

ADDENDUM NO. 2
TO
PLANS, SPECIFICATIONS
AND
CONTRACT DOCUMENTS
FOR

CITY OF MANTECA
WASTEWATER QUALITY CONTROL FACILITY

WQCF RECLAIMED WATER IMPROVEMENTS PROJECT



Prepared For:
City of Manteca

October 2016

This Addendum No. 2 shall become a part of the Contract and all provisions of the Contract shall apply thereto.

Bidder shall acknowledge receipt of addenda number on the Acknowledgement page of the BID DOCUMENTS.

SPECIFICATIONS (VOLUME 1)

SECTION 00300 - BID FORM

1. Page 00300-4, BID SCHEDULE, Modify Bid Item 7 to read:

"Installation of Asphalt Paving for trenching, patching and repair"

SECTION 11312D- VERTICAL TURBINE PUMPS

1. Section 2.01 A.1. Modify the sentence to read:

"1. Floway Pumps model 8JKL."

SECTION 13411 SPECIAL CONTROL SYSTEM PROGRAMMING AND TESTING REQUIREMENTS

1. Section 13411-2.01.B Specific IFIX programming and documentation, Replace paragraph "8" and "9" with the following:

- "8. The incremental exported excel file of the Process Database modifications shall add the following notes for tracking changes Database
 - a. Describe column of the tag
 - b. The original record (excel row) shall have the text "strikethrough" in red and a new row shall be inserted with the modification below, with red text color.
 - c. Highlight new records (excel row) in the color yellow.
 - d. Identify new data source, communication address, driver for the PLC.
 - e. Data source syntax, description input parameters and output values, is a standalone block or in a chain.
 - f. Primary block or secondary block.
 - g. Secondary block what calculation it is performing on the data.
 - h. Data source type, digit input, analog input, digital output, analog output, & alarms.
 - i. Graphic name the data source is connected to
 - j. Data source archiving the values
 - k. Alarms associated to the data source

9. New and modification to existing VBA scripts, code printout with comments
 - a. Do not delete old code but place it in a comments block
 - b. Add comments to describe the following:
 1. Imported libraries, type of variables, functions, the beginning and the end of loop structures, procedures and conditional statements."

SECTION 13412 ASSET DATA PROCESSING AND CMMS SYSTEM DATA INPUTS

1. Replace Section 13412 with the attached Section 13412-A2.

SECTION 16134 - BOXES

1. Section 2.03 C. Modify the sentence to read:
 - "C. Minimum 3 feet by 4 feet by depth as necessary for duct bank depth, or as otherwise indicated on the drawings, Constructed of reinforced Class A concrete."

SECTION 13412

ASSET DATA PROCESSING AND CMMS SYSTEM DATA INPUTS

PART 1 GENERAL

1.01 SUMMARY

- A. Scope of Work:
 - 1. Submit operation and maintenance manuals (OMMs) per Specification Section 01756. The OMMs are required to develop the Job Plans included in the Scope of Work for this Project.
 - 2. The CONTRACTOR, through the qualified Maintenance Specialist, shall:
 - a. Collect all asset attributes in an Asset Attributes Datasheet (refer to Attachment A1). At a minimum, the Asset Attributes Datasheet shall include all new and existing assets listed in the Asset List attached as Attachment A1 of this Section. Owner will provide O&M Manuals for existing equipment.
 - b. In addition to the items listed in Attachment A1, the City will assign tag numbers to the manual valves and other new miscellaneous equipment on the drawings. These manual valves and other miscellaneous equipment shall be entered into Asset Attribute Data sheets based on O&M information provided by the Contractor and added to the CMMS system data inputs.
 - c. Enter all asset attributes related to each asset into the OWNER's Computerized Maintenance Management System (CMMS) program (VUEWorks).
 - d. Provide Job Plans for each asset in the Manufacturer's Warranty Asset List provided as Attachment A1 of this Section.
 - 3. Following approval by the OWNER's CMMS program manager/engineer, the Maintenance Specialist shall enter all Job Plans into VUEWorks.

1.02 SUBMITTALS

- A. Furnish complete submittals in accordance with Sections 01330, 01756 and 13410 and as listed below.
- B. Qualifications of the proposed Maintenance Specialist for approval.
- C. Submit OMMs per Specification Section 01756. The OMMs are required to develop the Job Plans included in the Scope of Work for this Project.
- D. Following approval of the Asset Attributes Datasheet by the OWNER, the Maintenance Specialist shall enter all asset attributes related to each asset into the City's CMMS program (VUEWorks).

Job Plans shall be prepared by the Maintenance Specialist utilizing the Job Plan Template attached as Attachment A2 of this Section. The Job Plan shall include at minimum the following information: safety equipment like personal protective equipment (PPE's), required tools, frequency, and instructions/steps with sufficient detail to carry out the work in order to maintain the equipment manufacturer's warranty. Sample Job Plans are attached as Attachment A2 of this Section. The Manufacturer's

Warranty Asset List does not cancel, invalidate, lessen the requirements, terminate, or negate any of the Contractor's other warranties required by the project whether the other warranties be expressed, implied, warranties of merchantability, or warranties of fitness for a particular purpose. The OMMs are required to develop the Job Plans included in the Scope of Work for this Project.

- E. Final as-built hard copies of all data entered into VUEWorks and copy of final electronic file templates.
- F. Prior to substantial completion of any portion or element of the project and acceptance by the City, or the beginning of any warranty, the CONTRACTOR shall enter all asset data and approved Job Plans relating to all assets covered therein.

1.03 QUALIFICATIONS

- A. The Maintenance Specialist shall have a minimum of 5 years of experience writing Job Plans and similar experience for assets supporting wastewater treatment facilities, and the assets listed in the Warranty Asset List. The CONTRACTOR is expected to be fully knowledgeable of VUEWorks and all other software packages necessary to complete the task. A summary of relevant work experience within the past 5 years and a minimum of two professional references shall be submitted along with the Bid Documents required in Section 00420.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 GENERAL

- A. Only information approved by the OWNER's CMMS program manager/engineer shall be entered into VUEWorks. Prior to entering any information, CONTRACTOR and OWNER shall meet to review deliverables, and receive the appropriate credentials to obtain access to VUEWorks.
- B. CONTRACTOR shall maintain back-up copies of all data being entered into VUEWorks.
- C. CONTRACTOR and Maintenance Specialist shall review all contract documents, the City's *Naming Standards and Asset Hierarchy* (refer to Attachment A3), and assign equipment identification numbers (Equipment IDs) to assets missing Equipment IDs.
- D. CONTRACTOR and Maintenance Specialist shall base Job Plans on the manufacturer's OMMs.

3.02 TRAINING

- A. OWNER will provide up to 2 hours of training to the Maintenance Specialist regarding City procedures for entering asset attributes and entering Job Plans, and navigating the asset hierarchy within the City's VUEWorks system. This is not training on how to use VUEworks. The OWNER shall offer access to enter information remotely. The OWNER assumes CONTRACTOR will have the appropriate equipment (computer, internet

connection, asset information, etc.) to input information from a remote location.

END OF SECTION

SECTION 13412 - ATTACHMENT A1

| Power Source/MCC | Unit Operation | Project Equipment Tag No. | Old Tag No. | Equipment Title |
|---------------------------------------|-----------------------|---------------------------|-------------|--|
| a - 10 - Chlorine Contact Tank | | | | |
| MAIN SWBD (Admin ?) | Chlorine Contact Tank | CCT-MCC-10-001 | MCC-22-01 | Chlorine Contact MCC |
| | Chemical Building | CCT-BKP-10-002 | PNL-LPD1 | Chemical Building Lighting Panel |
| | Admin Building | CRWS-PC-10-006 | | PortAlogic SCADA PC |
| CCT-BKP-PNL-002 | Chemical Building | CCT-PNL-10-009 | | Recycled Water Fiber Optic Panel |
| CCT-BKP-PNL-002 | Chemical Building | CCT-PLC-10-010 | | Recycled Water PLC |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-FIT-10-011 | no number | UV Influent Flow Meter to CCT |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-LIT-10-012 | LIT-22-01 | CCT Level Transmitter |
| | Chlorine Contact Tank | CCT-LE-10-012 | no number | Level Element Tank No. 1 |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-LIT-10-014 | | Level Element Tank No. 2 |
| | Chlorine Contact Tank | CCT-LE-10-014 | | Level Element Tank No. 2 |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-AIT-10-015 | | Inlet Chlorine Analyzer Tank No. 1 |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-AIT-10-016 | | Inlet Chlorine Analyzer Tank No. 2 |
| | Chlorine Contact Tank | CCT-SLG-10-021 | | Inlet Slide Gate No. 1 |
| | Chlorine Contact Tank | CCT-SLG-10-022 | | Inlet Slide Gate No. 2 |
| | Chlorine Contact Tank | CCT-SLG-10-023 | | Isolation Slide Gate No. 3 |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-FIT-10-101 | FIT-22-01 | Reclaimed Water Effluent Flow Meter |
| | Chlorine Contact Tank | CCT-MXR-10-102 | MXR-22-01 | Reclaimed Water Effluent Static Mixer |
| | Chlorine Contact Tank | CCT-VAL-10-103 | | Reclaimed Water Pressure Relief Valve |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-AIT-10-105 | | Outlet Chlorine Analyzer Tank No. 1 |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-AIT-10-106 | | Outlet Chlorine Analyzer Tank No. 2 |
| CCT-MCC-10-001 | Chlorine Contact Tank | CCT-PMP-10-110 | PMP-22-01 | Reclaimed Water Pump No. 1 |
| | Chlorine Contact Tank | CCT-PSH-10-111 | | High Pressure Switch |
| CCT-MCC-10-001 | Chlorine Contact Tank | CCT-PMP-10-120 | PMP-22-02 | Reclaimed Water Pump No. 2 |
| | Chlorine Contact Tank | CCT-PSH-10-121 | | High Pressure Switch |
| CCT-MCC-10-001 | Chlorine Contact Tank | CCT-PNL-10-150 | no number | VFD Control Panel for Well Pump |
| CCT-PNL-10-150 | Chlorine Contact Tank | CCT-PMP-10-151 | no number | Well Pump |
| CCT-PNL-10-150 | Chlorine Contact Tank | CCT-FIT-10-152 | no number | Well Pump Flow Meter |
| CCT-PNL-10-150 | Chlorine Contact Tank | CCT-PIT-10-153 | no number | Well Pump Pressure |
| | Chlorine Contact Tank | CCT-BFP-10-154 | | Well Pump Backflow Preventer |
| CCT-MCC-10-001 | Chlorine Contact Tank | CCT-PNL-10-200 | | VFD Panel for 3W Pumps |
| CCT-BKP-PNL-002 | Chlorine Contact Tank | CCT-FIT-10-201 | | 3W System Flow Meter |
| | Chlorine Contact Tank | CCT-PIT-10-202 | | 3W System Pressure |
| CCT-PNL-10-200 | Chlorine Contact Tank | CCT-PMP-10-210 | | 3W Pump No. 1 |
| CCT-PNL-10-200 | Chlorine Contact Tank | CCT-PMP-10-220 | | 3W Pump No. 2 |
| | Chlorine Contact Tank | CCT-BFP-10-221 | | 3W System Backflow Preventer |
| ? | Chlorine Contact Tank | CCT-SCN-10-222 | STRN-17-01 | 3W Motorized Screen No. 1 |
| ? | Chlorine Contact Tank | CCT-SCN-10-223 | STRN-17-02 | 3W Motorized Screen No. 1 |
| CCT-MCC-10-001 | Chemical Building | CCT-PNL-11-300 | CPNL-11-01 | Chemical Pump Panel |
| | Chemical Building | CCT-PMP-11-310 | CHMP-11-01 | Sodium Hypochlorite Pump No.1 |
| | Chemical Building | CCT-PMP-11-320 | CHMP-11-02 | Sodium Hypochlorite Pump No.2 |
| | Chemical Building | CCT-LIT-11-330 | LIT-11-01 | Sodium Hypochlorite Solution Tank No.1 |
| | Chemical Building | CCT-LIT-11-340 | LIT-11-02 | Sodium Hypochlorite Solution Tank No.2 |

