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Consultants

Legend

Revision	By	Appd.	MM.DD.YY
Issued	By	Appd.	MM.DD.YY
File Name:	FDA	PJM	05.21.13
	Dwn.	Chkd.	MM.DD.YY
Permit-Seal			

Client/Project

FLATROCK DAM
OVERLAY ON 1921 TOPO
FLATROCK, MICHIGAN

Title

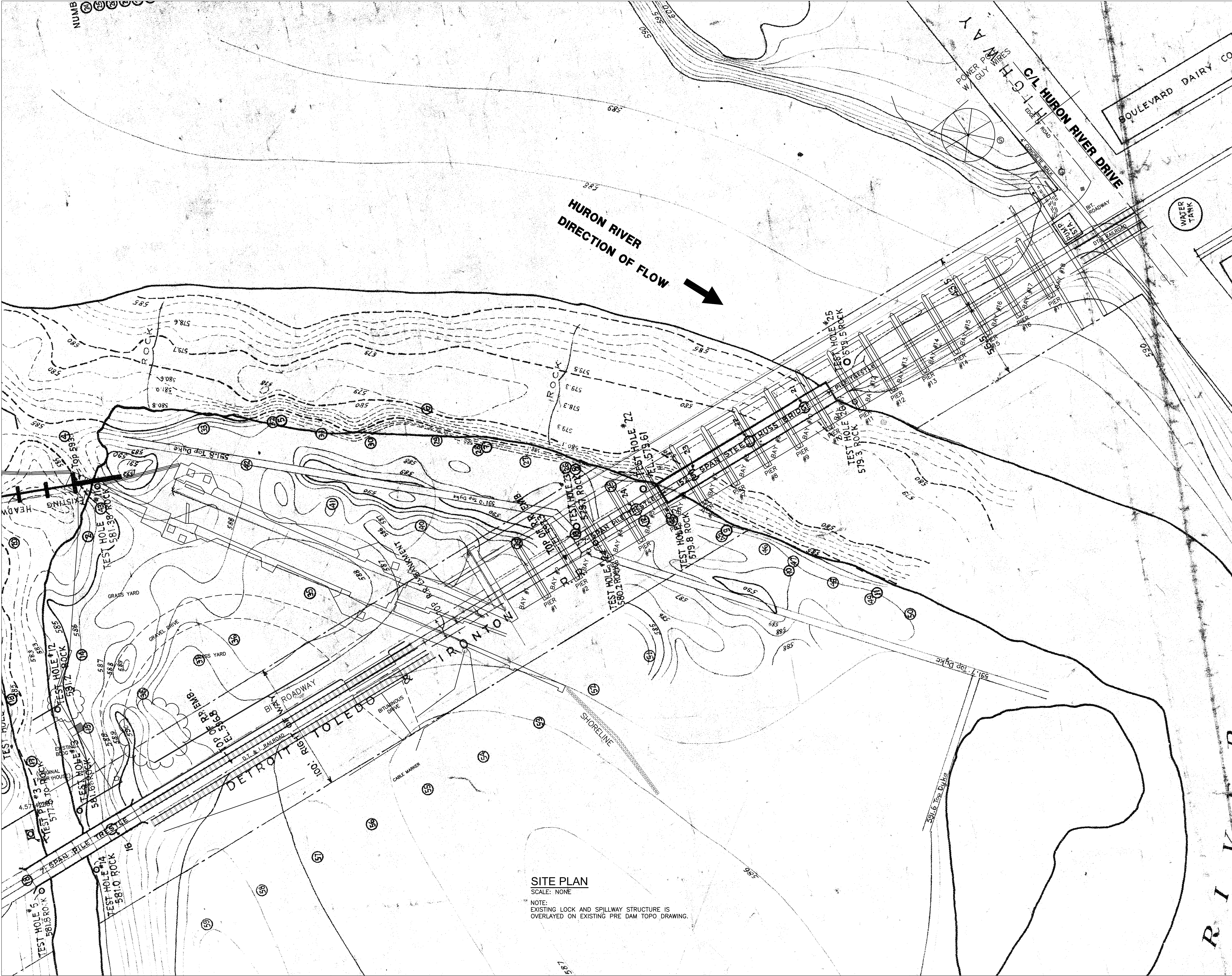
BORINGS TO ROCK (REFERENCE DRAWING)

Project No. 2075092501	Scale NONE	
Drawing No.	Sheet	Revision

C-100

1 of 2





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48108-2216
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www.stantec.com

Stantec

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Consultants

Legend

BORINGS TO ROCK			
NUMBER	ELEVATION	NUMBER	ELEVATION
1	582.1	11	579.7
2	578.0	12	580.6
3	576.8	13	578.4
4	578.5	14	578.4
5	579.2	15	581.0
6	579.2	16	580.2
7	577.7	17	577.3
8	578.6	18	581.0
9	580.0	19	578.7
10	579.2	20	580.3
11	579.3	21	579.3
12	580.0	22	579.3

BORINGS TO ROCK			
NUMBER	ELEVATION	NUMBER	ELEVATION
23	579.07	33	580.28
24	578.92	34	580.28
25	579.11	35	579.17
26	578.09	36	579.81
27	578.82	37	579.16
28	578.36	38	578.54
29	578.54	39	578.71
30	578.87	40	579.14
31	581.51	41	578.56
32	581.02	42	580.56
33	579.63	43	579.19
34	579.88	44	580.06
35	578.35	45	580.06
36	579.35	46	581.53
37	580.50	47	580.72
38	Struck boulder	48	579.51
39	577.68	49	579.84
40	578.10	50	578.94

Revision

By

Appd.

MM.DD.YY

Issued

By

Appd.

MM.DD.YY

File Name:

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Permit-Seal

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Client/Project

FLATROCK DAM
OVERLAY ON 1921 TOPO
FLATROCK, MICHIGAN

Title

BORINGS TO ROCK
(REFERENCE DRAWING)

Project No.

2075092501

Scale

NONE

Drawing No.

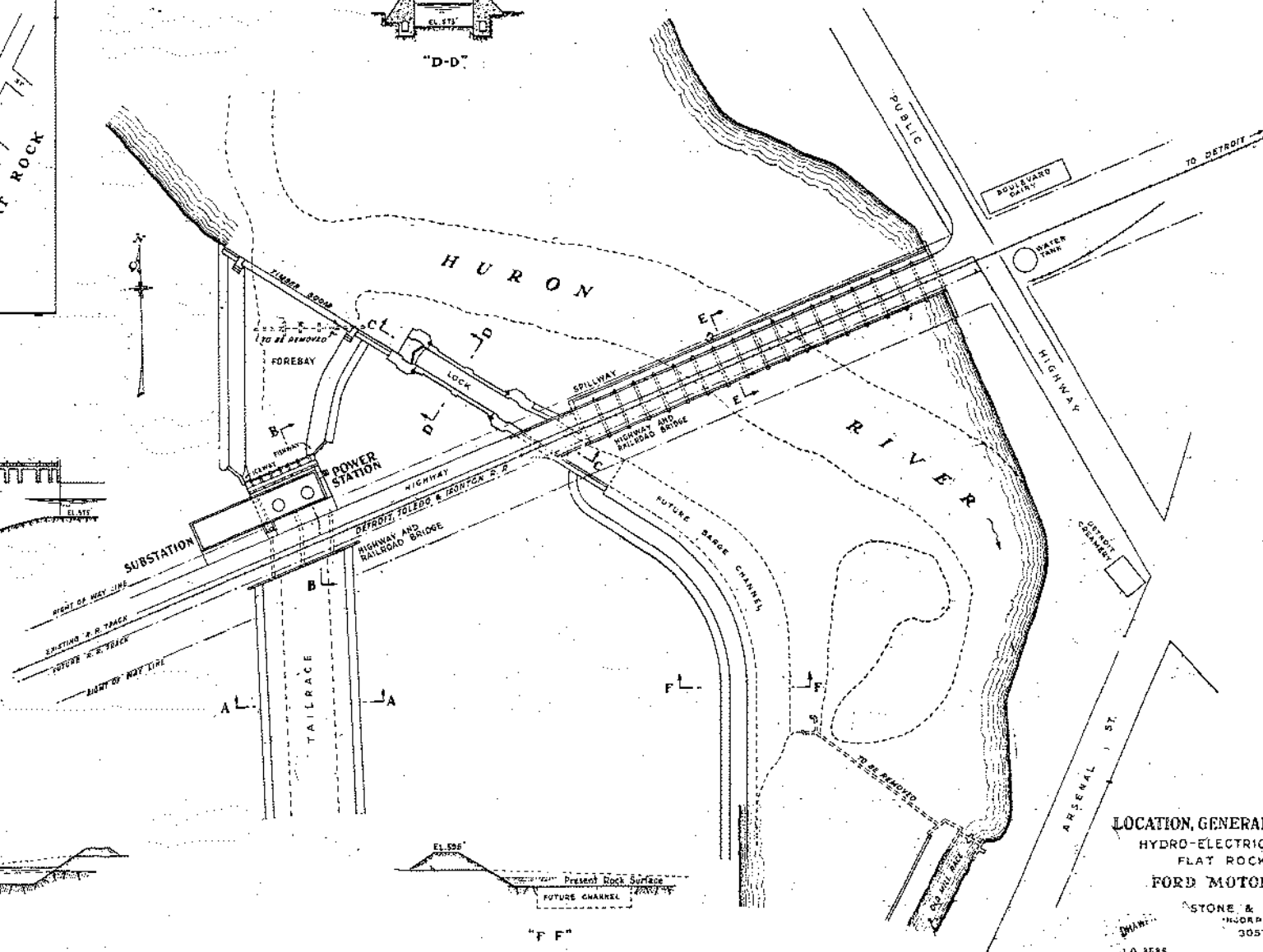
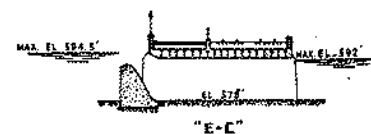
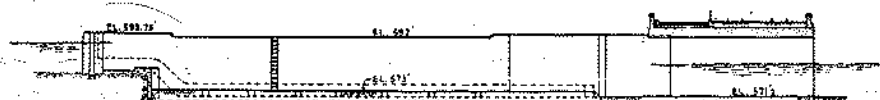
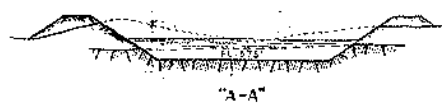
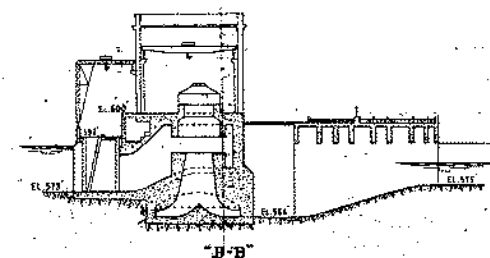
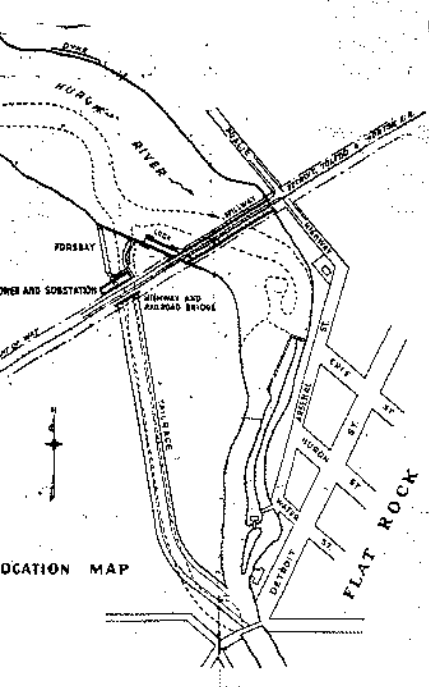
Sheet

Revision

C-101

2 of 2

16.54 3353



LOCATION, GENERAL PLAN & SECTIONS
HYDRO-ELECTRIC DEVELOPMENT
FLAT ROCK, MICHIGAN.
FORD MOTOR COMPANY

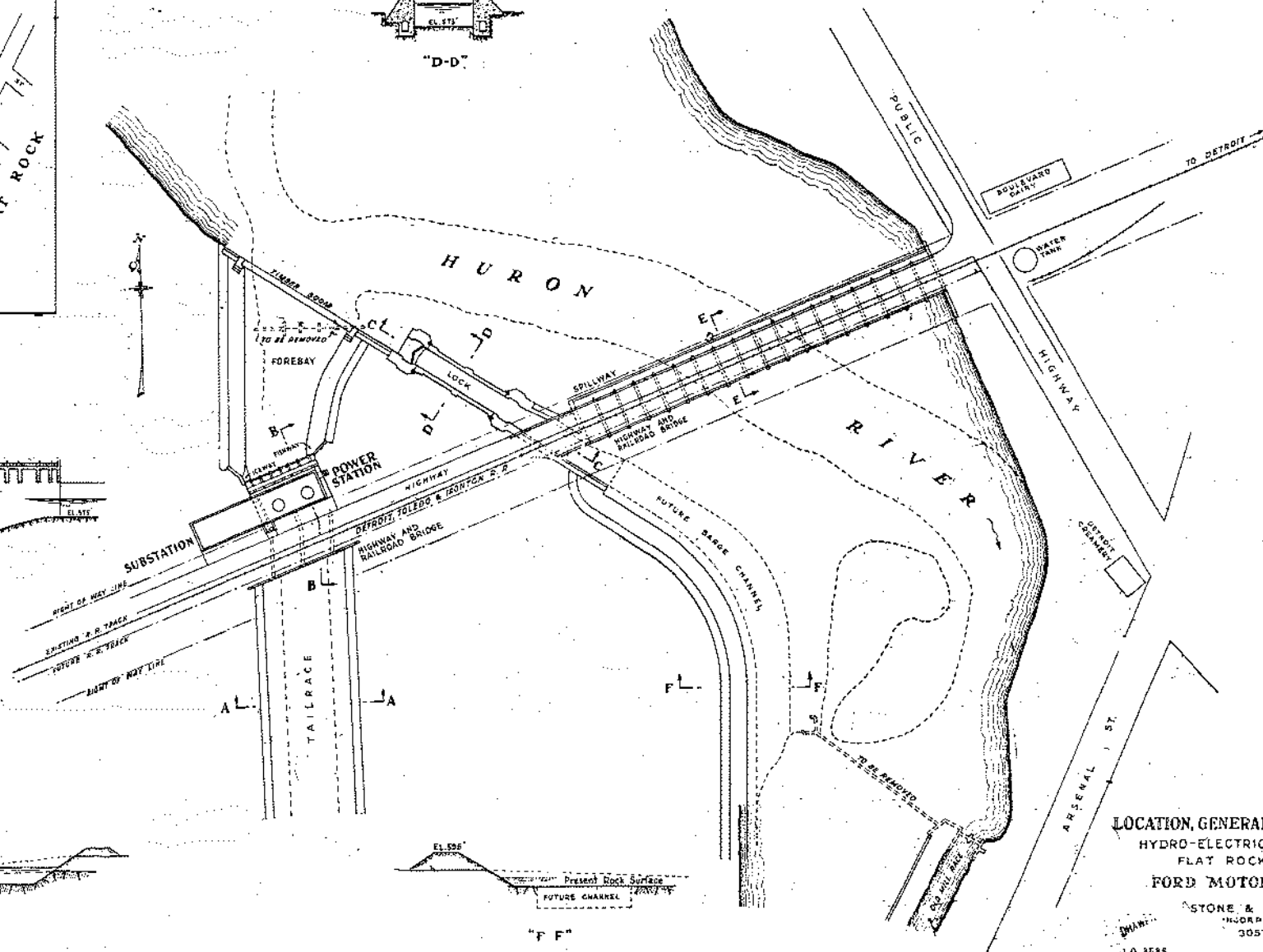
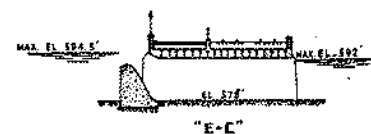
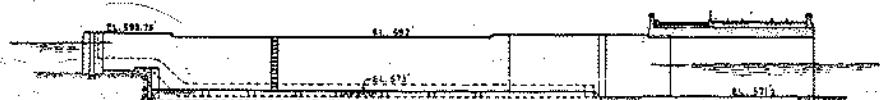
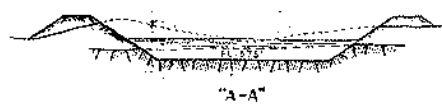
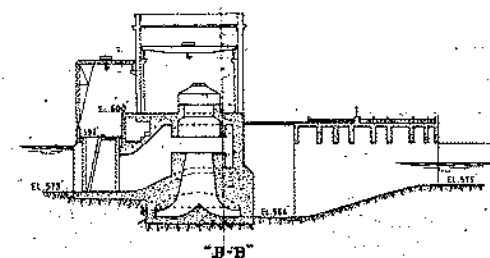
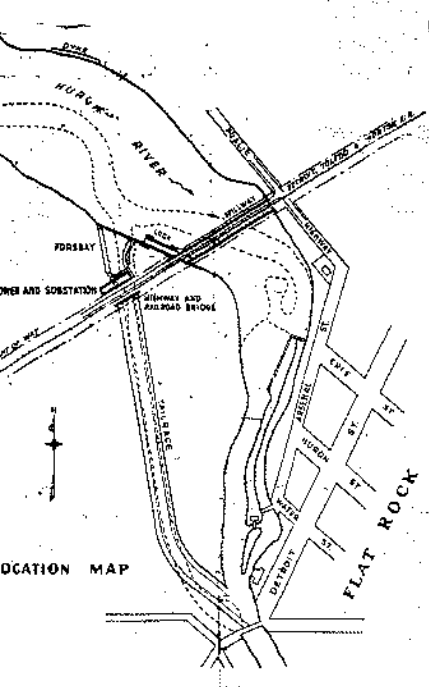
STONE & WEBSTER
INCORPORATED
BOSTON.

J. O. 3586

JUNE, 1922

KEY MAP
GENERAL PLAN
SECTIONS

AA955-18.55



LOCATION, GENERAL PLAN & SECTIONS
HYDRO-ELECTRIC DEVELOPMENT
FLAT ROCK, MICHIGAN.
FORD MOTOR COMPANY

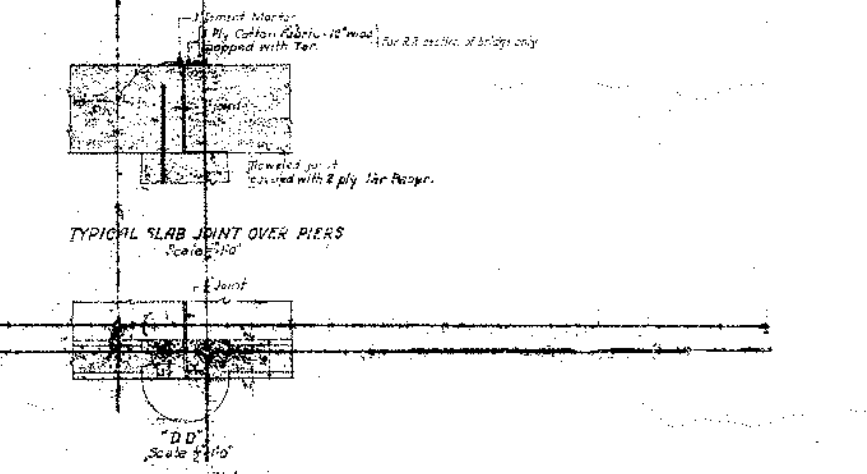
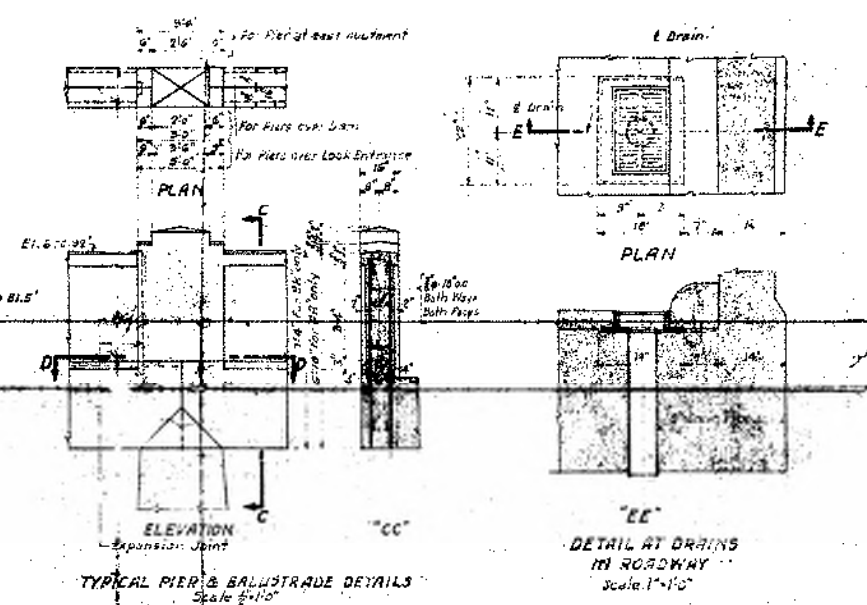
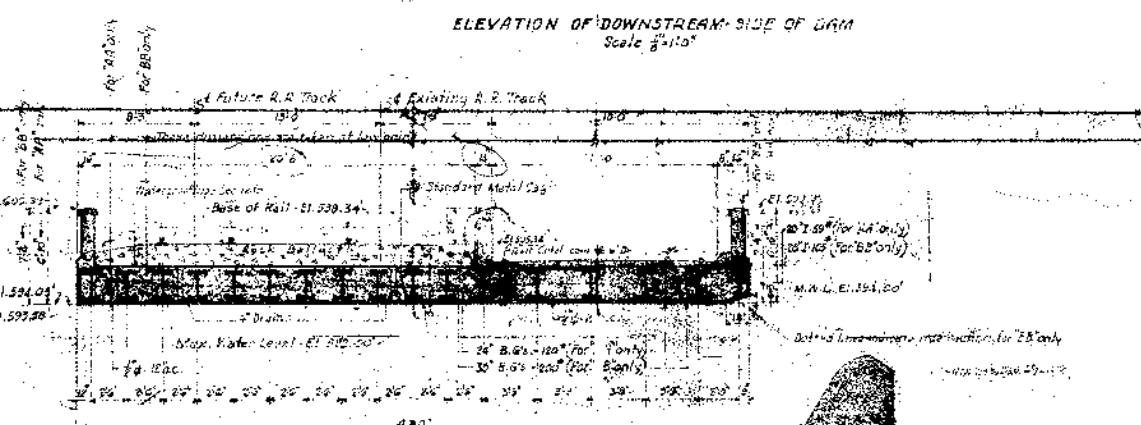
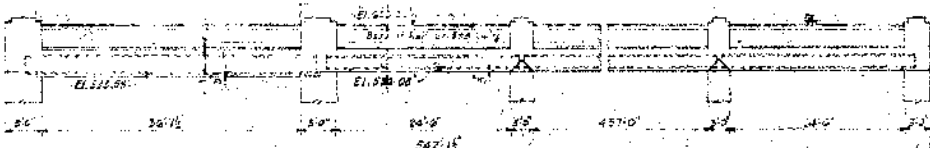
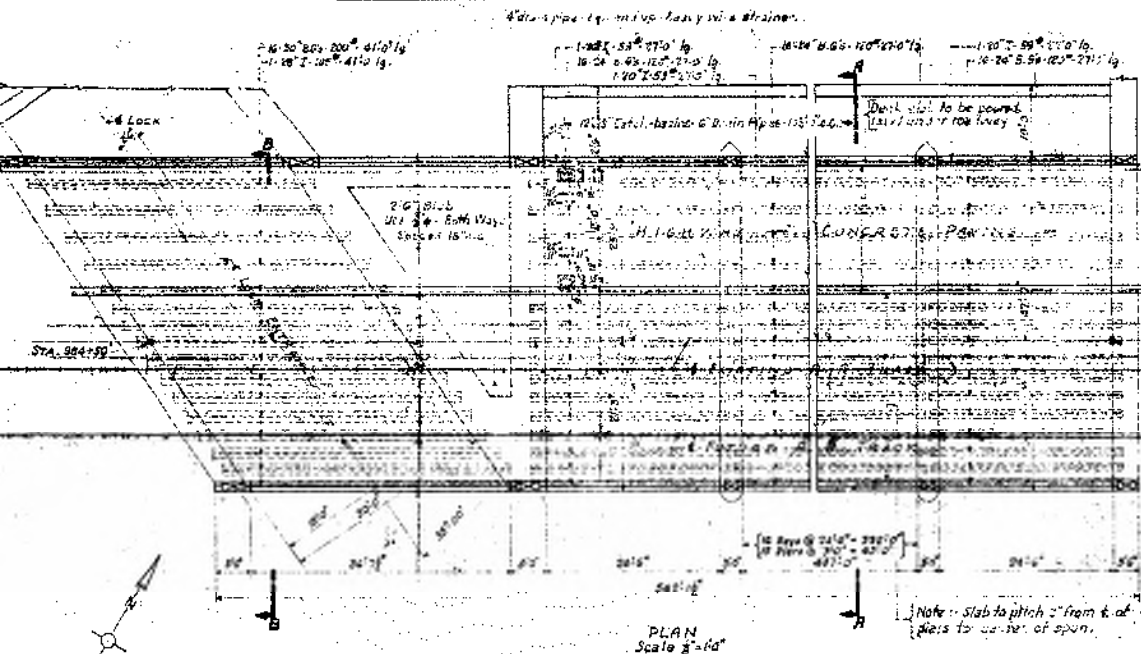
STONE & WEBSTER
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JUNE, 1922

