

**Brookhaven National Laboratory  
Plant Engineering - E&CS Division  
Engineering Change Notice Form**

**PROJECT:** CCWF II

**JOB No.** 11705

**ECN Title:** Cooling Tower Site Plan

**ECN No.** 32

Affected Documents: CE-03, A-710, SC-120, SC-303, M-104, M-610, MP-105, MP-301, MP-604, ES-101, ES-401, E-003

Requested Change (Attach sketch if applicable): Bldg 600C - Re-use existing bldg 829 existing shed as new Sonixide shed, bldg 600C. New lighting not required just re-use existing lighting. EUH#5 does not need to be installed re-use existing heaters. Add gypsum board wall and ceiling to interior of building.

Do Not Install Cooling Tower Fence

Relocated New Electric Manhole from bid drawings approximately 6' to the North

Requested by: A. Raphael

Date: 03/01/10

Resolution: See the attached sketch

Approvals: A/E or Proj. Eng.: B. Kimble



Date: 04/01/10

Project Coordinator: A. Raphael



Date: 04/01/10

Manager:

Date:

Contractor shall take the following action:

- Await change order from P&PM
- Proceed with change as described
- Provide cost proposal for change as described

Distribution: E. W. Howell

Giffels

PPM

E&U

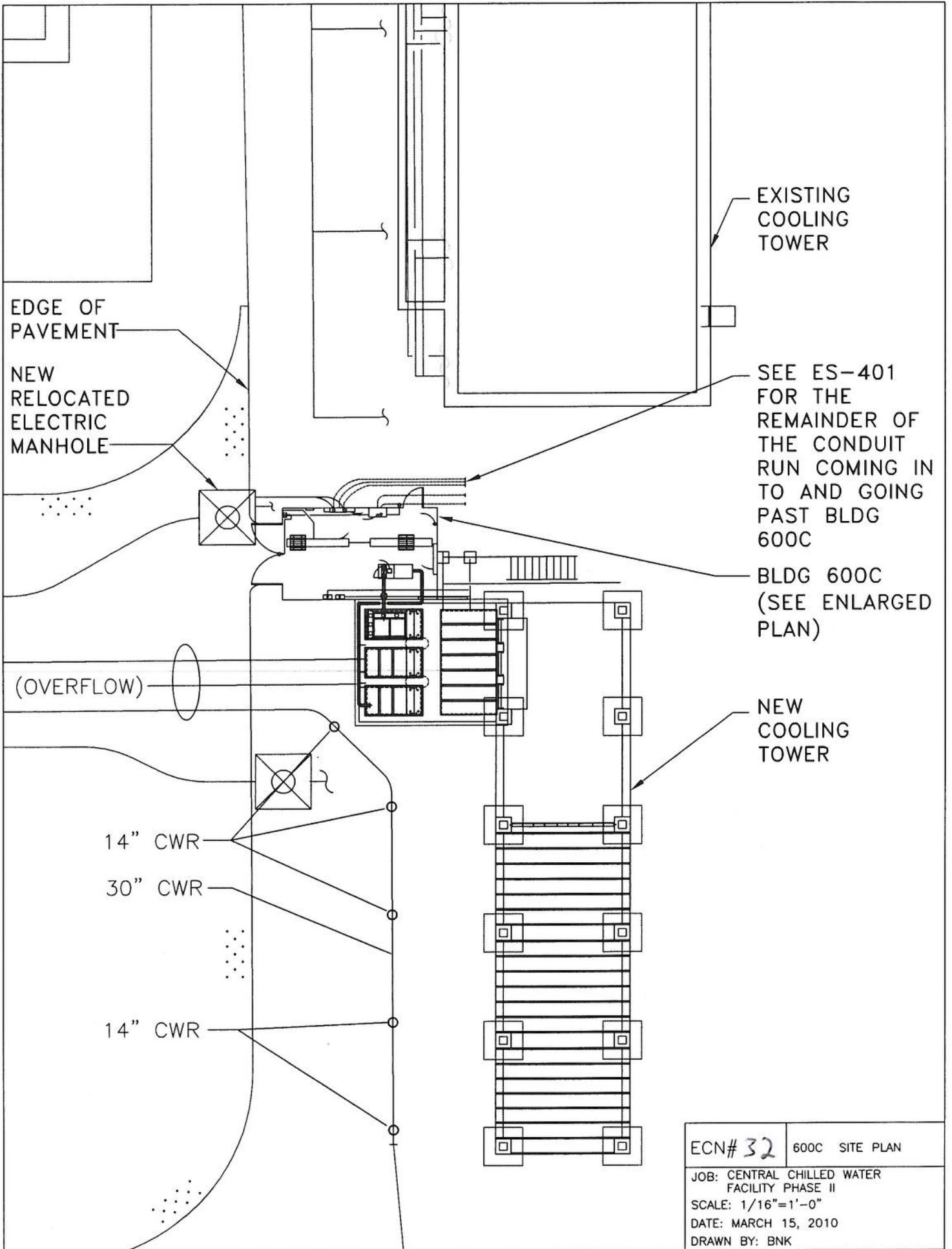
MPO

O&M

DOE

NSLS II

ECN File



EXISTING  
COOLING  
TOWER

EDGE OF  
PAVEMENT

NEW  
RELOCATED  
ELECTRIC  
MANHOLE

SEE ES-401  
FOR THE  
REMAINDER OF  
THE CONDUIT  
RUN COMING IN  
TO AND GOING  
PAST BLDG  
600C

BLDG 600C  
(SEE ENLARGED  
PLAN)

(OVERFLOW)

