

1919 Alliant Energy Center Way Madison, Wisconsin 53713 Office: 608/266-4018 ⋄ Fax: 608/267-1533 Public Works Engineering Division Public Works Solid Waste Division

## **ADDENDUM**

December 7th, 2016

#### ATTENTION ALL REQUEST FOR BID (RFB) HOLDERS

**RFB NO. 316047 - ADDENDUM NO. 2** 

## COOLING TOWERS REPLACEMENT CITY COUNTY BUILDING

**BIDS DUE**: TUESDAY, DECEMBER 13, 2016, 2:00 PM. DUE DATE AND TIME ARE NOT CHANGED BY THIS ADDENDUM.

This Addendum is issued to modify, explain or clarify the original Request for Bids (RFB) and is hereby made a part of the RFB. Please attach this Addendum to the RFB.

#### PLEASE MAKE THE FOLLOWING CHANGES:

1. Section 05 10 00 – Structural Metal Framing

Replace current section 05 10 00 - Structural Metal Framing with new section 05 10 00, attached.

2. Sheet T100

Add the following to the Sheet Index: "ME301 – Penthouse and Roof Plan – New Work – Structural"

- 3. Sheet ME300 Penthouse and Roof Plan New Work HVAC and Electrical Replace current Sheet ME300 with new drawing ME300, attached.
- **4.** Sheet ME301- Penthouse and Roof Plan New Work Structural Add Sheet ME301, attached.
- 5. Sheet ME400 Elevations and Details HVAC and Structural Replace current Sheet ME400 with new drawing ME400, attached.

If any additional information about this Addendum is needed, please call James Zavoral at 608/206-6952, Zavoral.James@countyofdane.com.

Sincerely,

James Zavoral

**Project Engineer** 

#### Enclosures:

Section 05 10 00 - Structural Metal Framing

Sheet ME 300 - Penthouse and Roof Plan - New Work - HVAC and Electrical

Sheet ME 301 - Penthouse and Roof Plan - New Work - Structural

Sheet ME 400 - Elevations and Details - HVAC

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RFB No. 316056 -1 - rev. 02/16

1 2	SECTION 05 10 00 STRUCTURAL METAL FRAMING
3	PART 1 - GENERAL
5 6	Applicable provisions of Division 01 shall govern all work of this section.
7 8 9	SUMMARY Include all materials, labor, services and incidentals necessary for the completion of this section of the work.
10 11 12 13	Include structural steel framing and support members shown on structural drawings complete with required bracing, welds, bolts, washers, nuts, baseplates, shims and anchor bolts.
14	Include all steel items.
15 16 17 18	Rolled steel plates, shapes and bars, tubular steel and bolts shall be of domestic manufacture and be clear and free of rust and/or pitting.
19	REFERENCES
20 21 22	INDUSTRY STANDARDS, SPECIFICATIONS AND CODES
23 24 25 26 27	<ul> <li>General</li> <li>Comply with all provisions of the following codes and standards except as modified herein.</li> <li>All referenced codes and standards including all revisions and commentaries shall be the most currently adopted as of the date of these contract documents.</li> </ul>
28 29 30 31 32 33	<ul> <li>American Institute Of Steel Construction (AISC)</li> <li>Specification for Structural Steel Buildings - Allowable Stress Design and Plastic Design</li> <li>Code of Standard Practice for Steel Buildings and Bridges</li> <li>Specification for Structural Joints Using ASTM A-325 or A-490 Bolts; approved by</li> <li>The Research Council on Structural Connections of The Engineering Foundation</li> <li>Structural Steel Detailing</li> </ul>
34 35 36 37	American Society For Testing And Materials (Astm)  • Specific ASTM numbers are noted in later text.
38 39 40 41 42	<ul> <li>American Welding Society (Aws)</li> <li>D1.1 Structural Welding Code – Steel</li> <li>D1.3 Structural Welding Code - Sheet Steel</li> <li>Additional AWS Specifications are noted in later text</li> </ul>
43 44 45 46 47	<ul> <li>Wisconsin Administrative Code, International Building Code</li> <li>ILHR 53.50 Structural Steel Requirements.</li> <li>ILHR 53.53 Structural Welding of Steel.</li> </ul>
48 49 50	Steel Structures Painting Council (Sspc)  • Specific SSPC numbers are noted in later text.
51 52	QUALITY ASSURANCE
53 54 55	Qualifications Qualify welding processes, welders and welding operators in accord with AWS D1.1, Wisconsin Administrative Code and International Building Code.

#### **Bolt Testing**

Visually inspect all connections for proper number, size and type of bolt.

Verify tightness of 10% of bolts or minimum of one per connection to proper torque for turn of the nut method. If tightness is not adequate, Contractor is to retighten all bolts on connection.

#### Weld Testing

Provide inspection of shop and field welding in accordance with AWS D1.1.

Where possible perform weld inspections in the fabricator's shop before delivery of the structural members to the project.

Visually inspect all fillet and partial penetration welds. Perform appropriate non-destructive testing on all welds which appear defective. Verify conformance with Division 5 specifications.

Non-destructive testing (ultrasonic, magnetic particle or radiographic) shall be performed on all full penetration welds.

