CHRISTOPHER M. FALLON
Vice President
Nuclear Development (Acting)

Duke Energy
EC09D/ 526 South Church Street
Charlotte, NC 28201-1006

Mailing Address:
P.O. Box 1006 – EC09D
Charlotte, NC 28201-1006

704-382-9248
704-519-6173 (cell)
Christopher.Fallon@duke-energy.com

April 30, 2012

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Subject: Duke Energy Carolinas, LLC
William States Lee III Nuclear Station – Docket Nos. 52-018 and 52-019
AP1000 Combined License Application for the
William States Lee III Nuclear Station Units 1 and 2
Supplemental Response to Request for Additional Information
Ltr# WLG2012.04-08

References: Letter from Sarah Lopas (NRC) to Bryan Dolan (Duke Energy), *Request for Additional Information Regarding the Supplement to the Environmental Report for the William States Lee III Nuclear Station Units 1 and 2, Combined License Application*, dated June 22, 2010 (ML101370398)

Letter from Sarah Lopas (NRC) to Bryan Dolan (Duke Energy), *Follow-Up Requests for Additional Information Regarding the Supplement to the Environmental Report for the William States Lee III Nuclear Station Units 1 and 2, Combined License Application*, dated September 14, 2010 (ML102371173)

Letter from Christopher M. Fallon to Chief, Rulemaking and Directives Branch, *Comments on Draft Environmental Impact Statement for Combined Licenses (COLs) for William States Lee III Nuclear Station Units 1 and 2*
Ltr# WLG2012.03-01, dated March 1, 2012 (ML12067A037)

This letter provides supplemental information to the Duke Energy responses to the Nuclear Regulatory Commission's (NRC) request for additional information (RAI) included in the referenced letters:

RAI 190, Site Layout and Plant Description

RAI 210, Ecology, Aquatic

The supplemental responses to these NRC information requests are addressed in the enclosures, which also identify associated changes to the Combined License Application for the Lee Nuclear Station, when appropriate.

D093
NRO

If you have any questions or need any additional information, please contact James R. Thornton, Nuclear Plant Development Licensing Manager (Acting), at (704) 382-2612.

Sincerely,

Christopher M. Fallon

Christopher M. Fallon
Vice President
Nuclear Development (Acting)

Enclosures:

1) RAI 190 Supplement, Site Layout and Plant Description
2) RAI 210 Supplement, Aquatic Ecology

xc (w/out enclosure):

Charles Casto, Deputy Regional Administrator, Region II

xc (w/ enclosure):

Sarah Lopas, Project Manager, DSER
Brian Hughes, Senior Project Manager, DNRL
Terri Miley, PNNL

AFFIDAVIT OF CHRISTOPHER M. FALLON

Christopher M. Fallon, being duly sworn, states that he is Vice President, Nuclear Development (Acting), Duke Energy Carolinas, LLC, that he is authorized on the part of said Company to sign and file with the U. S. Nuclear Regulatory Commission this combined license application for the William States Lee III Nuclear Station, and that all the matter and facts set forth herein are true and correct to the best of his knowledge.

Christopher M. Fallon

Christopher M. Fallon, Vice President
Nuclear Development (Acting)

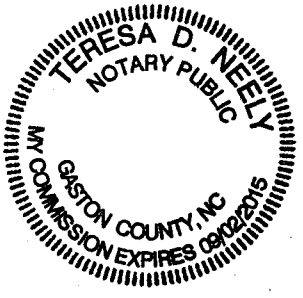
Subscribed and sworn to me on April 30, 2012

Teresa D. Neely

Notary Public

My commission expires: 9/2/2015

SEAL



Lee Nuclear Station Response to Request for Additional Information (RAI)

RAI Letter Dated: June 22, 2010

Reference NRC RAI Number: ER RAI 190 Supplement, Site Layout and Plant Description

NRC RAI:

Provide physical descriptions (e.g., location, dimensions, construction materials, pump systems) of the "River Water Intake Subsystem" and the "Refill Subsystem Intake" referred to in Supplemental ER Figure 3.3-1, Sheets 1 and 2.

Discuss any changes to the site preparation and construction methods, affected area, spoils volume and disposition, timing, and duration for the river intake and associated distribution systems. Provide a narrative description of the relationship or interconnections between these intake(s) and the various Make-Up ponds, including the expected flow rate and duration of refill pumping operations.

Duke Energy Response:

Duke Energy responded to this RAI on July 22, 2010 (Reference 1) and June 16, 2011 (Reference 2) and is supplementing these previous responses as follows:

Additional details of the Dual Flow Traveling Screens and concrete walls have been added to the plan and section views of the River Water Intake Structure as reflected on ER Figure 5.3-1 (Attachment 190S-01). The width of the Dual Flow Traveling Screens have been changed from 20'-0" to 13'-8" as shown on ER Figure 5.3-1 Sheet 5 of 7 (Attachment 190S-01). Updated calculations have confirmed that through-screen velocity on these Dual Flow Traveling Screens will be less than 0.5 ft/sec.

The number of pumps/pump bays in the Make-Up Pond A Intake Structure have changed from six (6) to four (4). The Raw Water System Water Transfer Diagram (previously provided with Reference 1) has been updated to reflect these changes and is provided as Attachment 190S-02. An updated drawing of the Make-Up Pond A Intake Structure is provided in Enclosure 2 to this letter.

There are no other changes to the information provided in References 1 and 2 as a result of these updates that reflect the latest conceptual design.

References:

1. Letter from B.J. Dolan to Document Control Desk, Duke Energy Carolinas, LLC, William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019, *AP1000 Combined License Application for the William States Lee III Nuclear Station Units 1 and 2, Response to Request for Additional Information,* Ltr# WLG2010.07-08, dated July 22, 2010 (ML102070357)

2. Letter from R.A. Jones to Document Control Desk, Duke Energy Carolinas, LLC, William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019, *AP1000 Combined License Application for the William States Lee III Nuclear Station Units 1 and 2, Responses to Request for Additional Information,* Ltr# WLG2011.06-03, dated June 16, 2011 (ML11172A288)

Associated Revision to the Lee Nuclear Station Combined License Application:

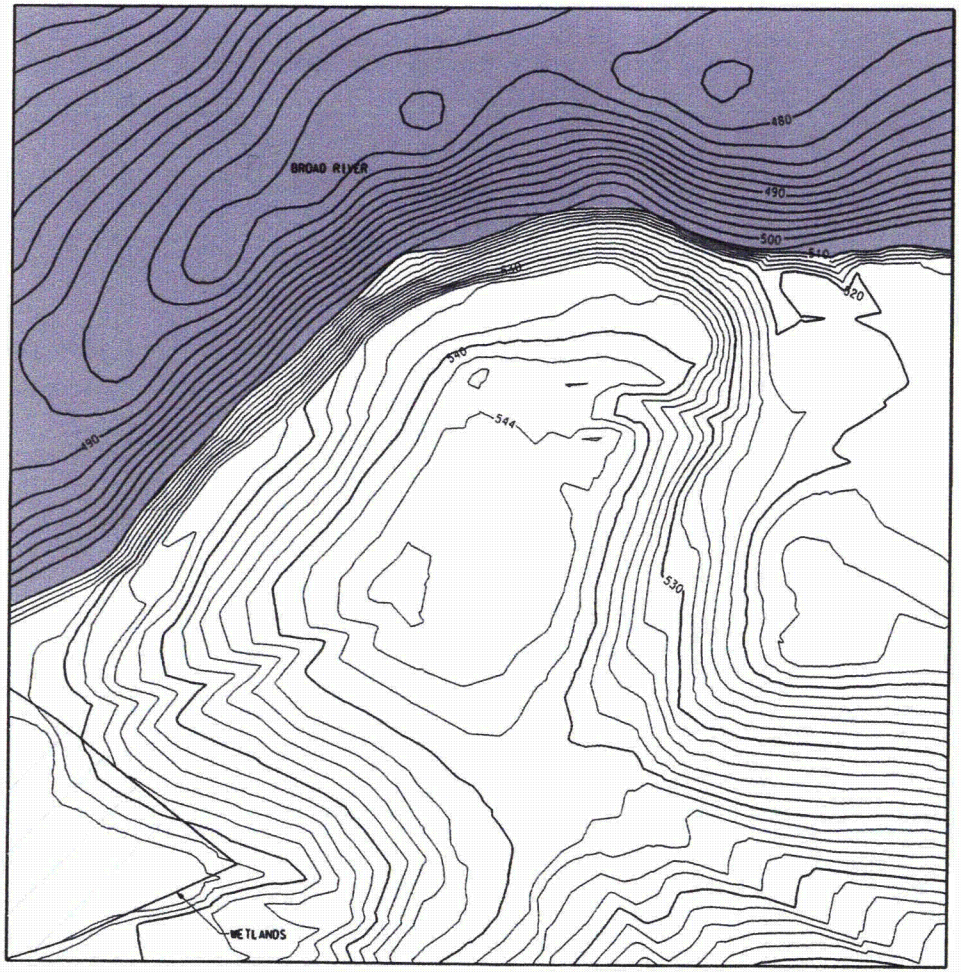
ER Figure 5.3-1 (Sheets 1 through 7 of 7)

Attachments:

Attachment 190S-01	Updated ER Figure 5.3-1, River Water Intake Structure (7 Sheets)
Attachment 190S-02	Updated Raw Water System Water Transfer Diagram

Attachment 190S-01

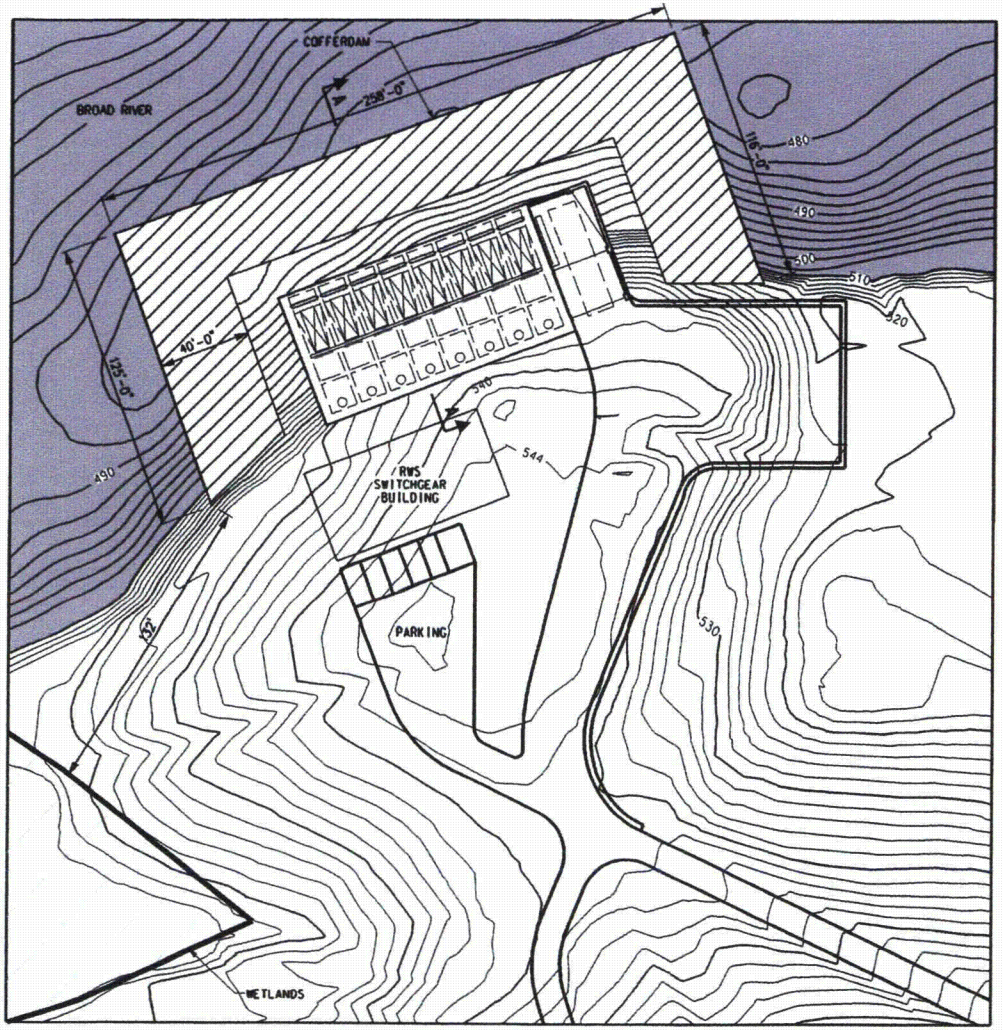
Updated ER Figure 5.3-1,
River Water Intake Structure
Sheets 1 through 7 of 7



