CITY OF TACOMA

Tacoma Power / Generation

ADDENDUM NO. 2 **DATE:** February 26, 2021

REVISIONS TO:
Request for Bids Specification No. PG20-0314
Cowlitz Falls Barrier Dam Repair Project

NOTICE TO ALL BIDDERS:

This addendum is issued to clarify, revise, add to or delete from, the original specification documents for the above project. This addendum, as integrated with the original specification documents, shall form the specification documents. The noted revisions shall take precedence over previously issued specification documents and shall become part of this contract.

REVISIONS TO THE SUBMITTAL DEADLINE:

The submittal deadline has been changed to 11:00 a.m., Pacific Time, Tuesday, March 23, 2021.

REVISIONS TO THE GENERAL INFORMATION AND REQUIREMENTS:

Site visit to the left bank is scheduled for Friday, March 5, 2021.

REVISIONS TO THE SPECIAL PROVISIONS:

Replace Section 01010 Summary of Work, Page 3 with revised page: Liquidated damages limit added.

Replace Section 46 80 10 Bulkhead Gate, Page 4 with revised page: Addition of acceptable manufacturer.

QUESTION AND ANSWER RESPONSES:

1. Question: Can work take place below OHW and outside the inwater work areas?
   a. Answer: Yes, temporary work will be needed to access and construct the cofferdam. Upstream of the Dam the AWS may not be blocked. Downstream of the dam the Right Fish Entrance must remain clear.

2. Question: Please provide soils reports or boring logs in the vicinity of the barrier dam if possible.
   a. Answer: Tacoma Power can confirm that the top 10 feet are gravels. We are currently locating the soils/geology reports in the offsite archive. If information is found, we will provide it in another addendum.

3. Question: Can there be a site visit to view the left abutment?
   a. Answer: Yes, it is being scheduled, see procurement requirements.

4. Question: Please provide the as-built drawings of the Barrier Dam.
   a. Answer: As-builts are provided as attachment 2.

5. Question: Please provide all the permits stated in Section 01040- 1.3 Permits
   a. Answer: Addendum 1 included final or draft copies of these permits as appropriate.

6. Question: Section 01040 states that the in-water work windows be phased over three years. Can these in-water window years be altered/ re-sequenced by the contractor to best fill their river diversion plan?
   a. Answer: Yes, however consider that stage 3 has a shorter duration due to being adjacent to the right (and only functional) fish entrance. Access to the right fish entrance must not be impeded.

7. Question: Can the Gravel Augmentation placement be performed outside the In-water window?
   a. Answer: Yes, Gravel Augmentation can be performed outside the In-water work window.

8. Question: Section 01400 discusses quality control and states in 1.2 A that "Construction inspection and testing for the City will be performed by a City employee or others as the City may designate and as the construction situation may dictate". Section 01 40 00 seems to indicate that the contractor will be responsible for quality control. Further in 3.2 G the specification states that "The required tests and frequencies are shown in Table 2". I cannot find a Table 2. Is it the intent for the City to be responsible for onsite testing and inspection?
   a. Answer: The Contractor is responsible for performing Quality Control per section 01 40 00. The Engineer is performing Quality Assurance and selected onsite material testing for QA purposes. City of Tacoma will be performing Quality Verification. Section 3.2 G should read: "The required test and frequencies are shown in Table 1."

9. Question: Section 01040, Paragraph 1.3 – Permits lists all the permits obtained by the City. Are these permits available to review for bidding purposes?
   a. Answer: Addendum 1 included final or draft copies of these permits as appropriate.

10. Question: Is the pre-bid meeting for the above referenced project mandatory?
    a. Answer: Pre-bid meeting is not mandatory. The site visits are not mandatory.

11. Question: The Specifications require the Contractor to provide a Water Control plan for both the Engineer and FERC approval. These details will require considerable engineering to prepare a plan and proper estimate for this work during the bidding phase. With the current 3 week bid period provided this will be very difficult to accomplish. It is requested that you extend the bid schedule by 4 weeks in order for bidding contractors to properly evaluate, develop and estimate these requirements.
    a. Answer: Bid Period was extended 3 weeks in Addendum 1 to March 23rd.

12. Question: Please provide the date for the last day of questions.
    a. Answer: In order to prepare the final addendum, it is requested that all questions be submitted by March 10th.

13. Question: Please provide the date for the last issuance of the final addendum.
    a. Answer: The last addendum must be issued 7 days prior to the bid date. At this time it is planned for March 16th.

14. Question: Is there a limit on liquidated damages?
    a. Answer: See specification change section.

15. Question: Are aeration pipes plugged?
    a. Answer: Assume that the existing aeration pipes are plugged with sand/organics.

REVISIONS TO THE PLANS:

Addition of barrier dam as-built drawings:

• MA2775	Mossyrock Salmon Hatchery Barrier Dam	Standard Details Sheet 1
• MA2776	Mossyrock Salmon Hatchery Barrier Dam	Standard Details Sheet 2
• MA2778	Mossyrock Salmon Hatchery Barrier Dam	Excavation Sheet 1
• MA2779	Mossyrock Salmon Hatchery Barrier Dam	Excavation Sheet 2
• MA2782	Mossyrock Salmon Hatchery Barrier Dam	Fish Barrier, Abutments, and Entrance Structures
• MA2783	Mossyrock Salmon Hatchery Barrier Dam	Fish Barrier Concrete and Reinforcements
• MA2784	Mossyrock Salmon Hatchery Barrier Dam	Left Abutment Concrete and Reinforcement
• MA2785	Mossyrock Salmon Hatchery Barrier Dam	Right Abutment and Entrance Struct. Concrete and Reinforcement Sheet 1
• MA2786	Mossyrock Salmon Hatchery Barrier Dam	Right Abutment and Entrance Struct. Concrete and Reinforcement Sheet 2
• MA2788	Mossyrock Salmon Hatchery Barrier Dam	General Plan Fish Ladders and Transportation Channel
• MA2789	Mossyrock Salmon Hatchery Barrier Dam	Fish Ladders Concrete and Reinforcement Sheet 1
• MA2790	Mossyrock Salmon Hatchery Barrier Dam	Fish Ladders Concrete and Reinforcement Sheet 2
• MA2792	Mossyrock Salmon Hatchery Barrier Dam	Miscellaneous Metals Sheet 1
• MA2793	Mossyrock Salmon Hatchery Barrier Dam	Miscellaneous Metals Sheet 2

Specification PG20-0314F
Addendum 4
February 26, 2021

• MW3797	Mossyrock Salmon Hatchery Barrier Dam	Conduit, Grounding & Lighting Layout Sheet 1

REFERENCE DOCUMENTS:

The following reference documents have been provided as part of this addendum:

- Attachment G Barrier Dam Forebay Photos (2,500 CFS and 6,300 CFS)

NOTE: Acknowledge receipt of this addendum by initialing the corresponding space as indicated on the signature page. Vendors who have already submitted their bid/proposal may contact the Purchasing Division at 253-502-8468 and request return of their bid/proposal for acknowledgment and re-submittal.

Or, a letter acknowledging receipt of this addendum may be submitted in an envelope marked Request for Bids Specification No. PG20-0314F Addendum No. 2. The City reserves the right to reject any and all bids, including, in certain circumstances, for failure to appropriately acknowledge this addendum.

Patsy Best, Procurement and Payables Manager
Finance/Purchasing Division

Cc: Tim Nordstrom, Power Engineer IV, Tacoma Power / Generation
Toby Brewer, Assistant Generation Manager, Tacoma Power / Generation

For this intermediate milestone, the amount of liquidated damages set forth of the General Provision 3.14 is hereby modified to $10,000 per day, limited to a maximum of $250,000.

1.5 SPECIFICATION FORMAT

This specification is written and formatted for use with Public Works specifications and is numbered to be consistent with other specifications, including Construction Specifications Institute (CSI) format, as modified by the City.

It is not intended to indicate what work is to be accomplished by various subcontractors on the project. In all cases, the City's contract is with one (1) general contractor and it is the general contractor's responsibility to insure all work required to provide a complete and operational facility is included in their bid.

When possible, the City has tried to reference work which should be included with various trades, but it is the contractor's responsibility to ensure all work is properly coordinated. The numbering system in the Special Provisions Section reflects standard provisions written by the City and assigned constant numbers. Thus, gaps will appear when specific sections are not used.

1.6 CONTRACT WORK TIMES

Work Hour Restrictions: The contractor should limit the upland work on the left bank (looking downstream) in the months of May and June such that work on the left bank does not start until two hours after sunrise and work has stopped two hours before sunset (i.e., approximately 8am-6:20pm in May and 7:30am-7pm in June). Beginning in July and extending to December there are no restrictions on work hours.

If the contractor elects to work on a Saturday, Sunday, holiday or longer than the designated contract work times, such work shall be considered overtime work. On all such overtime work, a City engineer or their inspector must be present. The contractor shall reimburse the City for the full amount of the costs for City employees who must work any such overtime hours. It shall be the engineer's decision as to when an inspector is required. For the purpose of estimation of reimbursement of City employee's overtime, the bidder shall budget $80.00 per hour.

However, if the City orders work to be performed on overtime, all City employees' overtime costs will be at no expense to the contractor. The City will not require reimbursement for overtime hours worked by the City for inspection as detailed in the General Provisions if the conditions of this paragraph are met to the satisfaction of the engineer.

1.7 QUALIFICATION OF CONTRACTORS

A. QUALIFIED CONTRACTORS

Only contractors with management, employees, and staff experienced in the type of work required by this specification, and with a record of successful completion of projects of similar scope, complexity, and overall cost will be considered. The bidder must complete the Contractor's Record of Prior Contracts form attached to this specification at the time of submitting their bid.

Additional materials are required to provide proof of qualifications to perform the work. See Section 01010, 1.9 Evaluation of Bids The City will be the sole judge of the bidder's ability to meet the requirements of this paragraph. Bidders past work will be judged in complexity of job, time of completion, organization, and other factors that may indicate the abilities of the contractor.

Submit to the engineer within ten (10) calendar days following execution of the contact documents, a list of all subcontractors, including each subcontractor's address, telephone number, and contact person to be used on this project.

2.2 ACCEPTABLE MANUFACTURERS

A. The following manufacturers are acceptable for the design and fabrication of the bulkhead gate and hoist. All other manufacturers not listed subject to approval by the City based qualifications required for substitutions.

1. EDCO Inc. – Mt Vernon, WA.
2. Jesse Engineering – Tacoma, WA.
3. K&N Electric – Spokane Valley, WA.
4. Rodney Hunt-Fontaine – Orange, MA.
5. Selway Corp. – Stevensville, MT.
6. Transco Industries Inc. – Portland, OR.
7. Vigor (Oregon Iron works) – Clackamas OR.
8. **Thompson Metal Fab. – Vancouver, WA.**
9. **Greenberry – Vancouver, WA.**

B. Substitution for gate manufacturers shall have no less than ten years' experience designing and fabricating similar projects. The manufacturer shall be subject to approval by the City based on consideration of submitted qualifications showing evidence of completing similar gates including owner with contact information, location, capacity, description of gate, and date of installation.

2.3 BULKHEAD GATE AND HOIST SUPPORT FRAME ASSEMBLY

A. CONFIGURATION

The Bulkhead Gate shall conform to the requirements indicated below:

Component/Condition Requirement

No. Gates	1
Nominal Size (feet)	14 high / 5.3 top width / 4.7 bottom width
Max. Head @ Invert (feet)	15
Actuator	2-ton chain hoist

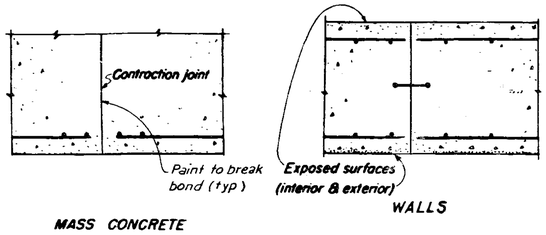
B. OPERATION

Gate shall be raised and lowered with no differential across the bulkhead gate.

C. MATERIALS

Material in the bulkhead gate and appurtenances shall conform to the requirements of the applicable specifications listed below for the alloy, grade, type, or class of material and the condition and finish appropriate to the structural and operational requirements.

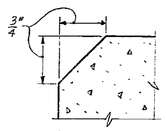
Material	ASTM Specification
Steel Plates, and Bars	A572, Grade 50
Wide-Flange Shapes	A992
Hollow Structural Shapes	A500, Grade B
Other Structural Shapes (M, S, C, MC, L)	A36
Stainless Steel Bottom Sill Plate, guides, and other Components Embedded in Concrete	A269, A276, or A666 Type 304 or 304L (for better weldability)
Stainless Steel Bolts and Nuts	F593 or F594, Type 304



MASS CONCRETE

CONTRACTION JOINTS

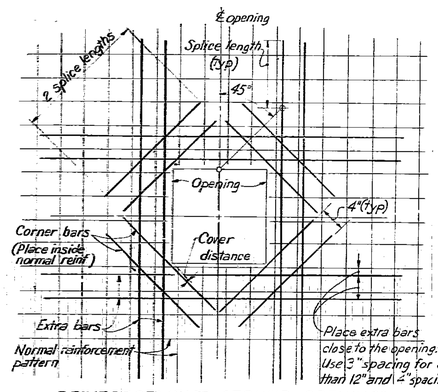
(Reinforcement stops at contraction joints)



Reentrant corner same

EXPOSED EXTERNAL CORNERS

(Except as otherwise noted)



REINFORCEMENT AROUND OPENINGS

REINFORCEMENT AROUND OPENINGS

NOTES:

1. Cross-sectional area of extra bars shall equal or exceed area of normal bars interrupted by opening.
2. Corner bars are same size as extra bars, but not larger than #8.
3. Reinf. shown to be for ml, ef, normal reinf.
4. This standard shall be used for both slabs and walls.
5. Circular openings shall have reinforcement similar to rectangular openings.
6. Wall openings wider than 7'-0" to be reinforced as shown on drawings.
7. Add second corner bar if slab or wall is 12" thick or over.

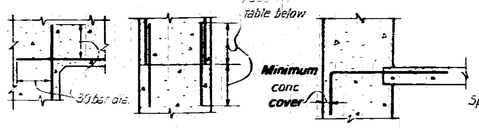
GENERAL NOTES FOR CONCRETE

Provide tooled edges for all construction and contraction joints on surfaces where wood float or steel trowel finish is required.

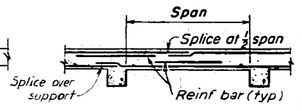
Concrete surfaces exposed to the flow of water must be smooth.

Unless otherwise noted, roughen surfaces of pours at construction joints.

Waterstops to be continuous.