Defective weld shall be replaced and retested at the expense of the Contractor.

#### **SUBMITTALS**

Submit in accordance with Division 1.

#### **Shop Drawings**

Submit shop drawings prepared under supervision of a licensed Professional Engineer to Engineer for approval showing type of steel, erection plans, setting diagrams and details of all connections and structural members. Plans and details shall clearly show required tolerances for setting all such embedded items and fabrication tolerances.

Connections not shown or detailed on structural drawings shall be designed and detailed by the fabricator using the loads shown on the structural drawings. If no loads are shown, beam connections shall be designed to support half the total uniform load capacity shown in the beam tables in the AISC "Manual of Steel Construction".

Any fabrication from shop drawings that have not been approved by the Engineer are at fabricator's own risk.

#### Mill Tests

Mill tests showing heat number of all structural steel delivered to site shall be submitted to the Engineer upon request.

Mill certifications of all high strength bolts to be used shall be submitted to the Engineer.

#### Welding Control

46 Submit Welding Procedure Specification for all prequalified joints to be used.
47

Submit Welding Procedure Qualification Test Record for all joints to be used which are not prequalified.

Submit Welder and Welding Operator Qualification Test Record, Certification and Wisconsin Certification card for all welders and welding operators to be used. Resubmit if during the course of the work additional personnel are used.

#### DELIVERY, STORAGE AND HANDLING

- Handle steel with care to avoid bending, twisting or other damage.
- 56 Unload under supervision of Contractor.

1 2	Place on blocking to keep steel off ground.			
3	Prace on blocking to keep steel on ground.			
4 5	Store steel to allow drainage of water from all parts.			
6	DADE 4 DECEMBER			
7 8	PART 2 - PRODUCTS			
9	MATERIALS			
10				
11	Rolled Steel Beams			
12	Shall conform to ASTM A-992 for all steel with $Fy = 50$ KSI.			
13				
14	Rolled Steel Plates, Shapes And Bars			
15	Shall conform to ASTM A-6 and A-36 for all steel with Fy = 36 KSI.			
16	Tuhulan Stool Dundyota			
17 18	<u>Tubular Steel Products</u> Square, rectangular and special shapes shall conform to ASTM A-500, Grade B.			
19	Square, rectangular and special shapes shall comorni to ASTM A-500, Grade B.			
20	Structural steel pipe shall conform to ASTM A-53, Grade B.			
21	p-po simila con proposition to 120 17111 co, Cinao 21			
22	Steel Casting			
23	Shall conform to ASTM A-27, Grade 65-35 unless otherwise shown.			
24				
25	Bolts, Nuts and Washers			
26	W. 1			
27 28	High strength bolts: Shall conform to ASTM A-325			
29	Nuts: Shall conform to ASTM A-563.			
30	Nuts. Shan Comorni to ASTW A-303.			
31	Washers: Shall conform to ASTM F-436.			
32				
33	Galvanized Steel			
34	Shall be hot dip galvanized after fabrication in accordance with ASTM A-123.			
35				
36	Structural bolts shall be hot dip galvanized in accordance with ASTM A-153. Type 2, A-325 bolts shall be			
37	tested after galvanizing to check mechanical properties.			
38 39	Welding Electrodes			
40	Welding electrodes shall meet minimum strength classification as shown on the drawings and meet the			
41	appropriate AWS Specification.			
42	appropriate 11118 Specification.			
43	A5.1 Specification for Mild Steel Covered Arc Electrodes (E70-XX unless noted otherwise)			
44	A5.5 Specification for Low-Alloy Steel Covered Arc Electrodes			
45	A5.17 Specification for Bare Mild Steel Electrodes and Fluxes for Submerged Arc Welding			
46	A5.23 Specification for Bare Steel Electrodes and Fluxes for Submerged Arc Low-Alloy Steel			
47	Welded Metal			
48				
49 50	Bedding Grout			
50 51	Shrinkage-Resistant Grout: Use non-shrink, non-metallic grout where noted on drawings, pre-mixed,			
52	factory-packaged complying with Corps of Engineers CRD-C621 Specifications. The following are			
53	approved:			
54	Master Flow 713: Master Builders			