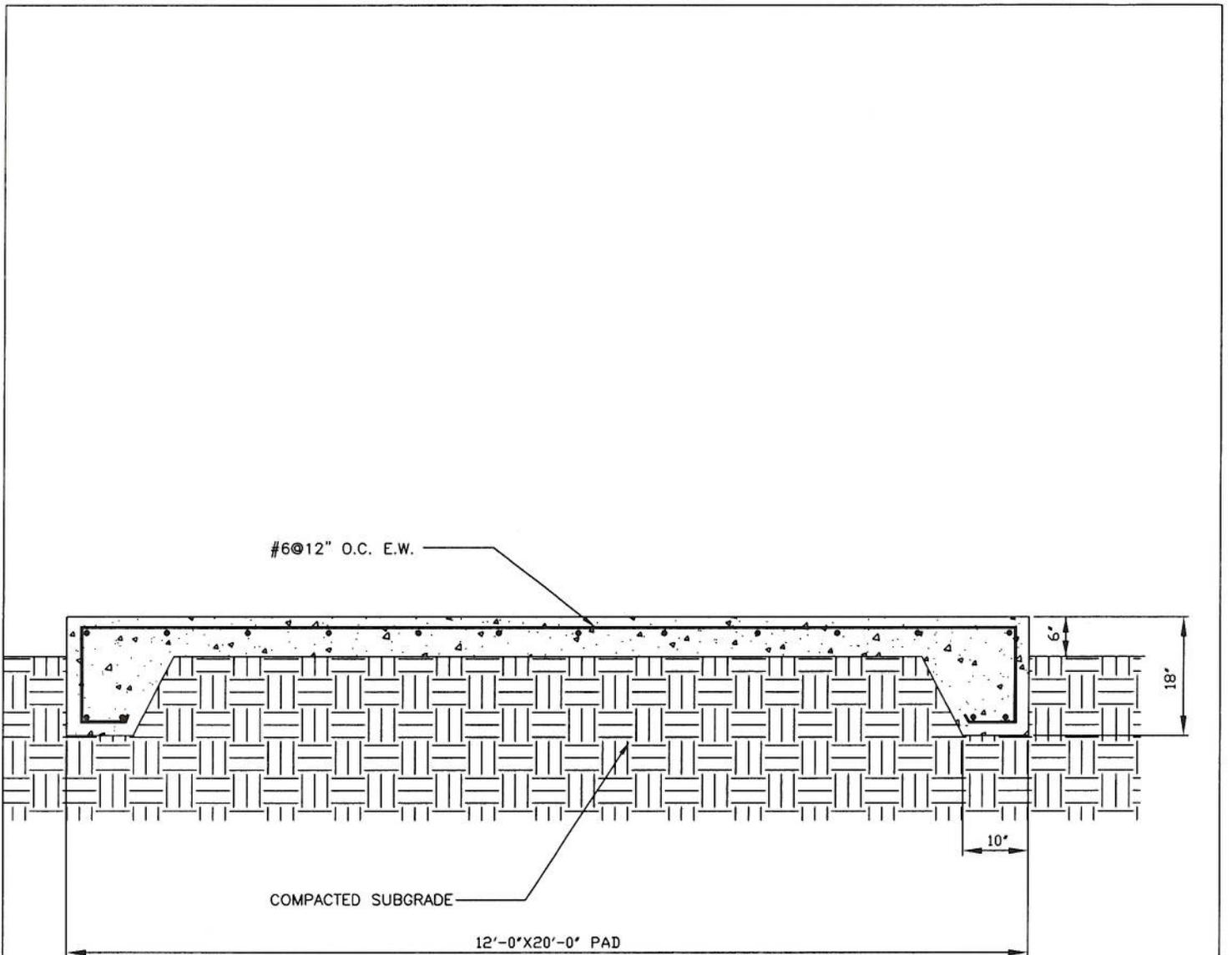
NEW  
COOLING  
TOWER

14" CWR

30" CWR

14" CWR

ECN# 32	600C SITE PLAN
JOB: CENTRAL CHILLED WATER FACILITY PHASE II	
SCALE: 1/16"=1'-0"	
DATE: MARCH 15, 2010	
DRAWN BY: BNK	

