I. DESIGN CRITERIA

A. GENERAL BUILDING CODE

1. The Construction Documents are based on the requirements of the 2013 Edition of California Building Code (13 CCBC, A.D.C.) and IBC 2012.

B. WIND LOADS

1. Wind pressures are based on the provisions of the American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures, ASCE 7-10 and the following data is:
   a. Ultimate design wind speed (V_ult): 113 MPH (3 second gust)
   b. Building risk category: II
   c. Wind exposure category: B
   d. Internal pressure coefficient (GCpi): +0.55/-0.55

C. SNOW LOADS

1. Snow loads are based on the American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures, ASCE 7-10 and the following criteria:
   a. Ground snow load (Pg): 20 PSF (in accordance with Section 1608.1.3 of 13CCBC), plus drifting or 30PSF equivalent uniform load, whichever is greater.
   b. Snow importance factor (Is): 1.10

D. SEISMIC DESIGN CRITERIA

1. Seismic loads are based on the American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures, ASCE 7-10 and the following criteria:
   a. 0.2 sec. Spectral Response (Ss) (%g): 0.119 g
   b. 1 sec. Spectral Response (S1) (%g): 0.051 g
   c. Site Class: D (assumed)

E. TRAFFIC DETAILING

1. Traffic details shown in the drawings are being provided to guide and direct traffic and have not been designed to withstand any specific loads.

II. DETAILED INFORMATION OF MAJOR WORK ELEMENTS

II.1 SHORING

Shoring frames details shown in drawings are conceptual only. Actual shoring members and connections may vary depending on the shoring manufacturer's proprietary system available. Shoring of all be installed in strict accordance with manufacturer's specifications. It is necessary that contractor take these such facts into consideration before quoting shoring jobs.

a) Shoring shown in these drawings is an interim, temporary measure to provide supplemental gravity support to the area affected by the failed members.

b) Attached drawings indicate shoring scheme and performance requirements for frames being required. Shoring is designed based on work being performed during summer months, without including snow load.

c) The shoring Contractor of all trades shall are stamp of the shoring to the Engineer for review and approval before executing the installation. Shop drawings shall include the following elements:

   i. Shoring Plans,
   ii. Shoring Beams,
   iii. Shoring Towers,
   iv. Shoring Braces,
   v. Details of attachment of shoring posts to supporting structural members,
   vi Details of shoring post base plates.

II.2 DESIGN CRITERIA FOR SHORING

a) Shoring shall be design for a loads shown on the drawings that service (unfactored) dead load of 3 PSF and unfactored live load of the livability. Provide a minimum safety factor of 2.0 for shoring design. Refer to drawings for required load capacities of individual shoring elements.

b) The area being shored shall not be open to the public during construction activities.

C. INSTALLATION OF SHORING

1. Shoring shall be put in place prior to performing the repairs indicated in the drawings. Shoring shall remain in place during repairs and of all not be removed until all repairs have been completed.
2. All shoring posts must be installed vertically plumb. Provide bracing between adjacent shoring posts as required or shown. Install shoring post bracing per manufacturer's specifications.
3. Shoring posts shall be located under the employee shown in the drawings and positioned so that the base is centered directly on the supporting structural members indicated in the drawings. Contact Engineer if shoring posts cannot be provided as a location indicated in the drawings. If supporting members are part of the foundation, Contractor shall field verify the location of the supporting foundation elements.
4. Shoring posts shall be provided with base plates or a footing so that the load is uniformly distributed to not exceed 300 PSF on the ground/slab.
5. Provide appropriate wedgings at the top and bottom of shoring elements to pre-and eliminating or taking over of shoring posts.
6. It is the Contractor's responsibility to protect the field structure during installation of shoring.
7. Shoring layout shall meet safety and operation requirements of the Owner.
8. Shoring frames details shown in drawings are conceptual only. Actual shoring members and connections may vary depending on the shoring manufacturer's and safety system available.
9. Shoring details installed to strict accordance with manufacturer's specifications.