55

56

Five Star Grout: US Grout Corporation

Sonogrout: Sonneborn Building Products

3	FABRICATION
4	Const
5 6	<u>General</u>
7 8 9	Verify dimensions on site prior to shop fabrication. If discrepancies are found contact the structural engineer immediately for redesign.
10 11 12	Fabricate items of structural steel as indicated on the final shop drawings. Properly mark all materials for field assembly.
13 14	Supply components required for proper anchorage of metal fabrications. Fabricate anchorage and related components of same material and finish as metal fabrication unless otherwise specified.
15 16 17	Thoroughly clean surfaces of rust, scale, grease and foreign matter prior to galvanizing.
18 19	Fit and shop assemble sections in largest practical sizes.
20 21	Accurately form and fit components and connections. Grind exposed edges and welds smooth and flush.
22 23	Make exposed joints flush butt type hair line joints where mechanically fastened.
24	Connections
25 26	Combinations of bolts and welds in the same connections are not permitted unless otherwise detailed.
27 28	Weld shop connections unless otherwise shown.
29 30	All welded connections shall be 3/16" fillet weld all around minimum unless noted otherwise.
31 32	Perform all intermittent, continuous welding and straightening of built-up sections to minimize internal stresses.
33 34 35	Bolt field connections, except where welded connections or other connections are shown or specified.
36 37 38	Provide high strength A325 bolts and nuts unless noted otherwise. (3/4" diameter minimum). Use minimum of 2 bolts per connection unless otherwise detailed.
39	Holes for Other Work
40 41 42	Provide holes required for securing other work to structural steel framing and for the passage of other work through steel framing members as shown on structural drawings or as approved by Engineer.
43	
44	PART 3 - EXECUTION
45	The Contract of 11 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
46 47 48	The Contractor shall designate and employ an individual to be responsible for all OSHA job site safety requirements.
49	TEMPORARY SHORING AND BRACING
50	Provide temporary shoring and bracing as required with connections of sufficient strength to bear imposed
51	loads. Remove temporary members and connections when permanent members are in place and final
52	connections are made. Provide temporary guy lines to achieve proper alignment of the structures as erection
53	proceeds as required.
54	ANGHAD DOLTE
55 56	ANCHOR BOLTS Furnish anchor bolts and other connectors required for securing structural steel to foundations and other
50	i armsir anerior botto and butter conficcious required for securing structural steel to roundations and butter

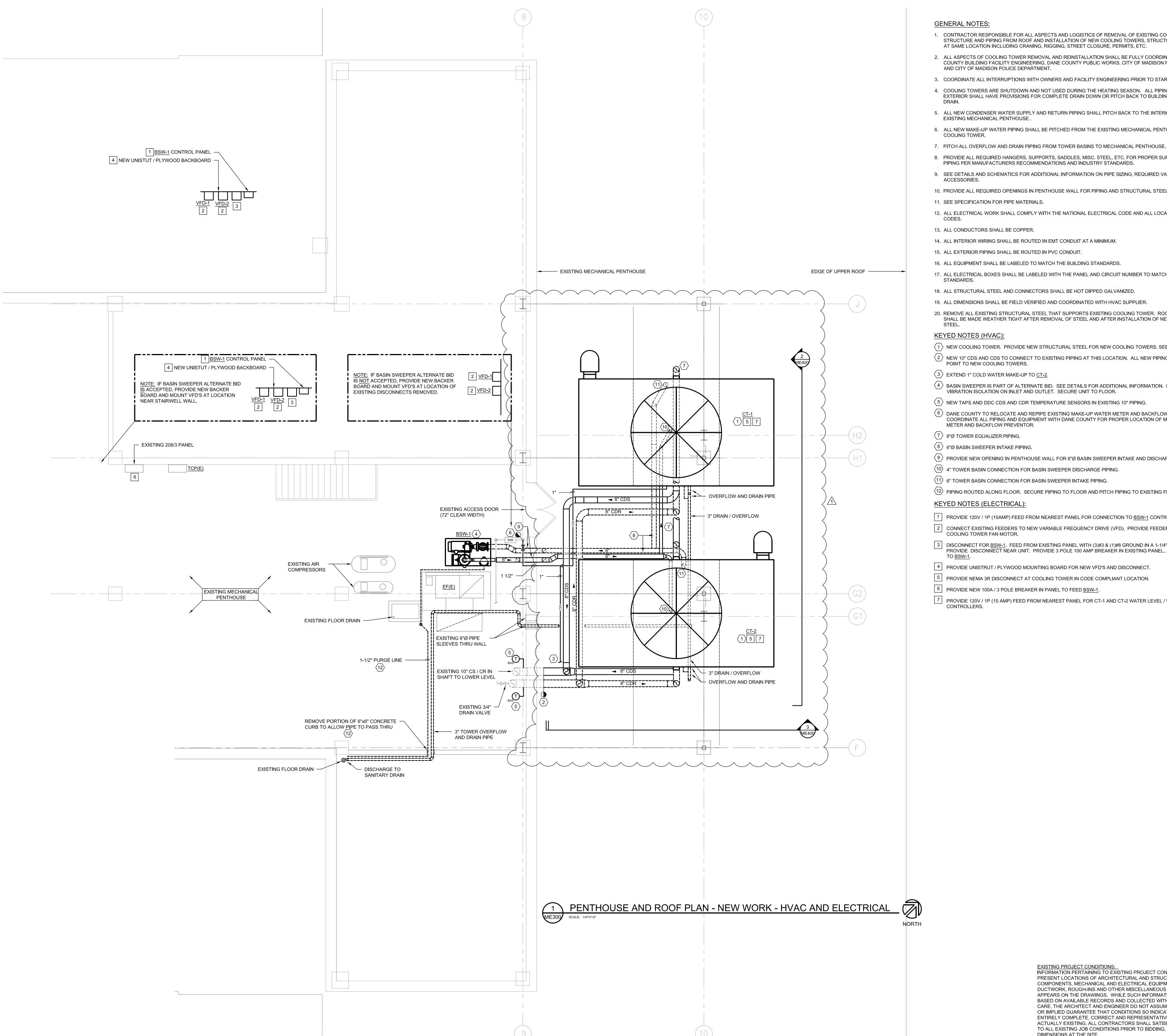
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2

Set Non-Shrink: Set Products, Inc.