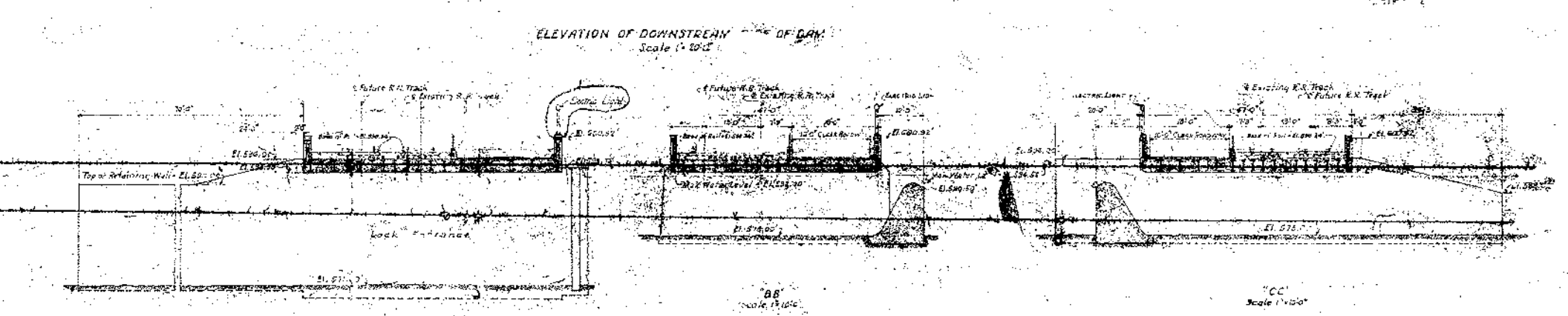
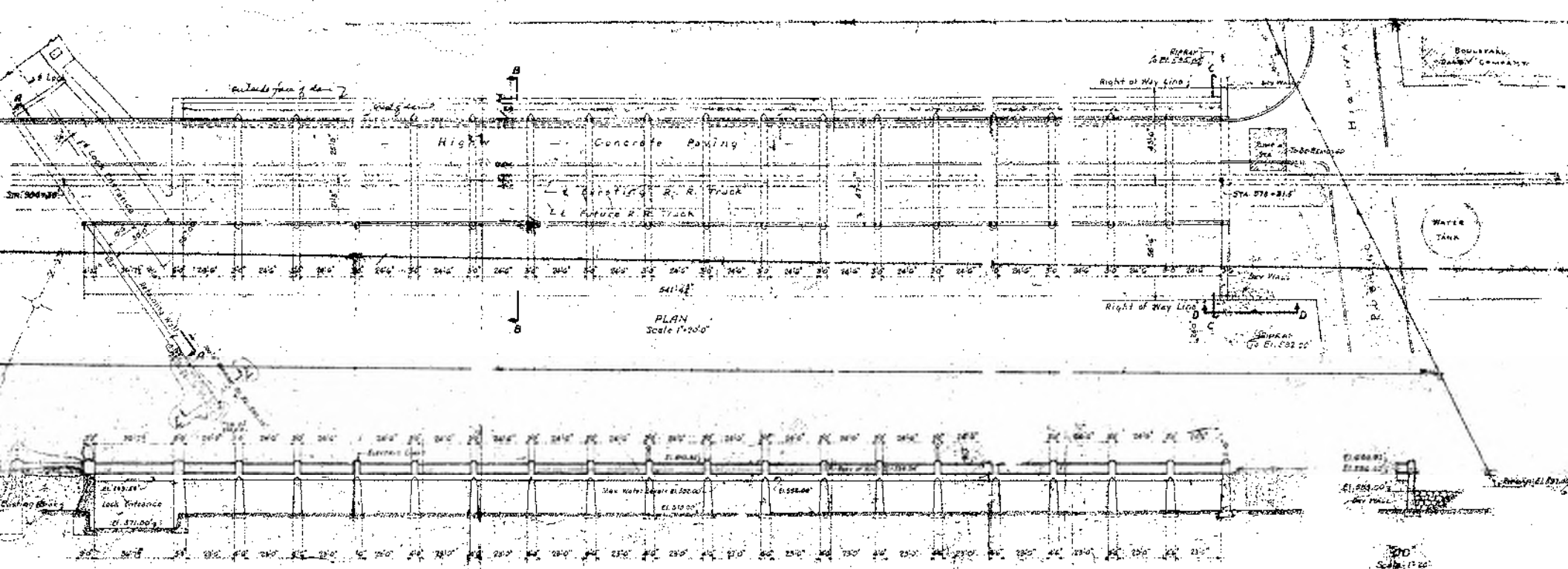
KEY MAP
GENERAL PLAN
SECTIONS

AA955-18.55



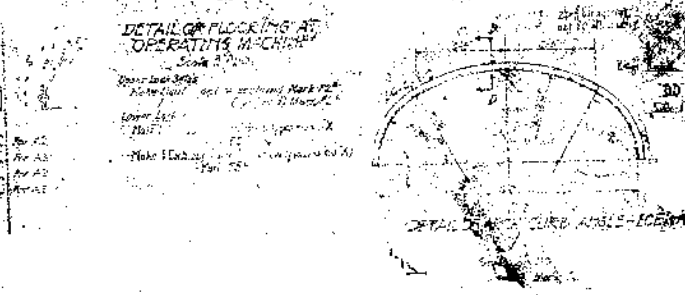
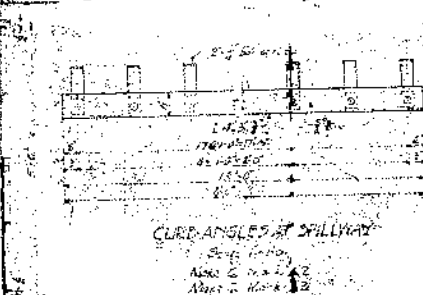
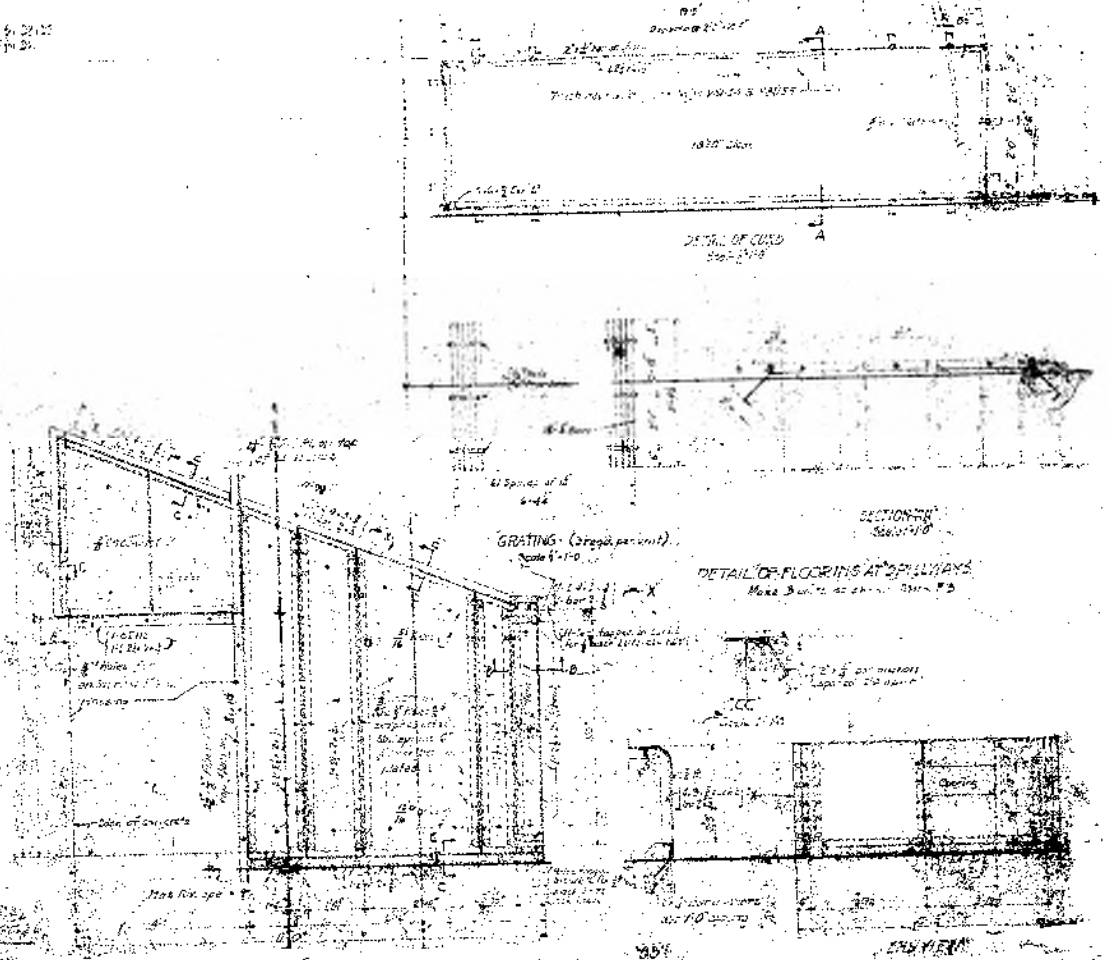
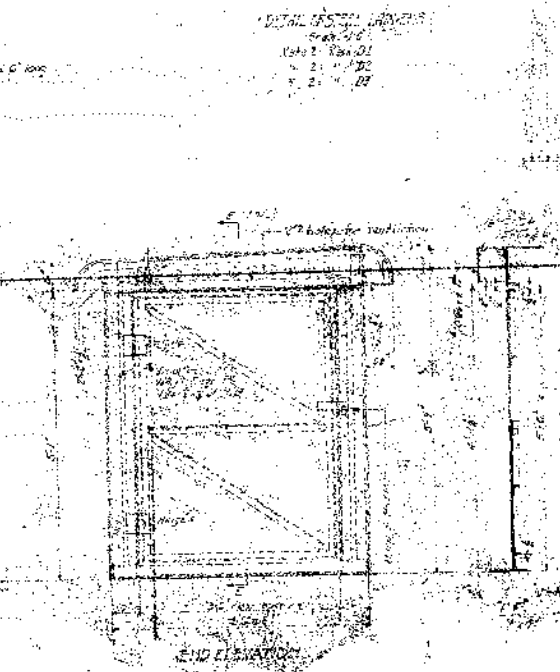
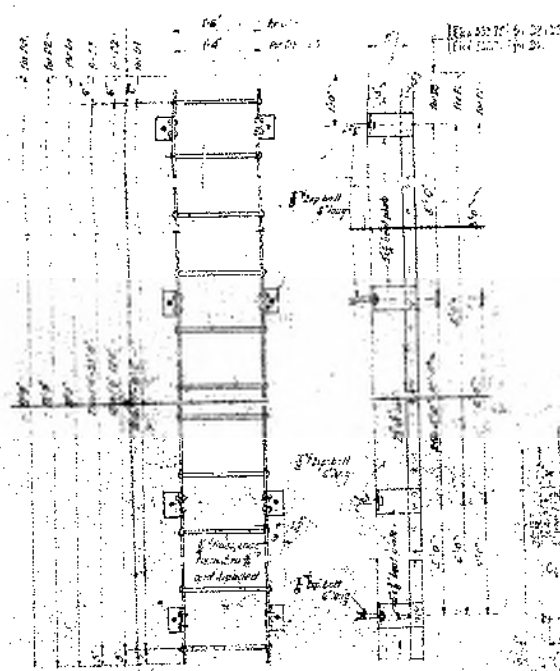
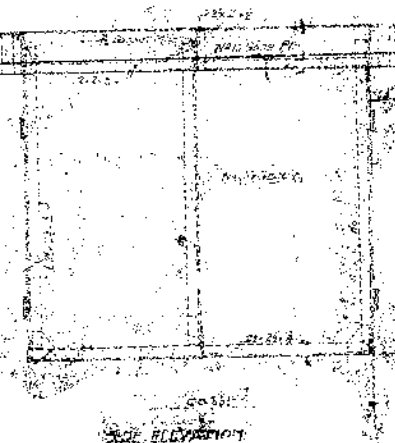
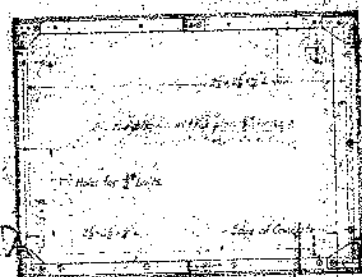
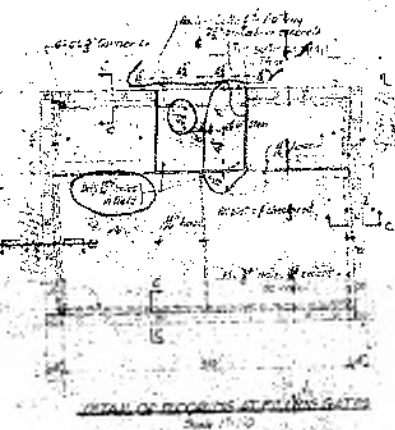
Notes:
 For details of Lock see 781494 & 787700.
 For details of concrete placement on Dam see 785115.
 For Pier details see 782120.
 Concrete Mixtures:
 Waterford top 4' (unagitated) in R & E section only, and bottom of parapet and spill
 to have bottom with heavy bedding of concrete with profile of pier.

DAM DETAILS - CONCRETE SHEET NO. 2
 HYDRAULIC STR. - HYDRO-ELEC. STA. - SLAT ROCK, N.H.
 FORD MOTOR COMPANY
STONE & WEBSTER
 DIVISION OF CONSTRUCTION AND ENGINEERING
 BOSTON
 SCALE GIVEN
 JULY 11, 1922
 V82228



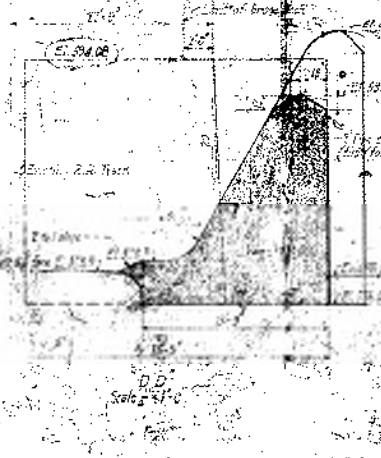
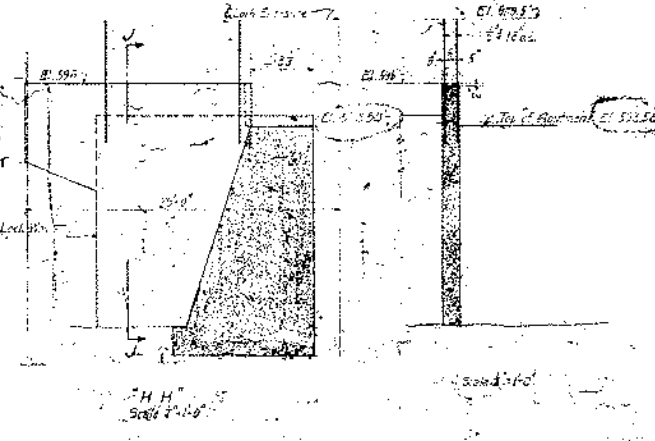
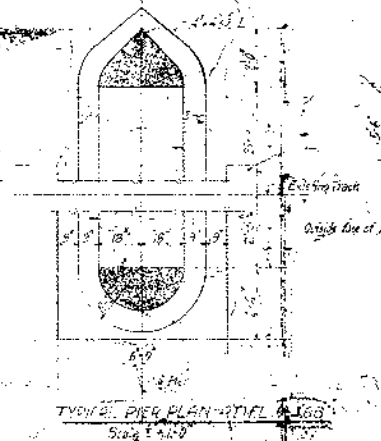
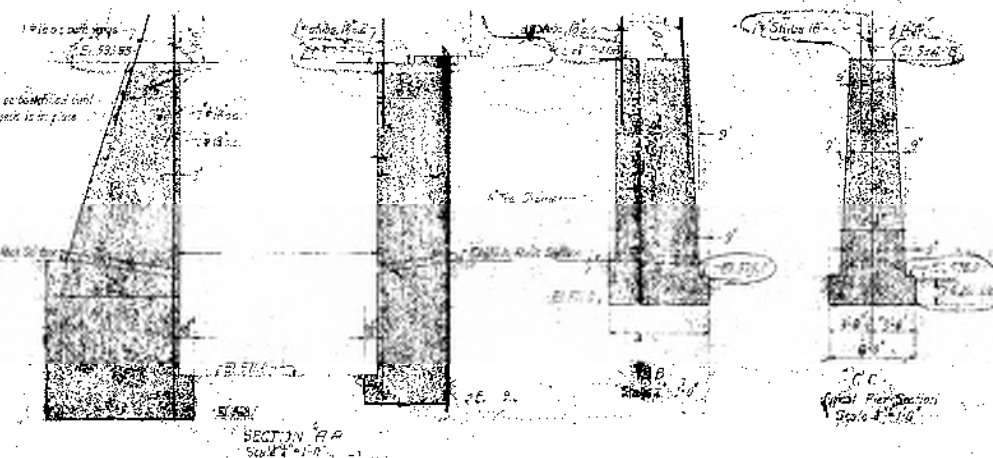
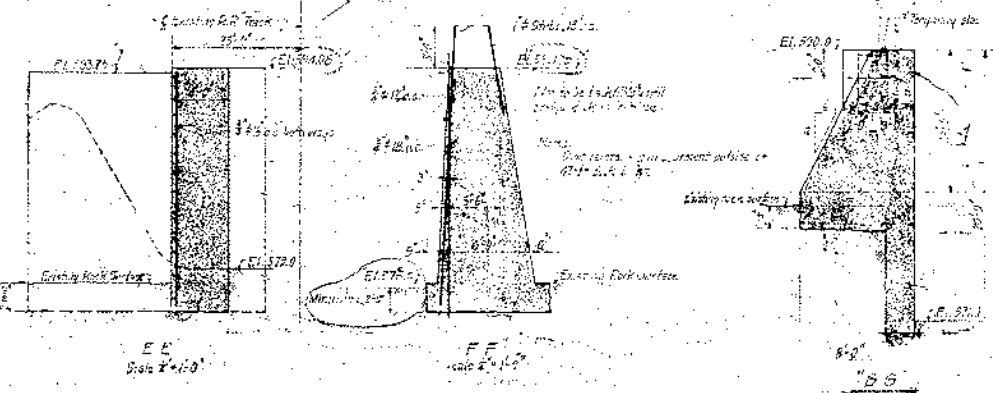
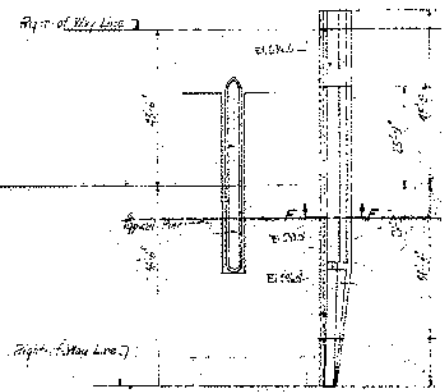
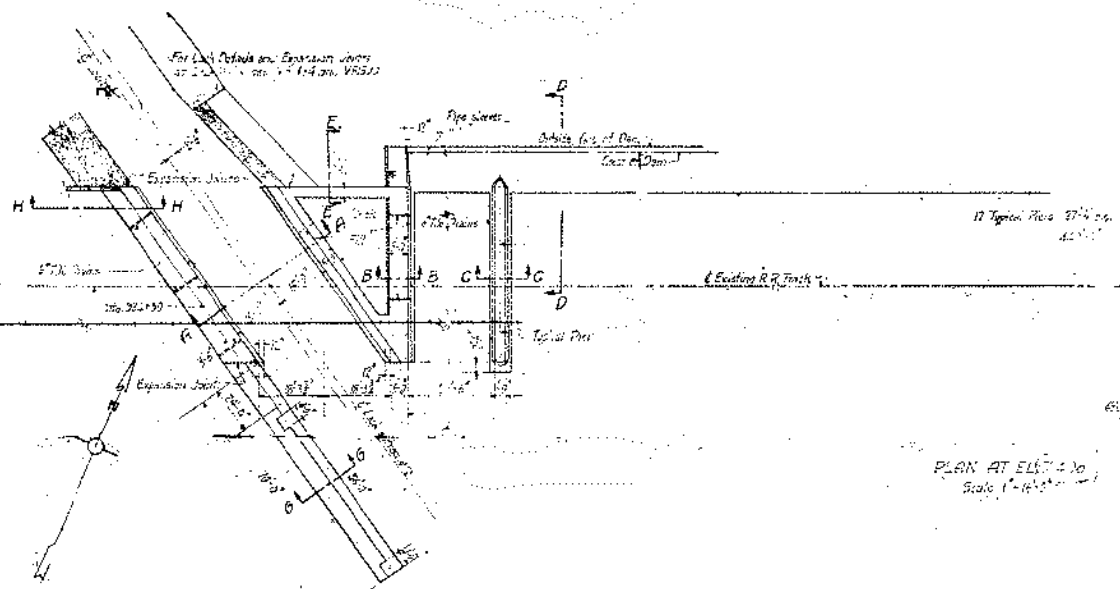
DAM AND BRIDGE - PLAN, ELEVATION & SECTION			
HYDRAULIC BY - HYDRO-ELEC. STAL-CLAY ROCK, MICH.			
FORD MOTOR COMPANY			
STONE & WEBSTER			
DIVISION OF CONSTRUCTION AND MAINTENANCE			
BOSTON			
REVISION			
NO.	DATE	BY	CHK.
1	1922	SW	SW
2	1922	SW	SW
3	1922	SW	SW
4	1922	SW	SW
5	1922	SW	SW
6	1922	SW	SW
7	1922	SW	SW
8	1922	SW	SW
9	1922	SW	SW
10	1922	SW	SW
NAME OF ADDITIONS AND CHANGES			
USE ONLY PRINTS OF LATEST DATE			
JUNE 15, 1922			
J.C. NO. 3568			

44995-18.55-1.5



MISC. IRON & STEEL DAM & LOCK
HYDRAULIC EQUIP. - HYDROELECTRIC STA. - LEAT ROCK
FORD MOTOR COMPANY
STONE & WEBSTER
DIVISION OF CONSTRUCTION
BOSTON

AA95-18.55-1-A
A-6-3
W-4078 HP 12.55



20' 17.6' x 16' 9.4'

25.13

545.94 ft = 2.02 per foot x 1.005 ft = 203.50 ft

Transit mix 6" 15' by 12' 14.332' 12,480.00

Portable Cylinders 100' 60,000 30,000

Perforated 100' 20,000 20,000

174,800

12,480

TOTAL 200,000

DAW DETAILS - CONCRETE - SHEET NO. 1

HYDRAULIC STR. - HYDRO-ELECTRIC - FERT. ROAD - ETC.