III. NONDESTRUCTIVE EVALUATION

A. REBAR EMBEDDED IN CONCRETE STRUCTURES

1. Some embedded in concrete structures shall not be damaged during installation or installation of new members requiring installation of rebars. Embedded items may include rebar reinforcement, prestressing reinforcement, ducts, embedded connections, electrical conduits, plumbing, etc.
2. Some embedded in concrete of all be located by non-destructive evaluation prior to performing any work. Contractor shall mark on the structure the location of embedded items and provide a report to the Engineer.
3. Contractor shall not start fabrication of new members, and some embedded in concrete have been located. Contact Engineer if existing embedded items are fairly off location of possibility and/or specified in drawings.

IV. STRUCTURAL STEEL

A. MATERIALS

1. Per AISC Steel in Buildings, all for rolled steel shapes, unless of wet plate, and bars shall be no + steel conforming to AS Section 2.4.
2. AS Specification and Grade: Grade, mark the grade of steel or each shape with a coding during mark shown from workshop, for the purpose of field inspection or proper grade of steel. Unless noted otherwise on the drawings, structural steel shall be as follows:
   a. Wide flange: ASTM A 992
   b. Channels: ASTM A 36
   c. Round Rod: ASTM A 500, Grade B (F y=42 ksi)
   d. Rectangular: ASTM A 500, Grade B (F y=42 ksi)
   e. Steel Pipe: ASTM A 53 Type E or S1 Grade B
   f. Steel Plates, Base Plates, Angle Shapes, and Angle Bars: ASTM A 36
   g. Connection Material: All connection material should be rolled structural shapes or as the drawings indicated from the same special plates, tee/wide shapes, angles, and small plates. Use ASTM A 36 unless a higher grade of steel is required by strength and provided the resulting times are compatible with the connected members.

B. STRUCTURAL BOLTS AND THREADED FASTENERS

1. A 325 Bolts: All bolts in structural connections shall consist to ASTM A 325 Type 1, unless indicated otherwise on the drawings.

C. WELDING

1. Unless noted otherwise, electrodes for welding shall consist to E7018 (SMAW), E70XX (SAW), E70T5(FCAW) or E70S-6 (GMAW).

V. SPECIAL INSPECTIONS

A. The Owner's testing laboratory of all provide special inspection service in accordance with the International Building Code for the following items.

1. Steel Construction:
   a. High-Strength Bolting
   b. Inspection of Structural Steel Welding, Welding Material
   c. Welding of Structural Steel
2. Concrete Construction:
   a. Bolts Installed in Concrete
   b. Epoxy Bolts

B. STATEMENT OF SPECIAL INSPECTIONS

1. Special Inspector is required by the Building Jurisdiction. Refer to Statement of Special Inspections for type and extent of each special inspection and each test. The Statement also indicates whether continuous or periodic inspection is required in the areas listed above above additional information.

VI. FABRIC AND RELATED ACCESSORIES

A. FABRIC USED AT UPWTEE PATCH LOCATIONS SHALL BE PVC MEMBRANE TO MATCH EXISTING, REFER TO MATERIALS INCLUDE:

1. PVC Fabric Materials
2. Sealants

B. FABRIC REPAIRING ACCESSORIES INCLUDE THE FOLLOWING ITEMS TO MEET ASTM Details:

1. Adhesive
2. Tension Wires

C. SUBMIT PRODUCT DATA FOR A 1 PRODUCTS AND ACCESSORIES PRIOR TO FABRICATION.

D. SUBMIT SEQUENCE AND PROCEDURES FOR REPAIRS AND MODIFICATIONS TO FABRIC MEMBRANE AND RELATED ACCESSORIES PRIOR TO TO REPAIRING WORK.

VII. SUBMITTALS

A. SUBMITTAL LIST AND SCHEDULE

1. The Contractor shall prepare a complete and accurate list of all submittal items to be sent to the Structural Engineer prior to the start of construction. This list of all be updated and revised and kept current as the job progresses. The submittal list shall be prepared as shown below:
   a. Shop Drawings
   b. Design Calculations
   c. Product Data, Certificates, Reports, and Other Literature
2. Submittal Requirements:
   a. All shop drawings must be reviewed and electronically stamped by the Contractor prior to submittal.
   b. Contractor shall provide the submittals electronic portable data sheet format (PDF) for the Transmittals.
   c. The contractor from the area drawings of any materials required by the Contract Documents to be furnished shall not rely on the Contractor of the responsibility or furnishing and installing such materials regardless of whether the shop drawings have been reviewed and approved.

