAILS.
 - 2 DEMOLISH EXISTING LCPG-602 AND REPLACE WITH NEW LCP-16.261.
 - 3 DEMOLISH EXISTING LCPH-602 AND REPLACE WITH NEW LCP-16.262.
 - 4 RELOCATE ELECTRICAL EQUIPMENT AND EQUIPMENT STANDS APPROXIMATELY FIVE FEET EAST TO NEW GUARDRAIL. INSTALL NEW CONDUIT BETWEEN DEVICES AND EXISTING WIREWAYS.

REV	DATE	BY	DESCRIPTION

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DATE MARCH 2019	

carollo

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 WATER RECLAMATION FACILITY
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 West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

BIOREACTOR 2 CONTROL PLAN

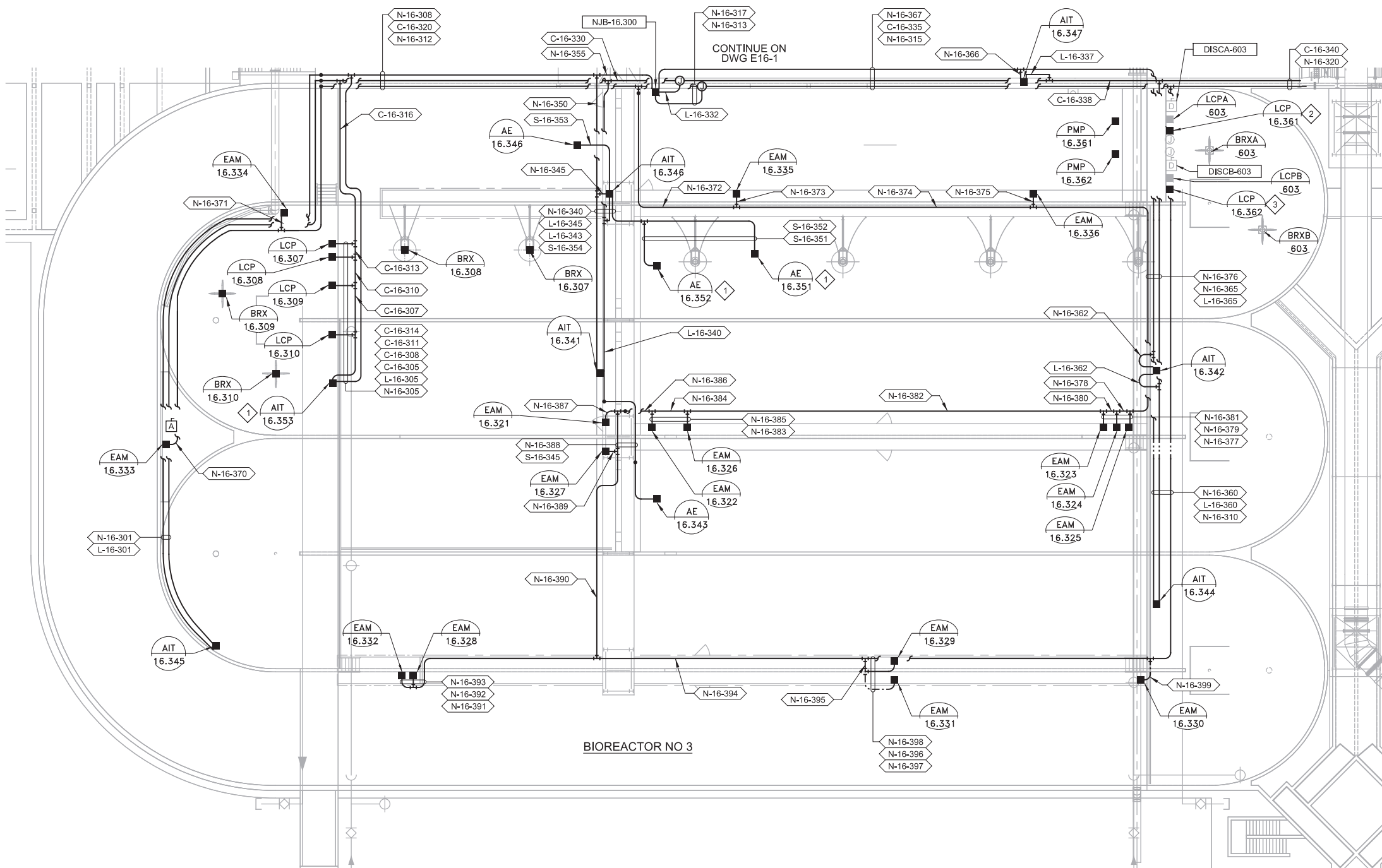
VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 10548A.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. E16-7
	SHEET NO. 59 OF 159

Plot Date: 01-MAR-2019 3:40:59 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jefevre



- GENERAL NOTES:**
1. THE AREA INCLUDING THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 INCHES ABOVE THE TOP OF THE TANK AND EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL; ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET FROM THE EXTERIOR TANK WALLS IS CLASSIFIED AS CLASS 1 DIV. 2.
 2. ROUTE ALL EXPOSED CONDUITS A MINIMUM OF 18 INCHES ABOVE WALKWAY. WHERE REQUIRED, USE CONDUIT SEALS PER TYPICAL DETAIL EM108.
 3. UTILIZE EXISTING GUARD RAILS AND STEEL BEAMS FOR CONDUIT SUPPORT WHERE APPLICABLE.
 4. WHEN MOUNTING MULTIPLE ELECTRICAL DEVICES TOGETHER, SUCH AS LCPs AND DISCONNECTS, USE TYPICAL DETAIL EM211. WHEN MOUNTING ONE OR TWO DEVICES AT A SINGLE LOCATION, USE TYPICAL DETAIL EM202.

- KEY NOTES:**
- 1 ADDITIVE BID ITEM #2. REFER TO SECTION 01230 FOR DETAILS.
 - 2 DEMOLISH EXISTING LCPG-603 AND REPLACE WITH NEW LCP-16.361.
 - 3 DEMOLISH EXISTING LCPH-603 AND REPLACE WITH NEW LCP-16.362.

F PLAN
E16-1 SCALE: 1/16" = 1'-0"
FILE: 10548A1016103

REV	DATE	BY	DESCRIPTION

DESIGNED CAC	
DRAWN AAW	
CHECKED BJR	
DATE MARCH 2019	

SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
ELECTRICAL
BIOREACTOR 3 CONTROL PLAN

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 10548A.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. E16-8
	SHEET NO. 60 OF 159

Plot Date: 01-MAR-2019 3:41:11 PM

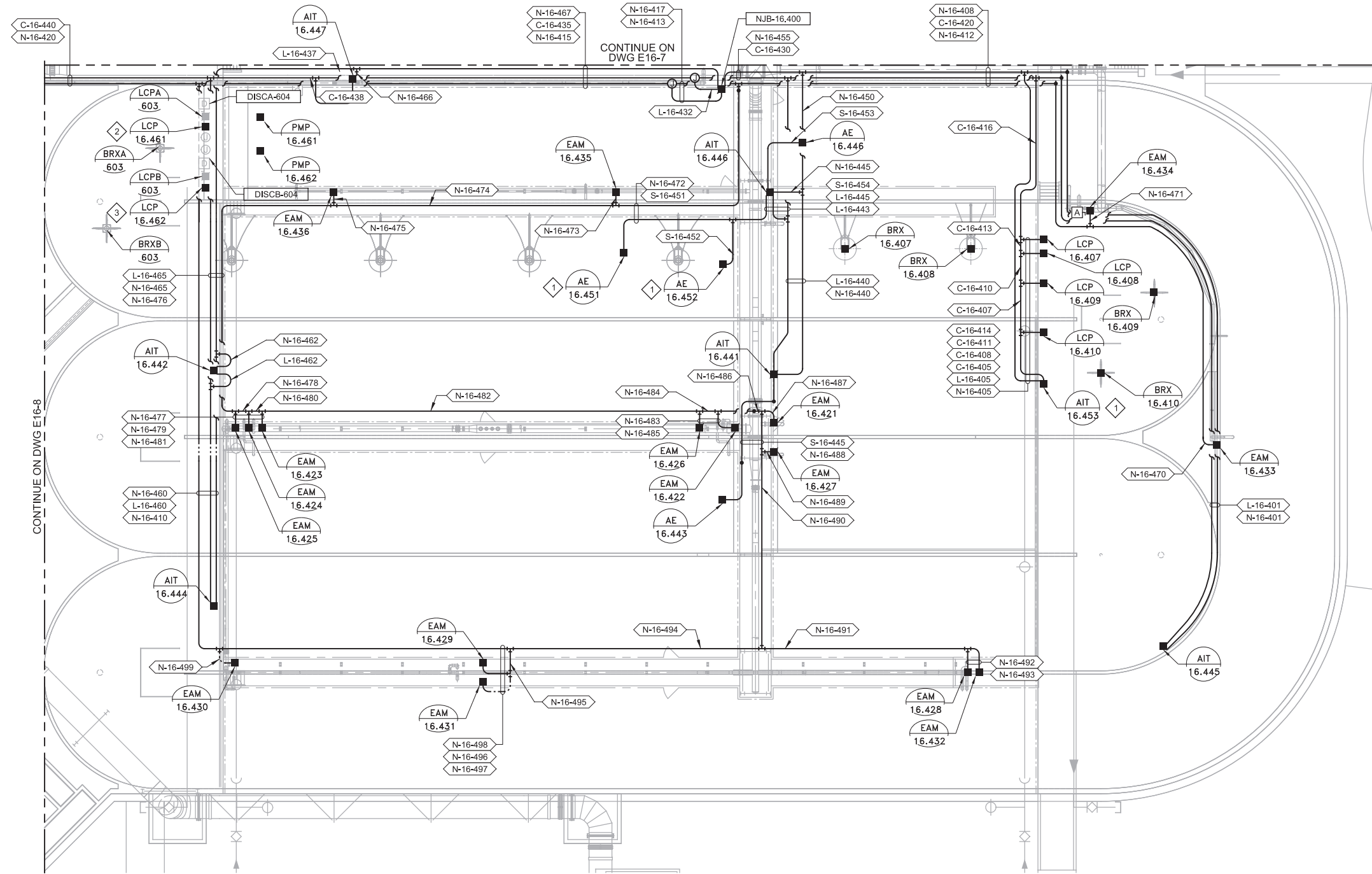
User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jfevre

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F G



- GENERAL NOTES:**
1. THE AREA INCLUDING THE INTERIOR OF THE TANK FROM THE MINIMUM OPERATING WATER SURFACE TO THE TOP OF THE TANK WALL; ENVELOPE 18 INCHES ABOVE THE TOP OF THE TANK AND EXTENDING 18 INCHES BEYOND THE EXTERIOR WALL; ENVELOPE 18 INCHES ABOVE GRADE EXTENDING 10 FEET FROM THE EXTERIOR TANK WALLS IS CLASSIFIED AS CLASS 1 DIV. 2.
 2. ROUTE ALL EXPOSED CONDUITS A MINIMUM OF 18 INCHES ABOVE WALKWAY. WHERE REQUIRED, USE CONDUIT SEALS PER TYPICAL DETAIL EM108.
 3. UTILIZE EXISTING GUARD RAILS AND STEEL BEAMS FOR CONDUIT SUPPORT WHERE APPLICABLE.
 4. WHEN MOUNTING MULTIPLE ELECTRICAL DEVICES TOGETHER, SUCH AS LCPs AND DISCONNECTS, USE TYPICAL DETAIL EM211. WHEN MOUNTING ONE OR TWO DEVICES AT A SINGLE LOCATION, USE TYPICAL DETAIL EM202.

- KEY NOTES:**
- 1 ADDITIVE BID ITEM #2. REFER TO SECTION 01230 FOR DETAILS.
 - 2 DEMOLISH EXISTING LCPG-604 AND REPLACE WITH NEW LCP-16.461.
 - 3 DEMOLISH EXISTING LCPH-604 AND REPLACE WITH NEW LCP-16.462.

G PLAN
 E16-1 SCALE: 1/16" = 1'-0"
 FILE: 10548A1016E102

REV	DATE	BY	DESCRIPTION
1			
2			
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CAC

DRAWN
AAW

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BJR

DATE
MARCH 2019



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SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

BIOREACTOR 4 CONTROL PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E16-9

SHEET NO.
61 OF 159

Plot Date: 01-MAR-2019 3:41:18 PM

User: svcPW

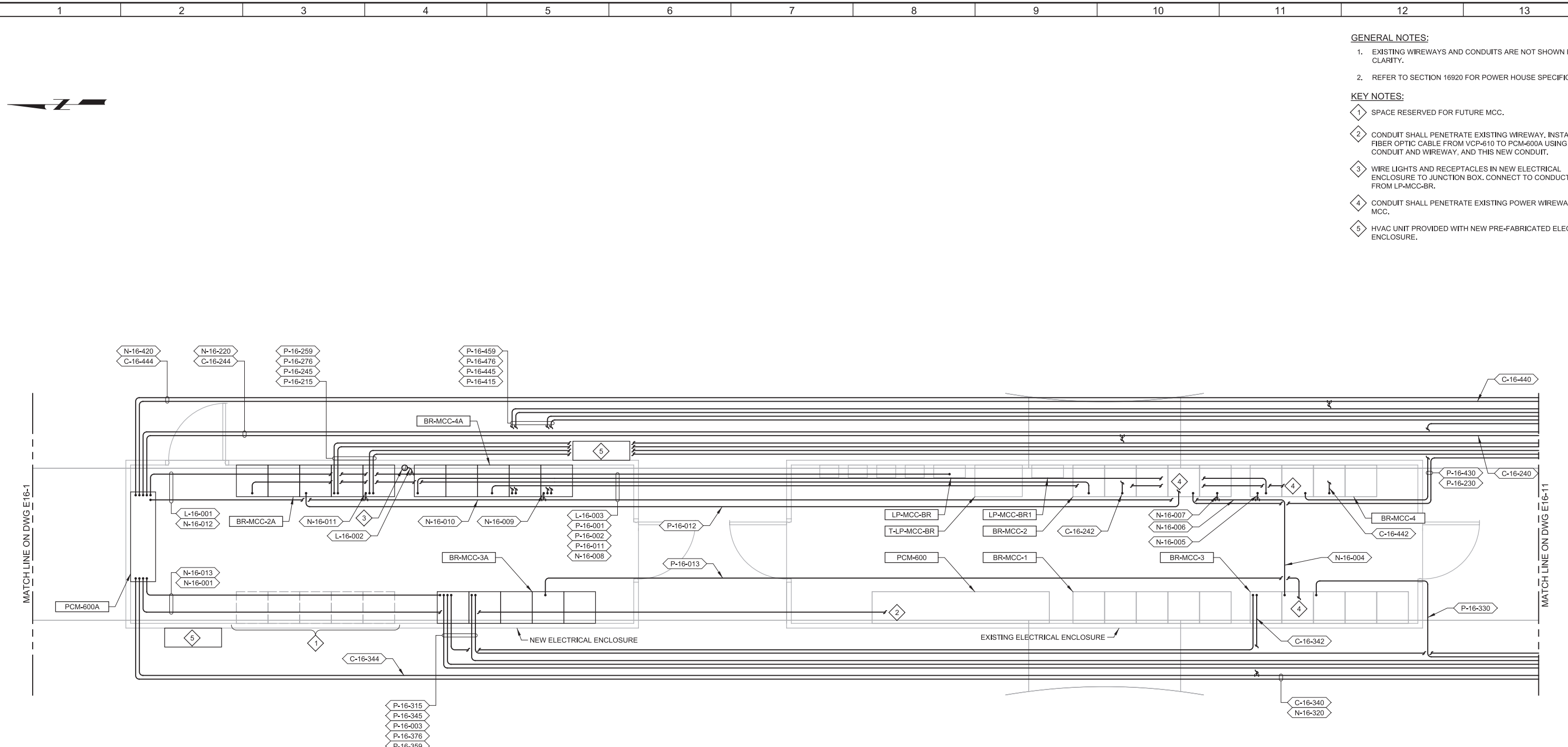
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Model: Layout1

ColorTable: gshade.ctb

DesignScript: Carollo_Std_Pen_v0905.dgn

ColorTable: gshade.ctb



- GENERAL NOTES:**
- EXISTING WIREWAYS AND CONDUITS ARE NOT SHOWN FOR CLARITY.
 - REFER TO SECTION 16920 FOR POWER HOUSE SPECIFICATIONS.
- KEY NOTES:**
- SPACE RESERVED FOR FUTURE MCC.
 - CONDUIT SHALL PENETRATE EXISTING WIREWAY. INSTALL NEW FIBER OPTIC CABLE FROM VCP-610 TO PCM-600A USING EXISTING CONDUIT AND WIREWAY, AND THIS NEW CONDUIT.
 - WIRE LIGHTS AND RECEPTACLES IN NEW ELECTRICAL ENCLOSURE TO JUNCTION BOX. CONNECT TO CONDUCTORS FROM LP-MCC-BR.
 - CONDUIT SHALL PENETRATE EXISTING POWER WIREWAY ABOVE MCC.
 - HVAC UNIT PROVIDED WITH NEW PRE-FABRICATED ELECTRICAL ENCLOSURE.

