



Tennessee Valley Authority, 1101 Market Street, Chattanooga, Tennessee 37402

April 29, 2013

10 CFR 50.4

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

Sequoyah Nuclear Plant, Units 1 and 2
NRC Docket Nos. 50-327 and 50-328
Facility License Nos. DPR-77 and DPR-79

Watts Bar Nuclear Plant, Unit 1
NRC Docket No. 50-390
Facility Operating License No. NPF-90

Subject: Completion of Commitments Related to Updated Hydrologic Analysis Results for Sequoyah Nuclear Plant Units 1 and 2 and Watts Bar Nuclear Plant Unit 1 (TAC Nos. ME8805, ME8806, and ME8807)

- References:**
1. Letter from TVA to NRC Document Control Desk, "Commitments Related to Updated Hydrologic Analysis Results for Sequoyah Nuclear Plant, Units 1 and 2, and Watts Bar Nuclear Plant, Unit 1," dated June 13, 2012 (Accession No. ML12171A053).
 2. Letter from NRC to TVA, "Confirmatory Action Letter - Watts Bar Nuclear Plant, Unit 1, and Sequoyah Nuclear Plant, Units 1 and 2, Commitments to Address External Flooding Concerns (TAC Nos. ME8805, ME8806, and ME8807)," dated June 25, 2012 (Accession No. ML12165A527).
 3. TVA Submittal to NRC Document Control Desk, "Application to Revise Sequoyah Nuclear Plant Units 1 and 2 Updated Final Safety Analysis Report Regarding Changes to Hydrologic Analysis, (SQN-TS-12-02)," dated August 10, 2012 (Accession No. ML12226A561).
 4. TVA Submittal to NRC Document Control Desk, "Application to Revise Watts Bar Nuclear Plant Unit 1 Updated Final Safety Analysis Report Regarding Changes to Hydrologic Analysis, TAC No. ME8200 (WBN-UFSAR-12-01)," dated July 19, 2012 (Accession No. ML12236A167).

By letter dated June 13, 2012 (Reference 1), the Tennessee Valley Authority (TVA) made 16 commitments to mitigate potential external flooding hazards at Sequoyah Nuclear Plant (SQN) Units 1 and 2 and Watts Bar Nuclear Plant (WBN) Unit 1. By Confirmatory Action

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April 29, 2013

Letter (CAL) dated June 25, 2012 (Reference 2), the NRC confirmed TVA's commitments and required, in part, that TVA notify the NRC in writing when TVA has completed the actions addressed in the CAL. The purpose of this letter is to notify the NRC of the completion of Commitment Numbers 8 through 11 in the Reference 1 and 2 letters.

These commitments are related to the updated hydrologic analysis for SQN Units 1 and 2 and WBN Unit 1 that results in increased Design Basis Flood levels at the sites, as described in the letters dated August 10, 2012 (Reference 3) and July 19, 2012 (Reference 4), respectively. The implementation date of these commitments was specified as March 31, 2013. The committed date for these four commitments has been met.

In addition, Commitment Numbers 3 through 5 specified compensatory measures that are now no longer required as a result of the permanent modifications completed for Commitment Numbers 8, 10, and 11, respectively. Therefore, there are no further actions required for Commitment Numbers 3 through 5 and 8 through 11.

Enclosure 1 contains a description of the permanent plant modifications installed, a description of the previous compensatory measures that are now superseded, and a description of the effect of the new flood protection features on flood warning preparations.

The enclosure contains no new regulatory commitments. Please address any questions regarding this letter to Ed Schrull at (423) 751-3850.

Respectfully,



J.W. Shea
Vice President, Nuclear Licensing

Enclosure:

1. Report on Completion of Plant Modifications for Flood Protection

cc (Enclosure):

NRC Regional Administrator - Region II
NRC Senior Resident Inspector – Watts Bar Nuclear Plant, Unit 1
NRC Senior Resident Inspector – Sequoyah Nuclear Plant

ENCLOSURE 1
REPORT ON COMPLETION OF PLANT MODIFICATIONS FOR FLOOD PROTECTION

By letter dated June 13, 2012 (Reference 1), the Tennessee Valley Authority (TVA) made 16 commitments to mitigate potential external flooding hazards at Sequoyah Nuclear Plant (SQN) Units 1 and 2 and Watts Bar Nuclear Plant (WBN) Unit 1. By Confirmatory Action Letter (CAL) dated June 25, 2012 (Reference 2), the NRC confirmed TVA's commitments and required, in part, that TVA notify the NRC in writing when TVA has completed the actions addressed in the CAL. The purpose of this letter is to notify the NRC of the completion of Commitment Numbers 8 through 11 in the Reference 1 and 2 letters.

These commitments are related to the updated hydrologic analysis for SQN Units 1 and 2 and WBN Unit 1 that results in increased Design Basis Flood (DBF) levels at the sites, as described in the letters dated August 10, 2012 (Reference 3) and July 19, 2012 (Reference 4), respectively. The implementation date of these commitments was specified as March 31, 2013. The committed date for these four commitments has been met.

This Enclosure contains a description of the permanent plant modifications installed, a description of the previous compensatory measures that are now superseded, and a description of the effect of the new flood protection features on flood warning preparations.

Commitment No. 8

As described in the Reference 1 and 2 letters, TVA committed to the following:

By March 31, 2013, TVA will install a permanent plant modification to provide flood protection with respect to the Design Basis Flood level for the WBN, Unit 1 Thermal Barrier Booster pumps and motors.

This commitment was completed on March 29, 2013.

Plant Modification Description

As discussed in the Reference 4 letter, the increase in DBF elevation had the potential to eliminate the existing margin at the WBN Unit 1 Thermal Barrier Booster (TBB) Pump 1 A-A and 1 B-B motors (1-MTR-70-131-A and 1-MTR-70-130-B). Field measurements of these motors taken from the floor and calibrated benchmark locations near the pumps indicate that the actual elevation to the base plate of these pumps is 739 ft 4 inches (739.3 ft). There is approximately 1/2 inch to 3/4 inch to the casing of the pump motor. The increased DBF elevation for the WBN Auxiliary Building including surge is 739.7 ft, thus flood water had the potential to go above the very bottom of the pump motors casing. The permanent plant modification includes a two foot margin, so the minimum elevation at the top of the barrier is designed to be approximately 741.7 ft.

The permanent plant modification consists of the installation of permanent flood barrier wall WBN-1-STRU-604-002. As shown in Attachment 1 to this Enclosure, the barrier starts at the WBN Auxiliary Building A5 wall line approximately seven feet north of Line W, extending approximately 10 ft east and turning south, extending approximately 13 ft to the east-west running concrete wall. A four foot access opening is provided to accommodate operational and

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maintenance needs. A 1/4 inch thick steel plate is seal welded across the flood barrier access opening. The barrier encloses both the Train A and Train B TBB Pumps and provides flood protection for two feet above the DBF level meeting the commitment requirement to provide flood protection with respect to the DBF level.

A future modification will install removable flood barrier door panels WBN-1-BRR-604-B002 to allow easier personnel and equipment access. These removable flood barrier door panels replace the 1/4 inch thick steel plate in the four foot access opening, will maintain the two feet of margin above the DBF level, and will be stored in a seismically qualified storage rack WBN-1-RCK-604-R002 adjacent to the door opening mounted to the flood barrier wall.

The barrier is constructed of steel plate and stiffened with horizontal and vertical tube steel members. The barrier wall cover plates are welded to a base plate located along the sealed portions of the floor, and welded to either an existing embedded plate or new wall plate to seal the end wall attachments. The base plate and new wall plates are attached to the floor or wall whichever is applicable using wedge bolts. All barrier members and connections are designed to Seismic Category I criteria/standards and capable of resisting the hydraulic pressures created by a DBF event and additional two feet of margin with floodwater elevations of 741.7 ft in the Auxiliary Building. The flood barrier is designed, fabricated and installed to American Institute of Steel Construction (AISC) and American Welding Society (AWS) standards.

A two-part sealing system is used at the majority of barrier-to-existing structure interfaces. There are 1-1/2 inch wide by one inch deep keyways cut out of the concrete walls and floor as applicable. The keyways are filled with SLYGARD 170 sealant; the steel base or wall plate key is embedded in the sealant creating a water-tight seal; the base/wall plate is grouted completing the water seal. The typical flood barrier-to-wall interface is provided by seal welding to the existing embedded plate or the new wall plate installation. Additionally, seals at the new and existing drain line panel penetrations are seal welded around the pipe through the wall plate penetration.

The flood barriers are attached to the walls and floor of the elevation 737 ft Auxiliary Building which is a Category I structure. Loads generated by the flood barrier and applied to the Auxiliary Building concrete walls and floors have been evaluated and do not adversely affect the structural integrity of these components.

The seal leak off floor drain will be temporarily modified during a Stage I Flood Warning in the same manner that it was being modified when the previous temporary flood barrier was installed as a compensatory measure. The floor drain will be sealed with a Thaxton plug to prevent floodwater backflow intrusion from elevations below. Should standard pump seal leak off occur, the protected area provided by flood protection barrier is large enough in volume to accommodate the water from seal leak off without filling the area and endangering the performance of the pumps. The installation of the barriers will not affect the performance of the pumps because it is installed at a sufficient distance from the pump motors to prevent overheating.

An existing sample drain pipe running along the north concrete wall of the TBB pumps protected area was not rerouted, but penetrates the barrier at its existing location. Sampling is not affected by the design change.

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Two separate conduit/cables were rerouted. The first conduit/cable (1PLC3369A/1PL6120) provides power supply to the pumps, and presented a possible path for flood water to enter the protected area around the pumps. This cable, which runs along the north concrete wall of the newly flood protected area, is an Appendix R cable and was rerouted as necessary to accommodate the modification. A second unscheduled conduit/cable for lighting did not present a path for floodwater to enter the protected area around the pumps, but is required to be rerouted to avoid the wall at the barrier/concrete wall interface.

Existing hand switch HS-26-246Y was de-energized and left in place per a previous design change. There was interference at the interface of the new flood barrier and the concrete wall at A5. This modification removed the hand switch to allow the attachment of the barrier to the wall, and the remaining portion of conduit (0FE04453) above the cut-line was abandoned (cable 0FE936 routed in this conduit was already abandoned).

Superseded Compensatory Measures

The permanent flood barrier replaced a temporary flood barrier that was described in the Reference 4 letter. The temporary barrier encompassed the TBB Pumps providing approximately 0.8 ft of margin above the increased DBF surge level. There were seven major components that were part of the barrier (three end attachment units and four panels), with two end attachment units that attached the L-shaped barrier to the West and South walls that were attached to the surrounding structure walls. By comparison, the permanent plant modification includes a two foot margin above the increased DBF surge level.

Effect on Flood Warning Preparations

As previously stated, the seal leak off floor drain will be temporarily modified during a Stage I Flood Warning. This action was already identified as necessary and had been addressed during the time the previous compensatory measures were in place. WBN Unit 1 Maintenance Instruction MI-17.003, "Flood Mode Preparation Storage Locations and Periodic Inventory," includes periodic inspection to ensure staging of the seal leak off floor drain plug. WBN Unit 1 Abnormal Operating Instruction AOI-7.01, "Maximum Probable Flood," requires the performance of WBN Units 1 and 2 Maintenance Instruction MI-17.004, "Movement of Equipment, Flood Mode Preparation," which directs the installation of the plug for the seal leak off floor drain.

