

**STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES**

**PLAN AND PROFILE
PROPOSED HIGHWAY PROJECT
KETCHIKAN
SHUTTLE FERRY FACILITIES
FM-0922(2) , 68783
&
SHUTTLE FERRY LEFT TURN LANE
F-091-1(2) , 69545**

STATE	PROJECT	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1	53

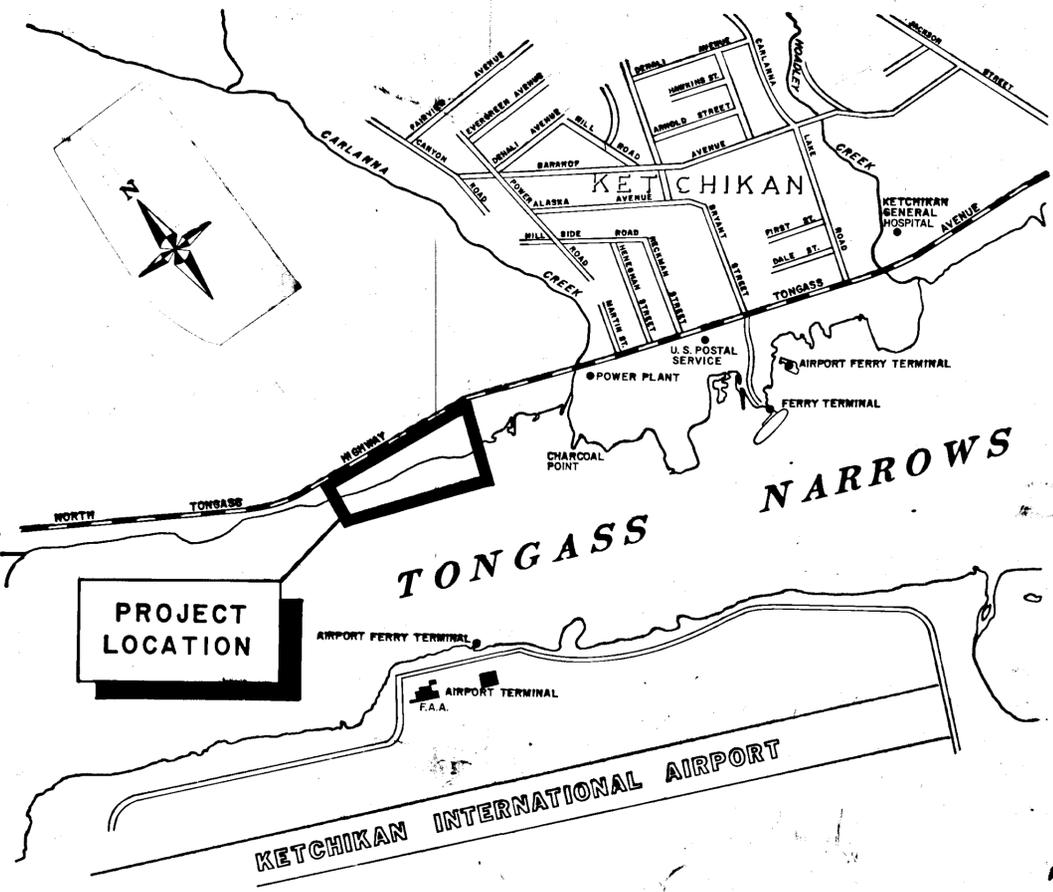
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3	GENERAL LAYOUT
4 & 5	CROSS SECTIONS
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DESIGN DESIGNATION
(LEFT TURN LANE)

A.D.T. (1986)	=	7,132
A.D.T. (2007)	=	10,597
D.H.V. (13%)	=	1,378
% T.	=	7%
V.	=	40 MPH
T.I.	=	8.5

"AS-BUILT" PLANS

CONTRACTOR : Dawson Construction Co.
 PROJECT ENGINEER : Chuck Correa
 ORIGINAL CONTRACT AMOUNT : \$2,058,134
 BEGIN CONSTRUCTION : November 20, 1987
 COMPLETION DATE : August 29, 1988



THE FOLLOWING STANDARD DRAWINGS APPLY TO THIS PROJECT :
 A-1, C-01.02, C-02.00, C-03.01, C-04.00, D-01.00, D-04.10, D-20.01, D-23.00, D-24.00, D-26.01, D-05.10, F-01.01, G-04.02S, G-14.03S, G-15.00, S-00.00, S-05.00, S-20.00, S-30.01, T-20.00, T-21.01, T-22.01.

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
&
PUBLIC FACILITIES
APPROVED
Wallace Williams Date 5/27/87
SOUTHEASTERN REGION DESIGN CHIEF

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION
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PUBLIC FACILITIES
APPROVED
Wallace Williams Date 5/27/87
DIRECTOR, SOUTHEAST REGION DESIGN & CONSTRUCTION

ESTIMATE OF QUANTITIES					
ITEM NO.	ITEM	UNIT	FACILITIES No. 68783	LEFT TURN LANE No. 69545	TOTAL
110(2)	Mobilization and Demobilization	L.S.	All Req'd.	All Req'd.	All Req'd.
111(1)	Temporary Erosion and Pollution Control	C.S.	All Req'd.	All Req'd.	All Req'd.
113(1)	Flagging	M.H.	40-60	40-60	40-60
114(1)	Construction Surveying by The Contractor	L.S.	All Req'd.	All Req'd.	All Req'd.
115(1)	Traffic Control	L.S.		All Req'd.	All Req'd.
115(2)	Construction Signs	Sq. Ft.		124-87	124-87
115(8)	Cones	L.S.		All Req'd.	All Req'd.
116(1)	Furnishing and Maintaining Field Office	L.S.	All Req'd.	All Req'd.	All Req'd.
203(3)	Unclassified Excavation	C.Y.	3709.000	203+52	95739+52
207(3)	Filter Cloth	L.S.	All Req'd.		All Req'd.
301(1)	Crushed Aggregate Base Course	Ton	3128,2330	364390	3492,220
401(1)	Asphalt Concrete, Type II	Ton	1173 960	198+100	1371,000
401(2)	Asphalt Cement, AC-5	Ton	10857.5	103-6	711-63.5
403(2)	MC-30 Liquid Asphalt for Prime Coat	Ton	3.9-8.4	0-0.7	39-8.8
504(6)	Nondestructive Testing E.W.O.#7	L.S.	All Req'd.		All Req'd.
501(1A)	Concrete Headwall E.W.O.#5	L.S.	All Req'd.	All Req'd.	All Req'd.
501(1)	Class A Concrete	L.S.	All Req'd.		All Req'd.
503(1)	Reinforcing Steel	L.S.	All Req'd.		All Req'd.
504(1)	Structural Steel Pontoon & Restraint Cap	L.S.	All Req'd.		All Req'd.
504(2)	Structural Steel Dolphin Cap & Fender System	Each	4		4
504(3)	Structural Steel Transfer Bridge	L.S.	All Req'd.		All Req'd.
504(2A)	EKKI Timber Price Reduction E.W.O.#6	L.S.	All Req'd.		All Req'd.
504(4)	Grating Transition Bars E.W.O.#3	L.S.	All Req'd.		All Req'd.
504(5)	Apron Modifications E.W.O.#7	L.S.	All Req'd.		All Req'd.
505(14D)	14 Inch Pipe Piles, Driven	Each	5		5
505(14F)	14 Inch Pipe Piles, Furnished	Lin. Ft.	403 501		403 501
505(18D)	18 Inch Pipe Piles, Driven	Each	32		32
505(18F)	18 Inch Pipe Piles, Furnished E.W.O.#1	Lin. Ft.	3,294 3,332		3,294 3,332
505(24D)	24 Inch Pipe Piles, Driven	Each	4		4
505(24F)	24 Inch Pipe Piles, Furnished	Lin. Ft.	521 496		521 496
511(1)	Prestressed Pile Anchors	Each	0 4		0 4
603(1-18)	18 Inch Corrugated Steel Pipe	Lin. Ft.		33 36	33 36
603(13-18)	18 Inch Corrugated Aluminum Pipe	Lin. Ft.		75 70	75 70
603(13-42)	42 Inch Corrugated Aluminum Pipe	Lin. Ft.		366 378	366 378
603(30)	12 Inch Slotted Drain	L.S.	All Req'd.		All Req'd.
603(30)	Storm Drain Modification E.W.O.#5	L.S.		All Req'd.	All Req'd.
604(1)	Storm Sewer Manhole	Each		1	1
604(4)	Adjust Existing Manholes	Each		0 2	0 2
604(5)	Inlet, Type "A"	Each		2	2
606(1)	Beam Type Guard Rail	Lin. Ft.	300		300
607(4)	Reconstructed Fence	Lin. Ft.		216 220	216 220
608(1)	Concrete Sidewalk, 4 Inch Depth	Sq. Yd.	163 166		163 166
609(2)	Curb and Gutter	Lin. Ft.	382 575	768 916	749 1350
611(1)	Riprap, Class II	Cu. Yd.	3822 3950		3822 3950
628(12)	Relocate Existing Underground Utilities E.W.O.#5	L.S.		All Req'd.	All Req'd.
615(1)	Standard Sign	Sq. Ft.	2648 4.57	12.00	2849 6.57
625(1)	Pipe Hand Rail	Lin. Ft.	400 39.8		400 39.8
626(2)	Extend Existing Sewer Outfall E.W.O.#4	L.S.	All Req'd.		All Req'd.
656(1)	Generator Building	L.S.	All Req'd.		All Req'd.
657(1)	Barrier Gate	L.S.	All Req'd.		All Req'd.
658(1)	Electrical and Lighting System, Complete	L.S.	All Req'd.		All Req'd.
659(1)	Emergency Generator Set, Complete	L.S.	All Req'd.		All Req'd.
670(1)	Painted Traffic Markings	L.S.	All Req'd.	All Req'd.	All Req'd.
670(8)	Removal of Existing Striping	L.S.		All Req'd.	All Req'd.

APPROXIMATE QUANTITY OF MATERIALS NOT LISTED AS PAY ITEMS

Riprap Bedding Material = 500 c.y.
 Filter Cloth = 4,000 sq. yds.
 Subbase = 1,700 c.y.

* does not include overlap or folds.

STANDARD SIGN SCHEDULE														
NO.	STATION	OFFSET		CODE NO.	LEGEND	CLASS	SIGN PANEL		AREA S. F.	NO. OF POST	POST			FACING TRAFFIC
		LEFT	RIGHT				THICKNESS	FRAMED			UNFRAMED	TYPE	SIZE	
①	"P" 10+09	110'		R1-1	STOP	L	0.080	6254.86	1	P.S.T.	2"x2"	13'-0"	3'-6"	N.B.
②	"P" 10+51	102'		R1-1	STOP	L	0.080	6254.86	1	P.S.T.	2"x2"	13'-0"	3'-6"	N.B.
③	"P" 10+38	18'		R1-1	STOP	L	0.080	6254.86	1	P.S.T.	2"x2"	14'-6"	3'-6"	W.B.
④	"P" 12+56	18'		R1-1	STOP	L	0.080	6254.86	1	P.S.T.	2"x2"	14'-6"	3'-6"	E.B.
⑤	"P" 10+97.79		218.2'	R1-2	YIELD	L	0.080	3903.13	①					E.B.
⑥	"P" 12+66.31	41.1'		R2-1	SPEED LIMIT 15	L	0.080	5.00	1	P.S.T.	2"x2"	13'-6"	3'-6"	S.B.
⑦	"P" 10+38	18'		R6-1(R)	ONE WAY	L	0.080	3.00	②					W.B.
⑧	"P" 12+56	18'		R6-1(R)	ONE WAY	L	0.080	3.00	③					E.B.
⑨	"P" 10+97.79		218.2'	R3-5L	ONLY	L	0.080	7.50	1	P.S.T.	2"x2"	16'-6"	3'-6"	E.B.
⑩	"P" 10+09	110'		R5-1	DO NOT ENTER	L	0.080	6.25	④					S.B.
⑪	"P" 10+51	102'		R5-1	DO NOT ENTER	L	0.080	6.25	⑤					S.B.
⑫	"P" 10+09		40'	R7-106	LOADING ZONE	L	0.080	1.50	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
⑬	"P" 10+35.90		114.4'	R7-106	LOADING ZONE	L	0.080	1.50	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
⑭	"P" 10+70.22		157.4'	R7-106	LOADING ZONE	L	0.080	1.50	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
⑮	"P" 10+09	17'		R7-101R	NO PARKING ANYTIME	L	0.080	1.50	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
⑯	"T" 10+78 9+10		22'	I-5	AIRPORT	L	0.080	6.00	1	P.S.T.	2"x2"	14'-6"	3'-6"	W.B.
⑰	"T" 14+30	205'		I-5	AIRPORT	L	0.080	6.00	1	P.S.T.	2"x2"	14'-6"	3'-6"	E.B.
⑱	"P" 11+12.67	100'		D9-6	HANDICAP PARKING	L	0.080	4.00	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
⑲	"P" 11+28.21	100'		D9-6	HANDICAP PARKING	L	0.080	4.00	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
⑳	"P" 11+43.76	100'		D9-6	HANDICAP PARKING	L	0.080	4.00	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
㉑	"P" 11+59.31	100'		D9-6	HANDICAP PARKING	L	0.080	4.00	1	P.S.T.	2"x2"	12'-6"	3'-6"	W.B.
㉒	"P" 10+42	91'		R7-108	24 HR PARKING	L	0.080	1.50						Band to Light Pole
㉓	"P" 11+12	100'		R7-108	24 HR PARKING	L	0.080	1.50						Band to Light Pole
㉔	"P" 11+52 12+62	10'		R7-108	24 HR PARKING	L	0.080	1.50						Band to Light Pole
㉕	"P" 11+52	38'		R7-108	4 HR PARKING	L	0.080	1.50						Band to Light Pole Deleted
㉖	"P" 11+92	100'		R7-108	4 HR PARKING	L	0.080	1.50						Band to Light Pole Deleted
㉗	"P" 12+47	58'		R7-108	4 HR PARKING	L	0.080	1.50						Band to Light Pole Deleted

* From Alaska Sign Design Specifications.
 ** Lengths given are approximate.
 *** Stations and offsets are approximate, shall be field adjusted if necessary to better fit field conditions, in accordance with the Engineer.
 ① See plan sheets 7 and 12 for sign location layouts.

① Shall be located on the same post and below sign no. ①.
 ② Shall be located on the same post and below sign no. ②.
 ③ Shall be located on the same post and below sign no. ③.
 ④ Shall be located on the same post and on the back side of sign no. ①.
 ⑤ Shall be located on the same post and on the back side of sign no. ②.
 Signs ②, ③, ④, & ⑤ shall be installed facing into the parking lot.
 Signs ②, ③, ④, & ⑤ shall be installed to back on the same light pole.

INLET SUMMARY				
STRUCTURE	TYPE	LOCATION	TOP ELEV.	INVERT ELEV.
S-2	Std. Manhole w/Frame & Grate	Sta. "P" 12+40, -E 2' Lt.	24.13	18.63
S-3	"A" Curb Inlet	Sta. "P" 13+14.78, E	23.38	20.50
S-4**	"A" Curb Inlet	Sta. "T" 9+50, -20.5' Lt. 45' 24.5'	22.79 ^b	18.44

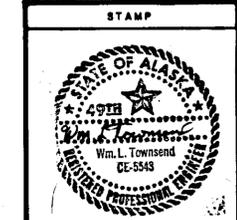
PIPE SUMMARY							
PIPE	DIA.	LENGTH	TYPE	FROM		TO	
				STRUCTURE/STA.	ELEV.	STRUCTURE/STA.	ELEV.
P-1	42"	165' 15.4	C.A.P.	"P" 12+10.7, 7+16.02 Lt.	20.33-5	S-2	18.73 ^b
P-2	42"	213' 21.2	C.A.P.	7+64 S-2 15.6	18.63	Daylight *	16.48
P-3	18"	75' 7.6	C.A.P.	S-3	20.50	S-2	19.77
P-4**	18"	33' 3.6	Match Exist.	S-4	19.44-20.0	Exist. Culvert	18.70-19.7

* Sta. "P" 12+07.12, 210.45 Rt. (approx.)
 ** See sht. 13 for details.

GENERAL DRAINAGE NOTES

- Curb inlet offsets are shown to edge of gutter.
- Pipe invert and structure elevation are subject to minor revisions to fit field conditions.
- Standard curb inlet for S-3 shall conform to the design pattern 04 and S-4 to 03R as shown on the Standard Drawing D-23.00.
- Drainage accessories (tee, elbow, coupling, frame, grate & etc.) shall be considered incidental to the pipe or structure involved.
- Length of pipe given are only approx. and subject to changes.
- Culverts passing thru riprap shall be protected w/crushed aggregate base course as shown on the plan details.

BASIS OF ESTIMATE	
ITEM NO.	ESTIMATING FACTOR
200	
301(1)	196 Tons per Cu. Yd.
401(1)	146 lbs. per Sq. Yd. per Inch Depth.
401(2)	616% of Item 401(1).
403(2)	0.25 Gal. per Sq. Yd. - 256 Gal. per Ton.



DO NOT SCALE THIS DRAWING - USE DIMENSIONS

STATE OF ALASKA
 DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

ESTIMATE OF QUANTITIES
 AND
 STANDARD SIGN SCHEDULE

DESIGNED D.D.S. _____ CHECKED W.L.T. _____ DRAWN D.K. _____ DATE MARCH _____
 PROJECT NUMBER FM-0922(2) 68733 SHEET 2 OF 53

Existing P.I. monument recovered

Exist. culvert to be replaced under "North Tongass Hwy. Paving, Stage I" contract. Its materials shall be stored in this area except by approval of Engineer.

Begin North Tongass Hwy. Paving, Stage I by others
Sta. "0" 1799.90
N 94, 011.008
E 95, 012.449

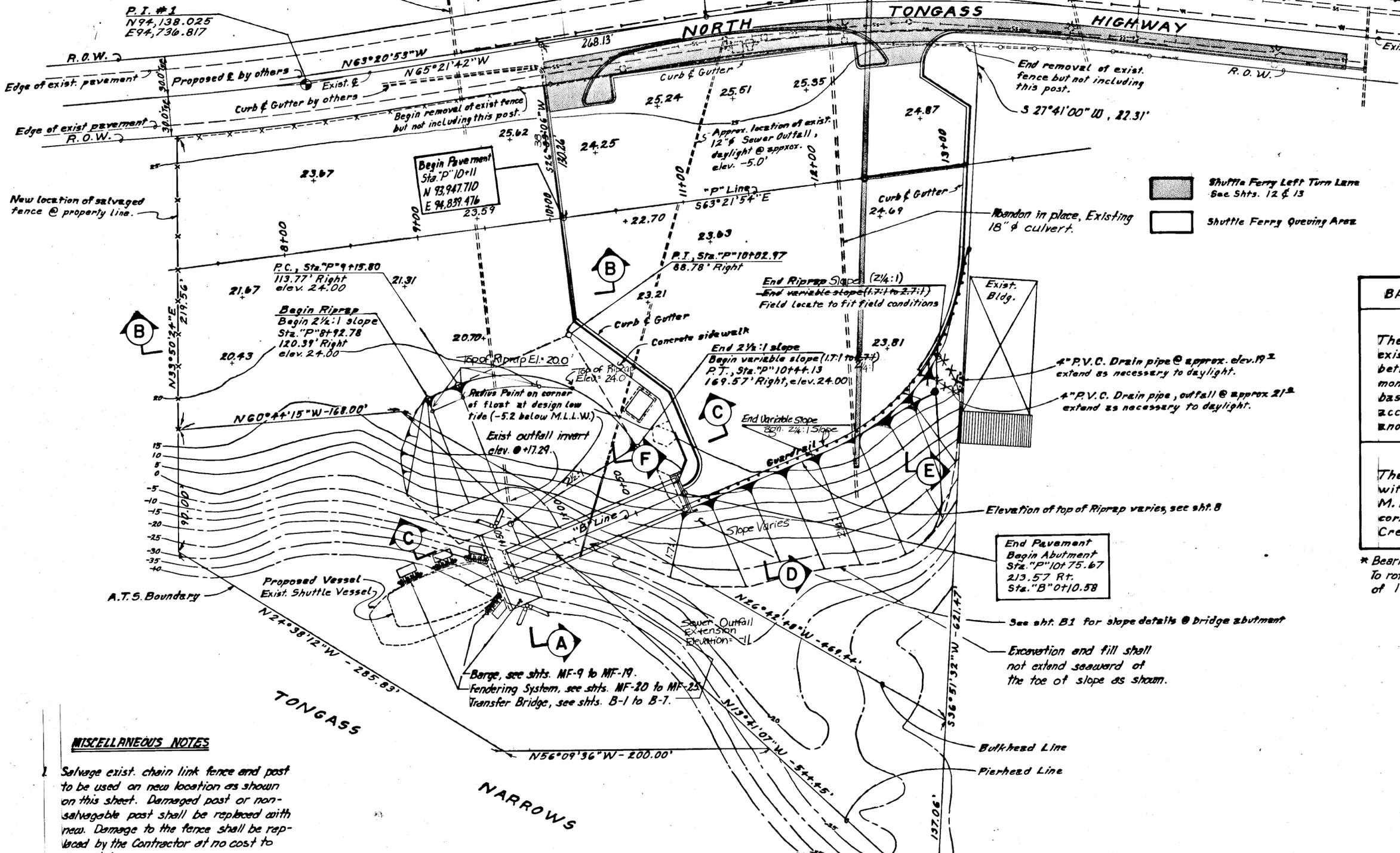
Exist. hole around the inlet of exist. culvert shall be backfilled w/consolidated material to match ditch line. Work shall be considered incidental to item 405(13-42).

EXIST. & CURVE DATA

$\Delta = 15^{\circ}44'04"$
 $D = 4^{\circ}56'57" \text{ Lt.}$
 $L = 319.93'$
 $T = 159.97'$
 $R = 1157.71'$

P.I. #1
N 94, 138.025
E 94, 730.817

P.I. #2
N 93, 952.455
E 95, 141.421



Shuttle Ferry Left Turn Lane
See Shts. 12 & 13

Shuttle Ferry Queuing Area

BASIS OF PROJECT CONTROL

HORIZONTAL CONTROL *
The basis of horizontal control is the existing centerline bearing of $N65^{\circ}21'42" \text{ W}$ between P.I. monument #2 and P.I. monument #1 as shown on the plans. The basis of coordinates is P.I. #2 with accepted coordinates of N 93,952.455 and E 95,141.421

VERTICAL CONTROL
The basis of vertical control is TBM KS-1, with an elevation of 29.01 feet above M.L.L.W. It is located on the southeast corner of the south abutment of Carlana Creek Bridge.

* Bearings are based on Alaska State Plane Grid Zone 1. To rotate to true bearings apply a clockwise rotation of $1^{\circ}34'36"$. All distances shown are true (geodetic).

MISCELLANEOUS NOTES

1. Salvage exist. chain link fence and post to be used on new location as shown on this sheet. Damaged post or non-salvagable post shall be replaced with new. Damage to the fence shall be replaced by the Contractor at no cost to the State.
2. Sections A-R thru FF are on shts. 4 & 5.
3. Spot elevations shown are exist. ground elev.
4. Exist. culverts and sewer outfall shall be cut-off to match face of riprap.

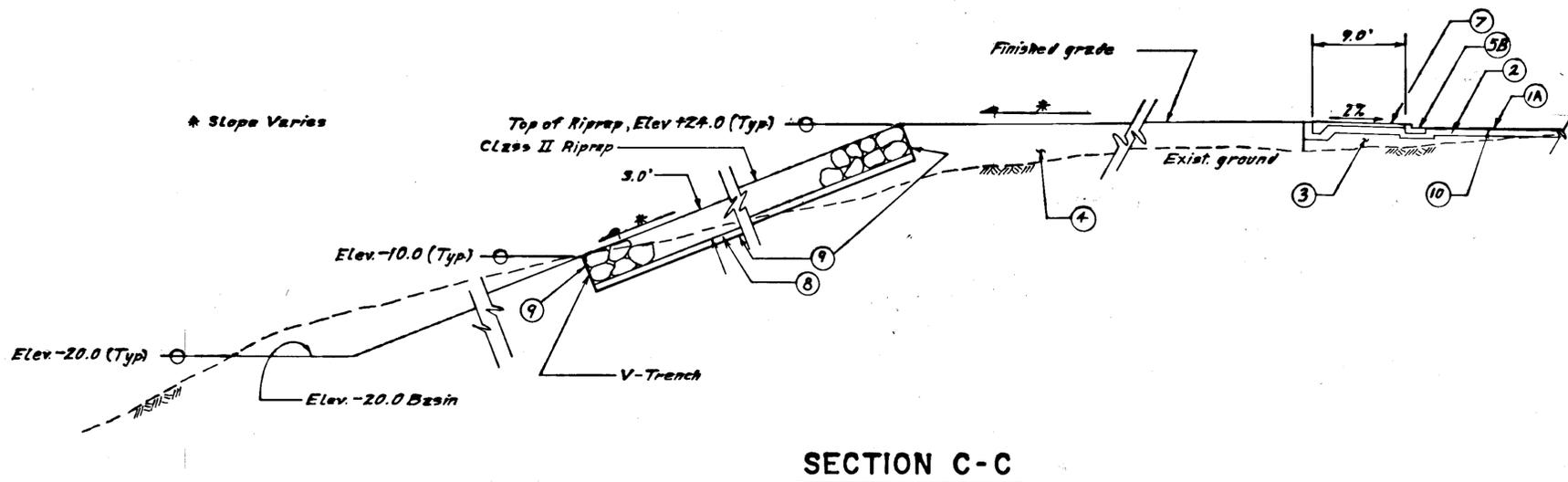
CURVE DATA FOR TOP OF RIPRAP

$\Delta = 79^{\circ}00'00"$
 $D = 32^{\circ}05'13"$
 $L = 151.67'$
 $T = 90.88'$
 $R = 110.00'$



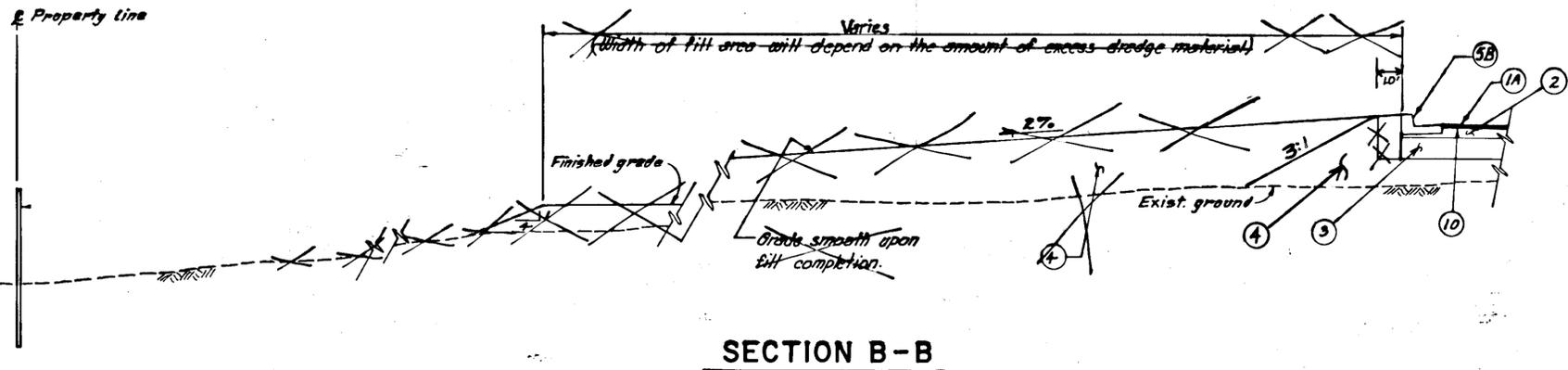
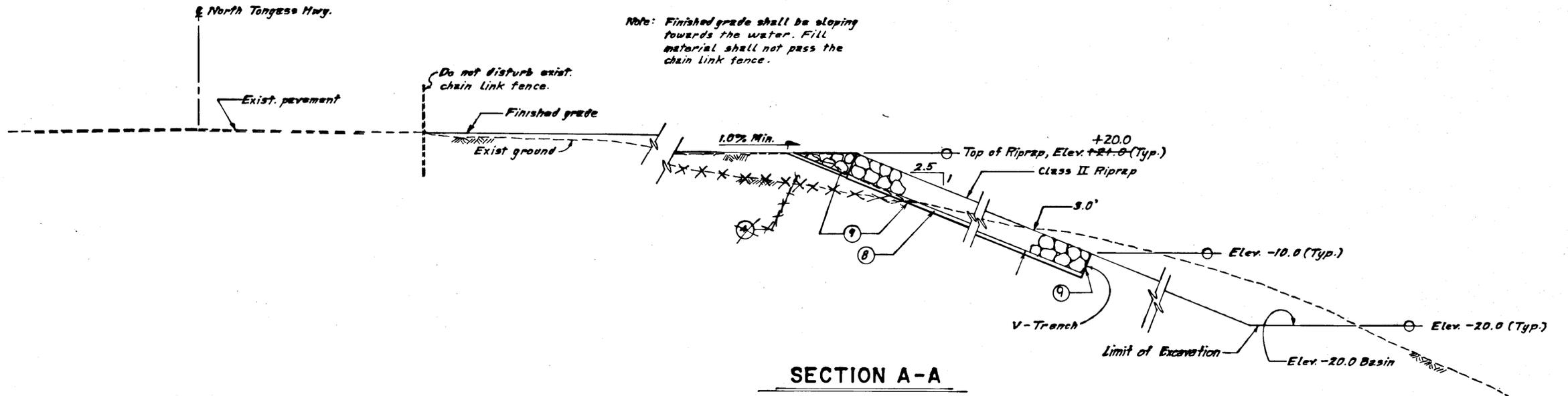
SCALE

	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES KETCHIKAN ALASKA			
GENERAL LAYOUT				
DESIGNED D.D.S.	CHECKED W.L.T.	DRAWN B.H.	DATE FEB. 1987	
PROJECT NUMBER FM-0922(2) 68783	SHEET 3		OF 53	



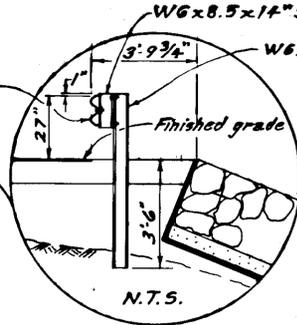
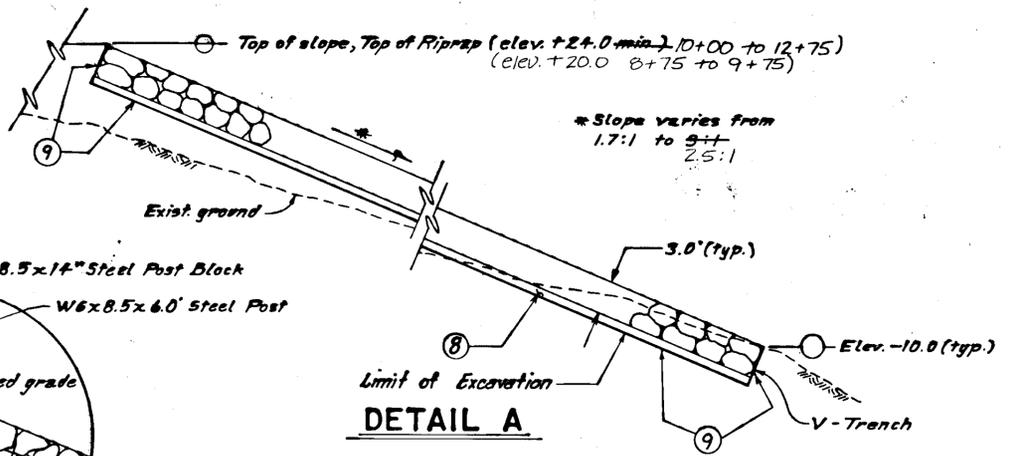
- LEGEND**
- ① 5" Asphalt Concrete Pavement, Type II
 - ② 2" Asphalt Concrete Pavement, Type II
 - ③ 6" Crushed Aggregate Base Course
 - ④ 12" Subbase (from dredge material), see specs.
 - ⑤ Subgrade (useable unclassified excavation)
 - ⑥ Concrete Curb & Butter, Type A **
 - ⑦ Concrete Curb & Butter, Type B **
 - ⑧ Guardrail
 - ⑨ 9.0' Wide Concrete Sidewalk
 - ⑩ 6" Riprap Bedding Material
 - ⑪ Filter Cloth
 - ⑫ Prime Coat

** See Sht. 10 for Details



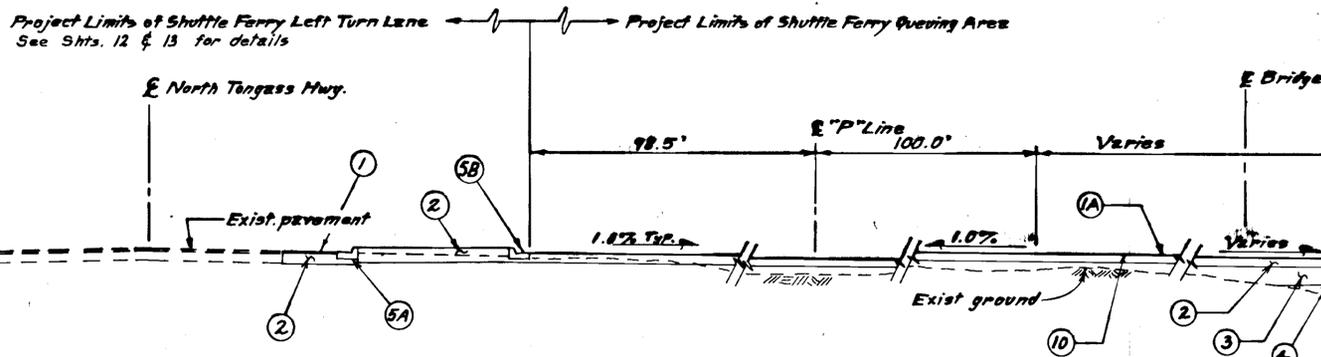
	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA			
	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	KETCHIKAN ALASKA			
CROSS SECTIONS				
DESIGNED <u>D.D.S.</u>	CHECKED <u>W.L.T.</u>	DRAWN <u>B.H.</u>	DATE <u>FEB. 1987</u>	
PROJECT NUMBER <u>FM-0922(2) 68763</u>			SHEET <u>4</u> OF <u>53</u>	

SUBBASE NOTES
 Excavation for subbase will not be required if the exist. material meets specification for subbase or as approved by the Engineer.

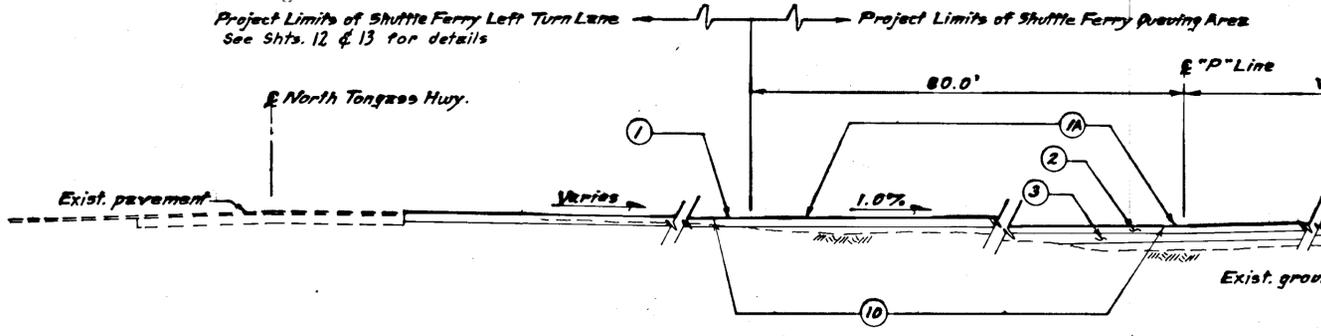


- LEGEND**
- ① 3" Asphalt Concrete Pavement, Type II
 - ①A 2" Asphalt Concrete Pavement, Type II
 - ② 6" Crushed Aggregate Base Course
 - ③ 12" Subbase (from dredge material), see specs.
 - ④ Subgrade (usable unclassified excavation)
 - ⑤ Concrete Curb & Gutter, Type A **
 - ⑤B Concrete Curb & Gutter, Type B **
 - ⑥ Guardrail
 - ⑦ 9.0' wide concrete sidewalk
 - ⑧ 6" Riprap Bedding Material
 - ⑨ Filter Cloth
 - ⑩ Prime Coat

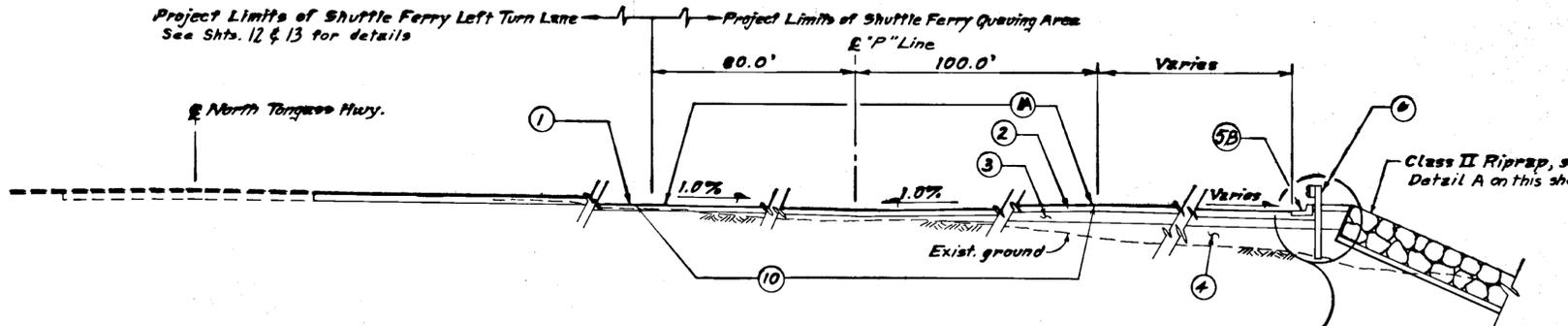
** See sht. 10 for details.



SECTION D-D



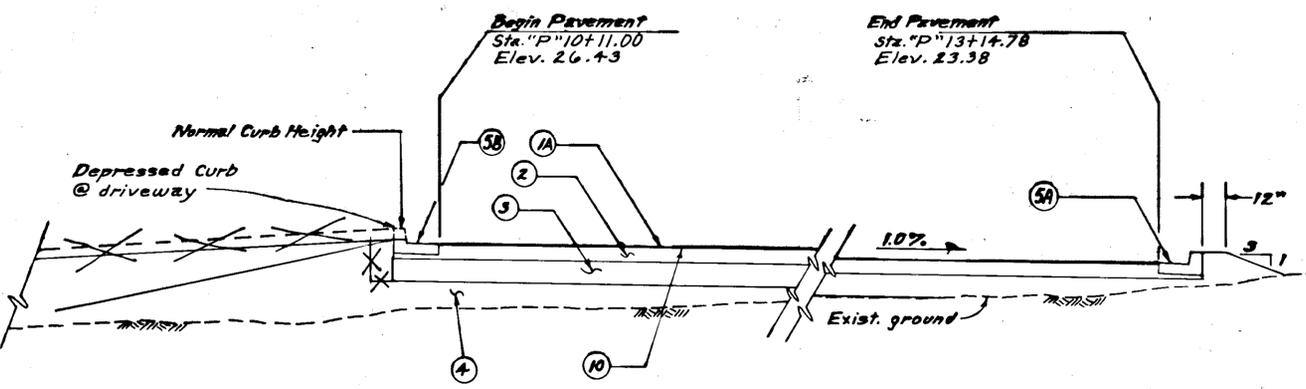
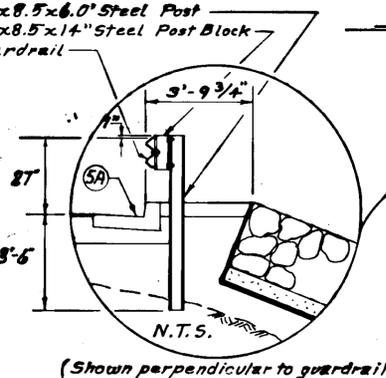
SECTION F-F



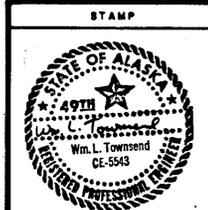
SECTION E-E

VERTICAL CURVE NOTES
 Grade change in the main driving lane and the queuing lanes only shall have a 50 ft. vertical curve.

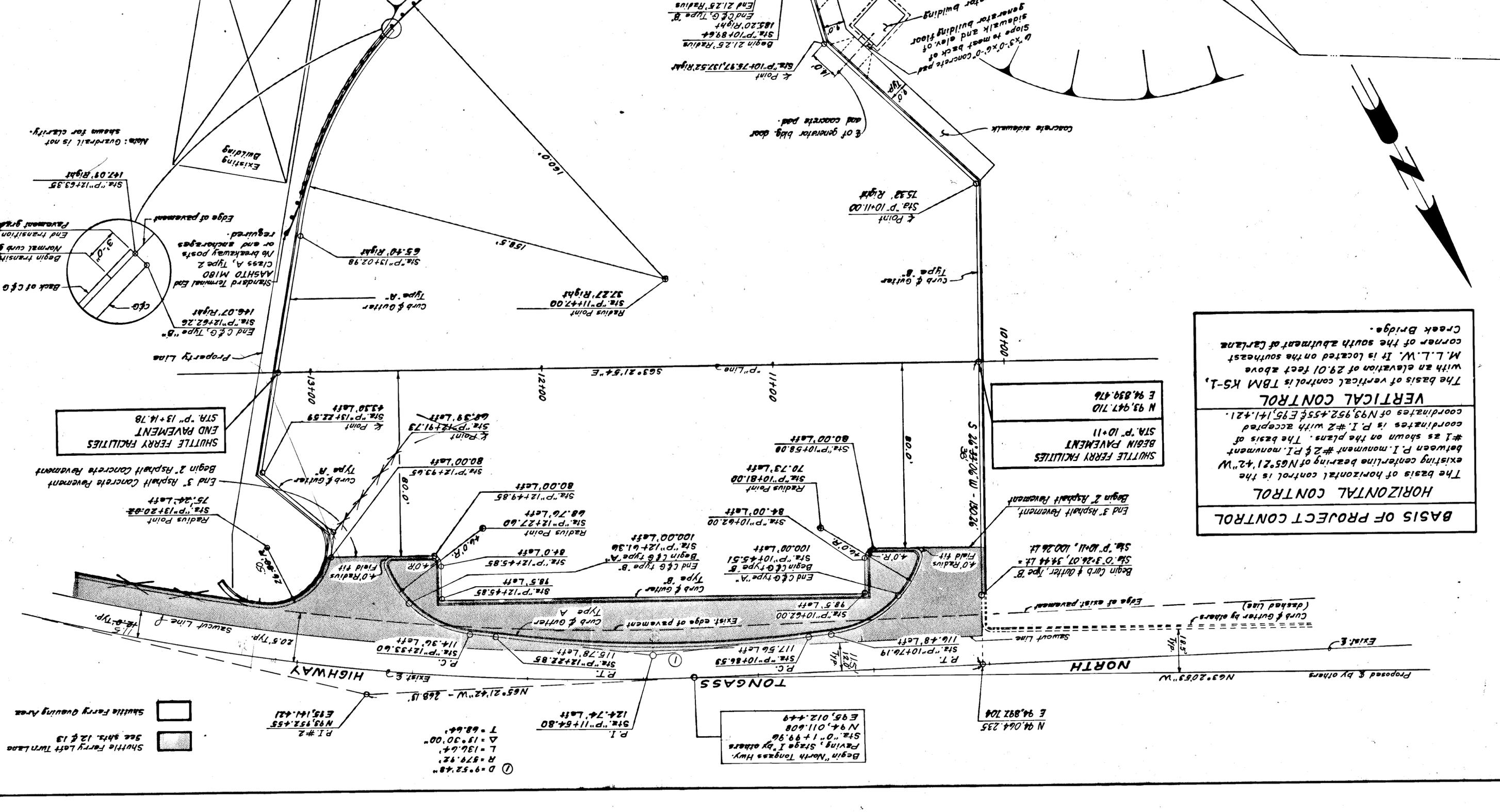
Do not disturb exist. chain link fence. Damage to the fence by the contractor shall be repaired as directed by the engineer.



"P" LINE PROFILE



DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
STATE OF ALASKA			
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
KETCHIKAN			
CROSS SECTIONS			
DESIGNED D.D.S.	CHECKED W.L.T.	DRAWN B.H.	DATE FEB. 19
PROJECT NUMBER FM-0922(2) 68785	SHEET 5 OF 53		



BASIS OF PROJECT CONTROL
 The basis of horizontal control is the existing centerline bearing of N65°21'42" W between P.I. monument #2 & P.I. monument #1 as shown on the plans. The basis of coordinates is P.I. #2 with accepted coordinates of N93,952.455 & E95,141.421.

HORIZONTAL CONTROL
 The basis of horizontal control is the existing centerline bearing of N65°21'42" W between P.I. monument #2 & P.I. monument #1 as shown on the plans. The basis of coordinates is P.I. #2 with accepted coordinates of N93,952.455 & E95,141.421.

VERTICAL CONTROL
 The basis of vertical control is TBM K5-1, with an elevation of 29.01 feet above M.L.L.W. It is located on the southeast corner of the south abutment of Carlane Creek Bridge.

Shuttle Ferry Left Turn Lane
 See shts. 12 & 13
 Shuttle Ferry Queuing Area

Note: Guardrail is not shown for clarity.

Begin "North Tongass Hwy. Paving, Stage I" by others
 Sta. "0" 1+99.96
 N 94,011.608
 E 95,012.449

P.I.#2
 N 93,952.455
 E 95,141.421

Shuttle Ferry Left Turn Lane
 Shuttle Ferry Queuing Area
 Ⓟ Denotes the type of sign, see sht. 2 for sign schedule.

Proposed E. by others N 83° 20' 53" W

Exist. E. N 65° 21' 42" W

N 65° 21' 42" W

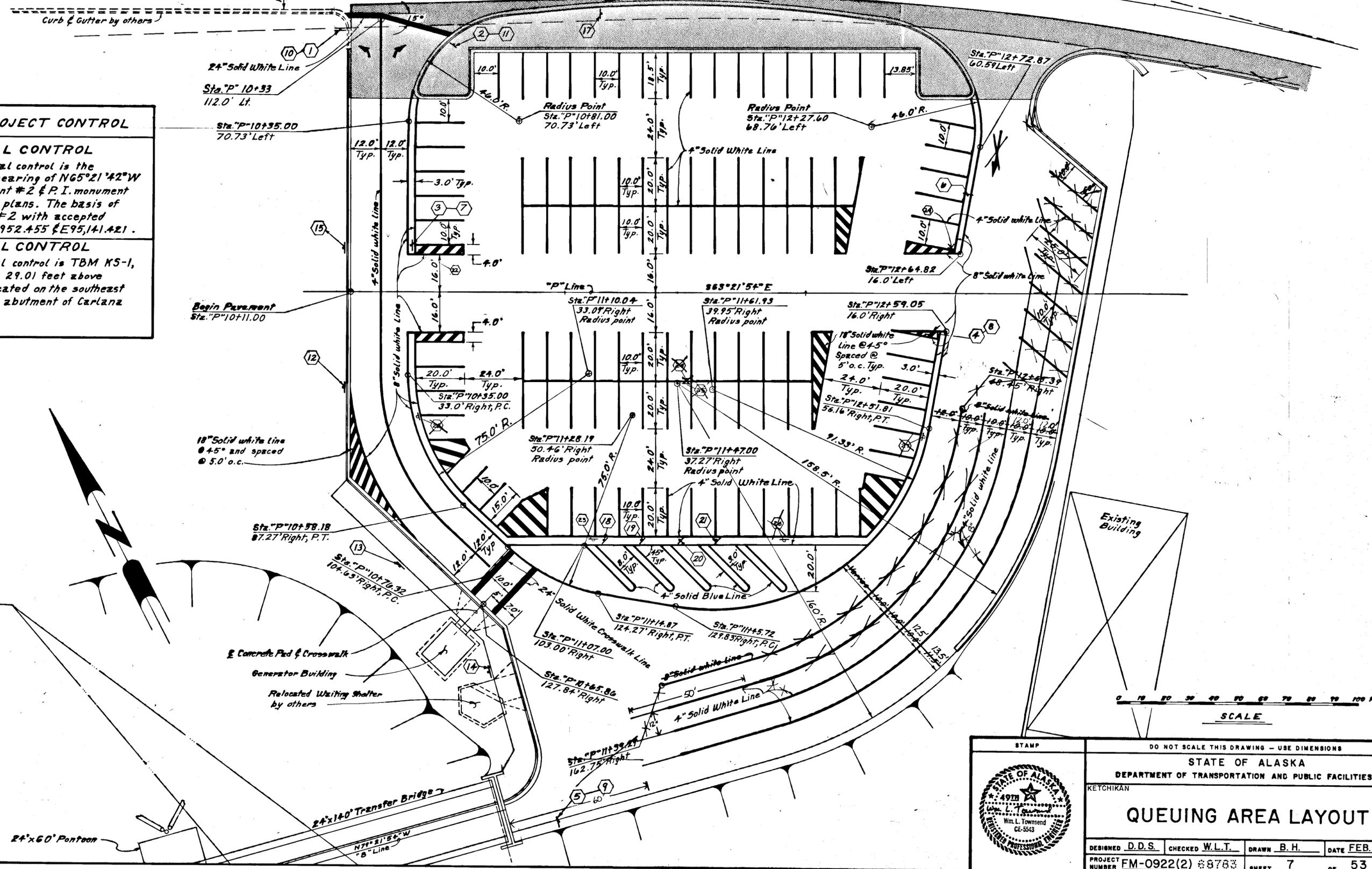
Exist. E. HIGHWAY

NORTH TONGASS

BASIS OF PROJECT CONTROL

HORIZONTAL CONTROL
 The basis of horizontal control is the existing centerline bearing of N 65° 21' 42" W between P. I. monument # 2 & P. I. monument # 1 as shown on the plans. The basis of coordinates is P. I. # 2 with accepted coordinates of N 93,952.455 & E 95,141.421.