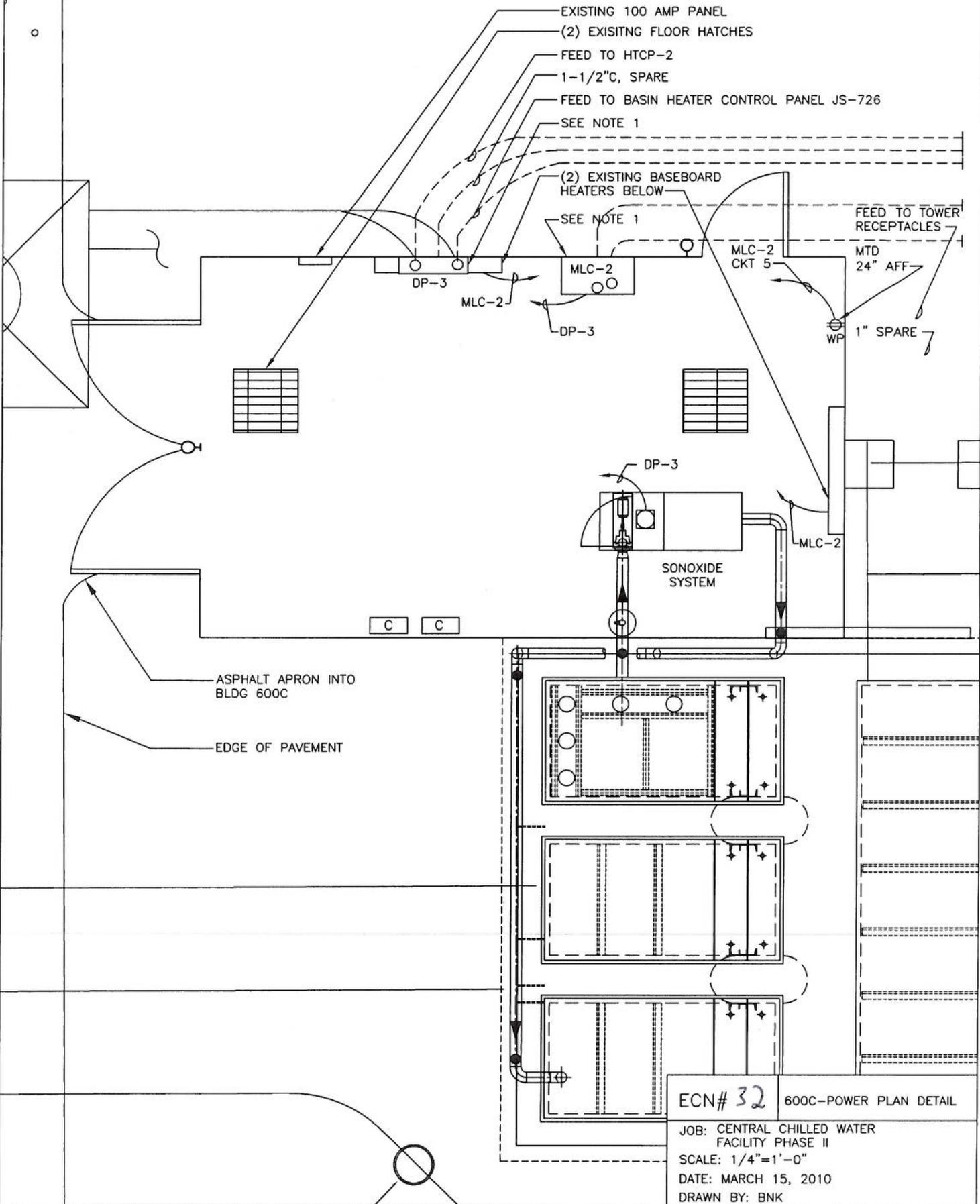


NOTES:  
 1. FIELD VERIFY SIDING OVERLAP FOR PROPER DRAINAGE  
 2. CONTRACTOR TO INSTALL 5/8" GYP. BOARD

ECN# 32	600C CONCRETE PAD DETAIL
JOB: CENTRAL CHILLED WATER FACILITY PHASE II	
SCALE: 1/2"=1'-0"	
DATE: MARCH 15, 2010	
DRAWN BY: BNK	