Digester Improvements Project
Sample Job Plan
City of Manteca VUEWorks

| VUEWorks Tab | Description | Other | |
|--|---|-------------------------------------|-------------------------------------|
| Priority Code | 1 | | |
| Department | WQCF | | |
| Group | WQCF Plant Preventive | | |
| Activity Description | Inspection | | |
| Location | HWK (01) and LAB (11) | | |
| Description | 12M Sample Transformer Insulating Liquid | | |
| Applicable Assets | IPS-TRF-01-01 | | |
| | AS-TRF-11-02 | | |
| | | | |
| Steps | Refer to Safety Guidelines in Details section above. | Character Limit (99 or less) | |
| | Ensure area is safe and take all necessary safety precautions regarding working on a transformer and handling oil. | 114 | |
| | Check oil level, if oil cannot be seen in level gauge do not proceed. | 69 | |
| | Identify sampling point (bottom tank valve, tap changer valve etc.) | 68 | |
| | Ensure Valve/Tap is closed and give area a wipe down if oily and dusty. | 71 | |
| | Place a drip tray under plug then remove plug from sampling port. Check for dirt and water, wipe clean if necessary. | 116 | |
| | Cut a suitable length of clear PVC tubing (normally 12-20" in length) and attach to sampling fitting. | 101 | |
| | Determine if transformer is under a positive or negative pressure. Do not proceed if under negative pressure. | 109 | |
| | Drain at least 4 quarts of oil into bucket and observe for visible contaminants. | 81 | |
| | Continue to drain to waste until oil looks visibly clean. | 58 | |
| | Stop process if more than 10 gallons of oil is needed to be drained and write a corrective work order to replace oil. | 117 | |
| | In a spare bottle/jar, fill ½ full with oil. Measure and record temperature. | 76 | |
| | Fill sample bottle 1/3 full, cap bottles, and gently rinse bottle internal. Empty contents. | 91 | |
| | Repeat bottle flush two more times. | 35 | |
| | Collect oil into flushed bottle by keeping end of tubing as high as possible in bottle. | 87 | |
| | Fill to brim, do this step slowly so as to avoid air bubbles. | 61 | |
| | Cap tightly but do not over-tighten, then wipe bottle clean. | 60 | |
| | Repeat flushing and collecting sample in 1 quart sample for DGA/Moisture testing | 80 | |
| | Close all valves and secure sampling port after removing sampling fitting. | 74 | |
| | Dispose of this tubing for every transformer sampled to avoid cross contamination. | 82 | |
| | Properly label bottles, attach paperwork, and package bottles for shipment to laboratory. | 89 | |
| | Review laboratory results. | 26 | |
| | Schedule flush and change insulating liquid (oil) if analysis results are not within acceptable values. | 103 | |
| Inventory Tab | | | |
| | | | |
| Tools (required to complete work) | Waste bucket to collect liquid drained during flushing and sampling | 67 | |
| | PVC tubing and hose attachment to sample connection on transformer | 66 | |
| | 4 quarts and 1 quart sample bottles | 35 | |
| | Thermometer to record oil temperature in sample bottles | 55 | |
| | Labels or tags to identify sample source | 40 | |
| | Packaging materials to protect sample bottles during transit to laboratory | 74 | |
| | | 0 | |
| Analysis | Test (as required to complete the work) | ASTM Method | Acceptable Values |
| | Dielectric breakdown, kV minimum | D 877 | 30 |
| | Dielectric breakdown, kV minimum @ 1 mm gap | D 1816 | 25 |
| | Dielectric breakdown, kV minimum @ 2 mm gap | D 1816 | 45 |
| | Interfacial tension mN/m minimum | D 971 or D 2285 | 38 |
| | Neutralization number, mg KOH/g maximum | D 974 | 0.015 |
| | Water content, ppm maximum @ 60° C | D 1533 | 30 |
| | Power factor at 25° C, % | D 924 | 0.05 |
| | Power factor at 100° C, % | D 924 | 0.4 |
| | Color | D 1500 | 1 |
| | Visual Condition | D 1524 | Bright, clear and free of particles |
| | Specific Gravity (Relative Density) @ 15° C Maximum | D 1298 | 0.91 |

Digester Improvements Project
Sample Job Plan
City of Manteca VUEWorks

| VUEWorks Tab | Description | Other |
|----------------------|---|---------------------------------|
| Priority Code | 1 | |
| Department | WQCF | |
| Group | WQCF Plant Preventive | |
| Activity Description | Inspection | |
| Location | IPS(01), SAB(03), UV(05) | |
| Description | 36M Inspect Generator | |
| Applicable Assets | EPW-GEN-13-01, Generator No. 1 EPW-GEN-13-02, Generator No. 2 EPW-GEN-13-03, Generator No. 3 EPW-GEN-13-04, Generator No. 4 | |
| Steps | Refer to Safety Guidelines in Details section above. | Character Limit (99 or less) |
| | Confirm Generator is down and engine is cool. | 108 |
| | (Holt) Replace station battery. (Holt) Reload Control Panel program if necessary during battery replacement. | 88 |
| | (Holt) Replace PLC battery. (Holt) Reload Control Panel program if necessary during battery replacement. | 58 |
| | Review coolant sample results to determine amount of Extended Life Coolant (ELC) to add. | 58 |
| | Loosen filler cap to relieve pressure and then remove cap. | 81 |
| | Place container under radiator and drain enough coolant to allow addition of ELC. | 49 |
| | Add proper amount of ELC based on sample results. | 83 |
| | Inspect the expansion tank filler cap. Replace the cap if the gaskets are damaged. | 19 |
| | Install filler cap. | 34 |
| | Take the generator out of service. | 45 |
| | Visually inspect the generator for moisture. | 76 |
| | If moisture exists, do not perform this insulation test. Dry the unit first. | 26 |
| | Inspect the installation. | 42 |
| | Discharge the capacitance of the windings. | 28 |
| | Disconnect "TO" from ground. | 102 |
| | Disconnect the sensing lead wires for the regulator. May be done by unplugging the harness connectors. | 49 |
| | Disconnect the PT leads of the load share module. | 54 |
| | Connect the Black lead of insulation tester to ground. | 54 |
| | Connect the RED lead of the insulation tester to "TO". | 54 |
| | Set the voltage to the rated voltage of the generator. | 37 |
| | Use the 30/60 Time Resistance Method: | 17 |
| | a. Apply voltage. | 74 |
| | b. Observe the readings at 30 seconds. Observe the readings at 60 seconds. | 80 |
| | c. Record the 60 second reading. This reading must be corrected for temperature. | 22 |
| | d. Record temperature. | 19 |
| | e. Record humidity. | 18 |
| | f. Remove voltage. | 23 |
| | Evaluate the readings. | 121 |
| | If a 60-second reading has a 50% reduction from the previous reading, the insulation may have absorbed too much moisture. | 51 |
| | Switch the insulation tester to the "OFF" position. | 42 |
| | Disconnect the insulation leads of tester. | 103 |
| | Refer to Page 108 in Operation and Maintenance Manual 3500B Generator Sets for temperature corrections. | 51 |
| | Reconnect the sensing lead wires for the regulator. | 48 |
| | Reconnect the PT leads of the load share module. | 79 |
| | Remove either the louver assembly or rear plate from rear of generator housing. | 62 |
| | Remove top grease pipe plug and remove lower grease pipe plug. | 44 |
| | Install a grease fitting in the grease pipe. | 79 |
| | Grease the shielded ball bearings with 1.8-2.0 oz. of 2S-320 Bearing Lubricant. | 70 |
| | Wipe off excessive grease. Remove top grease fitting and install plug. | 100 |
| | Operate generator for 60 minutes to enable grease to expand and force excess grease from the cavity. | 56 |
| | Continue operating generator until grease stops purging. | 61 |
| | While generator is operating, check and record power factor: | 23 |
| | a. Phase A Power Factor | 23 |
| | b. Phase B Power Factor | 23 |
| | c. Phase C Power Factor | 23 |
| | d. Average Power Factor | 80 |
| | Normally, Caterpillar Generators are designed for a power factor of 0.8 lagging. | 72 |
| | Stop engine. Install plug in bottom grease pipe. Wipe off excess grease. | 46 |
| | Install louver assembly or install rear plate. | 48 |
| | Write a work notification if problems are found. | 27 |
| Inventory Tab | Extended Life Coolant (ELC) 2S-3230 Bearing Lubricant (1.8-2.0 oz.) for shielded ball bearings 108-8611 Grease Cartridge for spherical roller bearings PLC Battery | |
| Tools | Generator Winding Insulation Resistance Tester 300-8648 PLC Program and Computer | |

Digester Improvements Project
 Asset Attributes Datasheet
 City of Manteca VUEWorks

| Item No. | Equipment ID | Equip Criticality | Manufacturer | Model | Serial Number | Voltage | Electrical Detailed Inspection Interval | Instrument Calibration Interval | Year Installed | Drawing No. | Reference Drawings | WQCF Location |
|----------|--------------|-------------------|---------------------|--|---------------|---------------|---|---------------------------------|----------------|-------------|--------------------------|--------------------------------|
| 1 | ATS-08-01 | MED | Eaton/Cutler-Hammer | Magnum ATS Low Voltage Transfer Switch | NA | 480 VAC | | | 2006 | E1.02 | WQCF Phase III, Feb 2013 | West Side MCC Bldg (MCC-08-01) |
| 2 | MXFM-12-01 | MED | GE | Prolec | M04J14551 | 17 kV / 480 V | | | 2005 | E1.02 | WQCF Phase III, Feb 2013 | Admin Bldg/North Plant |
| 3 | GEN-08-01 | HIGH | Caterpillar | 3512B DI TA UL2200 | G5X00093 | 480 VAC | | | 2006 | E1.02 | WQCF Phase III, Feb 2013 | West Side MCC Bldg (MCC-08-01) |
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Naming Standards and Asset Hierarchy

City of Manteca

Abstract

The objective of this document is to describe the City of Manteca equipment naming conventions for all of the equipment located at the Wastewater Quality Control Facility (WQCF), Water, Waste/Stormwater Collection, and for the Supervisory Control and Data Acquisition (SCADA) system. Updates to the standard are anticipated with most new Capital Improvement Projects (CIP) as new locations and equipment are added.

| Revision | Description | Date | By |
|----------|------------------|---------|-------------------------------|
| 3.1 | Official Release | 7/18/16 | Public Works, Alfredo Mijango |
| 3.2 | Water Assets | 8/24/16 | Public Works, Alfredo Mijango |

1 Naming Standards and Asset Hierarchy

1.1 Objective

The objective of this document is to describe the City of Manteca equipment naming conventions for all of the equipment located at the Wastewater Quality Control Facility (WQCF), Water, Waste/Stormwater Collection, and for the Supervisory Control and Data Acquisition (SCADA) system. The naming conventions shall be utilized for all upcoming project design drawings, SCADA, Piping and Instrumentation Diagrams (P&ID), Loop Diagrams and other documents used to identify equipment.

This standard is intended to be a living document. Updates to the standard are anticipated with most new Capital Improvement Projects (CIP) as new locations and equipment are added. This standard does not apply to instruments associated with fire alarm, security, and information technology systems, unless these systems are interfacing with the PLC or SCADA systems.

The location hierarchy for the WQCF, Water, and Waste/Stormwater Collection is shown on **Figure 1** and **Figure 2**. This location hierarchy will be used for segments 1 and 2 of the standard equipment naming convention shown in **Figure 3**.

1.2 Engineering Submittals and Equipment Tags

All design drawings, including SCADA submittals shall follow the instructions listed in **Table 1** for each submittal type.