VERTICAL CONTROL
 The basis of vertical control is TBM K5-1, with an elevation of 29.01 feet above M. L. L. W. It is located on the southeast corner of the south abutment of Carlana Creek Bridge.



0 10 20 30 40 50 60 70 80 90 100 FEET
 SCALE

	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES KETCHIKAN ALASKA			
QUEUING AREA LAYOUT				
DESIGNED <u>D.D.S.</u>	CHECKED <u>W.L.T.</u>	DRAWN <u>B.H.</u>	DATE <u>FEB. 1987</u>	
PROJECT NUMBER <u>FM-0922(2) 8783</u>		SHEET <u>7</u>	OF <u>53</u>	

Begin North Tongass Hwy.
Paving, Stage I by others
Sta. "0" 1+99.96
N 94° 01' 60.8"
E 95° 01' 2.44"

Abandon exist. 18" fCMP,
Open and shall be
plugged with concrete.

Concrete Headwall
See Sheet 14 for Details

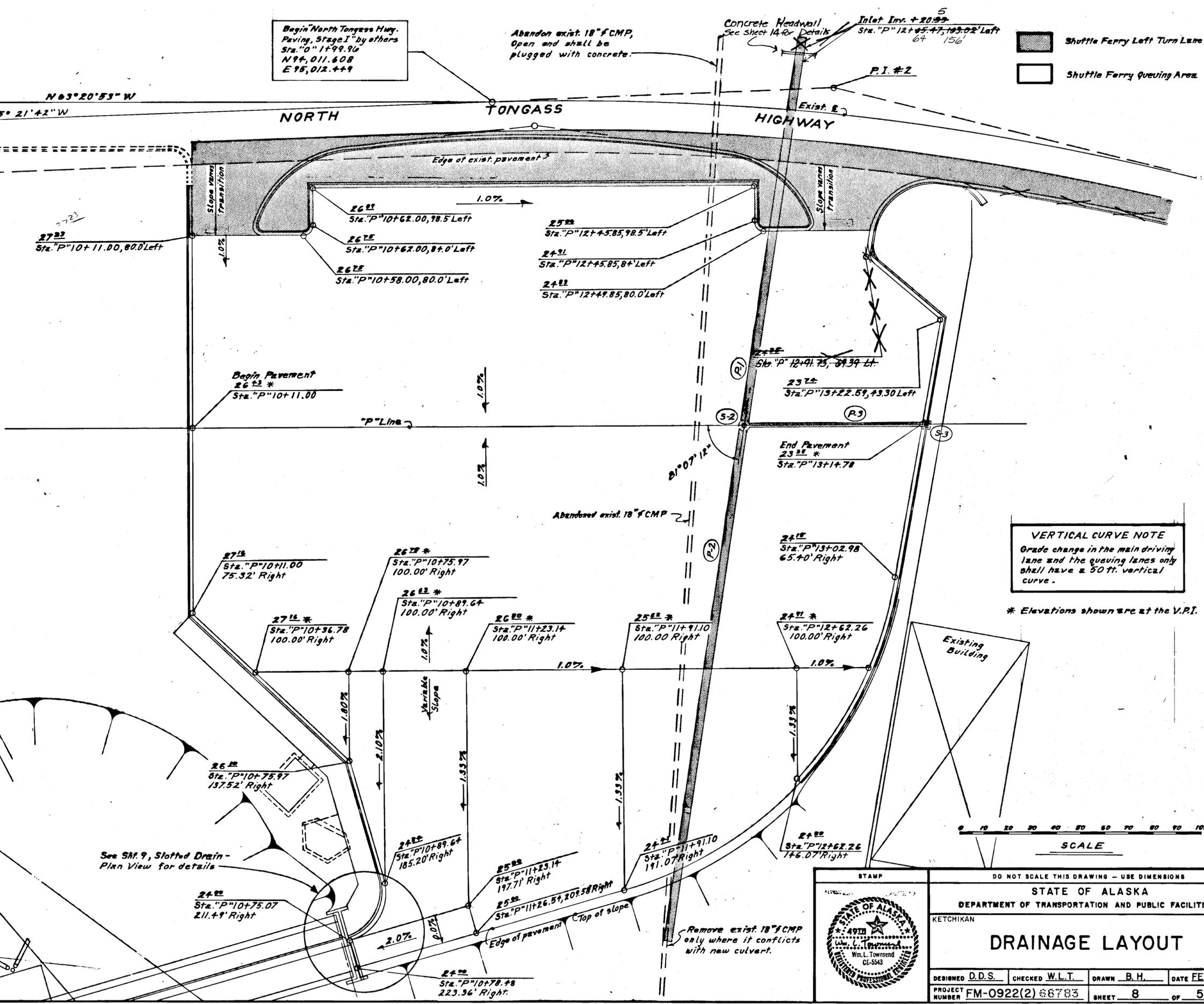
Inlet Inv. +20.99
Sta. "P" 12+45.47, 103.02' Left
64' 156'

Shuttle Ferry Left Turn Lane
Shuttle Ferry Queuing Area

BASIS OF PROJECT CONTROL

HORIZONTAL CONTROL
The basis of horizontal control is the existing centerline bearing of N65°21'42"W between P.I. monument #2 and P.I. monument #1 as shown on the plans. The basis of coordinates is P.I. #2 with accepted coordinates of N 93,952.455 and E 95,141.421.

VERTICAL CONTROL
The basis of vertical control is TBM KS-1, with an elevation of 29.01 feet above M.L.L.W. It is located on the southeast corner of the south abutment of Carlana Creek Bridge.



VERTICAL CURVE NOTE
Grade change in the main driving lane and the queuing lanes only shall have a 50 ft. vertical curve.

* Elevations shown are at the V.P.I.

HYDRAULIC AND HYDROLOGIC SUMMARY

	50 year	100 year
Design Flood Frequency	2%	1%
Exceedance Probability	.2	.2
Drainage Area (sq. mi.)	4.5	50
Design Discharge (cfs)	23.8	24.0
Probable Backwater (ft.)	0.0	0.0

The hydraulic capacity of the structure equals 67 cfs at elevation 25.33 which is considered equal to or less than an exceedance probability of 1%



STAMP

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
KETCHIKAN

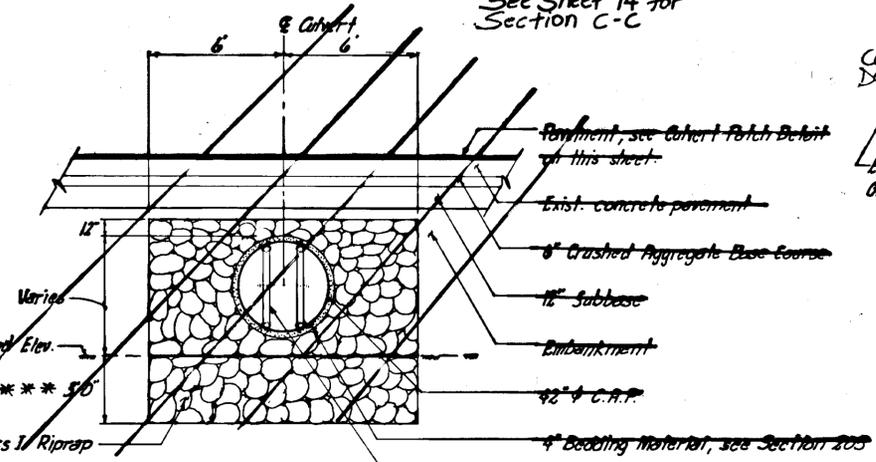
DRAINAGE LAYOUT

DESIGNED D.D.S. CHECKED W.L.T. DRAWN B.H. DATE FEB. 1996

PROJECT NUMBER FM-0922(2) 66783 SHEET 8 OF 53

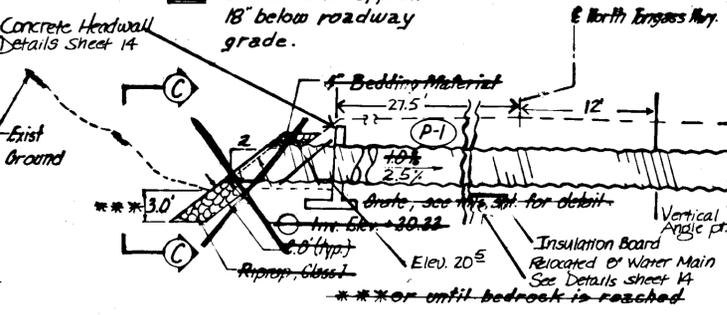
Professional Engineer Seal: Wm. L. Townsend, CE-5543

See Sheet 14 for Section C-C



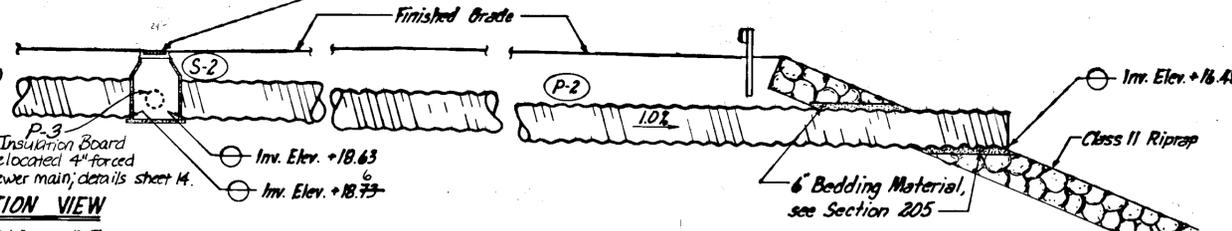
SECTION C-C
SCALE: 0 1 2 3 4 5 FT

NOTE: Bedrock exist approx. 18" below roadway grade.

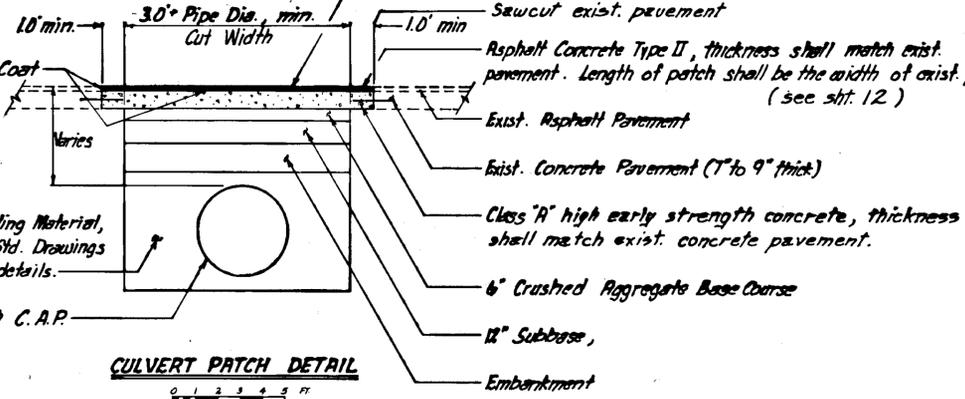


ELEVATION VIEW
SCALE: 0 1 2 3 4 5 FT

Heavy duty manhole frame w/grate (1.2 s.f. min. opening), min. weight of 250 lbs. and rated for HS-20 loading. Grate shall be bicycle safe with individual opening not exceeding 1 1/2" in width and 8" in length.

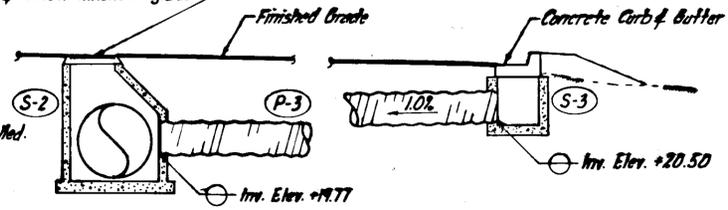


Provide temporary patch (see this sht. for details) if asphalt pavement cannot be provided after installation of new culvert. Patching shall be completed by the end of the final shift prior to a weekend of the week that the pipe was installed, and as directed by the engineer.

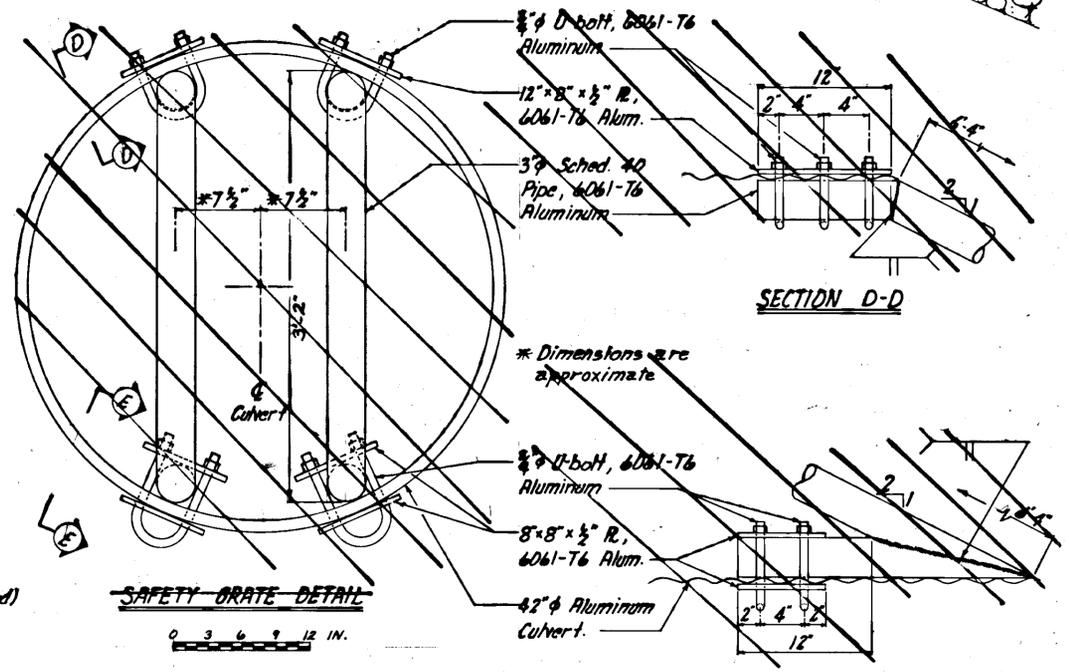


CULVERT PATCH DETAIL
SCALE: 0 1 2 3 4 5 FT

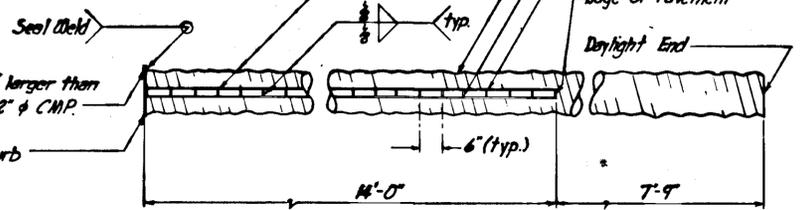
Manhole Frame & Grate shall be set 1/4" below finished grade.



ELEVATION VIEW
SCALE: 0 1 2 3 4 5 FT



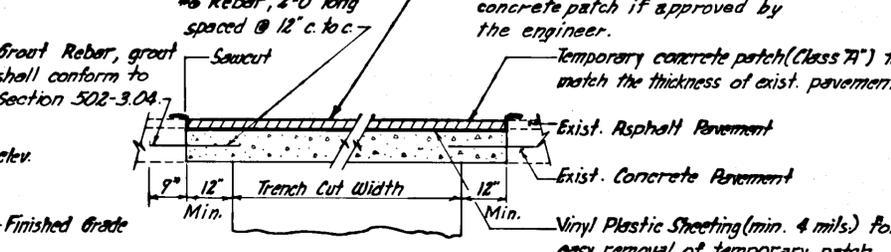
SAFETY GRATE DETAIL
SCALE: 0 3 6 9 12 IN.



SLOTTED DRAIN DETAIL
SCALE: 0 1 2 3 4 5 FT

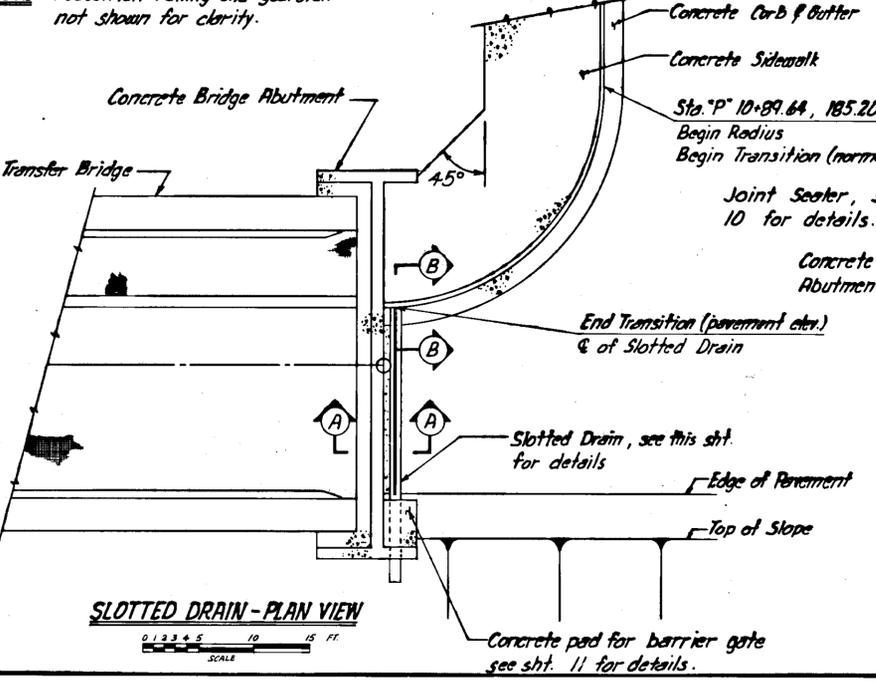
NOTE: Slotted drain shall be galvanized after fabrication.

U-BOLT DETAIL: Cold-mix asphalt paving may be substituted for the temporary concrete patch if approved by the engineer.

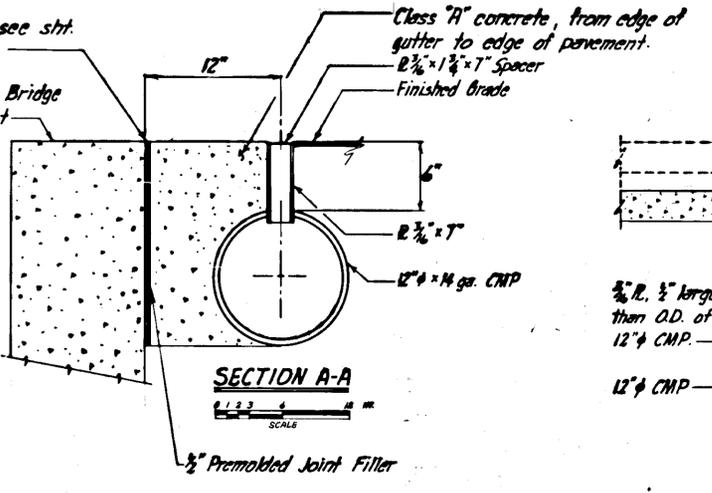


TEMPORARY PATCH DETAIL
SCALE: 0 1 2 3 4 5 FT

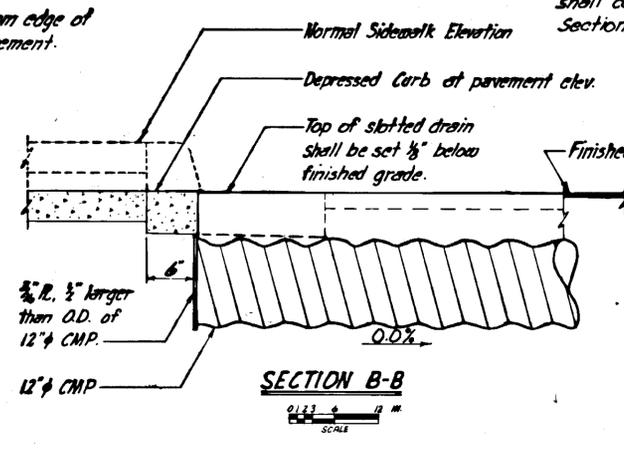
NOTE: Pedestrian railing and guardrail not shown for clarity.



SLOTTED DRAIN - PLAN VIEW
SCALE: 0 1 2 3 4 5 10 15 FT

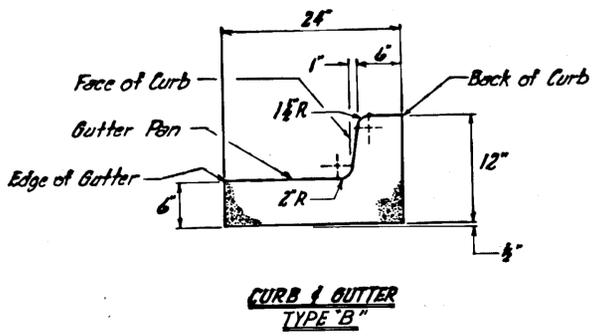
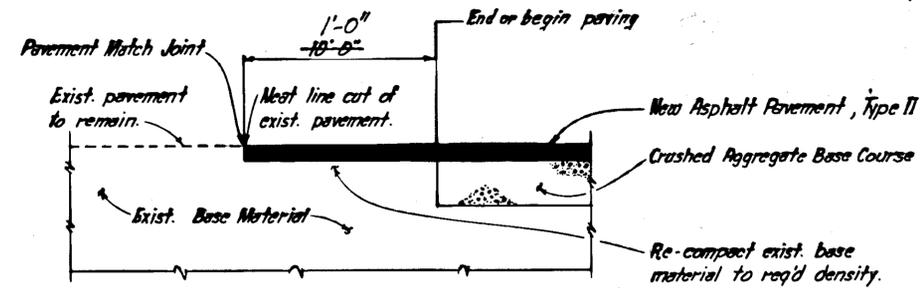
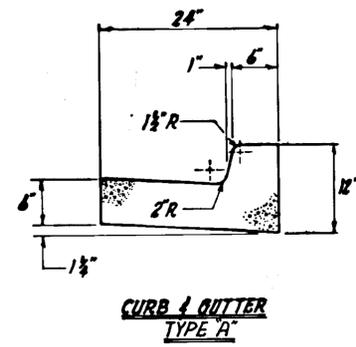
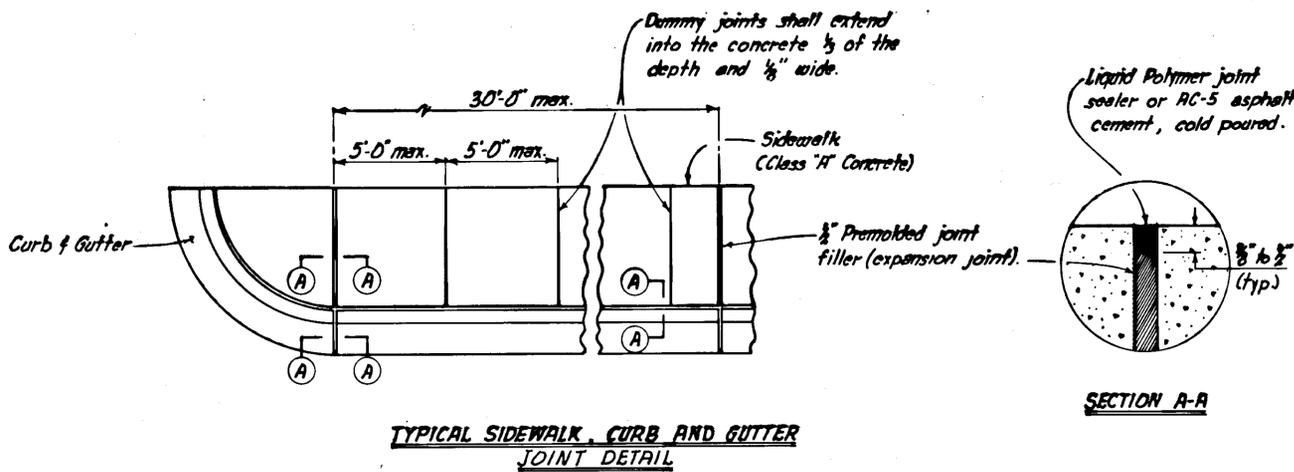


SECTION A-A
SCALE: 0 1 2 3 4 5 FT



SECTION B-B
SCALE: 0 1 2 3 4 5 FT

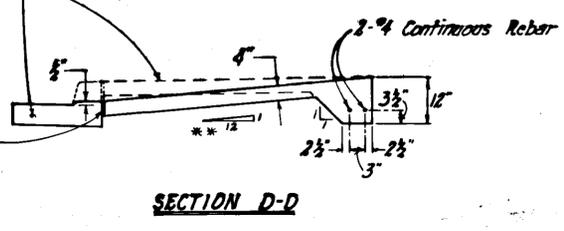
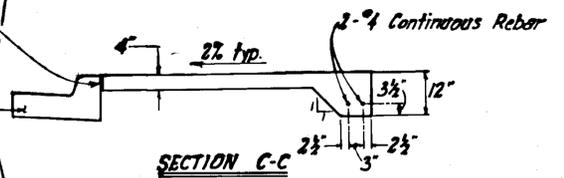
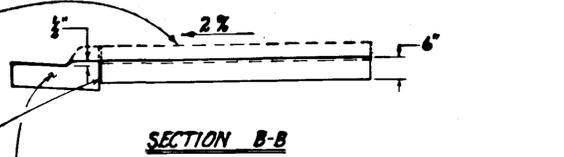
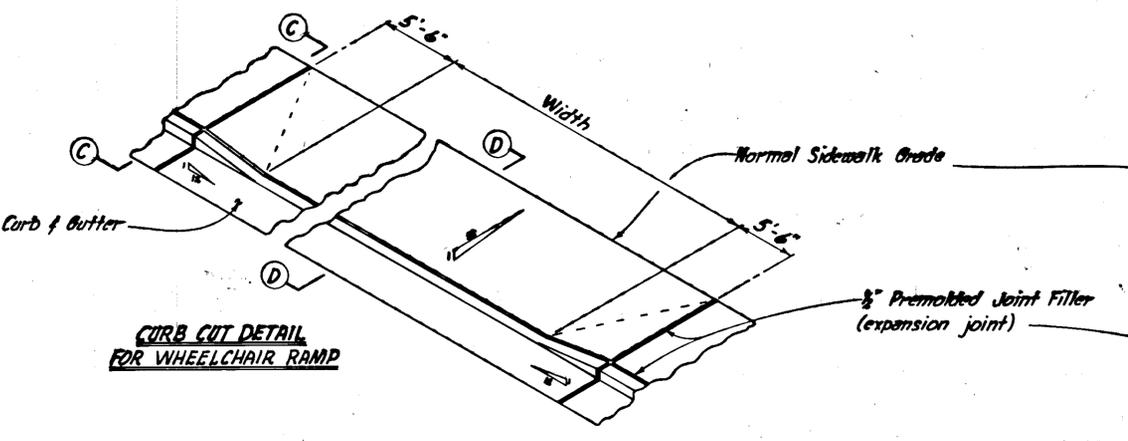
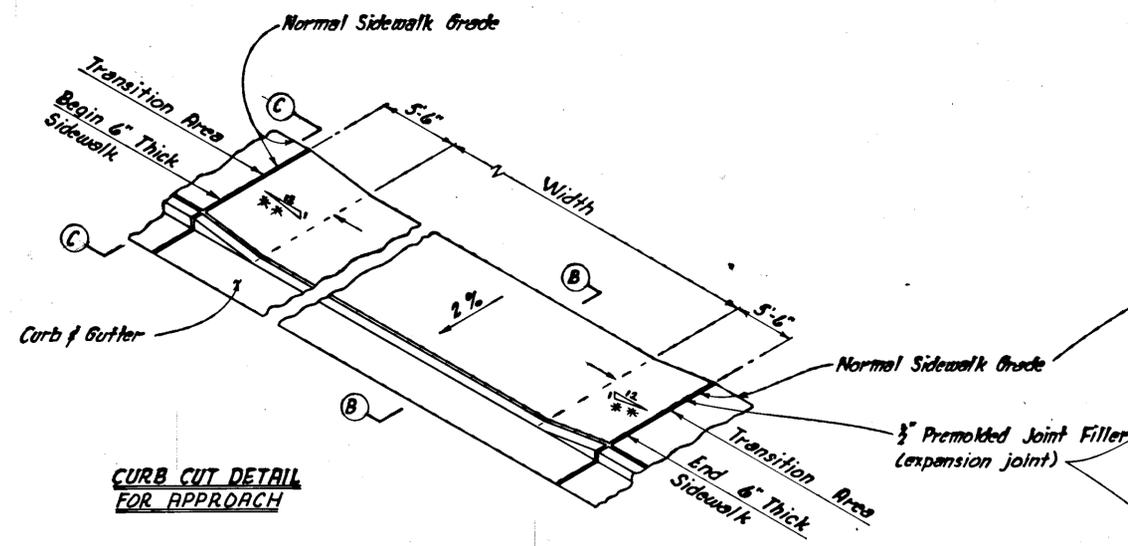
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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
KETCHIKAN		ALASKA	
DRAINAGE DETAILS			
DESIGNED DDS	CHECKED WLT	DRAWN DDS	DATE FEB. 1987
PROJECT NUMBER FM-0922(2) 68783	SHEET 9	OF 53	



CURB CUT SUMMARY (And Approach)

* CENTERLINE STATION	* OFFSET LEFT	* OFFSET RIGHT	WIDTH	REMARKS
P 10+83		162.04'	10.0'	Wheelchair Ramp
P 10+65.86		127.84'	10.0'	"
P 10+11	0	0	32.0'	Curb Cut for Approach
T 10+90	80.5'		10'-0"-53"	" " " Driveway Petro-Alaska Approach
T 11+69.60	80.5'		26'-0"-40"	" " " Petro-Alaska Approach

* Stations & Offsets are to the edge of gutter.



- SIDEWALK NOTES**
1. Premolded expansion joint filler and polymer joint sealer or AC-5 asphalt cement shall be considered incidental to the item involved under Section 608. No separate payment shall be made therefore.
 2. Curb and gutter expansion joints shall be at each end of the curb returns and immediately preceding and following all curb cuts. Thereafter they shall be placed at 30'-0" (max.) intervals except where shorter sections are needed for closure.
 3. Sidewalk expansion joints shall be opposite expansion joints in adjoining curb and gutter. Dummy joints shall be equally spaced between expansion joints and not exceeding 5'-0". Dummy joints shall extend into the concrete $\frac{1}{3}$ of the depth and $\frac{1}{8}$ wide.
 4. Sidewalk, curb cuts, wheelchair ramps surface shall have a broom finish and constructed using class "A" concrete with min. 28 day compressive strength of $f'_c = 4,000$ psi.

STAMP

DO NOT SCALE THIS DRAWING - USE DIMENSIONS

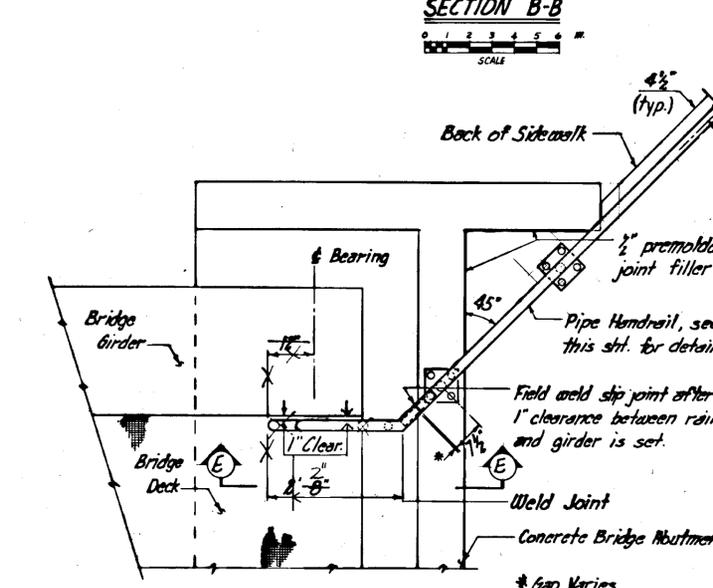
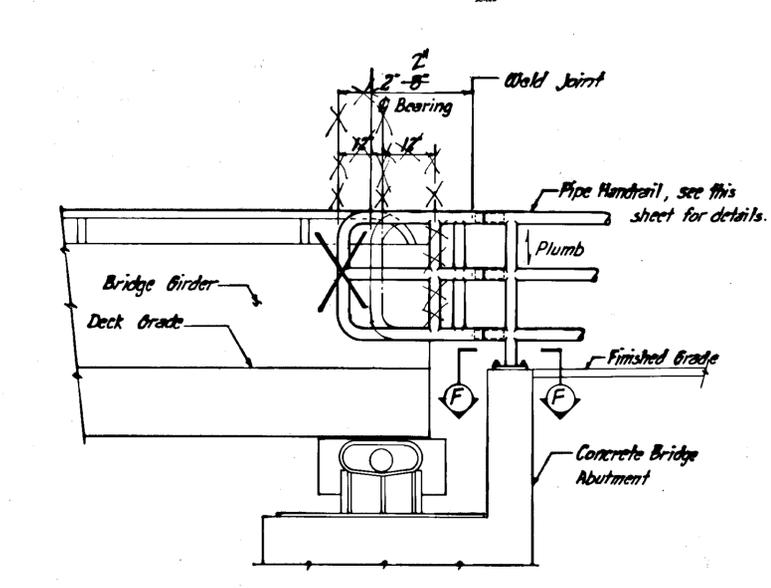
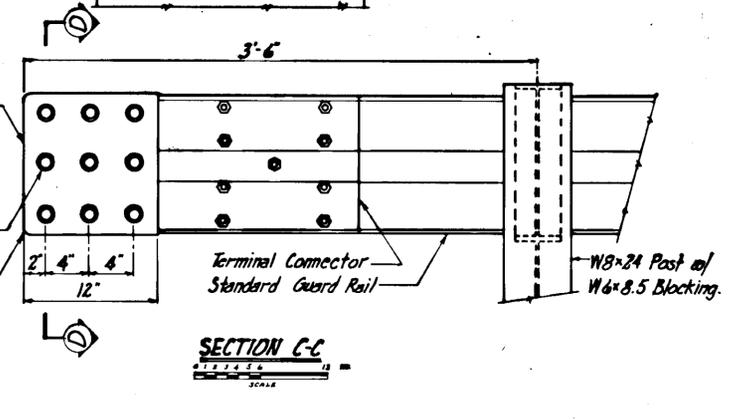
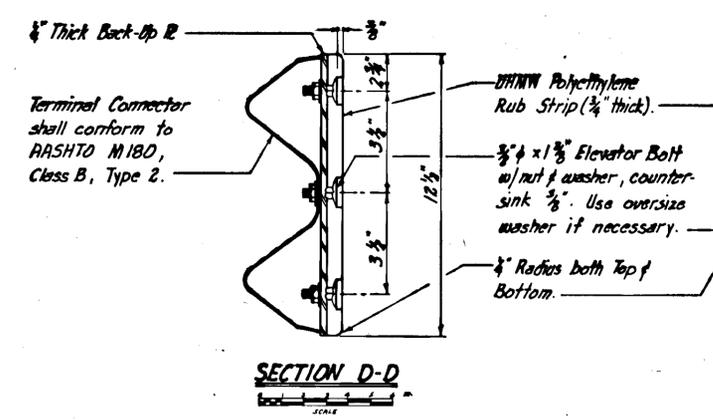
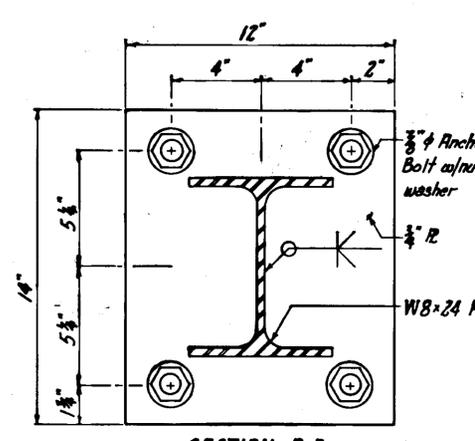
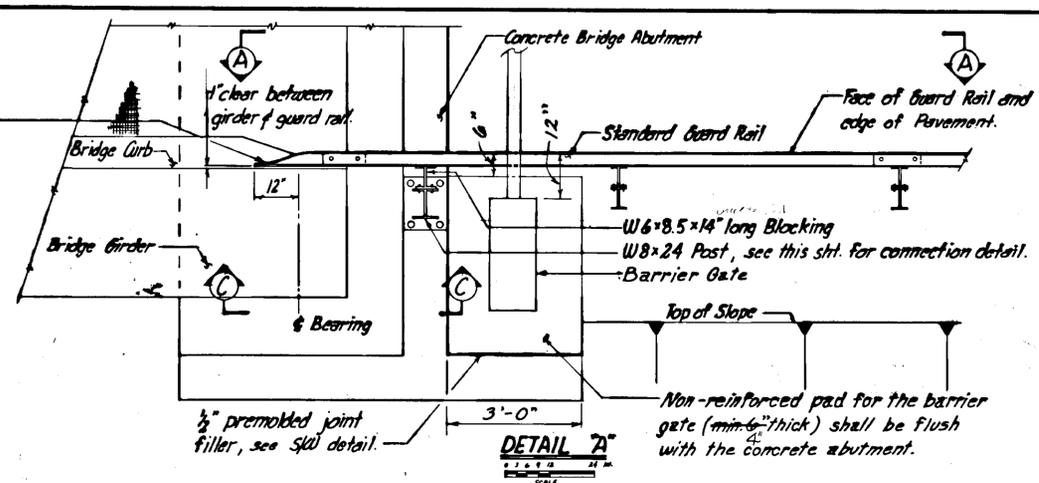
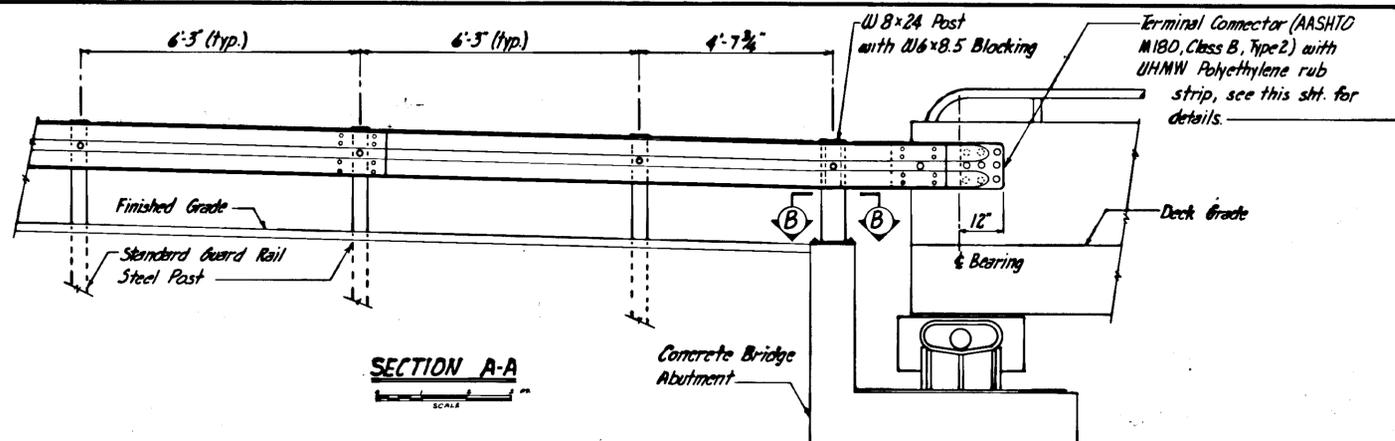
STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

KETCHIKAN ALASKA

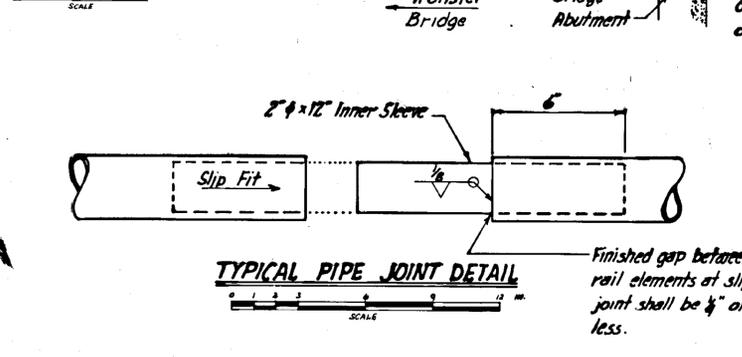
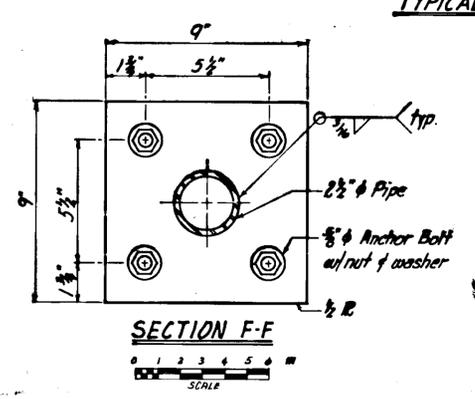
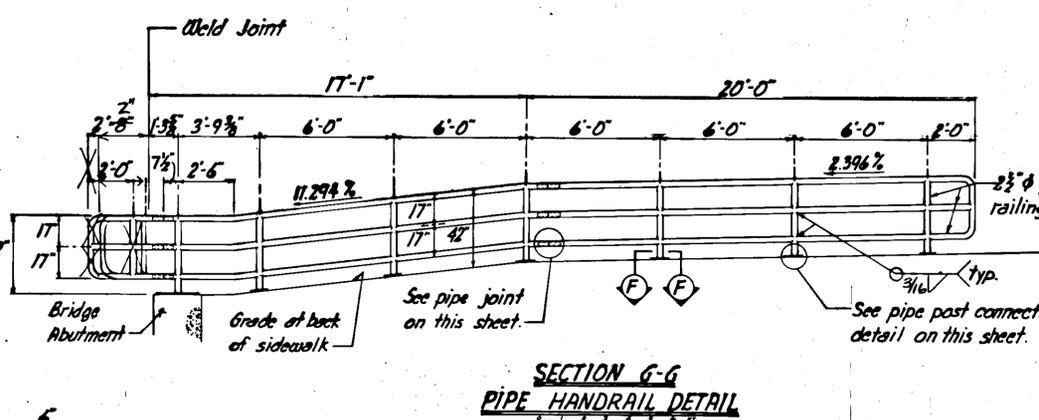
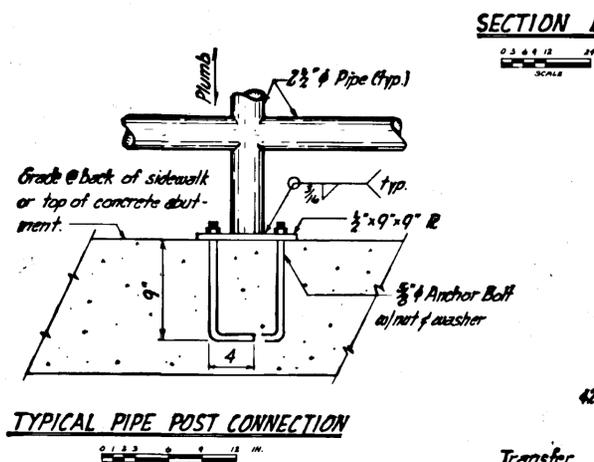
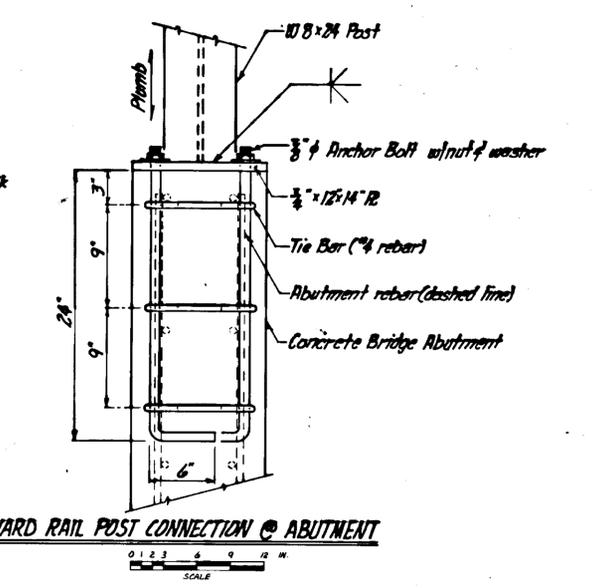
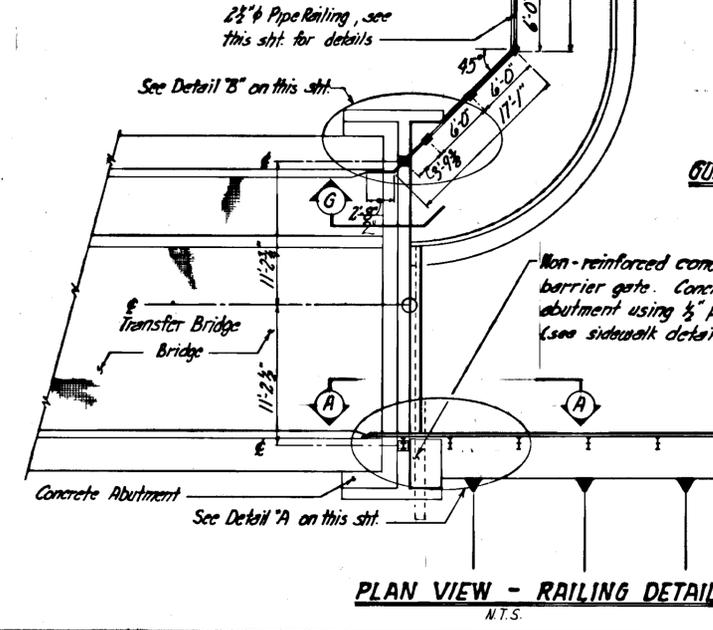
SIDEWALK AND MISCELLANEOUS DETAILS

DESIGNED D.D.S. CHECKED W.L.T. DRAWN D.D.S. DATE FEB. 1987

PROJECT NUMBER FM-0922(2) #878 SHEET 10 OF 53



- RAILING NOTES**
- All railing, posts, anchor assemblies, and other steel components shall be galvanized after fabrication. Galvanized steel shims shall be furnished by the Contractor as req'd.
 - Anchor bolts shall be A-325 steel.
 - Reqd field welding shall be treated per specs.
 - Post shall be shimmed to a plumb position.
 - Dimensions given are subject to minor revisions to fit field conditions or as directed by the Engr.



