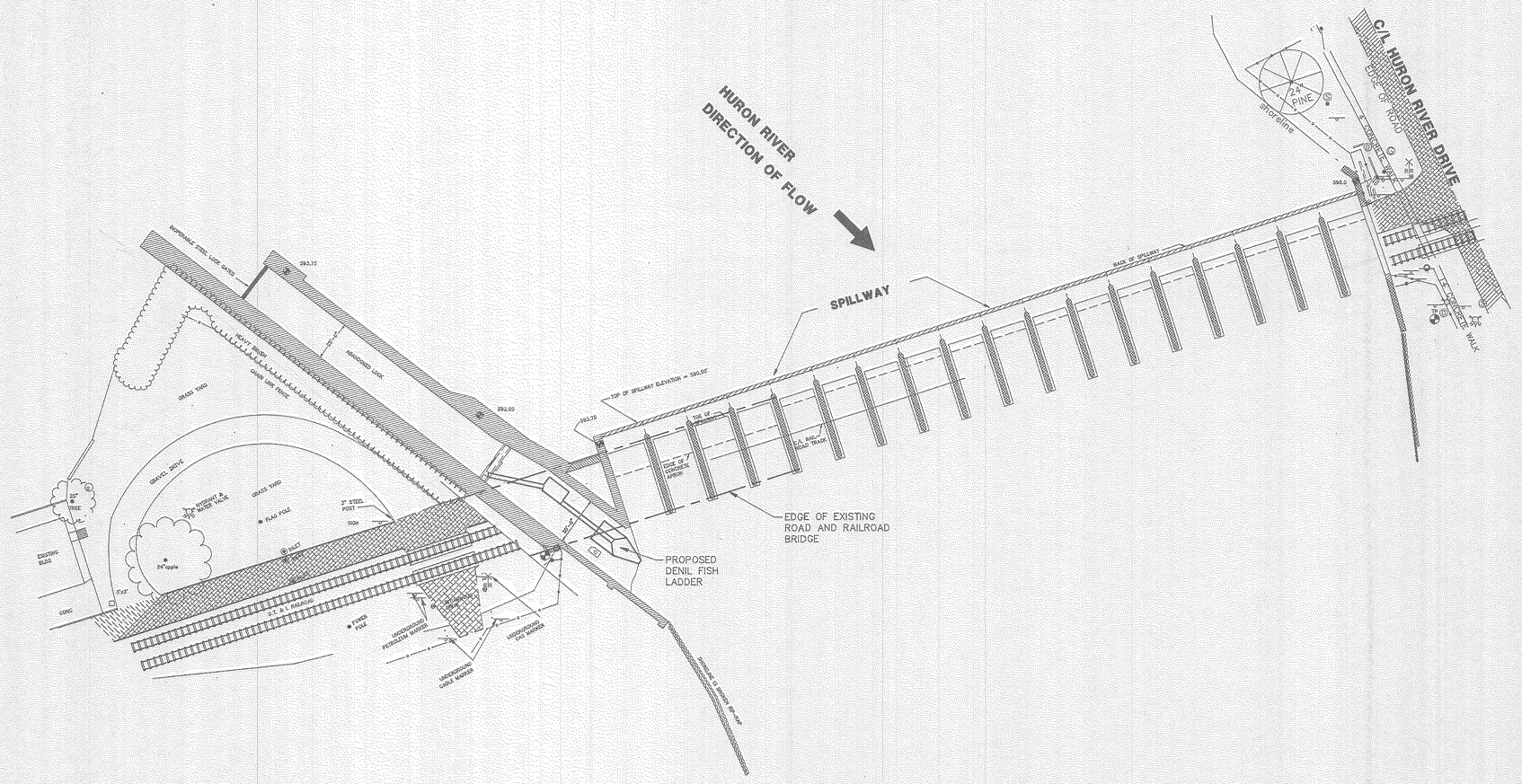

SITE PLAN
SCALE: 1"=40'-0"

LEGEND

- STORM INLET
- TP — 3" PLASTIC PIPE FOR TESTING PURPOSES
- LIGHT POLE
- S — SANITARY SEWER MANHOLE
- 6" WOODEN POST
- SIGN
- D — STORM SEWER MANHOLE
- G — GAS MANHOLE
- INDICATES WHERE A ABOVE GROUND PIPE ENTERS THE GROUND
- RR — RAILROAD CROSSING SIGNAL

SEE SHEET 2 FOR ATTACTION LINE ALIGHT

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AYRES, LEWIS, NORRIS & MAY, INC. ENGINEERS SURVEYORS
MAR 18 1994
ANN ARBOR, MICHIGAN

HURON RIVER FISHING ASSOC.
MICHIGAN UNITED CONSERVATION CLUB

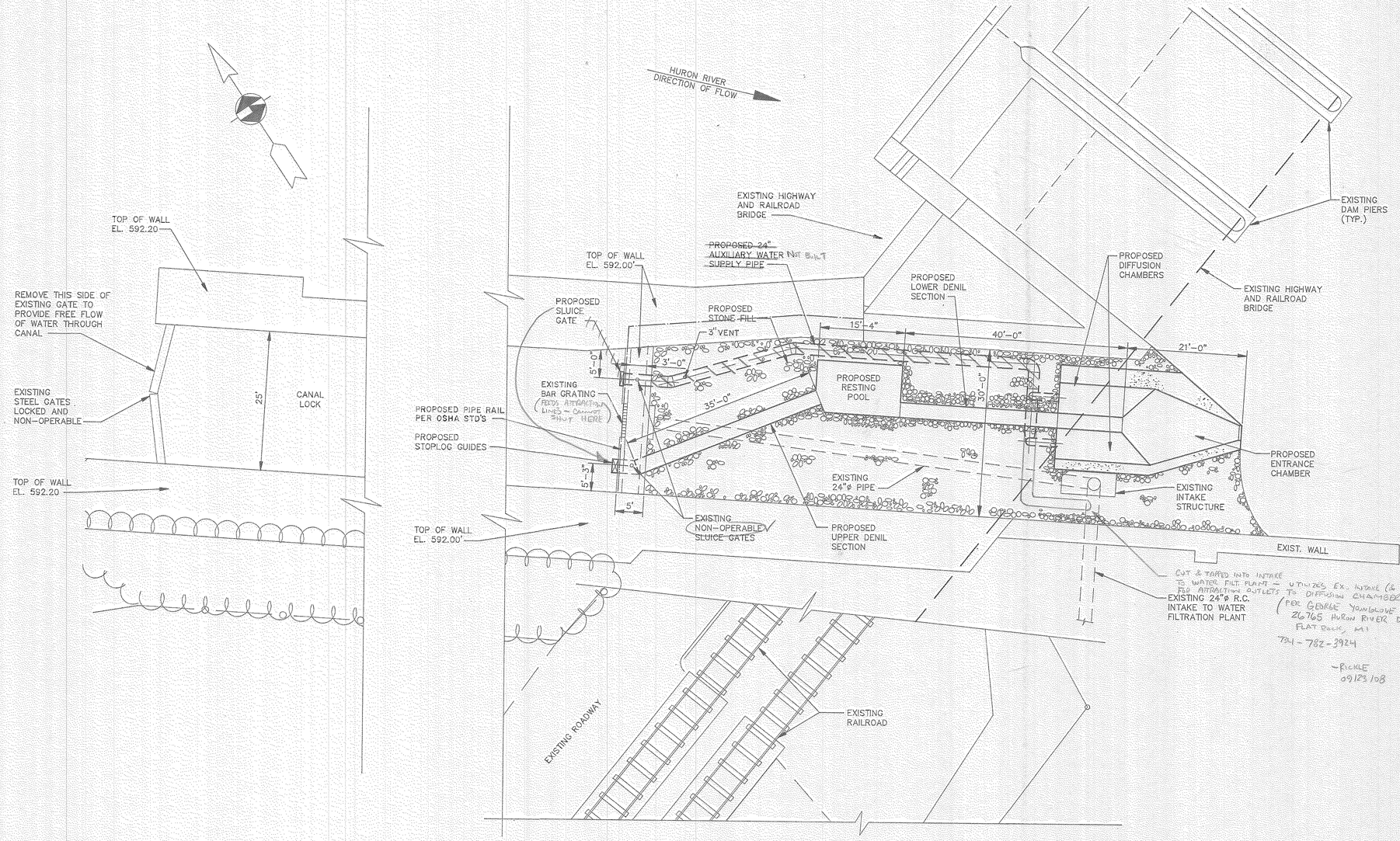
FLAT ROCK DAM/DENIL FISH LADDER SITE PLAN

Ayres, Lewis, Norris & May, Inc.
Engineers • Planners • Surveyors
3950 Research Park Drive
Ann Arbor, Michigan 48108
(313) 761-1010

SCALE: 1"=40'

92001–01

REVISION



DETAILED SITE PLAN

SCALE: 1"=10'-0"

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		--	ORIGINAL ISSUE:
DRAWN BY: P.A.Z.			CHECKED BY: U.M.