AT CORNERS AT WALLS



OVER & BETWEEN SUPPORTS

STANDARD ABBREVIATIONS FOR REINFORCEMENT

ml = middle layer	il = inside layer
ff = far face	nf = near face
tf = top face	bf = bottom face
el = each layer	ef = each face
oc = on center	bl = bottom layer
tl = top layer	ol = outside layer
ew = each way	

PROTECTIVE COVER

Main reinforcement to have concrete cover as follows: (except as otherwise noted on drawings).

	min	max
1. Bottom of foundation and footings	4"	5"
2. Backfilled surfaces, surfaces of water passages	2"	4"
3. Exterior walls, beams and slabs	2"	3"
4. Interior walls, beams and columns	1½"	2"
5. Interior slabs	1"	1½"

6. Cover for secondary reinforcement (i.e. stirrups, col ties), may be reduced by the diameter of such bars.

TYPICAL REINFORCEMENT EMBEDMENT, PROJECTION & SPLICE DETAILS

(Unless otherwise noted on drawings)

TYPICAL BAR BILLING

General Billing: #6, 6 oc, where bar length and number required is not given the Contractor shall determine same from bar spacing, location and dimensions of structure.

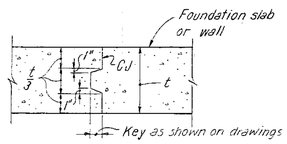
Detailed Billing: $\frac{8\#10,4\text{-}6}{8\text{ oc},4\text{ ef}}$; $10\#11$; $\frac{10\#6,8\text{-}0}{6\text{ oc},\text{tf}}$, is used where a definite number of bars or bar length or spacing is required.

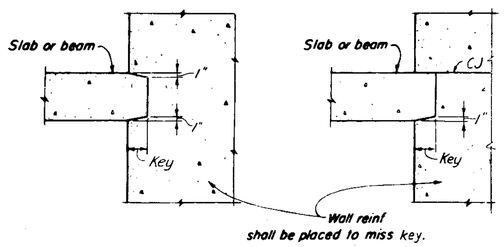
NOTES:

1. Feet and inch marks are omitted from length and spacing dimensions
2. Bar spacing is given in inches.
3. All bars are billed by size, spacing and in some instances length, in one view only, as shown by "Typical bar billing". Bars are only identified in other views, e.g.: #6; #10, 4-6

ABBREVIATIONS & SYMBOLS

alt = Alternate	HP = High point	reinf = Reinforcement
Al = Aluminum	ID = Inside diameter	req'd = Required
CJ = Construction joint	jt = Joint	std = Standard
cc = Center to center	L = Length along curve	Sta = Station
℄ = Center line	LP = Low point	sym = Symmetrical
cl = Clear	max = Maximum	struct = Structure
col = Column	min = Minimum	T = Tangent length
conc = Concrete	mfr = Manufacturer	typ. = Typical
DA = Dovetail anchors	nts = Not to scale	VG = V-groove
℗ = Diameter	No = Number	WL = Working line
dia = Diameter	oc = On center	WP = Working point
dn = Down	OD = Outside diameter	WS = Water stop
dwg = Drawing	PC = Point of curvature	Δ = Intersection angle
EA = Expansion anchors	PI = Point of intersection	
El = Elevation	PT = Point of tangency	
ga = Gage	proj = Projection	
	R = Radius	





TYPICAL KEY DETAILS

REINFORCEMENT DETAILS

NOTE:

Laps shall be detailed in accordance with table below unless otherwise noted.

Laps for #8 bars or smaller, spaced less than 12 diameters, must be increased by 20%.

Bar Size	Lap length in feet and inches "Typ. Bars"	"Other Bars"
3	1'-0"	1'-0"
4	1'-0"	1'-0"
5	1'-3"	1'-3"
6	1'-6"	1'-6"
7	2'-4"	1'-9"
8	3'-0"	2'-4"
9	4'-7"	3'-3"
10	5'-9"	4'-1"
11	7'-1"	5'-1"

REINFORCING BAR LAPS

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	No Asbuilt Revisions		WJW		7/11/67
1	Minor revisions	6/14/67	SJA	RBR	6/14/67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

STANDARD DETAILS
SHEET 1

CONSTRUCTION DWG. AS BUILT

DONALD P. ROOT STATE OF WASHINGTON 12 REGISTERED PROFESSIONAL ENGINEER

HARZA ENGINEERING COMPANY

DRAWN ELH | CHECKED SWG | DESIGNED SJA | REVIEWED RBR | HARZA ENGINEERING COMPANY

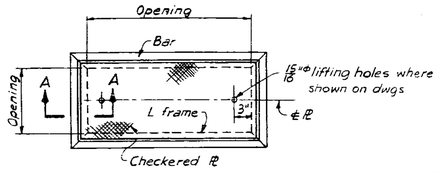
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

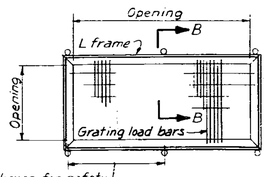
SCALE NONE | TACOMA, WASHINGTON DATE MAY, 1967 | DRAWING NUMBER MA 2775 R1/A5

DRAWER NO.

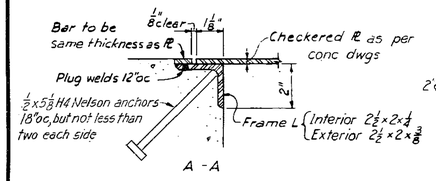
APR 14 1967



PLAN

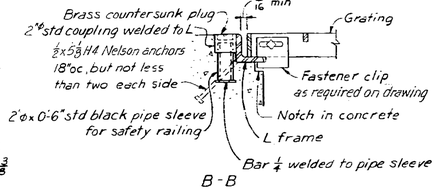


PLAN



A - A

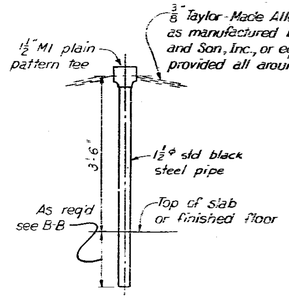
COVER PLATE AND FRAME



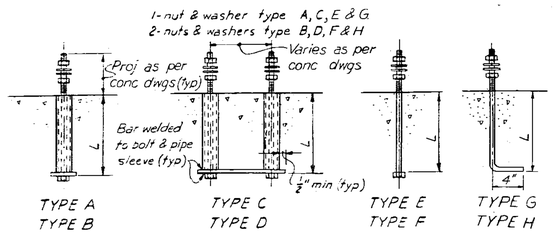
B - B

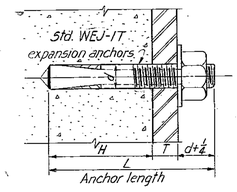
Grating & frame angles as per conc dwgs
Provide safety railing sleeves where shown

GRATING AND FRAME



SAFETY RAILING POST





TYPICAL EXPANSION ANCHOR DETAIL

Bolt dia.	Pipe dia	L *	Bar size Type A & B	Bar size Type C & D
½	1½	9	2½ x 2 x 0'-2½	2½ x ¼
5/8	1½	1'-0"	3 x ¼ x 0'-3"	3 x ¼
¾	2	1'-2"	3½ x ¼ x 0'-3½"	3½ x ¼
⅞	2	1'-4"	4 x ⅜ x 0'-4"	4 x ⅜
1	2	1'-6"	4½ x ½ x 0'-4½"	4½ x ½
1⅛	2	1'-9"	5 x ¾ x 0'-5"	5 x ¾
1¼	2½	2'-0"	5½ x ¾ x 0'-5½"	5½ x ¾
1½	2½	2'-3"	6½ x ¾ x 0'-6½"	6½ x ¾

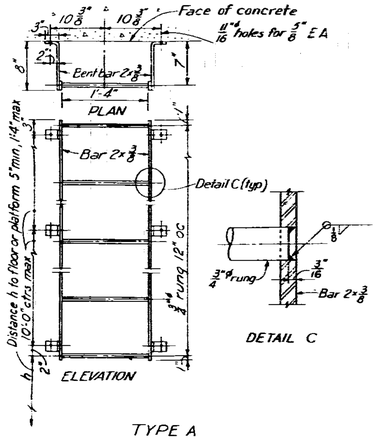
* Unless otherwise shown on dwgs

ANCHOR BOLTS

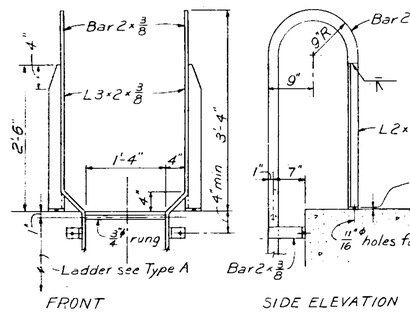
WEJ-IT Dia & hole Dia (d)	Min depth of hole (H)	Available lengths (L)	Min distance between holes	Min edge distance
Inches	Inches	Inches	Inches	Inches
5/16	1	1½, 2, 3	4½	4
⅜	1¼	1½, 2, 2¾, 3½, 5, 6	4½	4
½	1½	2, 2¾, 3½, 5, 6, 7	5	4
⅝	2	3½, 4½, 5, 5½, 6, 7	5	4
¾	3	4, 5, 6, 7, 10	5½	4

EXPANSION ANCHOR INSTALLATION DATA

Reference: WEJ-IT Catalog CF1064
by WEJ-IT EXPANSION PRODUCTS, INC.
Industrial Park/Broomfield, Colorado 80020

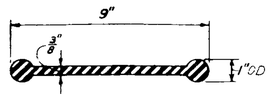


TYPE A

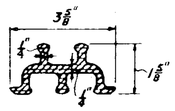


TYPE B

TYPICAL STEEL LADDERS

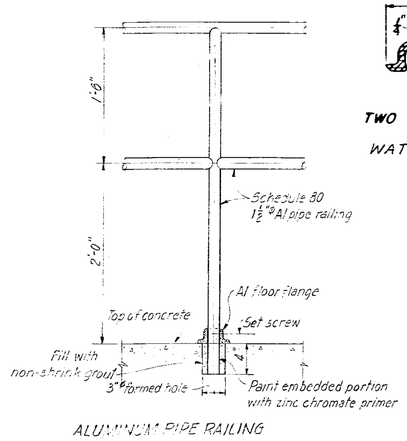


Type A
TWO BULB WATERSTOP



Type B
TWO RIB LABYRINTH

WATERSTOPS



ALUMINUM PIPE RAILING

NOTES:

Unless otherwise shown or noted:

1. Material to be welded structural steel
2. All steel to be painted.
3. For painting and galvanizing see specifications.
4. Do not paint surfaces embedded in concrete.
5. All gratings to be galvanized after fabrication.
6. All gratings to be furnished in 6'-0" sections, except as noted
7. All sheared edges to be ground smooth.
8. Exposed welds in hatch frame covers etc. to be ground smooth.
9. Catalog numbers and trade names indicate examples of commercial product only. Other manufacturers products approved equal may be substituted.
10. #5 reinf bar with std. hook to substitute for Nelson studs if desired
11. Reinf. bars in note 11 to have ⅜" fillet weld all around.
12. All welds shall be 3/16" continous fillet welds.
13. All corners of frames shall be mitered and welded in accordance with approved shop practice. Grind welds smooth on bearing and exposed surfaces.
14. Furnish all expansion anchors and connection bolts where such are required. Diameter of anchors and bolts shall be 1/16" smaller than holes indicated, except where noted.
15. MISCELLANEOUS DETAILS SHOWN ON THIS DRAWING ARE TYPICAL. INFORMATION NOT SHOWN HERE AND/OR NUMBER OF ITEMS REQUIRED SHALL BE IN ACCORDANCE WITH CONCRETE DRAWINGS.
16. The identification symbols (P) for pipe and fittings and (M) for miscellaneous items shown on the drawings correspond to the material identification symbols listed in the specifications.

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Asbuilt; deleted reference to C-C		WJW		7/1/69

CONSTRUCTION DWG AS BUILT

DONALD P. ROBERTS — STATE OF WASHINGTON — 6712 — REGISTERED PROFESSIONAL ENGINEER

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

STANDARD DETAILS
SHEET 2

HARZA ENGINEERING COMPANY

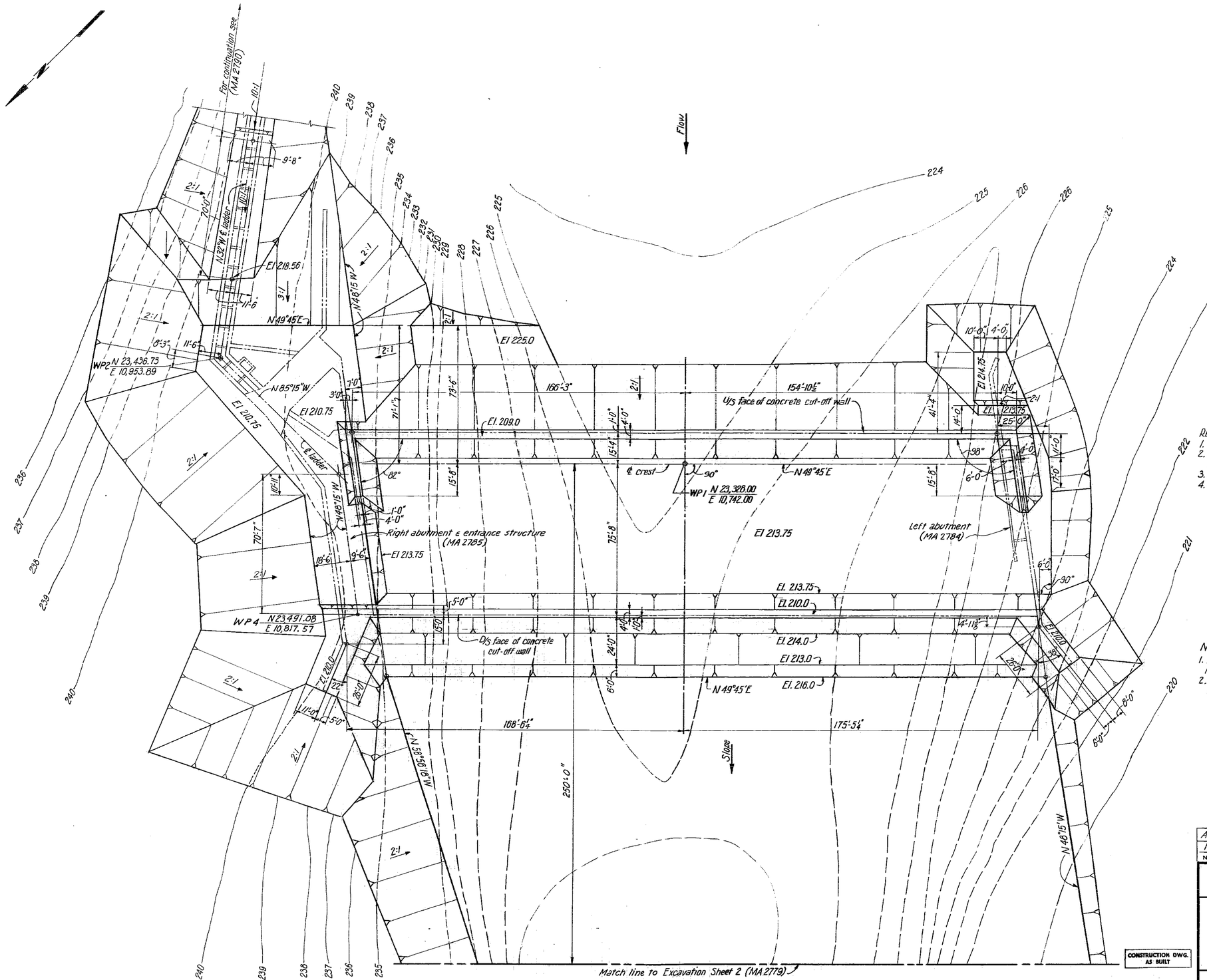
DRAWN	SAIA	DESIGNED	D.P. Roberts
CHECKED		REVIEWED	HARZA ENGINEERING COMPANY

APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES.
PROJECT MANAGER

SCALE	TACOMA, WASHINGTON	DRAWING NUMBER
NONE	DATE MAY, 1967	MA 2776 A5

DRAWER NO.