EXISTING CONDITION
NTS

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

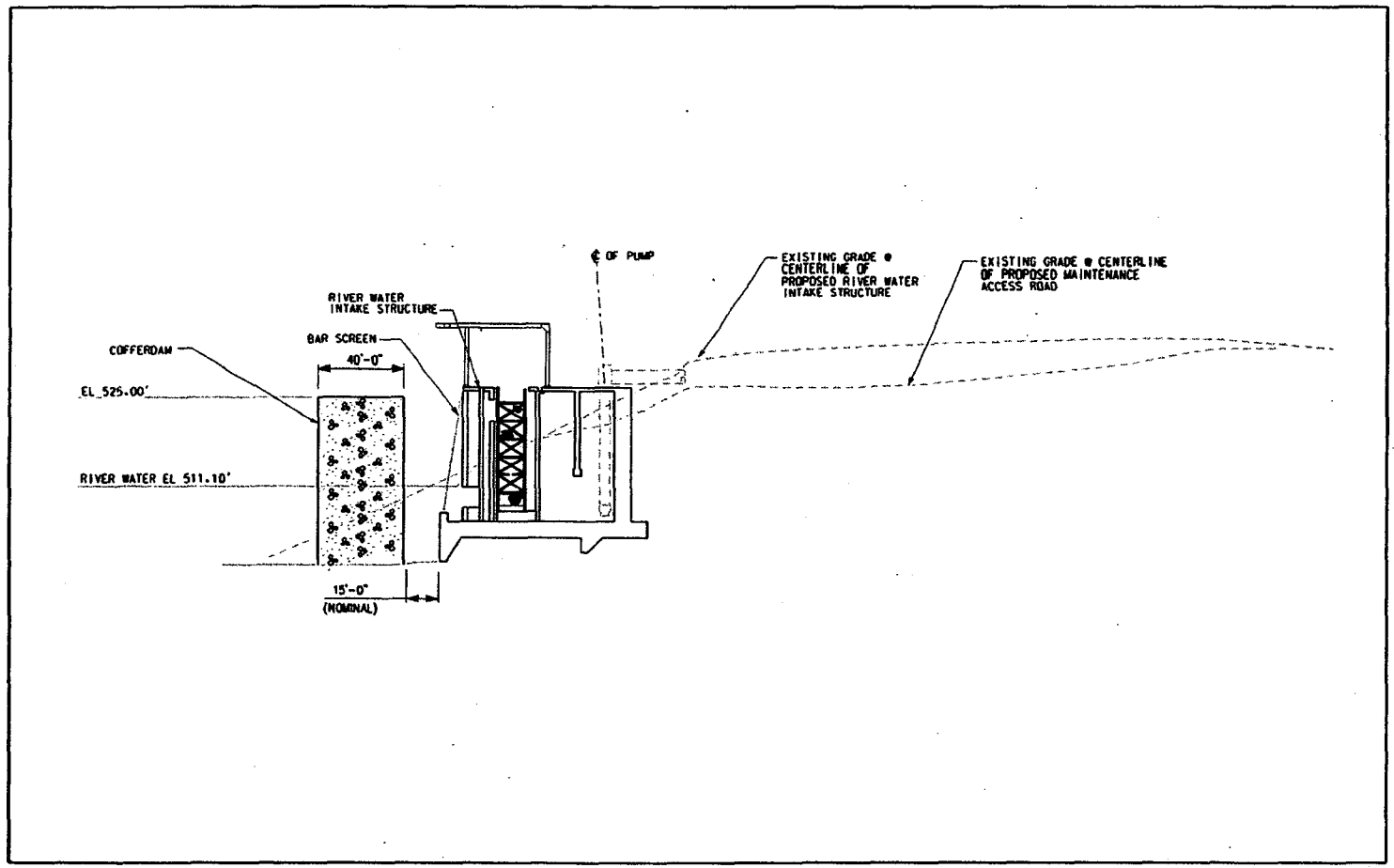
River Water Intake Structure
Sheet 1 of 7
Figure 5.3-1



PROPOSED PLAN ARRANGEMENT
RIVER WATER INTAKE STRUCTURE
NTS

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

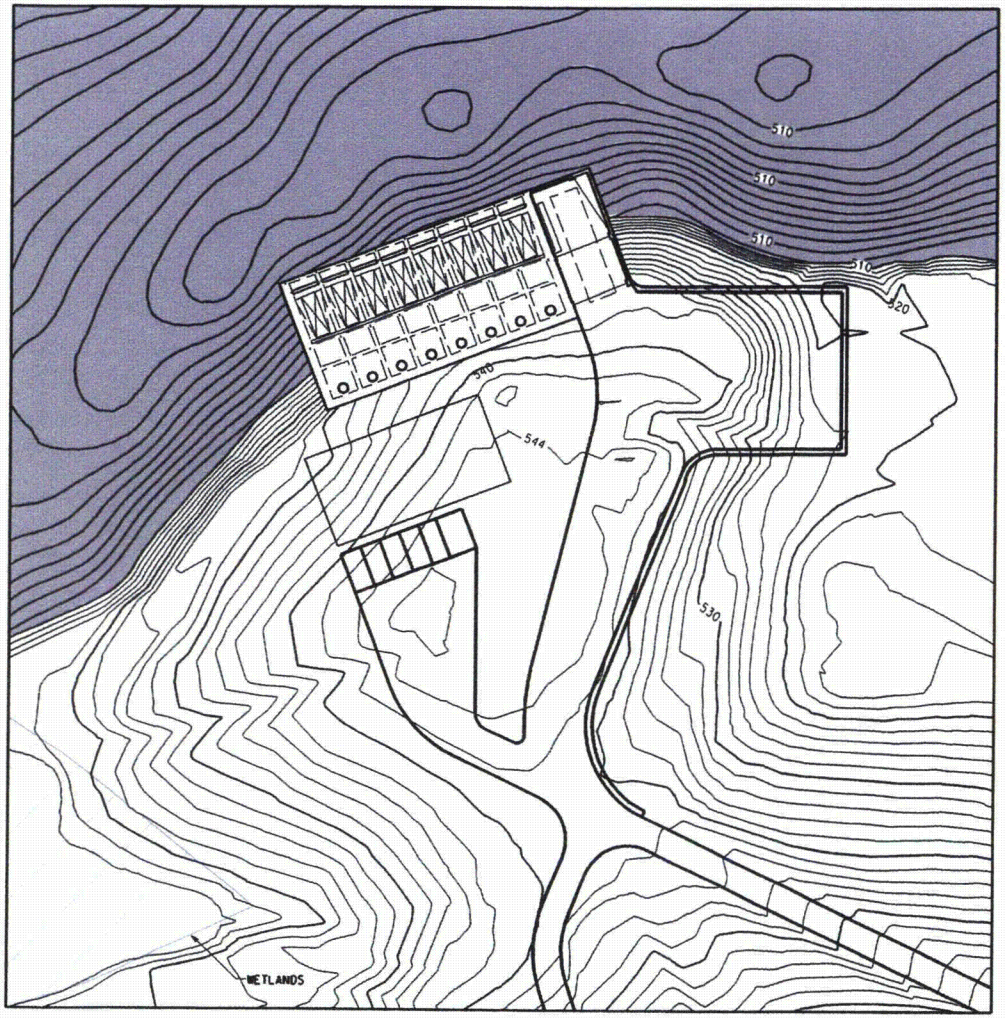
River Water Intake Structure
Sheet 2 of 7
Figure 5.3-1



SECTION A-A
COFFERDAM AND INTAKE STRUCTURE
PUMP AND PIPE OUTLINE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

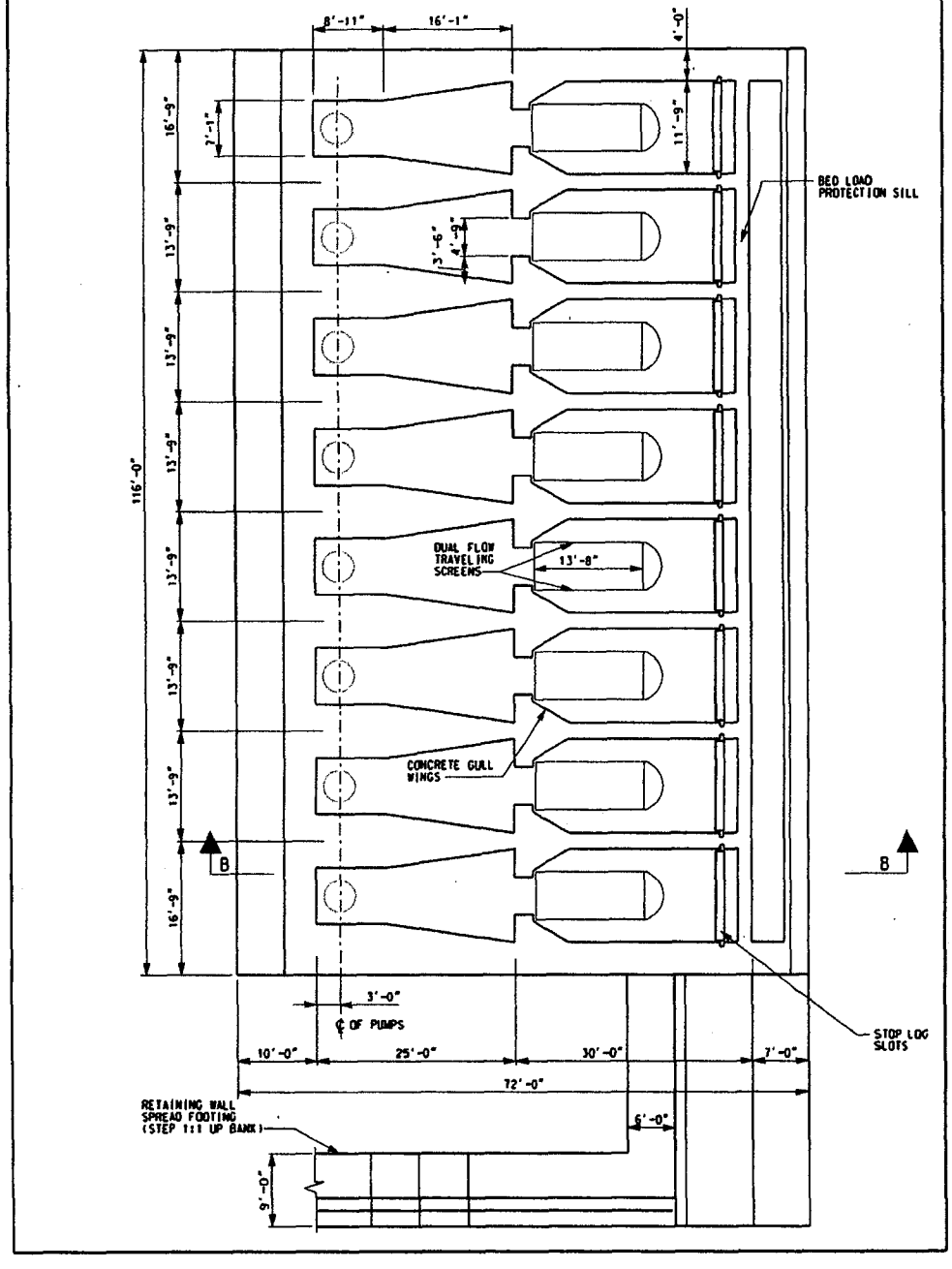
River Water Intake Structure
Sheet 3 of 7
Figure 5.3-1