Table 1 – Submittal Details

| Submittal Type (Format) | Description | Reference |
|---|--|--|
| Asset Database (Excel 2010 or comma delimited file) | In addition to Design Drawings, the engineer shall submit an asset database listing all of the equipment/instruments included in the Design Drawings. | The City of Manteca will provide Excel spreadsheet template. |
| Design Drawings | The Design Drawings shall only utilize segments 3 to 6 of the equipment naming convention identified in this document (see Figure 3). Tag numbers for instruments identified in P&IDs shall follow the instrumentation tag naming convention identified in Figure 4 . | Refer to Figure 3 and Figure 4 . |
| SCADA | The Design Drawings shall only utilize segments 3 to 6 of the equipment naming convention identified in this document (see Figure 2). | Refer to Figure 3 . |
| Equipment Name Plates | The physical name plates for equipment shall only include equipment naming segments 3 to 6. The equipment name plate shall be made of stainless steel. Font shall be engraved or stamped on the name plate and shall be at minimum 16-point, Arial font. | Refer to Figure 3 . |

Figure 1 – Utilities Location Hierarchy

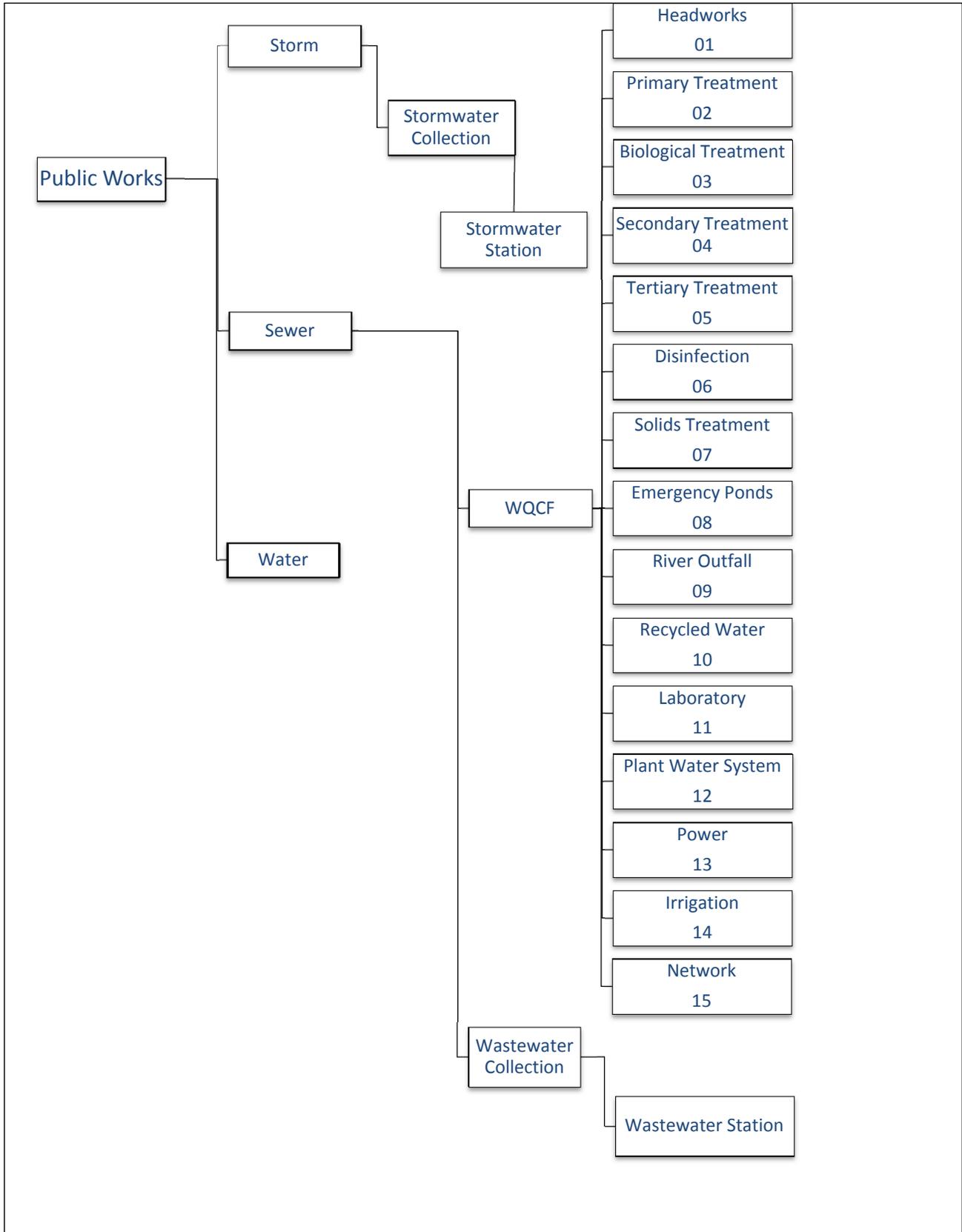
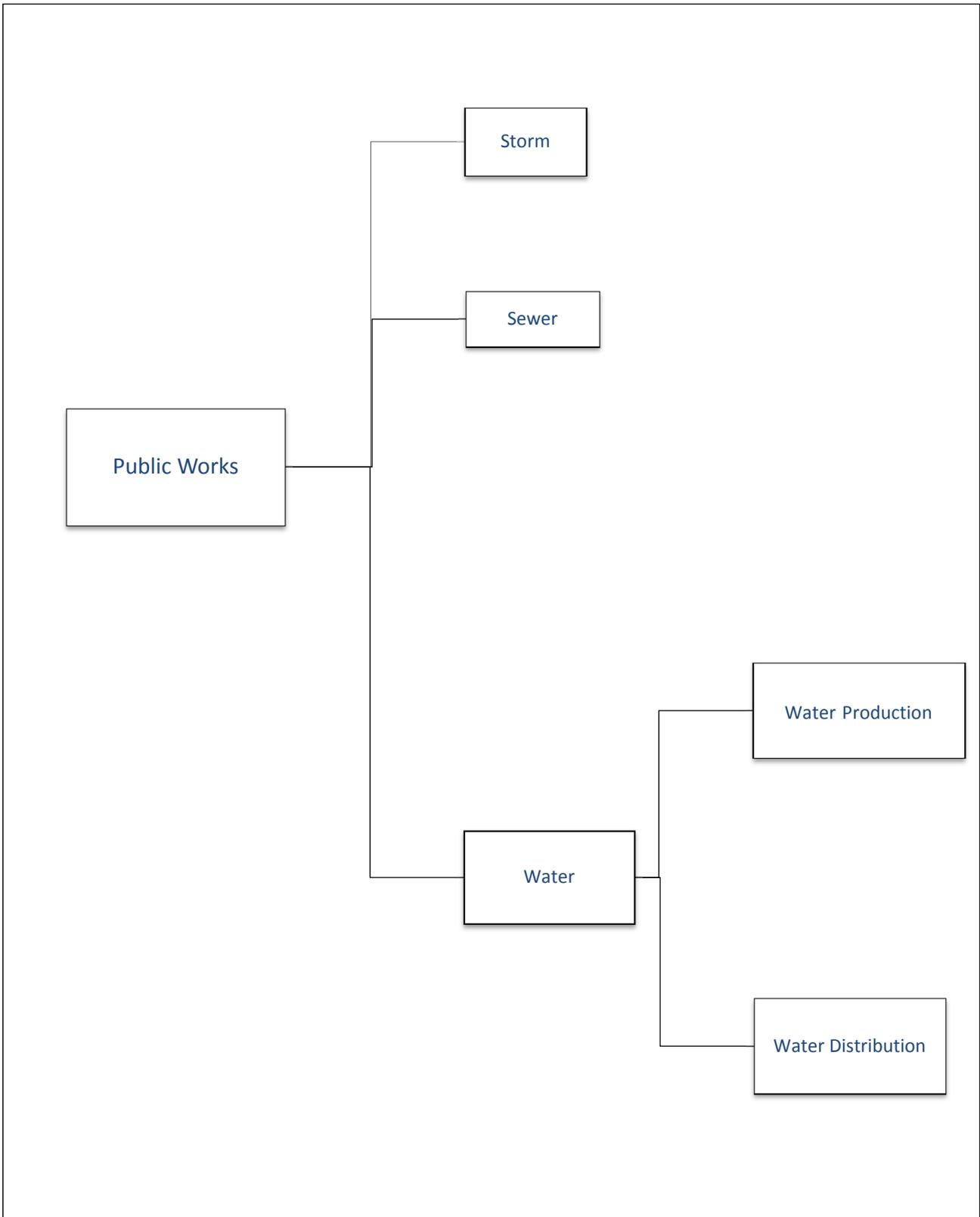


Figure 2 – Utilities Location Hierarchy



1.3 Description of Standard

The naming standard for the WQCF, Water, and Waste/Stormwater Collection systems are detailed in this section. The equipment naming standard is segmented into six fields with a maximum of four characters per segment as shown in **Figure 3**. The naming standard will apply to facility equipment, process control, SCADA, and field instrumentation. There are some exceptions to the number of segments required, please refer to **Table 1** at the beginning of this document.

Figure 3 – Naming Standard

AAAA - BBBB - CCCC - EEEE – FF - GGG
 ① ② ③ ④ ⑤ ⑥

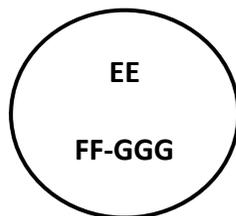
Segment Key

- ① Facility Location
- ② System Location
- ③ Process Abbreviation
- ④ Asset Type
- ⑤ System Code
- ⑥ Sequential Number

The abbreviations for segments 1, 2, 3 and 5 are listed in **Table A, B and C** respectively, and are attached at the end of this document. The abbreviations for segment 4 (facility equipment *Asset Type*) are listed in **Table D**, also attached at the end of this document. Field instrumentation and process control abbreviations for segment 4 shall be based on *ISA-5.1 Identification Letters*, listed in **Table E** (attached at the end of this document). If the *ISA-5.1 Identification Letters* falls under “User’s Choice” the proposed identification letters shall be submitted to Public Works Engineering Department for approval prior to .

The tag numbering for the instrument tags is shown in **Figure 4** below. The tag numbering will be made up of three segments.

Figure 4 – General Instrumentation Symbol with Tag Number



| Segment | Key |
|---------|--------------------------------------|
| EE | <i>ISA 5.1 Identification Letter</i> |
| FF | System Code |
| GGG | Sequential Number |

1.4 Equipment Naming Examples

This section presents four equipment naming examples.

Example 1: Equipment name for a pump located in the solids treatment process area.

WQCF-SLDT-DIG-PMP-07-001

1. Wastewater Quality Control Facility
2. Solids Treatment
3. Digesters
4. Pump
5. Solids Treatment System Code
6. Facility Equipment number 1

Example 2: Equipment name for a temperature element located in the solids treatment process area.

WQCF-SLDT-DIG-TE-07-001

1. Wastewater Quality Control Facility
2. Solids Treatment
3. Digesters
4. Temperature Element
5. Solids Treatment System Code
6. Control Instrument number 1

Example 3: Equipment name for a pump located in the wastewater station area.

WWC-WW10-WETW-PMP-10-001

1. Wastewater Collection
2. Wastewater Station 10
3. Wet Well
4. Pump
5. Wastewater Station System Code 10
6. Facility Equipment number 1

Example 4: Equipment name for a generator located in the stormwater station area.