H PLAN
 E16-1 SCALE: 1/2" = 1'-0"
 FILE: 10548A1001E102

REV	DATE	BY	DESCRIPTION

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BJR

DATE
MARCH 2019



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SOUTH VALLEY WATER RECLAMATION FACILITY
 PROJECT 5
 ELECTRICAL
 BIOREACTOR MCC POWER CENTERS PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E16-10

SHEET NO.
62 OF 159

Plot Date: 01-MAR-2019 3:41:28 PM

User: svcPW

Plot Scale: 2:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen

LAST SAVED BY: jefevre

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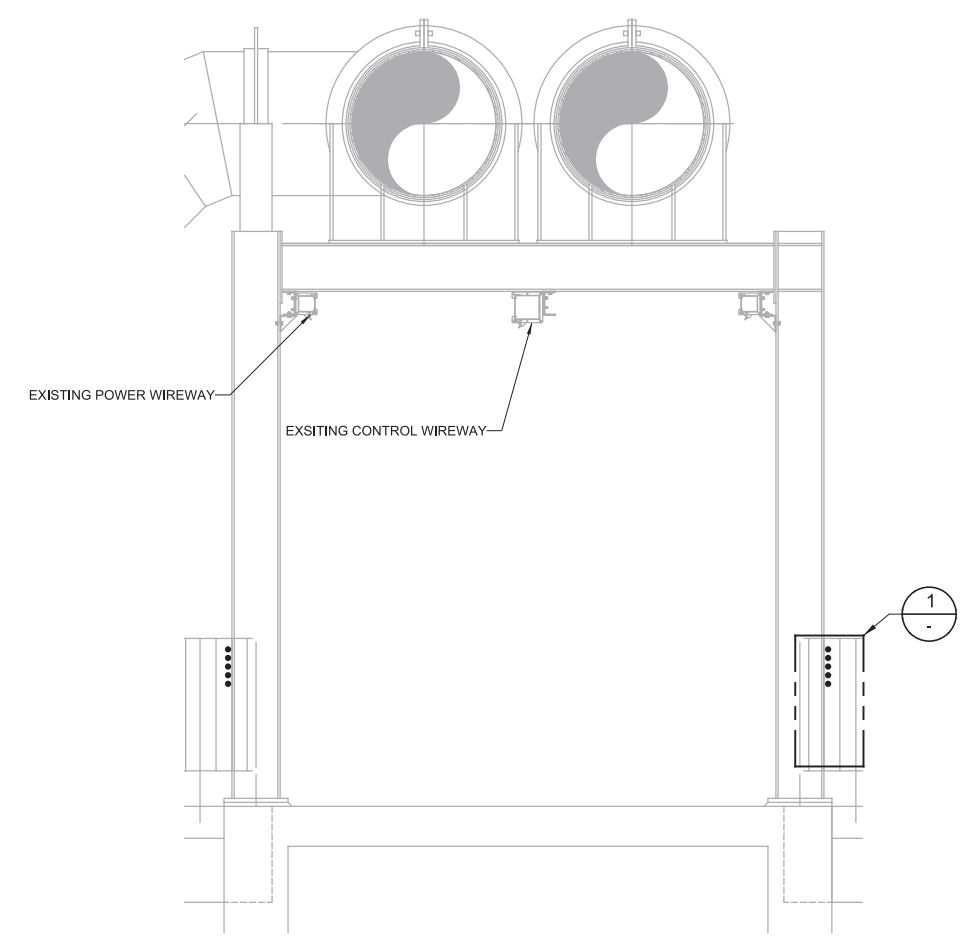
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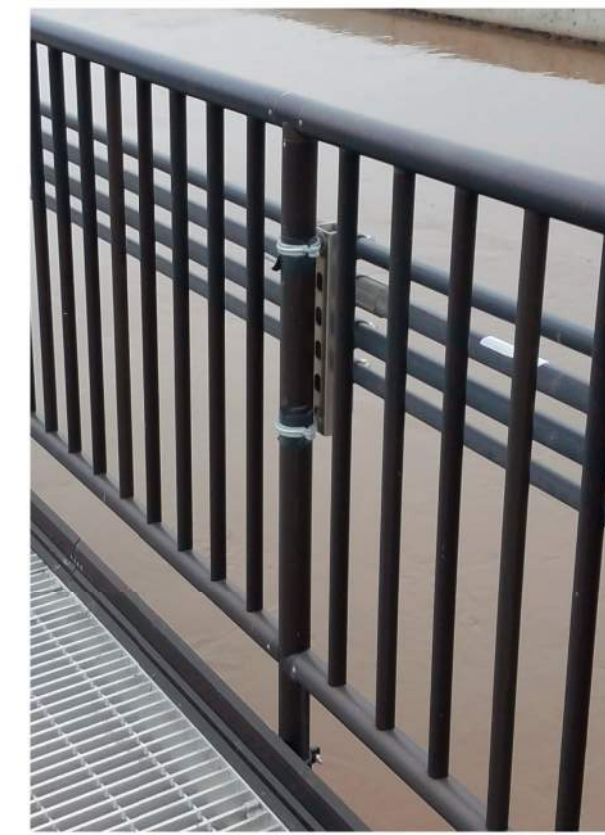
G

GENERAL NOTES:

1. INSTALL CONDUITS ALONG EXISTING GUARDRAILS USING SIMILAR METHOD AS EXISTING CONDUITS AT BIOREACTORS.



L SECTION
 E16-1 SCALE: 1/2" = 1'-0"
 FILE: 10548A1016E301



1 DETAIL
 SCALE: 1/2" = 1'-0"
 FILE: 10548A1016E101

REV	DATE	BY	DESCRIPTION
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SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

BIOREACTOR CONDUIT INSTALLATION DETAIL

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E16-12

SHEET NO.
64 OF 159

Plot Date: 01-MAR-2019 3:41:01 PM

User: svcBW

Plot Scale: 2:1

Model: Layout1

ColorTable: gshade.ctb

DesignScript: Carollo_Sld_Pen_v0905.pen

1 2 3 4 5 6 7 8 9 10 11 12 13

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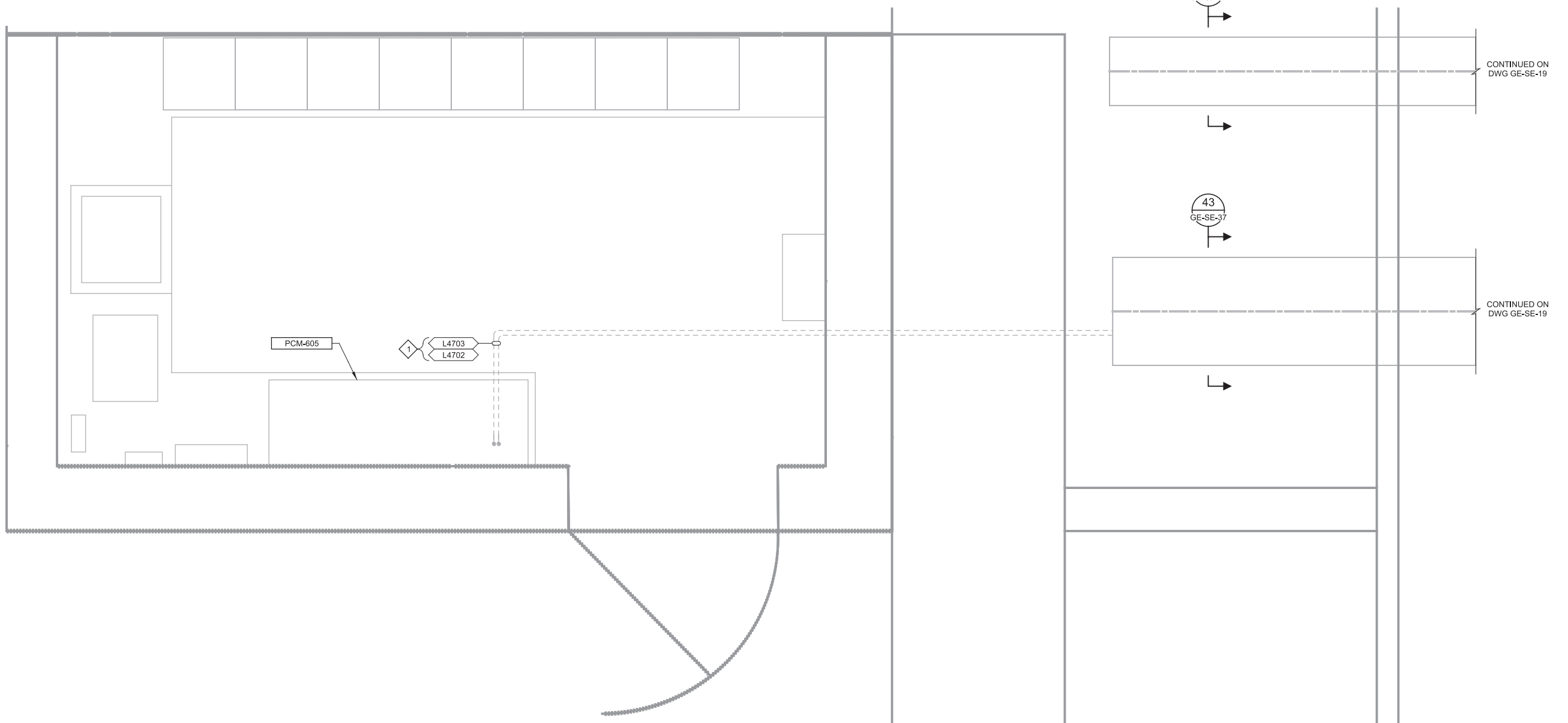
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KEY NOTES:

1 REMOVE EXISTING FIBER CABLE FROM CONDUIT L4703. THIS CABLE CURRENTLY CONNECTS PCM-605 TO VCP-610 IN BLOWER BUILDING NO. 3. INSTALL NEW SINGLE MODE FIBER OPTIC CABLE IN CONDUIT L4702 FOR CONNECTION TO PCM-2100 IN NEW GRIT REMOVAL BUILDING.



A PLAN
GE-SE-19 SCALE: 1"=1'
FILE: 10548A1001E106

REV	DATE	BY	DESCRIPTION

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MARCH 2019



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West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

BIOREACTOR NO. 5

ELECTRICAL ROOM PLAN

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E16-13

SHEET NO.
65 OF 159

Plot Date: 01-MAR-2019 3:41:48 PM

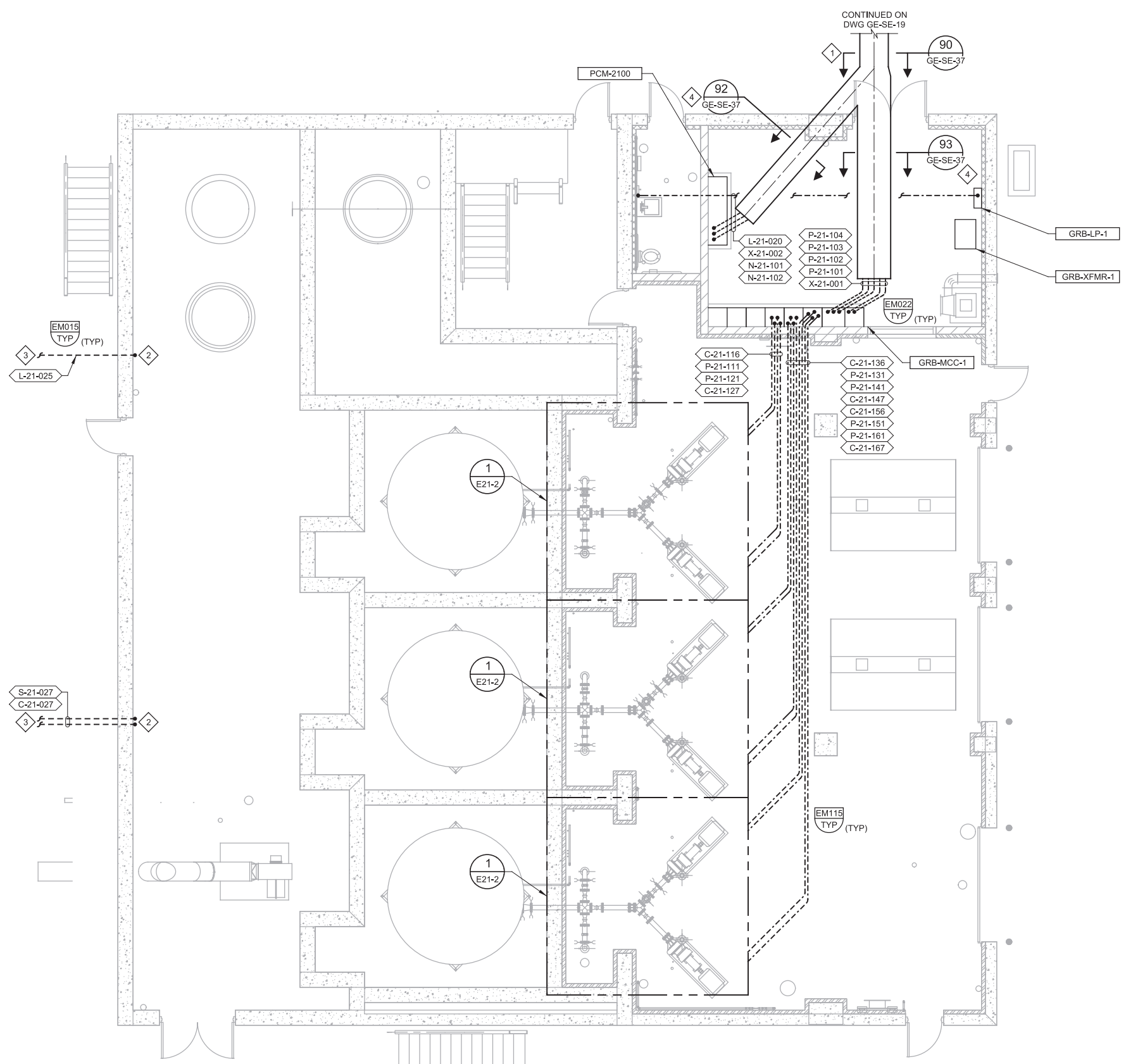
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Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 24:1

LAST SAVED BY: jefevre

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F



- GENERAL NOTES:**
1. ALL CONDUIT AND WIRE FOR THE BIOFILTER IS PART OF ALTERNATE BID ITEM #4. REFER TO SECTION 01230.
- KEY NOTES:**
- 1 CONTINUE DUCT BANK CONSTRUCTION INTO THE MCC AND PCM.
 - 2 CONDUITS CONTINUE ON DWG E21-3.
 - 3 CONDUITS CONTINUE TO BIOFILTER. REFER TO DWG E21-7 FOR CONTINUATION.
 - 4 DUCT BANK MUST BE A MINIMUM OF 6" BELOW BUILDING FOUNDATION.

A PLAN
 GE-SE-19 SCALE: 3/16" = 1'-0"
 FILE: 10548A1021E105

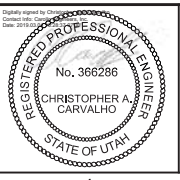
REV	DATE	BY	DESCRIPTION

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SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

GRIT REMOVAL BUILDING LOWER LEVEL UNDERGROUND POWER AND CONTROL PLAN

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E21-1

SHEET NO.
66 OF 159

Plot Date: 01-MAR-2019 3:40:14 PM

User: svcBW

Model: Layout1

ColorTable: gshade.ctb

DesignScript: Carollo_Std_Pen_v0905.pen

PlotScale: 2:1

LAST SAVED BY: jfevre

1 2 3 4 5 6 7 8 9 10 11 12 13

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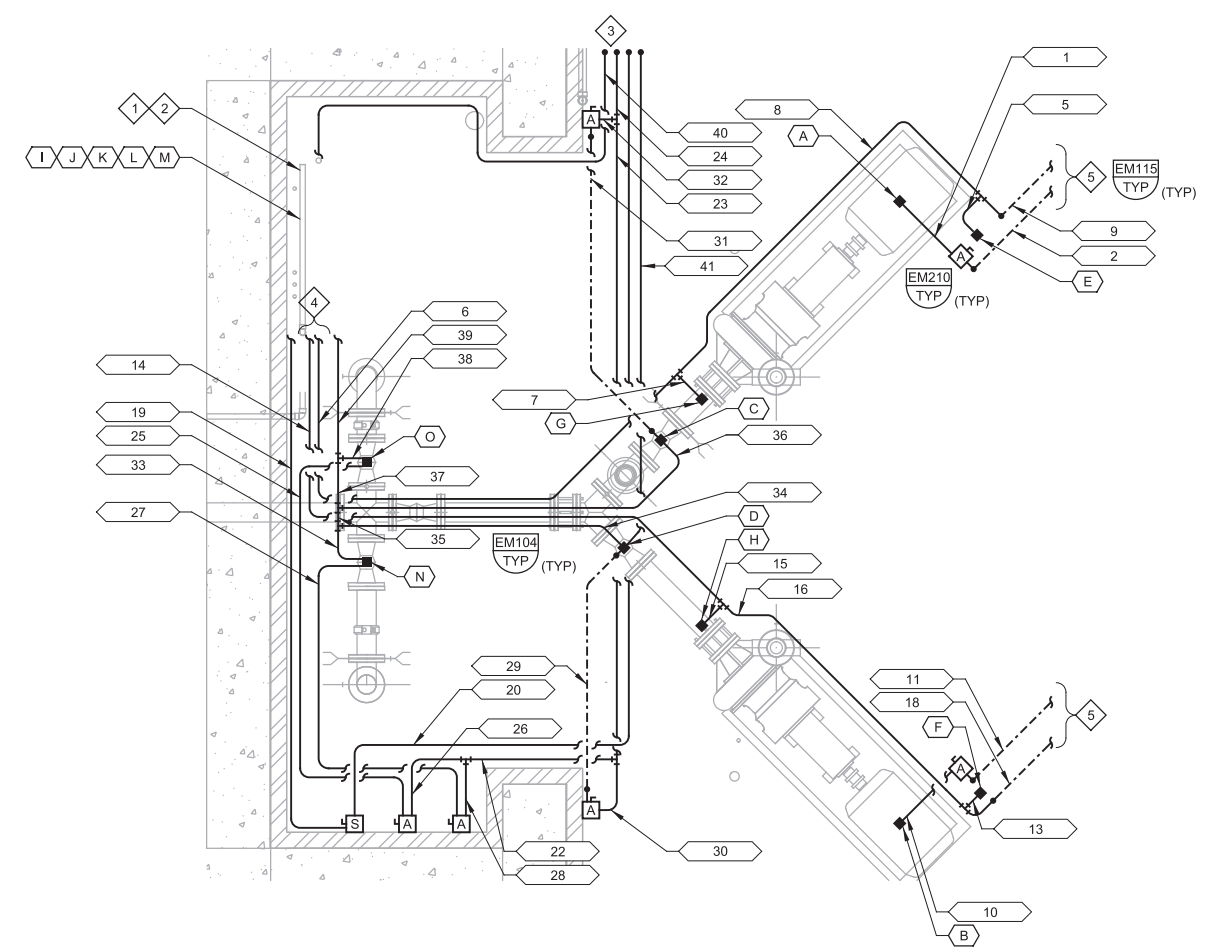
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1 **DETAIL**
E21-1 SCALE: 1/2" = 1'-0"
FILE: 10548A1021E105

GENERAL NOTES:

1. ALL EXPOSED CONDUIT FOR GRIT BASIN 3, GRIT PUMP 5 AND GRIT PUMP 6 AND ALL WIRING FOR THE SAME IS PART OF ALTERNATE BID ITEM #3. REFER TO SECTION 01230.