PROPOSED PLAN VIEW
RIVER WATER INTAKE STRUCTURE
NTS

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

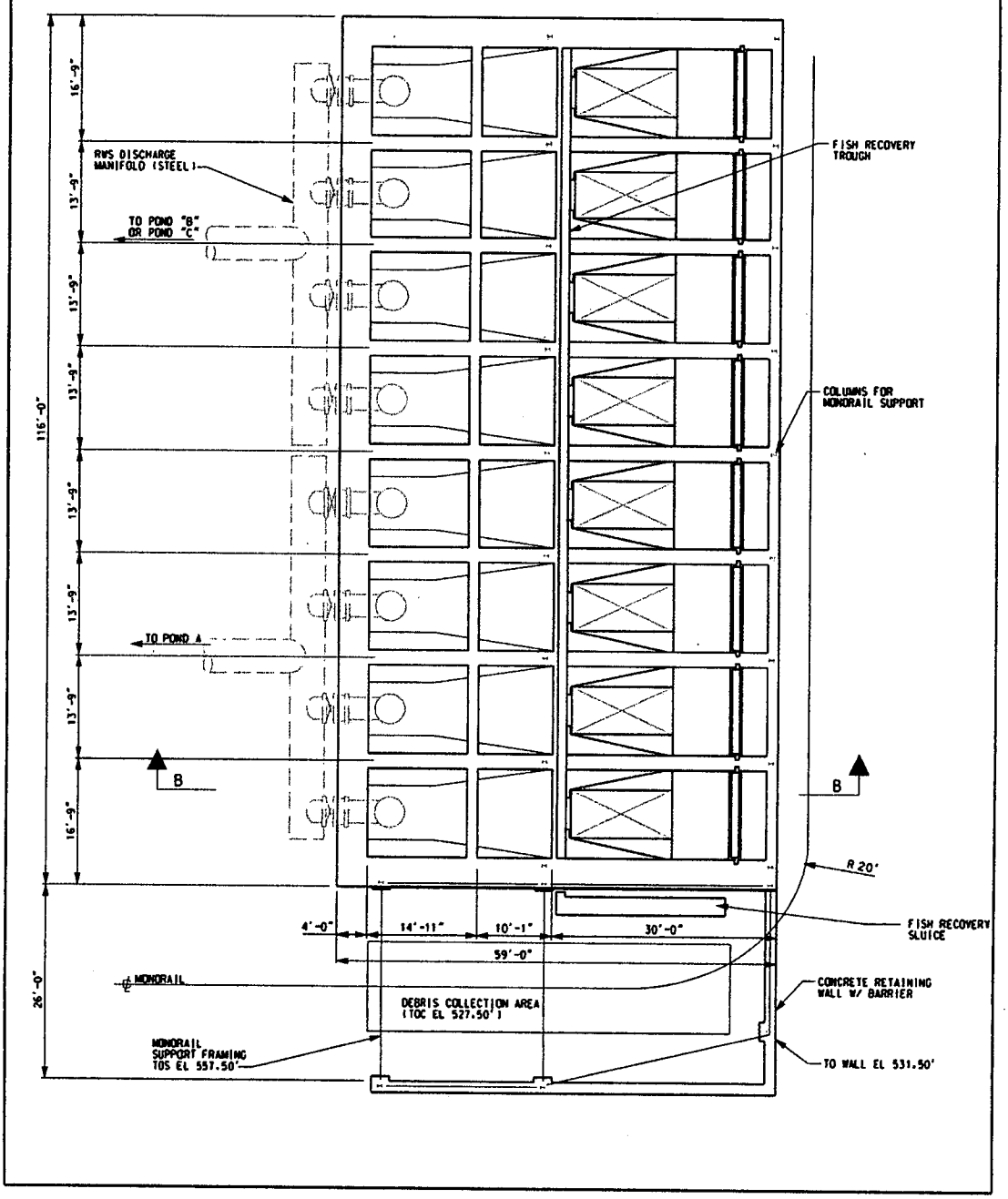
River Water Intake Structure
Sheet 4 of 7
Figure 5.3-1



PLAN @ EL 498.00'
PUMP AND PIPE OUTLINE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

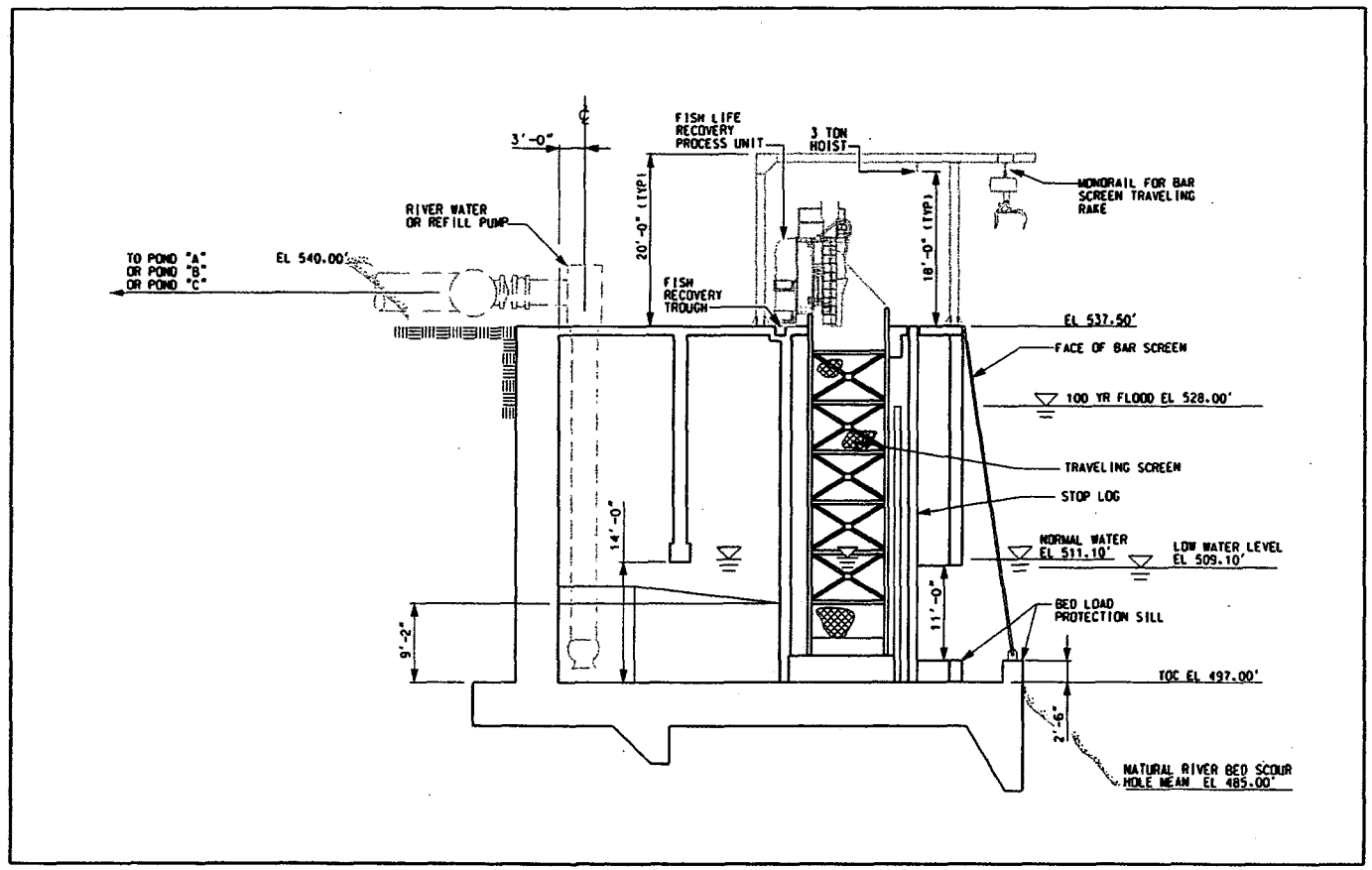
River Water Intake Structure
Sheet 5 of 7
Figure 5.3-1



DECK PLAN
PUMP AND PIPE OUTLINE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

River Water Intake Structure
Sheet 6 of 7
Figure 5.3-1



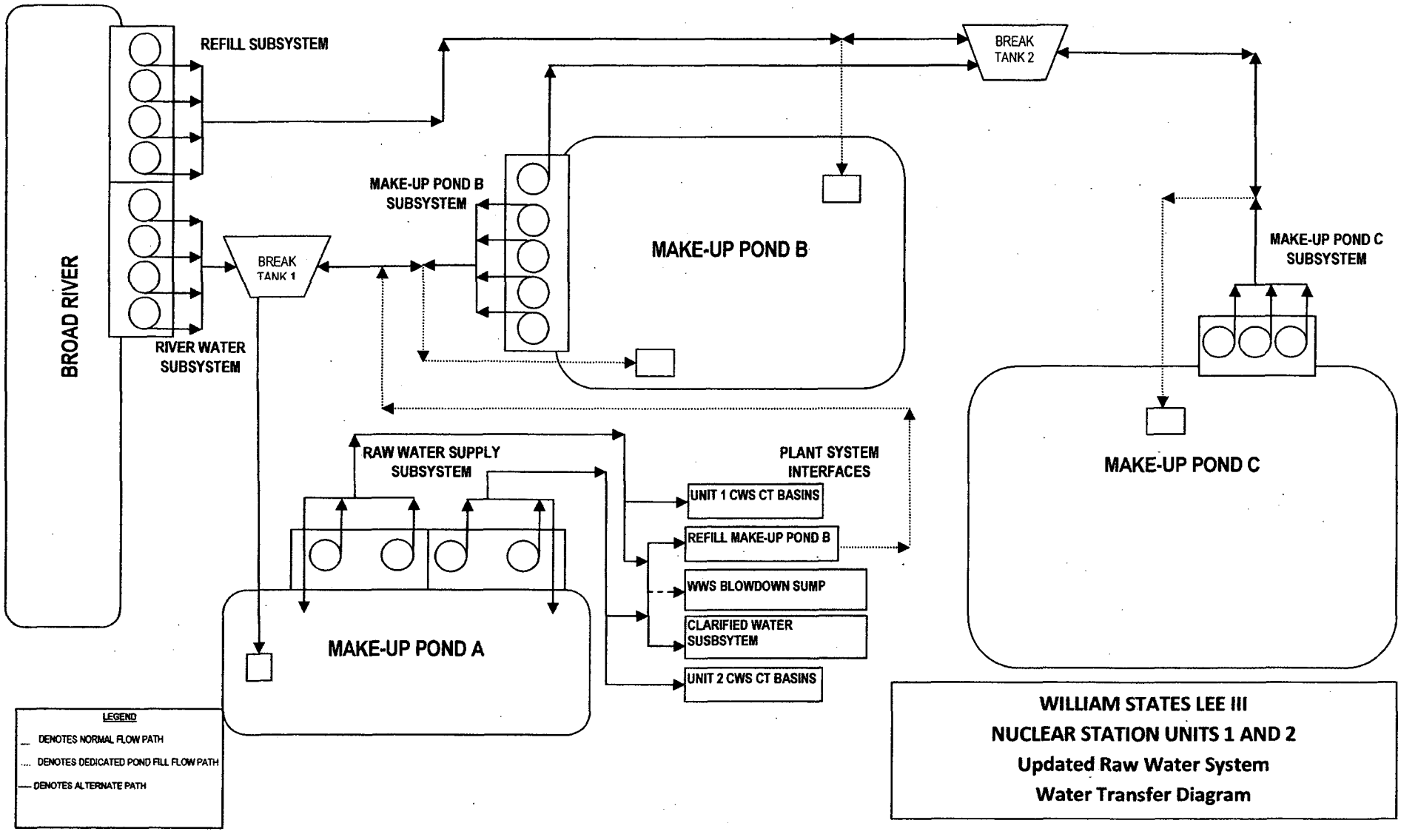
SECTION B-B
PUMP AND PIPE OUTLINE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

River Water Intake Structure
Sheet 7 of 7
Figure 5.3-1

Attachment 190S-02

Updated Raw Water System
Water Transfer Diagram



WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2
Updated Raw Water System
Water Transfer Diagram

Lee Nuclear Station Response to Request for Additional Information (RAI)

RAI Letter Dated: September 14, 2010

Reference NRC RAI Number: ER RAI 210 Supplement, Ecology - Aquatic

NRC RAI:

Provide bathymetric maps of Ponds A, B, and C that show clearly labeled contour lines with the locations of the intake screen and supporting structures superimposed. Provide plan and section views of each intake structure. For clarity and legibility, print the maps in black and white. Describe what is known about the options for wedge wire slot sizes for the traveling screens, particularly if an estimate or range of potential slot sizes is known. Provide information about the height the Pond B and C drum screens will be elevated above the substrate. Also, describe the potential cleaning methods for the Ponds A, B, and C intake screens. Indicate in the response when and how through-screen velocity calculations will be provided to the NRC (e.g., through submittal of a copy of the National Pollution Discharge Elimination System permit application).

Duke Energy Response:

Duke Energy responded to this RAI on October 14, 2010 (Reference 1), November 12, 2010 (Reference 2) and June 16, 2011 (Reference 3) and is supplementing these previous responses as follows:

The number of pumps/pump bays in the Make-Up Pond A Intake Structure have changed from six (6) to four (4) as reflected on ER Figure 5.3-3 (Attachment 210S-01). The number of pumps have been changed from three pumps per unit (six total) to two pumps per unit (four total) to more closely align the sizing of these pumps with the required make-up flow for the Circulating Water System (CWS) under anticipated normal operation at four cycles of concentration. Additional details of the Dual Flow Traveling Screens and concrete walls have been added to the plan and section views of the Make-Up Pond A Intake Structure as reflected on ER Figure 5.3-3 (Attachment 210S-01). Updated calculations have confirmed that through-screen velocity on these Dual Flow Traveling Screens will be less than 0.5 ft/sec. A portion of the Make-Up Pond A Intake Structure from the previous Cherokee Nuclear Station construction will be left in place (existing structure to be partially removed) to support access to the Make-Up Pond A Intake Structure for Lee Nuclear Station which is located deeper in Make-Up Pond A as reflected on ER Figure 5.3-3 (Attachment 210S-01).