SWC-SW21-EPW-GEN-21-001

1. Stormwater Collection
2. Stormwater Station 21
3. Emergency Power
4. Generator
5. Stormwater Station System Code 21
6. Facility Equipment number 1

Table A - WQCF System Location and Abbreviations

| ① Facility Location | ② Systems Location | Process/Sub-System Description | ③ Process/Sub-System Abbreviation | ④ Asset Type | ⑤ System Code | |
|------------------------|-------------------------------|---|---|---|---------------------|----|
| WQCF | Headworks(HWK) | | | Refer to Table D for asset type abbreviations | 01 | |
| | | Foul Air Removal | FAR | | | |
| | | Influent Pumping Station | IPS | | | |
| | | Barscreens | BSN | | | |
| | | Septage Receiving | SEP | | | |
| | Primary Treatment (PT) | | | | | 02 |
| | | North & South Grit Removal | NGR, SGR | | | |
| | | Primary Sedimentation Basins | NPSB, SPSB | | | |
| | Biological Treatment (BIO) | | | | | 03 |
| | | Biotowers | BIOT | | | |
| | | North & South Aeration Basins | NAB, SAB | | | |
| | Secondary Treatment (ST) | | | | | 04 |
| | | North & South Secondary Clarifiers | NSC, SSC | | | |
| | | North & South RAS | NRAS, SRAS | | | |
| | | Secondary Effluent Equalization Pond | SEEP | | | |
| | Tertiary Treatment (TT) | | | | | 05 |
| | | Filter Feed Pump Station | FFPS | | | |
| | | Flocculation | FLOC | | | |
| | | Tertiary Filtration | TF | | | |
| | | Chemical Feed | CHMF | | | |
| | Disinfection (DIS) | | | | | 06 |
| | | UV Disinfection | UV | | | |
| | | Effluent Pump Station | EPS | | | |
| | Solids Treatment (SLDT) | | | | | 07 |
| | | DAFT | DAF | | | |
| | | North & South WAS | NWAS, SWAS | | | |
| | | Digesters | DIG | | | |
| | | Sludge Blending | SLB | | | |
| | | Dewatering | DEW | | | |
| | | Gas Flare | GFL | | | |
| | | Centrifuge | CENT | | | |
| | | Centrifuge Polymer | CPLY | | | |
| | | Food Waste | FWST | | | |

| ① Facility Location | ② Systems Location | Process/Sub-System Description | ③ Process/Sub-System Abbreviation | ④ Asset Type | ⑤ System Code | |
|------------------------|----------------------------|--|---|---|---------------------|----|
| | | Fats Oils Greases | FOG | Refer to Table D for asset type abbreviations | | |
| | | Biogas Handling | BIOG | | | |
| | | Digester Chemical System (Ferric) | DCS | | | |
| | Emergency Ponds (EPD) | | | | | 08 |
| | | Secondary Effluent Storage Pond | SESP | | | |
| | River Outfall (RIO) | | | | | 09 |
| | | River Outfall | RIO | | | |
| | Recycled Water | | RW | | | 10 |
| | | Recycled Water Pump Station | RWPS | | | |
| | | RW Chlorine Contact Tank | CCT | | | |
| | | RW Disinfection | RWDS | | | |
| | | UV Recycled Water Pump Station | UVRW | | | |
| | | Commercial and Residential Recycled Fill Station System | CRWS,RRWS | | | |
| | Laboratory (LAB) | | | | | 11 |
| | | Vacuum system | VAC | | | |
| | | Compressed Air system | CAS | | | |
| | | Deionized water system | DI | | | |
| | | metals analysis system | MET | | | |
| | | Anion analysis system | IC | | | |
| | | Ancillary Systems | AS | | | |
| | Plant Water System (PW) | | | | | 12 |
| | | 1 Water (potable) | 1W | | | |
| | | 2 Water (non-potable) | 2W | | | |
| | | 3 Water Recycled Water | 3W | | | |
| | Power (PWR) | | | | | 13 |
| | | Normal Power | NP | | | |
| | | Emergency Power | EPW | | | |
| | Irrigation (IRR) | | IRR | | | 14 |
| | | Irrigation Pump Station | IRPS | | | |
| | | Industrial Pond (Eckerts) | IDP | | | |
| | | Agricultural Fields | IAG | | | |
| | Network (NET) | | | | 15 | |
| | | Network | NET | | | |
| | | SCADA | SCD | | | |

Table B – Collection System Location and Abbreviations

| ① Facility Location | ② Systems Location | Process/Sub-System Description | ③ Process/Sub-System Abbreviation | ④ Asset Type | ⑤ System Code |
|------------------------------------|---|-----------------------------------|---|---|---------------------|
| Wastewater Collections (WWC) | | | | Refer to Table D for asset type abbreviations | |
| | Wastewater Station Number (WW##)* | | | | Station Number |
| | | Wet Well | WETW | | |
| | | Wastewater Treatment | WWT | | |
| | | Normal Power | NP | | |
| | | Emergency Power | EPW | | |
| | | Network | NET | | |
| | | Grounds | GRND | | |
| | | | | | |
| Stormwater Collections (SWC) | | | | | |
| | Stormwater Station Number (SW##)* | | | | Station Number |
| | | Wet Well | WETW | | |
| | | Stormwater Treatment | SWT | | |
| | | Normal Power | NP | | |
| | | Emergency Power | EPW | | |
| | | Network | NET | | |
| | | Grounds | GRND | | |
| | | | | | |
| | Stormwater Treatment (SWT##)* | | | | |
| | | Stormwater Treatment | SWT | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

*Note, consult with the Engineering Department for the station number (##).

Table C – Water System Location and Abbreviations

| ① Facility Location | ② Systems Location ¹ | Process/Sub-System Description | ③ Process/Sub-System Abbreviation | ④ Asset Type | ⑤ System Code |
|-------------------------|--|--------------------------------|--------------------------------------|---|------------------|
| Water Production (WATP) | | | | Refer to Table D for asset type abbreviations | |
| | Water Tank Number (WTNK##) ² | | | | Tank Number |
| | | Tank | TNK | | |
| | | Basin | BSN | | |
| | | Normal Power | NP | | |
| | | Emergency Power | EPW | | |
| | | Network | NET | | |
| | | Grounds | GRND | | |
| | | Water Treatment | TRT | | |
| | | | | | |
| | Water Well Number (WWL##) ² | | | | Well Number |
| | | Well | Well | | |
| | | Water Treatment | TRT | | |
| | | Normal Power | NP | | |
| | | Emergency Power | EPW | | |
| | | Network | NET | | |
| | | Grounds | GRND | | |
| | | | | | |
| | Water Treatment Number (WTRT##) ² | | | | |
| | | Water Treatment | TRT | | |
| | | Normal Power | NP | | |
| | | Emergency Power | EPW | | |
| | | Network | NET | | |
| | | Grounds | GRND | | |
| | | | | | |
| | AMI | (FUTURE) | | | |

Notes:

1. Naming convention for the Water Distribution assets was already identified in the Public Works GIS System.
2. Note, consult with the Engineering Department for the tank, well, treatment number (##).

Table D – WQCF and Collection Asset Type and Abbreviations (Segment 4 of the Naming Convention)

| ID | DESCRIPTION | ID | DESCRIPTION |
|------|--------------------------------|------|-------------------------------|
| AC | Air Conditioner | MPS | Module Power Supply |
| ACT | Actuator | MTR | Motor |
| ADL | Auto Dialer | MXR | Mixer |
| AHU | Air Handling Unit | OCU | Odor Control Unit |
| ARV | Air Release Valve | PC | Personnel Computer |
| AUX | Auxiliary Supporting Equip | PCMP | Portable Air Compressor |
| BCG | Bio CNG Unit | PDC | Power Distribution Center |
| BFP | Backflow Preventer | PGEN | Portable Generator |
| BKP | Breaker Panel | PHR | Portable Hose Reel |
| BLR | Blower | PLC | Programmable Logic Controller |
| BNK | Bank | PMP | Pump |
| BOL | Boiler | PNL | Panel |
| CAM | Camera | PPL | Pipeline |
| CDT | Condensate Trap | PPLG | Portable 36" Pipe Plug |
| CENT | Centrifuge | PPMP | Portable 3", 6" Pump |
| CFD | Chemical Feeder | PV | Pressure Valve |
| CMP | Compressor | REG | Regulator |
| CNG | Compressed Natural Gas Unit | RVSS | Reduced Voltage Soft Starter |
| CNV | Conveyor | SBD | Switch Board |
| CRN | Crane | SCB | Scrubber |
| DPR | Dampener | SCC | System Control Center |
| DRY | Dryer | SCG | Security Gate |
| DTRK | Dump Truck | SCN | Screen |
| EXH | Exhaust | SCV | Screw Conveyor |
| FAN | Fan | SEP | Separator |
| FAR | Flame Arrestor | SFT | Water Softener |
| FLR | Flare | SLG | Slide Gate |
| FLT | Filter | SMP | Sampler |
| FM | Flow Meter | STN | Strainer |
| FRC | Furnace | SYS | System |
| GBX | Gearbox | TNK | Tank |
| GDT | Gas Detector | TRF | Transformer |
| GEN | Generator | UPS | Uninterruptible Power Supply |
| GRD | Grinder | UVM | UV Module |
| HEX | Heat Exchanger | UVW | UV System Bulb Washer |
| HRN | Horn | VACT | Vaccon Truck |
| HTR | Heater | VAL | Valve |
| HVC | HVAC | VFD | Variable Frequency Drive |
| LDR | Loader | VNT | Ventilator |
| LUB | Lubricator-Automatic, Pressure | WRW | Weir Washer |
| LVR | Louver | YLT | Yard Lighting |

| ID | DESCRIPTION | | ID | DESCRIPTION |
|-----|----------------------|--|----|-------------|
| MCC | Motor Control Center | | | |
| MEC | Mechanism | | | |

Table E – ISA-5.1 Identification Letters (Segment 4, used for loop diagrams and P&IDs)

| | First Letters | | Succeeding Letters | | |
|----------|--------------------------------|------------------------------------|---------------------------------|--|----------------------|
| | Measured/Initiating Variable | Variable Modifier | Readout/Passive Function | Output/Active Function | Function Modifier |
| A | Analysis | | Alarm | | |
| B | Burner, Combustion | | User's Choice | User's Choice | User's Choice |
| C | User's Choice | | | Control | Close |
| D | User's Choice | Difference, Differential | | | Deviation |
| E | Voltage | | Sensor, Primary Element | | |
| F | Flow, Flow Rate | Ratio | | | |
| G | User's Choice | | Glass, Gauge, Viewing Device | | |
| H | Hand | | | | High |
| I | Current | | Indicate | | |
| J | Power | Scan | | | |
| K | Time, Schedule | Time Rate of Change | | Control Station | |
| L | Level | | Light | | Low |
| M | User's Choice | | | | Middle, Intermediate |
| N | User's Choice | | User's Choice | User's Choice | User's Choice |
| O | User's Choice | | Orifice, Restriction | | Open |
| P | Pressure | | Point (Test Connection) | | |
| Q | Quantity | Integrate, Totalize | Integrate, Totalize | | |
| R | Radiation | | Record | | Run |
| S | Speed, Frequency | Safety | | Switch | Stop |
| T | Temperature | | | Transmit | |
| U | Multivariable | | Multifunction | Multifunction | |
| V | Vibration, Mechanical Analysis | | | Valve, Damper, Louver | |
| W | Weight, Force | | Well, Probe | | |
| X | Unclassified | X-axis | Accessory Devices, Unclassified | Unclassified | Unclassified |
| Y | Event, State, Presence | Y-axis | | Auxiliary Devices, | |
| Z | Position, Dimension | Z-axis, Safety Instrumented System | | Driver, Actuator, Unclassified final control element | |

DRAWINGS (VOLUME 2)

DRAWING T-7

1. Replace Drawing T-7 with the attached Drawing T-7-A2.

DRAWING S10-1

1. Replace Drawing S10-1 with the attached Drawing S10-1-A2".

DRAWING S10-2

1. Section C, Delete the left opening and callout reading "(E) 22"Φ OPENING W/ 18"Φ SLEEVE ...".
2. Section C, Add the following callout to the right opening:

"(E) 22"Φ OPENING W/ 18"Φ SLEEVE GROUTED INTO PLACE (TYP OF 2) SEE NOTE 7 DRWG S10-1".

DRAWING S10-3

1. Replace Drawing S10-3 with the attached Drawing S10-3-A2".

DRAWING S10-4

1. Section F, Delete the left SST plate and opening.
2. Section F, Modify the note on the right SST plate and opening to read:

"2-TYPE 304 SST PLATES EA. SIDE (TOTAL OF 4)".

DRAWING S10-5

1. Replace Drawing S10-5 with the attached Drawing S10-5-A2.

DRAWING M10-1

1. Add the additional existing east most penetration through the center basin wall in the same location as the new east most penetration on the attached Drawing M10-4-A2.