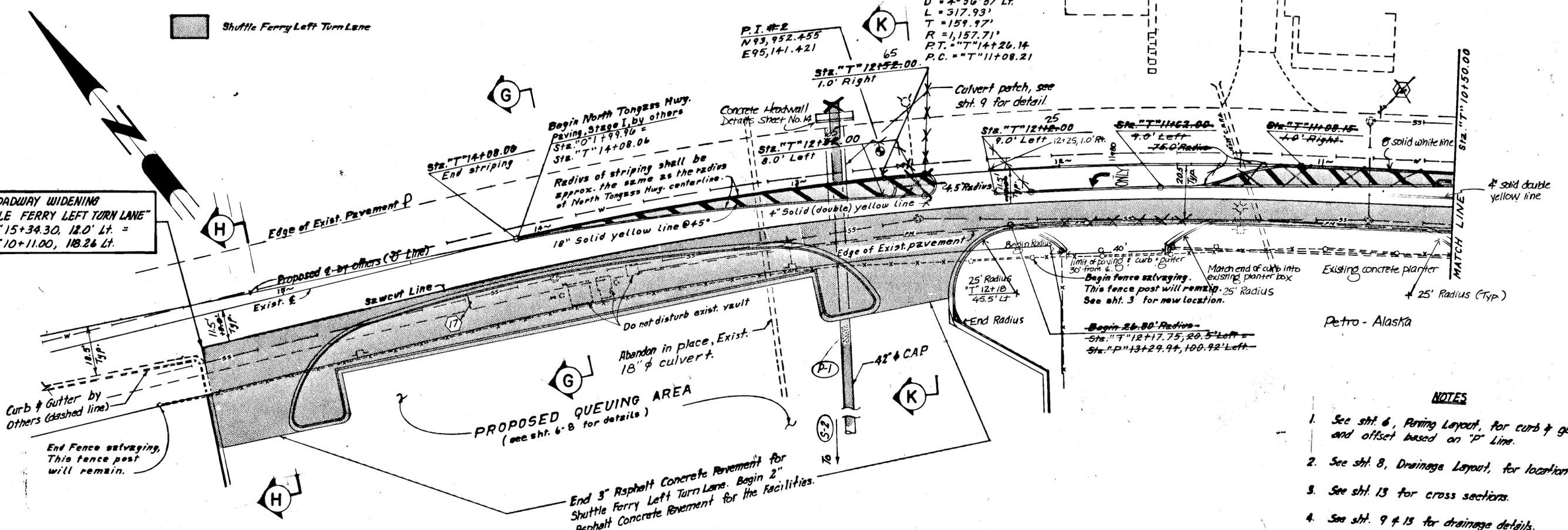
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STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
KETCHIKAN			
RAILING DETAILS			
DESIGNED D.D.S.	CHECKED W.L.T.	DRAWN B.H.	DATE FEB. 199
PROJECT NUMBER FM-0922(2) 68763	SHEET 11	OF 53	

Shuttle Ferry Left Turn Lane

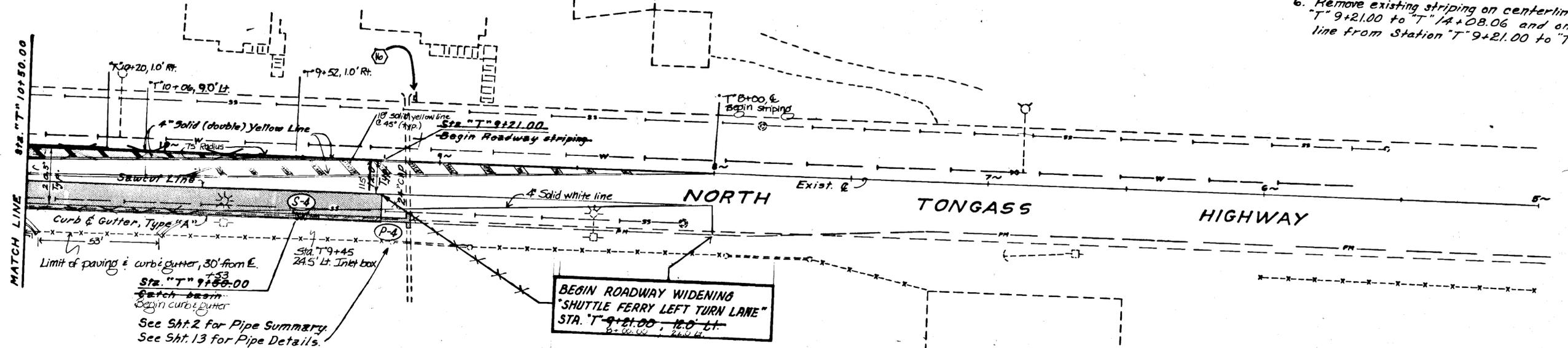
**END ROADWAY WIDENING
"SHUTTLE FERRY LEFT TURN LANE"**
STA. "T" 15+34.30, 12.0' Lt. =
STA. "P" 10+11.00, 18.26 Lt.

P.I. #2
N 93, 952.455
E 95, 141.421

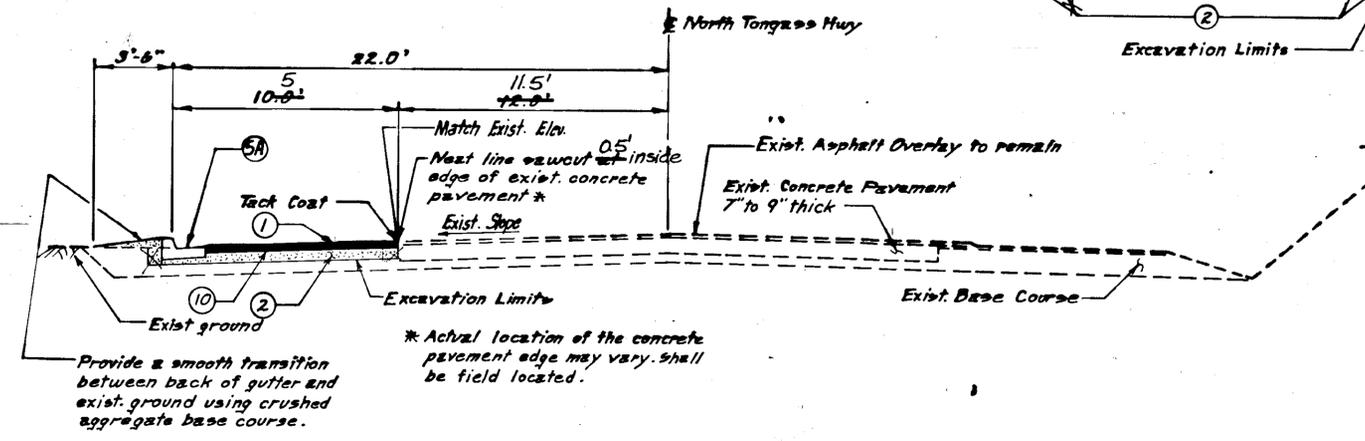
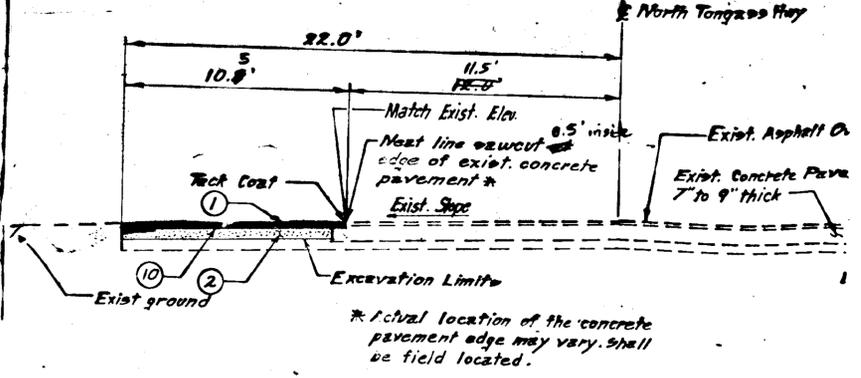
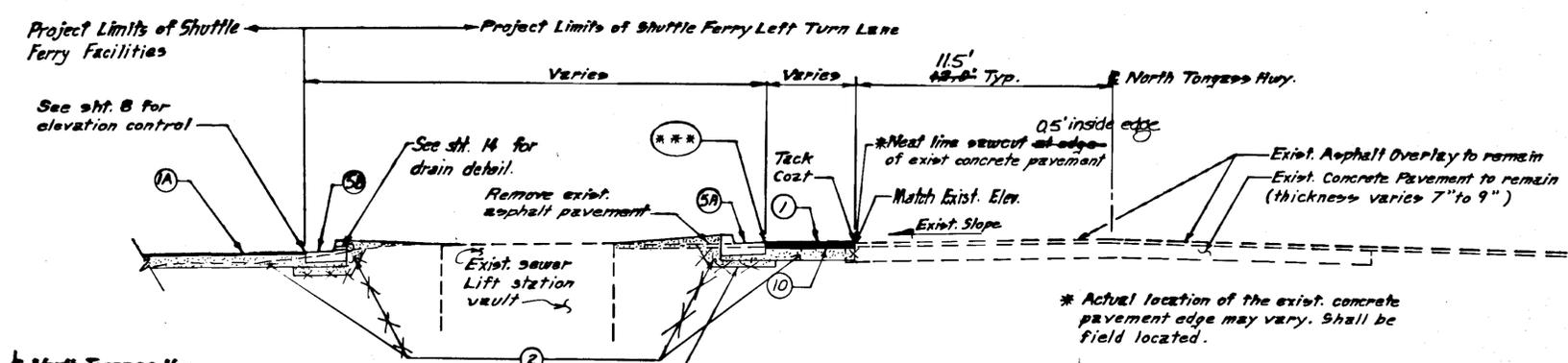
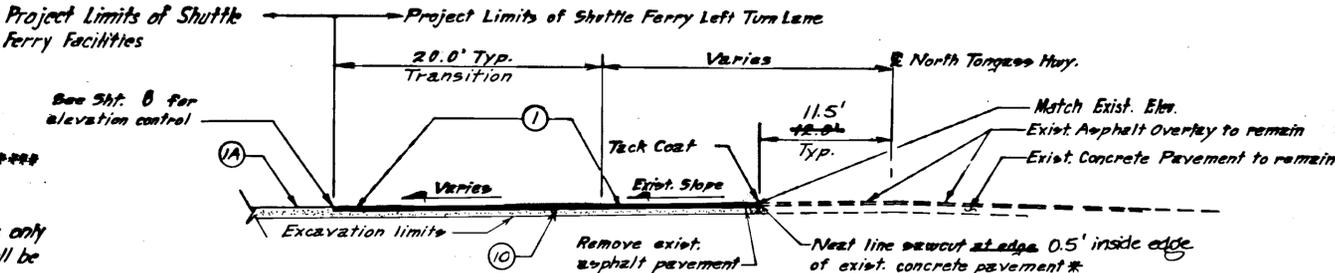
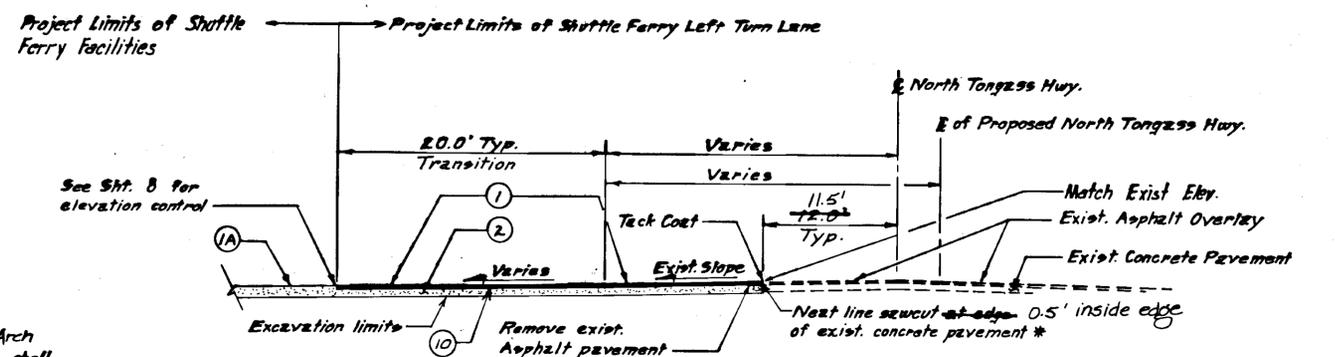
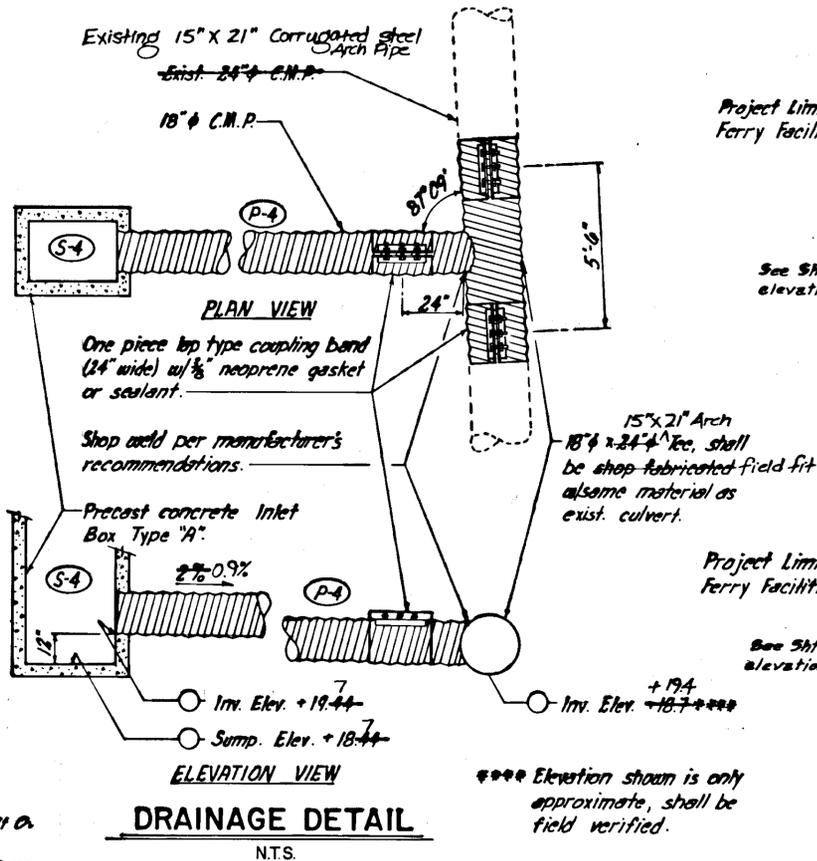
$\Delta = 15^\circ 44' 04''$
 $D = 4^\circ 56' 57'' Lt.$
 $L = 517.93'$
 $T = 159.97'$
 $R = 1,157.71'$
P.T. = "T" 14+26.14
P.C. = "T" 11+08.21



- NOTES**
1. See sht. 6, Paving Layout, for curb & gutter stationing and offset based on "P" Line.
 2. See sht. 8, Drainage Layout, for location of 42" ϕ C.R.
 3. See sht. 13 for cross sections.
 4. See sht. 9 & 13 for drainage details.
 5. See sht. 13 for curb & gutter elevation details.
 6. Remove existing striping on centerline from Station "T" 9+21.00 to "T" 14+08.06 and on left edge line from Station "T" 9+21.00 to "T" 15+34.30



	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	KETCHIKAN			
SHUTTLE FERRY LEFT TURN LANE				
DESIGNED D.D.S.	CHECKED W.L.T.	DRAWN B.H.	DATE FEB.	
PROJECT NUMBER F-091-1(2) 69545	SHEET 12		OF 53	



- LEGEND**
- ① 3" Asphalt Concrete Pavement, Type II
 - ①A 2" Asphalt Concrete Pavement, Type II
 - ② 6" Crushed Aggregate Base Course
 - ③ 12" Subbase (from dredge material), see specs.
 - ④ Subgrade (usable unclassified excavation)
 - ⑤A Concrete Curb & Gutter, Type A ***
 - ⑤B Concrete Curb & Gutter, Type B ***
 - ⑥ Guardrail
 - ⑦ 9.0' wide Concrete Sidewalk
 - ⑧ 6" Bedding Material
 - ⑨ Filter Cloth
 - ⑩ Prime Coat
- ** See Sht. 10 for details

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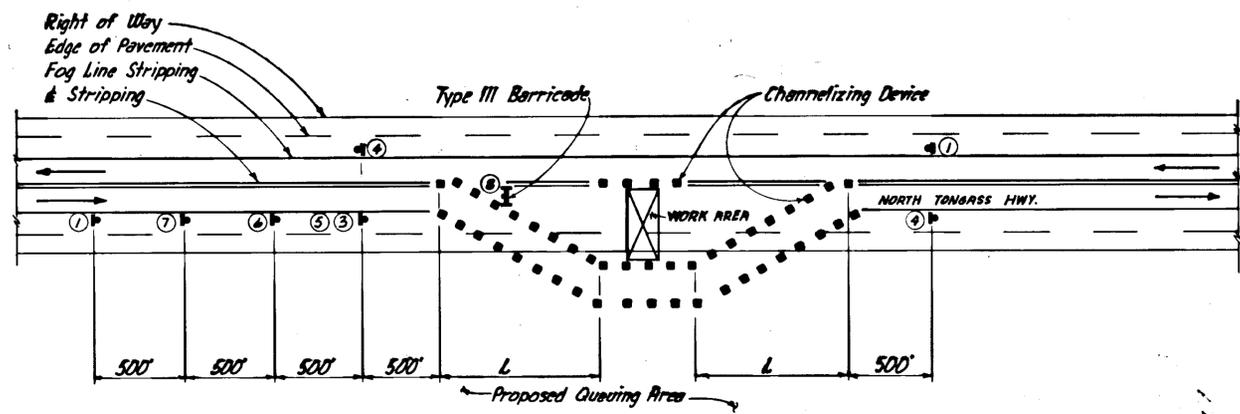
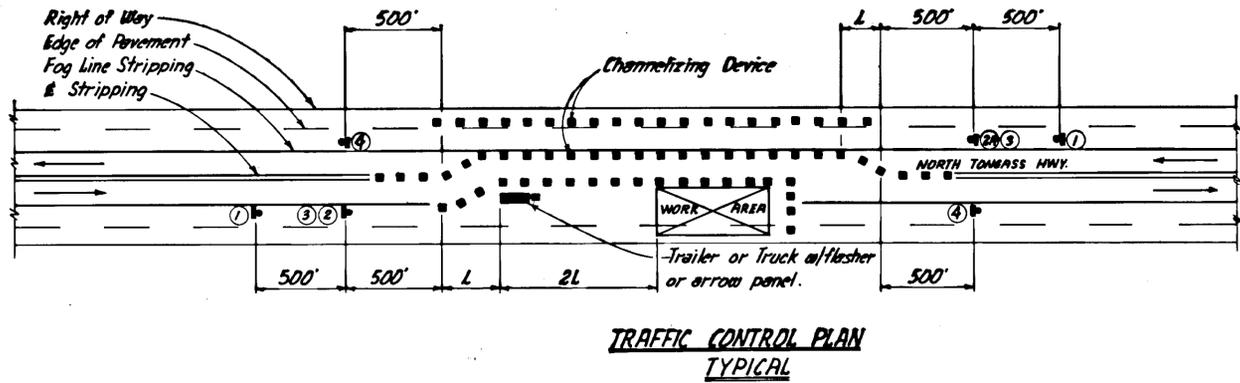
DO NOT SCALE THIS DRAWING - USE DIMENSIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

LEFT TURN LANE CROSS SECTIONS AND MISCELLANEOUS DETAILS

DESIGNED D.D.S. CHECKED W.L.T. DRAWN B.H. DATE MAR. 19

PROJECT NUMBER F-091-1(2) 69545 SHEET 13 OF 53



TRAFFIC CONTROL PLAN NOTES

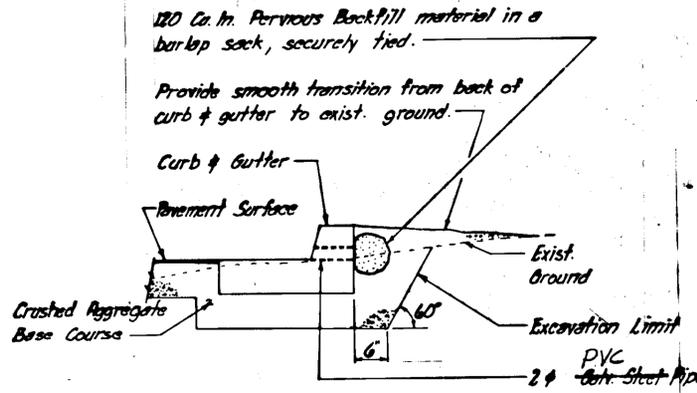
- Two (2) directional traffic (one lane for each direction) shall be maintained at all times.
- Closures will not be allowed. Detours will be allowed only during replacement of existing culvert. Detour area outside of the road right of way will be allowed only if within the proposed Ketchikan Shuttle Ferry site.
- Exist. chain link fence in conflict with the detour site shall be salvaged.
- Prior to all work on roadways, the Contractor shall submit a detailed T.C.P. for the Engineer's approval. The plan shall show the exact location of all signs, barricades, cones, flagpoles, & other traffic control devices.
- The Contractor shall designate at least one employee to maintain and continuously monitor the condition and placement of all traffic barriers during work operations. Any traffic control device used during non-work hours shall be maintained.
- Additional speed advisory signs may be required adjacent to work area or as directed by the Engineer.

SIGN DESIGN SPECIFICATION			
NO.	SIZE	DESIGNATION	SIGN WORDING
1	48" x 48"	CU20-1F	ROAD CONSTRUCTION AHEAD
2	30" x 30"	CU1-4L	
2A	30" x 30"	CU1-4R	
3	24" x 24"	CU13-1	20 M.P.H.
4	60" x 24"	820-2	END CONSTRUCTION
5	30" x 30"	CU1-3R	
6	48" x 48"	CU20-2B	DETOUR 1000 FT
7	48" x 48"	CU20-5RF	RIGHT LANE CLOSED AHEAD
8	48" x 18"	MA-1DR	DETOUR
9	48" x 48"	W20-7A	Flagman Ahead
10	48" x 48"		SLOW

* Alaska Sign Design Specifications

TAPER FORMULA NOTES

- Taper Formula : $L = WS^2/60$, min. length of taper in feet.
 S = Numerical value of posted speed limit.
 W = Width of offset in feet.
- Maximum spacing between channelizing devices should be approximately equal in feet to the speed limit.

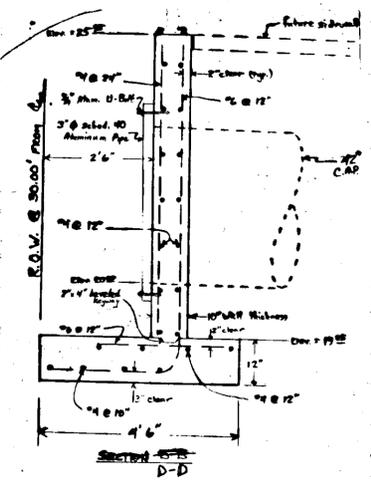


DRAIN HOLE DETAIL

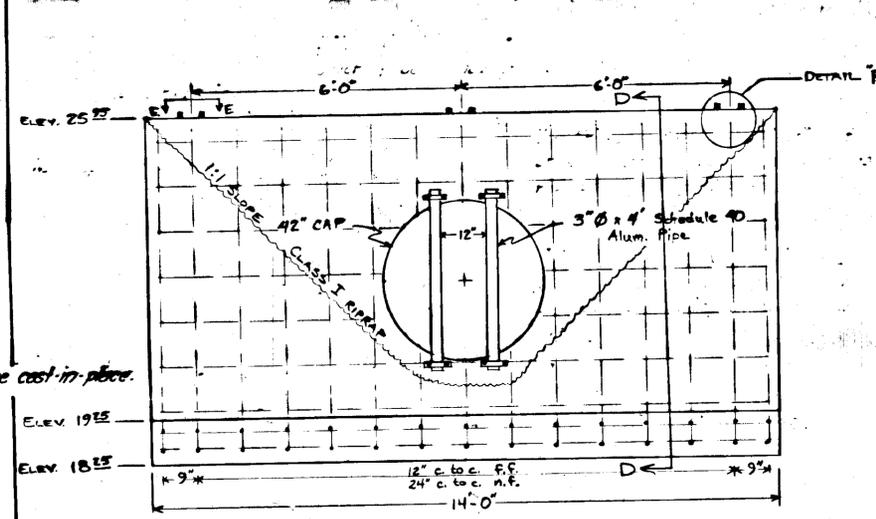
DRAIN HOLE NOTES

- Drain hole shall be located on the front island of Sta. 7' 10+44 - 80.0' Lt., 7' 10+54 - 80.0' Lt., 7' 10+64 - 98.5' Lt. to 7' 12+44 - 98.5' Lt. in 10.0' increments, 7' 12+54 - 80.0' Lt., and 7' 12+64 - 80.0' Lt.
- 23 total drain hole required.
- Station offsets are to the edge of gutter.
- 2" drain pipe shall be flush with the face of curb & back of curb.
- Inlet outlet of 2" drain pipe shall be at the same elevation as the gutter pan.
- 2" drain pipe shall slope (2%) towards the gutter pan.

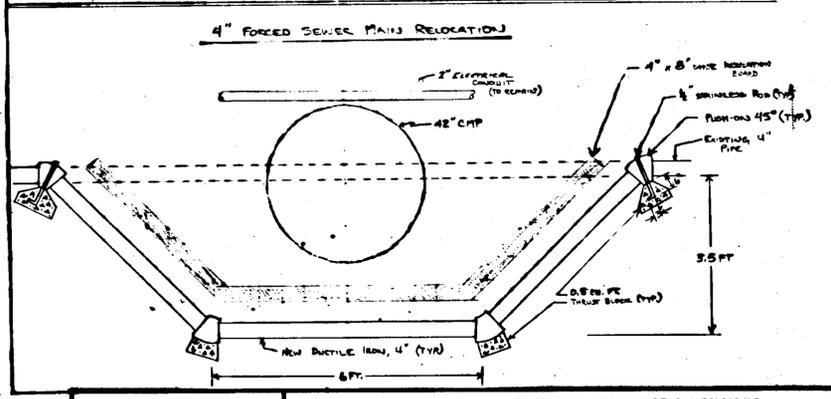
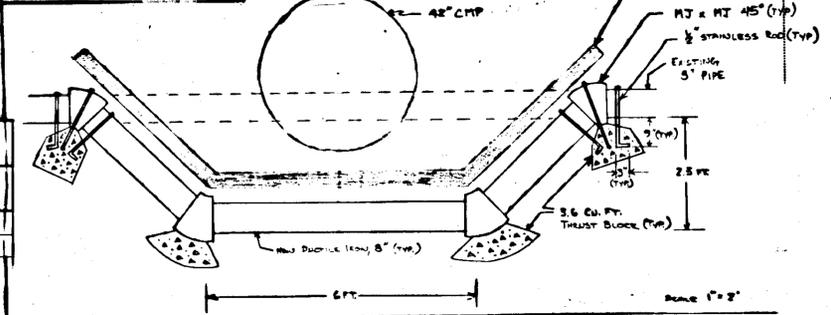
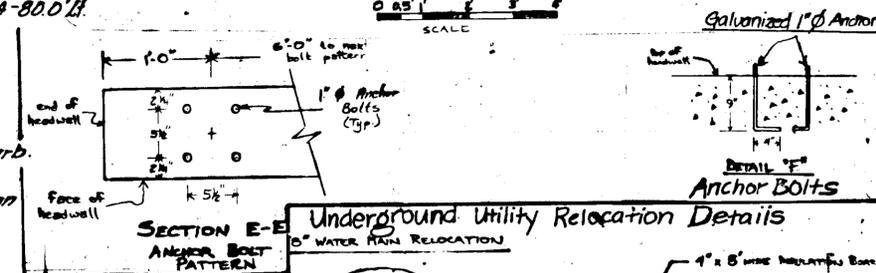
EXISTING UTILITIES APPURTENANCE SUMMARY			
STATION	OFFSET		REMARKS
	LEFT	RIGHT	
7' 10+81.8	18.9'		Adjust Manhole
7' 12+55.6	15.5'		



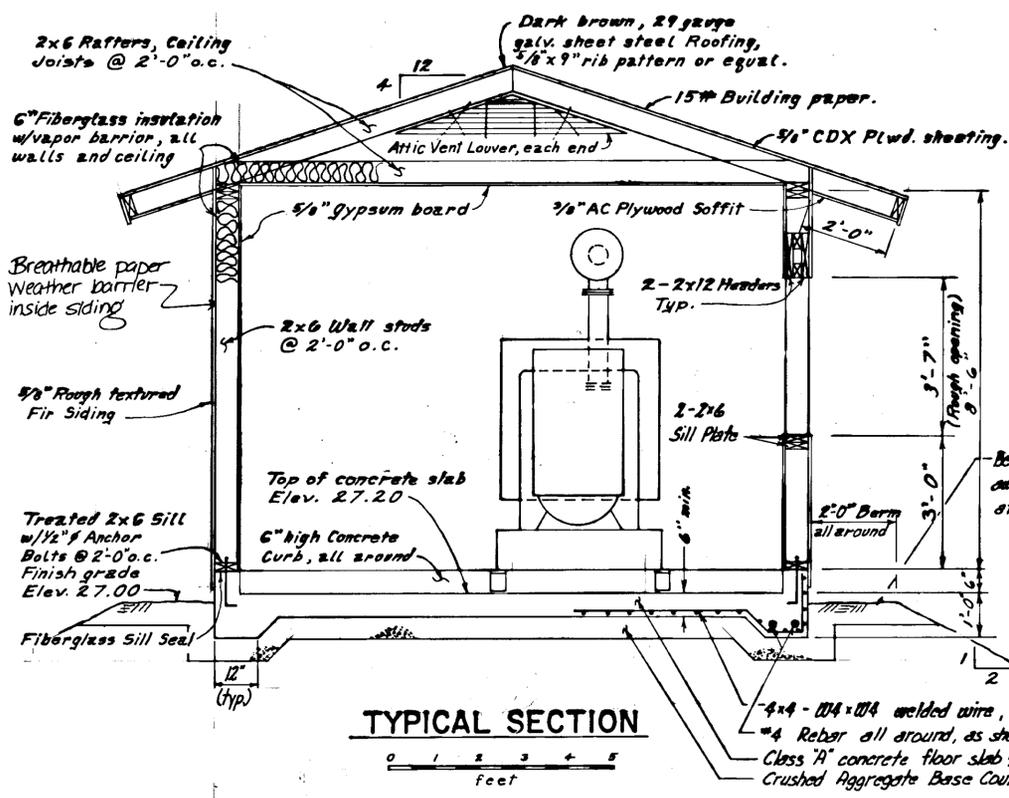
- CONCRETE HEADWALL NOTES**
- Class # Concrete shall be used.
 - Use 3/4" chamfers on all exposed corners.
 - Foundation material shall be as directed.
 - All reinforcing steel shall be Grade 40.



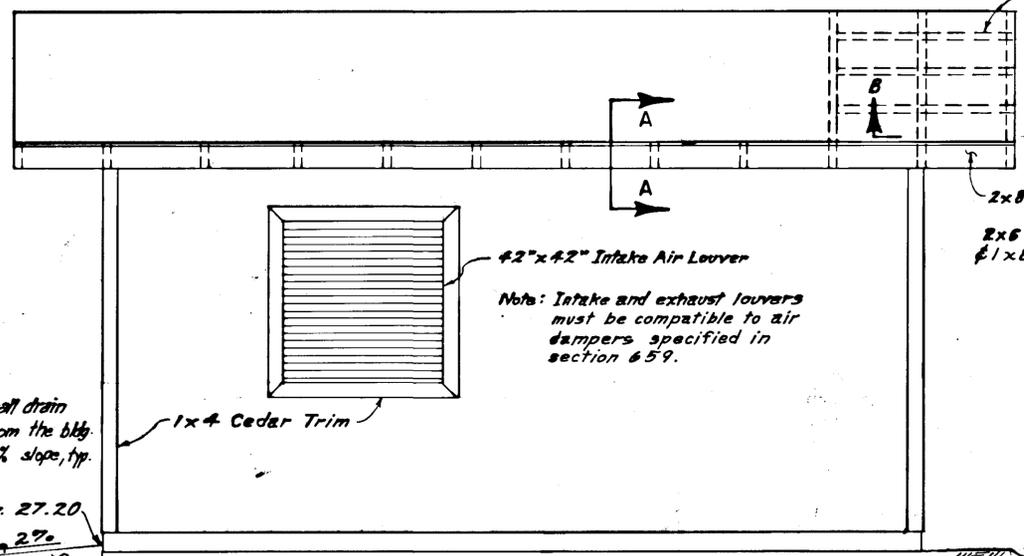
CONCRETE HEADWALL SECTION C-C



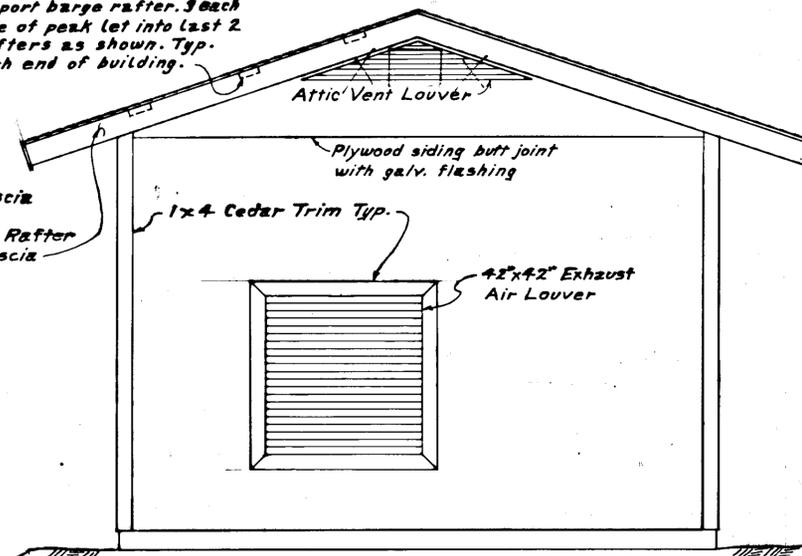
DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
KETCHIKAN		TRAFFIC CONTROL PLAN AND EXISTING UTILITIES ADJUSTMENT	
DESIGNED D.D.S.	CHECKED W.L.T.	DRAWN D.D.S.	DATE FEB. 19
PROJECT NUMBER F-091-(2) 88545		SHEET 14 OF 53	



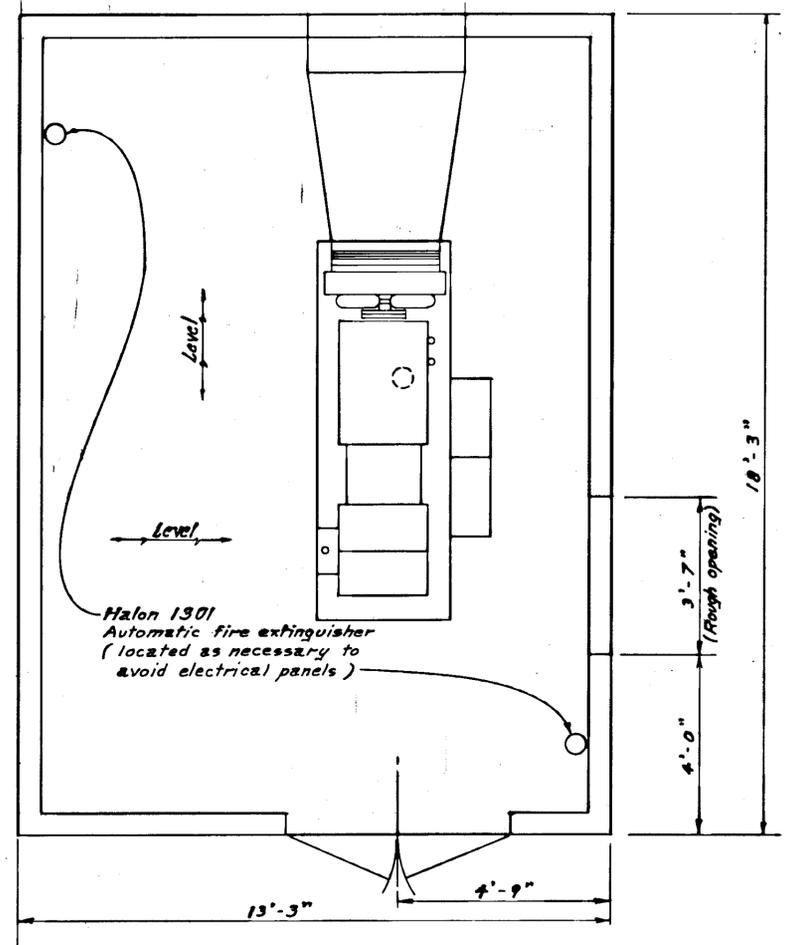
TYPICAL SECTION



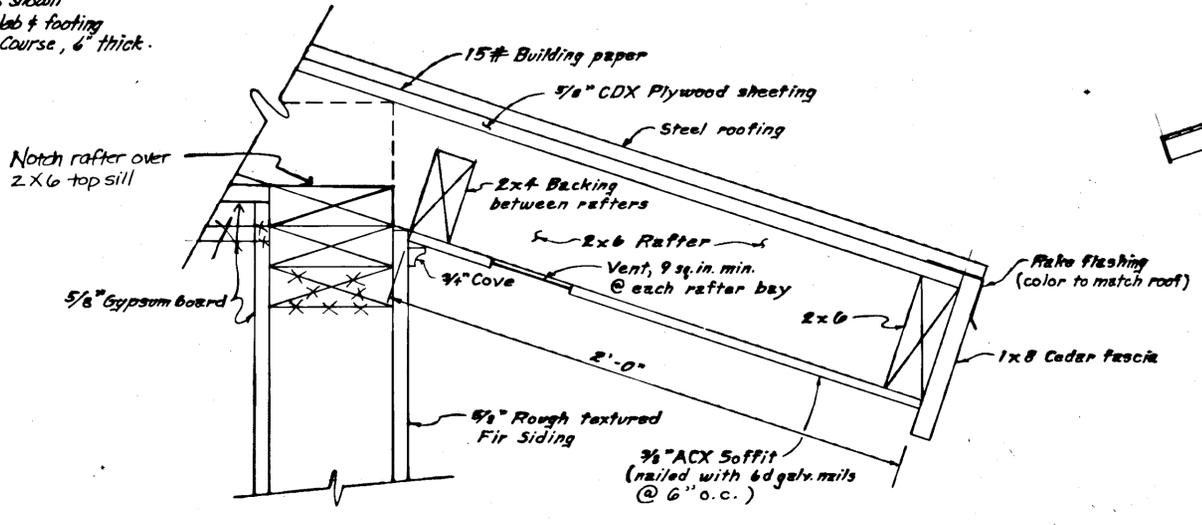
RIGHT SIDE
(Looking South)



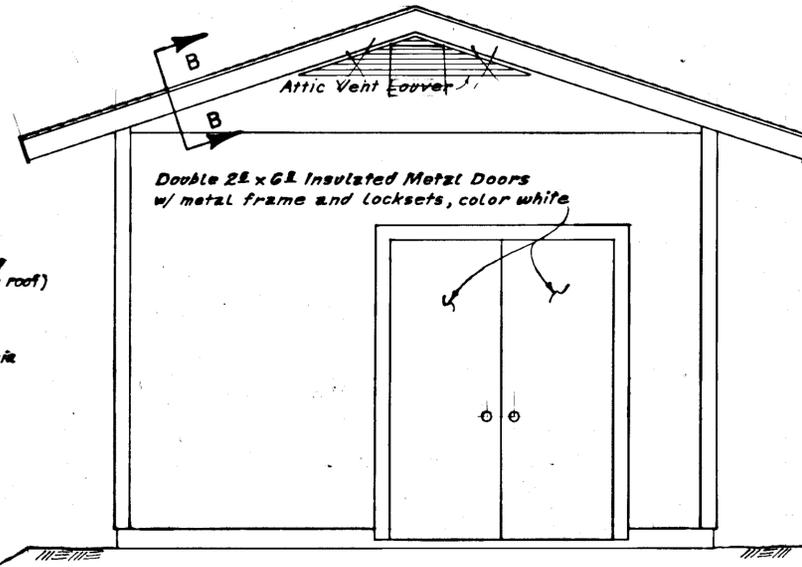
BACK
(Looking East)



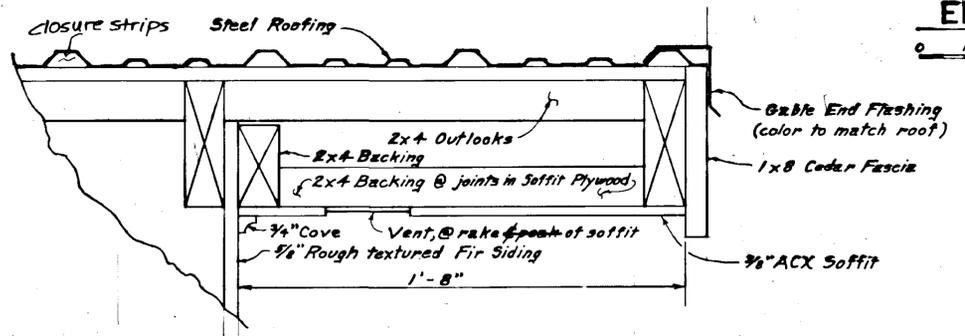
PLAN



SECTION A-A



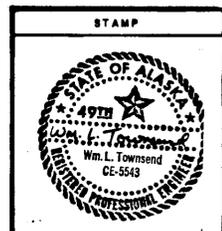
FRONT
(Looking West)



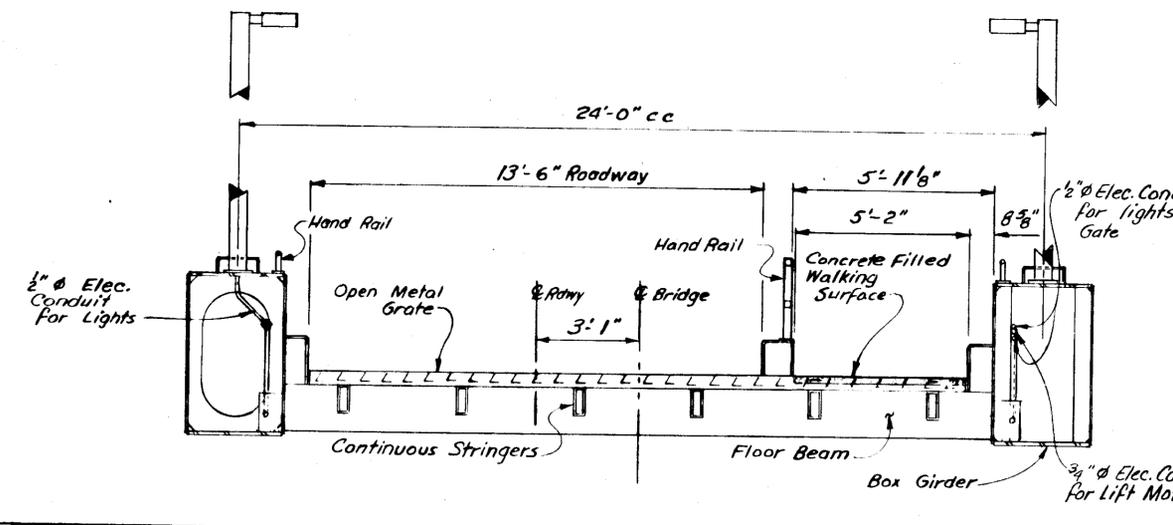
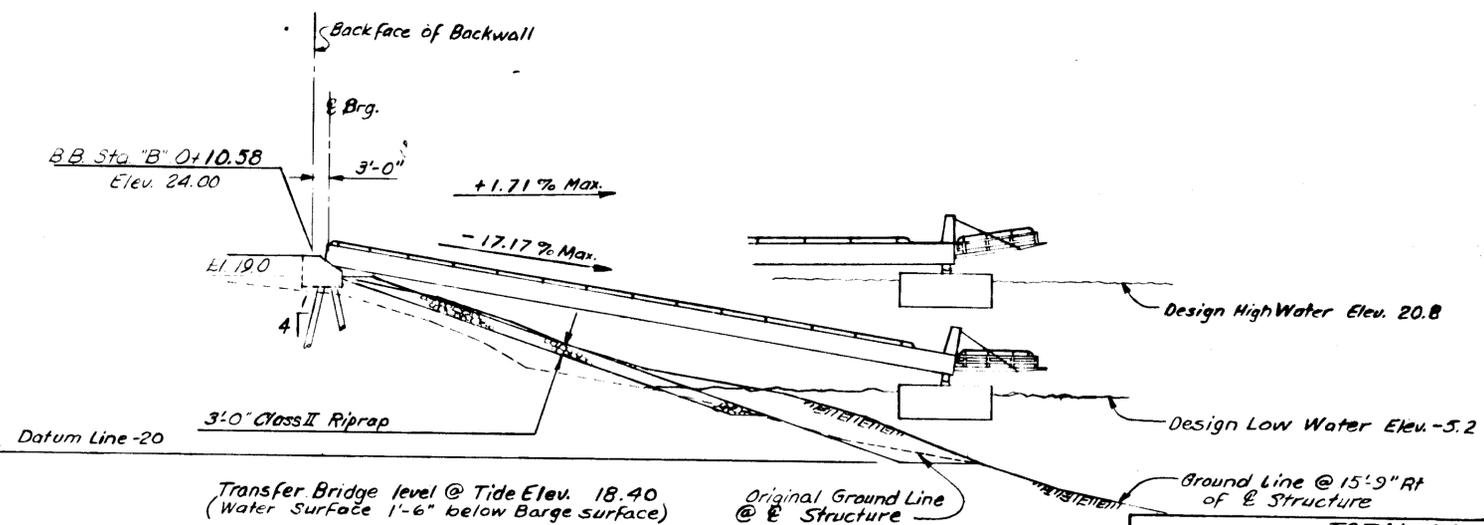
SECTION B-B



ELEVATIONS



DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
STATE OF ALASKA			
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
KETCHIKAN			
GENERATOR BUILDING			
DESIGNED	D.D.S.	CHECKED	W.L.T.
DRAWN	B.H.	DATE	FEB. 1978
PROJECT NUMBER	FM-0922(2) 66783	SHEET	15 OF 53



PILE TIP ELEVATION		
ESTIMATED	MINIMUM	Actual
Elev. -80.0	Elev. -60.0	Varies: Elev. -72 to -87

Note:
Predrilling or excavation may be required to set the abutment piles thru the existing fill material without damage.

ELEVATION

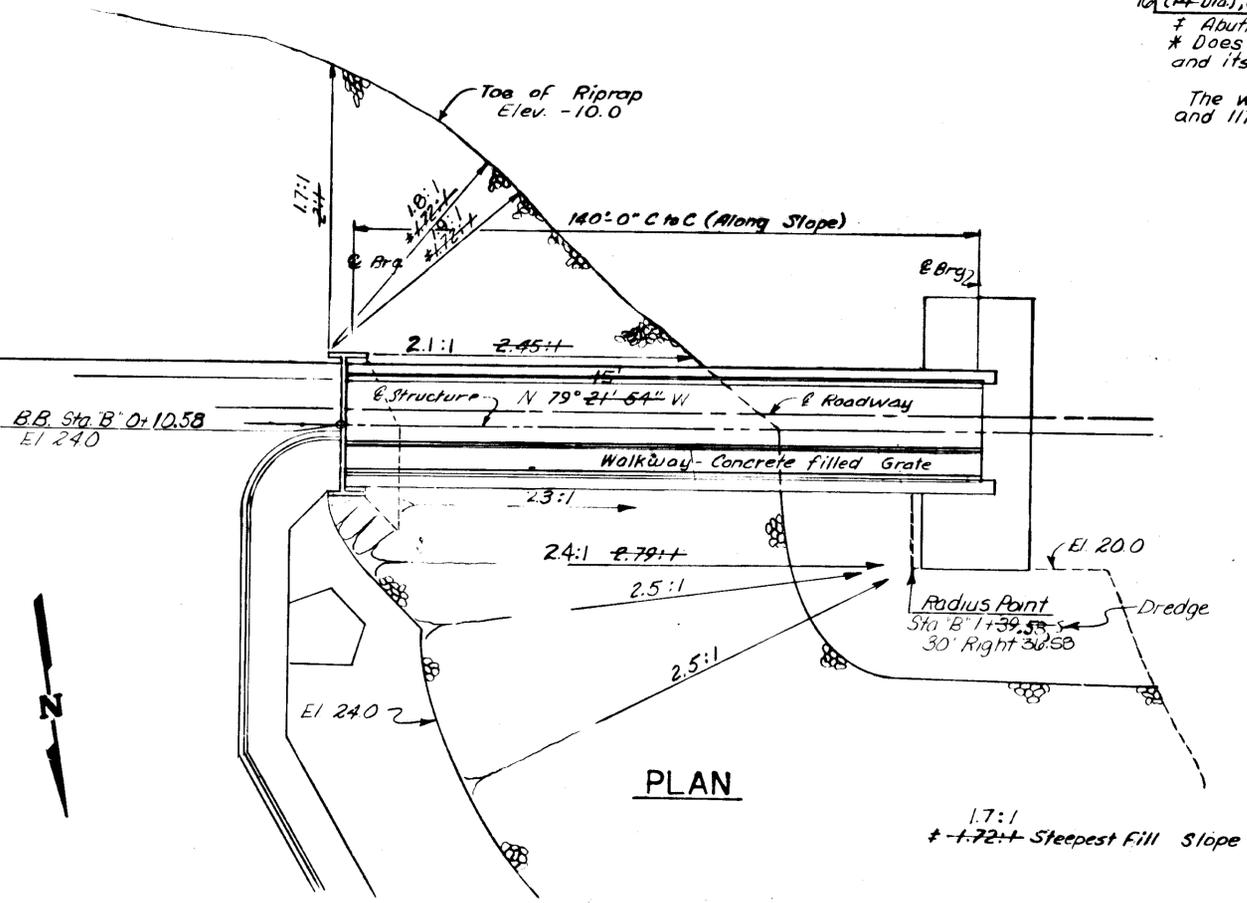
TOTAL ESTIMATED QUANTITIES					
ITEM	UNIT	SUBSTR	SUPER	TOTAL	DWG. No's
‡ Class A Concrete	CY	29.7	—	29.7	2, 4
Abutment Reinforcing Steel	Lb	2510	—	2510	2
* Structural Steel Transfer Bridge furnished, fabricated, and erected	Lb	2810	255,980	258,790	2 - 6
Structural Steel Pipe Piles 16 (14" Dia.) furnished	LF	483	—	483	2
Structural Steel Pipe Piles 16 (14" Dia.) driven	Ea.	5	—	5	2

‡ Abutment concrete.
* Does not include weight of apron, lifting tower, lifting mechanism and its appurtenances, electrical conduit and lighting system.
The weight includes approximately 86590 lbs A572, 55160 lbs A500 Grade B and 117,040 lbs A36 and other.