The plan and section views of the Make-Up Pond B and Make-Up Pond C Intake Structures have each been shown on a separate sheet to enhance legibility of the intake structure drawings, ER Figures 5.3-2 and 5.3-5 respectively (Attachments 210S-02 and 210S-03). Additional details of the Passive Wedge Wire Cylindrical Drum Screens have been added to the plan and section views of the Make-Up Pond B Intake Structure as reflected on ER Figure 5.3-2 (Attachment 210S-02). Likewise, additional details of the Passive Wedge Wire Cylindrical Drum Screens have been added to the plan and section views of the Make-Up Pond C Intake Structure as reflected on ER Figure 5.3-5 (Attachment 210S-03).

There are no other changes to the information provided in References 1, 2 and 3 as a result of these updates that reflect the latest conceptual design.

References:

1. Letter from B.J. Dolan to Document Control Desk, Duke Energy Carolinas, LLC, William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019, *AP1000 Combined License Application for the William States Lee III Nuclear Station Units 1 and 2, Response to Request for Additional Information,* Ltr# WLG2010.10-04, dated October 14, 2010 (ML103360419)

2. Letter from B.J. Dolan to Document Control Desk, Duke Energy Carolinas, LLC, William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019, *AP1000 Combined License Application for the William States Lee III Nuclear Station Units 1 and 2, Response to Request for Additional Information,* Ltr# WLG2010.11-02, dated November 12, 2010 (ML103210413)

3. Letter from R.A. Jones to Document Control Desk, Duke Energy Carolinas, LLC, William States Lee III Nuclear Station - Docket Nos. 52-018 and 52-019, *AP1000 Combined License Application for the William States Lee III Nuclear Station Units 1 and 2, Responses to Request for Additional Information,* Ltr# WLG2011.06-03, dated June 16, 2011 (ML11172A288)

Associated Revision to the Lee Nuclear Station Combined License Application:

ER Figure 5.3-3 (Sheets 1 through 5 of 5)

ER Figure 5.3-2 (Sheets 1 through 7 of 7)

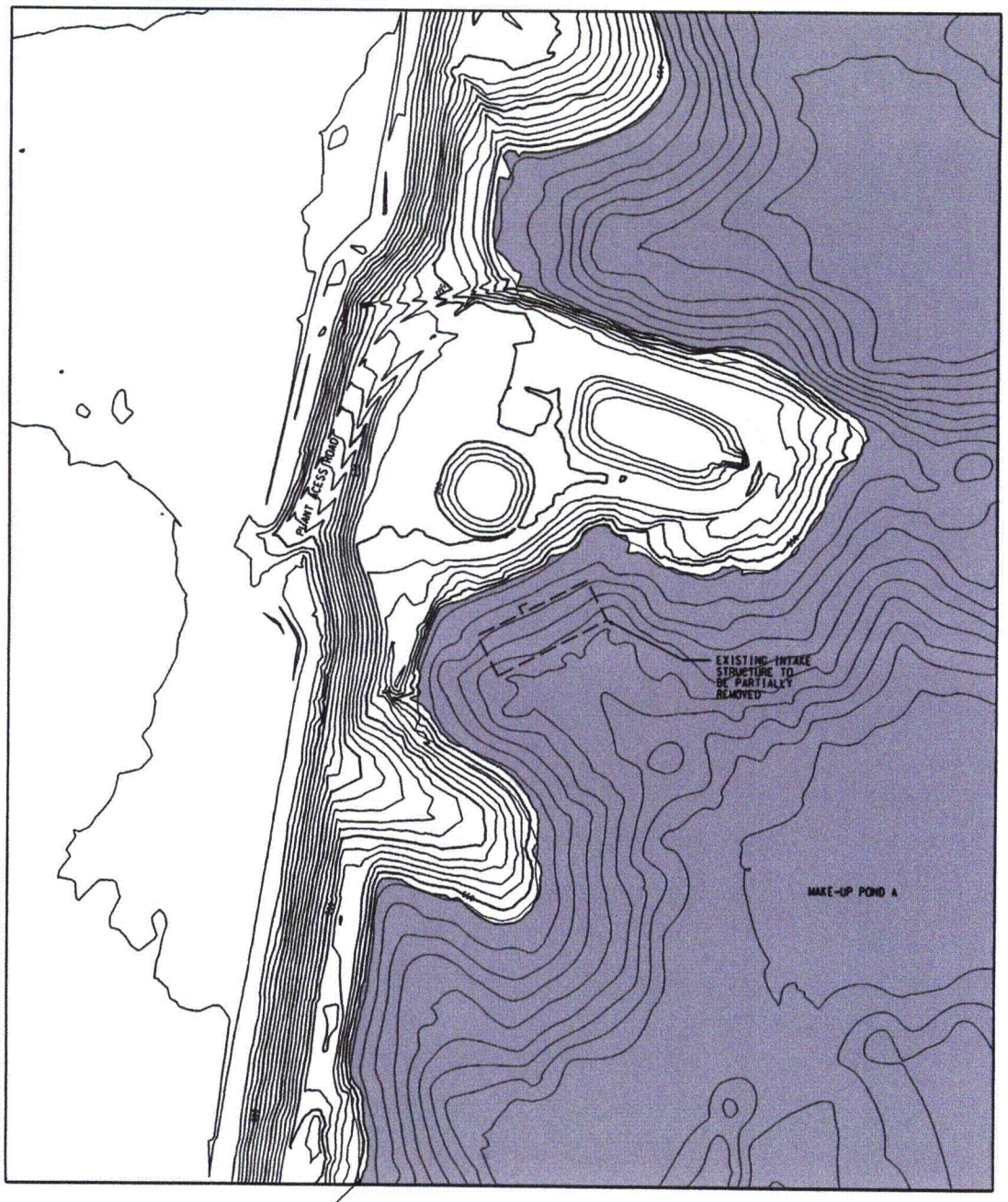
ER Supplement Figure 5.3-5 (Sheets 1 through 7 of 7)

Attachment:

Attachment 210S-01	Updated ER Figure 5.3-3, Make-Up Pond A Intake Structure (5 Sheets)
Attachment 210S-02	Updated ER Figure 5.3-2, Make-Up Pond B Intake Structure (7 Sheets)
Attachment 210S-03	Updated ER Figure 5.3-5, Make-Up Pond C Intake Structure (7 Sheets)

Attachment 210S-01

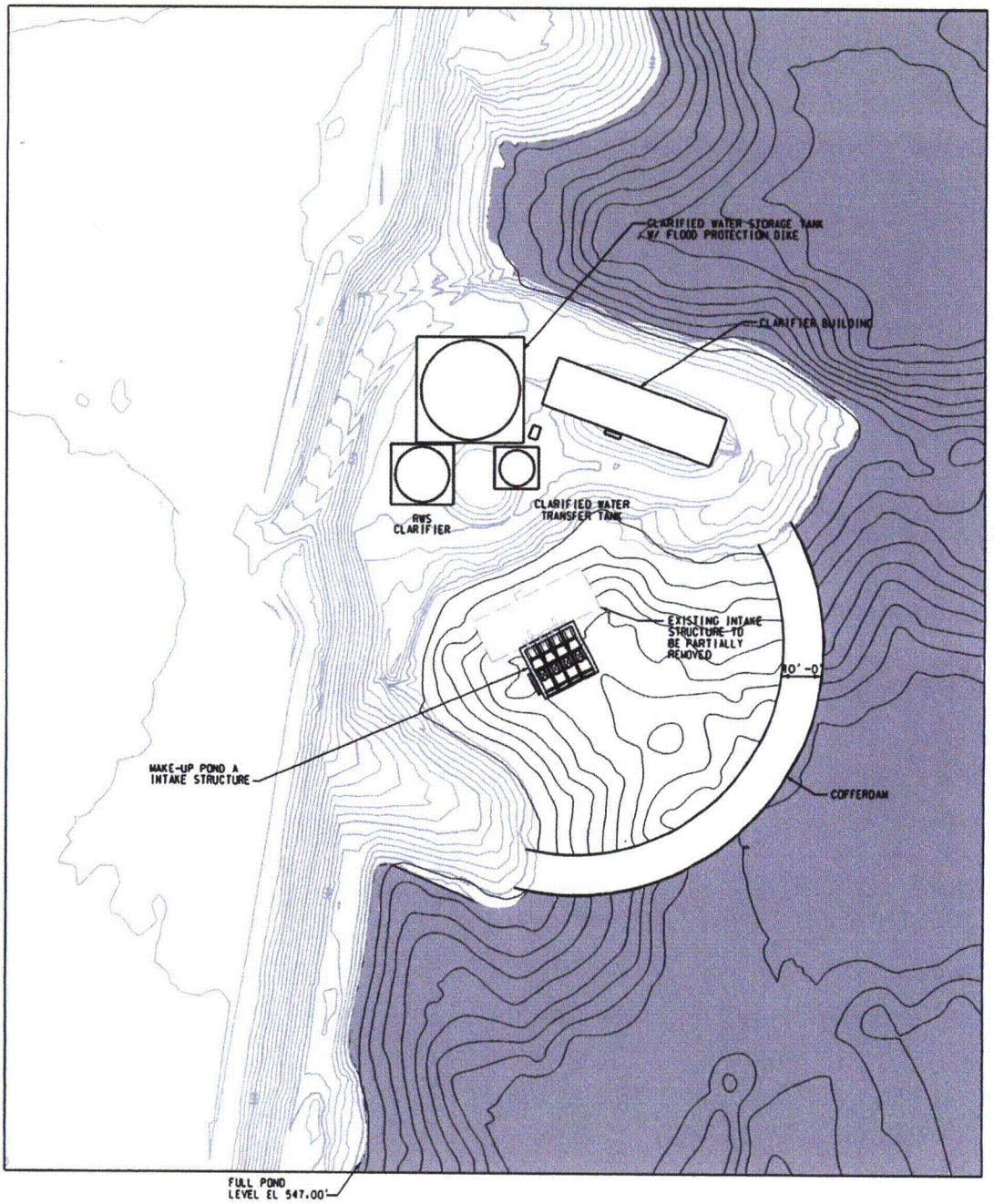
Updated ER Figure 5.3-3,
Make-Up Pond A Intake Structure
Sheets 1 through 5 of 5



EXISTING CONDITION
MAKE-UP POND A INTAKE STRUCTURE
NTS

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

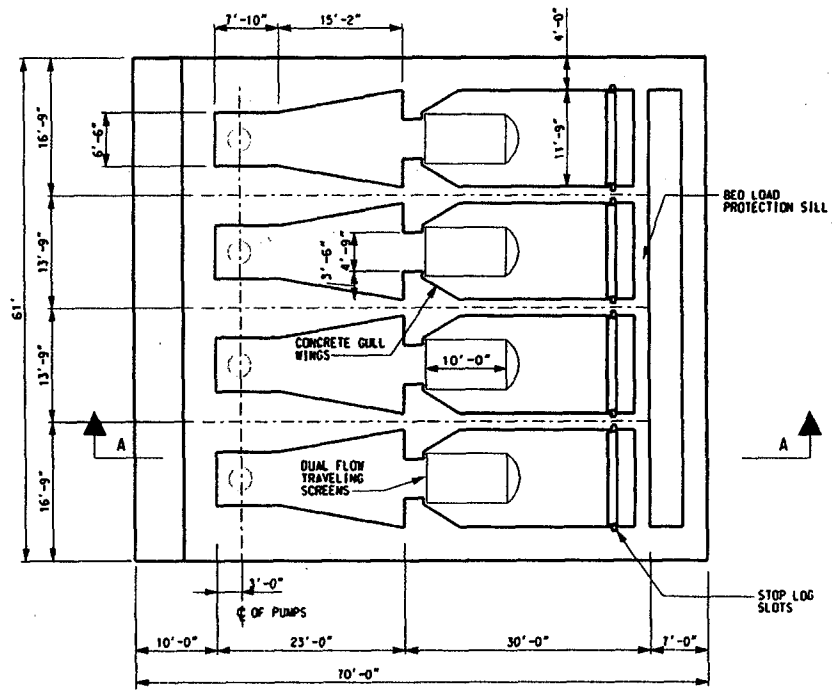
Make-Up Pond A Intake Structure
Sheet 1 of 5
Figure 5.3-3