DRAWING M10-2

1. Add the additional existing east most penetration through the center basin wall in the same location as the new east most penetration on the attached Drawing M10-4-A2.

2. Add a new slide gate, and a callout reading "CCT-SGT-10-023" similar to the east most penetration and slide gate shown on the attached Drawing M10-4-A2.

DRAWING M10-4

1. Replace Drawing M10-4 with the attached Drawing M10-4-A2.

DRAWING M10-6

1. Replace Drawing M10-6 with the attached Drawing M10-6-A2.

DRAWING E-5

1. On Section 3M, modify the circuit numbers between the VFD's and the 50 hp motors currently reading P0218A and P0218B to read P0208A and P0208B.

DRAWING E-10

1. For circuit P0208B, modify the text in the "RUN FROM" column to read:
"CCT-PNL-10-200"

DRAWING E10-3

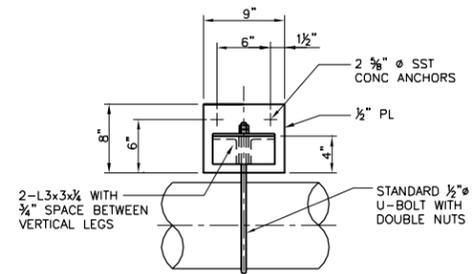
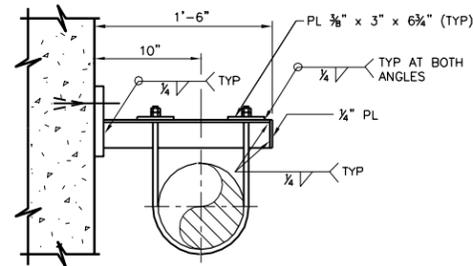
1. Modify the callout on the existing conduit north of the basin (running from the MCC to the wireway on the north wall) which currently reads "P0206, C0206, P0207, C0207, P0218, P0219" to read:

"P0206, C0206
P0207, C0207
P0208
P0218, P0219"

DRAWING E10-5

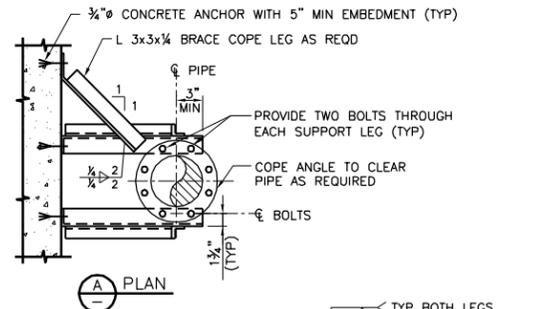
1. Modify the two callouts on the existing buried conduits (running from the MCC to the gutter tray on the wall) which currently read "P0206, P0207, C0206, C0207, P0218, P0219" to read:

"P0206
P0207
P0208
C0206
C0207
P0218
P0219"

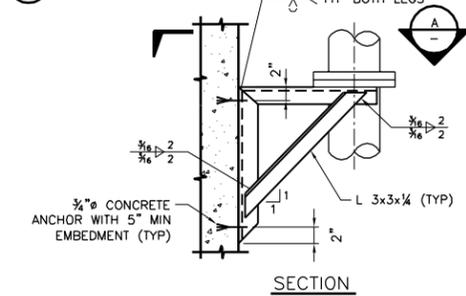


- NOTES:
1. MAXIMUM VERTICAL LOAD = 750 POUNDS.
 2. ALL MATERIALS SHALL BE 304 ST. STL.

P530 PIPE SUPPORT
TYP



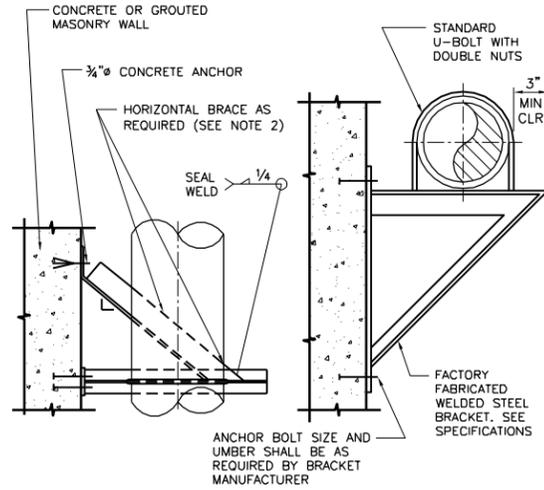
PLAN



SECTION

- NOTES:
1. PIPE SUPPORT IS TO BE USED FOR 4".
 2. MAXIMUM ALLOWABLE VERTICAL LOAD = 900 POUNDS.
 3. ALL MATERIAL SHALL BE 304 ST. STL.

P536 PIPE SUPPORT
TYP

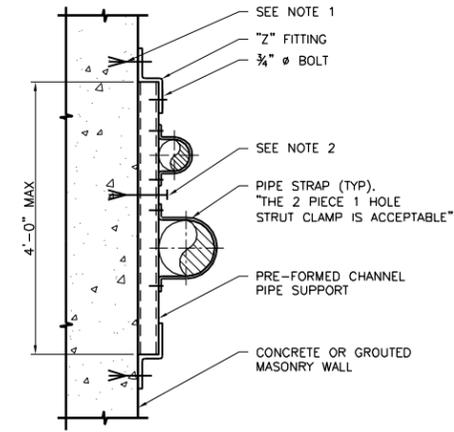


PLAN

SECTION

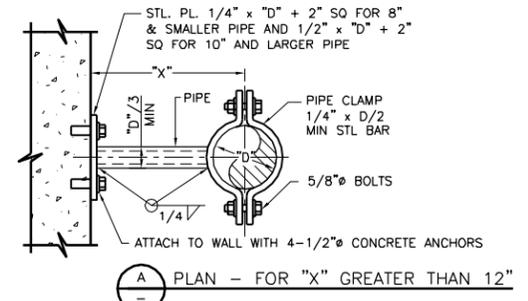
- NOTES:
1. MAXIMUM ALLOWABLE VERTICAL LOAD IS THE SMALLER OF 1500 POUNDS AND THE MANUFACTURERS MAXIMUM ALLOWABLE BRACKET LOAD.
 2. IF VERTICAL LOAD ON BRACKET EXCEEDS 300 LBS, USE L 3x3x1/4 BRACE COPE LEG AS REQUIRED.
 3. ISOLATE ALL COPPER PIPE W/ PVC TAPE.
 4. ALL MATERIAL SHALL BE 304 ST. STL.

P538 KNEE BRACE PIPE SUPPORT
TYP

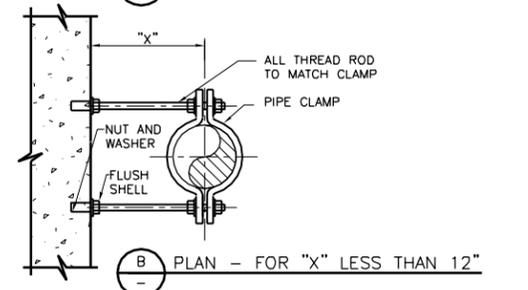


- NOTES:
1. 3/4" Ø CONCRETE ANCHORS IF MOUNTED ON WALL OR FLOOR. IF MOUNTED ON CEILING USE CONCRETE INSERTS OR ANCHOR BOLTS ONLY.
 2. FOR SUPPORT LENGTH GREATER THAN 2'-0" PROVIDE ADDITIONAL ANCHOR BOLT.
 3. MAXIMUM PIPE SIZE 4".
 4. SPACE FLUSH MOUNT PIPE SUPPORTS AT 5'-0" MAXIMUM OR AS OTHERWISE INDICATED ON THE DRAWINGS.
 5. ALL MATERIAL SHALL BE 304 ST. STL.

P540 FLUSH MOUNT PIPE SUPPORT
TYP



PLAN - FOR "X" GREATER THAN 12"



- NOTES:
1. SWAY BRACE SHALL NOT SUPPORT VERTICAL LOADS.
 2. SWAY BRACES SHOWN ARE FOR 12" AND SMALLER PIPE.
 3. IF SUPPORT IS SUBMERGED OR LOCATED BELOW THE TOP OF WALL IN WATER BEARING STRUCTURE, MATERIAL FOR ANCHOR BOLTS AND STRAP SHALL BE STAINLESS STEEL. IN ALL OTHER AREAS, MATERIAL FOR ANCHOR BOLTS AND STRAP SHALL BE HOT-DIP GALVANIZED STEEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

P552 VERTICAL PIPE SWAY BRACE
TYP

| DWG NO (1) | MARK | OPENING SIZE W" x H" (4) | QTY | TYPE OF CLOSURE | GATE DESIGN PRESSURE | | OPERATING PRESSURE | TYPE OF OPERATOR (3) | TYPE OF SYSTEM | COMMENTS |
|------------|------|--------------------------|-----|-----------------|--------------------------|-----------|--------------------|----------------------|----------------|------------|
| | | | | | SEATING / UNSEATING (FT) | LIFT (FT) | | | | |
| M10-2 | 1 | 42" x 24" | 2 | INVERTED/WEIR | 10 / 10 | 10 | 10 | MANUAL-HW | SC | NOTES 5, 6 |
| M10-2 | 2 | 24" x 24" | 1 | STD BOTTOM | 15 / 15 | 15 | 15 | MANUAL-HW | SC | NOTES 6, 7 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
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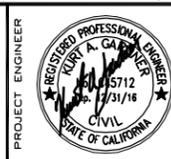
- NOTES:
1. FOR SPECIFIC GATE DETAILS, SEE DRAWINGS.
 2. HC=HAND CRANK HW=HANDWHEEL NO=NUT OPERATOR NR=NON-RISING STEM QTY=QUANTITY SC=SELF CONTAINED TAN=TANDEM LIFT
 3. OPENING DIAMETERS ARE NOMINAL PIPE DIAMETER. ACTUAL GATE SIZE MUST BE ADJUSTED TO ACCOUNT FOR PIPE THICKNESS, WALL SLEEVE OR CORE DRILL AND LINK SEAL SIZE, AND ANCHOR BOLTING SETBACKS.
 4. MANUAL OPERATORS SHALL BE SIZED FOR 40 LB MAX FORCE REQUIRED. WHERE HANDWHEELS ARE USED, HANDWHEELS SHALL BE 18" MAXIMUM AND ORIENTED AS INDICATED ON THE DRAWINGS. PROVIDE GEARED OPERATORS FOR HANDWHEELS WHERE REQUIRED TO MEET FORCE REQUIREMENTS.
 5. TOP OF SELF CONTAINED FRAME SHALL BE MOUNTED BELOW GRATING WITH 4"Ø (NOMINAL) PEDESTAL EXTENDING THROUGH GRATING TO 48" ABOVE WALKWAY.
 6. ALL PEDESTALS SHALL BE STAINLESS STEEL.
 7. TOP OF SELF CONTAINED FRAME SHALL BE MOUNTED LEVEL WITH TOP OF EXISTING WALL, WITH 4"Ø (NOMINAL) PEDESTAL EXTENDING TO 42" ABOVE WALL.