TYPICAL SECTION

INDEX

TITLE	DWG. NO.
SHUTTLE BRIDGE LAYOUT	1
ABUTMENT	2
ABUTMENT BEARINGS	3
TYPICAL SECTION	4
HATCH & DECK PANELS	5
RAILING	6
GIRDER ELECTRICAL DETAILS	7



PLAN

GENERAL NOTES

Specifications:
 Design: AASHTO Standard Specifications for Highway Bridges, 1983 Edition, with the latest Interim Specifications.
 Construction: State of Alaska Standard Specifications for Highway Construction, 1981, Standard Modifications and Special Provisions.
 Live Load: HS 20-44.
 Dead Load: No allowance for future wearing surface.
Design Unit Stresses:
 Cast-in-Place Concrete: $f'_c = 4,000$ psi, $f_c = 1,800$ psi
 Reinforcing Steel: $f_y = 60,000$ psi
 Structural Steel:
 A36 $F_y = 20,000$ psi, $F_u = 36,000$ psi
 A500 $F_y = 25,000$ psi, $F_u = 46,000$ psi
 A572 $F_y = 27,000$ psi, $F_u = 50,000$ psi
 A108 $F_y = 29,000$ psi, $F_u = 53,000$ psi
Structural Materials:
 Concrete: All cast-in-place abutment concrete shall be Class A.
 Reinforcing Steel: All reinforcing steel shall conform to ASTM 615 Grade 60.
 Structural Steel: All structural steel tube sections shall be A500, Grade B. All other structural steel shall be A36 except as noted. All structural steel not designated for painting shall be galvanized. Group 2 Charpy V-Notch Impact Requirements shall apply. Anchor bolts shall be galvanized A325 high strength bolts. All other bolts shall be galvanized A307 machine bolts.
Piling: Abutment structural steel pipe piles shall be 14" diameter with a wall thickness of .500". Structural steel pipe piles 18" diameter with a wall thickness of .500" may be substituted for abutment piles with no cost to the State for required additional materials. Pipe piles shall conform to ASTM A252, Grade 2, A501 or A53, Grade B, type E or S. Piles are 17' X 0.562" wall galvanized steel pipe piles, conforming to API 5L X 65. Pile Capacity = 55 tons.



KETCHIKAN SHUTTLE TRANSFER BRIDGE

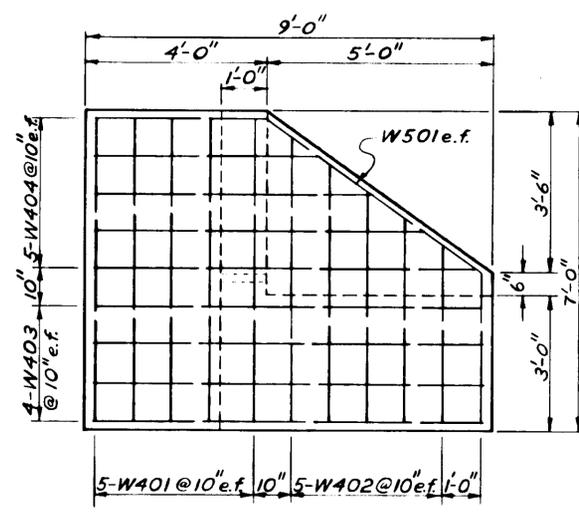
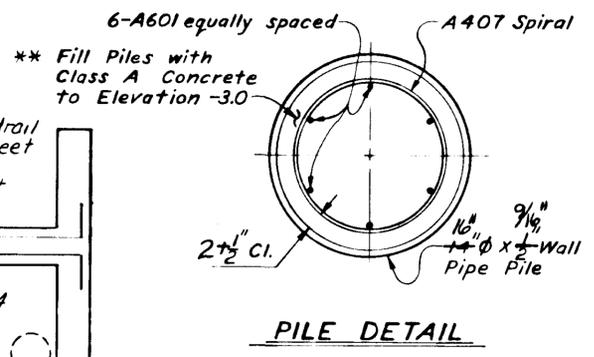
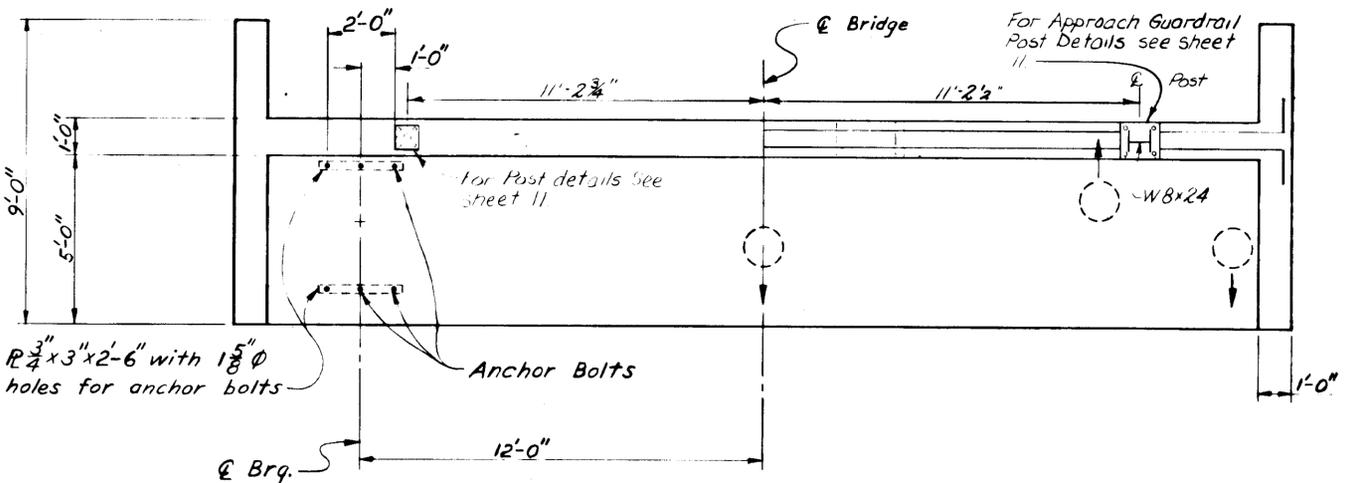
SHUTTLE BRIDGE LAYOUT

State of Alaska
DEPARTMENT OF TRANSPORTATION and PUBLIC FACILITIES
 Juneau, Alaska



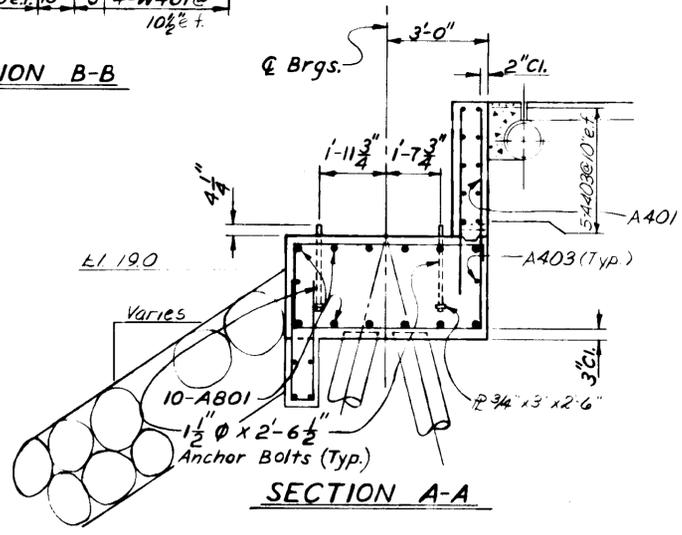
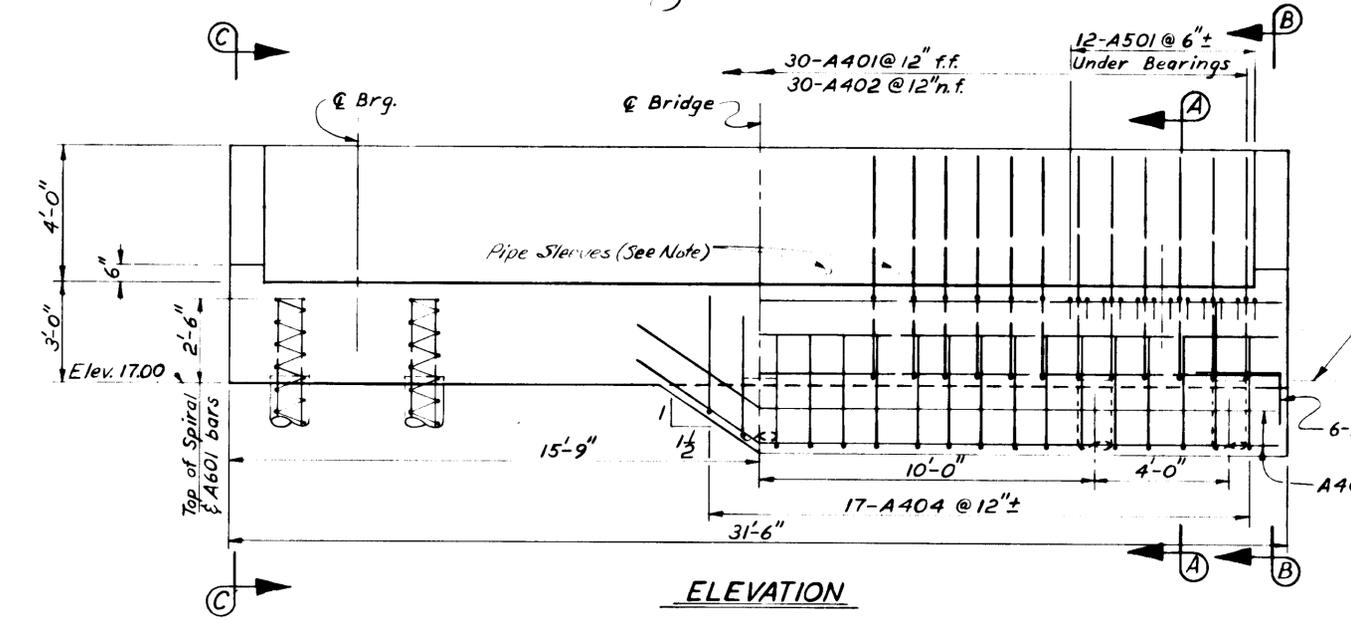
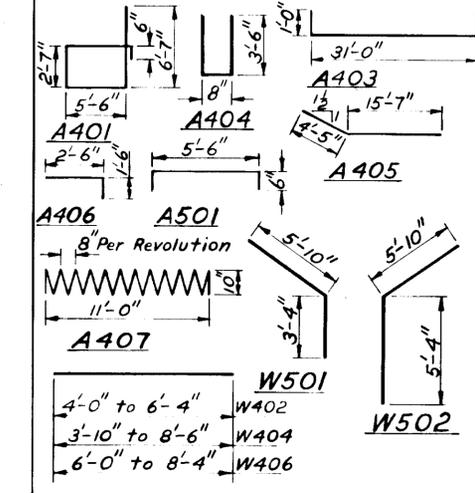
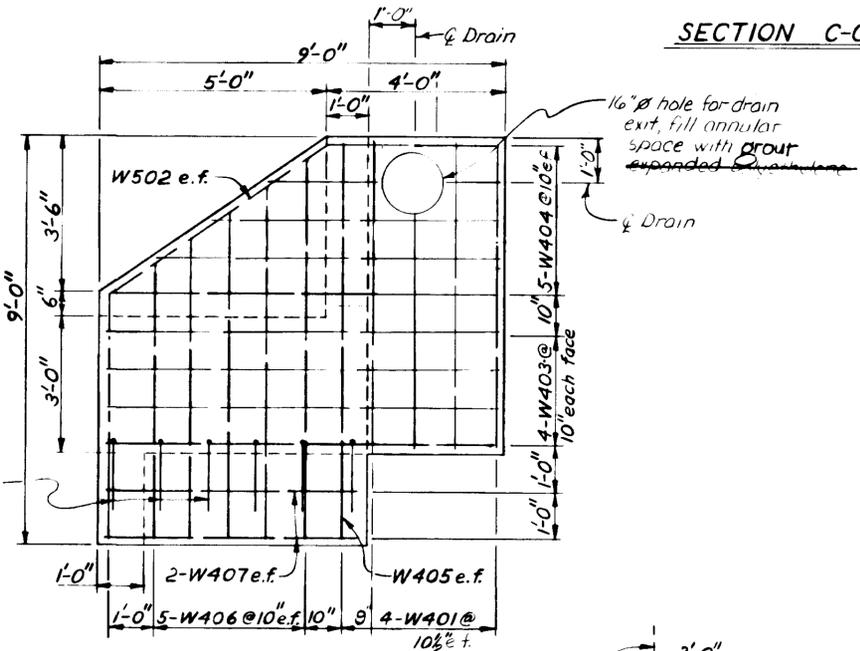
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	B2	53

** Concrete in piles shall be incidental to pipe piles



REINFORCING SCHEDULE

MARK	SIZE	NO.	LENGTH	TYPE
A401	4	30	20'-8"	Bent
A402	4	30	5'-6"	
A403	4	12	33'-0"	Bent
A404	4	17	7'-8"	Bent
A405	4	4	20'-0"	Bent
A406	4	6	3'-6"	Bent
A407	4	5	49'-3"	Spiral
A501	5	24	6'-6"	Bent
A601	6	30	11'-0"	
A801	8	12	31'-0"	
W401	4	18	6'-8"	
W402	4	10	Varies	
W403	4	16	8'-8"	
W404	4	20	Varies	
W405	4	2	8'-8"	
W406	4	10	Varies	
W407	4	4	5'-8"	
W501	5	2	9'-2"	Bent
W502	5	2	11'-2"	Bent



NOTE

Sleeves to hold Conduit	Pipe Sleeve Size	Conduit
Fill annular space with Expanded Polyethylene.	3" ∅	1 1/2" ∅
Locate in field to fit.	2" ∅	1" ∅

∓ incidental to pipe piles
Cut to fit at drain hole location

NO SCALE

KETCHIKAN SHUTTLE TRANSFER BRIDGE

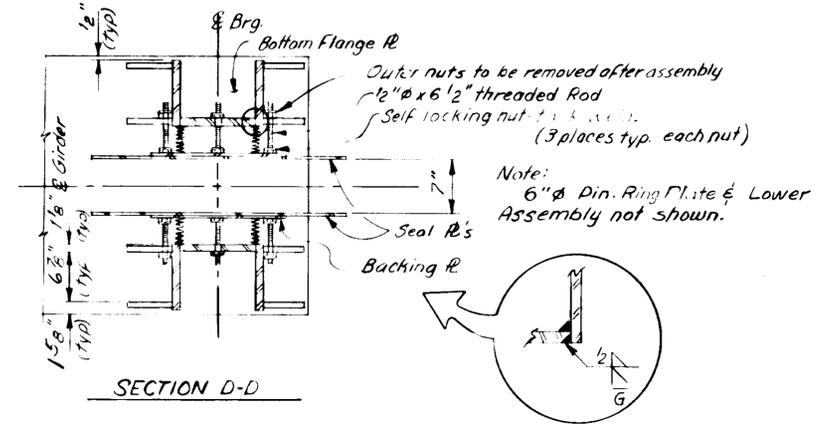
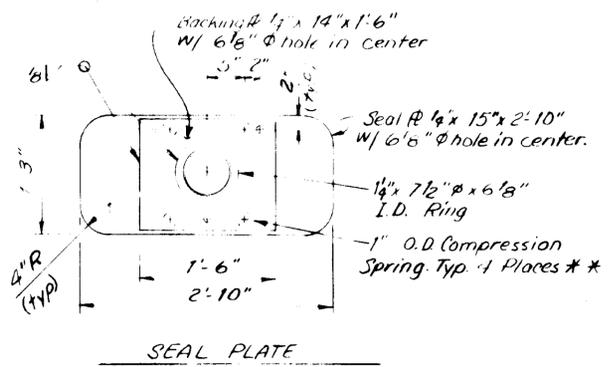
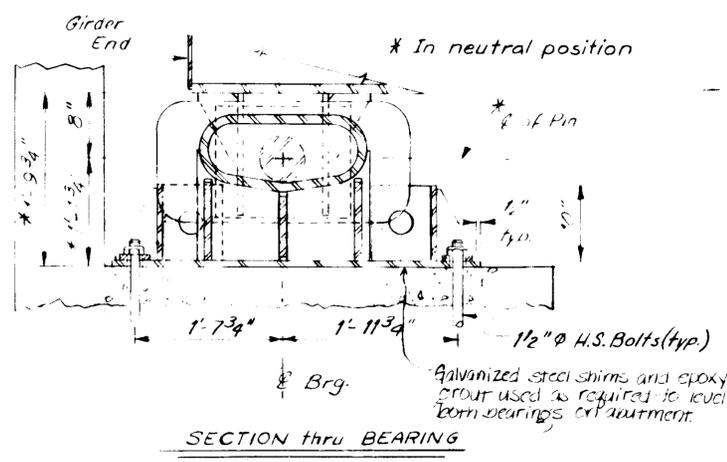
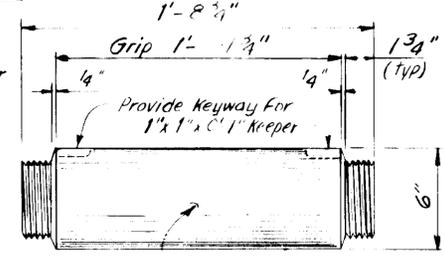
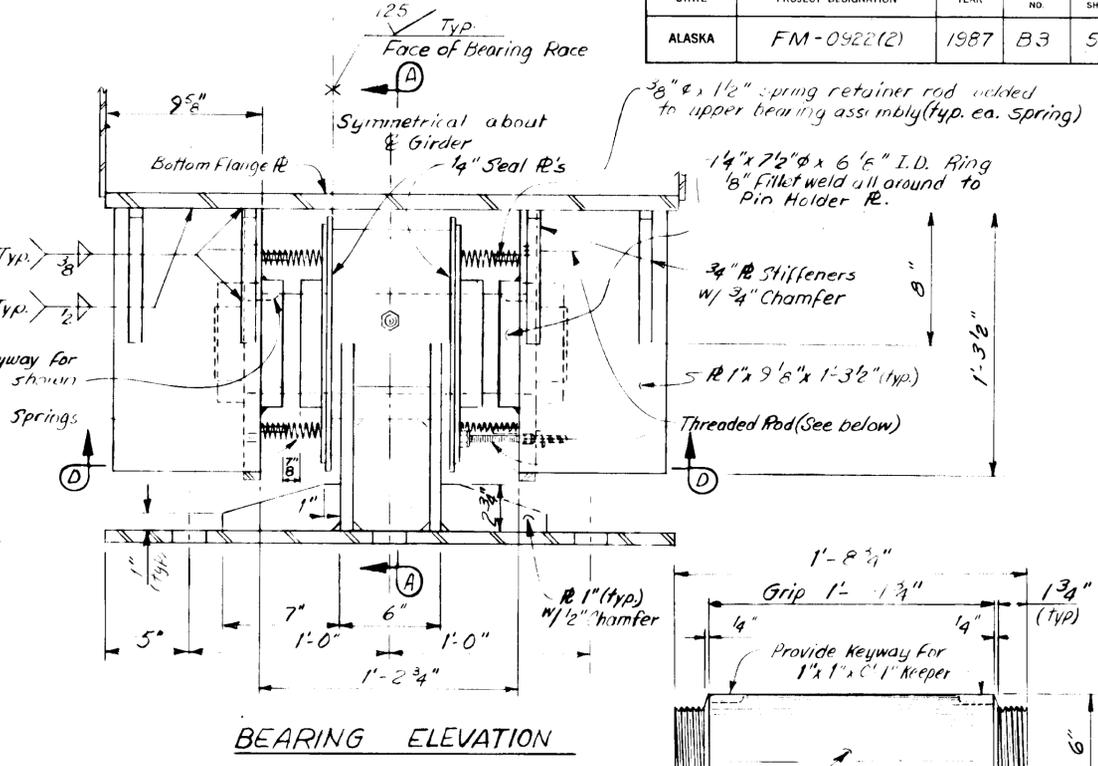
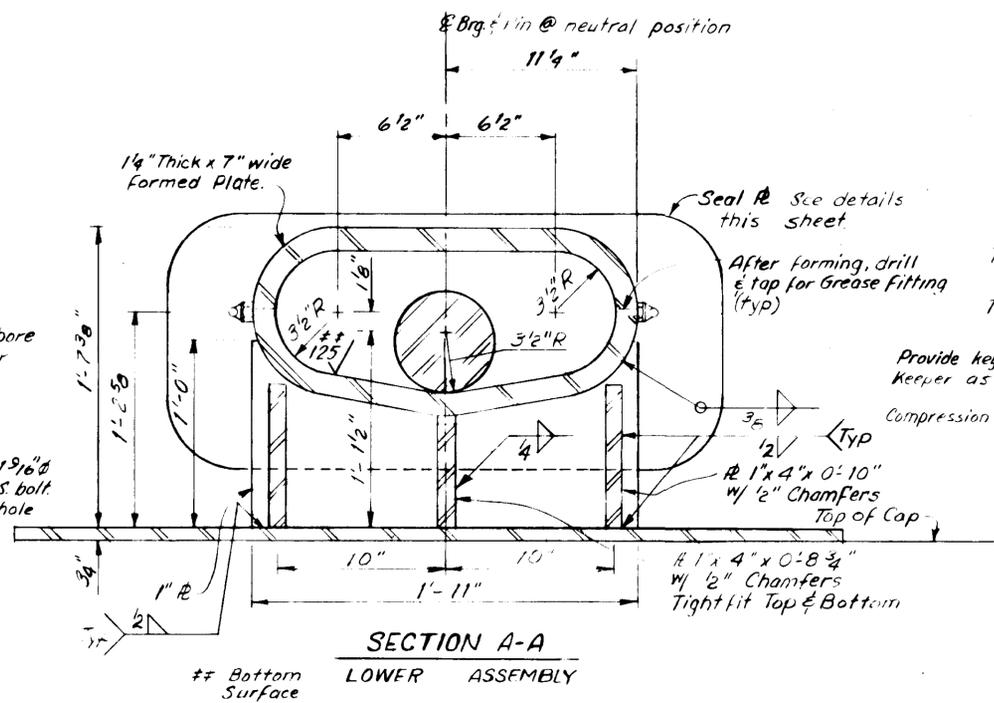
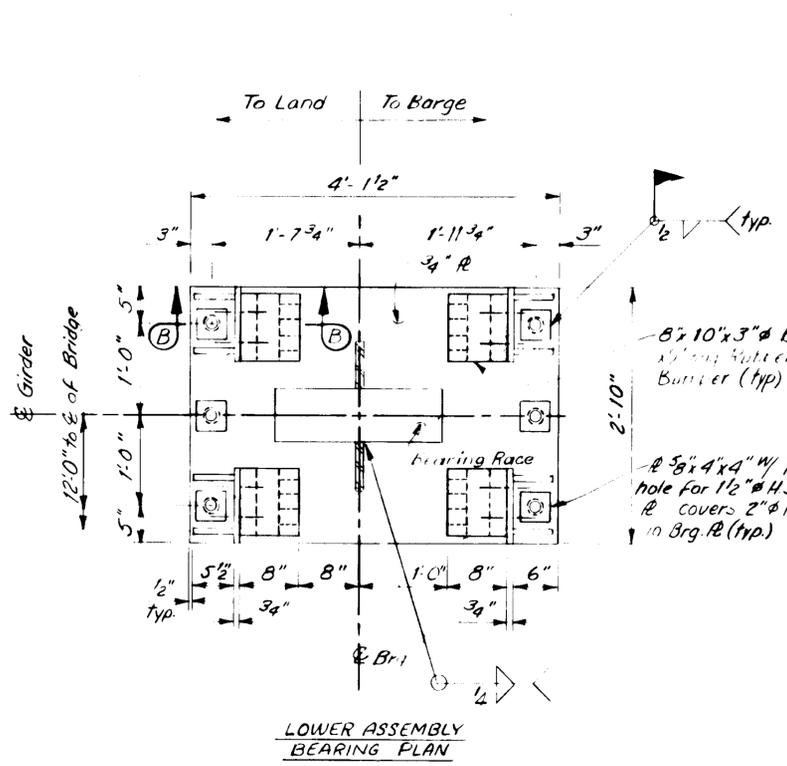
ABUTMENT

State of Alaska
DEPARTMENT OF TRANSPORTATION
and PUBLIC FACILITIES
Juneau, Alaska

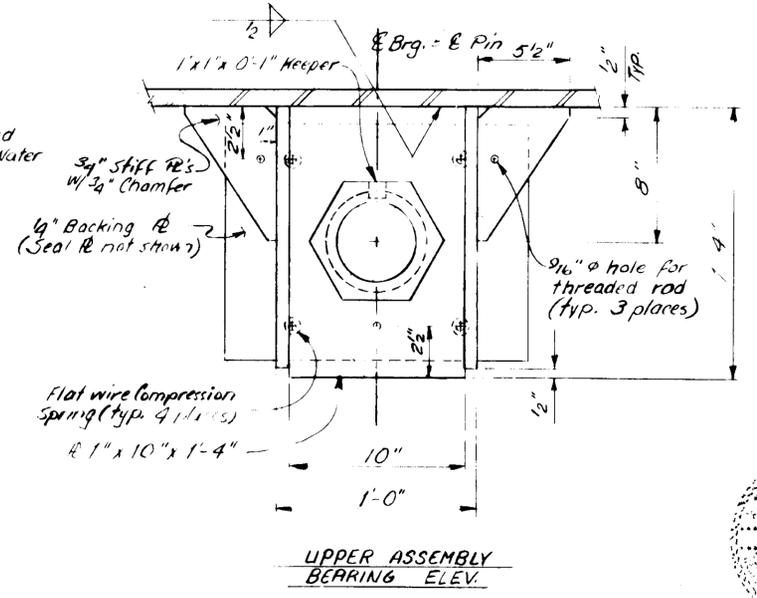
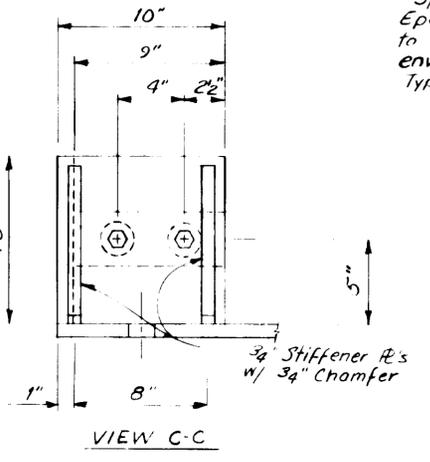
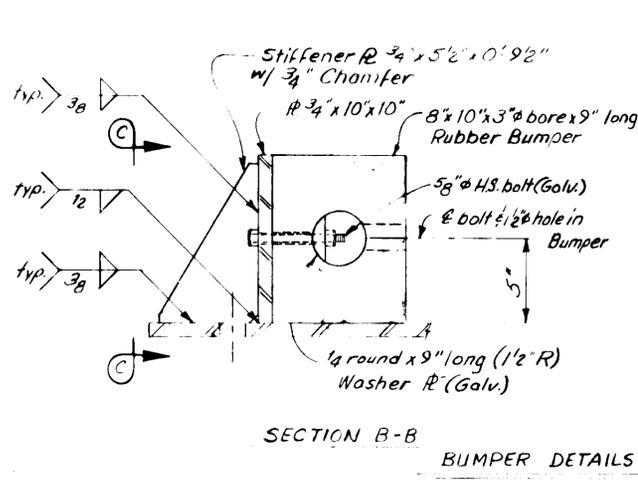


BRIDGE NO. 1819
DWNG. NO. 2

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	B.3	53



**** Round Edge flat wire compression spring 2 3/8" x 7/64" wire x 4 1/2" free length. 1/2" I.D. x 1" O.D. Solid height 2 3/8". K=145 pounds per inch. Spring shall have squared or closed ends ground smooth. Springs shall be Stainless Steel, Epoxy coated or otherwise treated to resist corrosion from a Salt Water environment. Tack weld to Seal R. Typical 4 places.**

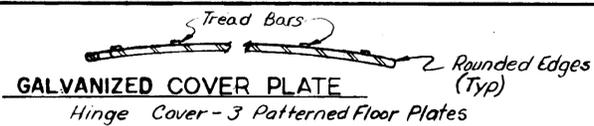


No Scale
KETCHIKAN SHUTTLE TRANSFER BRIDGE
ABUTMENT BEARINGS

State of Alaska
 DEPARTMENT OF TRANSPORTATION
 and PUBLIC FACILITIES
 Juneau, Alaska

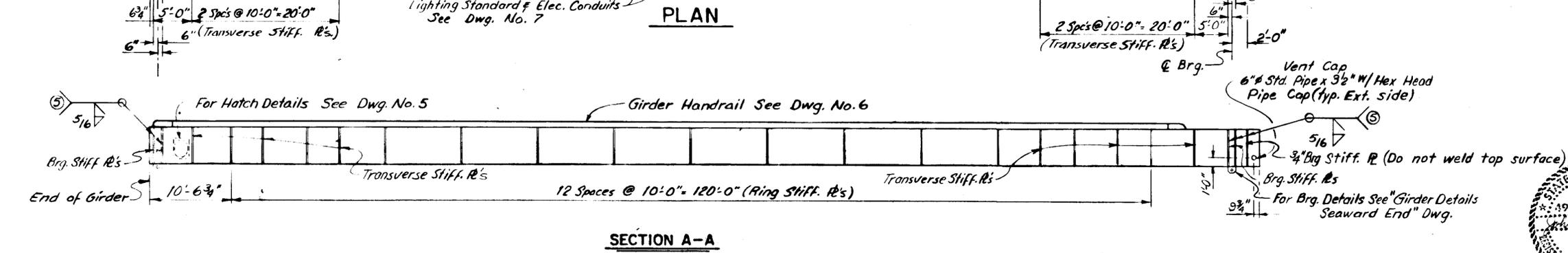
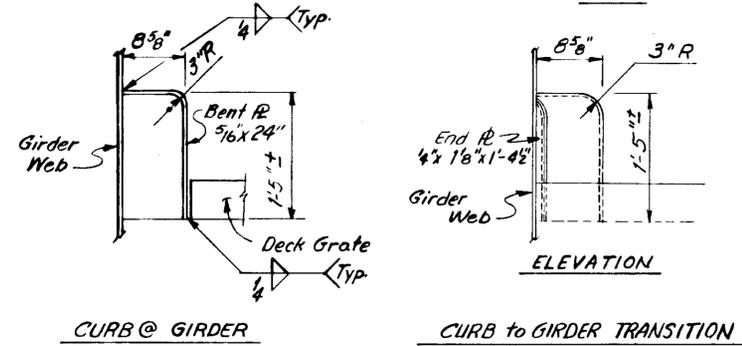
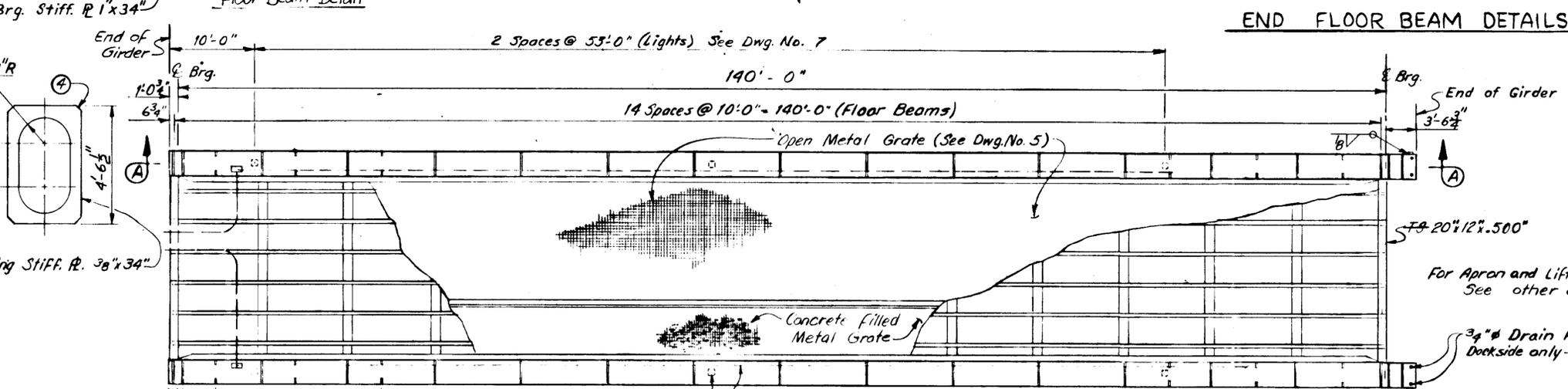
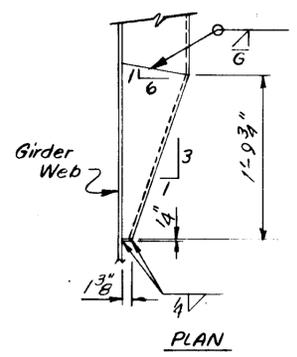
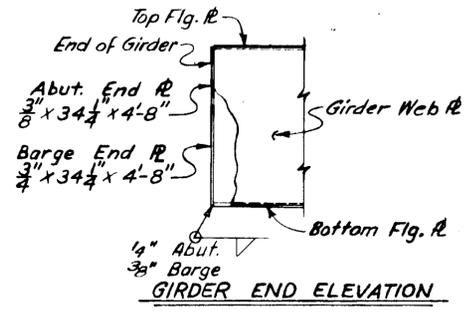
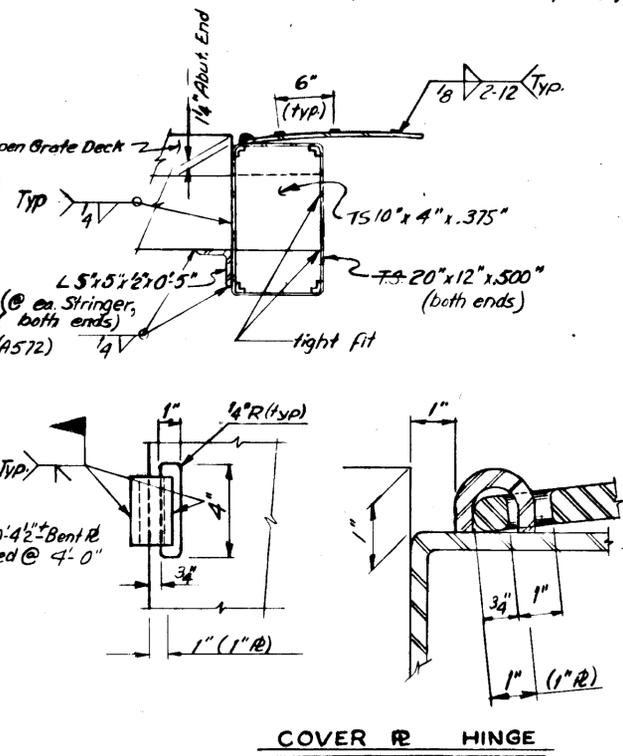
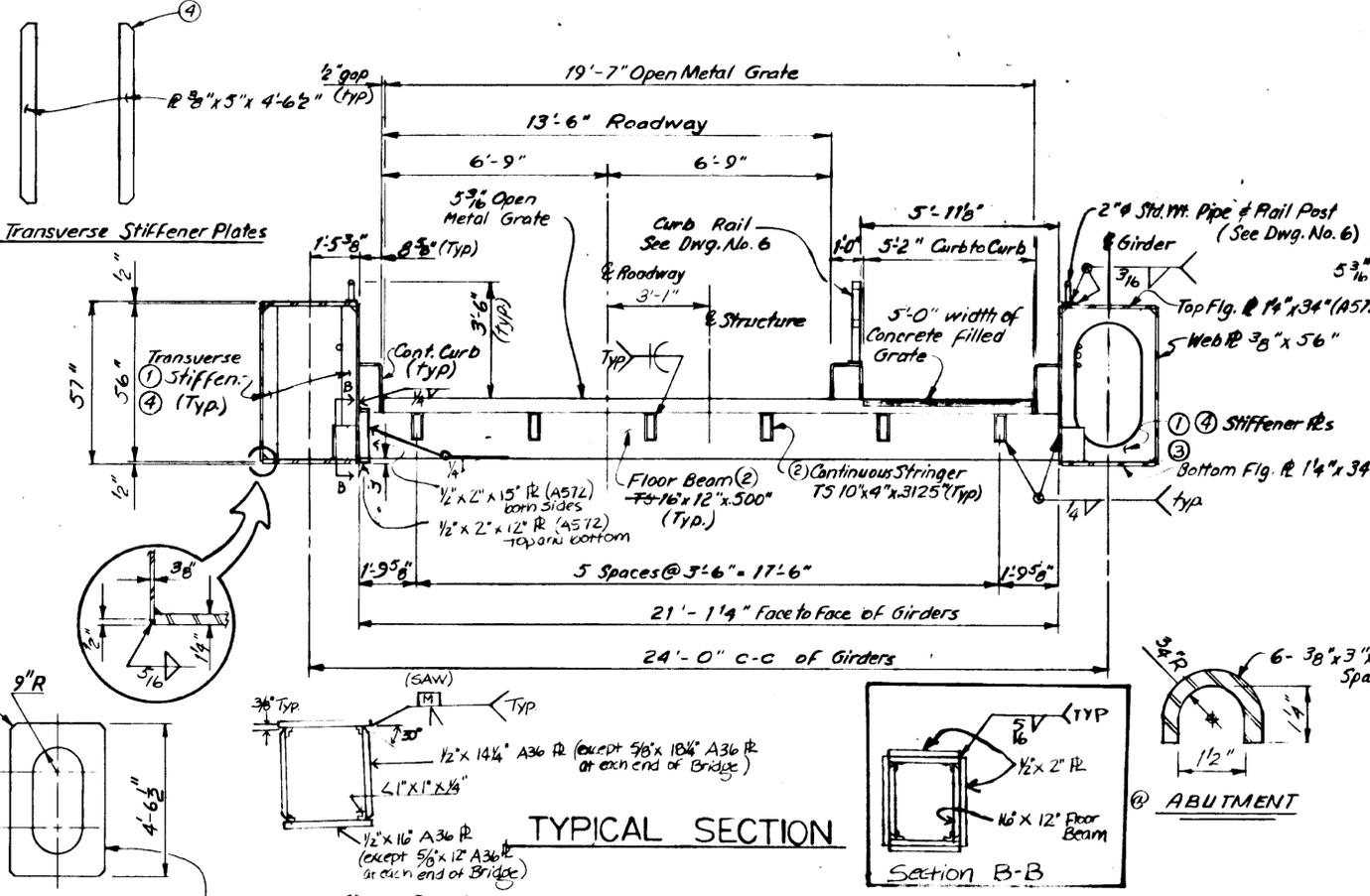
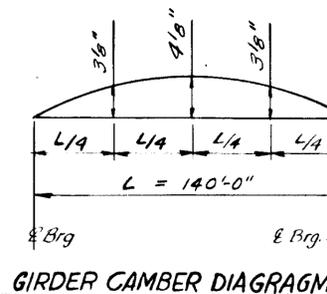


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	B4	53



NOTES

- ① Ring & Transverse Stiff. R's: Weld 1/4" fillet weld each side and all contact surfaces except at bottom flange tight fit only. Stop side weld 2" from bottom.
- ② Main member subject to tensile stress.
- ③ Fracture critical member subject to tensile stress.
- ④ Clip 3/4" @ Stiffener Plates
- ⑤ Except bottom edge, which shall be milled to bear on bottom flange of girder.

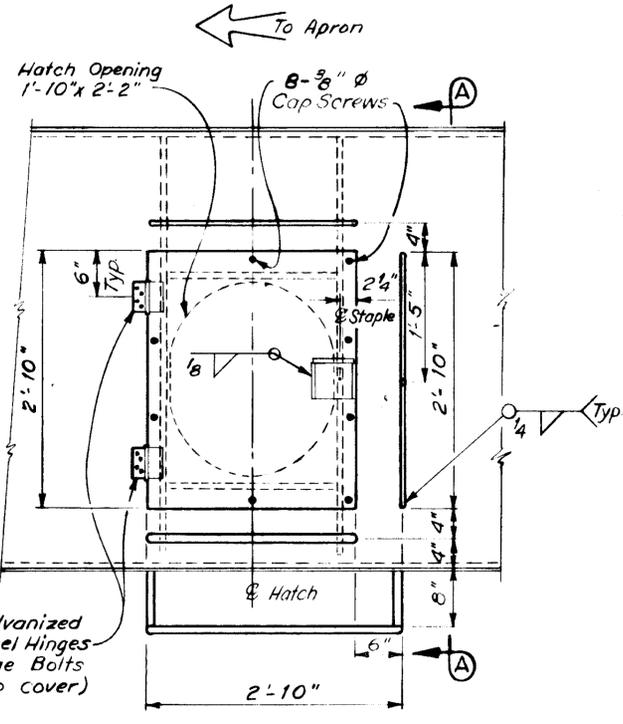


No Scale
KETCHIKAN SHUTTLE TRANSFER BRIDGE
 TYPICAL SECTION

State of Alaska
 DEPARTMENT OF TRANSPORTATION
 and PUBLIC FACILITIES
 Juneau, Alaska

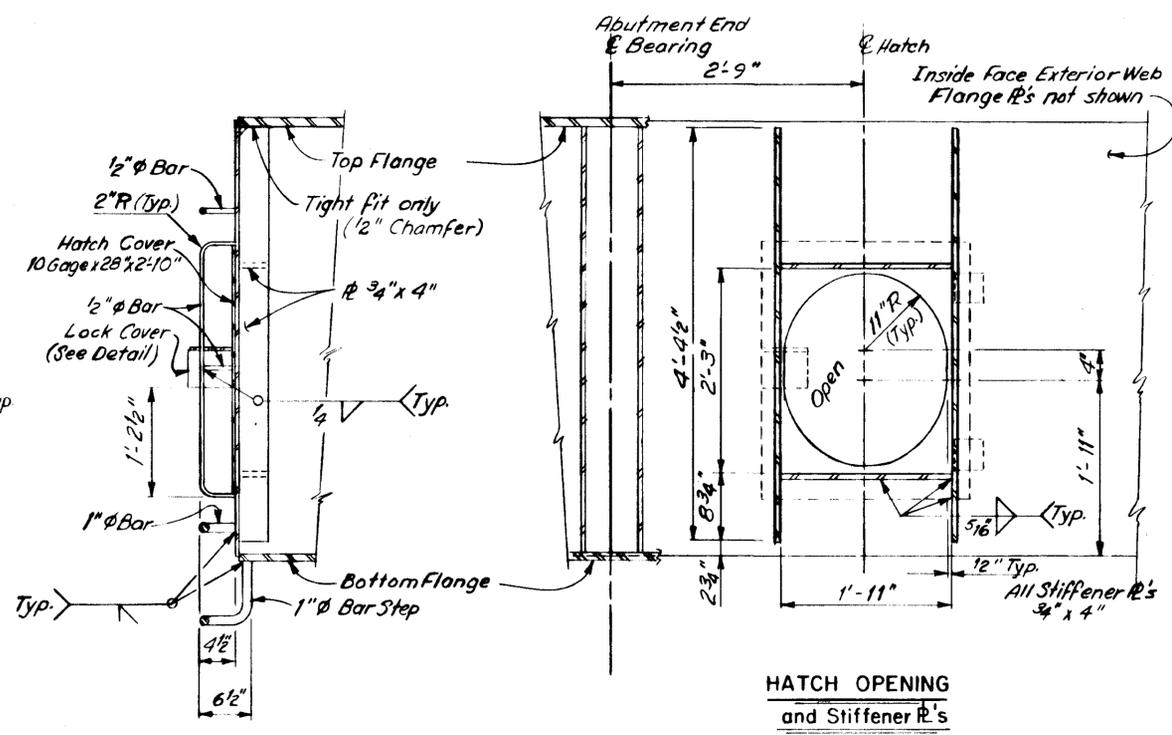


STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	B5	53



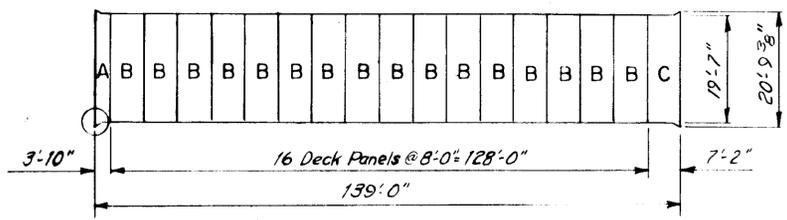
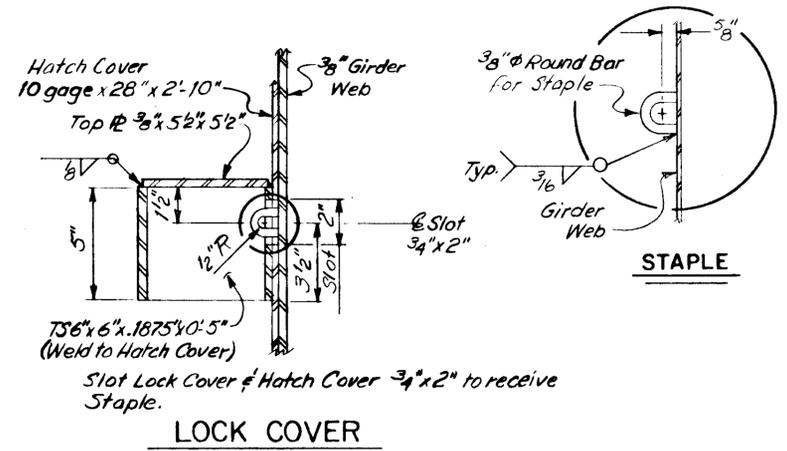
HATCH COVER

Note: Hatches are on the outside Girder Web 2'-required. Hatches are to be bolted in place before hinges are bolted down & welded. Hatches are to open towards Apron.



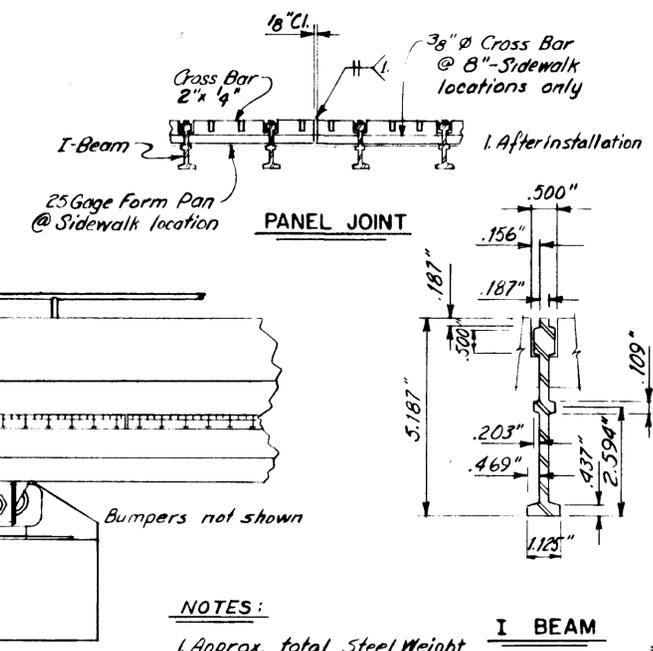
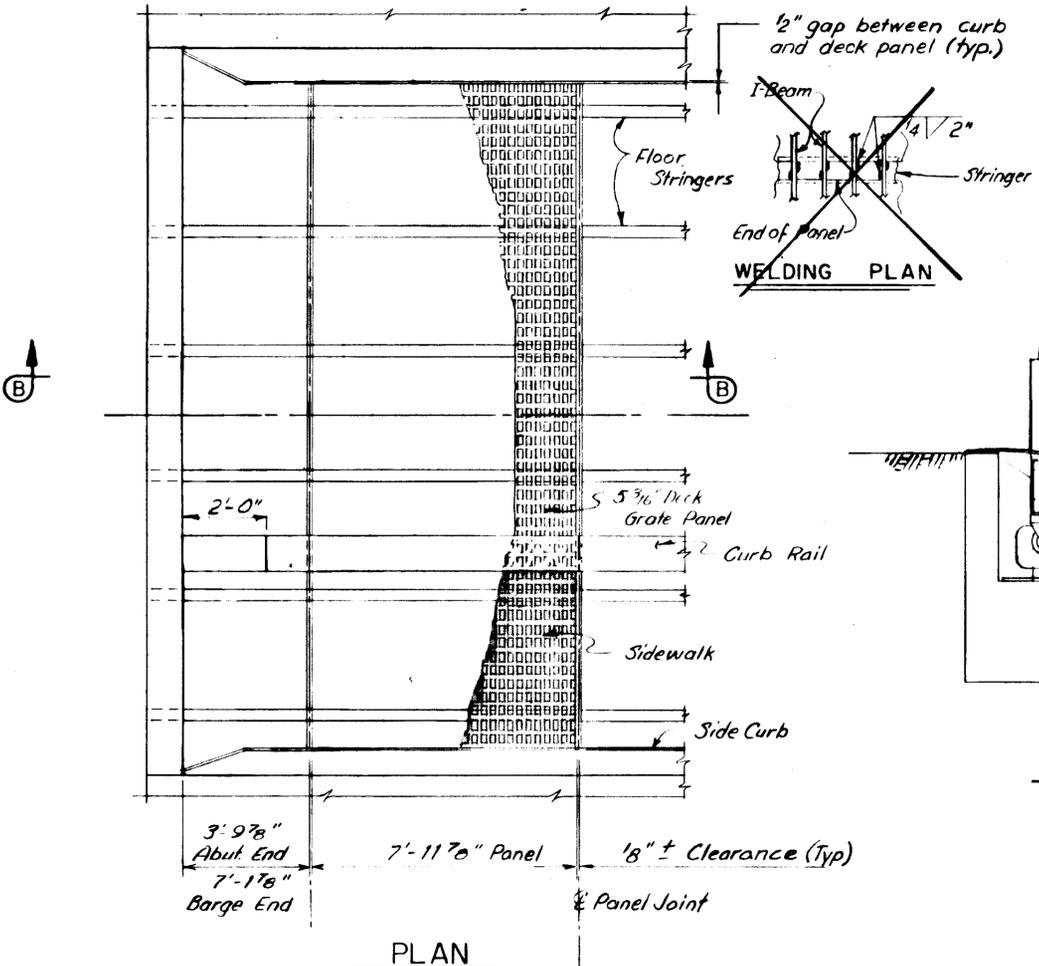
SECTION A-A

HATCH OPENING and Stiffener R's



DECK PANEL LAYOUT

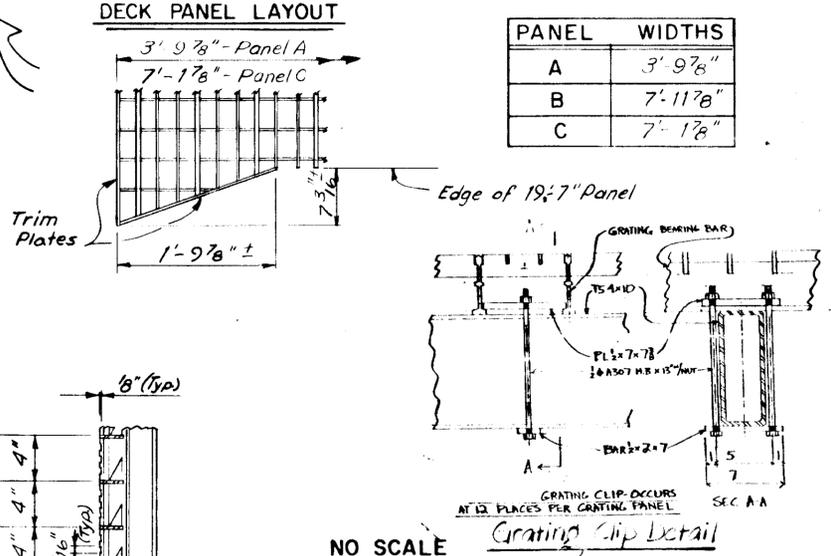
PANEL	WIDTHS
A	3'-9 7/8"
B	7'-11 7/8"
C	7'-1 7/8"



- NOTES:**
1. Approx. total Steel Weight for Deck Panels 43,270 lbs. including welds.
 2. Galvanize after fabrication.
 3. Approx. 5.7 C.Y. Class A Concrete for sidewalk.
 4. Section Modulus Top and Bottom shall not be less 3.10" in ³/Foot.