1	in-place work.		
2			
3 4	Setting plates for columns or beams shall not be allowed.		
5	FIELD ASSEMBLY		
6	Set structural members to the lines and elevations indicated. Align and adjust the various members forming		
7 8	a part of a complete frame or structure before permanently fastening. Clean bearing surfaces and other surfaces which will be in permanent contact before assembly. Perform necessary adjustments to compensate		
9	for discrepancies in elevations and alignment.		
10	for discrepancies in elevations and anginnent.		
11	Front structural steel members within telegrapos specified in "The Code of Standard Practice for Steel		
12	Erect structural steel members within tolerances specified in "The Code of Standard Practice for Steel		
13	Buildings and Bridges".		
14	Splice members only where shown or specified.		
15			
16	Do not enlarge unfair holes in members by burning or by the use of drift pins except in secondary bracing		
17	members. Ream holes that must be enlarged to admit bolts.		
18			
19	Do not use gas cutting torches in the field for correcting fabrication errors in the structural framing, except		
20	with Engineer's approval on secondary members which are not under stress. Finish gas-cut sections equal to		
21	sheared appearance.		
22	sheared appearance.		
23	HIGH STRENGTH BOLTING		
24	Use only high-strength bolts unless otherwise detailed on drawings.		
25	ose only high-strength botts unless otherwise detailed on drawings.		
26	Install hardened washers under turned element of all high strength bolts and over short-slotted holes in outer		
27			
	ply.		
28	To will be to the life on a Cate on all accepts to		
29	Install bolts by the "turn of the nut" method.		
30			
31	FIELD WELDING		
32	Limit field welding to those shown on drawings. All welds shall be 3/16" fillet weld all around minimum		
33	unless shown otherwise.		
34			
35	TOUCH-UP GALVANIZING		
36	Touch up marred and welded, galvanized surfaces with zinc-rich paint.		
37			
38			
39	End of Section		

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## **GENERAL NOTES:**

- 1. CONTRACTOR RESPONSIBLE FOR ALL ASPECTS AND LOGISTICS OF REMOVAL OF EXISTING COOLING TOWERS, STRUCTURE AND PIPING FROM ROOF AND INSTALLATION OF NEW COOLING TOWERS, STRUCTURE AND PIPING AT SAME LOCATION INCLUDING CRANING, RIGGING, STREET CLOSURE, PERMITS, ETC.
- 2. ALL ASPECTS OF COOLING TOWER REMOVAL AND REINSTALLATION SHALL BE FULLY COORDINATED WITH CITY COUNTY BUILDING FACILITY ENGINEERING, DANE COUNTY PUBLIC WORKS, CITY OF MADISON PUBLIC WORKS AND CITY OF MADISON POLICE DEPARTMENT.
- 3. COORDINATE ALL INTERRUPTIONS WITH OWNERS AND FACILITY ENGINEERING PRIOR TO STARTING WORK.
- 4. COOLING TOWERS ARE SHUTDOWN AND NOT USED DURING THE HEATING SEASON. ALL PIPING ON THE EXTERIOR SHALL HAVE PROVISIONS FOR COMPLETE DRAIN DOWN OR PITCH BACK TO BUILDING WITH INTERIOR
- 5. ALL NEW CONDENSER WATER SUPPLY AND RETURN PIPING SHALL PITCH BACK TO THE INTERIOR OF THE EXISTING MECHANICAL PENTHOUSE.
- 6. ALL NEW MAKE-UP WATER PIPING SHALL BE PITCHED FROM THE EXISTING MECHANICAL PENTHOUSE TO EACH
- 8. PROVIDE ALL REQUIRED HANGERS, SUPPORTS, SADDLES, MISC. STEEL, ETC. FOR PROPER SUPPORT OF ALL PIPING PER MANUFACTURERS RECOMMENDATIONS AND INDUSTRY STANDARDS.
- 9. SEE DETAILS AND SCHEMATICS FOR ADDITIONAL INFORMATION ON PIPE SIZING, REQUIRED VALVES, PIPING AND ACCESSORIES.
- 10. PROVIDE ALL REQUIRED OPENINGS IN PENTHOUSE WALL FOR PIPING AND STRUCTURAL STEEL.
- 11. SEE SPECIFICATION FOR PIPE MATERIALS.
- 12. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE
- 13. ALL CONDUCTORS SHALL BE COPPER.
- 14. ALL INTERIOR WIRING SHALL BE ROUTED IN EMT CONDUIT AT A MINIMUM.
- 15. ALL EXTERIOR PIPING SHALL BE ROUTED IN PVC CONDUIT.
- 16. ALL EQUIPMENT SHALL BE LABELED TO MATCH THE BUILDING STANDARDS.
- 17. ALL ELECTRICAL BOXES SHALL BE LABELED WITH THE PANEL AND CIRCUIT NUMBER TO MATCH THE BUILDING
- 18. ALL STRUCTURAL STEEL AND CONNECTORS SHALL BE HOT DIPPED GALVANIZED.
- 19. ALL DIMENSIONS SHALL BE FIELD VERIFIED AND COORDINATED WITH HVAC SUPPLIER.
- 20. REMOVE ALL EXISTING STRUCTURAL STEEL THAT SUPPORTS EXISTING COOLING TOWER. ROOF AND WALLS SHALL BE MADE WEATHER TIGHT AFTER REMOVAL OF STEEL AND AFTER INSTALLATION OF NEW STRUCTURAL