APR 1 6 1967



PLAN

REFERENCE DRAWINGS:
1. Work this drawing with Excavation Sheet 2 MA 2779
2. Concrete - General Plan - Fish Barrier, Abutments, ℄ Entrance Structures, MA 2782
3. Fish Ladder - Concrete ℄ Reinf Sheet 1, MA 2789
4. Fish Ladder - Concrete ℄ Reinf Sheet 2, MA 2790

NOTES:
1. All final exposed excavation slopes with or without riprap protection shall be 2h : 1v except as shown.
2. All temporary excavation slopes which are not indicated shall be stable slopes.

Scale 0 20 40 Feet
1"=20'-0"

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Asbuilt; note 3 deleted, slopes & elev's		WJW		7/4/67
1	Revised bearing	6/14/67	ELS	℄	6/14/67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

EXCAVATION - SHEET 1

HARZA ENGINEERING COMPANY

CONSTRUCTION DWG. AS BUILT

DONALD P. ROBERTS — STATE OF WASHINGTON — 67 72 71 — REGISTERED PROFESSIONAL ENGINEER

DRAWN JN	SWG / SAIA	DESIGNED	
CHECKED SWG	RBR	REVIEWED	HARZA ENGINEERING COMPANY

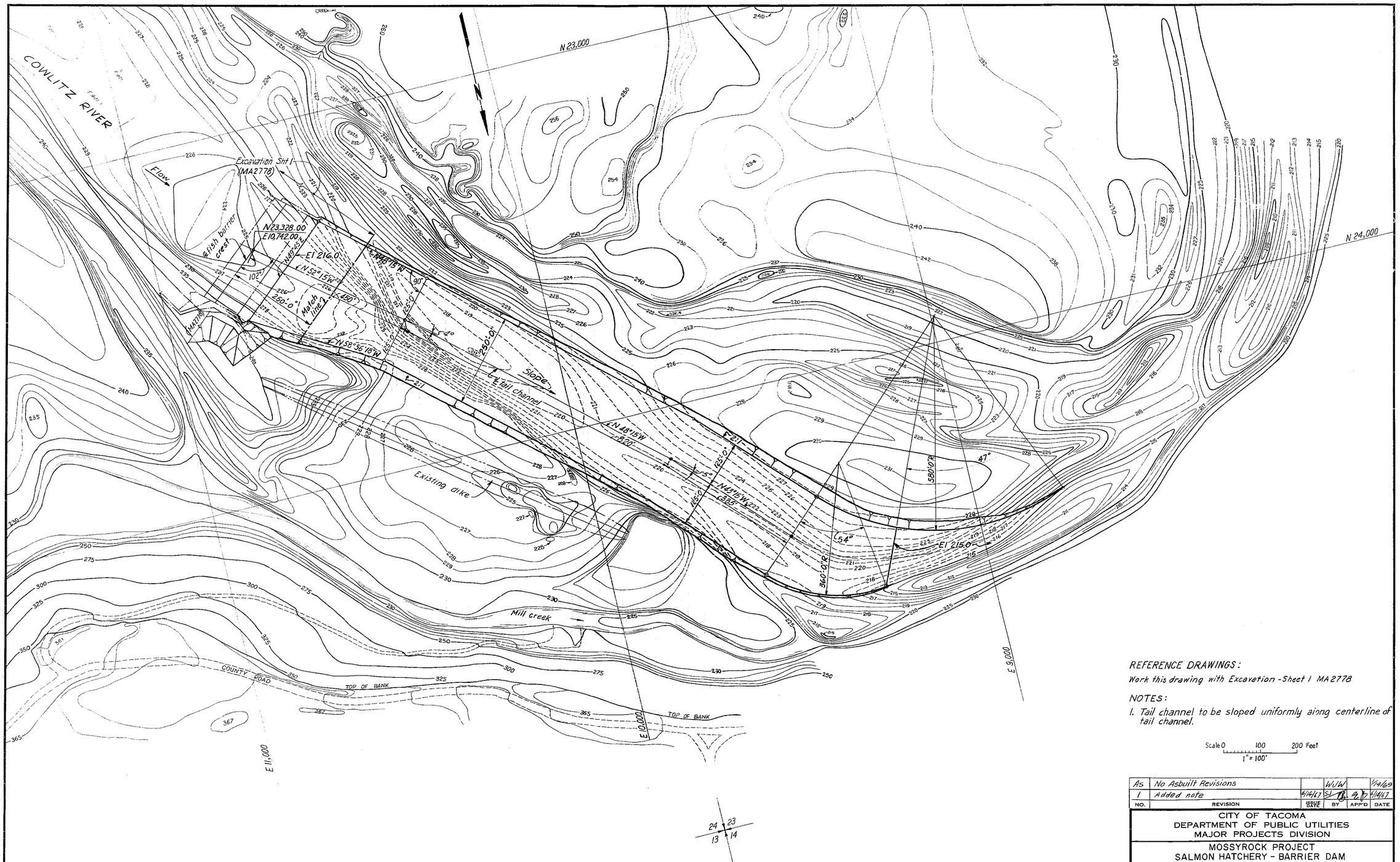
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

SCALE	DATE	DRAWING NUMBER
1"=20'	TACOMA, WASHINGTON MAY, 1967	MA 2778 R1/AS

DRAWER NO.

APR 26 1967 APR 28 1967 MAY 2 1967 MAY 4 1967 MAY 9 1967 MAY 10 1967 MAY 15 1967 MAY 26 1967 JUN 14 1967 JUL 11 1967



REFERENCE DRAWINGS:

Work this drawing with Excavation - Sheet 1 MA 2778

NOTES:

1. Tail channel to be sloped uniformly along centerline of tail channel.

Scale 0 100 200 Feet
1" = 100'

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	No Asbuilt Revisions		WJW		1/14/69
1	Added note	6/14/67	SL	RB	6/14/67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

EXCAVATION - SHEET 2

CONSTRUCTION DWG. AS BUILT

HARZA ENGINEERING COMPANY

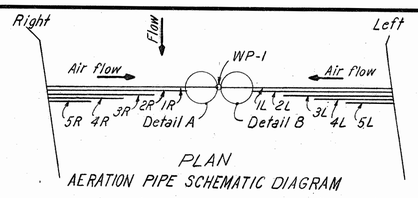
DONALD P. ROBERTS — STATE OF WASHINGTON — 67 72 — REGISTERED PROFESSIONAL ENGINEER

DRAWN DB/ELK | SWG/SAIA DESIGNED | D.P. Roberts HARZA ENGINEERING COMPANY
CHECKED SWG | REVIEWED
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES
PROJECT MANAGER

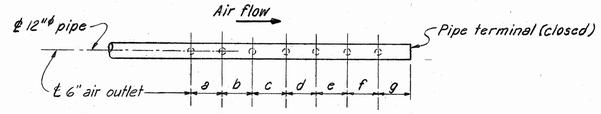
SCALE 1" = 100' | TACOMA, WASHINGTON DATE MAY, 1967 | DRAWING NUMBER MA2779 RI/AS

DRAWER NO.

OCT 24 1966 NOV 4 1966 NOV 8 1966 DEC 2 1966 DEC 9 1966 FEB 16 1967 FEB 17 1967 FEB 20 1967 FEB 27 1967 APR 14 1967 APR 17 1967 MAY 4 1967 MAY 10 1967 MAY 15 1967 JUN 1 1967 JUN 14 1967 JUL 11 1967



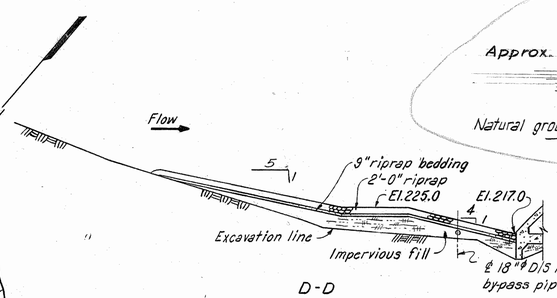
PLAN
AERATION PIPE SCHEMATIC DIAGRAM



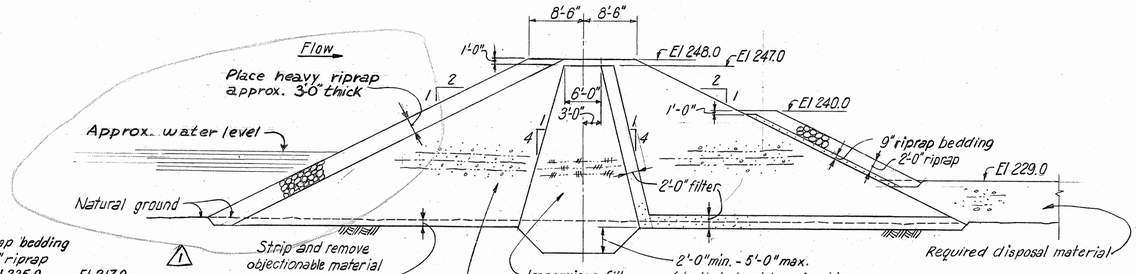
DETAIL A
DETAIL B opp hnd.

AERATION PIPE SYSTEM

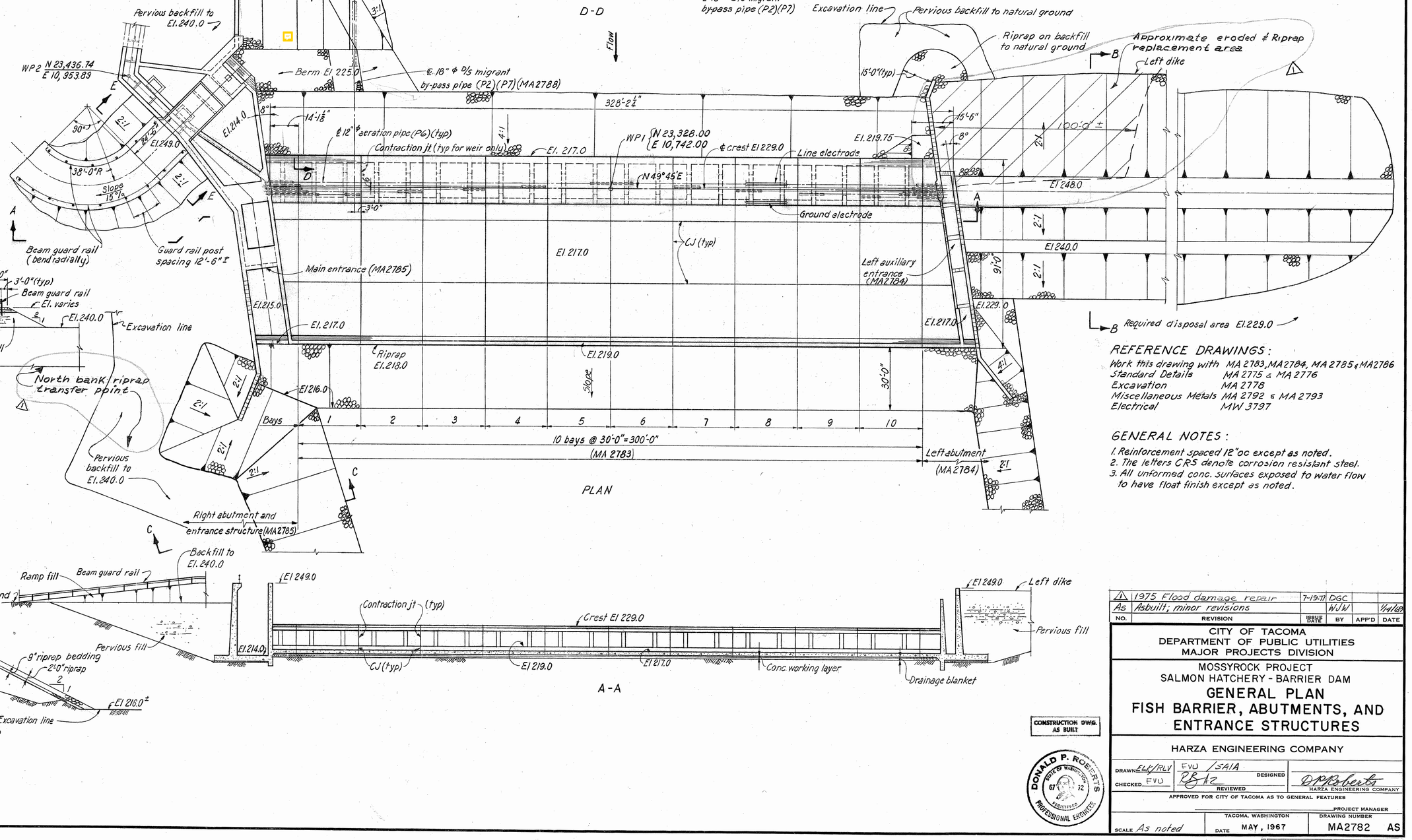
PIPE NO.	DIMENSIONS						
	a	b	c	d	e	f	g
1L, 1R, 2L, 2R	1'-6"	3'-6"	4'-6"	5'-0"	6'-0"	6'-0"	3'-6"
3L, 3R, 4L, 4R	2'-0"	4'-0"	8'-0"	6'-6"	7'-6"	0	4'-0"
5L	Varies	6'-0"	7'-0"	8'-0"	8'-6"	0	4'-6"
5R	Varies	7'-0"	8'-6"	9'-6"	10'-6"	0	5'-6"



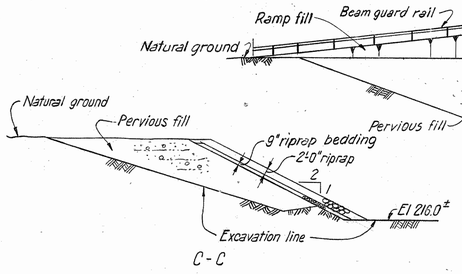
D-D



B-B
1"=10'



PLAN



C-C

E-E

A-A

REFERENCE DRAWINGS:

Work this drawing with MA 2783, MA 2784, MA 2785 & MA 2786
Standard Details MA 2715 & MA 2716
Excavation MA 2778
Miscellaneous Metals MA 2792 & MA 2793
Electrical MW 3797

GENERAL NOTES:

1. Reinforcement spaced 12"oc except as noted.
2. The letters C.R.S. denote corrosion resistant steel.
3. All unformed conc. surfaces exposed to water flow to have float finish except as noted.