SECTION B-B

PANEL DETAILS



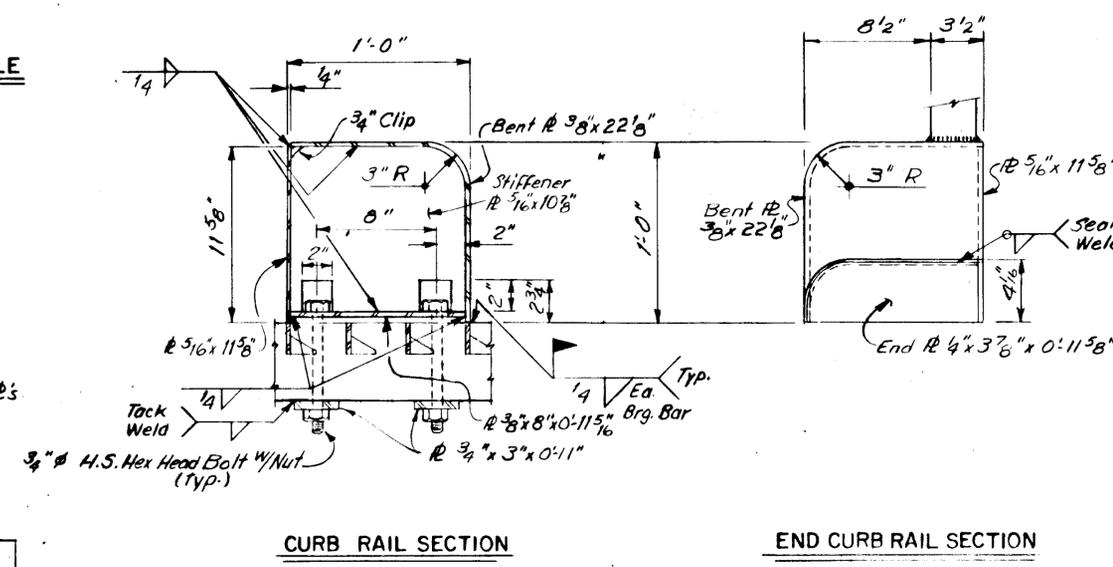
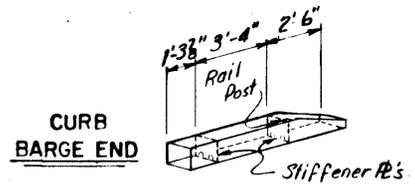
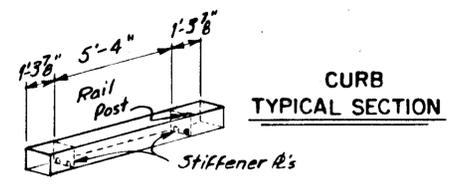
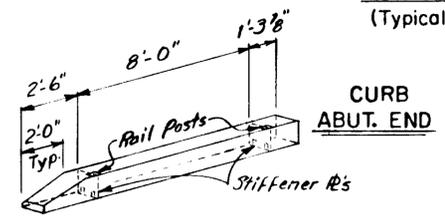
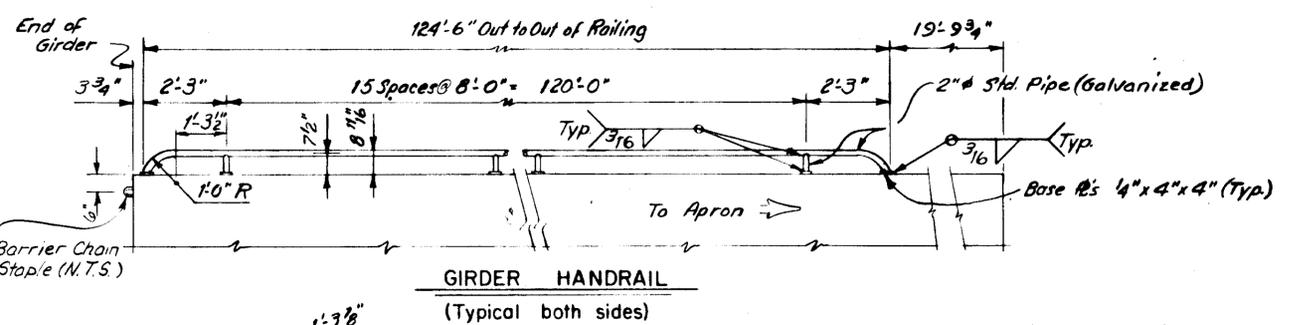
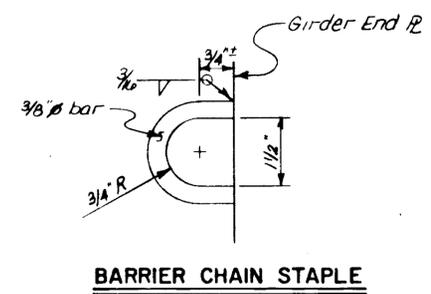
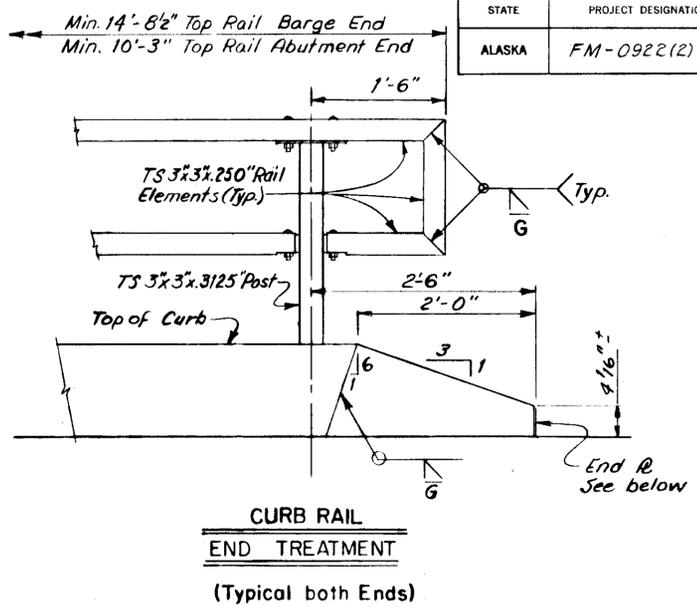
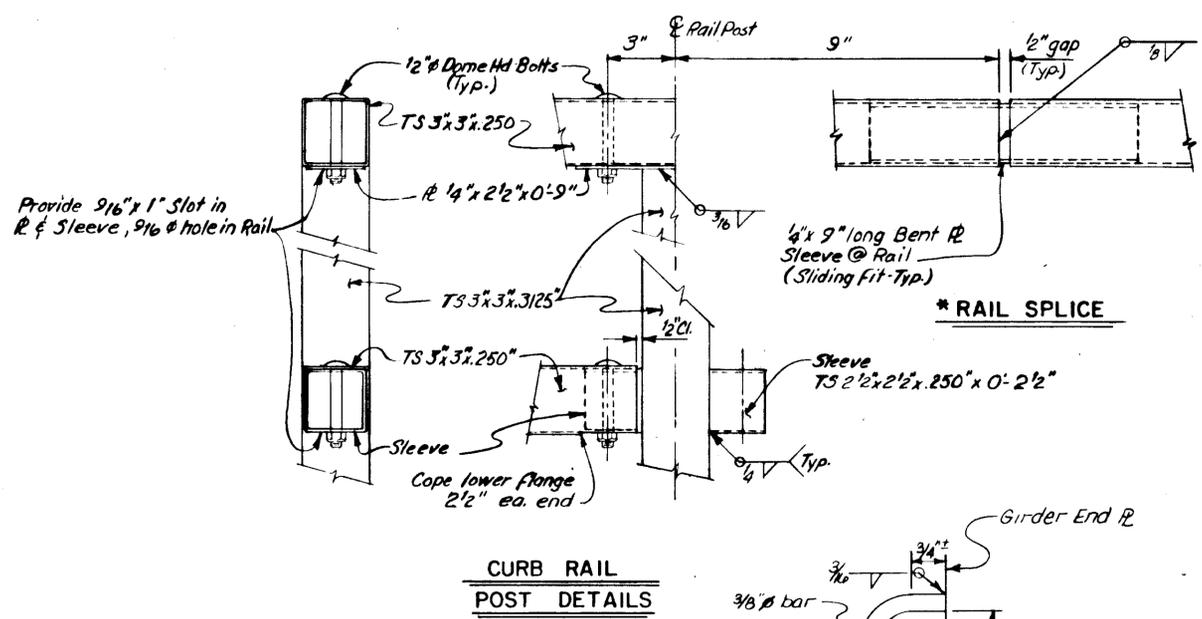
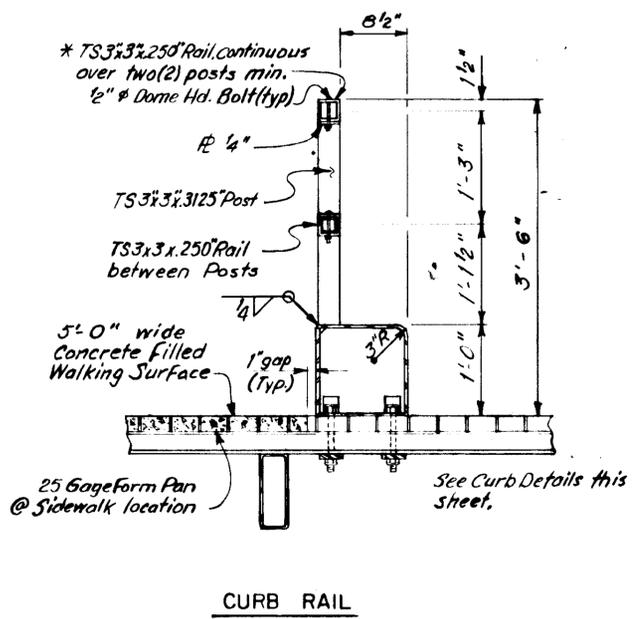
KETCHIKAN SHUTTLE TRANSFER BRIDGE

HATCH & DECK PANELS

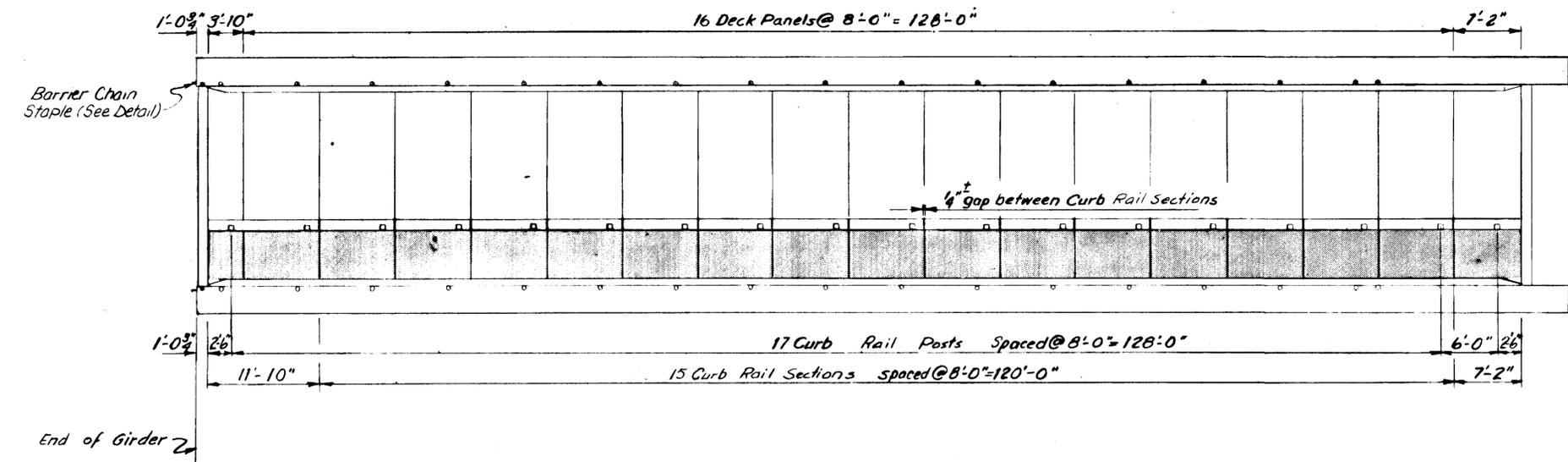
State of Alaska
DEPARTMENT OF TRANSPORTATION
and PUBLIC FACILITIES
Juneau, Alaska



STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	B6	53



- NOTES:**
1. Approx. total Steel Wt Railing = 11,040 lbs.
(6,930 lbs. A36; 2,860 lbs. A500, Grade B;
990 lbs. A53; 260 lbs. A307 and Welds)
 2. Galvanize after fabrication.
 3. For Deck Details see Dwg. No. 5

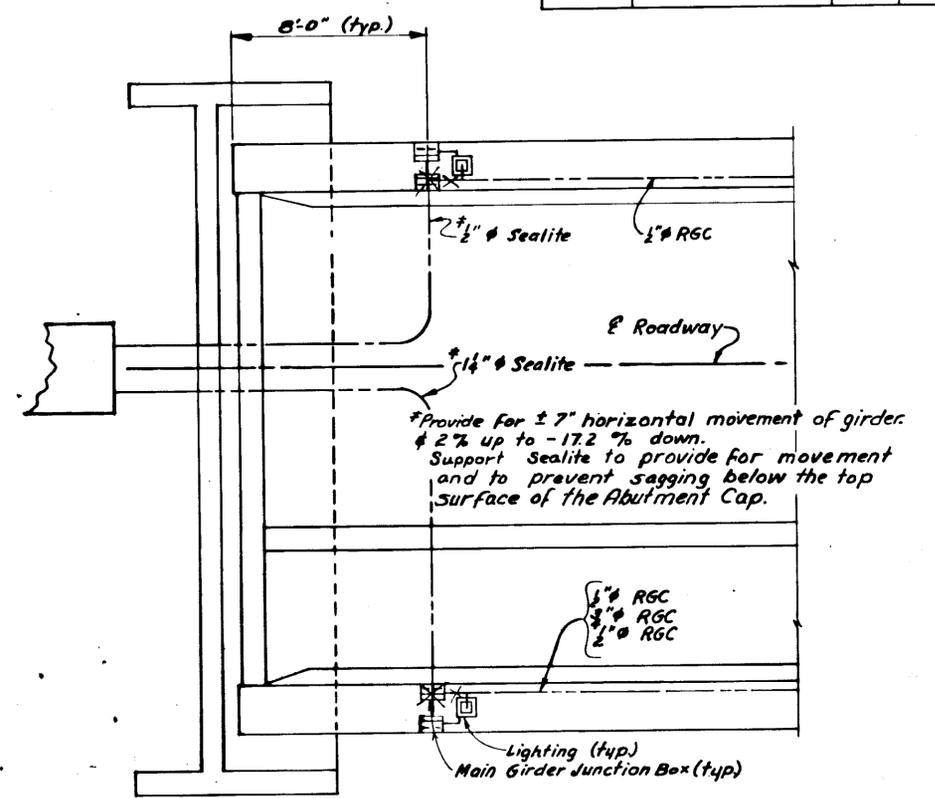
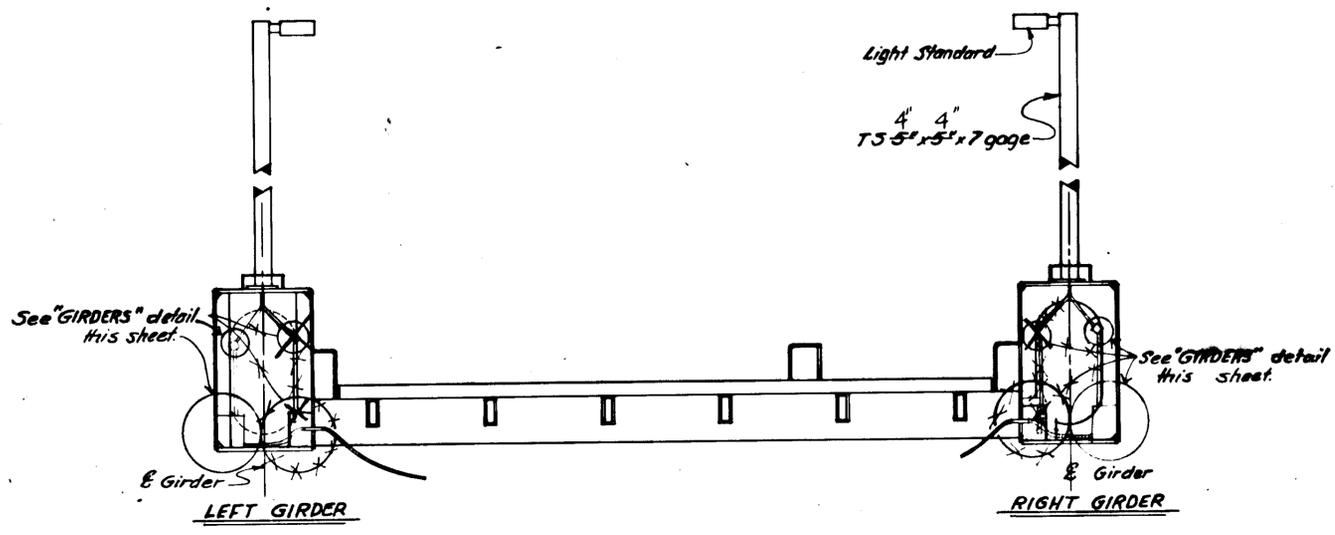


KETCHIKAN SHUTTLE TRANSFER BRIDGE RAILING

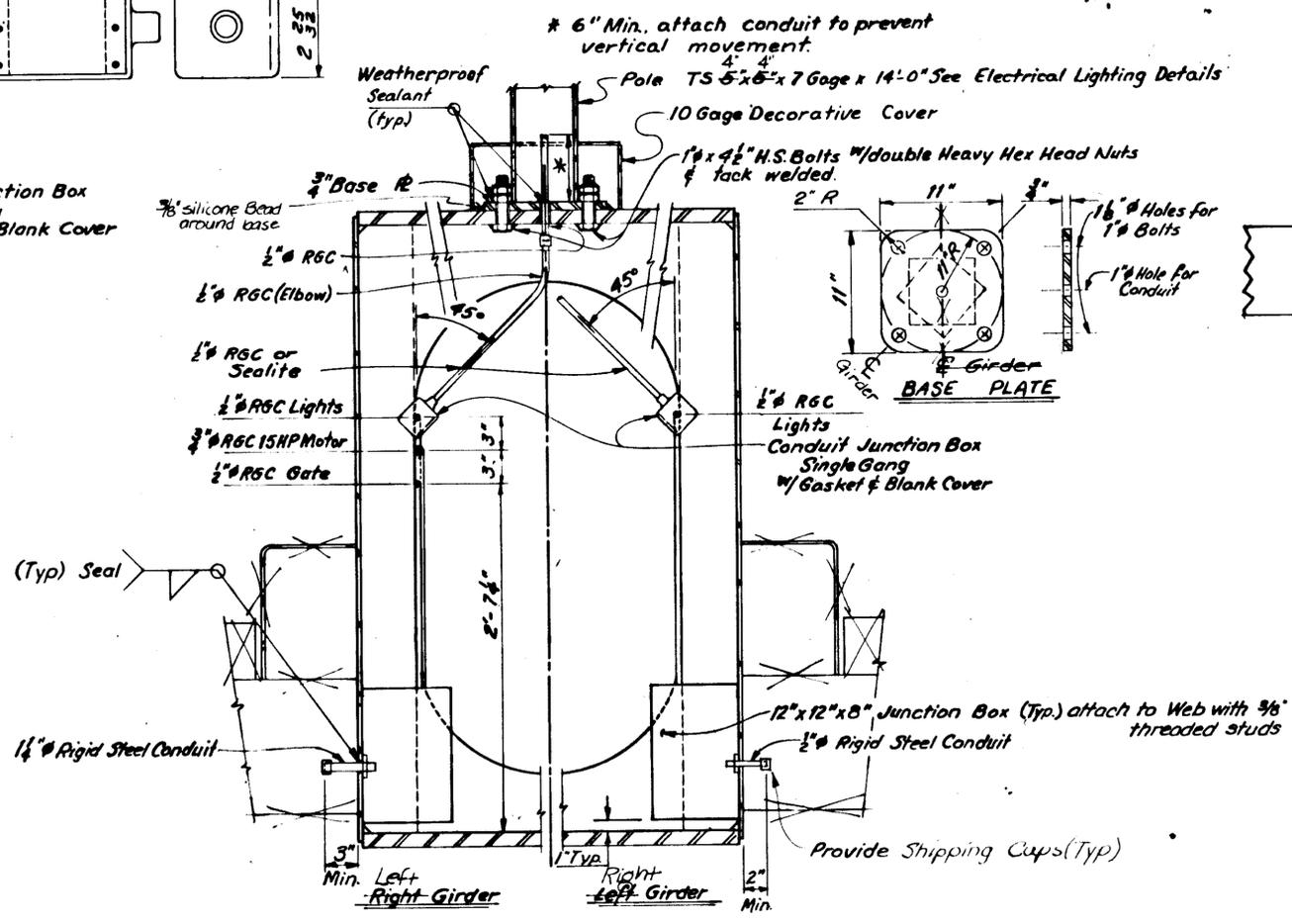
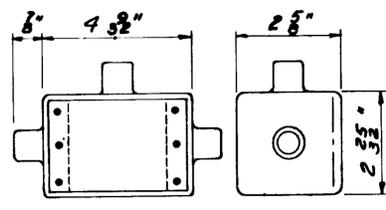
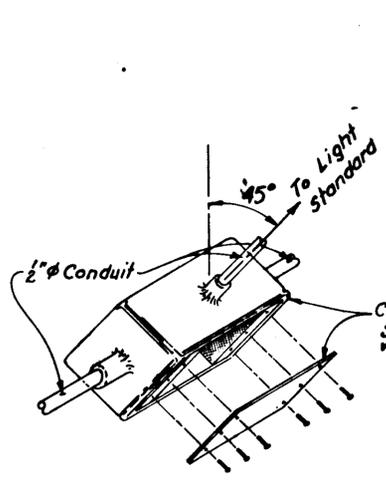


State of Alaska
DEPARTMENT OF TRANSPORTATION
and PUBLIC FACILITIES
Juneau, Alaska

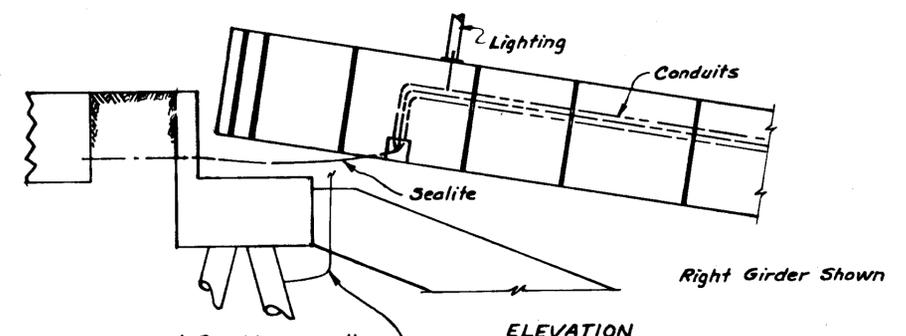
STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	B7	53



PLAN



GIRDERS



ELEVATION

Provide grounding wire from interior girder web to pile. Typical each girder. See Dwg. E 3

(NO SCALE)

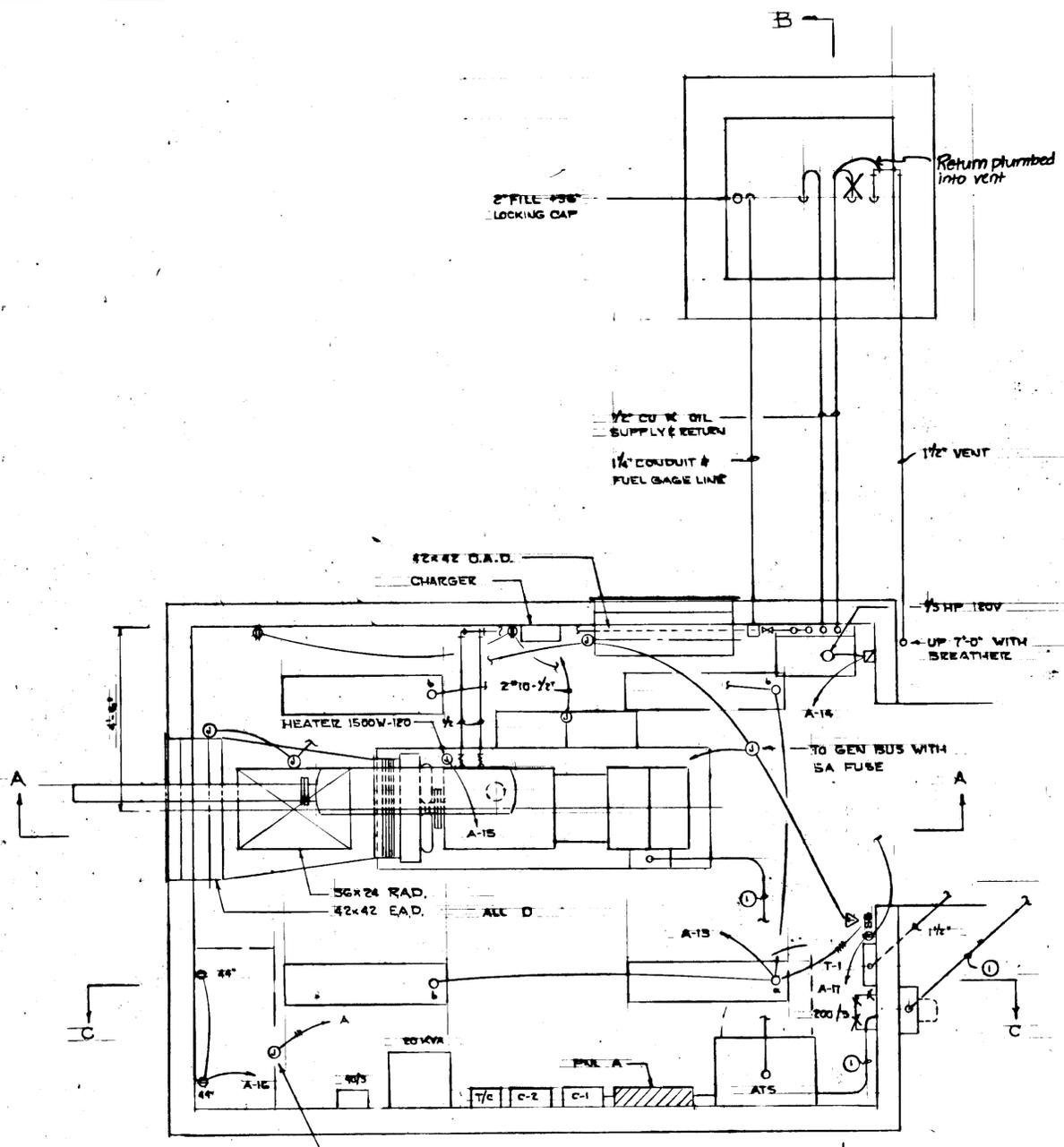
KETCHIKAN SHUTTLE TRANSFER
BRIDGE
GIRDER ELECTRICAL DETAILS



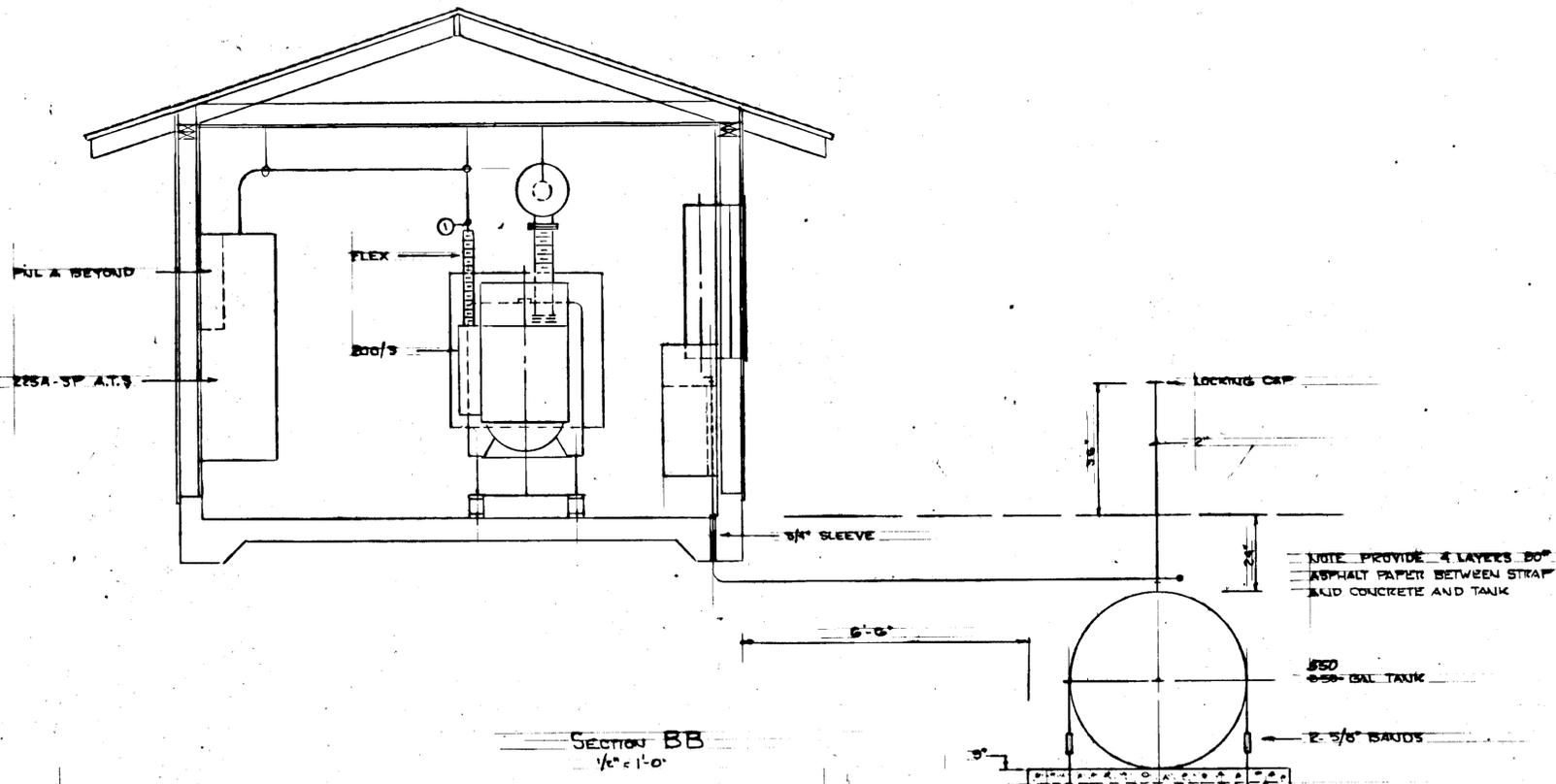
State of Alaska
DEPARTMENT OF TRANSPORTATION
and PUBLIC FACILITIES
Juneau, Alaska

Date _____
Approved _____

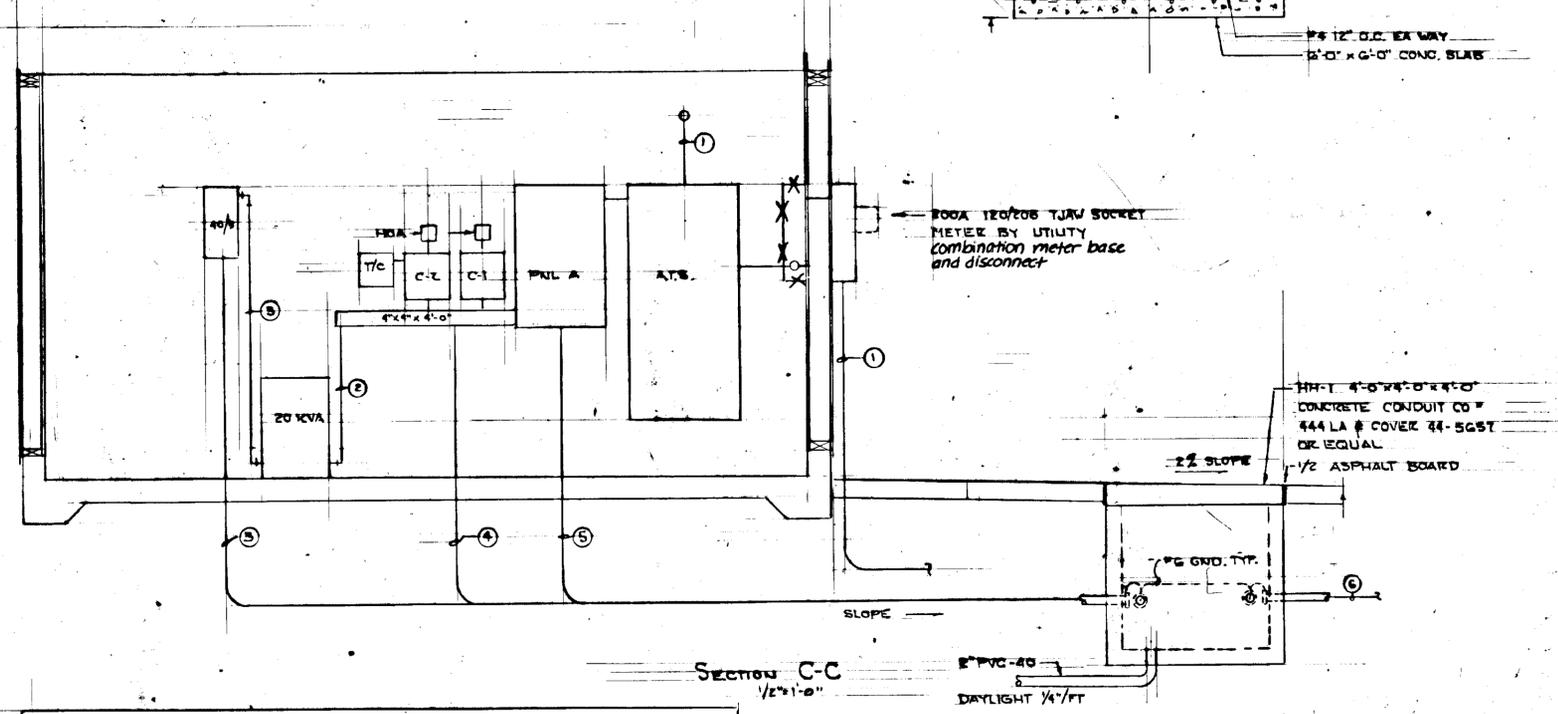
BRIDGE NO. 1819
DWNG. NO. 7



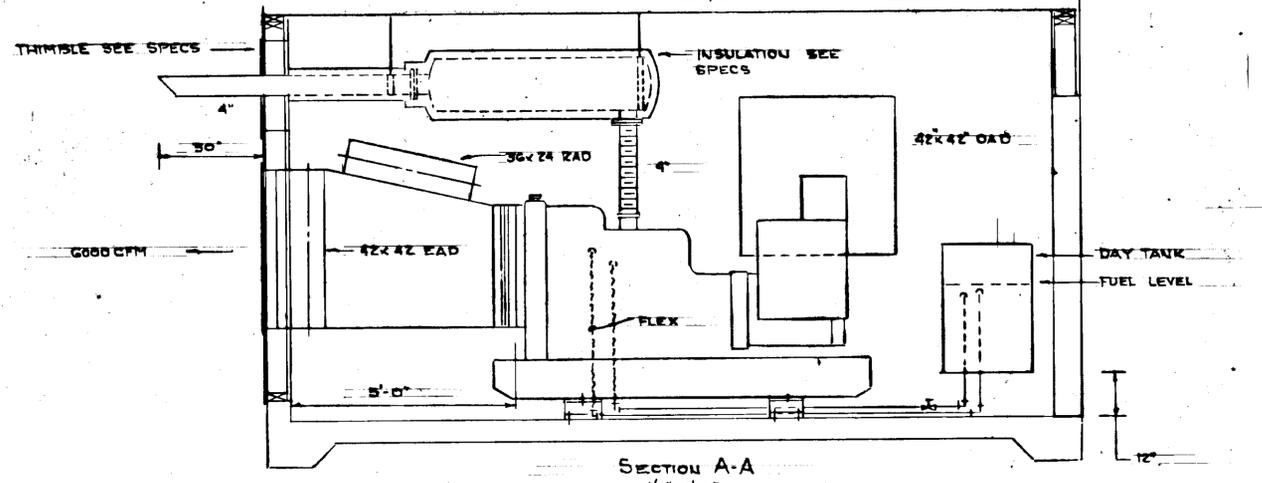
GENERATOR BUILDING PLAN
1/2" = 1'-0"



SECTION BB
1/2" = 1'-0"

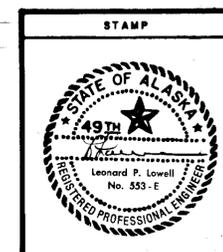


SECTION C-C
1/2" = 1'-0"



SECTION A-A
1/2" = 1'-0"

WIRE & CONDUIT SCHEDULE							
NO.	Ø	W	GND	W	GND.	C.	REMARKS
1		4" #10	—			2 1/2"	
2		3" #4	#8			1 1/2"	
3		3" #10	#10			3/4"	15 HP
4		3" #10	#10	7" #12	#12	1 1/2"	LIGHTS + PHOTO ELEC.
5		2" #10	#10			3/4"	GATE
6		3" #10	#10	5" #12		1 1/4"	LIGHTS + PHOTO ELEC.



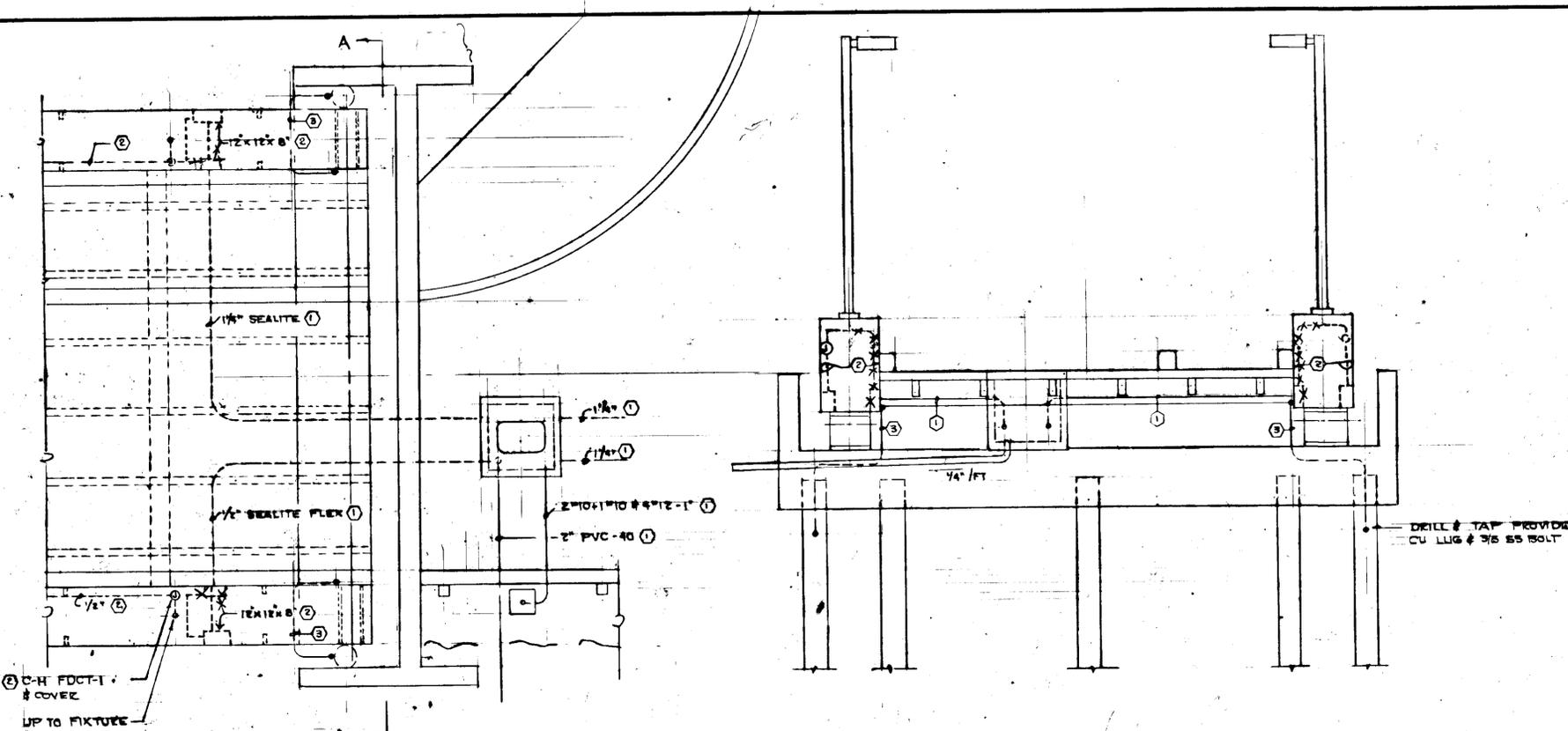
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DO NOT SCALE THIS DRAWING - USE DIMENSIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
KETCHIKAN

EMERGENCY GENERATOR

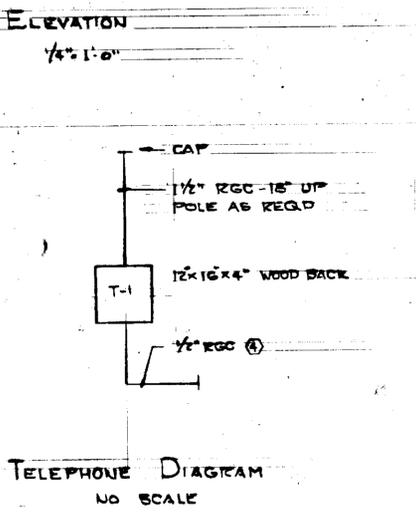
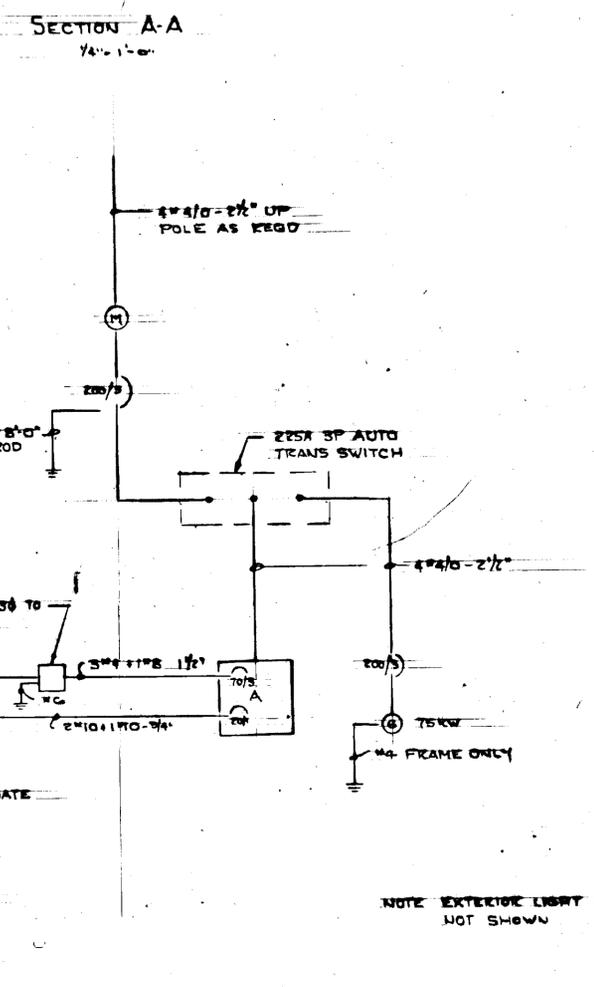
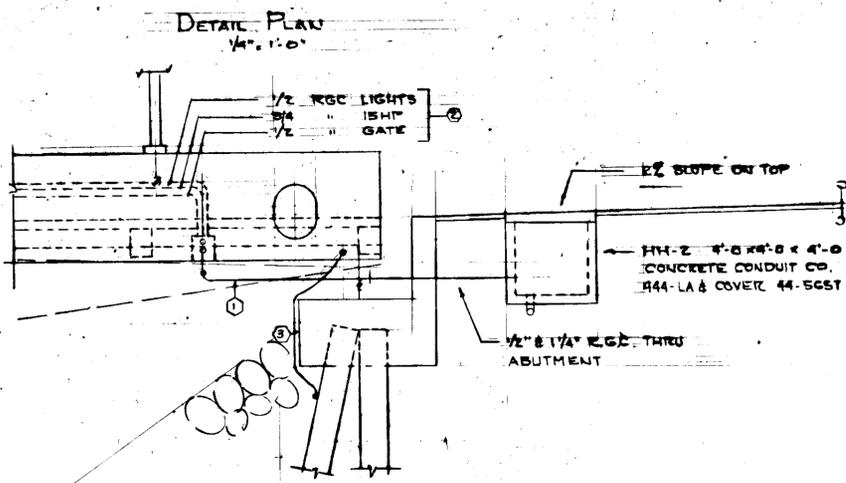
DESIGNED LPL CHECKED _____ DRAWN LPL DATE JAN. '81
PROJECT NUMBER FM-0922(2) 65783 SHEET E2 OF 53



TYPE		PANEL A			SECTION 1 of 1			,000 A/C	
BUS	VOLTS 120/208	PHASE 3	WIRING 4	CONDUIT	WIRING 4	CONDUIT	WIRING 4	CONDUIT	WIRING 4
1	LIGHTS PARKING	900		20 2		20 2	900		LIGHTS PARKING
3	"	900					900		"
5	"		900	20 2				900	"
7	"								"
9	BRIDGE	600		20 2			500		FUTURE WAITING
11	"		600					500	GATE MOTOR
13	GEN. BLDG	400		20 1			500		DAY TANK
15	GEN HEATER	1500		20 1			600		GEN BLDG RECP
17	GEN BLDG RECP		400	20 1					SPARE
19	SPARE			20 1					"
21	"			20 1			1500		ELEC. HEATER
23	"			20 1					"
25	TRANSFORMER	6000							SPACE
27	"	6000		20 3					"
29	"		6000						"
31	"								"
33	"								"
35	"								"
37	"								"
39	"								"
41	"								"
42	"								"

- SYMBOLS**
- ☐ FLUORESCENT FIXTURE SEE SCHEDULE
 - OUTDOOR " " SINGLE
 - " " " DOUBLE
 - S SWITCH +48"
 - ⊕ DUPLEX +18" OR NOTED
 - ⊙ JUNCTION
 - ⊙ MOTOR
 - ⊙ GENERATOR
 - ⊕ MANUAL STARTER
 - ⊕ COMBINATION + BY OTHERS CONNECTION BY ELEC.
 - ⊕ CONTACTOR
 - ⊕ TELEPHONE +48"
 - ⊕ THERMOSTAT +84"
 - OAD OUTSIDE AIR DAMPER
 - EAD EXHAUST
 - RAD RETURN
 - MOA HAND-OFF-AUTO
 - T/C TIME CLOCK
 - ATS AUTOMATIC TRANSFER SWITCH
 - ⊕ WIRING & CONDUIT 3/C GROUND NOT SHOWN
 - RGC RIGID GALV. CONDUIT

- NOTES**
- ① CONDUIT & WIRING INCLUDED WITH ELECT BID 600
 - ② CONDUIT, BOXES & ACCESSORIES INCLUDED WITH BRIDGE BID - WIRING INCLUDED WITH ELECT BID 600
 - ③ W/O BARE GROUND WIRE FROM BRIDGE TO STEEL PILING EACH SIDE BY ELEC.
 - ④ FUTURE BUILDING - STUB OUT 1/2" RGC ELEC & 1/2" TELP.



