

CITY OF ANN ARBOR

BARTON DAM HYDROTURBINE 10-YEAR INSPECTION & OVERHAUL

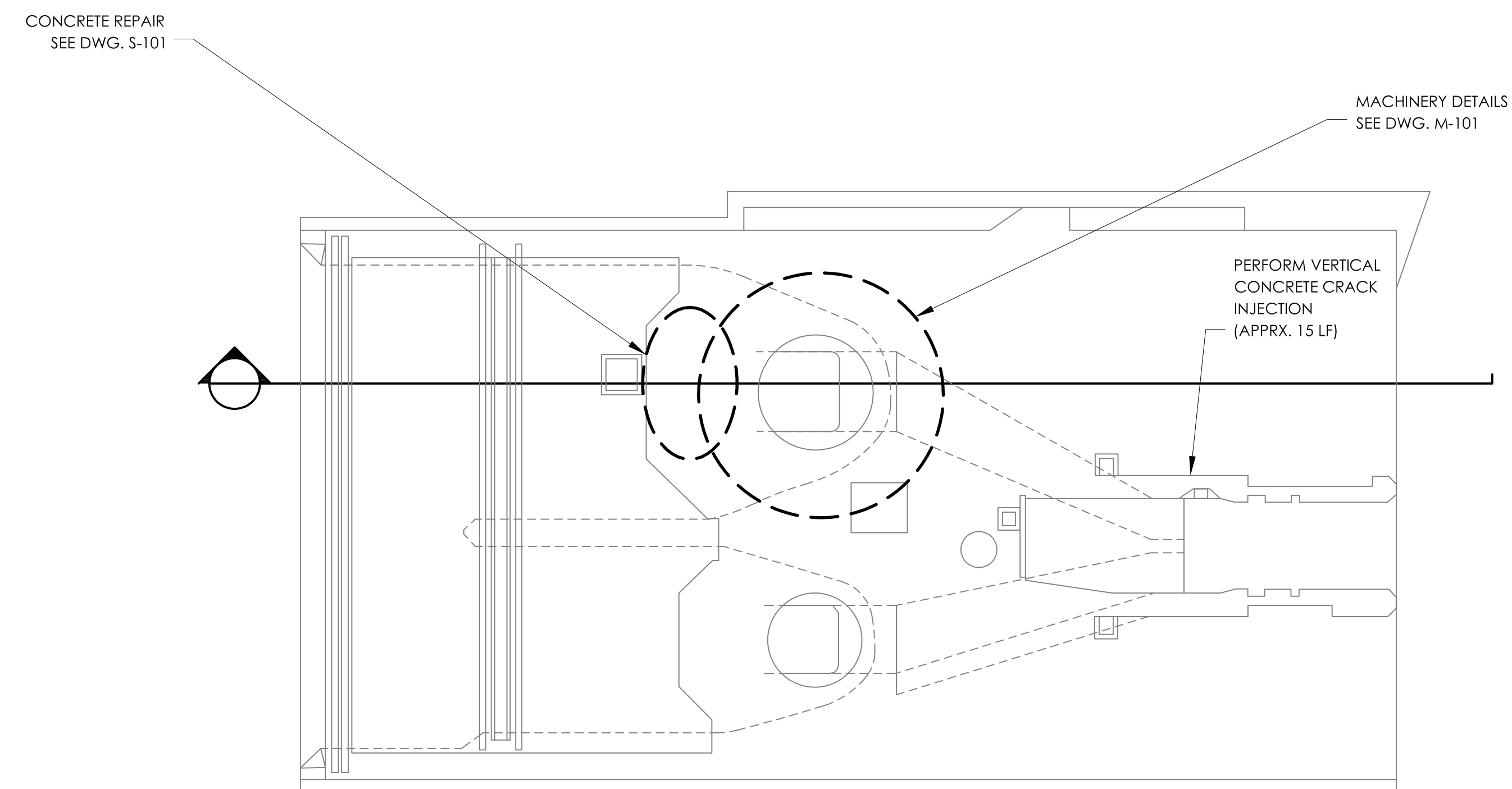
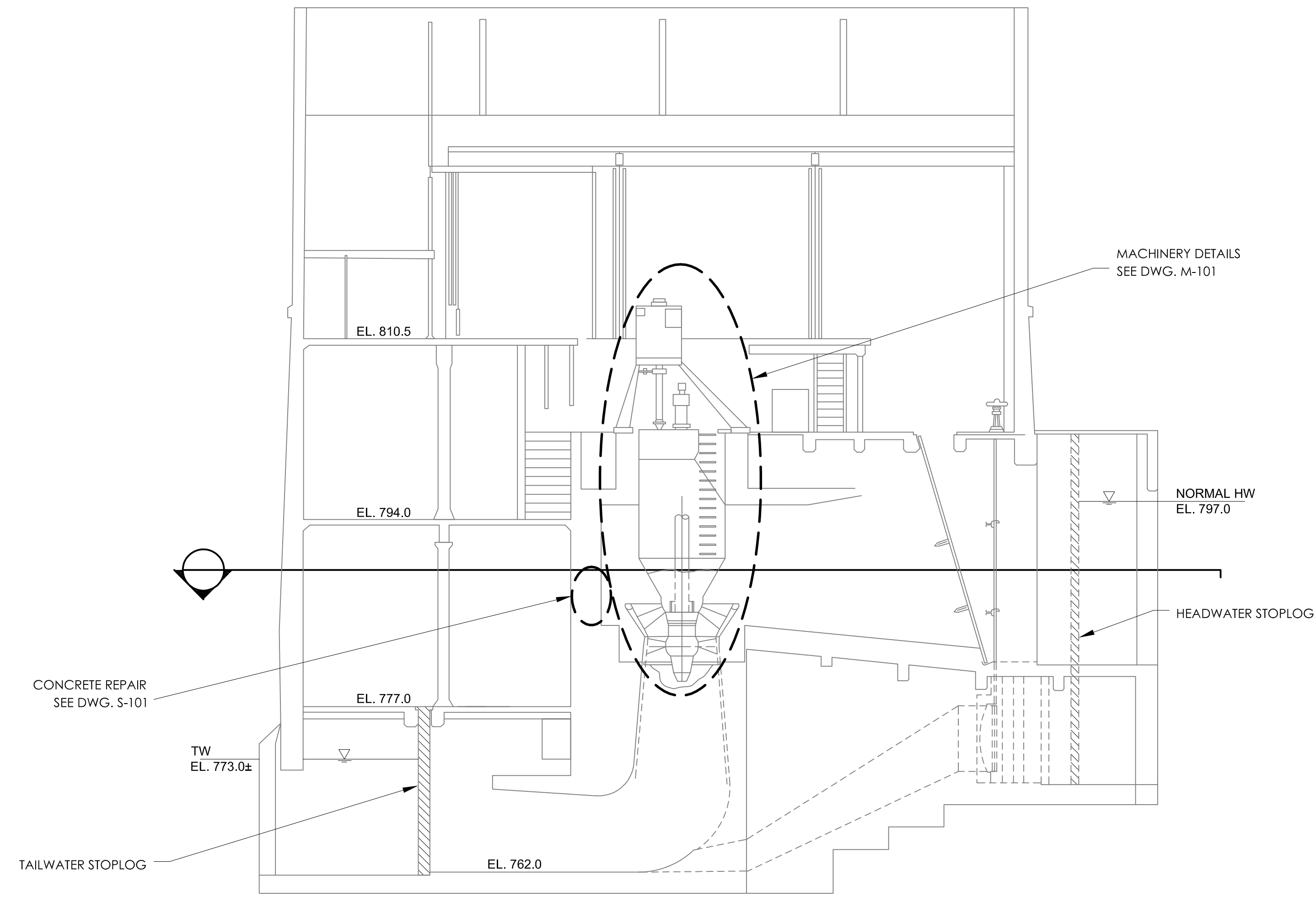
DECEMBER 2016