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
1	1975 Flood damage repair	7-19-71	DGC		
As	As built; minor revisions		WJW		1/9/68

CONSTRUCTION DWG. AS BUILT

DONALD P. ROBERTS — STATE OF WASHINGTON — 6712 — REGISTERED PROFESSIONAL ENGINEER

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

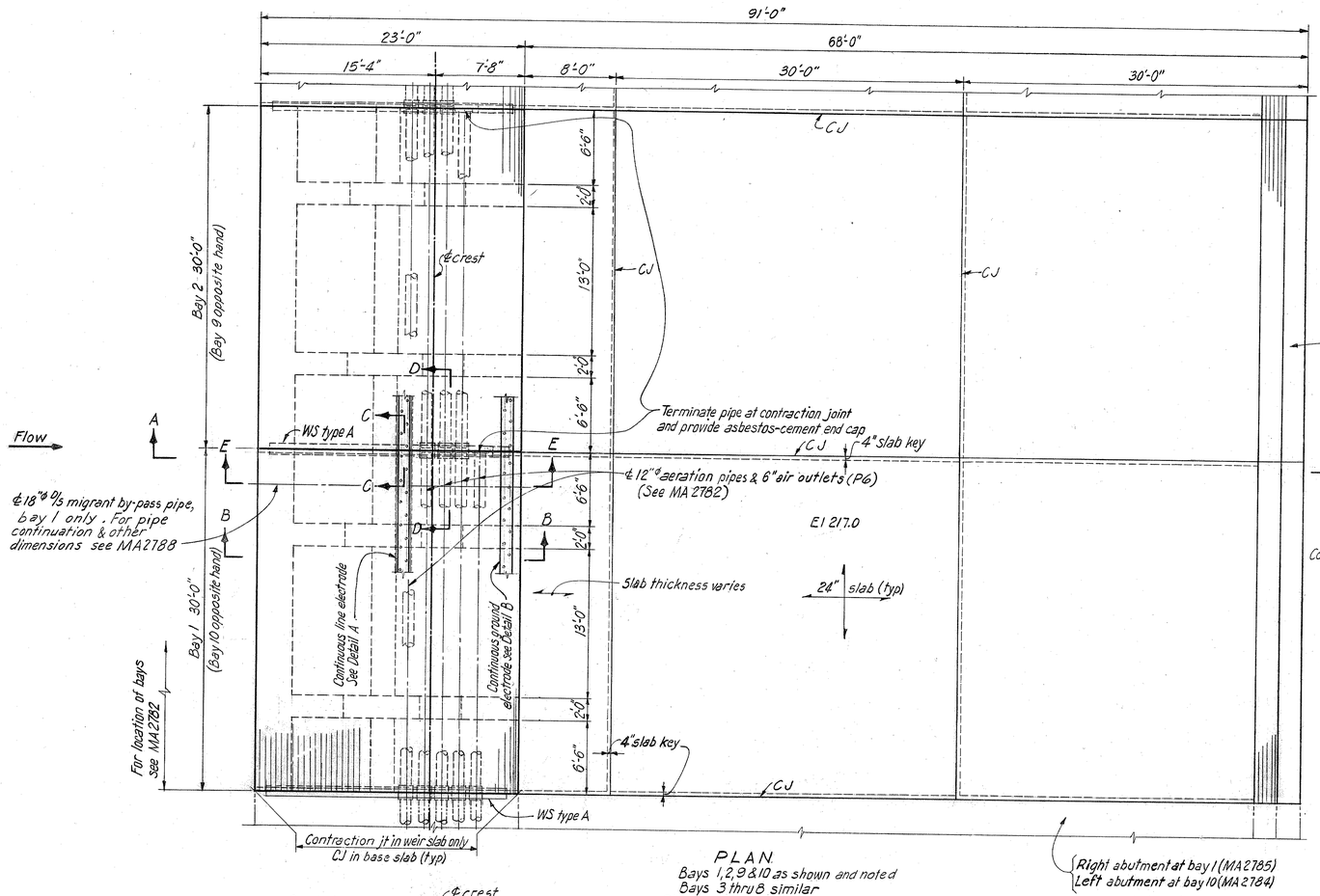
MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

GENERAL PLAN
FISH BARRIER, ABUTMENTS, AND ENTRANCE STRUCTURES

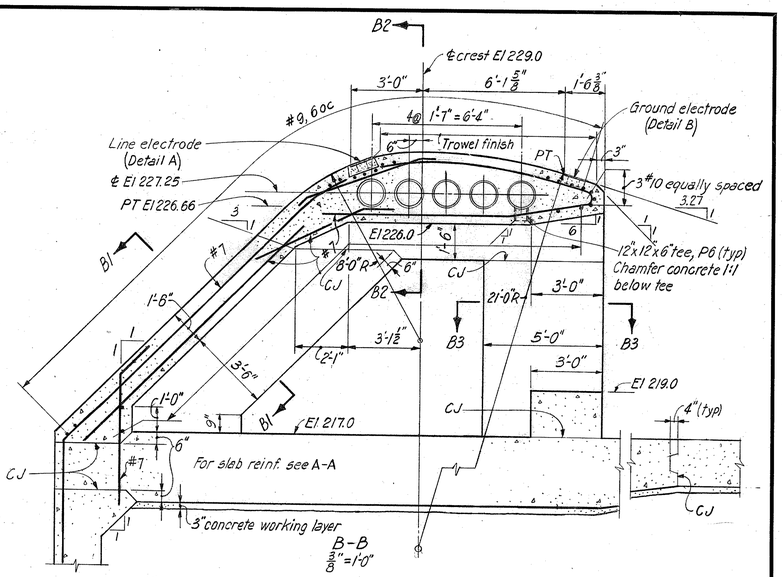
HARZA ENGINEERING COMPANY

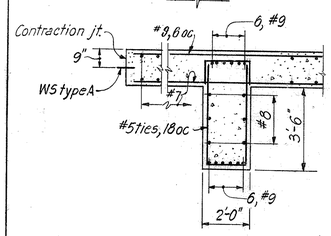
DRAWN ELL/RLV | FVU / SAIA DESIGNED
CHECKED FVU | REVIEWED
HARZA ENGINEERING COMPANY
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES
PROJECT MANAGER

SCALE As noted | TACOMA, WASHINGTON DATE MAY, 1967 | DRAWING NUMBER MA2782 AS

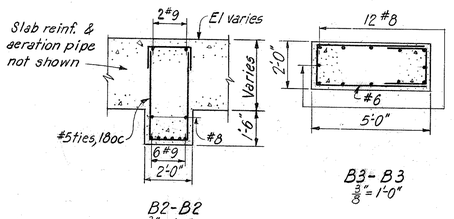


PLAN
Bays 1, 2, 9 & 10 as shown and noted
Bays 3 thru 8 similar
Riprap and excavation not shown



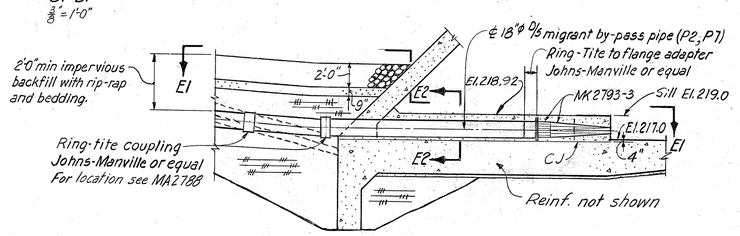


B1-B1
Orig 1" = 1'-0"

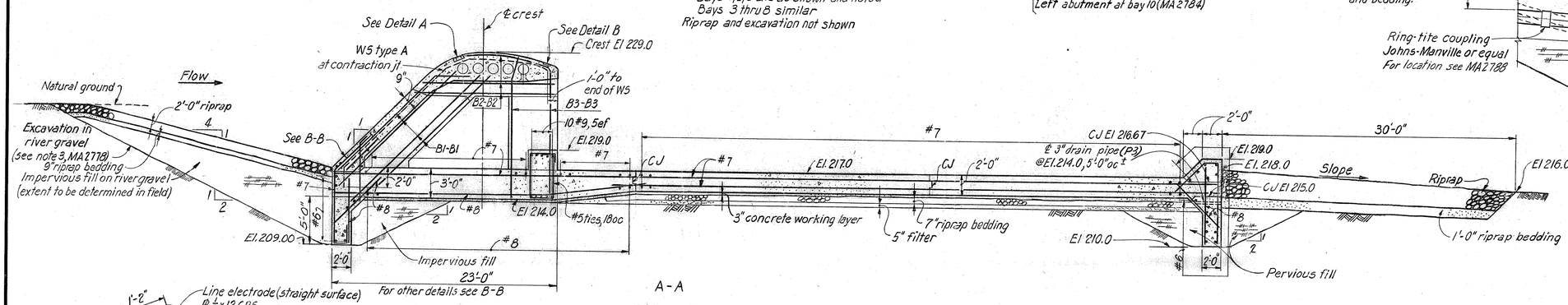


B2-B2
Orig 3/4" = 1'-0"

B3-B3
Orig 3/4" = 1'-0"

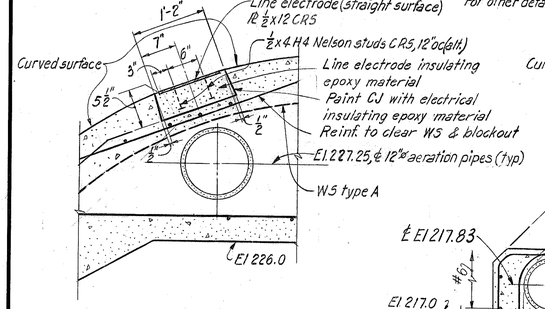


E-E

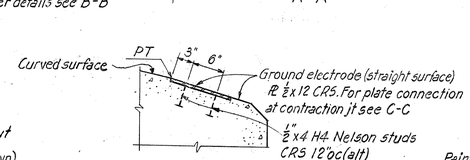


A-A

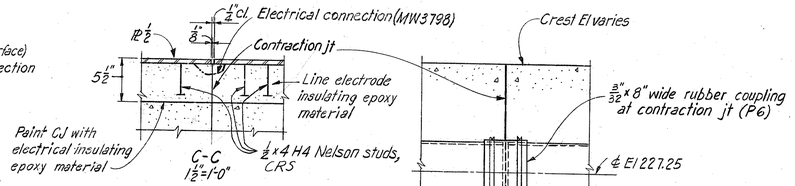
REFERENCE DRAWINGS
Work this drawing with MA 2782



DETAIL A
1" = 1'-0"

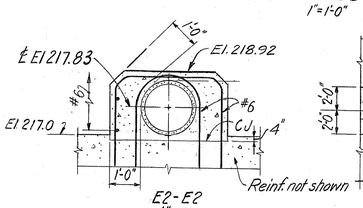


DETAIL B
1" = 1'-0"

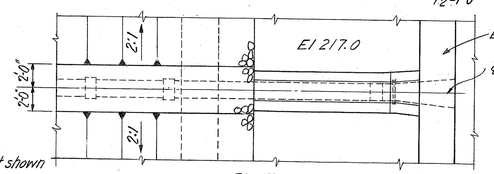


C-C
1 1/2" = 1'-0"

D-D
1" = 1'-0"



E2-E2
2" = 1'-0"



E1-E1

Except as noted
Scale 0 5 10 Feet
3/16" = 1'-0"

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Minor revisions		WJW		1/15/69
1	Revised CJ, A A-B-B, Added notes B-B	4/14/67	EVO	RB	4/14/67