STAMP

DO NOT SCALE THIS DRAWING - USE DIMENSIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

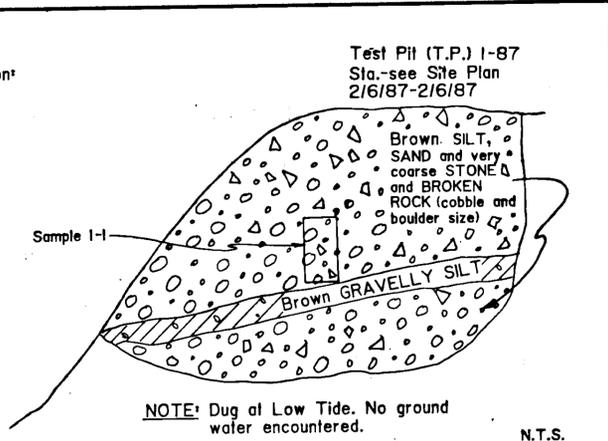
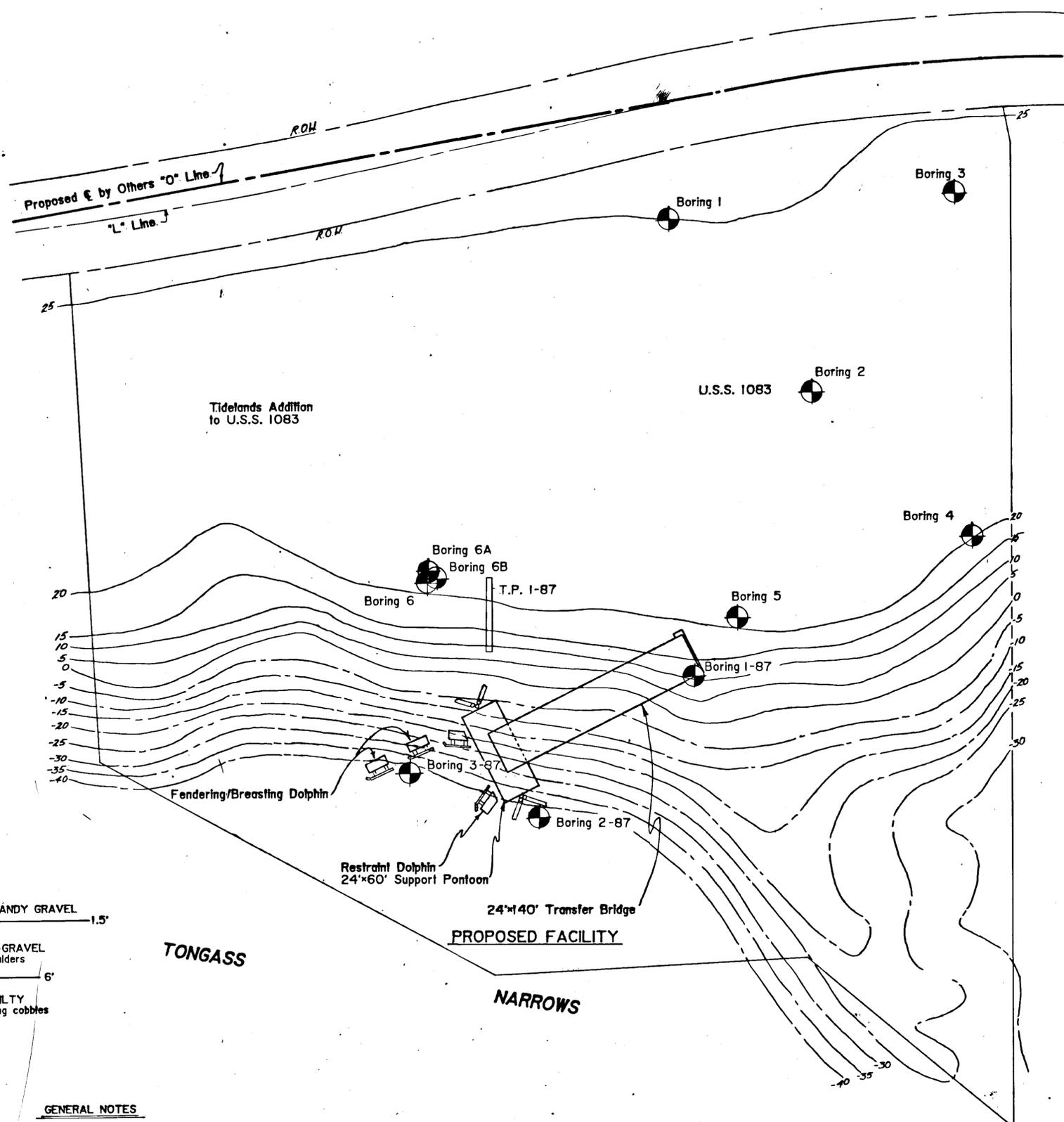
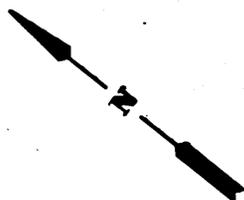
KETCHIKAN BRIDGE LIGHTING AND ELECTRICAL DETAILS

DESIGNED LPL CHECKED _____ DRAWN LPL DATE JAN. '87

PROJECT NUMBER FM-0922(2) 68763 SHEET E3 OF 53

KETCHIKAN FERRY TERMINAL

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	MI	53



BASIC MATERIALS SYMBOLS

	Organic		Silt
	Cobbles; Boulders		Clay
	Gravel		Stone
	Sand		Broken Rock

Note: Significant soil mixtures are shown by combining soil symbols

TYPICAL TEST HOLE SYMBOLS

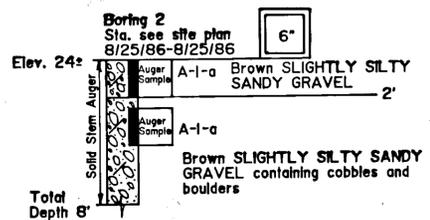
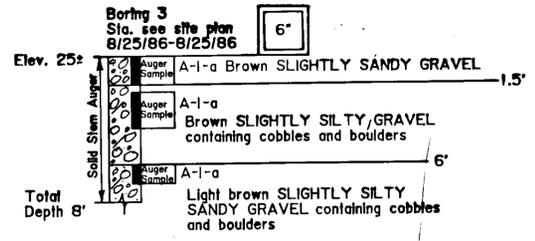
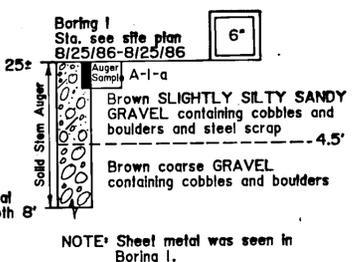
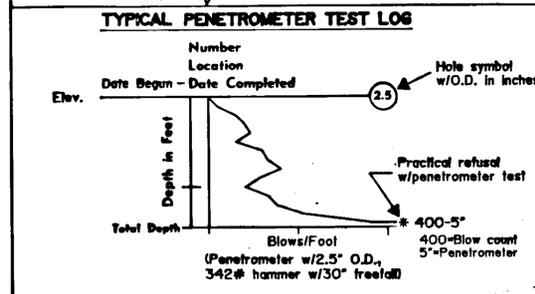
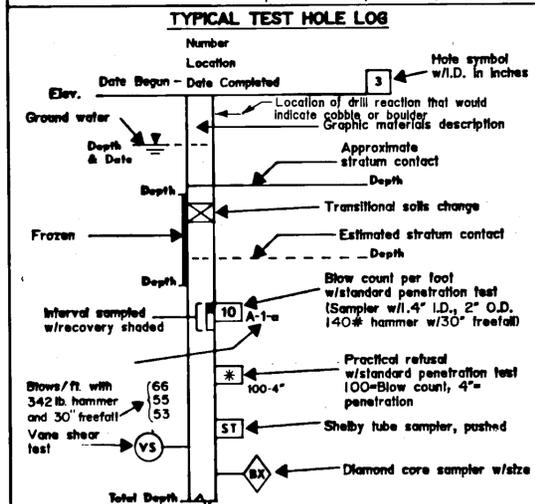
Plan View

-
-
-
-
-

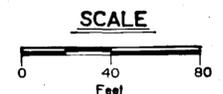
RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

Based on Standard Penetration Test

Blows/ft	Rel. Density	COHESIVE	
		Blows/ft	Consistency
0 - 5	Very Loose	2	Very Soft
6 - 10	Loose	2-4	Soft
11 - 20	Firm	5-8	Medium
21 - 35	Compact	9 - 15	Stiff
36 - 50	Dense	16-30	Very Stiff
51 - 70	Very Dense	31-60	Hard
71+	Very Dense	61+	Very Hard



- ### GENERAL NOTES
- The boring logs on this sheet and the following sheets are a combination of the original field boring log, laboratory soil testing data, and an office examination of the field logs, soil samples and/or rock cores.
 - The stratification lines represent the approximate boundary between soil types or relative densities, the transition may be gradual.
 - Where casing is indicated, the need was predicated by the position of the groundwater table or by caving ground conditions. The casing was installed to provide temporary soil support and/or provide for drill fluid circulation.



SOIL GRAIN SIZE DEFINITIONS

Boulder (rounded)	>10" Diameter
Cobble (rounded)	3" Diameter - 10" Diameter
Broken rock (angular)	>3" Diameter
Gravel (rounded); Stone (angular)	#10 Sieve - 3" Diameter
Sand	#200 Sieve - #10
Silt/clay	<#200 Sieve

Note: Soil classifications are visual only unless AASHTO soil class is shown on the log.

LOG OF TEST HOLES

KETCHIKAN SHUTTLE FERRY FACILITY

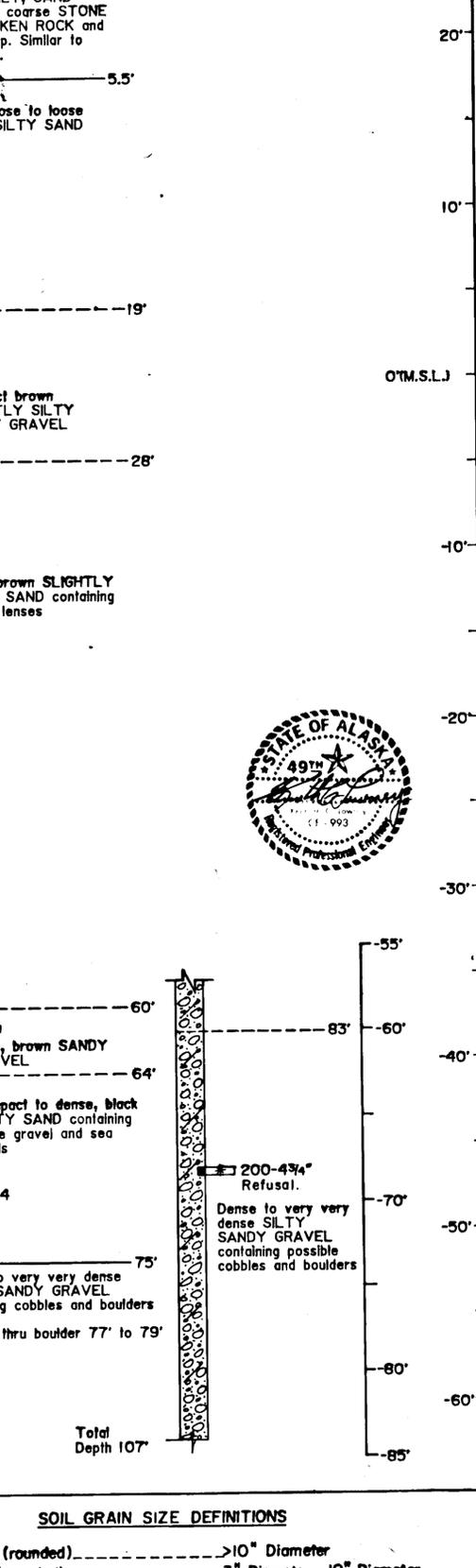
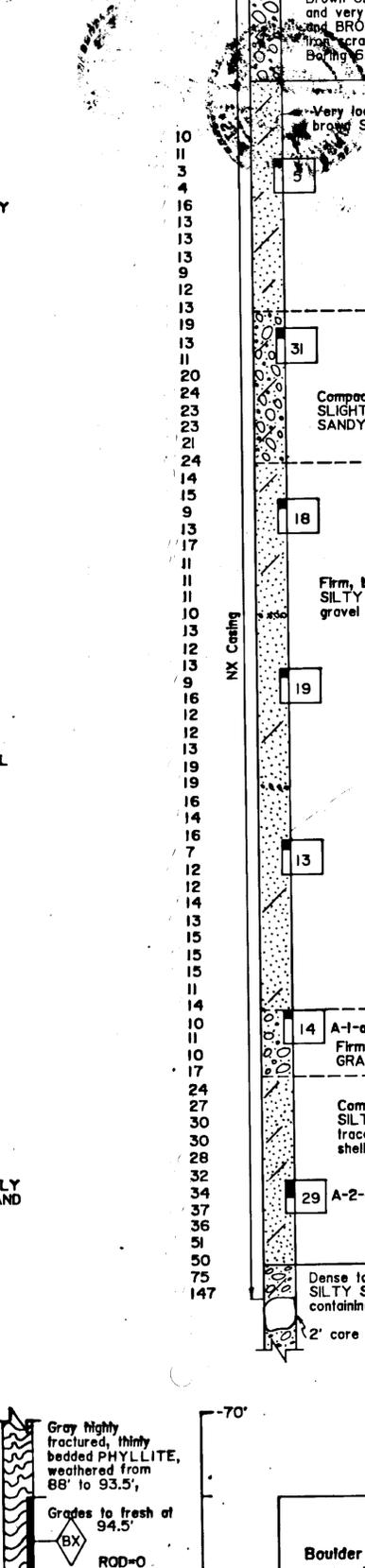
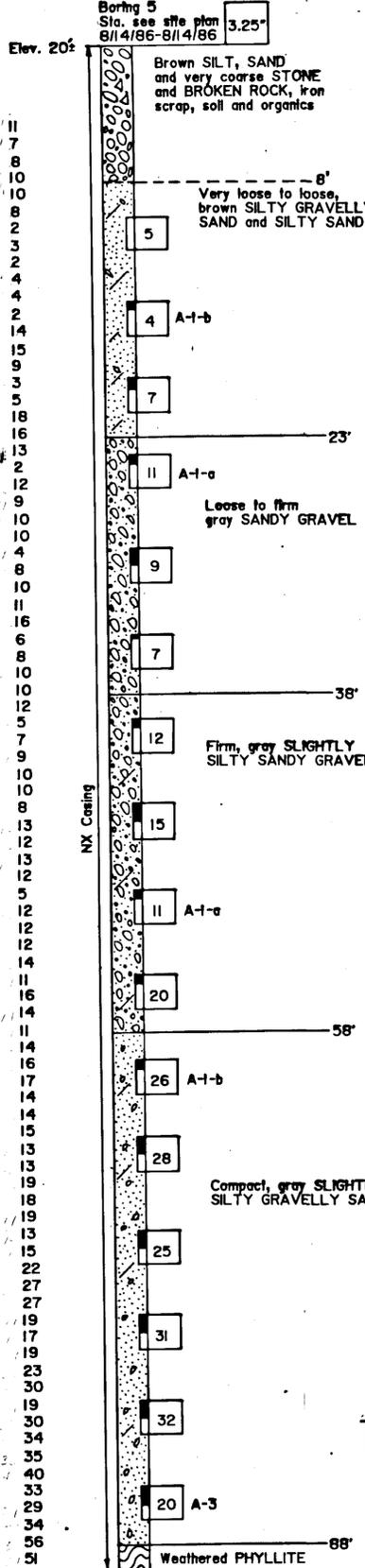
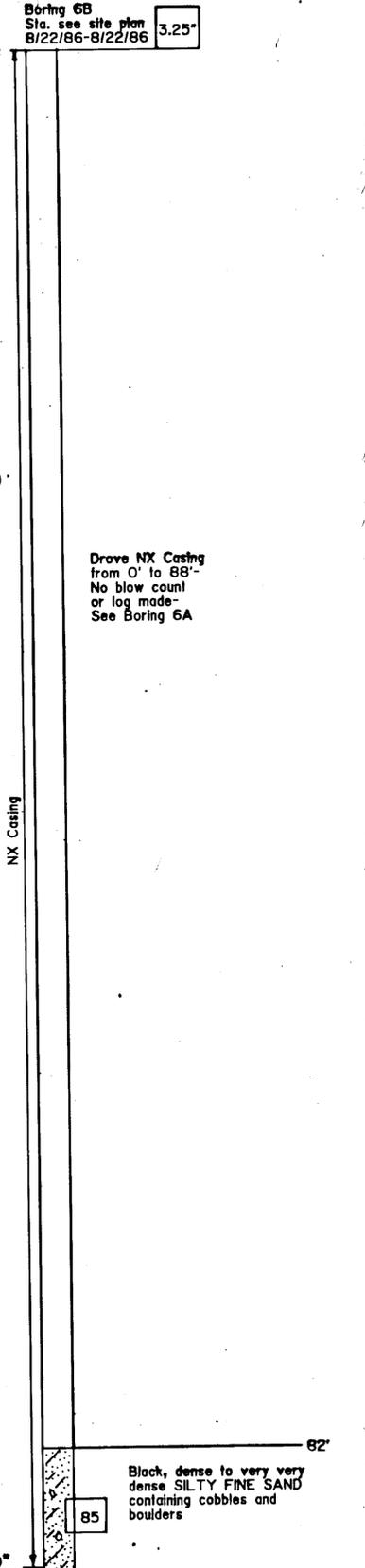
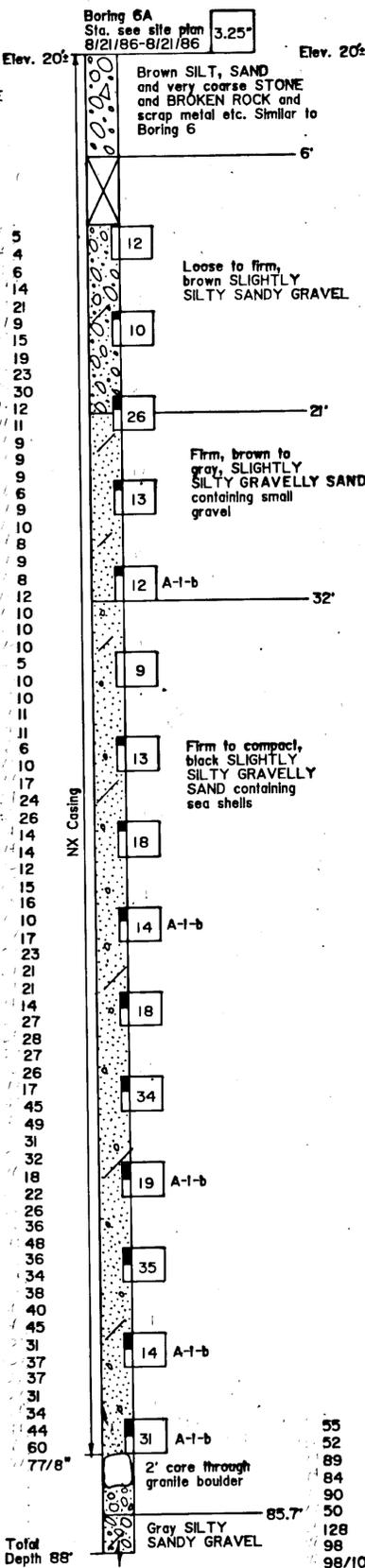
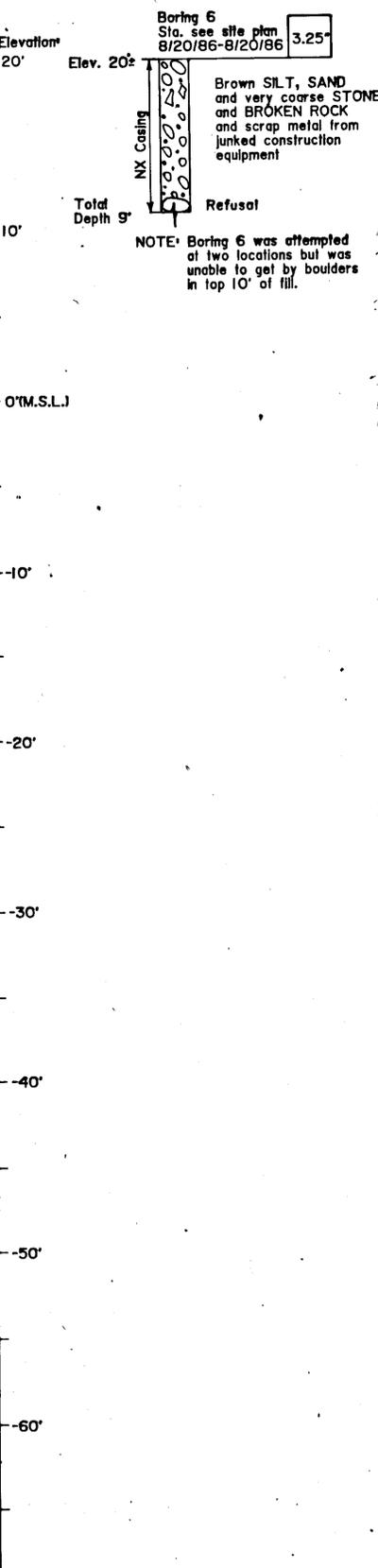
State of Alaska
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
Juneau, Alaska

Date: 3/26/87

Approved: _____

BRIDGE NO. _____
DWG. NO. _____

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1986	M2	53



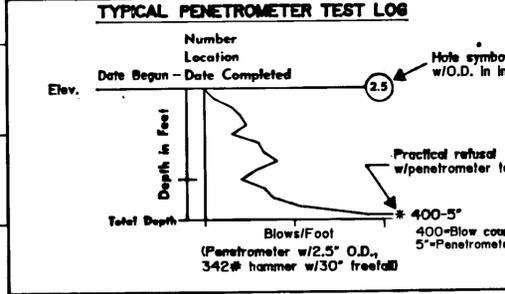
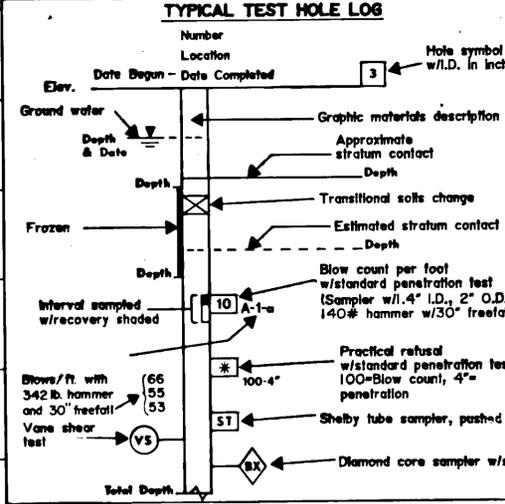
BASIC MATERIALS SYMBOLS

	Organic		Silt
	Cobbles; Boulders		Clay
	Gravel		Phyllite Bedrock
	Sand		

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

Based on Standard Penetration Test

Blows/ft	GRANULAR		COHESIVE	
	Rel. Density	Blows/ft	Consistency	
0 - 5	Very Loose	2	Very Soft	
6 - 10	Loose	2-4	Soft	
11 - 20	Firm	5-8	Medium	
21 - 35	Compact	9 - 15	Stiff	
36 - 50	Dense	16-30	Very Stiff	
51 - 70	Very Dense	31-60	Hard	
71+	V. Very Dense	61+	Very Hard	



SOIL GRAIN SIZE DEFINITIONS

Boulder (rounded)	>10" Diameter
Cobble (rounded)	.3" Diameter - 10" Diameter
Broken rock (angular)	>3" Diameter
Gravel (rounded); Stone (angular)	#10 Sieve - 3" Diameter
Sand	#200 Sieve - #10
Silt/clay	< #200 Sieve

Note: Soil classifications are visual only unless AASHTO soil class is shown on the log.

LOG OF TEST HOLES KETCHIKAN SHUTTLE FERRY FACILITY

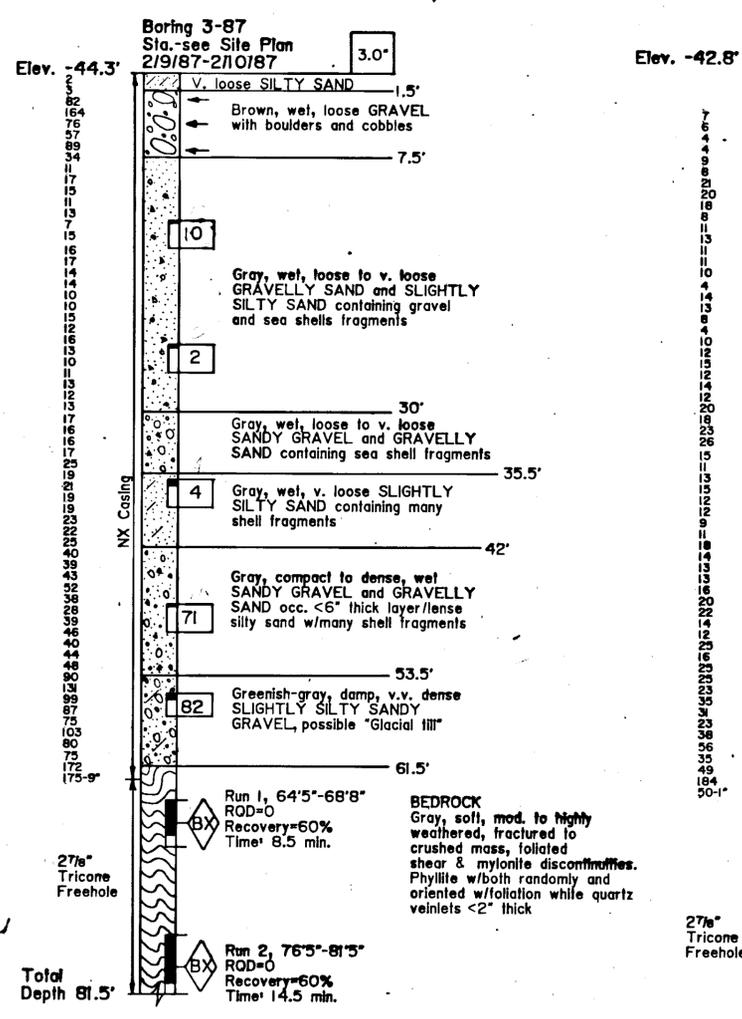
State of Alaska
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
Juneau, Alaska

Date NOV. 1986
Approved *[Signature]*

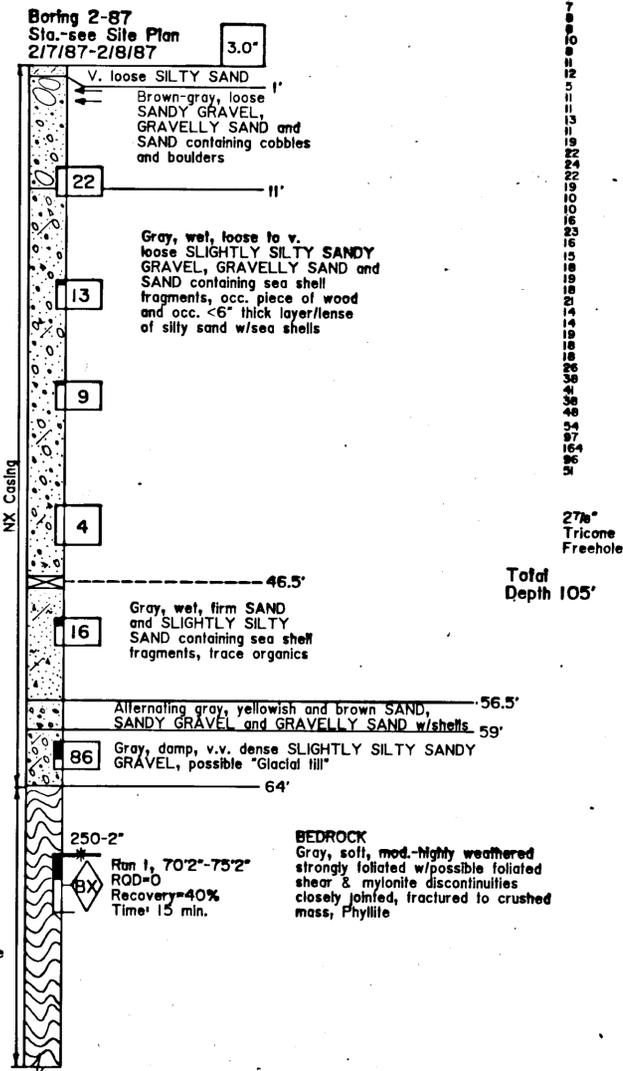
BRIDGE NO.
DWN6. NO.



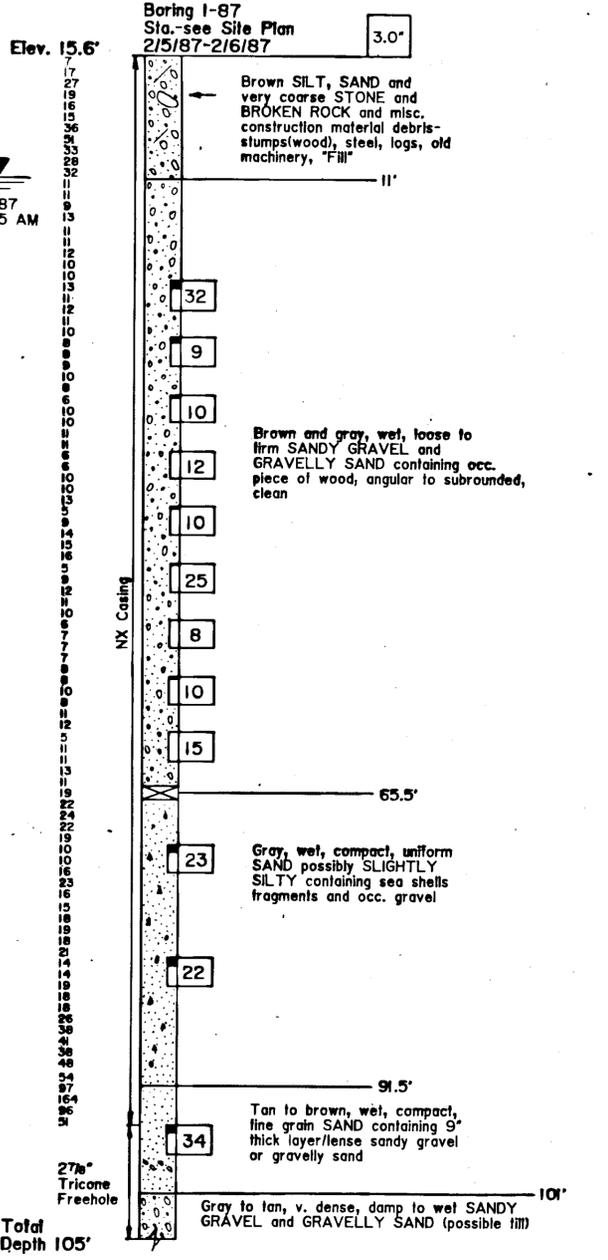
Elevation
20'
10'
0'(M.S.L.)
-10'
-20'
-30'
-40'
-50'
-60'
-70'
-80'
-90'
-100'
-110'
-120'
-130'
-140'



NOTE: Necessary to relocate barge once due to casing refusal on boulder just below mudline before being able to drive casing deep into ground at T.H.3 location.



NOTE: Necessary to relocate barge twice due to casing refusal on boulders between mudline and ±6' before being able to drive casing deep into ground at T.H. 2 location.



NOTE: NX casing pullout breaking pressure from 95' immediately after drilling to 105' was 13,748 pounds.

SOIL GRAIN SIZE DEFINITIONS

Boulder (rounded)	>10" Diameter
Cobble (rounded)	3" Diameter - 10" Diameter
Broken rock (angular)	>3" Diameter
Gravel (rounded); Stone (angular)	#10 Sieve - 3" Diameter
Sand	#200 Sieve - #10
Silt/clay	<#200 Sieve

Note: Soil classifications are visual only unless AASHTO soil class is shown on the log.

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	FM-0922(2)	1987	M3	5

BASIC MATERIALS SYMBOLS

Organic	Silt
Cobbles; Boulders	Clay
Gravel	Sea Shell Fragments
Sand	Bedrock

TYPICAL TEST HOLE SYMBOLS

Plan View: Location of any hole

Section View: Rotary, Auger, Diamond Core, Penetrometer

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION
Based on Standard Penetration Test

Blows/ft	GRANULAR		COHESIVE	
	Rel. Density	Blows/ft.	Consistency	
0 - 5	Very Loose	2	Very Soft	
6 - 10	Loose	2-4	Soft	
11 - 20	Firm	5-8	Medium	
21 - 35	Compact	9 - 15	Stiff	
36 - 50	Dense	16-30	Very Stiff	
51 - 70	Very Dense	31-60	Hard	
71 +	Very Dense	61+	Very Hard	

TYPICAL TEST HOLE LOG

Number: 3, Location: [Symbol], Hole symbol w/D. in inch: 3

Date Begun - Date Completed: []

Ground water: [Symbol] Depth & Date: []

Frozen: [Symbol] Depth: []

Interval sampled w/recovery shaded: []

Blows/R. with 342 lb. hammer and 30" freefall: (66) (53)

Vane shear test: [Symbol]

Practical refusal w/standard penetration test (Sampler w/1.4" I.D., 2" O.D., 140# hammer w/30" freefall): []

Practical refusal w/standard penetration test (4" penetration): []

Shelby tube sampler, pushed: [Symbol]

Diamond core sampler w/str.: [Symbol]

TYPICAL PENETROMETER TEST LOG

Number: 25, Location: [Symbol], Hole symbol w/D. in inch: 25

Date Begun - Date Completed: []

Blows/Foot (Penetrometer w/2.5" O.D., 342# hammer w/30" freefall): []

Practical refusal w/penetrometer test: []

Blows/Foot (400-Blow count 5"-Penetrometer): []

LOG OF TEST HOLES

KETCHIKAN SHUTTLE FERRY FACILITY

State of Alaska
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
Juneau, Alaska

Date: 3/26/87

APPROVED: [Signature]

BRIDGE NO. _____
DRAWING NO. _____

GENERAL NOTES

Specifications --

- Construction Per Contract Documents for Project No. FM-0922(2)
- Design Transfer Bridge, AASHTO 1983 with latest interim specifications
- Dolphins and Barge Marine Facilities Design Standards

Design Loads --

- Bridge
 - LL - HS20 44 and AASHTO pedestrian
 - DL - no allowance for future wearing surfaces
- Barge
 - DL - 11 Bridge with barge immersed or suspended from Restraint Dolphins (no ballast water supported)
 - Wall - 7 ft max immersion
 - Dolphins A - D
 - Horizontal - 10 ft Kips Service
 - Restraint Dolphins
 - Vertical - Barge suspended + bridge DL + LL

Design Unit Stresses

- Steel
 - A36 $F_y = 20 \text{ ksi}$
 - A572 Gr. 2 $F_y = 19.25 \text{ ksi}$
 - A500 Gr. B $F_y = 25 \text{ ksi}$
 - A572 $F_y = 27 \text{ ksi}$
 - A108 $F_y = 29 \text{ ksi}$
 - AB08 Gr. D $F_y = 30 \text{ ksi}$
- Concrete F_c @ 28 days = 5.0 ksi (class A-A); $f'_c = 4 \text{ ksi}$ (class A); $f_c = 0.4 f'_c$
- Reinforcing Steel $F_y = 60 \text{ ksi}$
- Ekki Timber $F_b = 4.00 \text{ ksi}$

Materials

- Steel
 - Tube Sections: A500 Gr. B
 - Pile: A572 Gr. 2, A501 or A513 Gr. B, type E or S
 - Pipe: A572 Gr. B, type E or S
 - All other shall be A36 or A572 as noted
 - Charpy Group 2 impact requirements shall apply
- Concrete: Class A
- Reinforcing Steel: A615 Gr. 60
- Timber Fender Face: Ekki (Lophina Preferred)

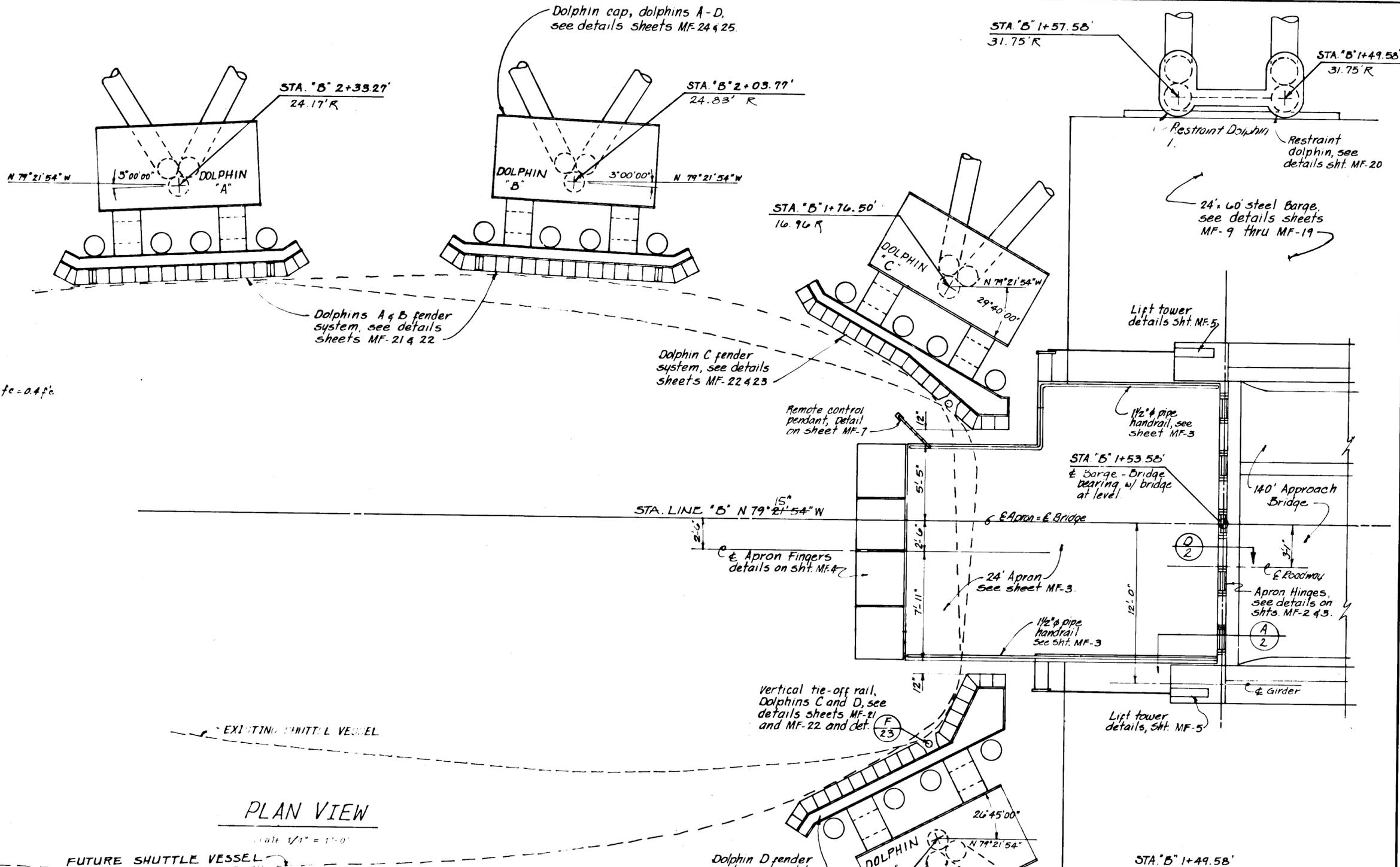
Protective Coatings

- Fender Face Timbers: Ekki Timber, Untreated
- Dolphins and Fender Systems: Galvanized after fabrication
- Reinforcing Steel: Epoxy coated
- Transfer Bridge: Paint per Section 510, System 2, 1, or 2 except rails, grating, chain and apron which shall be galvanized after fabrication
- Barge: Paint per Section 510, System 1 only

Piling

- Size: 16" dia x 1/2" wall steel pipe & 24" x 1/2" wall steel pipe
- Tip: API 0 14000 sharp or equal (API 0 14001 on Dolphin Butters or equal)
- Fender piles (1/2" x 1/2" wall) driven closed end

* Note: Interior surfaces of the transfer bridge and support barge shall receive a prime coat of 200% rich primer. Primer used shall be the same as that used for the selected or specified exterior coating system. See Sec. 504.2.02 of the technical spec.



PLAN VIEW

Scale 1/4" = 1'-0"

TIDAL DATA

- EHW + 21.00'
- MHHW + 15.40'
- MHW + 14.50'
- MLW + 1.50'
- MLLW 0.00'
- FLW - 5.00'

KEY

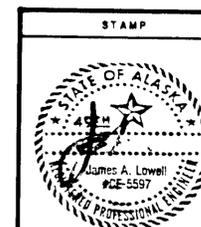
- Detail no. or Section letter

MF- sheet number where Detail or Section will be found.

LOCATION	ORIENTATION	Dia (in)	Capacity (tons)	TID Elevations	Cutoff Elev.	
				Minimum	Excl. Legate	
A Dolphin	Vertical	18	100	-70	-73	24.75
	Butter (2)	18	50	-85	-75	24.75
	Fender (2)	18	10	-85	-85	24.75
B Dolphin	Vertical	18	100	-85	-85	24.75
	Butter (2)	18	50	-75	-85	24.75
	Fender (2)	18	10	-50	-55	24.75
C Dolphin	Vertical	18	100	-80	-93	22.75
	Butter (2)	18	50	-70	-85	24.75
	Fender (2)	18	10	-40	-45	24.75
D Dolphin	Vertical	18	100	-90	-103	22.75
	Butter (2)	18	50	-80	-95	24.75
	Fender (2)	18	10	-55	-60	24.75
1 Restraint	Vertical (1)	24	100	-58	-73	31.00
	Butter (1)	18	50	-50	-75	31.00
2 Restraint	Vertical (1)	24	100	-83	-103	31.00
	Butter (1)	18	50	-80	-95	24.75