P400 STAINLESS STEEL SLIDE GATE SCHEDULE
TYP

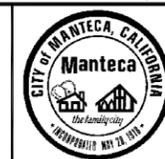
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| REV. | DATE | BY | DESCRIPTION |
|------|------|----|-------------|
| | | | |
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DESIGNED
KAG
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IG
CHECKED
GPH
DATE
AUGUST 2016



HERWIT ENGINEERING



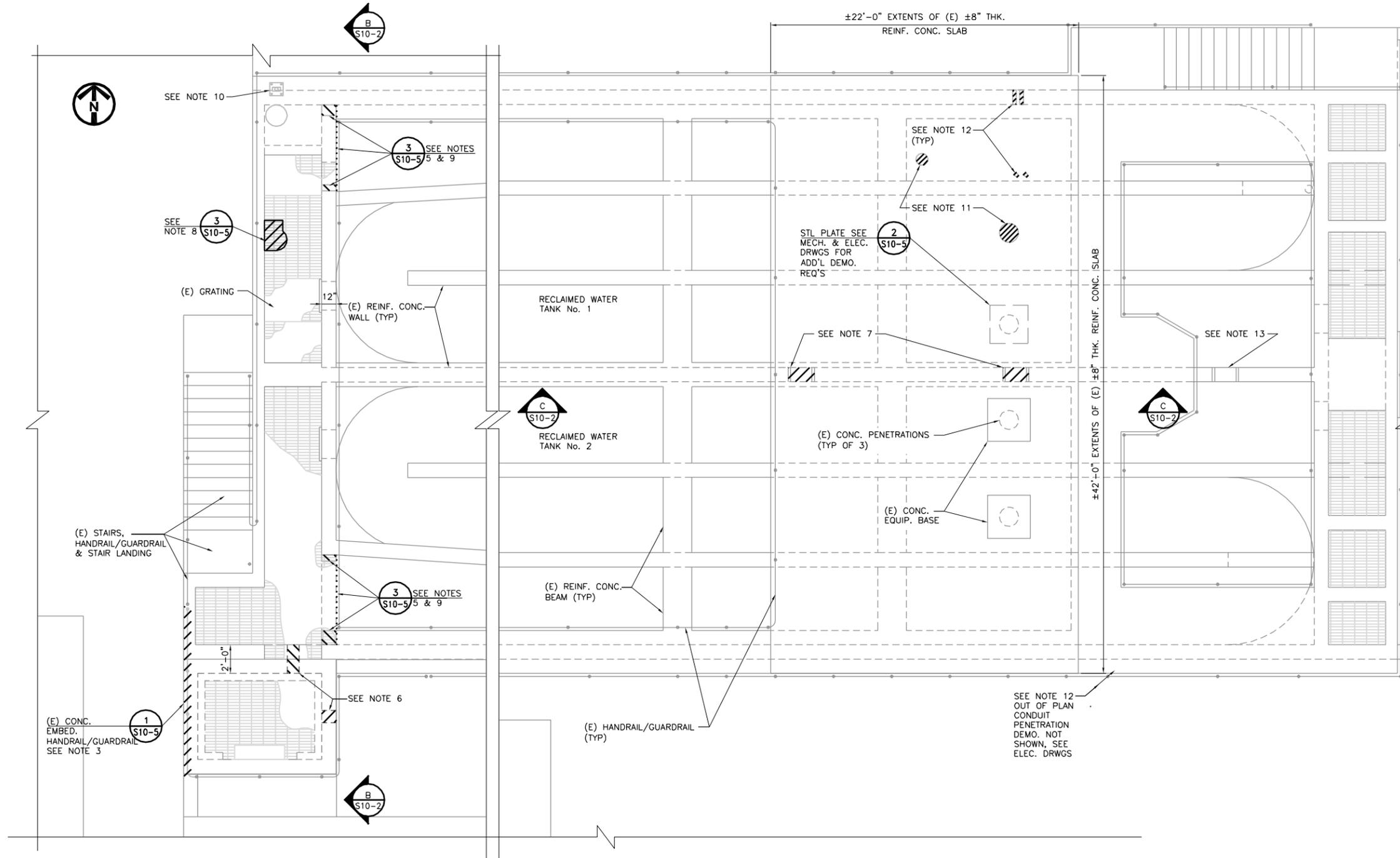
CITY OF MANTECA

CITY OF MANTECA
WQCF RECLAIMED WATER IMPROVEMENTS PROJECT
TYPICAL
TYPICAL DETAILS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1" = 10'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
2015-113 T01
DRAWING NO.
T-7-A2
SHEET NO.
8 OF 62

R:\Monteca\Reclaimed Water\Drawings\HMAN-rec-S10-1-4-42 10-21-16 08:08am Kurt : X-MAN-rec-BDR; X-MANT-CL2-Sections; X-MANT-RecStation; X-MANT-Logo2.tif



- DEMO. NOTES:**
- CONTRACTOR TO FIELD VERIFY ALL (E) CONDITIONS (DIMS., ELEV., LOCATIONS, ETC.).
 - //// DENOTES DEMOLITION.
 - DEMO. (E) HANDRAIL/GUARDRAIL. WHERE (E) HANDRAIL/GUARDRAIL IS EMBED. INTO CONCRETE DEMO. SHALL INCLUDE REMOVAL OF HANDRAIL/GUARDRAIL & GROUT IN GROUT POCKET.
 - ALL NEW HANDRAIL/GUARDRAIL. SHALL BE ON SITE AND VERIFIED PRIOR TO DEMOLITION OF EXISTING HANDRAIL/GUARDRAIL REPLACEMENT SHALL BE PHASED AND COORDINATED TO MAINTAIN OWNER ACCESS TO CHLORINE CONTACT TANK DURING CONSTRUCTION.
 - DEMO. (E) REINF. CONC. WALLS.
 - CORE DRILL (E) REINF. CONC. WALL FOR PIPE PENETRATION. SEE MECH. DRWGS. FOR DIAMETER (Ø), LOCATION & ELEVATION OF CORE.
 - CORE DRILL DEMO. (E) 22"Ø OPENING W/ 18"Ø SLEEVE GROUTED INTO PLACE. ESTIMATED CORE DRILL DIAMETER ±24" (TYP 2 PLACES).
 - DEMO. (E) GRATING FOR PIPE PENETRATION. SEE MECH. DRWGS. FOR DIAMETER (Ø), LOCATION & ELEVATION OF PENETRATION. DEMO. EXTENTS MUST TAKE INTO ACCOUNT 'FIXED' PIPE BASE SUPPORT.
 - DEMO. (E) 1/4" THK. SST WEIR PLATE AND WEIR PLATE ANCHORS.
 - REMOVE AND RE-USE (E) PIPE SUPPORT, SEE NOTE 11 DRWG No. S10-3.
 - CORE DRILL (E) REINF. CONC. SLAB FOR (E) PUMP BOWL SHAFT AND PIPE PENETRATIONS, SEE MECH. DRWGS FOR DIAMETER (Ø) & LOCATION.
 - CORE DRILL (E) REINF. CONC. WALL & SLAB FOR ELEC. CONDUIT PENETRATION. SEE ELEC. DRWGS FOR DIAMETER (Ø) & LOCATION.
 - IF REQUIRED PROVIDE DEMO. OF (E) REINF. CONC. 'HAUNCH' TO ACCOMMODATE NEW SLIDE GATE INSTALLATION. DEMO. SHALL BE AS MINIMAL AS POSSIBLE. SEE 10M-6 FOR ADD'L INFO.

DEMOLITION PARTIAL PLAN
 SCALE: 1/4"=1'-0"

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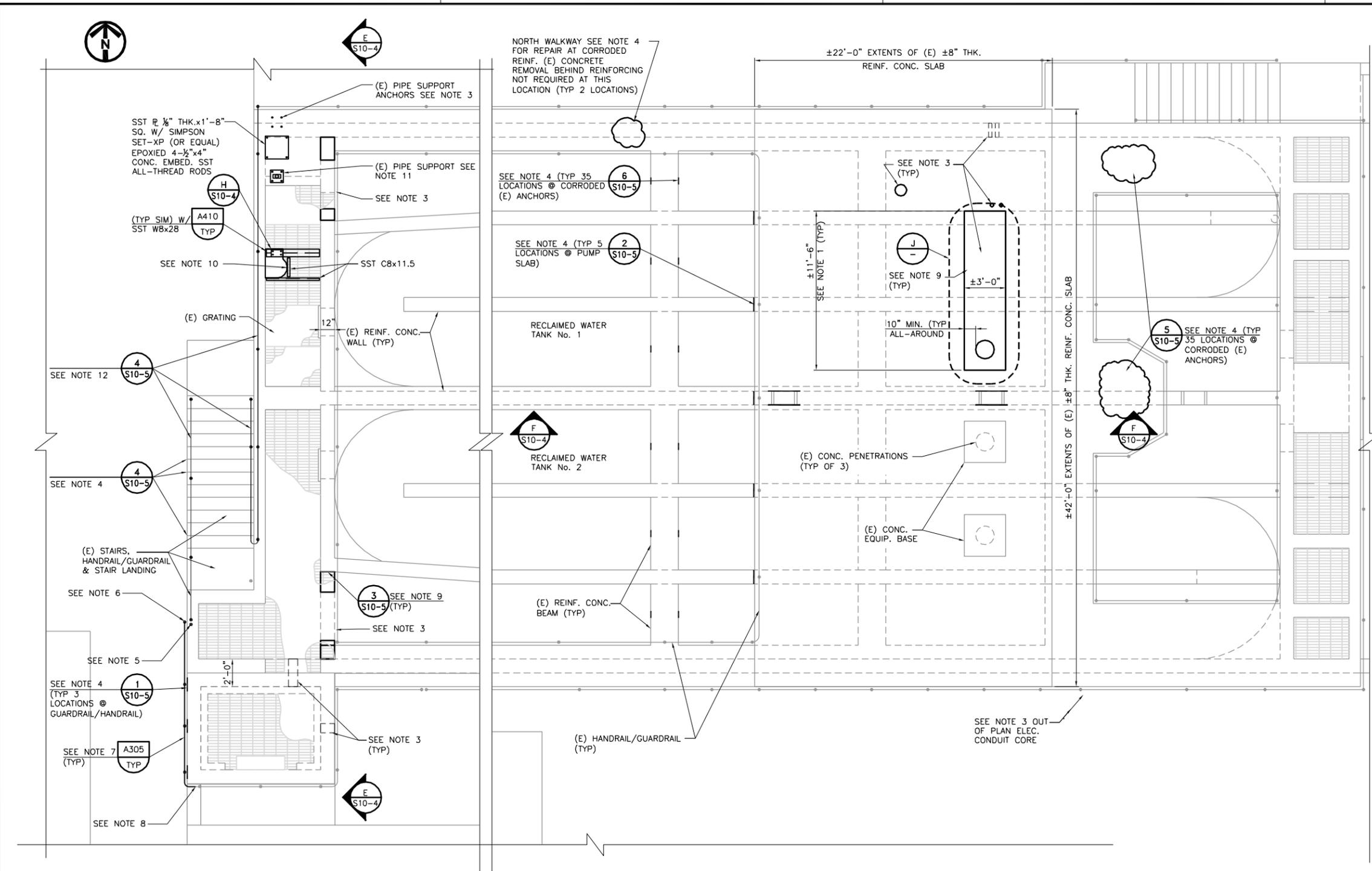


CITY OF MANTECA
 WQCF RECLAIMED WATER IMPROVEMENTS PROJECT
 STRUCTURAL
 CHLORINE CONTACT TANK
 DEMOLITION PARTIAL PLAN

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

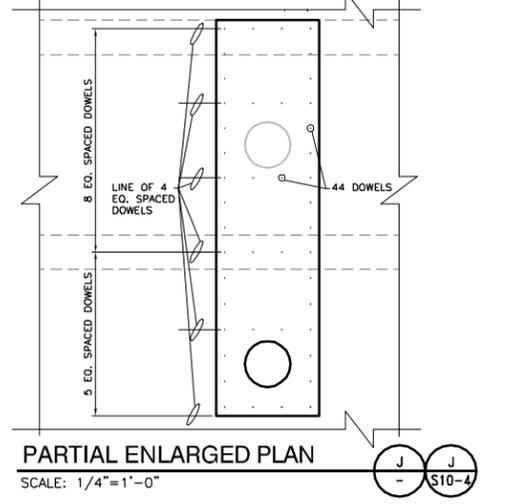
JOB NO.
2015-113 T01
 DRAWING NO.
S10-1-A2
 SHEET NO.
18 OF 62

R:\Monteca\Reclaimed Water\Drawings\HMAN-rec-S10-1-4-42 10-20-16 11:50am Kurt : X-MAN-rec-BDR; X-MANT-CL2-Sections; X-MANT-CL2-Sections; X-MANT-RecStation; Mant-Logo.dwg



PARTIAL PLAN
SCALE: 1/4"=1'-0"

