

# Landmarks Preservation Commission

## Planning & Development Services Department



### SUPPLEMENTAL STAFF REPORT

September 23, 2020

#### PRESERVATION PLANNING/BOARD BUSINESS

##### AGENDA ITEM 7A: Tacoma Water Facilities Seismic Retrofit

The following additional information was submitted by Tacoma Water:

Tacoma Water is seismically upgrading five facilities that were identified as high-risk and seismically vulnerable. These facilities are considered some of Tacoma Water's most critical because following a major earthquake they would be instrumental in supplying water to emergency facilities and residents. Three of these facilities (Hood Street Chlorination Building, South Tacoma Pump Station, and Water Operations Building) were originally constructed in the 1930's and are eligible for listing on the historic register. Some modifications will be undertaken to two of these three buildings (Hood Street Chlorination Building and Water Operations Building) as part of the seismic upgrade project. While the project's primary goal is to seismically upgrade the facilities, care will be taken to preserve the historic architecture, aesthetics, and character of the buildings.

Modifications to Building Exterior – Seismic upgrades are primarily confined within the existing buildings and are not visible from the exterior. Limited exterior improvements are necessary at the Hood Street Chlorination Building and Water Operations Building. The existing exterior wall piers at both of these two buildings are overstressed. Consequently, infilling the existing window openings with reinforced concrete is required to strengthen the exterior walls. The window infill consists of concrete that is connected to the existing wall structure by drilling and embedding the reinforcing bars into the existing wall structure. The infilled concrete will be flush with the exterior face of the wall.

To maintain the architecture of the existing building and the appearance of the windows, false window frames with the cross-hatched mullions matching the existing windows will be mounted in front of each concrete infill section. The face of the concrete infill behind the frames will be painted black to differentiate this space from the surrounding wall piers and to provide the appearance of visual access to the interior of the structure. At the Hood Street Chlorination Building, nearly all of the windows must be infilled to provide the added structural strength required. Note that this building is on a restricted site and is not visible to the public. At the Water Operations Building, which is more prominent and directly visible to the public, only approximately one third of the windows will be infilled. Almost half of these window infills will not be directly visible to the public.

The Water Operations Building has an existing hose-drying tower that is visible to the public, but from only a few angles that mainly face the back of the building. The hose-drying tower will be demolished and removed from the overall structure. The hose-drying tower poses a substantial threat of collapse in the event of even a modest earthquake.

**GENERAL CIVIL NOTES**

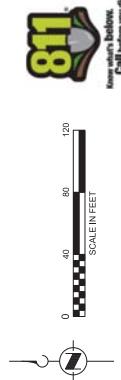
- COORDINATE ACTIVITIES WITH SITE OPERATIONS SO THAT NO INTERFERENCE OCCURS IN THE SIGHTLINE OF THE SITE ENTRANCE, RIGHT-OF-WAY TO ALL TRAFFIC IN THE VICINITY OF THE SITE ENTRANCE.
- EXISTING TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN AS PROPOSED GRADING, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVILY BURDED.
- EXISTING SITE TOPOGRAPHY (AND PLANNED FEATURES) ARE TAKEN FROM AERIAL PHOTOGRAPHS AND HISTORICAL CONSTRUCTION DOCUMENTS. CONSTRUCTION DOCUMENTS FOR THE EXISTING CONDITIONS HAVE NOT BEEN PROVIDED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXISTING CONDITIONS IN CONSTRUCTION AREAS PRIOR TO BEGINNING ACTIVITIES. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THESE PLANS. EXISTING CONDITIONS ARE TO BE DETERMINED BY THE CONTRACTOR ACCORDINGLY. PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES, THE CONTRACTOR DOCUMENTS FOR EXISTING SITE FACILITIES ARE PROVIDED BY REFERENCE.
- DISPENSE OF ALL DEBRIS FROM SITE CLEARING AND EXCAVATION SPILLS ARE WITHIN THE EXCAVATION LIMITS AND IDENTIFIED ON DRAWINGS 10-C-1 THROUGH 10-C-5.
- REMOVE TREES AND/OR SHRUBS LOCATED ADJACENT TO DRAWINGS THAT ARE WITHIN THE EXCAVATION LIMITS AND IDENTIFIED ON DRAWINGS 10-C-1 THROUGH 10-C-5.

GENERAL UTILITY NOTES

- AMERICAN SOCIETY FOR TESTED MATERIALS (ASTM) D471-02

  2. NOTIFY ALL UTILITY PURVYORS PRIOR TO ANY EXCAVATIONS. REFER TO SPECIFICATION SECTION 01 50 02.
  3. THE LOCATIONS, SHOWN FOR EXISTING SUBSURFACE UTILITIES, HAVE BEEN ESTABLISHED BASED ON AVAILABLE INFORMATION (EXISTING RECORD DRAWINGS, AERIAL PHOTOGRAPHS, AND SURFACE FEATURES). LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE. THE LOCATION IN ALL AREAS THAT MAY BE EXCAVATED IS UNKNOWN. THE CONTRACTOR WILL NOT BE HELD RESPONSIBLE FOR THE INJECTION OF SPILLS OR LEAKS INTO THE EXISTING UTILITIES. THE CONTRACTOR IS NOT RESPONSIBLE FOR THE EXISTENCE OF ANY UTILITIES IN THE EARTH, DEPTH OR HEIGHT OF ALL UNDERGROUND AND OVERHEAD UTILITIES WITHIN THE LIMITS OF CONSTRUCTION.
  4. DETERMINE THE EXTENT OF HAZARDS OR IMPACTS ON CONSTRUCTION ACTIVITIES CREATED BY OVERHEAD OR UNDERGROUND ELECTRICAL POWER, TELEPHONE, CABLE, TV, AND OTHER LINES IN ALL AREAS, AND FOLLOW FEDERAL, STATE, AND LOCAL REGULATIONS.
  5. PROTECT AND PRESERVE FROM DAMAGE DURING CONSTRUCTION ALL EXISTING UTILITIES AND FACILITIES AS SHOWN OR AS SPECIFIED. REPAIR DAMAGES TO EXISTING FEATURES AT CONTRACTOR'S SOLE EXPENSE.
  6. PROVIDE TEMPORARY FENCING AS NECESSARY TO MAINTAIN SECURITY AT ALL TIMES.
  7. ONSITE ELECTRICAL POWER SOURCES PROVIDE ADEQUATE POWER CIRCUITS (120V-20A OUTLETS) TO SUPPORT CONSTRUCTION ACTIVITIES WITHOUT ANY SPECIAL REQUIREMENTS (POWER FEED, OR METER). COORDINATE WITH OWNER REGARDING THE LOCATION OF POWER (400-AUPS) CO-OPS. USE CONTRACTOR'S BREAKER TRAMS, COORDINATE WITH SITE STAFF TO REFER TO NO CONNECT TO HIGHER VOLTS/AMPERAGE CIRCUITS THAT ARE REQUIRED TO CONNECT IF A BREAKER IS TRIPPED.
  8. WATER IS AVAILABLE FOR CONTRACTOR USE VIA A 2-INCH FIRE HOSE CONNECTION LOCATED IN CLOSE PROXIMITY TO THE VUMP STATION WELL WITH HEI DRAWING 10-C-004 AND C-005 FOR LOCATION OF WATER WELL CONNECTION FOR RESERVOIR WASHDOWN.
  9. TAKE ALL PRECAUTIONS TO PROTECT AND SUPPORT FACILITIES AND UTILITIES, DRAINS AND PIPELINES THAT REMAIN, WILL BE REPAIRED AT THE CONTRACTOR'S SOLE EXPENSE.