There are no other effects on flood warning preparations from the implementation of the permanent plant modification described above.

Commitment No. 9

As described in the Reference 1 and 2 letters, TVA committed to the following:

By March 31, 2013, TVA will install a permanent plant modification to provide flood protection with respect to the Design Basis Flood level for the WBN, Unit 1 Spent Fuel Pit Cooling pumps and motors.

This commitment was completed on March 29, 2013.

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REPORT ON COMPLETION OF PLANT MODIFICATIONS FOR FLOOD PROTECTION

Plant Modification Description

As discussed in the Reference 4 letter, the increase in DBF elevation had the potential to eliminate the existing margin at the WBN Unit 1 Spent Fuel Pit Cooling (SFPC) Pumps B-B, Pump A-A, and Pump C-S motors (0-MTR-78-9-B, 0-MTR-78-12-A, and 0-MTR-78-35-S) and the SFPC Skimmer pump motor (0-MTR-78-1). The increased DBF elevation for the WBN Auxiliary Building including surge is 739.7 ft, thus flood water had the potential to approach the very bottom of the pump motors casing. The permanent plant modification includes a two foot margin, so the minimum elevation at the top of the barrier is designed to be approximately 741.7 ft.

The permanent plant modification consists of the installation of permanent flood barrier wall WBN-0-STRU-604-003. As shown in Attachment 2 to this Enclosure, the barrier starts at the WBN Auxiliary Building A11 wall line approximately 12 ft north of Line W, extends approximately 25 ft west and turns north, extending approximately 13 ft to a corner post, then west terminating into the north-south running concrete wall. A four foot access opening is provided to accommodate operational and maintenance needs. A 1/4 inch thick steel plate is seal welded across the flood barrier access opening. The barrier encloses the three SFPC pumps and the SFPC Skimmer pump and provides flood protection for two feet above the DBF level meeting the commitment requirement to provide flood protection with respect to the DBF level.

A future modification will install removable flood barrier door panels WBN-0-BRR-604-B003 to allow easier personnel and equipment access. These removable flood barrier door panels replace the 1/4 inch thick steel plate in the four foot access opening, will maintain the two feet of margin above the DBF level, and will be stored in a seismically qualified storage rack WBN-0-RCK-604-R003 adjacent to the door opening mounted to the flood barrier wall.

The barrier is constructed of steel plate and stiffened with horizontal and vertical tube steel members. The barrier wall cover plates are welded to a base plate located along the sealed portions of the floor, and welded to either an existing embedded plate or new wall plate to seal the end wall attachments. The base plate and new wall plates are attached to the floor or wall whichever is applicable using wedge bolts. All barrier members and connections are designed to Seismic Category I criteria/standards and capable of resisting the hydraulic pressures created by a DBF event and additional two feet of margin with floodwater elevations of 741.7 ft in the Auxiliary Building. The flood barrier is designed, fabricated and installed to American Institute of Steel Construction (AISC) and American Welding Society (AWS) standards.

A two-part sealing system is used at the majority of barrier-to-existing structure interfaces. There are 1-1/2 inch wide by one inch deep keyways cut out of the concrete walls and floor as applicable. The keyways are filled with SLYGARD 170 sealant; the steel base or wall plate key is embedded in the sealant creating a water-tight seal; the base/wall plate is grouted completing the water seal. The typical flood barrier-to-wall interface is provided by seal welding to the existing embedded plate or the new wall plate installation. Additionally, seals at the new and existing drain line panel penetrations are seal welded around the pipe through the wall plate penetration.

The flood barriers are attached to the walls and floor of the elevation 737 ft Auxiliary Building which is a Category I structure. Loads generated by the flood barrier and applied to the

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Auxiliary Building concrete walls and floors have been evaluated and do not adversely affect the structural integrity of these components.

The seal leak off lines from SFPC Pumps B-B (0-PMP-78-9) and C-S (0-PMP-78-35) have been modified by removing an existing socket weld ELBOW, and replacing it with a new socket weld TEE with a new two inch top connection and threaded cap for each.

The seal leak off line from SFPC Pump A-A (0-PMP-78-12) has been modified by removing an existing socket weld TEE and replacing it with a socket weld CROSS with a new two inch top connection and threaded cap. In addition, the 3/4 inch casing drain line above the new CROSS has been raised approximately to elevation 739 ft 8 inches.

The SFPC Skimmer pump (0-PMP-78-1) required removal of an existing ELBOW and replacing it with a new socket weld TEE with a new two inch top connection and threaded cap. In addition, an existing TEE was replaced with a new CROSS with two inch side connection and threaded cap to prevent backflow from the drain funnels outside of the protected area.

The seal leak off floor drains described above will be temporarily modified during a Stage I Flood Warning. The floor drains will be sealed with Thaxton plugs to prevent floodwater backflow intrusion from elevations below. Should standard pump seal leak off occur, the protected area provided by flood protection barrier is large enough in volume to accommodate the water from seal leak off without filling the area and endangering the performance of the pumps. The installation of the barriers will not affect the performance of the pumps because it is installed at a sufficient distance from the pump motors to prevent overheating.

An existing drain pipe running along the west concrete wall of the SFPC pumps and SFPC Skimmer pump flood protected area was not be rerouted, but penetrates the barrier at its existing location.

One conduit conflicted with the new flood barrier wall protecting the area around the pumps. Conduit 0PV00004 runs north along the west wall of the new flood barrier in the unprotected area, and crosses into the protected area on the north end of the wall. The conduit was rerouted over the new flood barrier wall as necessary. Cable 0PV422 routed in conduit 0PV00004 provides connection between panel 0-PNL-276-L30 and panel 0-PNL-276-L643. The existing cable was replaced with a new and longer cable to accommodate the new route.

Superseded Compensatory Measures

The permanent flood barrier is a new structure. There were no previous compensatory measures in place for the SFPC pump motors and SFPC Skimmer pump motors since there was approximately 0.7 ft of margin above the increased DBF surge level prior to installation of the flood barrier as described in the Reference 4 letter. The permanent plant modification includes a two foot margin above the increased DBF surge level.

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Effect on Flood Warning Preparations

As previously stated, the seal leak off floor drains will be temporarily modified during a Stage I Flood Warning. This is a new action during flood warning preparations. WBN Unit 1

Maintenance Instruction MI-17.003, "Flood Mode Preparation Storage Locations and Periodic Inventory," includes periodic inspection to ensure staging of the seal leak off floor drain plugs. WBN Unit 1 Abnormal Operating Instruction AOI-7.01, "Maximum Probable Flood," directs the performance of WBN Units 1 and 2 Maintenance Instruction MI-17.004, "Movement of Equipment, Flood Mode Preparation," which directs the installation of the plugs for the seal leak off floor drains.

There are no other effects on flood warning preparations from the implementation of the permanent plant modification described above.

Commitment No. 10

As described in the Reference 1 and 2 letters, TVA committed to the following:

By March 31, 2013, TVA will install permanent plant modification to provide flood protection with respect to the Design Basis Flood level for the common SQN, Units 1 and 2 Diesel Generator Building.

This commitment was completed on March 29, 2013.

Plant Modification Description

As discussed in the Reference 3 letter, the increased DBF for the SQN Diesel Generator Building includes the PMF level of elevation 722.0 ft (the Diesel Generator Building operating floor elevation) plus 1.2 ft of wind wave run up on the 4:1 and 15:1 slopes approaching the building, reaching elevation 723.2 ft. Therefore, TVA has installed plant modifications to provide flood protection for the SQN Diesel Generator Building at several locations to account for the maximum postulated wind wave run up. Modifications include installation of flood protection barriers in the Diesel Generator Building at elevation 722.0 ft for equipment doors (D1-D4), personnel access door (D5) and emergency doors (D15-D18), capping of the 3/4 inch waste line from the Toilet Room, and extension to the four external fuel fill ports for the seven day oil storage tanks.

The flood protection barriers for the equipment doors (D1-D4) are fabricated on-site, and consist of a steel plate attached to a framing angle that is welded to the inside of the door frames, as shown in Sheet 1 of Attachment 3. The equipment numbers for these flood protection barriers are SQN-0-BRR-634-D001 through SQN-0-BRR-634-D004, respectively. These barriers ensure flood protection up to two feet above the increased DBF level. These flood barriers are installed at all times, except when access is needed for major maintenance. Therefore, no action is necessary during a flood event to install these barriers. The barriers may be removed as needed when access is required to perform major maintenance. In such instances where the barrier might be temporarily removed, the flood barrier is placed in a storage location. During flood mode preparations, an action is required to retrieve the barrier and remount it to the

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framing angle. Lifting lugs mounted to the concrete around the door frames are provided to assist in installation and removal.

The flood protection barrier for the personnel access door (D5) consists of an L-shaped reinforced concrete berm that is an extension of the permanent structure, and is located inside the building between doors D5 and D6. The flood protection barriers for the emergency doors (D15-D18) consist of reinforced concrete berms that are extensions of the permanent structure, and are located in the corridors outside of the emergency doors. These barriers are shown in Sheet 2 of Attachment 3. These barriers ensure flood protection up to the increased DBF level meeting the commitment requirement to provide flood protection with respect to the DBF level.

Capping of the 3/4 inch waste line from the Toilet Room was previously not required, because the plumbing drains were located above the previous DBF level. Capping the line provides flood protection above the increased DBF level, as shown in Sheet 3 of Attachment 3.

Extension to the four external fuel fill ports for the seven day oil storage tanks was previously not required, because the ports although capped were located above the previous DBF level. Extension to the four external fuel fill ports to elevation 725.25 ft provides flood protection up to two feet above the increased DBF level allowing sufficient margin to remove the cap and refill the tanks during a PMF event, as shown in Sheet 4 of Attachment 3.

A future modification will replace the flood protection barriers (reinforced concrete berms) for the personnel access door (D5) and emergency doors (D15-D18) with engineered flood barriers, as shown in Sheet 5 of Attachment 3. This will allow easier personnel and equipment access through these doors while ensuring adequate flood protection. These engineered flood barriers will ensure flood protection up to two feet above the increased DBF level, maintaining the commitment requirement to provide flood protection with respect to the DBF level. The flood barriers that are being identified for installation at doors D5, D15, D16, D17, and D18, are manufactured and qualified by Presray Corporation. The products are the Fastlogs System and the FB33 System, although equal products from another manufacturer may be used in the place of Presray products. Door D5 will use the Fastlogs System, and Doors D15, D16, D17, and D18 will use the FB33 System. A door rack will be supplied at each location, and a storage rack will be provided as needed for the Presray products. The equipment numbers for these flood protection barriers are SQN-0-BRR-634-D005, and SQN-0-BRR-634-D015 through SQN-0-BRR-634-D018, respectively.