FORD MOTOR COMPANY

STONE & WEBSTER

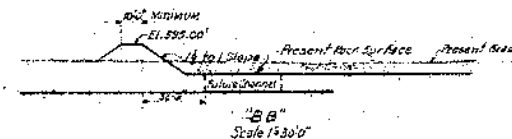
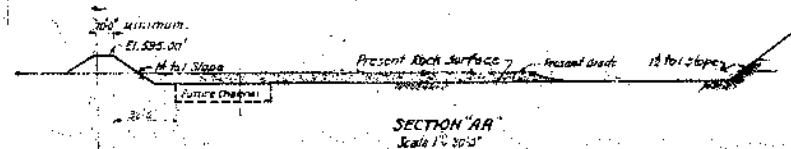
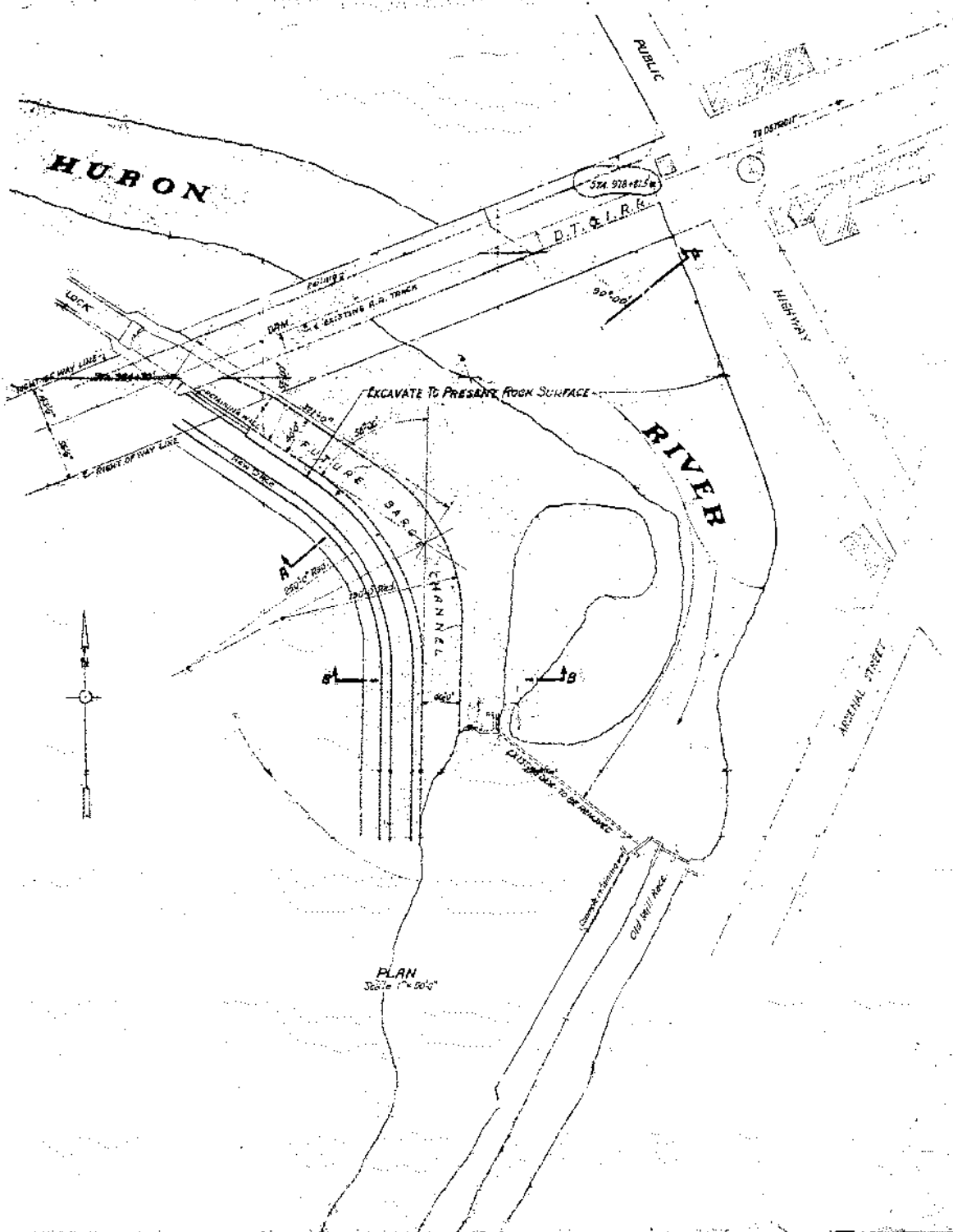
ENGINEERS - ARCHITECTS - PLANNERS

500 N. 10th St. ST. LOUIS, MO.

AGALEY & SONS

200 N. 10th St. ST. LOUIS, MO.

AA995-18.55-1.7



Notes:-
For excavation of Lock, Dam and Spillway see drawing V8214 B.

AA-15-18.55-1.8

EXCAVATION PLAN - CHANNEL BELOW DAM
HYDRAULIC STR. - HYDRO-ELEC. STA. - FLAT ROCK, MICH.
FORD MOTOR COMPANY

STONE & WEBSTER
DIVISION OF CONSTRUCTION AND ENGINEERING
BOSTON

SCALE GIVEN
NOV. 3, 1921
A. O. NO. 3548

NO.	DESCRIPTION	DATE	BY	CHKD.	APPD.
1	Excavation	11/3/21	J. H. B.	J. H. B.	J. H. B.
2	Channel	11/3/21	J. H. B.	J. H. B.	J. H. B.
3	Dam	11/3/21	J. H. B.	J. H. B.	J. H. B.
4	Lock	11/3/21	J. H. B.	J. H. B.	J. H. B.
5	Spillway	11/3/21	J. H. B.	J. H. B.	J. H. B.
6	Table of Additions and Changes	11/3/21	J. H. B.	J. H. B.	J. H. B.

USE ONLY PRINTS OF LATEST DATE.

V81183

W-11222 MIP 18.55

WAYNE COUNTY DPS GENERAL NOTES: A.B.

- ALL WORK WITHIN THE WAYNE COUNTY ROAD RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS, INCLUDING SOIL EROSION AND SEDIMENTATION CONTROL OF THE WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES.
- THESE PLANS ARE NOT VALID WITHOUT ATTACHMENT OF THE WAY COUNTY PERMIT SPECIFICATIONS FOR CONSTRUCTION WITHIN ROAD RIGHT OF WAY, PARKS, DRAIN EASEMENT OR SANITARY SEWER UNDER JURISDICTION OF THE WAYNE COUNTY (7/01/93) REVISED 12/15/2004.
- RESTORE ALL DISTURBED AREAS WITHIN THE COUNTY ROAD RIGHT OF WAY WITH 3" OF TOPSOIL AND CLASS "A" HYDROSEED. SLOPES STEEPER THAN 1:3 SHALL BE RESTORED BY PLACING SOD.
- MAINTAIN TWO WAY TRAFFIC AT ALL TIMES. ALL SIGNING AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D.

IMPOUNDMENT
WATER ELEVATIONS:
-100 YEAR: EL. 593.9'
-50 YEAR: EL. 593.7'
-10 YEAR: EL. 593.0'
-TYPICAL AUGUST
95% EXCEEDANCE 590.6'
-NORMAL WATER LEVEL
(ORDINARY HIGH WATER): 591.0'±

A.B. CAUTION!!
PRIMARY ELECTRIC IN
CONDUIT ATTACHED TO
NORTH FACE OF BRIDGE
AND UNDERGROUND EAST &
WEST OF BRIDGE. VERIFY
EXACT LOCATION IN FIELD
PRIOR TO ANY WORK.
USE EXTREME CAUTION!

SANDBAG SPILLWAY
1 EA. FOR BAYS #1
AND #17-2 TOTAL (INCLUDED WITH
ASSOCIATED COFFERDAM ITEM)

PORTADAM FOR BAYS
#1 & #4.
SAND BAGS AND
LINER FOR BAYS
#10, 17, 18. A.B.

COFFERDAM, SPILLWAY BAYS
(ONE EACH FOR BAYS #1, #4,
#16 AND #17). 4 TOTAL
5 A.B.
DRAWING C.201
AND C.202

ADDED SANDBAGS TO
SPILLWAYS #5-8
TO DO TREMIE WORK IN SCOUR HOLES. A.B.
BAYS #2-#4 (ADDED 223)
NEEDED IN #11 FOR TREMIE
ACCESS TO RIGHT OF WAY
A.B.

RESTRICTED ACCESS ON ROADWAY
OF BRIDGE. VEHICLE SIZE SHALL BE
LIMITED TO PASSENGER VEHICLES
AND LIGHTWEIGHT TRUCKS
I HAD TO REMIND CONTRACTOR OF THIS
CONSTRAINT. SOMETIMES THEY USED A
EDEL AND TRAILER/BALANCE. A.B.

TAILWATER NORMAL WATER LEVEL
(ORDINARY HIGH WATER) = 584.0'±

SOIL TYPE

(BASED ON 1977 SURVEY REPORT BY
USDA SOIL CONSERVATION SERVICE)

GENERAL:
PEWAMO-SELFREDGE-CORUNNA ASSOCIATION: NEARLY LEVEL TO
GENTLY SLOPING, VERY POORLY DRAINED TO SOMEWHAT POORLY
DRAINED SOILS THAT HAVE A MODERATELY FINE TEXTURED TO
COARSE TEXTURED SUBSOIL.

RIGHT SIDE: (BbB) BLOUT LOAM
LEFT SIDE: (MhB) META LOAMY SAND
NEARBY: (ShB) SHOALS SILT LOAM

APPROXIMATE DISTURBED ACREAGE

RIGHT UPSTREAM: 0.46AC (THIS AREA INCLUDES AN EXISTING BIT PARKING LOT
THAT MAY ONLY BE USED AS A STOCKPILE AREA)
RIGHT DOWNSTREAM: 0.34AC
LEFT UPSTREAM: 0.06AC
TOTAL: 0.86AC

DEWATERING NOTES A.B.

- THE EXISTING 4" FISH LADDER SLUICE GATE AND 24" ATTRACTION STRUCTURE, HOWEVER, PUMPING MAY BE REQUIRED IN ADDITION TO DRAINING THROUGH GRAVITY OUTLETS.
- ESTIMATED DEWATERING ELEVATION FOR LOCK=587.0' LOCK WATER SURFACE ELEVATION SHALL NOT BE DRAWN DOWN BELOW 586.0' A.B. WITHOUT PERMISSION OF ENGINEER. (DESIGN FOR CONTRACTORS) A.B.
- THE FISH LADDER MUST BE PROTECTED AT ALL TIMES FROM THE INTRUSION OF SILTS, DEBRIS OR OTHER DAMAGE.
- PUMPAGE FROM THE RIGHT COFFERDAM SHALL BE DISCHARGED AT THE HEAD OF THE LOCK.
- PUMPAGE FROM SPILLWAY BAYS SHALL DISCHARGE IN TO RIVER UPSTREAM OF DAM AT A LOCATION 10' MINIMUM FROM ANY ACTIVE SPILLWAY.
- PUMPING DISCHARGE SHALL NOT BE ALLOWED TO ERODE OR SCOUR EXISTING EARTH.
- FLOW MAY BE CUT OFF FROM A MAXIMUM OF 3 SPILLWAY BAYS AT ONE TIME. STAY AWAY WITH MORE THAN 3 - CONTRACTORS RISK OF TEMP. COFFERDAMS. A.B.

IN-WATER GENERAL SEQUENCE OF CONSTRUCTION A.B.

(FOR EACH SEPARATE CONSTRUCTION AREA, THE TYPICAL SEQUENCE OF CONSTRUCTION SHALL BE AS FOLLOWS)

- INSTALL ALL UPSTREAM AND DOWNSTREAM TURBIDITY CURTAINS AS SHOWN ON DRAWINGS. A.B.
- IF APPLICABLE TO LOCATION, INSTALL COFFERDAM AND DEWATER.
- DEMOLISH OLD CONCRETE AND CONSTRUCT NEW CONCRETE STRUCTURES, REVEINMENTS, RIP RAP, AND/OR TREMIE CONCRETE. CURE AND FINISH CONCRETE AS REQUIRED.
- AS APPLICABLE, TURN OFF DEWATERING AND EQUALIZE WATER LEVELS. REMOVE COFFERDAM.
- PRIOR TO REMOVAL OF TURBIDITY CURTAINS, ALLOW ALL SUSPENDED MATERIAL TO SETTLE. REMOVE SILTS THAT HAVE COLLECTED ON THE BOTTOM OR IN THE FABRIC AND DISPOSE OF OFF SITE.

SOIL EROSION CONTROL MAINTENANCE NOTES A.B.

- THE CONTRACTOR SHALL INSPECT ALL SOIL EROSION CONTROL MEASURES IMMEDIATELY AFTER EACH RAINFALL AND DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
- ALL SILT FENCE SHALL BE INSPECTED DAILY, INCLUDING AROUND YARD DRAINS. SILT FENCE WHICH IS UNDERMINED, CLOGGED, DECOMPOSED, FALLING OVER, OR OTHERWISE FUNCTIONING IMPROPERLY SHALL BE REPAIRED AND RESTORED TO ITS ORIGINAL INSTALLATION DETAIL.
- A WATER TRUCK SHALL BE AVAILABLE TO WATER DOWN THE SITE ON A DAILY BASIS AS REQUIRED TO MAINTAIN DUST CONTROL.
- SWEEP STREETS WEEKLY FOR SEDIMENT BUILD-UP. REMOVE TRACKED MUD/DIRT DAILY.

EROSION CONTROL GENERAL SEQUENCE OF CONSTRUCTION A.B.

- INSTALL TEMPORARY FENCING AS SHOWN ON PLANS.
- INSTALL TEMPORARY EROSION CONTROL MEASURES INCLUDING SILT FENCE INLET FILTERS, TREE PROTECTION FENCING AND MUD TRACKING PAD.
- EXCAVATE AND REMOVE FENCING, CONCRETE STRUCTURES AND OTHER ITEMS TO BE DEMOLISHED.
- COMPLETE CONCRETE REPAIRS AND BACKFILL WHEN APPROVED BY ENGINEER.
- INSTALL PERMANENT LANDSCAPING.
- REMOVE TEMPORARY SOIL EROSION CONTROL MEASURES AFTER PERMANENT VEGETATION HAS BEEN ESTABLISHED.
- RESTORE ALL LANDSCAPE AREAS, PAVEMENT AND CURBING DISTURBED DURING THE PROJECT TO ORIGINAL CONDITIONS.

SOIL EROSION & SEDIMENTATION CONTROL (SESC) NOTES A.B.

- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE WAYNE COUNTY D.O.E. SOIL EROSION.
- DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR TO DETERMINE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
- ANY EROSION AND SEDIMENTATION RESULTING FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
- EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO, OR AS THE FIRST STEP IN, CONSTRUCTION. SEDIMENT CONTROL PRACTICES SHALL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTATION OF SILT OFF THE SITE.
- CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL AS REQUIRED AND AS DIRECTED IN THESE PLANS. HE SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES AND OTHER EARTH CHANGES HAS BEEN ACCOMPLISHED.

- PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING, OR AFTER THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED IMMEDIATELY. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.
- ALL PERMANENT SOIL EROSION CONTROL MEASURES WILL BE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.
- ALL MUD/DIRT TRACKED ONTO EXISTING CITY/COUNTY/STATE ROADS FROM THIS SITE, DUE TO CONSTRUCTION, SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR/BUILDER. ALL MUD/DIRT TRACKED OR SPILLED ONTO PAVED ROADS OR PAVED SURFACES WITHIN THIS SITE SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR/BUILDER.
- DISTURBED AREAS WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE RESTORED WITH 4" TOPSOIL, SEEDING AND MULCHED.
- IF A TEMPORARY SOIL STOCKPILE IS NEEDED, AREA MUST BE SURROUNDED BY 2 ROWS OF CONTINUOUS HAY BALES. LOCATION OF OFFSITE DISPOSAL AREA TO BE DETERMINED. 1 ROW OF SILT FENCE PER COUNTY SESC OFFICE. A.B.

ESTIMATED DEPTHS, LOCATIONS AS SHOWN, UPSTREAM POINTS (FROM 590.8±)	
a. 10'	
b. 12'	
c. 12'	
d. 6'	
e. 6'	
f. 4'	
g. 10'	
h. 7'	
i. 6'	
DOWN STREAM POINTS (FROM 583.2±)	
j. 2.5'	
k. 5'	
l. 4'	
m. 4.5'	



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Legend

- ===== COFFERDAM
- TURBIDITY CURTAIN
- SILT FENCE
- TREE PROTECTION FENCE
- TEMPORARY CHAINLINK FENCE
- RIGHT OF WAY

LOCAL DATUM BENCHMARK:
EAST SIDE OF SPILLWAY AT LEFT
UPSTREAM RETAINING WALL = 590.5'
(BASED ON ORIGINAL STONE & WEBSTER DRAWINGS)

- ⊗ GATE VALVE
- ⊙ STORM SEWER MANHOLE
- ⊙ POWER POLE
- ⊙ SANITARY SEWER MANHOLE
- ⊙ WATER MANHOLE
- ⊙ FIRE HYDRANT
- ⊙ BENCH MARK
- G GAS LINE
- ST STORM SEWER
- OHP OVERHEAD POWER

UNDERLINED NOTES ARE PAY ITEMS.

Revision	By	Appd.	MM.DD.YY
BID SET			05.08
(WCPS) RESUBMITTAL			03.08
OWNER REVIEW			03.08
QA/QC (95%)			02.08
ROAD COMMISSION SUBMITTAL (WCPS)			01.08
REVISIONS PER MDEC			12.13.07
PERMITS (90% SET)			10.31.07
60% REVIEW			07.10.07
Issued			MM.DD.YY

File Name:	SMJ	DMD	PJM
	Dwn.	Chkd.	Dgn.

Permit-Seal

Client/Project

HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

Title

OVERALL SITE PLAN

Project No.	Scale
2075092501	1" = 40'
Drawing No.	Sheet
	Revision

C.001

of



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Legend

UNDERLINED NOTES ARE PAY ITEMS.

AS-BUILT ("A.B.") DRAWING NOTES	JRR	By	Appd.	01.10
Revision				MM.DD.YY
BID SET				05.08
OWNER REVIEW				03.08
QA/QC (95%)				02.08
ROAD COMMISSION SUBMITTAL (WCOPS)				01.08
REVISIONS PER MDO				12.13.07
PERMITS (90% SET)				10.31.07
60% REVIEW				07.07.10
Issued		By	Appd.	MM.DD.YY

File Name:	SMJ	DMD	PJM
	Dwn.	Chkd.	Dgn.
Permit-Seal			MM.DD.YY

Client/Project
HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

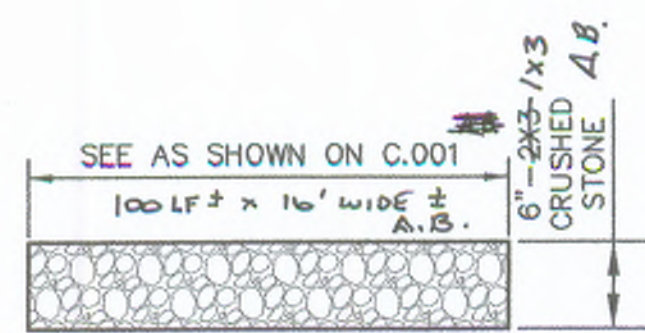
Title

SOIL EROSION CONTROL AND MISC. DETAILS

Project No. 2075092501	Scale 1" = 40'
Drawing No.	Sheet
	Revision

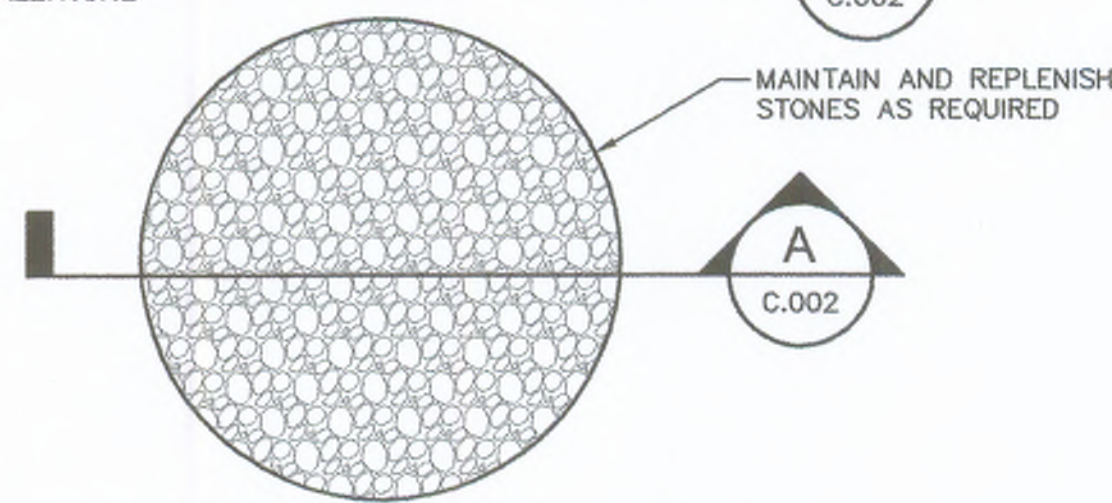
C.002

of



MUD TRACKING DEVICE SECTION

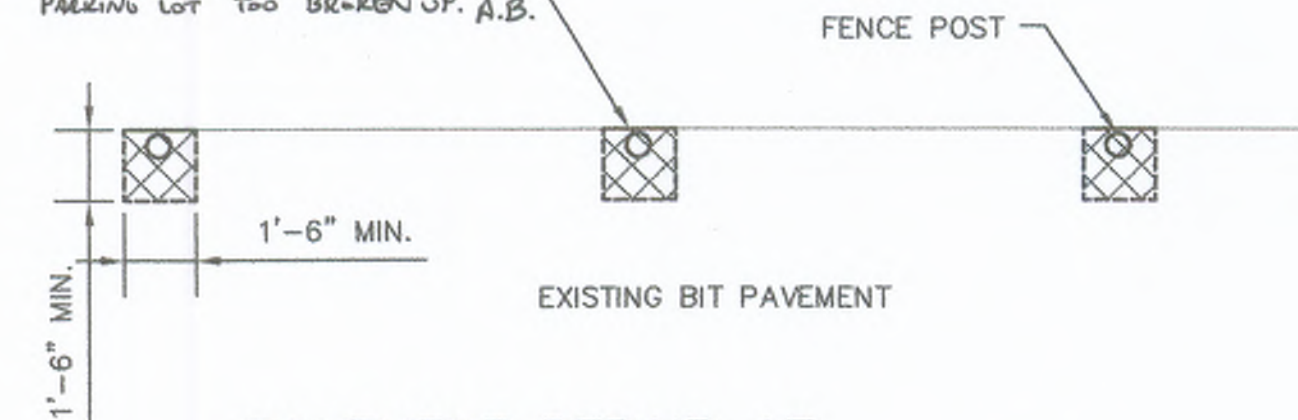
SCALE: NONE



MUD TRACKING DEVICE PLAN

SCALE: NONE

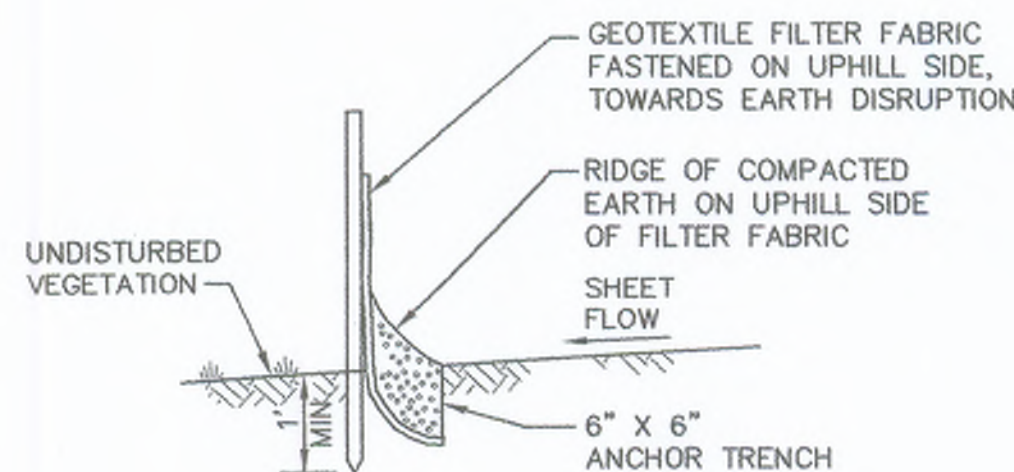
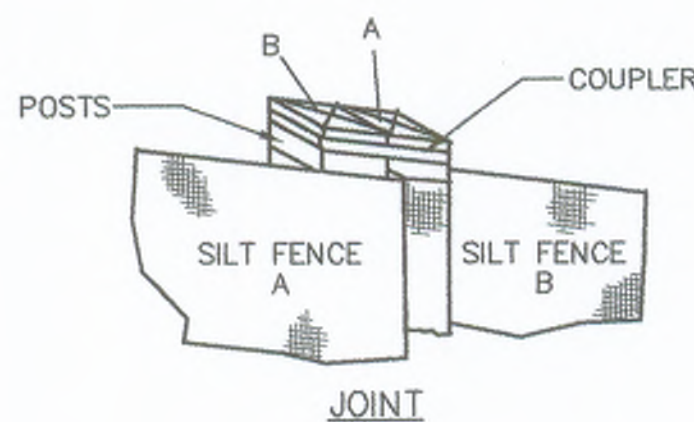
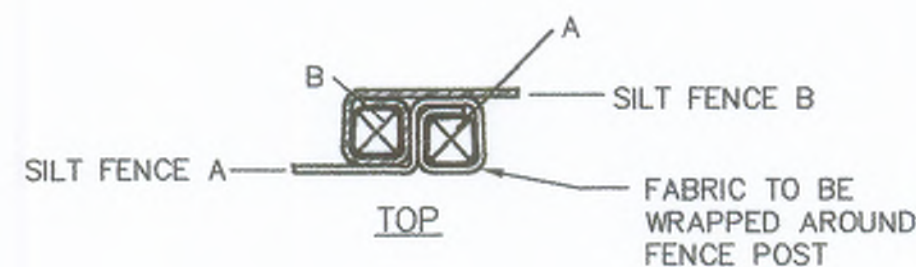
1. SAWCUT AND REMOVE BITUMINOUS PAVEMENT.
 2. REMOVE OLD FENCE POSTS AND REPLACE WITH NEW POSTS.
 3. CAP WITH 6" MIN. CONCRETE.
 4. SEAL EDGES AND OVERCUTS.
- SEE STANTEC INF. REPORT A.B.
Not Done By Contractor. Paving lot Too Broken Up. A.B.