DATUM HORIZONTAL DATUM WASHINGTON STATE PLANE C VERTICAL DATUM



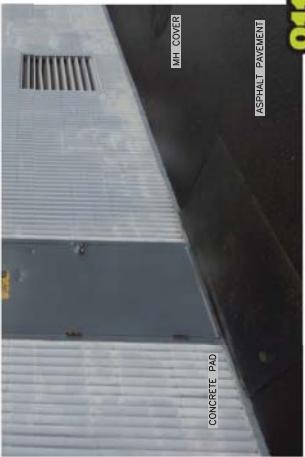
OVERALL PLAN  
SCALE: 1" = 40'-0"



CHLORINATION BUILDING  
SOUTHWEST CORNER



PUMP STATION BUILDING  
EAST FACE



PUMP STATION BUILDING  
EAST FACE



CHLORINATION BUILDING  
WEST FACE



PUMP STATION BUILDING  
NORTHEAST CORNER



PUMP STATION BUILDING  
WEST FACE



CHLORINATION BUILDING  
NORTHWEST CORNER



CHLORINATION BUILDING  
EAST FACE



PUMP STATION BUILDING  
SOUTH FACE



CHLORINATION BUILDING  
NORTH FACE



CHLORINATION BUILDING  
SOUTH FACE



PUMP STATION BUILDING  
SOUTH FACE







NOTES:

1. REPAIR ALL CONCRETE CRACKS PER SPEC SECTION OS 01, 32 AND OS 01, 33.
2. PREPARE BUILDING FACE FOR PAINTING PER SPEC SECTION 09, 90.
3. POWER WASH ALL GLAZED TERRA COTTA COLUMN CAPS.
4. REPAIR AND PREPARE DOORS FOR PAINTING PER SPEC SECTION 09, 90.

WALL FINISH LEGEND

- WALL FINISH WF1
- WALL FINISH WF2
- WALL FINISH WF3

ORIGINAL LIGHT FIXTURES PREVIOUSLY REMOVED  
FALSE WINDOW FRAME INSERTS, TYP  
1  
20-A-501

NOTES:

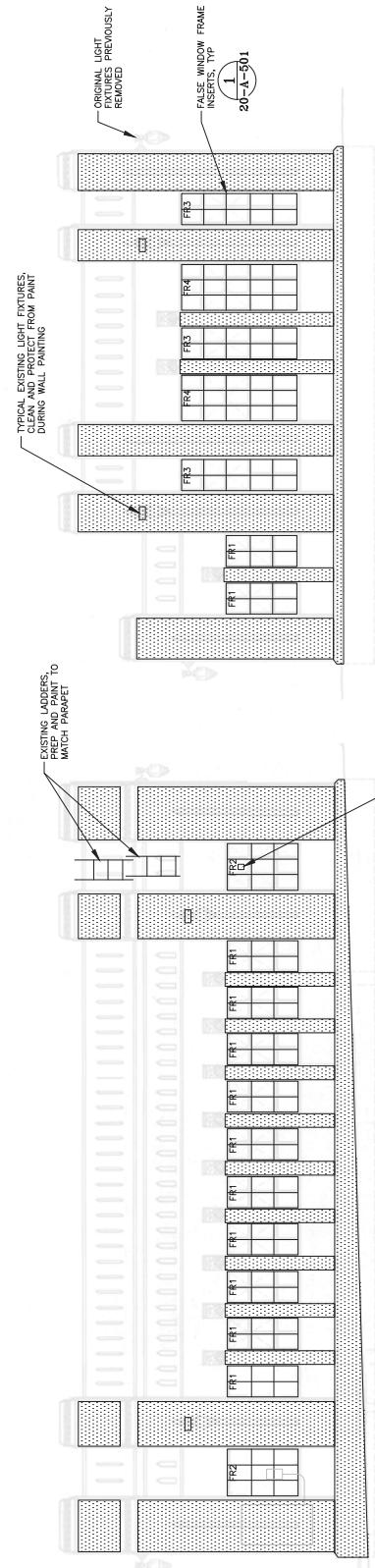
1. REPAIR ALL CONCRETE CRACKS PER SPEC SECTION OS 01, 32 AND OS 01, 33.

2. PREPARE BUILDING FACE FOR PAINTING PER SPEC SECTION 09, 90.

3. POWER WASH ALL GLAZED TERRA COTTA COLUMN CAPS.

4. REPAIR AND PREPARE DOORS FOR PAINTING PER SPEC SECTION 09, 90.

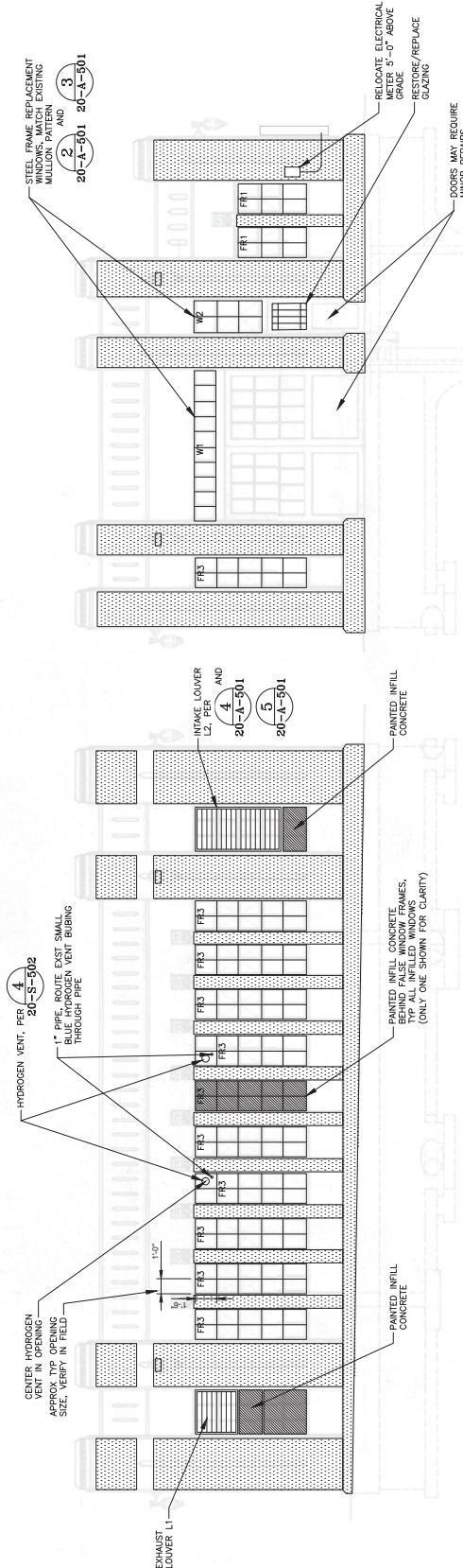
TYPICAL EXISTING LIGHT FIXTURES,  
CLEAN AND PAINT FROM WALL, PAINTING  
PRE-FACE AND PAINT TO MATCH PARAPET