LOCATION PLAN - MAKE-UP POND A
INTAKE STRUCTURE
NTS

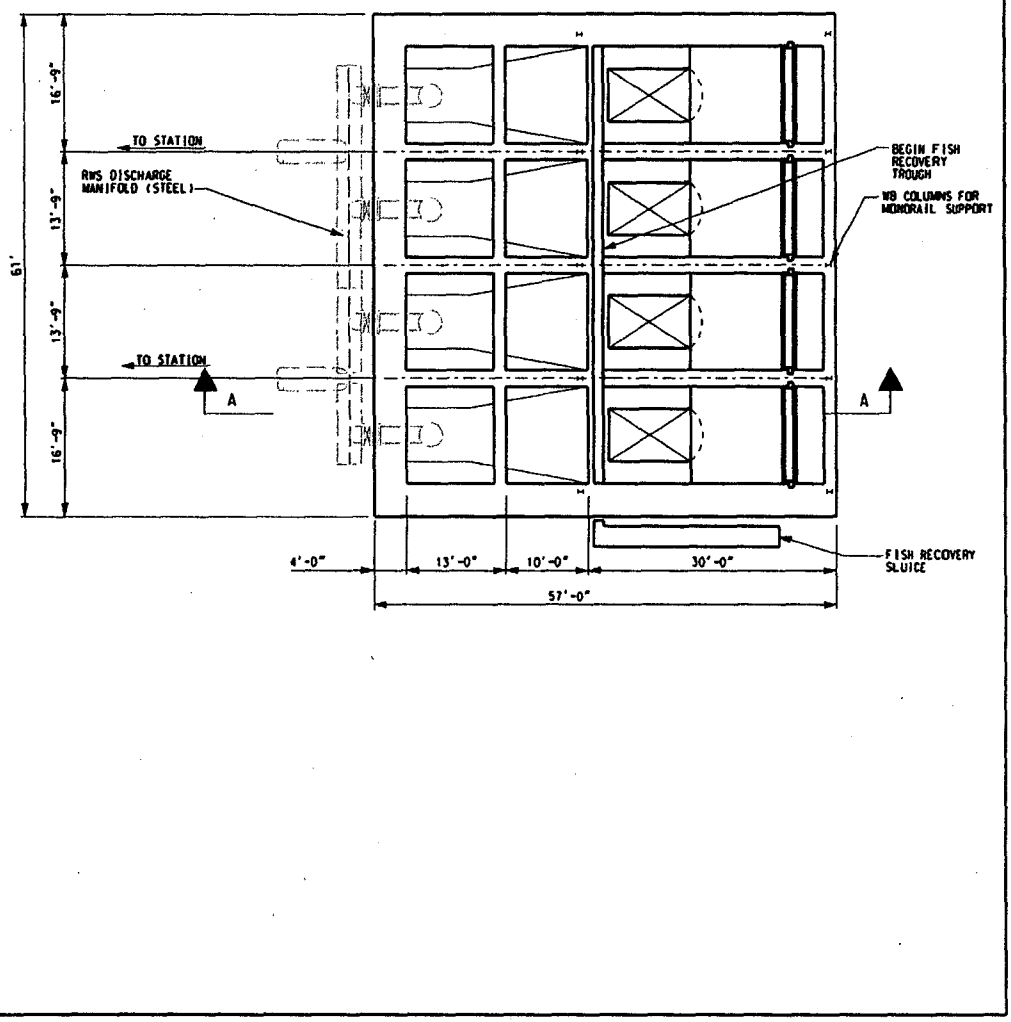
WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

Make-Up Pond A Intake Structure
Sheet 2 of 5
Figure 5.3-3



PLAN @ EL 511.00'
PUMP AND PIPE OUTLINE NOT TO SCALE

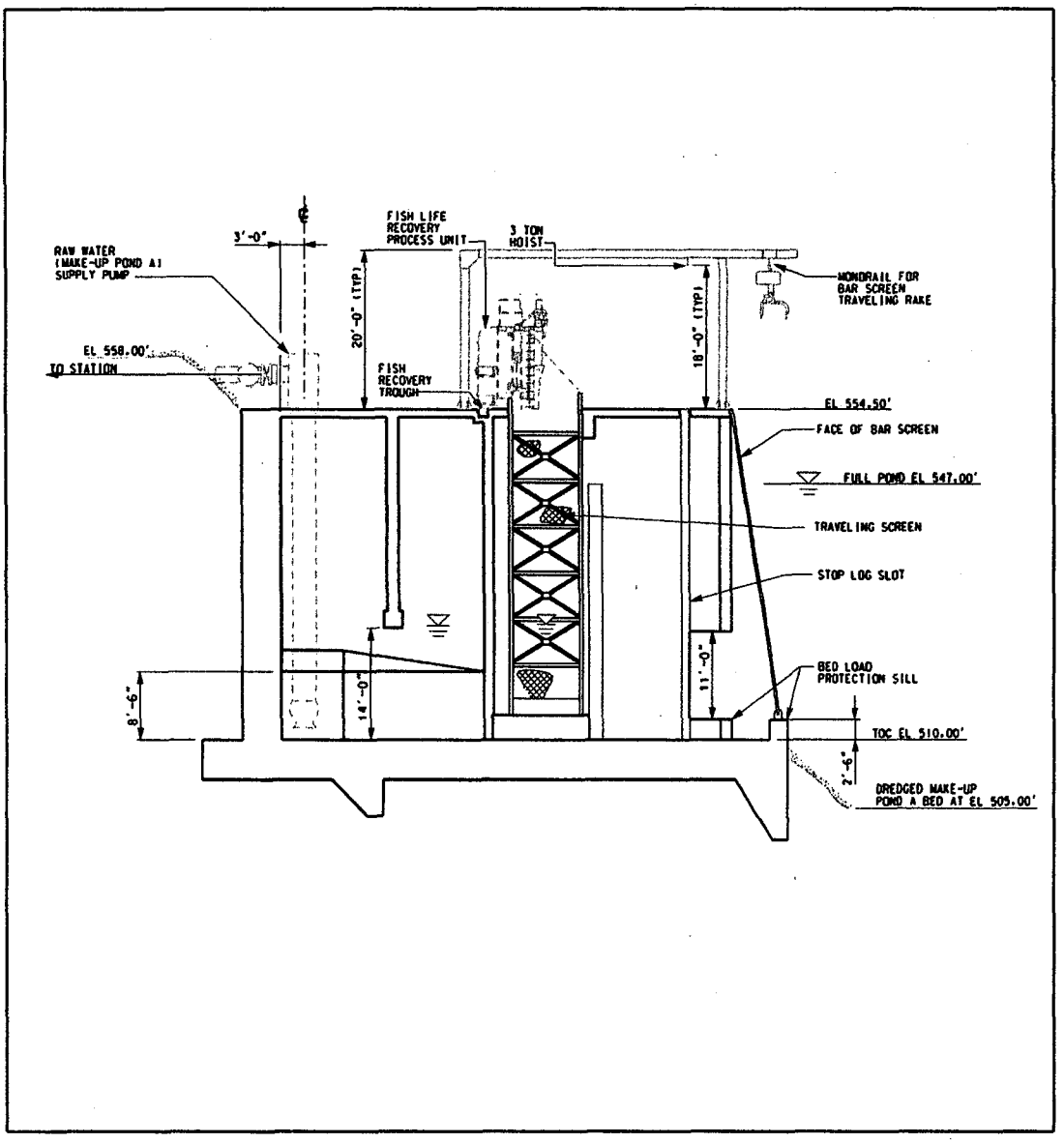
WILLIAM STATES LEE III NUCLEAR STATION UNITS 1 AND 2
Make-Up Pond A Intake Structure Sheet 3 of 5 Figure 5.3-3



DECK PLAN@ EL 554.50'
PUMP AND PIPE OUTLINE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

Make-Up Pond A Intake Structure
Sheet 4 of 5
Figure 5.3-3



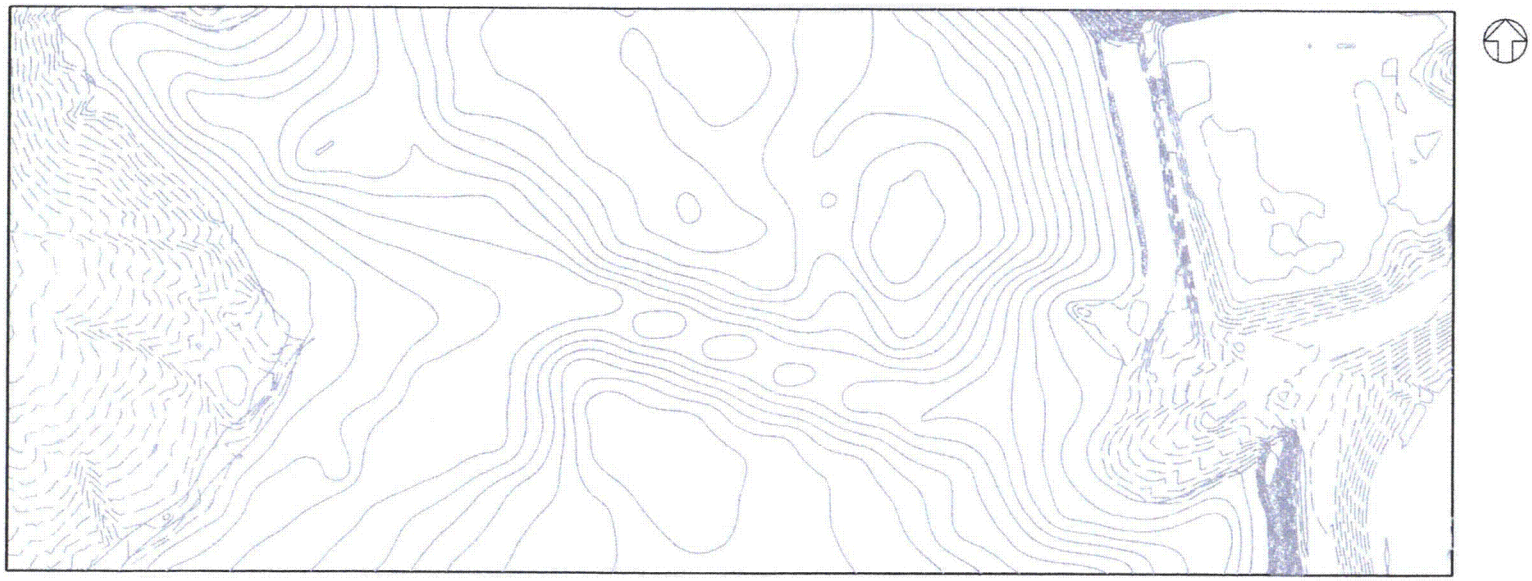
SECTION A-A
PUMP AND PIPE OUTLINE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

Make-Up Pond A Intake Structure
Sheet 5 of 5
Figure 5.3-3

Attachment 210S-02

Updated ER Figure 5.3-2,
Make-Up Pond B Intake Structure
Sheets 1 through 7 of 7

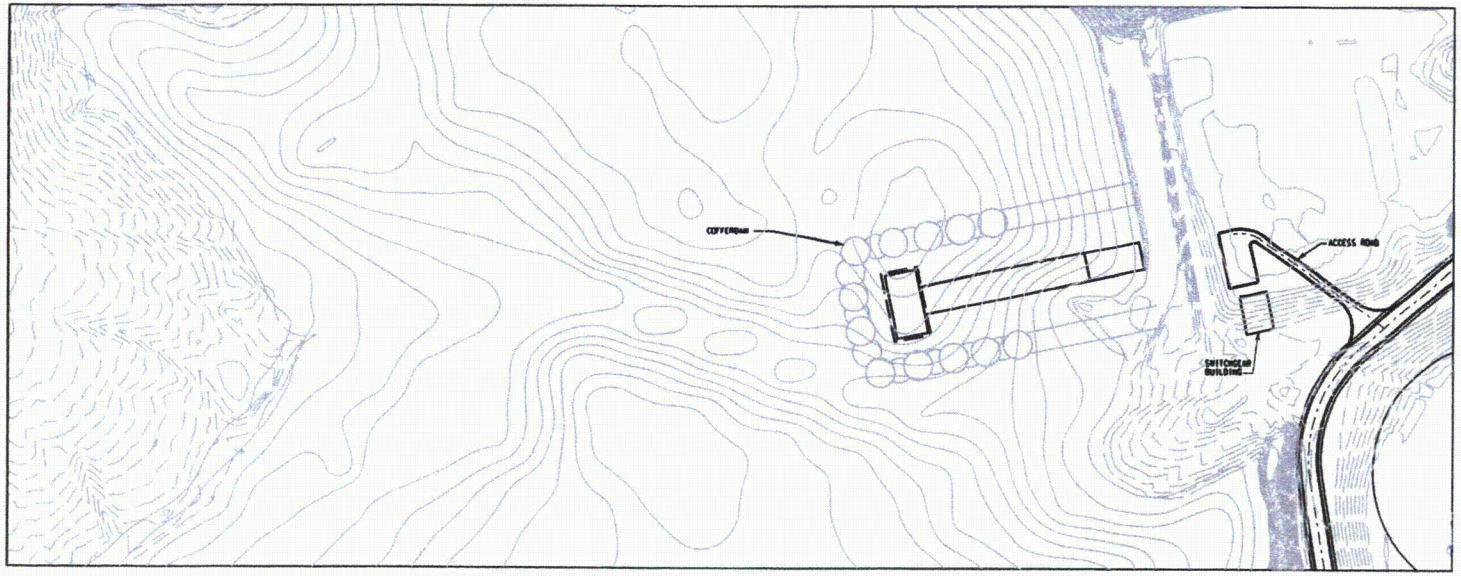


EXISTING CONDITION

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND B INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-2 SHEET 1 OF 7