(1) Concrete filled
(2) Drive to 15' penetration minimum

0 Rev. 5-1-87 Misc corrections.

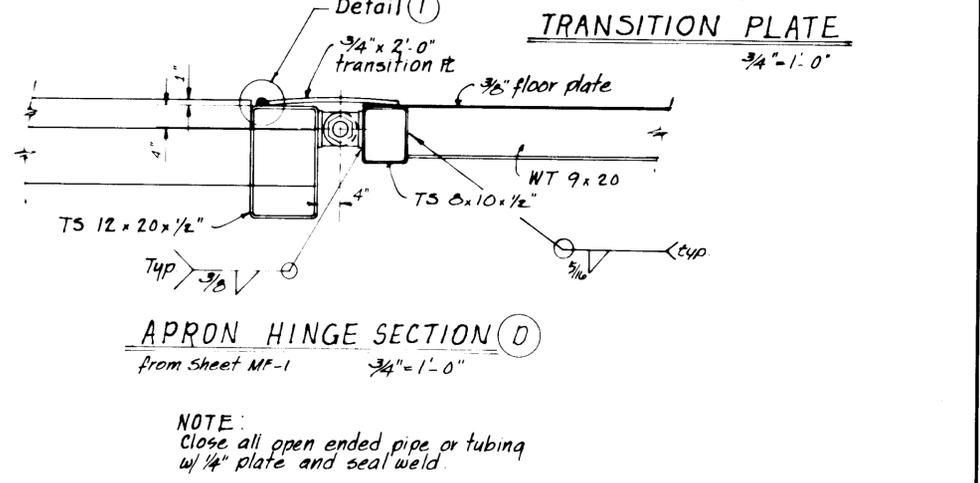
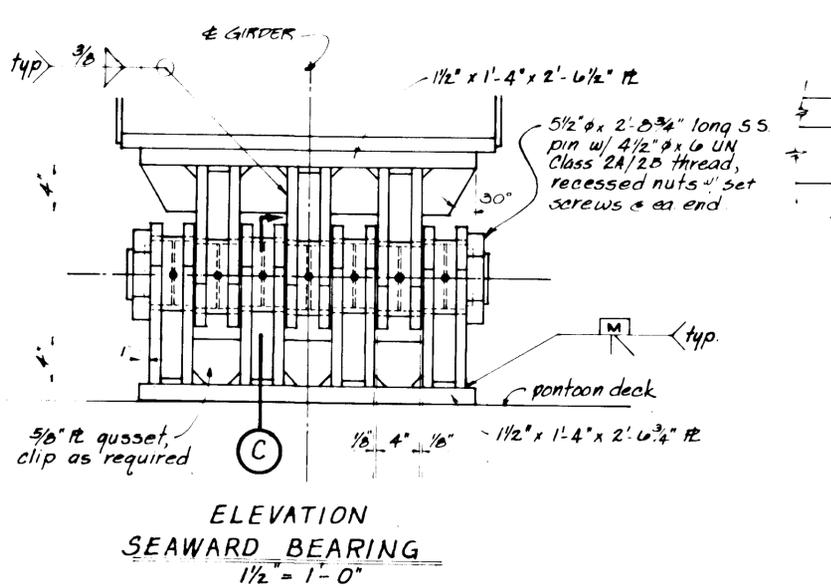
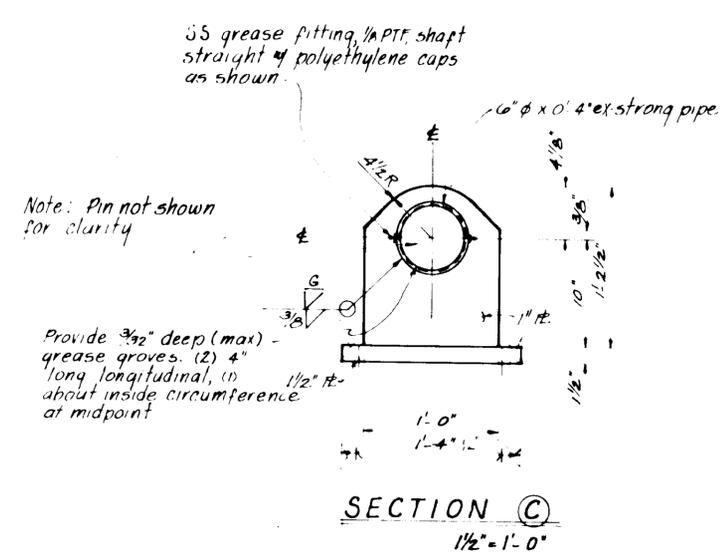
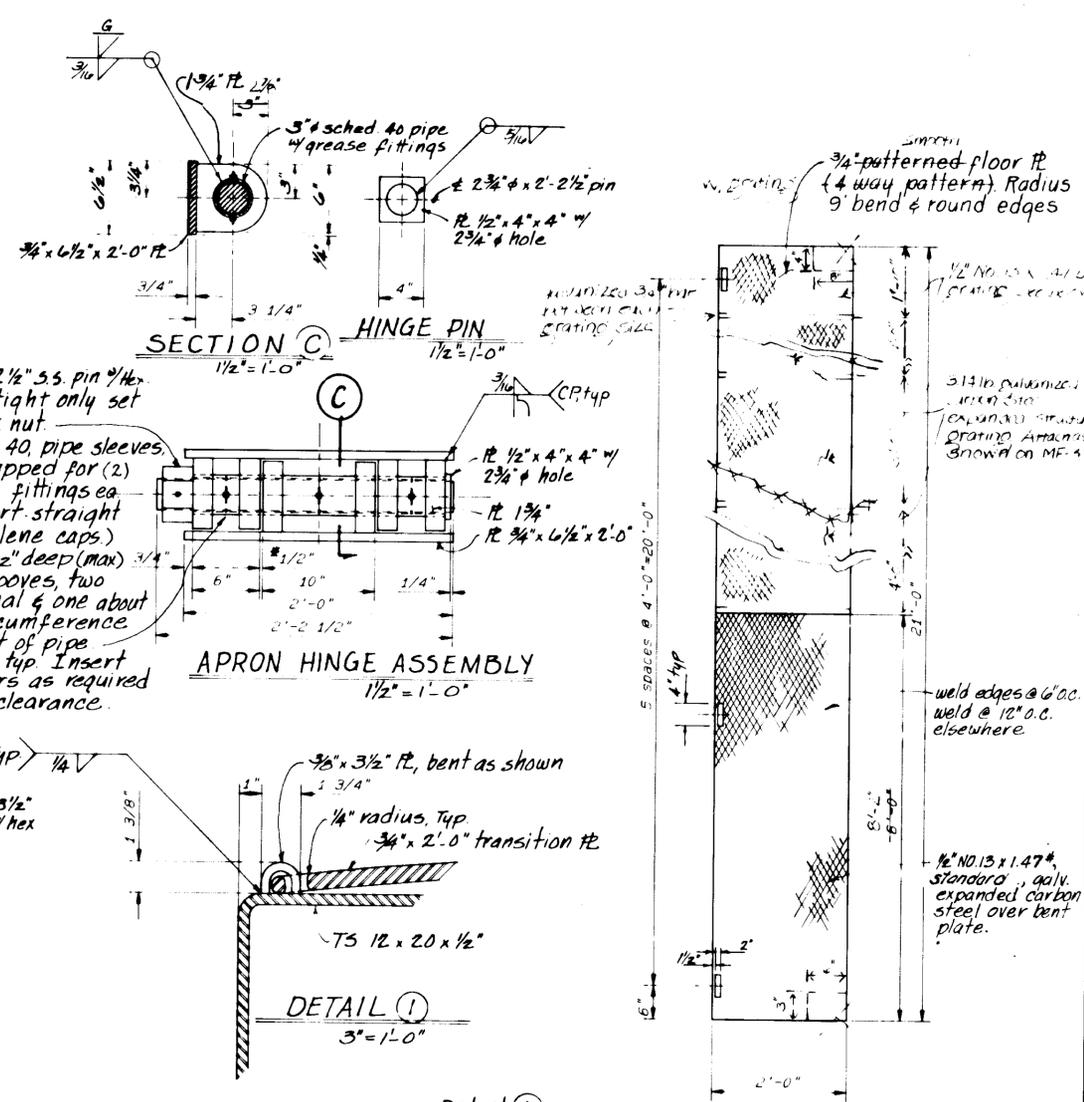
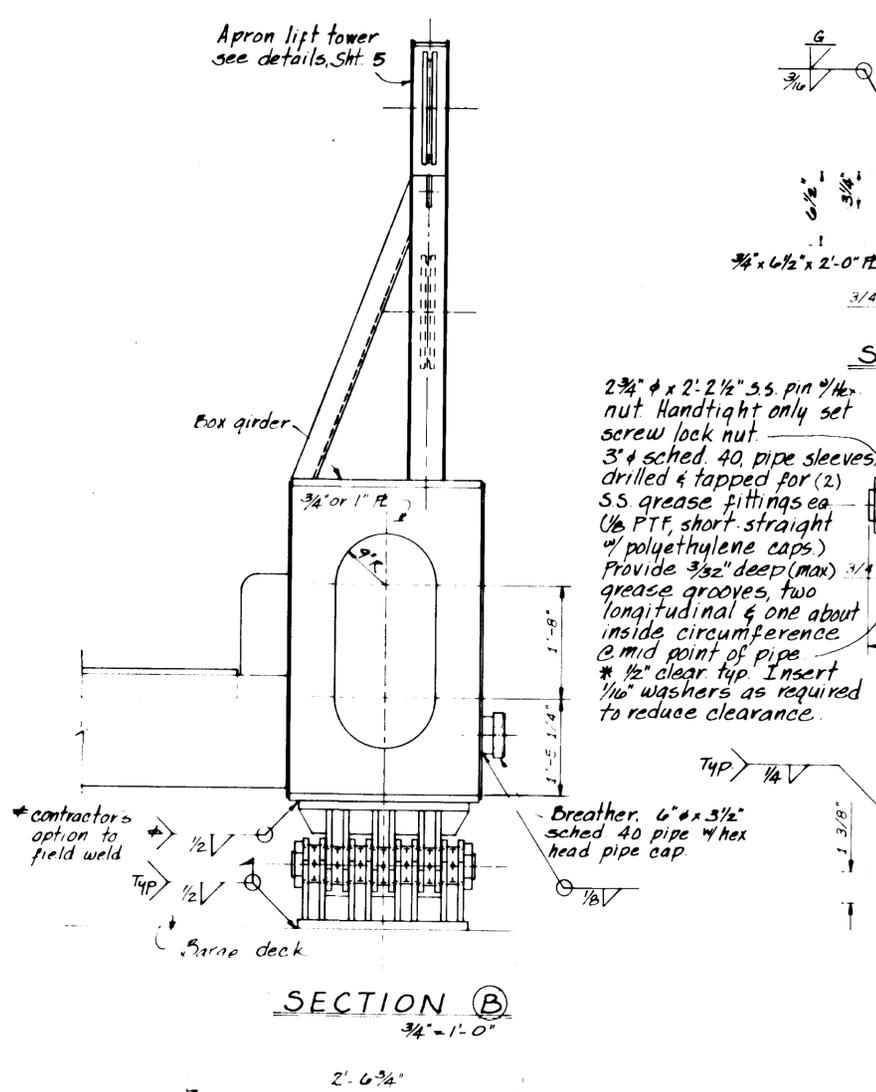
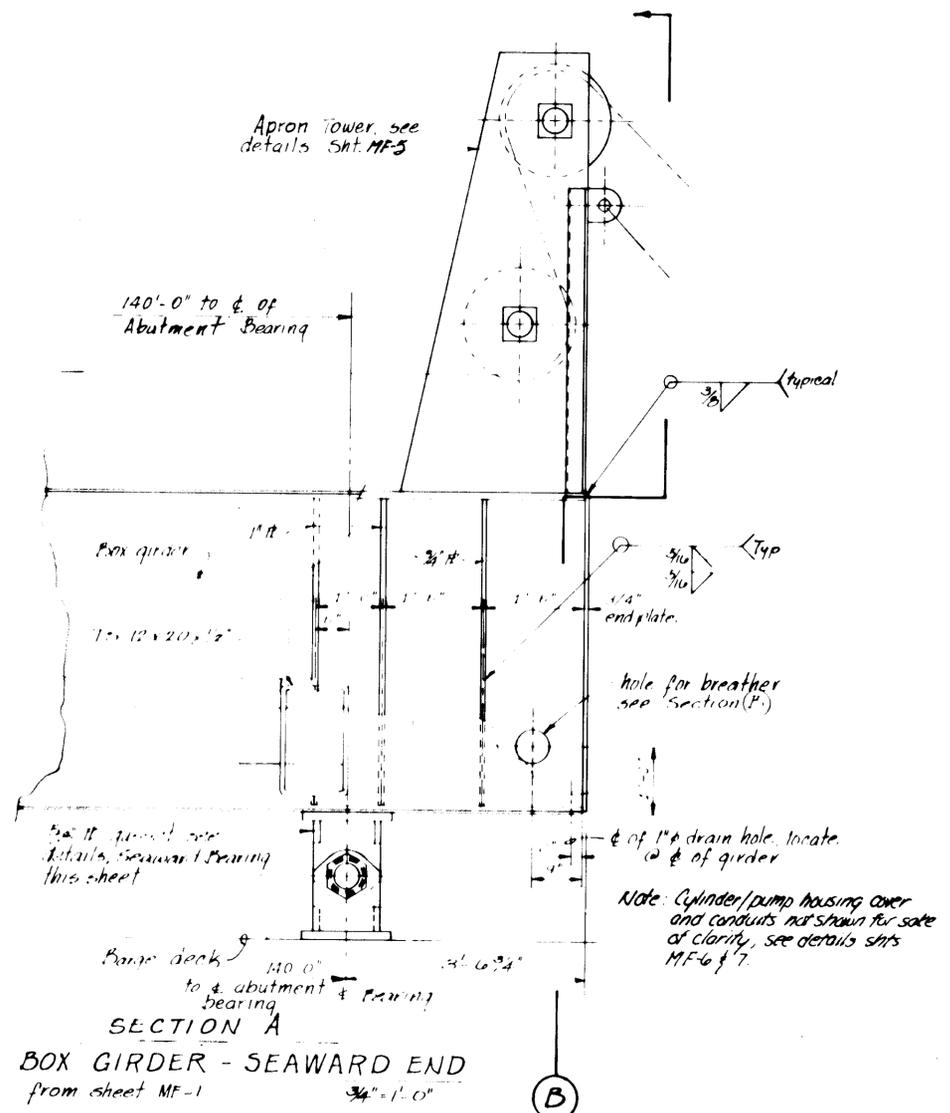


DO NOT SCALE THIS DRAWING - USE DIMENSIONS

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES
Ketchikan Alaska

GENERAL ARRANGEMENT
SEAWARD MOORINGS

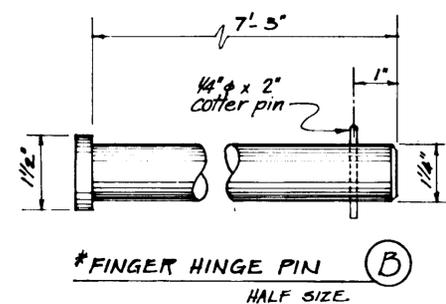
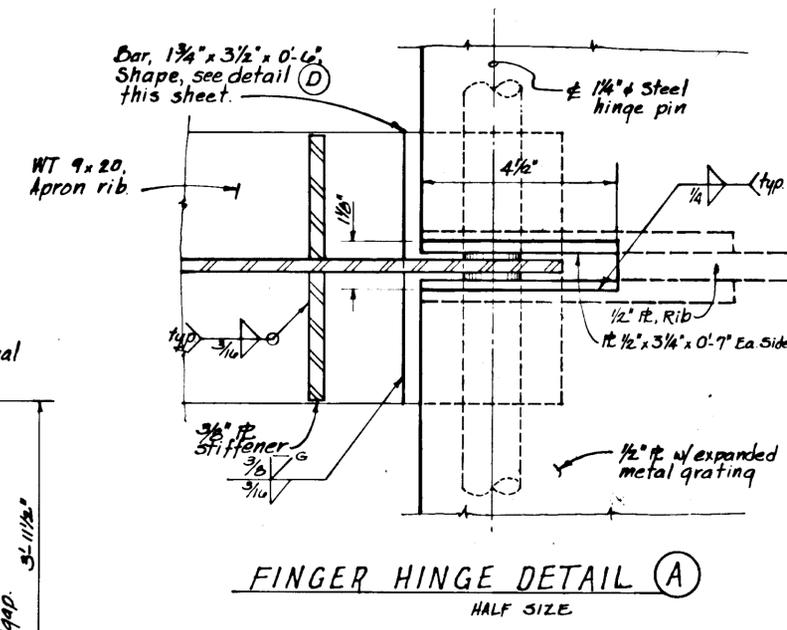
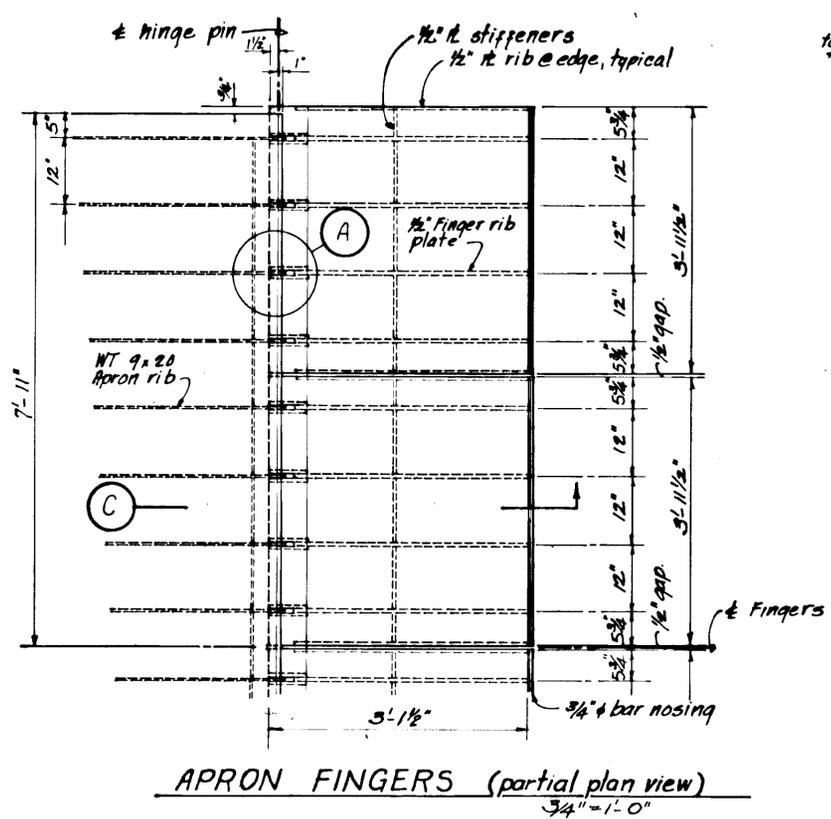
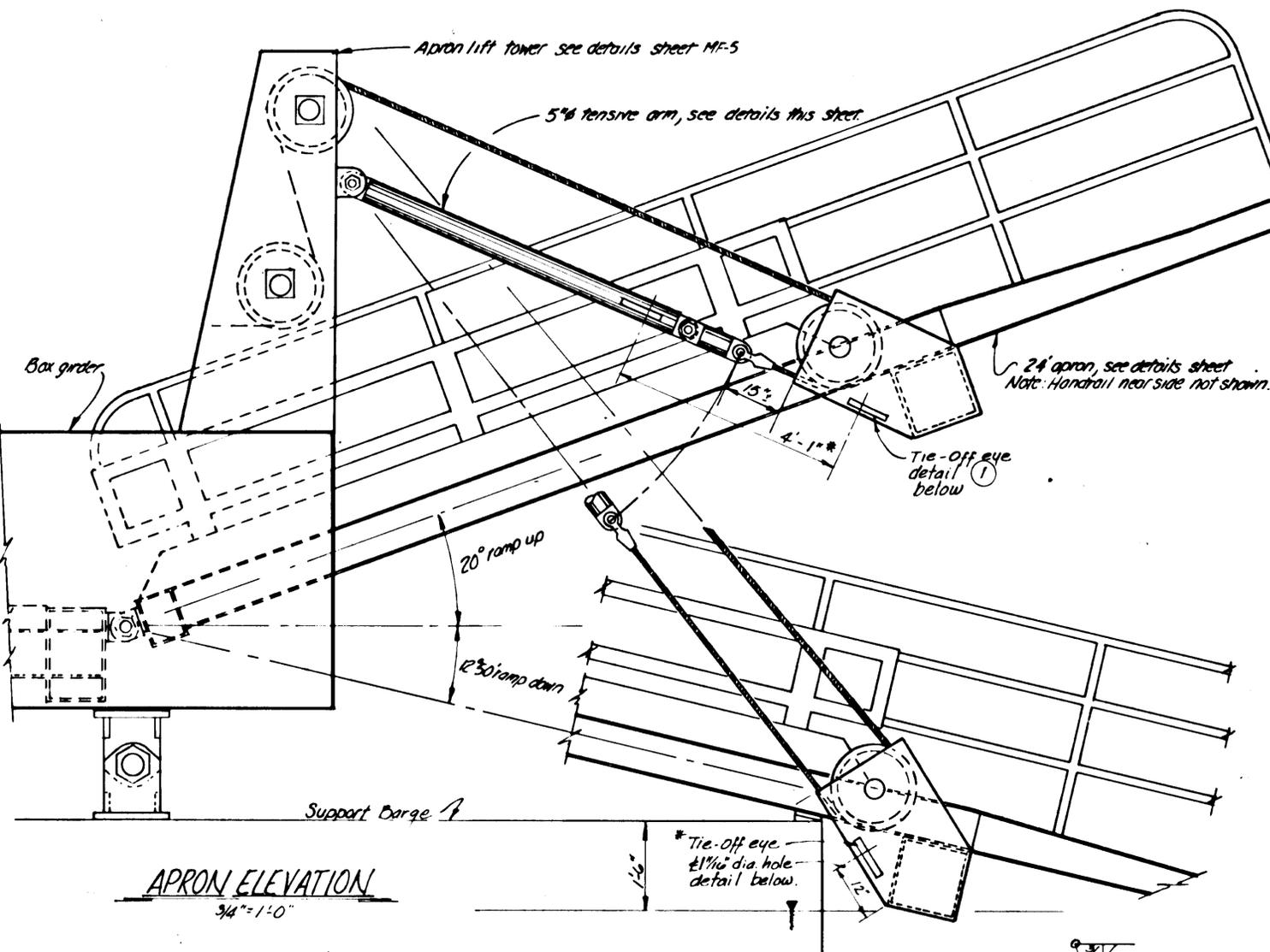
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PROJECT NUMBER FM-0922(2) SHEET MF-1 OF 53



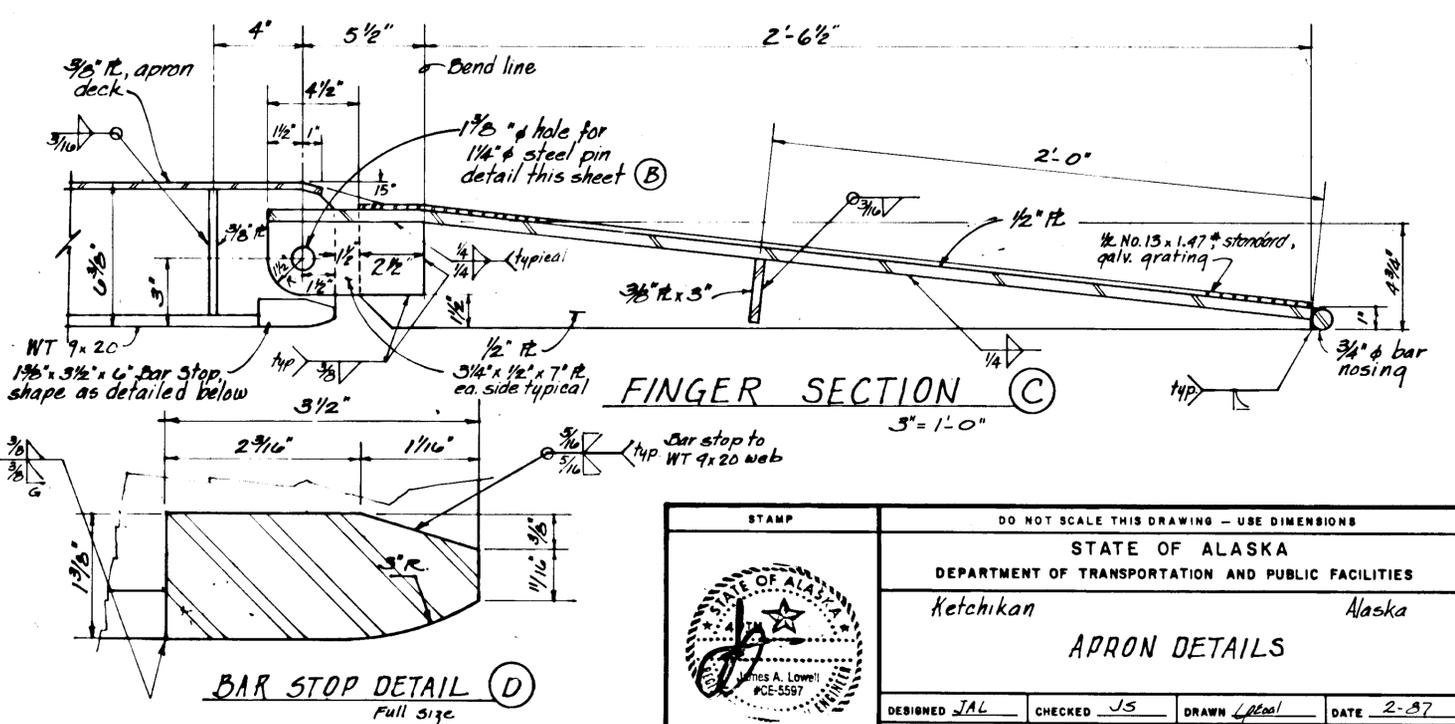
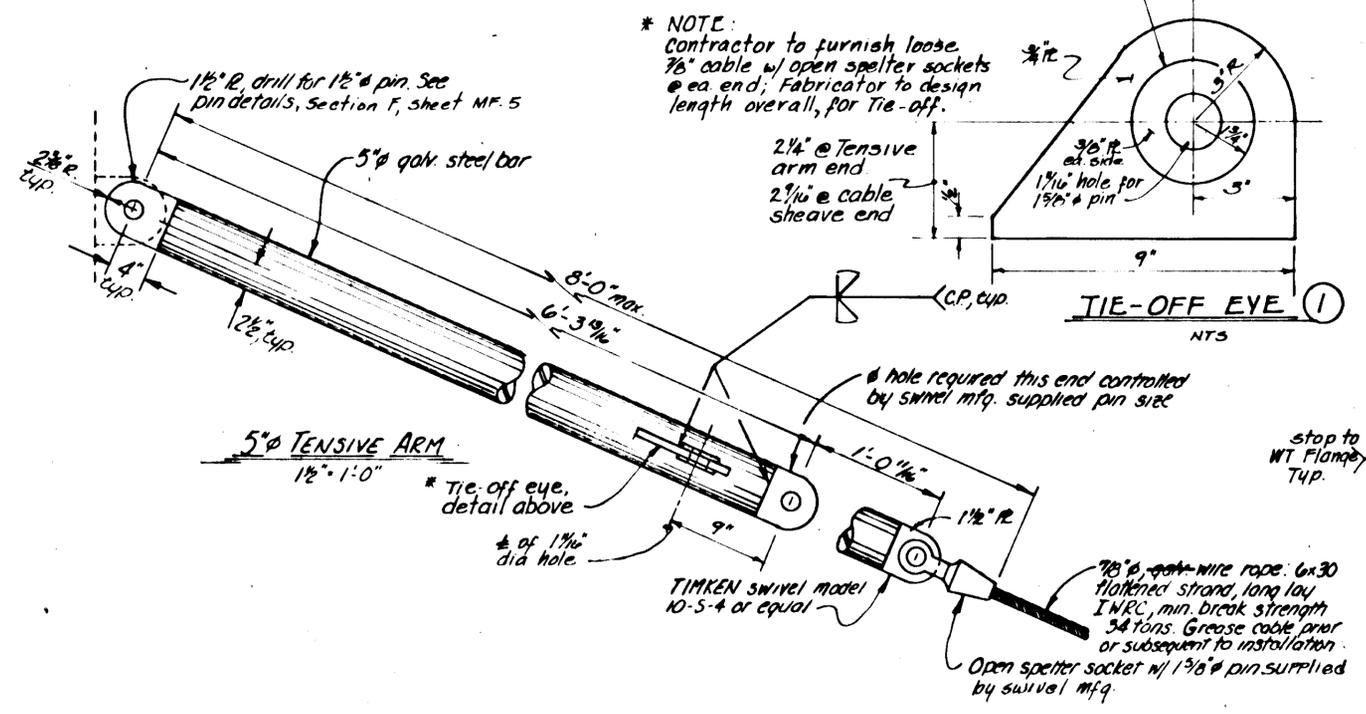
NOTE: Close all open ended pipe or tubing w/ 1/4" plate and seal weld.

STAMP		DO NOT SCALE THIS DRAWING - USE DIMENSIONS	
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
Ketchikan		Alaska	
GIRDER DETAILS SEAWARD END			
DESIGNED JAL	CHECKED JS	DRAWN [Signature]	DATE 8-87
PROJECT NUMBER FM-0922(2)		SHEET MF-2 OF 53	

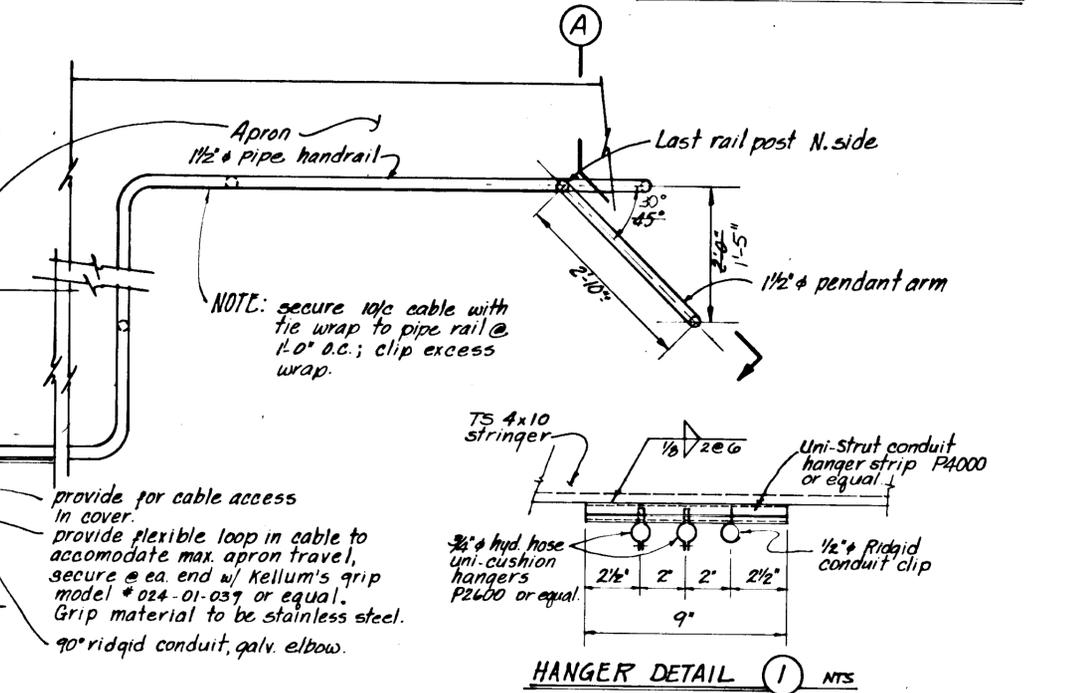
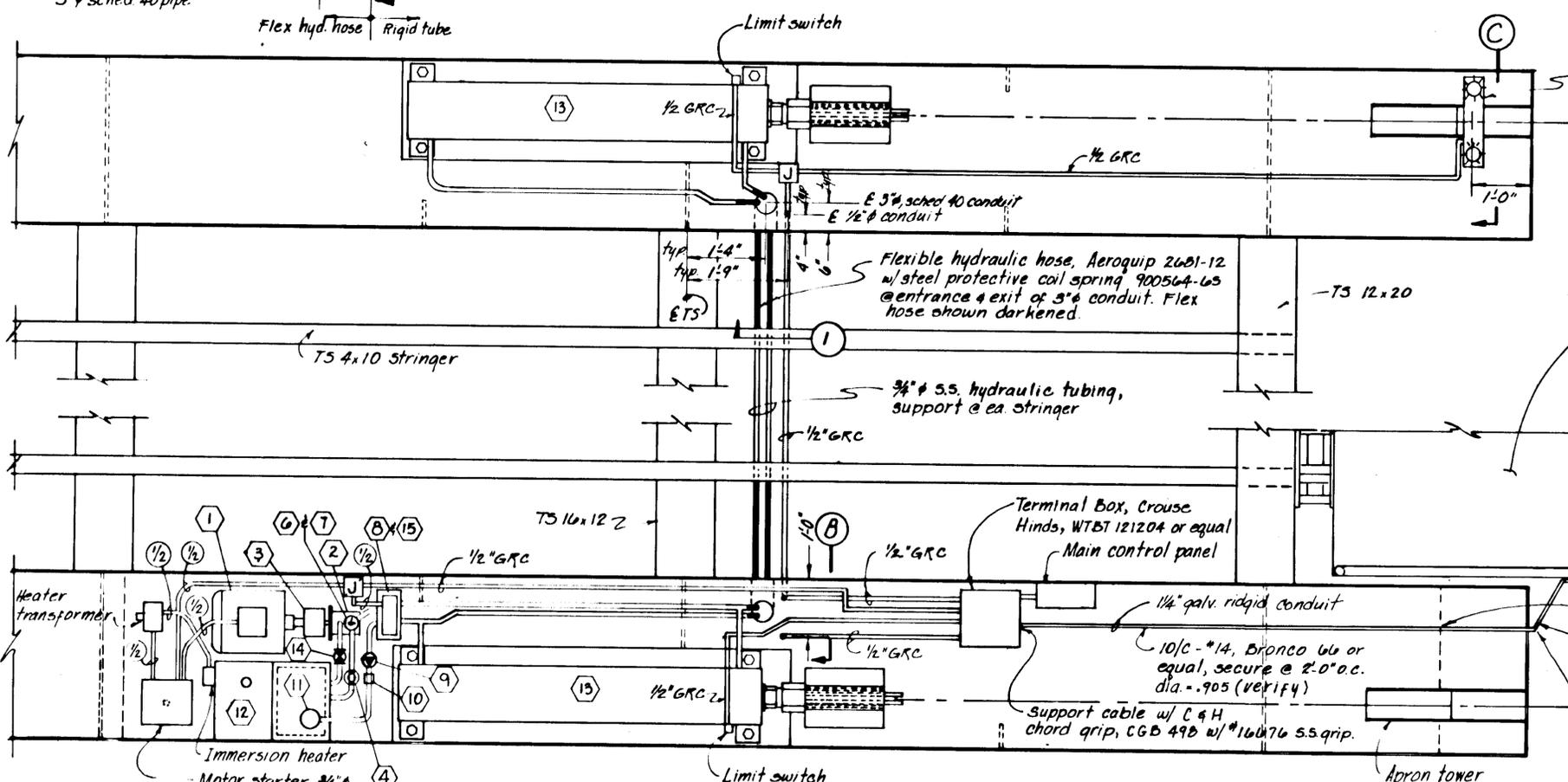
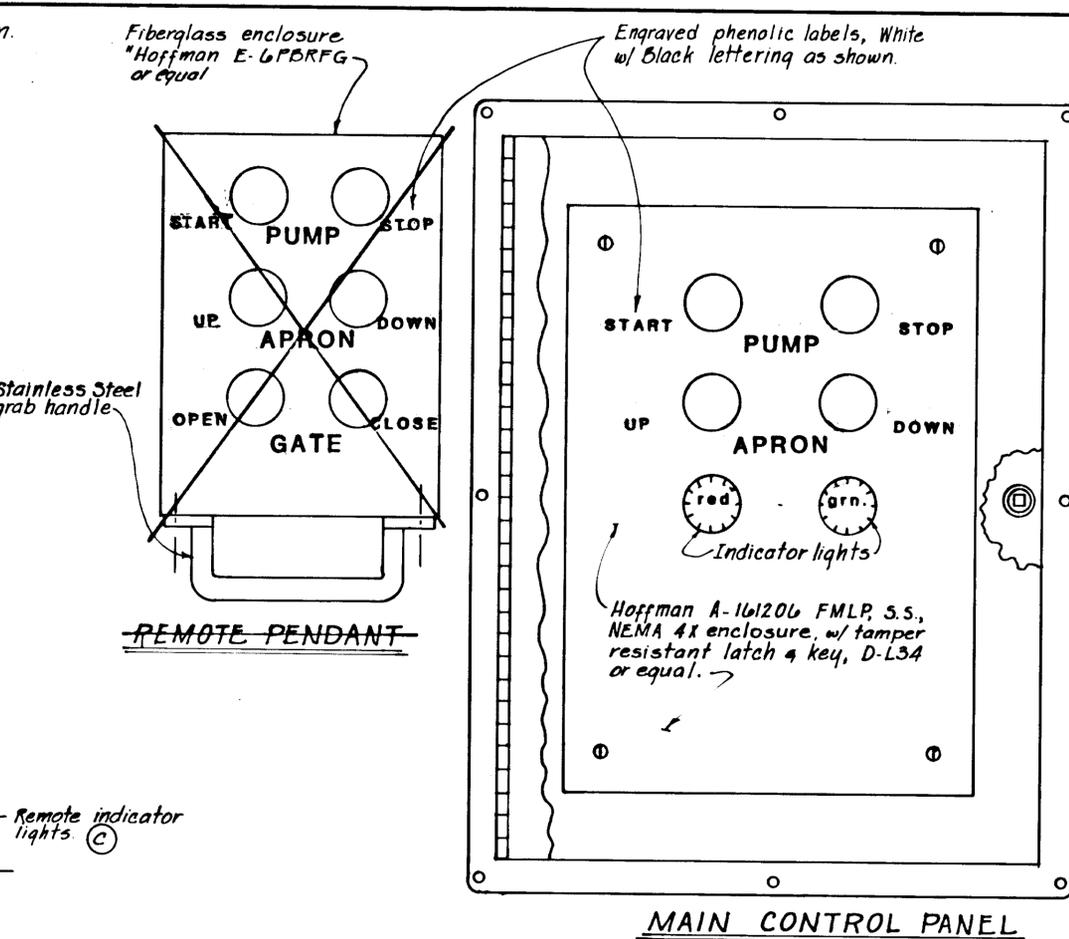
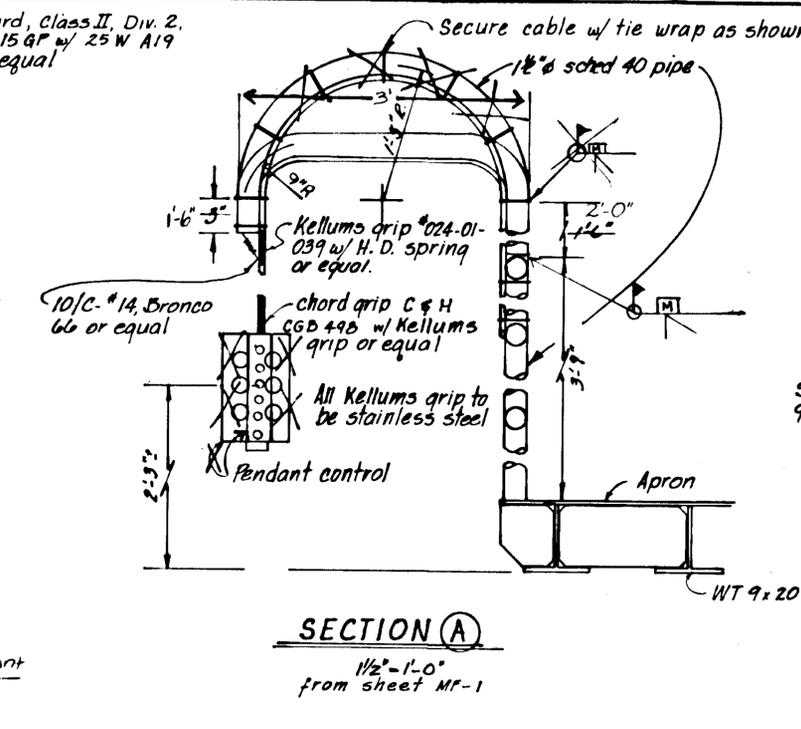
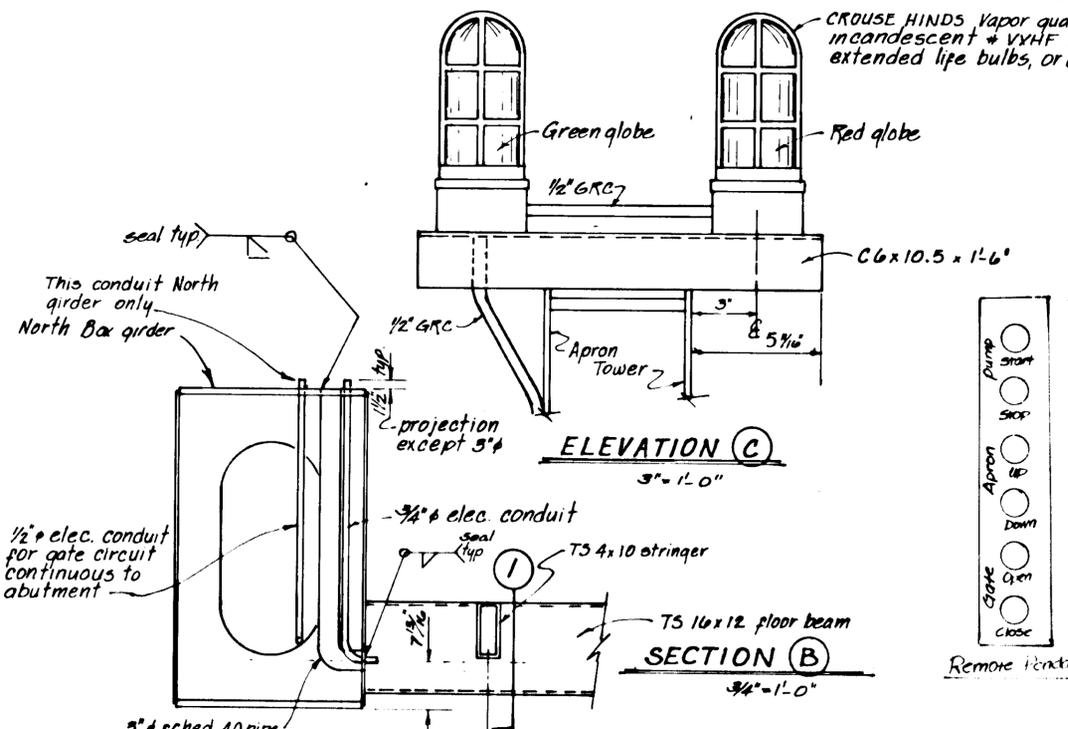
© Rev. 5-1-87 Misc. Corrections



* Note: All pins detailed this sheet shall be stainless steel.



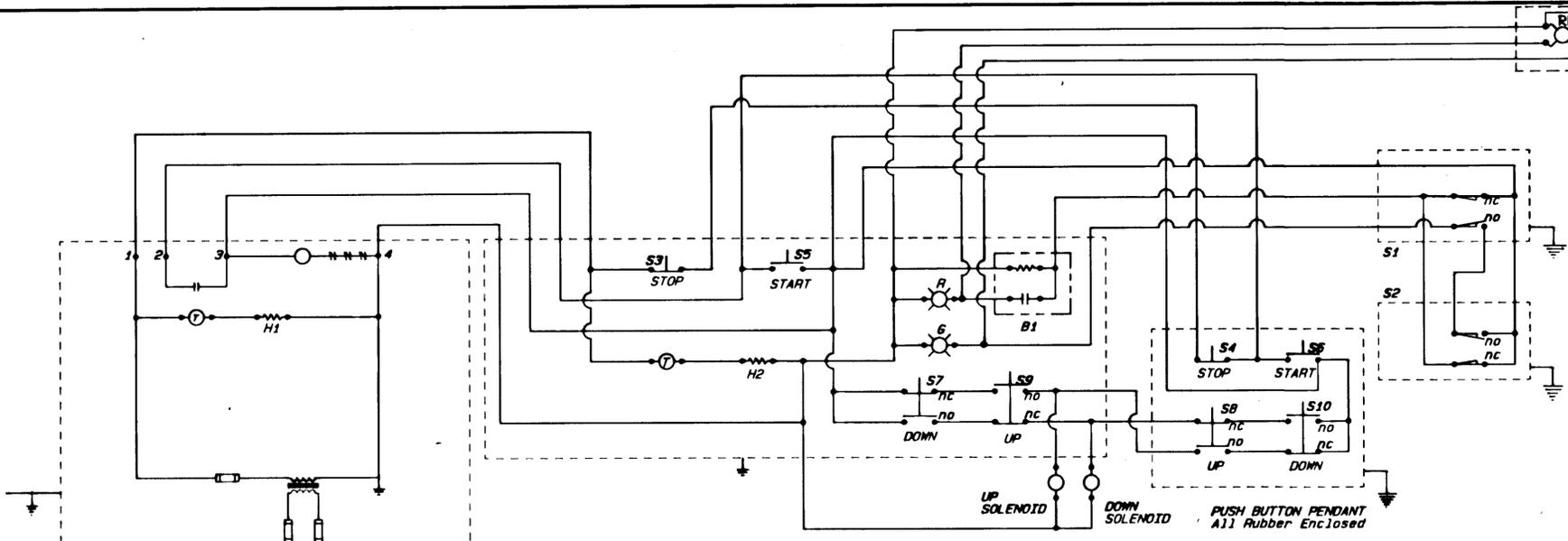
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		DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
		Ketchikan		Alaska	
APRON DETAILS					
DESIGNED JAL	CHECKED JS	DRAWN L. J. J.	DATE 2-87		
PROJECT NUMBER FM-0922(2)	SHEET MF-4		OF 53		



NOTE: Machinery and Electrical enclosure mount details not shown are a contractors option as to method of support. Submit details for approval.

- NOTE:**
1. Conduit size based on THW wire #14 for control- if RHW is used, increase conduit accordingly.
 2. Provide one #14 insulated ground wire in all conduit to all equipment.
 3. For flexibility Sealite type O.R. or O.R.H. (liquid tight-oil resistant) grey color or equal may be substituted for rigid galvanized conduit.

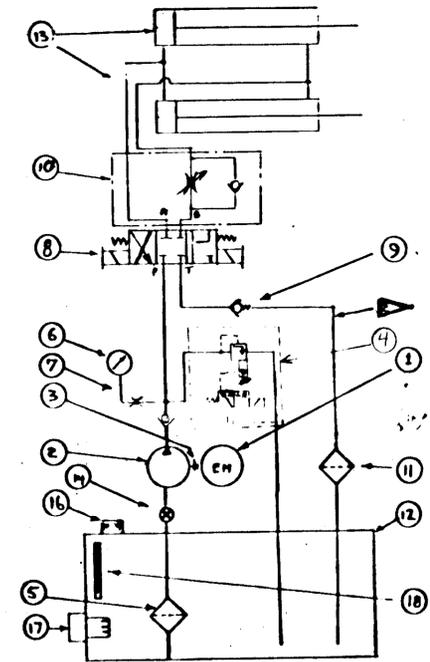
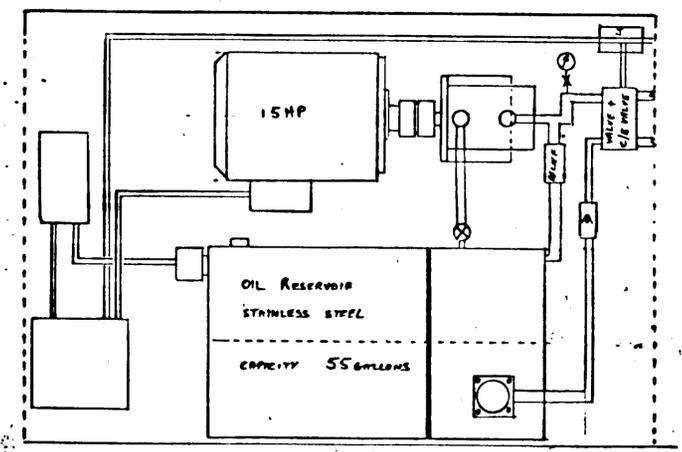
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MECHANICAL/ ELECTRICAL DETAILS FOR LIFT SYSTEM - SEAWARD END		
DESIGNED J.A.L.	CHECKED J.S.	DATE 2-87
PROJECT NUMBER FM-0922(2)	SHEET MF-7 OF 53	



ELECTRICAL SCHEMATIC

NTS

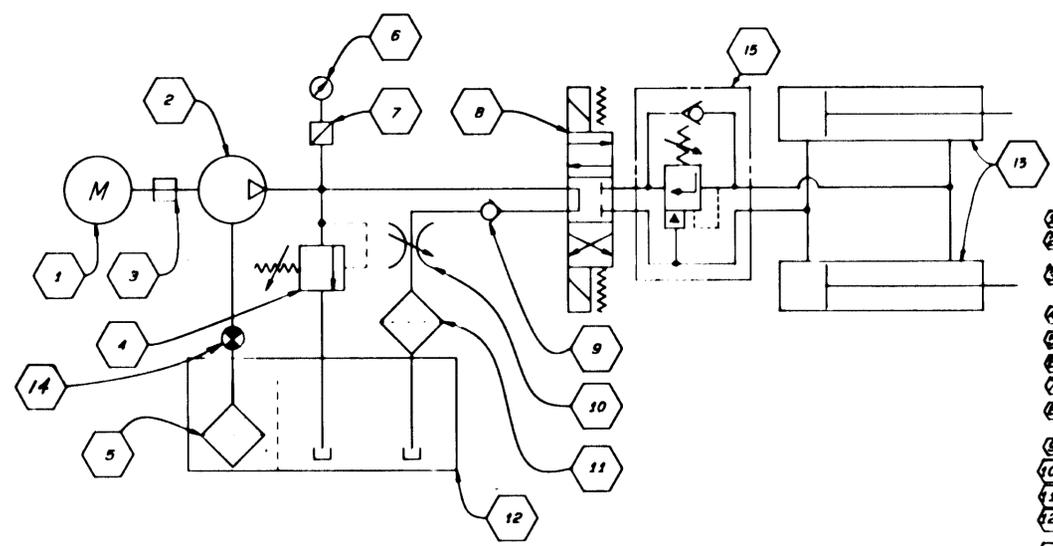
- EM - 15hp Electric Motor, 1800rpm, 480vac, 3Ø, 60hz, 254T, TEFC.
- C1 - Motor Starter (480v primary, 120v secondary), Combination Starter, NEMA 4 SS Enclosure, Square D, Class 0330, Type SDW11-58W/Form FT-11 fused control circuit Transformer
- B1 - Flasher Relay, Dayton IA366
- R - Red Pilot Light
- G - Green Pilot Light
- T - Thermostat
- T1 - Transformer, 480v/120v, 750va
- H1/H2 - Strip Heater, 25w, 120v
- H3 - Oil Heater, 500w w/Thermostat, Chromalox ARTMO-500E2
- F1/F2 - Fuse, 2amp, 600v
- S1/S2 - Limit Switch, DPDT, Located in seaward end of each hydraulic cylinder.
- S3/S4 - Stop Switch, SPST, NC, Push Button
- S5/S6 - Start Switch, SPST, NO, Push Button
- S7/S8/S9/S10 - Switch, DPDT, Push Button
- R1 - Red tower mounted indicator light 25W Max.
- G1 - Green 25W Max.