ITB#: 4467

Stantec Project Number: 2075139801

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D	FINAL REVIEW			16.12.16
C	OWNER REVIEW			16.12.12
B	REVISION			16.12.12
A	PRELIMINARY			16.11.18

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Client/Project
CITY OF ANN ARBOR

BARTON DAM HYDROTURBINE
10-YEAR INSEPECTION & OVERHAUL
Ann Arbor, Michigan

Title
GENERAL PLAN AND SECTIONS

Project No. 2075139801
Drawing No. G-101

Scale 0 4' 8' 16'
Sheet 2 of 7
Revision 0



811
Know what's below.
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NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

1 - GENERAL NOTES

- A. ALL STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE MECHANICAL DRAWINGS AND SPECIFICATIONS.
- B. CONTRACTORS SHALL VERIFY ALL EXISTING CONDITIONS, DIMENSIONS, ELEVATIONS, ETC., IN FIELD AND NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO THE START OF CONSTRUCTION OR SHOP DRAWINGS.
- C. THE DRAWINGS ARE INTENDED TO REQUIRE AND TO INCLUDE ALL LABOR, MATERIAL AND EQUIPMENT PROPER FOR THE WORK.
- D. ALL WORK SHALL COMPLY WITH ALL LOCAL, STATE AND NATIONAL CODES AND REQUIREMENTS.
- E. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND SAFETY PROCEDURES. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUBCONTRACTORS OR THEIR AGENTS OR EMPLOYEES OR ANY OTHER PERSONS PERFORMING ANY OF THE WORK.
- F. OBSERVE ALL OSHA AND OTHER APPLICABLE SAFETY REQUIREMENTS INCLUDING THE USE OF SAFETY GLASSES, HARD HATS, AND PROTECTION OF AREA WHEN WORKING OVERHEAD. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR CONSTRUCTION SAFETY AT ALL TIMES.
- G. COORDINATE WORK OF ALL DISCIPLINES WITH EXISTING CONDITIONS, SPECIAL REQUIREMENTS, CONSTRUCTION SCHEDULE AND OTHER CONTRACTORS PERFORMING WORK AT THE SITE.
- H. THE CONTRACTOR SHALL DESIGN AND PROVIDE ANY TEMPORARY SHORING, BRACING, ETC., AS NEEDED FOR THE WORK SO AS NOT TO ENDANGER THE STRUCTURAL INTEGRITY OF ANY EXISTING FEATURE.
- I. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR ANY DAMAGE DONE TO EXISTING FEATURES AS A RESULT OF THIS WORK. DAMAGED ITEMS SHALL BE REPLACED IN KIND AND AT NO ADDITIONAL COST TO THE OWNER.
- J. SEE SPECIFICATIONS FOR FULL SCOPE OF REQUIREMENTS APPLICABLE TO THIS PROJECT.
- K. SHOP DRAWINGS: REPRODUCTION OF DESIGN DRAWINGS SHALL NOT BE PERMITTED FOR SHOP DRAWING SUBMISSIONS. THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL REVIEW AND PROVIDE REVIEW STAMP ON SHOP DRAWING SUBMISSIONS PRIOR TO SUBMITTAL TO ENGINEER INDICATING UNDERSTANDING AND ACCEPTANCE OF SUBMITTAL AND CONFIRMING CONFORMANCE TO PROJECT PLANS/SPECIFICATIONS.