AYRES, LEWIS, NORRIS & MAY, INC.
ENGINEERS - PLANNERS - SURVEYORS

MAR 18 1994

ANN ARBOR, MICHIGAN

SEALED:

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MICHIGAN UNITED CONSERVATION CLUB

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DETAILED SITE PLAN

Ayres, Lewis, Norris & May, Inc.
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(313) 761-1010

SCALE: AS NOTED

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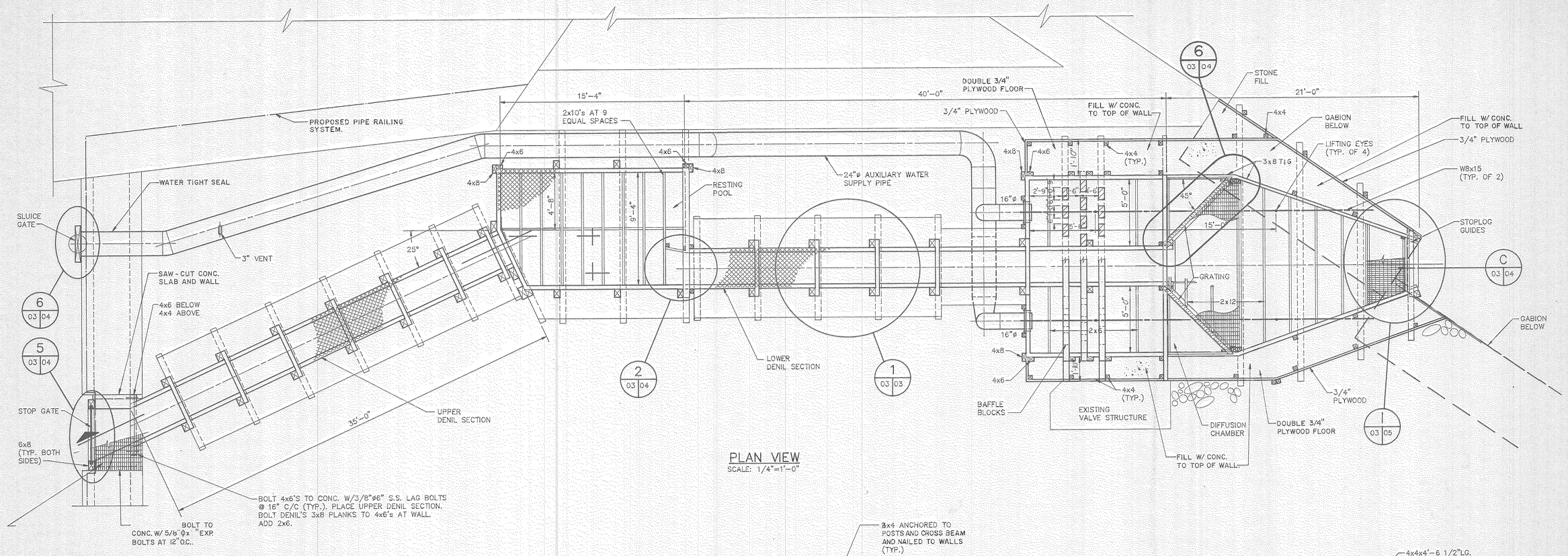
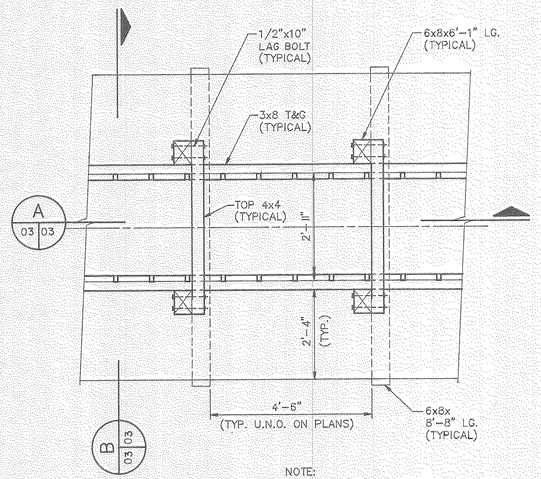
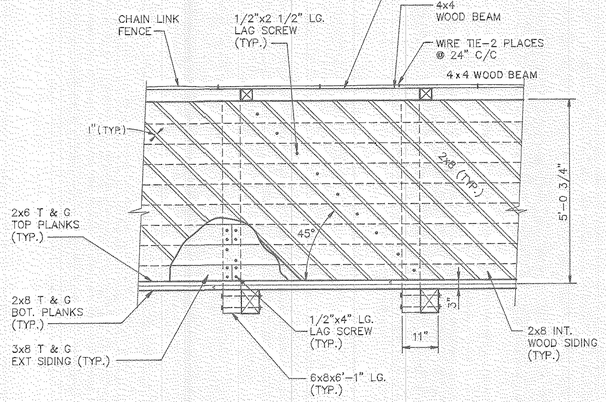


PLAN VIEW
SCALE: 1/4"=1'-0"

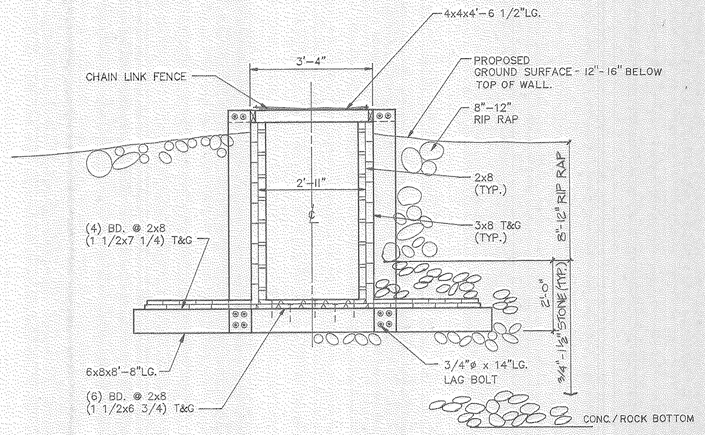


NOTE:
INSTALL CHAIN LINK FENCE ALONG TOP OF CHANNEL AND FISHWAY.

DETAIL 1 (03|04)
SCALE: 1/2"=1'-0"



SECTION A (03|03)
SCALE: 1/2"=1'-0"
(TYP. FOR UPPER & LOWER DENIL SECTIONS)



SECTION B (03|03)
SCALE: 1/2"=1'-0"
(TYP. FOR UPPER & LOWER DENIL SECTIONS)

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MAR 18 1994
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HURON RIVER FISHING ASSOCIATION
MICHIGAN UNITED CONSERVATION CLUB

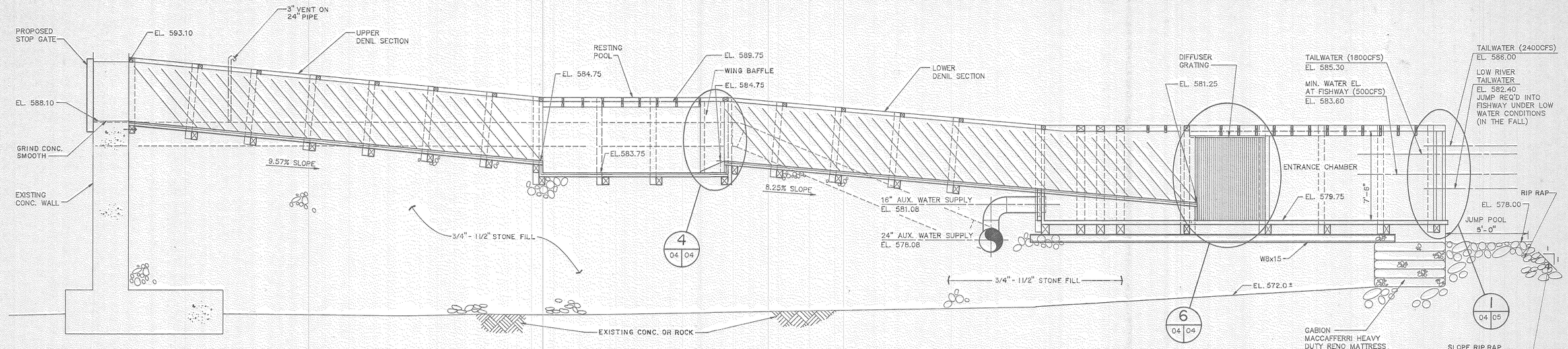
FLAT ROCK DAM/DENIL FISH LADDER PLAN, SECTIONS & DETAILS

Ayres, Lewis, Norris & May, Inc.
Engineers • Planners • Surveyors
3959 Research Park Drive
Ann Arbor, Michigan 48108
(313) 761-1010