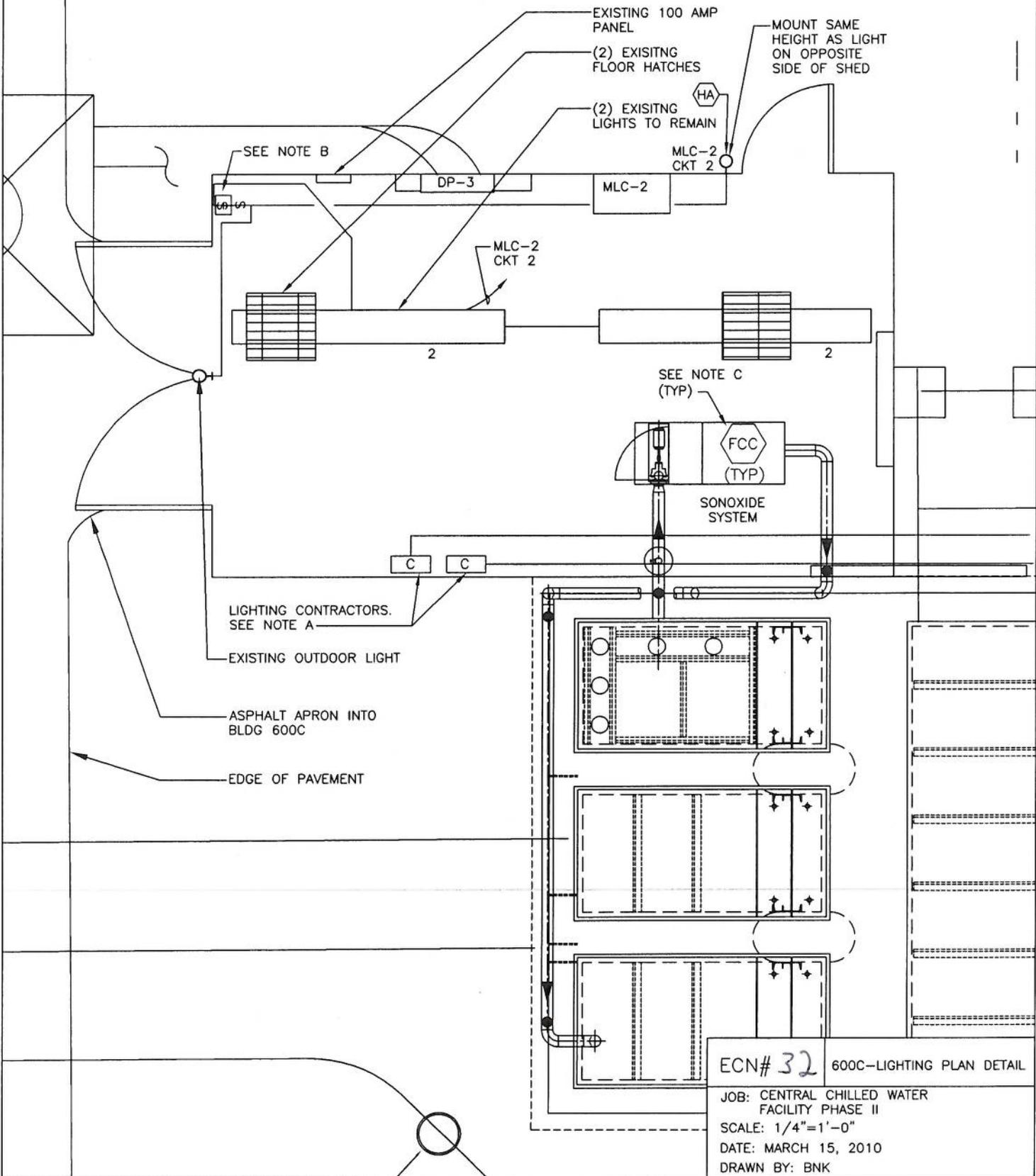
**NOTES:**

1. REFER TO MLC-2 PANEL SCHEDULE AND DP-3 RISER DIAGRAM ON DRAWING E-607.
2. SEE DRAWING ES-401 FOR CONTINUATION OF CONDUIT RUNS