PAVEMENT REPAIR AT FENCE POST DETAIL

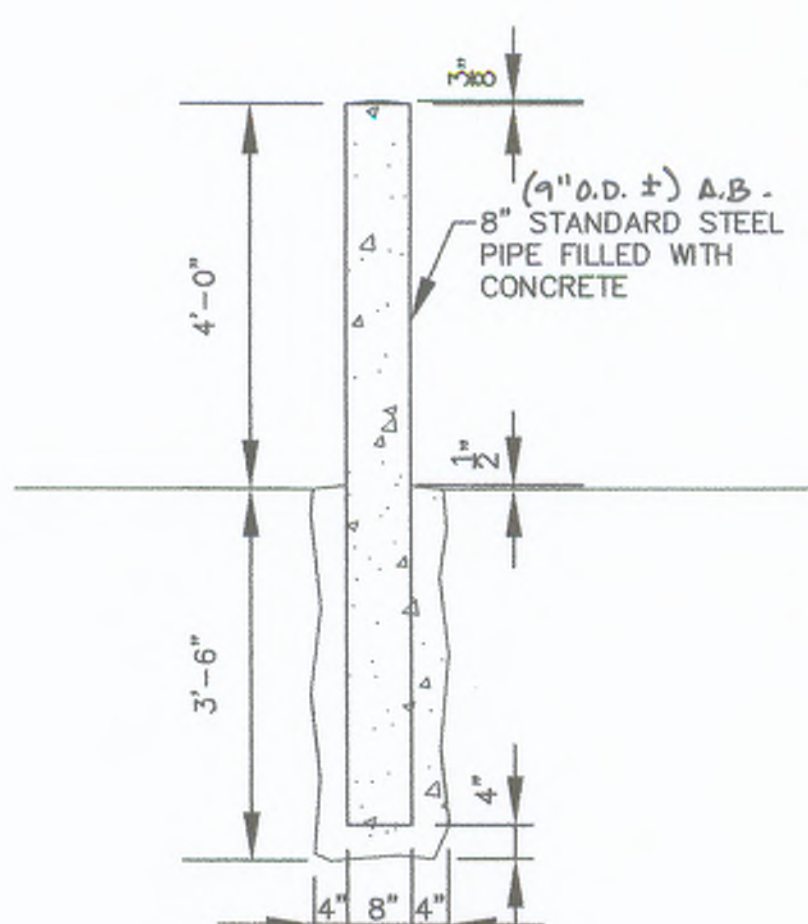
SCALE: NONE

1
C.001



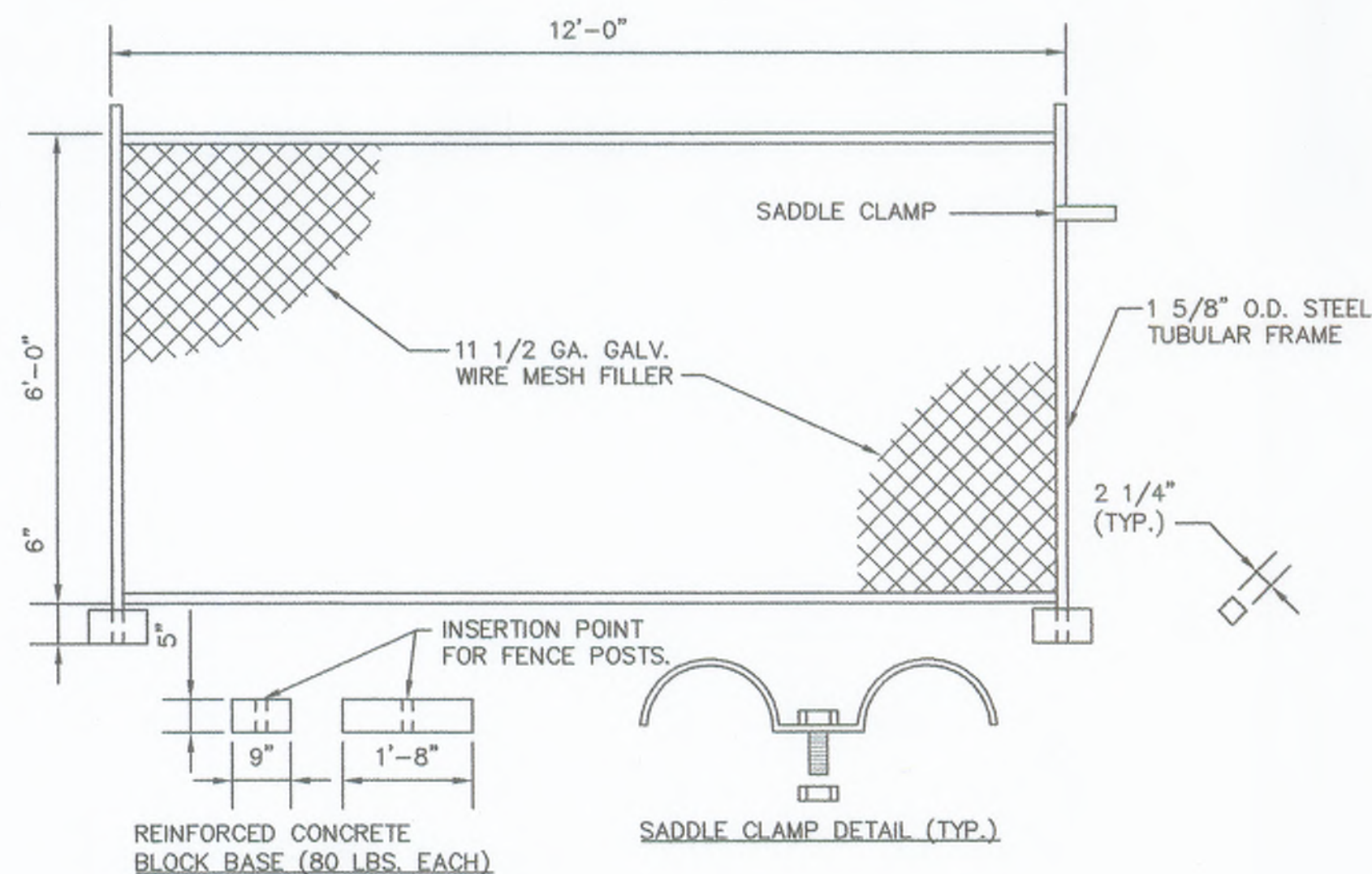
SILT FENCE DETAILS A.B.

SCALE: NONE



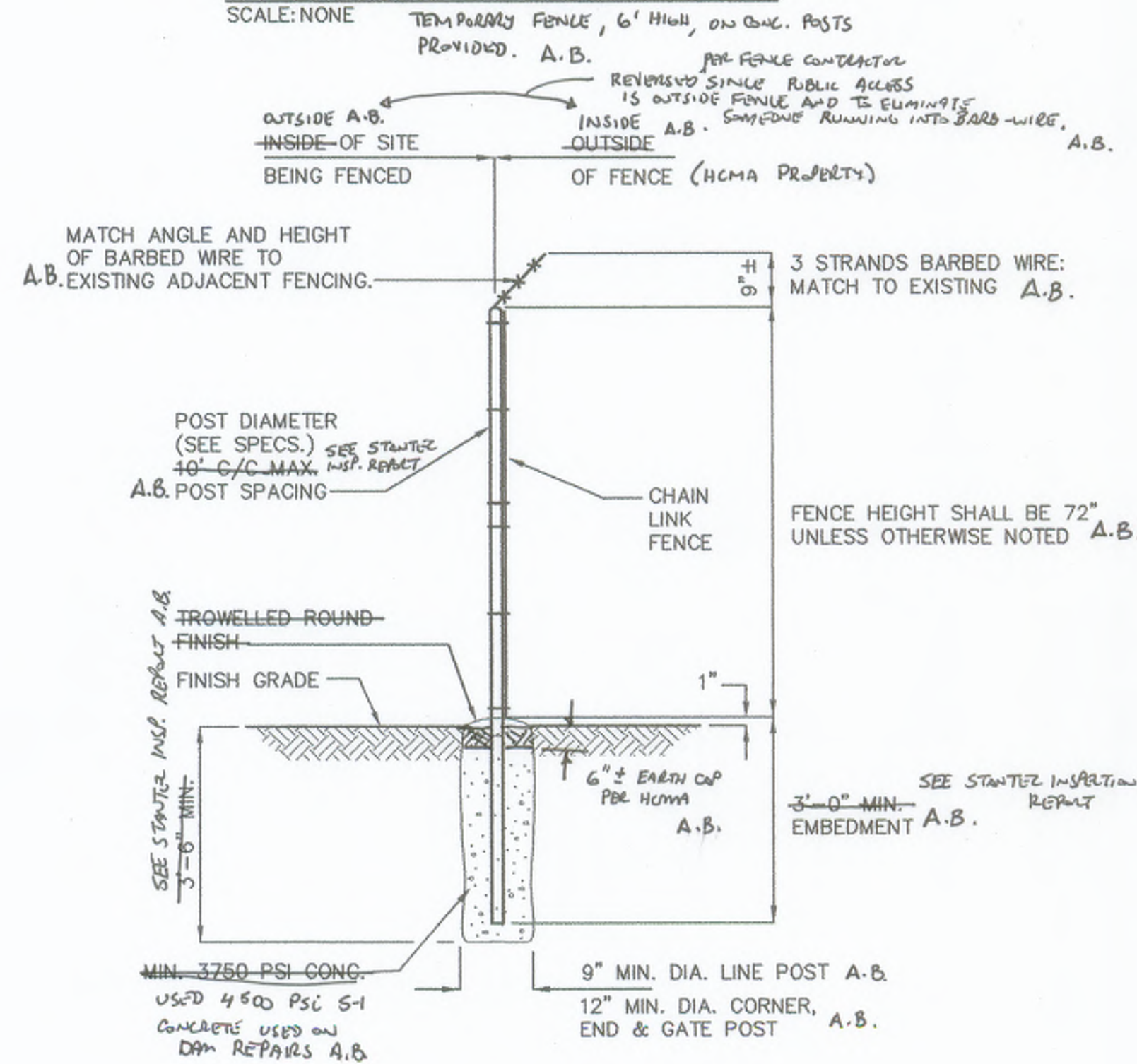
BOLLARD DETAIL

SCALE: NONE



TEMPORARY CHAINLINK FENCE

SCALE: NONE



NEW FENCE DETAIL

SCALE: NONE

EX. FENCE

EL. 590.08'

NOTCH INTO EXISTING GRADE AS NECESSARY. A.B.

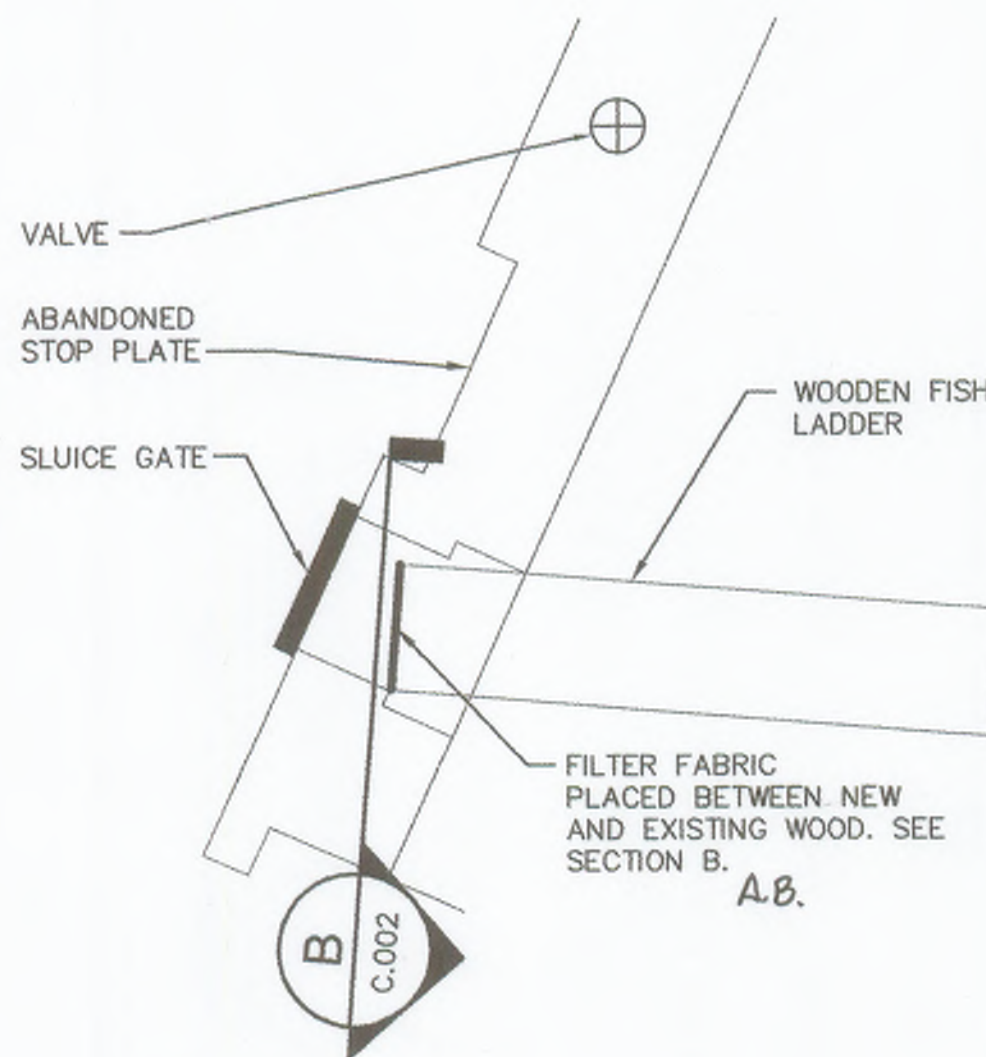
FILL LOWER AREAS WITH HEAVY RIP RAP AS NEEDED. 14" MAX. DEPTH. A.B.

SECTION

SCALE: NONE

C
C.001

TEMPORARY RIP RAP
10" THICK OF 2x3-1x3
CRUSHED STONE. A.B.



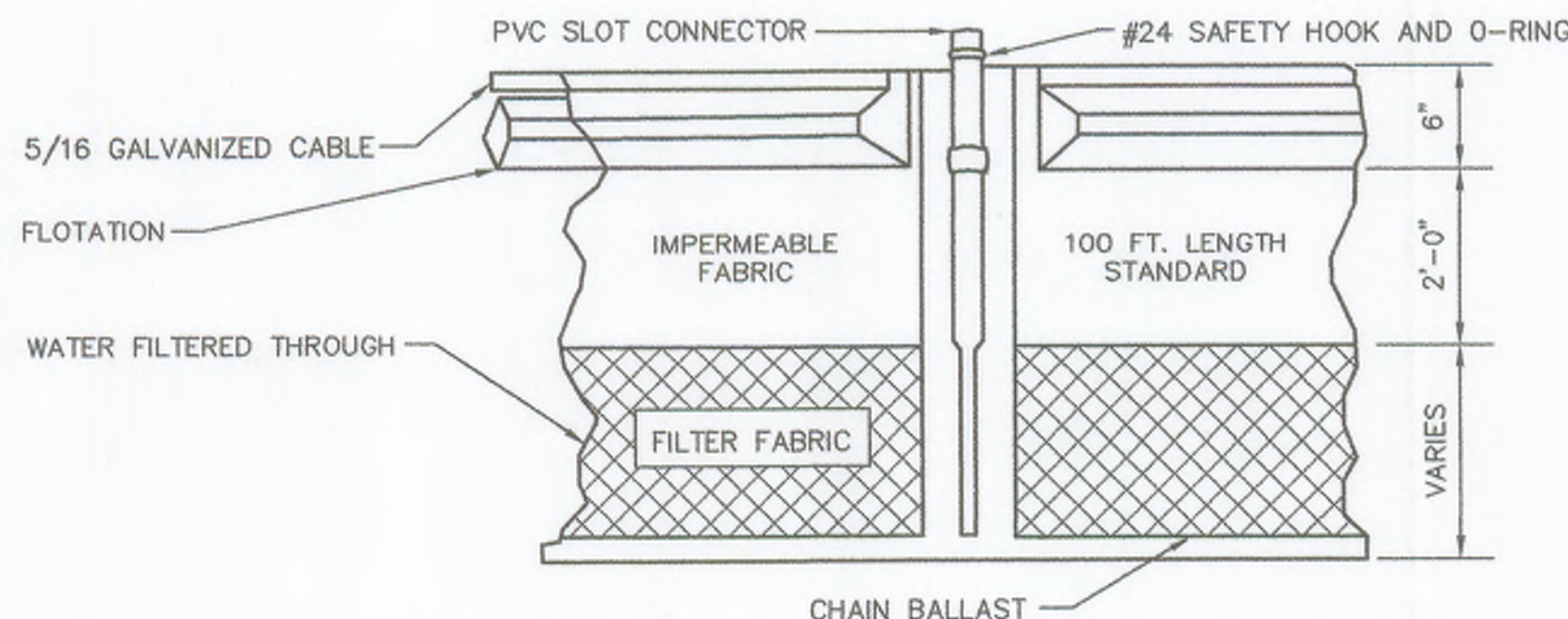
FISH LADDER SILT BARRIER DETAIL

SCALE: NONE

SECTION

SCALE: NONE

B
C.002



TYPE II OR TYPE III TURBIDITY CURTAIN

SCALE: NONE

(SEE SUBMITTAL) A.B.



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Legend

- ⊗ GATE VALVE
- ⊙ STORM SEWER MANHOLE
- ⊕ POWER POLE
- ⊙ SANITARY SEWER MANHOLE
- ⊙ WATER MANHOLE
- ⊙ FIRE HYDRANT
- ⊙ BENCH MARK
- G GAS LINE
- ST STORM SEWER
- OHP OVERHEAD POWER

UNDERLINED NOTES ARE PAY ITEMS.

AS-BUILT ("A.B.") DRAWING NOTES		JRR	01.10
Revision	By	Appd.	MM.DD.YY
BID SET			05.08
OWNER REVIEW			03.08
QA/QC (95%)			02.08
ROAD COMMISSION SUBMITTAL (WCDS)			01.08
PERMITS (90% SET)			10.31.07
60% REVIEW			07.07.10
Issued	By	Appd.	MM.DD.YY

File Name:	SMJ	DMD	PJM
	Dwn.	Chkd.	Dsgn.