WEST ELEVATION  
SCALE: 1/4"=1'-0"

SOUTH ELEVATION  
SCALE: 1/4"=1'-0"

EAST ELEVATION  
SCALE: 1/4"=1'-0"



NORTH ELEVATION  
SCALE: 1/4"=1'-0"

Jacobs  
ELEVATIONS

TACOMA WATER  
TACOMA PUBLIC UTILITIES

CONTRACTOR DRAWING NO.  
20-A-201  
TACOMA WATER DRAWING NO.  
SHEET 23 OF 37

PLOT DATE: Sep 01, 2020 - 1:56pm  
by: HGUINNNE  
FILE NAME: 20-A-201.dwg

AS SHOWN

DATE: SEPTEMBER 2020

FIELD BOOK REFERENCE:

DOC. REFERENCE:

DESIGNER:

CHANN:

DRAWN:

TOUCHUP PROJECT NAME:

SECTION UPDATES:

TOUCHUP ADDRESS:

MAIL ADDRESS:

DOOR NUMBER:

CHECKED:

DATA FILE:

PRINTED:

REV:

REC'D:

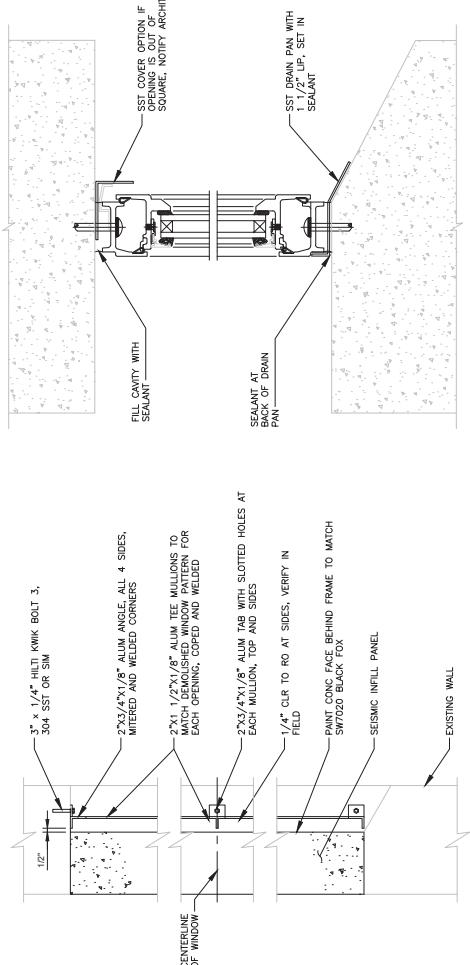
REC'D DATE:

REC'D BY:

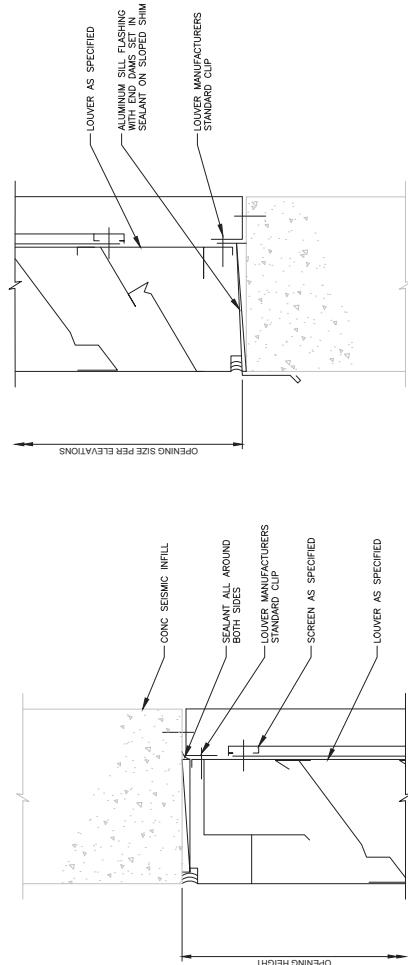
DESIGN, INTEGRATION, AND CONSTRUCTION

ИТАЛИЯ: 1500-1600-1700-1800-1900-2000

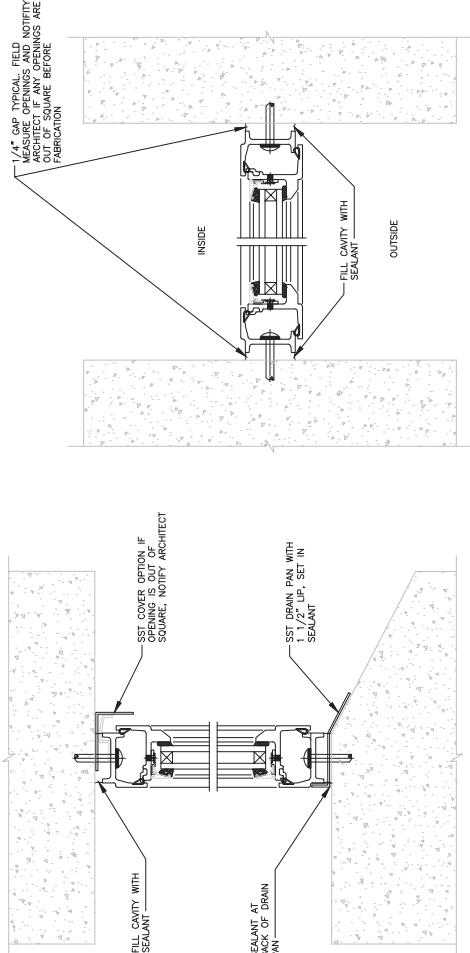
Задачи по физике



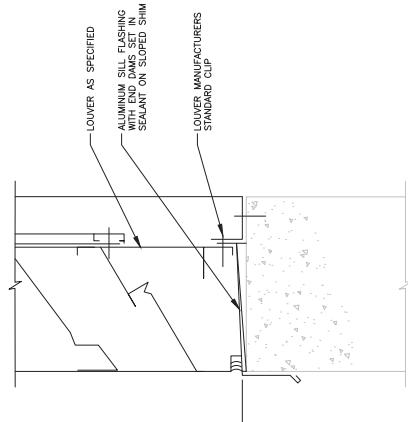
FALSE WINDOW FRAME DETAIL 20-A-201  
SCALE: 1 / 1/2" = 1'-0"  
WINDOW INFILL HEAD AND SILL DETAIL 20-A-201  
SCALE: 6" = 1'-0"