2 - CONCRETE WORK

- A. SUBMITTALS
 - 1. SUBMIT SHOP DRAWINGS SHOWING FABRICATION, BENDING AND PLACEMENT OF CONCRETE REINFORCEMENT. DETAILING SHALL COMPLY WITH THE ACI DETAILING MANUAL.
 - 2. SUBMIT CONCRETE MIX PROPORTIONS WITH SUPPORTING TEST DATA, MATERIAL CERTIFICATIONS AND PRODUCT DATA, TO DEMONSTRATE COMPLIANCE WITH THE REQUIREMENTS BELOW AND THE PROJECT SPECIFICATIONS.
- B. COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
 - 1. ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
 - 2. ACI 305, ACI 306, ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
 - 3. ACI DETAILING MANUAL, LATEST EDITION.
 - 4. ACI 347 "RECOMMENDED PRACTICE FOR CONCRETE FORM WORK".
 - 5. CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "MANUAL OF STANDARD PRACTICE".
 - 6. ACI 304 "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE".
- C. MATERIALS:
 - 1. REINFORCING BARS - ASTM A615, GRADE 60, DEFORMED.
 - 2. SUPPORTS FOR REINFORCEMENT:
 - (A) FOR SLABS-ON-GRADE USE CONCRETE BRICKS OR CHAIRS TO SUPPORT AND MAINTAIN PROPER LOCATION OF REINFORCING BARS.
 - (B) BOLSTERS, CHAIRS, SPACERS, ETC. SHALL BE WIRE BAR TYPE SUPPORTS COMPLYING WITH CRSI SPECS. FOR EXPOSED TO VIEW SURFACES WHERE SUPPORTS ARE IN CONTACT WITH FORMS, PROVIDE SUPPORTS WITH LEGS WHICH ARE PROTECTED BY PLASTIC.
 - 3. PORTLAND CEMENT-ASTM C150, TYPE I OR II.
 - 4. AGGREGATES-ASTM C33.
 - 5. AIR ENTRAINING ADMIXTURE-ASTM C260, CERTIFIED BY MANUFACTURER TO BE COMPATIBLE WITH OTHER REQUIRED ADMIXTURES.
 - 6. PROHIBITED ADMIXTURES-CALCIUM CHLORIDE THYOCYANATES OR ADMIXTURES CONTAINING MORE THAN 0.1% CHLORIDE IONS ARE NOT PERMITTED.
- D. PROPORTIONING AND DESIGN OF MIXES:
 - 1. PREPARE DESIGN MIXES FOR EACH TYPE, AND STRENGTH OF CONCRETE BY EITHER LABORATORY TRIAL BATCH OR FIELD EXPERIENCE METHODS AS SPECIFIED IN ACI 318.
 - 2. NORMAL WEIGHT CONCRETE-MINIMUM 28 COMPRESSIVE STRENGTH - 4,000 PSI.
- E. FORM WORK:
 - 1. PROVIDE OPENINGS IN CONCRETE FORM WORK TO ACCOMMODATE WORK OF OTHER TRADES.
- F. CONCRETE SHALL BE READY MIXED PER ASTM C94. JOB SITE MIXING SHALL NOT BE PERMITTED.
- G. CONCRETE PLACEMENT:
 - 1. THE ADDITION OF WATER TO THE CONCRETE MIX AT THE JOB SITE IS NOT PERMITTED UNLESS SPECIFICALLY ALLOWED BY THE OWNER'S REPRESENTATIVE.
 - 2. PROTECT CONCRETE WORK FROM THE DETRIMENTAL EFFECTS OF COLD TEMPERATURES IN COMPLIANCE WITH ACI 306.
 - 3. PROTECT CONCRETE WORK FROM THE DETRIMENTAL EFFECTS OF HOT WEATHER OR WINDY CONDITIONS IN COMPLIANCE WITH ACI 305.
- H. CONCRETE FINISHES:
 - 1. FORMED SURFACES EXPOSED TO VIEW - SMOOTH RUBBED FINISH.
- I. PROVIDE MOISTURE CURE TO SLAB SURFACES FOR 7 DAYS BY EITHER COVERING THE CONCRETE WITH WATER, APPLYING A CONTINUOUS WATER-FOG SPRAY, OR COVERING WITH AN ABSORPTIVE COVER.
- J. SAMPLING AND TESTING OF CONCRETE SHALL INCLUDE:
 - 1. SLUMP-ASTM C143-ONE TEST AT POINT OF PLACEMENT. ADDITIONAL TESTS WHEN CONCRETE CONSISTENCY SEEMS TO HAVE CHANGED.
 - 2. AIR ENTRAINMENT-ASTM C173 VOLUMETRIC METHOD, OR ASTM C231 PRESSURE METHOD, EACH TYPE OF AIR ENTRAINMENT CONCRETE.
 - 3. CONCRETE TEMPERATURE-TEST HOURLY WHEN AIR TEMPERATURE IS 41°F AND BELOW OR WHEN 80°F AND ABOVE; AND EACH TIME A SET OF COMPRESSION TEST CYLINDERS IS MADE.
 - 4. COMPRESSION TEST SPECIMENS-ASTM C31-ONE SET OF 5 CYLINDERS FOR EACH COMPRESSIVE STRENGTH TEST. MOLD AND STORE CYLINDERS FOR LABORATORY CURED TEST SPECIMENS.

D	FINAL REVIEW			14.12.14
C	OWNER REVIEW			14.12.12
B	REVISION			14.12.12
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Client/Project
CITY OF ANN ARBOR

BARTON DAM HYDROTURBINE
10-YEAR INSEPECTION & OVERHAUL
Ann Arbor, Michigan

Title

NOTES

Project No. 2075139801 Scale

Drawing No. S-000 Sheet 3 of 7 Revision 0



Know what's below.
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Legend

DATUM: ORIGINAL (NGVD29 ASSUMED)

NOTES:

- CONTRACTOR SHALL PROTECT FLOOR @ 777.0 BY COVERING WITH PLANKING OR PLYWOOD AND SHALL TAKE SPECIAL PRECAUTIONS TO PREVENT ANY DEBRIS FROM ENTERING THE WICKET ASSEMBLY INCLUDING COMPLETELY COVERING THE WICKET OPENING WITH PLASTIC AND PLYWOOD.
- EXACT DEMOLITION LIMITS TO BE FIELD DETERMINED BY ENGINEER.
- GENERATOR, SUPPORT AND SPEED INCREASER MUST BE REMOVED BEFORE COMMENCING DEMOLITION. REFER TO DRAWING NO. M-101.
- ALL EDGES SHALL BE SAWCUT 3" MIN. FROM OUTSIDE FACE.
- ALL SAWCUT LINES SHALL BE AT RIGHT ANGLES, PARALLEL AND PERPENDICULAR.
- ALL CONCRETE DUST SHALL BE CONTAINED AND PREVENTED FROM ENTERING THE RIVER OR MACHINERY.
- REFER TO S-401 AND S-402 FOR PHASING OF WORK.