B. SUBMITTALS TO BE PROVIDED TO STRUCTURAL ENGINEER

1. Product Submittals: In addition to the submittals required by the project specifications, the following submittals shall be provided:
   a. Epoxy-Modified Cementitious Coating
   b. Concrete Repair Materials
   c. Epoxy Resin for Crack Injection
   d. Epoxy for Bonding Steel Plates
   e. Epoxy for Bonding Fresh Concrete to Hardened Concrete
   f. Epoxy for Coating Rebar, Dowels, or Anchoring Bolts
   g. Layout of Demolition, Angles, Bolts and Anchors to the Structural Frame for Building Re-Cladding Attachment or for attachment of Other Items.
2. Informal Submittals.
   a. The following items are considered informal submittals by the registered design professional (RDP):
      1. Shoring and Backshoring (SAS, RE C)
3. Install fabrication details or shop drawing (SAS).

C. RE PRODUCTION

1. The use of electronic files or reproductions of hard copied documents by any Contractor, Subcontractor, Supplier, Fabricator, or material supplier in lieu of preparation of shop drawings signifies that acceptance of all information shown hereon as correct, and obligates it responsible to any job expense, and is binding upon it, or any person for who work is being rendered.

VIII. MISCELLANEOUS

A. CONTRACT DOCUMENTS

1. It is the responsibility of the Contractor to obtain all Contract Documents and have additions and to submit such set of sheets or all Subcontractors and material suppliers prior to the submittal of shop drawings, fabrication of any structural members, and erection in the field.
2. The contract structural drawings and specifications represent the finished structure, and except where specifically shown do not indicate the method or means of construction. The Contractor shall supervise and direct the work and shall be solely responsible for all construction means, methods, procedures, techniques and safety.

B. CONFLICTS IN STRUCTURAL REQUIREMENTS

1. Where conflicts among the various parts of the repair contract documents, including drawings, general notes, and specifications, the stricter requirements, as determined by the Engineer, shall govern.

C. EXISTING CONDITIONS

1. The Contractor shall verify all dimensions and conditions of the existing building in the field and report any deterioration from assumed conditions shown on the drawings to the Architect and Engineer prior to the fabrication and erection of any members. Existing dimensions shown on the drawings are to general reference only and should not be used in lieu of field verification.
2. Existing construction shown on the drawings was based on from limited site observation. The Contractor of all field verify all construction information.
3. Demolition and/or removal of all existing work of all be performed with great care so as not to jeopardize the structural integrity of the existing building. If any portions of structure or MEP members are designated for demolition/removal, all the work, the Owner shall be notified immediately and additional reinforcement shall be provided at their expense.
4. The Contractor shall notify HVAC working contractor when any building supports are removed to allow the installation of new ones. All shoring methods and sequencing of demolition of all be the responsibility of the Contractor and not the engineer.
5. The Contractor shall perform a survey to locate all existing utilities including underground utilities prior to the start of construction and take care to protect utilities that are to remain in place. Coordinating shall meet public electrical plumbing and emergency protection support for utility and areas outside the work area are to be maintained in operable condition throughout the duration of repairs. Contractor shall make necessary temporary connections to maintain existing utilities in service during the work. Temporary facilitated installation of these systems of all require approval by the Owner.
6. The Contractor shall provide dust, odor, and noise protection and safety measures as necessary for the duration of repairs. Provide all measures necessary to protect the adjacent structure building inside vehicles, facility patrons, and other persons during construction. Such measures of all include, but not limited to temporary loading, shoring, barriers, protective enclosures, and traffic control.
7. The Contractor of all perform a pre-construction condition survey to document site conditions prior to start of work. Submit survey to Owner and the Engineer. Document location and condition of any construction established for removal and restoration.
8. The Contractor shall install all storage required during construction with other materials and commitment to restore conditions to be as acceptable to the Owner.

D. RESPONSIBILITY OF THE CONTRACTOR FOR STABILITY OF THE STRUCTURE DURING CONSTRUCTION

1. Flexibility of structural elements of the structure have been designed by the Structural Engineer to resist the required lateral vertical and lateral forces that could occur in the final completed structure only. The details of the structural frame to resist the required lateral forces shown have the complete installation of the frames. It is the responsibility of the Contractor to provide all required bracing during construction to maintain the stability and safety of all structural elements during the construction process until the repair work is completely installed and all disciplined structural elements (if any) have reached a minimum of 75% of their design strength.