- NOTES:**
- CONTRACTOR TO FIELD VERIFY ALL (E) CONDITIONS (DIMS., ELEV., LOCATIONS, ETC.).
 - ALL (E) CONCRETE THAT IS DAMAGED/SPALLED DURING DEMO. SHALL BE PATCHED PER SPECIFICATIONS. THIS AREA/VOLUME OF REPAIR IS NOT INCLUDED IN NOTE 4 BELOW.
 - ALL (E) REINFORCING, ANCHORS AND POST BASES THAT ARE EXPOSED (DUE TO DEMO. OR OTHERWISE) SHALL BE COUNTERSUNK, BY MEANS OF DRILLING, INTO (E) CONCRETE A MIN. OF 1" AND COATED W/ EPOXY PER SPECIFICATIONS. WHERE (E) REINFORCING IS INACCESSIBLE BY A "RIGHT ANGLE DRILL BIT" DRILLING IS NOT REQUIRED, COAT W/ EPOXY PER SPECIFICATIONS.
 - SEE SPECIFICATION 03950 "CONCRETE RESTORATION". REPAIR (E) CONCRETE THAT IS SPALLED AT (E) HANDRAIL/GUARDRAIL THAT WILL BE DEMO. (1/S10-5, 3 LOCATIONS), (E) PUMP SLAB (2/S10-5, 5 LOCATIONS), (E) STAIRS (4/S10-5, 3 LOCATIONS), (E) ABANDONED EQUIPMENT ANCHORS ON WALKWAY (5/S10-5, 35 LOCATIONS), (E) ABANDONED HANDRAIL/GUARDRAIL ANCHORS ON VERTICAL BEAM FACES (6/S10-5, 35 LOCATIONS) AND (E) EXPOSED CORRODED REINFORCING ON NORTH WALKWAY (2 LOCATIONS). ASSUME VOLUME TO BE REPAIRED IS 6 FT³. AREA TO BE TREATED SHALL BE "FRAMED" WITH A 1/2" MIN. DEPTH, NO FEATHERING OF SPEC. REFERENCED POLYMER-MODIFIED CEMENTITIOUS MORTAR ALLOWED. WHEN (E) REINF. STEEL IS ENCOUNTERED REMOVAL OF (E) CONCRETE SHALL BE A MIN. OF 1" BEYOND REINF. UNLESS OTHERWISE NOTED TO ALLOW POLYMER MODIFIED CEMENTITIOUS MORTAR TO BE PLACED BEHIND THE (E) REINF. (E) REINF. SHALL BE COATED WITH SPEC. REFERENCED BONDING AGENT. DO NOT DAMAGE (E) REINF. DURING AREA PREP. WHEN (E) ANCHORS ARE ENCOUNTERED, ANCHORS SHALL BE REMOVED A MIN. OF 3/4" BEHIND SURFACE OF RESTORATION AND COATED W/ SPEC. REFERENCED BONDING AGENT.
 - WHERE (E) HANDRAIL/GUARDRAIL WAS DEMO. AND THE REMAINING POST IN THE EMBED POCKET IS EMPTY, FILL EMPTY POST WITH GROUT.
 - NEW HANDRAIL/GUARDRAIL SHALL BE CONFIGURED WITH COMPONENTS SO THAT THE "GAP" BETWEEN THE NEW HANDRAIL/GUARDRAIL AND THE (E) STAIR LANDING HANDRAIL/GUARDRAIL IS NO GREATER THAN 4" AND THEY OVERLAP A MINIMUM OF 6".
 - NEW HANDRAIL/GUARDRAIL POST SHALL BE SPACED SO THAT ANCHORAGE LOCATION WILL NOT OCCUR AT REPAIR OF (E) CONCRETE SPALLED LOCATION. CONTRACTOR SHALL FIELD VERIFY LOCATIONS.
 - ATTACH NEW HANDRAIL/GUARDRAIL TO (E) HANDRAIL/GUARDRAIL. CONFIGURE WITH COMPONENTS TO ACCOUNT FOR OFFSET DUE TO NEW SIDE-MOUNT POST ATTACHMENT DETAIL.
 - ROUGHEN (E) CONC. IN CONTACT W/ NEW CONC. TO 1/4" AMPLITUDE AND COAT W/ BONDING AGENT PER SPECS. PRIOR TO POUR.
 - BAND (E) GRATING AT PIPE PENETRATION.
 - RE-LOCATE AND RE-USE (E) PIPE SUPPORT. USE SIMPSON SET-XP ADHESIVE (OR EQUAL) W/ FF593 316 SST ALL-THREAD ROD, MATCH (E) ANCHOR DIAMETER. PROVIDE 3" CONC. EMBED. FOR 1/2" ANCHOR AND 4" CONC. EMBED. FOR 3/4" ANCHOR.
 - BLAST (E) HANDRAIL/GUARDRAIL CLEAN (SSPC-SP5/NACE 1 WHITE METAL BLAST CLEANING) AND RECOAT WITH A ZINC RICH PAINT (GALVINOX OR EQUAL) EXTENTS AS SHOWN ON PLAN.



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CITY OF MANTECA, CALIFORNIA

CITY OF MANTECA

CITY OF MANTECA
 WQCF RECLAIMED WATER IMPROVEMENTS PROJECT
STRUCTURAL
 CHLORINE CONTACT TANK
 PARTIAL PLAN AND PARTIAL ENLARGED PLAN

VERIFY SCALES
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S10-3-A2
SHEET NO.
20 OF 62

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(E) GUARDRAIL

1 1
S10-1 S10-3



(E) PUMP SLAB

2 2
S10-1 S10-3



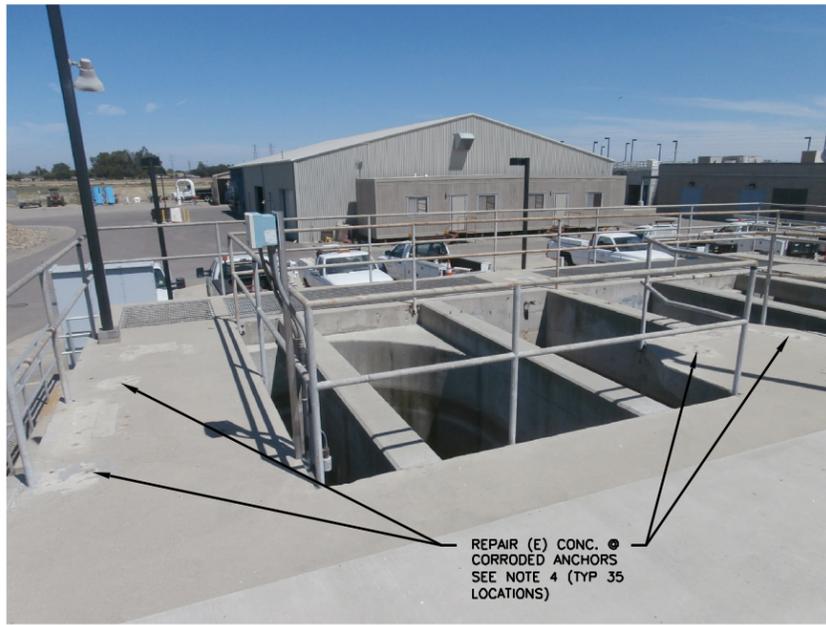
(E) WEIR @ RECLAIMED WATER TANK No. 1

3 3 3
S10-1 S10-2 S10-3



(E) STAIRS AND GUARDRAIL

4
S10-3



(E) PUMP SLAB

5
S10-3



(E) REINF. CONC. BEAMS

6
S10-3

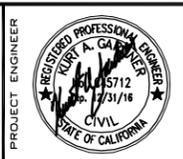
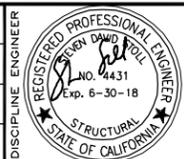
NOTES:

1. DEMO. (E) HANDRAIL/GUARDRAIL, SEE NOTE 3 DRWG No. S10-1.
2. DEMO. (E) CONC. WALLS, SEE NOTE 5 DRWG No. S10-1.
3. DEMO. (E) GRATING FOR PIPE PENETRATION, SEE NOTE 8 DRWG No. S10-1.
4. REPAIR (E) CONCRETE THAT IS SPALLED, SEE NOTE 4 DRWG No. S10-3.
5. GROUT POCKET, SEE NOTE 5 DRWG No. S10-3.
6. CONFIGURE NEW HANDRAIL/GUARDRAIL WITH COMPONENTS TO MEET 'GAP' REQUIREMENTS, SEE NOTE 6 DRWG No. S10-3.
7. FOR NEW HANDRAIL/GUARDRAIL POST SPACING REQUIREMENTS, SEE NOTE 7 DRWG No. S10-3.
8. TIE IN NEW HANDRAIL/GUARDRAIL TO (E) HANDRAIL/GUARDRAIL, SEE NOTE 8 DRWG No. S10-3.
9. BAND (E) GRATING AT NEW PIPE PENETRATION, SEE NOTE 10 ON DRWG No. S10-3.
10. DEMO. (E) SST PLATE WEIR AND ANCHORS, SEE NOTES 9 DRWG No. S10-1 & 3 DRWG No. S10-3.
11. CLEAN AND RE-COAT (E) HANDRAIL/GUARDRAIL, SEE NOTE 12 ON DRWG No. S10-3.

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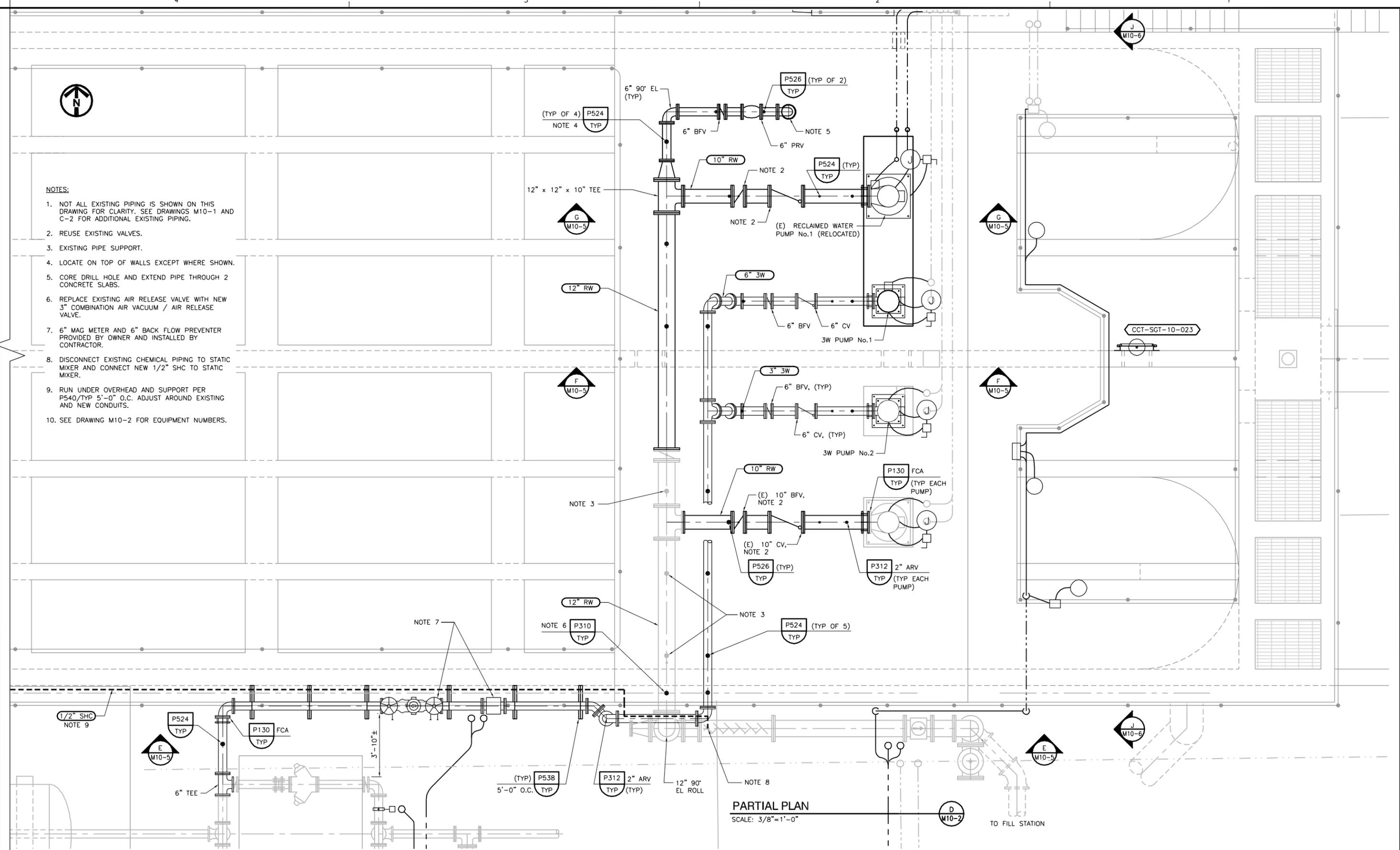
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CITY OF MANTECA
WQCF RECLAIMED WATER IMPROVEMENTS PROJECT
STRUCTURAL
CHLORINE CONTACT TANK
PHOTOS

