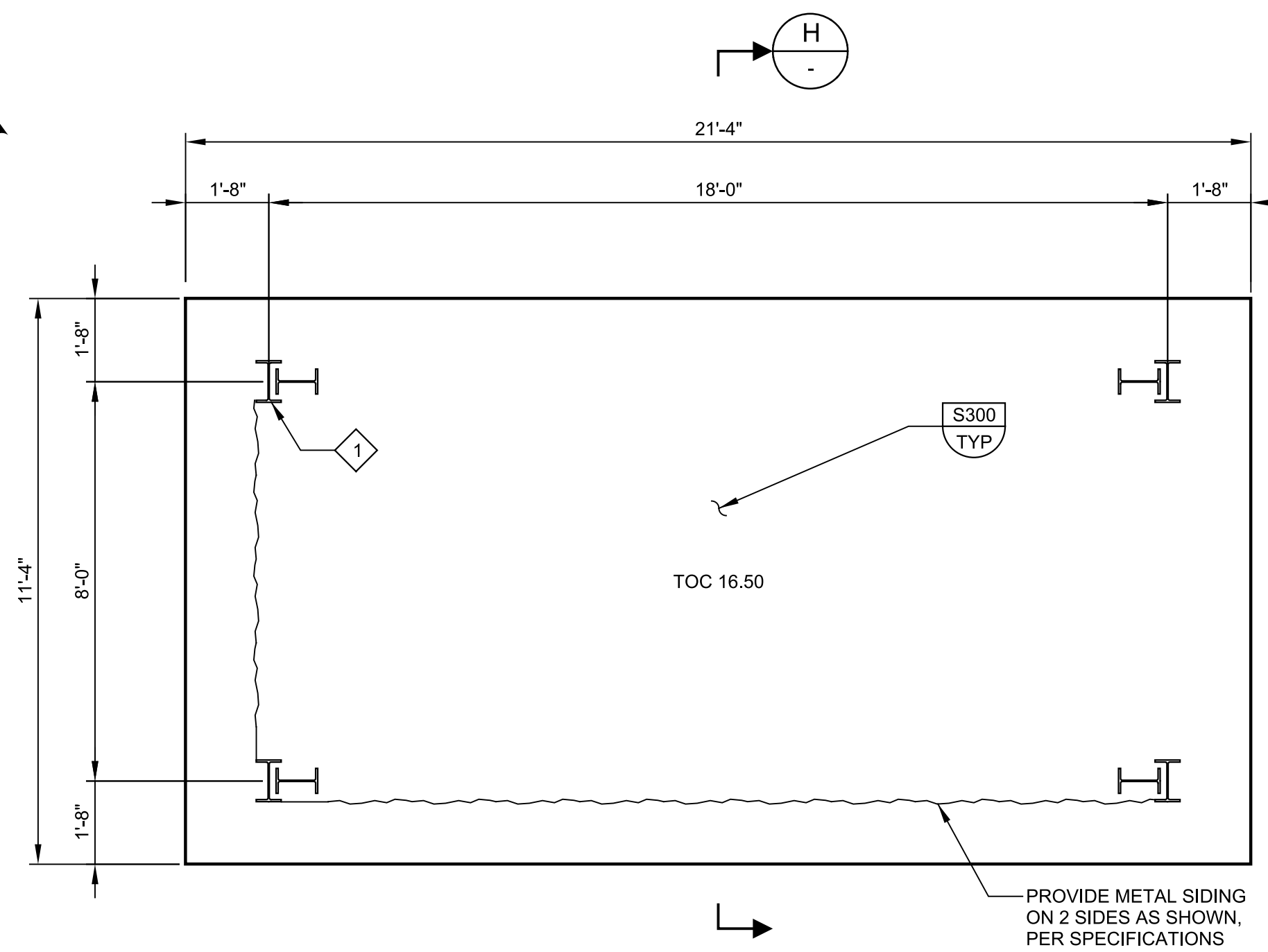


Plot Date: 05-APR-2023 11:06:59 AM

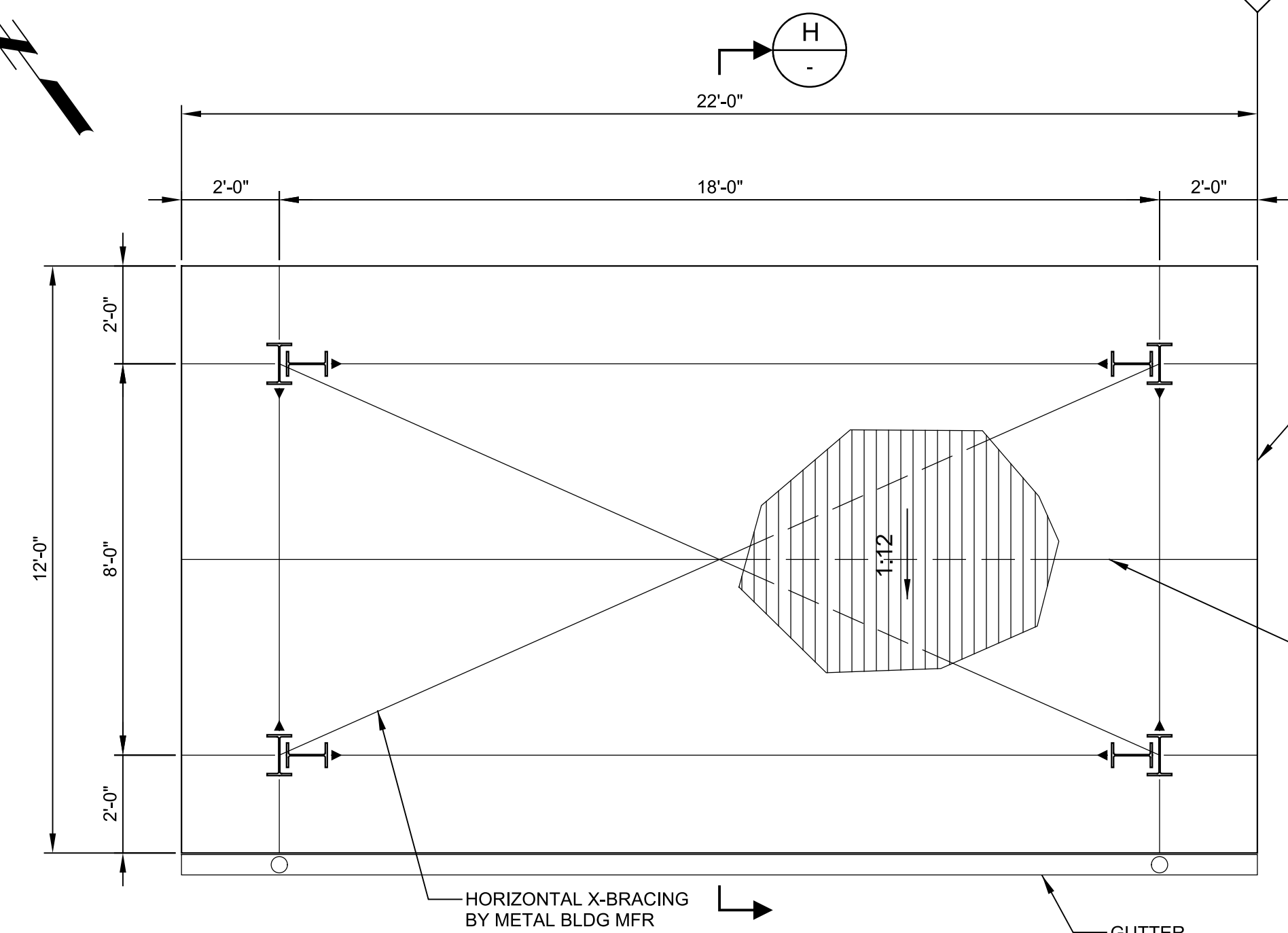
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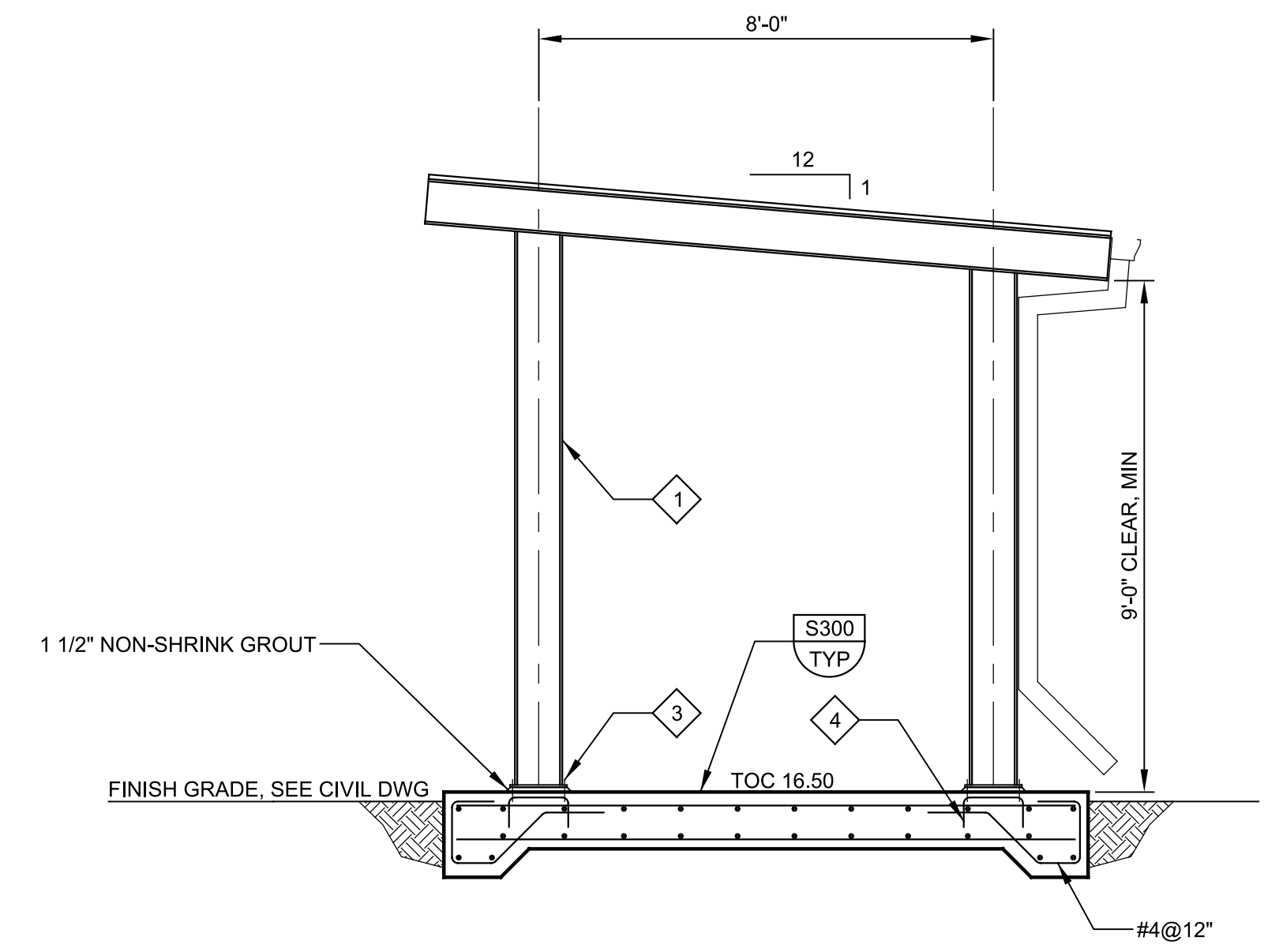
LAST SAVED BY: luy



F ROOF PLAN
22S01 SCALE: 3/8" = 1'-0"
FILE: 7310L1022S102



G ROOF PLAN
22S01 SCALE: 3/8" = 1'-0"
FILE: 7310L1022S102



H SECTION
SCALE: 3/8" = 1'-0"
FILE: 7310L1022S102

GENERAL NOTES:

1. SEE SHEETS G10C & G11C FOR GENERAL STRUCTURAL NOTES.
2. PRELIMINARY CANOPY FOUNDATION DIMENSIONS AND REINFORCEMENT ARE SHOWN ON THIS SHEET. FINAL DIMENSIONS AND REINFORCEMENT SHALL BE COORDINATED WITH THE ACTUAL BUILDING LOADS AS DETERMINED FROM THE APPROVED PRE-ENGINEERED METAL BUILDING SUBMITTAL.
3. THE PRE-ENGINEERED CANOPY SHALL HAVE THE FOLLOWING STRUCTURAL DESIGN CRITERIA PER 2019 AND ASCE 7-16:
 - A. SEISMIC FORCE RESISTING SYSTEM: STEEL ORDINARY MOMENT FRAME WITH RESPONSE
 - B. MODIFICATION FACTOR, R=3 1/2
ROOF LIVE LOAD: 20 PSF
WIND ENCLOSURE CLASSIFICATION:
 - C. OPEN STRUCTURE WITH CLEAR WIND FLOW.
ALLOWABLE NET SOIL BEARING PRESSURE:
2500 PSF W/ 1/3 INCREASE FOR LOAD
 - D. COMBINATIONS INCLUDING SEISMIC OR WIND.

KEY NOTES:

- 1 PRE-ENGINEERED METAL BUILDING CANOPY. SEE NOTE 3 ON THIS SHEET AND SPECIFICATION SECTION 13122 FOR DESIGN CRITERIA.
- 2 ALIGN WITH EAST FRONT OF STORAGE BUILDING.
- 3 METAL BUILDING ANCHORAGE TO BE DESIGNED, FURNISHED AND INSTALLED BY CONTRACTOR. SEE SPECIFICATION SECTION 13122 FOR ADDITIONAL INFORMATION. CONTRACTOR SHALL PROVIDE LEVELING NUTS AS REQUIRED BY METAL BUILDING MANUFACTURER.
- 4 ANCHOR REINFORCEMENT AS REQUIRED BY ANCHORAGE CALCULATIONS. REINFORCEMENT SHALL BE DESIGNED AND DETAILED BY CONTRACTOR.

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JAD
DATE
JANUARY 2023



Digitally signed by Eric J. Wilkins
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.07 08:46:00-0700

Eric Wilkins



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
STRUCTURAL
WASTE OIL STORAGE
PLANS AND SECTION

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

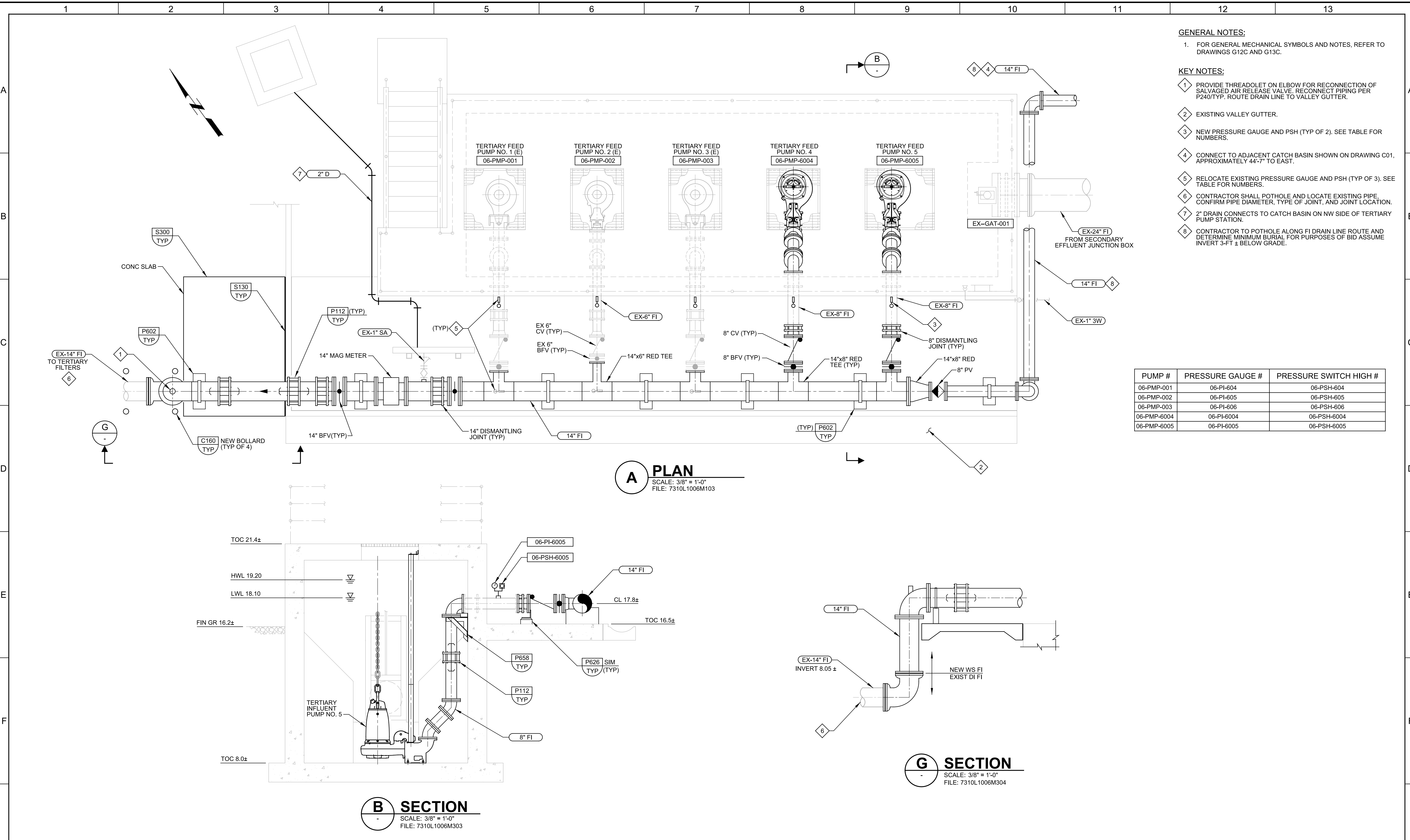
JOB NO.
7310L.10
DRAWING NO.
22S06
SHEET NO.
66 OF 130

Plot Date: 03-APR-2023 2:00:26 PM

User: svcPW

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

LAST SAVED BY: luy



A PLAN
SCALE: 3/8" = 1'-0"
FILE: 7310L1006M103

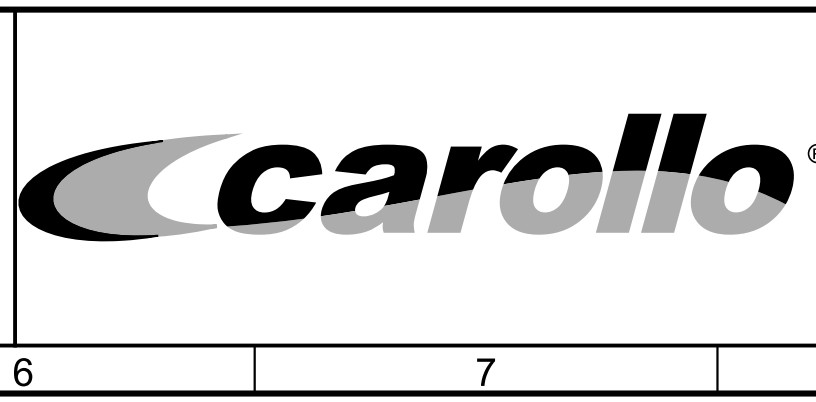
B SECTION
SCALE: 3/8" = 1'-0"
FILE: 7310L1006M303

G SECTION
SCALE: 3/8" = 1'-0"
FILE: 7310L1006M304

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| DESIGNED DWW | |
| DRAWN DPF | |
| CHECKED RH | |
| DATE JANUARY 2023 | |

Digitally signed by Douglas W. Wirth
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 10:30:07 -0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
MECHANICAL
TERTIARY PUMP STATION
PLAN AND SECTIONS

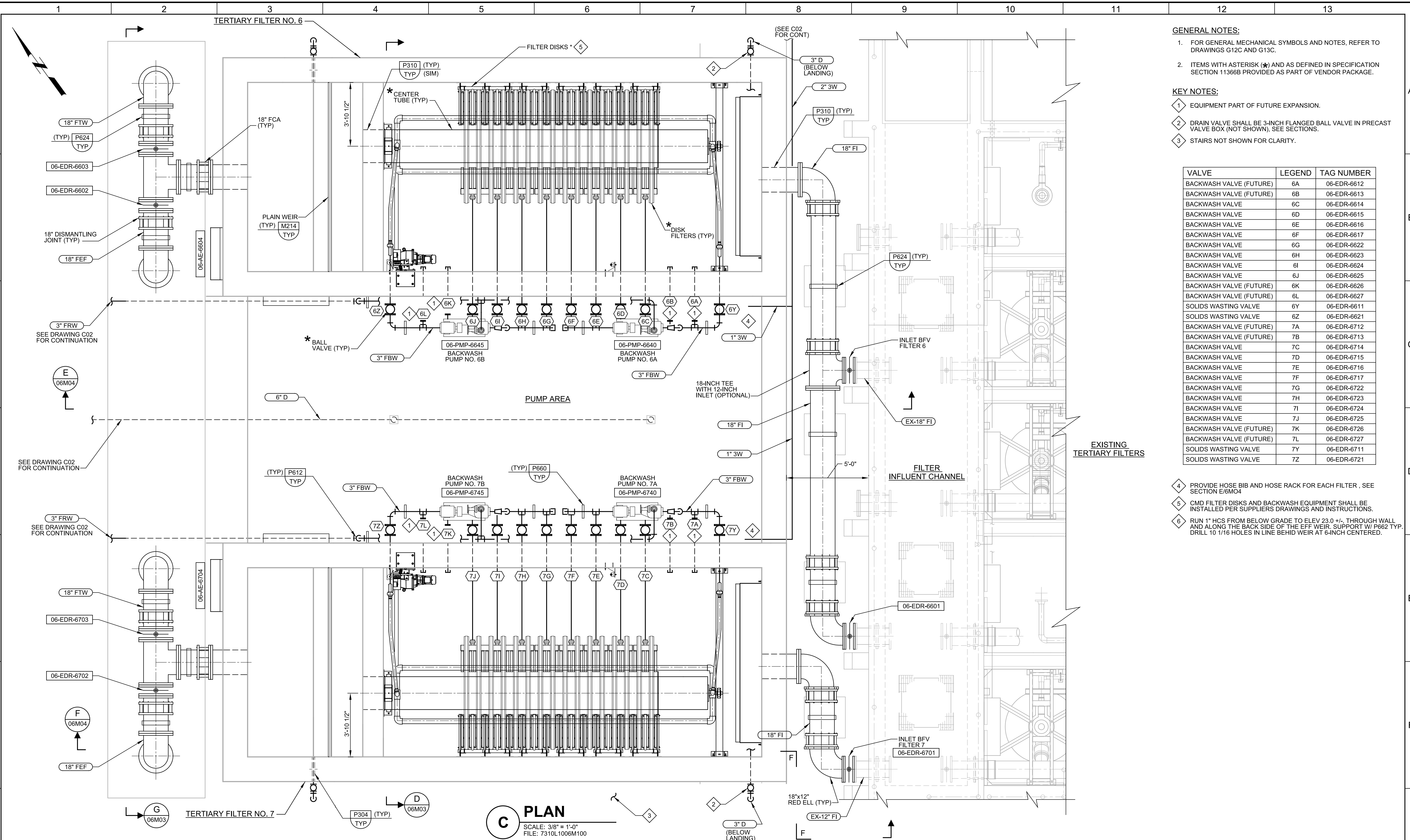
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| VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | JOB NO. 7310L.10 DRAWING NO. 06M01 SHEET NO. 67 OF 130 |
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Plot Date: 20-APR-2023 2:04:10 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: luy



- GENERAL NOTES:**
- FOR GENERAL MECHANICAL SYMBOLS AND NOTES, REFER TO DRAWINGS G12C AND G13C.
 - ITEMS WITH ASTERISK (*) AND AS DEFINED IN SPECIFICATION SECTION 11366B PROVIDED AS PART OF VENDOR PACKAGE.
- KEY NOTES:**
- EQUIPMENT PART OF FUTURE EXPANSION.
 - DRAIN VALVE SHALL BE 3-INCH FLANGED BALL VALVE IN PRECAST VALVE BOX (NOT SHOWN), SEE SECTIONS.
 - STAIRS NOT SHOWN FOR CLARITY.

| VALVE | LEGEND | TAG NUMBER |
|-------------------------|--------|-------------|
| BACKWASH VALVE (FUTURE) | 6A | 06-EDR-6612 |
| BACKWASH VALVE (FUTURE) | 6B | 06-EDR-6613 |
| BACKWASH VALVE | 6C | 06-EDR-6614 |
| BACKWASH VALVE | 6D | 06-EDR-6615 |
| BACKWASH VALVE | 6E | 06-EDR-6616 |
| BACKWASH VALVE | 6F | 06-EDR-6617 |
| BACKWASH VALVE | 6G | 06-EDR-6622 |
| BACKWASH VALVE | 6H | 06-EDR-6623 |
| BACKWASH VALVE | 6I | 06-EDR-6624 |
| BACKWASH VALVE | 6J | 06-EDR-6625 |
| BACKWASH VALVE (FUTURE) | 6K | 06-EDR-6626 |
| BACKWASH VALVE (FUTURE) | 6L | 06-EDR-6627 |
| SOLIDS WASTING VALVE | 6Y | 06-EDR-6611 |
| SOLIDS WASTING VALVE | 6Z | 06-EDR-6621 |
| BACKWASH VALVE (FUTURE) | 7A | 06-EDR-6712 |
| BACKWASH VALVE (FUTURE) | 7B | 06-EDR-6713 |
| BACKWASH VALVE | 7C | 06-EDR-6714 |
| BACKWASH VALVE | 7D | 06-EDR-6715 |
| BACKWASH VALVE | 7E | 06-EDR-6716 |
| BACKWASH VALVE | 7F | 06-EDR-6717 |
| BACKWASH VALVE | 7G | 06-EDR-6722 |
| BACKWASH VALVE | 7H | 06-EDR-6723 |
| BACKWASH VALVE | 7I | 06-EDR-6724 |
| BACKWASH VALVE | 7J | 06-EDR-6725 |
| BACKWASH VALVE (FUTURE) | 7K | 06-EDR-6726 |
| BACKWASH VALVE (FUTURE) | 7L | 06-EDR-6727 |
| SOLIDS WASTING VALVE | 7Y | 06-EDR-6711 |
| SOLIDS WASTING VALVE | 7Z | 06-EDR-6721 |

- PROVIDE HOSE BIB AND HOSE RACK FOR EACH FILTER, SEE SECTION E/6M04
- CMD FILTER DISKS AND BACKWASH EQUIPMENT SHALL BE INSTALLED PER SUPPLIERS DRAWINGS AND INSTRUCTIONS.
- RUN 1" HCS FROM BELOW GRADE TO ELEV 23.0 +/- THROUGH WALL AND ALONG THE BACK SIDE OF THE EFF WEIR. SUPPORT W/ P662 TYP. DRILL 10 1/16 HOLES IN LINE BEHIND WEIR AT 6-INCH CENTERED.

C PLAN
SCALE: 3/8" = 1'-0"
FILE: 7310L1006M100

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CHECKED
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DATE
JANUARY 2023



Digitally signed by Douglas W. Winkler
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.20 15:40:37 -0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
MECHANICAL
TERTIARY FILTERS NO. 6 & 7
PLAN

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

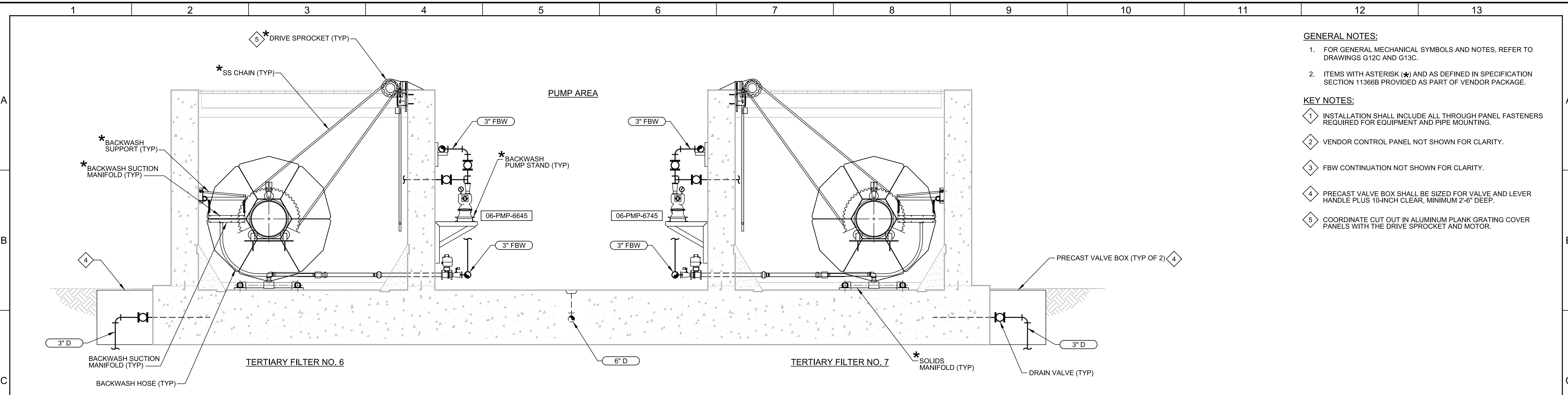
JOB NO.
7310L.10
DRAWING NO.
06M02
SHEET NO.
68 OF 130

Plot Date: 03-APR-2023 2:00:10 PM

User: svcPW

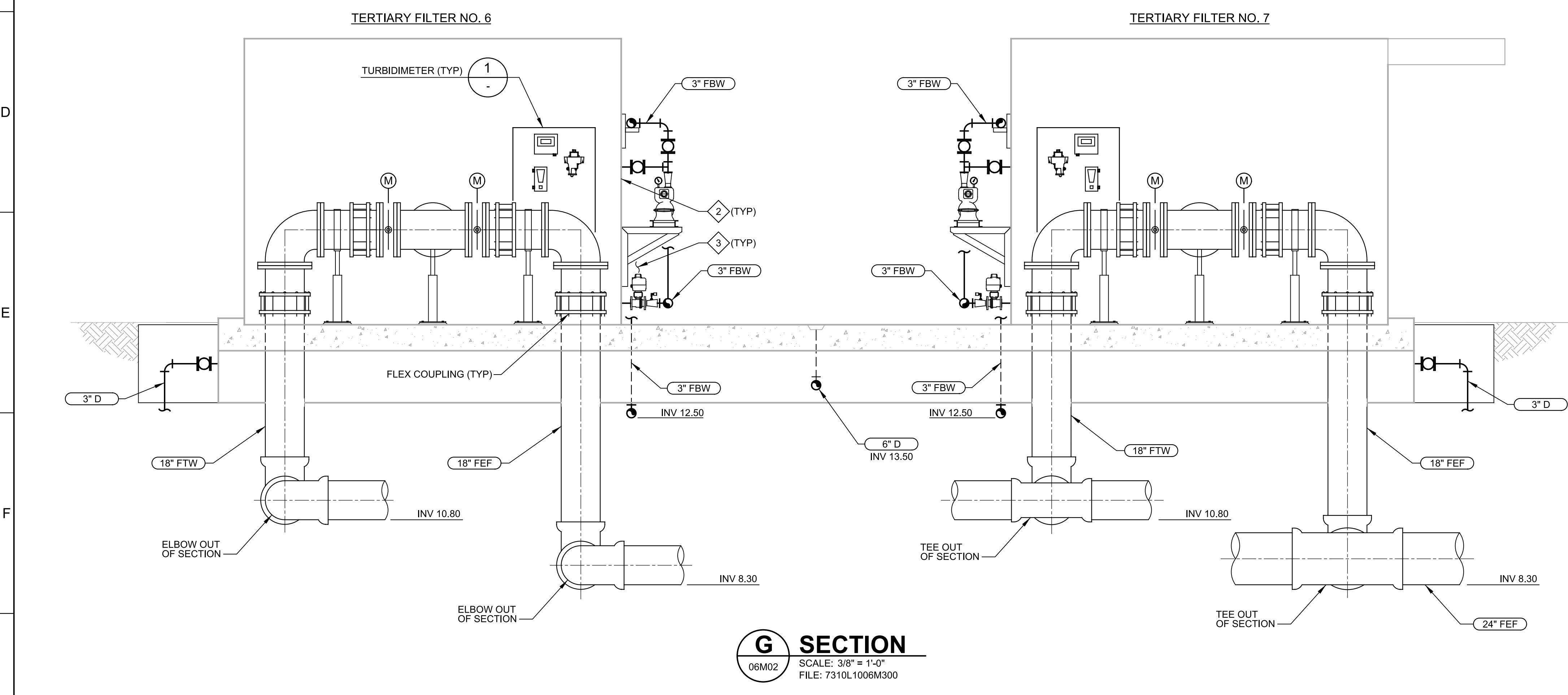
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LAST SAVED BY: luy

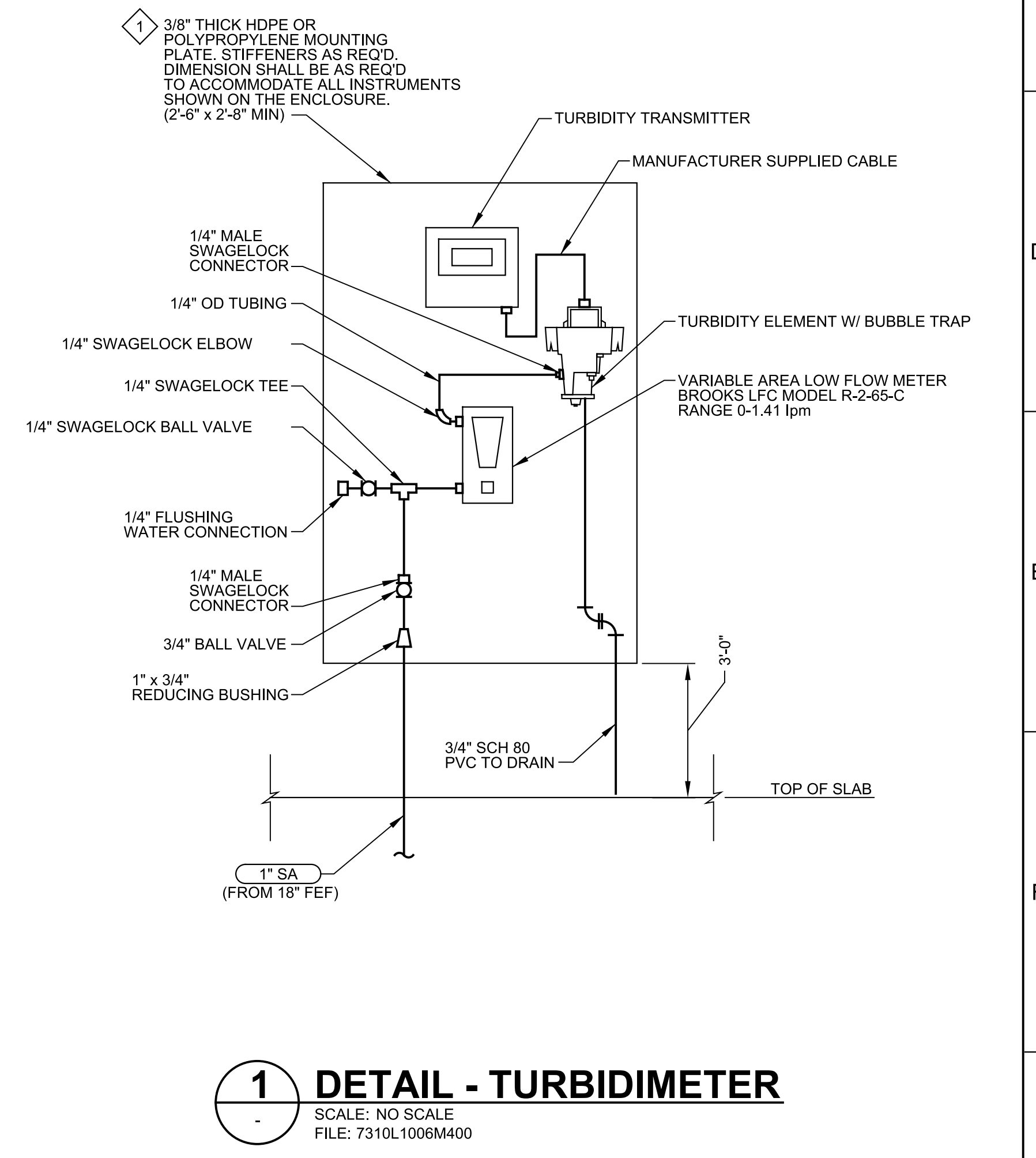


- GENERAL NOTES:**
- FOR GENERAL MECHANICAL SYMBOLS AND NOTES, REFER TO DRAWINGS G12C AND G13C.
 - ITEMS WITH ASTERISK (*) AND AS DEFINED IN SPECIFICATION SECTION 11366B PROVIDED AS PART OF VENDOR PACKAGE.
- KEY NOTES:**
- INSTALLATION SHALL INCLUDE ALL THROUGH PANEL FASTENERS REQUIRED FOR EQUIPMENT AND PIPE MOUNTING.
 - VENDOR CONTROL PANEL NOT SHOWN FOR CLARITY.
 - FBW CONTINUATION NOT SHOWN FOR CLARITY.
 - PRECAST VALVE BOX SHALL BE SIZED FOR VALVE AND LEVER HANDLE PLUS 10-INCH CLEAR, MINIMUM 2'-6" DEEP.
 - COORDINATE CUT OUT IN ALUMINUM PLANK GRATING COVER PANELS WITH THE DRIVE SPROCKET AND MOTOR.

D SECTION
06M02 SCALE: 3/8" = 1'-0"
FILE: 7310L1006M300



G SECTION
06M02 SCALE: 3/8" = 1'-0"
FILE: 7310L1006M300

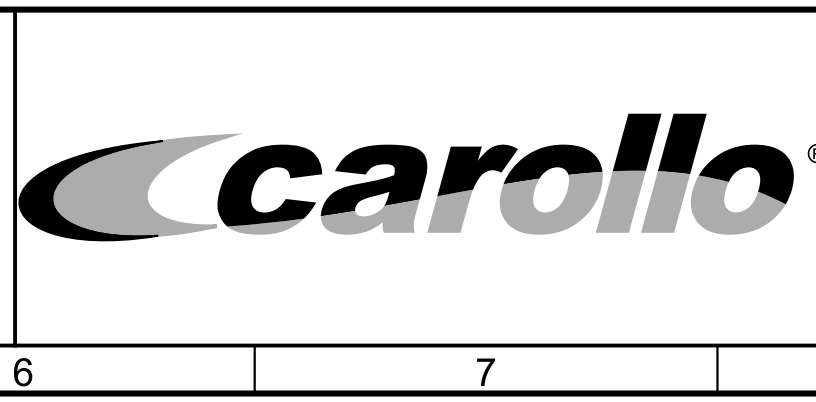


1 DETAIL - TURBIDIMETER
SCALE: NO SCALE
FILE: 7310L1006M400

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| DESIGNED DWW | |
| DRAWN DPF | |
| CHECKED DM | |
| DATE JANUARY 2023 | |

Digitally signed by Douglas W. Wing
Contact Info: CarolloImprovements, Inc.
Date: 2023.04.03 09:59:30 -0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
MECHANICAL
TERTIARY FILTERS NO. 6 & 7
SECTIONS

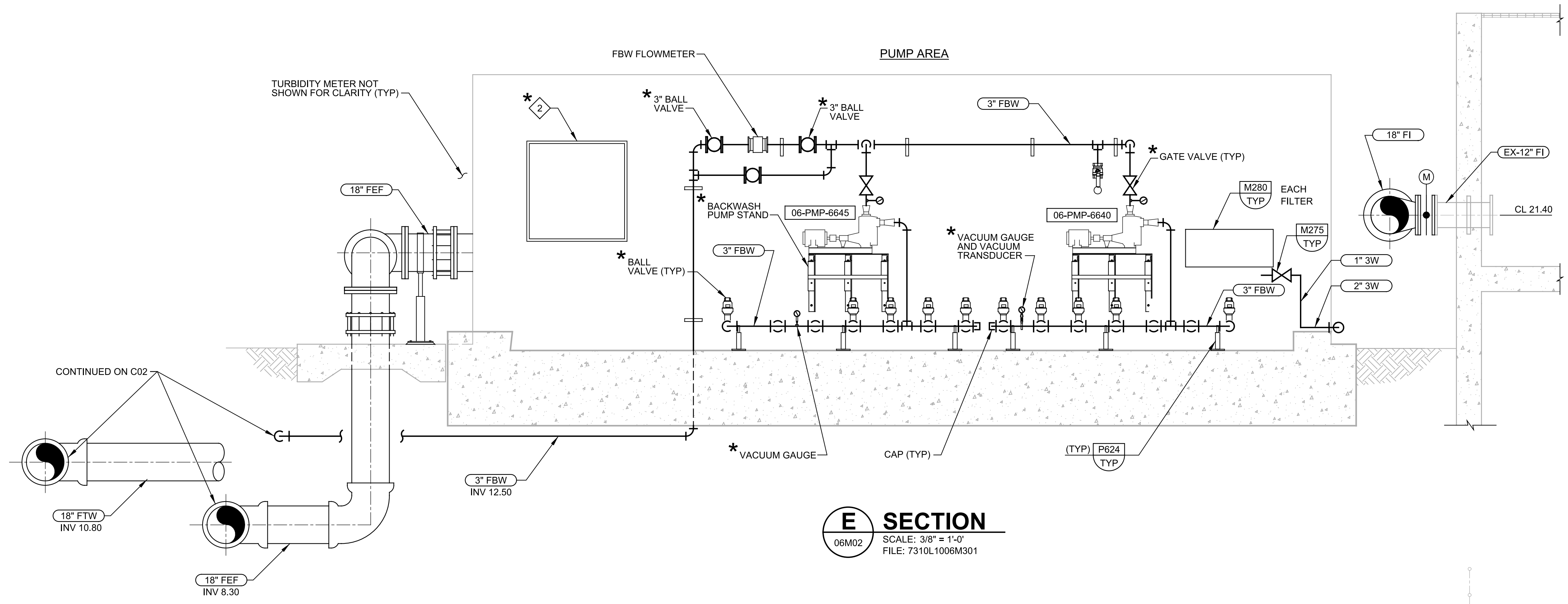
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|--|------------------------|
| VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" | JOB NO. 7310L.10 |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | DRAWING NO. 06M03 |
| | SHEET NO. 69 OF 130 |

Plot Date: 03-APR-2023 2:00:09 PM

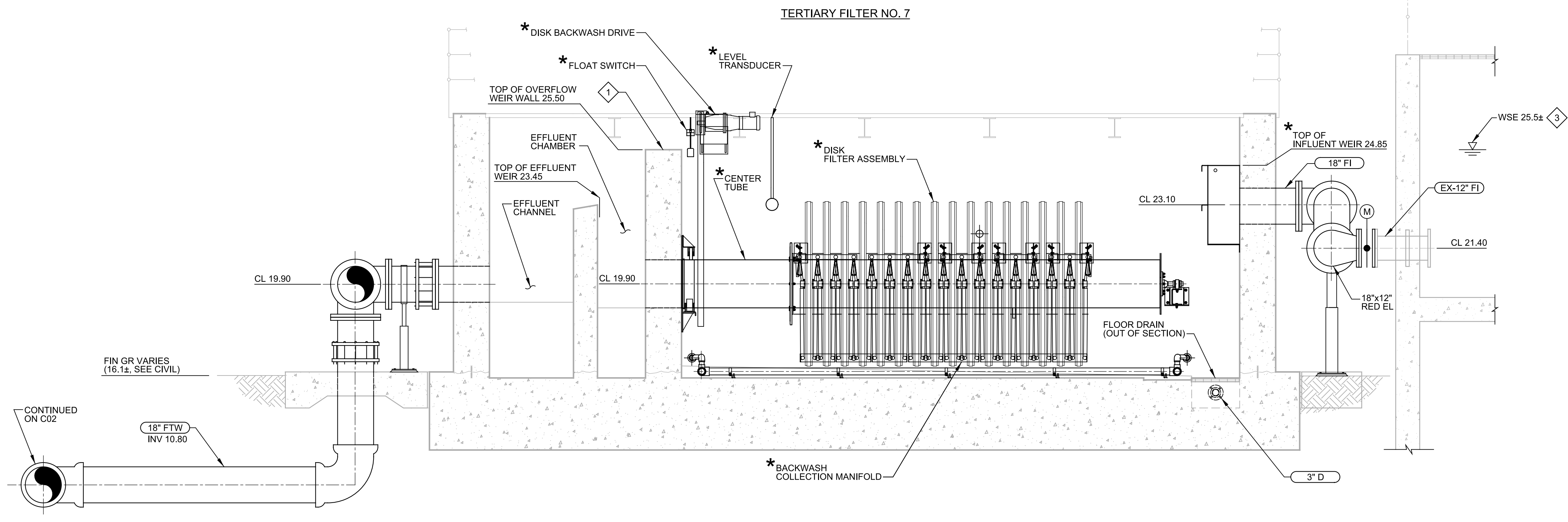
User: svcPW

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

LAST SAVED BY: lumadhy



E SECTION
 06M02 SCALE: 3/8" = 1'-0"
 FILE: 7310L1006M301



F SECTION
 06M02 SCALE: 3/8" = 1'-0"
 FILE: 7310L1006M302

- GENERAL NOTES:**
- FOR GENERAL MECHANICAL SYMBOLS AND NOTES, REFER TO DRAWINGS G12C AND G13C.
 - ITEMS WITH ASTERISK (*) AND AS DEFINED IN SPECIFICATION SECTION 11366B PROVIDED AS PART OF VENDOR PACKAGE.
- KEY NOTES:**
- OVERFLOW WEIR WALL.
 - VENDOR CONTROL PANEL. CONTRACTOR TO CONFIRM SIZE.
 - AT PEAK DESIGN FLOW OF 7.6 MGD.

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JANUARY 2023



Digitally signed by Douglas W. Wilk
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 10:30:07 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 MECHANICAL
 TERTIARY FILTERS NO. 6 & 7
 SECTIONS

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

JOB NO.
7310L.10
 DRAWING NO.
06M04
 SHEET NO.
70 OF 130

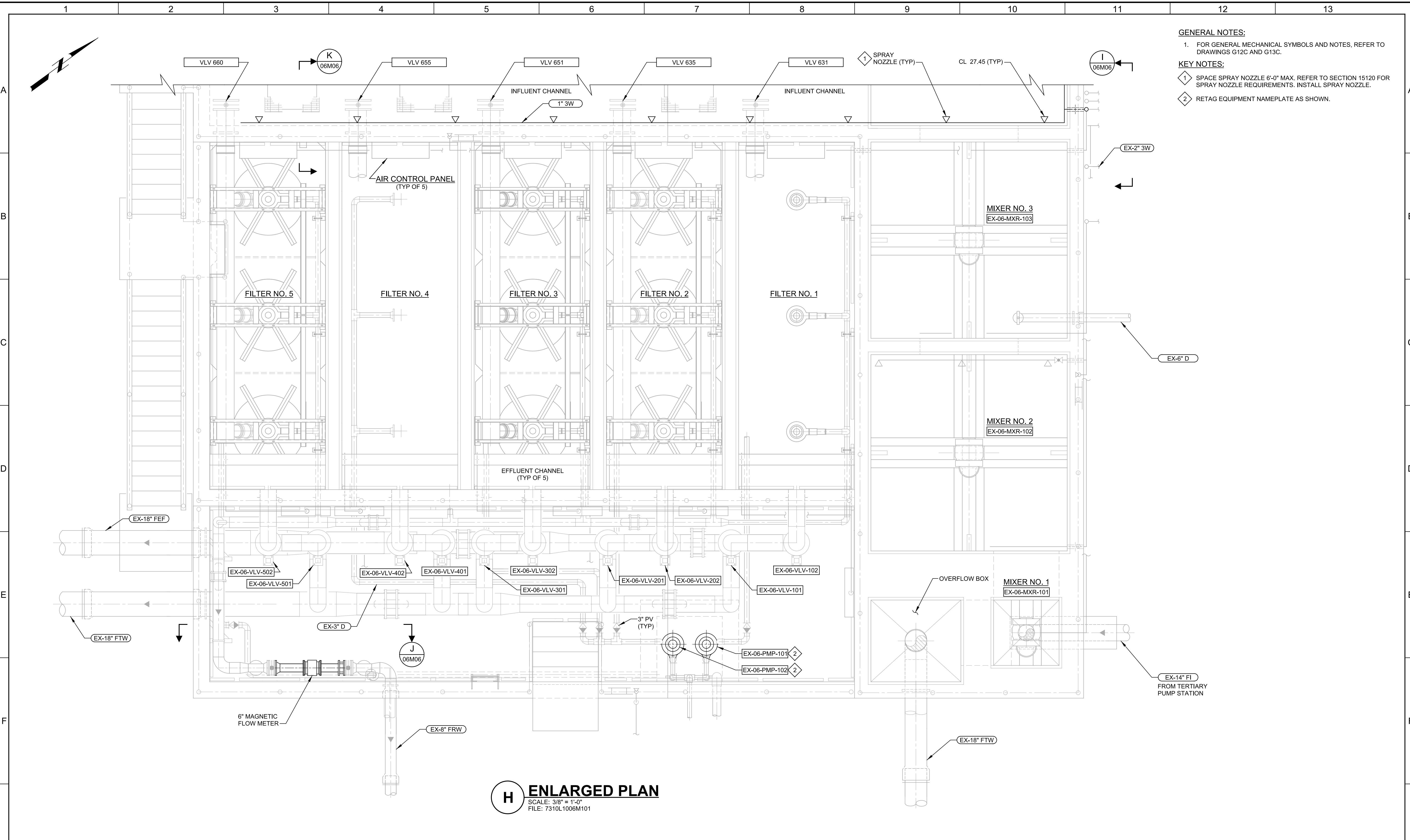
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PlotScale: 1:1

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LAST SAVED BY: lumadhay

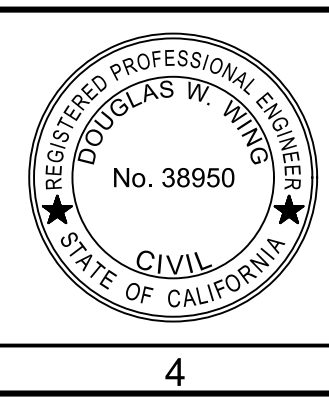


- GENERAL NOTES:**
- FOR GENERAL MECHANICAL SYMBOLS AND NOTES, REFER TO DRAWINGS G12C AND G13C.
- KEY NOTES:**
- SPACE SPRAY NOZZLE 6'-0" MAX. REFER TO SECTION 15120 FOR SPRAY NOZZLE REQUIREMENTS. INSTALL SPRAY NOZZLE.
 - RETAG EQUIPMENT NAMEPLATE AS SHOWN.