E. CONTRACTOR SUBSTITUTIONS

1. Any materials or products submitted for approval that are different from the material or products specified in the structural contract documents all be considered for approval only if the following criteria are satisfied:
   a. A cost savings to the Owner or assumption are submitted with the request.
   b. The material or product has been approved by the International Code Council (ICC) and the ICC report is submitted with the request.
      1) The ICC's ER has to specifies must reference the building code under which the product is approved.
      2) ICC reports that has been discontinued or the date of product installation will not be accepted.
2. Substitutions not satisfying the above criteria will not be considered.

F. THE STRUCTURAL ENGINEER'S ROLE DURING CONSTRUCTION

1. The Engineer shall not have control nor charge of, and shall not be responsible for, construction means, methods, techniques, sequences, or procedures, for safety precautions and programs in connection with the work, for the acts or omission of the Contractor, Subcontractor or any other persons performing any of the work, or for the failure of any of them to carry out the work in accordance with the contract documents.
2. Periodic site observation by field representatives of Author Professional Associates is solely for the purpose of keeping generally familiar with the progress and quality of the work performed and determining, in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the repair contract documents. This limited site observation should not be construed as exhaustive or continuous to check the quality or quantity of the work, but rather periodic in an effort to guard the Owner against defects or deficiencies in the work of the Contractor.

G. MAINTENANCE STATEMENT

1. All structures require periodic maintenance to extend lifespan and to ensure structural integrity from exposure to the environment. A planned program of maintenance shall be established by the building owner. This program shall include items such as but not limited to patching of structural steel, preventive coatings for concrete, sealing control joints, inspection joints, connections, repair of cracks and voids in concrete, and pressure washing of exposed structural elements exposed to a salt environment or other harsh chemicals.