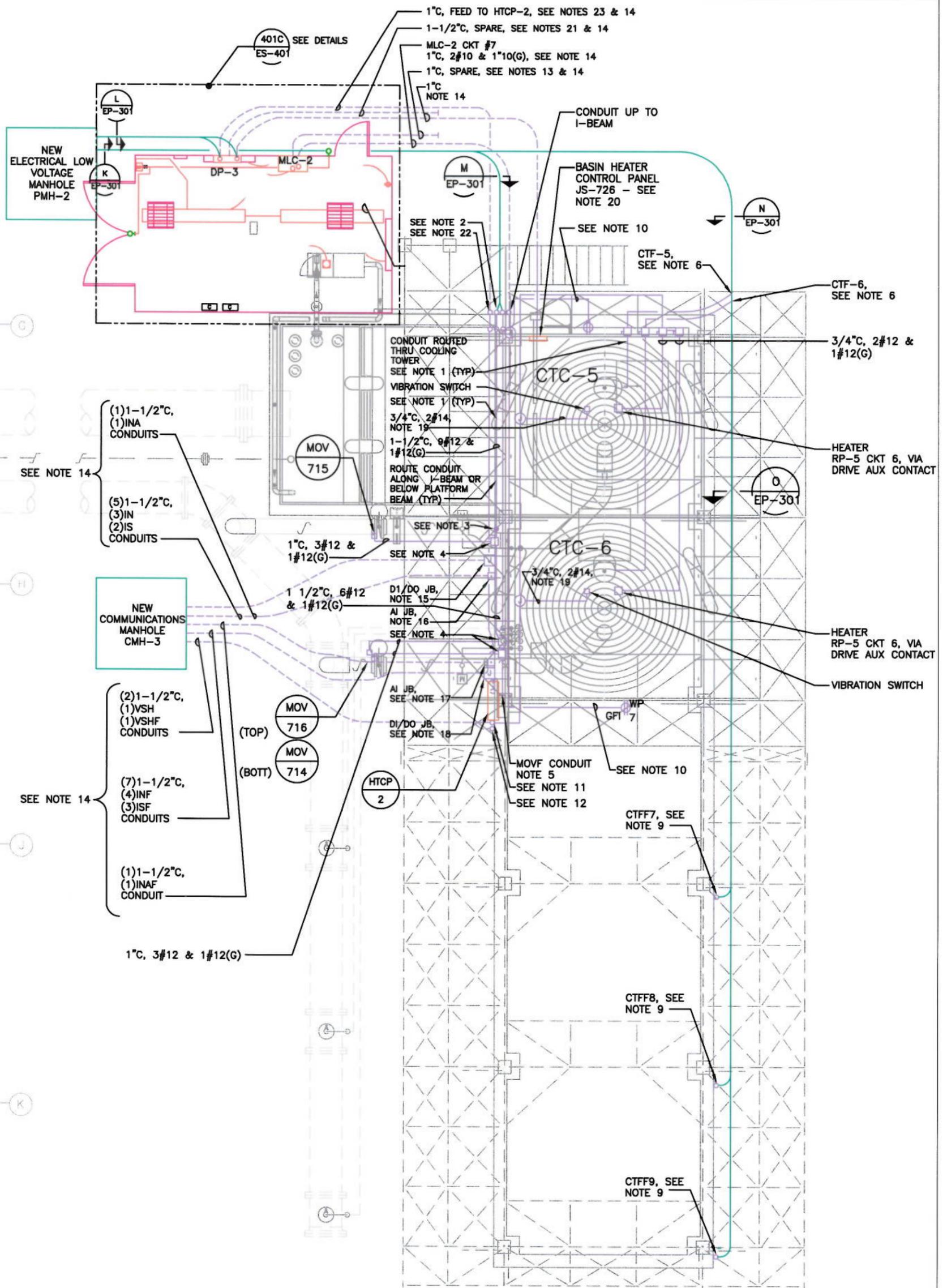


ECN# 32 600C-POWER PLAN DETAIL  
JOB: CENTRAL CHILLED WATER FACILITY PHASE II  
SCALE: 1/4"=1'-0"  
DATE: MARCH 15, 2010  
DRAWN BY: BNK

- NOTES:**
- A. REFER TO TYPICAL COOLING TOWER LIGHTS CONTROL DIAGRAM "504C" ON DRAWING E-504.
  - B. DIGITAL TIME SWITCH FOR BUILDING LIGHT CONTROL. SEE GENERAL NOTE 15 ON DRAWING E-001 FOR DIGITAL TIME SWITCH.
  - C. LIGHTING FIXTURE TYPE - REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING E-501.
  - D. SEE DRAWING ES-401 FOR CONTINUATION OF CONDUIT RUNS



ECN# 32 600C-LIGHTING PLAN DETAIL  
 JOB: CENTRAL CHILLED WATER FACILITY PHASE II  
 SCALE: 1/4"=1'-0"  
 DATE: MARCH 15, 2010  
 DRAWN BY: BNK