H ENLARGED PLAN
 SCALE: 3/8" = 1'-0"
 FILE: 7310L1006M101

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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.03 15:05:30 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 MECHANICAL
**TERTIARY FILTERS NOS. 1-5
 PLAN**

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

JOB NO.
7310L.10
 DRAWING NO.
06M05
 SHEET NO.
71 OF 130

Plot Date: 03-APR-2023 2:00:10 PM

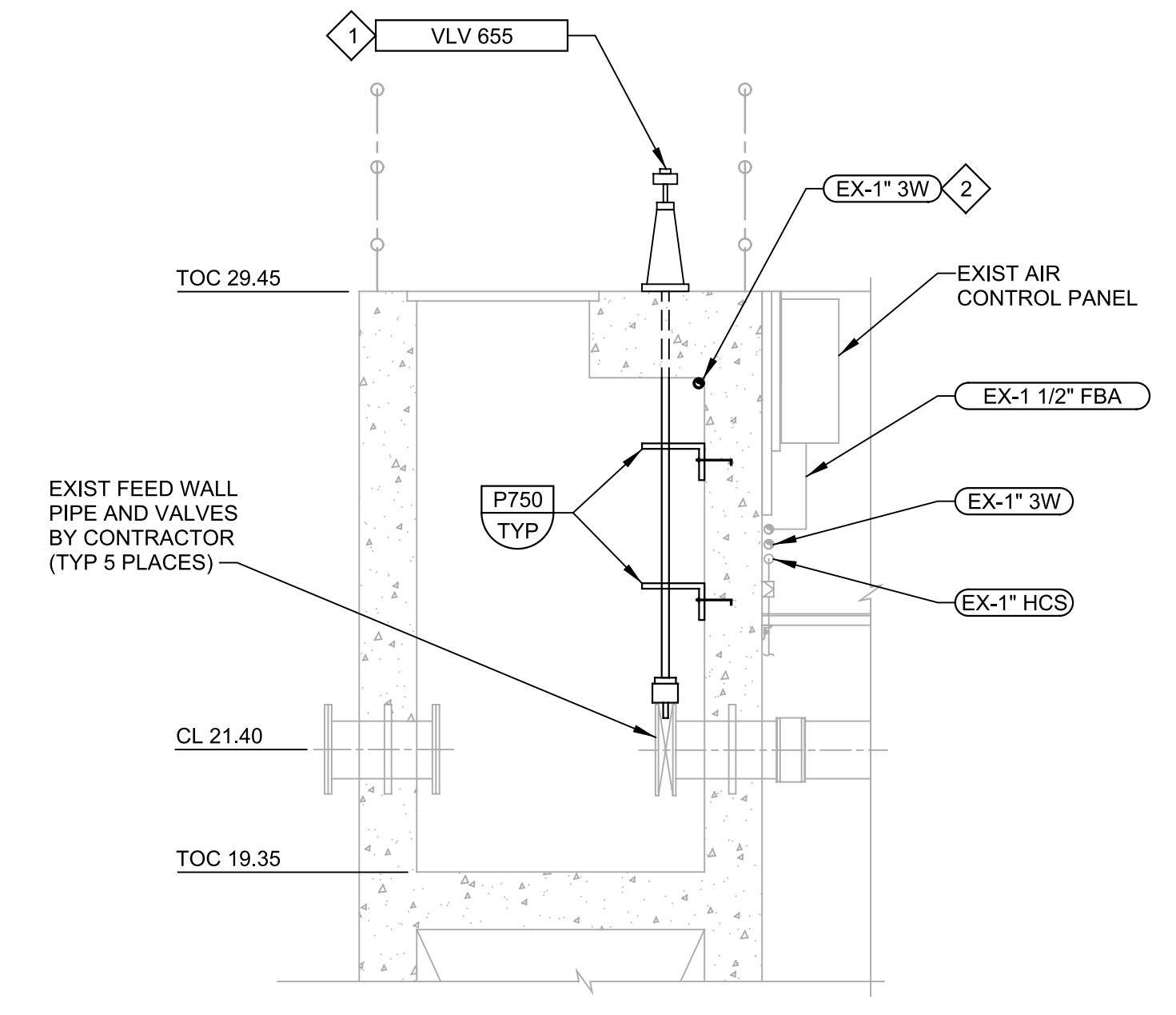
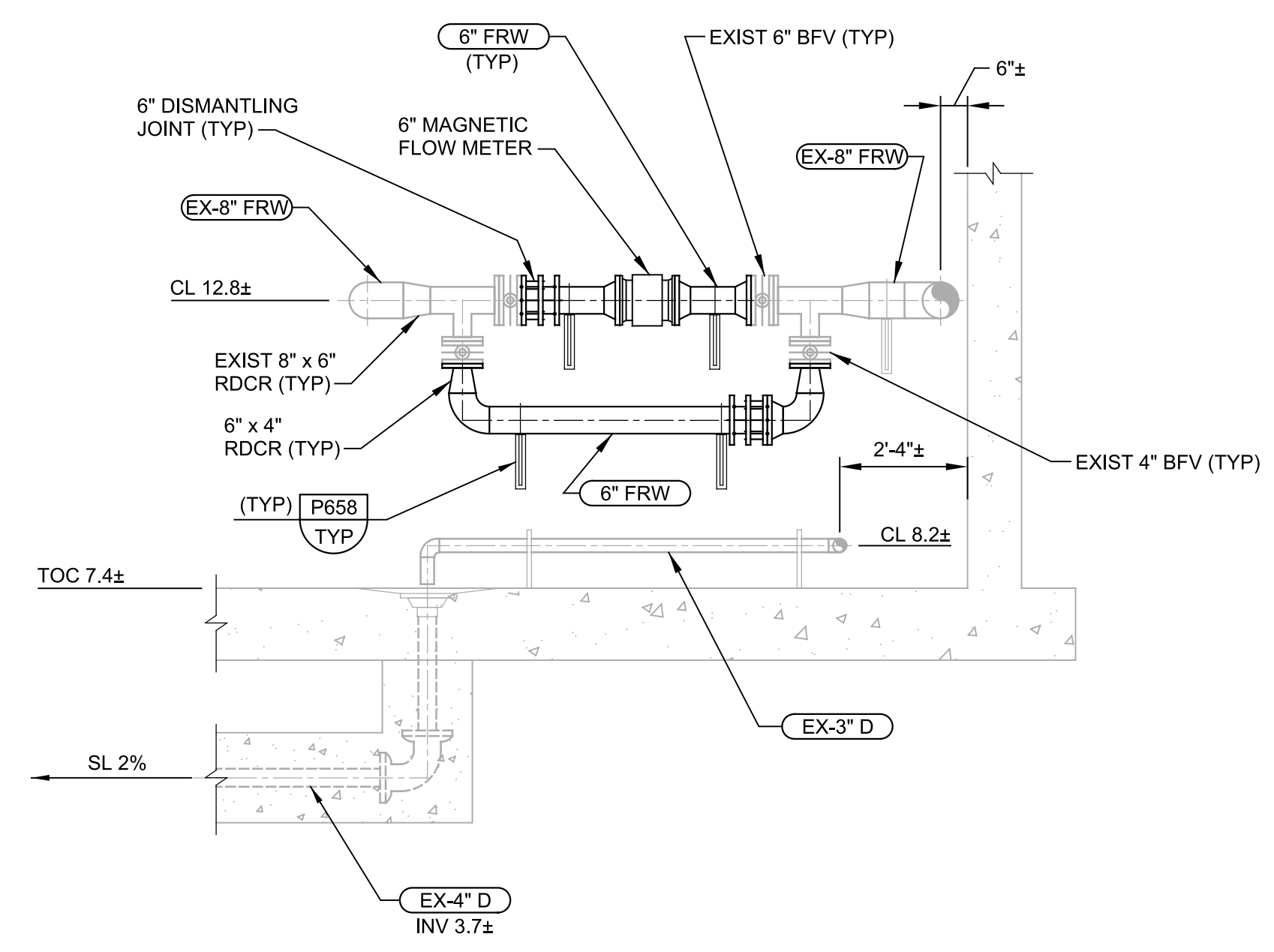
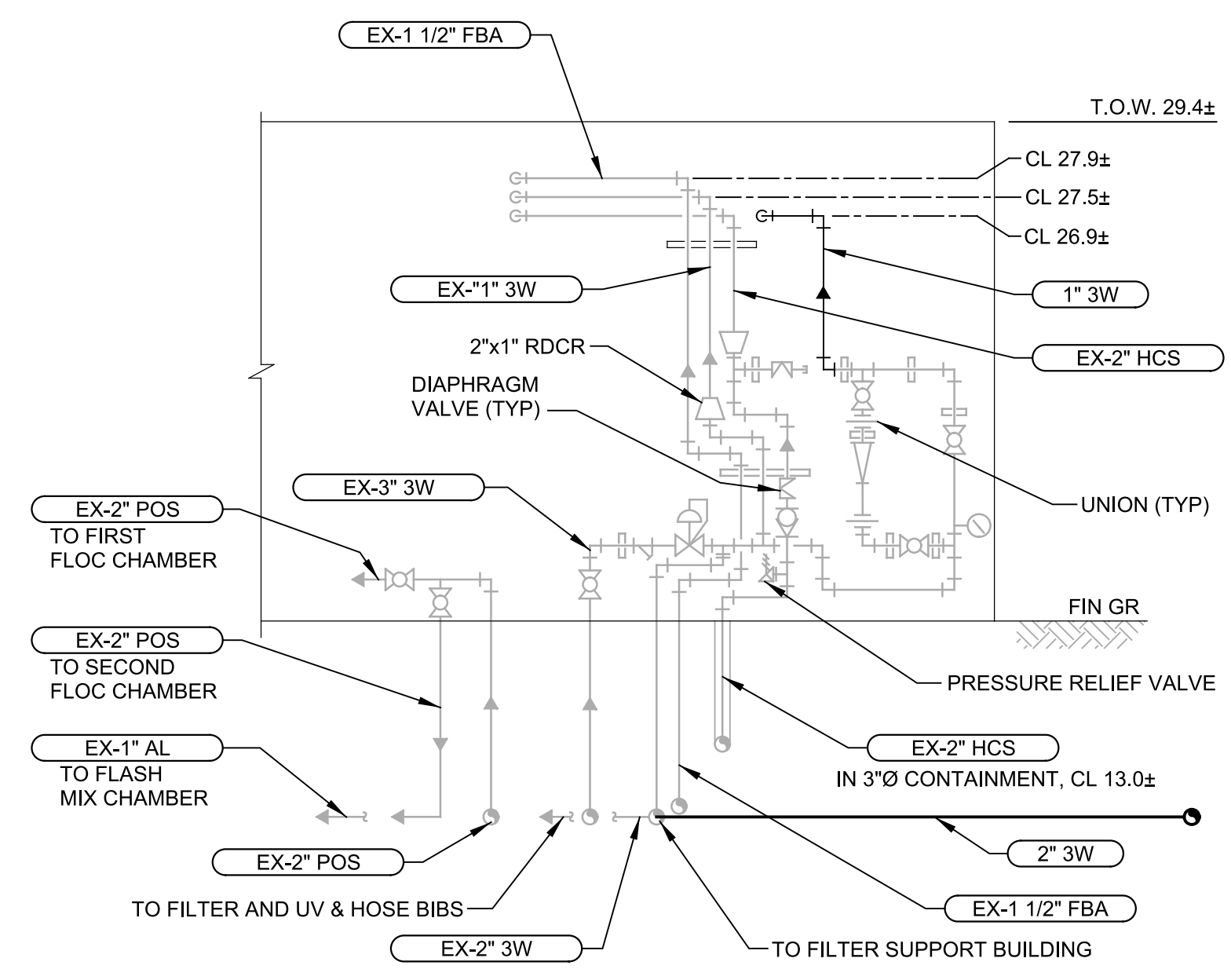
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PlotScale: 1:1

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

LAST SAVED BY: iweilch

- KEY NOTES:**
- 1 REPLACE EXISTING HANDWHEEL OPERATOR WITH MOTOR OPERATED VALVE ACTUATOR. MODIFY EXISTING FLOOR STAND AS NEEDED.
 - 2 SUPPORT 1" 3W USING SST SUPPORTS.



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Digitally signed by Douglas W. Wing
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 15:28:07 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 MECHANICAL
 TERTIARY FILTERS NOS. 1-5
 SECTIONS

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

JOB NO.
7310L.10
 DRAWING NO.
06M06
 SHEET NO.
72 OF 130

Plot Date: 03-APR-2023 2:00:52 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: lumadhay

NOTES

- SIZES OF EQUIPMENT PADS INDICATED ON THE DRAWINGS ARE APPROXIMATE. EXACT DIMENSIONS SHALL BE DETERMINED BY THE CONTRACTOR FOR THE EQUIPMENT FURNISHED. ALL FLOOR MOUNTED EQUIPMENT SHALL BE SET ON CONCRETE PADS CONFORMING TO DETAILS SHOWN ON THE TYPICAL STRUCTURAL DRAWINGS.
- DIELECTRIC COUPLINGS, FLANGES OR UNIONS SHALL BE INSTALLED AT ALL CONNECTIONS OF COPPER PIPE TO OTHER TYPES OF METALLIC PIPING.
- HVAC PIPING AND DUCTWORK DRAWINGS DO NOT SHOW ALL DRAINS, VENTS, OFFSETS AND FITTINGS ETC. REQUIRED FOR THE COMPLETE SYSTEM. SMALL PIPING IS SHOWN APPROXIMATELY TO SCALE BUT NOT EVERY FITTING AND OFFSET IS SHOWN. THE CONTRACTOR SHALL FURNISH, INSTALL AND TEST ALL HVAC SYSTEMS TO PROVIDE THE COMPLETE SYSTEM.
- UNLESS OTHERWISE SHOWN ON THE DRAWINGS ALL FLOOR SLAB AND WALL PENETRATIONS SHALL BE AS SHOWN ON THE TYPICAL DETAILS.
- NOT ALL AND ONLY CERTAIN TYPES OF SUPPORTS ARE SHOWN ON THE HVAC DRAWINGS, UNLESS OTHERWISE DETAILED ON THE DRAWINGS ALL PIPE AND DUCT SUPPORTS SHALL BE DESIGNED, FURNISHED AND INSTALLED BY THE CONTRACTOR AS SPECIFIED.
- THIS IS A GENERAL LIST OF SYMBOLS. NOT ALL ITEMS SHOWN HERE APPEAR ON CONTRACT DRAWINGS.
- TYPICAL DETAILS SHALL BE USED FOR ALL PERMANENT WORK EVEN THOUGH THEY ARE NOT CALLED OUT AT ALL LOCATIONS WHERE THEY APPLY.
- COORDINATE FINAL LOUVER SIZE AND LOCATION WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
- PROVIDE TURNING VANES IN ALL ELBOWS. (SHOWN OR NOT)

DUCTWORK SYMBOLS

| FEATURE | SYMBOL |
|---|--------|
| DIRECTION OF FLOW | |
| DUCT SIZE- FIRST NUMBER IS SIDE SHOWN | |
| ROUND DUCT | |
| DUCT SECTION, POSITIVE PRESS FIRST NUMBER IS TOP | |
| DUCT SECTION, NEGATIVE PRESS FIRST NUMBER IS TOP | |
| SIDE MOUNT DEVICE | |
| ELEVATION CHANGE (R) RISE, (D) DROP | |
| ACCESS DOOR | |
| BOTTOM MOUNT DEVICE REGISTER, GRILLE, DIFFUSER OR DUCT TAKEOFF | |
| FLEXIBLE CONNECTION | |
| FLEXIBLE DUCT | |
| DUCT INSULATION | |
| TURNING VANES | |
| RECTANGULAR TO RECTANGULAR TRANSITION | |
| RECTANGULAR TO ROUND TRANSITION | |
| POSITIVE PRESSURE DUCT - ELBOW TURNED UP (USE ONE DIAGONAL FOR NEGATIVE PRESSURE) | |
| POSITIVE PRESSURE DUCT - ELBOW TURNED DOWN (USE ONE DIAGONAL FOR NEGATIVE PRESSURE) | |
| SMOKE DETECTOR CONFIRM ORIENTATION OF INSTALLATION | |
| DAMPERS | |
| BACKDRAFT | |
| BALANCING | |
| FIRE W/ ACCESS DOOR | |
| MOTORIZED | |
| SMOKE CONFIRM ORIENTATION OF INSTALLATION | |
| COMBINATION SMOKE AND FIRE CONFIRM ORIENTATION OF INSTALLATION | |

EQUIPMENT SYMBOLS

| FEATURE | SYMBOL |
|-----------------------------------|--------|
| A/C OR HEAT PUMP COMPRESSOR | |
| CENTRIFUGAL FAN | |
| CONTROL PANEL | |
| COOLING COIL | |
| DIRECT EXPANSION COIL | |
| DUCT SMOKE DETECTOR | |
| ELECTRIC HEATER | |
| FILTER | |
| AIR FLOW SWITCH | |
| GAS HEATER | |
| HUMIDISTAT | |
| INLINE/AXIAL FAN | |
| MOTOR OPERATED VALVE | |
| ROOF/SIDEWALL FAN | |
| ROOF VENT OR ROOF FAN | |
| SOLENOID VALVE | |
| THERMOSTAT 60" ABOVE FINISH FLOOR | |
| UNIT HEATER (HORIZONTAL TYPE) | |
| UNIT HEATER (VERTICAL TYPE) | |
| PRESSURE DIFFERENTIAL SWITCH | |

NOTE: THIS IS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS. NOT ALL ITEMS SHOWN HERE APPEAR ON THE CONTRACT DRAWINGS.

REGISTERS, GRILLES & LOUVERS SYMBOLS

| FEATURE | SYMBOL |
|---|--------|
| LOUVER - PLAN | |
| LOUVER - SECTION | |
| TRANSFER GRILLE | |
| TO SPACE | |
| FROM SPACE | |
| SUPPLY DIFFUSER OR GRILLE ARROWS INDICATE FLOW DIRECTION | |
| RETURN DIFFUSER OR GRILLE ARROWS INDICATE FLOW DIRECTION | |
| EXHAUST DIFFUSER OR GRILLE ARROWS INDICATE FLOW DIRECTION | |

LEGEND FOR REGISTERS & GRILLES

TYPE OF REGISTER OR GRILLE (AS DESCRIBED IN SPECIFICATIONS)

SR-1(B)/12x12

CFM 400/4

BOOT (IF REQ'D)

NECK SIZE

FLOW PATTERN; SIDEWALL-ADJUSTABLE; C-CORNER

| | | |
|---------------|---------------|----------------|
| SUPPLY | RETURN | EXHAUST |
| | | |
| | | |

DUCT UP THRU ROOF OR FLOOR

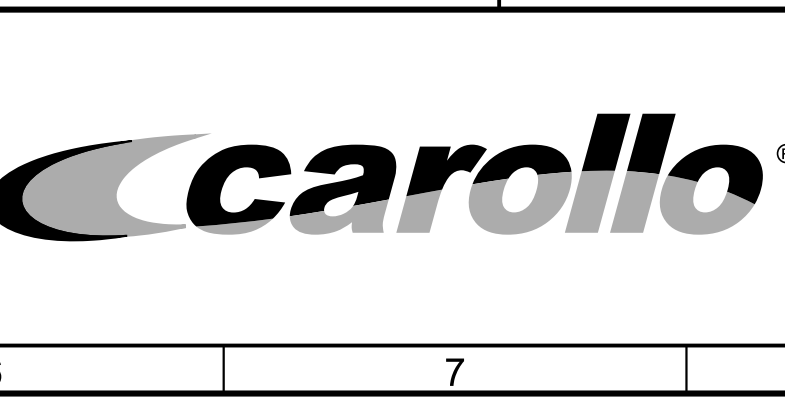
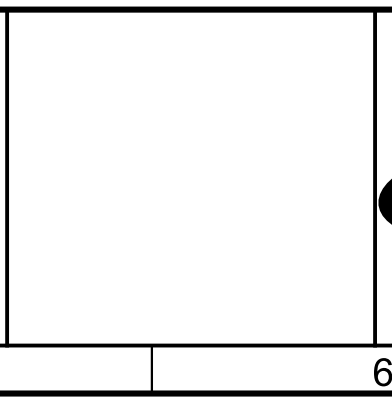
DUCT DOWN

ABBREVIATIONS

| | | |
|----------|-----|-------------------------------------|
| A | @ | AT ABOVE FINISHED FLOOR |
| | AFF | AIR FLOW SWITCH |
| B | BD | BALANCING DAMPER |
| | BDD | BACKDRAFT DAMPER |
| | BOD | BOTTOM OF DUCT |
| C | CO | CARBON MONOXIDE DETECTOR |
| D | DG | DOOR GRILLE |
| E | EA | EXHAUST AIR |
| F | FA | FOUL AIR |
| | FD | FIRE DAMPER |
| N | NC | NORMALLY CLOSED |
| | NO | NORMALLY OPEN |
| O | OA | OUTSIDE AIR |
| R | RA | RETURN AIR |
| | RR | RETURN REGISTER OR GRILLE |
| S | SA | SUPPLY AIR |
| | SD | SMOKE DAMPER OR SMOKE DETECTOR |
| | SFD | SMOKE & FIRE DAMPER COMBINATION |
| | SR | SUPPLY REGISTER, GRILLE OR DIFFUSER |

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DESIGNED TPL
 DRAWN KHB
 CHECKED CAG
 DATE JANUARY 2023



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

HVAC

GENERAL NOTES, ABBREVIATIONS AND SYMBOLS

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

JOB NO. 7310L.10
 DRAWING NO. GH01C
 SHEET NO. 73 OF 130

Plot Date: 03-APR-2023 2:00:52 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1
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| FAN SCHEDULE | | | | | | | | | | | | |
|---------------|---|----------|---------------|---------------|---------|-------|------|---------|-----------|-------|-------------------------|------------------------|
| EQUIPMENT TAG | AREA SERVED | FAN TYPE | AIRFLOW (CFM) | MIN. ESP (WC) | FAN RPM | MOTOR | | | ENCLOSURE | DRIVE | BASIS OF DESIGN | NOTES |
| | | | | | | HP | RPM | VOLTAGE | | | | |
| 07-EF-002 | FILTER SUPPORT BLDG - AIR COMPRESSOR RM | TYPE 14 | 5800 | 0.35 | 1125 | 2.00 | 1725 | 460 | TEFC | BELT | GREENHECK CUBE-200-20 | 1, 2, 3, 4, 5, 6, 7, 8 |
| 22-EF-2201 | STORAGE BUILDING | TYPE 14 | 5000 | 0.80 | 1113 | 2.00 | 1725 | 460 | TEFC | BELT | GREENHECK CUBE-WALL-200 | 1, 2, 4, 5, 6, 7, 8 |

LEGEND:

- 1) PROVIDE ALUMINUM BIRD SCREEN.
- 2) PROVIDE BACKDRAFT DAMPER, COUNTERBALANCED FOR MINIMUM PRESSURE LOSS.
- 3) PROVIDE MANUFACTURER ROOF CURB AND CURB ADAPTER AS NECESSARY.
- 4) PROVIDE CONTROLS AS SPECIFIED IN SECTION 15936.
- 5) PROVIDE VIBRATION ISOLATORS.
- 6) ELECTRICAL CONTRACTOR TO PROVIDE FAN DISCONNECT SWITCH.
- 7) PROVIDE FANS WITH OSHPD CERTIFICATION AND MANUFACTURER TIE DOWN POINTS.
- 8) PROVIDE FANS WITH MANUFACTURER APPLIED HI-PRO POLYESTER COATING.

| ELECTRIC UNIT HEATER SCHEDULE | | | | | | | | | | |
|-------------------------------|------------------|---------------------|-----------------------|--------------|---------|---------------|------------|----------|-----------------|---------|
| EQUIPMENT TAG | AREA DESCRIPTION | INPUT CAPACITY (KW) | OUTPUT CAPACITY (MBH) | AIR TEMP (F) | | AIRFLOW (CFM) | MCA (AMPS) | V /PH/Hz | BASIS OF DESIGN | NOTES |
| | | | | EAT (F) | LAT (F) | | | | | |
| 22-EUH-2202 | STORAGE BUILDING | 9 | 30.7 | 55 | 75 | 1450 | 12 | 480/3/60 | INDEECO TRIAD | 1, 2, 3 |
| 22-EUH-2203 | STORAGE BUILDING | 9 | 30.7 | 55 | 75 | 1450 | 12 | 480/3/60 | INDEECO TRIAD | 1, 2, 3 |

NOTES:

- 1) THERMOSTAT PROVIDED BY HEATING MANUFACTURER.
- 2) WALL MOUNTING.
- 3) ELECTRIC POWERED.

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DESIGNED TPL
 DRAWN KHB
 CHECKED CAG
 DATE JANUARY 2023



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 Date: 2023.04.06 09:17:30 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 HVAC
 EQUIPMENT SCHEDULES

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING

 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
 DRAWING NO. GH02C
 SHEET NO. 74 OF 130

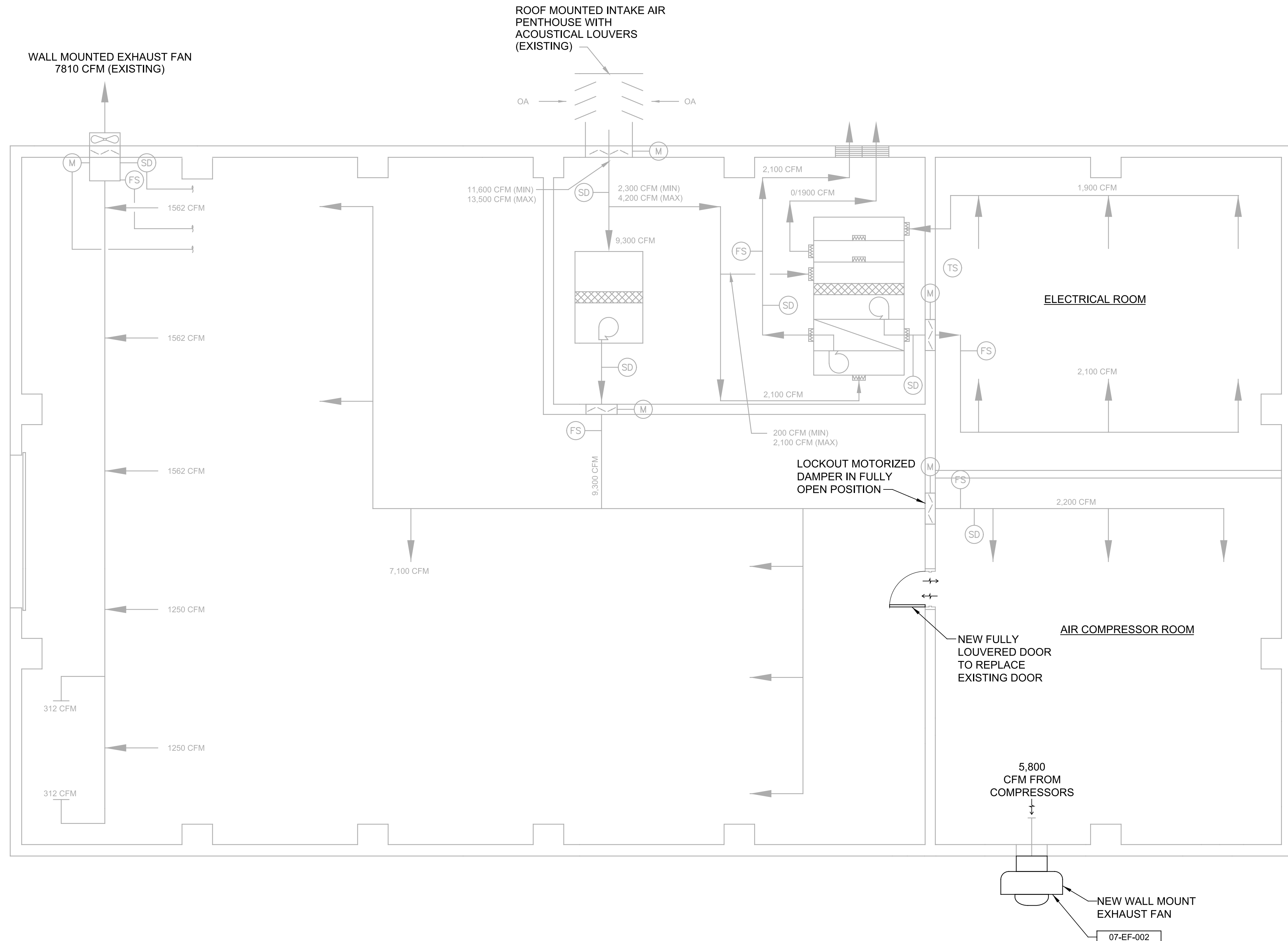
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DATE
JANUARY 2023



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Contact Info: Carollo Engineers, Inc
Date: 2023.04.03 09:50:29 -0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
HVAC
FILTER SUPPORT BUILDING
HVAC SYSTEM AIR FLOW SCHEMATIC

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

JOB NO.
7310L.10
DRAWING NO.
07H01
SHEET NO.
75 OF 130

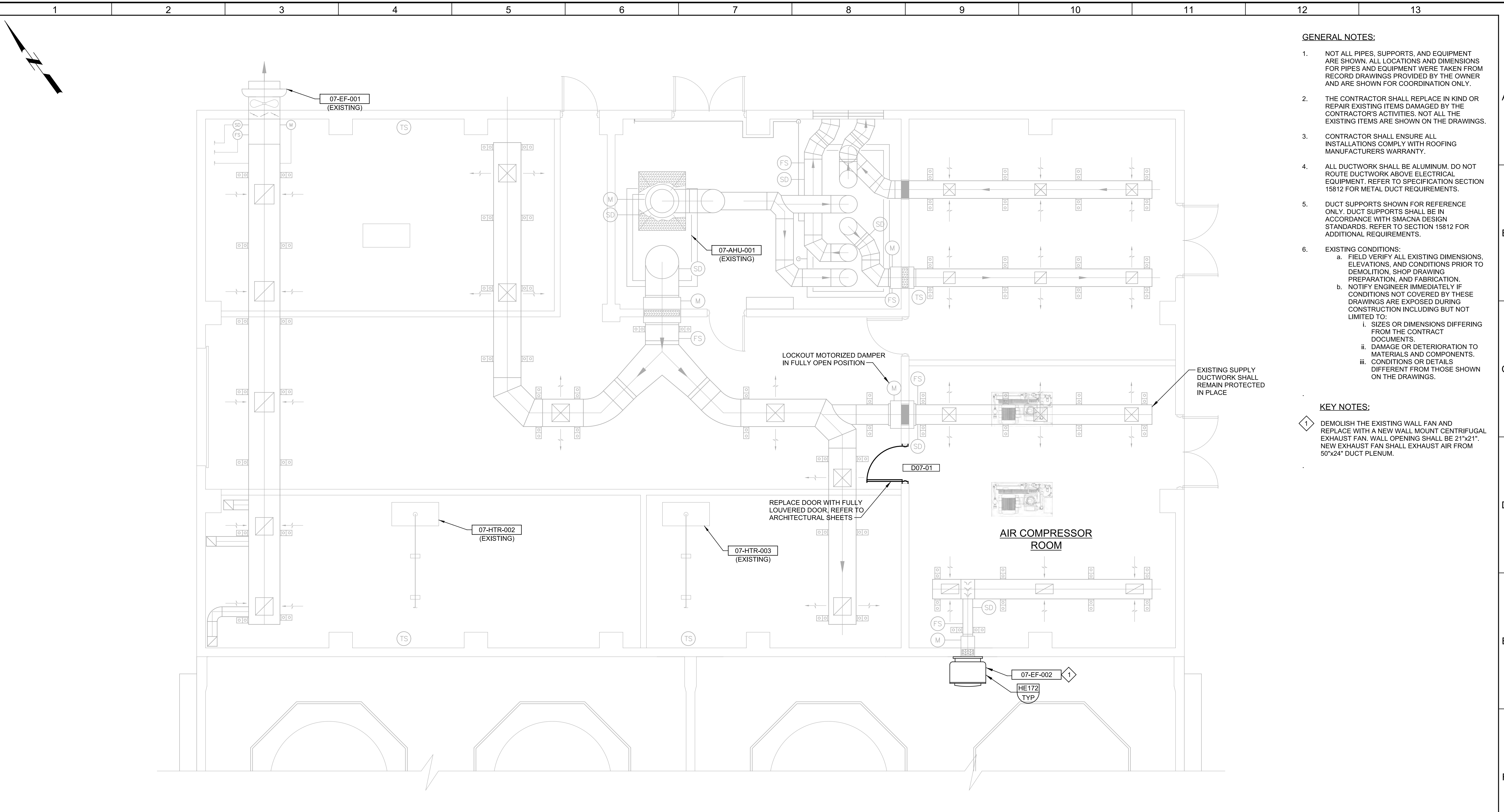
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User: svcPW

PlotScale: 1:1

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

LAST SAVED BY: luy



- GENERAL NOTES:**
- NOT ALL PIPES, SUPPORTS, AND EQUIPMENT ARE SHOWN. ALL LOCATIONS AND DIMENSIONS FOR PIPES AND EQUIPMENT WERE TAKEN FROM RECORD DRAWINGS PROVIDED BY THE OWNER AND ARE SHOWN FOR COORDINATION ONLY.
 - THE CONTRACTOR SHALL REPLACE IN KIND OR REPAIR EXISTING ITEMS DAMAGED BY THE CONTRACTOR'S ACTIVITIES. NOT ALL THE EXISTING ITEMS ARE SHOWN ON THE DRAWINGS.
 - CONTRACTOR SHALL ENSURE ALL INSTALLATIONS COMPLY WITH ROOFING MANUFACTURERS WARRANTY.
 - ALL DUCTWORK SHALL BE ALUMINUM. DO NOT ROUTE DUCTWORK ABOVE ELECTRICAL EQUIPMENT. REFER TO SPECIFICATION SECTION 15812 FOR METAL DUCT REQUIREMENTS.
 - DUCT SUPPORTS SHOWN FOR REFERENCE ONLY. DUCT SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DESIGN STANDARDS. REFER TO SECTION 15812 FOR ADDITIONAL REQUIREMENTS.
 - EXISTING CONDITIONS:
 - FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS PRIOR TO DEMOLITION, SHOP DRAWING PREPARATION, AND FABRICATION.
 - NOTIFY ENGINEER IMMEDIATELY IF CONDITIONS NOT COVERED BY THESE DRAWINGS ARE EXPOSED DURING CONSTRUCTION INCLUDING BUT NOT LIMITED TO:
 - SIZES OR DIMENSIONS DIFFERING FROM THE CONTRACT DOCUMENTS.
 - DAMAGE OR DETERIORATION TO MATERIALS AND COMPONENTS.
 - CONDITIONS OR DETAILS DIFFERENT FROM THOSE SHOWN ON THE DRAWINGS.
- KEY NOTES:**
- DEMOLISH THE EXISTING WALL FAN AND REPLACE WITH A NEW WALL MOUNT CENTRIFUGAL EXHAUST FAN. WALL OPENING SHALL BE 21"x21". NEW EXHAUST FAN SHALL EXHAUST AIR FROM 50"x24" DUCT PLENUM.

A FLOOR PLAN
 SCALE: 1/4" = 1'-0"
 FILE: 7310L1007H101

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| DESIGNED TPL |
| DRAWN JRG |
| CHECKED CAG |
| DATE JANUARY 2023 |



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 Contact Info: Carollo Engineers, Inc
 Date: 2023.04.20 09:05:29 -0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 HVAC
**FILTER SUPPORT BUILDING
 FLOOR PLAN**

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| VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | JOB NO. 7310L.10 DRAWING NO. 07H02 SHEET NO. 76 OF 130 |
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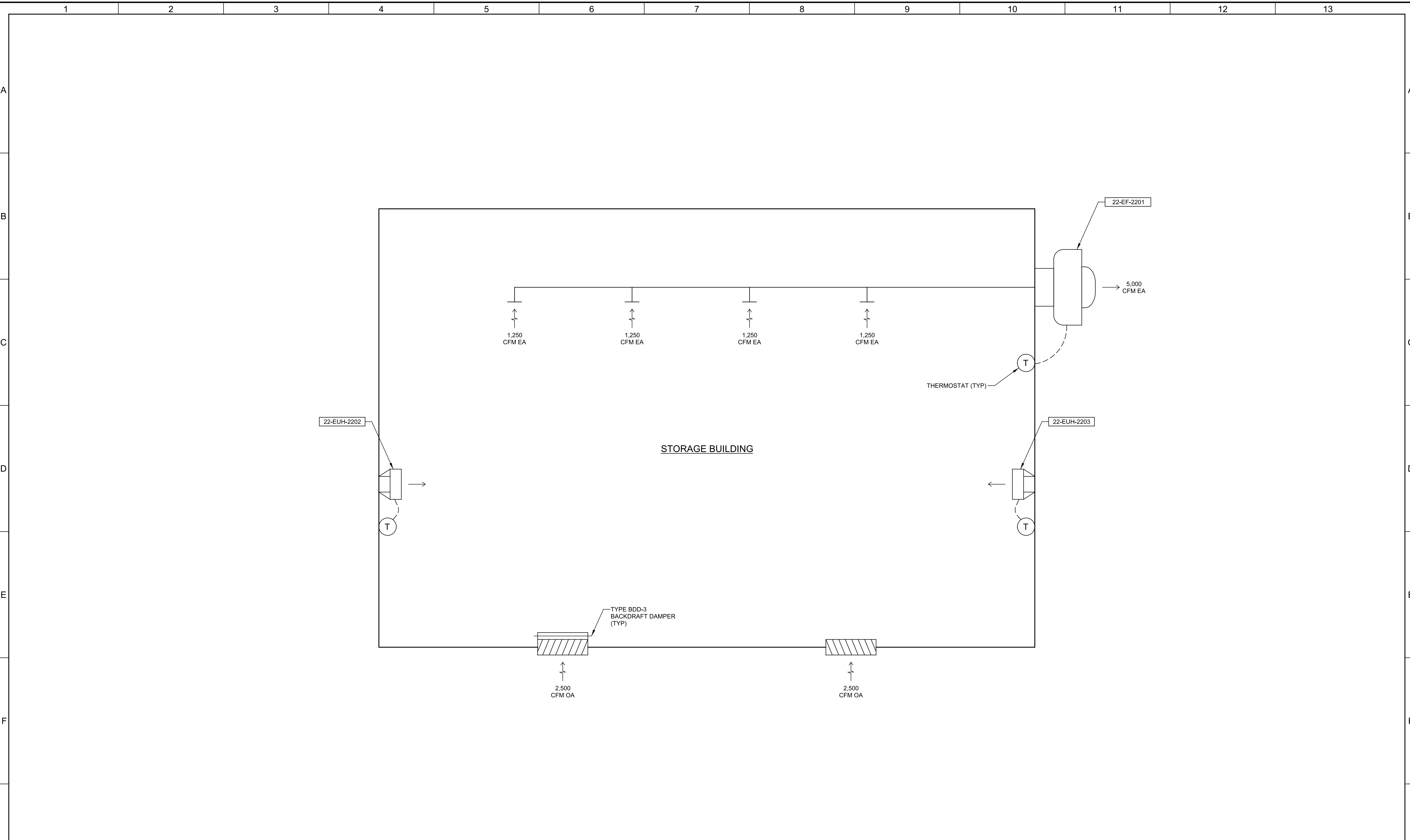
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User: svcPW

PlotScale: 1:1

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DATE
JANUARY 2023



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Contact Info: Carollo Equipment, Inc
Date: 2023.04.03 09:19:29-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
HVAC
STORAGE BUILDING
AIRFLOW SCHEMATIC

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

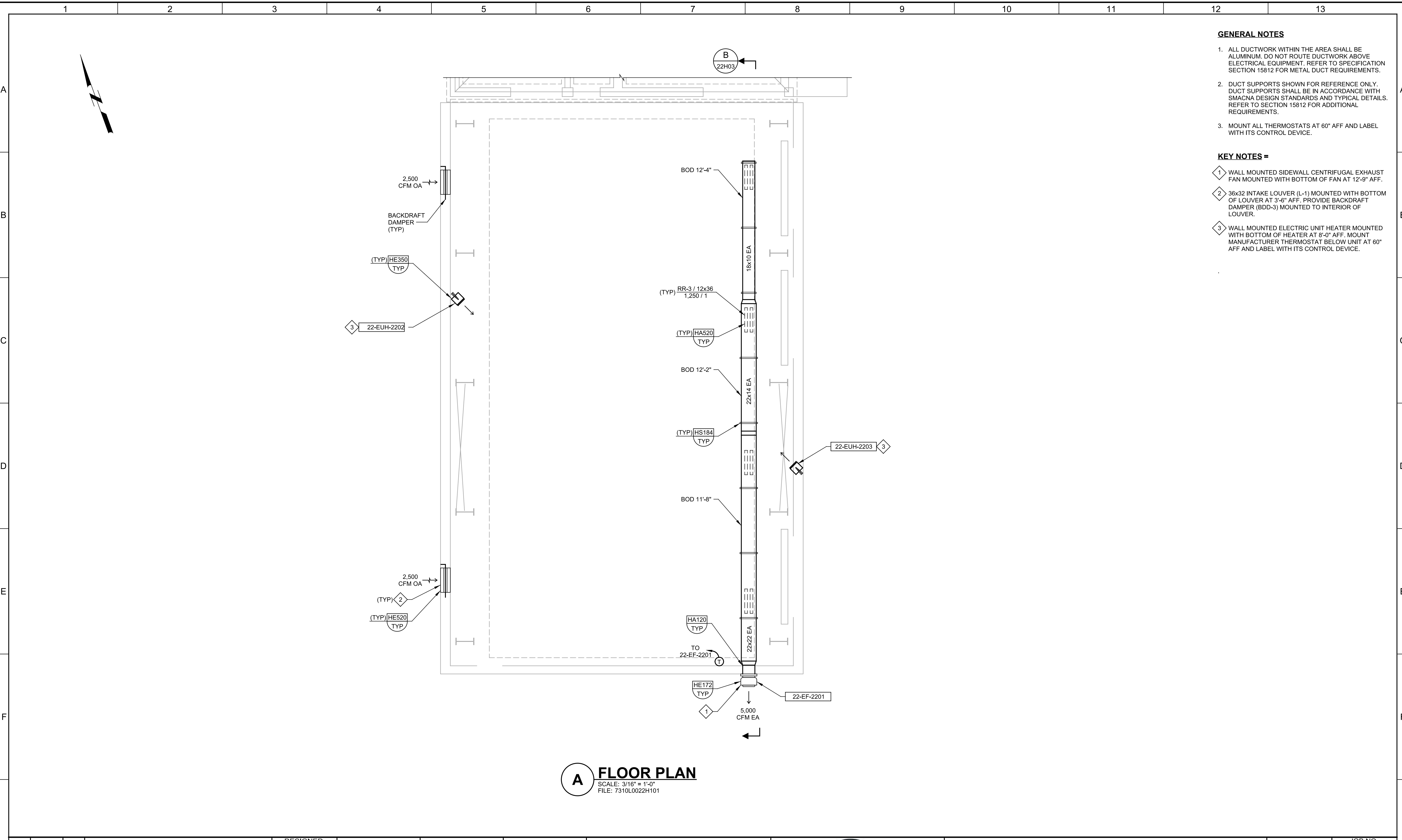
JOB NO.
7310L.10
DRAWING NO.
22H01
SHEET NO.
77 OF 130

Plot Date: 03-APR-2023 2:00:57 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sid_Pen_v0905.pen PlotScale: 1:1

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- GENERAL NOTES**
1. ALL DUCTWORK WITHIN THE AREA SHALL BE ALUMINUM. DO NOT ROUTE DUCTWORK ABOVE ELECTRICAL EQUIPMENT. REFER TO SPECIFICATION SECTION 15812 FOR METAL DUCT REQUIREMENTS.
 2. DUCT SUPPORTS SHOWN FOR REFERENCE ONLY. DUCT SUPPORTS SHALL BE IN ACCORDANCE WITH SMACNA DESIGN STANDARDS AND TYPICAL DETAILS. REFER TO SECTION 15812 FOR ADDITIONAL REQUIREMENTS.
 3. MOUNT ALL THERMOSTATS AT 60" AFF AND LABEL WITH ITS CONTROL DEVICE.

- KEY NOTES =**
- 1 WALL MOUNTED SIDEWALL CENTRIFUGAL EXHAUST FAN MOUNTED WITH BOTTOM OF FAN AT 12'-9" AFF.
 - 2 36x32 INTAKE LOUVER (L-1) MOUNTED WITH BOTTOM OF LOUVER AT 3'-6" AFF. PROVIDE BACKDRAFT DAMPER (BDD-3) MOUNTED TO INTERIOR OF LOUVER.
 - 3 WALL MOUNTED ELECTRIC UNIT HEATER MOUNTED WITH BOTTOM OF HEATER AT 8'-0" AFF. MOUNT MANUFACTURER THERMOSTAT BELOW UNIT AT 60" AFF AND LABEL WITH ITS CONTROL DEVICE.