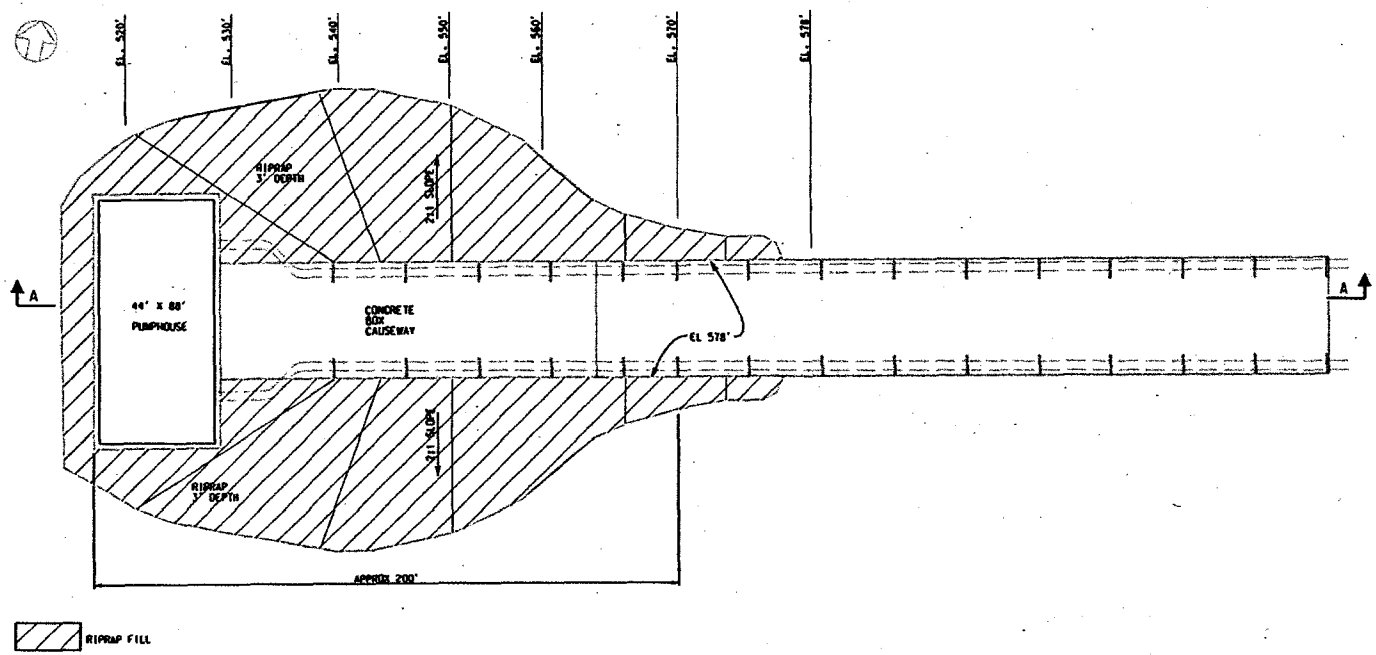


MAKE-UP POND B INTAKE STRUCTURE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND B INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-2 SHEET 2 OF 7



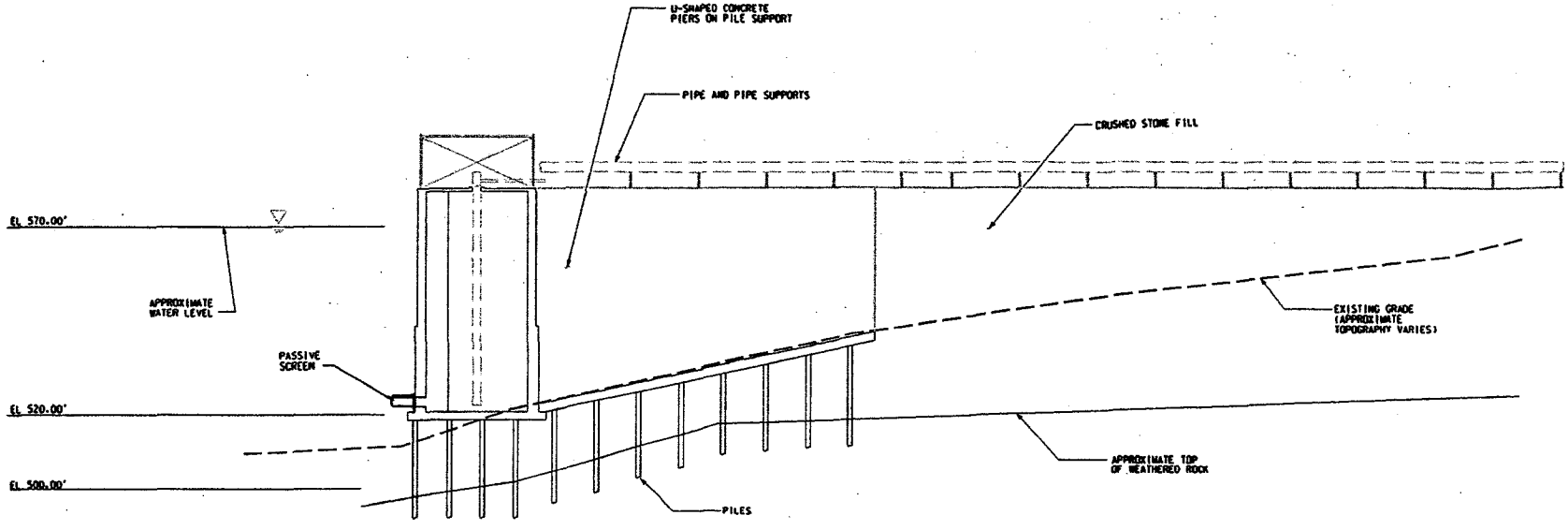
MAKE-UP POND B INTAKE STRUCTURE PLAN

PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND B INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-2 SHEET 3 OF 7

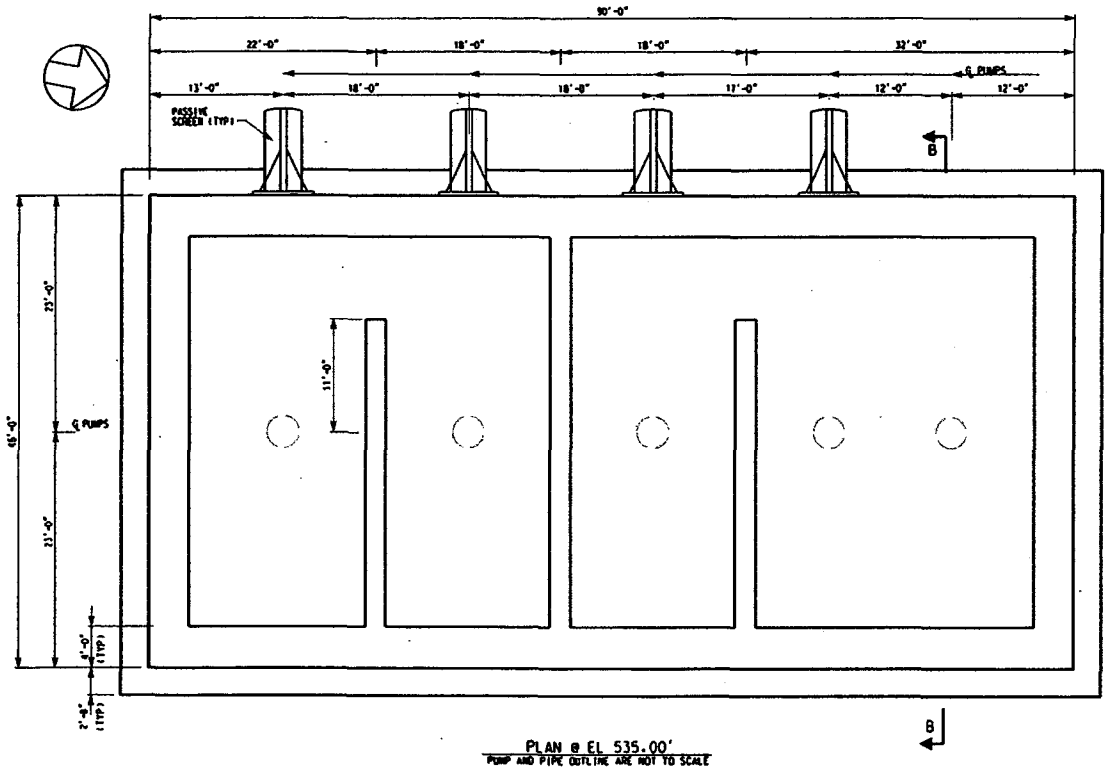


MAKE-UP POND B INTAKE STRUCTURE SECTION A-A
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND B INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-2 SHEET 4 OF 7

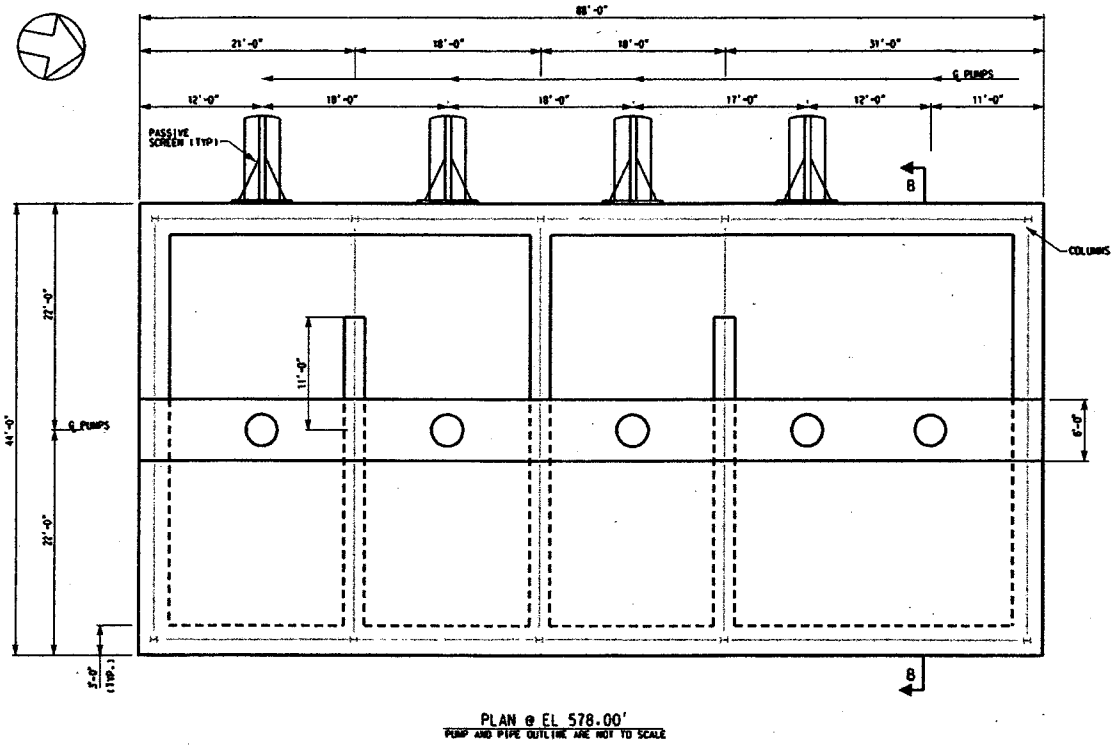


PLAN @ EL 535.00'
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND B INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-2 SHEET 5 OF 7