D	FINAL REVIEW			16.12.16
C	OWNER REVIEW			16.12.12
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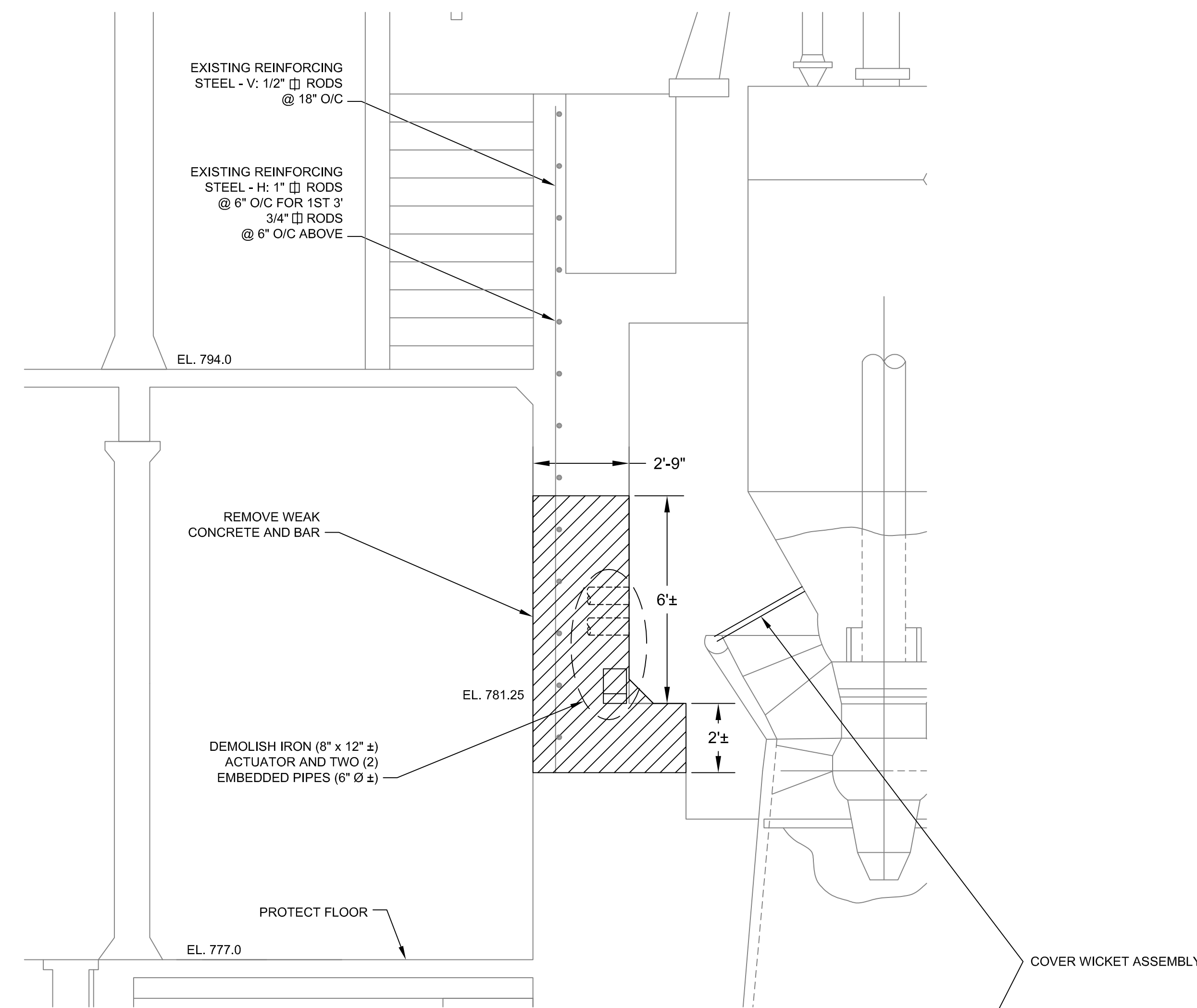
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CITY OF ANN ARBOR