A FLOOR PLAN
 SCALE: 3/16" = 1'-0"
 FILE: 7310L0022H101

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JANUARY 2023



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 Date: 2023.04.03 09:40:07-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 HVAC
STORAGE BUILDING FLOOR PLAN

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

JOB NO.
7310L.10
22H02
 SHEET NO.
78 OF 130

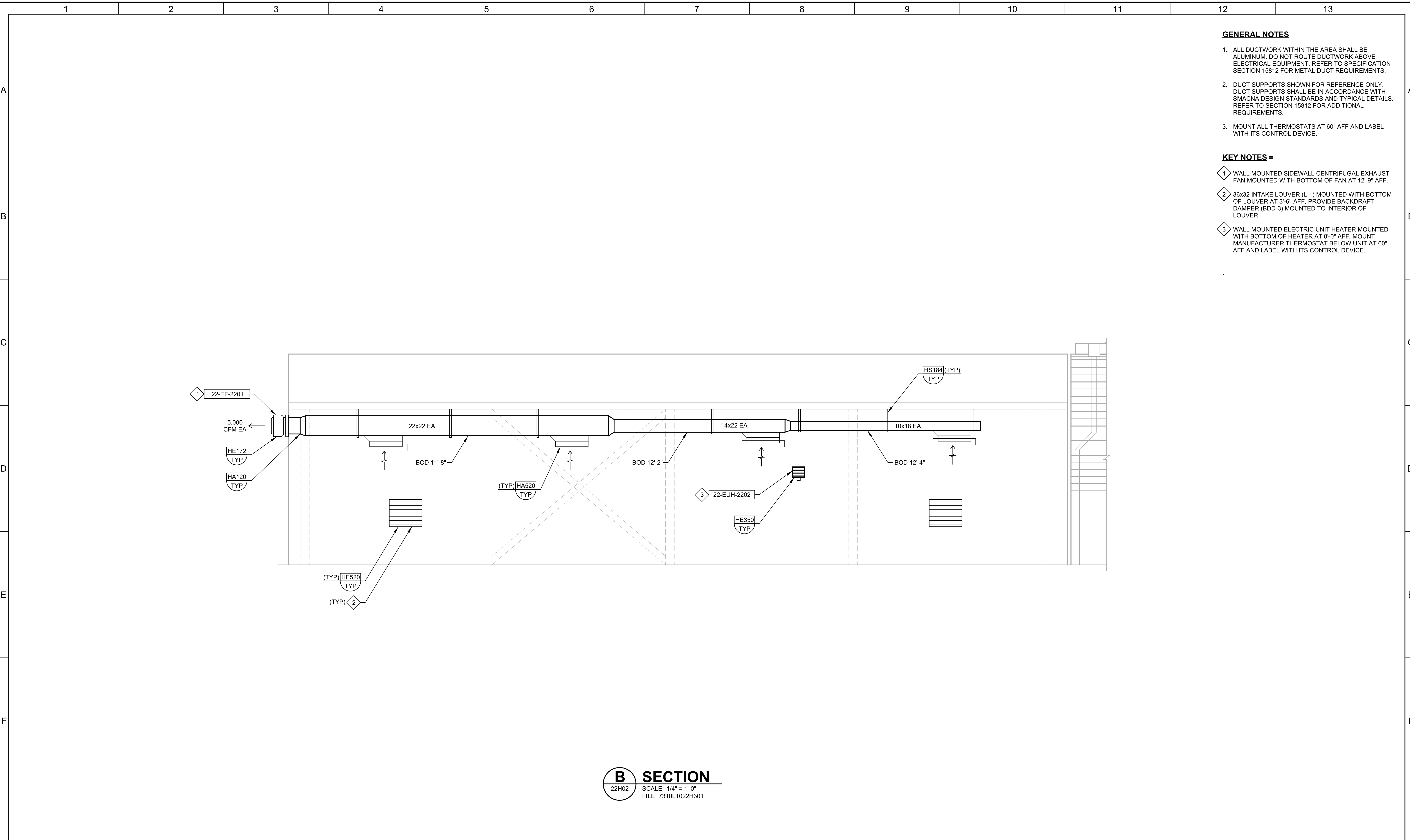
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LAST SAVED BY: lumadhay



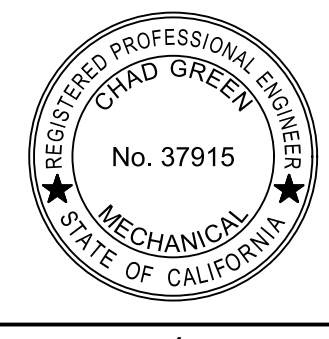
- GENERAL NOTES**
- ALL DUCTWORK WITHIN THE AREA SHALL BE ALUMINUM. DO NOT ROUTE DUCTWORK ABOVE ELECTRICAL EQUIPMENT. REFER TO SPECIFICATION SECTION 15812 FOR METAL DUCT REQUIREMENTS.
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 - MOUNT ALL THERMOSTATS AT 60" AFF AND LABEL WITH ITS CONTROL DEVICE.

- KEY NOTES =**
- WALL MOUNTED SIDEWALL CENTRIFUGAL EXHAUST FAN MOUNTED WITH BOTTOM OF FAN AT 12'-9" AFF.
 - 36x32 INTAKE LOUVER (L-1) MOUNTED WITH BOTTOM OF LOUVER AT 3'-6" AFF. PROVIDE BACKDRAFT DAMPER (BDD-3) MOUNTED TO INTERIOR OF LOUVER.
 - WALL MOUNTED ELECTRIC UNIT HEATER MOUNTED WITH BOTTOM OF HEATER AT 8'-0" AFF. MOUNT MANUFACTURER THERMOSTAT BELOW UNIT AT 60" AFF AND LABEL WITH ITS CONTROL DEVICE.

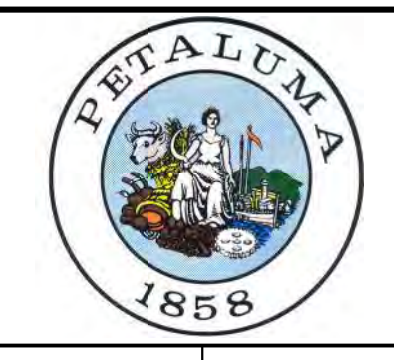
B SECTION
 22H02 SCALE: 1/4" = 1'-0"
 FILE: 7310L1022H301

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JANUARY 2023



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 Contact Info: Carollo Engineers, Inc
 Date: 2023.04.06 09:19:29-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 HVAC
 STORAGE BUILDING
 SECTION

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

JOB NO.
7310L.10
 DRAWING NO.
22H03
 SHEET NO.
79 OF 130

Plot Date: 03-APR-2023 2:06:55 PM
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 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: jsantaguida

ELECTRICAL PLAN SYMBOLS

ELECTRICAL ONE-LINE SYMBOLS

IDENTIFICATION SYMBOLS

- EQUIP #** EQUIPMENT AND INSTRUMENT IDENTIFICATION
- EQUIPMENT/INSTRUMENT LOCATOR**
- LUMINAIRE IDENTIFICATION**
 a = CIRCUIT DESIGNATION
 b = DEVICE SWITCHED FROM
 c = MOUNTING HEIGHT IN FEET TO BOTTOM OF FIXTURE
- CONDUIT IDENTIFICATION**
 XXXX = CONDUIT NUMBER, REFER TO CONDUIT SCHEDULE UNLESS OTHERWISE NOTED, GROUPED CONDUITS ARE LABELED LEFT TO RIGHT OR TOP TO BOTTOM.
- INDICATES KEYNOTE X**
 (PERTAINS ONLY TO SHEET WHERE NOTE IS FOUND)
- DISCONNECT SWITCH**
 A = TYPE, REFER TO DISCONNECT SCHEDULE

LUMINAIRES

- LINEAR FIXTURE**
- 2' X 2' LAY-IN TROFFER**
- 2' X 4' LAY-IN TROFFER**
- LUMINAIRE POLE MOUNTED**
- GO/NO-GO PANEL - STROBE AND HORN**
 R = RED LIGHT
 G = GREEN LIGHT
 H = HORN
- GO/NO-GO PANEL - SOLID**
- GO/NO-GO PANEL - STROBE**
- LUMINAIRE, EMERGENCY BATTERY-POWERED**
- LUMINAIRE, EMERGENCY/EXIT BATTERY-POWERED**
- LUMINAIRE, EMERGENCY BATTERY-POWERED REMOTE**
- LUMINAIRE, SURFACE OR PENDANT MOUNTED**
- LUMINAIRE, WALL MOUNTED**
- LUMINAIRE, FLOOD/SPOT**
- LUMINAIRE, EXIT ONE OR TWO FACES AS INDICATED, ARROW POINTS IN DIRECTION OF EGRESS.**
- LUMINAIRE, WALL WASHER**

SWITCHES/RECEPTACLES

- SINGLE POLE SWITCH**
 a = CIRCUIT DESIGNATION
 b = DEVICE SWITCHED DESIGNATION
 c = TYPE
 2 = DOUBLE POLE SWITCH
 3 = THREE-WAY SWITCH
 3P = THREE POSITION SWITCH
 4 = FOUR-WAY SWITCH
 K = KEY OPERATED SWITCH
 F = SWITCH AND FUSE/STAT HOLDER
 P = SWITCH AND PILOT LIGHT
 T = THERMOSTAT
 D = DIMMER SWITCH
 L = LOW VOLTAGE LIGHT SWITCH
 M = MANUAL MOTOR STARTER
 N = NETWORKED SINGLE OR MULTIPLE SWITCH LOCATIONS
- REFER TO ABBREVIATIONS LEGEND FOR ALL OTHER DESIGNATIONS.**
- OCCUPANCY SENSOR**
 X = REFERENCE LIGHTING CONTROL COMPONENT SCHEDULE
 a = CIRCUIT DESIGNATION
 b = DEVICE SWITCHED DESIGNATION
 c = MOUNTING HEIGHT IN FEET TO BOTTOM OF SENSOR
- PHOTOCELL**
- SWITCH AND SINGLE RECEPTACLE**
 a = CIRCUIT DESIGNATION
 b = DEVICE TYPE DESIGNATION
- DUPLEX RECEPTACLE**
- QUADRUPLER RECEPTACLE**
- IN FLOOR DUPLEX RECEPTACLE**
- IN FLOOR QUADRUPLER RECEPTACLE**
- DUPLEX RECEPTACLE w/SPLIT WIRE**
- APPLIANCE RECEPTACLE**
- SPECIAL PURPOSE RECEPTACLE**
- WELDING RECEPTACLE**
 a = CIRCUIT DESIGNATION
 b = DISCONNECT TYPE
- TWIST LOCK RECEPTACLE**
 a = AMP RATING
- TELEPHONE OUTLET**
 a = CIRCUIT DESIGNATION
 b = MOUNTING HEIGHT
- DATA COMMUNICATIONS OUTLET**
 a = CIRCUIT DESIGNATION
 b = MOUNTING HEIGHT

FIRE ALARM

- SMOKE DETECTOR**
 a = TYPE
 I = IONIZATION
 P = PHOTOELECTRIC
 d = DUCT DETECTOR
- FIRE ALARM CONTROL PANEL**
- FIRE ALARM PULL STATION**
- FIRE ALARM HORN/STROBE COMBINATION**
- FIRE ALARM STROBE**
- FIRE SPRINKLER**
 F = FLOW SWITCH
 T = TAMPER SWITCH

RACEWAY

- EXPOSED CONDUIT**
- BREAK AND CONTINUATION IN CONDUIT RUN**
- EXPOSED CONDUIT HIDDEN BEHIND WALLS, FLOORS OR OTHER STRUCTURES**
- UNDERGROUND CONDUIT, DIRECT BURIED OR IN DUCT BANK**
- CONDUIT IN SLAB**
- CONDUIT VERTICAL CHANGE IN DIRECTION**
- CONDUIT CAP**
- JUNCTION BOX**
- CONDUIT SEAL**
- CONDUIT TEE**
- DUCT BANK APPROXIMATE DIMENSIONS SHOWN ON DUCT BANK SECTIONS**

CONDUIT SIZE AND CONDUCTORS

- INDIVIDUAL CONDUCTORS**
- W³C-(3-X (Ø), 1-Y (N) & 1-Z (G))
- W³C (WHERE INDICATED): W = CONDUIT TRADE SIZE
- 3-X (Ø):
 3 = QUANTITY
 X = SIZE OF CONDUCTORS
 (Ø) = DESIGNATES PHASE CONDUCTORS
- 1-Y (N)(WHERE INDICATED):
 1 = QUANTITY
 Y = SIZE OF CONDUCTORS
 (N) = DESIGNATES NEUTRAL CONDUCTORS
- 1-Z (G)(WHERE INDICATED):
 1 = QUANTITY
 Z = SIZE OF CONDUCTORS
 (G) = DESIGNATES GROUND CONDUCTORS
- U(3-X (Ø) & 1-X (G))
 U = NUMBER OF PARALLEL RUNS
- MULTI CONDUCTOR CABLES**
- K/2/C#16S
 K (WHERE INDICATED) = NUMBER OF PAIRS
 2/C#16S = TWO CONDUCTOR, 16 GAUGE, TWISTED SHIELDED PAIR
- K/3/C#16S
 K (WHERE INDICATED) = NUMBER OF TRIPLET
 3/C#16S = THREE CONDUCTOR, 16 GAUGE, TWISTED SHIELDED TRIPLET
- N/CX
 N = NUMBER OF CONDUCTORS IN THE CABLE
 X = SIZE OF CONDUCTORS

FIBER OPTIC CABLES

- FO/N
 N = NUMBER OF INDIVIDUAL FIBERS

GROUNDING

- UNDERGROUND GROUND CABLE #4/0 SDBC UNLESS OTHERWISE NOTED**
- GROUND ROD**
- GROUND ROD AND GROUND WELL**

MEDIUM VOLTAGE

- CIRCUIT BREAKER, MEDIUM VOLTAGE**
 a = CIRCUIT BREAKER NUMBER
 b = FRAME SIZE
- ANSI RELAY DEVICE**
 a = ANSI DEVICE FUNCTION
 b = QUANTITY
- MEDIUM VOLTAGE DISCONNECT SWITCH NON-FUSED CUT OUT**
- MEDIUM VOLTAGE DISCONNECTING FUSE SINGLE FUSE CUT OUT**
- MEDIUM VOLTAGE DISCONNECTING FUSE DOUBLE FUSE CUT OUT**
- MEDIUM VOLTAGE SINGLE FUSE**
- MEDIUM VOLTAGE DOUBLE FUSE**
- MEDIUM VOLTAGE LIVE FRONT TERMINATOR**
- MEDIUM VOLTAGE ELBOW**
- MEDIUM VOLTAGE TEE**
- MEDIUM VOLTAGE CONTACTOR**
- MEDIUM VOLTAGE STARTER**
- MOV-ELBOW ARRESTER**

LOW VOLTAGE

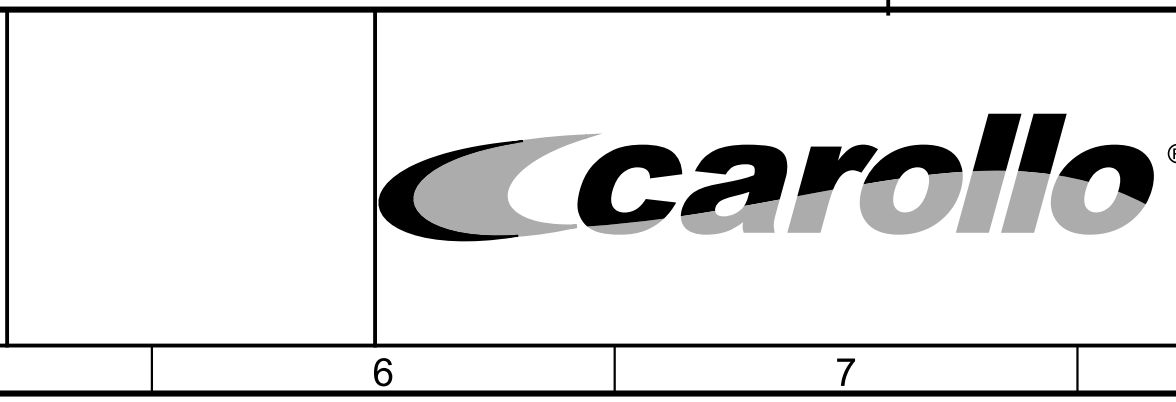
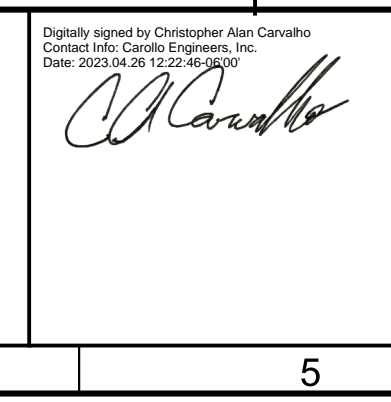
- LOW VOLTAGE CIRCUIT BREAKER**
 a = TYPE
 MCP = MOTOR CIRCUIT PROTECTOR
 TM = THERMAL MAGNETIC
 SS = SOLID STATE
 b = FRAME SIZE (MANUFACTURER TO DETERMINE FRAME SIZE UNLESS INDICATED)
 c = NUMBER OF POLES
 d = TRIP SETTING (AT = AMP TRIP) (AC = MCP CONTINUOUS RATING)
 e = DESIGNATION
 f = INTERRUPTING RATING
- LOW VOLTAGE CIRCUIT BREAKER AUXILIARY OPERATOR**
 S = SHUNT TRIP
 G = GROUND FAULT INTERRUPTER
 V = SOLENOID KEY RELEASE
- DISCONNECT SWITCH**
 A = TYPE, REFER TO DISCONNECT SCHEDULE
- FUSED DISCONNECT SWITCH**
 B = TYPE, REFER TO DISCONNECT SCHEDULE
 b = FUSE RATING
- FUSE**
- COMBINATION STARTER WITH CONTROL POWER TRANSFORMER**
 a = CIRCUIT BREAKER DISCONNECT, TYPE AS NOTED
 b = STARTER TYPE
 c = NEMA STARTER SIZE
 d = OVERLOAD
- MOTOR STARTER/DRIVES:**
 a = DEVICE TYPE
 VFD-6 = 6-PULSE VFD
 VFD-18 = 18-PULSE VFD
 RVSS = REDUCED VOLTAGE SOLID STATE STARTER
 RVAT = REDUCED VOLTAGE AUTO TRANSFORMER
 a/B = DEVICE WITH BYPASS STARTER. REFER TO THE SPECIFICATIONS
- b = INPUT OPTIONS**
 LL = LINE REACTOR
 PHF = PASSIVE HARMONIC FILTER
- c = OUTPUT OPTIONS**
 LR = LOAD REACTOR
 DV/DT = Dv/dt FILTER
 SWF = SINE WAVE FILTER
- EQUIPMENT ENCLOSURE**

MISCELLANEOUS

- MOTOR**
 HP = HORSEPOWER RATING
 FULL LOAD AMPS AS NOTED
- PACKAGED EQUIPMENT LOAD RATING AS INDICATED**
 a = RATED LOAD
 b = UNIT(HP, KW, KVA) AS INDICATED
- TRANSFORMER**
 a = DEVICE I.D.
 b = KVA RATING
 c = NUMBER OF PHASES
 d = PRIMARY VOLTAGE
 e = SECONDARY VOLTAGE
 f,g = CONNECTION TYPE SYMBOL
 h = IMPEDANCE
- GROUNDING WYE CONNECTION**
- DELTA CONNECTION**
- ENGINE-GENERATOR RATINGS AS INDICATED ON THE DRAWINGS**
 a = KVA/KW
 b = VOLTAGE/CONNECTION
 c = PHASE
 d = WIRE
 e = PF
- CURRENT TRANSFORMER WITH SHORTING TERMINAL BLOCK**
 a = QUANTITY
 b = RATIO
- POTENTIAL TRANSFORMER**
 a = QUANTITY
 b = RATIO
 c,d = CONNECTION TYPE SYMBOL
- SOLID STATE MULTIFUNCTION METER**
- AMPERE TEST POINT**
- VOLTAGE TEST POINT**
- UTILITY METER**
- LIGHTNING ARRESTER**
- SURGE PROTECTIVE DEVICE**
- DRAWOUT CONNECTION**
- GROUND**
- CAPACITOR**
- BATTERY**
- KIRK KEY INTERLOCK**
- LOAD BANK**

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| DESIGNED CAC |
| DRAWN EYP |
| CHECKED JGB |
| DATE JANUARY 2023 |



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

ELECTRICAL

LEGEND

| | |
|--|------------------------|
| VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" | JOB NO. 7310L.10 |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | DRAWING NO. GE01C |
| | SHEET NO. 80 OF 130 |

Plot Date: 03-APR-2023 2:07:30 PM

User: svcPW

PlotScale: 1:1

Last Saved By: jsantaguida

ABBREVIATIONS

POWER DEVICE FUNCTION NUMBERS

Table of abbreviations with columns for letter (A, B, C, D, E, F), symbol, and description. Includes terms like AMP, ABSOLUTE, AC, ACKNOWLEDGE, ACTR, etc.

Table of power device function numbers with columns for number (1-94) and description. Includes terms like MASTER ELEMENT, TIME-DELAY STARTING OR CLOSING RELAY, etc.

COMMONLY USED SUFFIX LETTERS APPLIED TO POWER DEVICE FUNCTION NUMBERS

Table of commonly used suffix letters (A, B, GS, L, M, N, T, V, P) and their corresponding descriptions.

ABBREVIATIONS

Table of abbreviations (AFD, CLK, DDR, DFR, ENV, HIZ, HMI, HST, LGC, MET, PDC, PMU, POM, RIO, RTU, SER, TCM) and their corresponding descriptions.

NOTES: 1. REFER TO SPECIFICATIONS AND OTHER DRAWINGS FOR ADDITIONAL ABBREVIATIONS.

Professional Engineer seal for Alan Carullo, No. 20740, State of California.

DESIGNED CAC, DRAWN EYP, CHECKED JGB, DATE JANUARY 2023



CITY OF PETALUMA, FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT, ELECTRICAL, ABBREVIATIONS

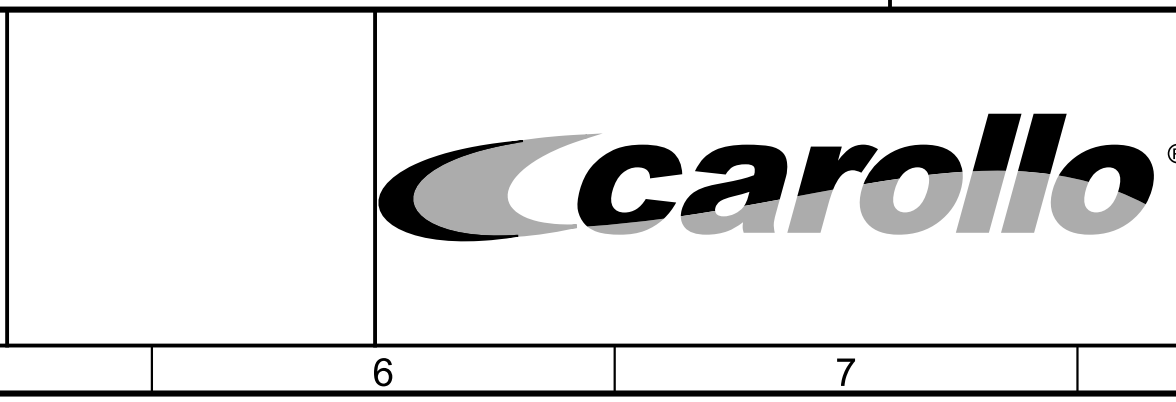
Verification scales, drawing title, and sheet number (81 OF 130).

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|--|---|--|---|--|---|---|---|--|----|---|----|----|
| PROCESS SWITCHES | | HAND SWITCHES | | RELAYS | | TERMINAL BLOCKS | | I/O | | MISC | | |
| <p>Float switch symbols: Close on rising level, Open on rising level.</p> <p>Pressure switch symbols: Close on rising pressure, Open on rising pressure.</p> <p>Temperature switch symbols: Close on rising temperature, Open on rising temperature.</p> <p>Flow switch symbols: Close on increase in flow, Open on increase in flow.</p> <p>Vibration switch symbols: Open on rising vibration, Close on rising vibration.</p> <p>Torque switch symbols: Open on high torque, Close on high torque.</p> <p>Limit switch symbols: Normally closed held open, Normally open limit, Normally open held closed.</p> | | <p>Normally open momentary pushbutton</p> <p>Normally closed momentary pushbutton</p> <p>Three position selector switch</p> <p>Two position selector switch</p> <p>Mushroom head pushbutton</p> <p>Push-pull pushbutton</p> <p>Padlock switch</p> <p>Pull cord switch</p> <p>Stop-lockout pushbutton</p> <p>Spring-return switch</p> | | <p>Relay coil symbols: CR, TD, M, L, H, F, R</p> <p>Control contact symbols: Normally open, Normally closed, Time delay (NOTC, NCTO, NCTC)</p> | | <p>Terminal symbols: PLC/PCM panel, Motor control center, Local starter control panel, RTU, Field panel, User choice, Digital bus connector</p> | | <p>PLC Discrete (a = input/output)</p> <p>PLC Analog (a = input/output)</p> <p>Digital Bus</p> | | <p>Solenoid, Meter unit (M = type), Motor (HP), Circuit breaker, Disconnect, Fuse, Transient surge protection, Motor winding heater, Space heater, Varistor, Capacitor, Resistor, Battery, Diode, Motor overload heaters, Overload contact, Drawout connection, Ground, Lightning arrestor, Control power transformer, Elapsed time meter (ETM)</p> | | |
| | | PILOT LIGHTS | | | | | | | | | | |
| | | <p>Pilot light symbols: a = lens color (R=Red, G=Green, W=White, A=Amber)</p> | | | | | | | | | | |

| | | | |
|----------|--------------|----|-------------|
| DESIGNED | CAC | | |
| DRAWN | EYP | | |
| CHECKED | JGB | | |
| DATE | JANUARY 2023 | | |
| REV | DATE | BY | DESCRIPTION |
| | | | |

REGISTERED PROFESSIONAL ENGINEER
 EYES FOR ALAN CAROLLO
 No. 20740
 ELECTRICAL
 STATE OF CALIFORNIA

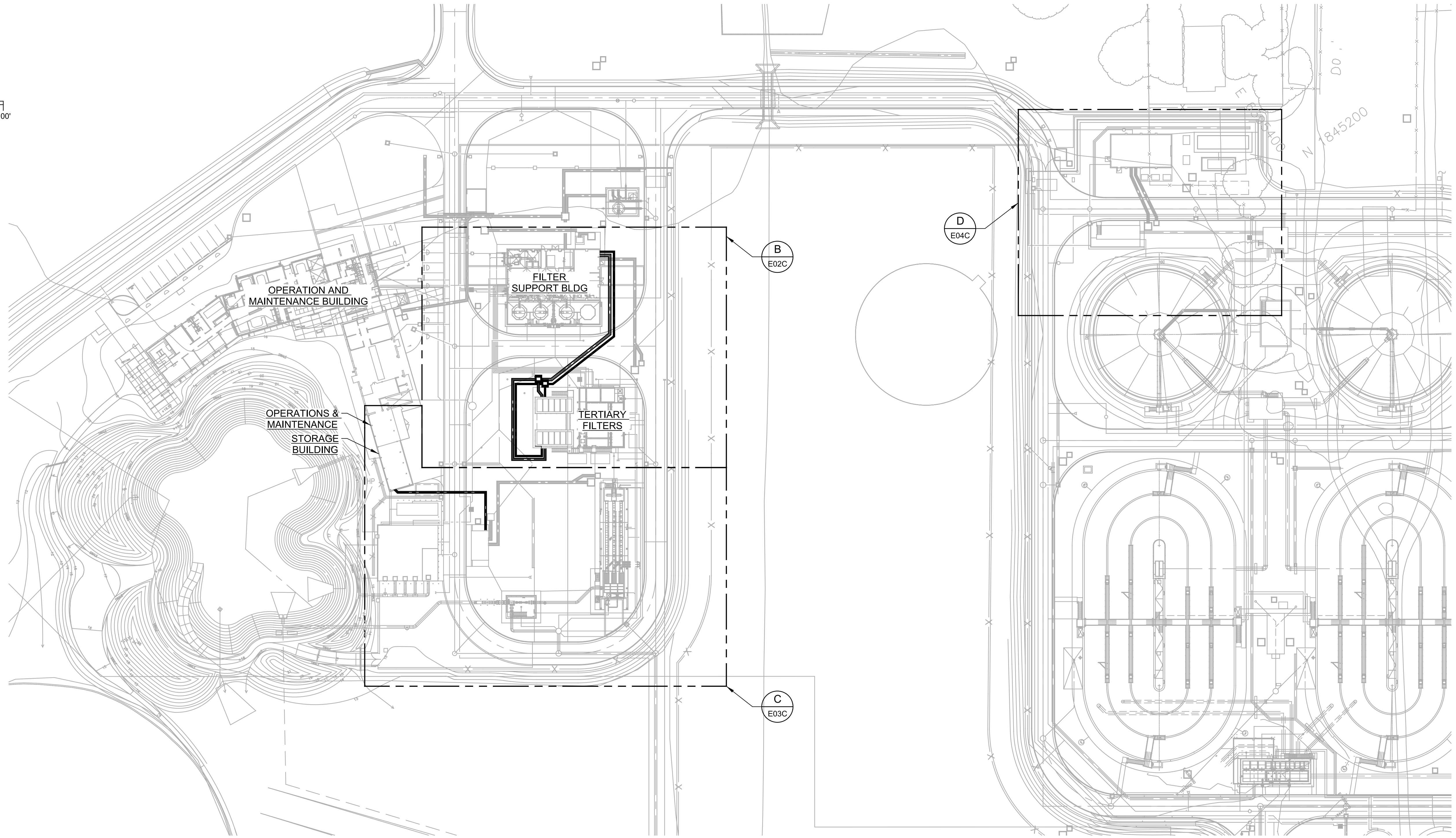
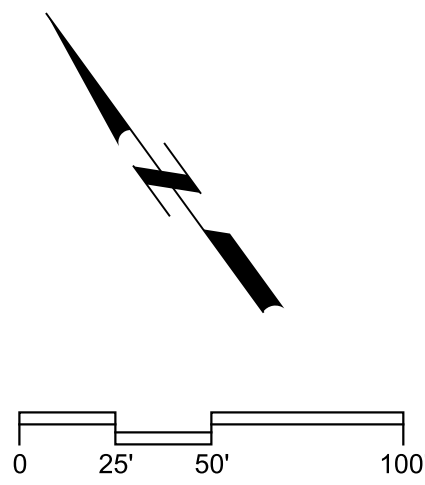
Digitally signed by Christopher Alan Carullo
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 12:21:49-0800



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 SCHEMATIC SYMBOLS

| | |
|--|---------------------|
| VERIFY SCALES | JOB NO. 7310L.10 |
| BAR IS ONE INCH ON ORIGINAL DRAWING | DRAWING NO. GE03C |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | SHEET NO. 82 OF 130 |

Plot Date: 03-APR-2023 2:06:59 PM
 User: svcPW
 Model: Layout1
 ColorTable: gshade.ctb
 DesignScript: Carollo_Sig_Pen_v0905.pen
 PlotScale: 1:1
 LAST SAVED BY: JSantaguida



A SITE PLAN
 FILE: 7310L1001E102

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

DESIGNED
 CAC
 DRAWN
 CGR
 CHECKED
 JGB
 DATE
 JANUARY 2023



Digitally signed by Christopher Alan Corvato
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 12:21:09-0800



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 OVERALL SITE PLAN

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

JOB NO.
 7310L.10
 DRAWING NO.
E01C
 SHEET NO.
 83 OF 130

Plot Date: 03-APR-2023 2:08:17 PM

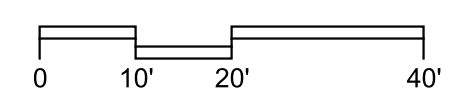
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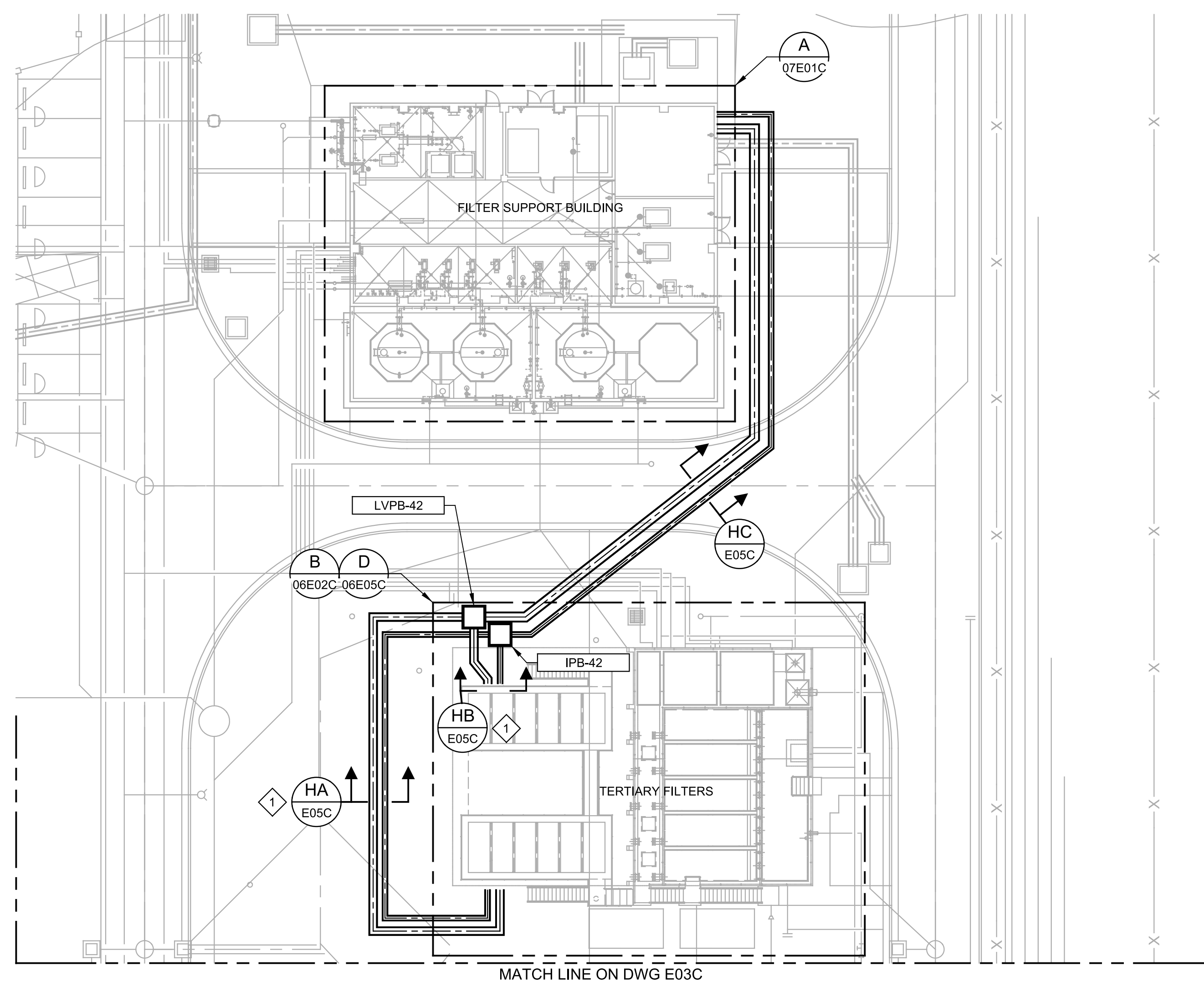
ColorTable: gshade.ctb

DesignScript: Carollo_Sig_Pen_v0905.pen

PlotScale: 1:1



KEY NOTES:
1 DUCT BANK SECTIONS HA AND HB ARE SPLIT INTO POWER AND CONTROL PORTIONS. RUN THE POWER PORTION OF EACH DUCT BANK THROUGH LVPB-42 AND THE CONTROLS PORTION THROUGH IPB-42.



B PARTIAL SITE PLAN
E01C FILE: 7310L1001E102

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
| | | | |
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DESIGNED
CAC
DRAWN
CGR
CHECKED
JGB
DATE
JANUARY 2023



Digitally signed by Christopher Alan Carvallo
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 12:21:19-0800



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
PARTIAL SITE PLAN - I

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

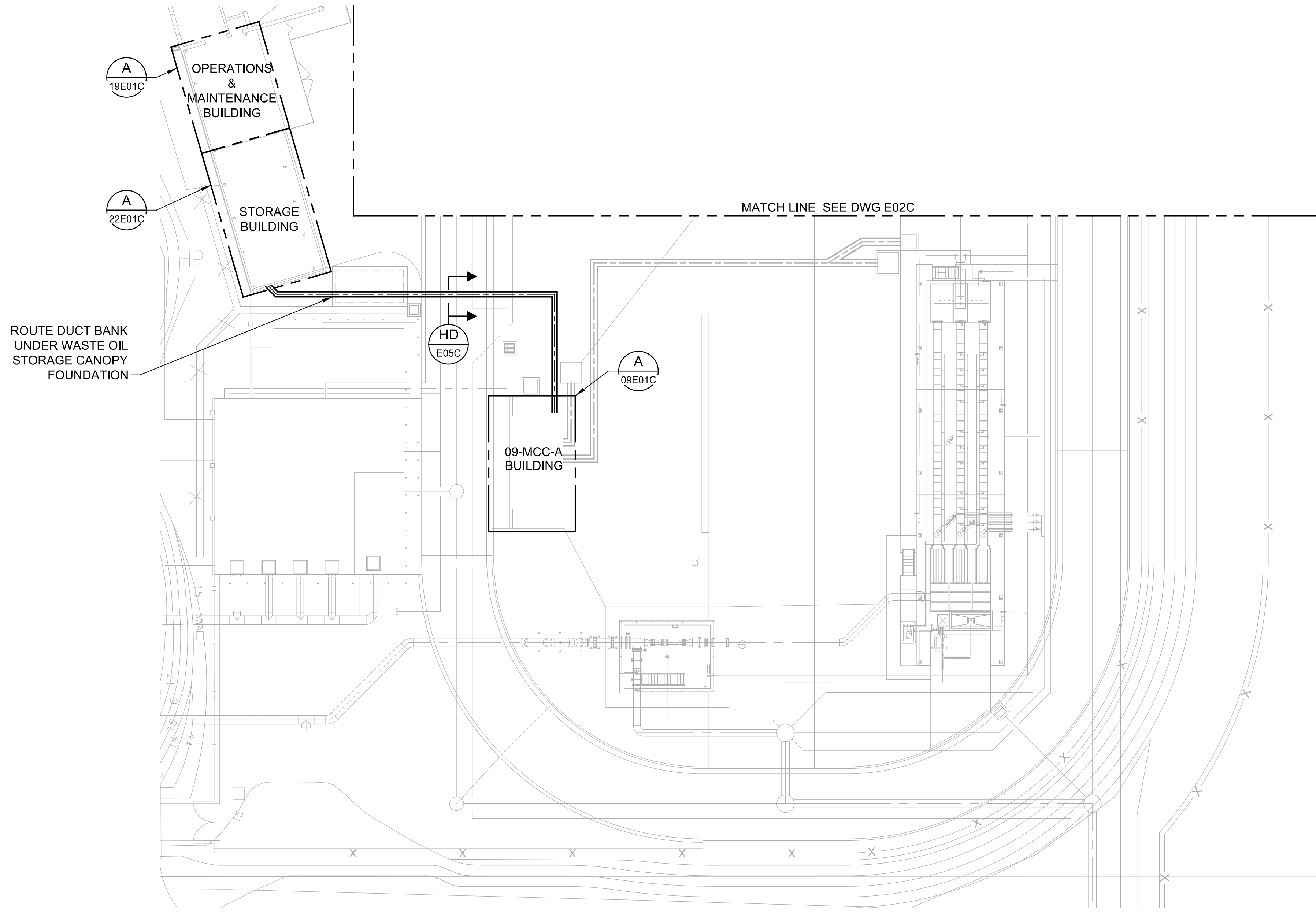
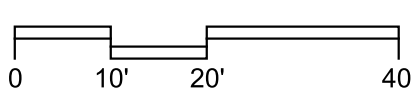
JOB NO.
7310L.10
DRAWING NO.
E02C
SHEET NO.
84 OF 130

Plot Date: 03-APR-2023 2:08:53 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: luy



C PARTIAL SITE PLAN
E01C FILE: 7310L1001E102

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
| | | | |
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DESIGNED
CAC
DRAWN
CGR
CHECKED
JGB
DATE
JANUARY 2023



Alan Carvallo

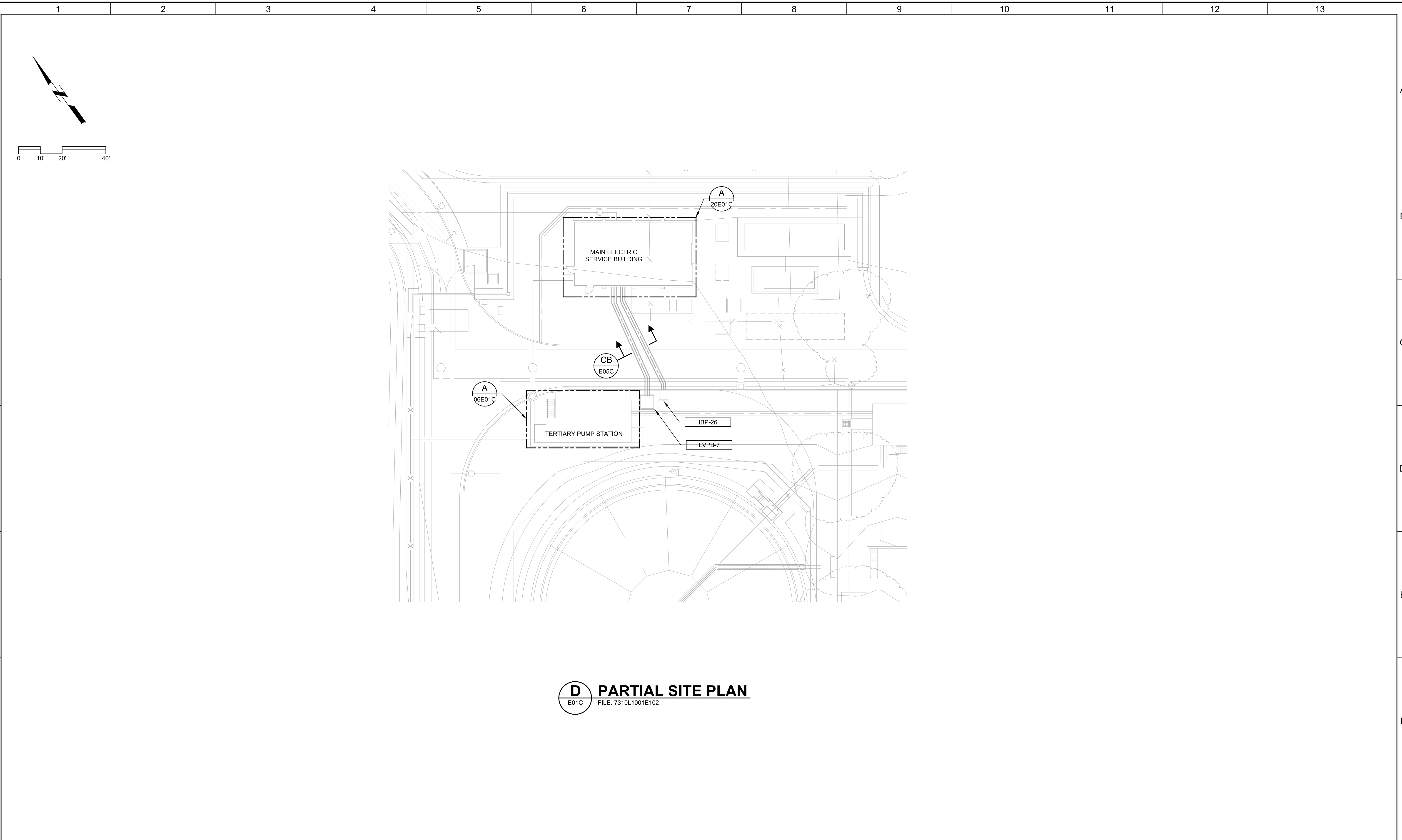


CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 PARTIAL SITE PLAN - II

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

JOB NO.
7310L.10
 DRAWING NO.
E03C
 SHEET NO.
85 OF 130

Plot Date: 03-APR-2023 2:06:58 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: JSantaguida



D PARTIAL SITE PLAN
 E01C FILE: 7310L1001E102

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
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DESIGNED
 CAC
 DRAWN
 CGR
 CHECKED
 JGB
 DATE
 JANUARY 2023



Digitally signed by Christopher Alan Carrollo
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:10:59-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 PARTIAL SITE PLAN - III

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

JOB NO.
 7310L.10
 DRAWING NO.
E04C
 SHEET NO.
 86 OF 130

Plot Date: 03-APR-2023 2:10:17 PM

User: svcPW

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

LAST SAVED BY: JSantaguida

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

A

B

C

D

E

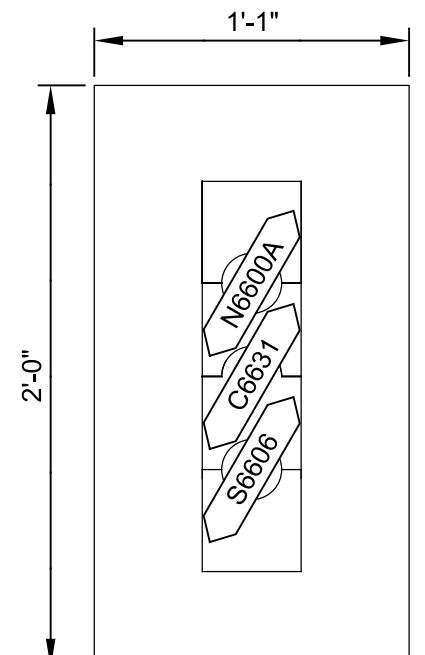
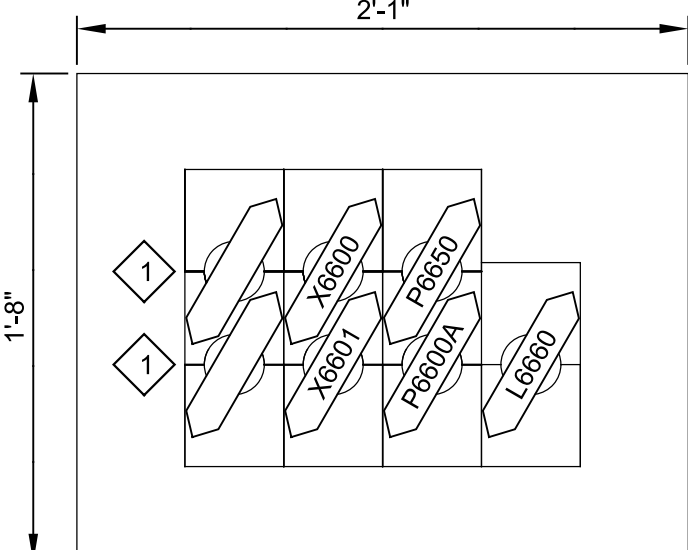
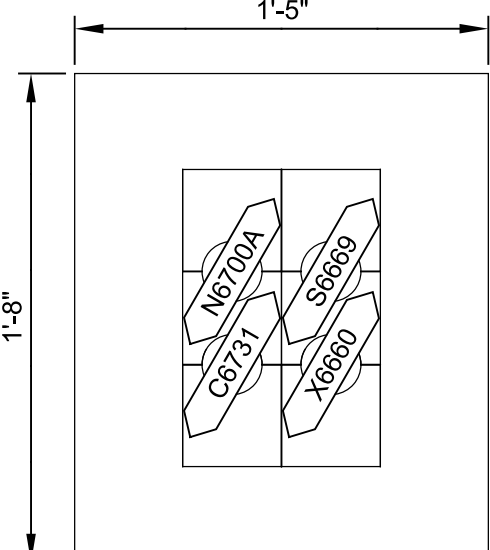
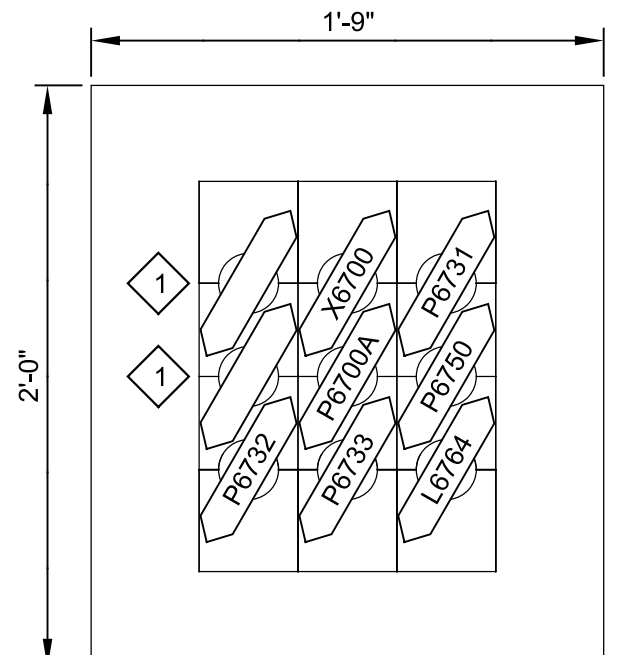
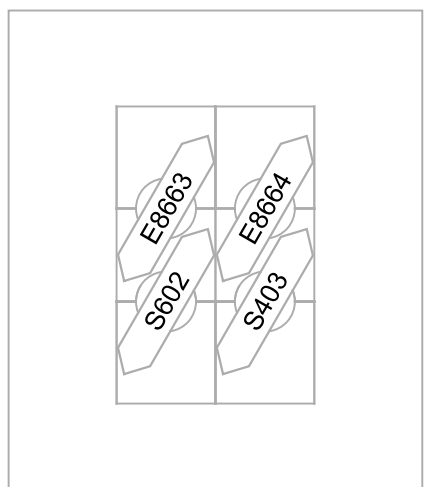
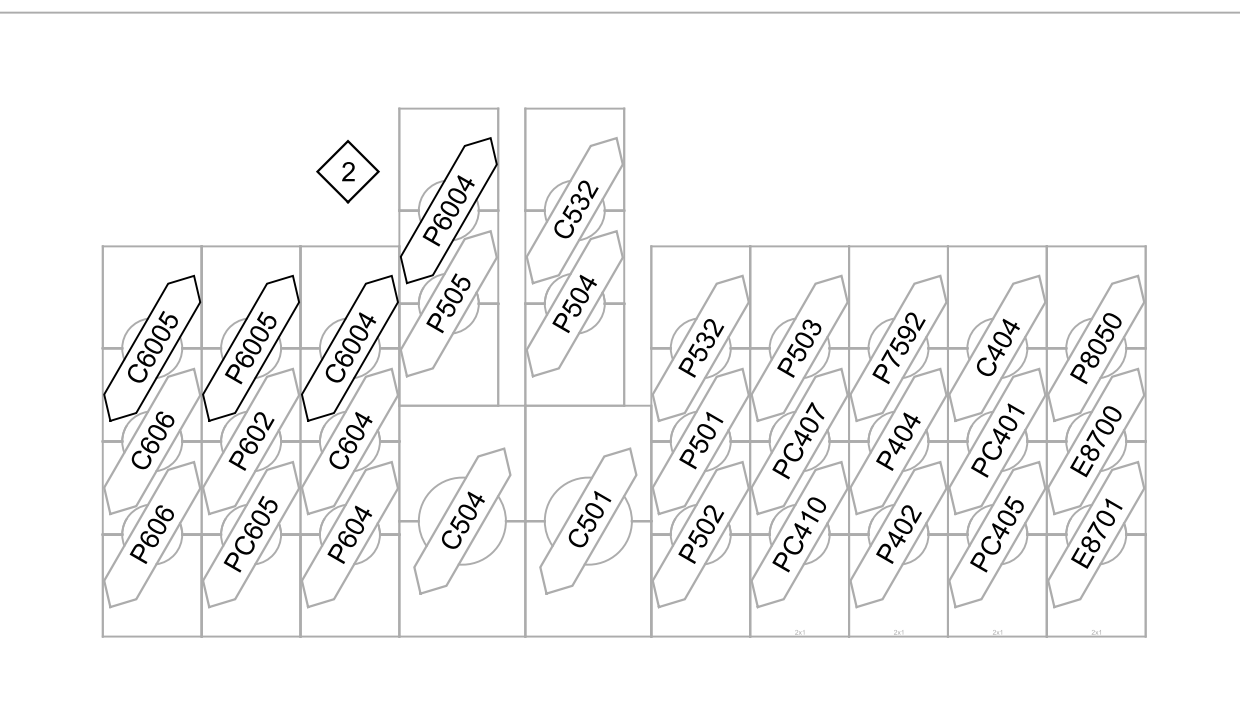
F

G

KEY NOTES:

1 2" CONDUIT RESERVED FOR LIGHTING AND RECEPTACLES.