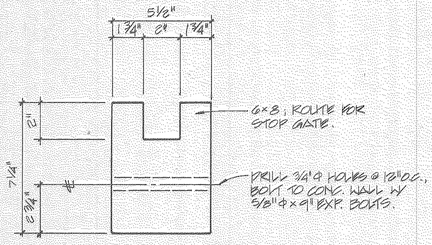
SCALE: – AS NOTED

92001–03

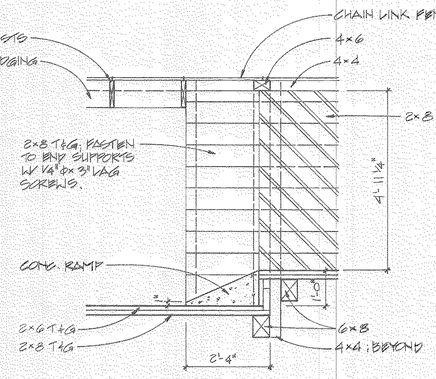
REVISION



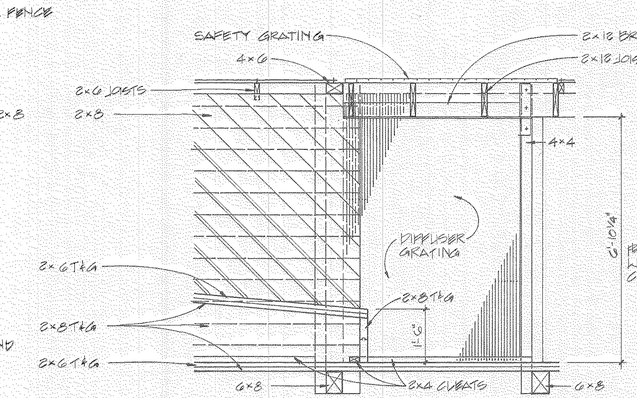
SECTION C
SCALE 1/4" = 1'-0" (04 | 03)



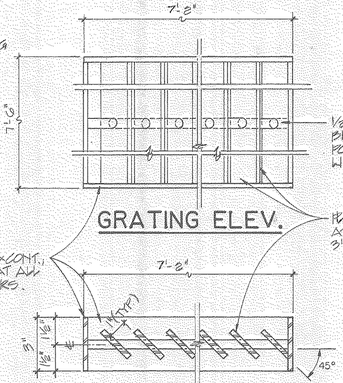
UPPER STOP GATE SUPPORT 2
SCALE 3" = 1'-0"



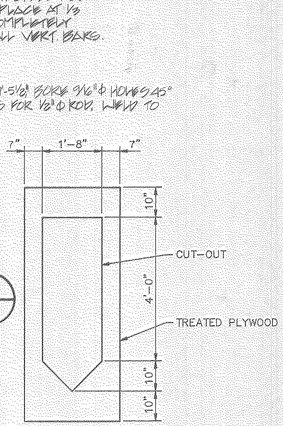
RAMP SECTION 4
SCALE 1/2" = 1'-0" (04 | 04)



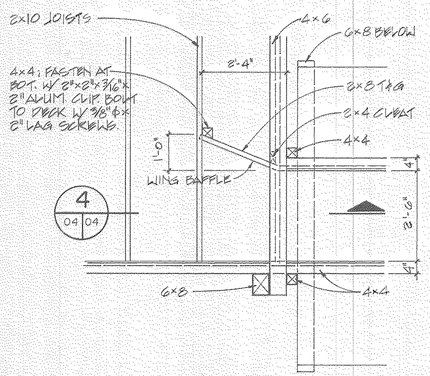
FRAMING AT GRATING SECTION 6
SCALE 1/2" = 1'-0" (04 | 04)



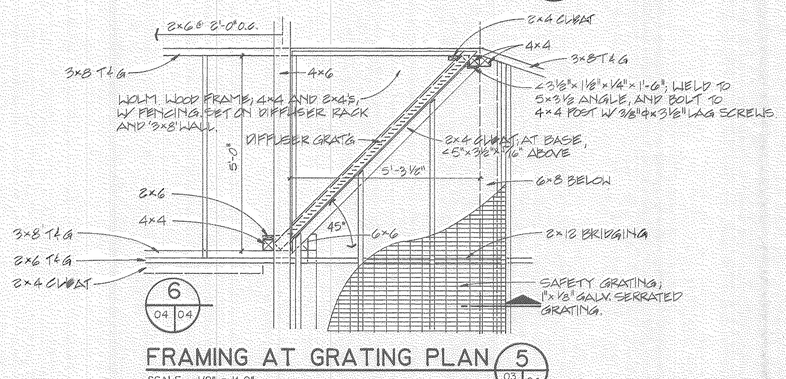
GRATING PLAN DETAIL 7
SCALE 3" = 1'-0"



TYP. DENIL BAFFLE DETAIL 8
SCALE: 1/2"=1'-0"
DIMS. ARE MEASURED IN PLANE OF BAFFLE



FRAMING AT RAMP PLAN 3
SCALE 1/2" = 1'-0" (03 | 04 | 04)



FRAMING AT GRATING PLAN 5
SCALE 1/2" = 1'-0" (03 | 04 | 04)

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	--	ORIGINAL ISSUE:	

DRAWN BY: L.D.W. CHECKED BY: U.M.

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MAR 18 1994

ANN ARBOR, MICHIGAN

SEALED:

HURON RIVER FISHING ASSOCIATION
MICHIGAN UNITED CONSERVATION CLUB

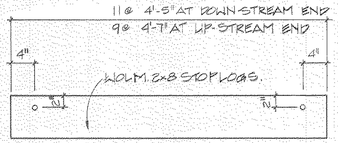
FLAT ROCK DAM/DENIL FISH LADDER SECTIONS & DETAILS

Ayres, Lewis, Norris & May, Inc.
Engineers • Planners • Surveyors
3959 Research Park Drive
Ann Arbor, Michigan 48108
(313) 761-1010

SCALE: – AS NOTED

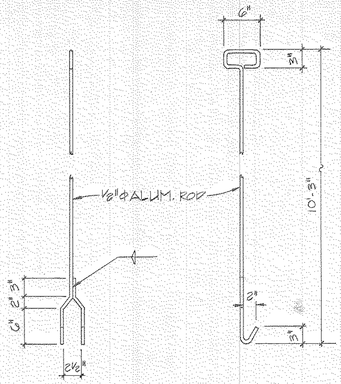
92001–04

REVISION



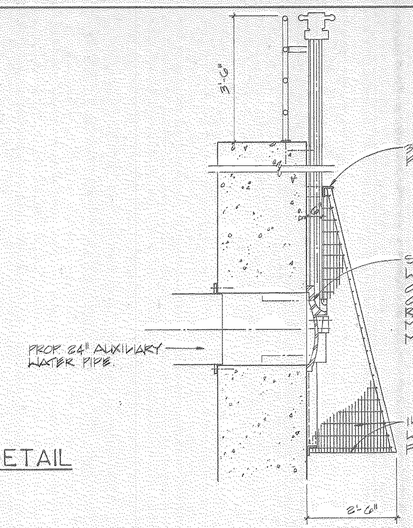
TYPICAL STOP LOG DETAIL

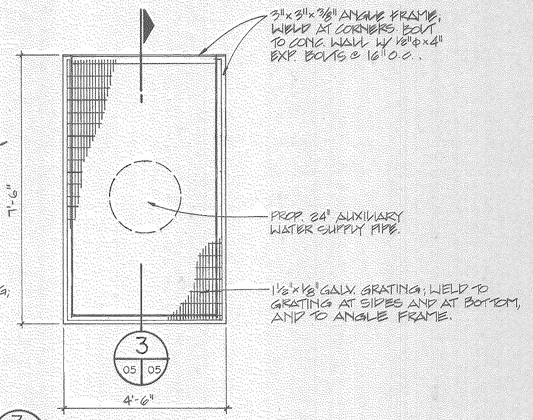
SCALE 1" = 1'-0"



STOPLOG LIFTING HOOK DETAIL

SCALE 1" = 1'-0" (2 REQ'D.)



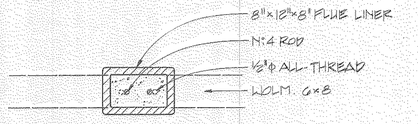


BAR RACK SECTION 3/05 05

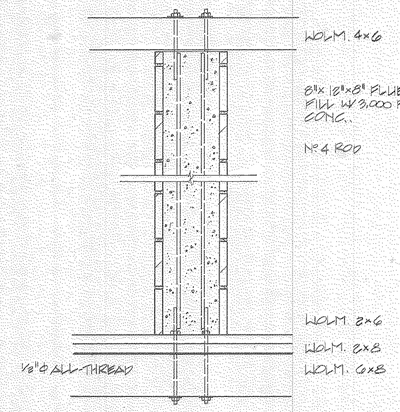
SCALE 1/2" = 1'-0"

BAR RACK ELEVATION 2/- -

SCALE 1/2" = 1'-0"



PLAN VIEW



TYP. BAFFLE SECTION DETAIL

SCALE 1" = 1'-0"