**NOTES:**

1. AT COOLING TOWER, ALL CONDUIT SHALL BE PVC JACKETED RIGID STEEL CONDUIT, AND ALL CONDUIT FITTINGS, ENCLOSURES, ETC SHALL BE PVC COATED OR NEMA 4X.
2. ROUTE 1-1/2" DUCT BANK CONDUITS MOV AND MOV UP TO COOLING TOWER I-BEAM AND ROUTE ALONG I-BEAM.
3. DROP CONDUIT DOWN AND ROUTE TO WP JUNCTION BOX UNDER DISCONNECT SWITCH. FROM JUNCTION BOX TAKE FEED TO MOV DISCONNECT SWITCH AND TO NEXT DISCONNECT. PROVIDE CONDUIT FREE STANDING SUPPORT ON CONTAINMENT WALL BETWEEN DISCONNECT SWITCHES AS REQUIRED.
4. PROVIDE FREE STANDING DISCONNECT SWITCH ON CONTAINMENT WALL FOR MOV'S POWER DISCONNECT.
5. TAKE 1-1/2" CONDUIT FOR FUTURE MOTOR OPERATED VALVES ALONG I-BEAM TO END OF I-BEAM AND CAP FOR FUTURE EXTENSION.
6. PEEL CONDUIT OFF DUCT BANK AND STUB-UP AT COOLING TOWERS INDICATED AND EXTEND CONDUIT/ WIRING TO DISCONNECT SWITCH FOR COOLING TOWER FAN MOTOR MOUNTED ON OUTSIDE OF COOLING TOWER ADJACENT TO ACCESS DOOR.
7. 200A NEMA 4X DISCONNECT SWITCH MOUNTED TO COOLING TOWER ADJACENT TO ACCESS DOOR FOR DISCONNECTING POWER TO COOLING TOWER FAN MOTOR.
8. 30A NEMA 4X DISCONNECT SWITCH MOUNTED TO COOLING TOWER ADJACENT TO ACCESS DOOR FOR DISCONNECTING POWER TO COOLING TOWER 120 VOLT HEATER.
9. STUB-UP CONDUIT APPROXIMATELY 12" ABOVE GRADE AND CAP FOR FUTURE EXTENSION TO FUTURE COOLING TOWER FAN MOTORS DISCONNECT SWITCH.
10. ROUTE UNDER PLATFORM THEN UP THRU PLATFORM TO RECEPTACLE MOUNTED ADJACENT TO DOOR 24" ABOVE PLATFORM.
11. 1-1/2" 4#14 & 4#12 & 1#12(G) WITH CELL 5 & 6 VIBRATION SWITCH CONTACT WIRING AND HEATER POWER WIRING FROM CTF-5 AND CTF-6 DRIVES ON ELECTRICAL MEZZANINE:
  - A. VIBRATION SWITCH CONTACT (2#14) WIRED BACK TO DRIVE TO SHUT DOWN FAN ON HIGH VIBRATION.
  - B. HEATER CIRCUIT (2#12, 1#12(G)) WIRED THRU AUXILIARY CONTACT ON DRIVE SO WHEN FAN SHUTS DOWN CONTACT CLOSURES AND ENERGIZES FAN MOTOR HEATER.