## KEYED NOTES (HVAC):

- $\langle 1 \rangle$  NEW COOLING TOWER. PROVIDE NEW STRUCTURAL STEEL FOR NEW COOLING TOWERS. SEE DETAILS.
- $|2\rangle$  NEW 10" CDS AND CDS TO CONNECT TO EXISTING PIPING AT THIS LOCATION. ALL NEW PIPING FROM THIS POINT TO NEW COOLING TOWERS.
- $\langle 3 \rangle$  EXTEND 1" COLD WATER MAKE-UP TO CT-2.
- $\langle$  4 angle BASIN SWEEPER IS PART OF ALTERNATE BID. SEE DETAILS FOR ADDITIONAL INFORMATION. PROVIDE PIPE
- VIBRATION ISOLATION ON INLET AND OUTLET. SECURE UNIT TO FLOOR.
- $\langle 5 
  angle$  NEW TAPS AND DDC CDS AND CDR TEMPERATURE SENSORS IN EXISTING 10" PIPING.
- $\langle 6 
  angle$  DANE COUNTY TO RELOCATE AND REPIPE EXISTING MAKE-UP WATER METER AND BACKFLOW PREVENTOR. COORDINATE ALL PIPING AND EQUIPMENT WITH DANE COUNTY FOR PROPER LOCATION OF MAKE-UP WATER METER AND BACKFLOW PREVENTOR.
- $\langle 7 \rangle$  8"Ø TOWER EQUALIZER PIPING.
- $\langle 8 \rangle$  6"Ø BASIN SWEEPER INTAKE PIPING.
- $\langle$  9 angle PROVIDE NEW OPENING IN PENTHOUSE WALL FOR 6"Ø BASIN SWEEPER INTAKE AND DISCHARGE PIPING.
- $\langle 10 \rangle$  4" TOWER BASIN CONNECTION FOR BASIN SWEEPER DISCHARGE PIPING.
- $\langle 11 \rangle$  6" TOWER BASIN CONNECTION FOR BASIN SWEEPER INTAKE PIPING.
- $\langle 12 \rangle$  PIPING ROUTED ALONG FLOOR. SECURE PIPING TO FLOOR AND PITCH PIPING TO EXISTING FLOOR DRAIN.

## KEYED NOTES (ELECTRICAL):

- PROVIDE 120V / 1P (15AMP) FEED FROM NEAREST PANEL FOR CONNECTION TO <u>BSW-1</u> CONTROL PANEL.
- 2 CONNECT EXISTING FEEDERS TO NEW VARIABLE FREQUENCY DRIVE (VFD). PROVIDE FEEDERS FROM VFD TO COOLING TOWER FAN MOTOR.
- DISCONNECT FOR <u>BSW-1</u>. FEED FROM EXISTING PANEL WITH (3)#3 & (1)#8 GROUND IN A 1-1/4" CONDUIT. PROVIDE DISCONNECT NEAR UNIT. PROVIDE 3 POLE 100 AMP BREAKER IN EXISTING PANEL.. EXTEND FEED
- 4 PROVIDE UNISTRUT / PLYWOOD MOUNTING BOARD FOR NEW VFD'S AND DISCONNECT.
- |5| PROVIDE NEMA 3R DISCONNECT AT COOLING TOWER IN CODE COMPLIANT LOCATION.
- 6 PROVIDE NEW 100A / 3 POLE BREAKER IN PANEL TO FEED <u>BSW-1</u>.
- PROVIDE 120V / 1P (15 AMP) FEED FROM NEAREST PANEL FOR CT-1 AND CT-2 WATER LEVEL / WATER FILL CONTROLLERS.

**EXISTING PROJECT CONDITIONS:** 

DIMENSIONS AT THE SITE.

INFORMATION PERTAINING TO EXISTING PROJECT CONDITIONS, SUCH AS PRESENT LOCATIONS OF ARCHITECTURAL AND STRUCTURAL BUILDING COMPONENTS, MECHANICAL AND ELECTRICAL EQUIPMENT, PIPING, DUCTWORK, ROUGH-INS AND OTHER MISCELLANEOUS CONSTRUCTION, APPEARS ON THE DRAWINGS. WHILE SUCH INFORMATION HAS BEEN BASED ON AVAILABLE RECORDS AND COLLECTED WITH REASONABLE

CARE, THE ARCHITECT AND ENGINEER DO NOT ASSUME ANY EXPRESSED OR IMPLIED GUARANTEE THAT CONDITIONS SO INDICATED ARE SHOWN ENTIRELY COMPLETE, CORRECT AND REPRESENTATIVE OF THOSE ACTUALLY EXISTING. ALL CONTRACTORS SHALL SATISFY THEMSELVES AS TO ALL EXISTING JOB CONDITIONS PRIOR TO BIDDING, AND VERIFY ALL