GENERAL NOTES

1. ALL TIMBER WORK SHALL COMPLY WITH "TIMBER CONSTRUCTION STANDARD". AITC 100 TIMBER GRADING SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN LUMBER STANDARDS AND WESTERN WOOD PRODUCTS ASSOCIATION.
2. PLYWOOD SHALL COMPLY WITH THE REQUIREMENTS OF AMERICAN PLYWOOD ASSN. AND MANUFACTURED UNDER U.S. PRODUCT STANDARD PS 1-83
3. ALL NEW TIMBER MATERIAL SHALL BE SOUTHERN YELLOW PINE, DOUGLAS FIR, HEM-FIR OR WESTERN HEMLOCK. ALL TIMBER SHALL BE PRESSURE TREATED WITH WOLMAN CCA WOOD PRESERVATIVE CHEMICALS CONFORMING TO AMERICAN WOOD PRESERVERS ASSOCIATION (AWPA) P-5.
4. TIMBER SEASONING SHALL BE "DRY" WITH A MOISTURE CONTENT LESS THAN 19%.
5. PLYWOOD USED FOR BAFFLES SHALL BE GRADE APA B-B, GROUP 1, EXTERIOR AND SHALL BE PRESSURE TREATED WITH WOLMAN CCA IN ACCORDANCE WITH ALU P-5.
6. PROVIDE SCREWS, BOLTS, WASHERS AND NUTS AS REQUIRED FOR INSTALLATION OF TIMBER. BOLTS OR SCREWS SHALL BE COMMON MEETING FEDERAL SPECIFICATION FF-13-571.
7. INSTALL TIMBER AS SHOWN ON DRAWINGS. SPLICES TO BE MADE AT SUPPORTS AND STAGGERED. A TIMBER SHALL BE LONG ENOUGH FOR MINIMUM 2 SPANS. WHERE TIMBER PLACED ON TIMBER, ARRANGE MEMBERS TO COVER PREVIOUS JOINT(S).
8. ALL TIMBER CONSTRUCTION SHALL BE PERFORMED BY MECHANICS SKILLED AT THE TRADE USING PROPER TOOLS, MACHINES, AND EQUIPMENT. ALL WORK SHALL BE ERECTED PLUMB AND TRUE.
9. FASTEN WOOD MEMBERS SECURELY TO ADJACENT CONSTRUCTION WITH BOLTS, WIRE TIES, ANCHORS, ETC. (GALVANIZED).
10. PRIOR TO FINAL ASSEMBLY ALL END CUTS AND OTHER CROSS SECTION SURFACES SHALL BE SATURATED WITH THREE APPLICATIONS OF WOOD PRESERVATIVES.
11. COMPLY WITH AITC 105 "RECOMMENDED PRACTICE FOR THE ERECTION OF STRUCTURAL TIMBER FRAMING.
12. CONCRETE FILL SHALL HAVE COMPRESSIVE STRENGTH OF 2500 PSI WITH 6± 1% AIR.
13. BASE FOR FISH LADDER IS WITH LIMESTONE AND SHALL MEET ASTM C-33 (3/4" TO 1 1/2") #4 AGGREGATE SIZE.
14. BASE STONE SHALL BE GRADED AS SHOWN ON DRAWINGS.
15. SURFACE LIMESTONE SHALL BE 5"-12" SIZE RIP RAP.
16. GABION FILL LIMESTONE SHALL MEET ASTM-C33 #1 (3"-4" SIZE)
17. FLOOR DECKING AND LADDER SIDE WALLS (3"X8" SIZE WOOD PLANKS) SHALL BE FASTENED TO SUPPORTS WITH 1/2"X6" LAG SCREWS.
18. INSTALL CHAIN LINK FENCING ON TOP OF LADDER AND POOLS.
19. ALL FLOOR DECKING WITHIN THE FISH LADDER AND POOLS SHALL HAVE EDGES BEVELED 60°.
20. ALL HAND RAILS, BAR RACKS, AND DIFFUSER SCREEN SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
21. ALL WELDING SHALL CONFORM TO LATEST REQUIREMENTS OF AWS (AMERICAN WELDING SOCIETY).
22. THE PROJECT IS BEING CONSTRUCTED BY THE MICHIGAN UNITED CONSERVATION CLUB AND THE HURON RIVER FISHING ASSOCIATION WITH THE CORPORATION OF MICHIGAN DEPARTMENT OF NATURAL RESOURCES.
23. CONTRACTOR SHALL INSTALL TEMPORARY COFFERDAM (BOX TYPE) BEFORE DRILLING TAPE OPENINGS ON THE WALL.
24. ALL DEBRIS, LARGE STONES AND STICKS AND THE LIKE, SHALL BE REMOVED AND DISPOSED OF AND THE ENTIRE DISTURBED AREA SHALL BE RESTORED TO THE ORIGINAL CONDITION.
25. CONTRACTOR SHALL SAW CUT AND REMOVE THE EXISTING WALKWAY AT THE EXIT OF THE FISH LADDER WHEREVER THE SLAB INTERFERES WITH THE TOP LOGS FRAME, BAR RACK FRAME AND TEMPORARY COFFER DAM (BOX TYPE).

BILL OF MATERIALS

Item	Description	Quantity	Remarks
1.	Limestone (3/4"-1 1/2" size) for base	2600T	ASTM C-33 #4 aggregate
2.	Limestone 8"-12" rip rap for surface	850T	
3.	Gabion Fill Stones (3"-4" size)	285T	Gabion fill stone ASTM C-33 #1
4.	Gabions 6'x12'x5' / 6'x9'x9'	20 / 20	Maccaferri heavy duty mattress, 6'-0" wide 9" thick heavily zinc coated wire mesh of double twist hexagonal opening 2-1/2"x3-1/4"
5.	Plywood 1/2" thick for baffles	1500 SFT	Treated
6.	Wood decking and side walls (3" and 2" thick planks)	8.5 MBF	Treated
7.	Wood framing	6.0 MBF	Treated
8.	Chain link fencing	1000 SFT	Fabric #9 ga. finished size steel wires, 2" mesh. Aluminized ASTM A491 CL II.
9.	Sluice gate	1	CM-10 by watermain company or, equivalent. Include, extra stem to operate gate and bent plate with anchor bolts to connect the gate frame to exist wall.
10.	Diffusers:	260	#4 rebbeil bar 120# to reinforce block. The cores should be grouted later.
11.	Concrete	65 CYD	2500 psi concrete min. 5.2 sacks of cement, add air entrainers (6±1%)
12.	Diffuser screens (2 reg.)	73 Plates: 2" x 1/4" x 6'-9" 4 Horiz. Plates: 3" x 1/4" x 7'-6-1/4" 4 End Plates: 3" x 1/4" x 6'-9" 4, 1/2"ϕ steel rods (smooth), place at third points and weld at every bar	Steel plates and rods A-36. Hot Dip galvanized the rack after fabrication.
13.	Pipe hand rails - upstream side, 3'-6" high with 4 rails at equal spaces	30 LFT 1 1/2"ϕ SCH.40 pipe posts and railing max. spacing of posts 8'-0"	Galvanized - Posts are welded to 1/2"x6"x6" base plat. Base plate is installed on concrete using 4, 1/2"ϕ expansion anchor bolts. (min. 3 1/2" EMB. length)
14.	Bar racks - upstream side	11/2"x1/8" Bar grating with 3" x 3" x 3/8" angle frame.	Galvanize the whole fabrication.
15.	24"ϕ steel pipe - ASTM - A572 min. 1/4" thick.	100'0"	Bends, tees, flanges etc. as per drawings.
16.	16"ϕ steel pipe - ASTM - A572 min. 1/4" thick.	20'0"	10'0" long 16" ϕ pipe connection from 24"ϕ pipe to diffusion chambers - - bends, tees, flanges etc.. As shown on drawings.

NOTES:
1. QUANTITIES GIVEN IN THE BILL OF MATERIALS ARE APPROXIMATE.
2. QUANTITIES FOR ANCHOR BOLTS, LAG BOLTS, SCREWS, NAILS, WIRE TIES ETC. REQUIRED ARE TO BE ESTIMATED FROM THE DRAWINGS.

LOWER STOP GATE PLAN 1/03 05

SCALE 1/2" = 1'-0"

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		2/94	ORIGINAL ISSUE:
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ENGINEERS - PLANNERS - SURVEYORS
MAR 18 1994
ANN ARBOR, MICHIGAN
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MICHIGAN UNITED CONSERVATION CLUB

FLAT ROCK DAM/DENIL FISH LADDER SECTION DETAILS & PLANS

Ayres, Lewis, Norris & May, Inc.
Engineers • Planners • Surveyors
3959 Research Park Drive
Ann Arbor, Michigan 48108
(313) 761-1010

SCALE: - AS NOTED

92001-05

REVISION

Wm SMITH

GROVER STOFLET

C.E. YOST

JOHN CHAMBERLIN

PENNSYLVANIA R.R. CO. ROW

NORMAN MACKIE ROAD

26

25

KATE CARNEY BIGELOW
54.20 A.

NOTE: This Parcel Deeded To Huron County Road Commissioners 11/1913

ELMSTEAD

FRANK H. STOFLET
26.29 A.

BAYOU

HURON RIVER

NORMAN MACKIE
42.25 A.

8.19 A.

ORVILLE MOSES

JOHN CHAMBERLIN

1/4 Corner Section 26

WILLIAM F. ERNEST
63.7 A.

DAME BROTHERS

1/4 Corner Sec 25

IDA GLASS
26.74 A.

6.17 A.

8.31 A.

17.13 A.

OREN C. THOMPSON
76.90 A.

THOMPSON BAYOU

BUNTE BROS.

S. VREELAND

108 A.

BUNTE BROS.

CHAS. LEE WILLIAMS

T.D. SMITH
&
S.H. SMITH

JOHN C. NEAR

S.H. SMITH

35

36

CHAS. LEE WILLIAMS

CHAS. LEE WILLIAMS

HURON TWP.

WAYNE CO.

T3S. R9E
T3S. R9E

ASH TWP.

MONROE CO.

590 FT. ELEV. FLOW LINE TRAVERSE AT FLATROCK — MICHIGAN

SCALE 1"=300'

JAN. 1931

Notes: All bearings and courses of lines are referred to The Meridian as determined by Solar Observation.