H. STRUCTURAL MAINTENANCE SYMBOLS AND NOTATIONS

@	AT	LBS	POUNDS
&	AND	LF	LINEAR/LINEAR LENGTH
#	NUMBER	LI BS	LONG LIFE BACK TO BACK
ø	ROUND DIAMETER	LLH	LONG LEG HORIZONTAL
ADDL	ADDITIONAL	LLV	LONG LEG VERTICAL
ABV	ABOVE FINISHED FLOOR	LONG	CONCRETE/RAIN
ANR	ANCHOR	LSH	LONG SIDE HORIZONTAL
AHU	AIR HANDLING UNIT	LSLP	LONG-SLOTTED HOLE PARALLEL
ALT	ALTERNATE	LSLT	LONG-SLOTTED HOLE TRANSVERSE
APPROX	APPROXIMATE	LSV	LONG SIDE VERTICAL
AR	ANCHOR ROD	LWC	LIGHTWEIGHT CONCRETE
ARCH	ARCHITECTURAL	M	MOMENT
BLDG	BUILDING	MAS	MASONRY
BM	BEAM	MAX	MAXIMUM
BO	BOTTOM OF	MFR	MANUFACTURER
BOT	BOTTOM	MIN	MINIMUM
BRGS	BRIDGING	MISC	MISCELLANEOUS
BRG	BEARING	MTL	METAL
BTWN	BETWEEN	NIC	NOT IN CONTRACT
C	CAMBER	NS	NEAR SIDE
CANTIL	CANTILEVER	NTS	NOT TO SCALE
CIP	CAST-IN-PLACE	NWC	NORMAL WEIGHT CONCRETE
CJ	CONSTRUCTION/CONTROL JOINT	OC	ON CENTER
CJP	COMPLETE JOINT PENETRATION	OD	OUTSIDE DIAMETER
CL	CENTERLINE	OPNG	OPENING
CMU	CONCRETE MASONRY UNIT	OPP	OPPOSITE
COL	COLUMN	OVS	OVERSIZED HOLE
CONC	CONCRETE	P	AXIAL LOAD
CONN	CONNECTION	PAF	POWDER ACTUATED FASTENER
CONST	CONSTRUCTION	PAR	PARALLEL
CONT	CONTINUOUS	PCC	PRECAST CONCRETE
COORD	COORDINATE	PCI	POUNDS PER CUBIC FOOT
COV	COVER	PCW	PERPENDICULAR
CPRS	COMPRESSIBLE	PL	PLATE
CTRS	CENTERS	PLF	POUNDS PER LINEAR FOOT
db	BAR DIAMETER	PJP	PARTIAL JOINT PENETRATION
DBA	DEFORMED BAR ANCHOR	PRELIM	PRELIMINARY
DET	DETAIL	PROP	PROPERTY
DIA	DIAMETER	PSF	POUNDS PER SQUARE FOOT
DIM	DIMENSION	PSI	POUNDS PER SQUARE INCH
DWA	DEFORMED WIRE ANCHOR	PT	POST-TENSIONING
DWG	DRAWING	QTY	QUANTITY
EA	EACH	R	RADIUS REACTION REMAINDER
EF	EXPANSION JOINT	REF	REFERENCE
EL	ELEVATION	REINF	REINFORCING
ELEV	ELEVATION	REQD	REQUIRED
EMBED	EMBEDMENT	REV	REVISION
ENGR	ENGINEER	RTU	ROOF TOP UNIT
EQ	EQUAL	SC	SLIP CRITICAL SHEAR CONNECTOR
EQUIP	EQUIPMENT	SCHED	SCHEDULE(D)
EQUIV	EQUIVALENT	SDS	SELF-DRILLING SCREW
FW	FIELD WELD	SECT	SECTION
EXIST	EXISTING	SHT	SHEET
EXP	EXPANSION	SIM	SIMILAR
EXT	EXTERIOR	SLBB	SHORT LEG BACK TO BACK
FAB	FABRICATE	SPA	SPACING
F'c	28 DAY CONCRETE STRENGTH	SPEC	SPECIFICATION
FD	FLOOR DRAIN	SPRT	SUPPORT
FDTN	FOUNDATION	SQ	SQUARE
FBK	FINISHED	SSLP	SHORT-SLOTTED HOLE PARALLEL
FLR	FLOOR	SSLT	SHORT-SLOTTED HOLE TRANSVERSE
FS	FAR SIDE	STD	STANDARD
FTG	FOOTING	STIF	STIFFENER
FUT	FUTURE	STIR	STIRRUP
FV	FIELD VERIFY	STL	STEEL
F y=	YIELD STRENGTH	STRUCT	STRUCTURE STRUCTURAL
GALV	GALVANIZED	SYMM	SYMMETRIC SYMMETRICAL
GR	GENERAL	T	PLATE THICKNESS TREAD
GR	GRADE	THD	THREADED
H	HORIZONTAL REACTION	TO	TOP OF
HGR	HANGER	TOC	TOP OF CONCRETE
HORIZ	HORIZONTAL	TOW	TOP OF MASONRY
HSA	HEAD STUD ANCHOR	TOS	TOP OF STEEL TOP OF SLAB
HSS	HOLLOW STRUCTURAL SECTION	TYP	TYPICAL
ID	INSIDE DIAMETER	UNO	UNLESS NOTED OTHERWISE
INFO	INFORMATION	VERT	VERTICAL
INT	INTERIOR	WF	WIDE FLANGE
JT	JOINT	WP	WORK POINT
<	ANGLE (HSS JBB)	WS	WATERSTOP
<SF	ANGLE PER SQUARE FOOT	WT	WEIGHT
<SI	ANGLE PER SQUARE INCH	WWR	WELDED WIRE REBAR
		XXS	DOUBLE EXTRA STRONG