2 REUSE AND RENUMBER EXISTING CONDUIT AS REQUIRED.



CB DUCT BANK SECTION (EXISTING)

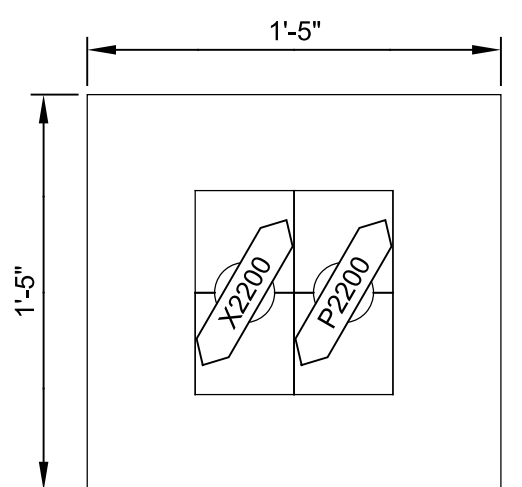
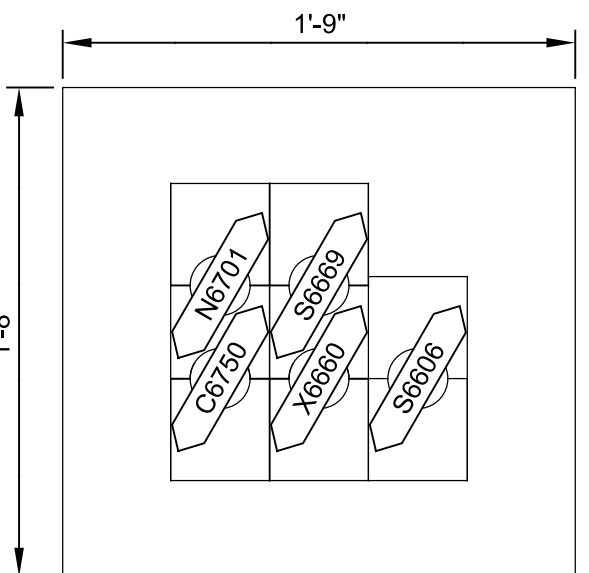
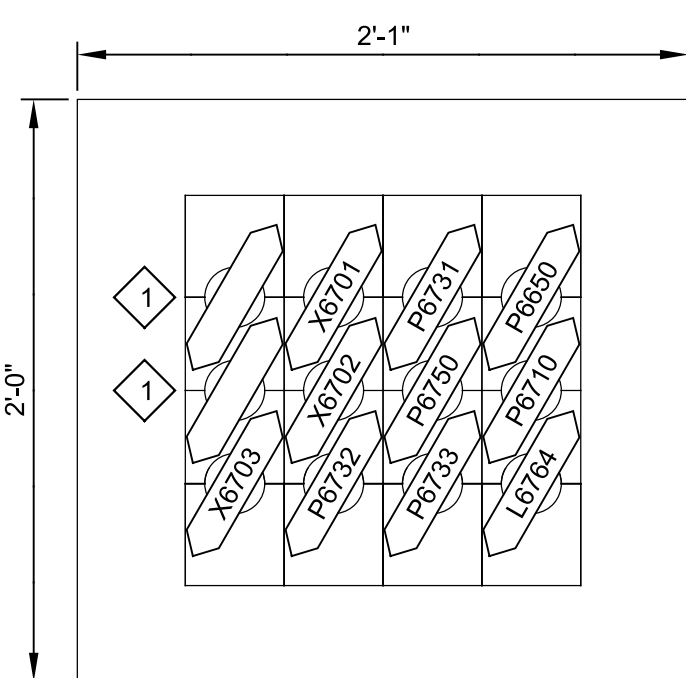
E04C

HA DUCT BANK SECTION EM001 TYP

E02C, 06E03C

HB DUCT BANK SECTION EM001 TYP

E02C, 06E03C



HC DUCT BANK SECTION EM001 TYP

E02C, 06E03C, 07E01C

HD DUCT BANK SECTION EM001 TYP

E03C, 09E01C, 22E01C

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
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DESIGNED
JHA
DRAWN
JJS
CHECKED
JGB
DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 12:10:39-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
DUCT BANK SECTIONS - I

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

JOB NO.
7310L.10
DRAWING NO.
E05C
SHEET NO.
87 OF 130

Plot Date: 03-APR-2023 2:09:14 PM

User: svcPW

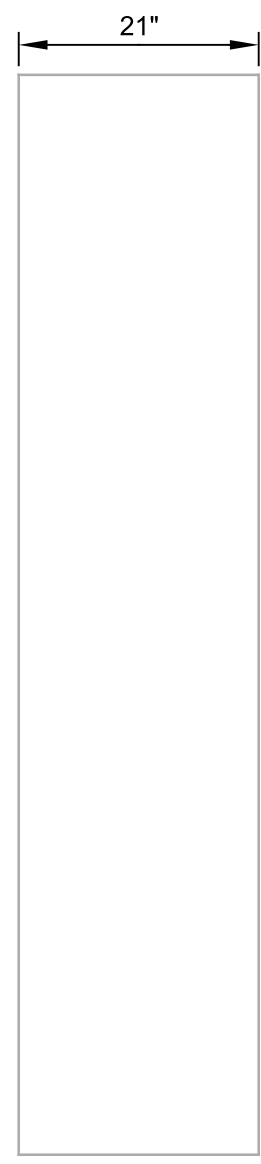
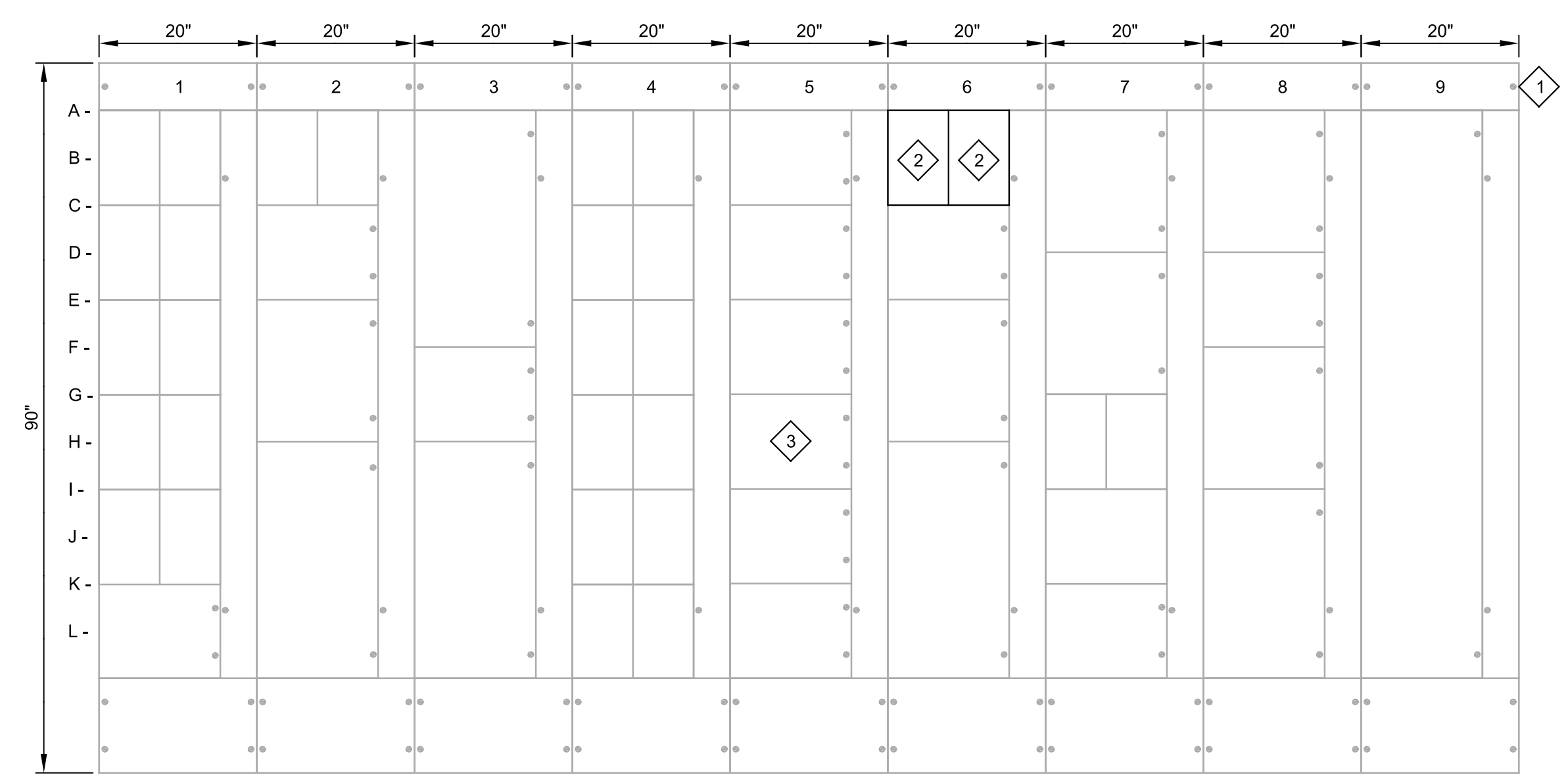
PlotScale: 1:1

Model: Layout1

ColorTable: gshade.ctb

DesignScript: Carollo_Sig_Pen_v0905.pen

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



- KEY NOTES:**
- 1 EXISTING MCC: EATON/CUTLER-HAMMER FREEDOM SERIES 2100 MCC, CAT NO.:MLA01487.
 - 2 FOR COMPARTMENT 6A REMOVE EXISTING COVER PLATE. INSTALL NEW COVER PLATE AND NAMEPLATES AS INDICATED ON THIS SHEET.
 - 3 PROVIDE NEW CONTROLS ON THE STARTER DOOR AS REQUIRED. REFER TO THE SCHEMATIC DIAGRAM.

FRONT VIEW
SCALE: 3/4"=1'-0"
FILE: 7310L1003E622

SIDE VIEW
SCALE: 3/4"=1'-0"
FILE: 7310L1003E622

| | | | | | | | | |
|--|---|---|--|------------------------------------|--|---------------------------------|---|------------------|
| 1AL- LIGHTING PANEL 07-LPA | 2AL- AIR COMPRESSOR NO. 1 07-ACP-001 | 3A- FLOCCULATOR MIXER NO. 2 06-MXR-103 | 4AL- FEEDER TO TERTIARY SUMP PUMPS LCP-06PMP004 | 5A- EXHAUST FAN NO. 1 07-EF-001 | 6AL- 480V PANEL 07-DPA | 7A- 1W PUMP NO. 1 03-PMP-001 | 8A- SPD | 9A- MAIN BREAKER |
| 1AR- LIGHTING PANEL 07-LPB | 2AR- AIR COMPRESSOR NO. 2 07-ACP-002 | 3F- SPACE | 4AR- SPARE | 5C- SPARE | 6BL- 208/120 PANEL 07-LPD | 7D- 1W PUMP NO. 2 03-PMP-002 | 8D- PQM | |
| 1CL- 120/240 DISTR PANEL 07-LPC | 2C- SPACE | 3H- FLASH MIXER NO. 1 06-MXR-101 | 4CL- FTW VALVE NO. 1 06-VLV-101 | 5E- SPARE | 6C- 03-PMP-001/002 RELAY | 7GL- GATE NO. 1 | 8F- SPACE | |
| 1CR- SPARE | 2E- SPACE | | 4CR- FEF VALVE NO. 1 06-VLV-102 | 5G- 07-EF-7001 | 6E- SPACE | 7GR- GATE NO. 2 | 8I- FEEDER TO OPERATIONS AND MAINTENANCE BLDG | |
| 1EL- ALUM AREA SUMP PUMP 07-PMP-104 | 2H- FLOCCULATOR MIXER NO. 1 06-MXR-102 | | 4EL- FTW VALVE NO. 2 06-VLV-201 | 5I- SPACE | 6H- PORTABLE GENERATOR RECEPTACLE 07-GENRECEP | 7I- SPACE | | |
| 1ER- HYPOCHLORITE AREA SUMP PUMP 07-PMP-304 | | | 4ER- FEF VALVE NO. 2 06-VLV-202 | 5K- SPARE | | 7K- SPACE | | |
| 1GL- ROLL UP DOOR 07-DOR-01 | | | 4GL- FTW VALVE NO. 3 06-VLV-301 | | | | | |
| 1GR- SPARE | | | 4GR- FEF VALVE NO. 3 06-VLV-302 | | | | | |
| 1IL- SPARE | | | 4IL- FTW VALVE NO. 4 06-VLV-401 | | | | | |
| 1IR- FEEDER TO LCP-07AHU002 | | | 4IR- FEF VALVE NO. 4 06-VLV-402 | | | | | |
| 1K- SPACE | | | 4KL- FTW VALVE NO. 5 06-VLV-501 | | | | | |
| | | | 4KR- FEF VALVE NO. 5 06-VLV-502 | | | | | |

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
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DESIGNED
CAC
DRAWN
BS
CHECKED
JGB
DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 12:14:59-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
07-MCC-A ELEVATION
MODIFICATION

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

JOB NO.
7310L.10
DRAWING NO.
E06C
SHEET NO.
88 OF 130

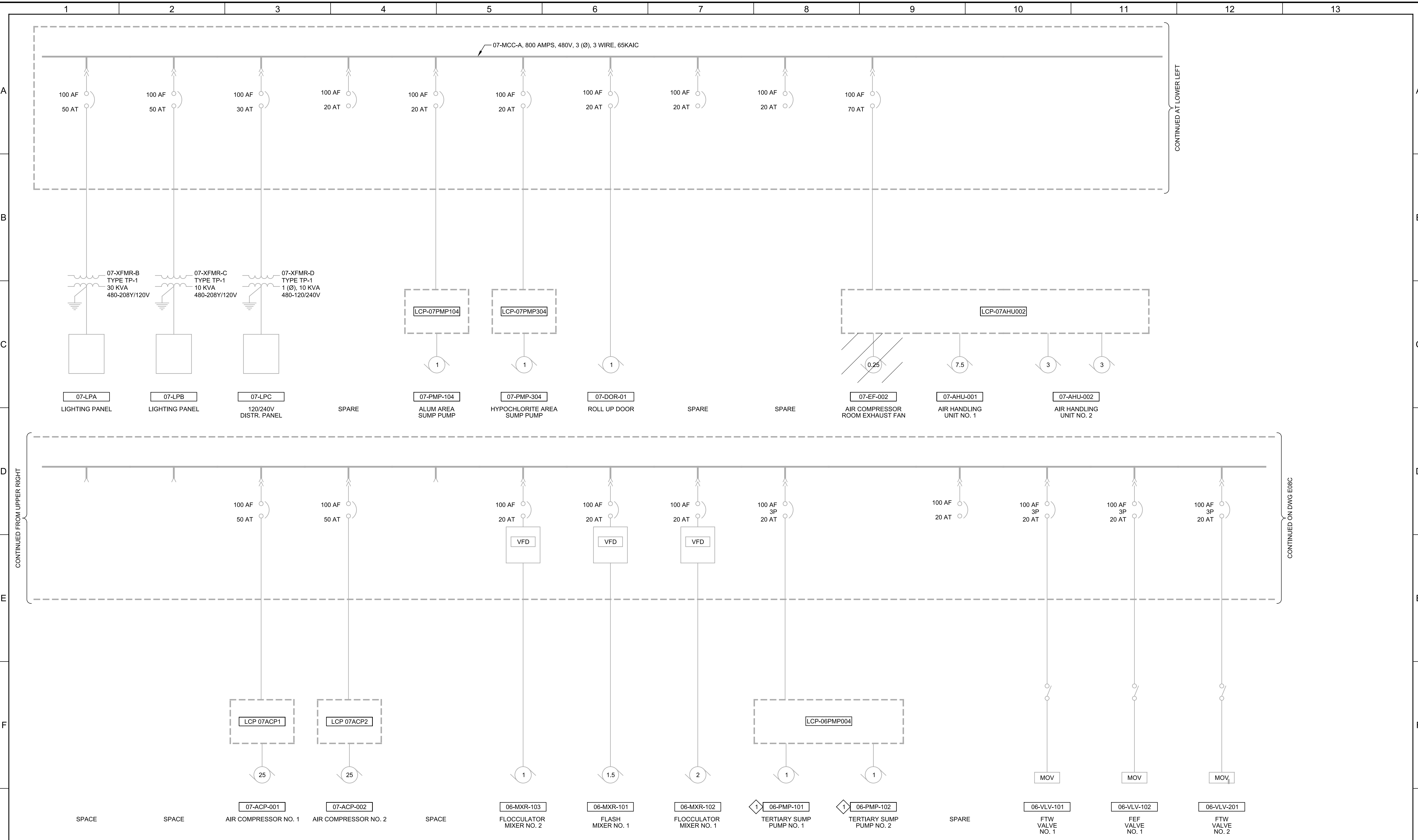
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Plot Date: 03-APR-2023 2:07:38 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: JSantaguida



CONTINUED AT LOWER LEFT

CONTINUED ON DWG E08C

| REV | DATE | BY | DESCRIPTION |
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| 1 | | | |
| 2 | | | |
| 3 | | | |

DESIGNED
CAC

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CHECKED
JGB

DATE
JANUARY 2023



Digitally signed by Christopher Alan Carvallo
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 12:20:59-0800



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
07-MCC-A ONE-LINE DIAGRAM - I
MODIFICATION

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

JOB NO.
7310L.10

DRAWING NO.
E07C

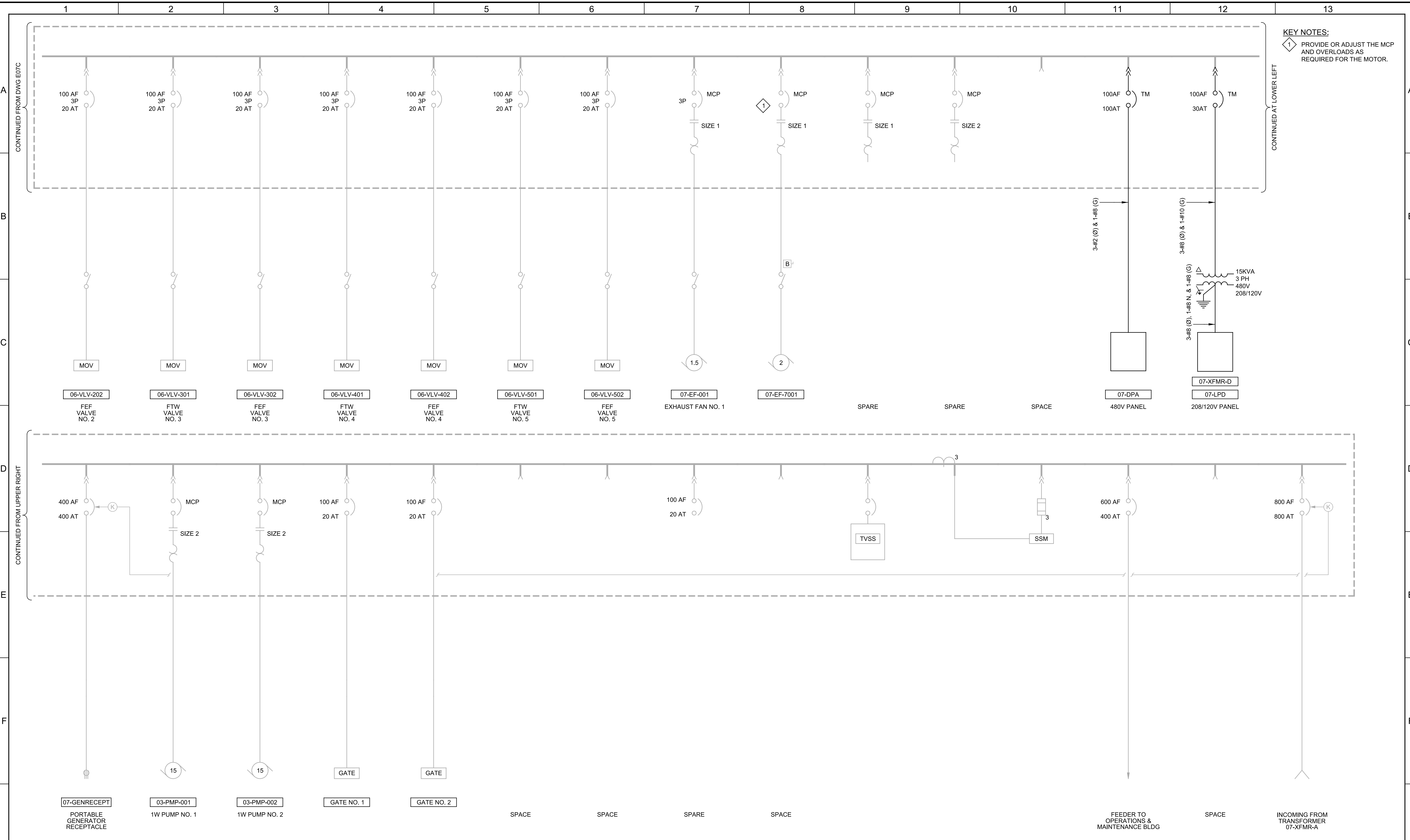
SHEET NO.
89 OF 130

Plot Date: 03-APR-2023 2:09:53 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

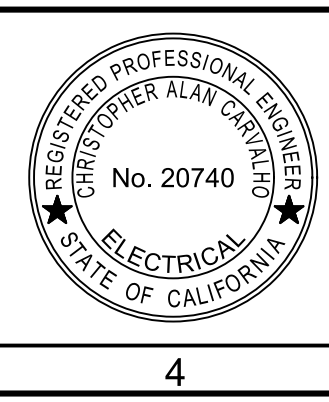
LAST SAVED BY: JSantaguida



KEY NOTES:
 1 PROVIDE OR ADJUST THE MCP AND OVERLOADS AS REQUIRED FOR THE MOTOR.

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |

DESIGNED
CAC
 DRAWN
BS
 CHECKED
JGB
 DATE
JANUARY 2023



Digitally signed by Christopher Alan Carvallo
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 12:10:50-0800
Alan Carvallo



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 07-MCC-A ONE-LINE DIAGRAM - II
 MODIFICATION

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

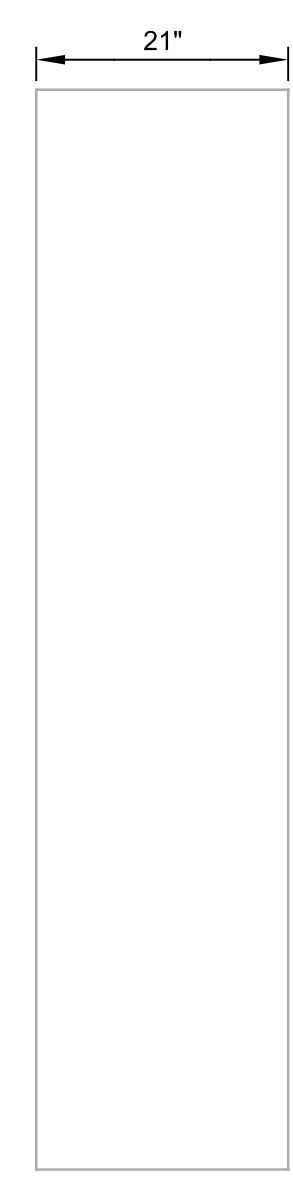
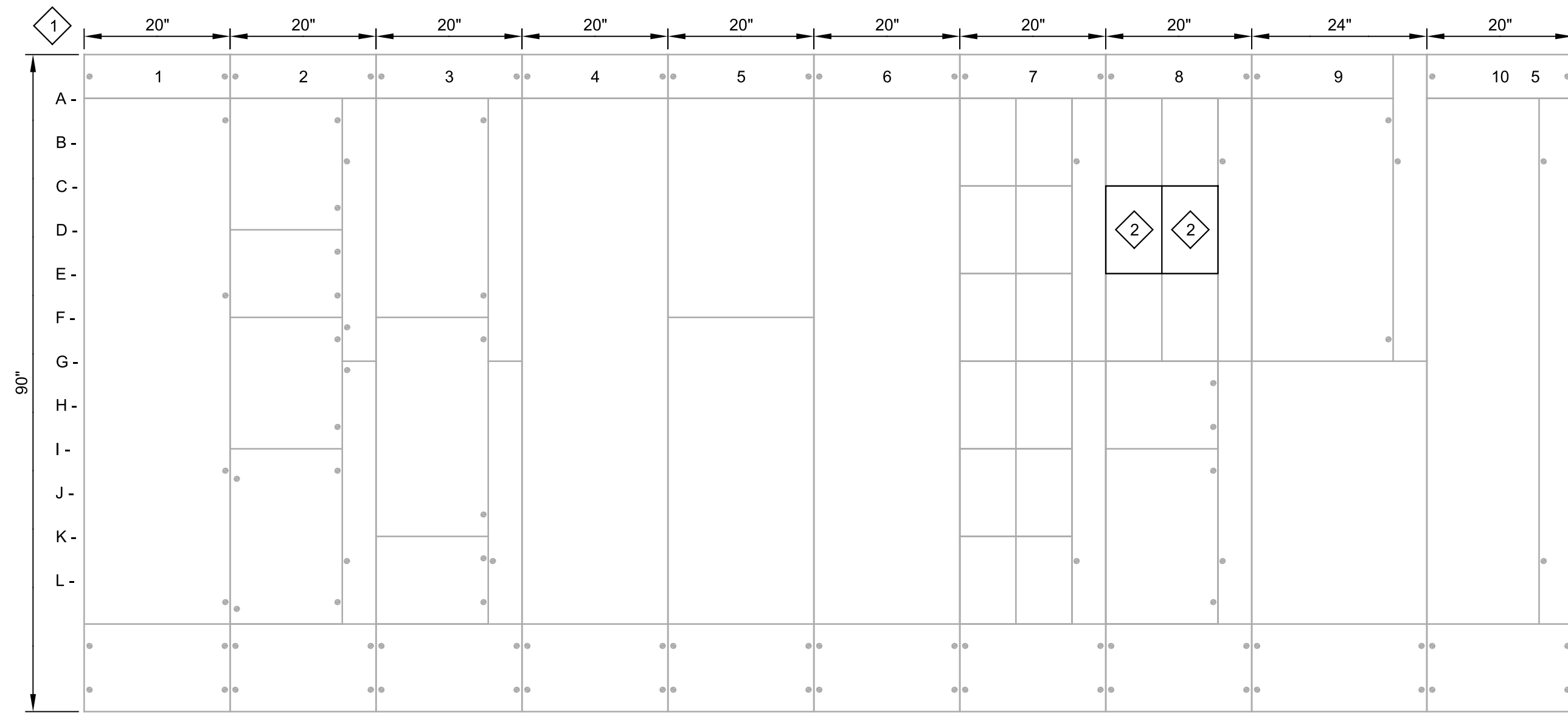
JOB NO.
7310L.10
 DRAWING NO.
E08C
 SHEET NO.
90 OF 130

Plot Date: 03-APR-2023 2:07:19 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: jsantaguida



KEY NOTES:

1 EXISTING MCC: EATON/CUTLER-HAMMER FREEDOM SERIES 2100 MCC, CAT NO.: MLA01487.

2 REMOVE EXISTING COVER PLATE. INSTALL NEW COVER PLATE AND NAMEPLATE AS INDICATED ON THIS DRAWING.

FRONT VIEW
SCALE: 3/4"=1'-0"
FILE: 7310L1003E623C

SIDE VIEW
SCALE: 3/4"=1'-0"
FILE: 7310L1003E623C

- | | | | | | | | | | |
|------------------|--|------------------------------------|-----------|------------------------------------|------------------------------------|--|---|---------------------------------------|-----------------------------------|
| 1A- MAIN BREAKER | 2A- TVSS | 3A- RW/3W PUMP NO. 2 09-PMP-002 | 4A- SPACE | 5A- RW/3W PUMP NO. 3 09-PMP-003 | 6A- RW/3W PUMP NO. 4 09-PMP-004 | 7AL- OVERHEAD CRANE 08-CRN-001 | 8AL- AUTOMATED 1W VALVE 09-VLV-002 | 9A- LIGHTING PANEL 09-LPA | 10A- GENERATOR CONNECTION BREAKER |
| | 2D- SSM | 3F- RW/3W PUMP NO. 1 09-PMP-001 | | 5F- RW BASIN LOLO LOCKOUT | | 7AR- SANITARY SEWER LIFT PUMPS 19-LCPPMP | 8AR- AUTOMATIC STRAINER 09-STR-004 | 9G- 30 KVA 480-208Y/120V 09-XFMR-B | |
| | 2F- SPARE | 3K- SPARE | | | | 7CL- INFLUENT CHANNEL GATE NO. 1 08-GAT-101 | 8CL- STORAGE BLDG. 480V PANEL 21-DPA | | |
| | 2J- UV DISINFECTION POWER DISTRIBUTION CENTER 06-UV-PDC | | | | | 7CR- INFLUENT CHANNEL GATE NO. 2 08-GAT-201 | 8CR- SPARE | | |
| | | | | | | 7EL- INFLUENT CHANNEL GATE NO. 3 08-GAT-301 | 8EL- AIR HANDLING 09-ACU-001 | | |
| | | | | | | 7ER- AIR COMPRESSOR NO. 1 09-ACP-001 | 8ER- UV SYSTEM AIR BLOWER 08-BLW-001 | | |
| | | | | | | 7GL- AUTOMATIC STRAINER 09-STR-001 | 8G- SPACE | | |
| | | | | | | 7GR- AUTOMATIC STRAINER 09-STR-002 | 8I- UV DISINFECTION POWER DISTRIBUTION CENTER UV-PDC-800 | | |
| | | | | | | 7IL- AUTOMATIC STRAINER 09-STR-003 | | | |
| | | | | | | 7IR- FIRE WATER PUMP PACKAGED SYSTEM 09-PMP-005 | | | |
| | | | | | | 7KL- TERTIARY PLANT EFFLUENT VALVE 08-VLV-001 | | | |
| | | | | | | 7KR- TERTIARY PLANT EFFLUENT VALVE 08-VLV-002 | | | |

| REV | DATE | BY | DESCRIPTION |
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DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 12:20:09-0800



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

ELECTRICAL

09-MCC-A ELEVATION MODIFICATION

VERIFY SCALES

BAR IS ONE INCH ON ORIGINAL DRAWING

0 1"

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10

DRAWING NO.
E09C

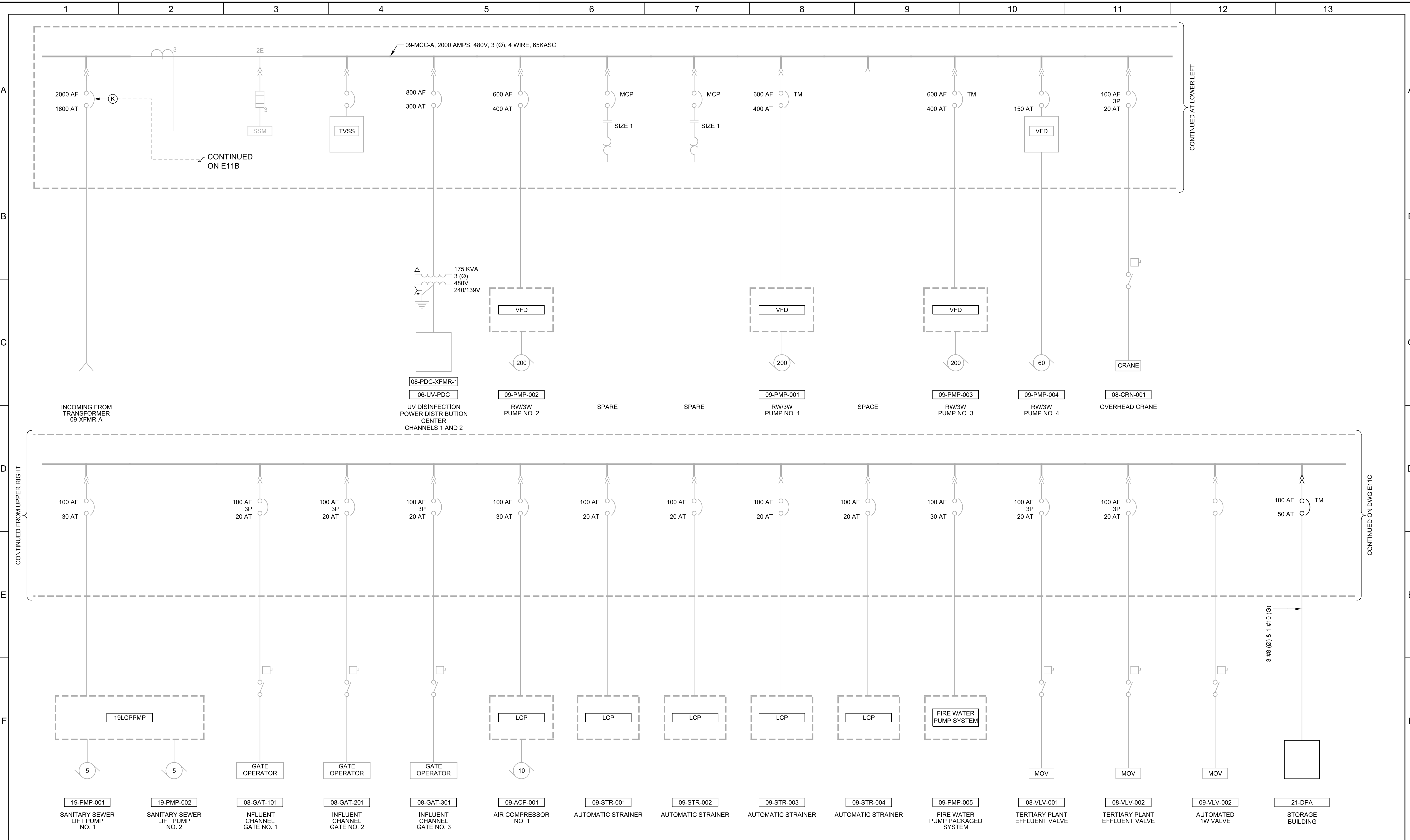
SHEET NO.
91 OF 130

Plot Date: 03-APR-2023 2:07:40 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: JSantaguida



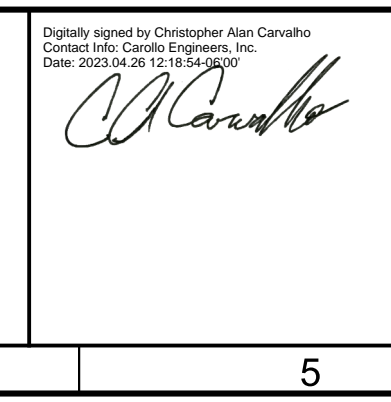
| REV | DATE | BY | DESCRIPTION |
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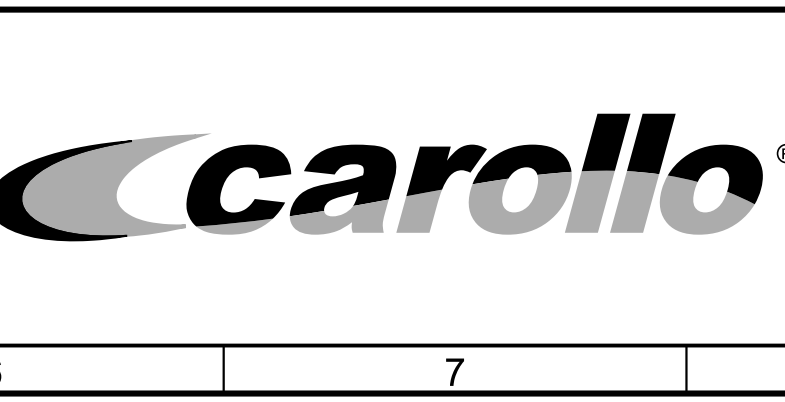
DRAWN
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DATE
JANUARY 2023



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Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 12:18:59-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
09-MCC-A ONE-LINE DIAGRAM - I
MODIFICATION

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

JOB NO.
7310L.10

DRAWING NO.
E10C

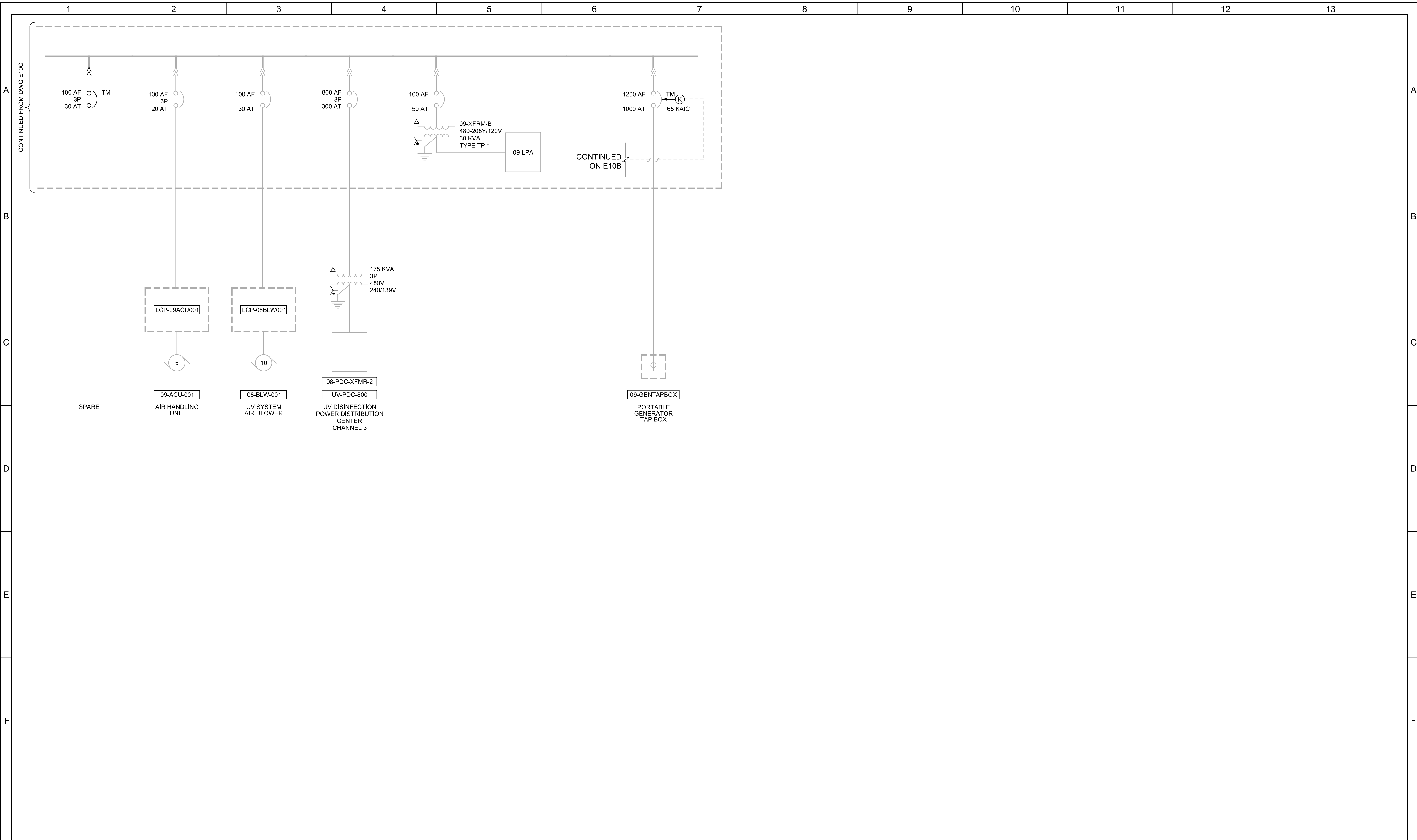
SHEET NO.
92 OF 130

Plot Date: 03-APR-2023 2:07:28 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: JSantaguida



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JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 12:14:59-0700

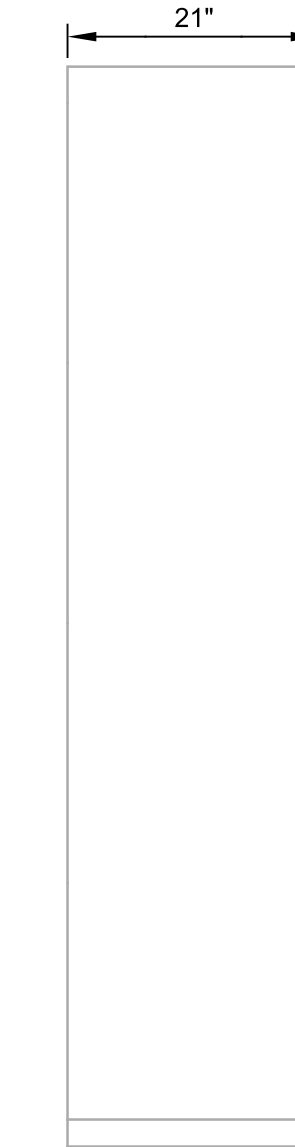
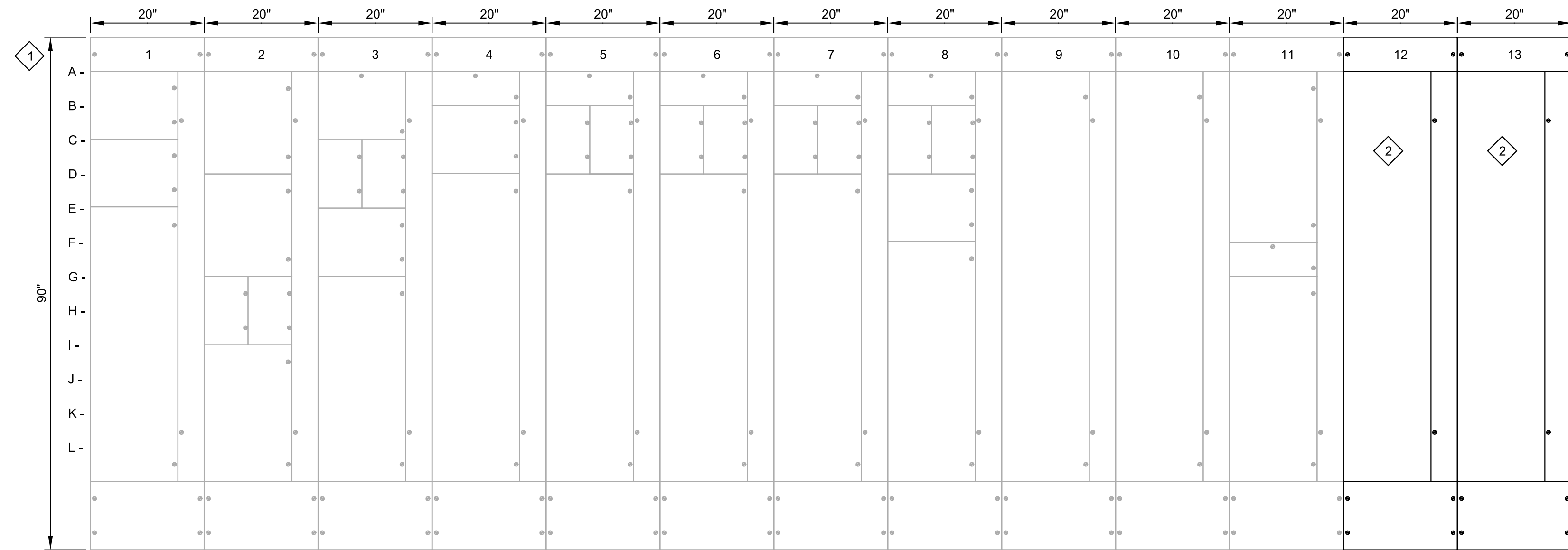


CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
09-MCC-A ONE-LINE DIAGRAM - II
MODIFICATION

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

JOB NO.
7310L.10
DRAWING NO.
E11C
SHEET NO.
93 OF 130

Plot Date: 03-APR-2023 2:08:35 PM
 User: svcPW
 PlotScale: 1:1
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo Std Pen_v0905.pen
 LAST SAVED BY: jsantaguida



- KEY NOTES:**
- 1 EXISTING MCC: EATON/CUTLER-HAMMER FREEDOM SERIES MCC, CAT NO.: MLA01487.
 - 2 NEW VFD SECTIONS. PROVIDE BUS SPLICE KITS AS REQUIRED.