Traverse Lines are run 0.5 foot above proposed Pond Level.

HURON TWP.
BROWNSTOWN TWP.

GEORGE CASE

GEORGE CASE
199.85 A.

George W. Case
20.1 Acres

S. VREELAND

BUNTE BROS.

257.3 A.
FLAT ROCK MFG. CO.

VILLAGE OF FLAT ROCK

N

(Proposed Water Level El. 590.0)

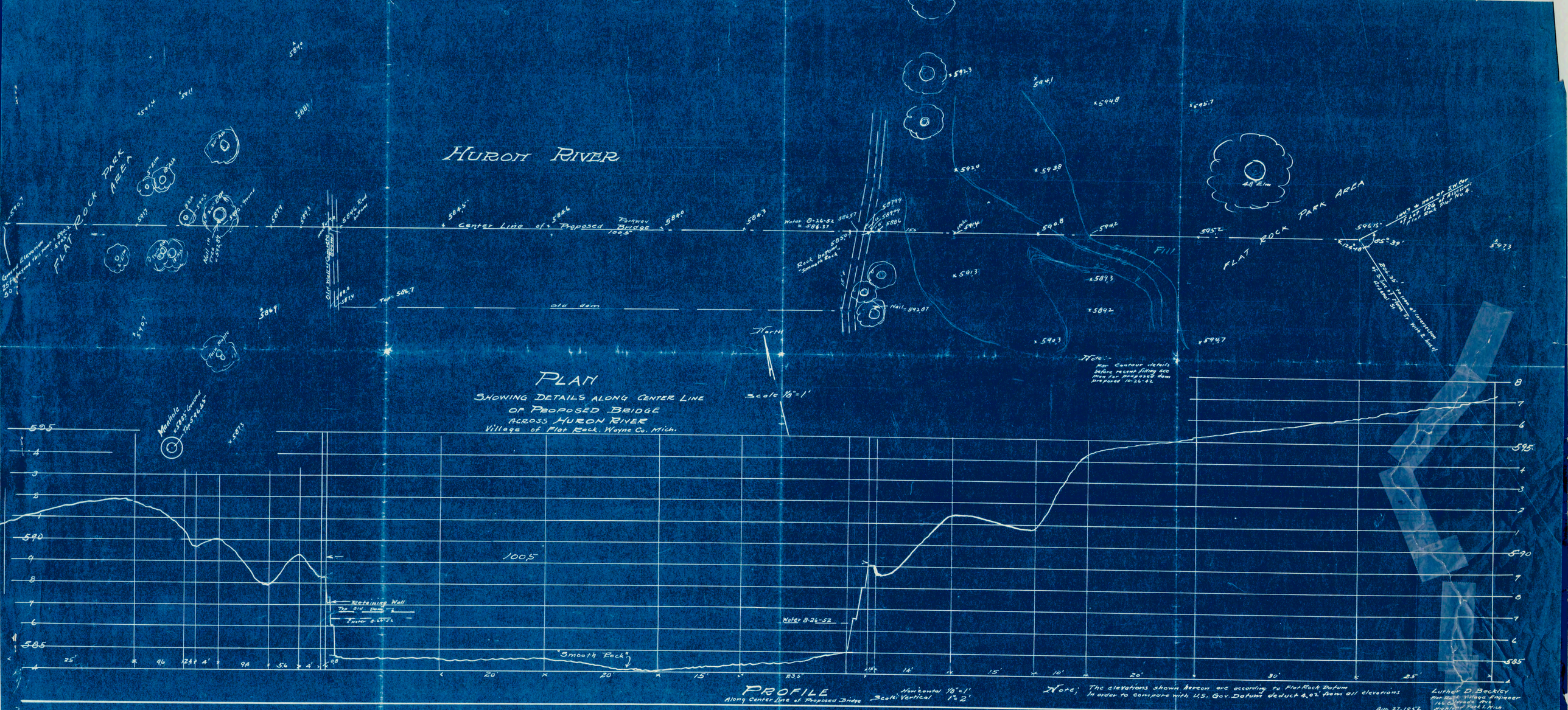
Present Water Level El. 587.5

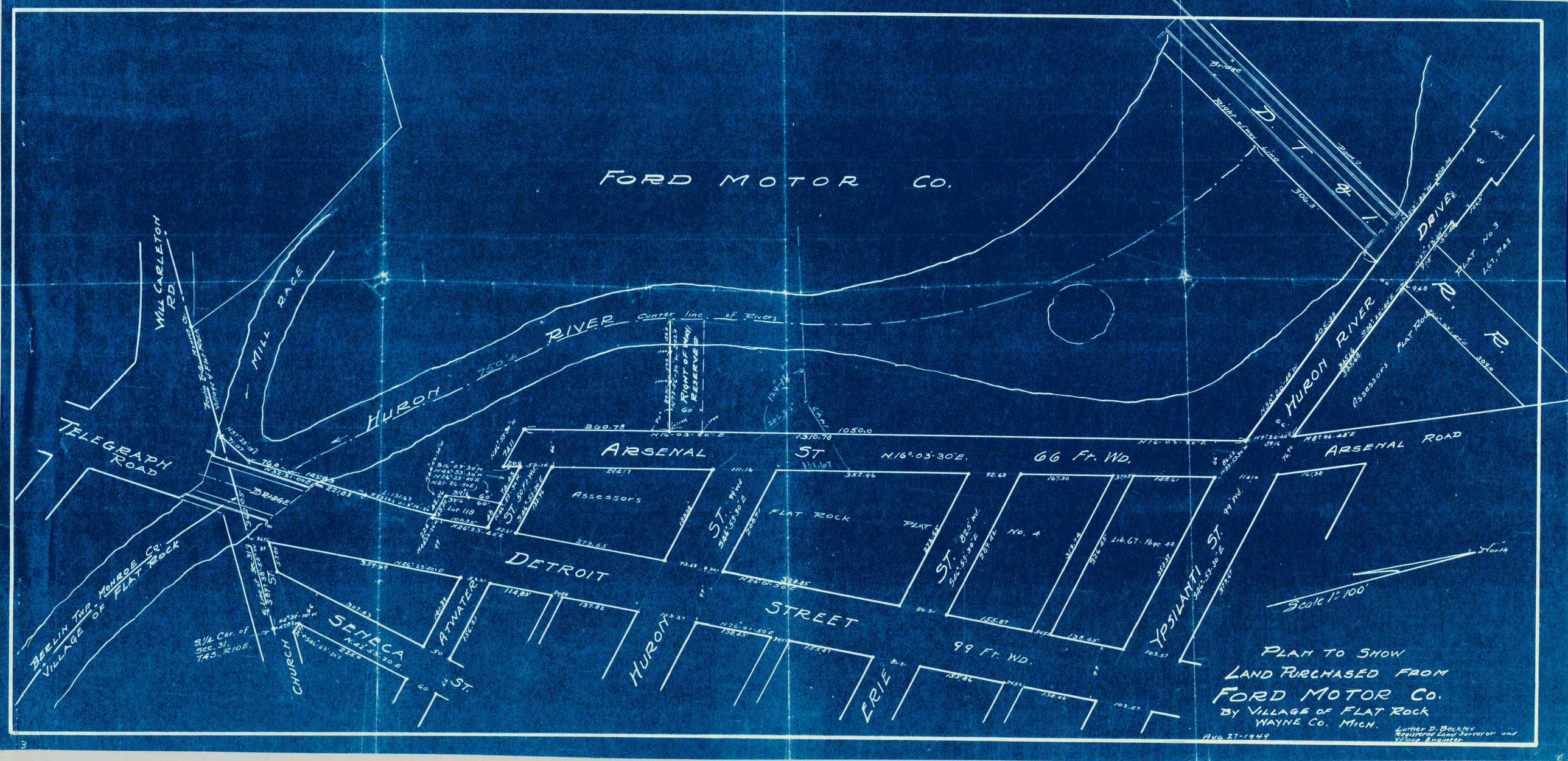
Toll Race Water El. 579.0

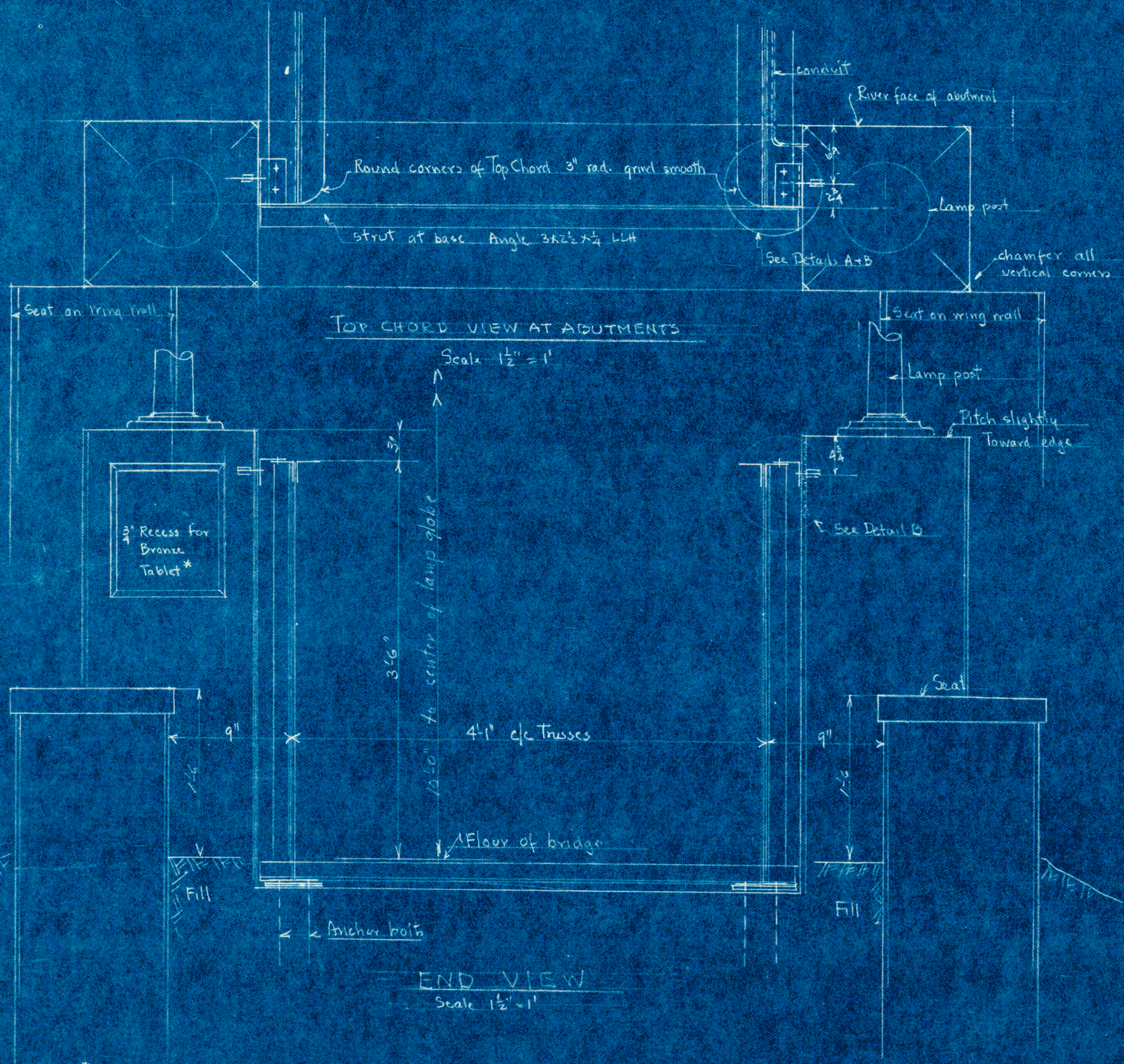
DIAGRAMATIC SECTION AT DAM

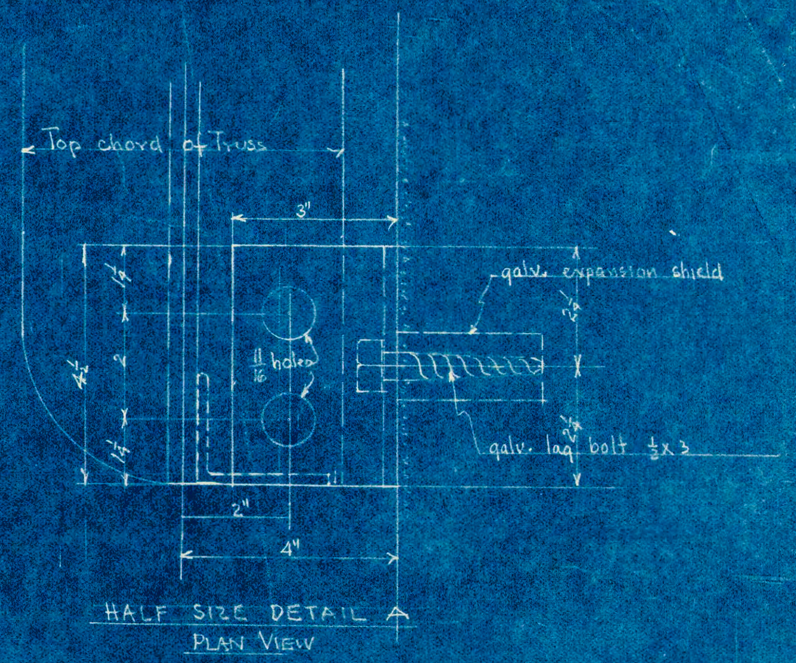
Scale 1"=10'

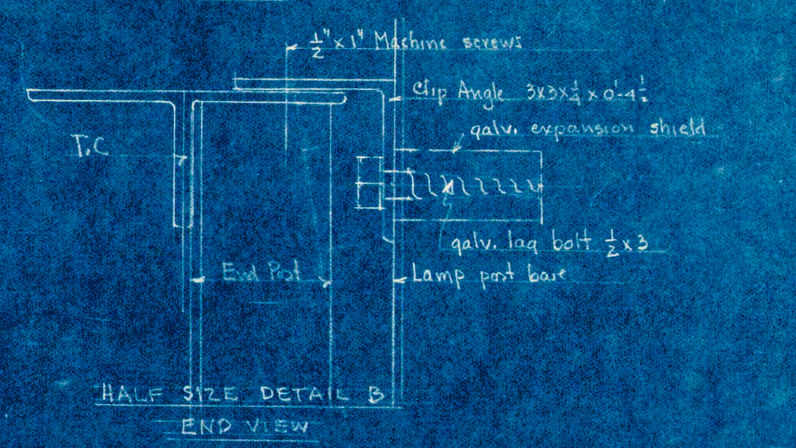
NOTE:- Elevations shown on this map are referred to a datum which is 0.8 foot above Sea Level datum as established by the U.S.G.S. Bench Mark 3½ miles west of Flat Rock. To get true elevations add 0.71 foot to elevations shown.


HURON RIVER
FLAT ROCK PARK AREA
Center Line of Proposed Parkway Bridge
100.5'
Old Dam
Top 586.7
Water 8-26-52 586.37
Rock Bottom "Smooth Rock"
Nail = 592.87
Fill
48" Elm
Note:- For Contour details before recent filling see Plan for proposed dam prepared 10-26-42
North
PLAN
SHOWING DETAILS ALONG CENTER LINE OF PROPOSED BRIDGE ACROSS HURON RIVER
Village of Flat Rock, Wayne Co. Mich.