5525 NOBEL DRIVE SUITE 110 MADISON, WI 53711 PH: 608.277.1728 FAX: 608.271.7046

CONSULTANTS

12/07/2016 ADDENDUM NO 2

ISSUED

REVISIONS / ADDENDA

ADDENDUM NO 2

PROJECT #: DRAWN:

DATE: 11/15/2016

BIDDING

PROJECT

PHASE:

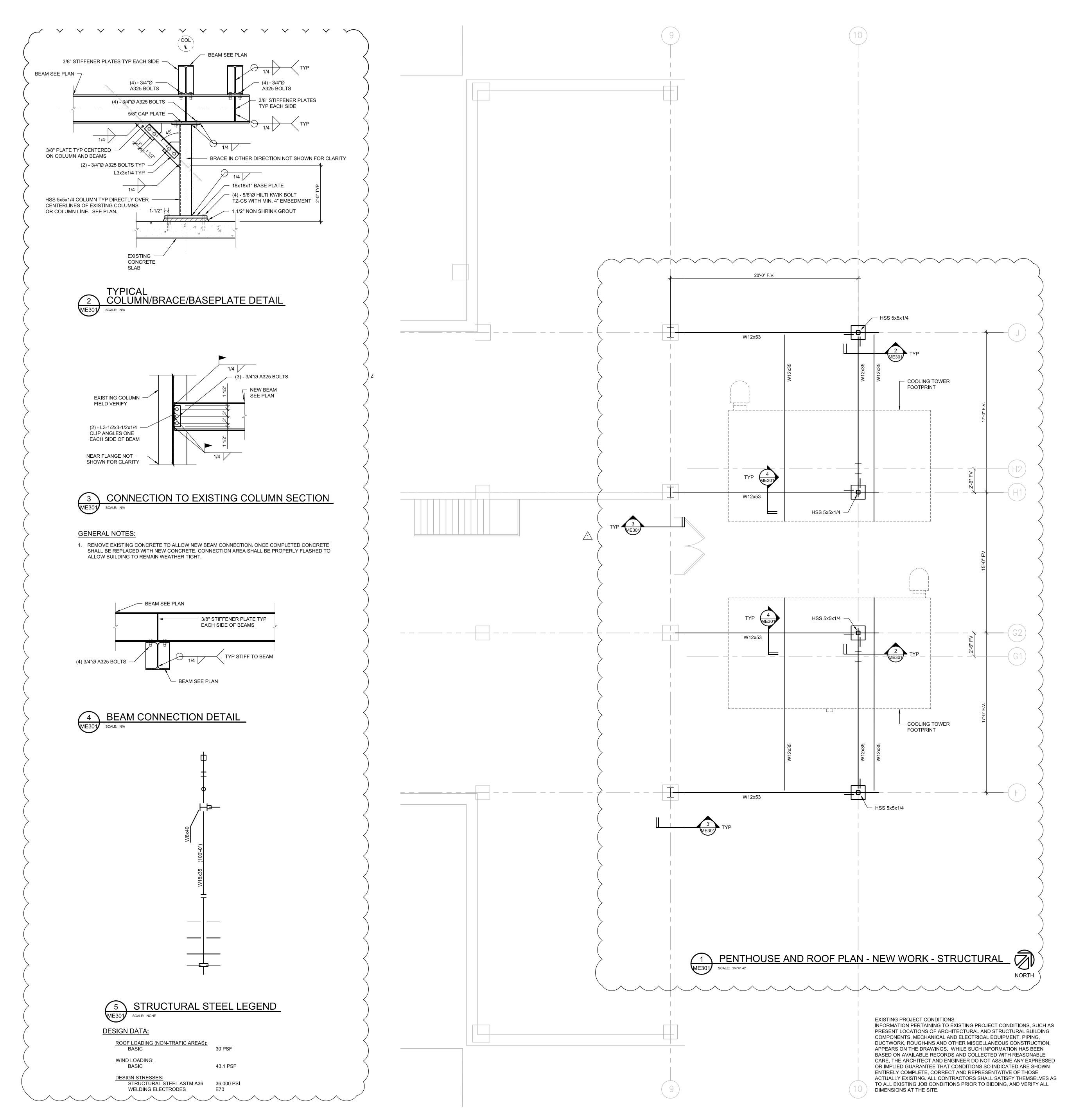
CHECKED:

DANE COUNTY **CITY COUNTY** BUILDING

**COOLING TOWER** REPLACEMENT PROJECT

PENTHOUSE AND ROOF PLAN - NEW WORK -**HVAC & ELECTRICAL** 

ME300



ENGINEERING, INC.
5525 NOBEL DRIVE
SUITE 110
MADISON, WI 53711
PH: 608.277.1728 FAX: 608.271.7046

CONSULTANTS

ISSUED

12/07/2016 ADDENDUM NO 2

REVISIONS / ADDENDA

ADDENDUM NO 2

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PROJECT #: 16.0206

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PHASE: BIDDING

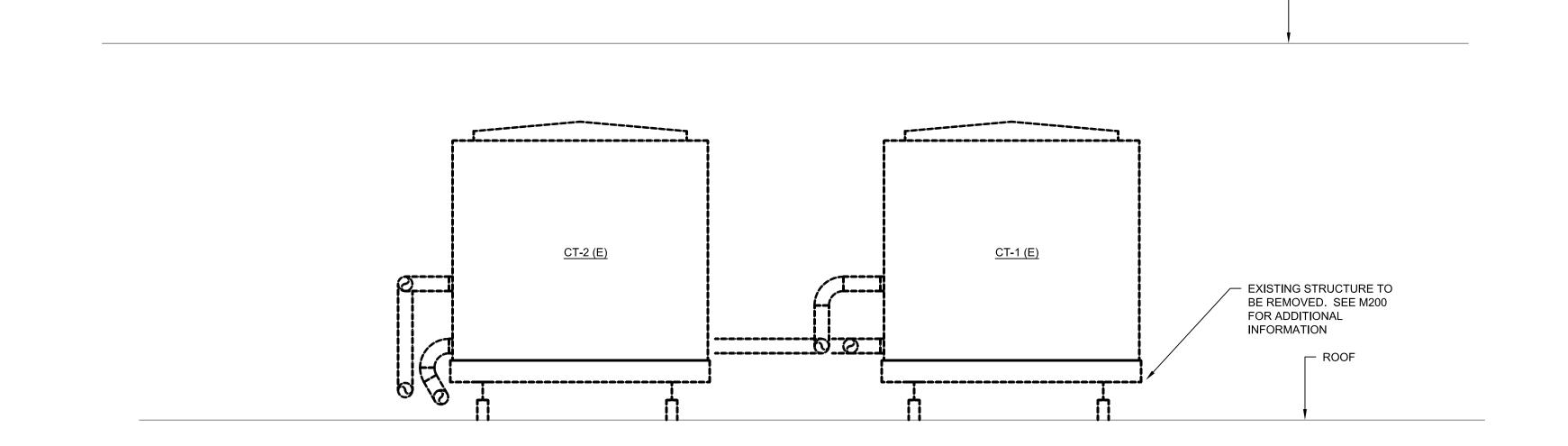
PROJECT

DANE COUNTY
CITY COUNTY
BUILDING

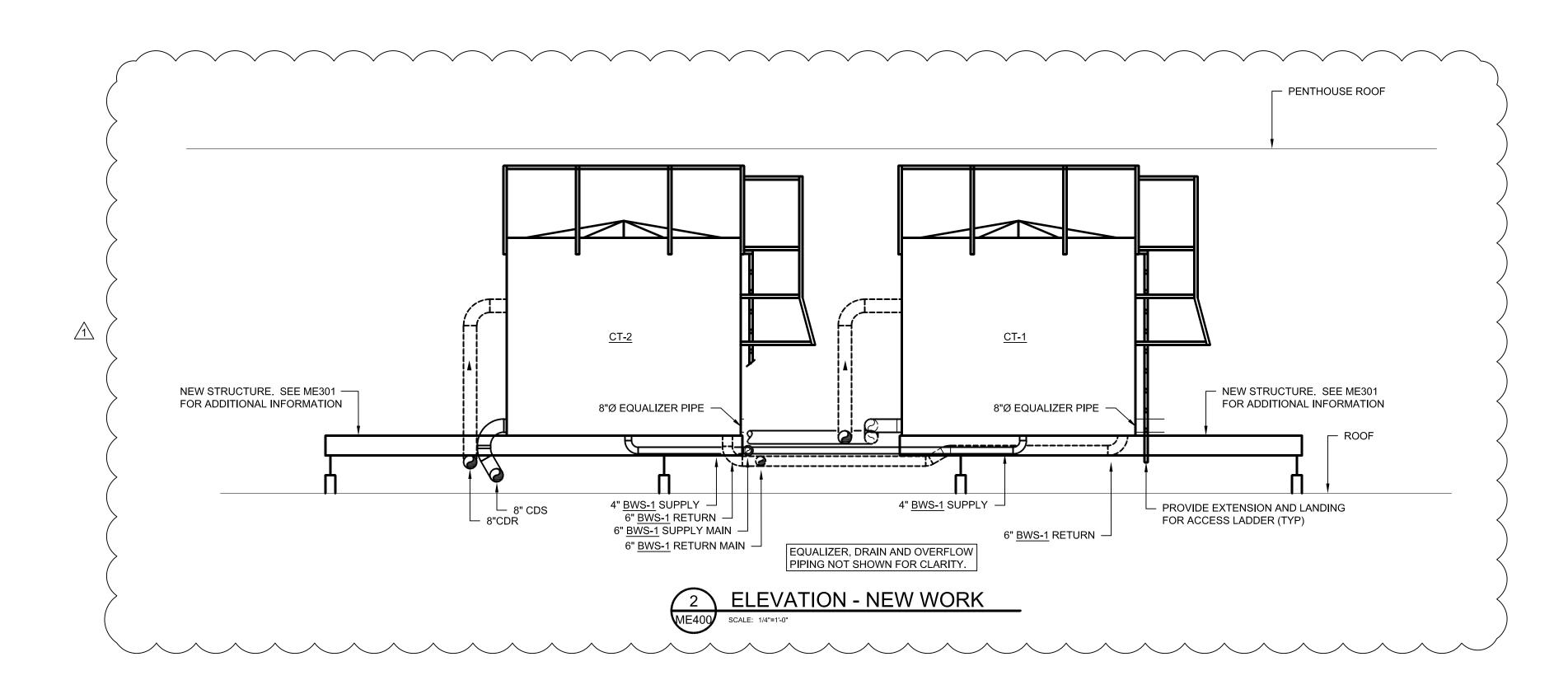
COOLING TOWER