KEY NOTES:

1. SEAL WATER PANEL.
2. GRIT FLUIDIZING VALVE LOCATED IN SEAL WATER PANEL.
3. CONDUITS CONTINUE ON DRAWING E21-3.
4. PROVIDE A CONDUIT TEE AND TYPE SLT CONDUIT TO MAKE FINAL CONNECTIONS TO THE SEAL WATER SOLENOID AND FLOW SWITCH ON THE SEAL WATER PANEL.
5. CONDUITS CONTINUE ON DRAWING E21-1.

EQUIPMENT	GRIT BASIN NO. 1	GRIT BASIN NO. 2	GRIT BASIN NO. 3
P&ID	PI21-01,PI21-04	PI21-02,PI21-05	PI21-03,PI21-06
A	PMP-21.210	PMP-21.230	PMP-21.250
B	PMP-21.220	PMP-21.240	PMP-21.260
C	EDR-21.211	EDR-21.231	EDR-21.251
D	EDR-21.221	EDR-21.241	EDR-21.261
E	LCP-21.210	LCP-21.230	LCP-21.250
F	LCP-21.220	LCP-21.240	LCP-21.260
G	PSL-21.212	PSL-21.232	PSL-21.252
H	PSL-21.222	PSL-21.242	PSL-21.262
I	SV-21.214	SV-21.234	SV-21.254
J	FSL-21.216	FSL-21.236	FSL-21.256
K	SV-21.224	SV-21.244	SV-21.264
L	FSL-21.226	FSL-21.246	FSL-21.266
M	EDR-21.113	EDR-21.123	EDR-21.133
N	EDR-21.115	EDR-21.125	EDR-21.135
O	EDR-21.116	EDR-21.126	EDR-21.136

CONDUIT	GRIT BASIN NO. 1	GRIT BASIN NO. 2	GRIT BASIN NO. 3
1	P-21-110	P-21-130	P-21-150
2	P-21-111	P-21-131	P-21-151
3	NOT USED	NOT USED	NOT USED
4	NOT USED	NOT USED	NOT USED
5	C-21-112	C-21-132	C-21-152
6	C-21-113	C-21-133	C-21-153
7	C-21-114	C-21-134	C-21-154
8	C-21-115	C-21-135	C-21-155
9	C-21-116	C-21-136	C-21-156
10	P-21-120	P-21-140	P-21-160
11	P-21-121	P-21-141	P-21-161
12	NOT USED	NOT USED	NOT USED
13	C-21-121	C-21-141	C-21-161
14	C-21-123	C-21-143	C-21-163
15	C-21-124	C-21-144	C-21-164
16	C-21-125	C-21-145	C-21-165
17	NOT USED	NOT USED	NOT USED
18	C-21-127	C-21-147	C-21-167
19	L-21-213	L-21-233	L-21-253
20	L-21-214	L-21-234	L-21-254
21	NOT USED	NOT USED	NOT USED
22	P-21-220	P-21-240	P-21-260
23	P-21-223	P-21-243	P-21-263
24	P-21-224	P-21-244	P-21-264
25	P-21-216	P-21-236	P-21-256
26	P-21-217	P-21-237	P-21-257
27	P-21-215	P-21-235	P-21-255
28	P-21-218	P-21-238	P-21-258
29	P-21-221	P-21-241	P-21-261
30	P-21-222	P-21-242	P-21-262
31	P-21-231	P-21-251	P-21-271
32	P-21-232	P-21-252	P-21-272
33	N-21-115	N-21-125	N-21-135
34	N-21-116	N-21-126	N-21-136
35	N-21-117	N-21-127	N-21-137
36	N-21-118	N-21-128	N-21-138
37	N-21-119	N-21-129	N-21-139
38	N-21-120	N-21-130	N-21-140
39	N-21-121	N-21-131	N-21-141
40	N-21-122	N-21-132	N-21-142
41	N-21-150	N-21-160	N-21-170

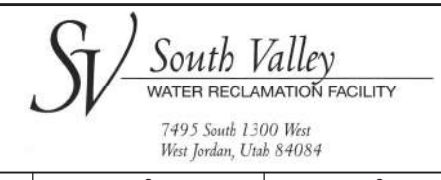
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BJR

DATE
MARCH 2019



SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

GRIT REMOVAL BUILDING

LOWER LEVEL POWER AND CONTROL DETAIL

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E21-2

SHEET NO.
67 OF 159

Plot Date: 01-MAR-2019 3:40:50 PM

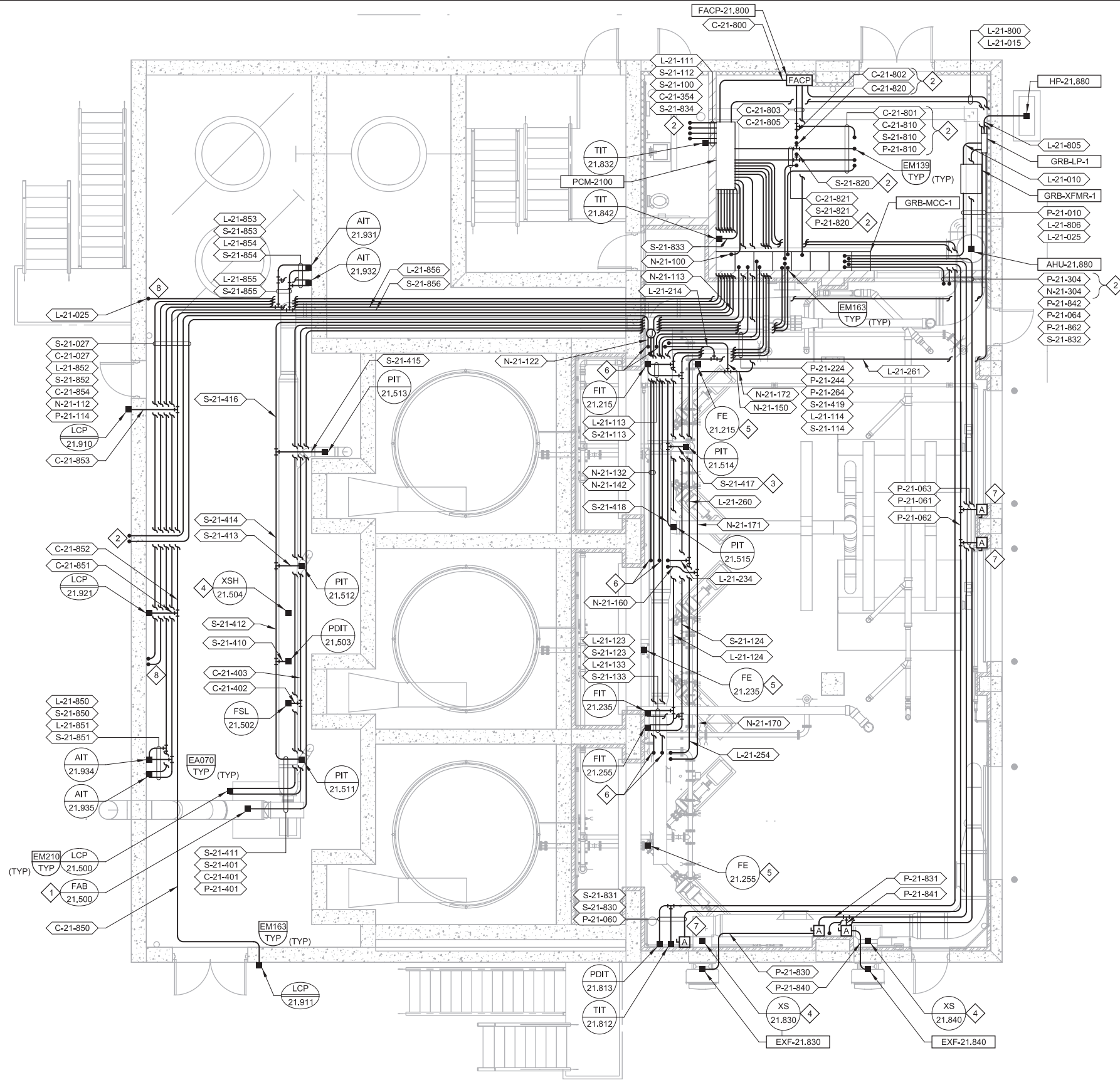
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LAST SAVED BY: jefevre

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F



- KEY NOTES:**
- 1 ODOR CONTROL FAN LOCATED BELOW INFLUENT CHANNEL.
 - 2 CONDUITS CONTINUE ON DRAWING E21-4.
 - 3 LOCATED ON THE FOUL AIR DUCT.
 - 4 CONDUIT AND CABLE FOR THE DUCT SMOKE DETECTORS IS PROVIDED BY THE FIRE ALARM SYSTEM INSTALLER.
 - 5 PROVIDE CONDUITS AS REQUIRED FOR THE MANUFACTURERS CABLES BETWEEN THE FLOW ELEMENT AND THE FLOW TRANSMITTER.
 - 6 CONDUITS CONTINUE ON DRAWING E21-2.
 - 7 PROVIDE A 3/4" CONDUIT WITH 3-#12 PHSE CONDUCTORS AND 1-#12 GROUND FROM THE DISCONNECT TO THE DOOR OPERATOR. PROVIDE A 3/4" CONDUIT BETWEEN THE CONTROL STATION AND THE DOOR OPERATOR.
 - 8 CONDUITS CONTINUE ON DRAWING E21-1.

A PLAN
 GE-SE-19 SCALE: 3/16" = 1'-0"
 FILE: 10548A1021E101

REV	DATE	BY	DESCRIPTION
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BJR

DATE
MARCH 2019



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 WATER RECLAMATION FACILITY

7495 South 1300 West
 West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

**GRIT REMOVAL BUILDING LOWER LEVEL
 OVERHEAD POWER AND CONTROL PLAN**

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E21-3

SHEET NO.
68 OF 159

Plot Date: 01-MAR-2019 3:41:47 PM

User: svcPW

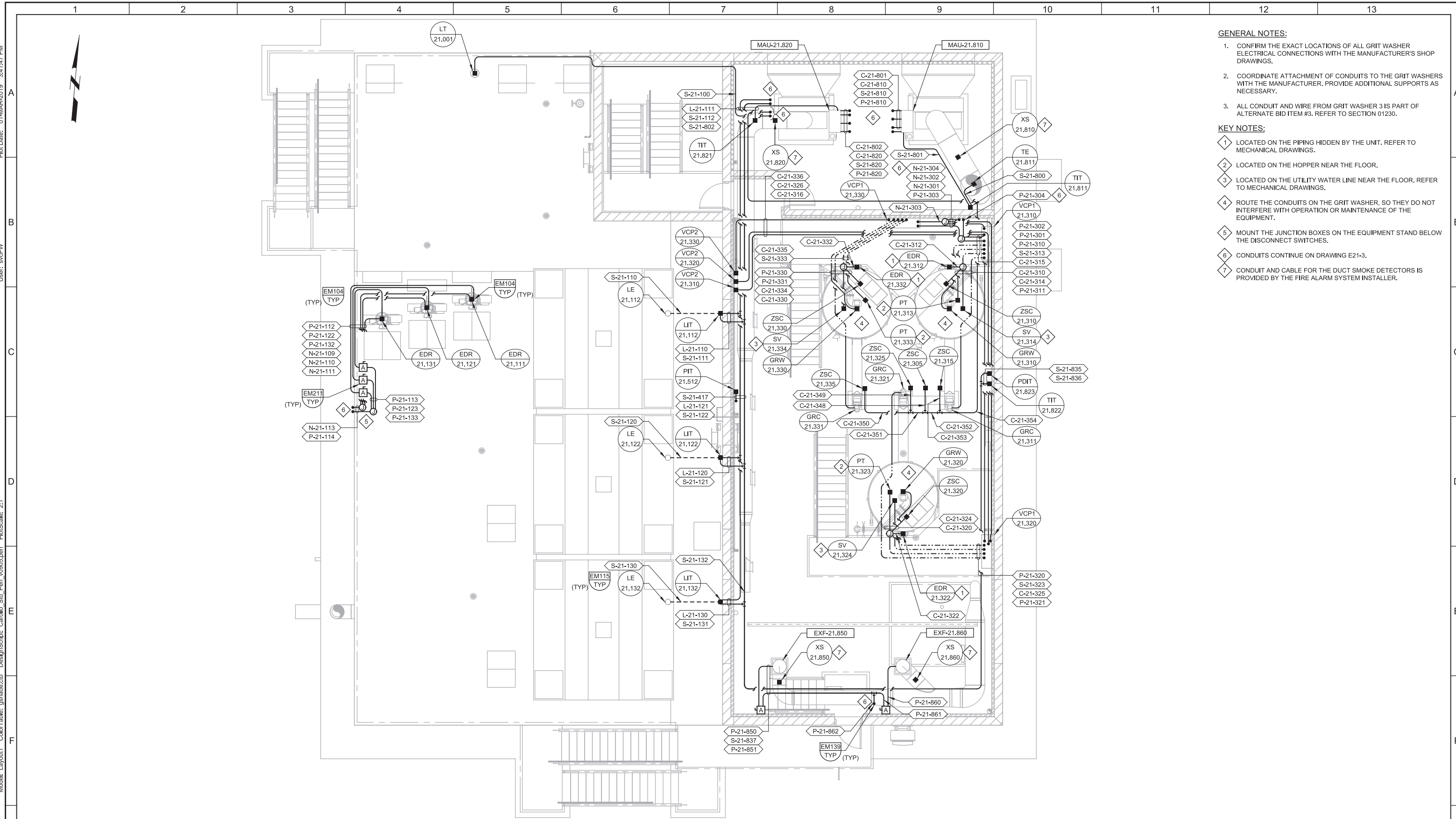
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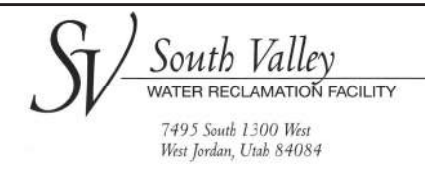
PlotScale: 2:1

LAST SAVED BY: jfevre



- GENERAL NOTES:**
- CONFIRM THE EXACT LOCATIONS OF ALL GRIT WASHER ELECTRICAL CONNECTIONS WITH THE MANUFACTURER'S SHOP DRAWINGS.
 - COORDINATE ATTACHMENT OF CONDUITS TO THE GRIT WASHERS WITH THE MANUFACTURER. PROVIDE ADDITIONAL SUPPORTS AS NECESSARY.
 - ALL CONDUIT AND WIRE FROM GRIT WASHER 3 IS PART OF ALTERNATE BID ITEM #3. REFER TO SECTION 01230.
- KEY NOTES:**
- LOCATED ON THE PIPING HIDDEN BY THE UNIT. REFER TO MECHANICAL DRAWINGS.
 - LOCATED ON THE HOPPER NEAR THE FLOOR.
 - LOCATED ON THE UTILITY WATER LINE NEAR THE FLOOR. REFER TO MECHANICAL DRAWINGS.
 - ROUTE THE CONDUITS ON THE GRIT WASHER, SO THEY DO NOT INTERFERE WITH OPERATION OR MAINTENANCE OF THE EQUIPMENT.
 - MOUNT THE JUNCTION BOXES ON THE EQUIPMENT STAND BELOW THE DISCONNECT SWITCHES.
 - CONDUITS CONTINUE ON DRAWING E21-3.
 - CONDUIT AND CABLE FOR THE DUCT SMOKE DETECTORS IS PROVIDED BY THE FIRE ALARM SYSTEM INSTALLER.

B PLAN
 GE-SE-19 SCALE: 3/16" = 1'-0"
 FILE: 10548A1021E102



SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
 ELECTRICAL
GRIT REMOVAL BUILDING
UPPER LEVEL POWER AND CONTROL PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 10548A.10
 DRAWING NO. **E21-4**
 SHEET NO. 69 OF 159

REV	DATE	BY	DESCRIPTION

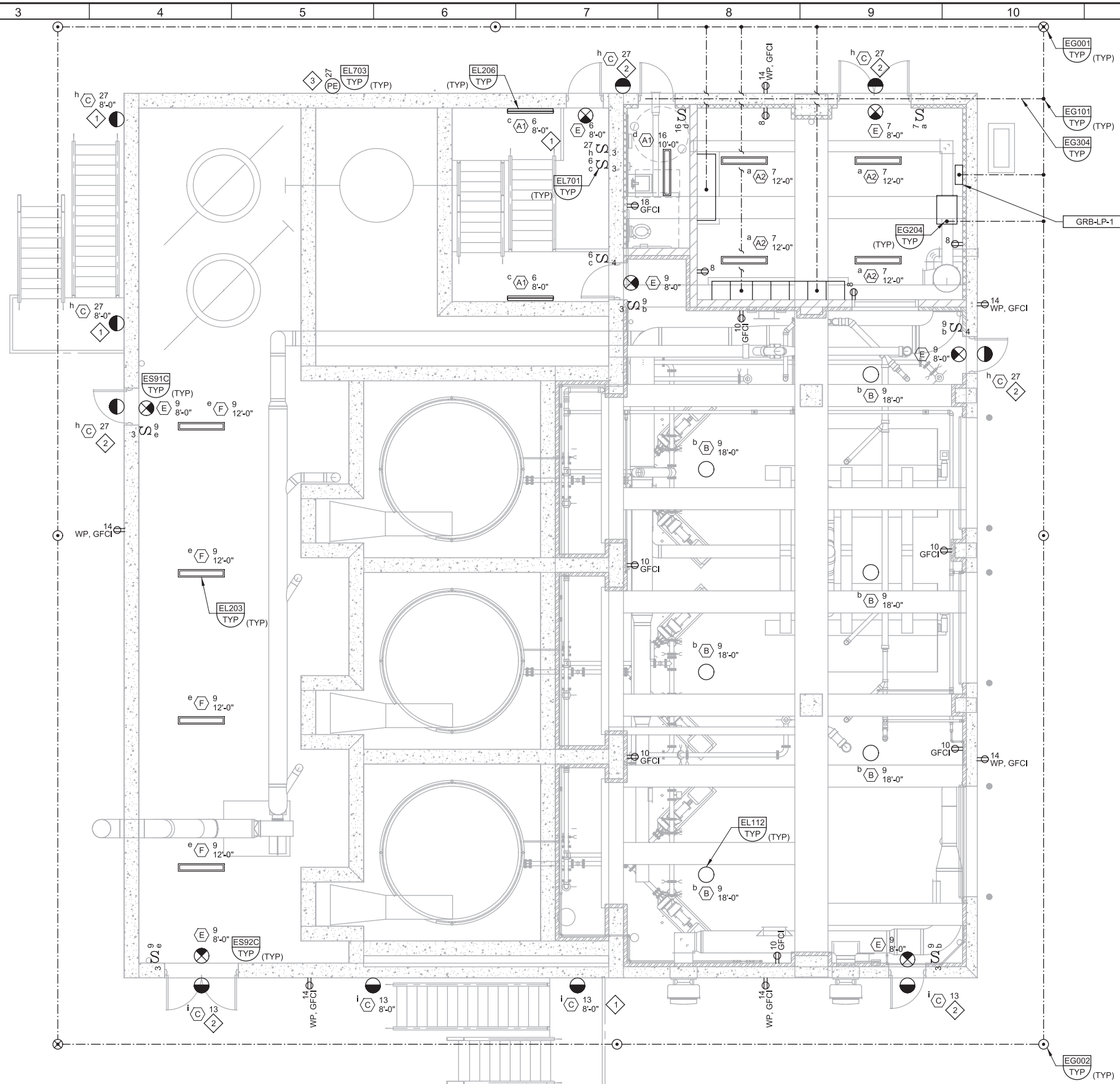
DESIGNED CAC	
DRAWN AAW	
CHECKED BJR	
DATE MARCH 2019	