Scale 1/8"=1'
Manhole
Retaining Wall
Top Old Dam
Water 8-26-52
"Smooth Rock"
100.5'
PROFILE
Along Center Line of Proposed Bridge
Horizontal 1/8"=1'
Scale: Vertical 1"=2'
Note; The elevations shown hereon are according to Flat Rock Datum
In order to compare with U.S. Gov. Datum deduct 4.02' from all elevations
Luther D. Beckley
Flat Rock Village Engineer
166 Colorado Ave.
Highland Park 3, Mich.
Aug. 27-1952

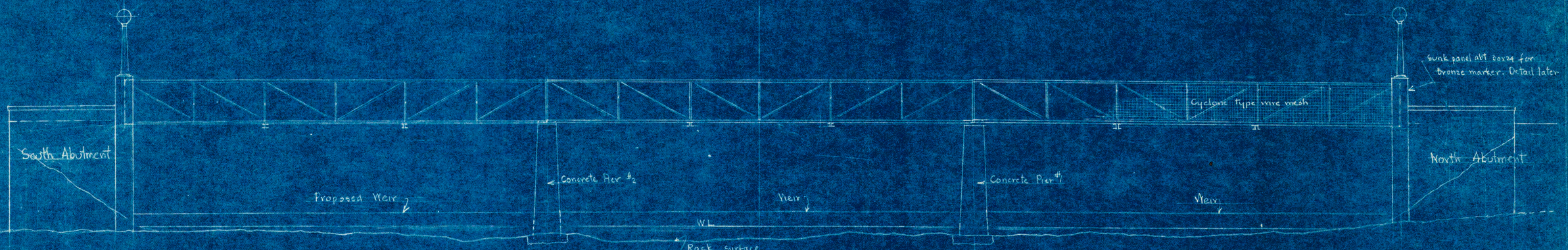

FORD MOTOR CO.
D. T. & I. R. R.
Bridge
Right of Way Line
300.3'
Town 2
DRIVE
Plat No 3
L.67, P.43
HURON RIVER
Assessors Flat Rock Plat
R. R.
MILL RACE
WILL CARLETON RD.
HURON
750.4'
RIVER
Center line of River
RIGHT OF WAY RESERVED
60'
TELEGRAPH ROAD
BRIDGE
ARSENAL ST
N.16°-03'-30"E.
66 Ft. Wd.
ARSENAL ROAD
Assessors
FLAT ROCK PLAT No. 4
L.16, P.44
ST. 99' Wd.
ST. 82.5' Wd.
DETROIT STREET
99 Ft. Wd.
HURON ST.
ERIE
YPSILANTI ST.
SENECA
ATWATER
CHURCH
BERLIN TWP. MONROE CO.
VILLAGE OF FLAT ROCK
S1/4 Cor. of Sec. 31, T.4S., R10E.
Scale 1" = 100'
PLAN TO SHOW
LAND PURCHASED FROM
FORD MOTOR CO.
BY VILLAGE OF FLAT ROCK
WAYNE CO. MICH.
Aug. 27-1949
Luther D. Beckley
Registered Land Surveyor and
Village Engineer