WALTER P MOORE

PROJECT TEAM

STRUCTURAL ENGINEER
WALTER P. MOORE

PROJECT NAME

DPW SALT STORAGE BUILDING LIMITED STRUCTURAL REPAIRS

Issues Revisions

PERMIT SET

NO.	DATE	REVISION

PROJECT NUMBER
1311 / 40157.00

DATE
4 AUGUST 2014

DRAWN BY

GENERAL NOTES

SHEET NO. SHEET
S-001

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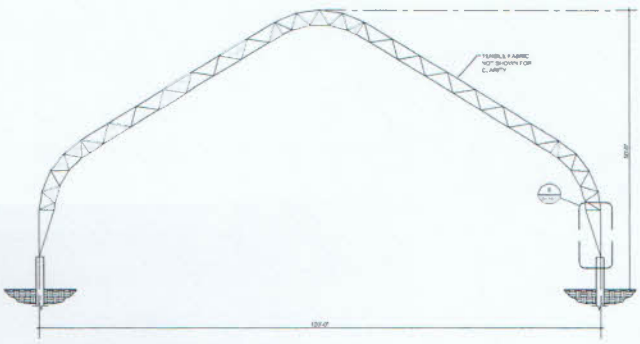
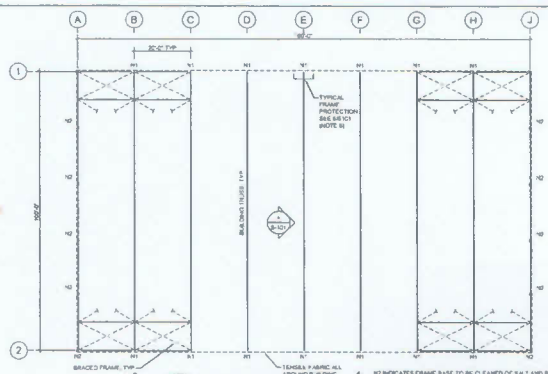
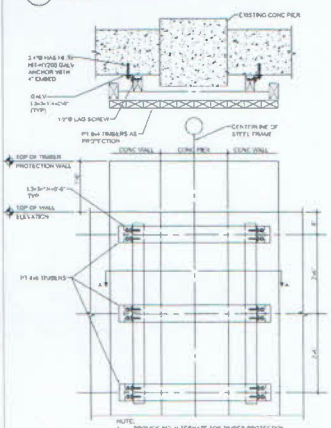


4 BUILDING TRUSS ELEVATION
1/8" = 1'-0"

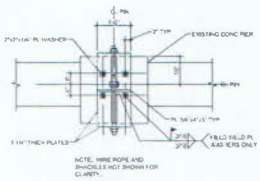


N

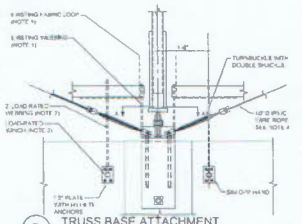
2 OVERALL PLAN
1/16" = 1'-0"



8 WALL ELEVATION - TIMBER PROTECTION
3/4" = 1'-0"

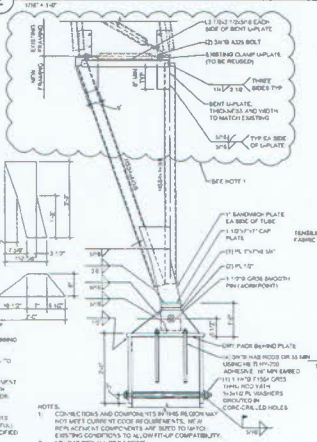


SECTION A-A

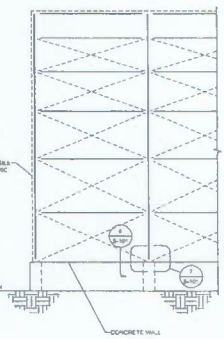


7 TRUSS BASE ATTACHMENT
3/4" = 1'-0"

NOTES:
1. SEQUENCE REPAIRS TO ALLOW TENSION OF FABRIC DURING PROCESS. INSTALL NEW WEBBING PRIOR TO REMOVING WEBBING EXISTING.
2. TENSIONED AND ACCESSORIES TO BE LOAD RATED FOR 1/2 A. SLIP AXIED REPLACE LOAD.
3. AFTER CYCLICAL REINFORCEMENT PATCH BY ACCORDANCE WITH FABRIC MFR. LEAD SEAL PRIOR TO CUTTING HOLE.
4. PROVIDE CONNECTION EQUIPMENT HAVE COMPONENTS CAPABLE OF TRANSMITTING FULL ULTIMATE CAPACITY OF SPECIFIED WIRE ROPE.