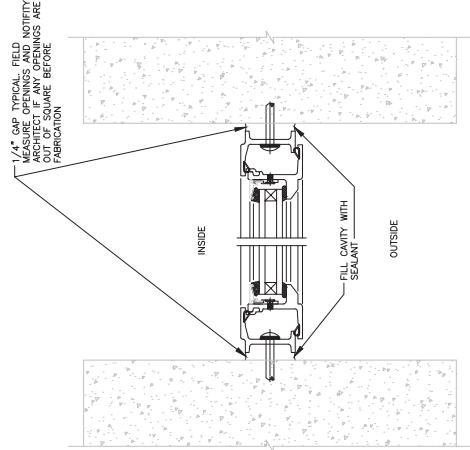
LOUVER HEAD DETAIL 4  
20-A-201  
SCALE: 6" = 1'-0"



WINDOW INFILL HEAD AND SILL DETAIL 2 20-A-201



**Louver Sill Detail**   
Scale: 6" = 1'-0"

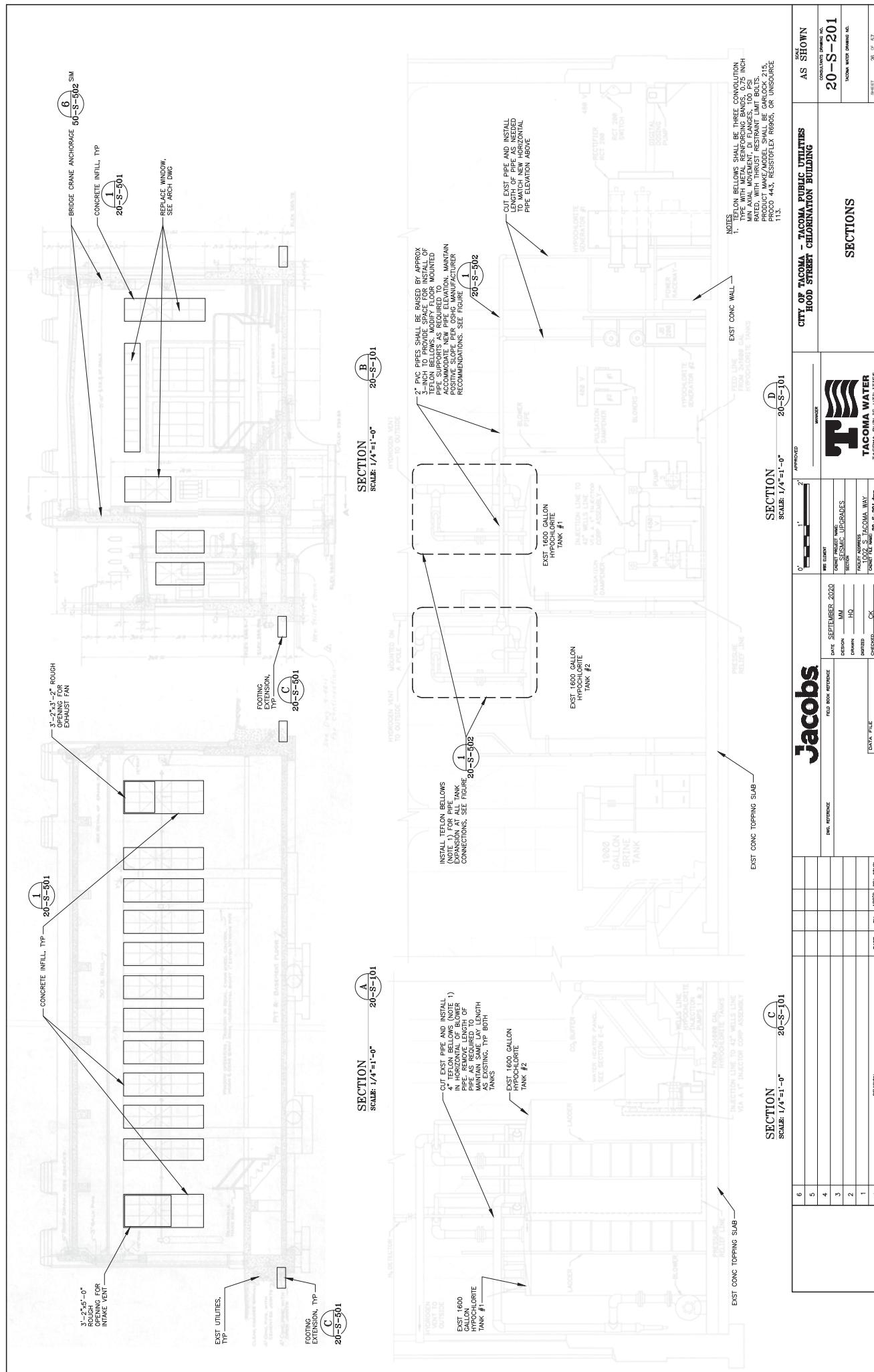


WINDOW INFILL JAMB DETAIL 3  
 SCALE: 6'-1"-0"  
 20-A-201

L1	5'-2"	3'-2"
L2	5'-0"	3'-2"