FRONT VIEW
 SCALE: 3/4"=1'-0"
 FILE: 7310L1003E624

SIDE VIEW
 SCALE: 3/4"=1'-0"
 FILE: 7310L1003E624

| | | | | | | | | | | | | |
|---|--|--|------------------------------------|--|--|--|--|---|--|---|---|---|
| 1A- SPACE | 2A- TVSS | 3A- SPACE | 4A- SPACE | 5A- GENERATOR NO. 1 JACKET WATER HEATER 20-HTR-01 | 6A- SPACE | 7A- SPACE | 8A- GATE NO. 4 | 9A- TERTIARY INFLUENT PUMP NO. 1 06-PMP-001 | 10A- TERTIARY INFLUENT PUMP NO. 3 06-PMP-003 | 11A- PORTABLE GENERATOR RECEPTACLE 20-GEN RECP | 12A- TERTIARY INFLUENT PUMP NO. 4 06-PMP-6004 | 13A- TERTIARY INFLUENT PUMP NO. 5 06-PMP-6005 |
| 1C- PQM | 2D- SPACE | 3CL- SCUM DISCHARGE VALVE NO. 1 04-VLV-021 | 4B- SPARE | 5BL- GENERATOR NO. 1 480V PANEL 20-DP-01 | 6BL- POWER RECEPTACLE CLARIFIER NO. 1 RECP1 | 7BL- POWER RECEPTACLE CLARIFIER NO. 2 RECP2 | 8BL- RAS STATION NO. 1 SUMP PUMPS LCP-05PMP011 | | | 11F- CONDENSING UNIT 20-CU-001 | | |
| 1E- MAIN BREAKER INCOMING FROM XFMR, 20-XFMR-A | 2GL- SECONDARY CLARIFIER 1 04-SC-001 | 3CR- SCUM DISCHARGE VALVE NO. 2 04-VLV-022 | 4D- RAS PUMP NO. 101 05-PMP-101 | 5BR- MAIN ELECTRICAL BUILDING AHU 20-AHU-001 | 6BR- POWER RECEPTACLE CLARIFIER NO. 1 RECP3 | 7BR- POWER RECEPTACLE CLARIFIER NO. 2 RECP4 | 8BR- LIGHTING PANEL 20-LPA | | | 11G- SCUM PUMP NO. 2 04-PMP-022 | | |
| | 2GR- SECONDARY CLARIFIER 2 04-SC-002 | 3E- SPARE | | 5D- RAS PUMP NO. 102 05-PMP-102 | 6D- RAS PUMP NO. 201 05-PMP-201 | 7D- RAS PUMP NO. 202 05-PMP-202 | 8D- SPACE | | | | | |
| | 2I- SPACE | 3G- SCUM PUMP NO. 1 04-PMP-021 | | | | | 8F- TERTIARY INFLUENT PUMP NO. 2 06-PMP-002 | | | | | |

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JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:10:50-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
**20-MCC-A ELEVATION
 MODIFICATION**

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

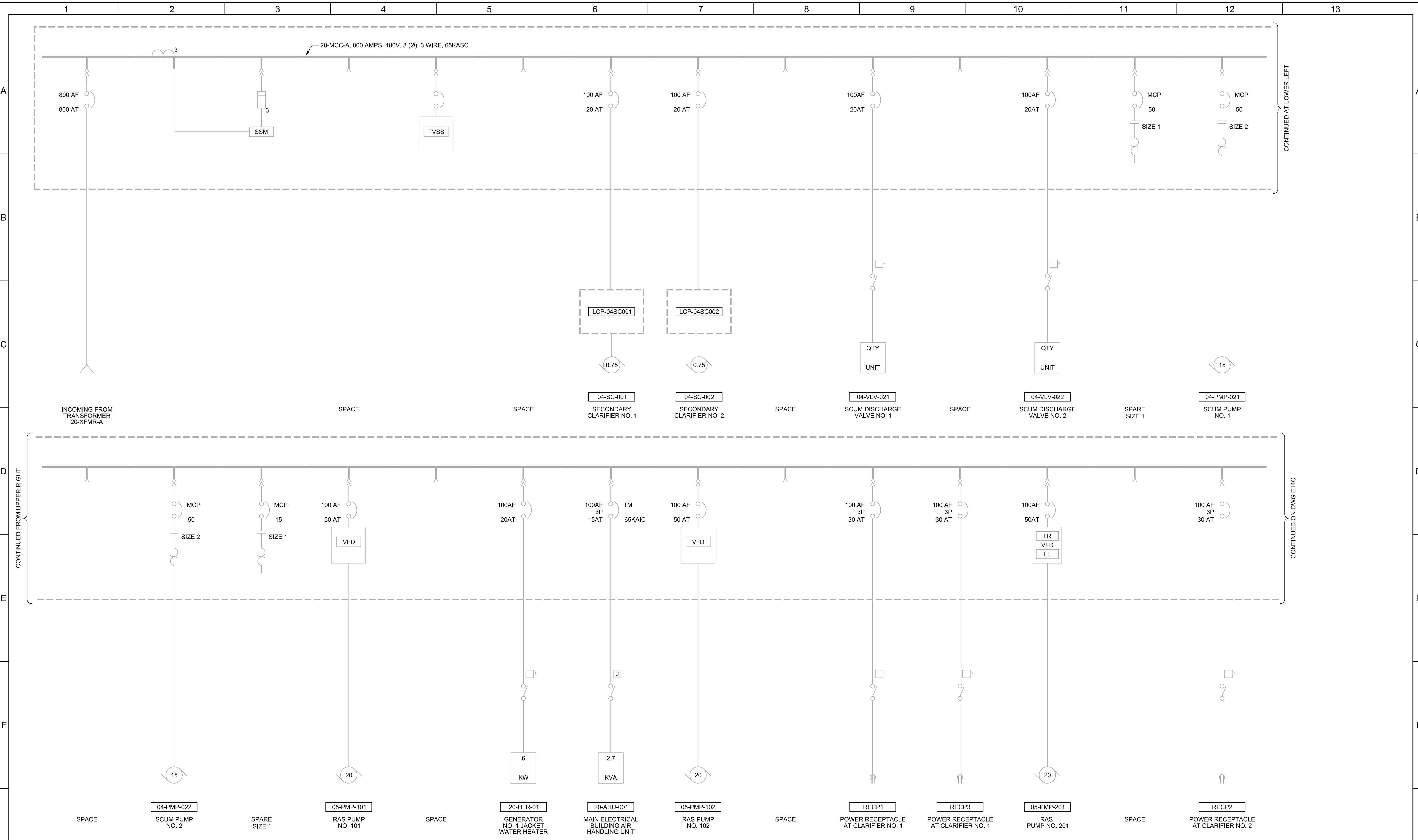
JOB NO.
7310L.10
DRAWING NO.
E12C
SHEET NO.
94 OF 130

Plot Date: 03-APR-2023 2:08:04 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: JSantaguida



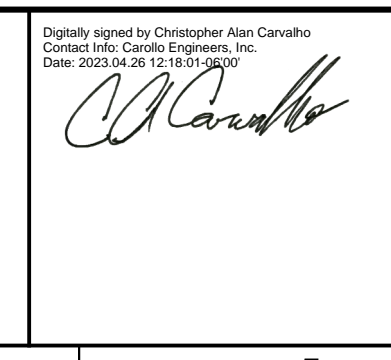
| REV | DATE | BY | DESCRIPTION |
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DATE
JANUARY 2023



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Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 12:10:50-0800

Carvallo



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

ELECTRICAL

20-MCC-A ONE-LINE DIAGRAM - I
MODIFICATION

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

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10

DRAWING NO.
E13C

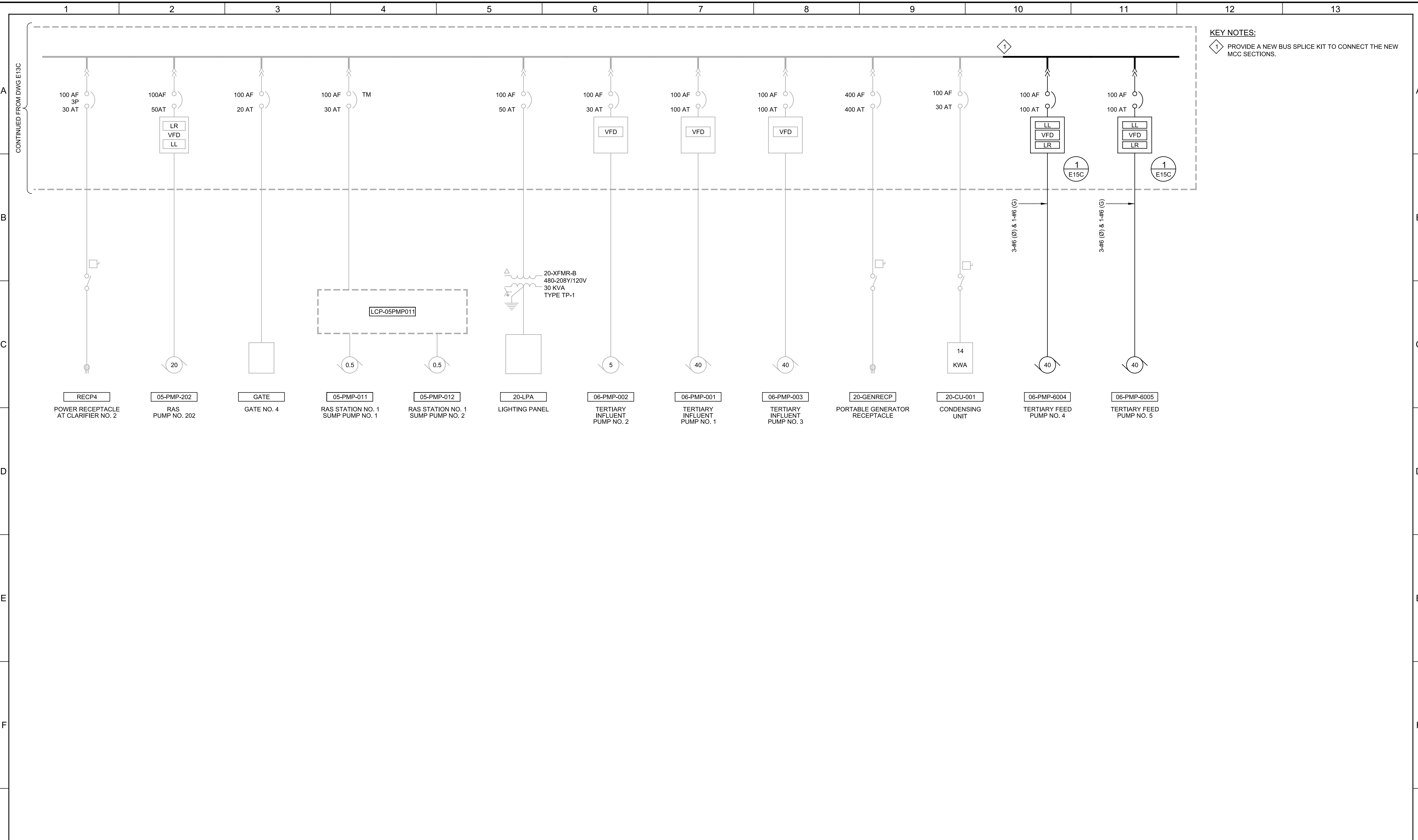
SHEET NO.
95 OF 130

Plot Date: 03-APR-2023 2:10:25 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: JSantaguida



KEY NOTES:
 1 PROVIDE A NEW BUS SPLICE KIT TO CONNECT THE NEW MCC SECTIONS.

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JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:11:49-0800
Carvallo



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
**20-MCC-A ONE-LINE DIAGRAM - II
 MODIFICATION**

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

JOB NO.
7310L.10
 DRAWING NO.
E14C
 SHEET NO.
96 OF 130

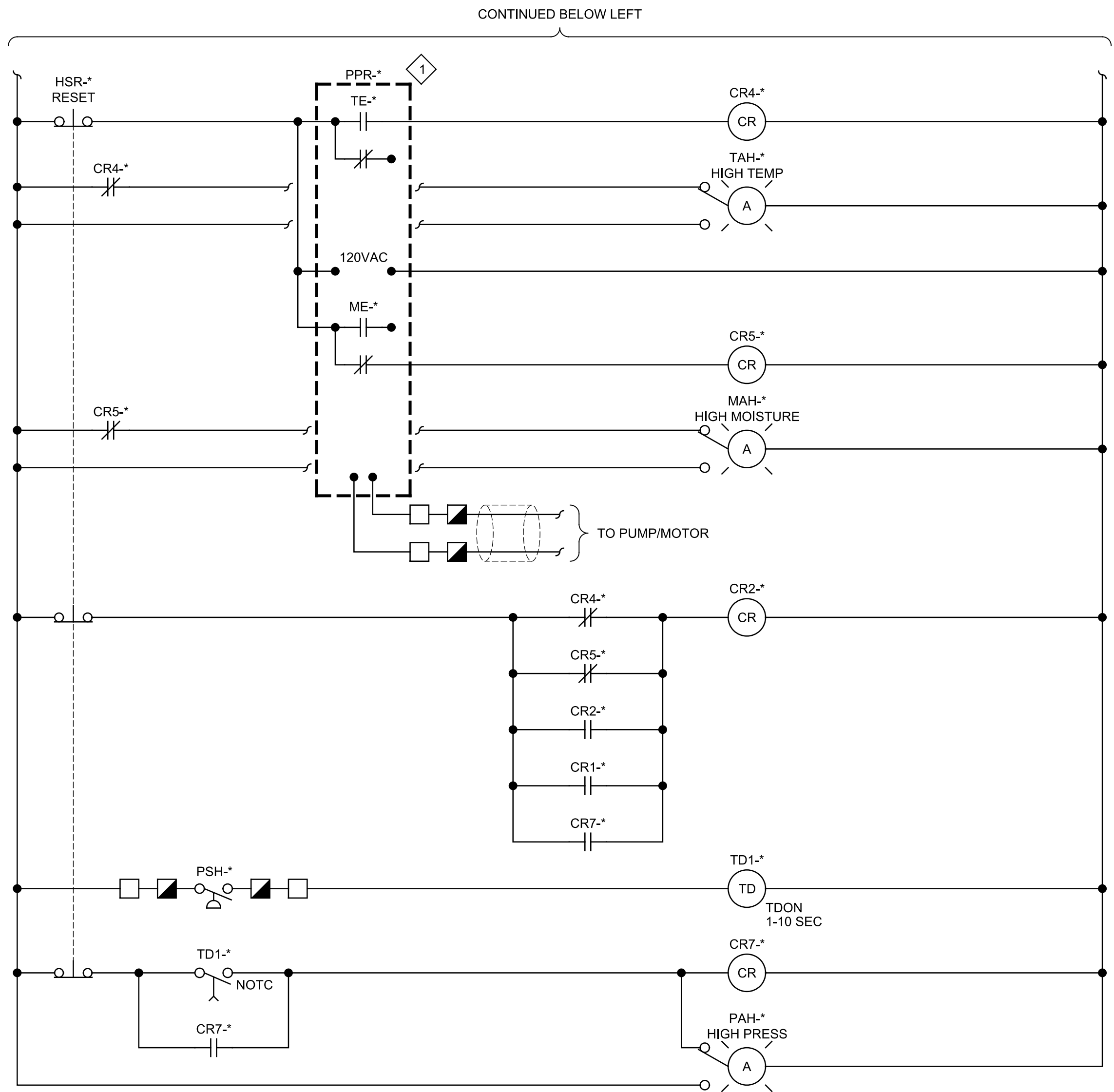
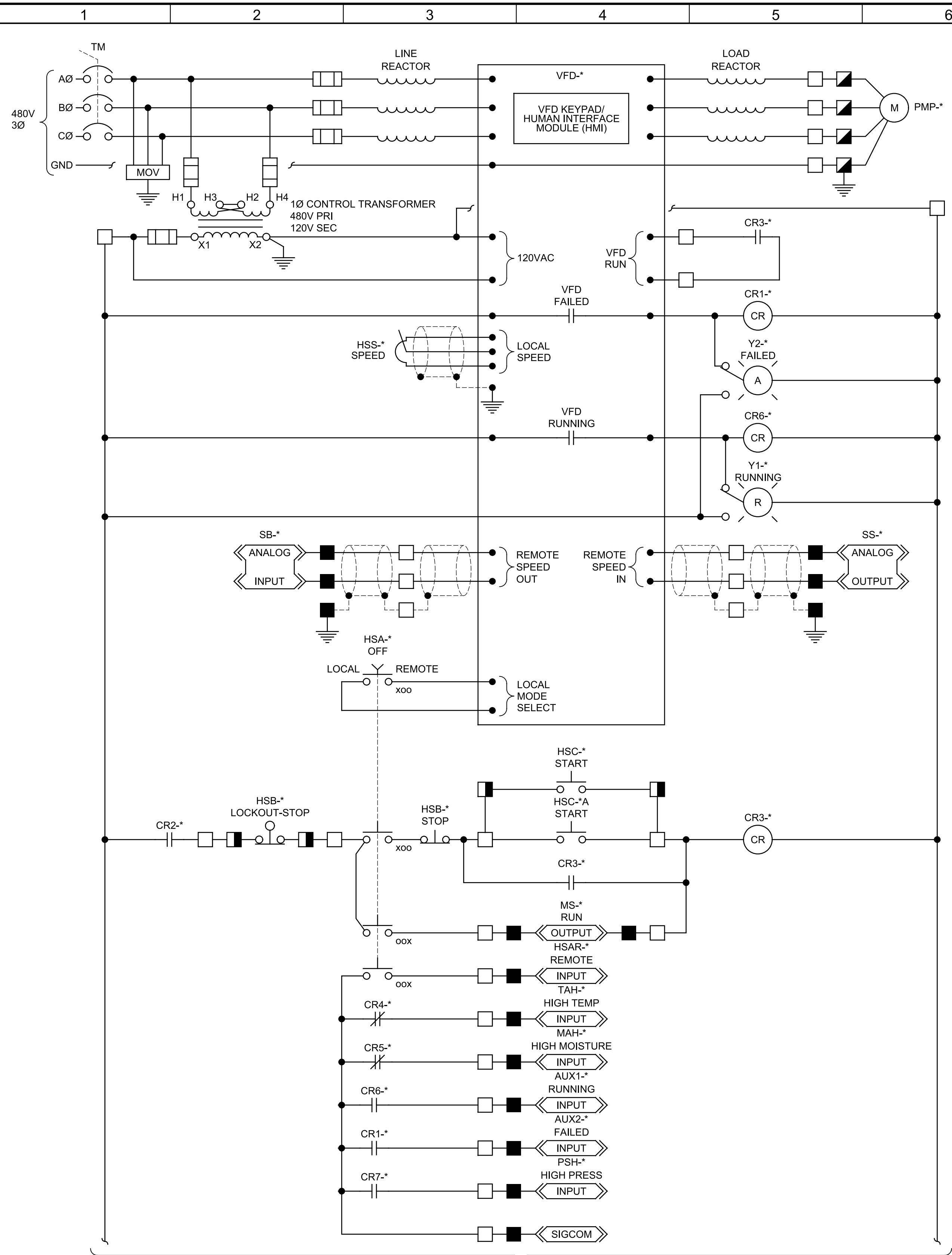
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User: svcPW

PlotScale: 1:1

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

LAST SAVED BY: jsantaguida



- GENERAL NOTES:**
1. SIZE CONTROL POWER TRANSFORMER IN ACCORDANCE WITH ALL INDICATED LOADS.
 2. REFER TO P&IDS FOR TAG NUMBERS.
 3. REFER TO SPECIFICATION SECTION 17101 FOR CONTROL DESCRIPTIONS.
- KEY NOTES:**
- 1. CR4 AND CR5 ARE ENERGIZED UNDER NORMAL OPERATING CONDITIONS.

1 TERTIARY FEED PUMPS

* = 6004 → 06-PMP-6004
 * = 6005 → 06-PMP-6005

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JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:11:39-0800



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 CONTROL SCHEMATICS - I

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

IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10

DRAWING NO.
E15C

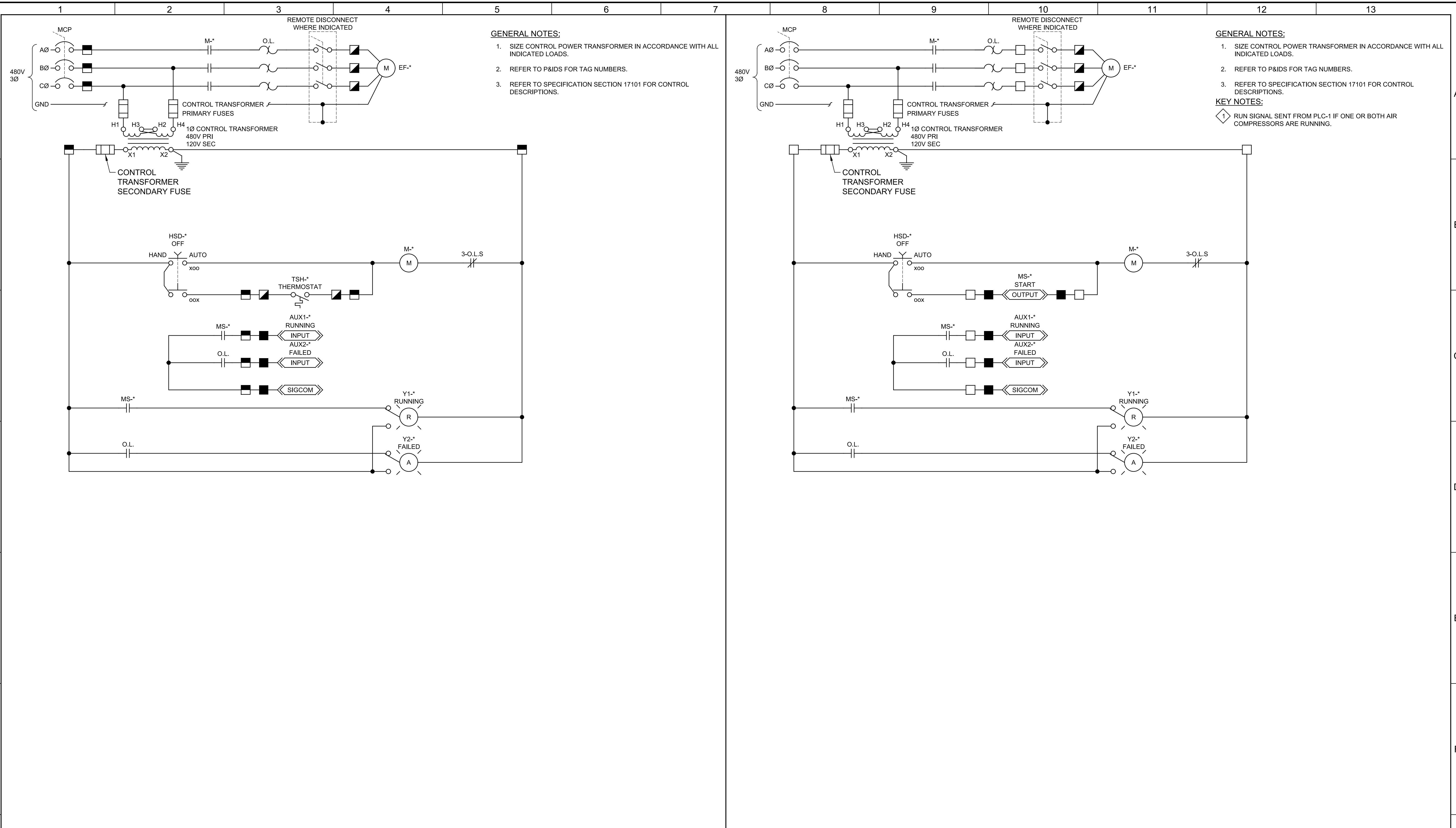
SHEET NO.
97 OF 130

Plot Date: 03-APR-2023 2:10:37 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: jsantaguida



GENERAL NOTES:

1. SIZE CONTROL POWER TRANSFORMER IN ACCORDANCE WITH ALL INDICATED LOADS.
2. REFER TO P&IDS FOR TAG NUMBERS.
3. REFER TO SPECIFICATION SECTION 17101 FOR CONTROL DESCRIPTIONS.

GENERAL NOTES:

1. SIZE CONTROL POWER TRANSFORMER IN ACCORDANCE WITH ALL INDICATED LOADS.
2. REFER TO P&IDS FOR TAG NUMBERS.
3. REFER TO SPECIFICATION SECTION 17101 FOR CONTROL DESCRIPTIONS.

KEY NOTES:

- 1. RUN SIGNAL SENT FROM PLC-1 IF ONE OR BOTH AIR COMPRESSORS ARE RUNNING.

2 MAINTENANCE FAN

* = 2201 ← → 22-EF-2201

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Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 12:11:49-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
CONTROL SCHEMATICS - II

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

JOB NO.
7310L.10
DRAWING NO.
E16C
SHEET NO.
98 OF 130

Plot Date: 03-APR-2023 2:07:07 PM User: svcPW Model: Layout ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1 LAST SAVED BY: JSantaguida


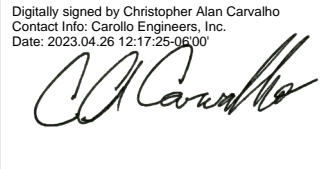


| LUMINAIRE SCHEDULE | | | | | | | | | | 12/1/2020 | |
|--------------------|---|-----------------|----------|-----------------------------|--------------------------|---|-------|-------|----|-----------|--|
| ITEM | DESCRIPTION | MOUNTING METHOD | LAMP | | LUMINAIRE SPECIFICATIONS | | | VOLTS | VA | | |
| | | | QUANTITY | TYPE | MANUFACTURER | CATALOG | | | | | |
| A | LITHONIA TWR1 LED WALL LUMINAIRE CAST-ALUMINUM HOUSING WITH LASTING DURABILITY SEALED TO INHIBIT EXTERNAL CONTAMINANTS RATED FOR OUTDOOR INSTALLATIONS, -40°C MINIMUM AMBIENT PRISMATIC GLASS LENS, UL LISTED, FOR WET LOCATIONS | WALL MOUNT | | LED 5000K 3519 LUMENS | LITHONIA | TWR1 LED P2 50K MVOLT DDBTXD | MVOLT | 29 | | | |
| A1 | LITHONIA TWR1 LED WALL LUMINAIRE CAST-ALUMINUM HOUSING WITH LASTING DURABILITY SEALED TO INHIBIT EXTERNAL CONTAMINANTS RATED FOR OUTDOOR INSTALLATIONS, -40°C MINIMUM AMBIENT PRISMATIC GLASS LENS, UL LISTED, FOR WET LOCATIONS PHOTO CONTROL | WALL MOUNT | | LED 5000K 3519 LUMENS | LITHONIA | TWR1 LED P2 50K MVOLT PE DDBTXD | MVOLT | 29 | | | |
| B | LITHONIA KAD LED AREA LUMINAIRE SINGLE-PIECE DIE-CAST, ALUMINUM HOUSING CORROSION AND WEATHER RESISTANCE FINISH NEMA TWIST-LOCK RECEPTACLE WITHOUT CONTROLS SQUARE STRAIGHT ALUMINUM 10' POLE | POLE MOUNT | | LED 5000K 8422 LUMENS | LITHONIA | KAD LED 30C 700 50K R4 MVOLT SPD09 DDBXD | MVOLT | 69 | | | |
| B1 | LITHONIA KAD LED AREA LUMINAIRE SINGLE-PIECE DIE-CAST, ALUMINUM HOUSING CORROSION AND WEATHER RESISTANCE FINISH SQUARE STRAIGHT ALUMINUM 10' POLE | POLE MOUNT | | LED 5000K 8422 LUMENS | LITHONIA | KAD LED 30C 700 50K R4 MVOLT SPD09 DDBXD | MVOLT | 69 | | | |
| C | HOLOPHANE PXLW LED LOW BAY UL1588 WET LOCATION LISTED IP65 AND IP66 RATING MAX AMBIENT TEMPERATURE OF 65°C X-POINT WIRELESS, 0-10V DIMMING | UNIVERSAL | 18 | LED 4000K 4826 LUMENS | HOLOPHANE | PXLW 5000LM MDU5GLF MVOLT 40K 70CRI UNM XAD | MVOLT | 39 | | | |

| PANEL 07-DPA | | | | | | | | | | 12/28/2022 | |
|---------------|--|-------------------------|--------|----------------------------|---|------------------|--------|-----------|--|------------|--|
| LOCATION: | | FILTER SUPPORT BUILDING | | NEMA: 1 | | PH A WEIGHTED VA | | 12568 | | | |
| VOLTS: | | 480 | | FEED: BOTTOM | | PH B WEIGHTED VA | | 12568 | | | |
| PHASE & WIRE: | | 3PH 3W | | MTG. SURFACE | | PH C WEIGHTED VA | | 12568 | | | |
| INTERRUPT: | | 65 KAIC | | BUS RATING: 100 | | EQUIP SIZING VA | | 37704 | | | |
| | | MAIN: CB | | MAIN RATING: 100 AF 100 AT | | PANEL AMPS | | 45.4 | | | |
| I/C/F | DESCRIPTION | LOAD (VA) | BKR | CIR | Ø | CIR | BKR | LOAD (VA) | DESCRIPTION | I/C/F | |
| C | 06-VCP-6600 FILTER NO. 6 CONTROL PANEL | 3815 | 20A-3P | 1 | A | 2 | 20A-3P | 3815 | 06-VCP-6700 FILTER NO. 7 CONTROL PANEL | C | |
| C | | 3815 | | 3 | B | 4 | | 3815 | | C | |
| C | | 3815 | | 5 | C | 6 | | 3815 | | C | |
| I | 06-EDR-6601 FILTER 6 INLET VALVE | 305 | 15A-3P | 7 | A | 8 | 15A-3P | 305 | 06-EDR-6701 FILTER 7 INLET VALVE | I | |
| I | | 305 | | 9 | B | 10 | | 305 | | I | |
| I | | 305 | | 11 | C | 12 | | 305 | | I | |
| I | 06-EDR-6602 FILTER 6 OUTLET VALVE | 305 | 15A-3P | 13 | A | 14 | 15A-3P | 305 | 06-EDR-6702 FILTER 7 OUTLET VALVE | I | |
| I | | 305 | | 15 | B | 16 | | 305 | | I | |
| I | | 305 | | 17 | C | 18 | | 305 | | I | |
| I | 06-EDR-6603 FILTER 6 FTW VALVE | 305 | 15A-3P | 19 | A | 20 | 15A-3P | 305 | 06-EDR-6703 FILTER 7 FTW VALVE | I | |
| I | | 305 | | 21 | B | 22 | | 305 | | I | |
| I | | 305 | | 23 | C | 24 | | 305 | | I | |
| C | SPARE | 0 | 20A-3P | 25 | A | 26 | 20A-3P | 240 | EDM-651 FILTER CELL 3 INLET VALVE | I | |
| C | | 0 | | 27 | B | 28 | | 240 | | I | |
| C | | 0 | | 29 | C | 30 | | 240 | | I | |
| I | EDM-631 FILTER CELL 1 INLET VALVE | 240 | 20A-3P | 31 | A | 32 | 20A-3P | 240 | EDM-655 FILTER CELL 4 INLET VALVE | I | |
| I | | 240 | | 33 | B | 34 | | 240 | | I | |
| I | | 240 | | 35 | C | 36 | | 240 | | I | |
| I | EDM-635 FILTER CELL 2 INLET VALVE | 240 | 20A-3P | 37 | A | 38 | 20A-3P | 240 | EDM-660 FILTER CELL 5 INLET VALVE | I | |
| I | | 240 | | 39 | B | 40 | | 240 | | I | |
| I | | 240 | | 41 | C | 42 | | 240 | | I | |

| PANEL 22-DPA | | | | | | | | | | 6/23/2020 | |
|---------------|--------------------|------------------|---------|----------------------------|---|------------------|--------|-----------|-------------|-----------|--|
| LOCATION: | | STORAGE BUILDING | | NEMA: 1 | | PH A WEIGHTED VA | | 39303 | | | |
| VOLTS: | | 480 | | FEED: BOTTOM | | PH B WEIGHTED VA | | 39303 | | | |
| PHASE & WIRE: | | 3PH 3W | | MTG. SURFACE | | PH C WEIGHTED VA | | 23678 | | | |
| INTERRUPT: | | 65 KAIC | | BUS RATING: 150 | | EQUIP SIZING VA | | 117909 | | | |
| | | MAIN: CB | | MAIN RATING: 150 AF 150 AT | | PANEL AMPS | | 141.8 | | | |
| I/C/F | DESCRIPTION | LOAD (VA) | BKR | CIR | Ø | CIR | BKR | LOAD (VA) | DESCRIPTION | I/C/F | |
| | 22-XFMR | 12500 | 90A-2P | 1 | A | 2 | 20A-3P | 3000 | 22-EUH-2202 | C | |
| | | 12500 | | 3 | B | 4 | | 3000 | | C | |
| | | | | 5 | C | 6 | | 3000 | | C | |
| C | | 3000 | | 7 | A | 8 | | 942 | | C | |
| C | 22-EUH-2203 | 3000 | 20A-3P | 9 | B | 10 | 20A-3P | 942 | 22-EF-2201 | C | |
| C | | 3000 | | 11 | C | 12 | | 942 | | C | |
| I | | 15000 | | 13 | A | 14 | | | | I | |
| I | MOTOR TEST CIRCUIT | 15000 | 100A-3P | 15 | B | 16 | 15A-3P | | SPARE | I | |
| I | | 15000 | | 17 | C | 18 | | | | I | |
| | SPARE | | 15A-3P | 19 | A | 20 | 15A-3P | | SPARE | I | |
| | | | | 21 | B | 22 | | | | I | |
| | | | | 23 | C | 24 | | | | I | |
| | SPARE | | 20A-3P | 25 | A | 26 | 20A-3P | | SPARE | I | |
| | | | | 27 | B | 28 | | | | I | |
| | | | | 29 | C | 30 | | | | I | |
| | SPARE | | 20A-3P | 31 | A | 32 | 20A-3P | | SPARE | I | |
| | | | | 33 | B | 34 | | | | I | |
| | | | | 35 | C | 36 | | | | I | |
| | SPARE | | 20A-3P | 37 | A | 38 | 20A-3P | | SPARE | I | |
| | | | | 39 | B | 40 | | | | I | |
| | | | | 41 | C | 42 | | | | I | |

| PANEL 07-LPD | | | | | | | | | | 6/23/2020 | |
|---------------|-----------------------------------|-------------------------|--------|---------------------------|---|------------------|--------|-----------|--------------------------------------|-----------|--|
| LOCATION: | | FILTER SUPPORT BUILDING | | NEMA: 1 | | PH A WEIGHTED VA | | 2830 | | | |
| VOLTS: | | 208 / 120 | | FEED: BOTTOM | | PH B WEIGHTED VA | | 2980 | | | |
| PHASE & WIRE: | | 3PH 4W | | MTG. SURFACE | | PH C WEIGHTED VA | | 2235 | | | |
| INTERRUPT: | | 10 KAIC | | BUS RATING: 100 | | EQUIP SIZING VA | | 8940 | | | |
| | | MAIN: CB | | MAIN RATING: 100 AF 30 AT | | PANEL AMPS | | 24.8 | | | |
| I/C/F | DESCRIPTION | LOAD (VA) | BKR | CIR | Ø | CIR | BKR | LOAD (VA) | DESCRIPTION | I/C/F | |
| C | FILTER CONTROL PANEL 06-VCP-FC6 | 500 | 20A-1P | 1 | A | 2 | 20A-1P | 200 | TERTIARY FILTER 06-AIT-6602 | C | |
| C | FILTER CONTROL PANEL 06-VCP-FC7 | 500 | 20A-1P | 3 | B | 4 | 20A-1P | 200 | TERTIARY FILTER 06-AIT-6702 | C | |
| C | FILTER CONTROL PANEL 06-VCP-FC8 | 500 | 20A-1P | 5 | C | 6 | 20A-1P | 200 | TERTIARY FILTER 06-AIT-6802 | C | |
| C | FILTER CONTROL PANEL 06-VCP-FC9 | 500 | 20A-1P | 7 | A | 8 | 20A-1P | 200 | TERTIARY FILTER 06-AIT-6902 | C | |
| C | FILTER CONTROL PANEL 06-VCP-FC10 | 500 | 20A-1P | 9 | B | 10 | 20A-1P | 200 | TERTIARY FILTER 06-AIT-61002 | C | |
| C | TERTIARY FILTERS 6 AND 7 LIGHTS | 392 | 20A-1P | 11 | C | 12 | 20A-1P | 720 | TERTIARY FILTERS 6 AND 7 RECEPTACLES | I | |
| C | TERTIARY FILTERS PUMP AREA LIGHTS | 174 | 20A-1P | 13 | A | 14 | 20A-1P | 690 | UV DISINFECTION LIGHTS | C | |
| C | MAGNETIC FLOWMETER FIT-6001 | 120 | 20A-1P | 15 | B | 16 | 20A-1P | 1080 | UV DISINFECTION RECEPTACLES | I | |
| C | MAGNETIC FLOWMETER FIT-6002 | 120 | 20A-1P | 17 | C | 18 | 20A-1P | | SPARE | I | |

| PANEL 22-LPA | | | | | | | | | | 6/23/2020 | |
|---------------|--------------------------|------------------|--------|-----------------|---|------------------|--------|-----------|--------------------------|-----------|--|
| LOCATION: | | STORAGE BUILDING | | NEMA: 1 | | PH A WEIGHTED VA | | 884 | | | |
| VOLTS: | | 208 / 120 | | FEED: BOTTOM | | PH B WEIGHTED VA | | 720 | | | |
| PHASE & WIRE: | | 3PH 4W | | MTG. SURFACE | | PH C WEIGHTED VA | | 720 | | | |
| INTERRUPT: | | 10 KAIC | | BUS RATING: 150 | | EQUIP SIZING VA | | 2652 | | | |
| | | MAIN: MLO | | MAIN RATING: | | PANEL AMPS | | 7.4 | | | |
| I/C/F | DESCRIPTION | LOAD (VA) | BKR | CIR | Ø | CIR | BKR | LOAD (VA) | DESCRIPTION | I/C/F | |
| C | STORAGE ROOM LIGHTS | 702 | 20A-1P | 1 | A | 2 | 20A-1P | 5 | STORAGE ROOM EXIT LIGHT | C | |
| | SPARE | | 20A-1P | 3 | B | 4 | 20A-1P | 720 | STORAGE ROOM RECEPTACLES | I | |
| I | STORAGE ROOM RECEPTACLES | 720 | 20A-1P | 5 | C | 6 | 20A-1P | | SPARE | I | |
| | SPARE | | 20A-1P | 7 | A | 8 | 20A-1P | | SPARE | I | |
| | SPARE | | 20A-1P | 9 | B | 10 | 20A-1P | | SPARE | I | |
| | SPARE | | 20A-1P | 11 | C | 12 | 20A-1P | | SPARE | I | |
| | SPARE | | 20A-1P | 13 | A | 14 | 20A-1P | | SPARE | I | |
| | SPARE | | 20A-1P | 15 | B | 16 | 20A-1P | | SPARE | I | |
| | SPARE | | 20A-1P | 17 | C | 18 | 20A-1P | | SPARE | I | |

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|----------------------|------|---|--|---|---|--|--|---|----------------------------|--|
| DESIGNED CAC | |  |  |  |  | CITY OF PETALUMA | | VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0" = 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | JOB NO. 7310L.10 | |
| DRAWN CLH | | | | | | FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT | | | DRAWING NO. E17C | |
| CHECKED JGB | | | | | | ELECTRICAL | | | SHEET NO. 99 OF 130 | |
| DATE JANUARY 2023 | | PANELBOARD PULL BOX AND LUMINAIRE SCHEDULE | | | | | | | | |
| REV | DATE | BY | DESCRIPTION | | | | | | | |
| 1 | | | | | | | | | | |

Plot Date: 03-APR-2023 2:07:53 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: JSantaguida

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

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| ELECTRICAL HANDHOLE AND MANHOLE SCHEDULE | | | | | | | 12/28/2022 |
|--|--------------------------------------|--------|-------|--------------|----------------|-----------------|------------|
| TAG NO | MINIMUM INTERIOR DIMENSIONS (INCHES) | | | CONSTRUCTION | TYPICAL DETAIL | SURFACE LOADING | COMMENTS |
| | WIDTH | LENGTH | DEPTH | | | | |
| IPB-26 | 60 | 60 | | | | | |
| IPB-31 | 60 | 60 | | | | | |
| IPB-42 | 72 | 72 | | | | | |
| LVPB-7 | 84 | 84 | | | | | |
| LVPB-12 | 84 | 84 | | | | | |
| LVPB-42 | 72 | 72 | | | | | |

NOTES:
 1. SEE SPECIFICATION 02581 FOR PRECAST ELECTRICAL HANDHOLES AND MANHOLES.
 2. ALTERNATES: PROVIDE PER TYPICAL DETAIL EM062 IF INDICATED UNDER "COMMENTS".

| REV | DATE | BY | DESCRIPTION |
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JGB
 DATE
JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:11:29-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 MANHOLE AND HANDHOLE SCHEDULE

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING

 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
7310L.10
 DRAWING NO.
05E02C
 SHEET NO.
100 OF 130

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

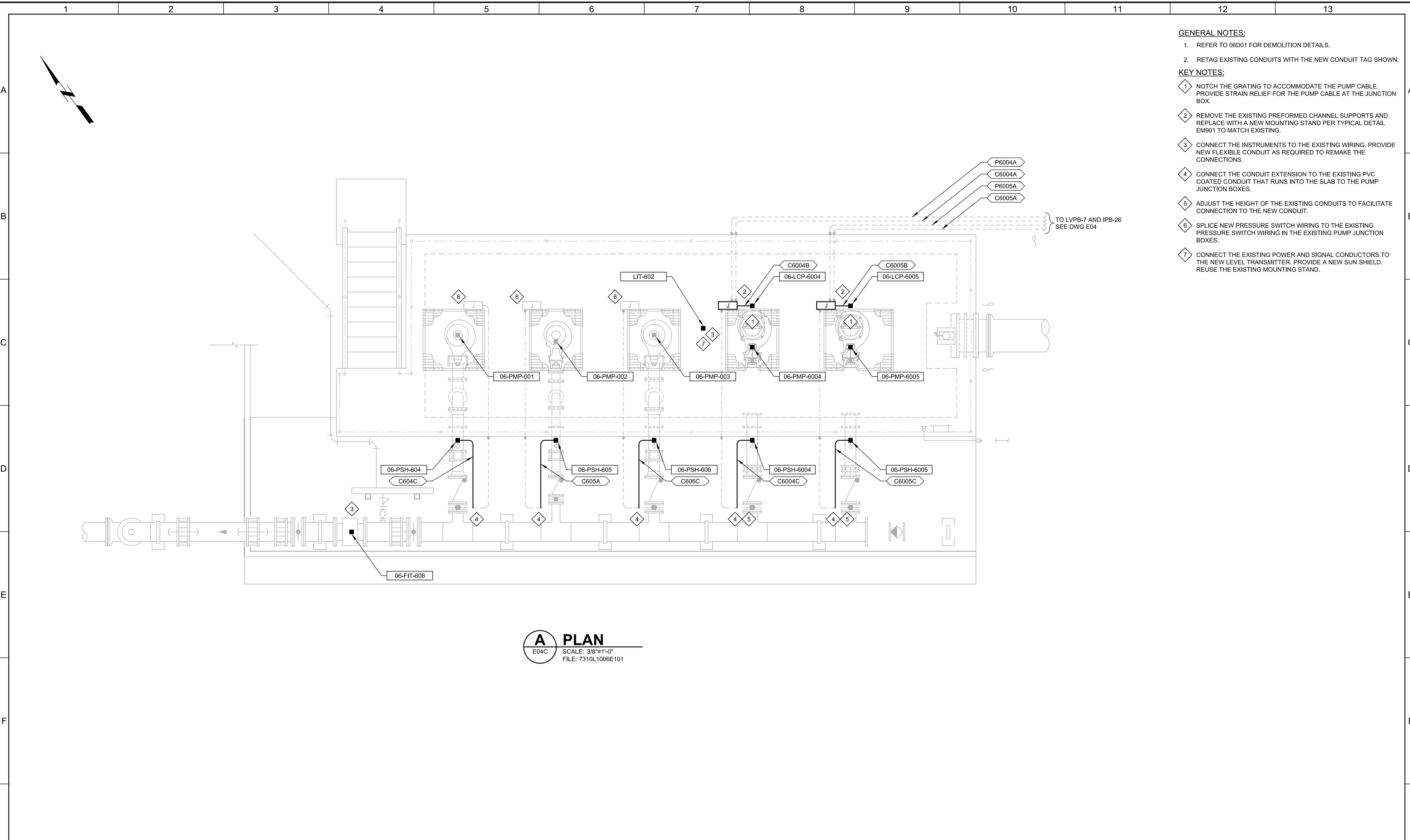
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User: svcPW

PlotScale: 1:1

Model: Layout1

ColorTable: gshade.ctb



- GENERAL NOTES:**
- REFER TO 06D01 FOR DEMOLITION DETAILS.
 - RETAG EXISTING CONDUITS WITH THE NEW CONDUIT TAG SHOWN.
- KEY NOTES:**
- NOTCH THE GRATING TO ACCOMMODATE THE PUMP CABLE, PROVIDE STRAIN RELIEF FOR THE PUMP CABLE AT THE JUNCTION BOX.
 - REMOVE THE EXISTING PREFORMED CHANNEL SUPPORTS AND REPLACE WITH A NEW MOUNTING STAND PER TYPICAL DETAIL EM901 TO MATCH EXISTING.
 - CONNECT THE INSTRUMENTS TO THE EXISTING WIRING. PROVIDE NEW FLEXIBLE CONDUIT AS REQUIRED TO REMAKE THE CONNECTIONS.
 - CONNECT THE CONDUIT EXTENSION TO THE EXISTING PVC COATED CONDUIT THAT RUNS INTO THE SLAB TO THE PUMP JUNCTION BOXES.
 - ADJUST THE HEIGHT OF THE EXISTING CONDUITS TO FACILITATE CONNECTION TO THE NEW CONDUIT.
 - SPLICE NEW PRESSURE SWITCH WIRING TO THE EXISTING PRESSURE SWITCH WIRING IN THE EXISTING PUMP JUNCTION BOXES.
 - CONNECT THE EXISTING POWER AND SIGNAL CONDUCTORS TO THE NEW LEVEL TRANSMITTER. PROVIDE A NEW SUN SHIELD. REUSE THE EXISTING MOUNTING STAND.