Plot Date: 01-MAR-2019 3:40:27 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jfevre



- GENERAL NOTES:**
1. ALL LUMINAIRES AND RECEPTACLES ON THIS DRAWING ARE POWERED FROM PANEL GRB-LP-1. CIRCUIT NUMBERS REFER TO GRB-LP-1 PANEL SCHEDULE.
 2. CONDUIT ROUTING FOR LIGHTS AND RECEPTACLES IS NOT SHOWN. USE THE PROCESS POWER AND CONTROL CONDUIT ROUTING AS A GUIDE AND INSTALL LIGHTING AND RECEPTACLE CONDUITS AND WIRING IN A SIMILAR MANNER.
 3. LIGHTING AND RECEPTACLE CONDUITS AND CONDUIT FITTING TYPES SHALL BE THE SAME AS THOSE FOR THE PROCESS POWER AND CONTROL CONDUIT INSTALLATION WITHIN THE SAME AREA.
 4. LIGHTING AND RECEPTACLE CONDUITS SHALL BE SIZED IN ACCORDANCE WITH THE CONDUIT FILL REQUIREMENTS IN THE SPECIFICATIONS. CONDUIT SHALL NOT BE SMALLER THAN 0.75 INCH.
 5. CONDUCTORS FOR LIGHTING AND RECEPTACLE CIRCUITS SHALL BE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND SHALL BE DERATED TO ACCOUNT FOR MULTIPLE CONDUCTORS IN THE SAME RACEWAY AND FOR VOLTAGE DROP.
 6. MOUNT LIGHT SWITCHES AND RECEPTACLES 48 INCHES ABOVE FINISHED GRADE.
 7. PROVIDE SECURITY ROUGH IN AT EACH EXTERIOR DOOR PER TYPICAL DETAILS.
- KEY NOTES:**
- 1 LUMINAIRE MOUNTING HEIGHT IS FROM THE STAIR LANDING LOCATED DIRECTLY BELOW THE FIXTURE.
 - 2 UNLESS OTHERWISE NOTED, COORDINATE THE MOUNTING HEIGHT OF THE EXTERIOR LUMINAIRES WITH THE ARCHITECTURAL DRAWINGS.
 - 3 PROVIDE A PHOTOCELL BYPASS SWITCH.

A PLAN
 GESE-19 SCALE: 3/16" = 1'-0"
 FILE: 10548A1021E103

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED
CAC

DRAWN
AAW

CHECKED
BJR

DATE
MARCH 2019



SV South Valley
 WATER RECLAMATION FACILITY

7495 South 1300 West
 West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

GRIT REMOVAL BUILDING

LOWER LEVEL LIGHTING AND GROUNDING PLAN

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E21-5

SHEET NO.
70 OF 159

Plot Date: 01-MAR-2019 3:40:33 PM

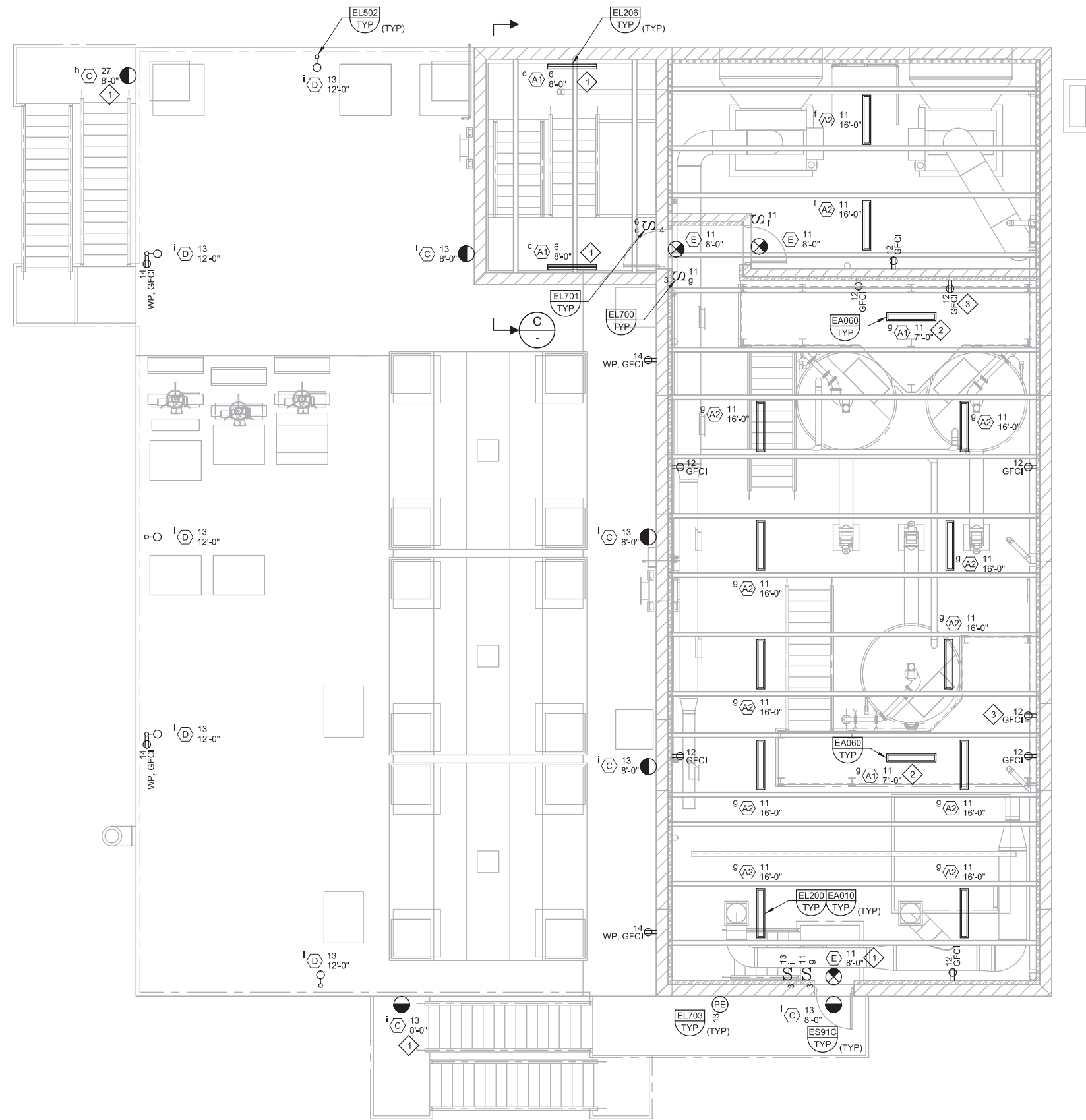
User: svcPW

Model: Layout1

ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: jefevre

1 2 3 4 5 6 7 8 9 10 11 12 13

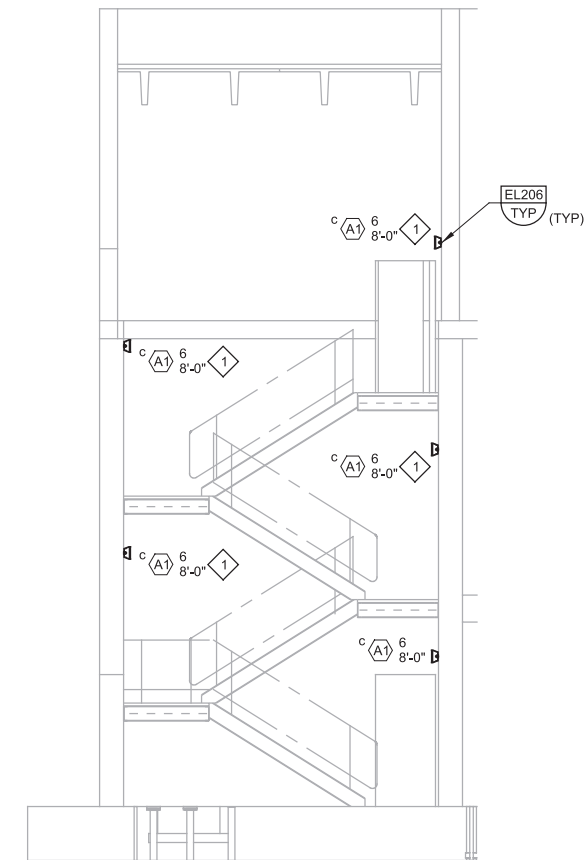


GENERAL NOTES:

1. ALL LUMINAIRES AND RECEPTACLES ON THIS DRAWING ARE POWERED FROM PANEL GRB-LP-1.
2. CONDUIT ROUTING FOR LIGHTS AND RECEPTACLES IS NOT SHOWN. USE THE PROCESS POWER AND CONTROL CONDUIT ROUTING AS A GUIDE AND INSTALL LIGHTING AND RECEPTACLE CONDUITS AND WIRING IN A SIMILAR MANNER.
3. LIGHTING AND RECEPTACLE CONDUITS AND CONDUIT FITTING TYPES SHALL BE THE SAME AS THOSE FOR THE PROCESS POWER AND CONTROL CONDUIT INSTALLATION WITHIN THE SAME AREA.
4. LIGHTING AND RECEPTACLE CONDUITS SHALL BE SIZED IN ACCORDANCE WITH THE CONDUIT FILL REQUIREMENTS IN THE SPECIFICATIONS. CONDUIT SHALL NOT BE SMALLER THAN 0.75 INCH.
5. CONDUCTORS FOR LIGHTING AND RECEPTACLE CIRCUITS SHALL BE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND SHALL BE DERATED TO ACCOUNT FOR MULTIPLE CONDUCTORS IN THE SAME RACEWAY AND FOR VOLTAGE DROP.
6. UNLESS OTHERWISE NOTED, MOUNT LIGHT SWITCHES AND RECEPTACLES 48 INCHES ABOVE FINISHED GRADE.
7. PROVIDE SECURITY ROUGH IN AT EACH EXTERIOR DOOR PER TYPICAL DETAILS.

KEY NOTES:

- 1 LUMINAIRE MOUNTING HEIGHT IS FROM THE STAIR LANDING LOCATED DIRECTLY BELOW THE FIXTURE.
- 2 LUMINAIRE IS MOUNTED BELOW MEZZANINE PLATFORM.
- 3 MOUNT RECEPTACLE 48 INCHES ABOVE MEZZANINE PLATFORM.

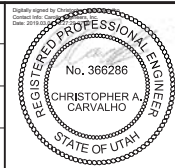


B PLAN
GE-SE-19 SCALE: 3/16" = 1'-0"
FILE: 10548A1021E104

C SECTION
SCALE: 3/16" = 1'-0"
FILE: 10548A1021E301

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED
CAC
DRAWN
EYP
CHECKED
BJR
DATE
MARCH 2019



SV South Valley
WATER RECLAMATION FACILITY
7495 South 1300 West
West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
ELECTRICAL
GRIT REMOVAL BUILDING
UPPER LEVEL LIGHTING AND GROUNDING PLAN

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1"	JOB NO. 10548A.10
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	DRAWING NO. E21-6
	SHEET NO. 71 OF 159

Plot Date: 01-MAR-2019 3:40:21 PM

User: svcPW

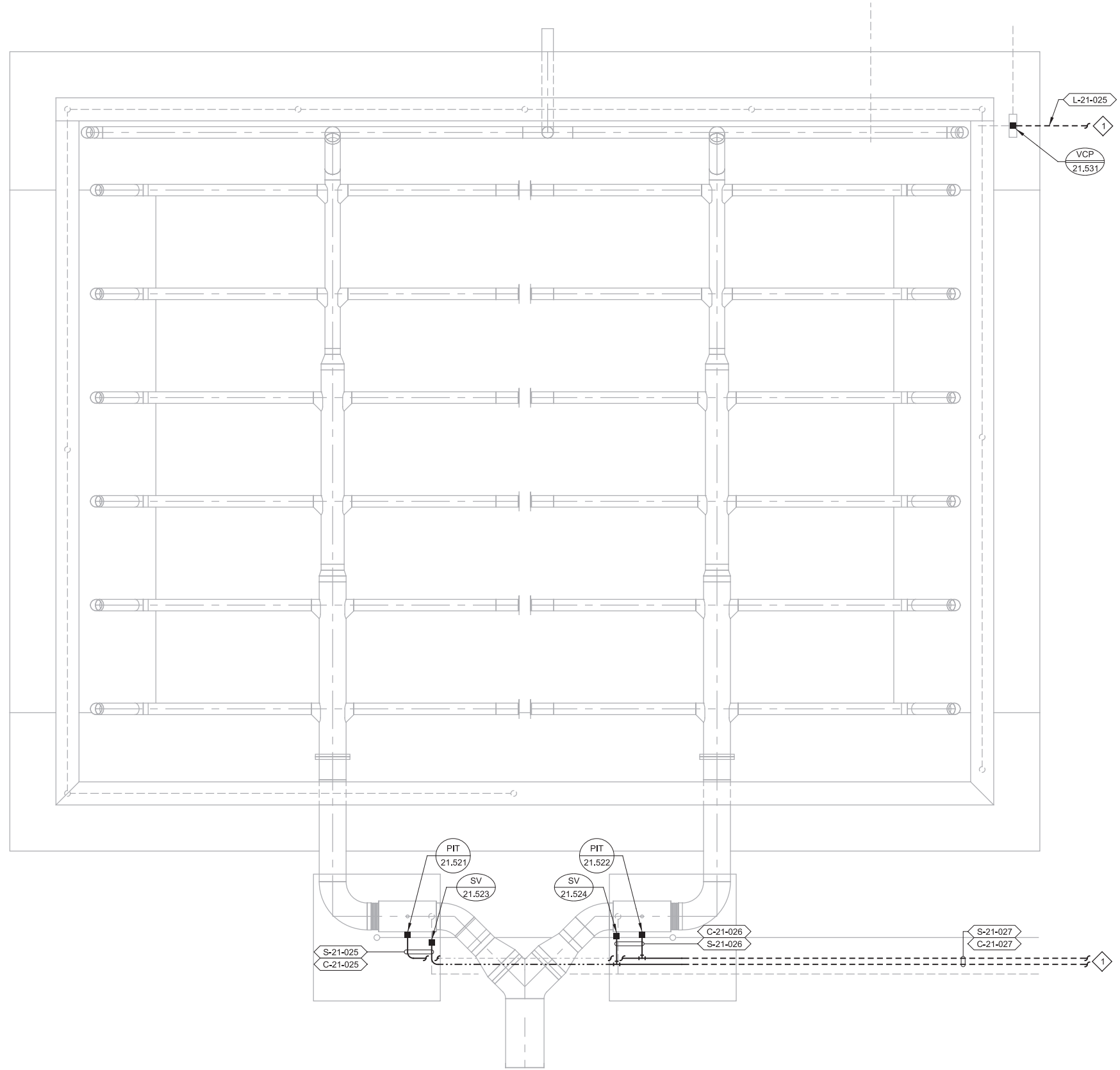
Plot Scale: 2:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen

LAST SAVED BY: jefeyre

1 2 3 4 5 6 7 8 9 10 11 12 13

A B C D E F



GENERAL NOTES:

- 1. ALL CONDUIT AND WIRE FOR THE BIOFILTER IS PART OF ALTERNATE BID ITEM #4. REFER TO SECTION 01230.

KEY NOTES:

- 1 TYPE PCS DIRECT BURIED CONDUIT TO THE GRB. REFER TO DRAWING E21-1 FOR CONTINUATION.