CONSTRUCTION DWG. AS BUILT

DONALD P. ROBERTS — 6712 — REGISTERED PROFESSIONAL ENGINEER

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

FISH BARRIER
CONCRETE AND REINFORCEMENT

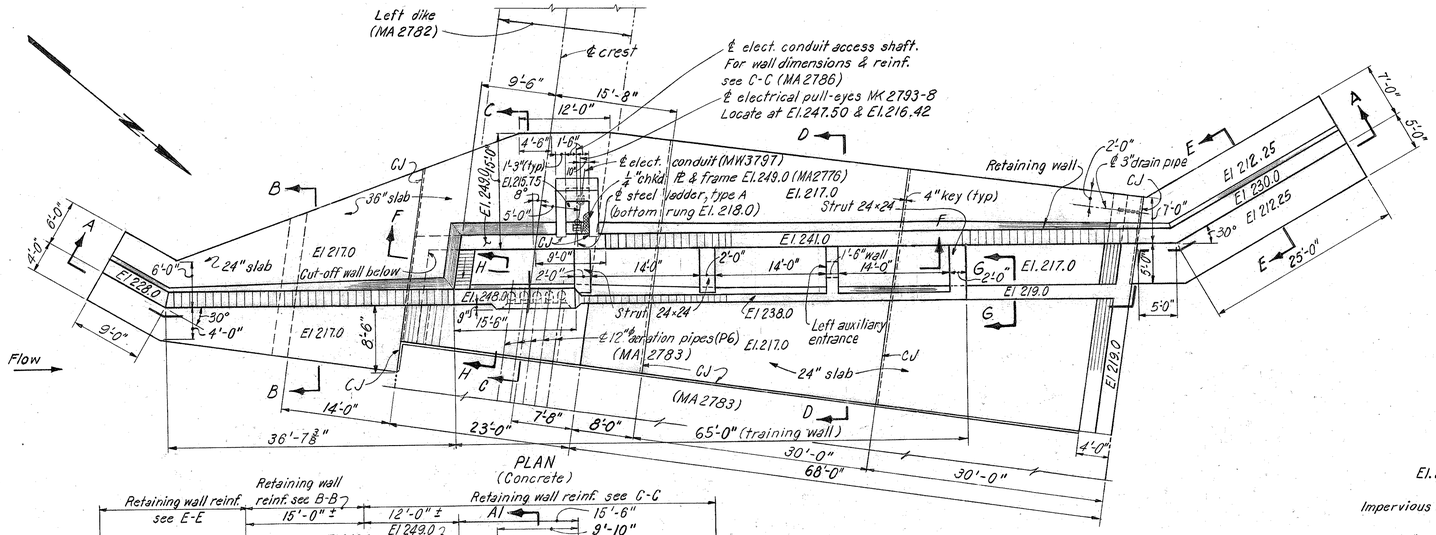
HARZA ENGINEERING COMPANY

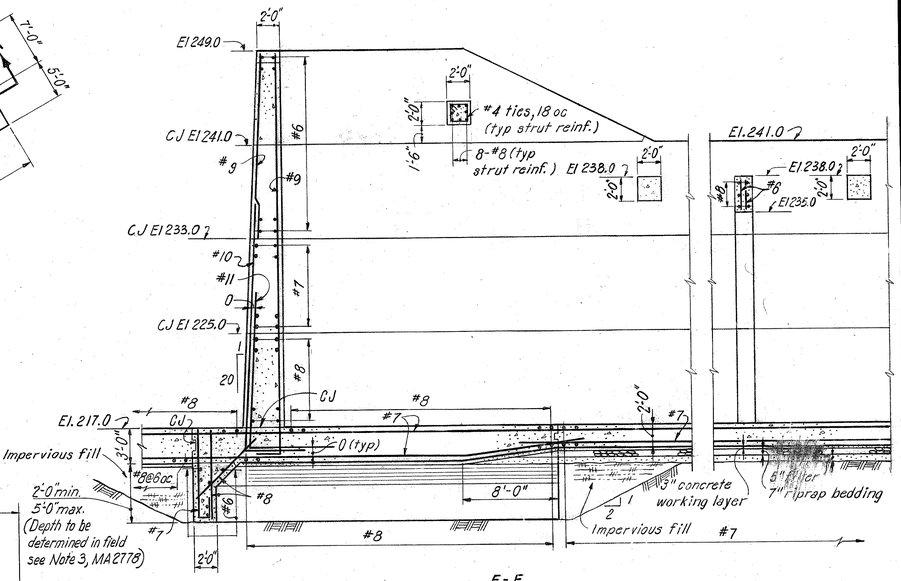
DRAWN ELK	EVO / SAIA DESIGNED		
CHECKED EVO	REVIEWED	HARZA ENGINEERING COMPANY	

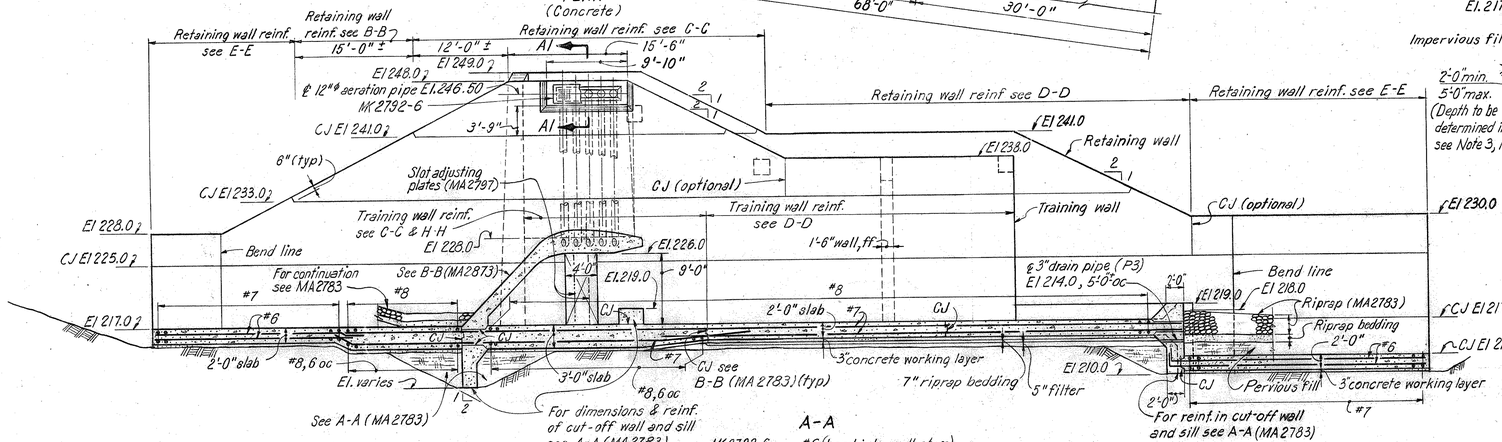
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

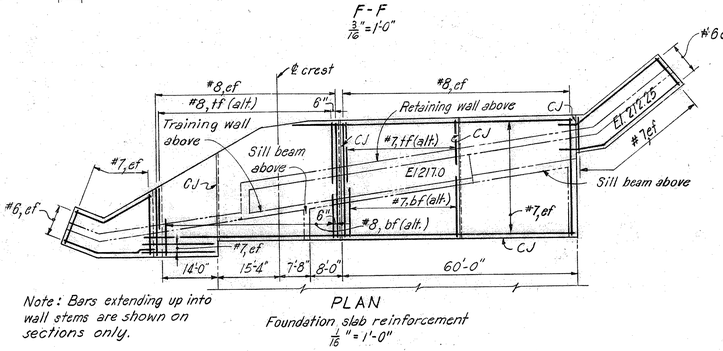
PROJECT MANAGER

SCALE	TACOMA, WASHINGTON	DRAWING NUMBER
As noted	DATE MAY, 1967	MA2783 R1/45

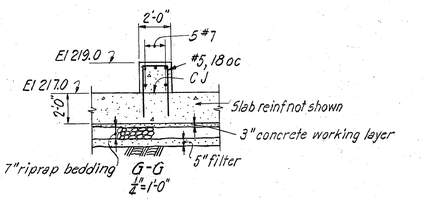


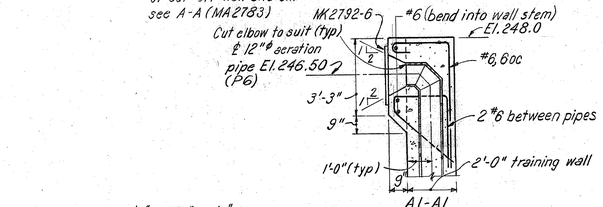


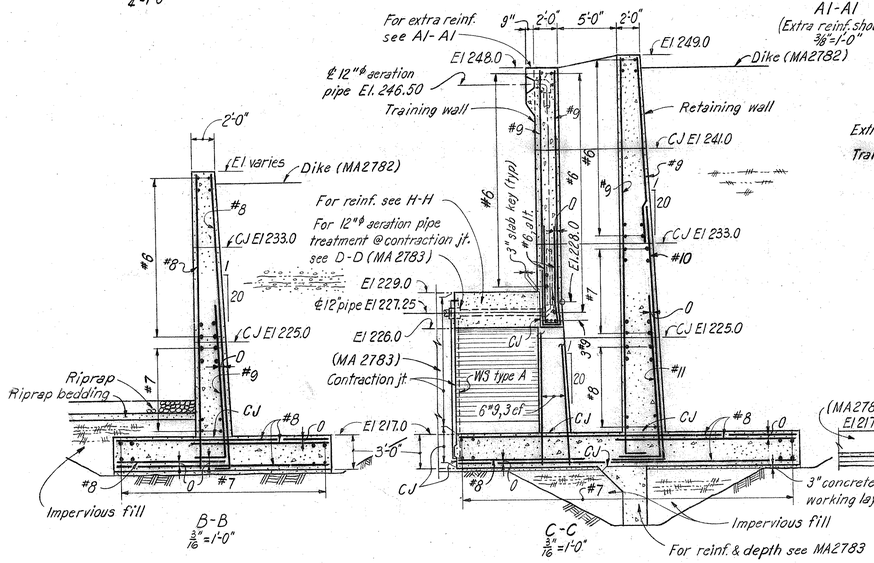


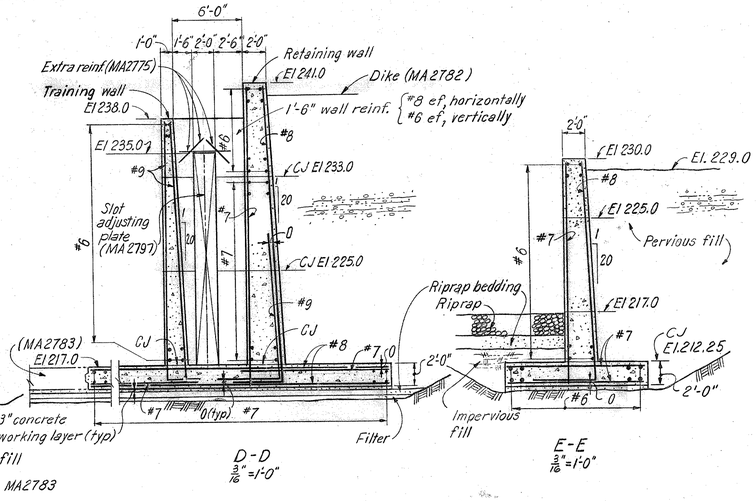


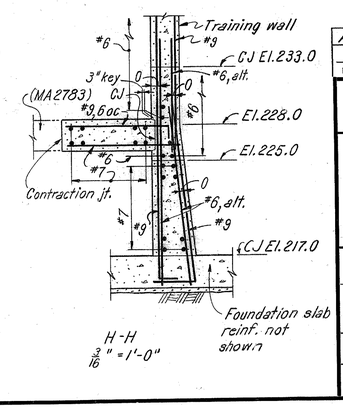
Note: Bars extending up into wall stems are shown on sections only.











REFERENCE DRAWINGS:
Work this drawing with MA 2782

CONSTRUCTION DWG. AS BUILT

DONALD P. ROBERTS — STATE OF WASHINGTON — 6712 — REGISTERED PROFESSIONAL ENGINEER

Scale 0 8 16 Feet
1/8" = 1'-0"
Except as noted

NO.	REVISION	DRAWN	BY	APP'D	DATE
As	Asbuilt; minor revisions		WLW		1/25/67
1	Added dimension	6/14/67	ELK/RLV	RB	6/16/67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

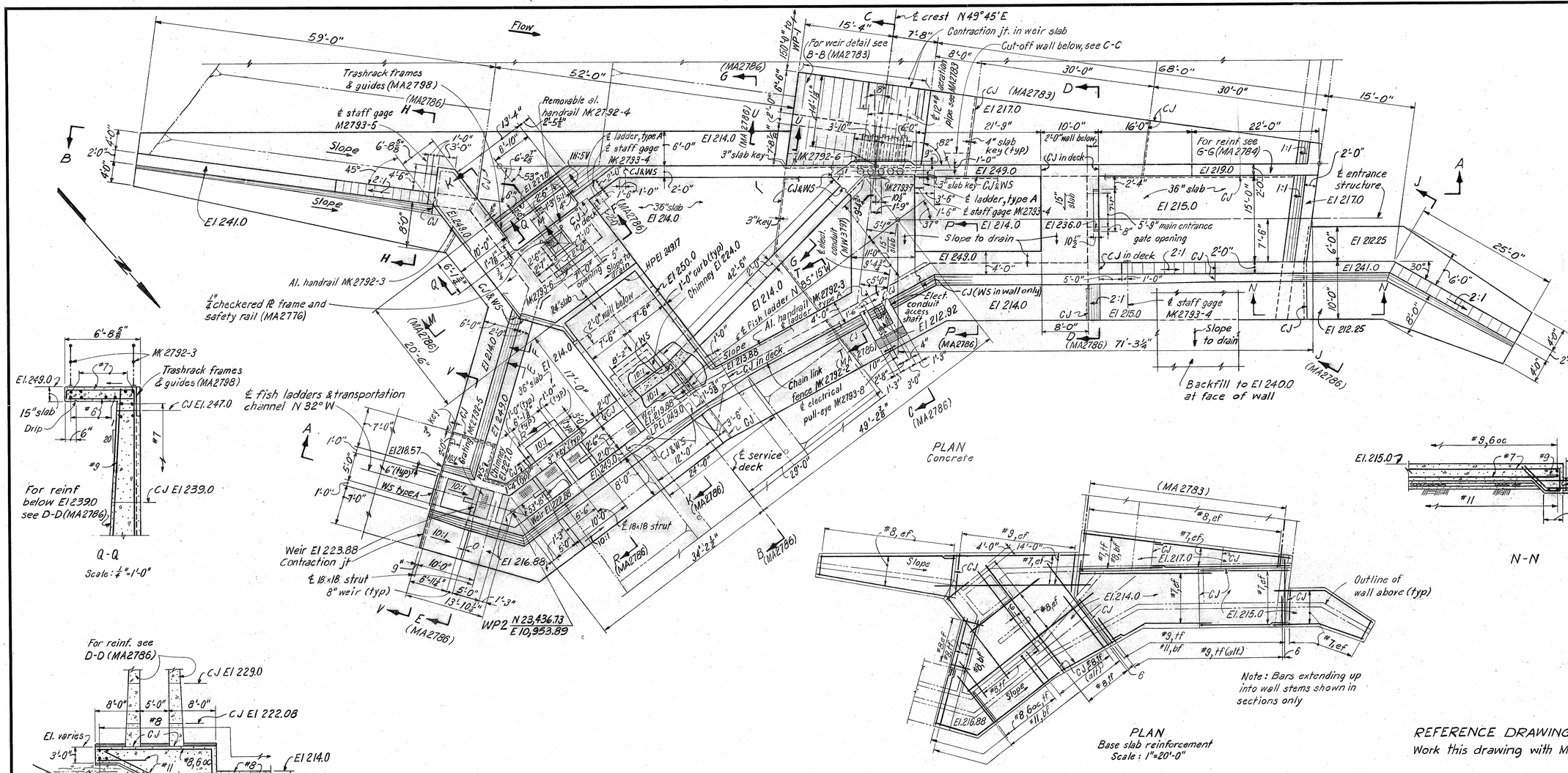
MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

LEFT ABUTMENT
CONCRETE AND REINFORCEMENT

HARZA ENGINEERING COMPANY

DRAWN ELK/RLV — DESIGNED SWG/SAIA
CHECKED FVH — REVIEWED RB AZ
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES
HARZA ENGINEERING COMPANY
PROJECT MANAGER

SCALE As noted — TACOMA, WASHINGTON — DATE MAY, 1967 — DRAWING NUMBER MA 2784 R1/AS



Note: Reinf. bars marked with asterisk (*) indicate extra reinf. to be equally spaced around openings. For other extra reinf around openings see MA 2775

REFERENCE DRAWINGS:
Work this drawing with MA 2782 & MA 2786

NOTES:
1. All water stops to be type B and are to be located at center of slab or wall except as noted.
2. All unformed exposed concrete surfaces to have float finish except as noted.