BARTON DAM HYDROTURBINE
10-YEAR INSEPECTION & OVERHAUL
Ann Arbor, Michigan

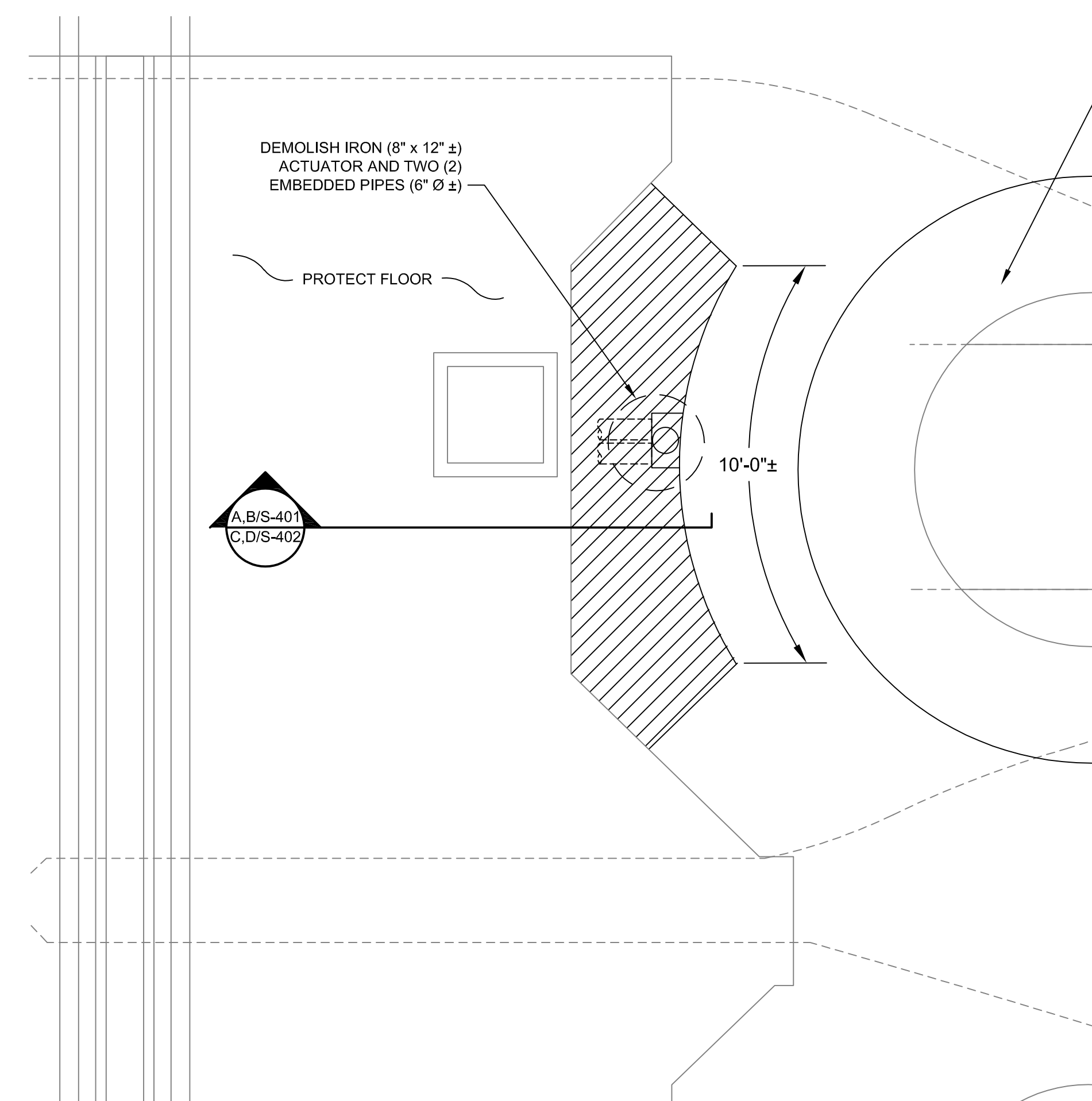
Title
DEMOLITION PLAN AND SECTION

Project No. 2075139801
Drawing No. _____ Sheet _____ Revision _____

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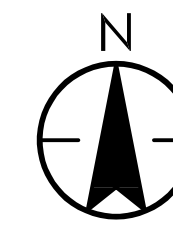


SECTION VIEW



PLAN VIEW

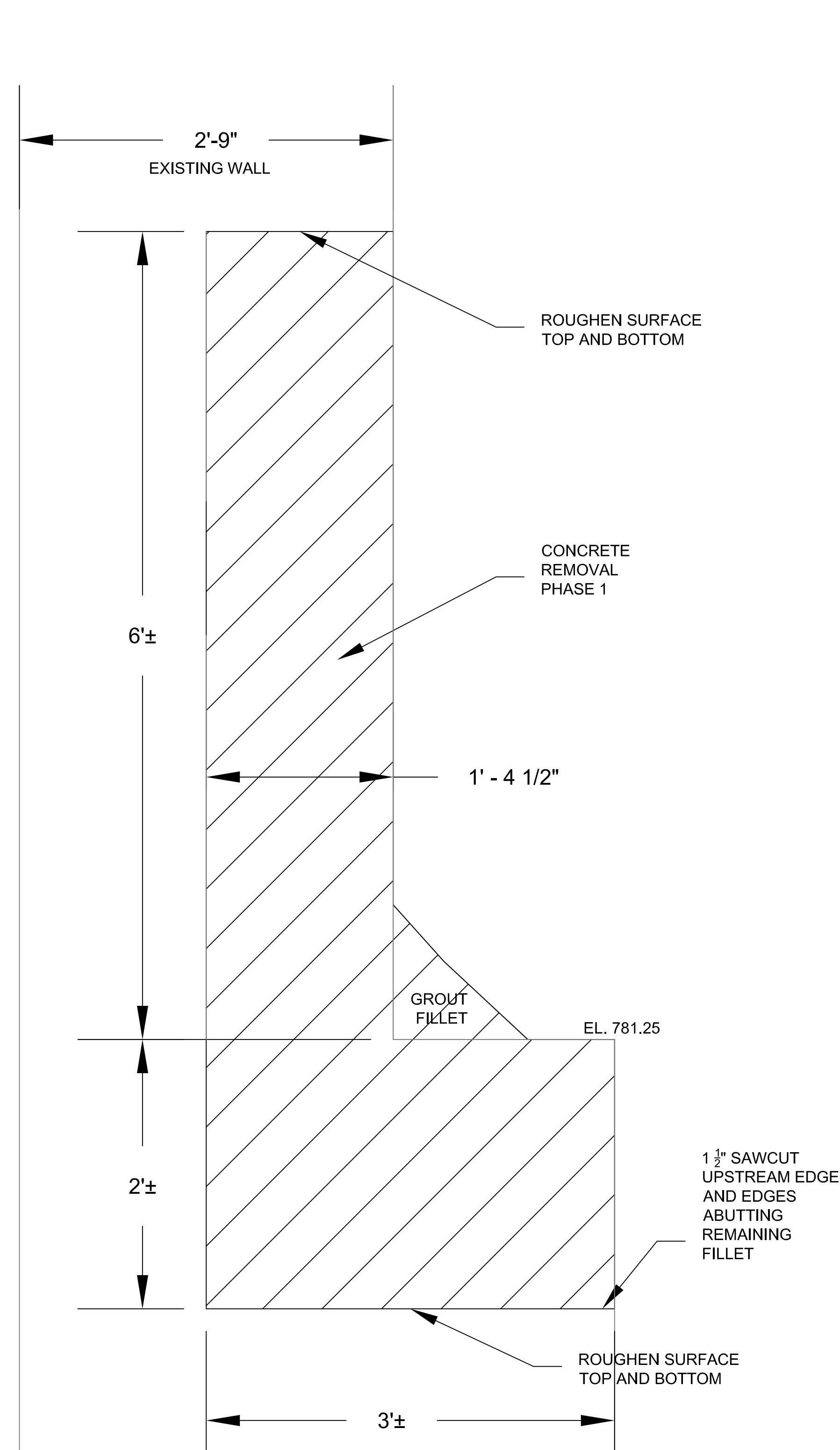
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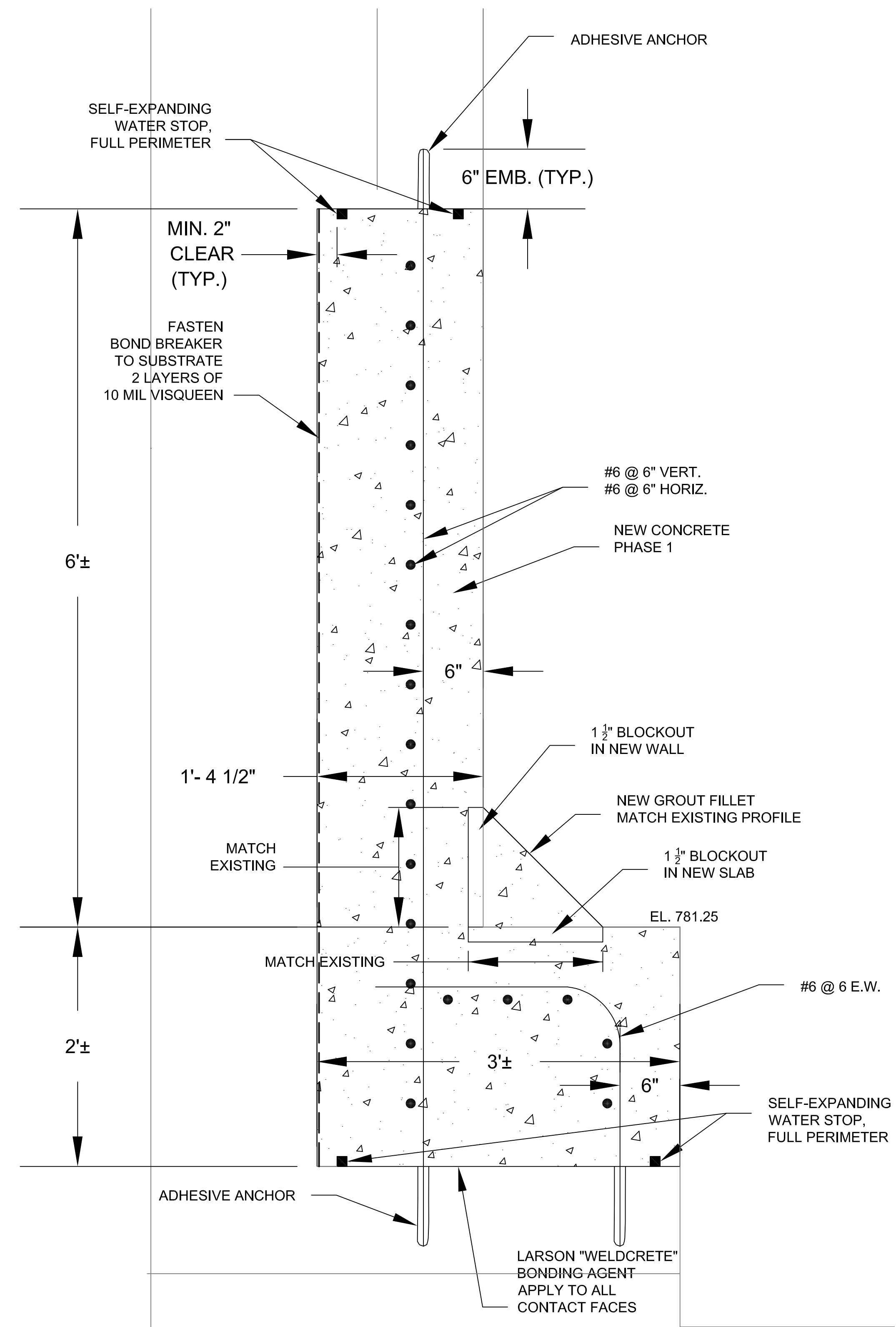
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NOTES:

1. EXACT REMOVAL DIMENSIONS TO BE DETERMINED IN THE FIELD BY ENGINEER.
2. IF SAWCUT DEPTH IS NOT COMPLETELY THROUGH WALL, WATERSTOP TRACKS SHALL BE GROUND SMOOTH FOR PLACEMENT OF WATERSTOP. WATERSTOP SHALL BE TIGHTLY ANCHORED TO SUBSTRATE AND LAPPED PER MANUFACTURERS RECOMMENDATIONS.
3. IT IS ANTICIPATED THAT "BIRD MOUTH" CHUTES WILL BE USED FOR CASTING WALL REPAIRS. CHUTES SHALL EXTEND AT LEAST 6" ABOVE TOP OF CASTING AND SHALL BE LARGE AND EXTENSIVE ENOUGH FOR GOOD OBSERVATION AND CONSOLIDATION.
4. CHUTES SHALL BE REMOVED AS SOON AS PRACTICAL AFTER CASTING AND THE SURFACE REPAIRED. FLUSH USING APPROVED CEMENTITIOUS MATERIAL.
5. CONTRACTOR TO PROVIDE WATERSTOPS ON CONSTRUCTION JOINTS.
6. ALL CONSTRUCTION JOINTS MUST BE APPROVED BY THE ENGINEER.



C SECTION - REMOVAL - PHASE 1
S-101 NOT TO SCALE



D SECTION - REPAIR - PHASE 1
S-101 NOT TO SCALE

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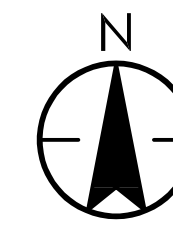
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Client/Project
CITY OF ANN ARBOR