A PLAN
 GESE-19 SCALE: 3/8" = 1'-0"
 FILE: 10548A1021E106

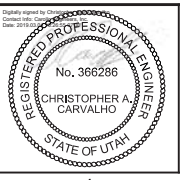
REV	DATE	BY	DESCRIPTION

DESIGNED
CAC

DRAWN
EYP

CHECKED
BJR

DATE
MARCH 2019



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7495 South 1300 West
 West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5

ELECTRICAL

BIOFILTER ELECTRICAL PLAN

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10

DRAWING NO.
E21-7

SHEET NO.
72 OF 159

1	2	3	4	5	6	7	8	9	10	11	12	13				
SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	SYMBOL	DRAWING VISIBLE FIELDS	FIELD - 1	FIELD - 2	FIELD - 3	FIELD - 4	FIELD - 5	FIELD - 6	
SCADA SYSTEM OPERATOR INTERFACE TERMINAL	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM NUM - NUMERIC SP - SET POINT STATUS TREND	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	INSTRUMENT PRIMARY ELEMENT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE	
HARDWIRED I/O POINT	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2 4	REFER 3	AI - ANALOG INPUT AO - ANALOG OUTPUT DI - DISCRETE INPUT DO - DISCRETE OUTPUT HSC - HIGH SPEED COUNTER INPUT RTD - RTD INPUT	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	INSTRUMENT/CONTROL ELEMENT PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - EXISTING/FUTURE	REFER 1	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	
DIGITAL BUS I/O REGISTER (FIELD BUS I/O)	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	BUS ID CNET - CONTROLNET DNET - DEVCENET ENET - ETHERNET/IP FF - FOUNDATION FIELDBUS MB - MODBUS RTU MB+ - MODBUS PLUS MBTCP - MODBUS TCP DP - PROFIBUS DP PA - PROFIBUS PA PNET - PROFINET SERIAL - PROPRIETARY PROTOCOL	DESCRIPTION	PAC - PROGRAMMABLE AUTOMATION CONTROLLER NO. PLC - PROGRAMMABLE LOGIC CONTROLLER NO. RIO - REMOTE I/O VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	INSTRUMENT/CONTROL ELEMENT PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY IR - INTERPOSING RELAY	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
HUMAN MACHINE INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	ACTION ALARM NUM - NUMERIC SP - SET POINT STATUS	DESCRIPTION	HMI - HUMAN MACHINE INTERFACE NO. LCP - LOCAL CONTROL PANEL NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	INSTRUMENT/CONTROL ELEMENT AUXILIARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 3 XR - PROTECTION RELAY CR - CONTROL RELAY IR - INTERPOSING RELAY	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE
PILOT DEVICE OPERATOR INTERFACE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	REFER 1 2	REFER 3	AM - AUTO/MANUAL BYPASS - BYPASS CL - CLOSE E-STOP - EMERGENCY STOP FRLR - FIXED RATE/LEVEL RATE HOA - HAND /OFF/AUTO JOHC - JOG OPEN/HOLD/CLOSE JOUCC - JOG OPEN/JOG CLOSE LH - LOW/HIGH LOR - LOCAL/OFF/REMOTE LOS - LOCK OUT STOP LS - LEAD/STANDBY LSR - LOCAL/STOP/REMOTE NOOT - NO OFFLINE/OFFLINE TRANSITION OC - OPEN/CLOSE OLOL - ON LINE/OFF LINE OO - OFF/ON OP - OPEN OSC - OPEN/STOP/CLOSE RST - RESET SAAM - SEMI AUTO/AUTO/MANUAL SEL - SELECT SP - STOP SPD - SPEED SS - START/STOP ST - START	DESCRIPTION	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. RVSS - REDUCED VOLTAGE SOLID STARTER NO. VCP - VENDOR CONTROL PANEL NO. VFD - VARIABLE FREQUENCY DRIVE NO.	E - EXISTING F - FUTURE	FIELD EQUIPMENT NON-POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION/SIZE 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 3	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE
POWER DEVICE PRIMARY FUNCTION OPERATOR ACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE/PHASE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER DISC - DISCONNECT FU - FUSE	REFER 3	TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 3P 480VAC - 2P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	FIELD EQUIPMENT PRIMARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - LOCATION 6 - EXISTING/FUTURE	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION	AREA NO. BUILDING NO. ROOM NO.	E - EXISTING F - FUTURE	
POWER DEVICE AUXILIARY FUNCTION FOR OPERATOR ACCESSIBLE DEVICES	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE	DISC - DISCONNECT	REFER 3	DESCRIPTION	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	FIELD EQUIPMENT AUXILIARY FUNCTION POWERED	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - FURNISHED BY 5 - DESCRIPTION 6 - EXISTING/FUTURE	MWH - MOTOR WINDING HEATER TSH - TEMPERATURE SWITCH XSH - TORQUE SWITCH	REFER 3	REFER 3	DESCRIPTION	DESCRIPTION	E - EXISTING F - FUTURE	
POWER DEVICE PRIMARY FUNCTION OPERATOR INACCESSIBLE	1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE/PHASE 5 - LOCATION 6 - EXISTING/FUTURE	CB - CIRCUIT BREAKER FU - FUSE	REFER 3	MCP - MOTOR CIRCUIT PROTECTOR SS - SOLID STATE CIRCUIT BREAKER TM - THERMAL MAGNETIC CIRCUIT BREAKER	24VDC - 1P 120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	DP - DISTRIBUTION PANEL NO. LCP - LOCAL CONTROL PANEL NO. LP - LIGHTING PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. PP - POWER PANEL NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	FIELD EQUIPMENT STARTER/DRIVE CUBICLE/CABINET	1 - TAG 2 - LOOP NUMBER 3 - TYPE 4 - VOLTAGE/PHASE 5 - LOCATION 6 - EXISTING/FUTURE	MS - MOTOR STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER VFD - VARIABLE FREQUENCY DRIVE	REFER 3	FVNR - FULL VOLTAGE NON-REVERSING STARTER FVR - FULL VOLTAGE REVERSING STARTER PWS - PART-WINDING STARTER RVAT - REDUCED VOLTAGE AUTO TRANSFORMER STARTER RVSS - REDUCED VOLTAGE SOLID STATE STARTER TS1W - TWO SPEED SINGLE WINDING TS2W - TWO SPEED TWO WINDINGS VFD - VARIABLE FREQUENCY DRIVE	120VAC - 1P 208VAC - 2P 208VAC - 3P 240VAC - 2P 240VAC - 3P 480VAC - 3P 2400VAC - 3P 4160VAC - 3P	LCP - LOCAL CONTROL PANEL NO. MCC - MOTOR CONTROL CENTER NO. PCM - PROCESS CONTROL MODULE NO. VCP - VENDOR CONTROL PANEL NO.	E - EXISTING F - FUTURE	

INSTRUMENT BUBBLE LOCATIONS		NOTES
SCADA		1 INSTRUMENT TAG IDENTIFICATION LETTERS TABLE 2 OPERATOR PILOT DEVICE LEGEND 3 EQUIPMENT TAGGING TABLE 4 I/O TYPE DESIGNATIONS TABLE 5 INSTRUMENT TYPE DESIGNATIONS TABLE 6 FURNISHED BY: FBO FURNISHED BY OWNER FV FURNISHED BY VENDOR
CONTROL PANEL I/O		
CONTROL PANEL OPERATOR INTERFACE CONTROL DEVICES		
POWER SOURCE		
FIELD		

REV	DATE	BY	DESCRIPTION

DESIGNED
MGH

DRAWN
CEY

CHECKED
DJC

DATE
MARCH 2019



SV South Valley
WATER RECLAMATION FACILITY

7495 South 1300 West
West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY

PROJECT 5
INSTRUMENTATION

SYMBOLS AND ABBREVIATIONS - I

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 10548A.10
DRAWING NO. **GI-01**
SHEET NO. 73 OF 159

INSTRUMENT TAG IDENTIFICATION LETTERS

INSTRUMENT LINE SYMBOLS

Table with 26 columns (A-Z) and 26 rows (A-Z) for instrument function and measured variable. Columns include: ANALYSIS, BURNER FLAME, CONDUCTIVITY, DENSITY, FLOW, FLOW RATIO, GAUGING, HAND, CURRENT, POWER, TIME, LEVEL, MOISTURE, EMERGENCY SHUTDOWN, PRESSURE, DIFFERENTIAL PRESSURE, QUANTITY, RADIOACTIVITY, SPEED, TEMPERATURE, DIFFERENTIAL TEMPERATURE, MULTIVARIABLE, VISCOSITY, WEIGHT, UNCLASSIFIED, VIBRATION, STATUS, POSITION.

Table showing instrument line symbols for various connection types: PNEUMATIC SIGNAL, ELECTRIC SIGNAL, HYDRAULIC SIGNAL, CAPILLARY TUBE, ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED), ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED), INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK), COPPER ETHERNET, FIBER OPTIC ETHERNET, WIRELESS ETHERNET, PROFIBUS DP, PROFIBUS PA, DEVICENET, FOUNDATION FIELDBUS.

PROCESS LINE SYMBOLS

Table showing process line symbols: PRIMARY PROCESS FLOW IN PIPE, SECONDARY PROCESS FLOW IN PIPE, PRIMARY PROCESS FLOW IN CHANNEL, SECONDARY PROCESS FLOW IN CHANNEL.

DESIGNATIONS

Table showing equipment enclosure designations: EQUIPMENT ENCLOSURE, EXISTING, FUTURE.

MISCELLANEOUS P&ID SYMBOLS

Table showing miscellaneous P&ID symbols: CHEMICAL INJECTION POINT, CONTINUATION TAG, PIPE CALLOUT, SIGNAL CONTINUATION.

* REFER TO OPERATOR PILOT DEVICE LEGEND
** LETTER INDICATES POSITION (O=OPEN, C=CLOSED, R=RAISE, L=LOWER, ETC)
*** PI# # = 1,2,3 ETC. AND REPRESENTS A UNIQUE IDENTIFIER AND IS APPLICABLE TO ALL ITEMS IN THE TABLE ABOVE
**** COULD ALSO BE PIS - FOR PRESSURE INDICATING SWITCH

OPERATOR PILOT DEVICE LEGEND

Table with 26 columns (A-Z) and 26 rows (A-Z) for pilot device function and device type. Columns include: LOCAL-OFF-REMOTE (LOR) OR LOCAL-STOP-REMOTE (LSR), STOP (SP), START (ST), HAND-OFF-AUTO (HOA), OFF-ON (OO), SELECT (SEL), OPEN-STOP-CLOSE (OSC), JOG OPEN-HOLD-CLOSE (JOHC), SEMI-AUTO-AUTO-MANUAL (SAAM), LEAD-LAG-STANDBY (LGS), JOG OPEN-JOG CLOSE (JOC), ONLINE-OFFLINE (OLOF), AUTO-MANUAL (AM), FIXED RATE-LEVEL RATE (FRLR), OPEN-CLOSE (OC), NO OFFLINE- OFFLINE TRANSITION (NOOT), LOW-HIGH (LH), RESET (RST), SPEED (SPD), START-STOP (STSP), E-STOP (E-SP), BYPASS (BYP), POSITION (POS).

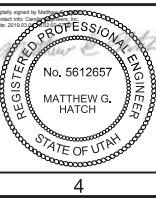
I/O TYPE DESIGNATIONS table with 4 columns: AUX1, AUX2, AUXF1, AUXH1, AUXL1, AUXR1, SVC, SVO, MS, MSF, MSH.

INSTRUMENT TYPE DESIGNATIONS table with 4 columns: AM, CAP, CG, CL, COND, DO, FMCW, HSF, IS, LEL, MAG.

SPECIFIC ABBREVIATIONS table with 4 columns: APH, BPH, BRB, BRT, BTFLY, CPH, CC*, HTR, HTU.

Revision table with columns: REV, DATE, BY, DESCRIPTION.

DESIGNED MGH, DRAWN CEY, CHECKED DJC, DATE MARCH 2019.



South Valley Water Reclamation Facility, PROJECT 5, INSTRUMENTATION, SYMBOLS AND ABBREVIATIONS - II, VERIFY SCALES, DRAWING NO. GI-02, SHEET NO. 74 OF 159.

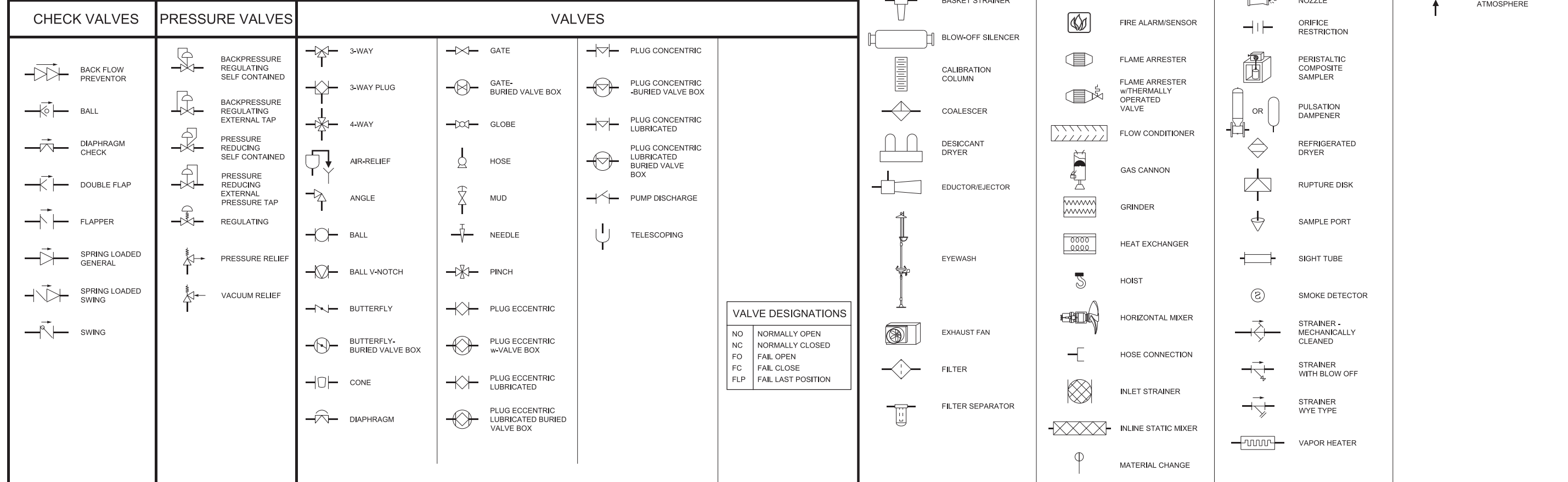
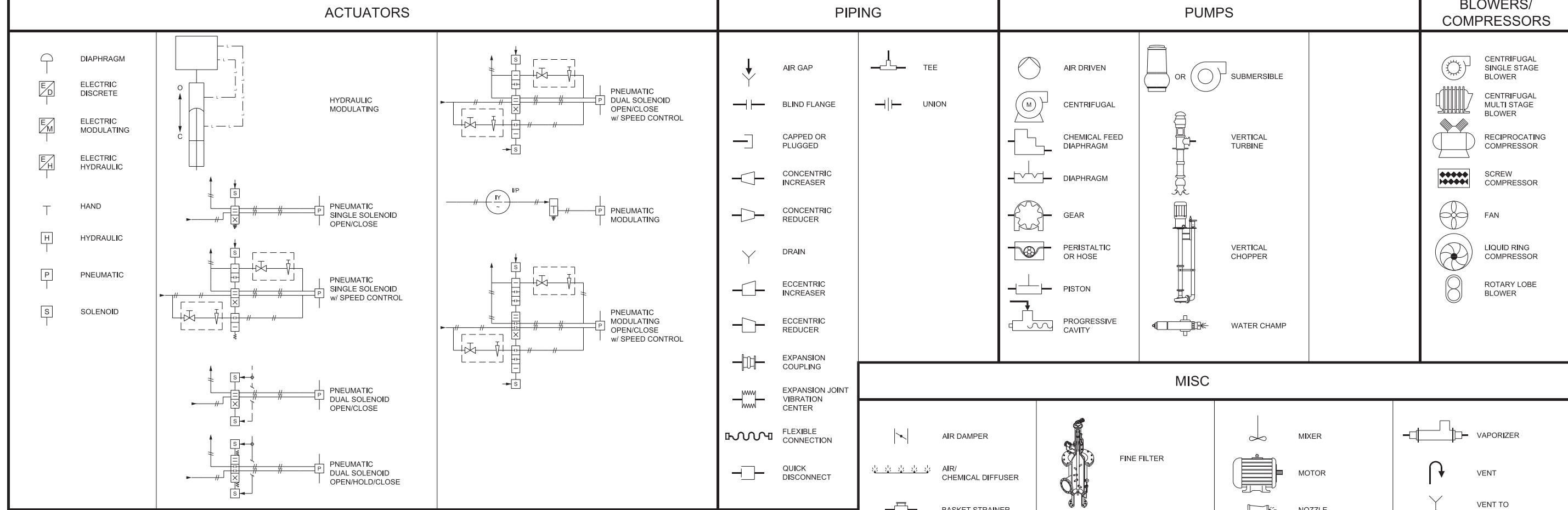
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Plot Date: 28-FEB-2019 10:15:36 AM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 2:1

LAST SAVED BY: CYoung



VALVE DESIGNATIONS	
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
FO	FAIL OPEN
FC	FAIL CLOSE
FLP	FAIL LAST POSITION

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED
MGH
DRAWN
CEY
CHECKED
DJC
DATE
MARCH 2019



SV South Valley
WATER RECLAMATION FACILITY
7495 South 1300 West
West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
INSTRUMENTATION
SYMBOLS AND ABBREVIATIONS - III

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10
DRAWING NO.
GI-03
SHEET NO.
75 OF 159

Plot Date: 28-FEB-2019 10:15:42 AM

User: svcPW

PlotScale: 2:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen

LAST SAVED BY: CYoung

GATES		FLUMES		FLOW		LEVEL		TEMPERATURE		WEIGHT		NETWORK	
SIDE VIEW	PLAN VIEW												
	FLAP		LEOPOLD-LAGCO		BATCH		BUBBLER		TEMPERATURE w/THERMOWELL		HYDRAULIC		GE FANUC RX3I PLC WITH EXPANSION BACKPLANES AS REQUIRED
	KNIFE		PALMER-BOWLUS		CORIOLIS		CAPACITANCE		TEMPERATURE GAUGE		STRAIN GAUGE		PANEL-MOUNTED HMI
	SLIDE		PARSHALL		MAGNETIC		DIFFERENTIAL PRESSURE		THERMOMETER				PC-BASED OPERATOR INTERFACE WITH PANEL-MOUNTED MONITOR
	SLUICE		REGULAR CUTTHROAT		ORIFICE		TANK						ETHERNET FIBER OPTIC TO COPPER MEDIA CONVERTER
	STOP		TRAPEZOIDAL		PADDLE WHEEL		LDIT						FIBER OPTIC SPLICE
					PITOT TUBE AVERAGING		ELECTRODE						
					PITOT TUBE/ANNUBAR		FLOAT						
					POSITIVE-DISPLACEMENT		INVERTED COLUMN						
					PROPELLER-TURBINE		RADAR PTOF						
					ROTAMETER		RADAR TDR						
					THERMAL		SUSPENDED/SUBMERSIBLE						
					ULTRASONIC DOPPLER		TUNING FORK						
					ULTRA-SONIC TRANSIT TIME		ULTRASONIC						

WEIRS

	RECTANGULAR w/o END CONTRACTIONS
	RECTANGULAR w/ END CONTRACTIONS
	V-NOTCH (TRIANGULAR)
	TRAPEZOIDAL (CIPOLLETTI)