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Asbuilt; minor revisions		WJW		1/16/69
1	General revisions	4/14/67	SJ FVU	DRR	6/14/67

CONSTRUCTION DWG. AS BUILT

DONALD R. ROBERTS — REGISTERED PROFESSIONAL ENGINEER — STATE OF WASHINGTON — 5742

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

RIGHT ABUTMENT AND ENTRANCE STRUCT. CONCRETE AND REINFORCEMENT SHEET 1

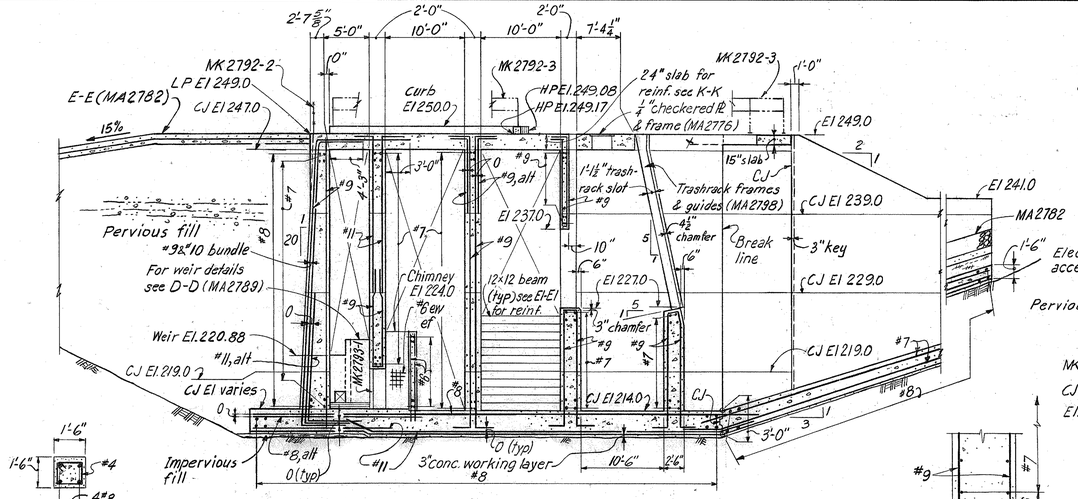
HARZA ENGINEERING COMPANY

DRAWN SJ/RLV	SJ/FVU/SAIA DESIGNED		
CHECKED FVU	REVIEWED	HARZA ENGINEERING COMPANY	

APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

SCALE	TACOMA, WASHINGTON DATE	DRAWING NUMBER
As noted	MAY 1967	MA 2785 R1/AS



REFERENCE DRAWINGS:
Work this drawing with MA2782 & MA2795.

Except as noted
Scale 0 8 16 Feet
1/8" = 1'-0"

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Asbuilt; minor revisions		WJW		1/5/69
1	Minor revisions	6/19/67	BJS FVU	AJ	6/19/67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

RIGHT ABUTMENT AND ENTRANCE STRUCT. CONCRETE AND REINFORCEMENT SHEET 2

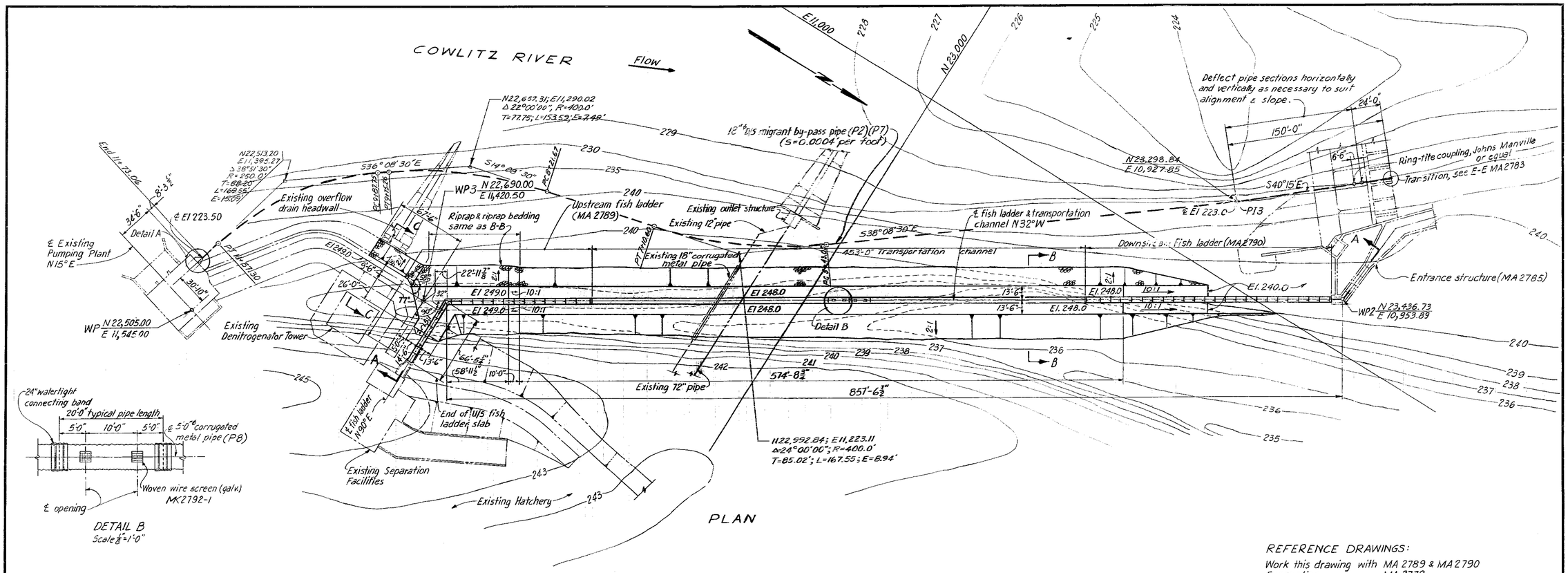
HARZA ENGINEERING COMPANY

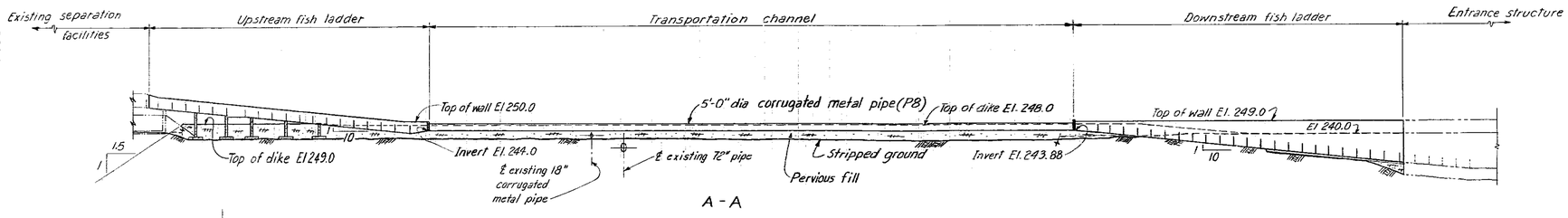
CONSTRUCTION DWG. AS BUILT

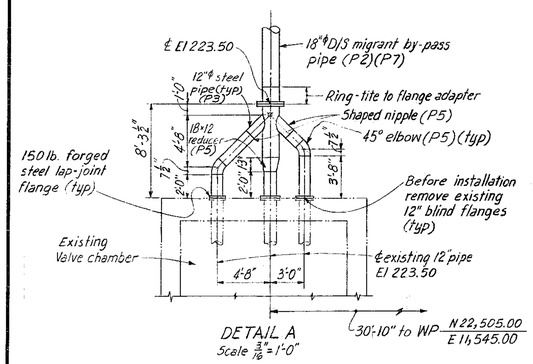
DONALD P. ROBERTS REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON 07

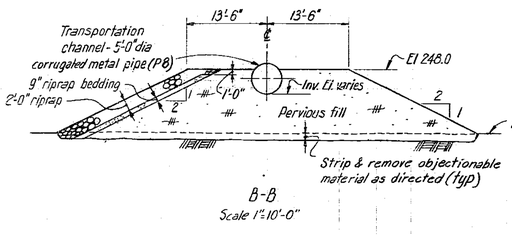
DRAWN SJ/RLV | CHECKED FVU | DESIGNED SJ/FVU/SAIA | REVIEWED | APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES | PROJECT MANAGER D.P. Roberts | HARZA ENGINEERING COMPANY

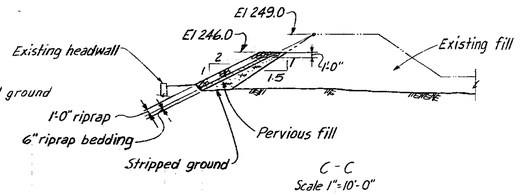
SCALE As noted | DATE TACOMA, WASHINGTON MAY, 1967 | DRAWING NUMBER MA 2786 R1/AS











REFERENCE DRAWINGS:

Work this drawing with MA 2789 & MA 2790
Excavation MA 2778
General Plan- Fish Barrier, Abutments and Entrance Structures MA 2782
Standard Details MA 2775

NOTES:

1. The alignment of the by-pass pipe adjusted by the Engineer with the limitation of joint rotations to reduce depth of excavation. Pipe has a min cover above crown of 2 feet.

Scale 0 40 80 Feet
1"=40'
Except as noted

CONSTRUCTION DWG. AS BUILT

DONALD P. ROBERTS STATE OF WASHINGTON 6712 REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Asbuilt; by pass pipe alignment		WJW		1/7/69
R1	18"ϕ D/S migrant by-pass pipe realigned	4/14/67	SJ	DPR	4/14/67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

GENERAL PLAN FISH LADDERS AND TRANSPORTATION CHANNEL

HARZA ENGINEERING COMPANY

DRAWN ELK | CHECKED SJ | DESIGNED SJ/SAIA | REVIEWED | HARZA ENGINEERING COMPANY

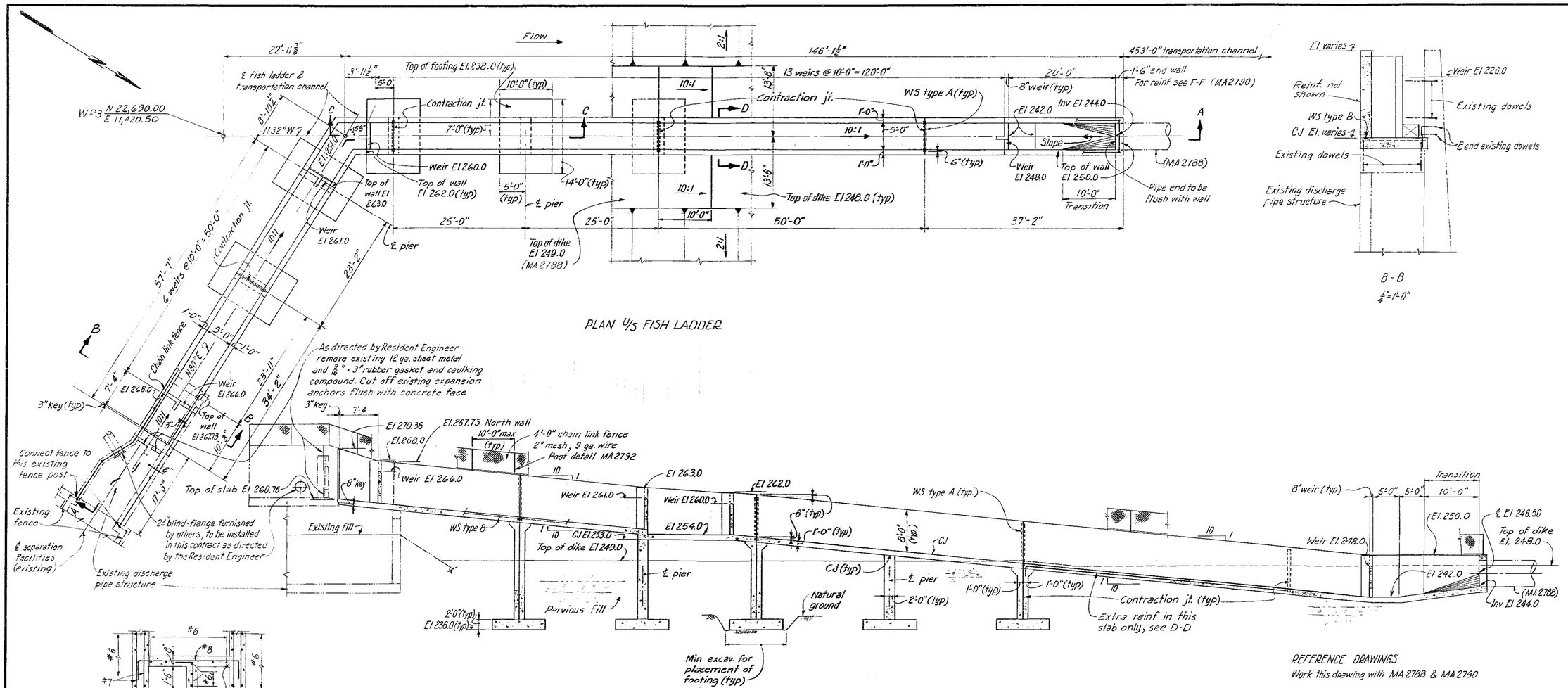
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

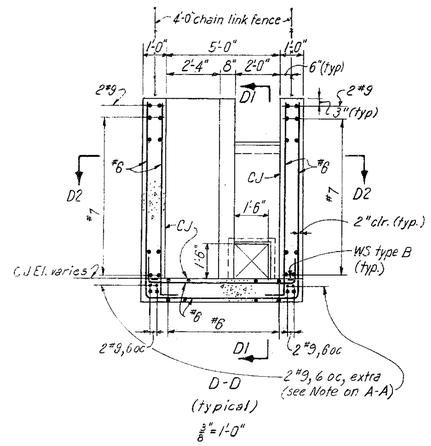
SCALE As shown | TACOMA, WASHINGTON DATE MAY, 1967 | DRAWING NUMBER MA 2788 R1/AS

DRAWER NO.