REPLACEMENT PROJECT

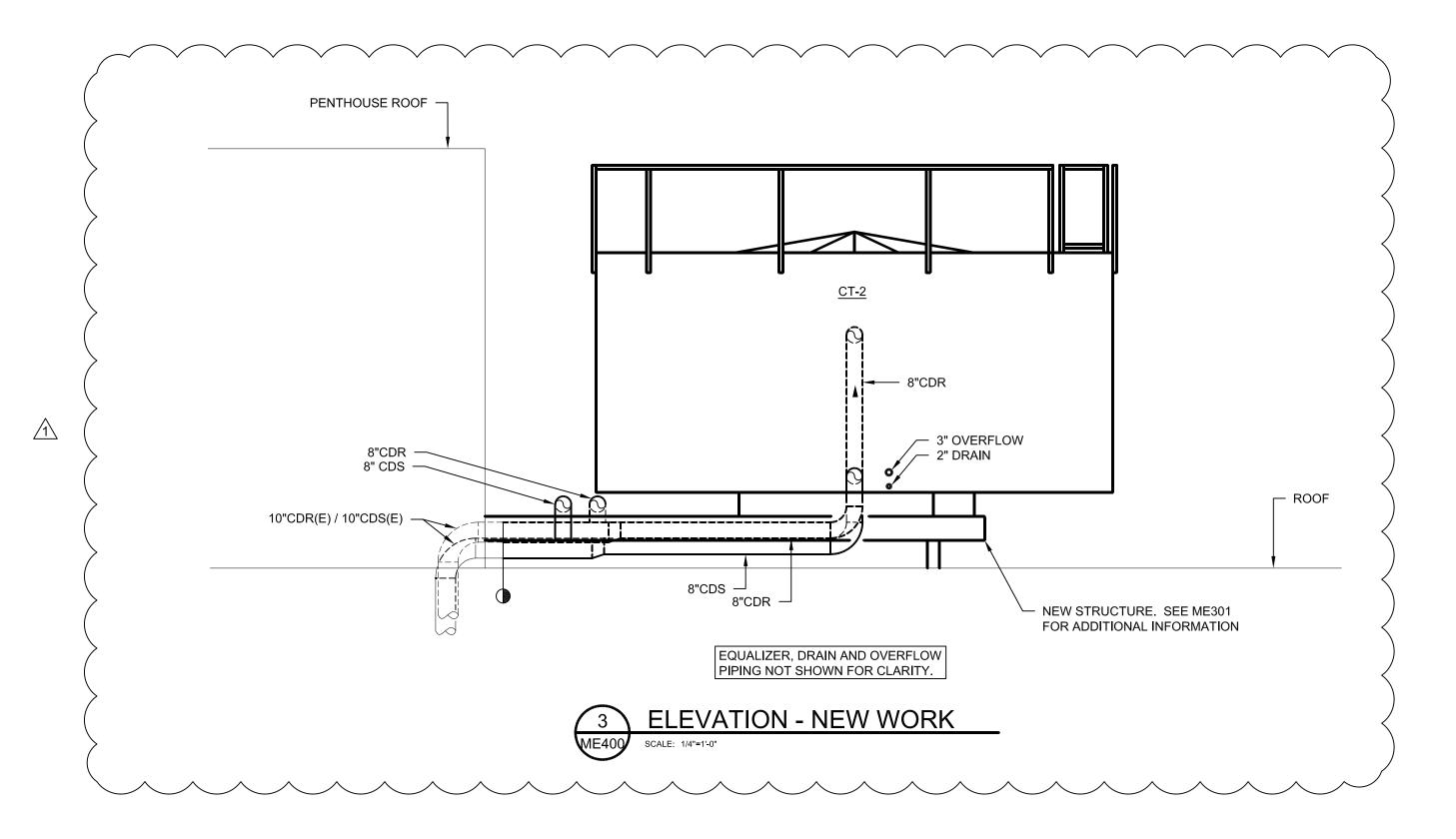
PENTHOUSE AND ROOF PLAN – NEW WORK – STRUCTURAL

ME301



# 1 ELEVATION - DEMOLITION ME400 SCALE: 1/4"=1'-0"







CONSULTANTS

PENTHOUSE ROOF

ISSUED				
12/07/2016	ADDENDUM NO 2			
REVISIONS / ADDENDA				
	ADDENDUM NO 2			
<u>-</u>				
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-				
PROJECT #:	16.020			
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CHECKED:	TDN			
DATE :	11/15/2016			
PHASE :	BIDDING			

ELEVATIONS AND DETAILS
HVAC AND STRUCTURAL

REPLACEMENT PROJECT

ME400

PROJECT

DANE COUNTY

CITY COUNTY

COOLING TOWER

BUILDING