SCALE	AS SHOWN
CONSULTANT DRAWING NO.	<b>20-A-501</b>
TACOMA WATER DRAWING NO.	
SHEET	24 OF 67

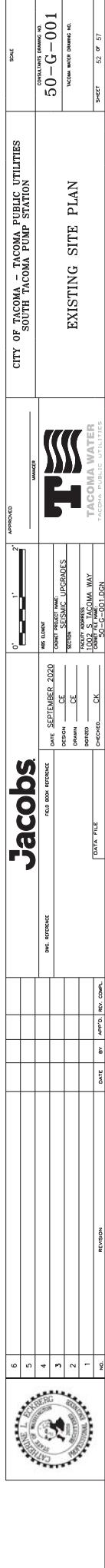


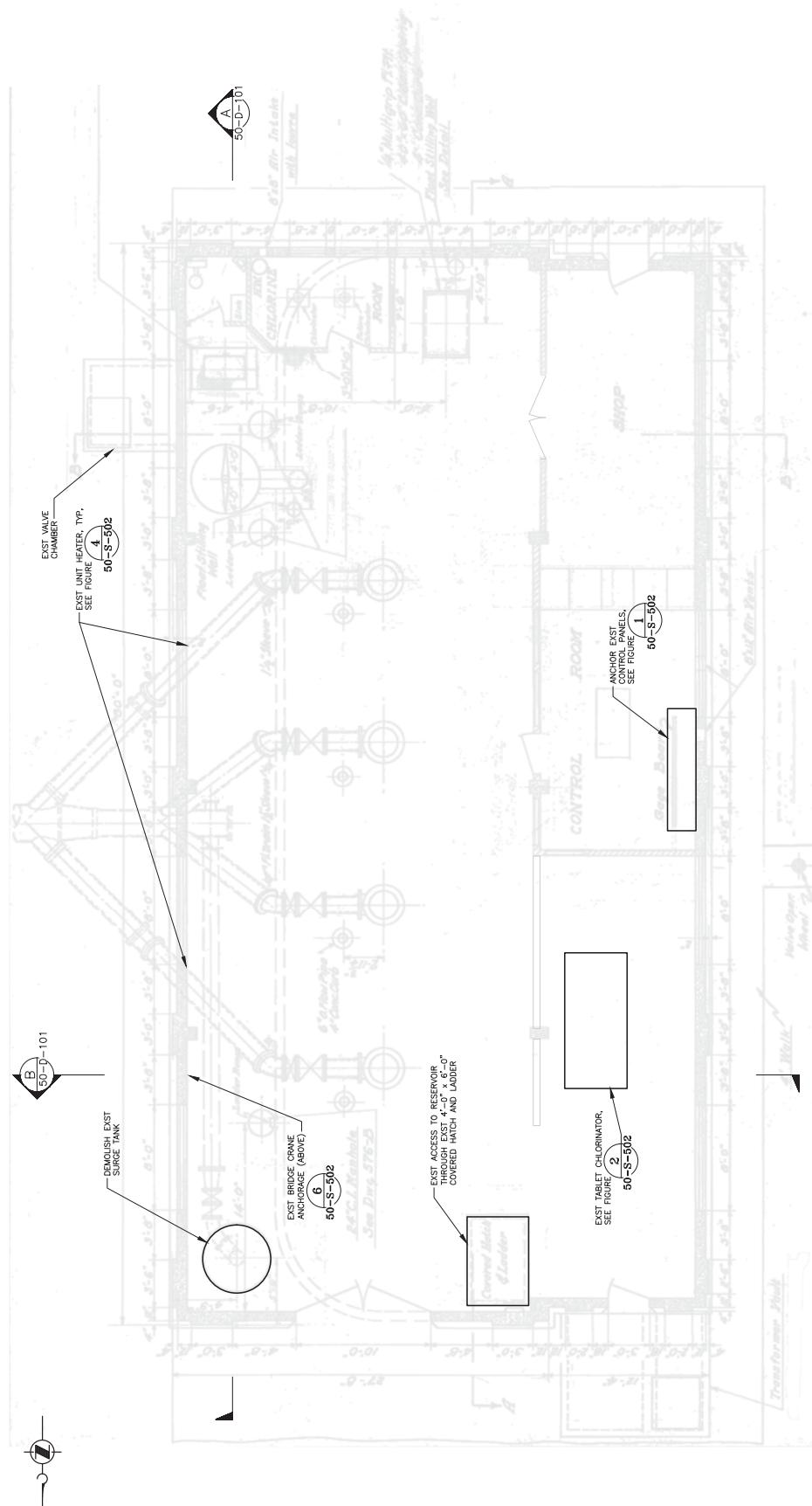


#### GENERAL NOTES

1. COORDINATE WITH SITE OPERATIONS SO THAT NO INFERFERENCE WITH ON-GOING OPERATIONS OCCURS. YIELD NIGHT-OF-WAY TO ALL TRAFFIC IN THE VICINITY OF THE SITE ENTRANCE.
  2. EXISTING SITE TOPOGRAPHY, STRUCTURES, AND SITE FEATURES ARE SHOWN, PROPOSED GRADING, STRUCTURES, AND SITE FEATURES ARE SHOWN HEAVILY-LINED.
  3. EXISTING SITE TOPOGRAPHY (AND PLANNED FEATURES) ARE TAKEN FROM AERIAL PHOTOGRAPHS AND HISTORICAL RECORD DRAWINGS EXISTING FEATURES MAY VARY FROM THOSE SHOWN ON THESE PLANS. VERIFY EXISTING CONDITIONS AND WORK PLAN ACCORDINGLY PRIOR TO COMMENCING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR ALL PLANS AND DRAWINGS PROVIDED BY THE PROJECT TEAM. SEE APPENDIX E.
  4. PROTECT AND RELOCATE ALL EXISTING UTILITIES AND SERVICES. IF POSSIBLE, SET UP MONITORING STATION AND MONITORING TO CONFIRM AS SPECIFIED DAMAGE TO EXISTING FEATURES ASSOCIATED WITH CONSTRUCTION ACTIVITIES WILL BE REPAIRED AT CONTRACTOR'S EXPENSE. CONTRACTOR IS RESPONSIBLE FOR ALL PROPERTY DAMAGE TO EXISTING UTILITIES AND SERVICES. CONTRACTOR IS RESPONSIBLE FOR RESTORING PROPERTY TO ORIGINAL OR BETTER CONDITION.
  5. COORDINATE WITH RUMBLE STATION OPERATIONS STAFF TO DISMANTLE AND WORKSPACE INSIDE THE BUILDING FOR MATERIAL STORAGE AND WORK SPACE.
  6. ONSITE ELECTRICAL POWER SOURCES PROVIDE INDEPENDED POWER CIRCUITS FOR SITES. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND LOCATING SPECIAL REQUIREMENTS (POWER SOURCE, FUSE, METER, CORDING) WITH OWNER REGARDING THE LOCATION OF POWER HOUSING. USE BY CONTRACTOR FOR VENTILATION/HEATING EQUIPMENT IF DURING CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH SITE STAFF TO REVIEW AND RESPOND IF A BREAKER IS TRIPPED.
  7. WATER IS AVAILABLE ON SITE FOR CONTRACTOR USE. OA 2-INCH FIRE HOSE CONNECTION LOCATED IN CLOSE PROXIMITY TO THE STATION.
  8. STREET PARKING IS AVAILABLE ON S. CLEMENT AVENUE, LIMITED PARKING SPACES ARE AVAILABLE ON S. CLEMENT AVENUE. CONTRACTOR IS RESPONSIBLE FOR PARKING PAYMENT FEES.

90% DESIGN, NOT FOR CONSTRUCTION





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

FLOOR PLAN		CITY OF TACOMA - TACOMA PUBLIC UTILITIES AS SHOWN	
		CITY OF TACOMA - SOUTH TACOMA PUMP STATION	
Jacobs			
DATE: SEPTEMBER 2020	APPROVED	50-G-002	CONTRACT DRAWING NO.
FIELD BOOK REFERENCE	MM	TACOMA WATER COMPANY	50-G-002
DOC. REFERENCE	DESIGNER: HQ	SECTION: SEISMIC UPGRADING	FACTORIES, WORKSHOPS, ETC.
	DRAWN: CK	TAUCOMA, S. TACOMA AVE.	GENERAL TRADES: SEE CONTRACTS
	SUPERVISED: CK	DOCKS, WHARFS, ETC.	TACOMA ELECTRIC UTILITIES
	REVIEWED:		
	DATE: 09/2020 REC'D. REC'D. DATE:		