A PLAN
 E04C SCALE: 3/8"=1'-0"
 FILE: 7310L1006E101

| REV | DATE | BY | DESCRIPTION |
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JANUARY 2023



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 Date: 2023.04.06 12:10:29-0800
Christopher Alan Corvato



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
**TERTIARY PUMP STATION
 POWER AND CONTROL PLAN**

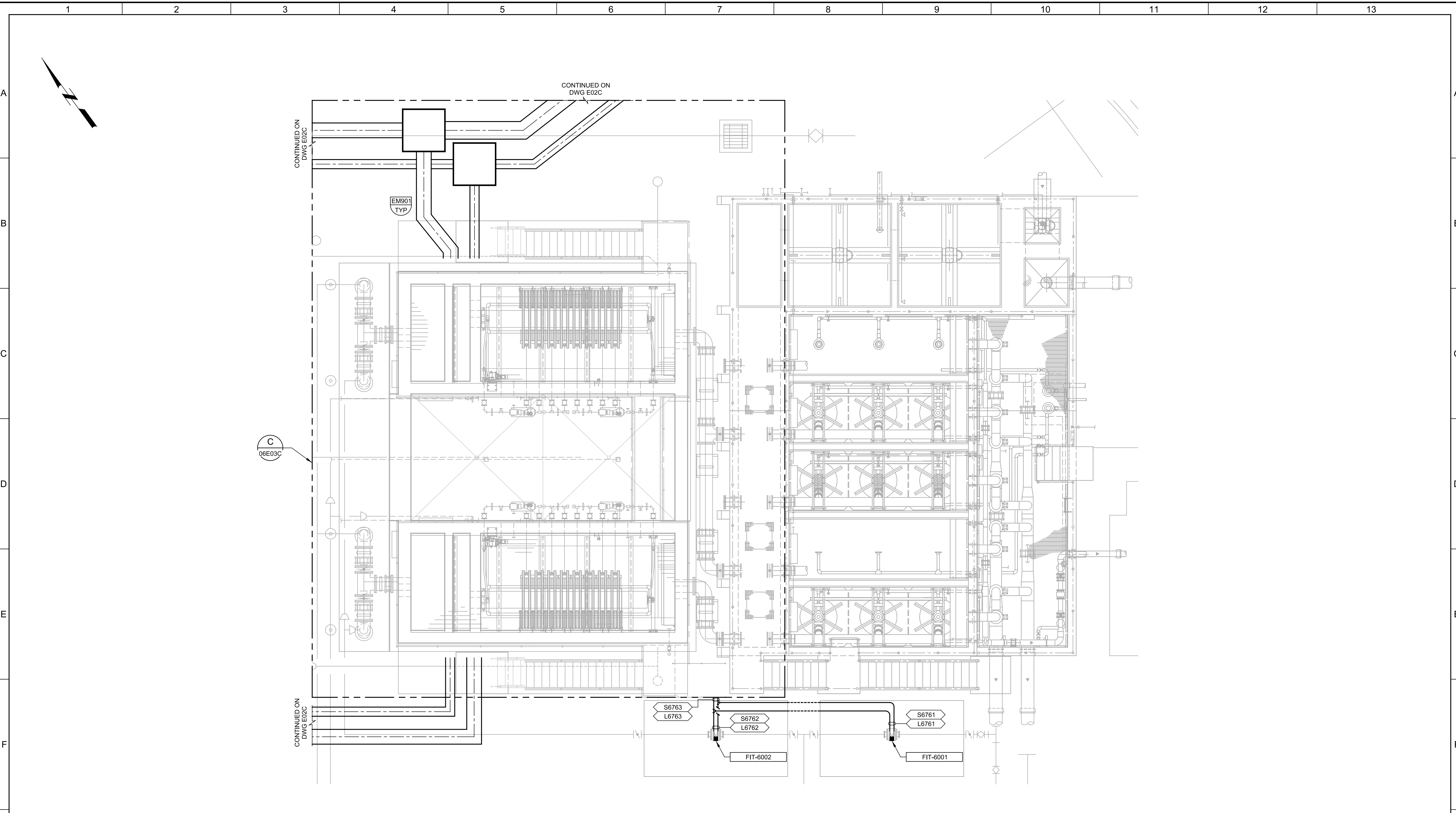
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| VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1' IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | JOB NO. 7310L.10 DRAWING NO. 06E01C SHEET NO. 101 OF 130 |
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Plot Date: 03-APR-2023 2:08:18 PM

User: svcPW

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

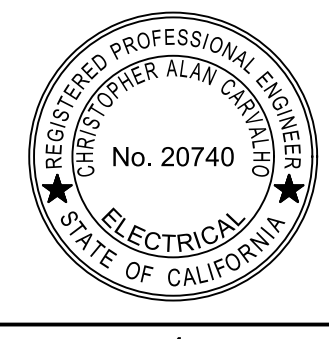
LAST SAVED BY: JSantaguida



B PLAN
 E02C SCALE: 3/16" = 1'-0"
 FILE: 7310L1006E102

| REV | DATE | BY | DESCRIPTION |
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 DATE
JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 12:10:09-0800
Alan Carvallo



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
**TERTIARY FILTERS
 OVERALL PLAN**

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

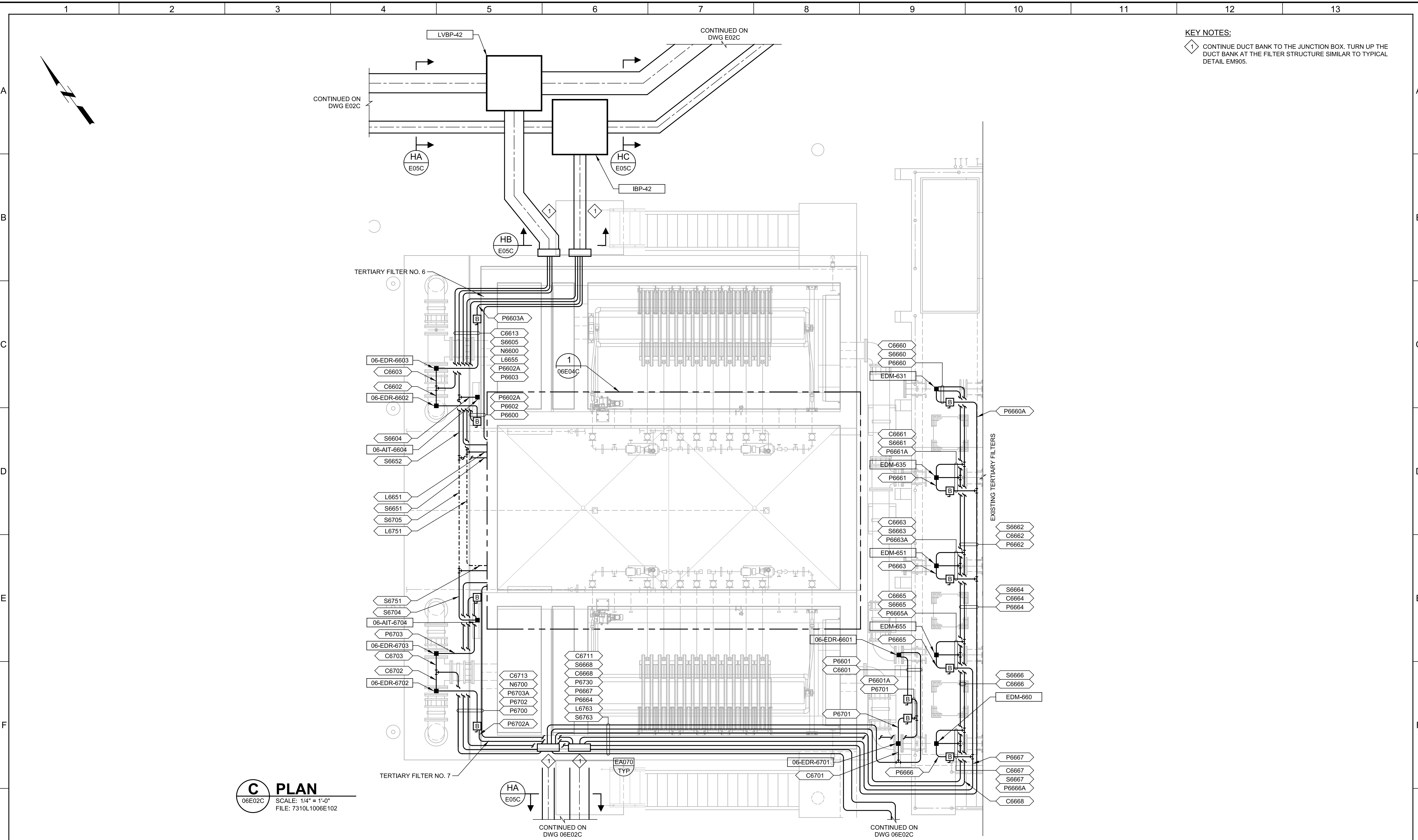
JOB NO.
7310L.10
 DRAWING NO.
06E02C
 SHEET NO.
102 OF 130

Plot Date: 03-APR-2023 2:08:29 PM

User: svcPW

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

LAST SAVED BY: JSantaguida



KEY NOTES:

1 CONTINUE DUCT BANK TO THE JUNCTION BOX. TURN UP THE DUCT BANK AT THE FILTER STRUCTURE SIMILAR TO TYPICAL DETAIL EM905.

C PLAN
 06E02C SCALE: 1/4" = 1'-0"
 FILE: 7310L1006E102

| REV | DATE | BY | DESCRIPTION |
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| 1 | | | |
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| 3 | | | |

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JGB

DATE
JANUARY 2023



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 Date: 2023.04.03 13:10:29 PDT

Alan Corrallo



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
TERTIARY FILTERS NO. 6 & 7 PLAN

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

JOB NO.
7310L.10

DRAWING NO.
06E03C

SHEET NO.
103 OF 130

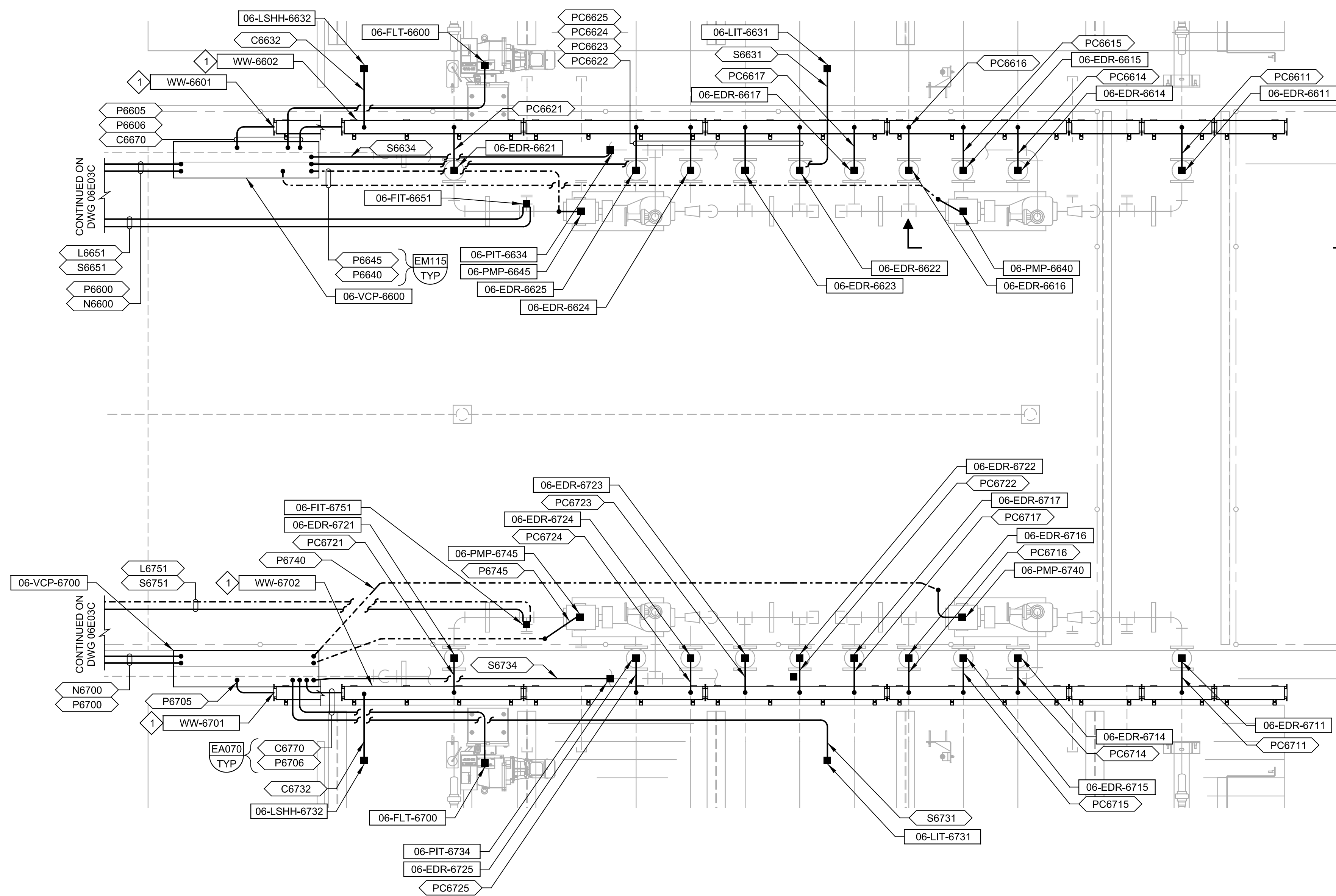
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User: svcPW

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

LAST SAVED BY: JSantaguida

KEY NOTES:
1 CONTINUE THE WIREWAY TO THE VALVE DISCONNECT SWITCHES REFER TO SECTION E ON 06E06C.



1 DETAIL
06E03C SCALE: 1/2"=1'-0"
FILE: 7310L1006E102

| REV | DATE | BY | DESCRIPTION |
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Date: 2023.04.06 12:10:09-0700

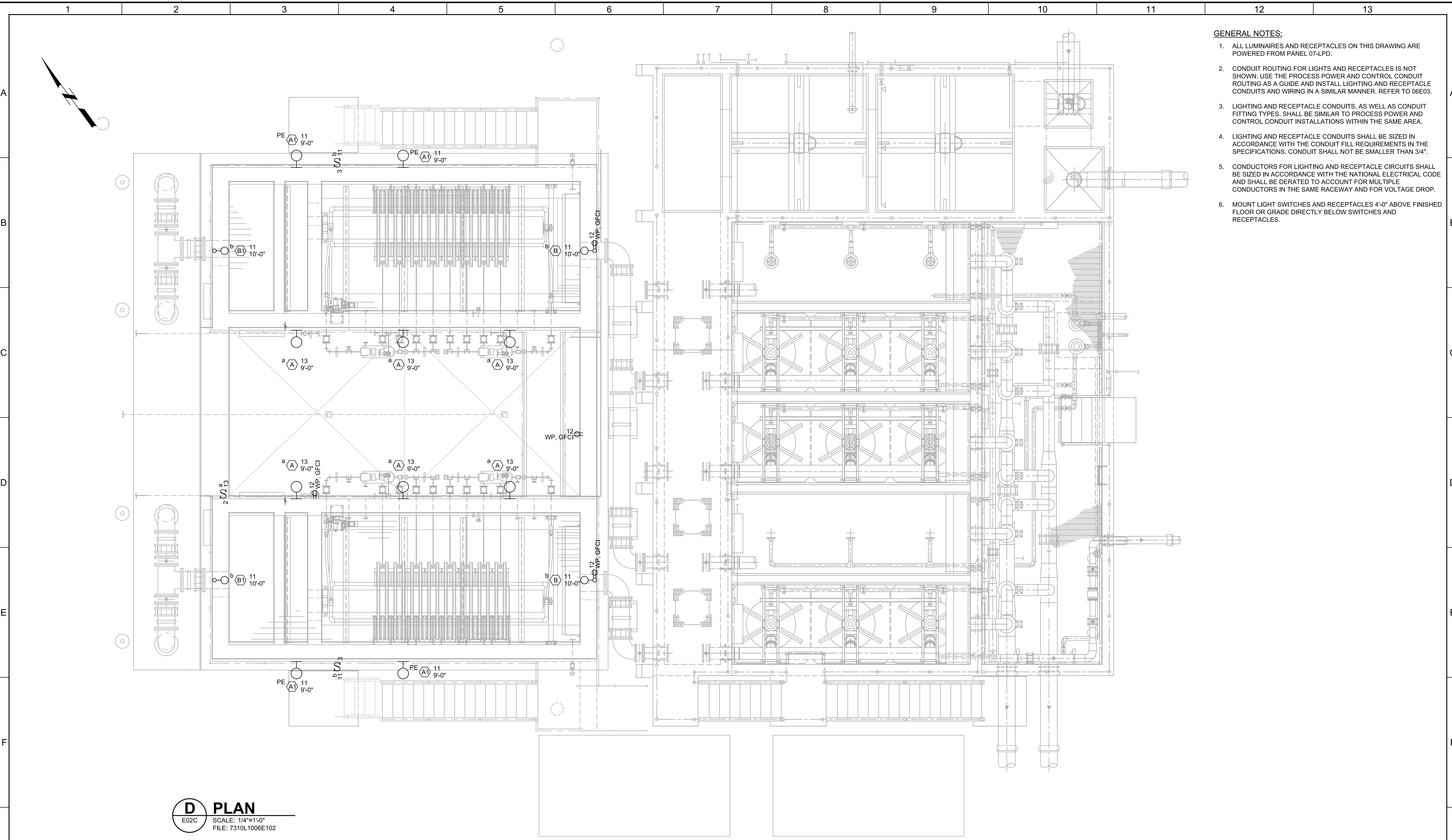


CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
TERTIARY FILTERS NO. 6 & 7
PUMP AREA DETAIL

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

JOB NO.
7310L.10
DRAWING NO.
06E04C
SHEET NO.
104 OF 130

Plot Date: 03-APR-2023 2:06:56 PM
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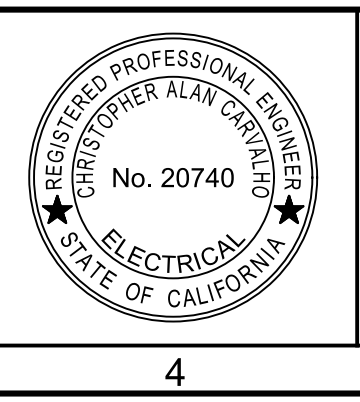


- GENERAL NOTES:**
- ALL LUMNAIRES AND RECEPTACLES ON THIS DRAWING ARE POWERED FROM PANEL 07-LPD.
 - CONDUIT ROUTING FOR LIGHTS AND RECEPTACLES IS NOT SHOWN. USE THE PROCESS POWER AND CONTROL CONDUIT ROUTING AS A GUIDE AND INSTALL LIGHTING AND RECEPTACLE CONDUITS AND WIRING IN A SIMILAR MANNER. REFER TO 06E03.
 - LIGHTING AND RECEPTACLE CONDUITS, AS WELL AS CONDUIT FITTING TYPES, SHALL BE SIMILAR TO PROCESS POWER AND CONTROL CONDUIT INSTALLATIONS WITHIN THE SAME AREA.
 - LIGHTING AND RECEPTACLE CONDUITS SHALL BE SIZED IN ACCORDANCE WITH THE CONDUIT FILL REQUIREMENTS IN THE SPECIFICATIONS. CONDUIT SHALL NOT BE SMALLER THAN 3/4\".
 - 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.
 - MOUNT LIGHT SWITCHES AND RECEPTACLES 4'-0\" ABOVE FINISHED FLOOR OR GRADE DIRECTLY BELOW SWITCHES AND RECEPTACLES.

D PLAN
 E02C SCALE: 1/4"=1'-0"
 FILE: 7310L1006E102

| REV | DATE | BY | DESCRIPTION |
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 JGB
 DATE
 JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 12:16:09-0800
CA Corvato



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
TERTIARY FILTERS
LIGHTING, RECEPTACLES AND GROUNDING PLAN

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| VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | JOB NO. 7310L.10 DRAWING NO. 06E05C SHEET NO. 105 OF 130 |
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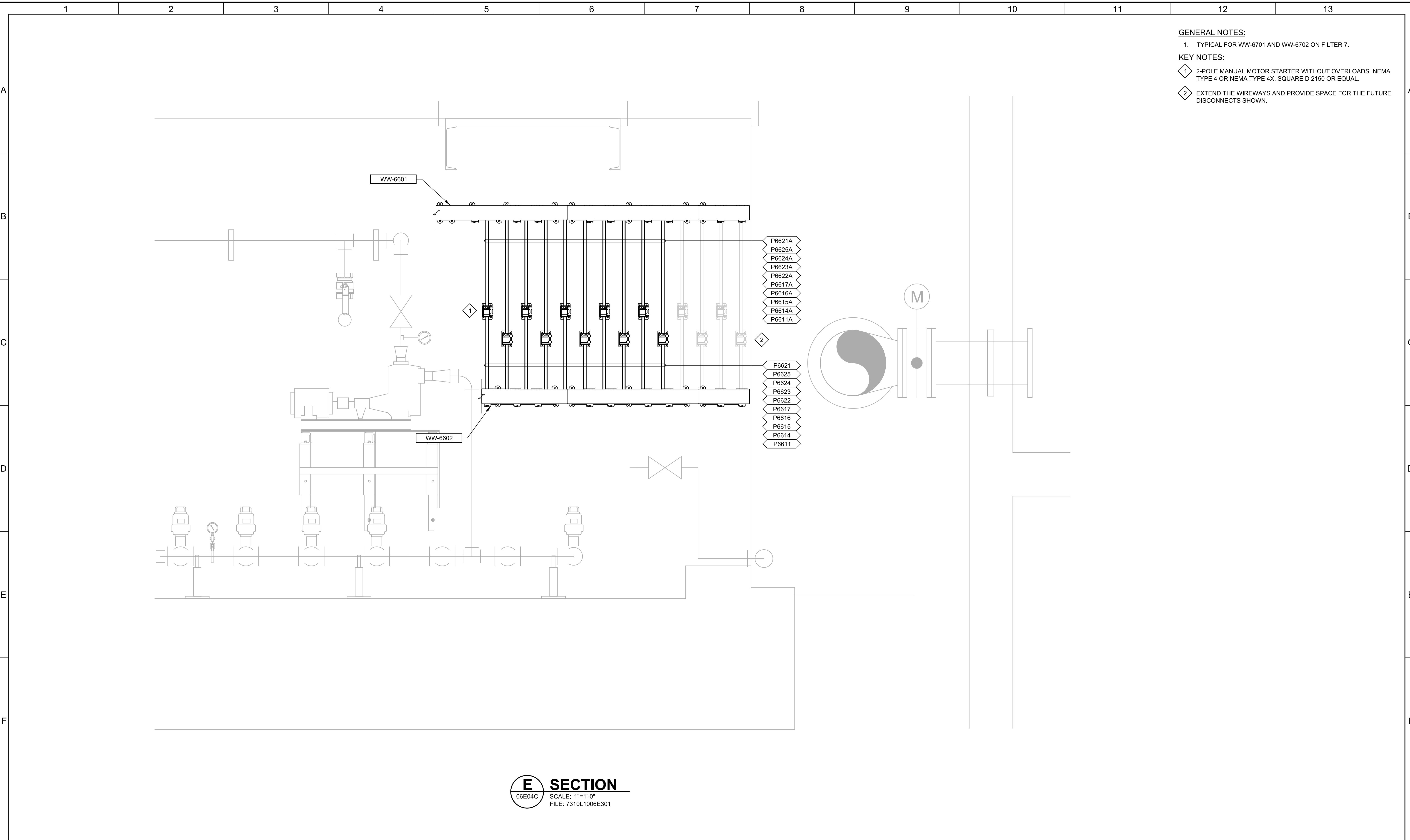
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User: svcPW

Plot Scale: 1:1

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

LAST SAVED BY: JSantaguida

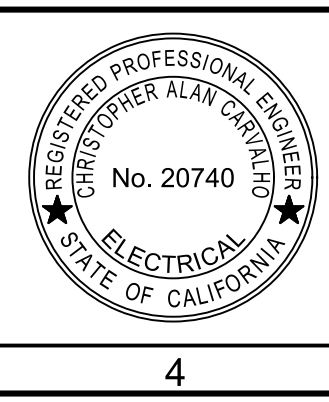


- GENERAL NOTES:**
- TYPICAL FOR WW-6701 AND WW-6702 ON FILTER 7.
- KEY NOTES:**
- 2-POLE MANUAL MOTOR STARTER WITHOUT OVERLOADS. NEMA TYPE 4 OR NEMA TYPE 4X. SQUARE D 2150 OR EQUAL.
 - EXTEND THE WIREWAYS AND PROVIDE SPACE FOR THE FUTURE DISCONNECTS SHOWN.

E SECTION
 06E04C SCALE: 1"=1'-0"
 FILE: 7310L1006E301

| REV | DATE | BY | DESCRIPTION |
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JANUARY 2023



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 Date: 2023.04.26 12:11:59-0800
Carvallo



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
TERTIARY FILTERS NO. 6 & 7 SECTION

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

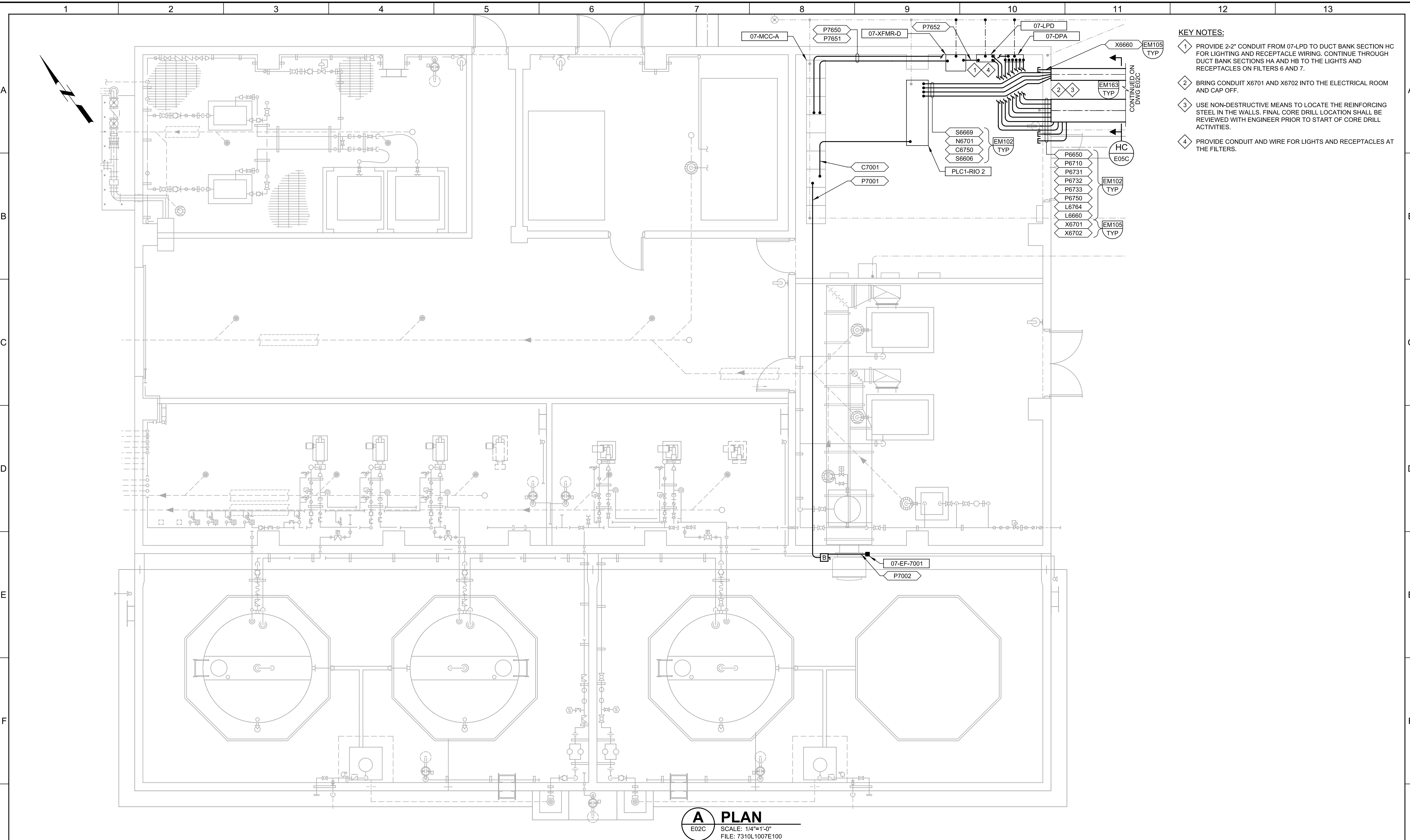
JOB NO. 7310L.10
DRAWING NO. 06E06C
 SHEET NO. 106 OF 130

Plot Date: 03-APR-2023 2:08:07 PM

User: svcPW

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

LAST SAVED BY: JSantaguida



- KEY NOTES:**
- 1 PROVIDE 2-2" CONDUIT FROM 07-LPD TO DUCT BANK SECTION HC FOR LIGHTING AND RECEPTACLE WIRING. CONTINUE THROUGH DUCT BANK SECTIONS HA AND HB TO THE LIGHTS AND RECEPTACLES ON FILTERS 6 AND 7.
 - 2 BRING CONDUIT X6701 AND X6702 INTO THE ELECTRICAL ROOM AND CAP OFF.
 - 3 USE NON-DESTRUCTIVE MEANS TO LOCATE THE REINFORCING STEEL IN THE WALLS. FINAL CORE DRILL LOCATION SHALL BE REVIEWED WITH ENGINEER PRIOR TO START OF CORE DRILL ACTIVITIES.
 - 4 PROVIDE CONDUIT AND WIRE FOR LIGHTS AND RECEPTACLES AT THE FILTERS.

A PLAN
E02C SCALE: 1/4"=1'-0"
FILE: 7310L1007E100

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JANUARY 2023



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Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 15:10:00-0800

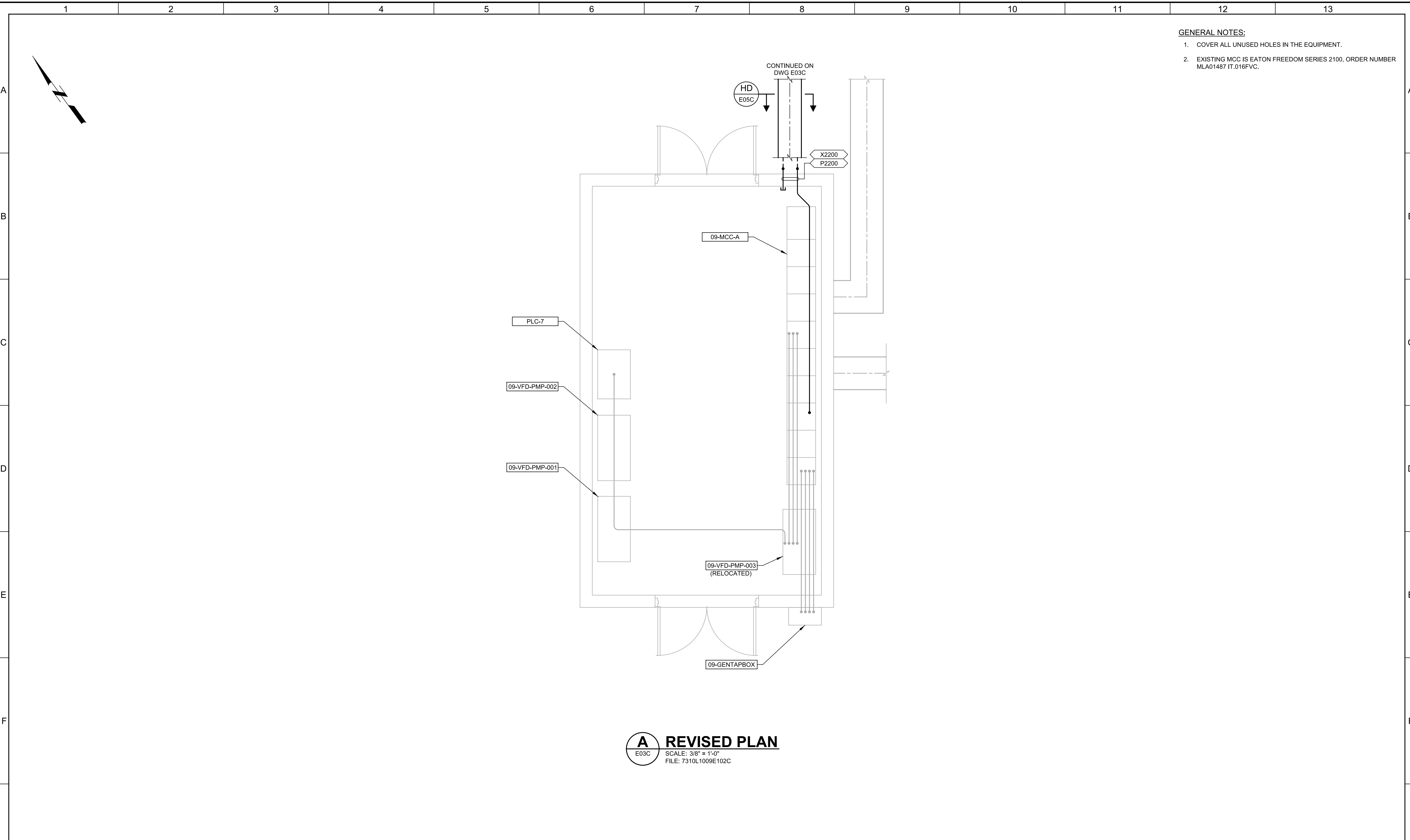


CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
FILTER SUPPORT BUILDING
POWER AND CONTROL PLAN

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

JOB NO.
7310L.10
DRAWING NO.
07E01C
SHEET NO.
107 OF 130

Plot Date: 03-APR-2023 2:10:07 PM
 User: svcPW
 Model: Layout1
 ColorTable: gshade.ctb
 DesignScript: Carollo_Sig_Pen_v0905.pen
 PlotScale: 1:1
 LAST_SAVED BY: JSantaguida



- GENERAL NOTES:**
- COVER ALL UNUSED HOLES IN THE EQUIPMENT.
 - EXISTING MCC IS EATON FREEDOM SERIES 2100, ORDER NUMBER MLA01487 IT.016FVC.

A REVISED PLAN
 E03C SCALE: 3/8" = 1'-0"
 FILE: 7310L1009E102C

| REV | DATE | BY | DESCRIPTION |
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DATE
JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:10:59-0800



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
09-MCC-A BUILDING
 POWER, GROUNDING AND LIGHTING PLAN

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

JOB NO.
7310L.10

DRAWING NO.
09E01C

SHEET NO.
108 OF 130

Plot Date: 03-APR-2023 2:10:44 PM

User: svcPW

PlotScale: 1:1

Model: Layout1

ColorTable: gshade.ctb

DesignScript: Carollo_Sig_Pen_v0905.pen

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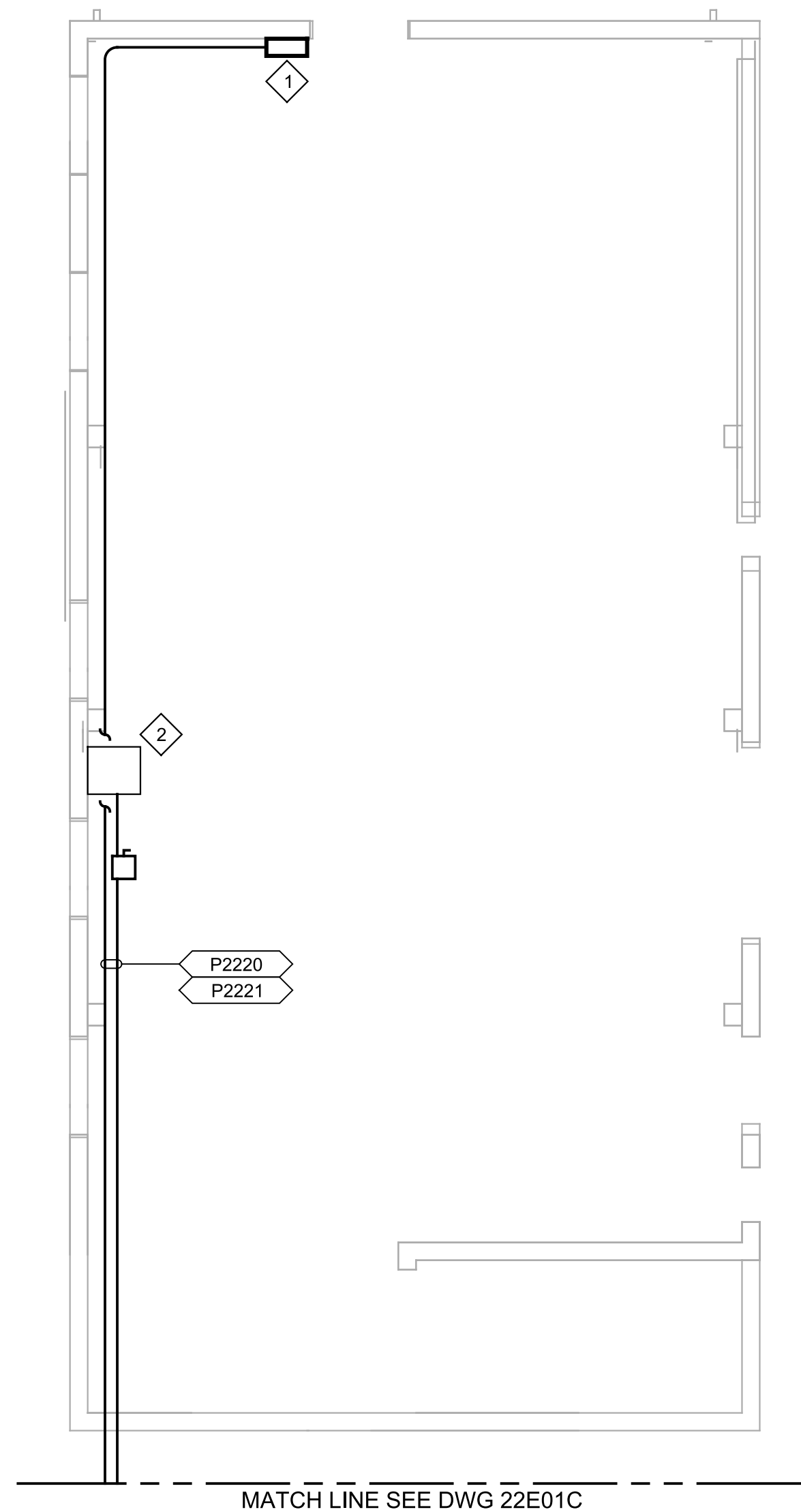
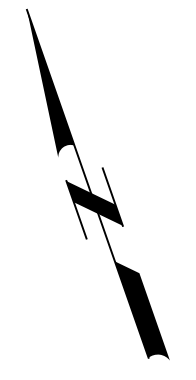
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KEY NOTES:

- 1 480V PULLBOX FOR FUTURE USE.
- 2 TAP BOX FOR MOTOR TEST STATION. 480V, 3P, 100A.



A PLAN
 E03C SCALE: 1/8" = 1'-0"
 FILE: 7310L1019E101

| REV | DATE | BY | DESCRIPTION |
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 DATE
JANUARY 2023



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 Date: 2023.04.26 12:10:44-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 ELECTRICAL
 OPERATIONS AND MAINTENANCE
 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.
7310L.10
 DRAWING NO.
19E01C
 SHEET NO.
109 OF 130

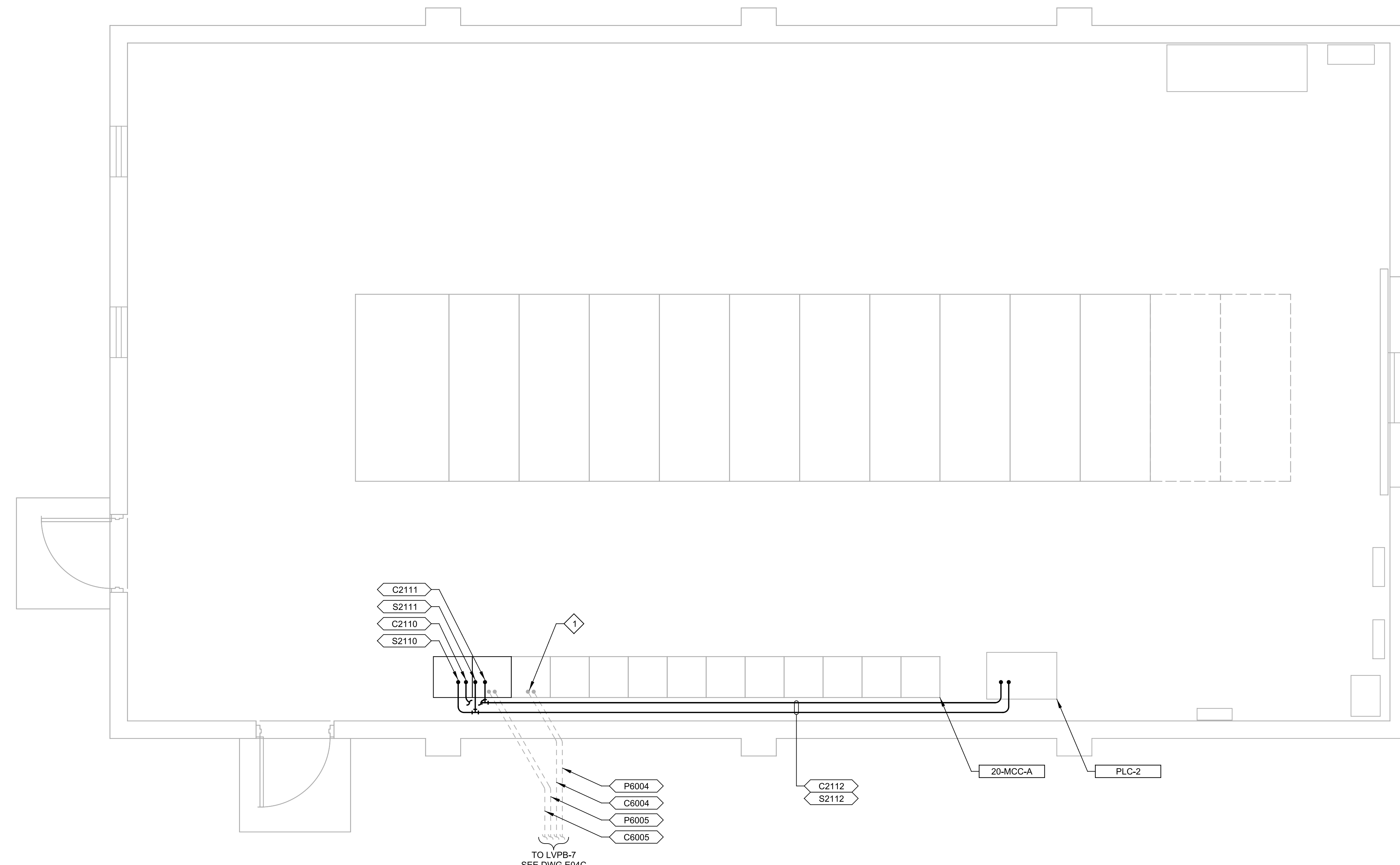
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User: svcPW

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

LAST SAVED BY: JSantaguida

KEY NOTES:
1 ROUTE THE NEW PUMP WIRE AND CABLES THROUGH THE MCC WIREWAY TO THE CORRECT MCC SECTION.



A PLAN
E04C SCALE: 3/8"=1'-0"
FILE: 7310L1020E101

| REV | DATE | BY | DESCRIPTION |
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JANUARY 2023



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Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 12:14:59-0700
Alan Carvallo



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
ELECTRICAL
MAIN ELECTRICAL SERVICE BUILDING
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.
7310L.10
DRAWING NO.
20E01C
SHEET NO.
110 OF 130

Plot Date: 04-APR-2023 3:00:56 PM

User: svcPW

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

LAST SAVED BY: EWittmer

| SYMBOL | DRAWING VISIBLE FIELDS | FIELD - 1 | FIELD - 2 | FIELD - 3 | FIELD - 4 | FIELD - 5 | FIELD - 6 |
|---|---|--|------------|--|--|---|----------------------------|
| HMI/SCADA SYSTEM OPERATOR INTERFACE TERMINAL | 1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE | REFER 1 2 | REFER 3 | ACTION ALARM NUM - NUMERIC SET POINT TRENDS | DESCRIPTION 2 5 | DESCRIPTION | 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 |
| NETWORK / SOFT I/O | 1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE 7 - DIGITAL NETWORK TABLE | REFER 1 2 | REFER 3 | BUS ID CNET - CONTROLNET DNET - DEVICENET 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 |
| LOCAL OPERATOR INTERFACE | 1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - DESCRIPTION 5 - LOCATION 6 - EXISTING/FUTURE | REFER 1 2 | REFER 3 | ACTION ALARM NUM - NUMERIC SET POINT STATUS | DESCRIPTION 2 5 | LOI - LOCAL OPERATOR INTERFACE NO. LCP - LOCAL CONTROL PANEL 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 JOUC - 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 |
| POWER DEVICE PRIMARY FUNCTION OPERATOR ACCESSIBLE | 1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 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 |
| POWER DEVICE AUXILIARY FUNCTION FOR OPERATOR ACCESSIBLE DEVICES | 1 - TAG 2 - LOOP NUMBER 3 - DESCRIPTION 4 - DESCRIPTION 5 - DESCRIPTION 6 - EXISTING/FUTURE | DISC - DISCONNECT | REFER 3 | DESCRIPTION | DESCRIPTION | DESCRIPTION | E - EXISTING F - FUTURE |
| POWER DEVICE PRIMARY FUNCTION OPERATOR INACCESSIBLE | 1 - TAG 2 - LOOP NUMBER 3 - FUNCTION 4 - VOLTAGE-POLE 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 |

| INSTRUMENT BUBBLE LOCATIONS | | NOTES |
|--|--|--|
| PCS | | 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 FBV FURNISHED BY VENDOR |
| CONTROL PANEL I/O | | |
| CONTROL PANEL OPERATOR INTERFACE CONTROL DEVICES | | |
| POWER SOURCE | | |
| FIELD | | |
| | | |

| | | | | | | |
|----------------------|--|--|--|--|--|---|
| DESIGNED CDS | | | | CITY OF PETALUMA FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT INSTRUMENTATION SYMBOLS & ABBREVIATIONS - I | VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" | JOB NO. 7310L.10 DRAWING NO. GN01C SHEET NO. 112 OF 130 |
| DRAWN ESW | | | | | | |
| CHECKED DJC | | | | | | |
| DATE JANUARY 2023 | | | | | | |

Plot Date: 04-APR-2023 3:00:12 PM
User: svcpw
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
LAST SAVED BY: EWittner

INSTRUMENT TAG IDENTIFICATION LETTERS

| INSTRUMENT FUNCTION | MEASURED VARIABLE | | INSTRUMENT TAG IDENTIFICATION LETTERS | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|-------------------|-------------|---------------------------------------|---|-----------|----------|------------|-----------------------|----------------------|--------|----------------|------------|-------------|------------------|-----------------------------|--------|---------------|-----------|------------|-----------------|--------------------------------|-------|-------|-------|---------------|
| | ELEMENT | TRANSMITTER | INDICATING TRANSMITTER | CONVERTER TRANSducer, RELAY SPECIAL DEVICES | INDICATOR | RECORDER | CONTROLLER | INDICATING CONTROLLER | RECORDING CONTROLLER | SWITCH | SWITCH LOW LOW | SWITCH LOW | SWITCH HIGH | SWITCH HIGH HIGH | SWITCH COMBINATION HIGH LOW | ACTION | ALARM LOW LOW | ALARM LOW | ALARM HIGH | ALARM HIGH HIGH | TOTALIZE INDICATOR TRANSMITTER | VALVE | GAUGE | LIGHT | SPEED SETTING |
| A ANALYSIS | AE | AT | AIT | AY | AI | AR | AC | AIC | ARC | AS | ASLL | ASL | ASH | ASHH | ASHL | | AALL | AAL | AAH | AAHH | | | | | AL |
| B BURNER FLAME | BE | BT | BIT | BY | BI | BR | BC | BIC | BRC | BS | BSLL | BSL | BSH | BSHH | BSHL | | BALL | BAL | BAH | BAHH | | | | | BL |
| C CONDUCTIVITY | CE | CT | CIT | CY | CI | CR | CC | CIC | CRC | CS | CSLL | CSL | CSH | CSHH | CSHL | | CALL | CAL | CAH | CAHH | | | | | CL |
| D DENSITY | DE | DT | DIT | DY | DI | DR | DC | DIC | DRC | DS | DSLL | DSL | DSH | DSHH | DSHL | | DALL | DAL | DAH | DAHH | | | | | DL |
| E | | | | | | | | | | | | | | | | | | | | | | | | | |
| F FLOW | FE | FT | FIT | FY | FI | FR | FC | FIC | FRC | FS | FSL | FSL | FSH | FSHH | FSHL | | FALL | FAL | FAH | FAHH | FQI | FCV | FG | FL | |
| FF FLOW RATIO | | | | FFY | FFI | | FFC | FFIC | | FFS | | | | | | | | | | | | | | FFL | |
| G GAUGING (DIMENSION) | | | | | | | | | | | | | | | | | | | | | | | | | |
| H HAND (MANUAL)* | | | | | | | HC | | | HS* | | | | | | HA* | | | | | | HV | | HSS | |
| I CURRENT | | IT | IIT | IY | II | IR | IC | IIC | IRC | IS | ISLL | ISL | ISH | ISHH | | IALL | IAL | IAH | IAHH | | | | | IL | |
| J POWER | | | | | | | | | | | | | | | | | | | | | | | | | |
| K TIME | | | | KY | KI | KR | KC | KIC | KRC | KS | KSL | KSL | KSH | KSHH | | KALL | KAL | KAH | KAHH | | | KV | | KL | |
| L LEVEL | LE | LT | LIT | LY | LI | LR | LC | LIC | LRC | LS | LSLL | LSL | LSH | LSHH | LSHL | | LALL | LAL | LAH | LAHH | | LCV | LG | LL | |
| M MOISTURE OR HUMIDITY | ME | MT | MIT | MY | MI | MR | MC | MIC | MRC | MS | MSLL | MSL | MSH | MSHH | | MALL | MAL | MAH | MAHH | | | | | ML | |
| N EMERGENCY SHUTDOWN | | | | | | | | | | | | | | | | | | | | | | | | | |
| O | | | | | | | | | | | | | | | | | | | | | | | | | |
| P PRESSURE OR VACUUM | PE | PT | PIT | PY | PI** | PR | PC | PIC | PRC | PS**** | PSLL | PSL | PSH | PSHH | PSHL | | PALL | PAL | PAH | PAHH | | PCV | | PL | |
| PD DIFFERENTIAL PRESSURE | | PDT | PDIT | PDY | PDI | PDR | PDC | PDIC | PDRC | PDS | PDSLL | PDSL | PDSH | PDSHH | | PDALL | PDAL | PDAH | PDAHH | | | PDCV | | PDL | |
| Q QUANTITY | QE | QT | QIT | QY | QI | QR | | | | QS | QSLL | QSL | QSH | QSHH | | QALL | QAL | QAH | QAAH | | | | | | |
| R RADIOACTIVITY | | | | | | | | | | | | | | | | | | | | | | | | | |
| S SPEED | SE | ST | SIT | SY | SI | SR | SC | SIC | SRC | SS | SSLL | SSL | SSH | SSHH | | SALL | SAL | SAH | SAHH | | | | | | |
| T TEMPERATURE | TE | TT | TIT | TY | TI | TR | TC | TIC | TRC | TS | TSLL | TSL | TSH | TSHH | TSHL | | TALL | TAL | TAH | TAHH | | TCV | | TL | |
| TD DIFFERENTIAL TEMPERATURE | | TDT | TDIT | TDY | TDI | TDR | TDC | TDIC | TDRC | TDS | TDSLL | TDSL | TDSH | TDSHH | | TDALL | TDAL | TDAH | TDAHH | | | TDCV | | TDL | |
| U MULTIVARIABLE | | | | | UI | UR | UC | UIC | URC | US | | | | | | | | | | | | | | UL | |
| V VISCOSITY | VE | VT | VIT | VY | VI | VR | VC | VIC | VRC | VS | VSLL | VSL | VSH | VSHH | | VALL | VAL | VAH | VAHH | | | | | VL | |
| W WEIGHT | WE | WT | WIT | WY | WI | WR | | | | WS | WSLL | WSL | WSH | WSHH | | WALL | WAL | WAH | WAHH | | | | | | |
| X UNCLASSIFIED | XE | XT | XIT | XY | XI | XR | XC | XIC | XRC | XS | XSLL | XSL | XSH | XSHH | | XALL | XAL | XAH | XAAH | | | XCV | XG | XL | |
| XV VIBRATION | XVE | XVT | | XVY | XVI | XVR | | | | XVS | | | XVSH | XVSHH | | | | XVAH | XVAHH | | | | | XVL | |
| Y STATUS*** | | | | | YI*** | | | | | | | | | | | | | | | | | | | YL | |
| Z POSITION | ZE | ZT | ZIT | ZY | ZI | | | | | ZS** | | | | | | | | | | | | | | ZL** | |