BARTON DAM HYDROTURBINE
10-YEAR INSEPECTION & OVERHAUL
Ann Arbor, Michigan

Title
C, D SECTION - PHASE 1 SECTION

Project No.	Scale
2075139801	
Drawing No.	Sheet
S-401	5 of 7
Revision	0



Legend

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CITY OF ANN ARBOR

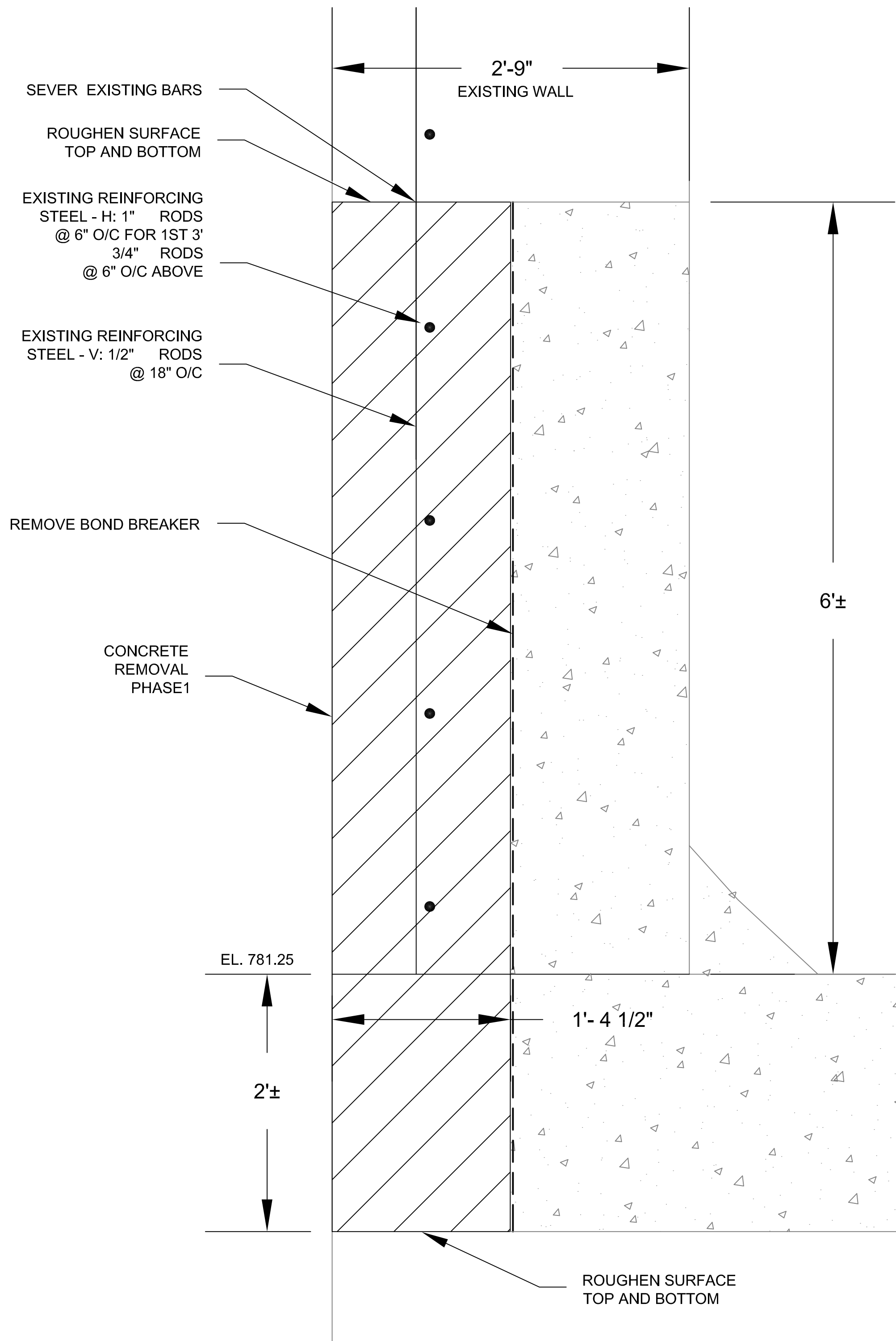
BARTON DAM HYDROTURBINE
10-YEAR INSEPECTION & OVERHAUL
Ann Arbor, Michigan