WEIRS

	V-CONE
	VENTURI TUBE OR FLOW NOZZLE
	VORTEX

PRESSURE/VACUUM

PRESSURE	DIFFERENTIAL PRESSURE	PRESSURE SEALS
		EXAMPLE

REV	DATE	BY	DESCRIPTION
1			
2			
3			

DESIGNED	MGH
DRAWN	CEY
CHECKED	DJC
DATE	MARCH 2019



SV South Valley
WATER RECLAMATION FACILITY
7495 South 1300 West
West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY		VERIFY SCALES	JOB NO. 10548A.10
PROJECT 5		BAR IS ONE INCH ON ORIGINAL DRAWING	DRAWING NO. GI-04
INSTRUMENTATION		0 1"	SHEET NO. 76 OF 159
SYMBOLS AND ABBREVIATIONS - IV		IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	

1	2	3	4	5	6	7	8	9	10	11	12	13
PROCESS SWITCHES		HAND SWITCHES			RELAYS		TERMINAL BLOCKS		I/O		MISC	
	FLOAT SWITCH CLOSE ON RISING LEVEL		NORMALLY OPEN MOMENTARY PUSHBUTTON		RELAY COIL a = TYPE CR - CONTROL RELAY TD - TIME DELAY RELAY M - MOTOR STARTER COIL L - MOTOR STARTER COIL - LOW SPEED H - MOTOR STARTER COIL - HIGH SPEED F - MOTOR STARTER COIL - FORWARD R - MOTOR STARTER COIL - REVERSE b = TDON - TIME DELAY ON ENERGIZATION TDOFF - TIME DELAY ON DEENERGIZATION c = TIMING RANGE/SETTING d = DESCRIPTION		TERMINAL IN PLC/PCM PANEL		PLC DISCRETE a = INPUT OR OUTPUT AS INDICATED		SOLENOID	
	FLOAT SWITCH OPEN ON RISING LEVEL		NORMALLY CLOSED MOMENTARY PUSHBUTTON				TERMINAL IN MOTOR CONTROL CENTER		PLC ANALOG a = INPUT OR OUTPUT AS INDICATED		METER UNIT M = TYPE	
	PRESSURE SWITCH CLOSE ON RISING PRESSURE		THREE POSITION SELECTOR SWITCH x - DENOTES POSITION CONTACTS CLOSED IN				TERMINAL IN LOCAL STARTER CONTROL PANEL		DIGITAL BUS		MOTOR	
	PRESSURE SWITCH OPEN ON RISING PRESSURE		TWO POSITION SELECTOR SWITCH x - DENOTES POSITION CONTACTS CLOSED IN				TERMINAL AT FIELD DEVICE				CIRCUIT BREAKER	
	TEMPERATURE SWITCH CLOSE ON RISING TEMPERATURE		MUSHROOM HEAD PUSHBUTTON		NORMALLY OPEN CONTROL CONTACT		TERMINAL IN RTU				DISCONNECT	
	TEMPERATURE SWITCH OPEN ON RISING TEMPERATURE		PUSH-PULL PUSHBUTTON MAINTAINED CONTACT		NORMALLY CLOSED CONTROL CONTACT		TERMINAL IN FIELD PANEL				FUSE	
	FLOW SWITCH CLOSE ON INCREASE IN FLOW		PADLOCK SWITCH x - DENOTES POSITION CONTACTS CLOSED IN		TIME DELAY CONTACT NORMALLY OPEN TIMED CLOSING		TERMINAL IN (USER CHOICE)				TRANSIENT SURGE PROTECTION	
	FLOW SWITCH OPEN ON INCREASE IN FLOW		PULL CORD SWITCH		TIME DELAY CONTACT NORMALLY CLOSED TIMED OPENING		DIGITAL BUS CONNECTOR * = D - DEVICENET * = PA - PROFIBUS PA * = DP - PROFIBUS DP * = H1 - FOUNDATION FIELDBUS H1 * = H2 - FOUNDATION FIELDBUS H2				MOTOR WINDING HEATER * - MOTOR TAG I.D.	
	VIBRATION SWITCH OPEN ON RISING VIBRATION		STOP-LOCKOUT PUSHBUTTON		TIME DELAY CONTACT NORMALLY OPEN TIMED OPENING						SPACE HEATER	
	VIBRATION SWITCH CLOSE ON RISING VIBRATION		SPRING-RETURN x - DENOTES POSITION CONTACTS CLOSED IN		TIME DELAY CONTACT NORMALLY CLOSED TIMED CLOSING						VARISTOR	
	TORQUE SWITCH OPEN ON HIGH TORQUE	PILOT LIGHTS									CAPACITOR	
	TORQUE SWITCH CLOSE ON HIGH TORQUE		PILOT LIGHT a = LENS COLOR R = RED G = GREEN W = WHITE A = AMBER								RESISTOR	
	NORMALLY CLOSED LIMIT SWITCH										BATTERY	
	NORMALLY CLOSED HELD OPEN LIMIT SWITCH										DIODE	
	NORMALLY OPEN LIMIT SWITCH										MOTOR OVERLOAD HEATERS	
	NORMALLY OPEN HELD CLOSED LIMIT SWITCH										OVERLOAD CONTACT	
											DRAWOUT CONNECTION	
											GROUND	
											LIGHTNING ARRESTOR	
											CONTROL POWER TRANSFORMER	
											ELAPSED TIME METER	

DESIGNED	MGH		
DRAWN	CEY		
CHECKED	DJC		
DATE	MARCH 2019		
REV	DATE	BY	DESCRIPTION

REGISTERED PROFESSIONAL ENGINEER
 MATTHEW G. HATCH
 STATE OF UTAH
 No. 5612657

Carollo

South Valley
 WATER RECLAMATION FACILITY
 7495 South 1300 West
 West Jordan, Utah 84084

SOUTH VALLEY WATER RECLAMATION FACILITY
 PROJECT 5
 INSTRUMENTATION
SCHEMATIC SYMBOLS

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"

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JOB NO. 10548A.10
 DRAWING NO. **GI-05**
 SHEET NO. 77 OF 159

Plot Date: 28-FEB-2019 10:02:06 AM

User: svcPW

PlotScale: 2:1

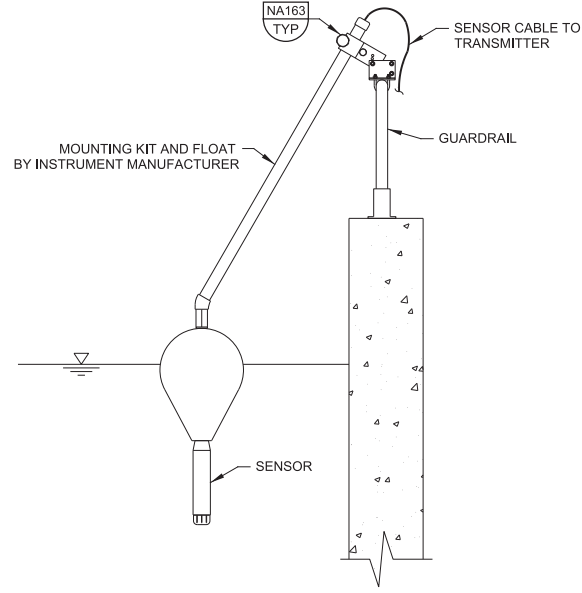
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen

LAST SAVED BY: CYoung

GAS	MOUNTING HEIGHT	ALARM SETPOINT
CARBON MONOXIDE	A=60 IN	35 ppm
CHLORINE	A=12 IN	0.5 ppm
CHLORINE DIOXIDE	A=12 IN	0.1 ppm
FLUORIDE	A=60 IN	6 ppm
HYDROGEN SULFIDE	A=12 IN	10 ppm
OXYGEN	A=60 IN	19.5% L/23.5% H
OZONE	A=12 IN	0.05 ppm
SULFUR DIOXIDE	A=12 IN	2 ppm
AMMONIA	B=12 IN	25 ppm
HYDROGEN	B=12 IN	10% LEL
METHANE/NATURAL GAS	B=12 IN	10% LEL

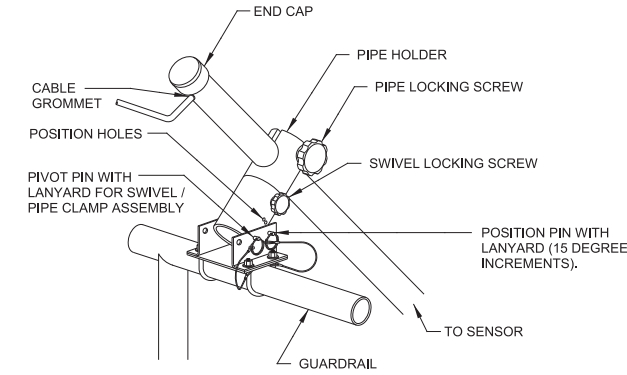
- NOTES:
1. SETPOINTS BASED ON BELA LIPTAK'S INSTRUMENT ENGINEER HANDBOOK 2002 VOLUME I, TABLE 8.59A AND OSHA MSDS SHEETS.

NA001 GAS SENSOR MOUNTING DETAIL
TYP S



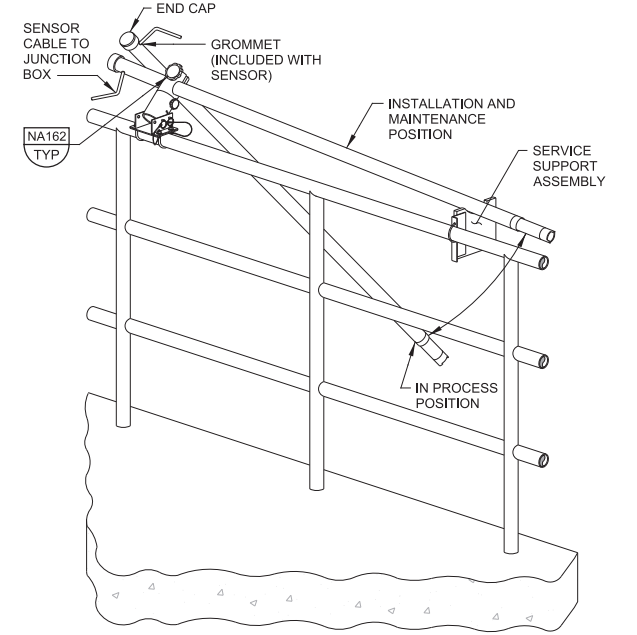
- NOTES:
1. NO PLASTIC OR POLYMER MOUNTING COMPONENTS SHALL BE PROVIDED FOR ANALYZER MOUNTING HARDWARE.

NA011 DISSOLVED OXYGEN PROBE FLOAT MOUNT INSTALLATION
TYP R

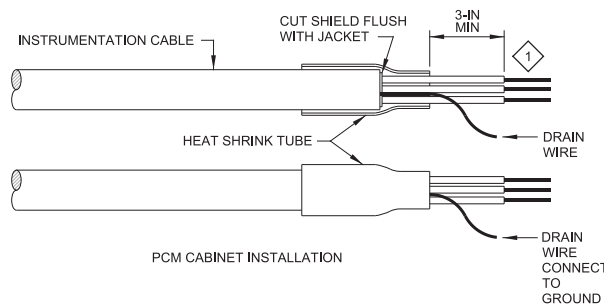


- NOTES:
1. MOUNT THE SWIVEL / PIVOT / PIPE CLAMP ASSEMBLY TO A GUARDRAIL OR HORIZONTAL PIPE AS INDICATED ON THE PLAN DRAWINGS.
 2. MOUNT THE HARDWARE SERVICE SUPPORT ASSEMBLY TO A GUARDRAIL IN A LOCATION THAT IS APPROXIMATELY 5 FT. FROM THE SWIVEL / PIVOT / PIPE CLAMP ASSEMBLY.
 3. WHEN USING WITH FLOATATION HARDWARE, REMOVE THIS PIN FROM BRACKET TO PERMIT FREE PIVOTING.

NA162 IN-BASIN ANALYZER PROBE MOUNTING DETAIL
TYP S

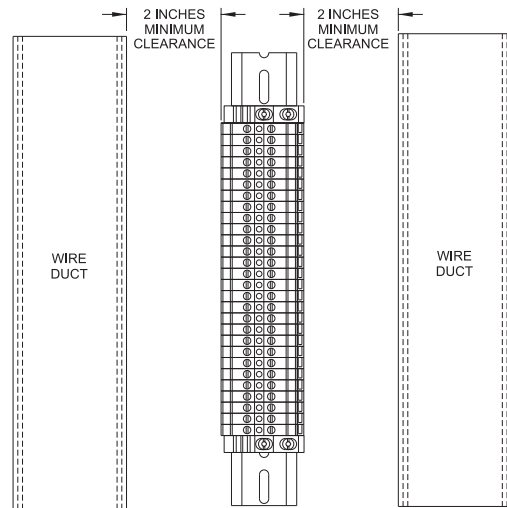


NA163 SWIVEL MOUNT FOR IN-BASIN ANALYZER PROBES
TYP S

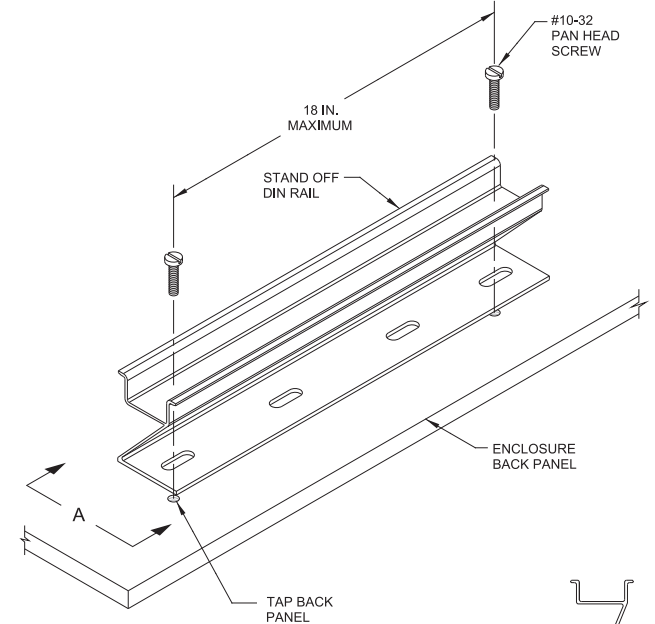


- KEY NOTES:
1. SIMILAR FOR 2-CONDUCTOR SHIELDED CABLE

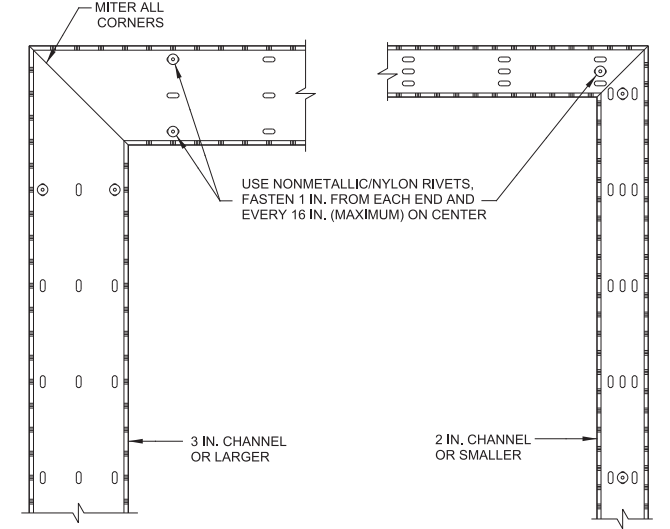
NE101 TERMINATION DETAILS INSTRUMENTATION SHIELDED CABLE
TYP S



NE102 TERMINAL BLOCK CLEARANCE
TYP S



NE104 RAISED DIN RAIL MOUNTING
TYP S



NE105 PANEL WIRING DUCT MOUNTING
TYP S

REV	DATE	BY	DESCRIPTION

DESIGNED MGH
DRAWN CEY
CHECKED DJC
DATE MARCH 2019



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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
TYPICAL DETAILS
INSTRUMENTATION TYPICAL DETAILS 1

VERIFY SCALES
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0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

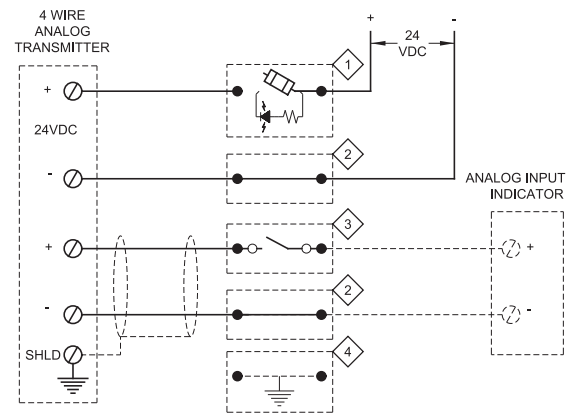
JOB NO. 10548A.10
DRAWING NO. **GI-06**
SHEET NO. 78 OF 159

Plot Date: 28-FEB-2019 10:02:05 AM

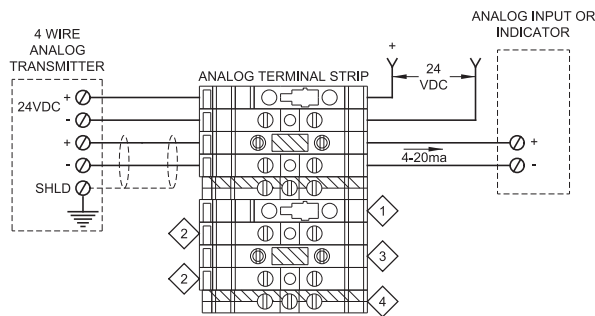
User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

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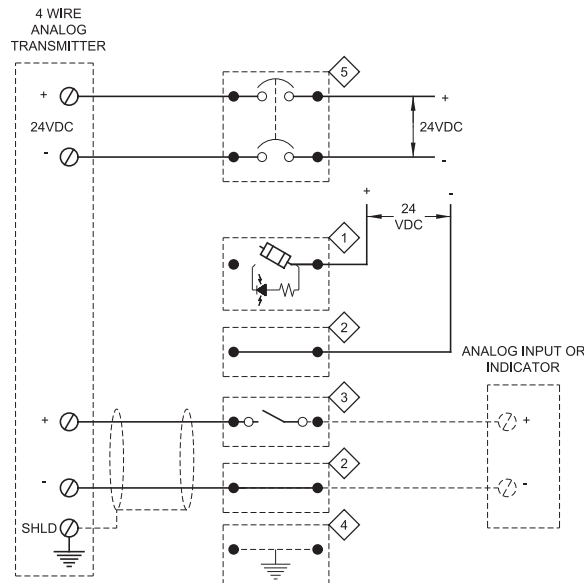


- KEY NOTES:**
- 1 FUSED TERMINAL/DISCONNECT BLOCK
 - 2 FEED THROUGH TERMINAL BLOCK
 - 3 TEST BLOCK WITH KNIFE DISCONNECT SWITCH
 - 4 GROUNDING TERMINAL BLOCK

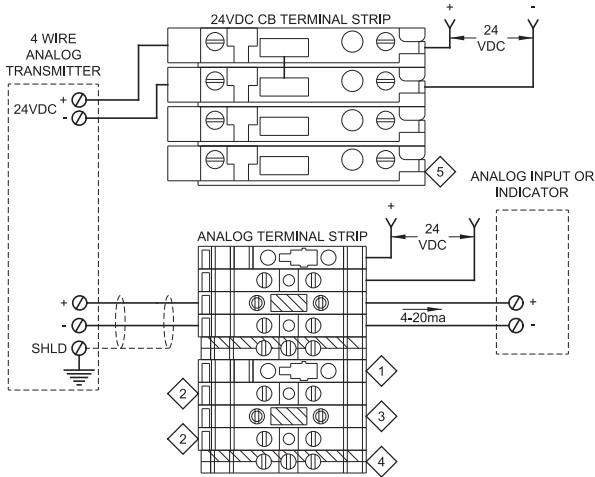


- NOTES:**
- GROUND SHIELD AT CLOSEST OPPORTUNITY TO THE LOOP POWER DEVICE.
 - (-)24VDC RETURNS OR COMMONS CAN'T BE PROTECTED OR HAVE A DISCONNECTING MEANS ON SYSTEMS WITH GROUNDED 24VDC POWER SUPPLIES.