Superseded Compensatory Measures

The installation of permanent plant modifications to protect the Diesel Generator Building entrances from a DBF has replaced the use of sandbag berms that was described in the Reference 3 letter.

Effect on Flood Warning Preparations

The actions to install sandbag berms has been removed from flood warning preparations, and there are no other current effects on flood warning preparations from the implementation of the permanent plant modifications described above. However, actions during flood warning preparations will be required in the future to install the engineered flood barriers for the personnel access door (D5) and emergency doors (D15-D18) when those permanent

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modifications are complete, These actions are not complex, and will take less time than the actions previously required for constructing the sandbag berms.

Commitment No. 11

As described in the Reference 1 and 2 letters, TVA committed to the following:

By March 31, 2013, TVA will implement the design change to document the SQN, Units 1 and 2 Spent Fuel Pit Cooling Pump Enclosure caps as a permanent plant feature.

This commitment was completed on March 29, 2013.

Plant Modification Description

As discussed in the Reference 3 letter, the SFPC pumps are located on a platform at elevation 721.0 ft in the Auxiliary Building. The SFPC pumps are protected from flooding by Auxiliary Building walls on two sides and the SFPC pump enclosure constructed of steel plating on the other two sides. The SFPC pump enclosure provides protection up to a flood elevation of 724.5 ft (top of the two sides constructed of steel plating), which is adequate to provide protection from the proposed DBF level in the Auxiliary Building in the Reference 3 letter of elevation 722.5 ft.

A design feature of the enclosure includes two six inch diameter drains located next to each other on the enclosure that are normally open during operation to allow any leakage from the SFPC pumps to drain to the normal Auxiliary Building drains as shown in Attachment 4. The drains are located at the bottom of the enclosure near the floor elevation of 714.0 ft, the caps are attached to the drains by chains, and the drains are readily accessible during Stage II Flood Warning preparations.

Superseded Compensatory Measures

This modification was only to revise design documentation, and did not change the physical design of the SFPC pump enclosure drains and drain caps. Therefore, there were no previous compensatory measures.

Effect on Flood Warning Preparations

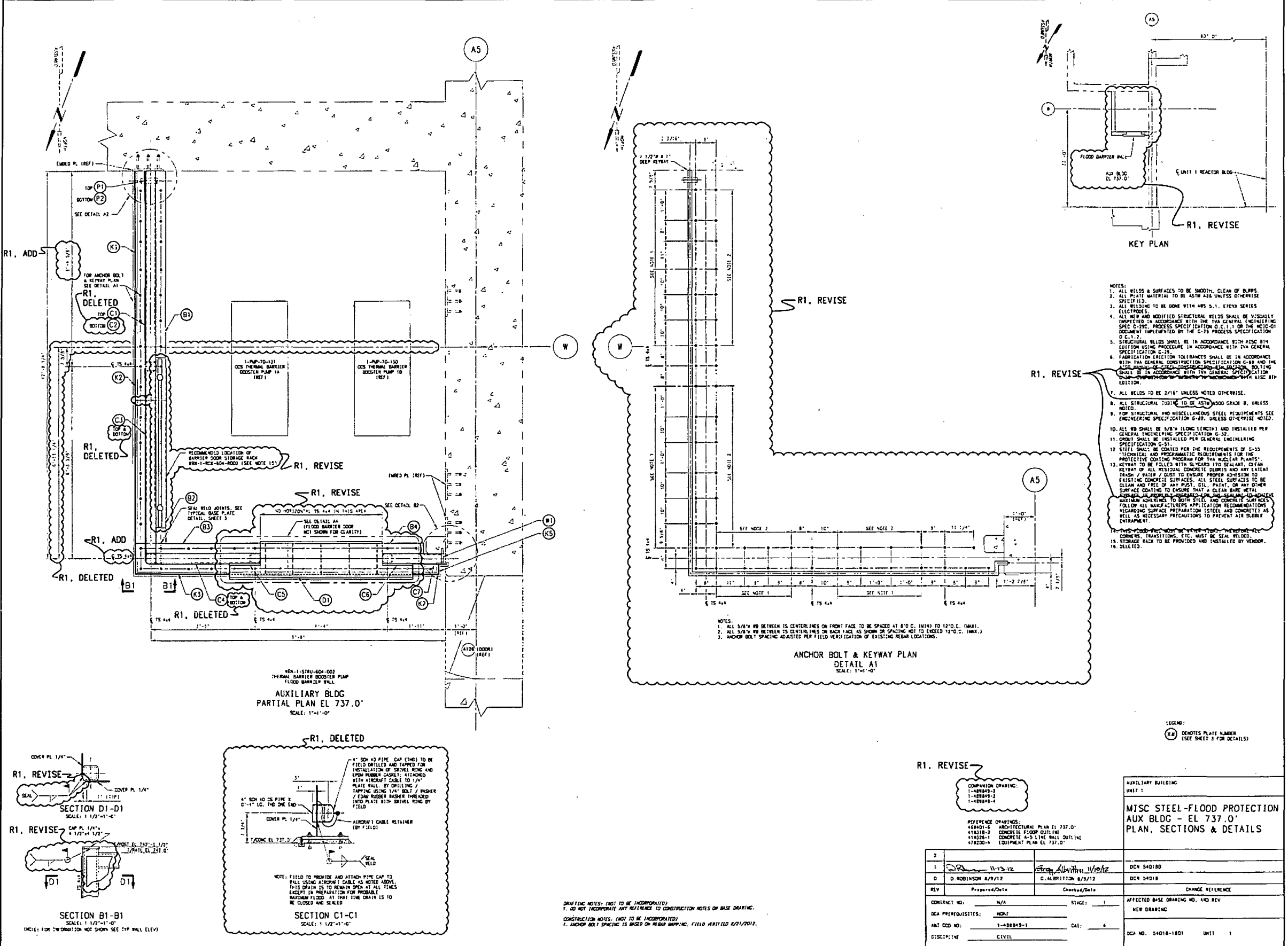
These drains are capped as required by SQN Units 1 and 2 Abnormal Operating Procedure AOP-N.03 during Stage II Flood Warning preparations in accordance with maintenance instruction 0-FP-MXX-000-011.0, "Flood Preparation SFPC Pump Enclosure Caps, SFPC System Heat Exchangers, RCP Thermal Barrier Booster Pumps, and RHR Heat Exchanger Spool Pieces." Because this modification was only to revise design documentation, these steps were already required during Stage II flood mode preparations. Therefore, there are no effects on flood warning preparations from the implementation of the permanent plant modification described above.

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REPORT ON COMPLETION OF PLANT MODIFICATIONS FOR FLOOD PROTECTION

References

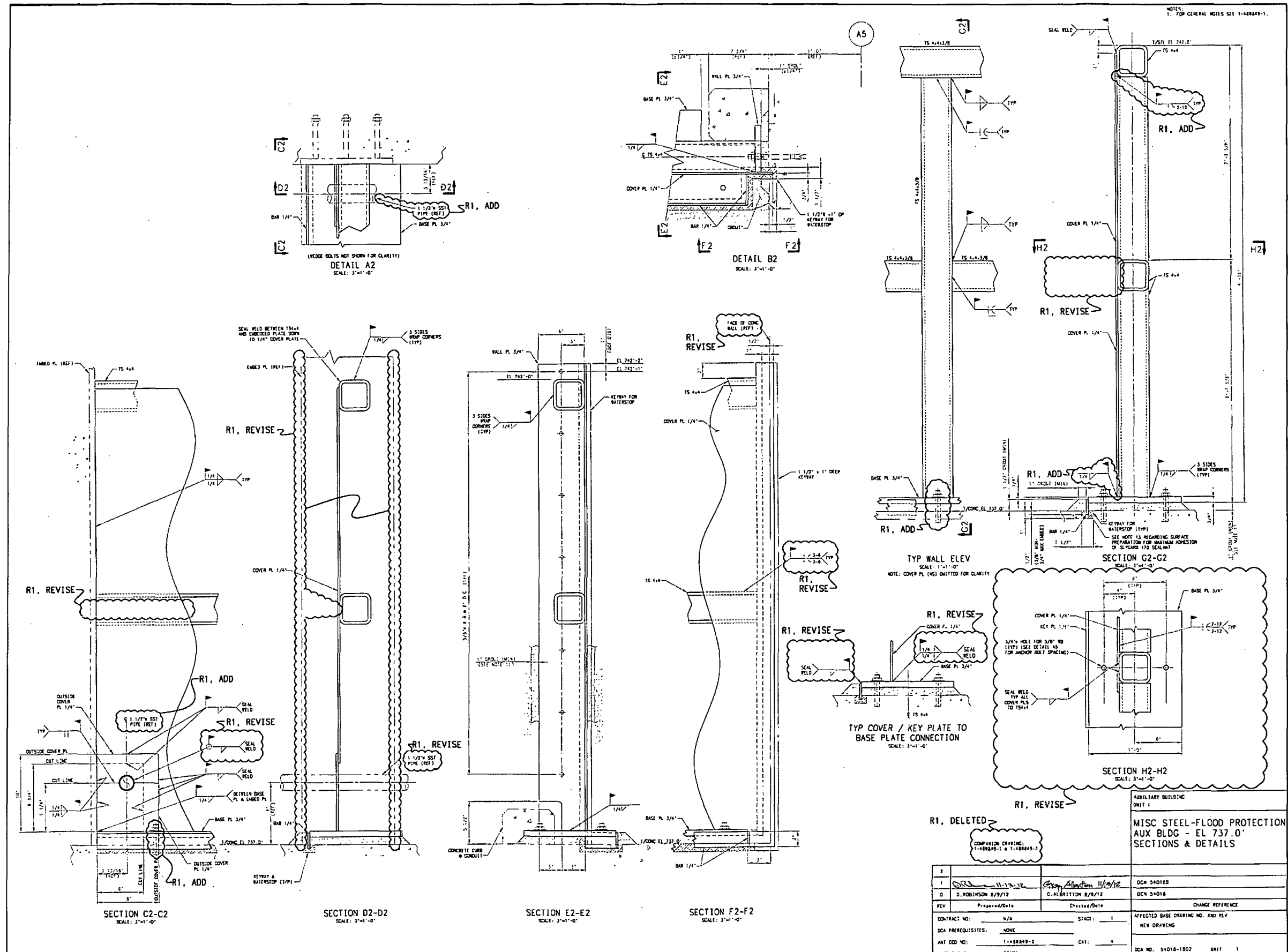
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2. Letter from NRC to TVA, "Confirmatory Action Letter - Watts Bar Nuclear Plant, Unit 1, and Sequoyah Nuclear Plant, Units 1 and 2, Commitments to Address External Flooding Concerns (TAC Nos. ME8805, ME8806, and ME8807)," dated June 25, 2012 (Accession No. ML12165A527).
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4. TVA Submittal to NRC Document Control Desk, "Application to Revise Watts Bar Nuclear Plant Unit 1 Updated Final Safety Analysis Report Regarding Changes to Hydrologic Analysis, TAC No. ME8200 (WBN-UFSAR-12-01)," dated July 19, 2012 (Accession No. ML12236A167).