* 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

| PILOT DEVICE FUNCTION | DEVICE TYPE | | OPERATOR PILOT DEVICE LEGEND | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|---|-----|------------------------------|------------|---------------------|-------------|--------------|-----------------------|----------------------------|-------------------------|------------------------|---------------------------|-----------------------|------------------|------------------------------|-----------------|---------------------------------------|---------------|-------------|-------------|-------------------|---------------|--------------|---------|----------------|-----|--|--|--|--|
| | 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-MANUAL (SAAM) | LEAD-LAG-STANDBY (LGS) | JOG OPEN-JOG CLOSE (JOJC) | 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) | SILENCE | POSITION (POS) | | | | | |
| PILOT DEVICE TAG (HAND SWITCHES) | HSA* | HSB | HSC | HSD* | HSE | HSF | HSG* | HSH* | HSI | HSJ* | HSK* | HSL* | HSM* | HSN | HSP | HSQ* | HSR | HSS | HST* | HSU | HSV | HSW | HSX | HSY | HSZ | | | | | |
| SCADA/HMI TAG (HAND ACTION) | HAA | HAB | HAC | HAD | HAE | HAF | HAG | HAH | HAI | HAJ | HAK | HAL | HAM | HAN | HAO | HAP | HAQ | HAR | HAS | HAT | HAU | HAV | HAW | HAX | HAY | HAZ | | | | |

HSA* SELECTOR SWITCH POSITION EG: HSA(R) R = REMOTE, HSD(A) A = AUTO, ETC

I/O TYPE DESIGNATIONS

| | | | |
|-------|----------------------|-----|------------------------|
| AUX1 | RUNNING | MSL | MOTOR START LOW |
| AUX2 | FAILED/FAULT | MSM | VALVE MODULATE |
| AUXF1 | RUNNING FORWARD | MSP | MOTOR STOP |
| AUXH1 | RUNNING HIGH | MSR | MOTOR START REVERSE |
| AUXL1 | RUNNING LOW | MST | MOTOR START |
| AUXR1 | RUNNING REVERSE | SS | SPEED SIGNAL |
| SVC | SOLENOID VALVE CLOSE | ZC | POSITION COMMAND |
| SVO | SOLENOID VALVE OPEN | ZCC | POSITION COMMAND CLOSE |
| MS | RUN | ZCO | POSITION COMMAND OPEN |
| MSF | MOTOR START FORWARD | | |
| MSH | MOTOR START HIGH | | |

INSTRUMENT TYPE DESIGNATIONS

| | | | | | |
|------|----------------------------|-------|-------------------------------|------|---------------------------|
| AM | AMMONIA | O3 | OZONE | SH | SODIUM HYPOCHLORITE |
| CAP | CAPACITANCE | ORP | OXIDATION REDUCTION POTENTIAL | TDR | TIME DOMAIN REFLECTOMETRY |
| CGD | COMBUSTIBLE GAS DETECTOR | P | PRESSURE | TH | THERMAL |
| CL | CHLORINE | P-SUB | PRESSURE SUBMERSIBLE | TSS | TOTAL SUSPENDED SOLIDS |
| COND | CONDUCTIVITY | PC | PARTICLE COUNTER | TURB | TURBIDITY |
| DO | DISSOLVED OXYGEN | PO | PHOSPHOROUS | US | ULTRASONIC |
| FMCW | FREQ. MODULATED CONT. WAVE | PTOF | PULSE TIME OF FLIGHT | UVI | UV INTENSITY |
| HSF | FLUORIDE | R/I | RESISTANCE TO CURRENT | UVT | UV TRANSMITTANCE |
| IS | INTRINSIC SAFETY BARRIER | ROT | ROTAMETER | VAC | VACUUM |
| LEL | LOWER EXPLOSIVE LIMIT | RTD | RESISTANCE TEMP DETECTOR | | |
| MAG | MAGNETIC | SC | STREAMING CURRENT | | |

SPECIFIC ABBREVIATIONS

| | | | |
|-------|--------------------|-----|------------------------------|
| APH | A PHASE | MWH | MOTOR WINDING HEATER |
| BPH | B PHASE | SSG | SECONDARY SWITCHGEAR |
| BRB | BEARING BOTTOM | SV* | SOLENOID VALVE |
| BRT | BEARING TOP | SPD | SURGE PROTECTIVE DEVICE |
| BTFLY | BUTTERFLY | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| CPH | C PHASE | YA | STATUS AUTO |
| CC* | CALIBRATION COLUMN | YR | STATUS REMOTE |
| HTR | HEATER | Y1 | STATUS RUNNING |
| HTU | HEAT TRACE UNIT | Y2 | ALARM FAILED/FAULT |

* OC# AND SV# # = 1, 2, 3 ETC. AND REPRESENTS A UNIQUE IDENTIFIER

INSTRUMENT LINE SYMBOLS

| | |
|--|-----------------------------------|
| INSTRUMENT OR CONNECTION TO PROCESS | ————— |
| PNEUMATIC SIGNAL | — # — # — # — # — # — # — # — # — |
| ELECTRIC SIGNAL | — — — — — |
| HYDRAULIC SIGNAL | — L — L — L — L — L — |
| CAPILLARY TUBE | — X — X — X — X — X — |
| ELECTROMAGNETIC OR SONIC SIGNAL (GUIDED) | — S — S — S — S — S — |
| ELECTROMAGNETIC OR SONIC SIGNAL (NOT GUIDED) | — S — S — S — S — S — |
| INTERNAL SYSTEM LINK (SOFTWARE OR DATA LINK) | — o — o — o — o — o — o — |
| COPPER ETHERNET | — C — C — C — C — C — |
| FIBER OPTIC ETHERNET | — F — F — F — F — F — |
| WIRELESS ETHERNET | — W — W — W — W — W — |
| PROFIBUS DP | — PBD — PBD — PBD — PBD — PBD — |
| PROFIBUS PA | — PBA — PBA — PBA — PBA — PBA — |
| DEVICENET | — DN — DN — DN — DN — DN — |
| FOUNDATION FIELDBUS | — FF — FF — FF — FF — FF — |

PROCESS LINE SYMBOLS

| | |
|-----------------------------------|-------------|
| PRIMARY PROCESS FLOW IN PIPE | ————— |
| SECONDARY PROCESS FLOW IN PIPE | ————— |
| PRIMARY PROCESS FLOW IN CHANNEL | — · · · · · |
| SECONDARY PROCESS FLOW IN CHANNEL | — · · · · · |

DESIGNATIONS

| | |
|---------------------|-------------|
| EQUIPMENT ENCLOSURE | — · · · · · |
| EXISTING | ————— |
| FUTURE | — · · · · · |

MISCELLANEOUS P&ID SYMBOLS

| | |
|--------------------------|--|
| CHEMICAL INJECTION POINT | |
| CONTINUATION TAG | |
| PIPE CALLOUT | |
| SIGNAL CONTINUATION | |

CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

INSTRUMENTATION SYMBOLS & ABBREVIATIONS - II

VERIFY SCALES

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

JOB NO. 7310L.10

DRAWING NO. GN02C

SHEET NO. 113 OF 130

Plot Date: 04-APR-2023 3:01:48 PM

User: svcPW

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

LAST SAVED BY: EWittmer

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

| | | | |
|---|---|--|---|
| <p>ACTUATORS</p> <ul style="list-style-type: none"> DIAPHRAGM ELECTRIC DISCRETE ELECTRIC MODULATING ELECTRIC HYDRAULIC HAND HYDRAULIC PNEUMATIC SOLENOID | <p>PIPING</p> <ul style="list-style-type: none"> AIR GAP BLIND FLANGE CAPPED OR PLUGGED CONCENTRIC INCREASER CONCENTRIC REDUCER DRAIN ECCENTRIC INCREASER ECCENTRIC REDUCER EXPANSION COUPLING EXPANSION JOINT VIBRATION CENTER FLEXIBLE CONNECTION QUICK DISCONNECT | <p>PUMPS</p> <ul style="list-style-type: none"> AIR DRIVEN CENTRIFUGAL CHEMICAL FEED DIAPHRAGM DIAPHRAGM GEAR PERISTALTIC OR HOSE PISTON PROGRESSIVE CAVITY SUBMERSIBLE VERTICAL TURBINE VERTICAL CHOPPER WATER CHAMP | <p>BLOWERS/COMPRESSORS</p> <ul style="list-style-type: none"> CENTRIFUGAL SINGLE STAGE BLOWER CENTRIFUGAL MULTI STAGE BLOWER RECIPROCATING COMPRESSOR SCREW COMPRESSOR FAN LIQUID RING COMPRESSOR ROTARY LOBE BLOWER |
|---|---|--|---|

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|-------|------|-----------------|------------|-----------------------|----------------------------------|-------|-------|----------------------------|------------|------|---|-------|-----|----------------|------|--------|-------------|--------------|-------|--|-----------|----------------|--|----------------------------|----------------------------|--|------|---------------------------|--|-----------|--|--|---|
| <p>CHECK VALVES</p> <ul style="list-style-type: none"> BACK FLOW PREVENTOR BALL DIAPHRAGM CHECK DOUBLE FLAP FLAPPER SPRING LOADED GENERAL SPRING LOADED SWING SWING | <p>PRESSURE VALVES</p> <ul style="list-style-type: none"> BACKPRESSURE REGULATING SELF CONTAINED BACKPRESSURE REGULATING EXTERNAL TAP PRESSURE REDUCING SELF CONTAINED PRESSURE REDUCING EXTERNAL PRESSURE TAP REGULATING PRESSURE RELIEF VACUUM RELIEF | <p>VALVES</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:25%;"> 3-WAY</td> <td style="width:25%;"> GATE</td> <td style="width:25%;"> PLUG CONCENTRIC</td> </tr> <tr> <td> 3-WAY PLUG</td> <td> GATE-BURIED VALVE BOX</td> <td> PLUG CONCENTRIC BURIED VALVE BOX</td> </tr> <tr> <td> 4-WAY</td> <td> GLOBE</td> <td> PLUG CONCENTRIC LUBRICATED</td> </tr> <tr> <td> AIR-RELIEF</td> <td> HOSE</td> <td> PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX</td> </tr> <tr> <td> ANGLE</td> <td> MUD</td> <td> PUMP DISCHARGE</td> </tr> <tr> <td> BALL</td> <td> NEEDLE</td> <td> TELESCOPING</td> </tr> <tr> <td> BALL V-NOTCH</td> <td> PINCH</td> <td></td> </tr> <tr> <td> BUTTERFLY</td> <td> PLUG ECCENTRIC</td> <td></td> </tr> <tr> <td> BUTTERFLY-BURIED VALVE BOX</td> <td> PLUG ECCENTRIC w-VALVE BOX</td> <td></td> </tr> <tr> <td> CONE</td> <td> PLUG ECCENTRIC LUBRICATED</td> <td></td> </tr> <tr> <td> DIAPHRAGM</td> <td> PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX</td> <td></td> </tr> </table> | 3-WAY | GATE | PLUG CONCENTRIC | 3-WAY PLUG | GATE-BURIED VALVE BOX | PLUG CONCENTRIC BURIED VALVE BOX | 4-WAY | GLOBE | PLUG CONCENTRIC LUBRICATED | AIR-RELIEF | HOSE | PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX | ANGLE | MUD | PUMP DISCHARGE | BALL | NEEDLE | TELESCOPING | BALL V-NOTCH | PINCH | | BUTTERFLY | PLUG ECCENTRIC | | BUTTERFLY-BURIED VALVE BOX | PLUG ECCENTRIC w-VALVE BOX | | CONE | PLUG ECCENTRIC LUBRICATED | | DIAPHRAGM | PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX | | <p>MISC</p> <ul style="list-style-type: none"> AIR DAMPER AIR/CHEMICAL DIFFUSER BASKET STRAINER BLOW-OFF SILENCER CALIBRATION COLUMN COALESCKER DESICCANT DRYER EDUCTOR/EJECTOR EYEWASH EXHAUST FAN FILTER FILTER SEPARATOR FINE FILTER FIRE ALARM/SENSOR FLAME ARRESTER FLAME ARRESTER w/THERMALLY OPERATED VALVE FLOW CONDITIONER GAS CANNON GRINDER HEAT EXCHANGER HOIST HORIZONTAL MIXER HOSE CONNECTION INLET STRAINER INLINE STATIC MIXER MATERIAL CHANGE MIXER MOTOR NOZZLE ORIFICE RESTRICTION PERISTALTIC COMPOSITE SAMPLER PULSATION DAMPENOR REFRIGERATED DRYER RUPTURE DISK SAMPLE PORT SIGHT TUBE SMOKE DETECTOR STRAINER - MECHANICALLY CLEANED STRAINER WITH BLOW OFF STRAINER WYE TYPE VAPORIZER VENT VENT TO ATMOSPHERE |
| 3-WAY | GATE | PLUG CONCENTRIC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3-WAY PLUG | GATE-BURIED VALVE BOX | PLUG CONCENTRIC BURIED VALVE BOX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4-WAY | GLOBE | PLUG CONCENTRIC LUBRICATED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AIR-RELIEF | HOSE | PLUG CONCENTRIC LUBRICATED BURIED VALVE BOX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ANGLE | MUD | PUMP DISCHARGE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BALL | NEEDLE | TELESCOPING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BALL V-NOTCH | PINCH | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BUTTERFLY | PLUG ECCENTRIC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BUTTERFLY-BURIED VALVE BOX | PLUG ECCENTRIC w-VALVE BOX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CONE | PLUG ECCENTRIC LUBRICATED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DIAPHRAGM | PLUG ECCENTRIC LUBRICATED BURIED VALVE BOX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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

DESIGNED
CDS

DRAWN
MNH

CHECKED
DJC

DATE
JANUARY 2023



Digitally signed by Christopher Alan Carvallo
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 13:10:59-0700



CITY OF PETALUMA

FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT

INSTRUMENTATION

SYMBOLS & 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.
7310L.10

DRAWING NO.
GN03C

SHEET NO.
114 OF 130

Plot Date: 04-APR-2023 3:00:40 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

LAST SAVED BY: EWittner

| GATES | | FLUMES | | FLOW | | LEVEL | | TEMPERATURE | | WEIGHT | |
|-----------|-----------|--------|-------------------|------|--------------------------|-------|-----------------------|-------------|--------------------------|--------|--------------|
| SIDE VIEW | PLAN VIEW | | | | | | | | | | |
| | FLAP | | LEOPOLD-LAGCO | | BATCH | | BUBBLER | | TEMPERATURE w/THERMOWELL | | HYDRAULIC |
| | KNIFE | | PALMER-BOWLUS | | CORIOLIS | | CAPACITANCE | | TEMPERATURE GAUGE | | STRAIN GAUGE |
| | SLIDE | | PARSHALL | | MAGNETIC | | DIFFERENTIAL PRESSURE | | THERMOMETER | | |
| | SLUICE | | REGULAR CUTTHROAT | | ORIFICE | | ELECTRODE | | | | |
| | STOP | | TRAPEZOIDAL | | PADDLE WHEEL | | FLOAT | | | | |
| | | | | | PITOT TUBE AVERAGING | | INVERTED COLUMN | | | | |
| | | | | | PITOT TUBE/ANNUBAR | | RADAR PTOF | | | | |
| | | | | | POSITIVE-DISPLACEMENT | | RADAR TDR | | | | |
| | | | | | PROPELLER-TURBINE | | SUSPENDED/SUBMERSIBLE | | | | |
| | | | | | ROTAMETER | | TUNING FORK | | | | |
| | | | | | THERMAL | | ULTRASONIC | | | | |
| | | | | | ULTRASONIC DOPPLER | | | | | | |
| | | | | | ULTRA-SONIC TRANSIT TIME | | | | | | |

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 |
| | | |
| | | |
| | | |
| | | PRESSURE SWITCH |

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

| | |
|----------|--------------|
| DESIGNED | CDS |
| DRAWN | MNH |
| CHECKED | DJC |
| DATE | JANUARY 2023 |



Digitally signed by Christopher Alan Carvallo
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.06 13:14:09-0800

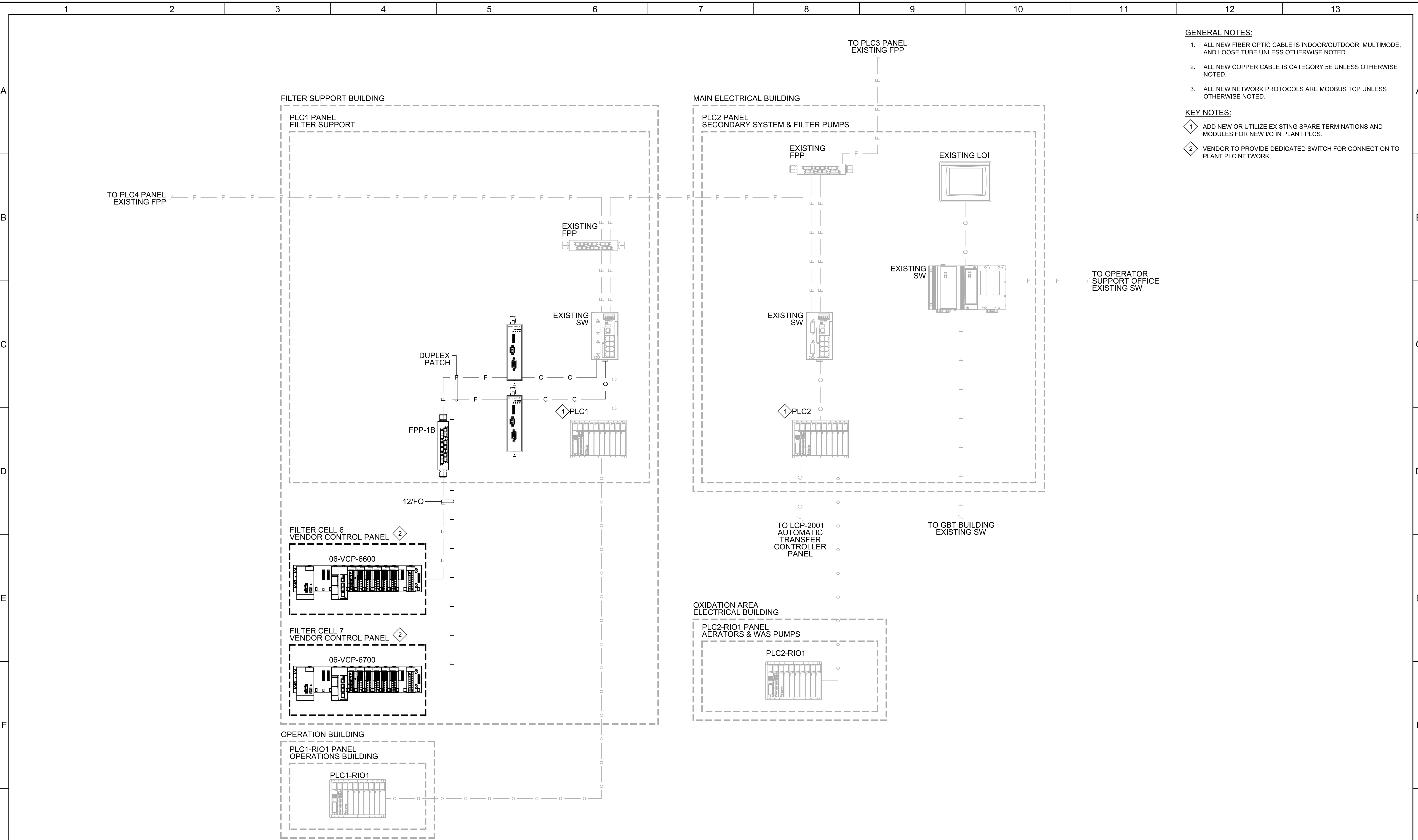


CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
 SYMBOLS & ABBREVIATIONS - IV

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

JOB NO. 7310L.10
 DRAWING NO. GN04C
 SHEET NO. 115 OF 130

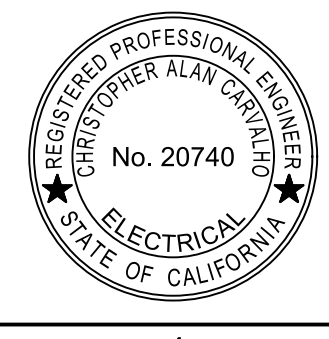
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 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Std_Pen_v0905.pen PlotScale: 1:1
 LAST SAVED BY: EWittmer



- GENERAL NOTES:**
- ALL NEW FIBER OPTIC CABLE IS INDOOR/OUTDOOR, MULTIMODE, AND LOOSE TUBE UNLESS OTHERWISE NOTED.
 - ALL NEW COPPER CABLE IS CATEGORY 5E UNLESS OTHERWISE NOTED.
 - ALL NEW NETWORK PROTOCOLS ARE MODBUS TCP UNLESS OTHERWISE NOTED.
- KEY NOTES:**
- ADD NEW OR UTILIZE EXISTING SPARE TERMINATIONS AND MODULES FOR NEW I/O IN PLANT PLCS.
 - VENDOR TO PROVIDE DEDICATED SWITCH FOR CONNECTION TO PLANT PLC NETWORK.

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |

DESIGNED CDS
 DRAWN ESW
 CHECKED DJC
 DATE JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.04 13:12:56-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
 NETWORK DIAGRAM

| | |
|--|----------------------|
| VERIFY SCALES | JOB NO. 7310L.10 |
| BAR IS ONE INCH ON ORIGINAL DRAWING | DRAWING NO. 00N01C |
| 0 1" | SHEET NO. 116 OF 130 |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | |

Plot Date: 04-APR-2023 2:59:58 PM

User: svcPW

PlotScale: 1:1

DesignScript: Carollo_Sig_Pen_v0905.pen

ColorTable: gshade.ctb

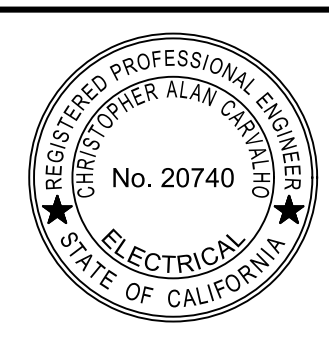
Model: Layout1 ColorTable: gshade.ctb

LAST SAVED BY: EWittmer

| FILTER1 | | | | | |
|----------------------------------|---------|----------|-------|-------|-----------|
| FILTER CELL - VCP | | | | | |
| PROTOCOL: MODBUS TCP | | | | | |
| DESCRIPTION | CONTROL | INDICATE | ALARM | TREND | INTERLOCK |
| SOLIDS WASTE VALVE A OPENED | | X | | | |
| SOLIDS WASTE VALVE A CLOSED | | X | | | |
| SOLIDS WASTE VALVE B OPENED | | X | | | |
| SOLIDS WASTE VALVE B CLOSED | | X | | | |
| BACKWASH VALVE A OPENED | | X | | | |
| BACKWASH VALVE A CLOSED | | X | | | |
| BACKWASH VALVE B OPENED | | X | | | |
| BACKWASH VALVE B CLOSED | | X | | | |
| BACKWASH VALVE C OPENED | | X | | | |
| BACKWASH VALVE C CLOSED | | X | | | |
| BACKWASH VALVE D OPENED | | X | | | |
| BACKWASH VALVE D CLOSED | | X | | | |
| BACKWASH VALVE E OPENED (FUTURE) | | X | | | |
| BACKWASH VALVE E CLOSED (FUTURE) | | X | | | |
| BACKWASH VALVE F OPENED (FUTURE) | | X | | | |
| BACKWASH VALVE F CLOSED (FUTURE) | | X | | | |
| BACKWASH VALVE G OPENED | | X | | | |
| BACKWASH VALVE G CLOSED | | X | | | |
| BACKWASH VALVE H OPENED | | X | | | |
| BACKWASH VALVE H CLOSED | | X | | | |
| BACKWASH VALVE I OPENED | | X | | | |
| BACKWASH VALVE I CLOSED | | X | | | |
| BACKWASH VALVE J OPENED | | X | | | |
| BACKWASH VALVE J CLOSED | | X | | | |
| BACKWASH VALVE K OPENED (FUTURE) | | X | | | |
| BACKWASH VALVE K CLOSED (FUTURE) | | X | | | |
| BACKWASH VALVE L OPENED (FUTURE) | | X | | | |
| BACKWASH VALVE L CLOSED (FUTURE) | | X | | | |
| BACKWASH PUMP A RUNNING | | X | | X | |
| BACKWASH PUMP A OFF | | X | | | |
| BACKWASH PUMP A AVERAGE CURRENT | | X | | | |
| BACKWASH PUMP A POWER KVA | | X | | | |
| BACKWASH PUMP A POWER KW | | X | | | |
| BACKWASH PUMP A POWER FACTOR | | X | | | |
| BACKWASH PUMP A OVERLOAD | | X | X | | |
| BACKWASH PUMP B RUNNING | | X | | X | |
| BACKWASH PUMP B OFF | | X | | | |
| BACKWASH PUMP B AVERAGE CURRENT | | X | | | |
| BACKWASH PUMP B POWER KVA | | X | | | |
| BACKWASH PUMP B POWER KW | | X | | | |
| BACKWASH PUMP B POWER FACTOR | | X | | | |
| BACKWASH PUMP B OVERLOAD | | X | X | | |
| FILTER CELL LEVEL | | X | | X | |
| FILTER CELL PRESSURE | | X | | X | |
| FILTER CELL LEVEL HIGH HIGH | | X | X | | |
| COMMON TROUBLE ALARM | | X | X | | X |

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
| | | | |
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DESIGNED
CDS
DRAWN
SGS
CHECKED
DJC
DATE
JANUARY 2023



Digitally signed by Christopher Alan Carvallo
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.04 12:11:29-0800



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
INSTRUMENTATION
NETWORK I/O TABLES

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

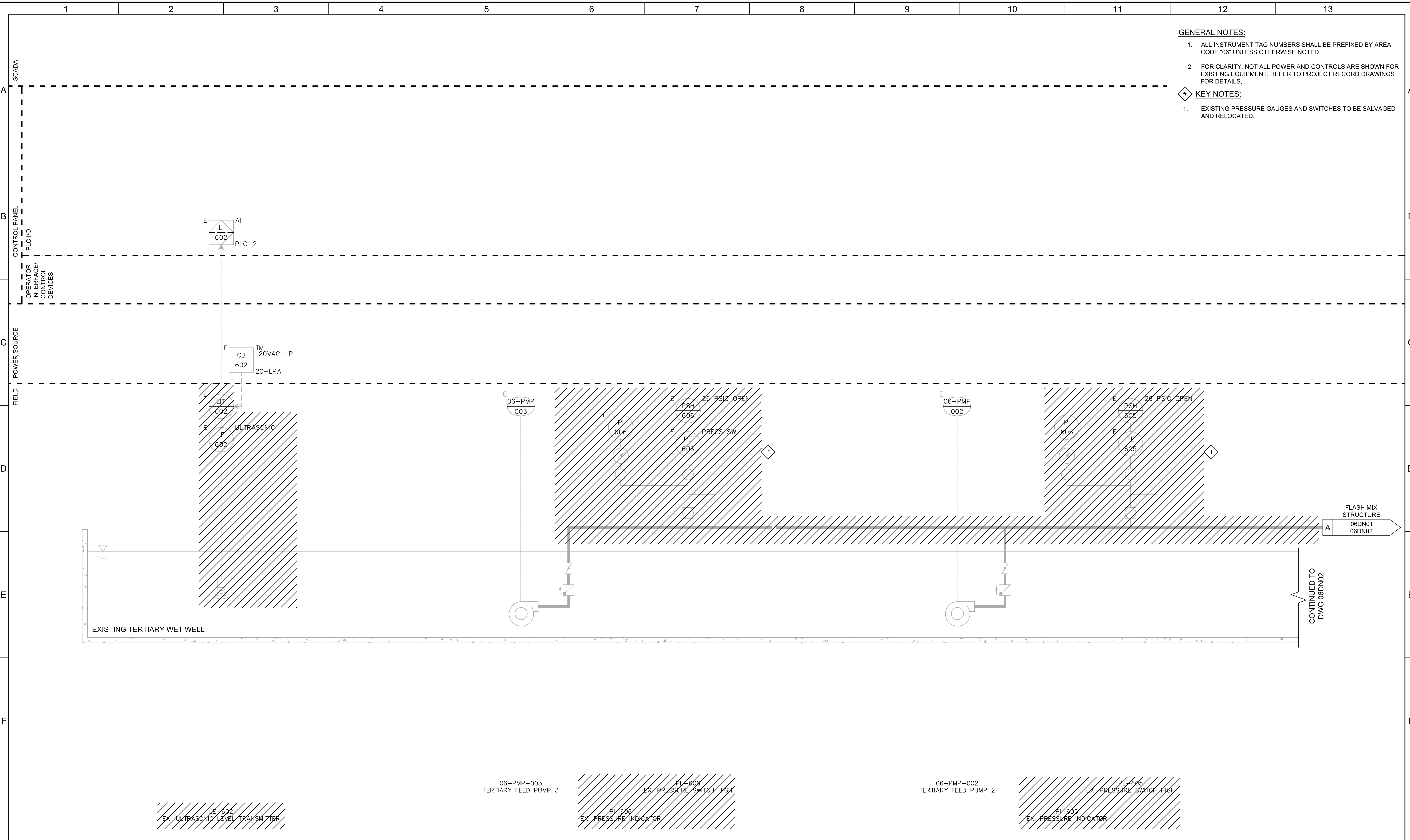
JOB NO.
7310L.10
DRAWING NO.
00N02C
SHEET NO.
117 OF 130

Plot Date: 04-APR-2023 2:58:41 PM

User: svcPW

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

E:\Witner



- GENERAL NOTES:**
1. ALL INSTRUMENT TAG NUMBERS SHALL BE PREFIXED BY AREA CODE "06" UNLESS OTHERWISE NOTED.
 2. FOR CLARITY, NOT ALL POWER AND CONTROLS ARE SHOWN FOR EXISTING EQUIPMENT. REFER TO PROJECT RECORD DRAWINGS FOR DETAILS.
- KEY NOTES:**
1. EXISTING PRESSURE GAUGES AND SWITCHES TO BE SALVAGED AND RELOCATED.

LE-602
EX. ULTRASONIC LEVEL TRANSMITTER

06-PMP-003
TERTIARY FEED PUMP 3

PI-806
EX. PRESSURE INDICATOR

PS-806
EX. PRESSURE SWITCH HIGH

06-PMP-002
TERTIARY FEED PUMP 2

PI-805
EX. PRESSURE INDICATOR

PS-805
EX. PRESSURE SWITCH HIGH

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

DESIGNED
CDS

DRAWN
ESW

CHECKED
DJC

DATE
JANUARY 2023



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Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 12:12:09-0800



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
INSTRUMENTATION
DEMO TERTIARY FEED PUMP
STATION - I

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

JOB NO.
7310L.10

DRAWING NO.
06DN01

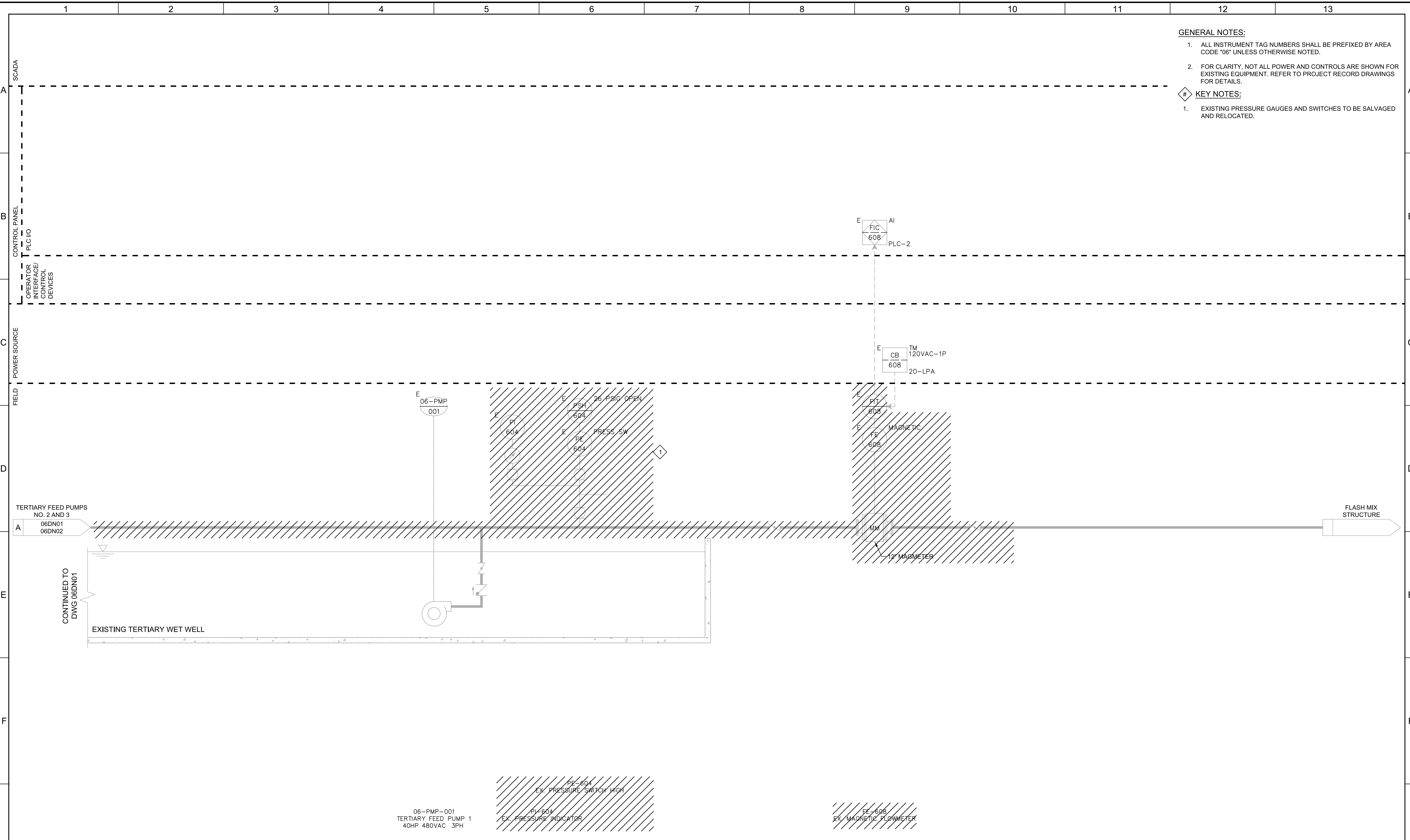
SHEET NO.
118 OF 130

Plot Date: 04-APR-2023 3:21:22 PM

User: svcPW

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

E:\Witmer



- GENERAL NOTES:**
1. ALL INSTRUMENT TAG NUMBERS SHALL BE PREFIXED BY AREA CODE "06" UNLESS OTHERWISE NOTED.
 2. FOR CLARITY, NOT ALL POWER AND CONTROLS ARE SHOWN FOR EXISTING EQUIPMENT. REFER TO PROJECT RECORD DRAWINGS FOR DETAILS.
- KEY NOTES:**
1. EXISTING PRESSURE GAUGES AND SWITCHES TO BE SALVAGED AND RELOCATED.

TERTIARY FEED PUMPS
NO. 2 AND 3
06DN01
06DN02

CONTINUED TO
DWG 06DN01

EXISTING TERTIARY WET WELL

FLASH MIX
STRUCTURE

06-PMP-001
TERTIARY FEED PUMP 1
40HP 480VAC 3PH

PI-604
EX. PRESSURE INDICATOR

PSH-604
EX. PRESSURE SWITCH HIGH

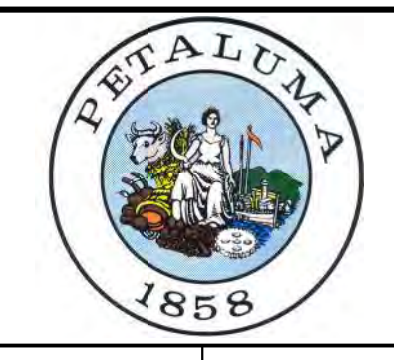
FE-608
EX. MAGNETIC FLOWMETER

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

DESIGNED
CDS
DRAWN
ESW
CHECKED
DJC
DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 13:12:59-0700

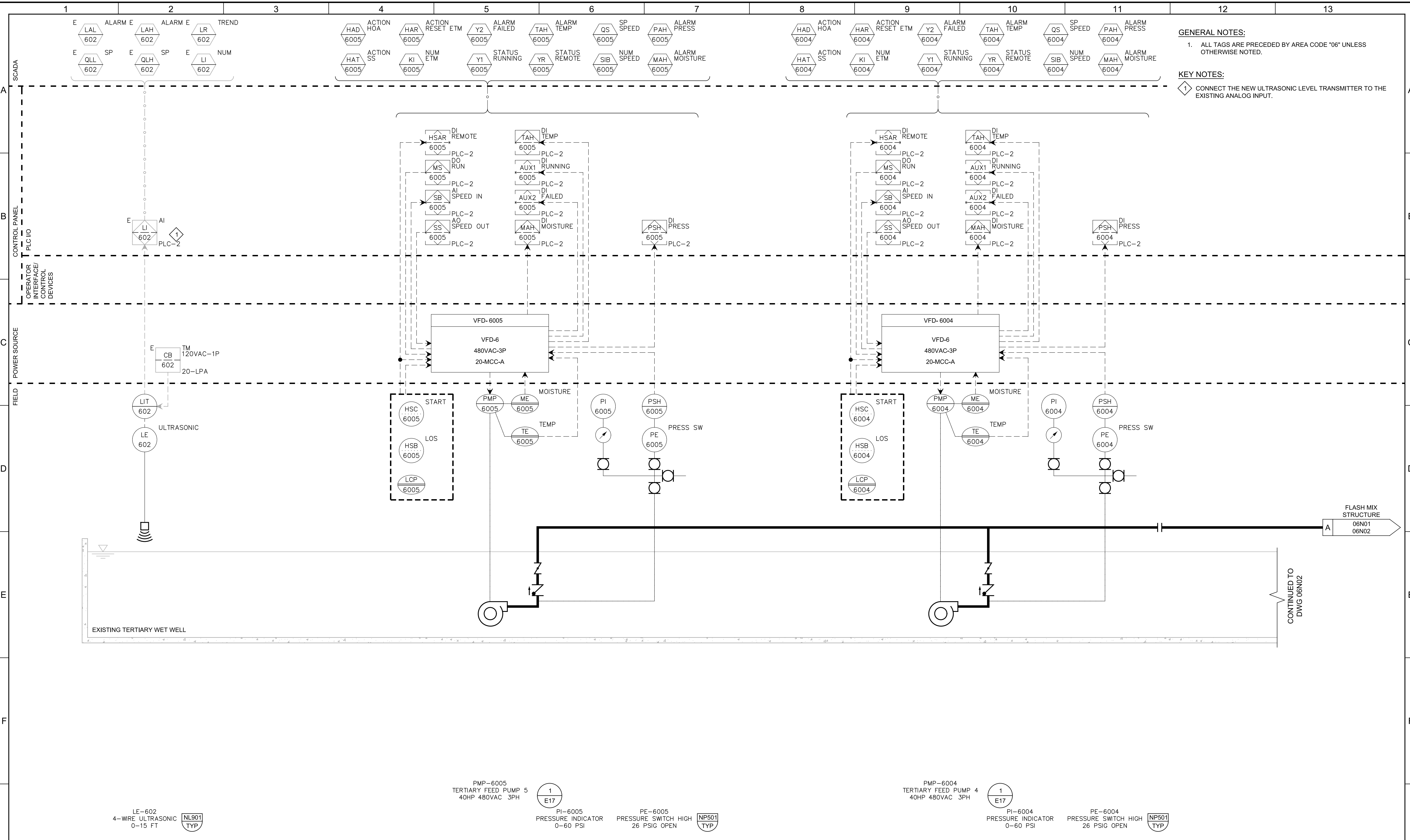


CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
INSTRUMENTATION
DEMO TERTIARY FEED PUMP
STATION - II

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

JOB NO.
7310L.10
DRAWING NO.
06DN02
SHEET NO.
119 OF 130

Plot Date: 04-APR-2023 2:57:40 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1
 E:\Witner



GENERAL NOTES:
 1. ALL TAGS ARE PRECEDED BY AREA CODE "06" UNLESS OTHERWISE NOTED.

KEY NOTES:
 1. CONNECT THE NEW ULTRASONIC LEVEL TRANSMITTER TO THE EXISTING ANALOG INPUT.

LE-602
 4-WIRE ULTRASONIC
 0-15 FT
 NL901
 TYP

PMP-6005
 TERTIARY FEED PUMP 5
 40HP 480VAC 3PH
 1
 E17

PI-6005
 PRESSURE INDICATOR
 0-60 PSI

PE-6005
 PRESSURE SWITCH HIGH
 26 PSIG OPEN
 NP501
 TYP

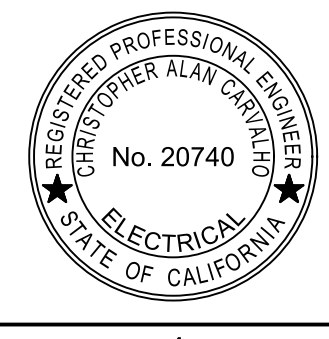
PMP-6004
 TERTIARY FEED PUMP 4
 40HP 480VAC 3PH
 1
 E17

PI-6004
 PRESSURE INDICATOR
 0-60 PSI

PE-6004
 PRESSURE SWITCH HIGH
 26 PSIG OPEN
 NP501
 TYP

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

DESIGNED
 CDS
 DRAWN
 ESW
 CHECKED
 DJC
 DATE
 JANUARY 2023



Digitally signed by Christopher Alan Carollo
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.04 13:12:09-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
 TERTIARY PUMP STATION - I

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

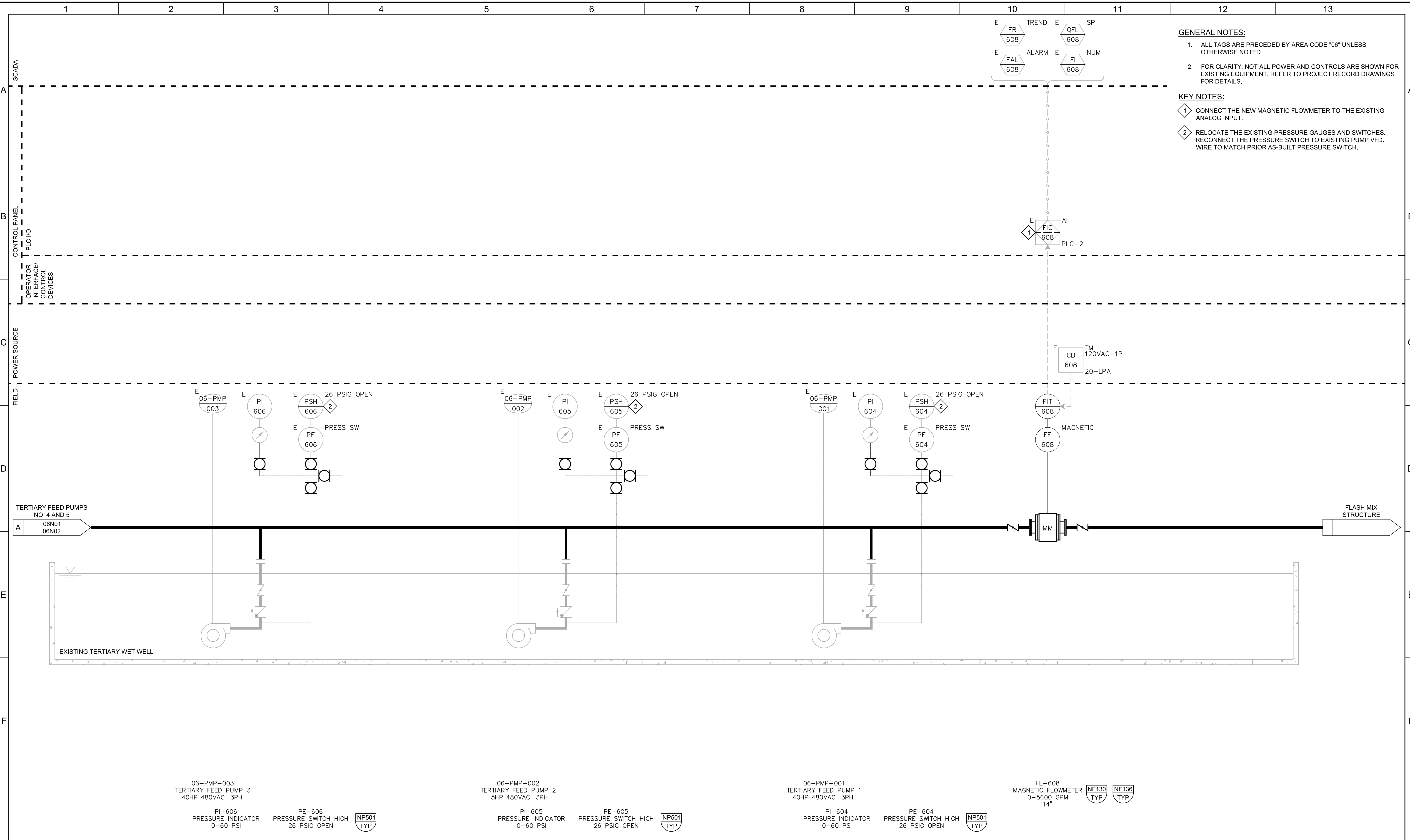
JOB NO.
 7310L.10
 DRAWING NO.
06N01
 SHEET NO.
 120 OF 130

Plot Date: 04-APR-2023 2:57:45 PM

User: svcPW

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

E:\Witter



- GENERAL NOTES:**
- ALL TAGS ARE PRECEDED BY AREA CODE "06" UNLESS OTHERWISE NOTED.
 - FOR CLARITY, NOT ALL POWER AND CONTROLS ARE SHOWN FOR EXISTING EQUIPMENT. REFER TO PROJECT RECORD DRAWINGS FOR DETAILS.
- KEY NOTES:**
- CONNECT THE NEW MAGNETIC FLOWMETER TO THE EXISTING ANALOG INPUT.
 - RELOCATE THE EXISTING PRESSURE GAUGES AND SWITCHES. RECONNECT THE PRESSURE SWITCH TO EXISTING PUMP VFD. WIRE TO MATCH PRIOR AS-BUILT PRESSURE SWITCH.