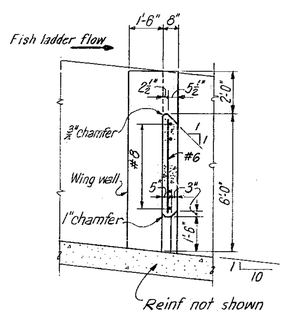
APR 14 1967 APR 28 1967 MAY 8 1967 MAY 10 1967 MAY 15 1967 MAY 16 1967 MAY 19 1967 MAY 25 1967 JUN 6 1967 JUN 6 1967 JUN 7 1967 JUN 14 1967 JUN 27 1967



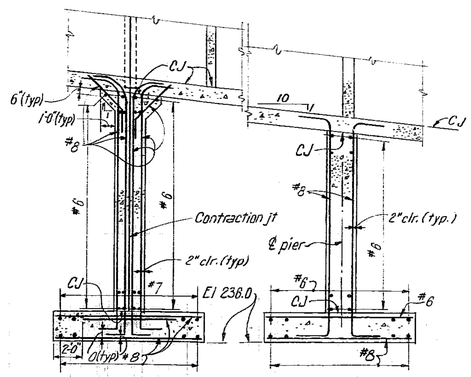
D2 - D2
3/8" = 1'-0"



D - D
(typical)
3/8" = 1'-0"



D1 - D1
Scale 0 3 Feet
3/8" = 1'-0"



C - C
(Typ. pier & footing reinf)
Scale 0 4 Feet
1/4" = 1'-0"

A - A
Reinforcement not shown

REFERENCE DRAWINGS
Work this drawing with MA 2788 & MA 2790

Scale 0 8 Feet
1" = 1'-0"
Except as noted

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Asbuilt; minor correction		WJW		1/7/69

CONSTRUCTION DWG. AS BUILT

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM
FISH LADDERS
CONCRETE AND REINFORCEMENT
SHEET 1

HARZA ENGINEERING COMPANY

DRAWN SJ | DESIGNED SJ/FVU/SAIA | CHECKED SWG | REVIEWED RBM | HARZA ENGINEERING COMPANY D.P. Roberts

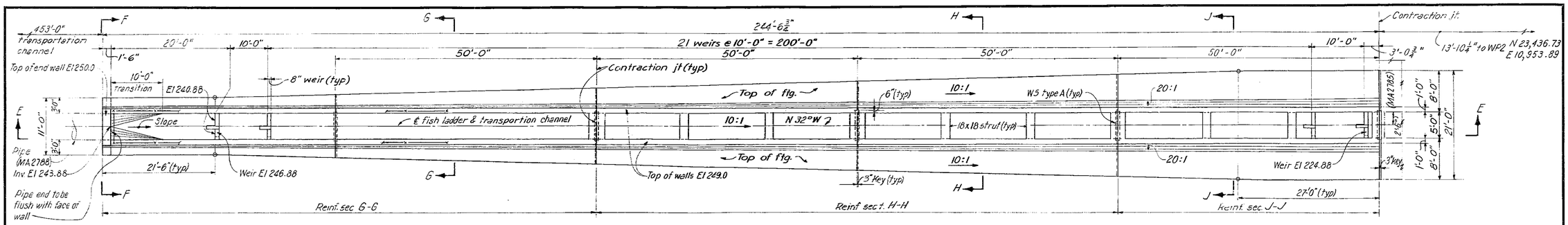
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

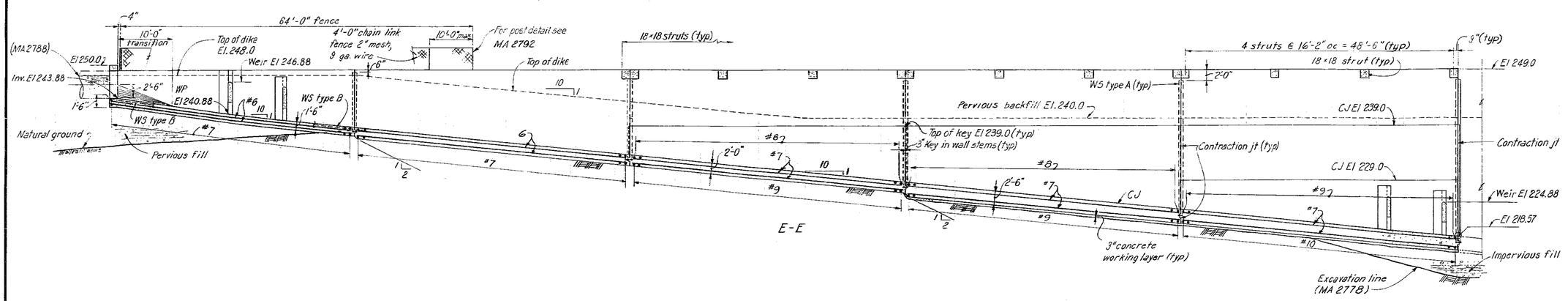
SCALE As noted | TACOMA, WASHINGTON DATE MAY, 1967 | DRAWING NUMBER MA2789 AS

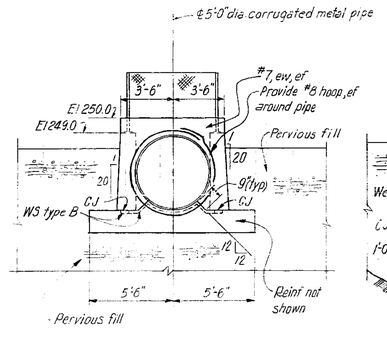
DRAWER NO.

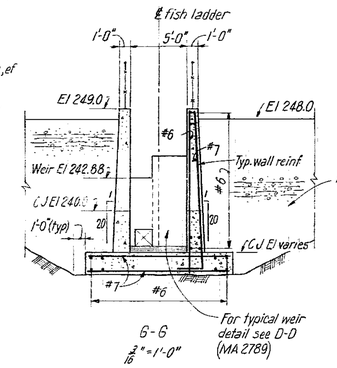
APR 26 1967 MAY 2 1967 MAY 4 1967 MAY 9 1967 MAY 11 1967 MAY 16 1967 JUN 1 1967 JUN 14 1967

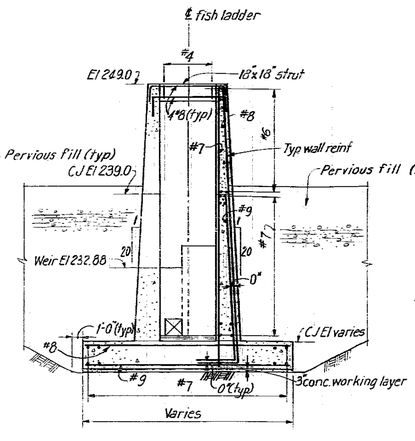


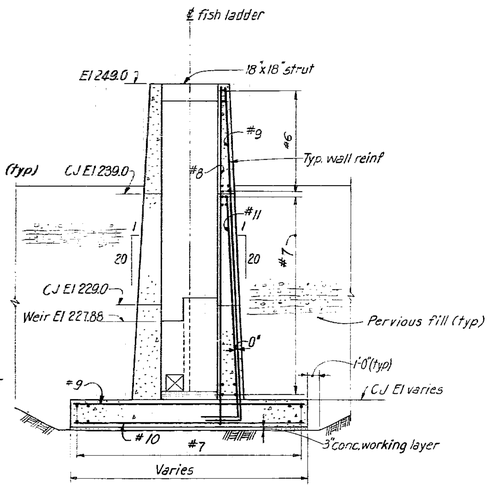
PLAN-DOWNSTREAM FISH LADDER











REFERENCE DRAWINGS :
Work this drawing with MA 2788 & MA 2789

Scale 0 8 16 Feet
1/8" = 1'-0"

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	No Asbuilt Revisions		WJW		1/1/69
1	Added keys - Gen revisions	5/1/67	ELK	DPR	6/1/67

CONSTRUCTION DWG. AS BUILT

DONALD P. ROBERTS — STATE OF WASHINGTON — 6772 — REGISTERED PROFESSIONAL ENGINEER

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

FISH LADDERS
CONCRETE AND REINFORCEMENT
SHEET 2

HARZA ENGINEERING COMPANY

DRAWN SJ/ELK — DESIGNED SJ/SMA
CHECKED SWG — REVIEWED CBA
HARZA ENGINEERING COMPANY

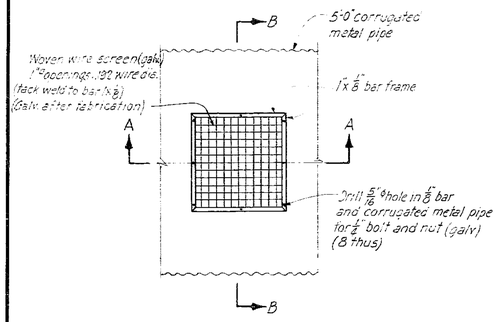
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

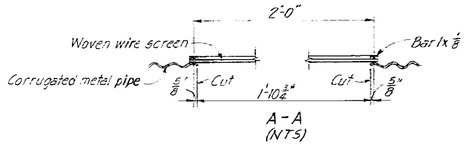
SCALE As noted — DATE TACOMA, WASHINGTON MAY, 1967 — DRAWING NUMBER MA2790RI/AS

DRAWER NO.

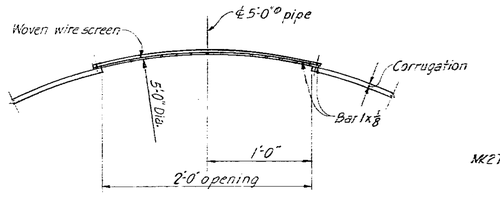
APR 13 1967 APR 14 1967 APR 27 1967 MAY 4 1967 MAY 9 1967 MAY 22 1967 MAY 24 1967 JUN 1 1967



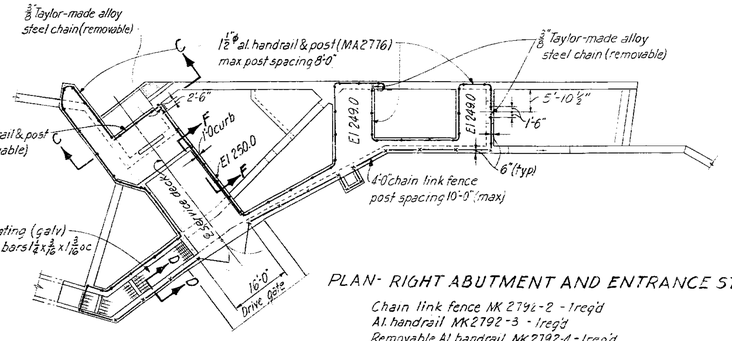
PLAN
Transportation Channel screened openings
MK2792-1 - 44 req'd. (MA2782)
¾" = 1'-0"



A-A
(NTS)



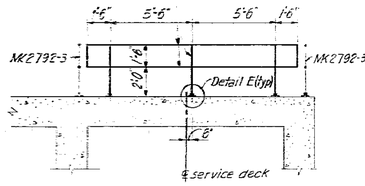
B-B
1½" = 1'-0"



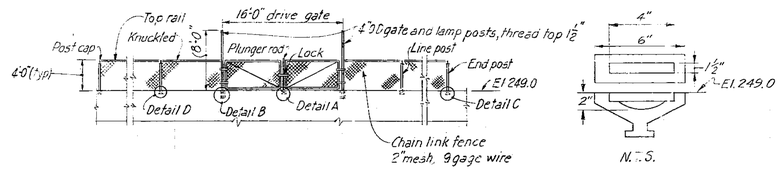
PLAN - RIGHT ABUTMENT AND ENTRANCE STRUCTURE

Chain link fence MK2792-2 - 1 req'd
Al. handrail MK2792-3 - 1 req'd
Removable Al. handrail MK2792-4 - 1 req'd
Grating MK2792-5 1 req'd

1½" ø al handrail & post (removable) MK2792-4



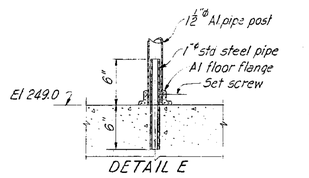
C-C



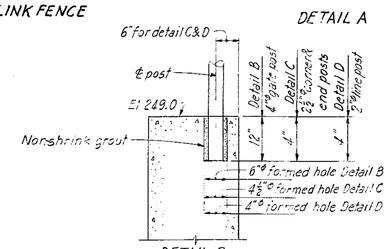
ELEVATION - CHAIN LINK FENCE

N. T. S.

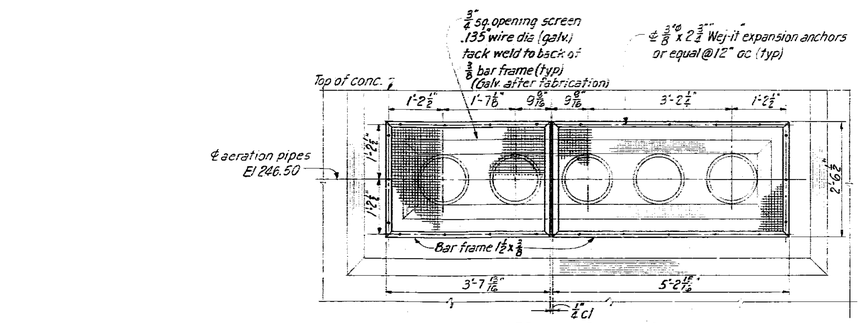
DETAIL A



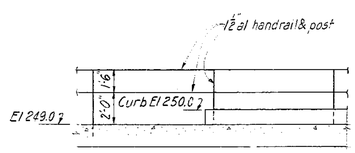
DETAIL E



DETAIL B
DETAILS C & D similar

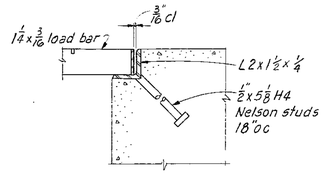


ELEV - AERATION PIPE SCREEN
Entrance structure & left abutment (MA2784 & MA2785)
MK2792-6 2 req'd



F-F

REFERENCE DRAWINGS:
Concrete MA2784, MA2785, MA2788
Standard Details MA2775, MA2776



D-D

CONSTRUCTION DWG. AS BUILT

DONALD F. ROBERTS STATE OF WASHINGTON 6712 REGISTERED PROFESSIONAL ENGINEER

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
AS	Asbuilt; minor revisions		WJW		2/20/69
1	Revised A-A, B-B & misc.	6/14/67	ELK/SAIA	DFR	6/14/67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

MISCELLANEOUS METALS

SHEET 1

HARZA ENGINEERING COMPANY

DRAWN ELK	ELK/SAIA DESIGNED	
CHECKED FVU	REVIEWED	HARZA ENGINEERING COMPANY

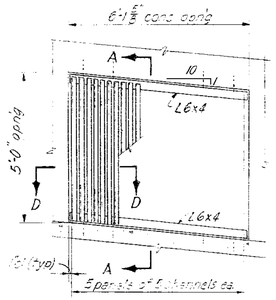
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

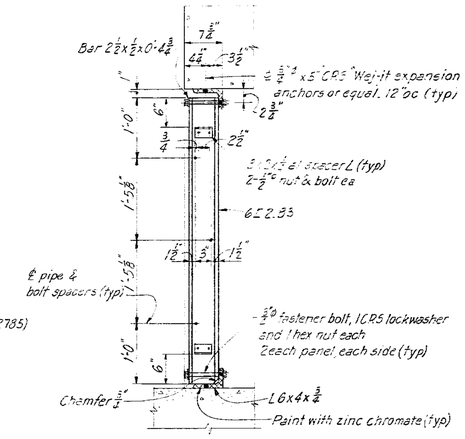
SCALE	TACOMA, WASHINGTON DATE	DRAWING NUMBER
As noted	MAY, 1967	MA2792 R1/AS

DRAWER NO.