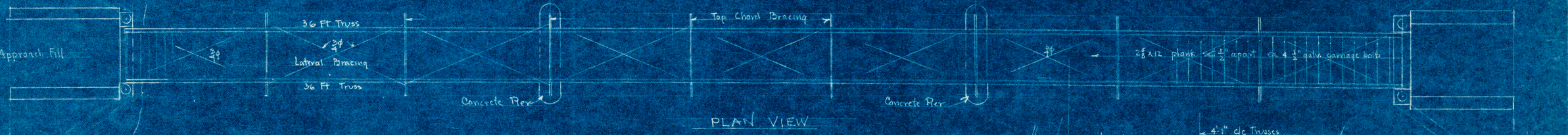




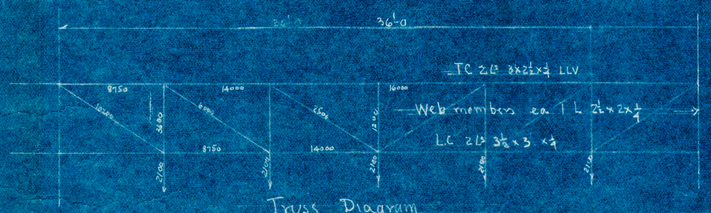
	Proposed Pony Truss Bridge over the Huron River For the Village of Flat Rock Mich
Job 53-103 Sh 4	L. D. Beckley Village Engineer William H Adams Consulting Engineer



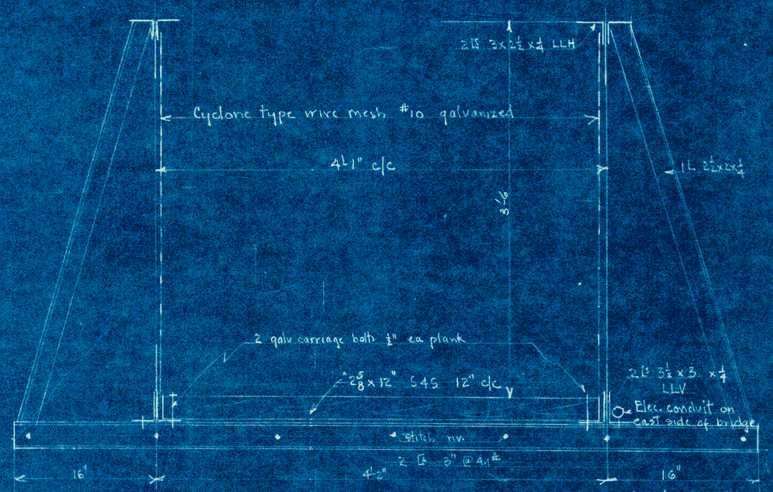
ELEVATION — LOOKING UP-STREAM
Scale 1" = 4 Ft.



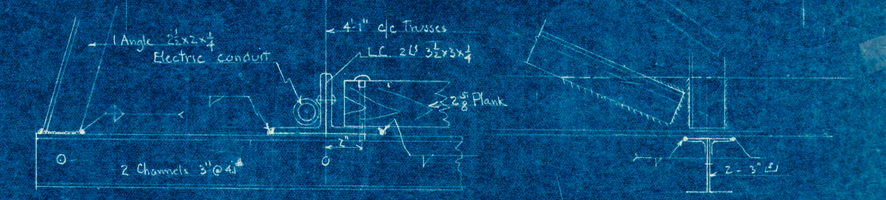
PLAN VIEW

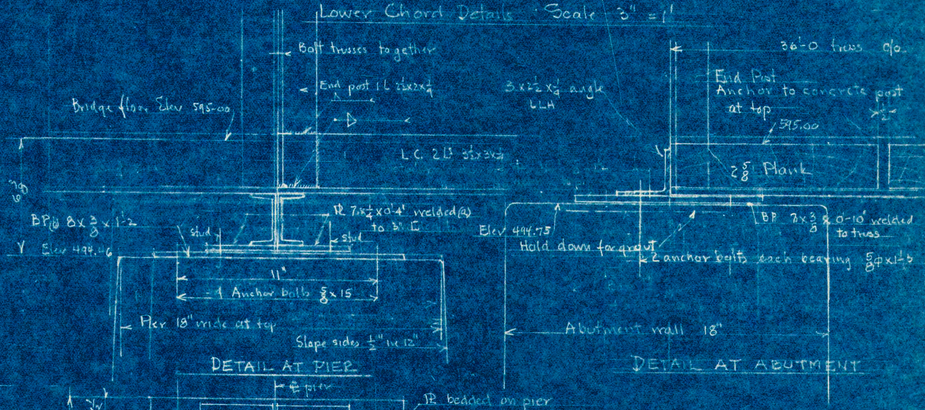


Truss Diagram
Cr Regd



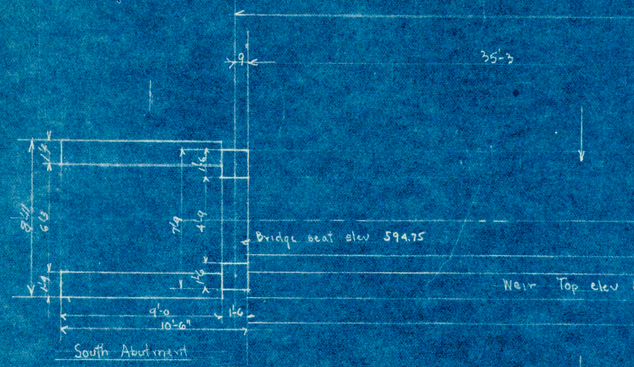
TYPICAL CROSS SECTION
Scale 1½" = 1'

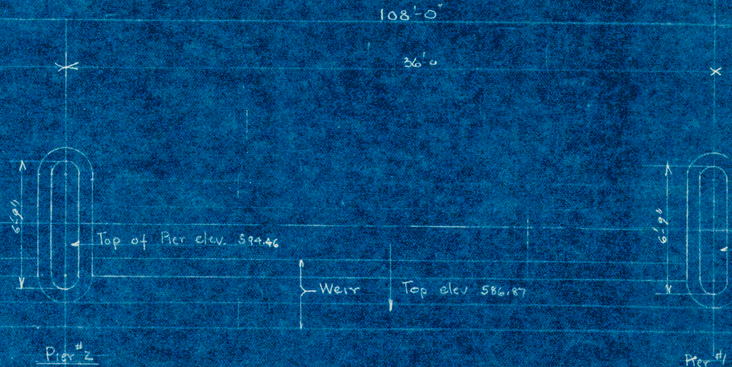


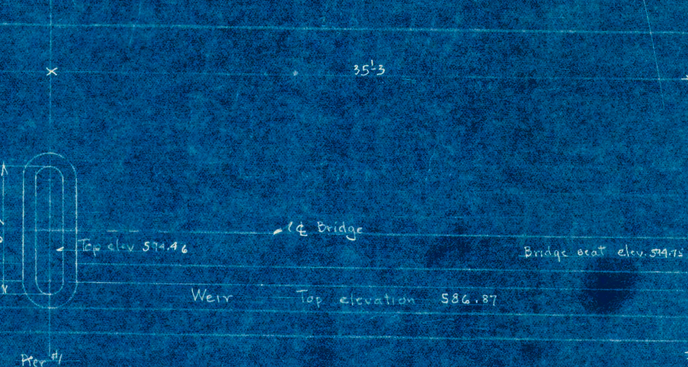


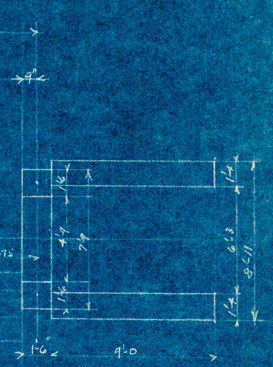
Approved Luther D Beckley
Jan 16-1950 Village Engineer

	Proposed Pony Truss Bridge over the Huron River For the Village of Flat Rock, Mich.
Job 50-103	Luther D Beckley Village Engineer
Sh. 1	William H Adams Consulting Engineer