06-PMP-003
TERTIARY FEED PUMP 3
40HP 480VAC 3PH

PI-606
PRESSURE INDICATOR
0-60 PSI

PE-606
PRESSURE SWITCH HIGH
26 PSIG OPEN



06-PMP-002
TERTIARY FEED PUMP 2
5HP 480VAC 3PH

PI-605
PRESSURE INDICATOR
0-60 PSI

PE-605
PRESSURE SWITCH HIGH
26 PSIG OPEN



06-PMP-001
TERTIARY FEED PUMP 1
40HP 480VAC 3PH

PI-604
PRESSURE INDICATOR
0-60 PSI

PE-604
PRESSURE SWITCH HIGH
26 PSIG OPEN



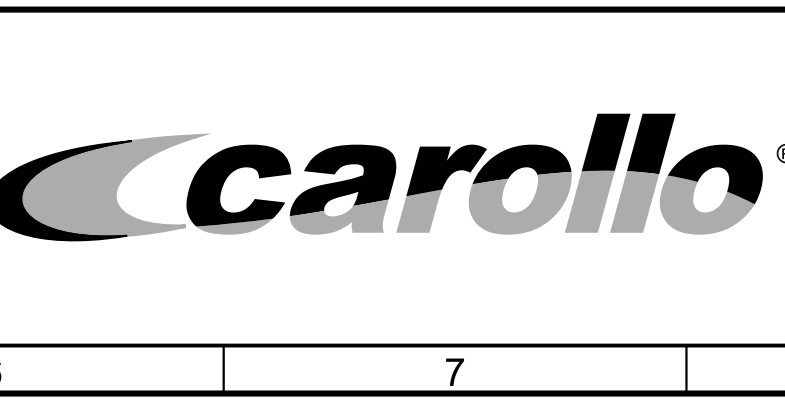
FE-608
MAGNETIC FLOWMETER
0-5600 GPM
14"

NF130 TYP
NF136 TYP

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
| 1 | | | |
| 2 | | | |
| 3 | | | |

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|----------------------|
| DESIGNED CDS |
| DRAWN ESW |
| CHECKED DJC |
| DATE JANUARY 2023 |

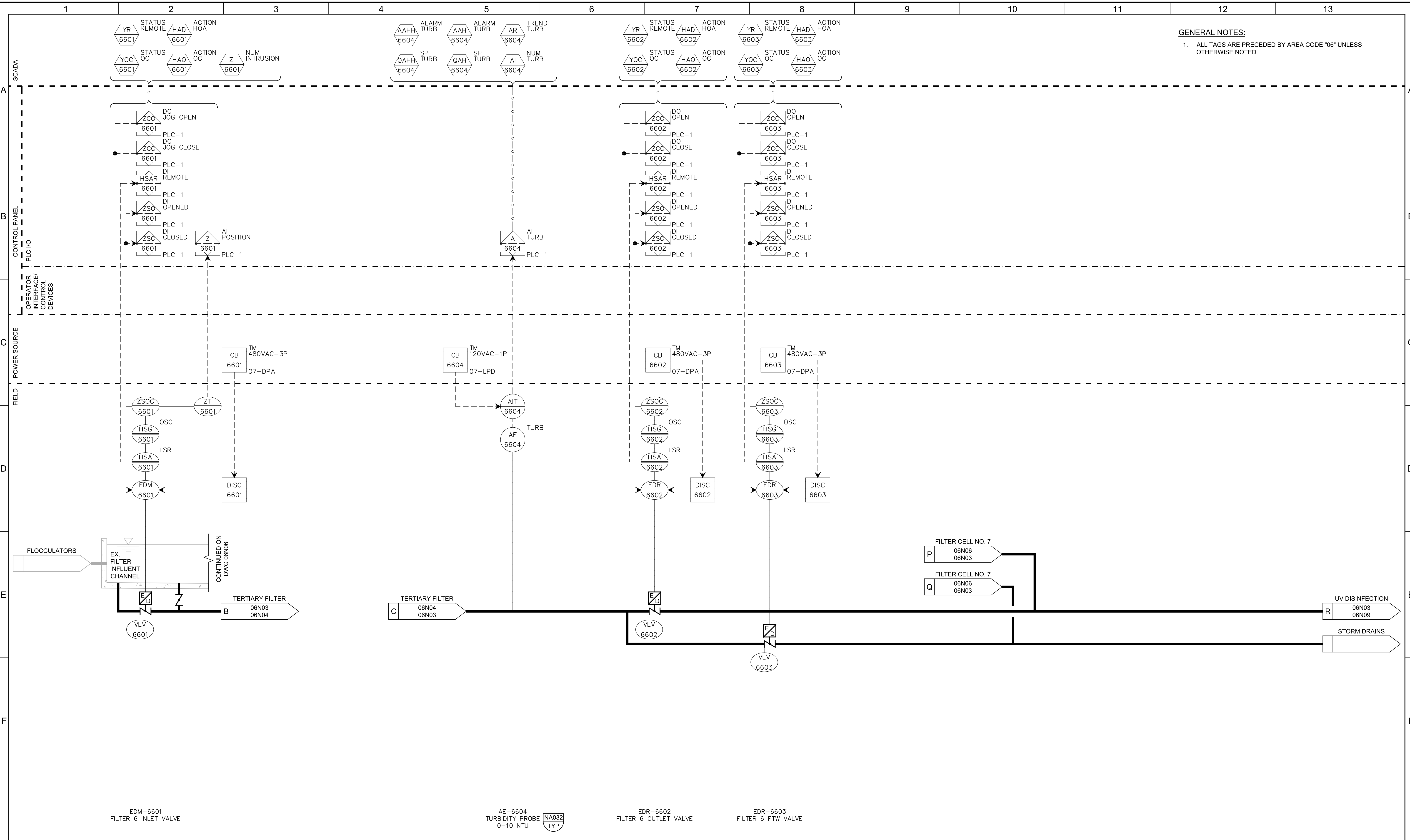
Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.26 12:11:29-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
INSTRUMENTATION
TERTIARY PUMP STATION - II

| | |
|--|-------------------------|
| VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" | JOB NO. 7310L.10 |
| IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY | DRAWING NO. 06N02 |
| | SHEET NO. 121 OF 130 |

Plot Date: 04-APR-2023 2:58:14 PM
 User: svcPW
 Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sld_Pen_v0905.pen PlotScale: 1:1
 E:\Witter



GENERAL NOTES:
 1. ALL TAGS ARE PRECEDED BY AREA CODE "06" UNLESS OTHERWISE NOTED.

EDM-6601
 FILTER 6 INLET VALVE

AE-6604
 TURBIDITY PROBE
 0-10 NTU

EDR-6602
 FILTER 6 OUTLET VALVE

EDR-6603
 FILTER 6 FTW VALVE

| REV | DATE | BY | DESCRIPTION |
|-----|------|----|-------------|
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DESIGNED
 CDS
 DRAWN
 ESW
 CHECKED
 DJC
 DATE
 JANUARY 2023



Digitally signed by Christopher Alan Corvato
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.28 12:11:49-0800
Christopher Alan Corvato



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
**TERTIARY FILTER 6
 INLET AND OUTLET**

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

JOB NO.
 7310L.10
 DRAWING NO.
06N03
 SHEET NO.
 122 OF 130

Plot Date: 04-APR-2023 2:58:57 PM

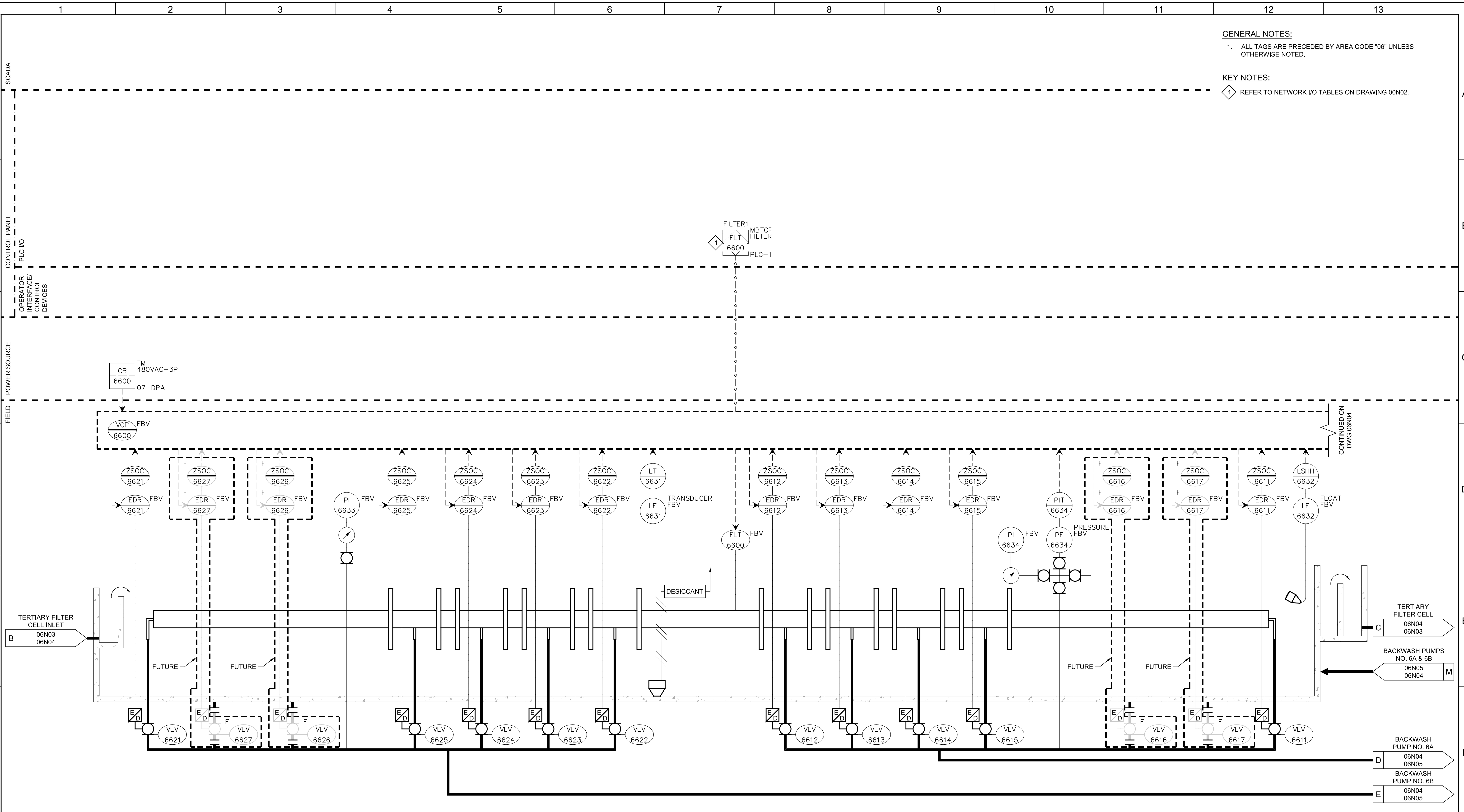
User: svcPW

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

E:Witter

GENERAL NOTES:
 1. ALL TAGS ARE PRECEDED BY AREA CODE "06" UNLESS OTHERWISE NOTED.

KEY NOTES:
 1. REFER TO NETWORK I/O TABLES ON DRAWING 00N02.



- EDR-6627
BACKWASH VALVE 6L
- PI-6633
PRESSURE INDICATOR
NP503 TYP
- EDR-6624
BACKWASH VALVE 6I
- EDR-6622
BACKWASH VALVE 6C
- FLT-6600
FILTER CELL 6
- EDR-6613
BACKWASH VALVE 6B
- EDR-6615
BACKWASH VALVE 6D
- PE-6634
PRESSURE TRANSMITTER
NP501 TYP
- EDR-6617
BACKWASH VALVE 6F
- LE-6632
LEVEL SWITCH HIGH
NL101 TYP
- EDR-6621
SOLIDS WASTE VALVE 6B
- EDR-6626
BACKWASH VALVE 6K
- EDR-6625
BACKWASH VALVE 6J
- EDR-6623
BACKWASH VALVE 6H
- LE-6631
TRANSDUCER LEVEL TRANSMITTER
NL132 TYP
- EDR-6612
BACKWASH VALVE 6A
- EDR-6614
BACKWASH VALVE 6C
- PI-6634
PRESSURE INDICATOR
- EDR-6616
BACKWASH VALVE 6E
- EDR-6611
SOLIDS WASTE VALVE 6A

| REV | DATE | BY | DESCRIPTION |
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DESIGNED
CDS

DRAWN
ESW

CHECKED
DJC

DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 13:11:29-0800

Alan Corvato



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
 TERTIARY FILTER 6

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

JOB NO.
7310L.10

DRAWING NO.
06N04

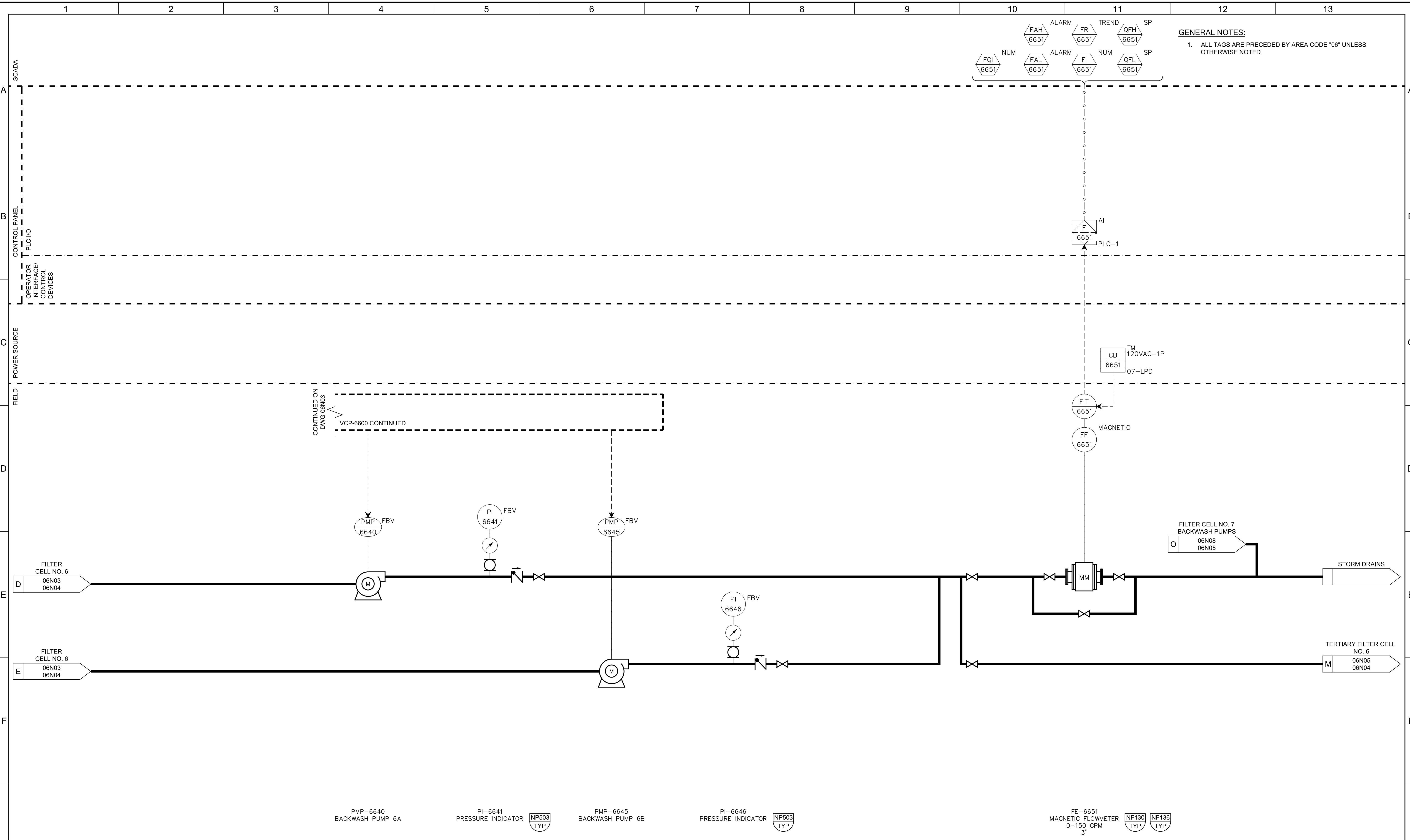
SHEET NO.
123 OF 130

Plot Date: 04-APR-2023 2:58:17 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

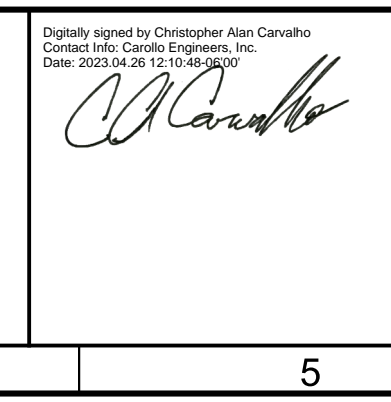
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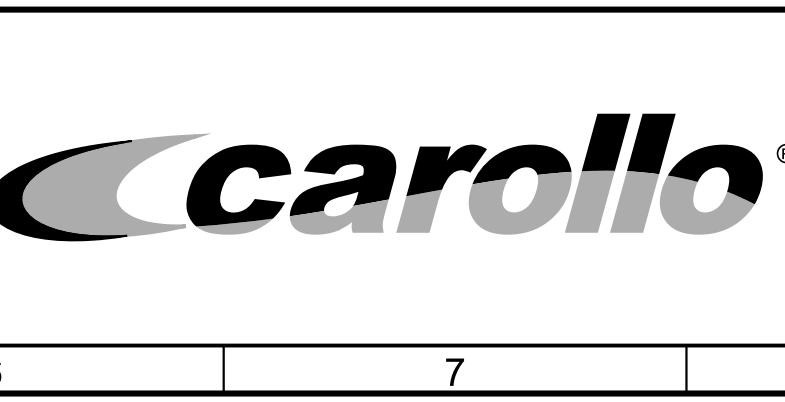
PMP-6640 BACKWASH PUMP 6A PI-6641 PRESSURE INDICATOR **NP503 TYP** PMP-6645 BACKWASH PUMP 6B PI-6646 PRESSURE INDICATOR **NP503 TYP** FE-6651 MAGNETIC FLOWMETER 0-150 GPM **NF130 TYP** **NF136 TYP**

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DESIGNED CDS
 DRAWN ESW
 CHECKED DJC
 DATE JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:10:49-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
**TERTIARY FILTER 6
 BACKWASH PUMPS**

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

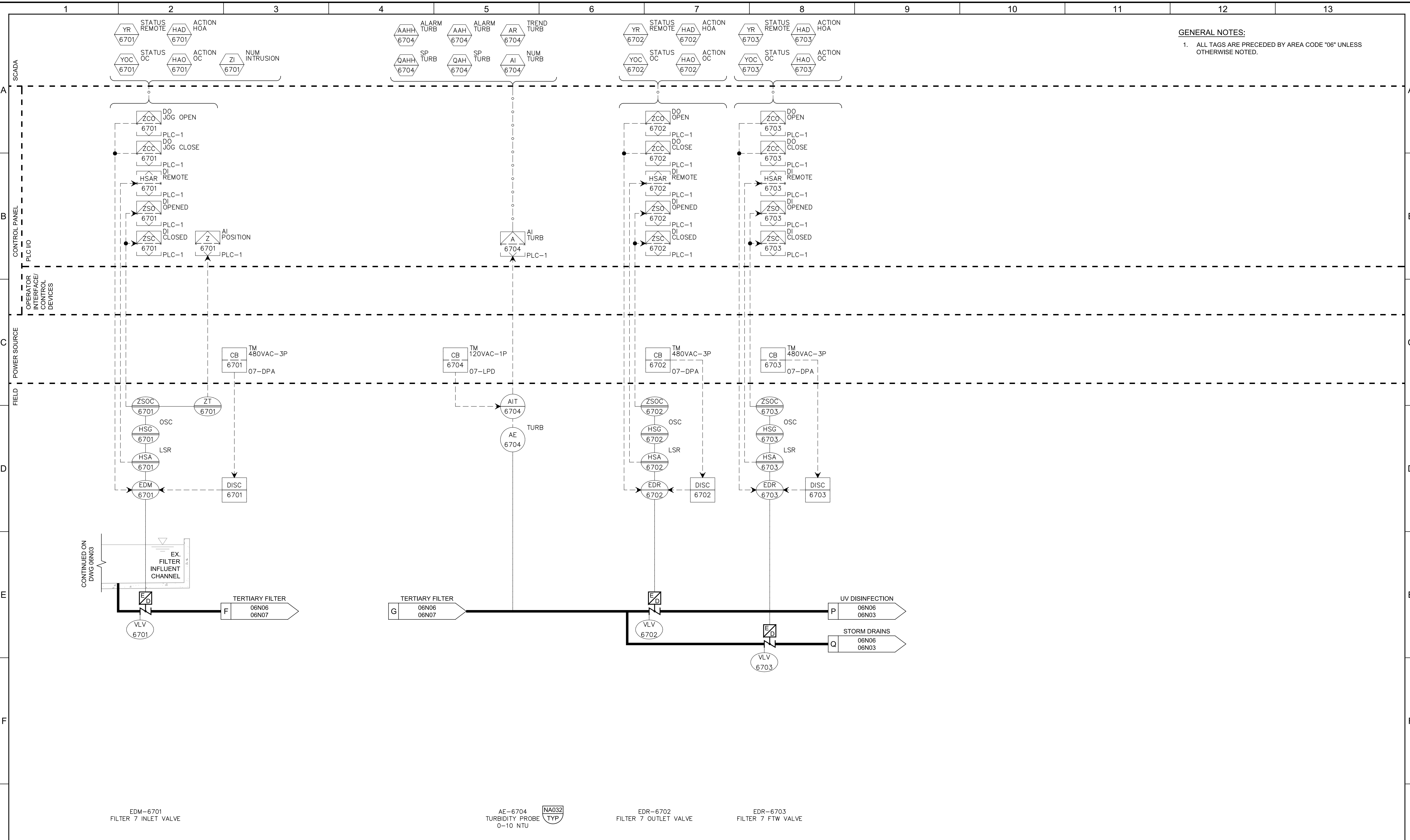
JOB NO. 7310L.10
 DRAWING NO. **06N05**
 SHEET NO. 124 OF 130

Plot Date: 04-APR-2023 2:59:29 PM

User: svcPW

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

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EDM-6701
FILTER 7 INLET VALVE

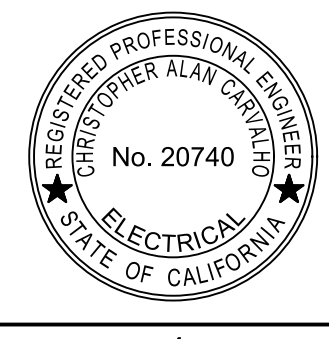
AE-6704
TURBIDITY PROBE
0-10 NTU

EDR-6702
FILTER 7 OUTLET VALVE

EDR-6703
FILTER 7 FTW VALVE

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DATE
JANUARY 2023



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Contact Info: Carollo Engineers, Inc.
Date: 2023.04.28 12:11:09-0700



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
INSTRUMENTATION
TERTIARY FILTER 7
INLET AND OUTLET

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

JOB NO.
7310L.10
DRAWING NO.
06N06
SHEET NO.
125 OF 130

Plot Date: 04-APR-2023 2:59:11 PM

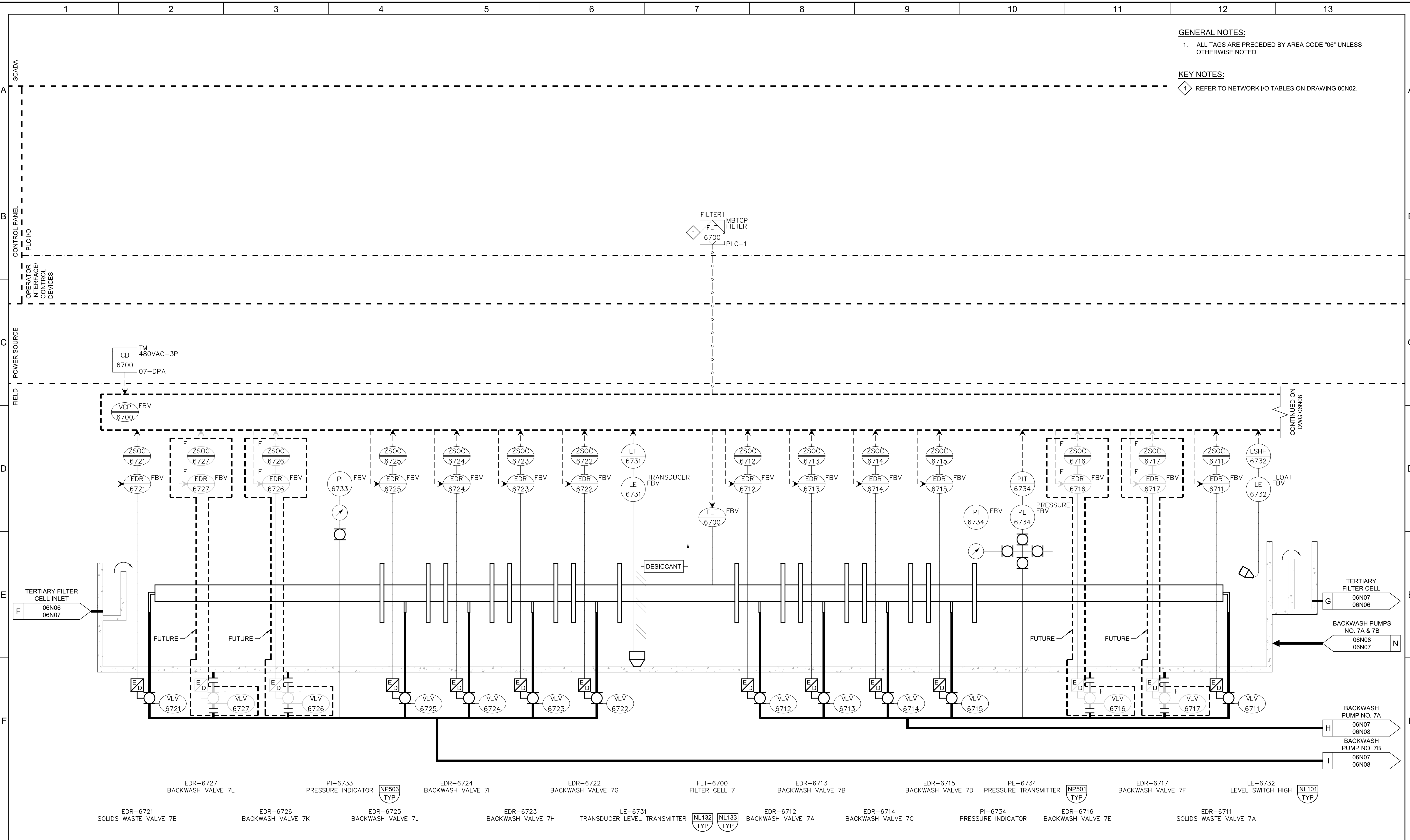
User: svcPW

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

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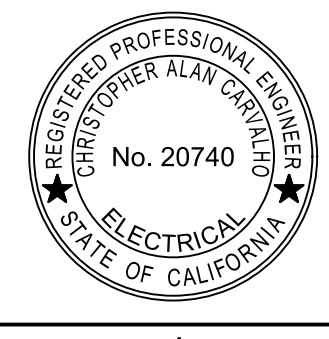
GENERAL NOTES:
1. ALL TAGS ARE PRECEDED BY AREA CODE "06" UNLESS OTHERWISE NOTED.

KEY NOTES:
1. REFER TO NETWORK I/O TABLES ON DRAWING 00N02.



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CHECKED
DJC
DATE
JANUARY 2023



Digitally signed by Christopher Alan Corvato
Contact Info: Carollo Engineers, Inc.
Date: 2023.04.06 13:10:39-0800



CITY OF PETALUMA
FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
INSTRUMENTATION
TERTIARY FILTER 7

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

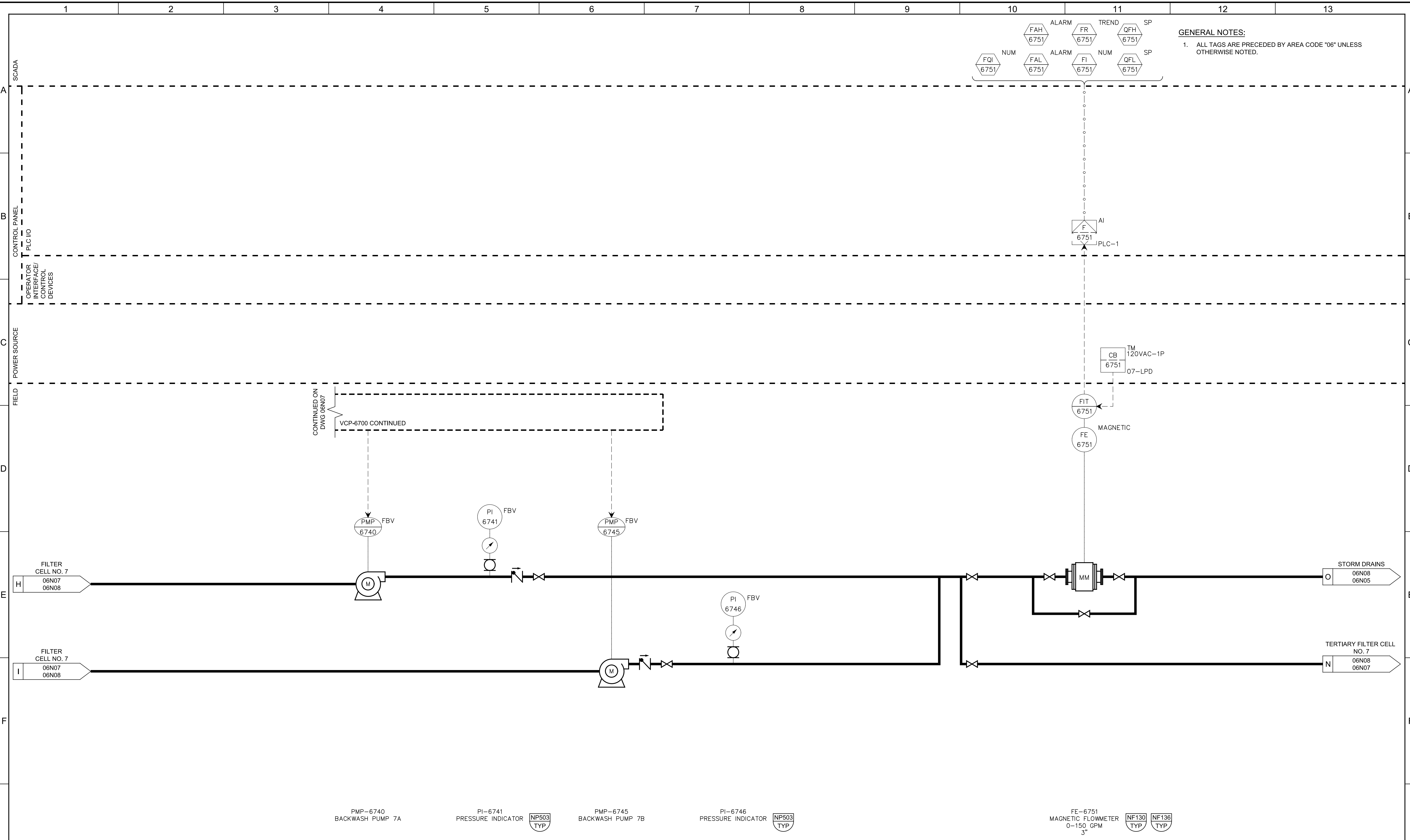
JOB NO.
7310L.10
DRAWING NO.
06N07
SHEET NO.
126 OF 130

Plot Date: 04-APR-2023 2:59:13 PM

User: svcPW

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

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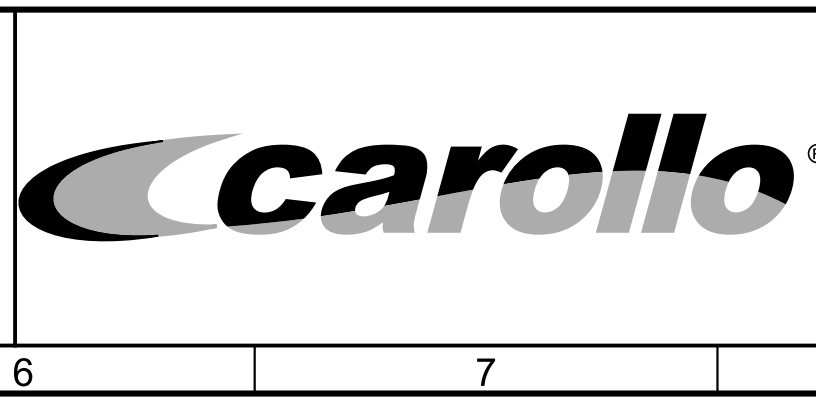


PMP-6740 BACKWASH PUMP 7A PI-6741 PRESSURE INDICATOR **NP503 TYP** PMP-6745 BACKWASH PUMP 7B PI-6746 PRESSURE INDICATOR **NP503 TYP** FE-6751 MAGNETIC FLOWMETER 0-150 GPM 3" **NF130 TYP** **NF136 TYP**

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 DATE JANUARY 2023

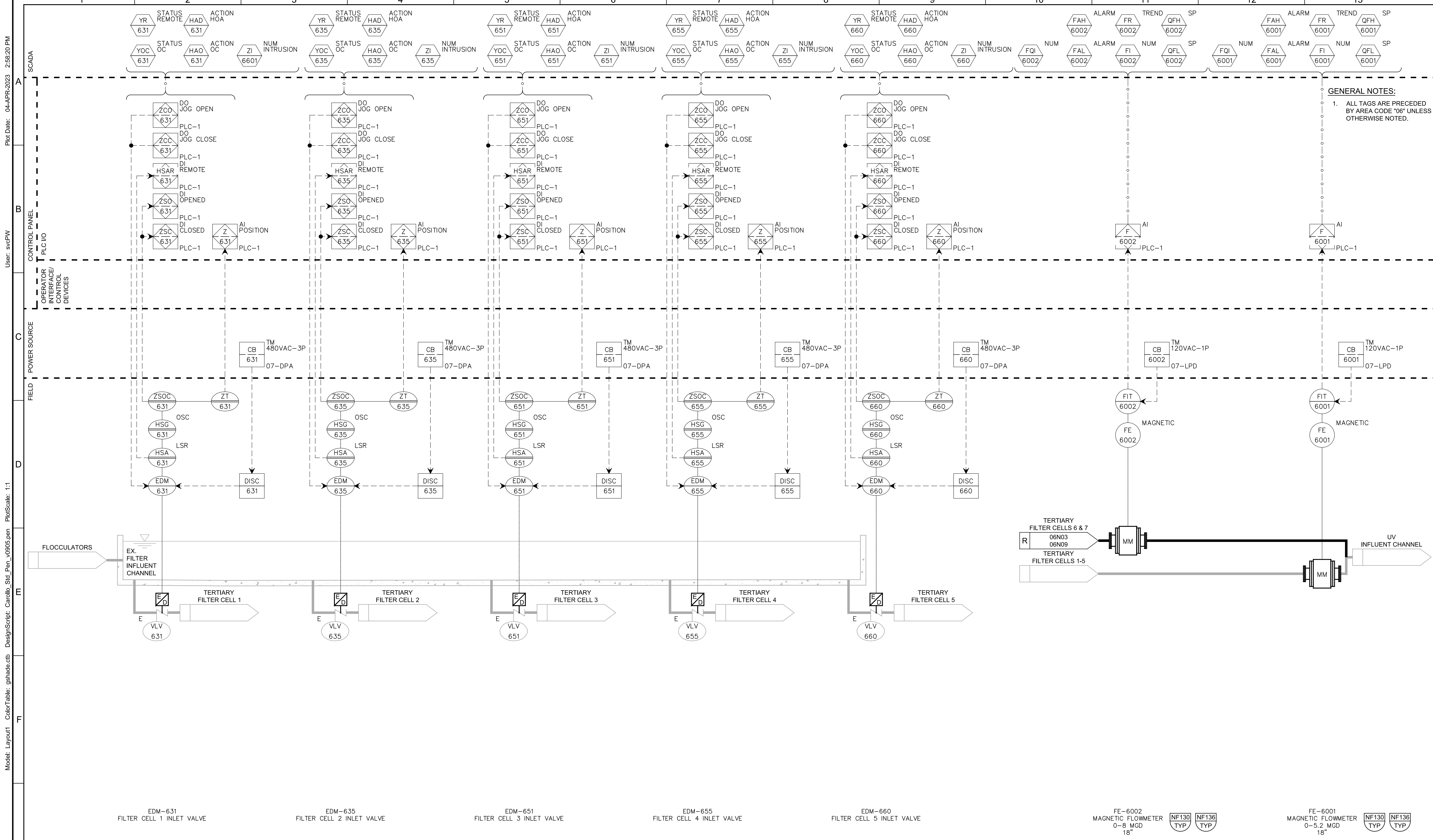
REGISTERED PROFESSIONAL ENGINEER
 STATE OF CALIFORNIA
 No. 20740
Christopher Alan Carvallo
Digitally signed by Christopher Alan Carvallo
 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:10:49-0700



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
**TERTIARY FILTER 7
 BACKWASH PUMPS**

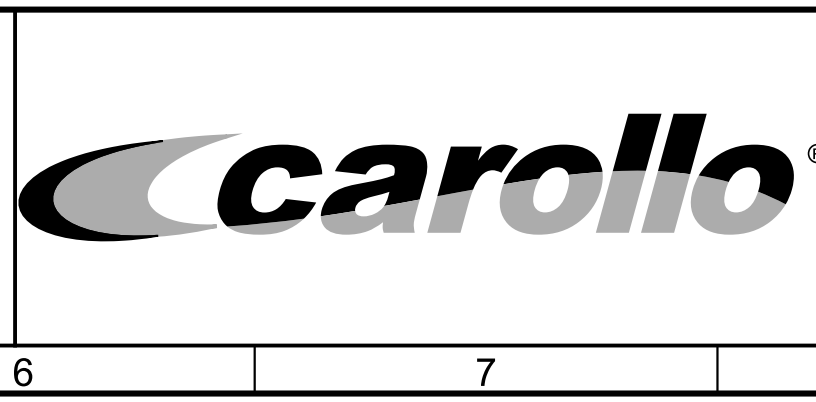
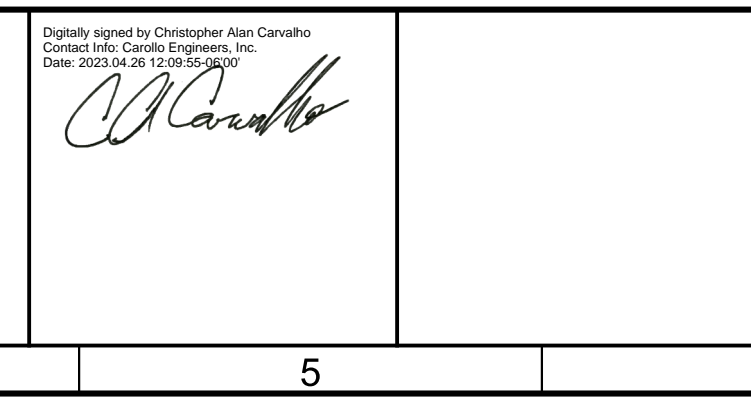
VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO. 7310L.10
 DRAWING NO. **06N08**
 SHEET NO. 127 OF 130



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DATE
JANUARY 2023



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
**TERTIARY FILTER 1-5
 MODIFICATIONS**

VERIFY SCALES
 BAR IS ONE INCH ON ORIGINAL DRAWING
 0 1" 18"
 IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

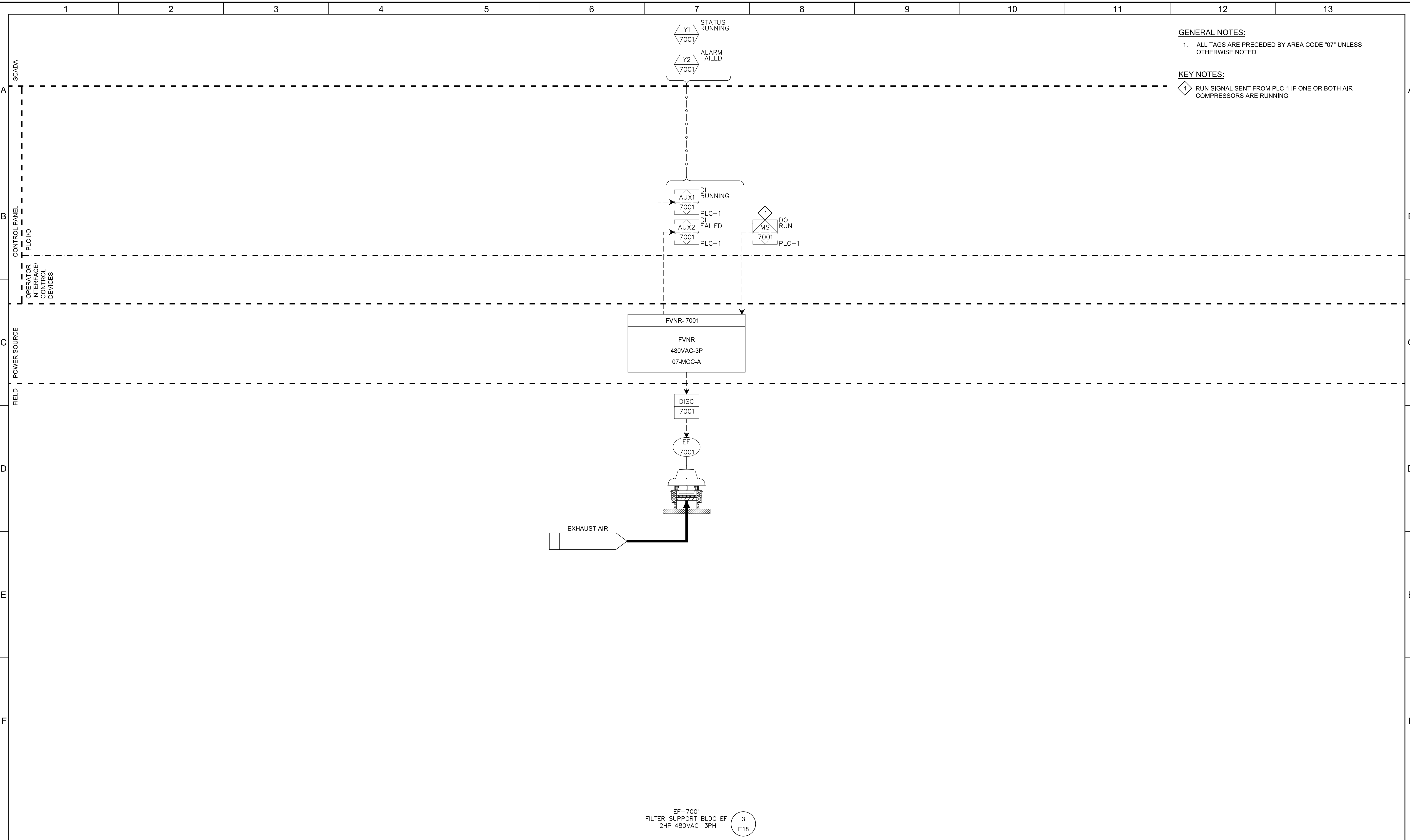
JOB NO.
7310L.10
 DRAWING NO.
06N09
 SHEET NO.
128 OF 130

Plot Date: 04-APR-2023 2:57:49 PM

User: svcPW

Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

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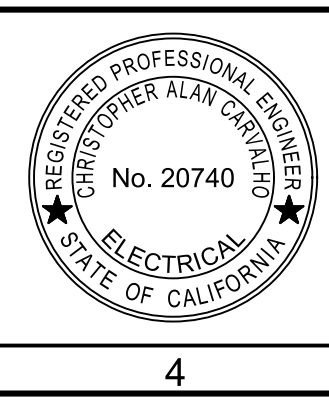


GENERAL NOTES:
 1. ALL TAGS ARE PRECEDED BY AREA CODE "07" UNLESS OTHERWISE NOTED.

KEY NOTES:
 1. RUN SIGNAL SENT FROM PLC-1 IF ONE OR BOTH AIR COMPRESSORS ARE RUNNING.

| REV | DATE | BY | DESCRIPTION |
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DESIGNED
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DJC
DATE
JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.26 12:10:29-0800



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
 FILTER SUPPORT BUILDING HVAC

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

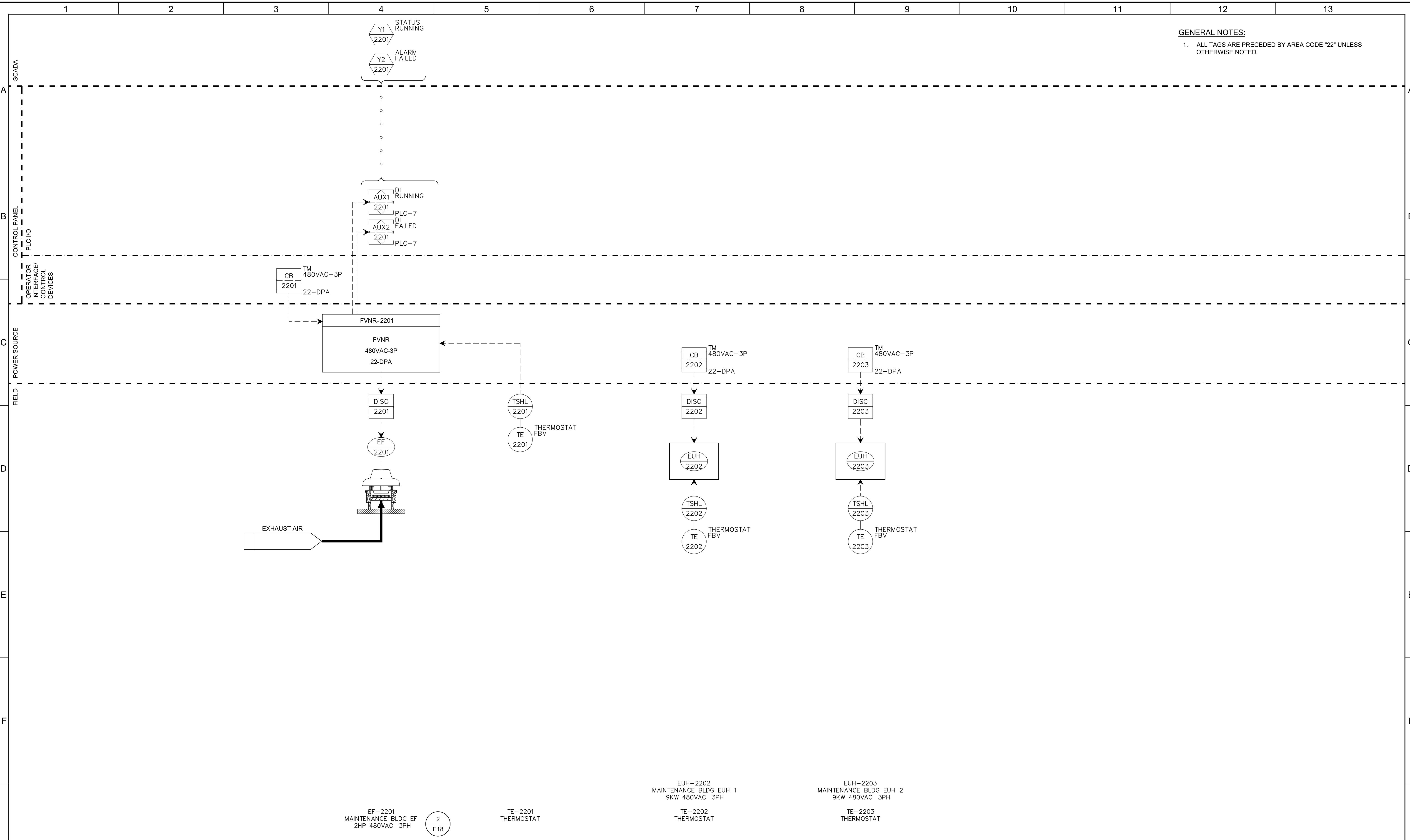
JOB NO.
7310L.10
DRAWING NO.
07N01
SHEET NO.
129 OF 130

Plot Date: 04-APR-2023 2:57:54 PM

User: svcPW

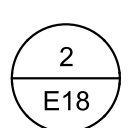
Model: Layout1 ColorTable: gshade.ctb DesignScript: Carollo_Sig_Pen_v0905.pen PlotScale: 1:1

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GENERAL NOTES:
 1. ALL TAGS ARE PRECEDED BY AREA CODE "22" UNLESS OTHERWISE NOTED.

EF-2201
 MAINTENANCE BLDG EF
 2HP 480VAC 3PH



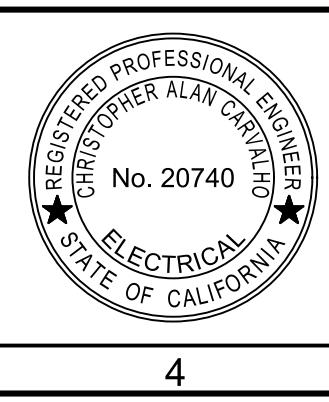
TE-2201
 THERMOSTAT

EUH-2202
 MAINTENANCE BLDG EUH 1
 9KW 480VAC 3PH
 TE-2202
 THERMOSTAT

EUH-2203
 MAINTENANCE BLDG EUH 2
 9KW 480VAC 3PH
 TE-2203
 THERMOSTAT

| REV | DATE | BY | DESCRIPTION |
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CDS
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ESW
 CHECKED
DJC
 DATE
JANUARY 2023



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 Contact Info: Carollo Engineers, Inc.
 Date: 2023.04.04 12:50:29-0800
Christopher Alan Corvato



CITY OF PETALUMA
 FILTER ADDITION AND MISC. IMPROVEMENTS PROJECT
 INSTRUMENTATION
 MAINTENANCE BUILDING HVAC

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

JOB NO.
7310L.10
 DRAWING NO.
22N01
 SHEET NO.
130 OF 130