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1" = 10'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

JOB NO.
2015-113 T01
DRAWING NO.
S10-5-A2
SHEET NO.
22 OF 62

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- NOTES:**
1. NOT ALL EXISTING PIPING IS SHOWN ON THIS DRAWING FOR CLARITY. SEE DRAWINGS M10-1 AND C-2 FOR ADDITIONAL EXISTING PIPING.
 2. REUSE EXISTING VALVES.
 3. EXISTING PIPE SUPPORT.
 4. LOCATE ON TOP OF WALLS EXCEPT WHERE SHOWN.
 5. CORE DRILL HOLE AND EXTEND PIPE THROUGH 2 CONCRETE SLABS.
 6. REPLACE EXISTING AIR RELEASE VALVE WITH NEW 3" COMBINATION AIR VACUUM / AIR RELEASE VALVE.
 7. 6" MAG METER AND 6" BACK FLOW PREVENTER PROVIDED BY OWNER AND INSTALLED BY CONTRACTOR.
 8. DISCONNECT EXISTING CHEMICAL PIPING TO STATIC MIXER AND CONNECT NEW 1/2" SHC TO STATIC MIXER.
 9. RUN UNDER OVERHEAD AND SUPPORT PER P540/TYP 5'-0" O.C. ADJUST AROUND EXISTING AND NEW CONDUITS.
 10. SEE DRAWING M10-2 FOR EQUIPMENT NUMBERS.

PARTIAL PLAN
SCALE: 3/8"=1'-0"

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AUGUST 2016



HERWIT ENGINEERING

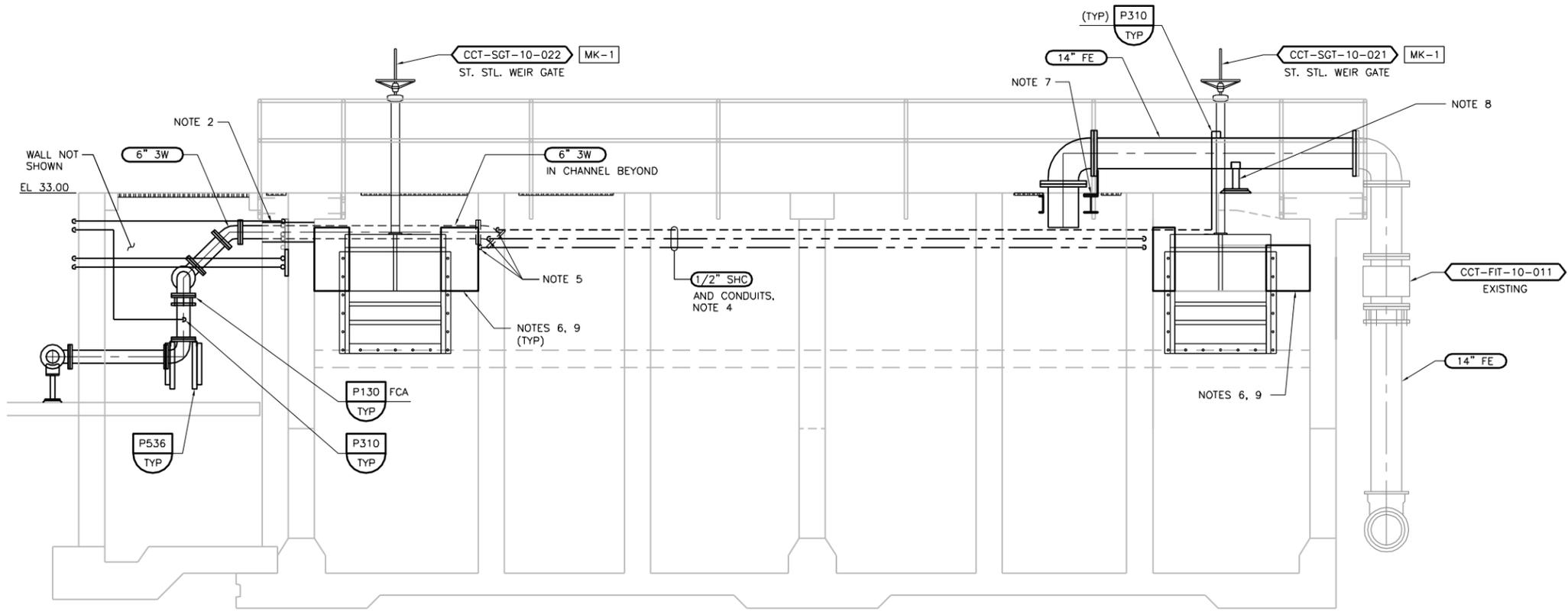


CITY OF MANTECA
 WQCF RECLAIMED WATER IMPROVEMENTS PROJECT
 MECHANICAL
 CHLORINE CONTACT TANK
 PARTIAL PLAN

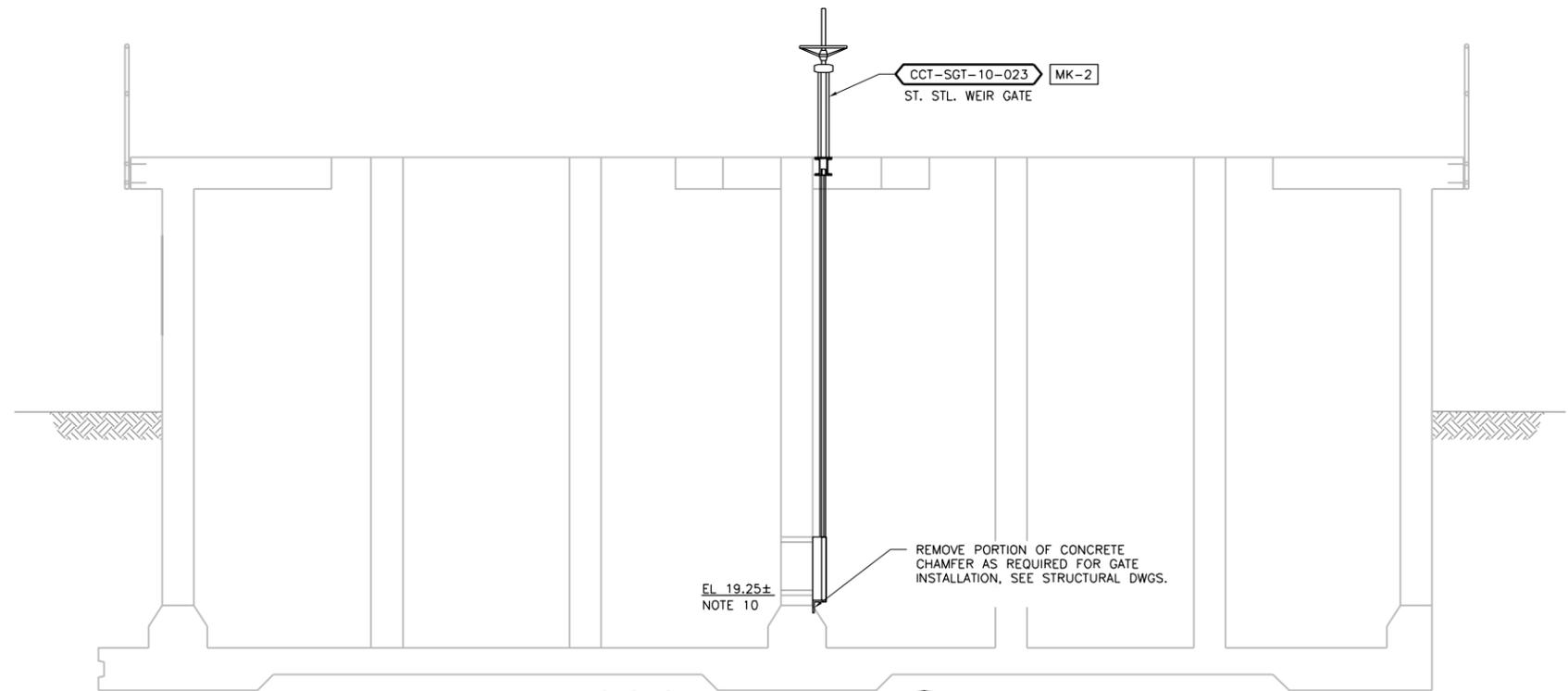
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2015-113 T01
 DRAWING NO.
M10-4-A2
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28 OF 62

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SECTION H-M10-2/M10-3
SCALE: 3/8"=1'-0"



SECTION J-M10-4
SCALE: 3/8"=1'-0"

- NOTES:**
1. INSTALL FL x FL SPOOL ON EACH END OF RISER SECTION TO MATCH NEW PIPING ELEVATION. REUSE EXISTING FL 90° ELBS.
 2. CORE DRILL AND LINK SEAL FOR 6" 3W PIPE.
 3. INSTALL 304 ST. STL. P1001 DOUBLE UNISTRUT WITH END BRACKETS 304 ST. STL. BETWEEN CHANNEL WALLS WITH END BRACKETS. PROVIDE 304 ST. STL. U-BOLT TO SUPPORT PIPE.
 4. RUN 1/2" SHC AND CONDUITS ON COMMON ST. STL. UNISTRUT 5'-0" TYP.
 5. CORE DRILL AND PENETRATE WALL UNDER STAIR LANDING. PROVIDE LINK SEAL ON PIPE AND CONDUITS.
 6. REMOVE EXISTING WEIR. ENCLOSE OPENING PER STRUCTURAL DRAWINGS. MOUNT NEW ST. STL. GATE AND CUT AND BAND EXISTING GRATING AND GRATING SUPPORTS TO ACCOMMODATE GATES.
 7. SEE STRUCTURAL DRAWINGS FOR SUPPORT DETAILS.
 8. RELOCATE EXISTING SUPPORT.
 9. WEIR GATE OPERATING EL FROM 29.15± TO 31.15±. CONTRACTOR TO FIELD VERIFY EL OF (E) CONCRETE WEIR WALL AND COORDINATE WITH ENGINEER PRIOR TO SLIDE GATE SHOP DRAWING SUBMITTAL.
 10. CONTRACTOR TO FIELD VERIFY EL OF (E) OPENING AND COORDINATE WITH ENGINEER PRIOR TO SLIDE GATE SHOP DRAWING SUBMITTAL.

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CITY OF MANTECA

CITY OF MANTECA
 WQCF RECLAIMED WATER IMPROVEMENTS PROJECT
 MECHANICAL
 CHLORINE CONTACT TANK SECTIONS

VERIFY SCALES
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JOB NO.
2015-113 T01
 DRAWING NO.
M10-6-A2
 SHEET NO.
30 OF 62

This Addendum No. 2, pages 1 through 32, shall become part of the Contract and all provisions of the Contract shall apply thereto.

The Contract Time is not changed.

The Bid Date is not changed by this addendum.

Bidder shall acknowledge receipt of addenda number on the Acknowledgement page of the BID DOCUMENTS.

HERWIT ENGINEERING



Kurt A. Gardner, P.E.
R.C.E. No. 45712