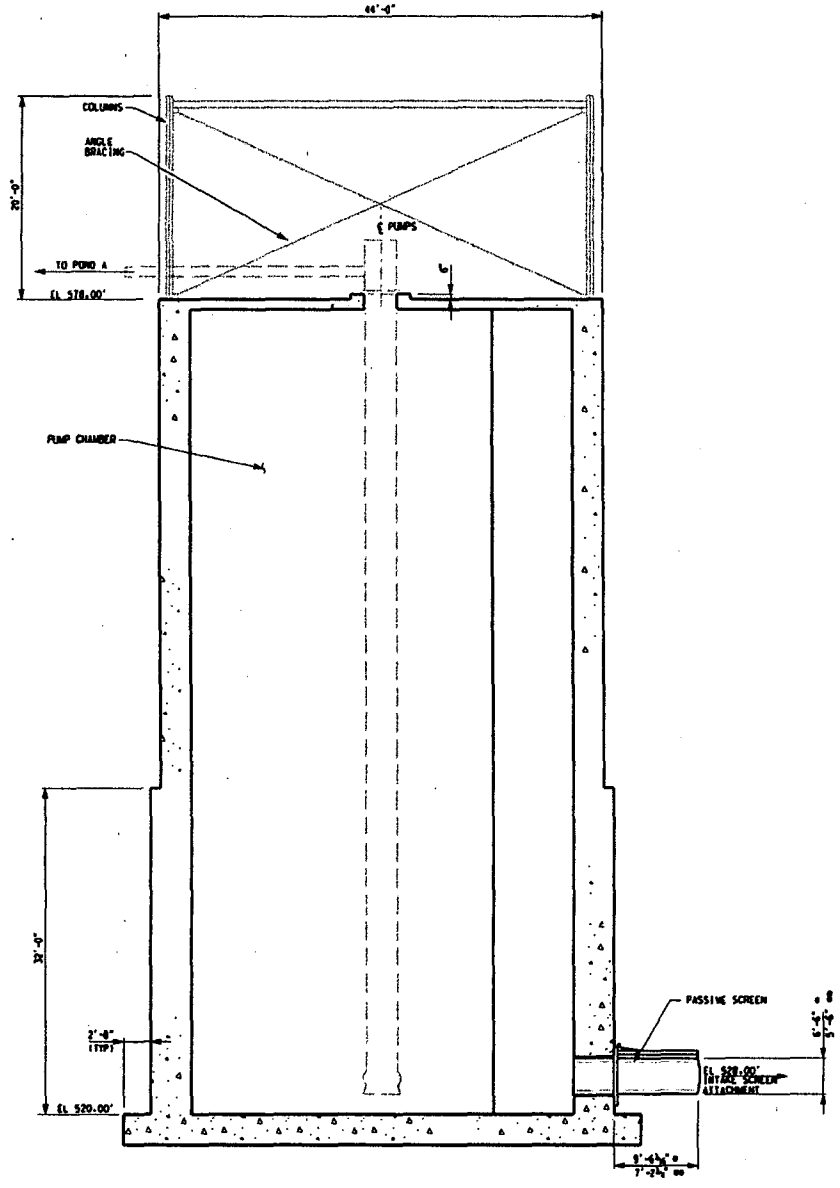


PLAN @ EL 578.00'
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND B INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-2 SHEET 6 OF 7



SECTION B-B
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

* FINE SCREEN
** COARSE SCREEN

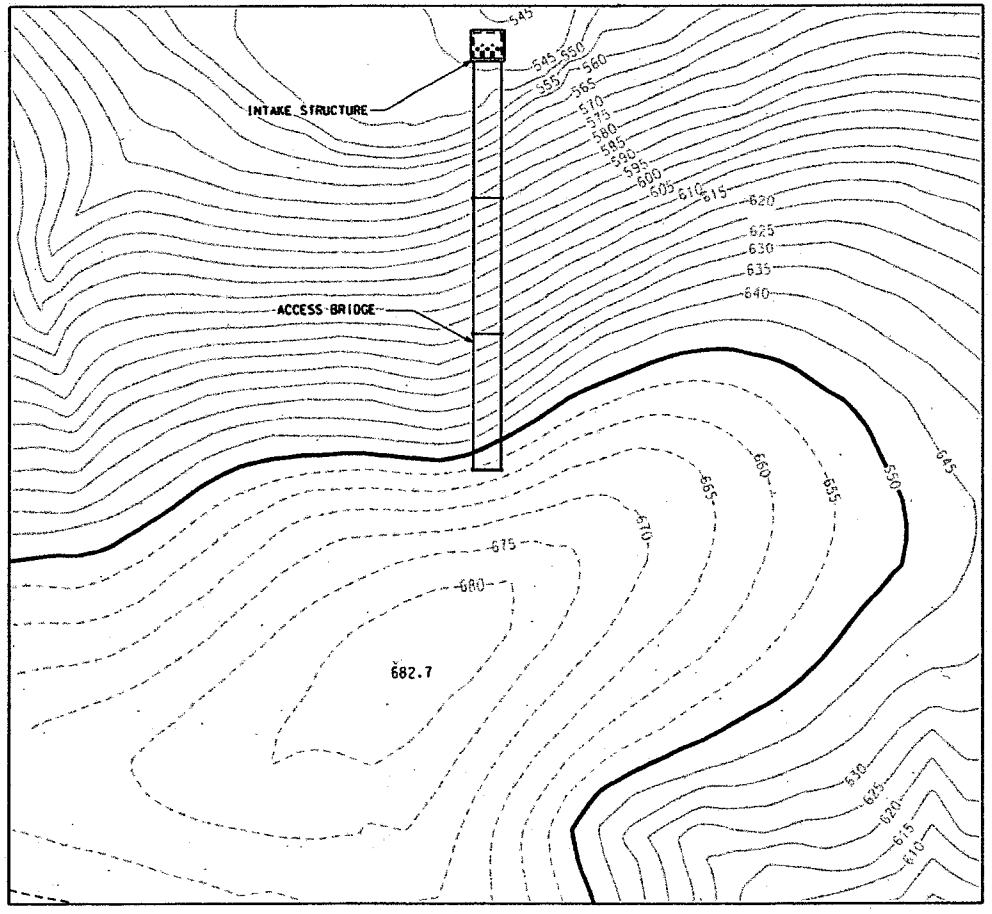
WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND B INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-2 SHEET 7 OF 7

Attachment 210S-03

Updated ER Figure 5.3-5,
Make-Up Pond C Intake Structure
Sheets 1 through 7 of 7

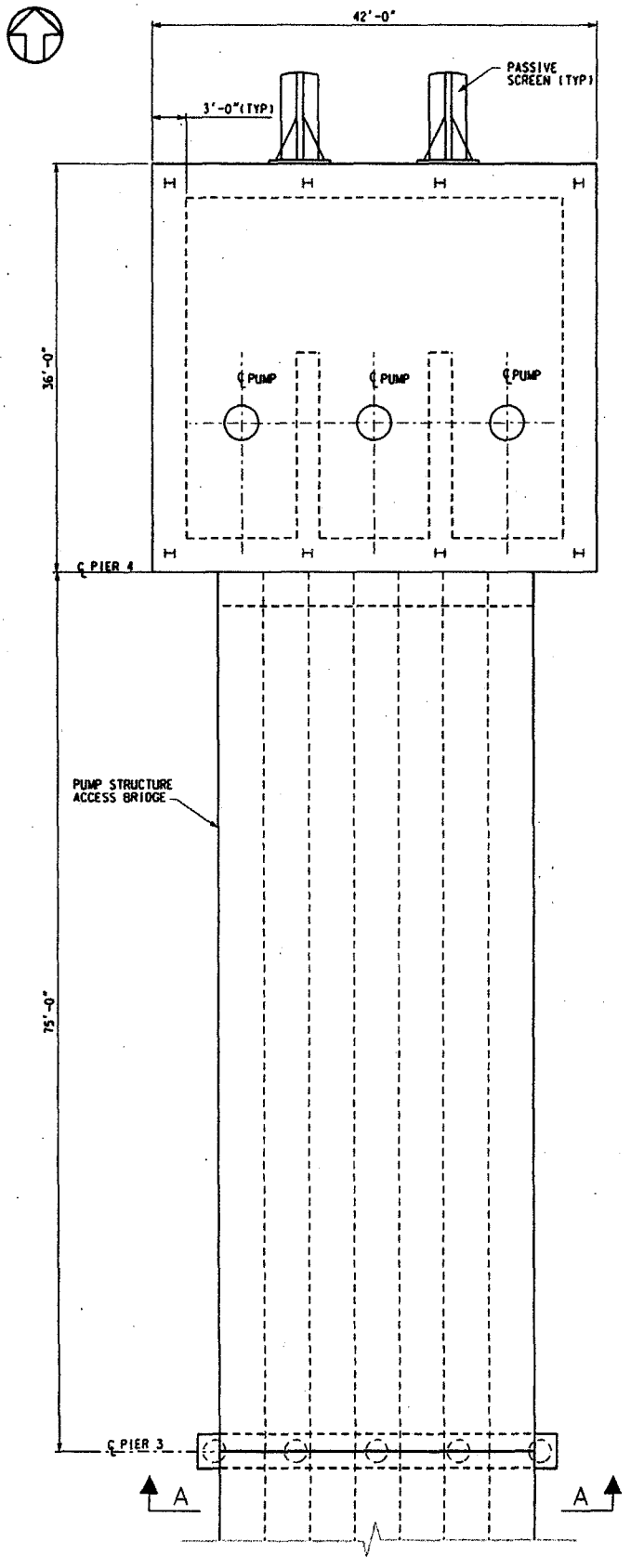


MAKE-UP POND C ACCESS BRIDGE AND INTAKE STRUCTURE LOCATION PLAN
SCALE: 1"= 200'-0"

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND C INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-5 SHEET 1 OF 7

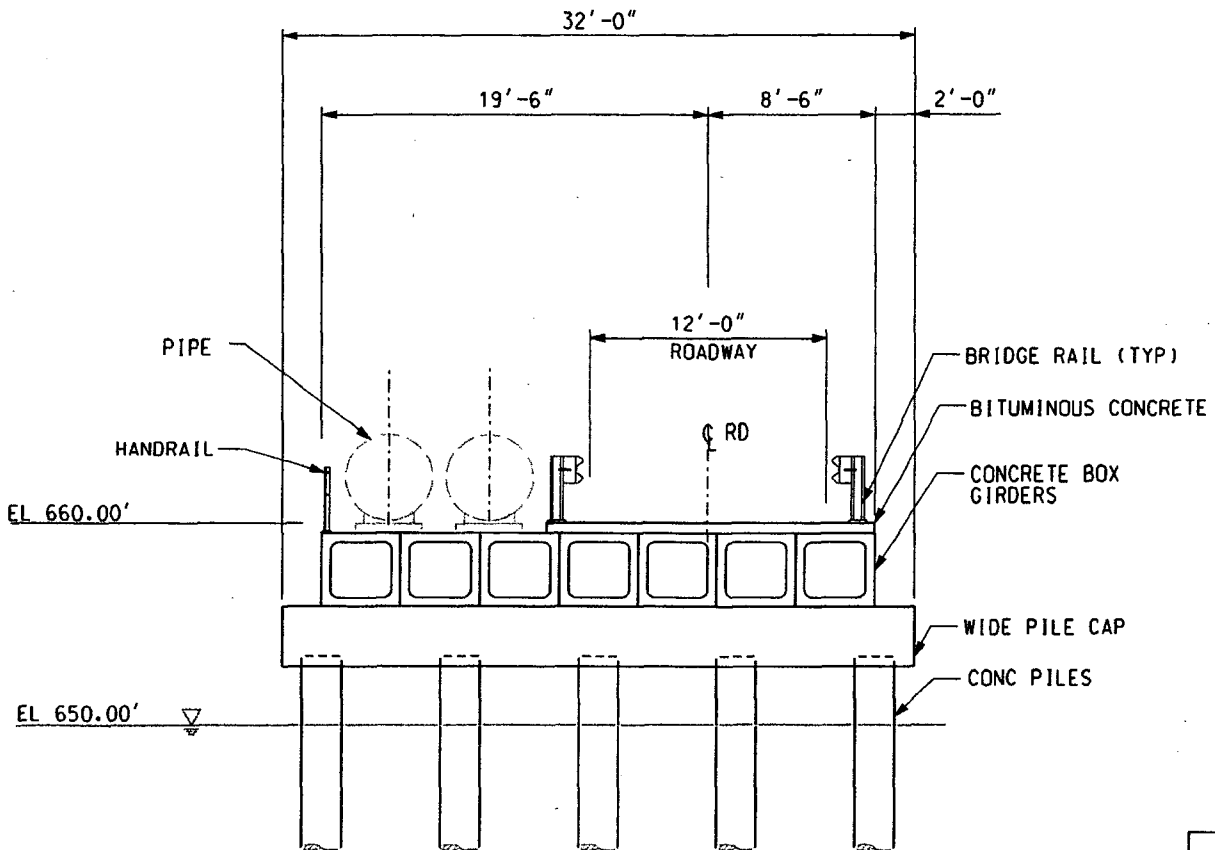


INTAKE STRUCTURE PLATFORM PLAN
SCALE: 1/4"= 1'-0"
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND C INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-5 SHEET 2 OF 7