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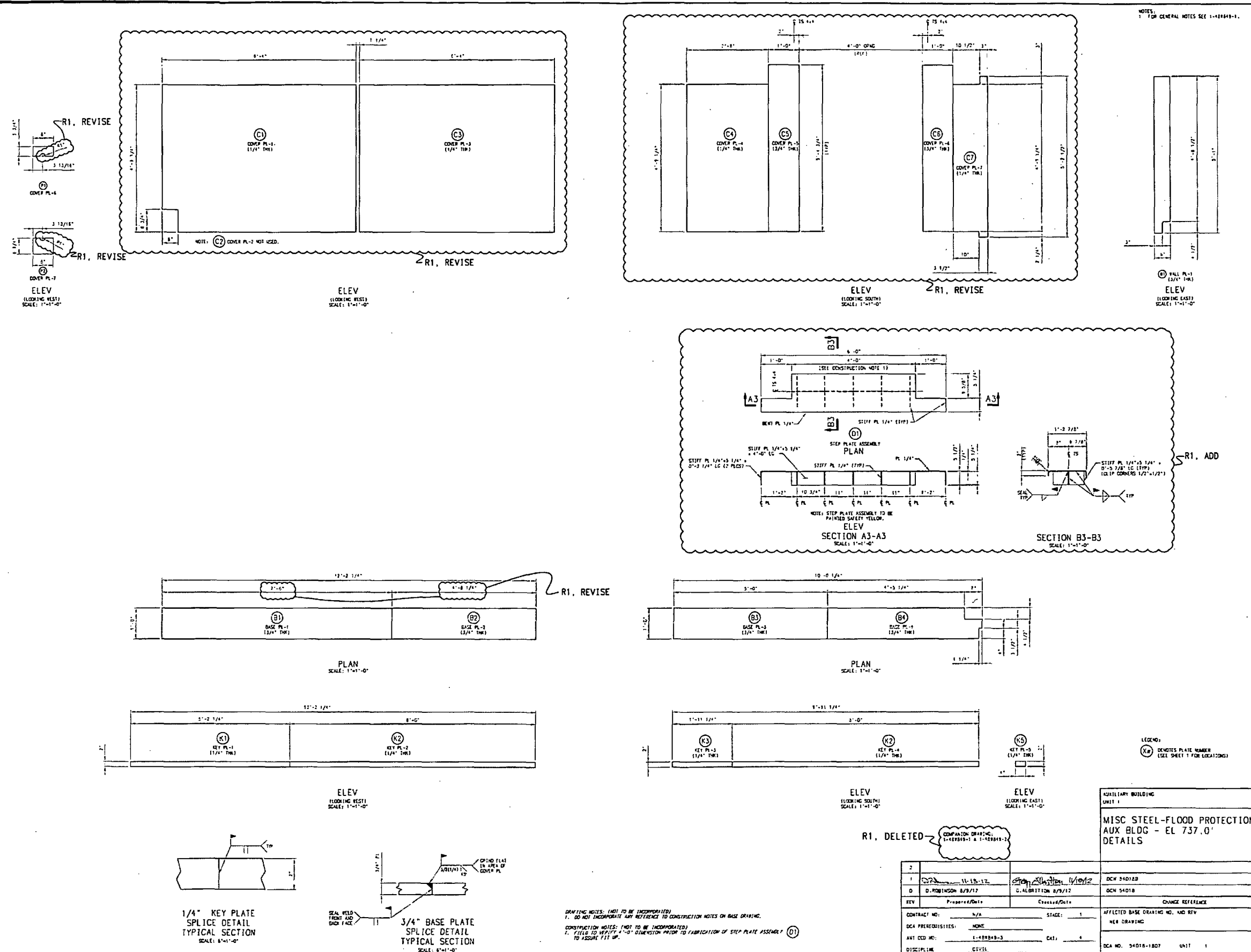


ATTACHMENT 1 SHEET 1: WBN UNIT 1 THERMAL BARRIER BOOSTER PUMP FLOOD BARRIER

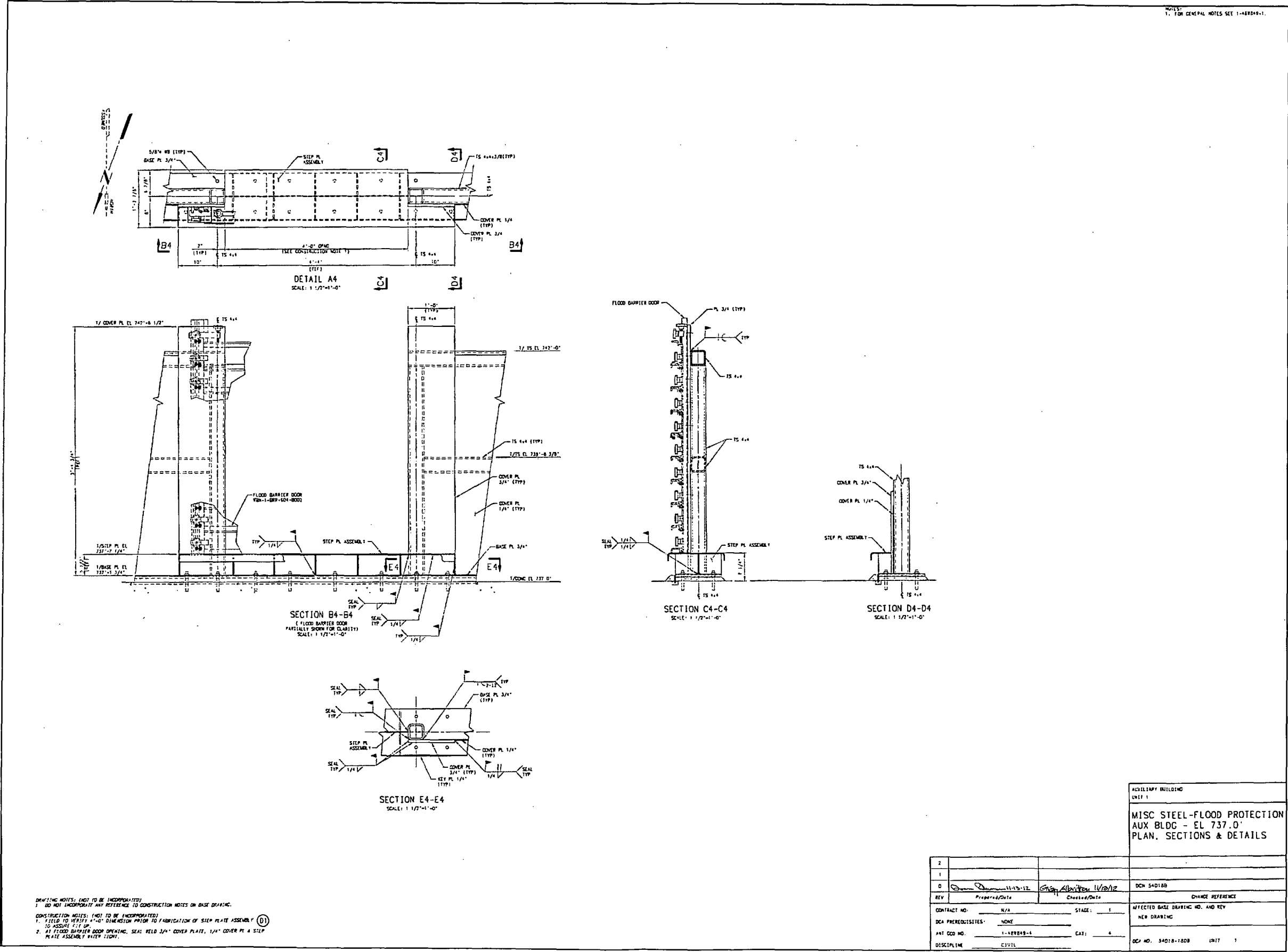
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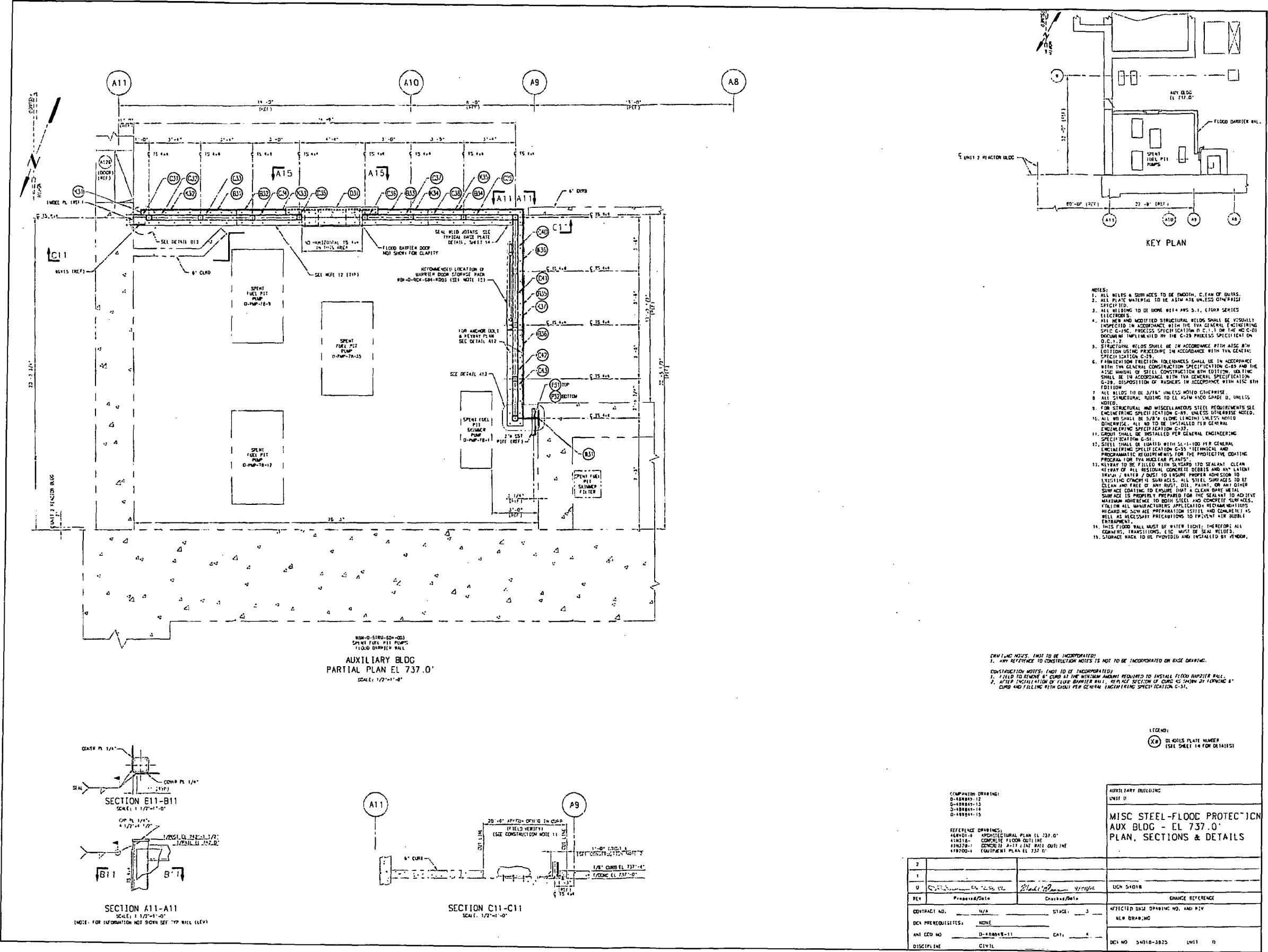
REPORT ON COMPLETION OF PLANT MODIFICATIONS FOR FLOOD PROTECTION