FOUR WIRE TRANSMITTER WITH (GROUNDED) 24VDC POWER SUPPLY SCHEMATIC

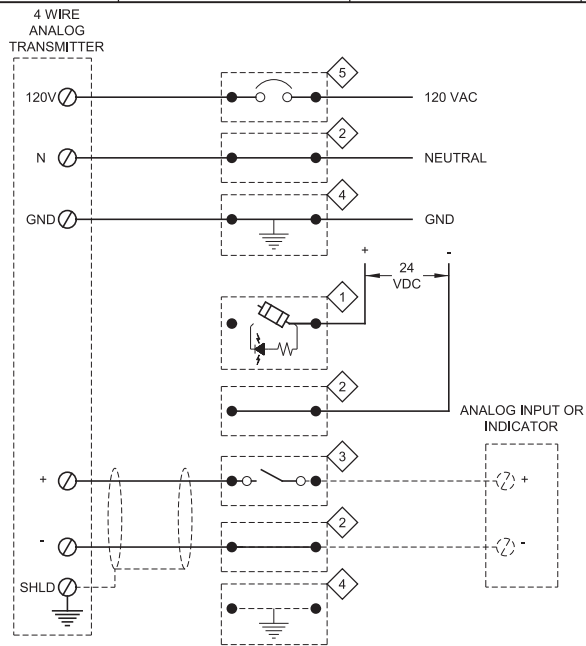


- KEY NOTES:**
- 1 FUSED TERMINAL/DISCONNECT BLOCK
 - 2 FEED THROUGH TERMINAL BLOCK
 - 3 TEST BLOCK WITH KNIFE DISCONNECT SWITCH
 - 4 GROUNDING TERMINAL BLOCK
 - 5 2-POLE 24VDC CIRCUIT BREAKER

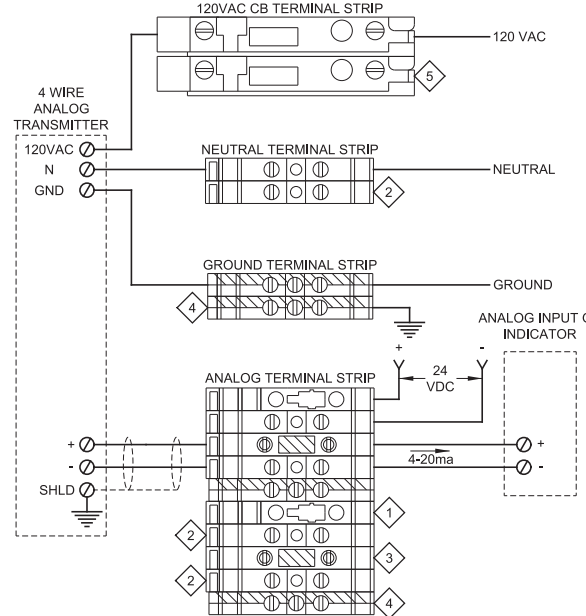


- NOTES:**
- GROUND SHIELD AT CLOSEST OPPORTUNITY TO THE LOOP POWER SOURCE.
 - PROVIDE (-)24VDC RETURNS WITH PROTECTION ON ALL UN-GROUNDED 24VDC POWER SUPPLIES.

FOUR WIRE TRANSMITTER WITH (UN-GROUNDED) 24VDC POWER SUPPLY SCHEMATIC

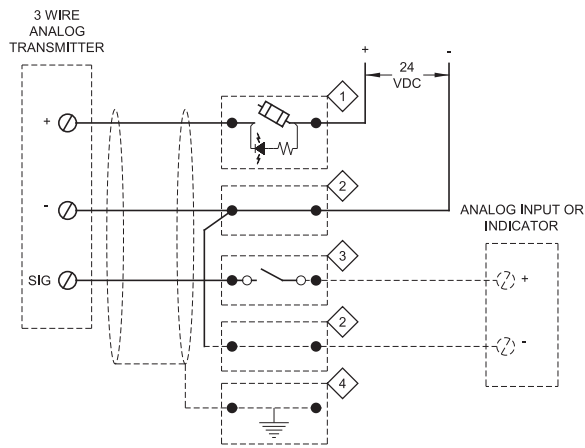


- KEY NOTES:**
- 1 FUSED TERMINAL/DISCONNECT BLOCK
 - 2 FEED THROUGH TERMINAL BLOCK
 - 3 TEST BLOCK WITH KNIFE DISCONNECT SWITCH
 - 4 GROUNDING TERMINAL BLOCK
 - 5 120VAC CIRCUIT BREAKER

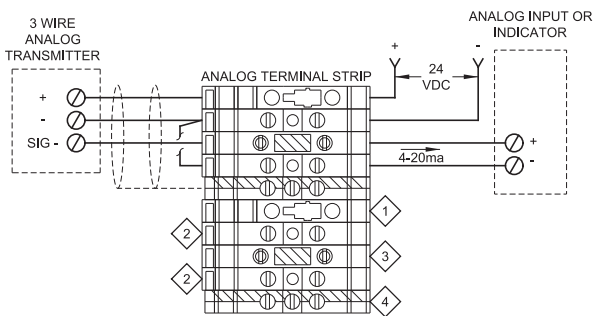


- NOTES:**
- GROUND SHIELD AT CLOSEST OPPORTUNITY TO THE LOOP POWER SOURCE.
 - PROVIDE 120VAC CIRCUIT BREAKER FOR EACH INSTRUMENT.

FOUR WIRE (120VAC) TRANSMITTER SCHEMATIC

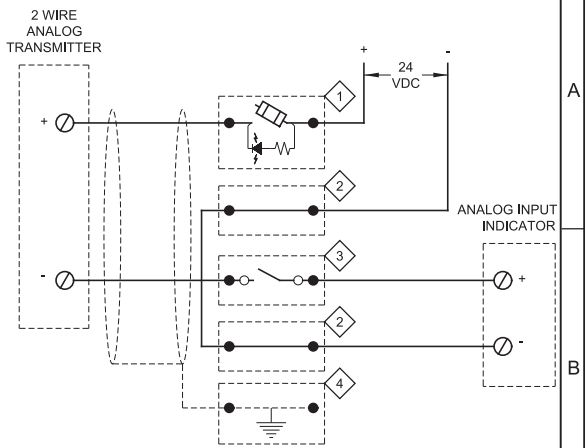


- KEY NOTES:**
- 1 FUSED TERMINAL/DISCONNECT BLOCK
 - 2 FEED THROUGH TERMINAL BLOCK
 - 3 TEST BLOCK WITH KNIFE DISCONNECT SWITCH
 - 4 GROUNDING TERMINAL BLOCK

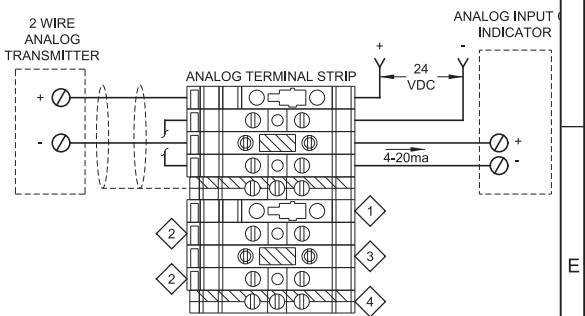


- NOTES:**
- GROUND SHIELD AT CLOSEST OPPORTUNITY TO THE LOOP POWER SOURCE.

24VDC THREE WIRE ANALOG TRANSMITTER SCHEMATIC



- KEY NOTES:**
- 1 FUSED TERMINAL/DISCONNECT BLOCK
 - 2 FEED THROUGH TERMINAL BLOCK
 - 3 TEST BLOCK WITH KNIFE DISCONNECT SWITCH
 - 4 GROUNDING TERMINAL BLOCK

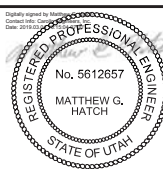


- NOTES:**
- GROUND SHIELD AT CLOSEST OPPORTUNITY TO THE LOOP POWER SOURCE.

24VDC TWO WIRE TRANSMITTER SCHEMATIC

NE304 ANALOG TERMINAL DETAILS
TYP

DESIGNED
MGH
DRAWN
SGS
CHECKED
DJC
DATE
MARCH 2019



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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
TYPICAL DETAILS
INSTRUMENTATION TYPICAL DETAILS 2

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

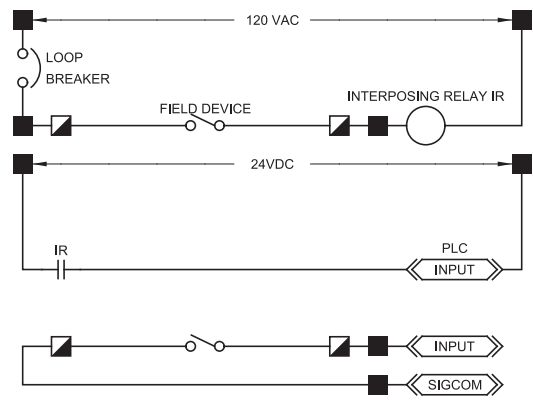
JOB NO.
10548A.10
DRAWING NO.
GI-07
SHEET NO.
79 OF 159

Plot Date: 28-FEB-2019 10:02:05 AM

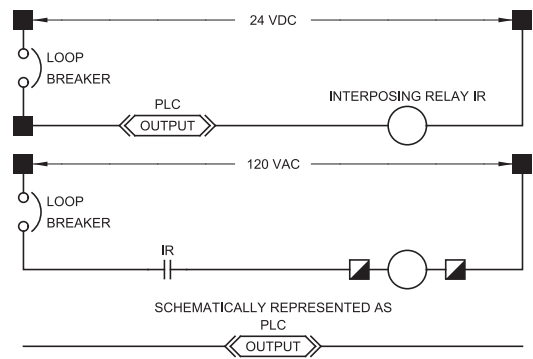
User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 2:1

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NE314 TYPICAL PLC 24VDC INPUT SCHEMATIC



NE315 TYPICAL PLC 24VDC OUTPUT SCHEMATIC

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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
TYPICAL DETAILS
INSTRUMENTATION TYPICAL DETAILS 3

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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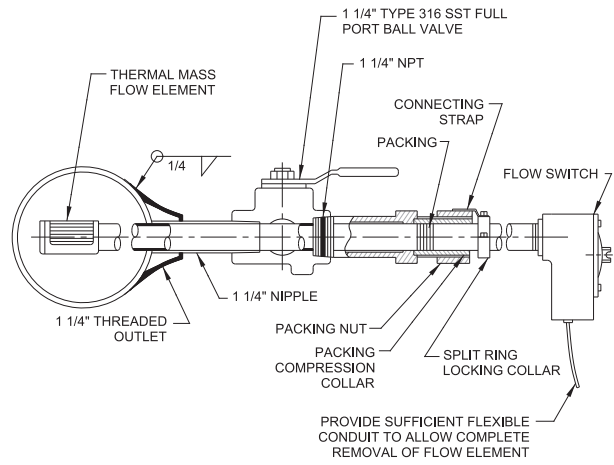
JOB NO. 10548A.10
DRAWING NO. GI-09
SHEET NO. 80 OF 159

Plot Date: 28-FEB-2019 11:47:44 AM

User: svcPW

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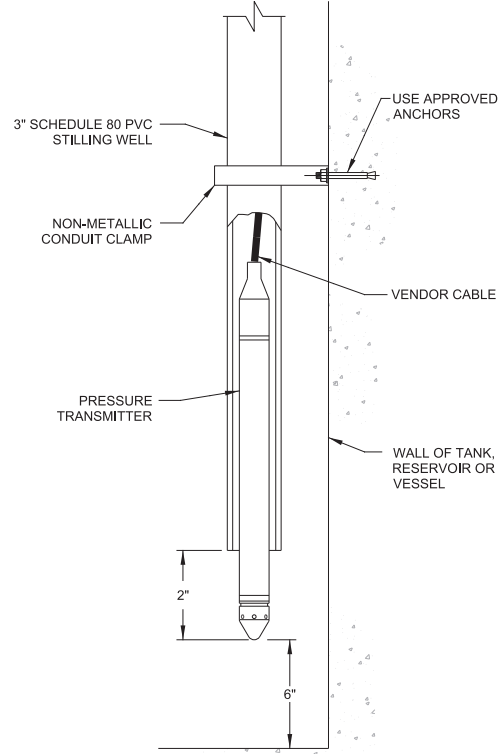
LAST SAVED BY: CYoung



NOTES:

- 1. LENGTH OF PROBE TO BE DETERMINED BY MFG.

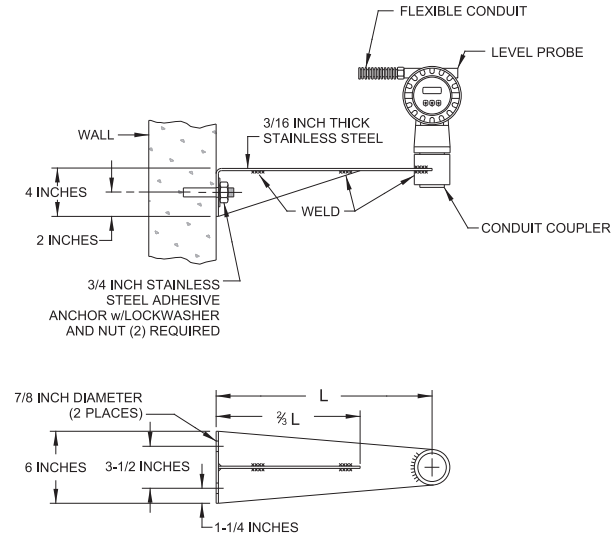
NF110
HOT TAP THERMAL MASS FLOW SWITCH
INSTALLATION DETAIL



NL131
DROP-IN PRESSURE TRANSMITTER
MOUNTING DETAIL

CALCULATE DIMENSION L BASED ON MEASURING DEPTH.
USE THE FOLLOWING FORMULA TO CALCULATE A MINIMUM VALUE FOR
DIMENSION L.

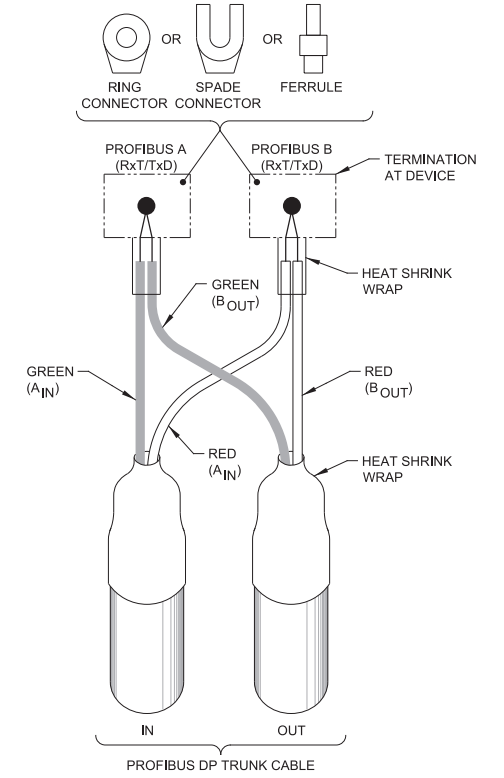
$$L > (\text{DEPTH})(\tan(\frac{\text{BEAM ANGLE}}{2}))$$



KEY NOTES:

- 1. MINIMUM DISTANCE BETWEEN HIGHEST POSSIBLE LEVEL, INCLUDING OVERFLOW, AND PROBE FACE SHALL BE MANUFACTURER'S BLANKING ZONE PLUS 2 INCHES.

NL184
ULTRASONIC LEVEL TRANSDUCER
MOUNTING DETAIL



NOTES:

- 1. COMBINE THE PROFIBUS DP CABLES USING HEAT SHRINK WRAP TUBING.