Permit-Seal

Client/Project

HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

Title

**RIGHT SIDE, LOCK
DEMOLITION PLAN**

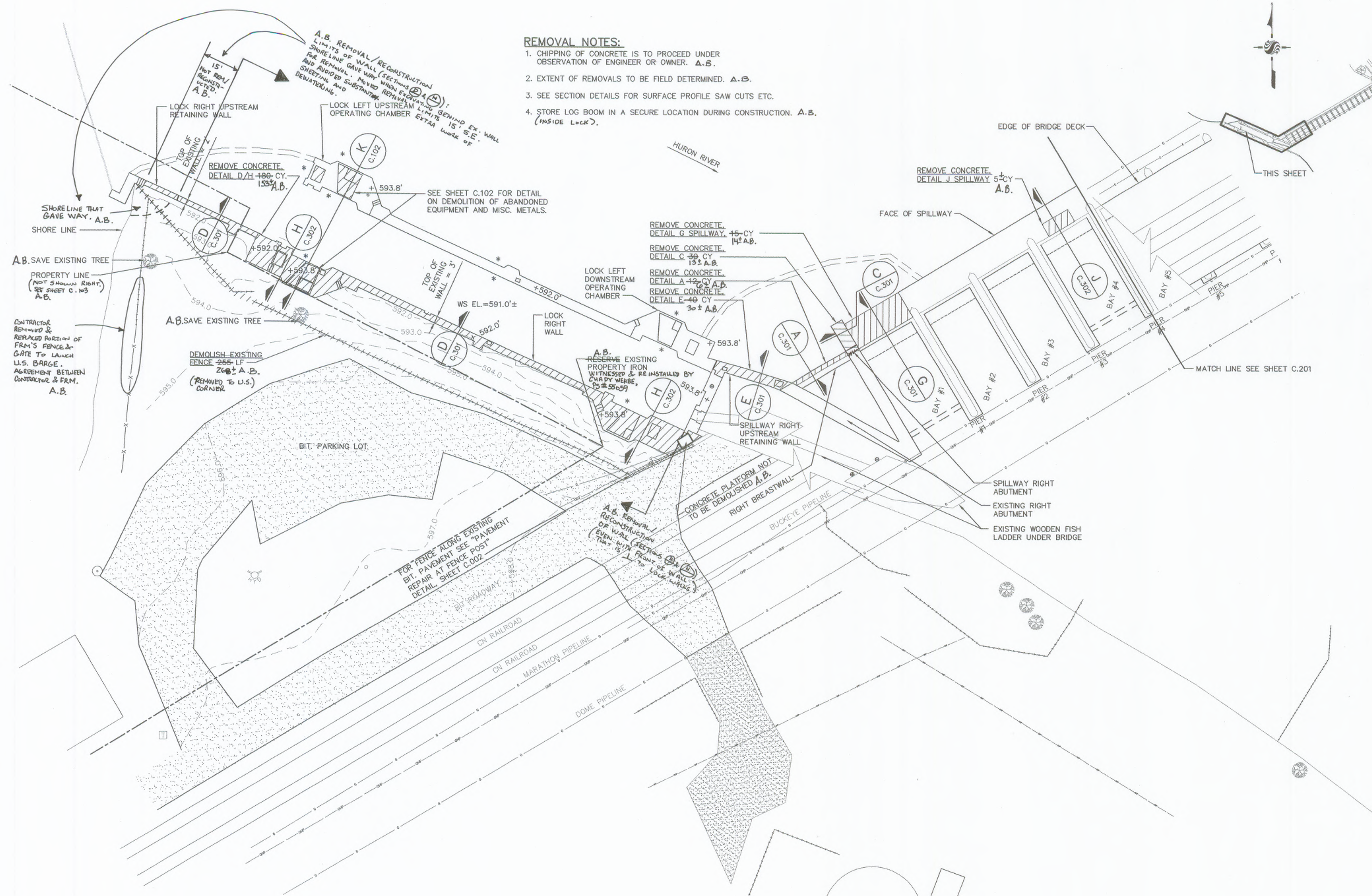
Project No.	Scale
2075092501	AS-NOTED
Drawing No.	Sheet
	Revision

C.101

of

REMOVAL NOTES:

1. CHIPPING OF CONCRETE IS TO PROCEED UNDER OBSERVATION OF ENGINEER OR OWNER. **A.B.**
2. EXTENT OF REMOVALS TO BE FIELD DETERMINED. **A.B.**
3. SEE SECTION DETAILS FOR SURFACE PROFILE SAW CUTS ETC.
4. STORE LOG BOOM IN A SECURE LOCATION DURING CONSTRUCTION. **A.B.** (INSIDE LOCK).



LOCK SITE PLAN

SCALE: 1" = 20'-0"

* INSPECT FOR UNDERWATER OPENINGS. **A.B.** - SEE DIVER REPORTS (2 EACH)
08.25.08 & 12.04.08/10.22.08

SHOWS EQUIPMENT AND
CONCRETE TO BE REMOVED.



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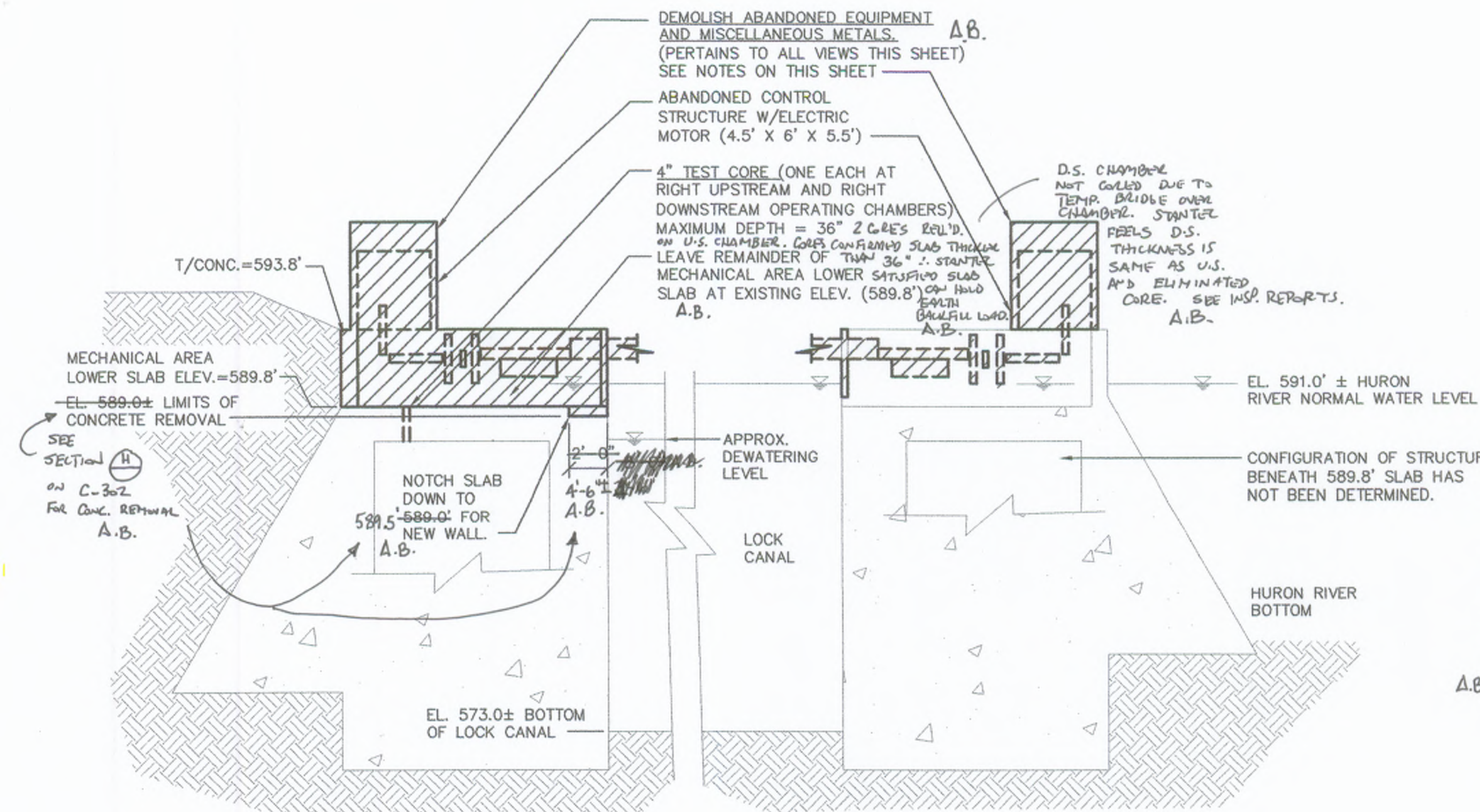
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Legend

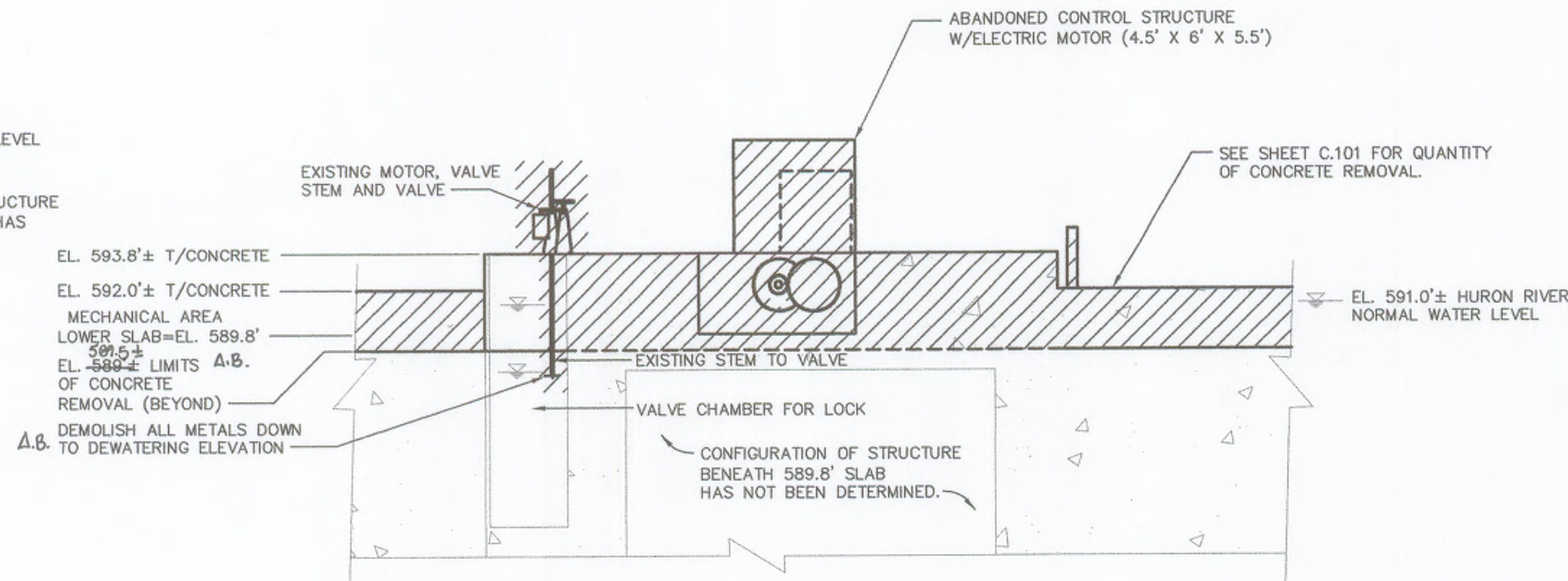
Stanlec Consulting Michigan Ltd.
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Fax. 734.761.1200
www.stanlec.com



UPSTREAM OPERATING CHAMBER, DEMOLITION

SCALE: 3/16" = 1'-0"

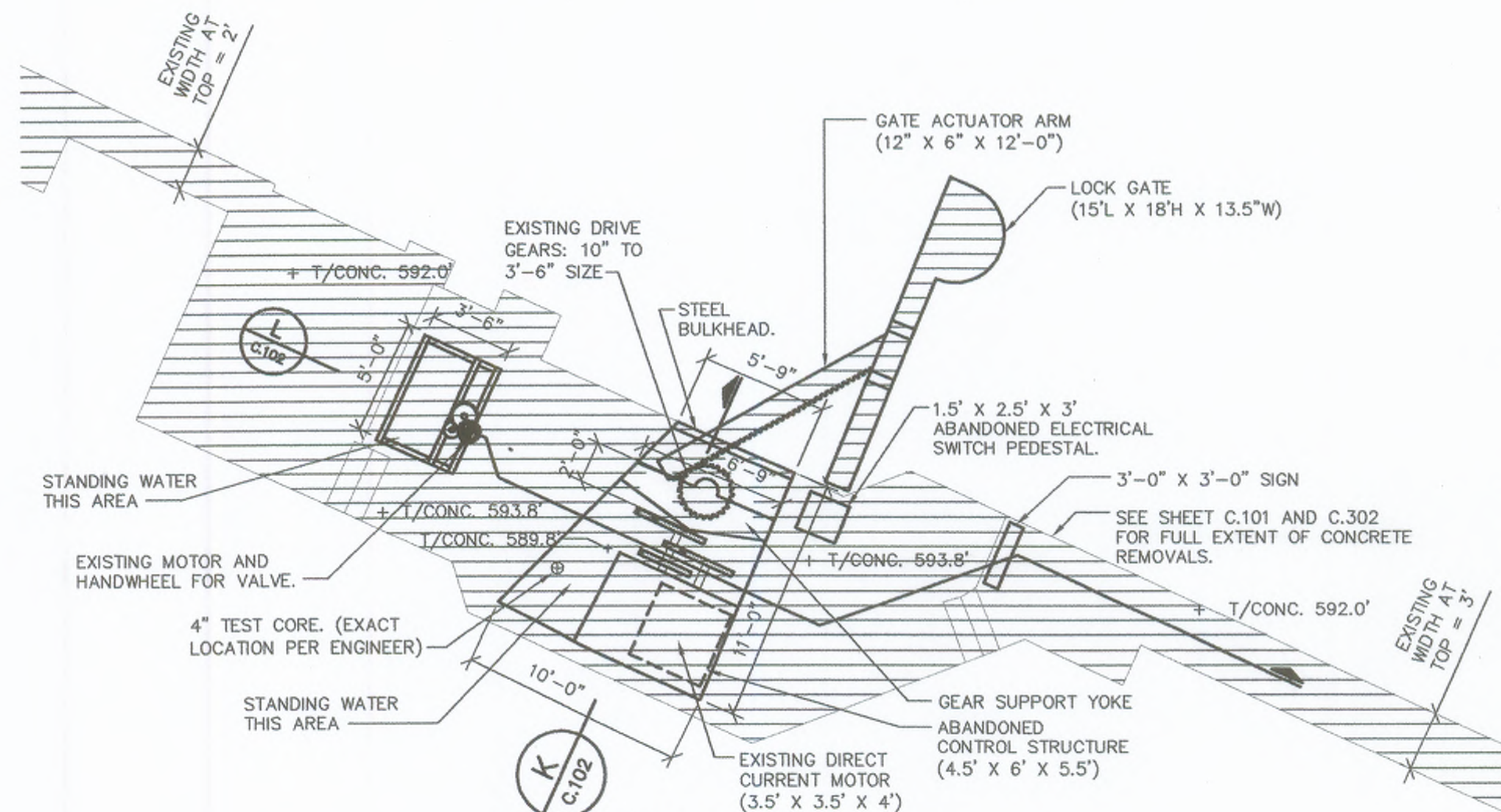
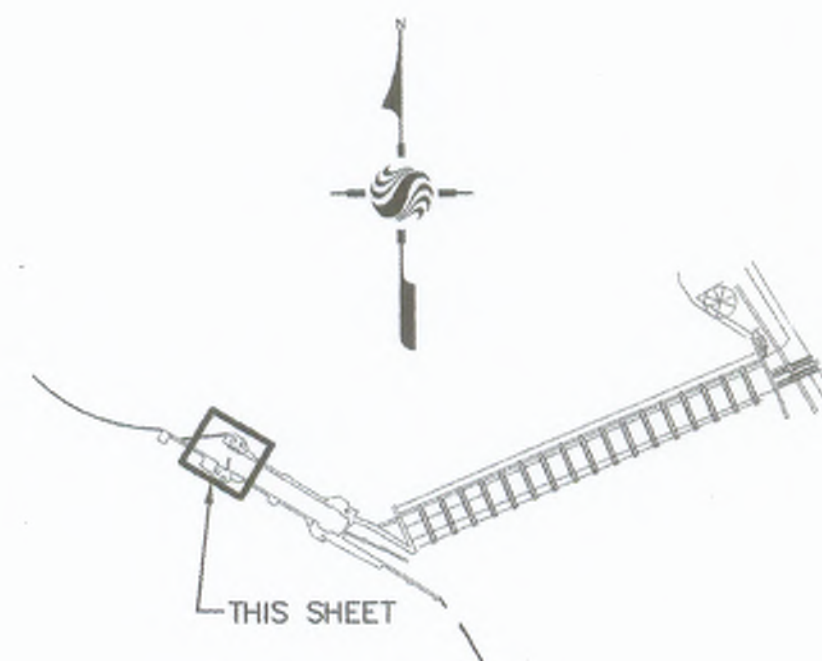
K
C.102



LOCK RIGHT UPSTREAM OPERATING CHAMBER (SECTION), DEMOLITION

SCALE: 3/16" = 1'-0"

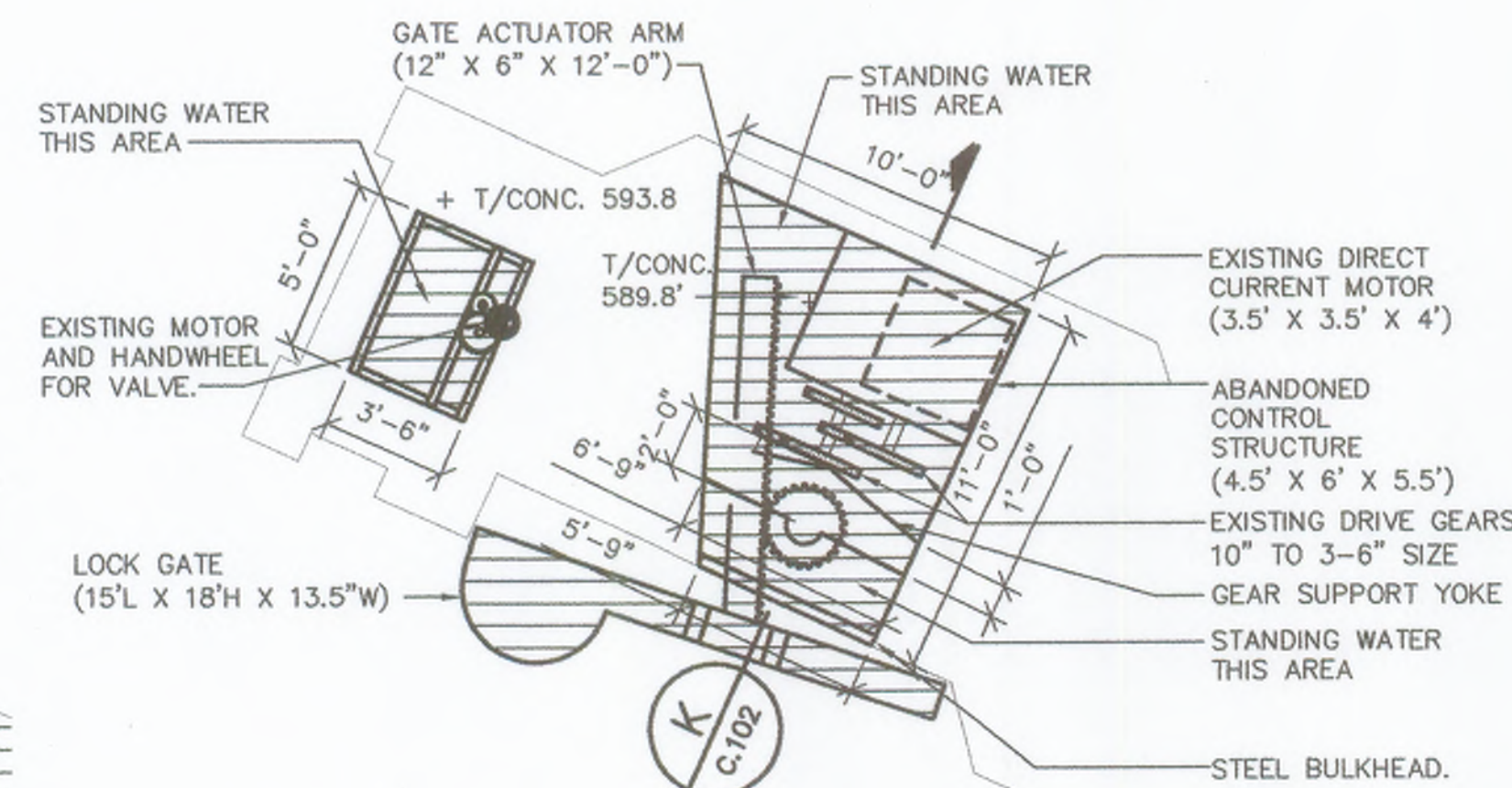
L
C.102



LOCK RIGHT UPSTREAM OPERATING CHAMBER, DEMOLITION

SCALE: 3/16" = 1'-0"

K
C.102



LOCK LEFT UPSTREAM OPERATING CHAMBER DEMOLITION

SCALE: 3/16" = 1'-0"

K
C.102

DEMOLISH ABANDONED EQUIPMENT AND MISC. METALS:

NOTES:

A.B. 1. DEMOLISH AND REMOVE ALL EQUIPMENT AND MISC. METALS IN THE AREAS SHOWN. THIS SHEET DEPICTS MOST OF THE SIGNIFICANT MECHANICAL EQUIPMENT THAT EXISTS AT THE LOCK CONTROL STRUCTURES. THE INTENT IS THAT ALL ABANDONED EQUIPMENT IN THE REMOVAL AREAS OF THE CONTROL STRUCTURES BE REMOVED AND DISPOSED OF BY THE CONTRACTOR. DIMENSIONS ARE SHOWN ONLY FOR THE PURPOSE OF CONVEYING THE APPROXIMATE SIZE OF THE REMOVALS.

2. IN BOTH STRUCTURES, REMOVALS SHALL INCLUDE ALL VISIBLE EQUIPMENT, GATE ACTUATOR ARMS, MOTORS, GEARS, DRIVE SHAFTS, LADDER RUNGS, SUPPORT STEEL, STEEL STRUCTURES AND APPURTENANCES FROM THE DEWATERING ELEVATION AND UP. A.B. THE LOCK GATES ON BOTH THE LEFT AND RIGHT SIDES SHALL BE REMOVED IN THEIR ENTIRETY (TO FULL DEPTH). A.B.

3. SUPPORT POINTS AND ANCHORAGES INCLUDING GATE PIVOTS AND OTHER METAL APPURTENANCES (INCLUDING THOSE BELOW WATER) REMAINING IN THE EXISTING CONCRETE SHALL BE CUT FLUSH SO AS TO AVOID SHARP OR JAGGED EDGES, SNARE POINTS OR OTHER HAZARDS. A.B. (LADDERS IN WELLS COULDN'T BE CUT FLUSH - WARNING) A.B.

4. HAZ-MAT DELINEATION HAS BEEN PERFORMED ON THIS EQUIPMENT. THE FOLLOWING SPECIFIC HAZARDS HAVE BEEN IDENTIFIED (SEE APPENDIX IN THE SPECIFICATIONS (FUTURE NET REPORT)):

LOCK RIGHT UPSTREAM CONTROL STRUCTURE
-20 PLUG CONNECTORS-25% CHRYSOTILE ASBESTOS.

LOCK LEFT UPSTREAM CONTROL STRUCTURE
-10 BRAKE PADS-20% CHRYSOTILE ASBESTOS.
-10 CABLE CONNECTORS-25% CHRYSOTILE ASBESTOS.
-1000 SF.-22% BY WT. LEAD BASED PAINT.

ALL PAINTED SURFACES SHOULD BE PRESUMED TO CONTAIN LEAD. ALL PLUG CONNECTORS, CABLE CONNECTORS AND BRAKE PADS SHOULD BE PRESUMED TO CONTAIN ASBESTOS.

CONCRETE AND EQUIPMENT REMOVAL A.B.

GENERAL CONTRACTOR DEMO'D EQUIPMENT PRIOR TO ASBESTOS ABATEMENT WHILE JOB'S WORK WASN'T PRESENT, (AS SPEC'D.). B.C. BLAUGHT IN ABATEMENT CONTRACTOR AFTER BEING CHARGED FOR CLEAN-UP. - NEVER RECEIVED ABATEMENT RESULTS FROM B.C. DEBATE MANY ATTEMPTS. A.B.

UNDERLINED NOTES ARE PAY ITEMS.

AS-BUILT ("A.B.") DRAWING NOTES	By	Appd.	MM.DD.YY
Revision			
BID SET			05.08
OWNER REVIEW			03.08
QA/QC (95%)			02.08
ROAD COMMISSION SUBMITTAL (WCDPS)			01.08
PERMITS (90% SET)			10.31.07
60% REVIEW			07.07.10
Issued	By	Appd.	MM.DD.YY

File Name:	SMJ	DMD	PJM
	Dwn.	Chkd.	Dgn.
Permit-Seal			MM.DD.YY

Client/Project
HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

Title
RIGHT SIDE, LOCK
DEMOLITION DETAILS

Project No. 2075092501	Scale AS-NOTED
Drawing No.	Sheet
	Revision



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Legend

- ⊗ GATE VALVE
- ⊙ STORM SEWER MANHOLE
- ⊘ POWER POLE
- ⊙ SANITARY SEWER MANHOLE
- ⊙ WATER MANHOLE
- ⊙ FIRE HYDRANT
- △ BENCH MARK
- G GAS LINE
- ST STORM SEWER
- OHP OVERHEAD POWER

UNDERLINED NOTES ARE PAY ITEMS.