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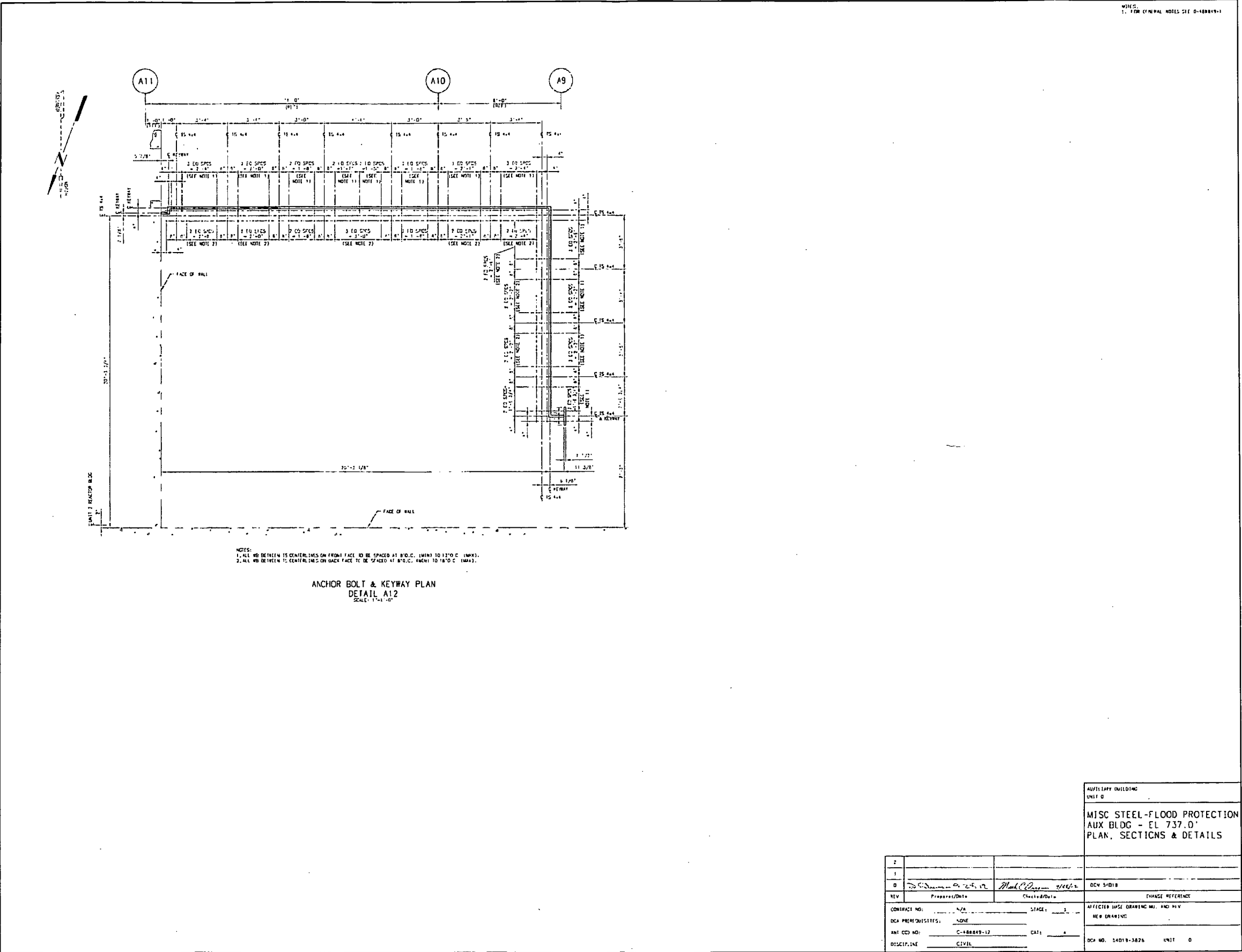


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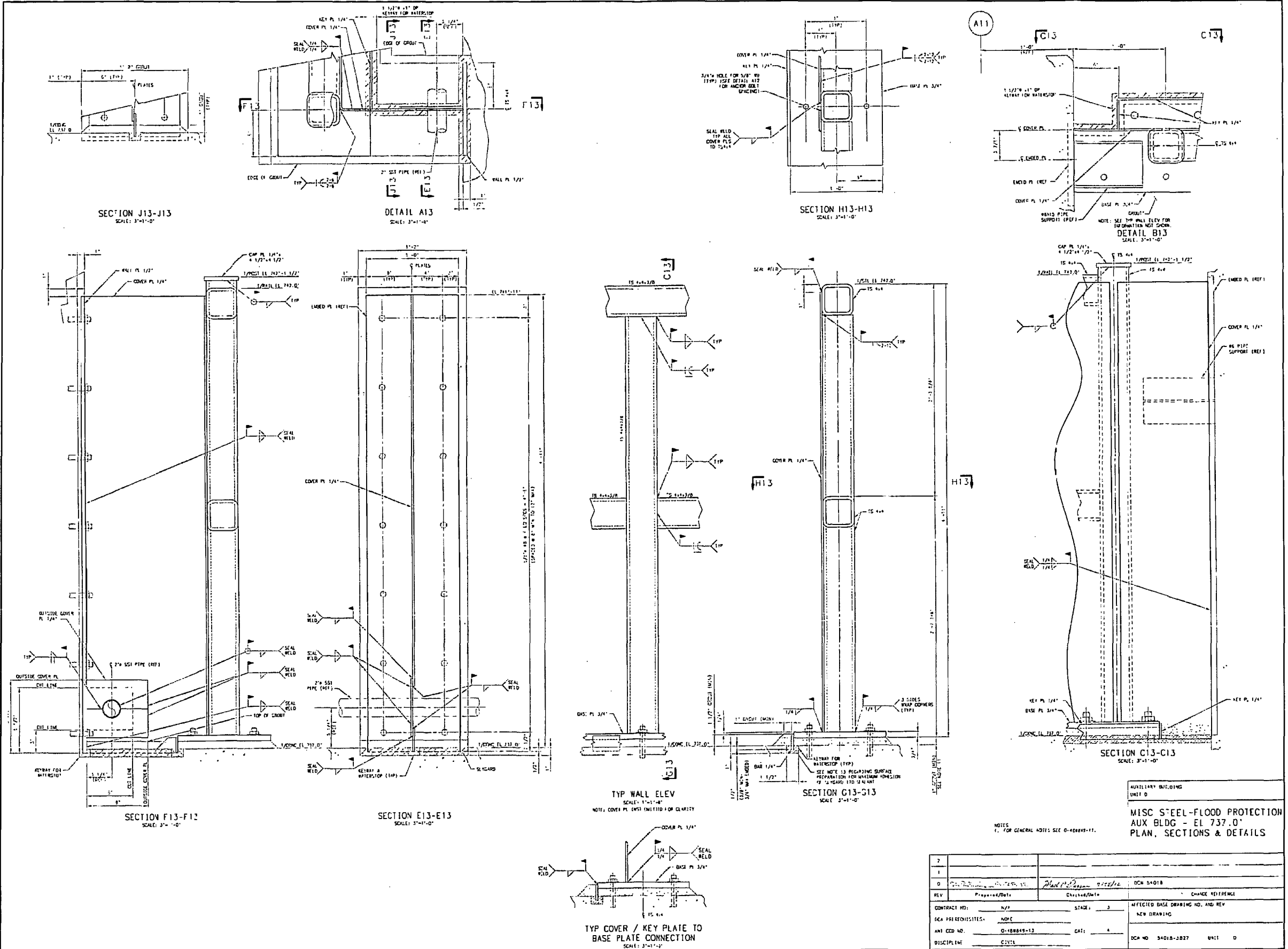