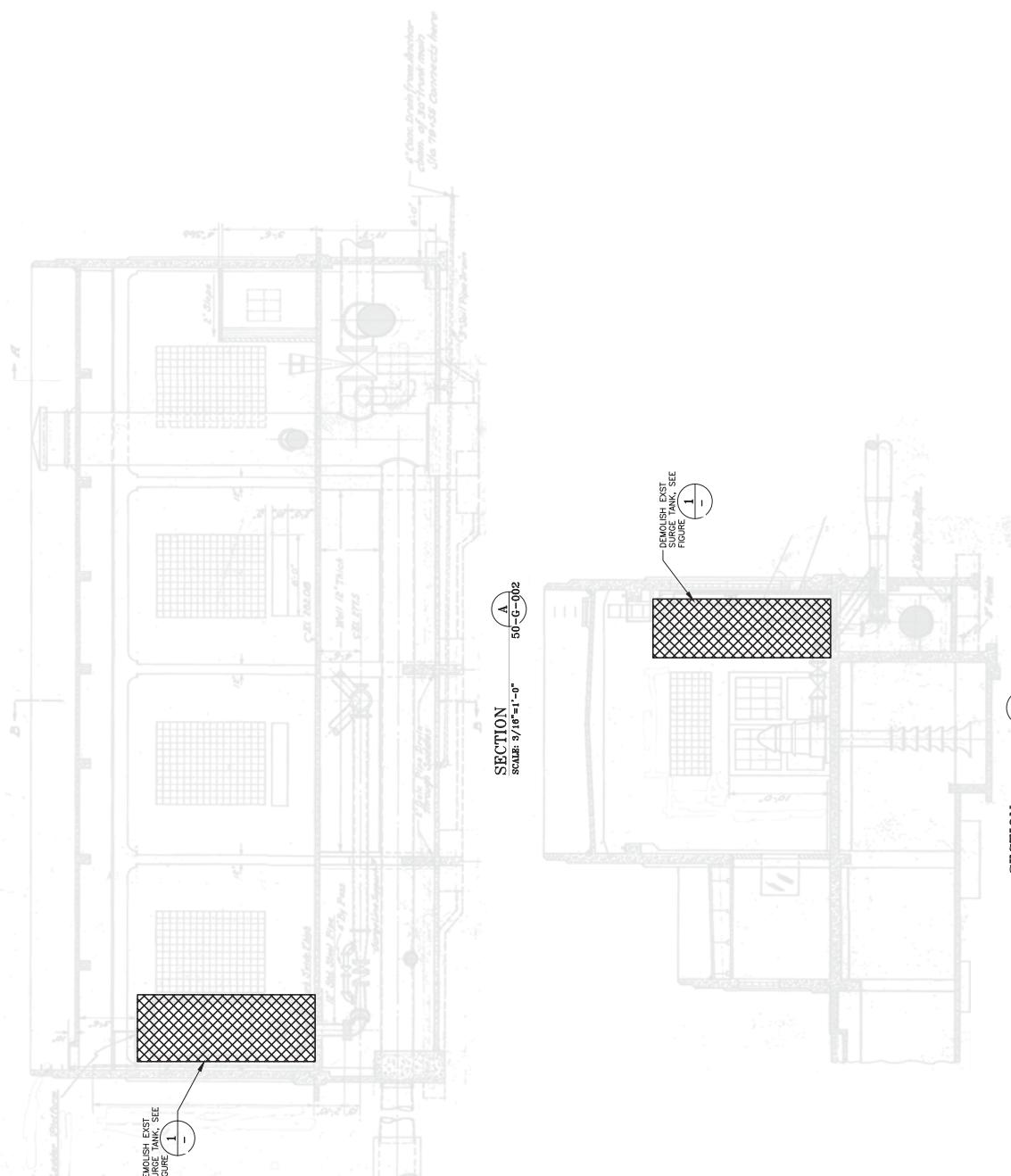
- INSTALL BLIND FLANGE  
OVER EXST CONNECTION  
TO 12" STEEL PIPE

NOTE

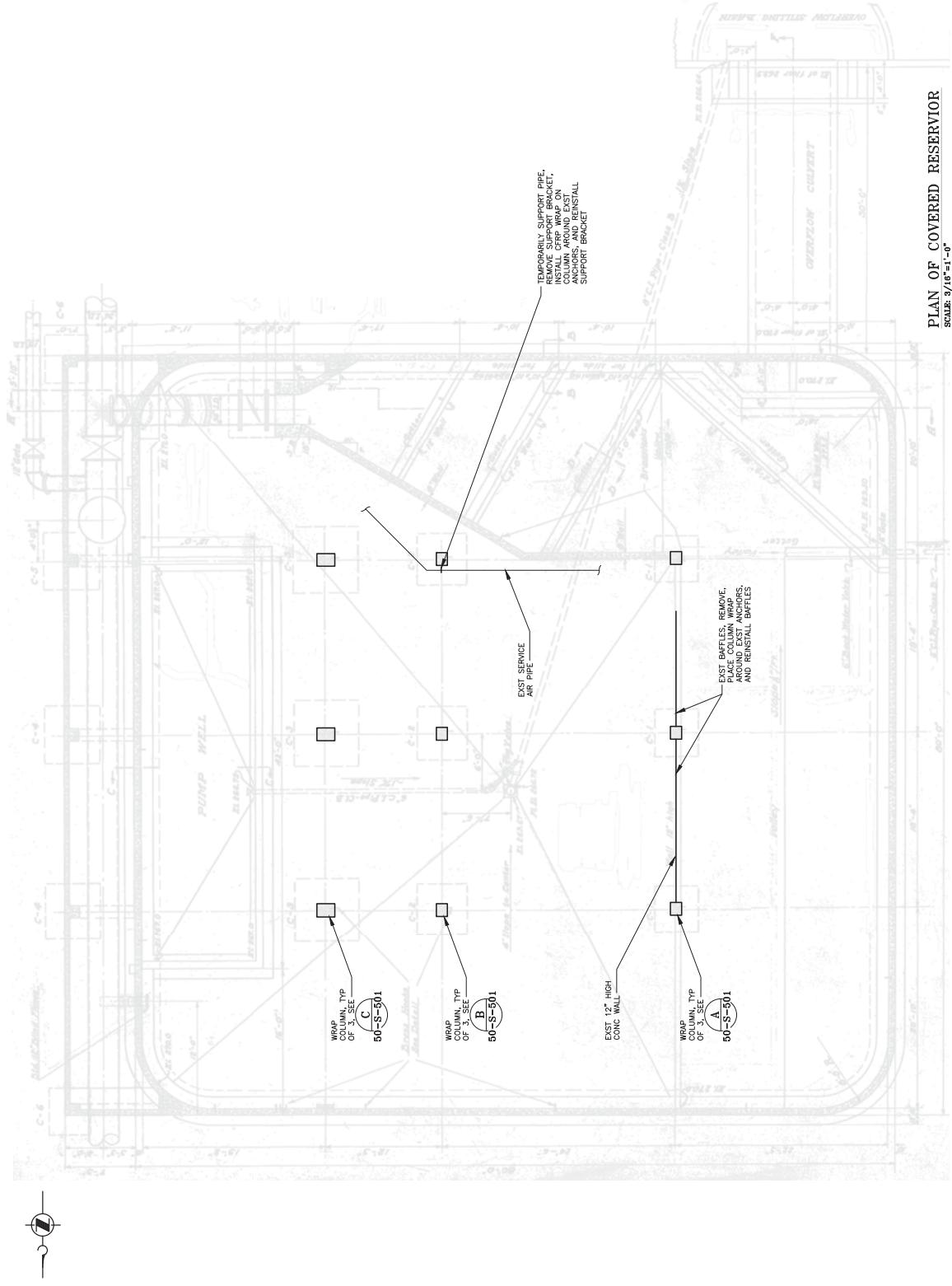
**NOTE:**

1. CORE DRILL 2" DIA HOLE, 1 1/2" DEEP, AND CHIP AND GRIND TO REMOVE EXISTING EQUIPMENT ANCHORS TO 1 1/2" MIN BELOW TOP OF EXIST CONC. CLEAN AND SOAK, AND PATCH WITH REPAIR MATERIAL.