AS-BUILT ("A.B.") DRAWING	MM.DD.YY
Revision	By Appd. MM.DD.YY
BID SET	05.08
OWNER REVIEW	03.08
QA/QC (95%)	02.08
ROAD COMMISSION SUBMITTAL (WCOPS)	01.08
PERMITS (90% SET)	10.31.07
60% REVIEW	07.07.10
Issued	By Appd. MM.DD.YY

File Name:	SMJ	DMD	PJM
Permit Seal	Desn.	Chkd.	Desn.

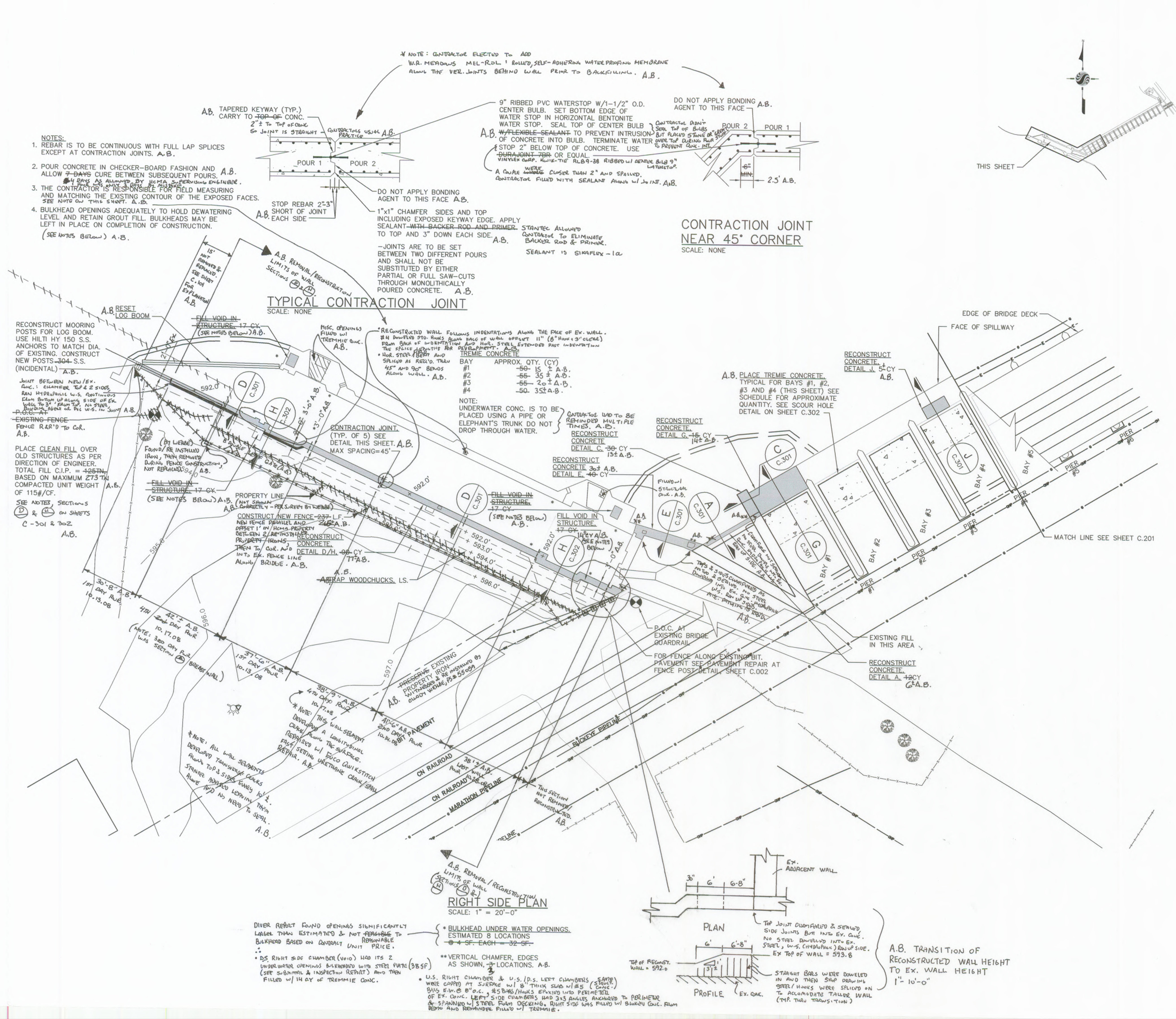
Client/Project
HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

Title
RIGHT SIDE
RECONSTRUCTION PLAN

Project No.	Scale
2075092501	AS-NOTED
Drawing No.	Sheet
C.103	

of





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- ST STORM SEWER
- OHP OVERHEAD POWER

UNDERLINED NOTES ARE PAY ITEMS.

AS-BUILT ("A.B.") DRAWING NOTES		By	Appd.	DATE
Revision				MM.DD.YY
BID SET				05.08
OWNER REVIEW				03.08
QA/QC (95%)				02.08
ROAD COMMISSION SUBMITTAL (WCDCPS)				01.08
PERMITS (90% SET)				10.31.07
60% REVIEW				07.07.10
Issued		By	Appd.	MM.DD.YY

File Name: SMJ DMD PJM
Dwn. Chkd. Dgn. MM.DD.YY

Permit-Seal

Client/Project
HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

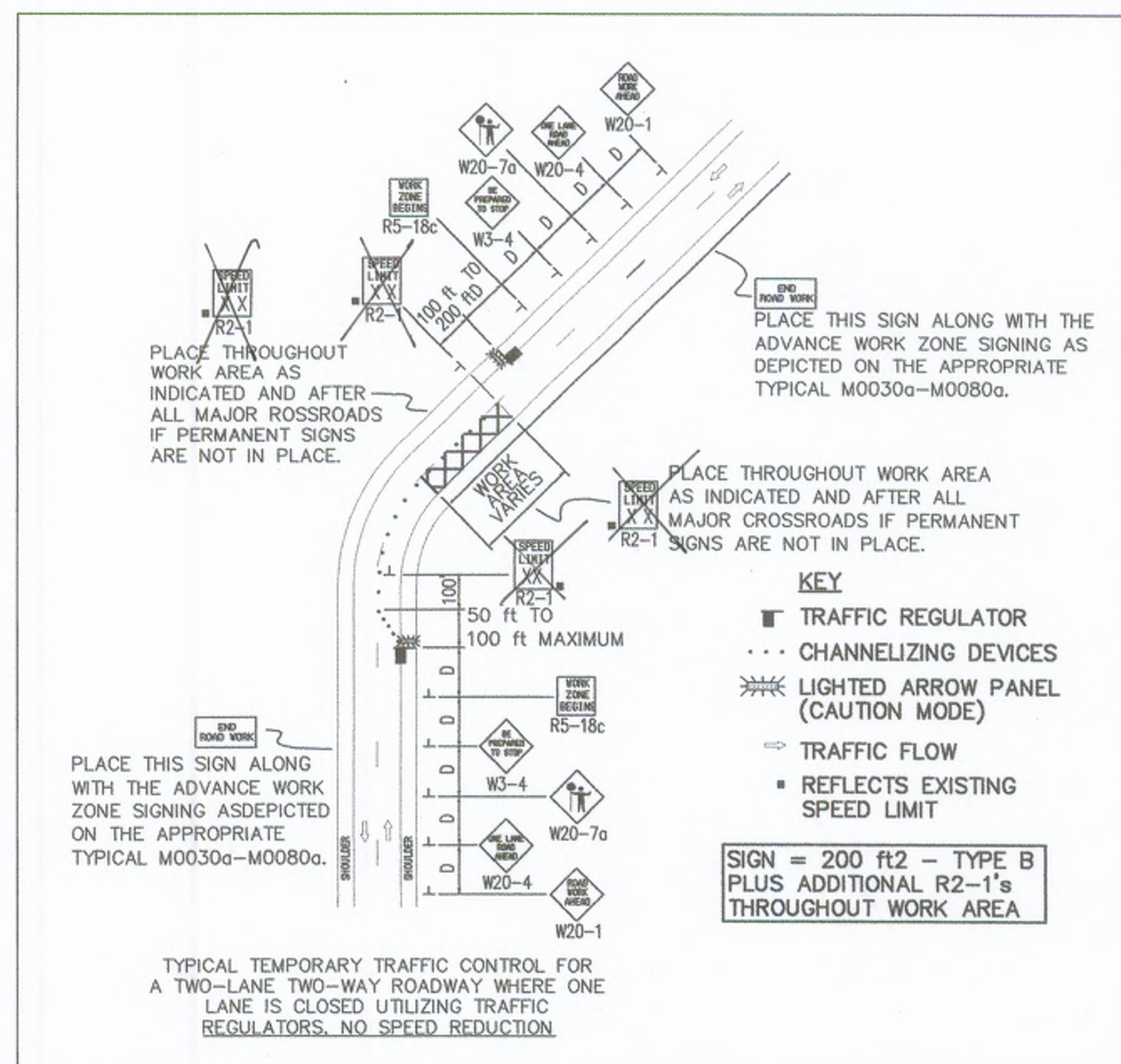
FLATROCK, MICHIGAN

Title
LEFT SIDE
DEMOLITION PLAN

Project No. 2075092501 Scale AS NOTED
Drawing No. Sheet Revision

C.201

of





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Consultants

Legend

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- ① STORM SEWER MANHOLE
- ⊗ POWER POLE
- Ⓢ SANITARY SEWER MANHOLE
- ⊙ WATER MANHOLE
- ⊙ FIRE HYDRANT
- △ BENCH MARK
- G GAS LINE
- ST STORM SEWER
- OHP OVERHEAD POWER

UNDERLINED NOTES ARE PAY ITEMS.

As-Built ("A.B.") DRAWING NOTED	JRR	DLIO
Revision	By	Appd.
BID SET		05.08
OWNER REVIEW		03.08
QA/QC (95%)		02.08
ROAD COMMISSION SUBMITTAL (WCDPS)		01.08
PERMITS (90% SET)		10.31.07
60% REVIEW		07.07.10
Issued	By	Appd.

File Name:	SMJ	DMD	PJM
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Permit-Seal

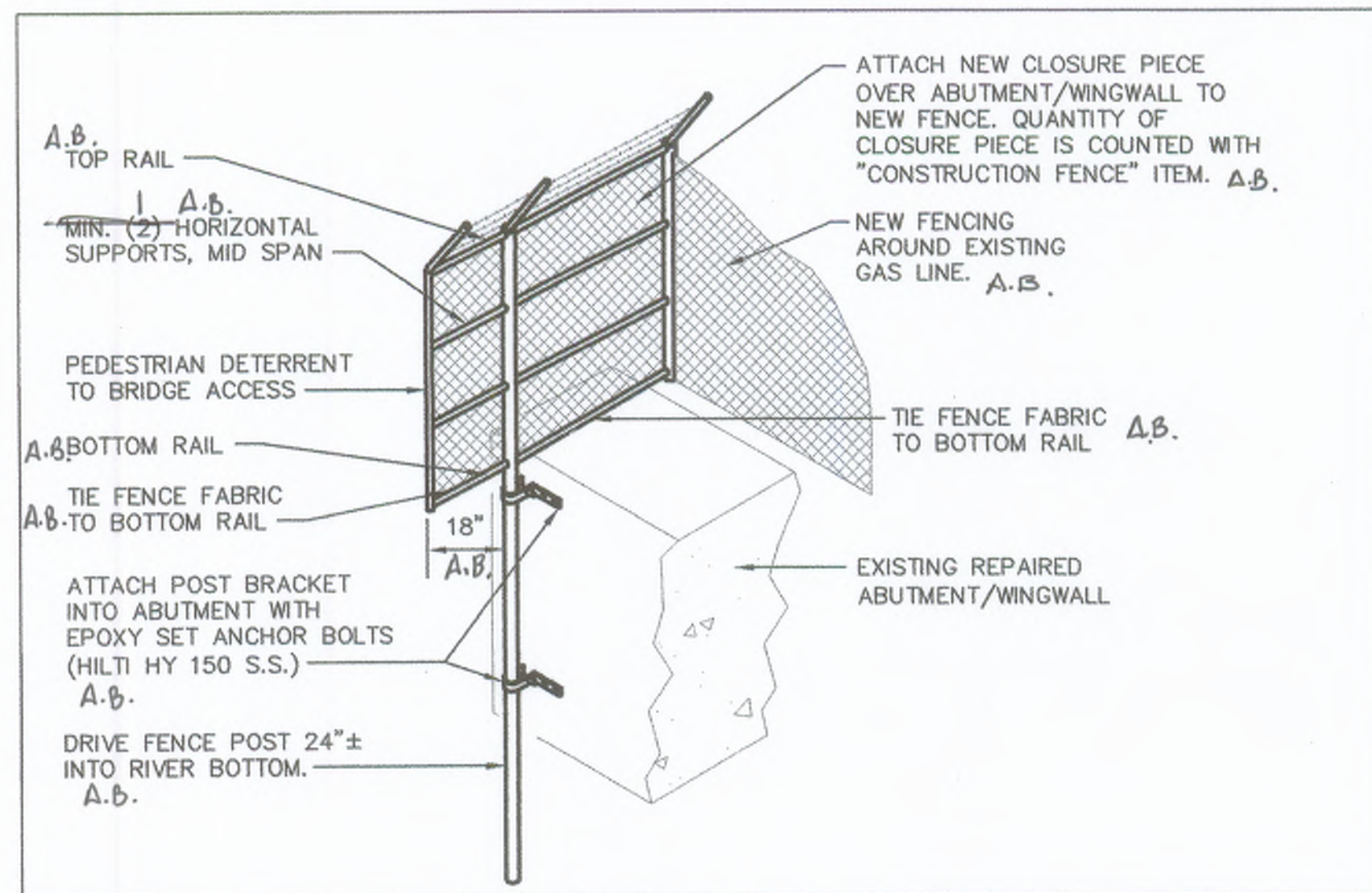
Client/Project
HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

Title
LEFT SIDE
RECONSTRUCTION PLAN

Project No.	Scale
2075092501	AS NOTED
Drawing No.	Sheet
	Revision

C.202 of

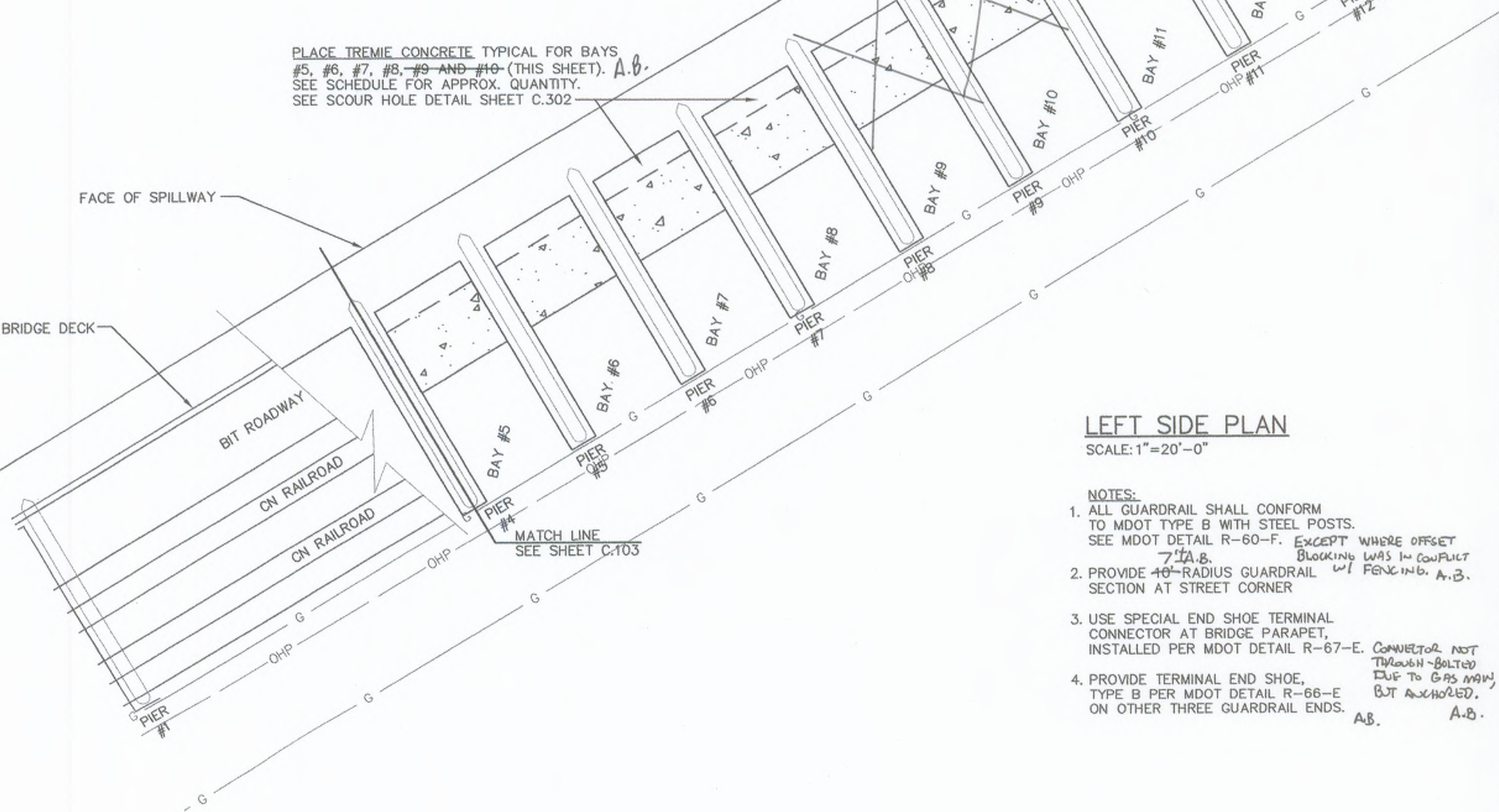


FENCE CLOSURE DETAIL
SCALE: NONE

BAY	APPROX. QTY. (CY)
#5	47 ± 25 ± A.B.
#6	48 ± 15 ± A.B.
#7	56 ± 20 ± A.B.
#8	50 ± 24 ± A.B.
#9	45 ± 0 A.B.
#10	45 ± 0 A.B.

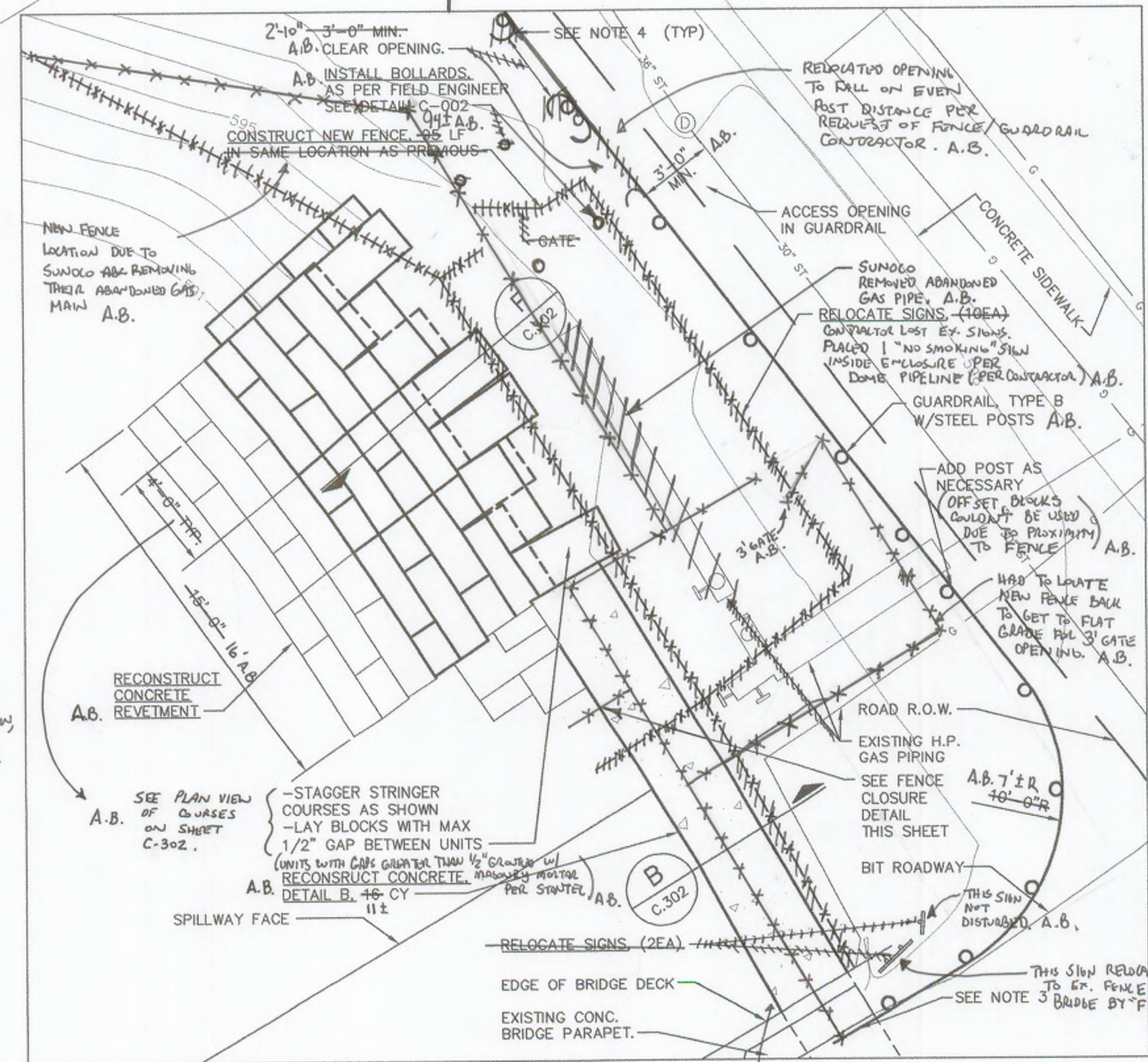
SEE NOTE ON SHEET C-103.

SIDEWALKS SHALL BE PROTECTED BY CONTRACTOR. DAMAGED SIDEWALK SHALL BE REPLACED IN KIND BY THE FLAG PER MDOT STANDARD MIX DESIGN AND DETAILS (INCIDENTAL).



LEFT SIDE PLAN
SCALE: 1"=20'-0"

- NOTES:
- ALL GUARDRAIL SHALL CONFORM TO MDOT TYPE B WITH STEEL POSTS. SEE MDOT DETAIL R-60-F. EXCEPT WHERE OFFSET BLOCKING WAS IN CONFLICT WITH FENCING, A.B.
 - PROVIDE 10'-RADIUS GUARDRAIL SECTION AT STREET CORNER.
 - USE SPECIAL END SHOE TERMINAL CONNECTOR AT BRIDGE PARAPET, INSTALLED PER MDOT DETAIL R-67-E. CONNECTOR NOT THROUGH-BOLTED DUE TO GAS MAIN, BUT ANCHORED. A.B.
 - PROVIDE TERMINAL END SHOE, TYPE B PER MDOT DETAIL R-66-E ON OTHER THREE GUARDRAIL ENDS. A.B.