ATTACHMENT 2 SHEET 1: WBN UNIT 1 SPENT FUEL PIT COOLING PUMPS AND SKIMMER PUMP FLOOD BARRIER

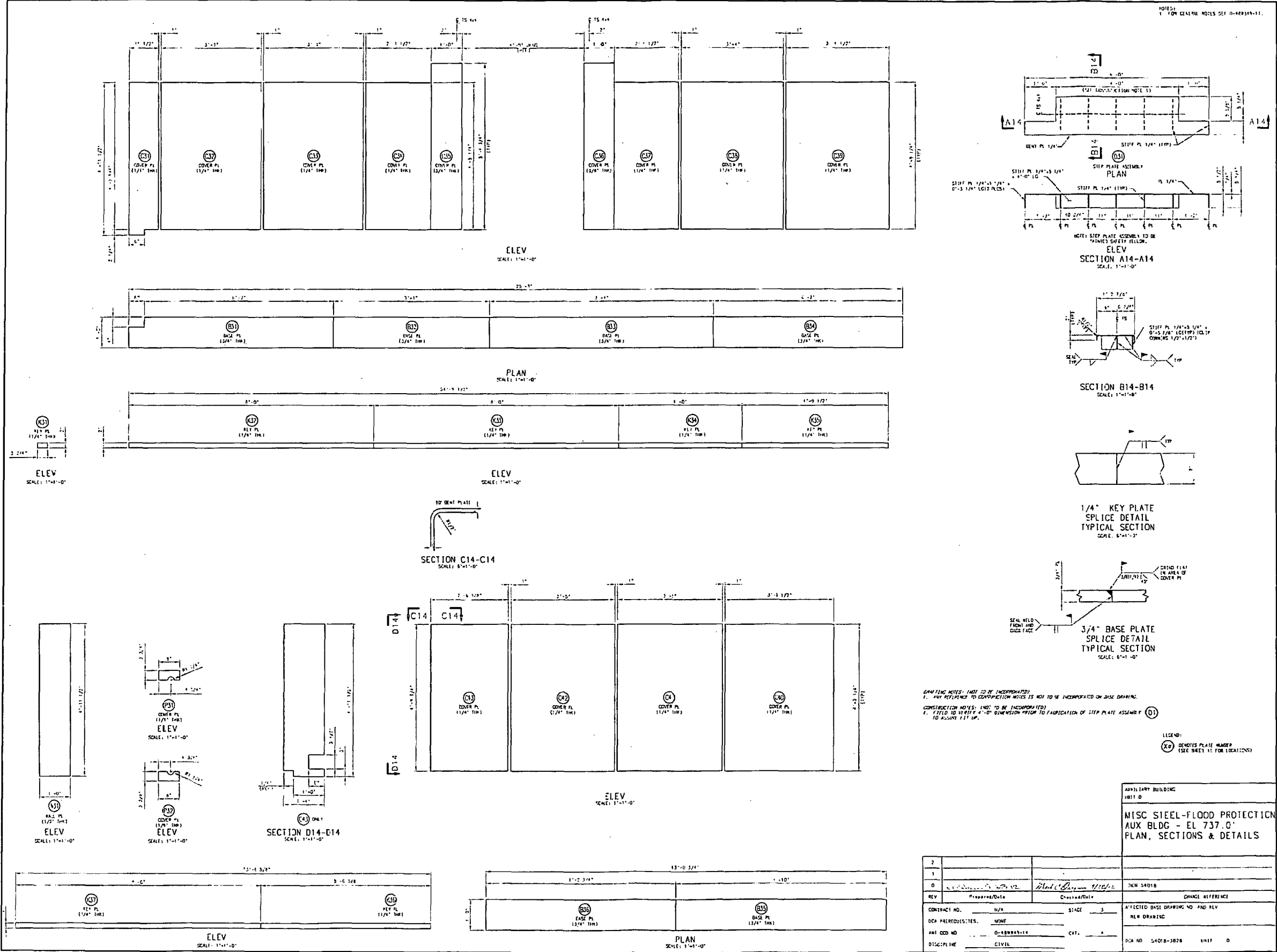
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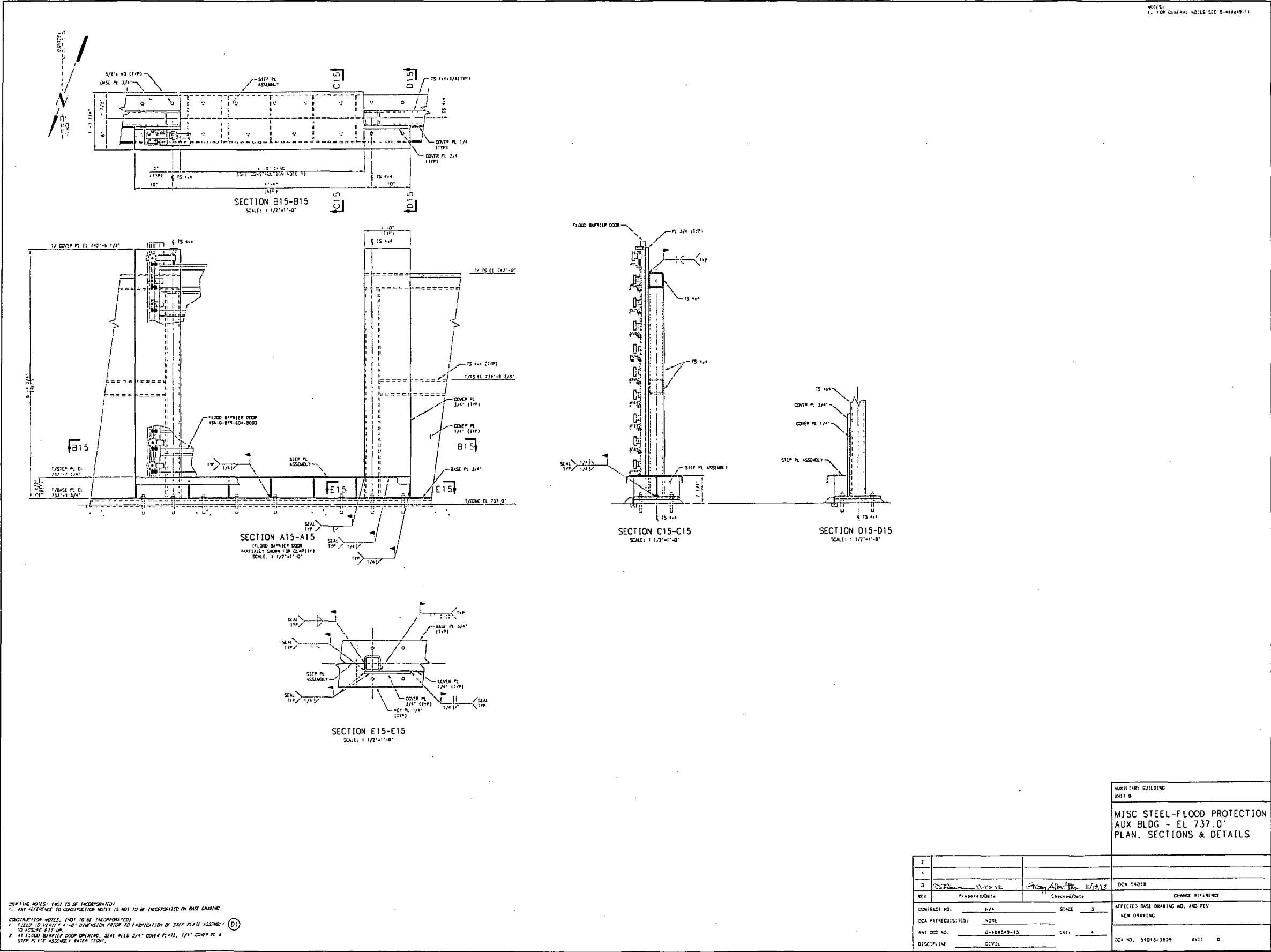


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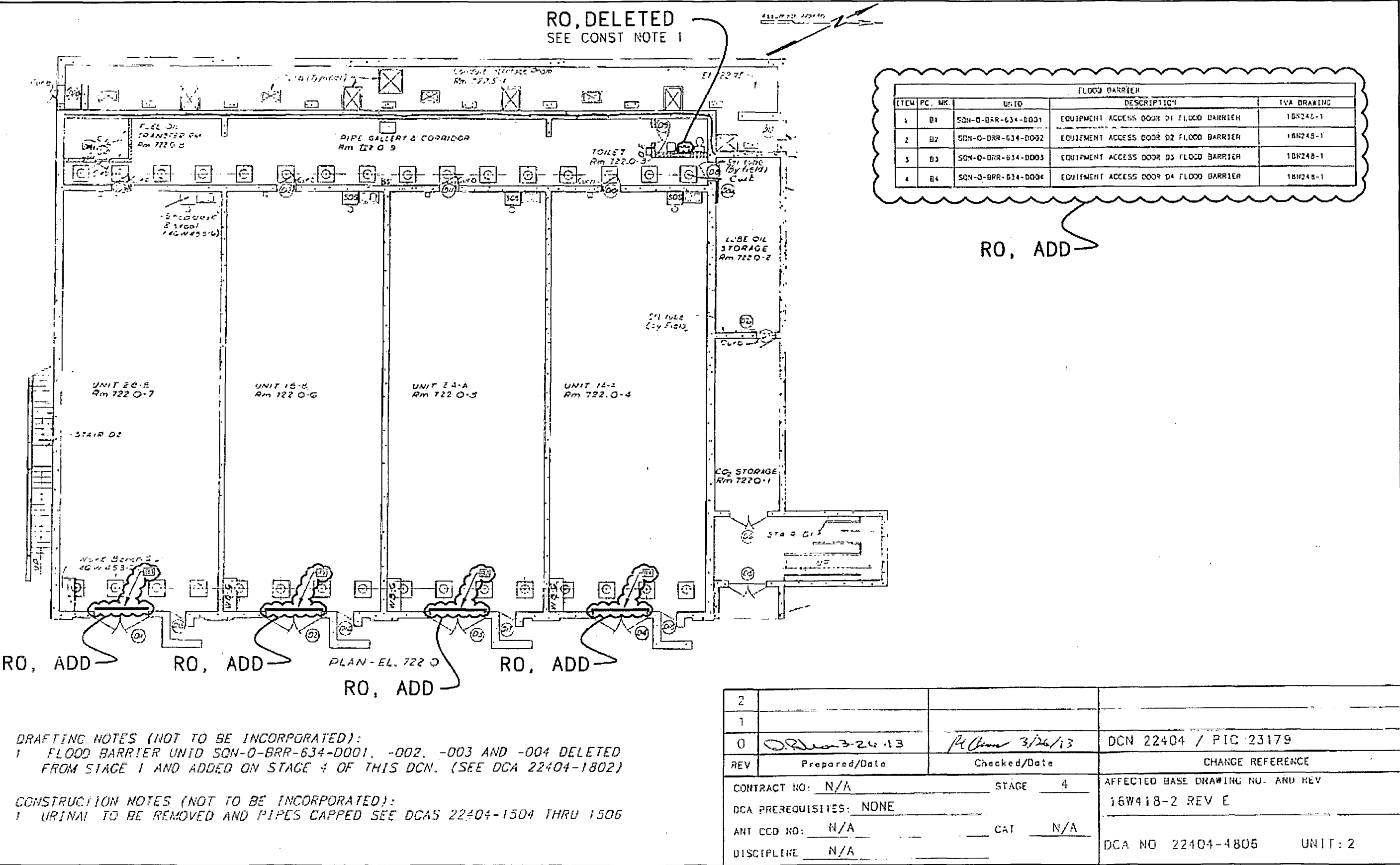