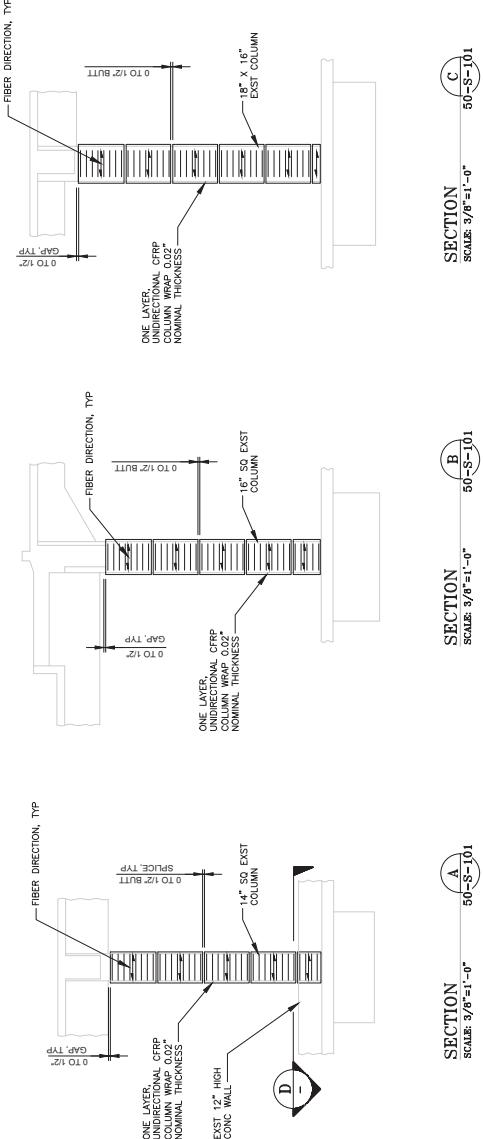
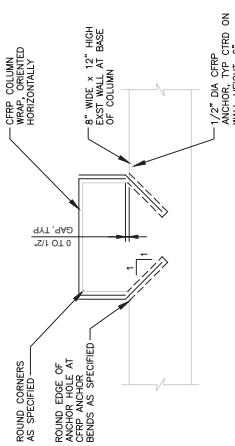
**FIGURE**  
SCALE: NTS



NOTES  
1. FOR GENERAL STRUCTURAL NOTES, SEE DRAWING  
1-0-G.  
2. TO RECEIVE CRIMP STRENGTHENING SYSTEM, PREPARE SURFACES OF COLUMNS TO BE WRAPPED IN ACCORDANCE WITH THE REQUIREMENTS FOR CONCANT-CRITICAL APPLICATIONS IN SECTION 3 OF THE POMER STRENGTHENING SYSTEM. REPAIR CRACKS WIDER THAN  $\frac{1}{8}$ " AS SPECIFIED.  
3. CRIMP STRENGTHENING SYSTEM FOR COLUMNS SHALL BE APPLIED ON ALL EXPOSURE SURFACES.  
4. DAMAGE DURING CONSTRUCTION, DUST, OR



**PLAN OF COVERED RESERVOIR**  
SCALE: 3' / 16" = 1'-0"

SECTION  
SCALE: 3/8"=1'-0"  
50-S-101SECTION  
SCALE: 3/8"=1'-0"  
50-S-101SECTION  
SCALE: 1 1/2"=1'-0"  
50-S-101SECTION  
SCALE: 1 1/2"=1'-0"  
50-S-101

D

Jacobs		APPROVED		CITY OF TACOMA - TACOMA PUBLIC UTILITIES AS SHOWN	
DATE	SEPTEMBER 2020	NAME		DESIGNER	50-S-501
DOC. REFERENCE		DESIGN	MM	OWNER	TACOMA PUBLIC UTILITIES
		DRAWN	HO	SEISMIC UPGRADING	TACOMA WATER
		DESIRED	CK	TACOMA S. AVENUE	TACOMA, WASHINGTON
		DATA FILE		DACTILE FLOOR SLAB-S-101	SOFT ROCK
REVISION	REV	REF'D	REC'D	RECD	RECD

DETAILS



TACOMA WATER

TACOMA, WASHINGTON

50-S-501

SOFT ROCK



A large industrial water treatment unit, likely a reverse osmosis system, is shown. The unit is white with several blue and orange horizontal pipes in front. A vertical pipe on the left has a yellow triangular hazard label with the number '2' and the word 'DANGER'. To the right, there's a metal frame holding multiple black cylindrical components, possibly filters or membranes. A black strap with a white buckle is draped over the top of the frame.

A large, light-colored metal cabinet with a control panel featuring a small screen and two circular ports.

**NOTES:**

1. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS OF EXISTING BRAKE, SIZE OF NEW ANGLES SHALL MATCH EXISTING.
2. WELD NEW ANGLES TO EXISTING WITH .317 FILLET WELD.
3. COAT NEW ANGLE AND REPAIR DAMAGED COATING ON EXISTING BRACE AFTER WELDING PER SPEC 09 90 00.
4. UNINSTALL UNIT HEATER TO INSTALL NEW RACING. REINSTALL UNIT AFTER BRACING INSTALLATION.

4  
50-G-002

DETAIL      SCALE:  $1/2'' = 1' = -0''$

FIGURE  
SCALE: NTS  
 $\frac{2}{50-G-002}$

FIGURE  
SCALE: NTS

NOTC  
MARK: TOP OF CHASSIS ELEVATION ON WALL ALONG  
LENGTH OF TRAVEL PRIOR TO ANCHOR INSTALLATION  
FOR RESTRAINT ANGLED TEE CRANE TRAVEL  
ANGLE TO ALLOW FREE TRAVEL AS  
REQUIRED TO

IT BRIDGE

IT CHASSIS

IT CRANE

IT 30' CRANE

10' 0"

**ELECTRICAL PANEL ANCHORAGE**

NOTES:

1. IF ELECTRICAL PANEL EQUIPMENT IS EQUAL TO OR GREATER THAN 6'-0" PROVIDE ADDITIONAL SEISMIC ANCHORAGE AS SHOWN.
2. LOCATE ANGLES 3" FROM EACH EDGE OF EQUIPMENT.