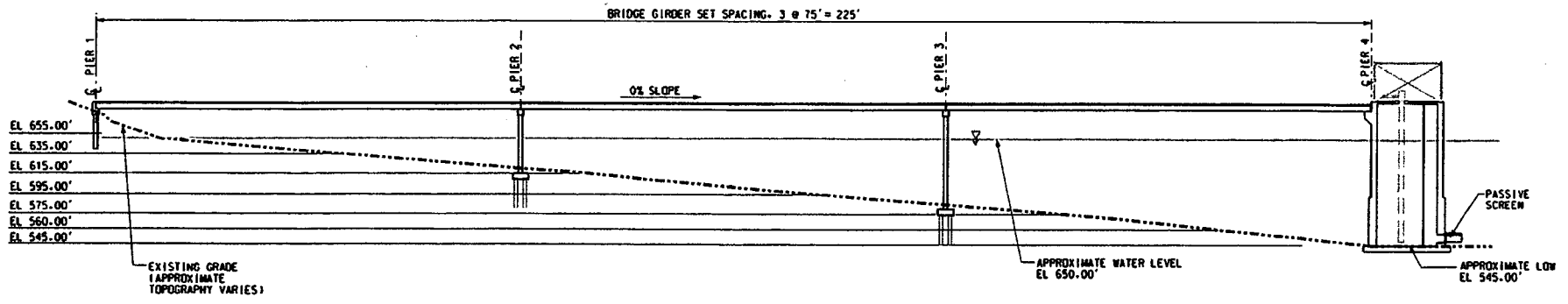


SECTION A-A @ BRIDGE PIER
SCALE: 1/4"= 1'-0"

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND C INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-5 SHEET 3 OF 7

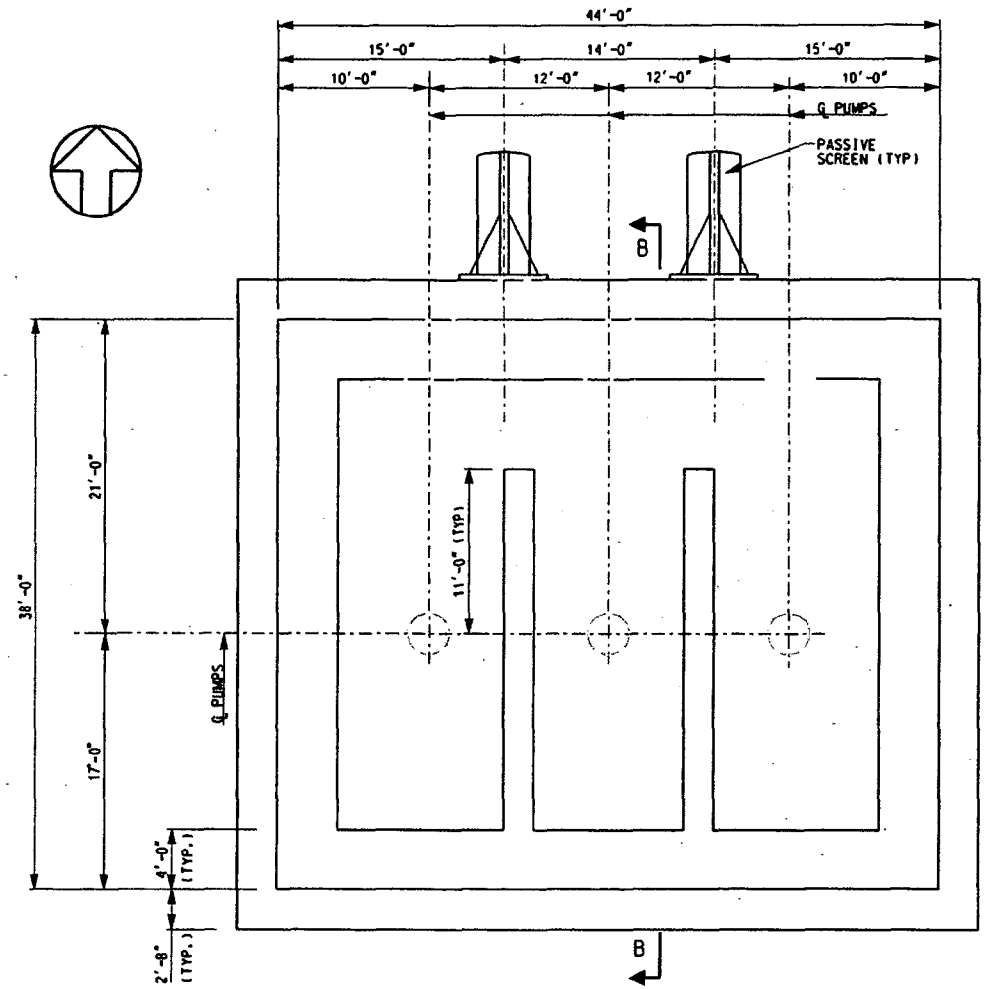


MAKE-UP POND C BRIDGE ELEVATION
SCALE: 1"= 40'-0"
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND C INTAKE/DISCHARGE
STRUCTURE, ACCESS BRIDGE,
AND PUMP PLATFORM

Figure 5.3-5 SHEET 4 OF 7

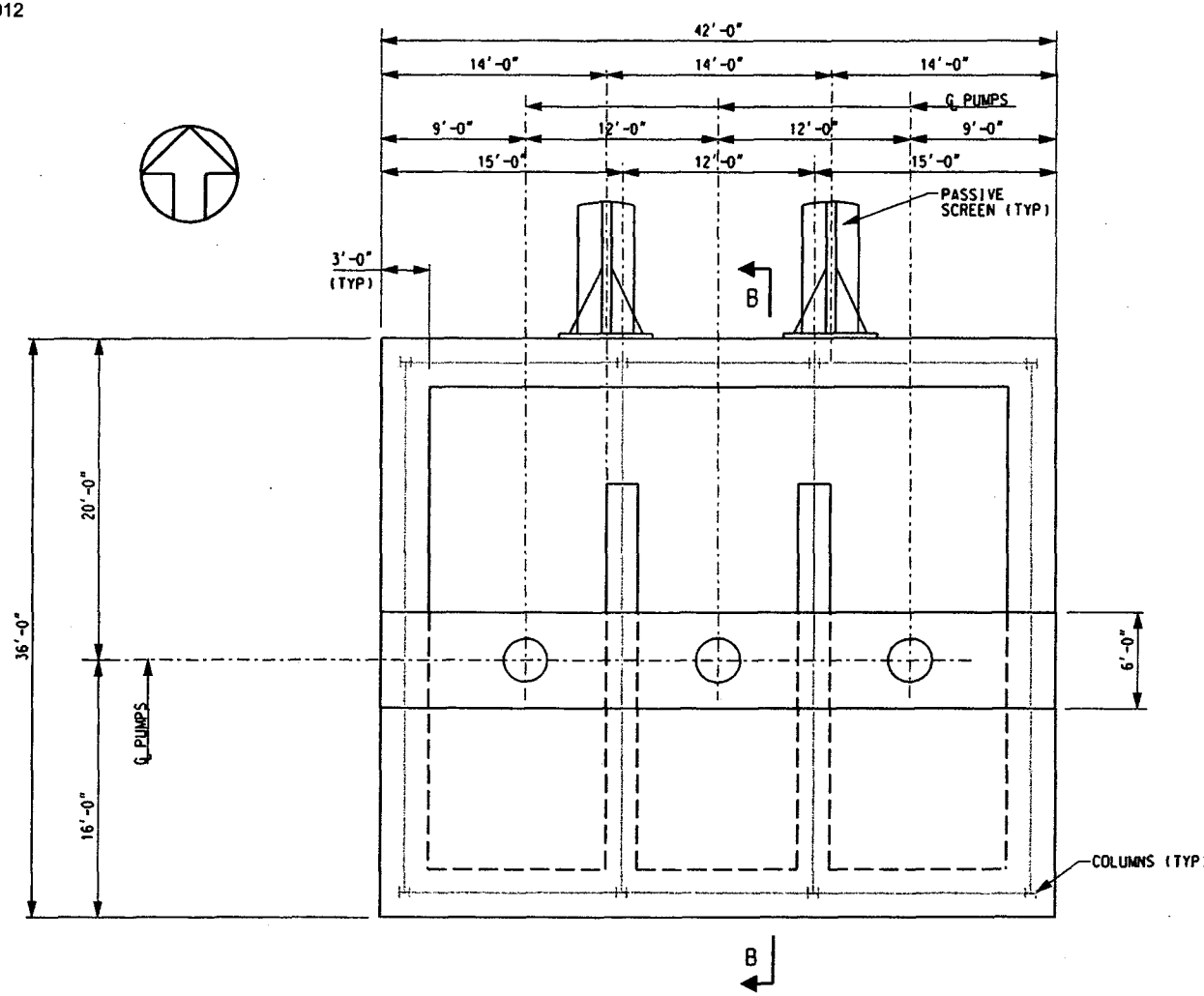


PLAN @ EL 560.00'
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND C INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-5 SHEET 5 OF 7

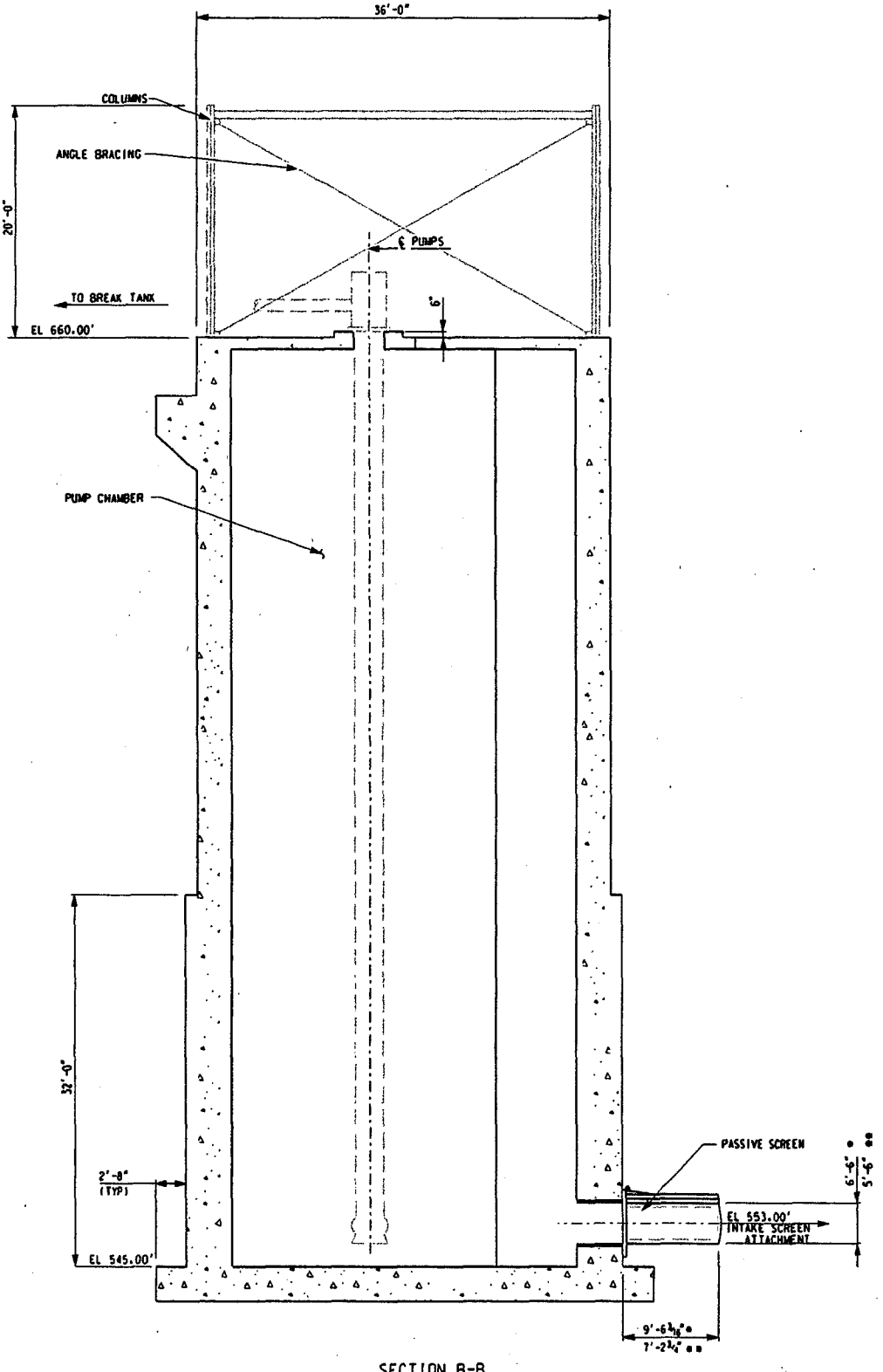


PLAN @ EL 660.00'
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

WILLIAM STATES LEE III NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND C INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-5 SHEET 6 OF 7



SECTION B-B
PUMP AND PIPE OUTLINE ARE NOT TO SCALE

* FINE SCREEN
** COARSE SCREEN

WILLIAM STATES LEE III
NUCLEAR STATION UNITS 1 AND 2

MAKE-UP POND C INTAKE/DISCHARGE STRUCTURE, ACCESS BRIDGE, AND PUMP PLATFORM

Figure 5.3-5 SHEET 7 OF 7