NN124
PROFIBUS DP RING CONNECTOR

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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
TYPICAL DETAILS
INSTRUMENTATION TYPICAL DETAILS 4

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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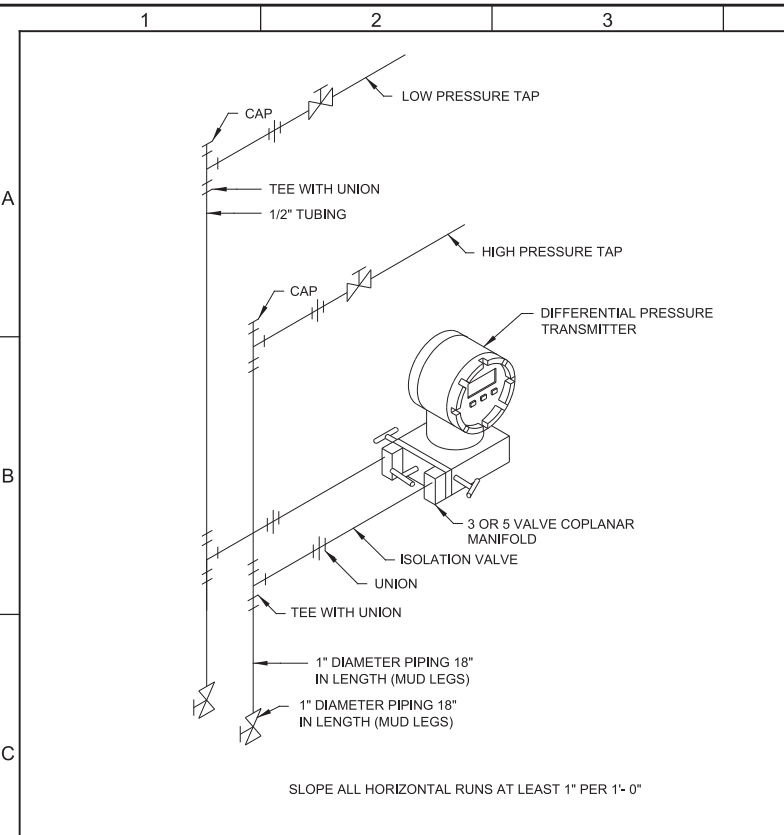
JOB NO.
10548A.10
DRAWING NO.
GI-10
SHEET NO.
81 OF 159

Plot Date: 28-FEB-2019 11:47:49 AM

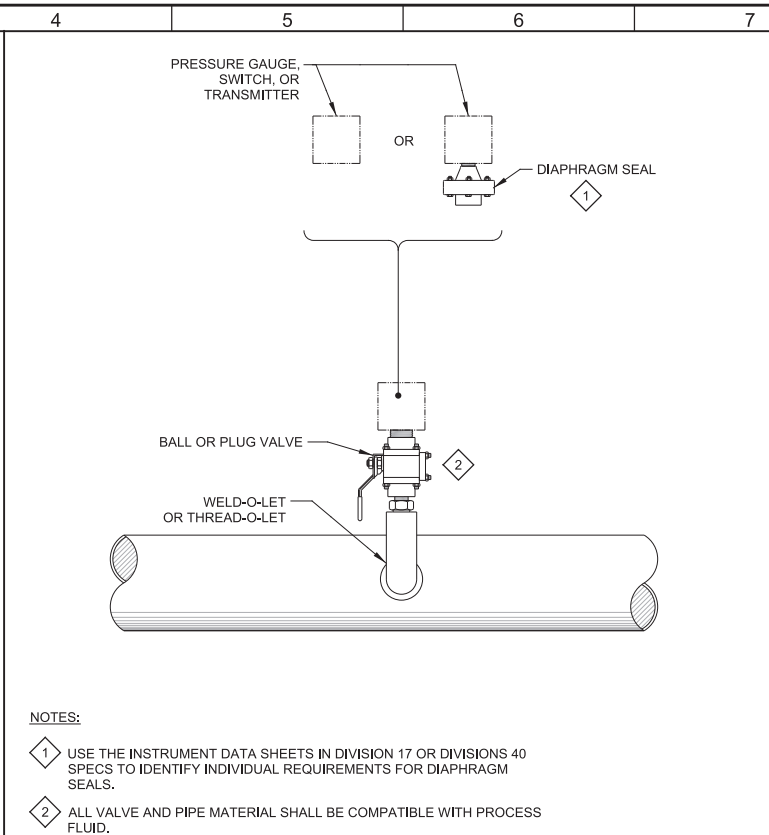
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Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

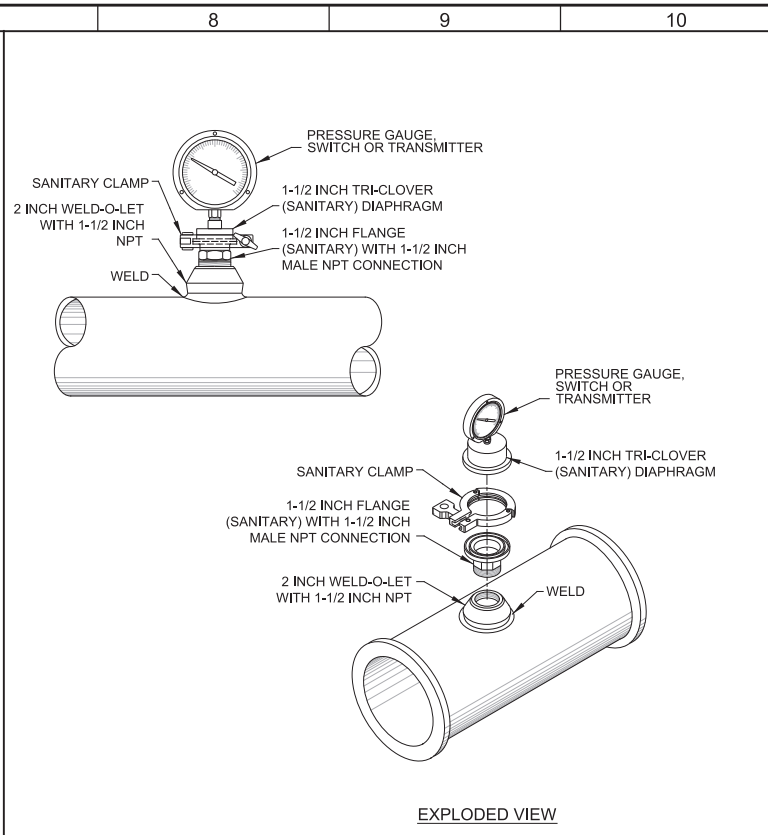
LAST SAVED BY: CYoung



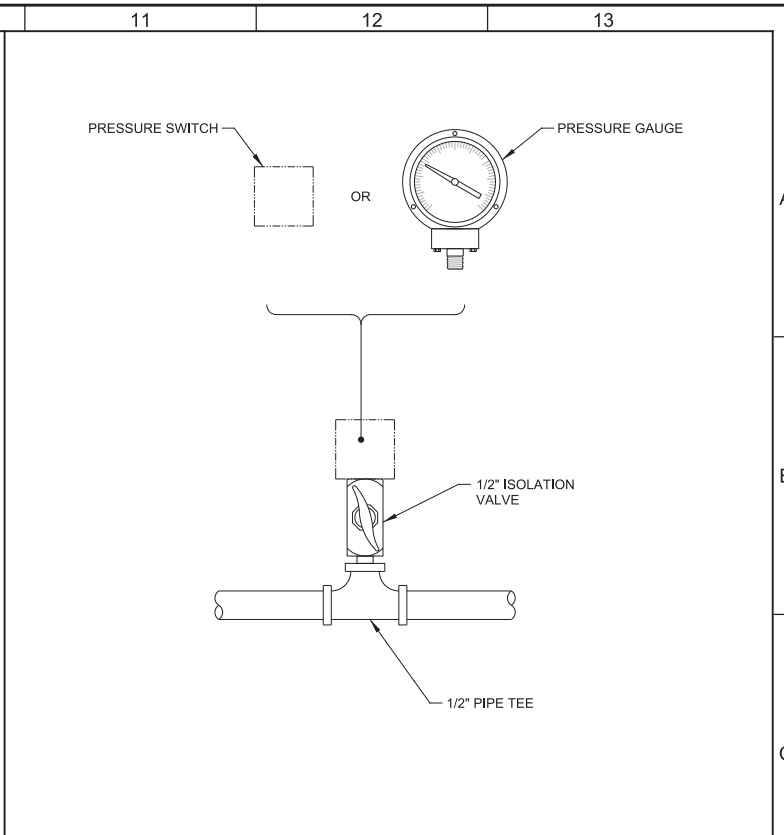
NP120
TYP
DIFFERENTIAL PRESSURE INSTRUMENT INSTALLATION



NP503
TYP
ISOLATING PRESSURE INSTRUMENT MOUNTING DETAIL



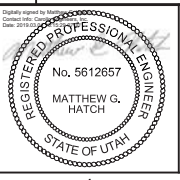
NP601
TYP
GRIT SERVICE PRESSURE INSTRUMENT INSTALLATION



NP901
TYP
SEAL WATER SERVICE PRESSURE INSTRUMENT INSTALLATION
01-17-19

REV	DATE	BY	DESCRIPTION
1			
2			
3			

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DATE
MARCH 2019



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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
TYPICAL DETAILS
INSTRUMENTATION TYPICAL DETAILS 5

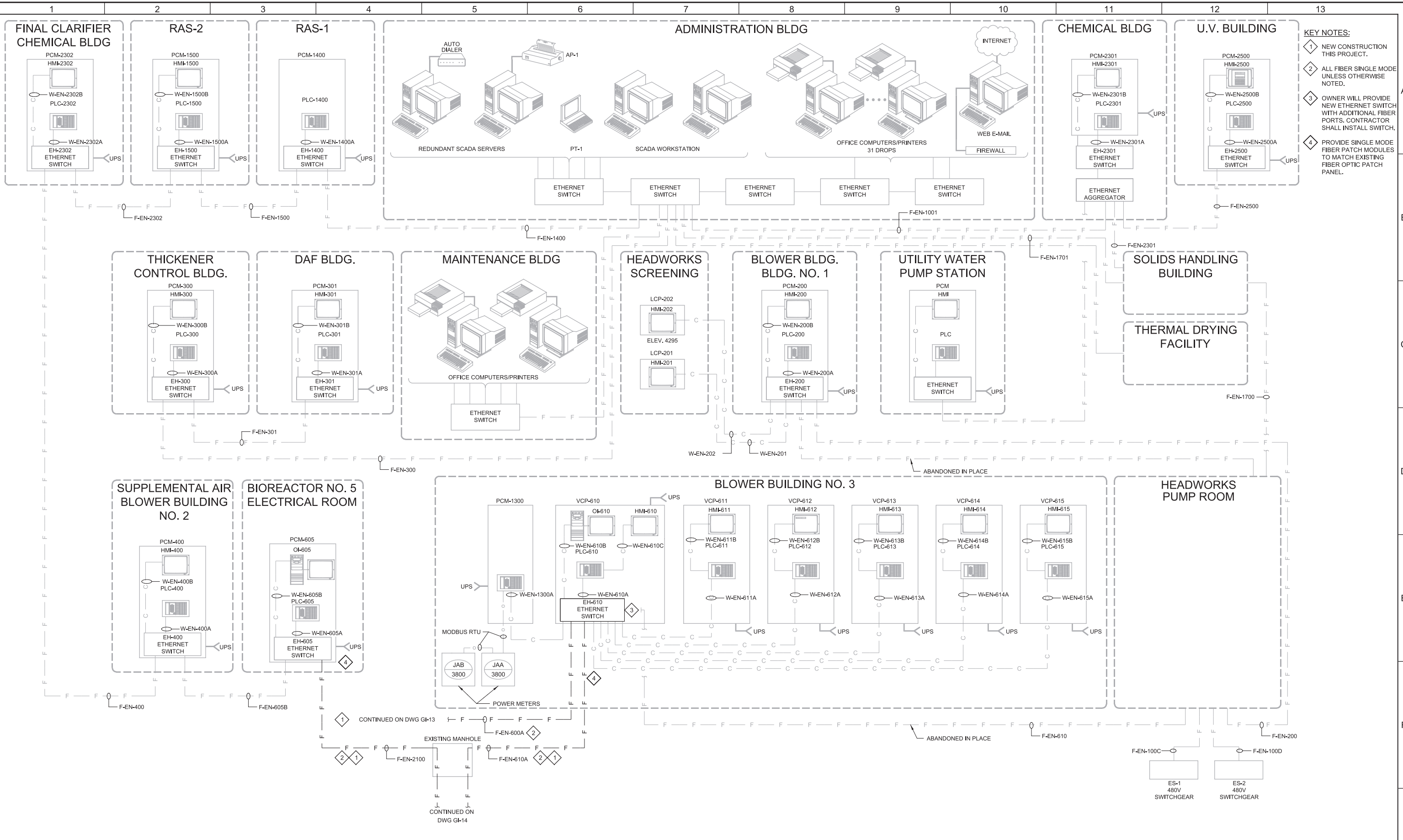
VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY
JOB NO. 10548A.10
DRAWING NO. GI-11
SHEET NO. 82 OF 159

Plot Date: 28-FEB-2019 10:15:53 AM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 2:1

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- KEY NOTES:**
- NEW CONSTRUCTION THIS PROJECT.
 - ALL FIBER SINGLE MODE UNLESS OTHERWISE NOTED.
 - OWNER WILL PROVIDE NEW ETHERNET SWITCH WITH ADDITIONAL FIBER PORTS. CONTRACTOR SHALL INSTALL SWITCH.
 - PROVIDE SINGLE MODE FIBER PATCH MODULES TO MATCH EXISTING FIBER OPTIC PATCH PANEL.

REV	DATE	BY	DESCRIPTION

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CEY
CHECKED
DJC
DATE
MARCH 2019



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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
INSTRUMENTATION
CONTROL SYSTEM BLOCK DIAGRAM - I

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
10548A.10
DRAWING NO.
GI-12
SHEET NO.
83 OF 159

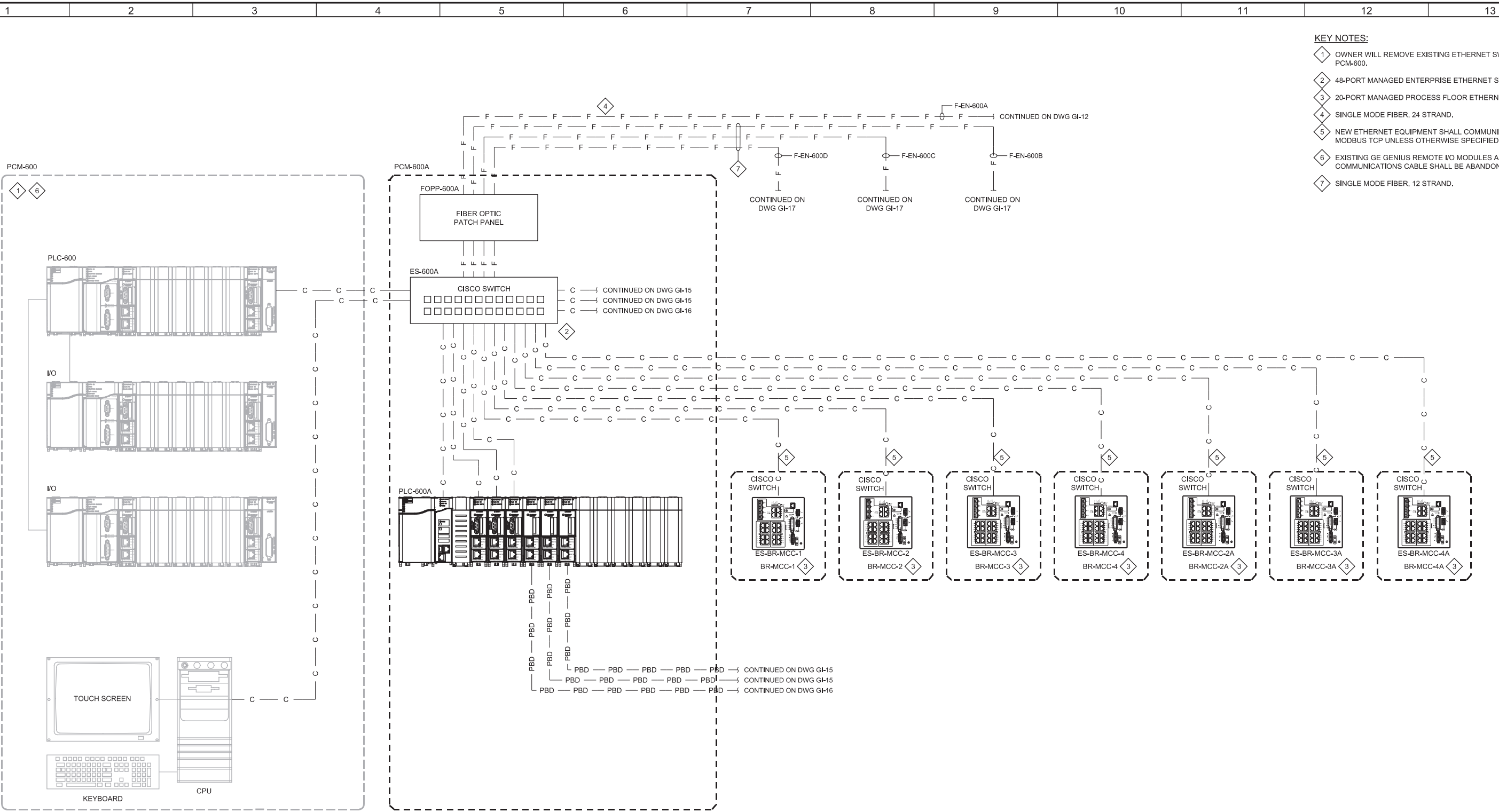
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User: svcPW

PlotScale: 2:1

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen

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- KEY NOTES:**
- 1 OWNER WILL REMOVE EXISTING ETHERNET SWITCH IN PANEL PCM-600.
 - 2 48-PORT MANAGED ENTERPRISE ETHERNET SWITCH.
 - 3 20-PORT MANAGED PROCESS FLOOR ETHERNET SWITCH.
 - 4 SINGLE MODE FIBER, 24 STRAND.
 - 5 NEW ETHERNET EQUIPMENT SHALL COMMUNICATE OVER MODBUS TCP UNLESS OTHERWISE SPECIFIED.
 - 6 EXISTING GE GENIUS REMOTE I/O MODULES AND COMMUNICATIONS CABLE SHALL BE ABANDONED IN PLACE.
 - 7 SINGLE MODE FIBER, 12 STRAND.

REV	DATE	BY	DESCRIPTION
1			
2			
3			

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MARCH 2019



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SOUTH VALLEY WATER RECLAMATION FACILITY
PROJECT 5
INSTRUMENTATION
CONTROL SYSTEM BLOCK DIAGRAM - II

VERIFY SCALES
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0 1"
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JOB NO.
10548A.10
DRAWING NO.
GI-13
SHEET NO.
84 OF 159