ATTACHMENT 2 SHEET 4: WBN UNIT 1 SPENT FUEL PIT COOLING PUMPS AND SKIMMER PUMP FLOOD BARRIER

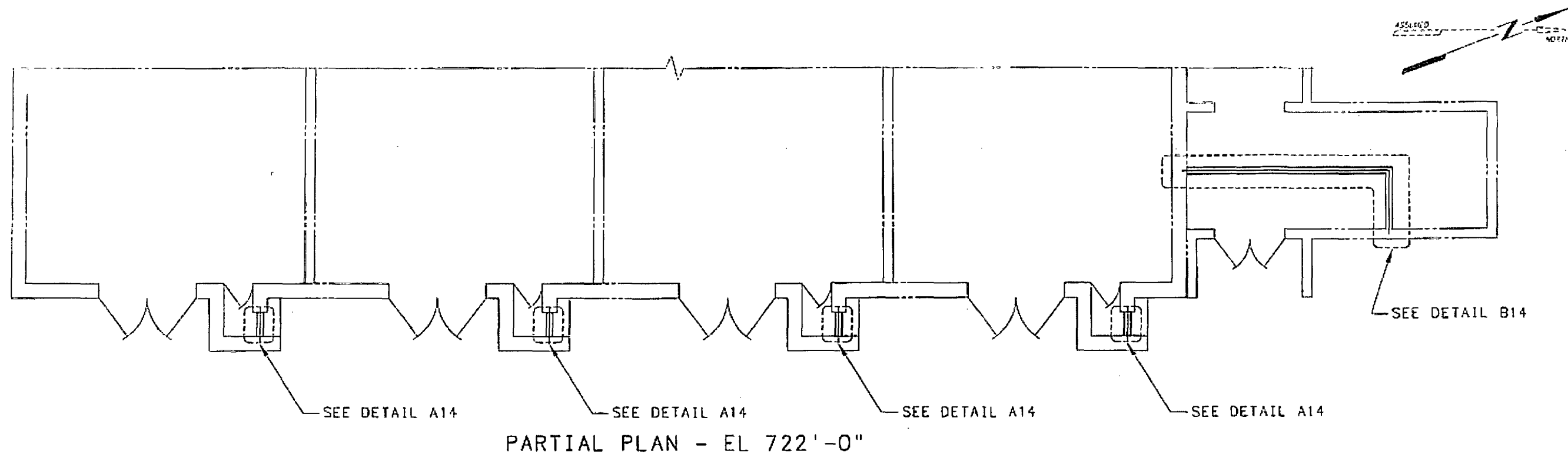
ENCLOSURE 1
REPORT ON COMPLETION OF PLANT MODIFICATIONS FOR FLOOD PROTECTION



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- NOTES:
- 1. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF ACI 318 AND ACI 301.
 - 2. ALL CONCRETE SHALL BE CLASS 300.75 AFW MIN. (3000 PSI) AND SHALL BE PLACED IN ACCORDANCE WITH GENERAL ENGINEERING SPECIFICATION G-2.
 - 3. ALL EMBEDDED METALS TO CONFORM TO ASTM A36, UNLESS OTHERWISE NOTED ON DRAWINGS. ALUMINUM SHALL NOT BE EMBEDDED IN CONCRETE UNLESS SPECIFICALLY APPROVED.
 - 4. ALL UNFORMED CONCRETE SURFACES SHALL BE STEEL TROWELLED.
 - 5. ALL MATERIALS SHALL BE QA LEVEL 1 UNLESS OTHERWISE NOTED.
 - 6. CONCRETE SLAB & WALL IN CONTACT WITH CONCRETE WATER BARRIER SHALL BE SCARIFIED TO A DEPTH 1/4" TO 1/2" AND COATED WITH AN APPROVED BONDING AGENT PER GENERAL ENGINEERING SPECIFICATION G-34.
 - 7. REINFORCING STEEL SHALL BE ASTM A615 GR. 60.
 - 8. CHAMFER ALL EXPOSED CONCRETE EDGES 1/4".
 - 9. DIMENSIONAL TOLERANCE FOR REINFORCEMENT PLACEMENT IS +/- 1/2", UNLESS NOTED.
 - 10. () DENOTES IN PLACE CONCRETE.
 - 11. CUTTING REINFORCEMENT FOR GROUTED HOLES IS NOT ALLOWED. ADDITIONAL VERTICAL REINFORCEMENT MAY BE INSTALLED TO MAINTAIN 12" MAXIMUM, 3" MINIMUM BAR SPACING.
 - 12. HOLES FOR GROUTED REINFORCEMENT TO BE 1.5" DIAMETER & DRILLED TO A DEPTH 0.5" GREATER THAN BAR DEPTH.
 - 13. ALL GROUT TO BE NON-SHRINK WITH A MINIMUM STRENGTH = 3000 PSI.
 - 14. CONCRETE SHALL CONTAIN FIBER REINFORCEMENT MEETING THE REQUIREMENTS OF ASTM C1116, SECTION 4.1.3 TYPE III, AND NOTE 2. DOSAGE SHALL BE 2.5-3 LB/CU.YD.
 - 15. MASTERFIBER F100 ENHANCED FIBRILLATED POLYPROPYLENE FIBER MANUFACTURED BY BASF IS ACCEPTABLE TO USE AS FIBER REINFORCEMENT.

- NOTES: (CONT)
- 16. TESTING SHALL COMPLY WITH SECTION B.8.4 OF GENERAL ENGINEERING SPECIFICATION G-2 EXCEPT THAT ALL TESTING IS WAIVED IN ACCORDANCE WITH SECTION B.8.8.
 - 17. CONCRETE MAY BE PURCHASED AUGMENTED QUALITY Q10 SEISMIC CATEGORY I(L).
 - 18. NO ATTACHMENTS ARE PERMITTED TO DETAIL A14 AND/OR B14.

REFERENCE DRAWINGS:
10N320-1
10N321-2
16W418-2

CONSTRUCTION NOTES: (NOT TO BE INCORPORATED)
1. WORK THIS DCA WITH DCA 22404-4807, -4810 AND -4811.

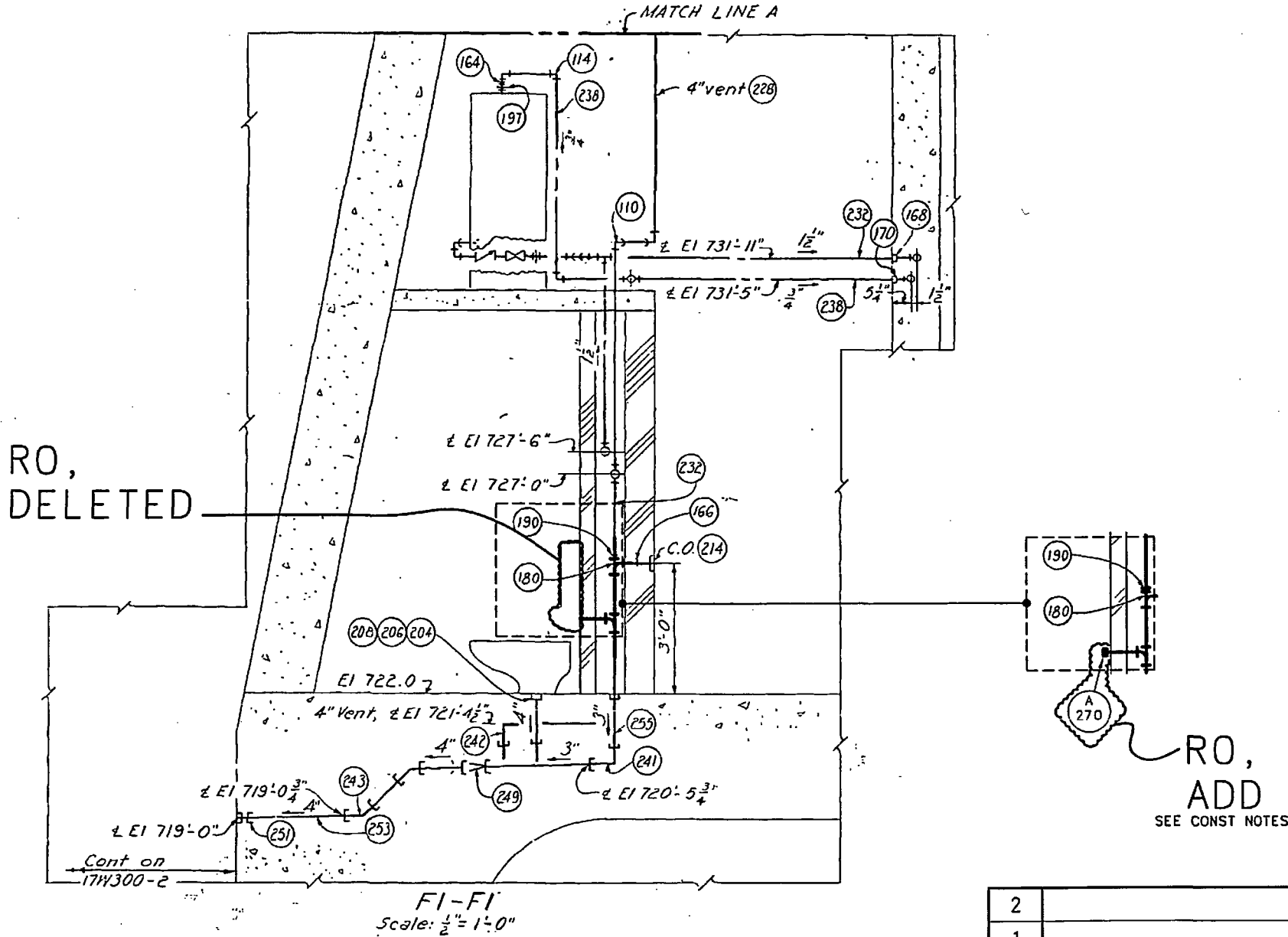
CALCULATION BRANCH/PROJECT IDENTIFIERS: CDQ0009992013000045

DIESEL GENERATOR BUILDING UNIT 0

CONCRETE FLOOD BARRIERS
DIESEL GEN - EL. 722.0'
PLAN, SECTIONS & DETAILS

2			
1			
0	DR 3-29-13	PL 3/26/13	DCN 22404 / PIC 23179
REV	Prepared/Date	Checked/Date	CHANGE REFERENCE
CONTRACT NO: N/A			STAGE 4
DCA PREREQUISITES: NONE			AFFECTED BASE DRAWING NO. AND REV
ANT CCD NO: 0-10N321-14			NEW DRAWING (ANT)
DISCIPLINE CIVIL			DCA NO. 22404-4809 UNIT: 0

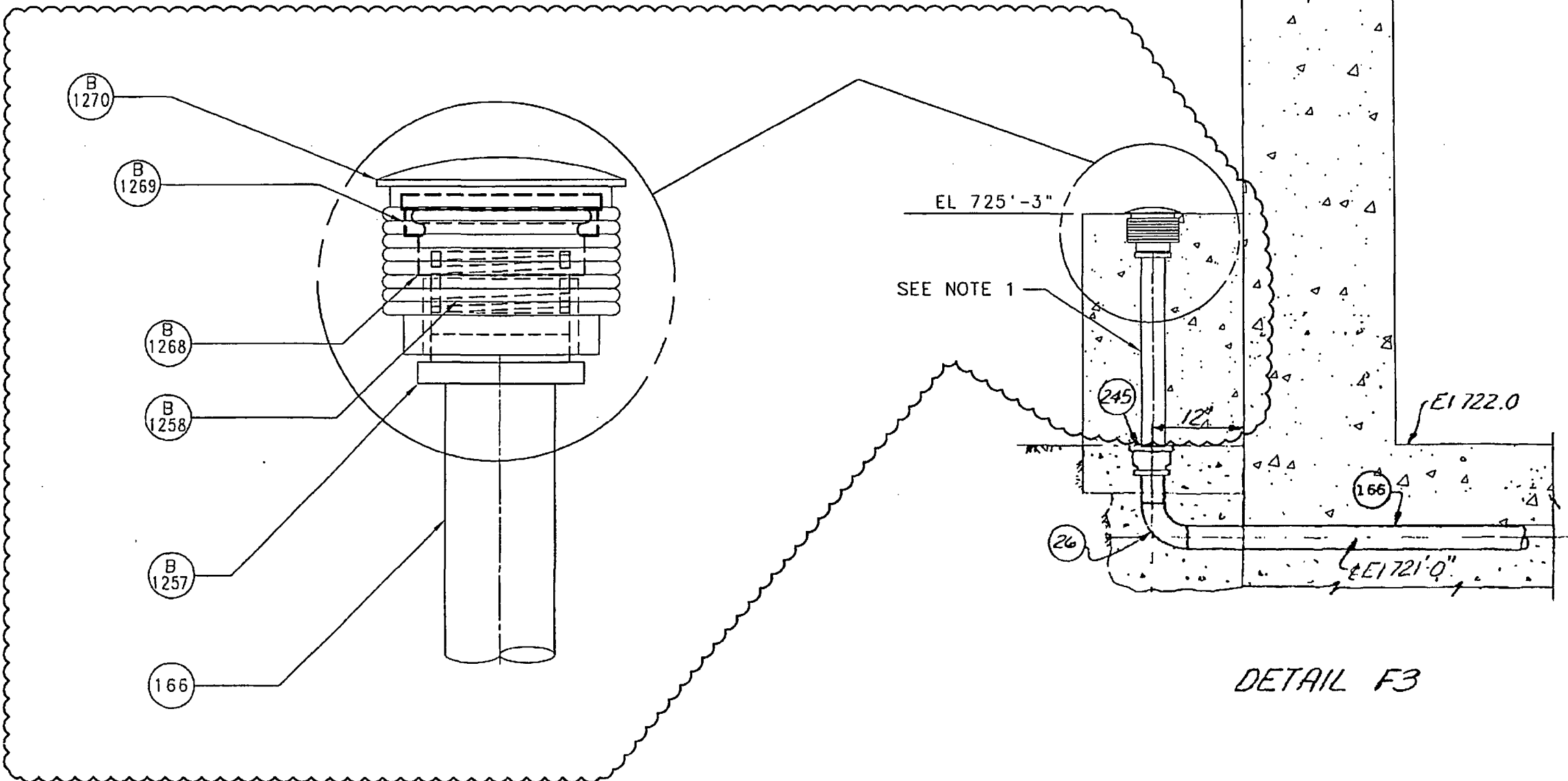
ENCLOSURE 1
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- CONSTRUCTION NOTES: (NOT TO BE INCORPORATED)
1. REMOVE URINAL AND CAP DRAIN LINE WITH 2" THREADED CAP MARK NO. A270.
 2. WORK THIS DCA WITH DCA 22404-1501 & -1502.