12. STUB-UP 1-1/2" CONDUIT AT CONTAINMENT WALL AND CAP FOR FUTURE EXTENSION TO CELLS 7, 8 & 9 VIBRATION SWITCHES AND MOTOR HEATERS.
13. BRING 1" CONDUIT FROM PANEL MLC-2 5'-0" FROM BUILDING AND CAP.
14. SEE DIRECT BURIED CONDUIT DETAIL "504A" ON DRAWING E-504.
15. DI/DO JUNCTION BOX MOUNTED ON CONTAINMENT WALL FOR DISCRETE I/O CABLES BETWEEN I/O PANELS 600-1N AND 600-IS IN PIPE TUNNEL AND COOLING TOWER CELLS 5 & 6. COORDINATE WITH I&C FOR BOX SIZE.
16. AI JUNCTION BOX MOUNTED ON CONTAINMENT WALL FOR ANALOG I/O CABLES BETWEEN I/O PANEL 600-1N IN PIPE TUNNEL AND COOLING TOWER CELLS 5 & 6. COORDINATE WITH I&C FOR BOX SIZE.
17. A1 JUNCTION BOX MOUNTED ON CONTAINMENT WALL FOR FUTURE ANALOG CABLES TO FUTURE COOLING TOWER CELLS 7, 8 & 9 FROM I/O PANEL 600-IN. COORDINATE WITH I&C FOR BOX SIZE.
18. DI/DO JUNCTION BOX MOUNTED ON CONTAINMENT WALL FOR FUTURE DISCRETE CABLES BETWEEN I/O PANELS 600-IN & 600-IS AND FUTURE COOLING TOWER CELLS 7, 8 & 9. COORDINATE WITH I&C FOR BOX SIZE.
19. CONDUIT UP FROM JUNCTION BOX THRU PLATFORM INTO SIDE OF COOLING TOWER TO VIBRATION SWITCH.
20. FEED TO BASIN HEATER CONTROL PANEL FROM DP-3. SEE RISER DIAGRAM ON DWG E-607. THE CONTRACTOR SHALL CONNECT THE BASIN HEATER ELEMENTS TO THE BASIN HEATER CONTROL PANEL.
21. BRING 1-1/2" CONDUIT FROM PANEL DP-3 5'-0" FROM BUILDING AND CAP.
22. ROUTE CONDUIT/WIRING FOR FEED TO HTCP-2 FROM DP-3 BELOW GRADE TO COOLING TOWER THEN UP TO I-BEAM BELOW PLATFORM AND ALONG I-BEAM TO HTCP-2. THEN DROP DOWN FOR BOTTOM ENTRY INTO PANEL.
23. FEED TO HTCP-2 FROM DP-3, SEE RISER DIAGRAM ON DRAWING E-607.

ECN# 32	600C-COOLING TOWER POWER PLAN
JOB: CENTRAL CHILLED WATER FACILITY PHASE II	
SCALE: 1/8"=1'-0"	
DATE: MARCH 29, 2010	
DRAWN BY: BNK	