DETAIL
SCALE: 1/4"=1'-0"



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Consultants

Legend

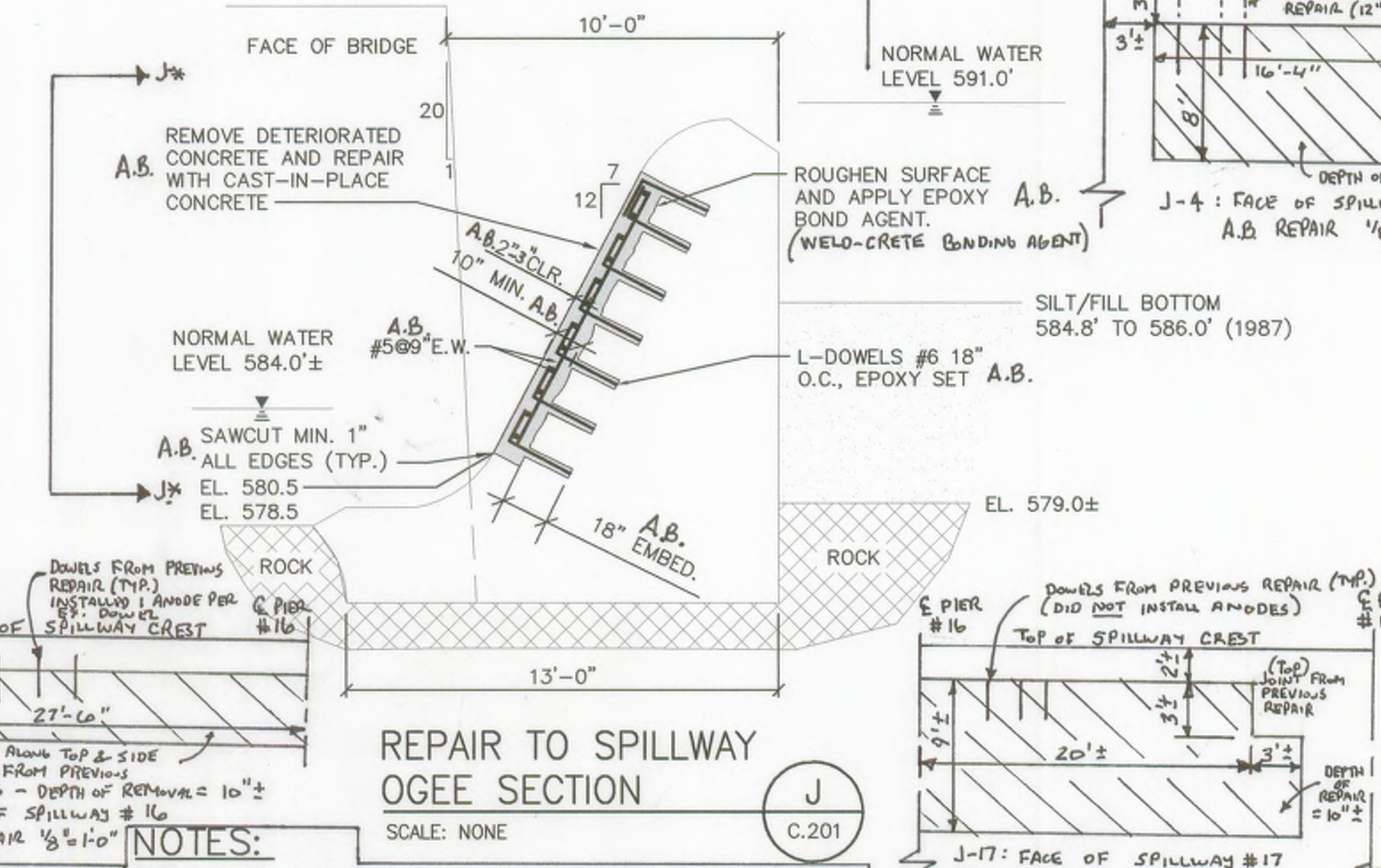
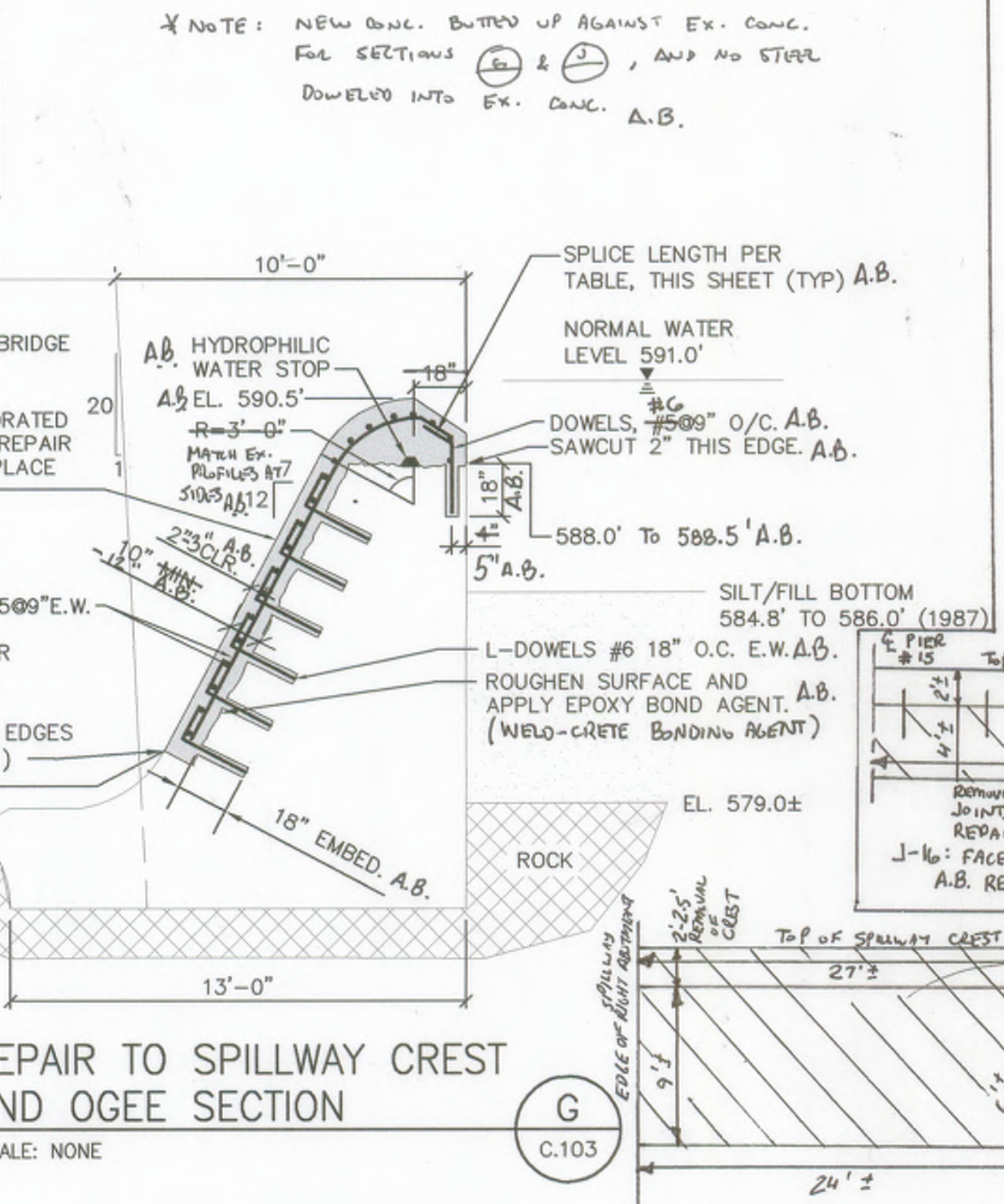
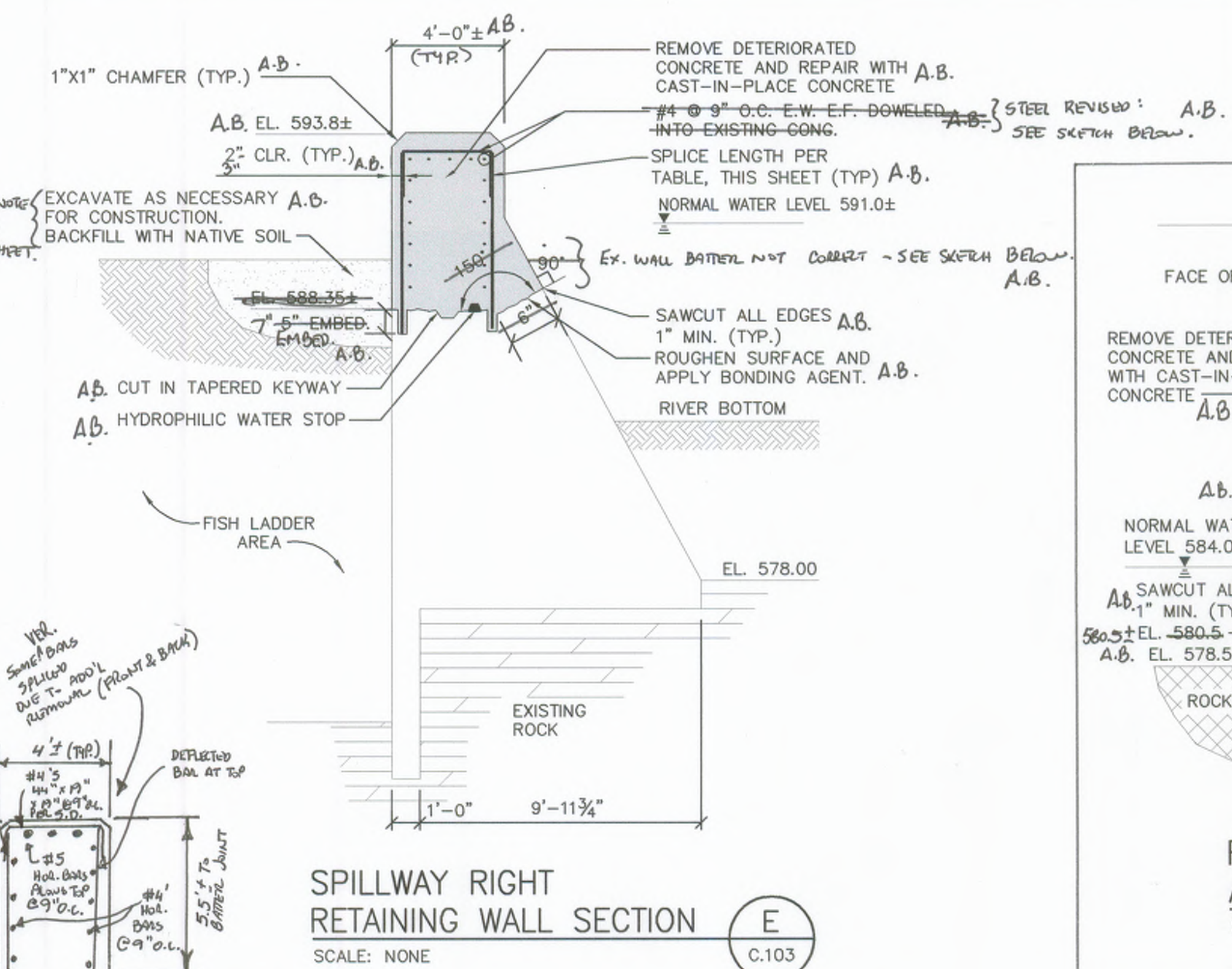
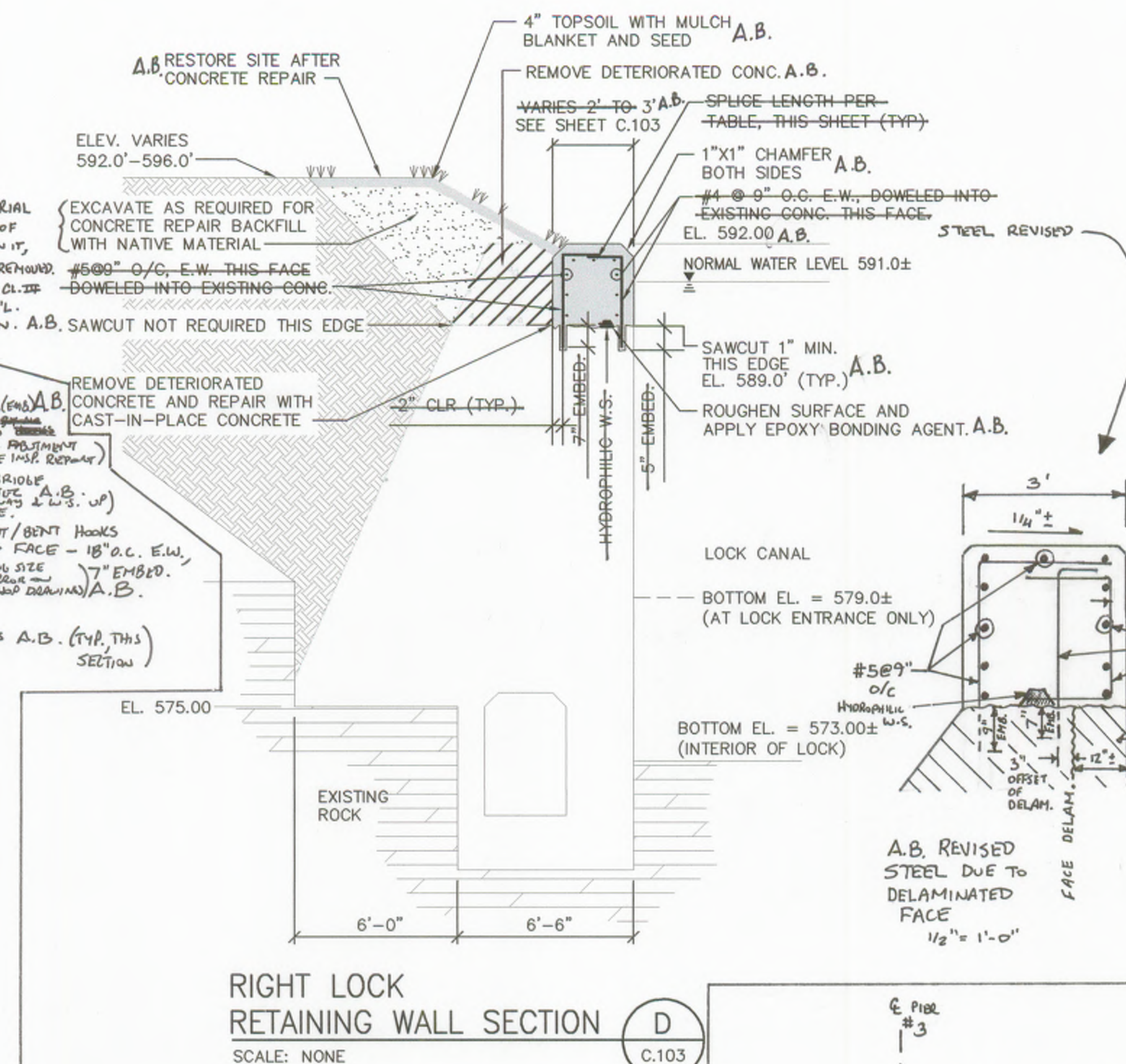
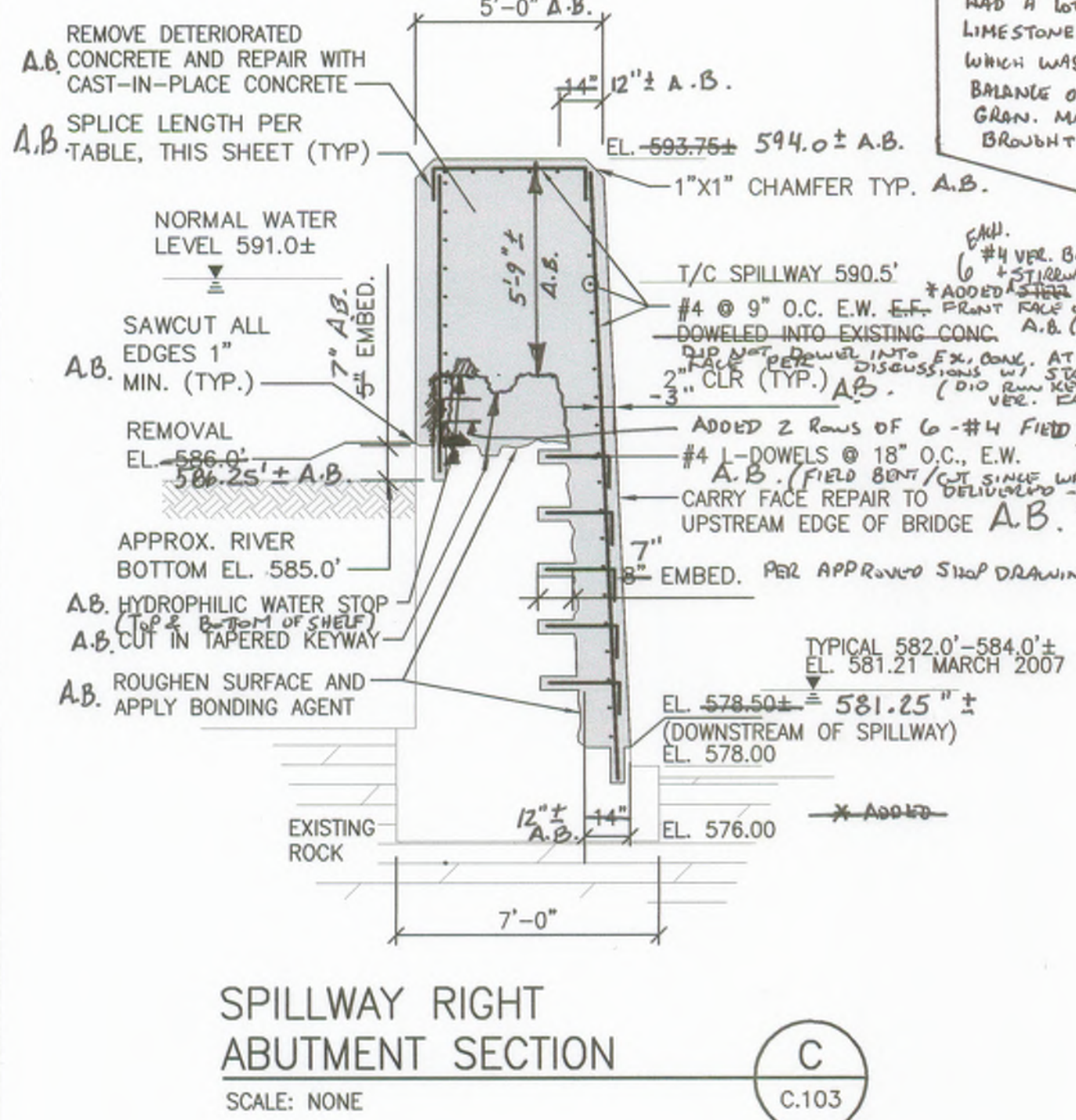
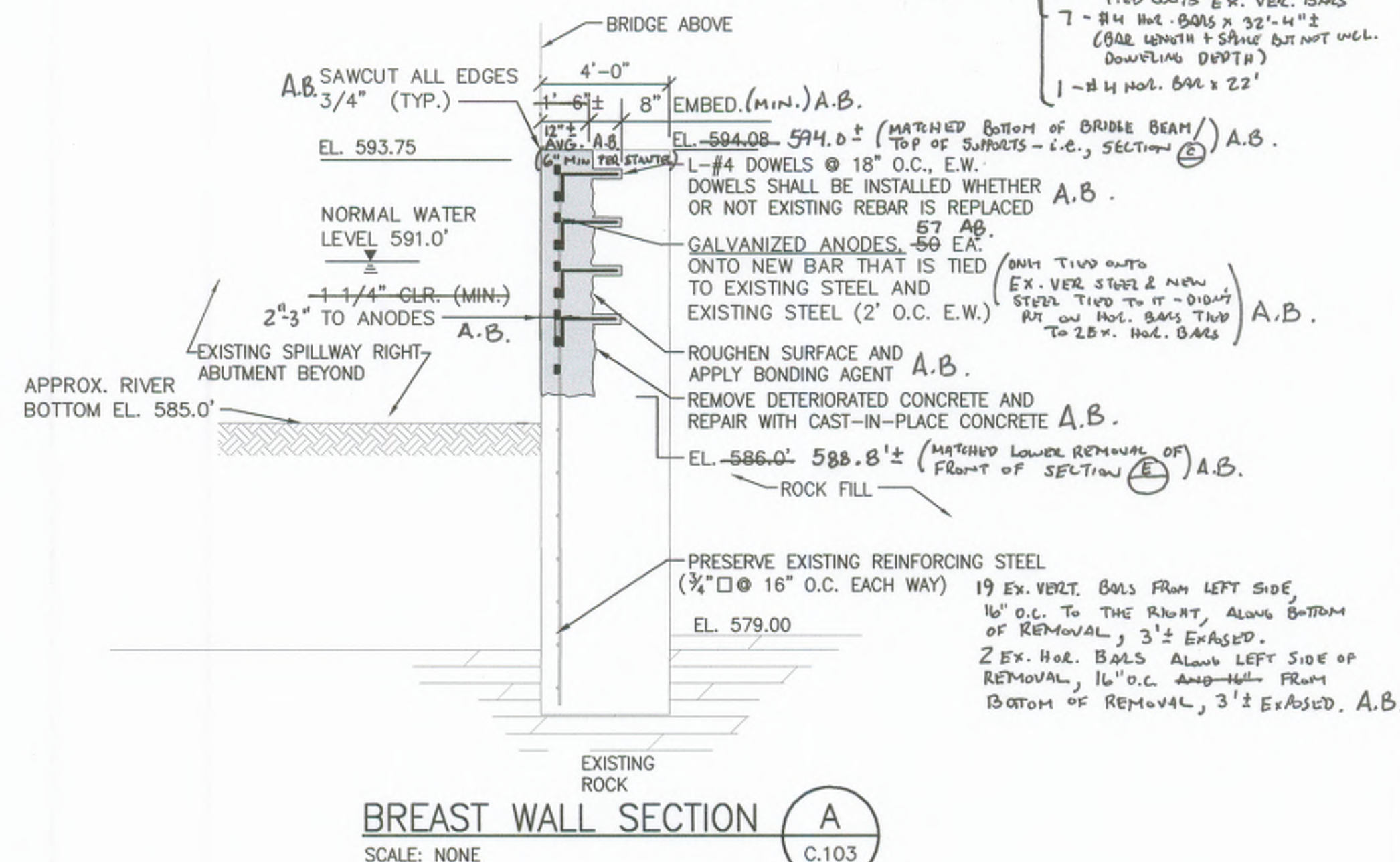
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3959 Research Park Drive
Ann Arbor MI U.S.A.
48108-2216
Tel. 734.761.1010
Fax. 734.761.1200
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FOR SECTION A:
EXISTING REBAR SHALL BE SAVED AS POSSIBLE. WHERE
EXISTING BAR IS CORRODED OR DAMAGED, REPLACE
WITH #4@8" E.W. AND ADDITIONAL DOWELS @8" O.C. INTO EDGES.

ADDITIONAL REBAR: 500 LBS. 330 LBS. A.B.
ADDITIONAL DOWELS: 440 EA. 40 EA. A.B.

27 ALONG BOTTOM
7 ALONG RIGHT SIDE
6 ALONG LEFT SIDE

(DOWELS ON 2 SIDES
& BOTTOM ONLY, NO DOWELS
INTO EX. BRIDGE BEAM ABOVE) A.B.



REBAR NOTES (APPLY TO ALL SECTIONS AND DETAILS)

1. L-DOWELS SHALL HAVE STANDARD LENGTH HOOKS. STRAIGHT DOWELS SHALL HAVE MIN. SPICE LENGTH TO STEEL. A.B.
2. ALL BAS INCLUDING HOOKS ARE TO BE TIED TIGHT TO RUNNING BARS, PER A.C.I. SEPARATIONS ARE SHOWN FOR CLARITY ONLY. A.B.