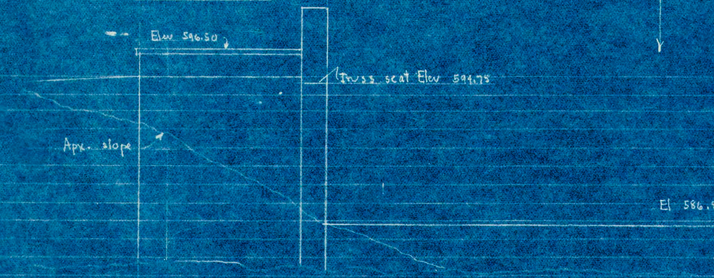


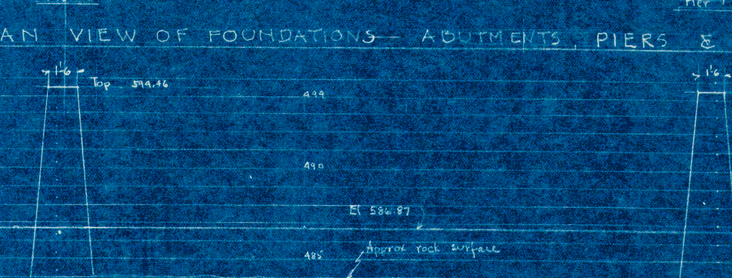


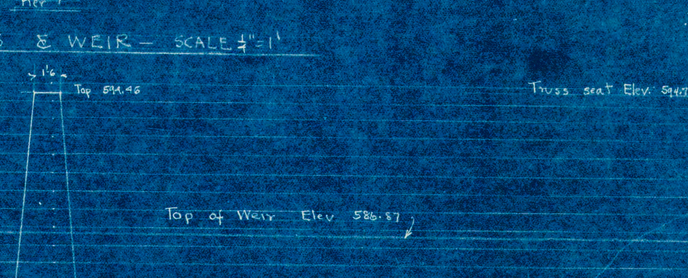


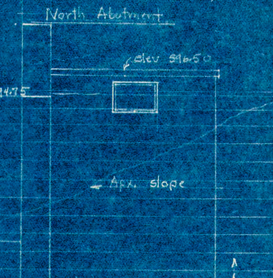


PLAN VIEW OF FOUNDATIONS — ABUTMENTS, PIERS & WEIR — SCALE $\frac{1}{4}$"=1'

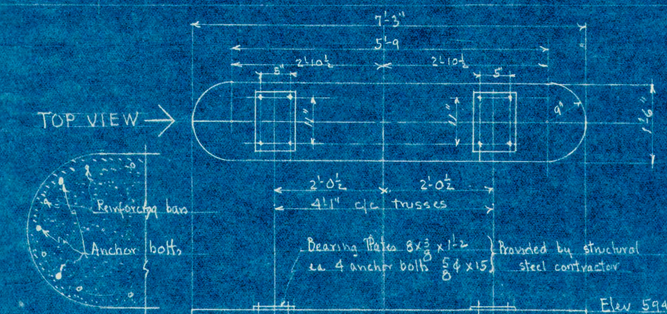


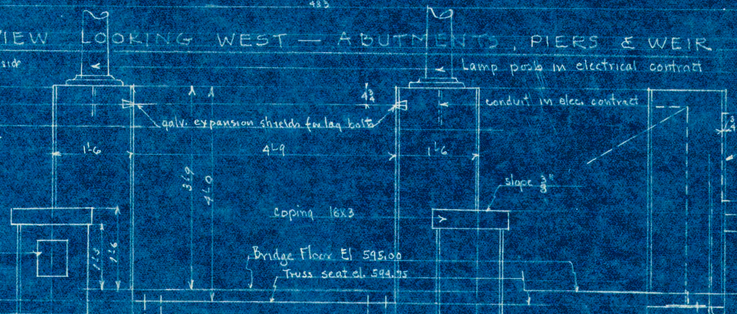


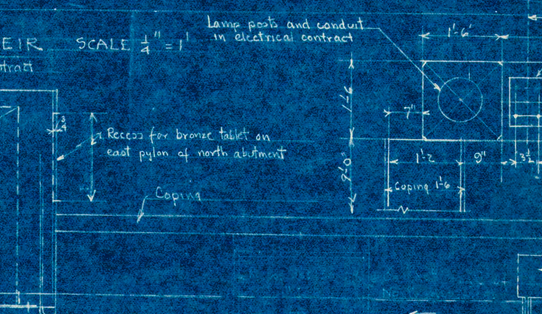


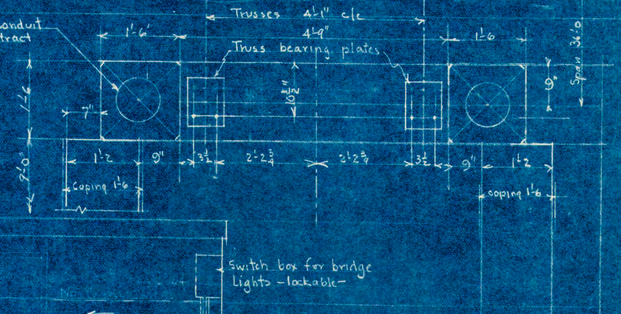


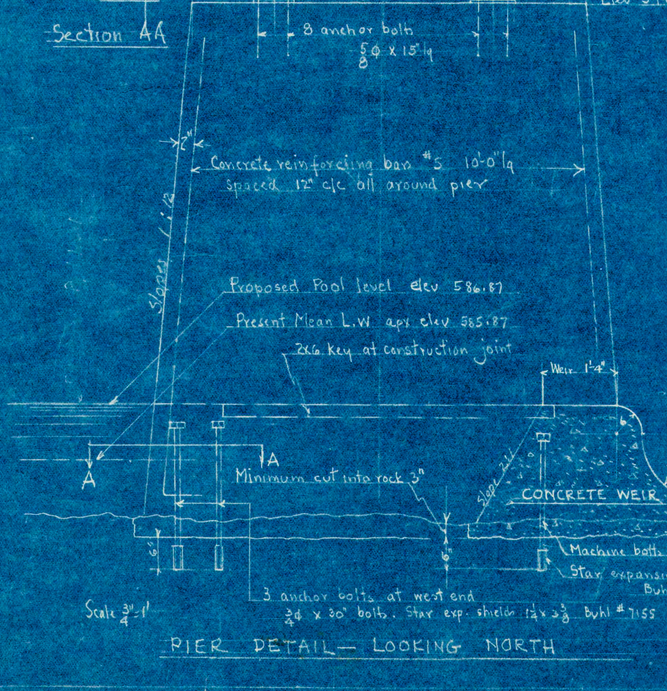
VIEW LOOKING WEST — ABUTMENTS, PIERS & WEIR SCALE $\frac{1}{4}$"=1'

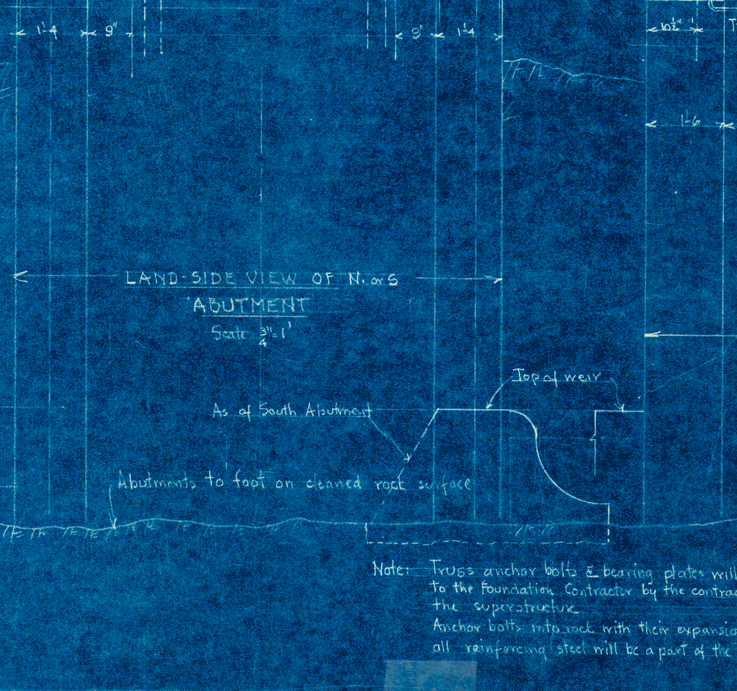


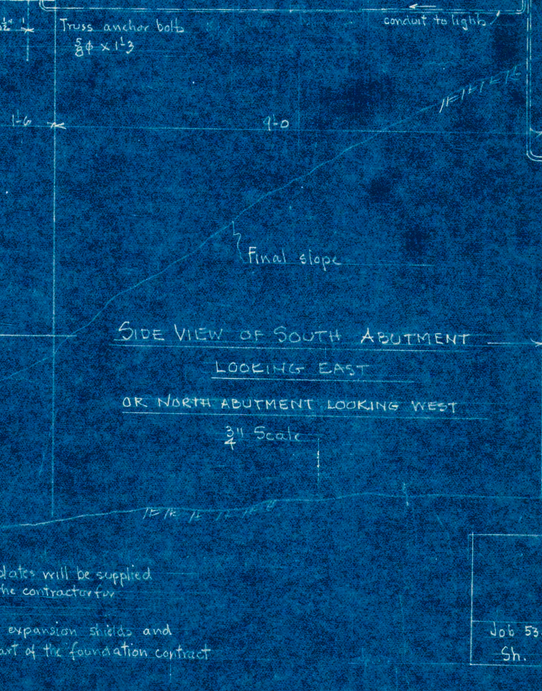












Note: Truss anchor bolts & bearing plates will be supplied to the Foundation Contractor by the contractor for the superstructure. Anchor bolts into rock with their expansion shields and all reinforcing steel will be a part of the foundation contract

Job 53-105
Sh. 2

Proposed Pony Truss Bridge
over the Huron River
For the Village of Flat Rock, Mich.

L. D. Beckley Village Engineer
William H. Adams Consulting Engineer

Proposed Pony Truss Bridge over the Huron River For the Village of Flat Rock Mich

L. D. Beckley Village Engineer

William H Adams Consulting Engineer

Job 53 103

Sh 3