6 TRUSS REPLACEMENT SECTION
3/4" = 1'-0"



5 BRACED FRAME ELEVATION
1/8" = 1'-0"

WALTER P MOORE

PROJECT TEAM

STRUCTURAL ENGINEER
WALTER P. MOORE

PROJECT NAME

DPW SALT
STORAGE BUILDING
LIMITED
STRUCTURAL
REPAIRS

Issue Mandatory

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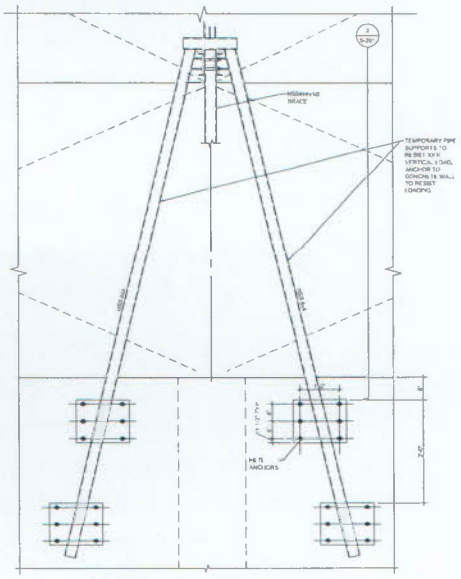
4 AUGUST 2014

PLANS AND DETAILS

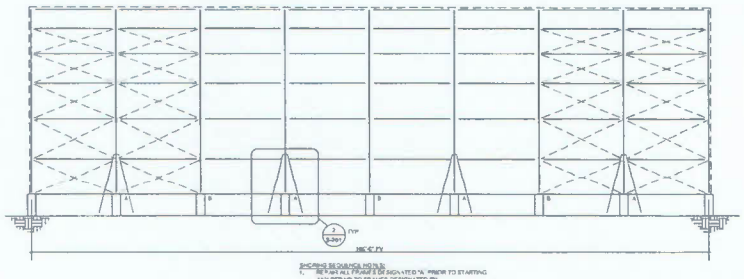
SHEET NUMBER
S-101



NOTES

1. USE THIS SHORING SCHEME FOR BID PURPOSES. CONTRACTOR MAY SUBMIT ALTERNATE FULLY ENGINEERED SHORING SCHEME FOR APPROVAL AFTER AWARD AS TROUGH OTHER SCHEMES MAY NOT BE APPROVED.
2. TEMPORARY SHORING FRAME IS DESIGNED TO CARRY FULL VERTICAL LOAD AND HORIZONTAL LOAD OF FRAME WITH LOWER ELEMENT REMOVED DURING REPAIRS.
3. DESIGN IS BASED ON CONSTRUCTION DURING SUMMER MONTHS AND IS BASED ON MAXIMUM 6 WEEK CONSTRUCTION DURATION. IF CONSTRUCTION EXTENDS PAST THIS TIME SHORING WILL REQUIRE RESIGN

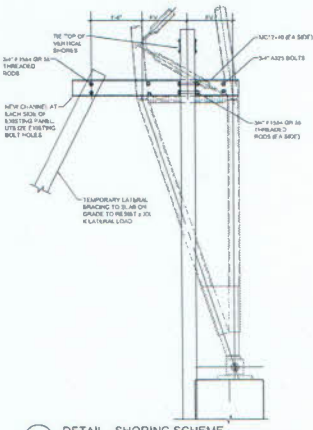
2 WALL ELEVATION - SHORING SCHEME
3/8" = 1'-0"



SHORING SEQUENCE NOTES:

1. REPAIR ALL FRAME B OR SIGNATED "A" PRIOR TO STARTING ANY REPAIR TO FRAMES DESIGNATED "B".
2. FULLY COMPLETE REPAIR OF EACH FRAME PRIOR TO REMOVING TEMPORARY BRACING.
3. COMPLETE REPAIRS ON ALL FRAMES ON ONE ELEVATION BEFORE STARTING ON OPPOSITE ELEVATION.

1 WALL ELEVATION - SHORING SCHEME
3/32" = 1'-0"



3 DETAIL - SHORING SCHEME
3/4" = 1'-0"

WALTER P MOORE

PROJECT TEAM

STRUCTURAL ENGINEER
WALTER P. MOORE

PROJECT NAME

DPW SALT STORAGE BUILDING LIMITED STRUCTURAL REPAIRS

ISSUE PURPOSE

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4 AUGUST 2014

SHEET TITLE
PROPOSED SHORING CONCEPT

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