2			
1			
0	S. Baloo 9/26/12	9.26.12/9/26/12 <i>Final</i>	DCN 22404
REV	Prepared/Date	Checked/Date	CHANGE REFERENCE
CONTRACT NO: N/A STAGE 1			AFFECTED BASE DRAWING NO. AND REV
DCA PREREQUISITES: NONE			17W710-1 REV A
ANT CCD NO: N/A CAT. N/A			DCA NO. 22404-1503 UNIT: 1
DISCIPLINE N/A			

ENCLOSURE 1
REPORT ON COMPLETION OF PLANT MODIFICATIONS FOR FLOOD PROTECTION



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ADD

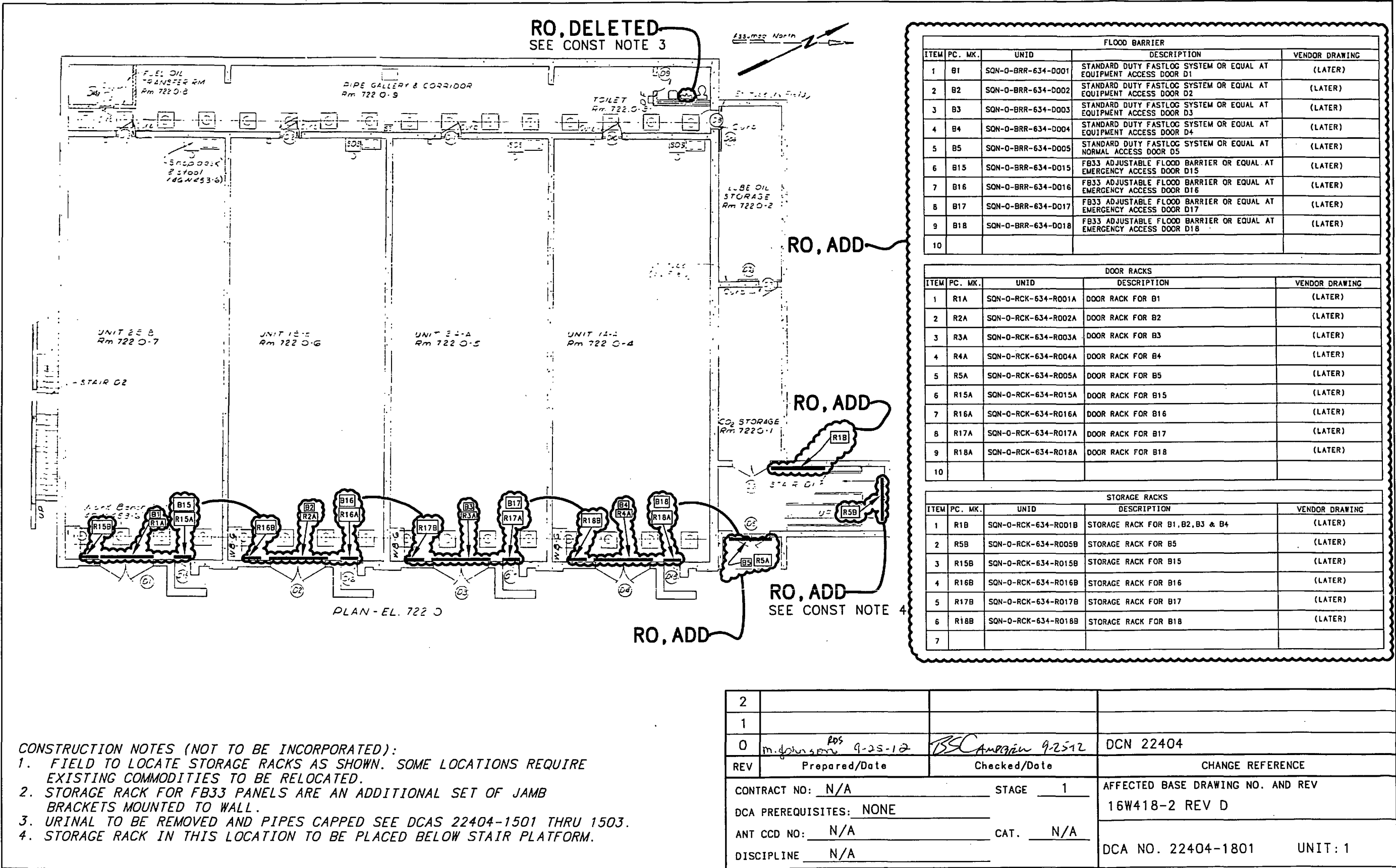
NOTES:

1. PIPE TO THREAD INTO FILL PORT (MARK #245) INTERNAL PLUG
THREADED CONNECTION, THREADED CONNECTION TO HAVE AN APPROVED
THREAD SEALANT. FILL PORT COVER & INTERNAL PLUG TO BE
DISCARDED.

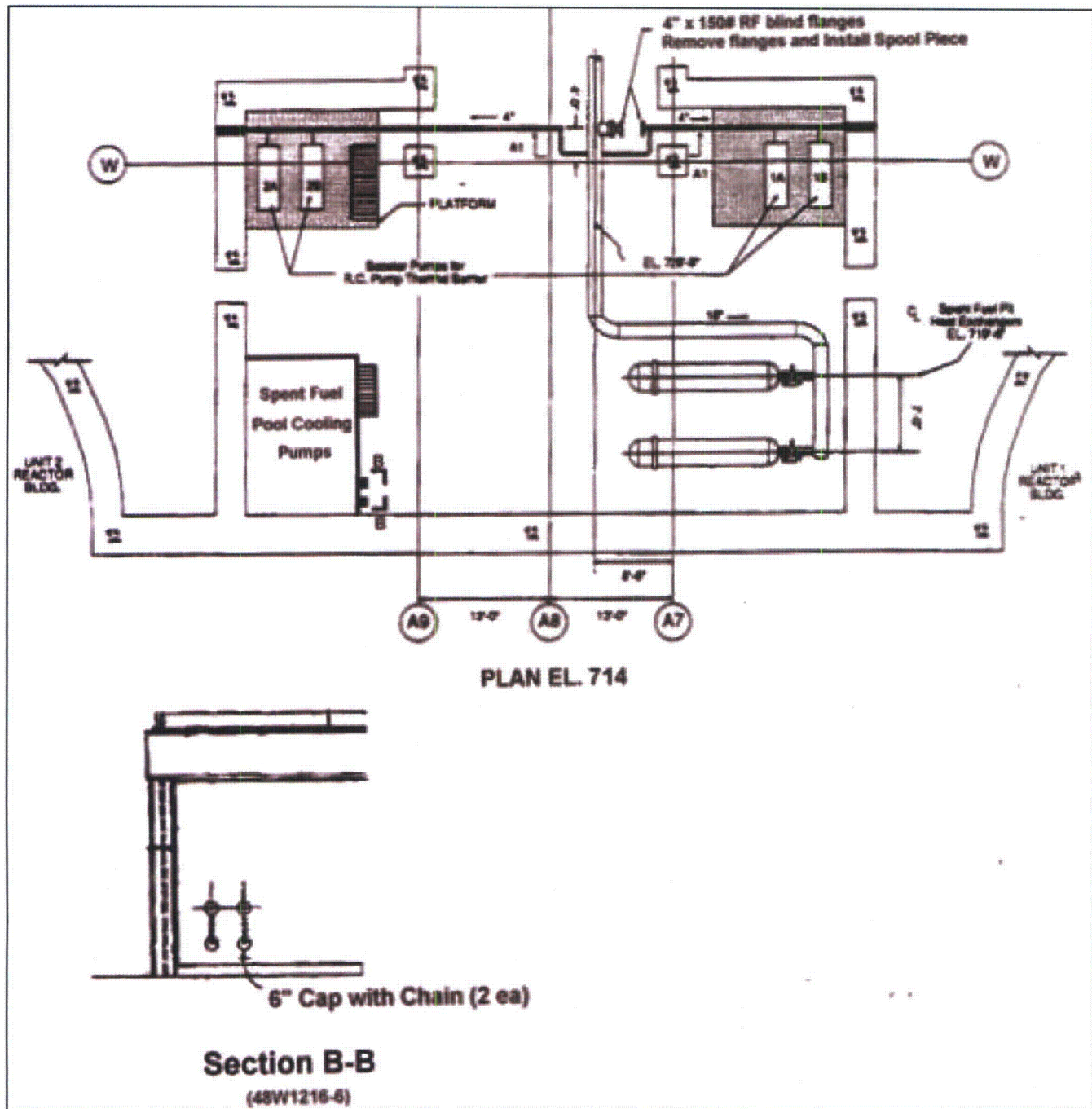
- CONSTRUCTION NOTES: (NOT TO BE INCORPORATED)
1. REMOVE COVER AND INTERNAL PLUG OF FILL PORT MARK #245.
2. THREAD IN PIPE MARK #166.
3. ATTACH REMAINING ITEMS AS SHOWN.

2			
1			
0	S. Bales 9/25/12	4-25-12 / 9/25/12	DCN 22404
REV	Prepared/Date	Checked/Date	CHANGE REFERENCE
CONTRACT NO: N/A		STAGE 1	AFFECTED BASE DRAWING NO. AND REV
DCA PREREQUISITES: NONE			1,2-17W585-3 REV 0
ANT CCD NO: N/A		CAT. N/A	
DISCIPLINE N/A			DCA NO. 22404-1500 UNIT: 0

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ATTACHMENT 4: SQN UNITS 1 AND 2 SPENT FUEL PIT COOLING PUMP ENCLOSURE