**BRIDGE CRANE ANCHORAGE**  
SCALE: NTS

DETAIL  
SCALE: NTS

**DETAIL**      SCALE: 1" = 1' = 0"

SCALE	AS SHOWN
CONTRACTORS DRAWING NO.	
<b>50-S-502</b>	
TACOMA WATER DRAWING NO.	
SHEET	47 OF 47

DETAILS

30-S-502

SCALE  
CONTRACTING DRAWING NO.  
**50-S-502**  
TODDCA WATER DRAWING NO.  
SH1001  
8-7 OF 8-7

DETAIL  
SCALE: 1"

DETAIL		C
SCALE: NTS	7 -	
		
		ANCHORED
		WATER
		
		TACOMA WATER
		TIDE
MEMBER: 2020		
		NEW CHANNEL
		TODAY'S PREVIOUS NAME
		SEISMIC UPGRADES
		SECOND
		TIDE ACCESS ELEMENT, AVE.
		TIDE ACCESS ELEMENT, BLDG. 100
		TIDE TIDE
		CK

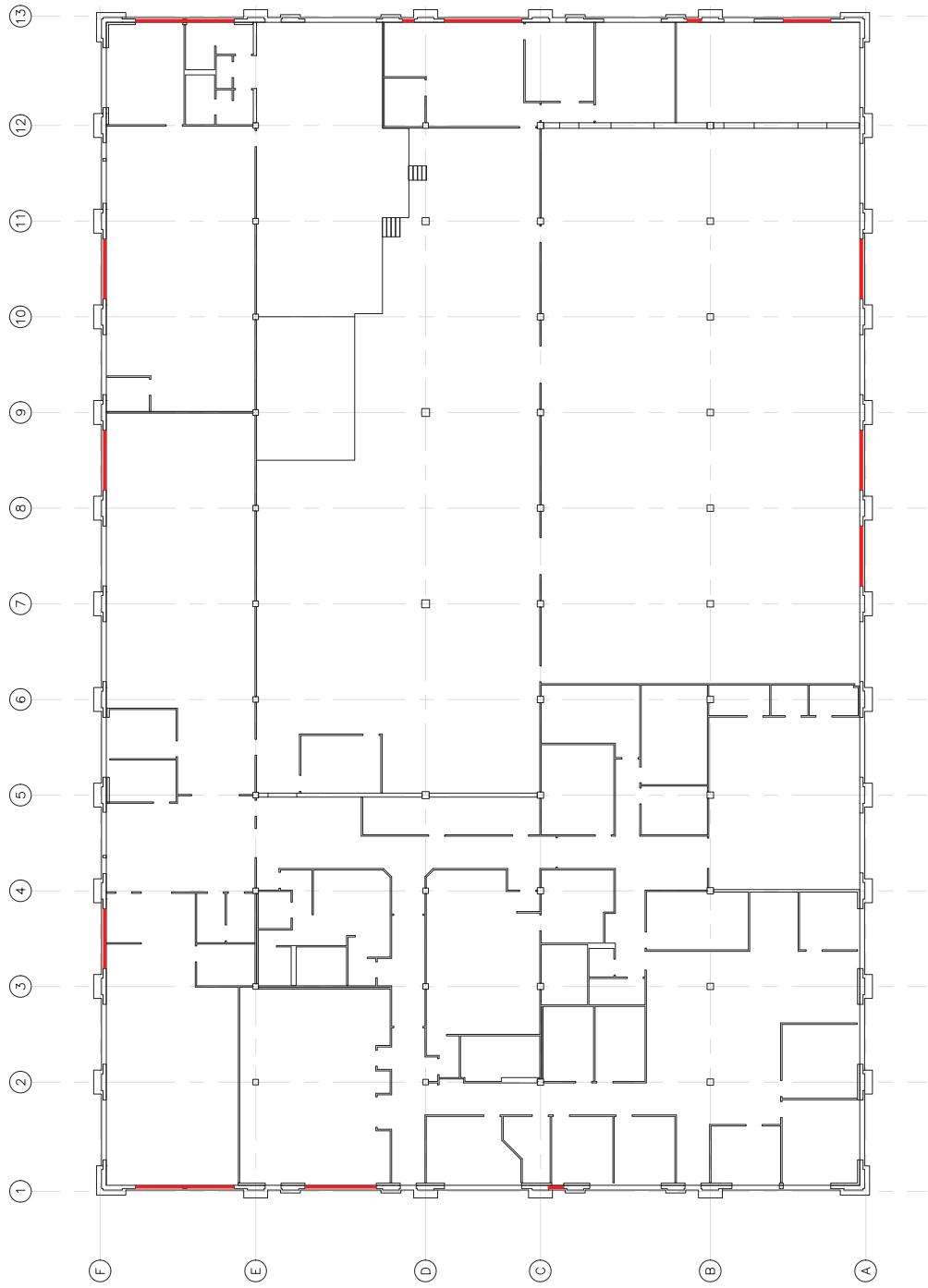
<b>AL PANEL EQUIPMENT IS EQUAL TO OR GREATER PROVIDE ADDITIONAL SEISMIC ANCHORAGE AS LES 3" FROM EACH EDGE OF EQUIPMENT:</b>  <b>AL PANEL ANCHORAGE</b>		<b>(5)</b>	<b>20-S-502</b>	<b>30-S-502</b>
6	5	4	3	2
1	-	-	-	-

90% DESIGN, 10% FOR CONSTRUCTION

PLOT DATE: Sep 02, 2020 - 10:07am by: HQUINNENT

## NEW EXTERIOR CONCRETE WINDOW INFILL LOCATIONS

**NEW EXTERIOR CONCRETE INFILL LOCATIONS**



GENERAL OVERALL FLOOR PLAN



FILE NAME: 01-G-010.dwg		PLOT DATE: Aug 27, 2019 - 9:31am		by: HGUINNEN		SCALE:		AS SHOWN	
CONTRACTORS DRAWING NO.		01-G-010		TACOMA WATER		GENERAL OVERALL FLOOR PLAN			
DESIGNER DRAWING NO.									
SHEET		X or X							
<b>JACOBS'</b>		<b>TACOMA WATER</b>		<b>GENERAL OVERALL FLOOR PLAN</b>		<b>TACOMA WATER OPERATIONS BUILDING</b>		<b>AS SHOWN</b>	
FIELD BOOK REFERENCE		DATE: AUG 2019		APPROVED		MANAGER		CONTRACTORS DRAWING NO.	
DOC. REFERENCE		DESIGNER		TACOMA WATER OPERATIONS BLDG		01-G-010		01-G-010	
FIELD BOOK NUMBER		CHANN		TEST QUALITY		TACOMA WATER OPERATIONS BLDG		TACOMA PUBLIC UTILITIES	
FIELD BOOK NUMBER		DRAFTED		WATER TESTS		WATER TESTS		TACOMA PUBLIC UTILITIES	
FIELD BOOK NUMBER		CHECKED		WATER TESTS		WATER TESTS		TACOMA PUBLIC UTILITIES	
FIELD BOOK NUMBER		DATA FILE		WATER TESTS		WATER TESTS		TACOMA PUBLIC UTILITIES	
FIELD BOOK NUMBER		REVISION		DATE		REV		REV COMB	