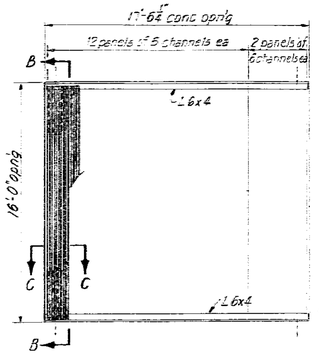
APR 14 1967 MAY 4 1967 MAY 5 1967 MAY 10 1967 MAY 22 1967 MAY 23 1967 JUN 14 1967



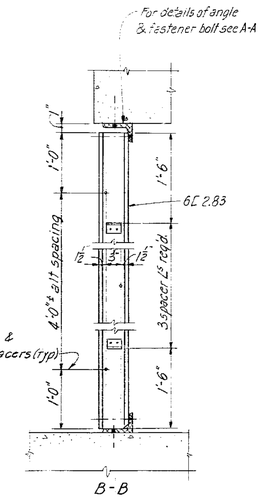
ELEV.-DIFFUSION GRATING (MA2785)
MK2793-1 2 req'd



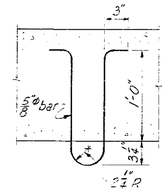
A - A



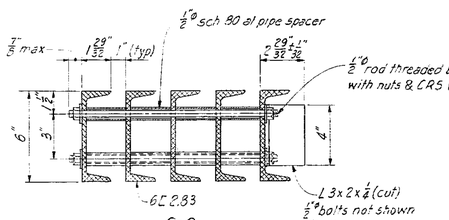
ELEV.-DIFFUSION GRATING (MA2785)
MK2793-2 2 req'd



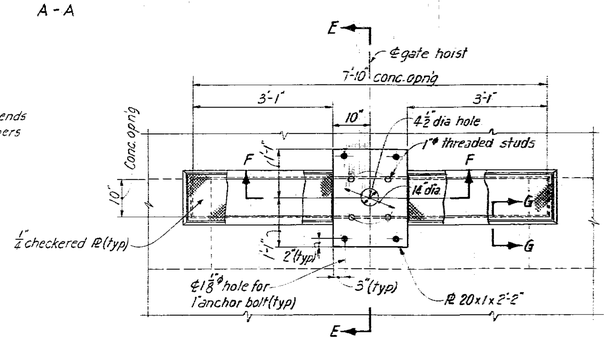
B - B



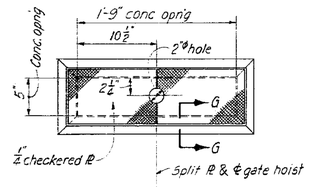
PULL EYE FOR ELECTRIC CABLES
MK2793-8 4 req'd



C-C
D-D
Typical bolt & spacer connections on typical panel



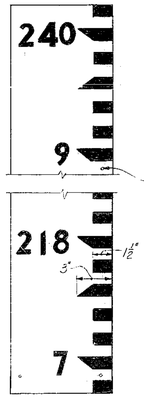
PLAN - GRAVITY INTAKE GATE HOIST MOUNTING PL & FRAME & COVER
MK2793-6 1 req'd (MA2785)



PLAN-RIGHT BANK AUXILIARY ENTRANCE FRAME & COVER
MK2793-7 1 req'd (MA2785)

REFERENCE DRAWINGS:

1. Concrete MA 2785
2. Standard Details MA 2775 & MA 2776
3. Gravity Intake Gate & Guides MA 2796
4. Auxiliary Entrance Gate and Guides - Slot Adjusting Plates MA 2797



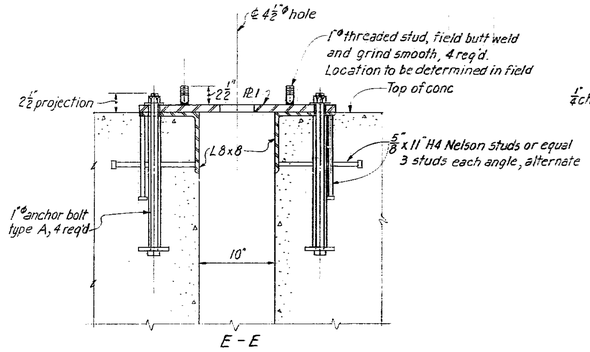
1" x 1 3/4" C.R.S. Wej-it expansion anchors or equal spaced 2'-0" oc min 4 anchors per gage (typ)

1 1/2"
3"

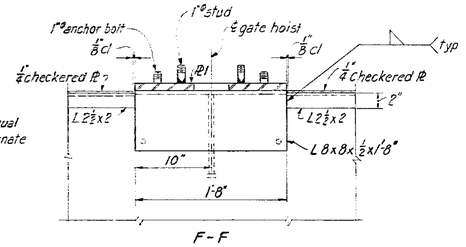
NOTE: Gage material to be No. 8 ga. steel porcelain enameled with black numerals on white background
Full numbers at each even elevation

STAFF GAGE (MA2785)
Top and bottom typical foot shown (MK2793-4)
MK2793-5 similar
See table below

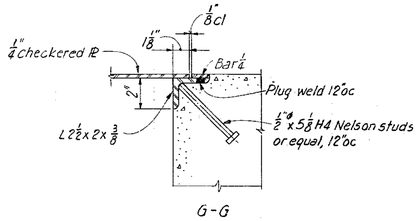
STAFF GAGE TABLE			
Mark No	Elev. range (in feet)	No req'd	Location
2793-4	217 - 240	3	Entrance structure
2793-5	229 - 246	1	Entrance structure (Reservoir wall)



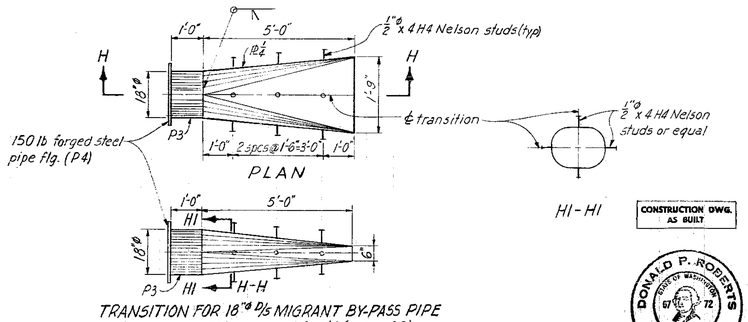
E - E



F - F



G - G



TRANSITION FOR 18" ø D/S MIGRANT BY-PASS PIPE
MK2793-3 1 Req'd (MA2783)

NOTES:

1. All material for diffusion grating to be aluminum except as noted.
2. C.R.S. denotes corrosion resistant steel

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	No Asbuilt Revisions		WJW		1/15/69
1	MK2793-3 rev. dimension - E-E, F-F rev. stud placement	4/1/47	SWG		4/14/67

CONSTRUCTION DWG. AS BUILT

DONALD P. ROBERTS — STATE OF WASHINGTON — 67 72 — REGISTERED PROFESSIONAL ENGINEER

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY - BARRIER DAM

MISCELLANEOUS METALS
SHEET 2

HARZA ENGINEERING COMPANY

DRAWN ELK | ELK / SAIA DESIGNED | REVIEWED RBK2 | HARZA ENGINEERING COMPANY
CHECKED SWG

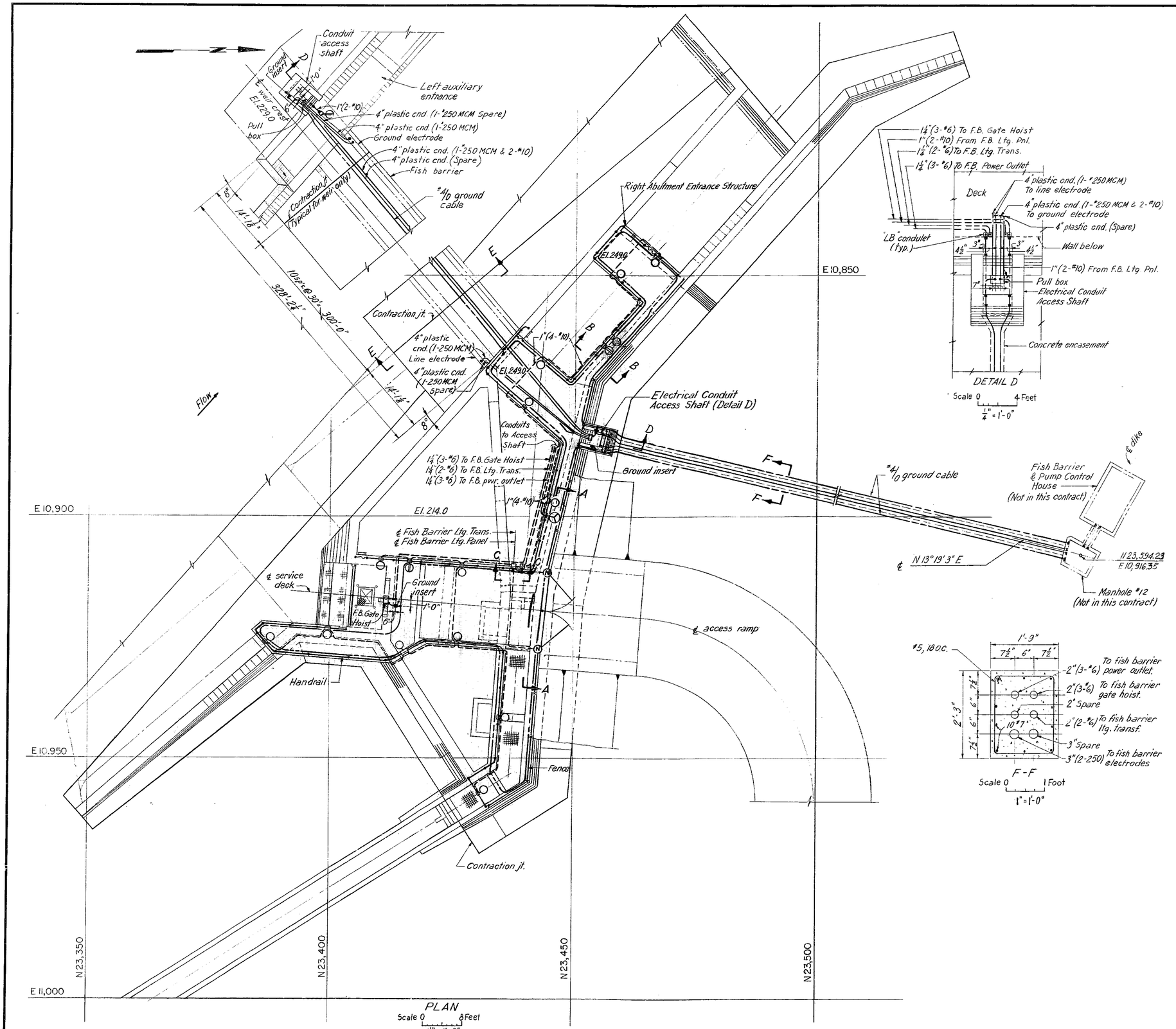
APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

SCALE None | TACOMA, WASHINGTON DATE MAY 1967 | DRAWING NUMBER MA2793R1/AS

DRAWER NO.

MAY 12 1967



SYMBOLS:

- Conduit embedded or buried
- Conduit exposed
- Conduit turning toward observer
- Conduit turning away from observer
- Ground cable
- Lighting fixture type "V" except where noted
- 120V. receptacle
- 440V., 3φ power outlet
- Ground insert

REFERENCE DRAWINGS:

Civil	MA2783, MA2784, MA2785
Mechanical	MA2641

This drawing is NOT in the database - need to check the vault

NOTES:

1. Conduits for lighting & receptacles shall be ¾" in size containing 2-#10 wires, unless otherwise noted.
2. Location of Fish Barrier Lighting Transformer, Panel, receptacles & fixture type "V" shall be determined in field.
3. Conduit runs to all electrical items shall be exposed as much as possible beneath the concrete slabs.
4. Conduits running from Electrical Conduit Access Shaft to Manhole #10 shall be uniformly sloped toward this manhole.
5. All conduits leaving concrete shall be terminated with conduit coupling flush with the surface.
6. All sleeves shall be plugged with flush type pipe plugs.
7. Exposed ¾" conduits shall be supported at 5 foot intervals or less & 1" conduits & larger at 10 foot intervals or less.
8. Size of main ground cables shall be #4/0 AWG.
9. Ground cables buried in earth shall be laid at a minimum depth of 12 inches below finished grade.
10. If required, 1-inch diameter copperweld rods shall be driven to achieve the specified 5 ohm resistance.
11. Connections to major equipment (Lighting transf. panel etc. shall be #2/0 AWG. Connections to motors and exposed metal parts shall be #6 AWG, unless otherwise noted.
12. All exposed metal parts, frames, conduits, waterpipe systems, fences, railings, etc. shall be grounded.
13. Clamp exposed ground cable to steel members at 5 feet centers & to concrete surfaces at 3 feet centers.
14. Fences & handrails shall be grounded at not over 25 foot intervals & bonded for electrical continuity.
15. Fence gates shall be grounded by the use of copper flexible braid & required connectors.
16. For other electrical requirements refer to the specifications.
17. Coil 3'-0" of each 250 MCM cable & protect against damage in this pull box. These cables are to be used in case of a failure of either line or ground electrode cables.
18. Concrete reinforcing should not come in contact with either electrode, Nelson studs or Cadweld connections.

CONSTRUCTION DWG. AS BUILT

NO.	REVISION	ISSUE DATE	BY	APP'D	DATE
As	Asbuilt; minor revisions				
1	General	6-21-67	D.A.H.	[illegible]	6-21-67

CITY OF TACOMA
DEPARTMENT OF PUBLIC UTILITIES
MAJOR PROJECTS DIVISION

MOSSYROCK PROJECT
SALMON HATCHERY-BARRIER DAM

CONDUIT, GROUNDING & LIGHTING LAYOUT
SHEET 1

HARZA ENGINEERING COMPANY

DRAWN B.K. CHECKED [illegible] DESIGNED [illegible] REVIEWED [illegible] HARZA ENGINEERING COMPANY

APPROVED FOR CITY OF TACOMA AS TO GENERAL FEATURES

PROJECT MANAGER

SCALE As Shown | TACOMA, WASHINGTON DATE May 1967 | DRAWING NUMBER MW 3797R1/AS

DRAWER NO.

MAY 1 1967 MAY 2 1967 MAY 5 1967 MAY 26 1967 JUN 12 1967 JUN 19 1967 JUN 20 1967 JUN 21 1967 JUL 11 1967

2500 CFS 8/29/2020

2500 CFS 8/29/2020

2500 CFS 8/29/2020

2500 CFS 8/29/2020

6300 CFS 6/5/2020

6300 CFS 6/5/2020

6300 CFS 6/5/2020