MINIMUM SPICE LENGTHS FOR ALL REBAR

#4	19"
#5	24"
#6	30"

NOTES:

1. (APPLY TO ALL CONCRETE REPAIRS)
1. ROUGHEN ALL CONTACT SURFACES OF EXISTING CONCRETE TO CSP 6 OR 7 AS ESTABLISHED BY THE INTERNATIONAL CONCRETE REPAIR INSTITUTE (OR 1/8" ± PROFILE). CLEAN EXISTING REBAR. TREAT ALL REBAR AND CONCRETE CONTACT SURFACES WITH SIKKA ARMATEC 110. A.B. NOTE: HEMA ENHANCER ALLOWED W/ WELD-CRETE BONDING AGENT SINCE ITS OPEN TIME IS 7-10 DAYS, VS. SIKKA 10 OF 16 HOURS. DUE TO LOGISTICS OF SETTING REPAIRS & POURING CONCRETE, FOR REPAIR SECTIONS B, C, & J ONLY, (REBAR NOT TREATED PER STANTEC).
2. UNLESS OTHERWISE SHOWN, #4 DOWELS SHALL BE EMBEDDED 5" ON EDGE AND 8" ON FACE; #5 DOWELS 7"; AND #6 DOWELS 18". ALL DOWELS SHALL BE EPOXY SET WITH MULTI-HIT 150 OR HIT ICE. A.B. OR AS SHOWN ON APPROVED STEEL SHOP DRAWINGS. A.B. HILTI HIT RE 500 (EXCEPT A FEW LOCATIONS WHERE A BAR WAS ADDED PRIOR TO A.B., THEN, HIT 150 WAS USED FOR QUICKER CURE TIME).
3. UNLESS OTHERWISE SHOWN, ALL EXPOSED EDGES SHALL BE CHAMFERED. A.B.
4. SAWCUT EXISTING CONCRETE AT ALL CONTACT EDGES, UNLESS OTHERWISE SHOWN. A.B.
5. WIRE MESH REINFORCING MAY BE PRESENT IN EXISTING CONCRETE-NOT NOTED IN INDIVIDUAL DETAILS. WIRE MESH REINFORCING IS NOT TO BE REPLACED.
6. UNLESS OTHERWISE NOTED, ALL REBAR AND DOWELING SHOWN ARE INCLUDED WITH THE RESPECTIVE REPAIR DETAIL. ADDITIONAL REBAR AND ADDITIONAL DOWELS ARE CALLED OUT SEPARATELY ONLY WHERE APPLICABLE.
7. WATERSTOPS SHALL BE BEHIND REBAR WITH 4" MIN. CLR TO SURFACE AND 3" MIN. CLR. TO KEYWAYS, WHERE DIMENSIONS ALLOW. A.B.
8. DOWEL HOOKS TO BE LAPPED TIGHT TO MAT. A.B.

Client/Project
HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

RECONSTRUCTION DETAILS AND SECTIONS I

Project No. 2075092501	Scale AS-NOTED
Drawing No. Sheet	Revision

C-301 of



Stantec

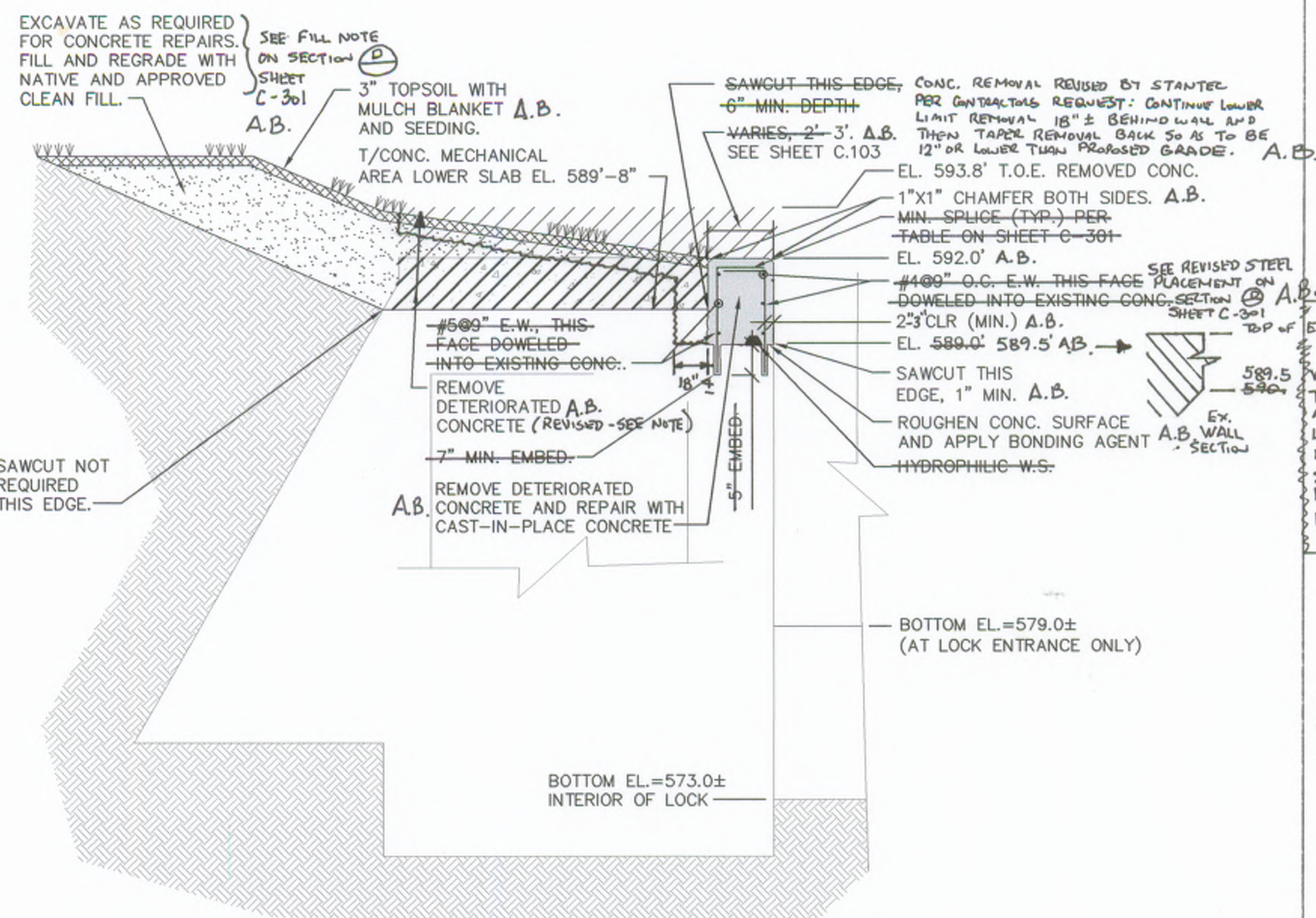
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Consultants

Legend

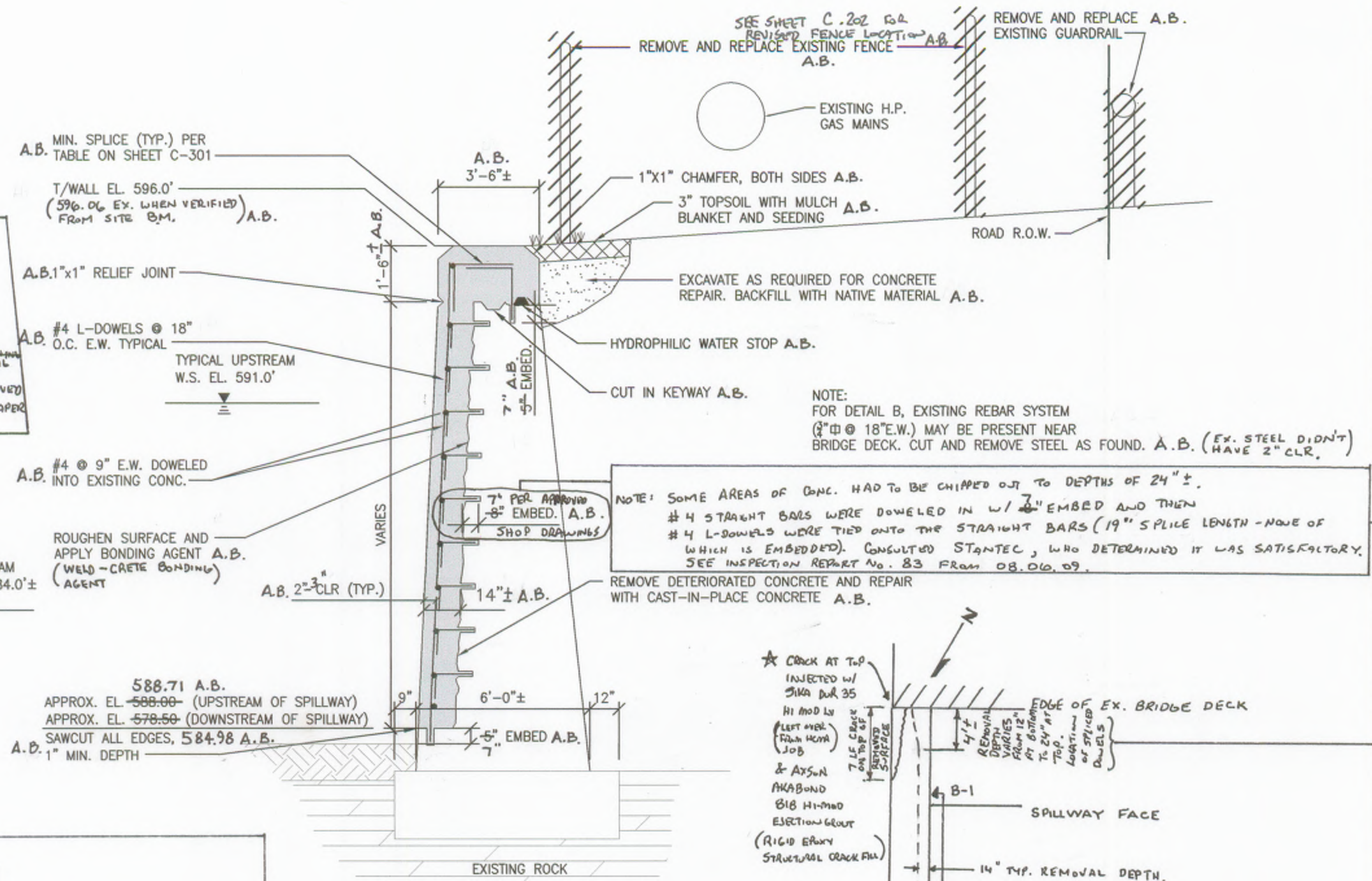
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RIGHT OPERATING
CHAMBER SECTION
SCALE: NONE

H
C.103

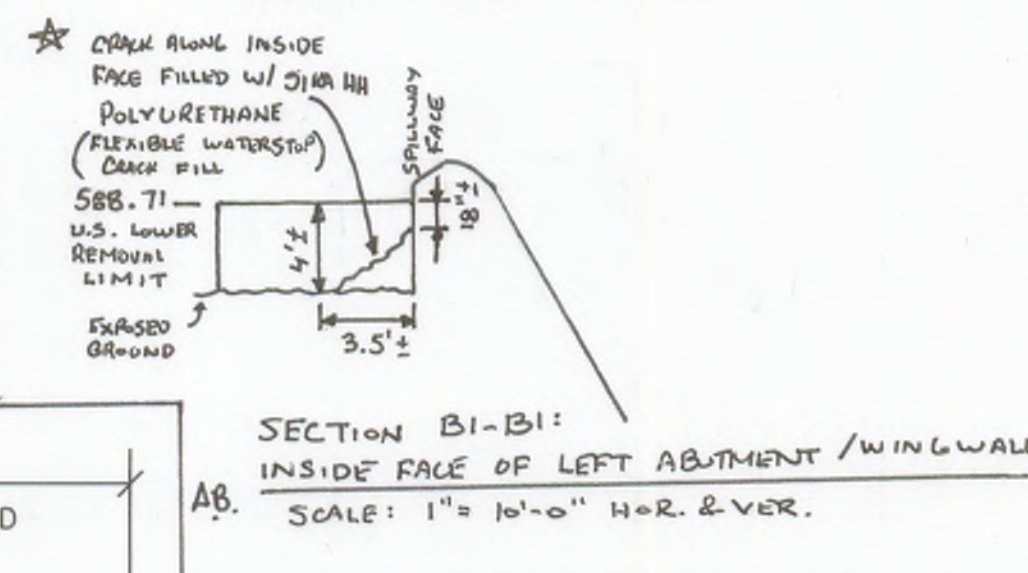
NOTES ON C.301
APPLY TO CONCRETE
REPAIRS ON THIS SHEET



LEFT ABUTMENT/WINGWALL
SECTION LOOKING UPSTREAM
SCALE: NONE

B
C.201

AB. PLAN VIEW OF LEFT ABUTMENT/WINGWALL
SCALE: 1\"/>



UNDERLINED NOTES ARE PAY ITEMS.

AS-BUILT ("A.B.") DRAWING NOTES		JAR	By	Appd.	MM.DD.YY
Revision					
BID SET					05.08
OWNER SUBMITTAL					03.08
QA/QC (95%)					02.08
ROAD COMMISSION SUBMITTAL (WCDS)					01.08
PERMITS (90% SET)					10.31.07
60% REVIEW					07.07.10
Issued					MM.DD.YY

File Name: SMJ DMD PJM
Dwn. Chkd. Dsgn. MM.DD.YY

Permit-Seal

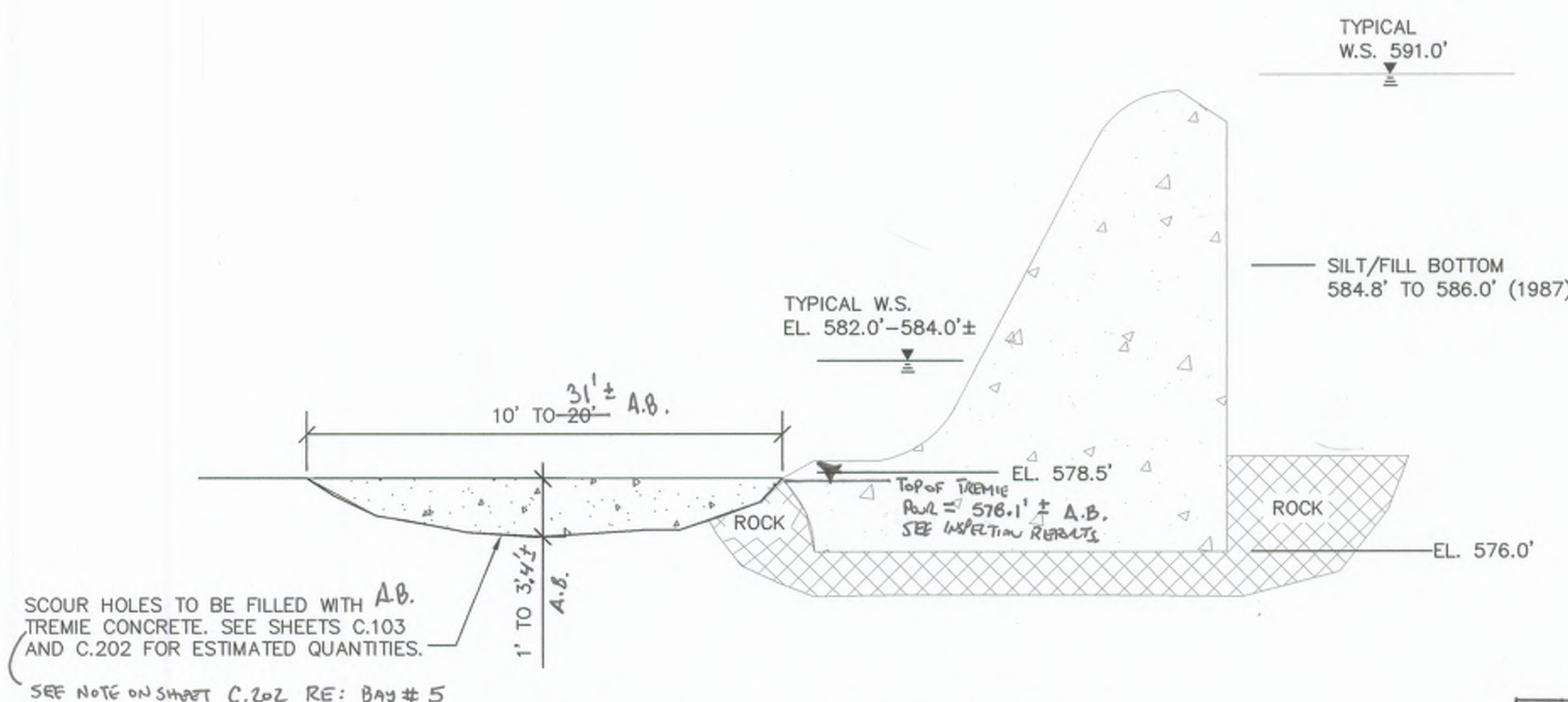
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HURON-CLINTON METROPOLITAN AUTHORITY
FLATROCK DAM 2008 REPAIRS

FLATROCK, MICHIGAN

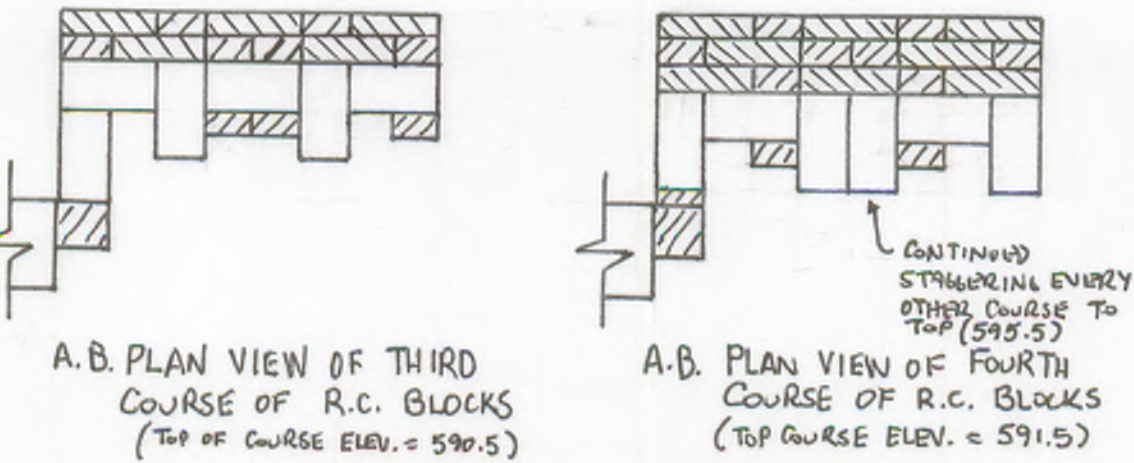
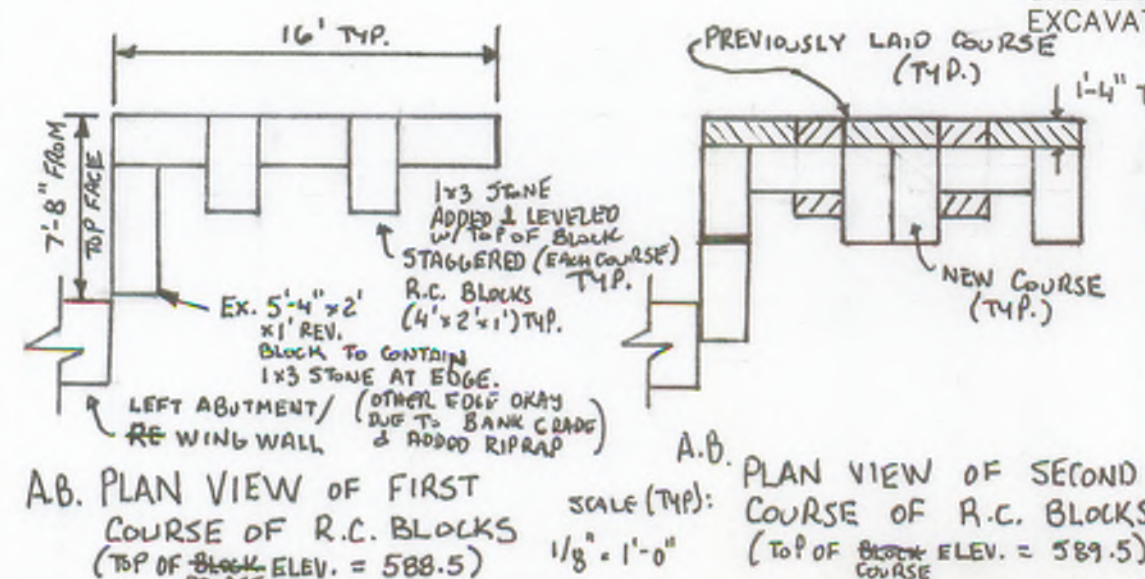
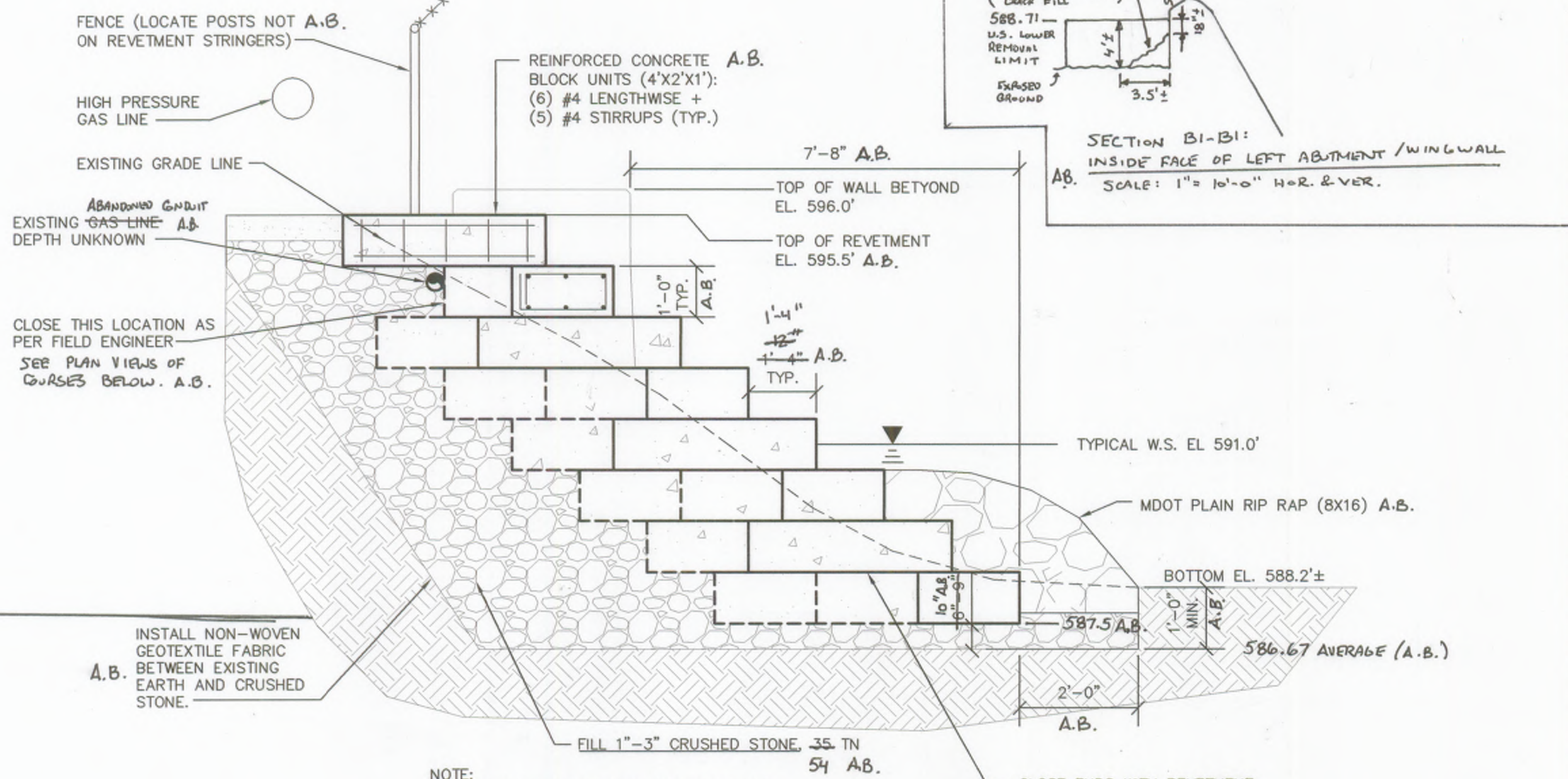
Title
RECONSTRUCTION
DETAILS AND SECTIONS II

Project No. 2075092501 Scale AS-NOTED
Drawing No. Sheet Revision

C-302 of



SCOUR HOLE DETAIL (TYP.)
SCALE: NONE



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