Title
A, B SECTION - PHASE 2 SECTION

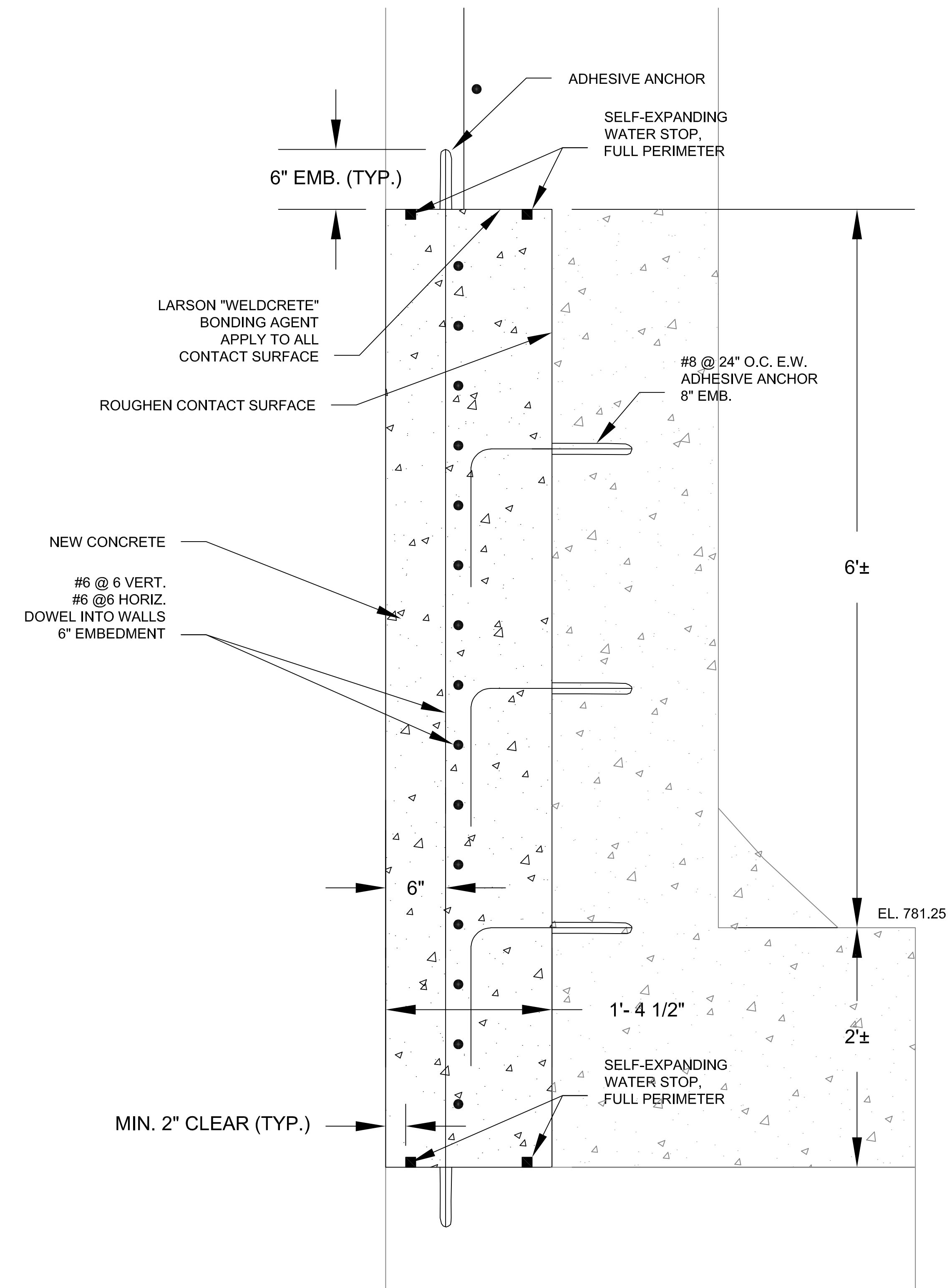
Project No. Scale
2075139801

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A SECTION - REMOVAL - PHASE 2
S-101 NOT TO SCALE

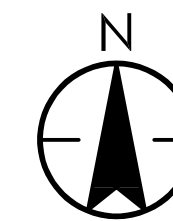


B SECTION - REPAIR - PHASE 2
S-101 NOT TO SCALE

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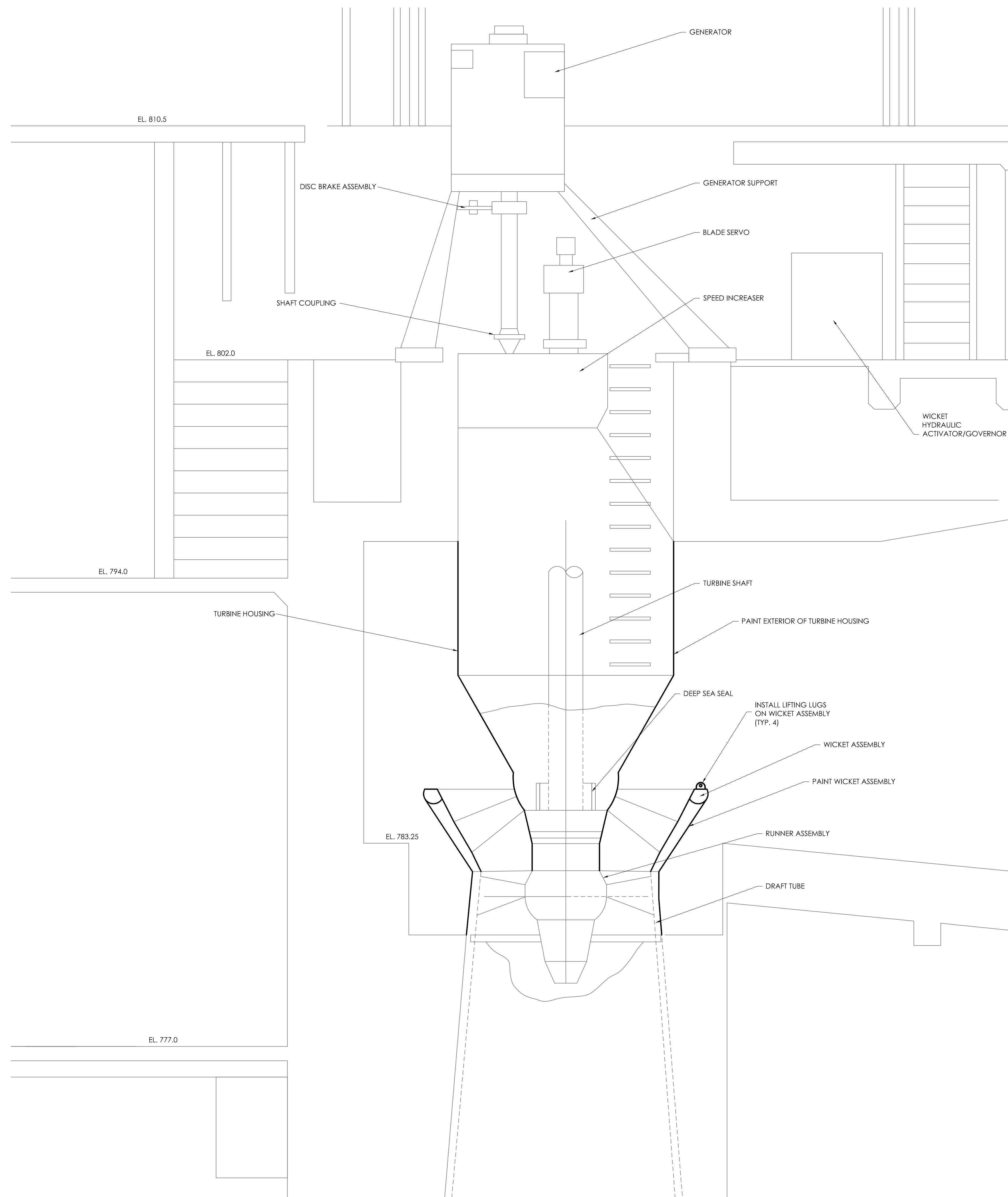
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NOTE:

- SEE SPECIFICATIONS FOR FULL WORK REQUIREMENTS.



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BARTON DAM HYDROTURBINE
10-YEAR INSEPECTION & OVERHAUL
Ann Arbor, Michigan

Title
PROPOSED WORK SECTION

Project No.	Scale	0	1'	2'	4'
2075139801					
Drawing No.	Sheet	Revision			

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