AS-BUILT

ITEM NO	PART NUMBER	DESCRIPTION
18	6-643-L10	10" SIGHT GAGE LINE DEVICES
17	ARTMO-500E2	HEATER CHROMALOX
16	CFTA-400D-C80	FILTER BREATHER - CANELO
14	2" GATE VALVE	OTTO BRASS
13	ØD12 10" x 63" Rod	CYLINDER REDBUSH MFE
12	55 GALLON SS TANK	B-W CONTAINERS
11	OFM 101-10	FLOW CONTROL - HYCON
10	DV-16-3.0/5	FLOW CONTROL - HYCON
9	DTBP1-06-65-11	CHECK VALVE - VICKERS
8	W652E R40/W652E R40	SOLENOID VALVE - VICKERS
7	133-1/4 B	NEEDLE VALVE - TELEDYNE
6	660391	PRESSURE GAUGE - HELICOID
5	P50-2-100	100MM STRAINER & MOUNT FEED
4	DNW1802-01/1802-01	SOLENOID VALVE - VICKERS
3	#400 Coupler 1870mm	MAGNOLY COUPLER
2	25V17AIC-3D-282	PUMP VICKERS 176PM @ 1200RPM
1		LUBRICATOR 181800PM 254T

▶ Used with Vickers subplate DG-SHE-06
 ▶ Pumping - stainless steel tubing with stainless fittings
 Hoses - Four Braid SAWICOR9



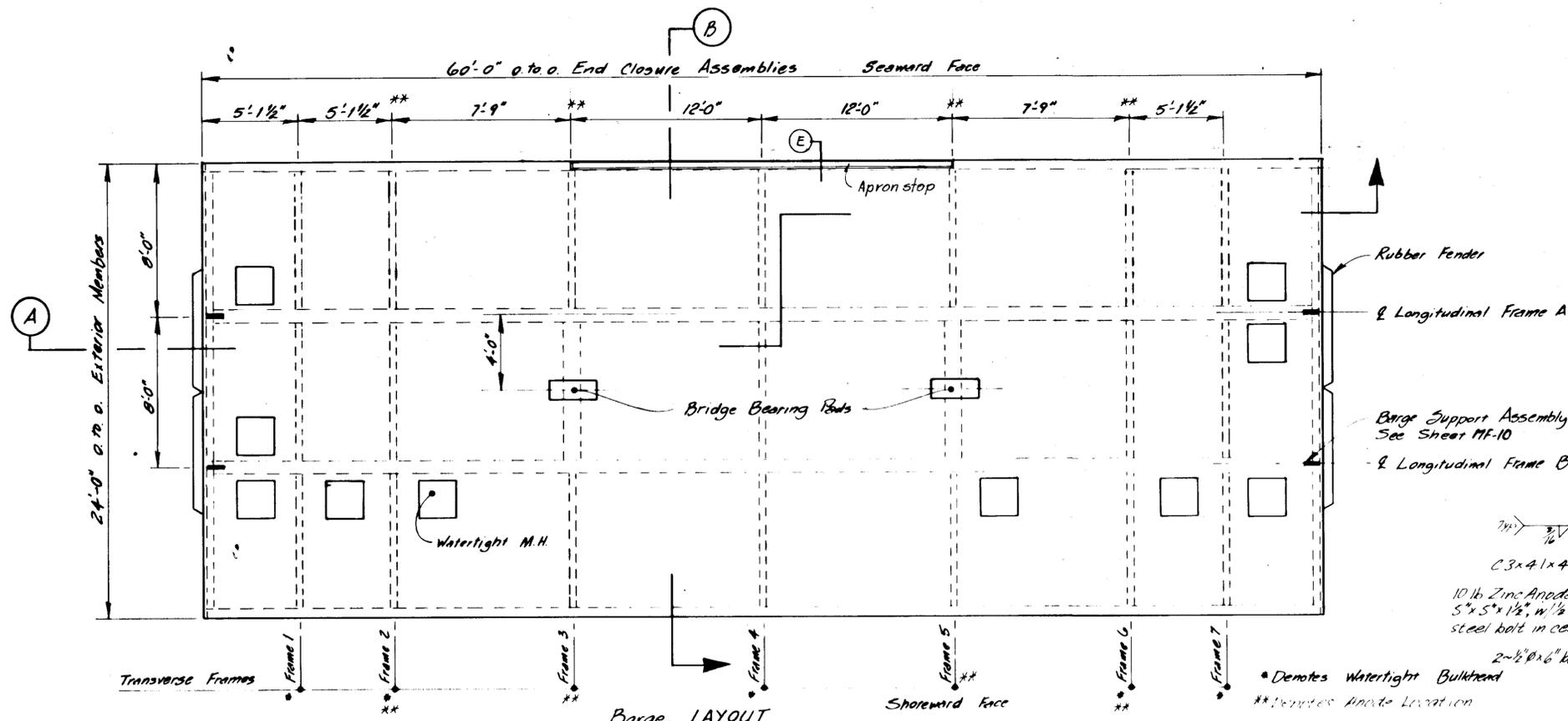
HYDRAULIC SYSTEM SCHEMATIC

NTS

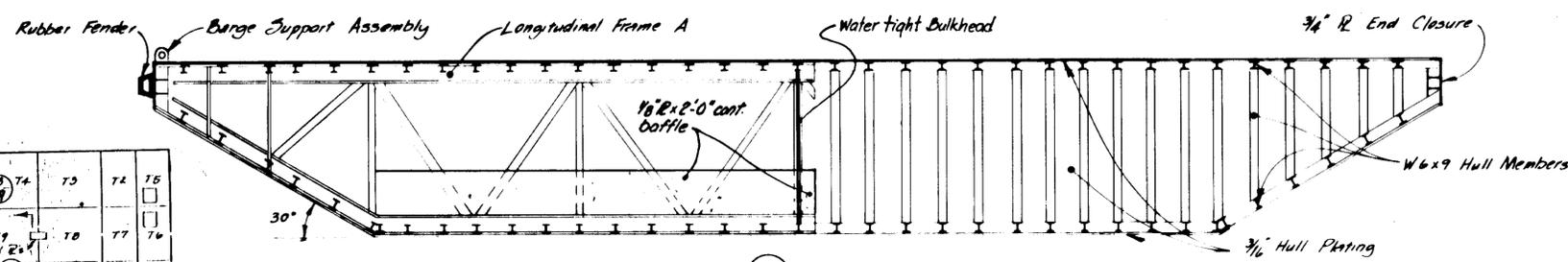
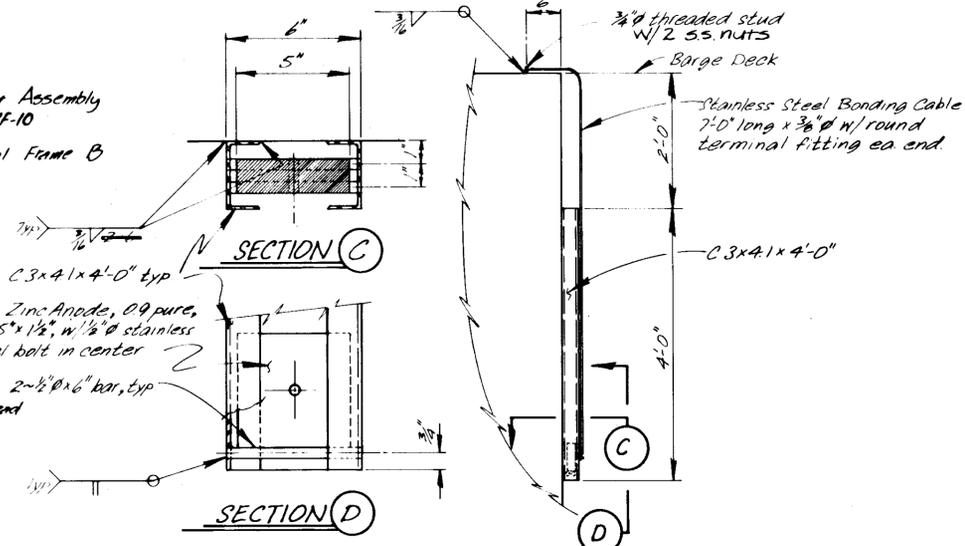
PLAN

- 1 Electric Motor, 15hp, 1800rpm
- 2 Vane Pump, Fixed Vol, 17gpm @ 1200psi, w/flanges, Vickers FL1-16-16P-10
- 3 Coupling-Motor to Pump, Magnoly Model 400 w/470 Insert
- 4 Relief Valve, Vickers CT-06-C-50
- 5 Strainer, FLOW-EGY P50-2-100
- 6 Gauge 0-3000psi, Helicoid 660391
- 7 Needle Valve, Teledyne-Republic 133-1/4B
- 8 Directional Valve, Solenoid w/Subplate and Bolt Kit, Vickers D655-8-8C-T-WB-10
- 9 Check Valve, Vickers DTBP1-06-65-11
- 10 Flow Control, Hycon DV-16-3.0/5
- 11 Filter & Element, Vickers OFM 101-10 & 923069
- 12 Reservoir, 36gal, 2'-0"x1'-4"x2'-3"x12ga, w/Baffle, Removable Cover and Filter/Breather Cap.
- 13 Cylinder, 10"Øx63" stroke, 4 1/2"Ø SS Rod, Cushion and Air Bleeder each end, Limit Switch at full extension.
- 14 2" gate valve.
- 15 Counter balance valve, Sun CBEA-LAN-HDA, field adjust.

STAMP		DO NOT SCALE THIS DRAWING - USE DIMENSIONS	
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
KETCHIKAN		ALASKA	
ELECTRIC & HYDRAULIC SCHEMATICS			
DESIGNED <u>LJB/JAL</u>	CHECKED <u>JS</u>	DRAWN <u>LJB/JAL</u>	DATE <u>2-87</u>
PROJECT NUMBER <u>FM-0922(2)</u>		SHEET <u>MF-8</u> OF <u>53</u>	



- Notes:
1. Barge Design Freeboard = 1'-6" (w/ballast)
 2. Ballast shall consist of fresh potable water combined with 10% ethylene glycol, by volume.
 3. Barge deck to be level both ways, longitudinally and laterally, with full dead load, i.e. bridge, barge with ballast.
 4. Fill trapezoid ballast tanks ea. side of barge before putting ballast in main tank. Put ballast equally into each baffled section of each tank.
 5. Prior to protective coating each compartment shall be tested for water tightness by smoke and pneumatic or hydraulic methods to 7 ft equivalent head. Test methods and details shall be subject to approval of the engineer.

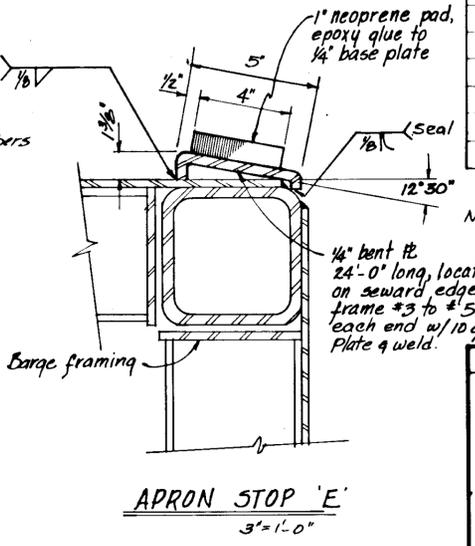
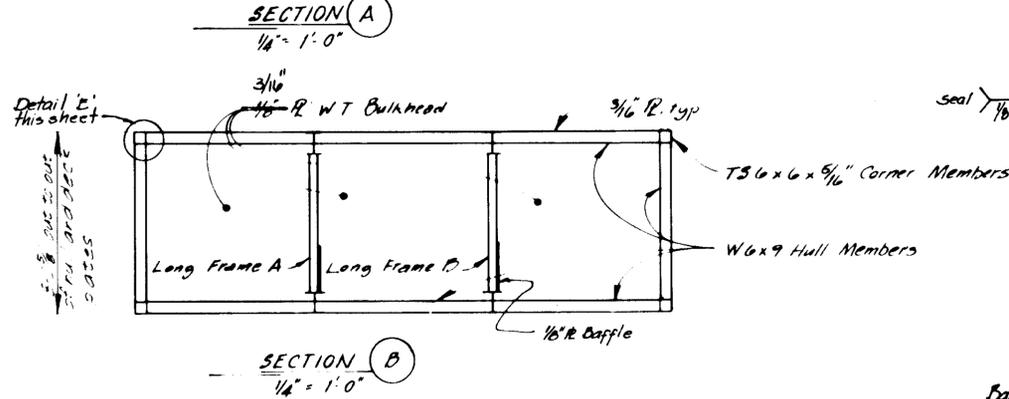
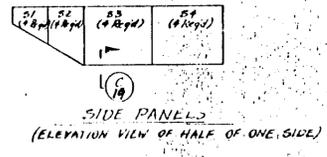


TOP PANELS (PLAN VIEW)

T1	T2	T3	T4	T5	T6
T7	T8	T9	T10	T11	T12

BOTTOM PANELS (PLAN VIEW)

B1	B2	B3	B4	B5	B6	B7
B8	B9	B10	B11	B12	B13	B14
B15	B16	B17	B18	B19	B20	B21



ZINC ANODE DETAILS

BARGE SHEETS - REFERENCE INDEX

Sheet No.	Description
MF-9	Barge Layout & Typical Sections
MF-10	Longitudinal Frames A & B
MF-11	Transverse Frames 1-7
MF-12	Details Frames 1-7
MF-13	Details Frames 2, 4 & 6
MF-14	Details Frames 3 & 5
MF-15	Watertight Bulkheads & Bridge Bearing Details
MF-16	Panels T1-T11 & Manhole Details
MF-17	Panels B1-B11 & S1-S4
MF-18	End Closure Assembly & Fender Details
MF-19	Panel Connection & Misc. Details

Note: Approximate total weight of Barge ≈ 110,000 lbs

STAMP

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STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES

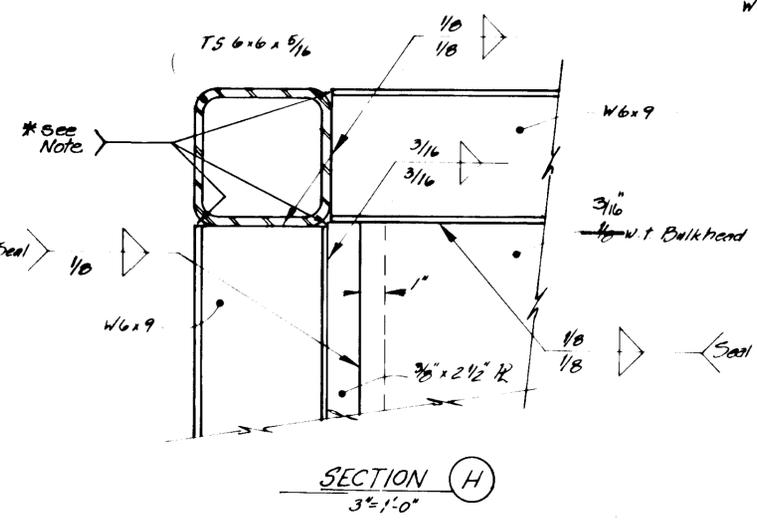
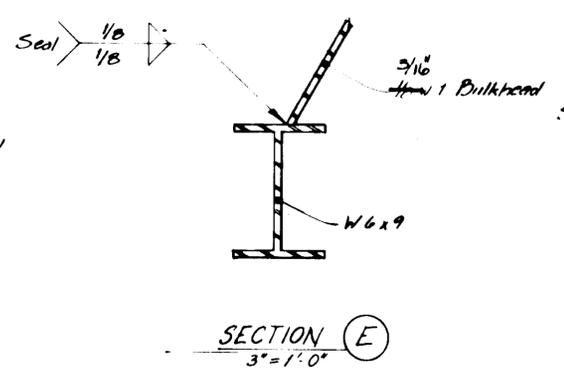
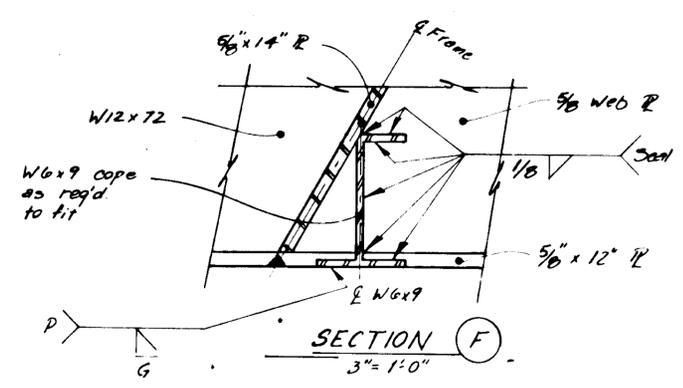
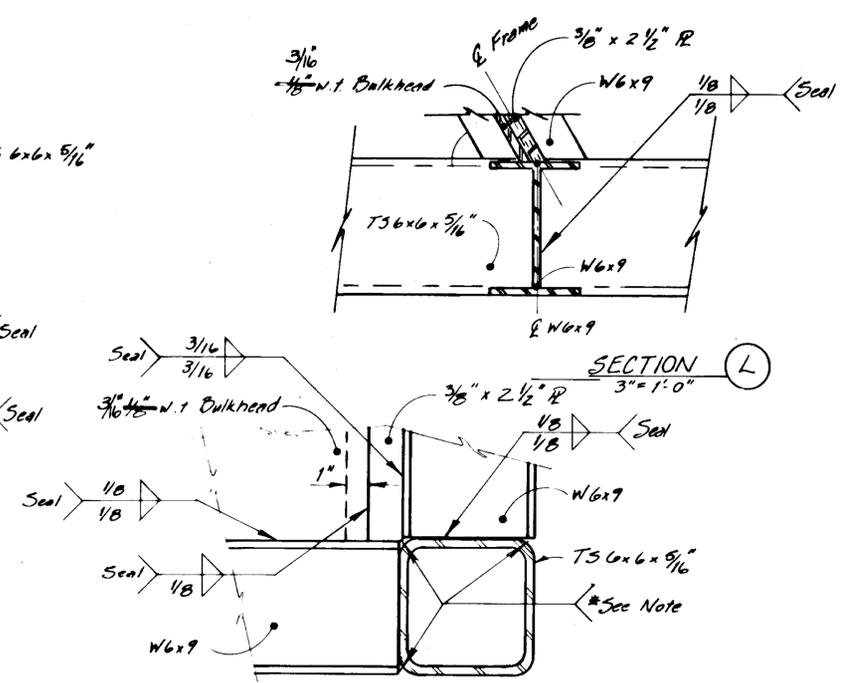
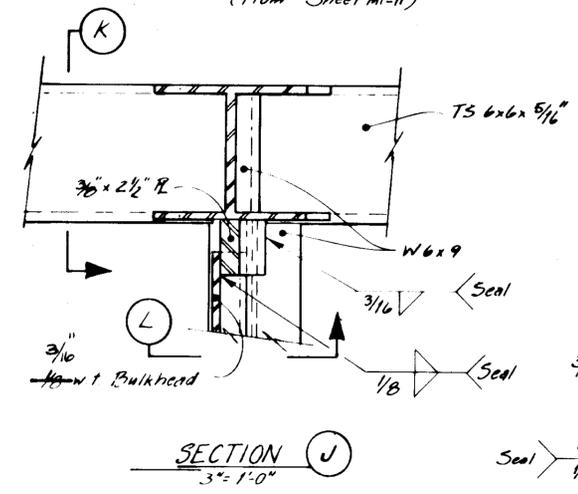
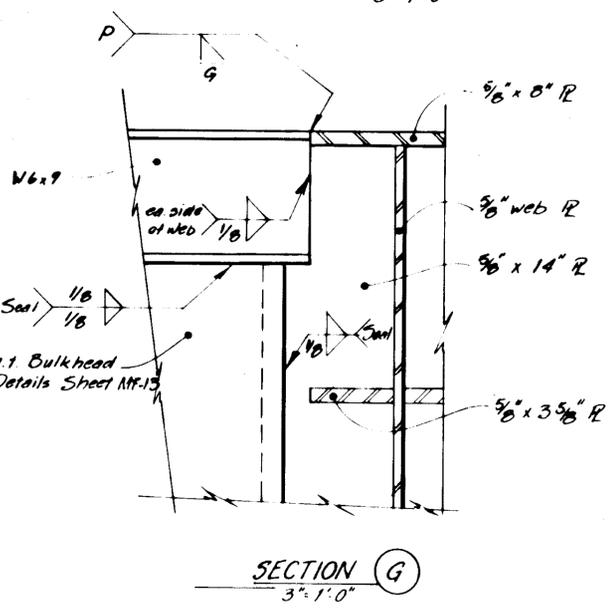
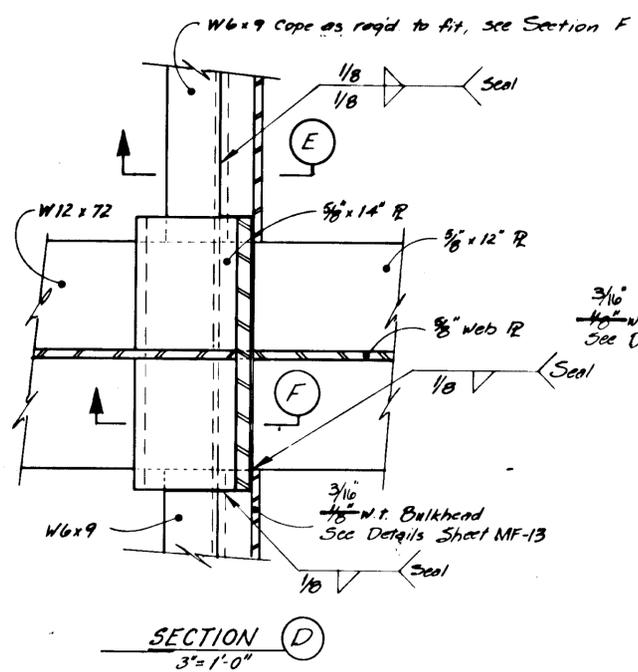
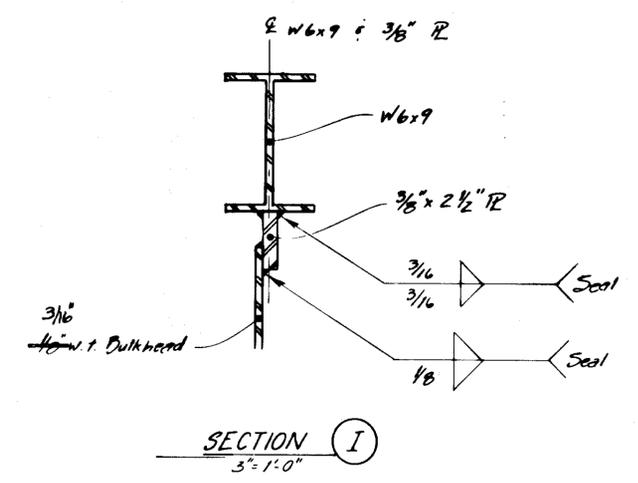
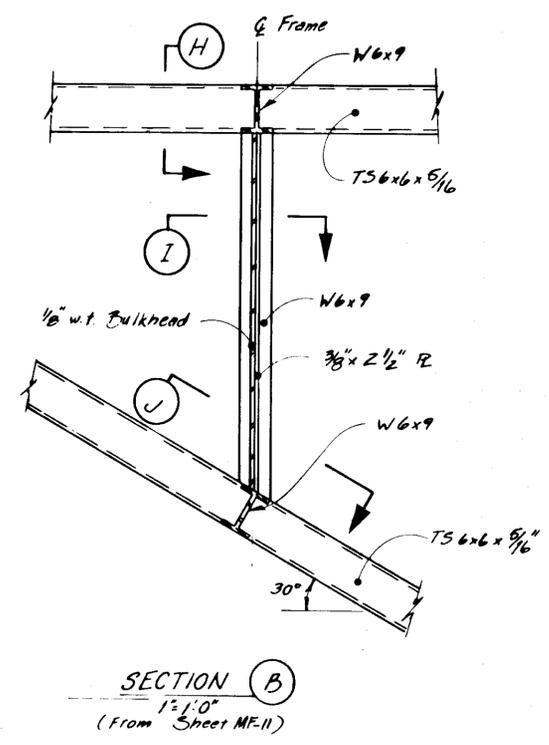
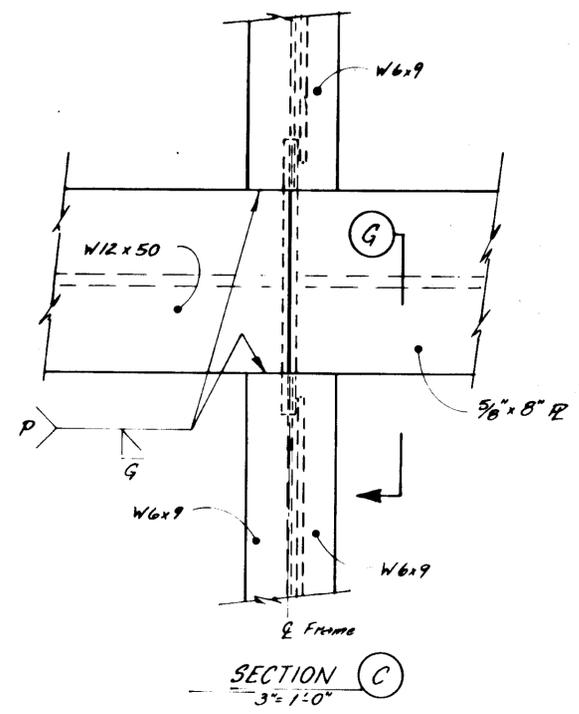
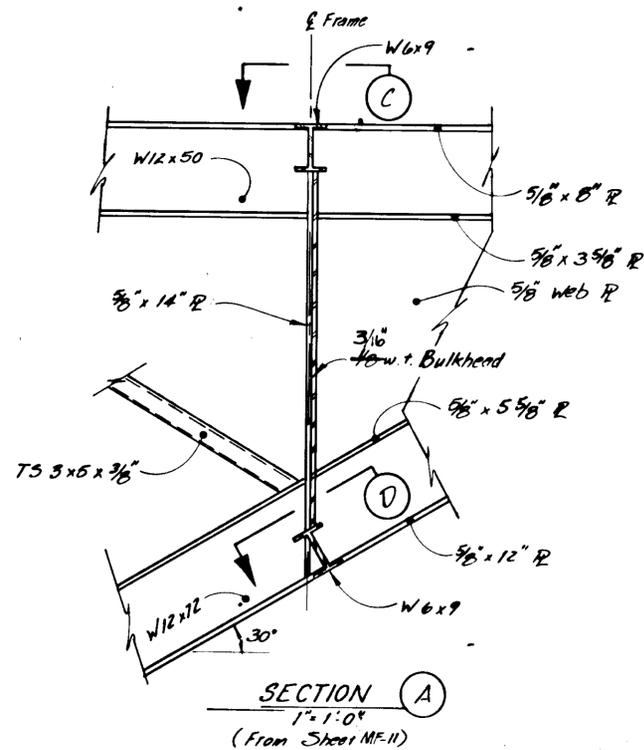
Ketchikan Alaska

Barge LAYOUT & TYPICAL SECTIONS

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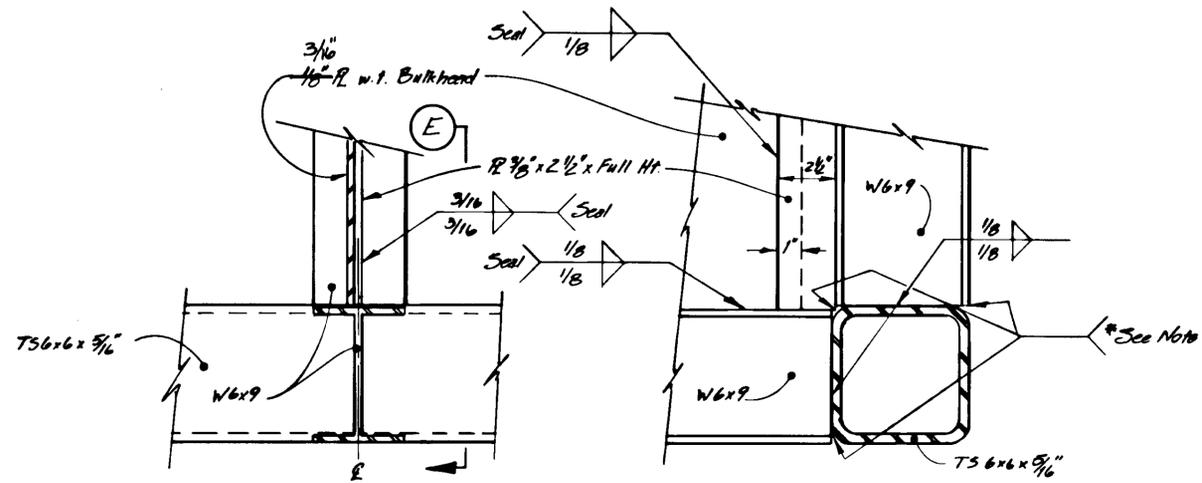
PROJECT NUMBER FM-0922(2) SHEET MF-9 OF 53

2/5/87

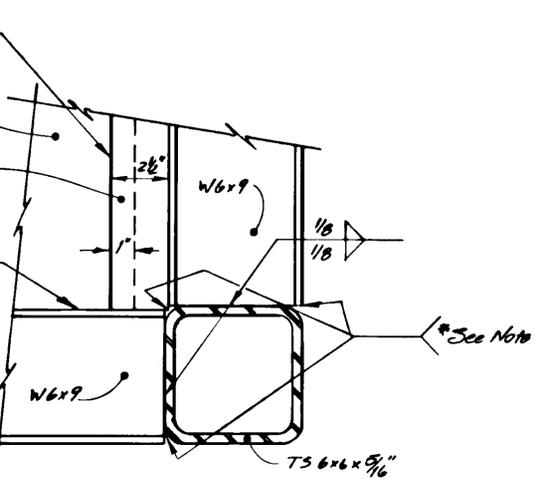


* Note: Size and type of weld to accommodate seal. On exterior, grind flush to insure proper fit up of hull panels and still maintain watertightness.

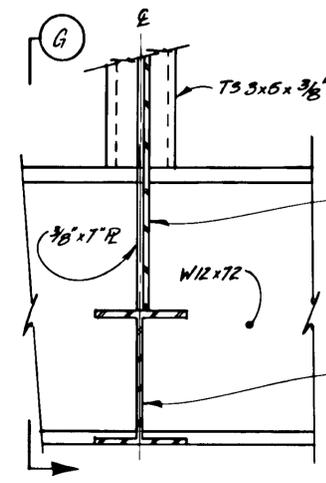
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	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	Ketchikan Alaska			
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DESIGNED JAL	CHECKED JS	DRAWN JAL	DATE 2-87	
PROJECT NUMBER FM-0922(2)	SHEET MF-12		OF 53	



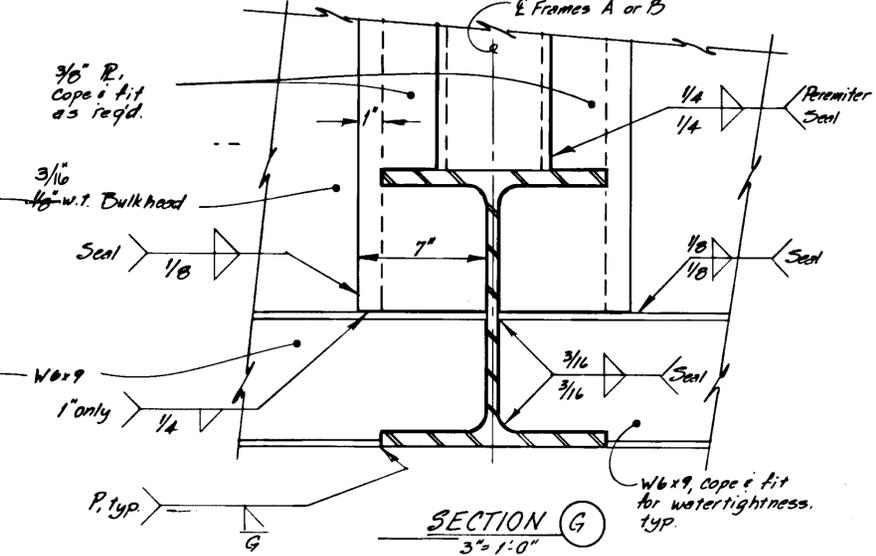
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Bulkhead E



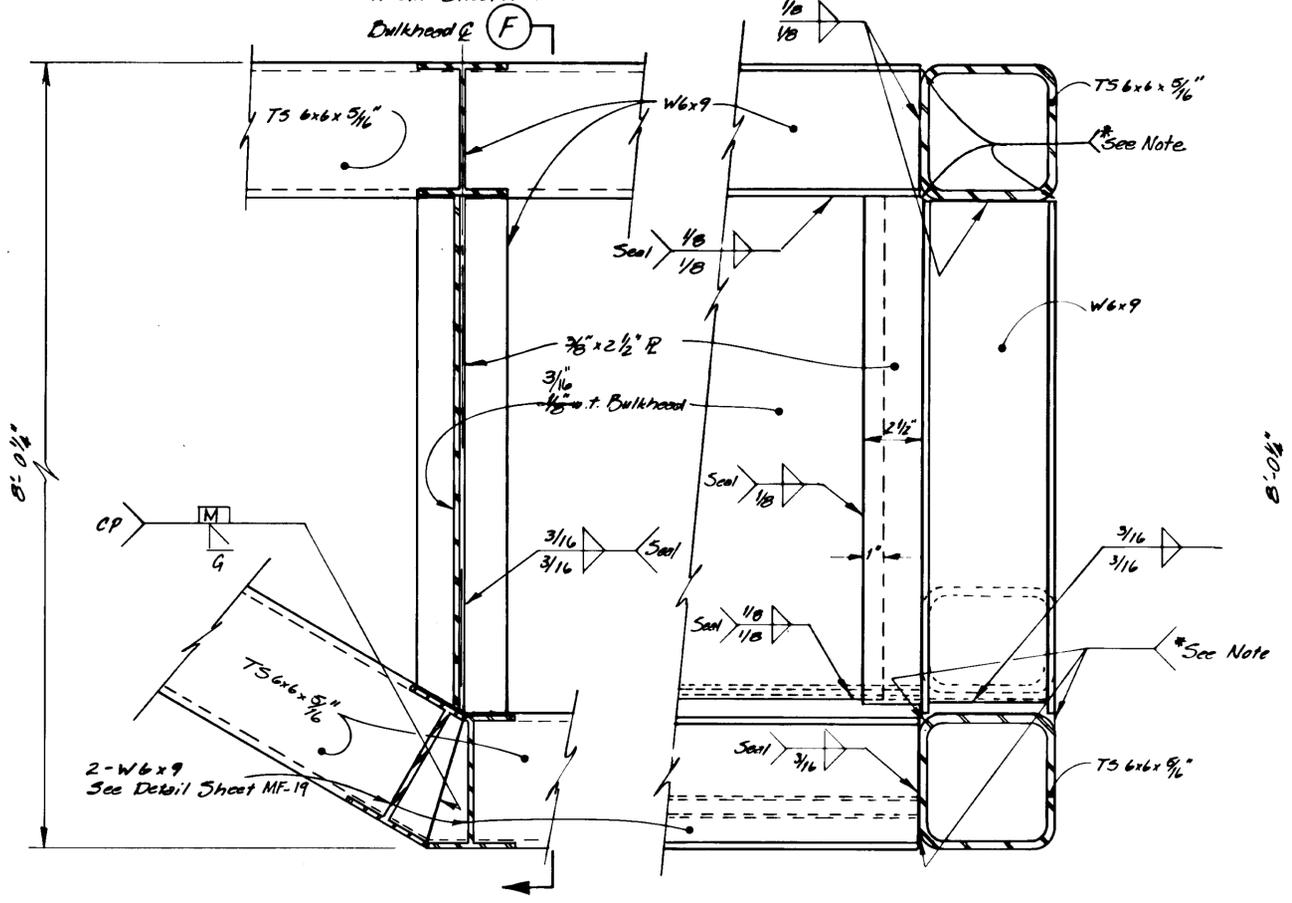
SECTION E
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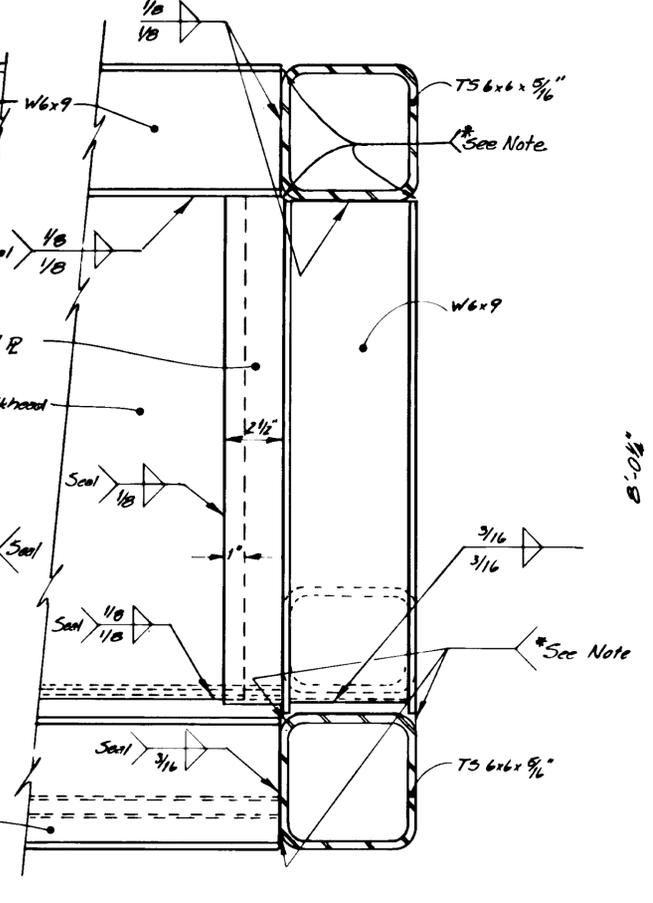
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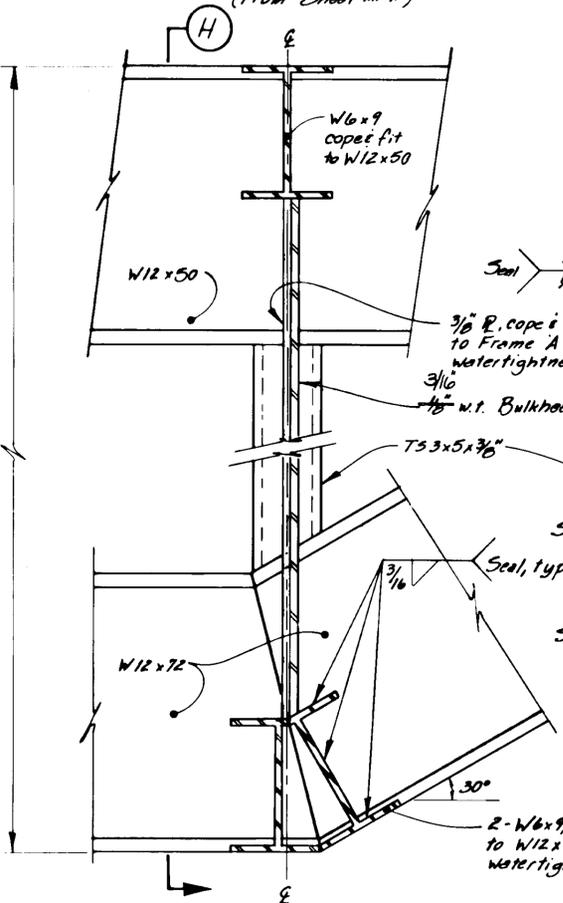
SECTION G
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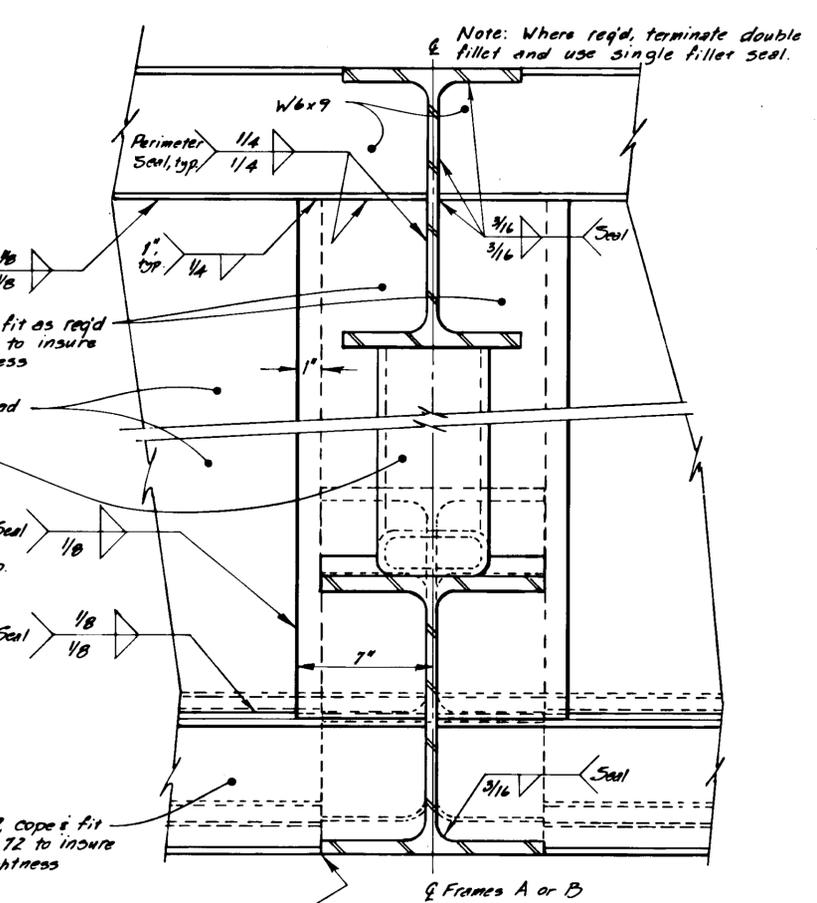
SECTION A
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(From Sheet MF-11)



SECTION F
3" x 1'-0"



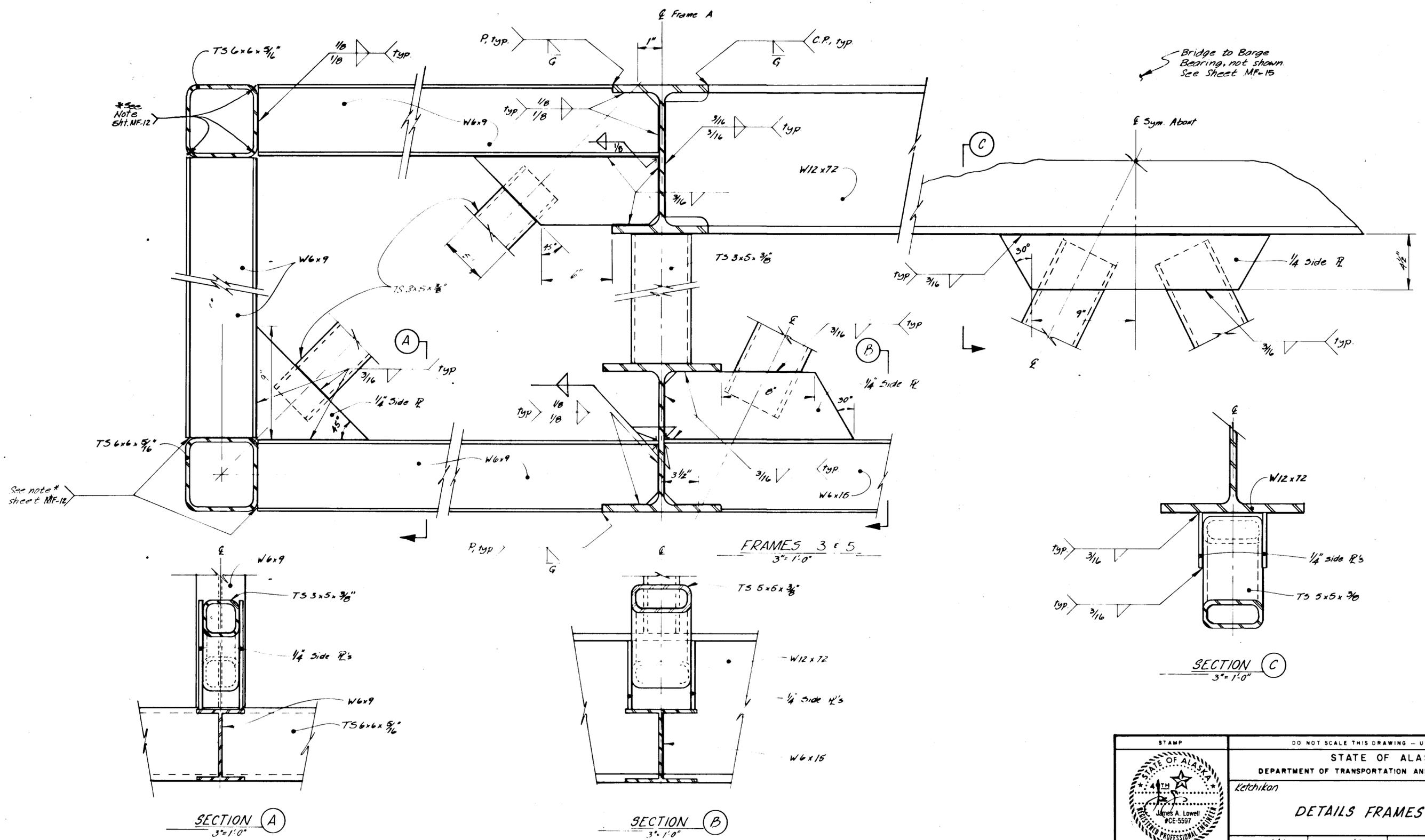
SECTION B
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(From Sheet MF-11)



SECTION H
3" x 1'-0"

* Note: Size and type of weld to accommodate seal. On exterior, grind flush to insure proper fit up of hull panels and still maintain watertightness.

	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
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	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	Ketchikan Alaska			
DETAILS FRAMES 2, 4 & 6				
DESIGNED JAL	CHECKED JS	DRAWN JAL	DATE 2-87	
PROJECT NUMBER FM-0922(2)	SHEET MF-13		OF 53	



Bridge to Barge
Bearing, not shown.
See Sheet MF-15

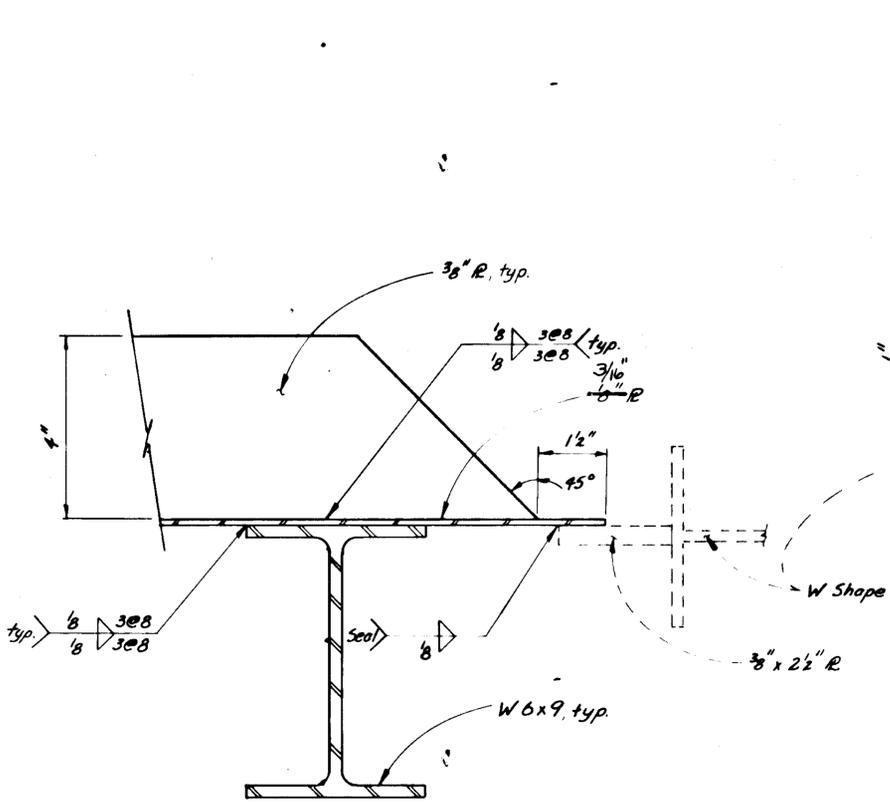
SECTION A
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SECTION B
3'-1'-0"

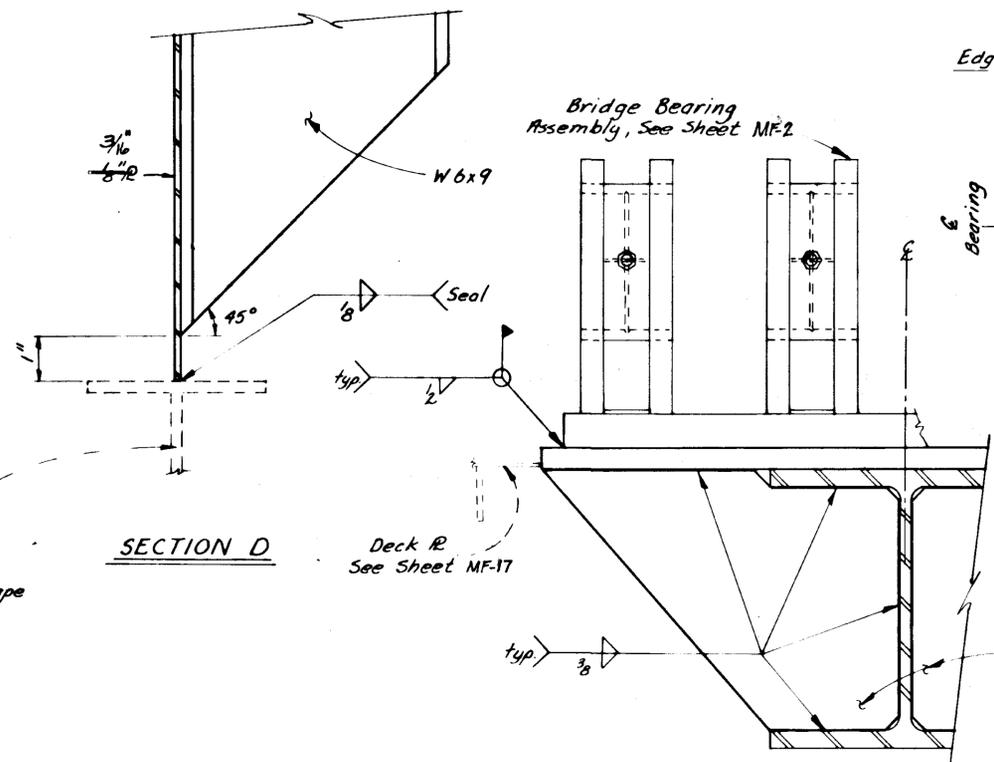
SECTION C
3'-1'-0"

FRAMES 3 & 5
3'-1'-0"

STAMP 	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	Ketchikan		Alaska	
	DETAILS FRAMES 3 & 5			
DESIGNED JAL	CHECKED JS	DRAWN JAL	DATE 2-87	
PROJECT NUMBER FM-0922(2)		SHEET MF-14 OF 53		

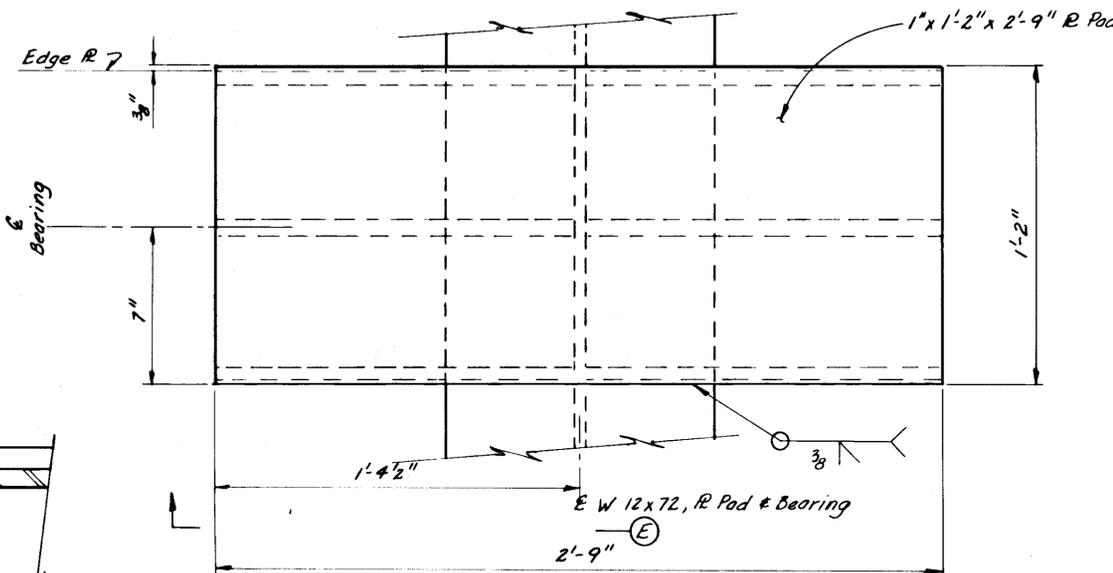


SECTION C

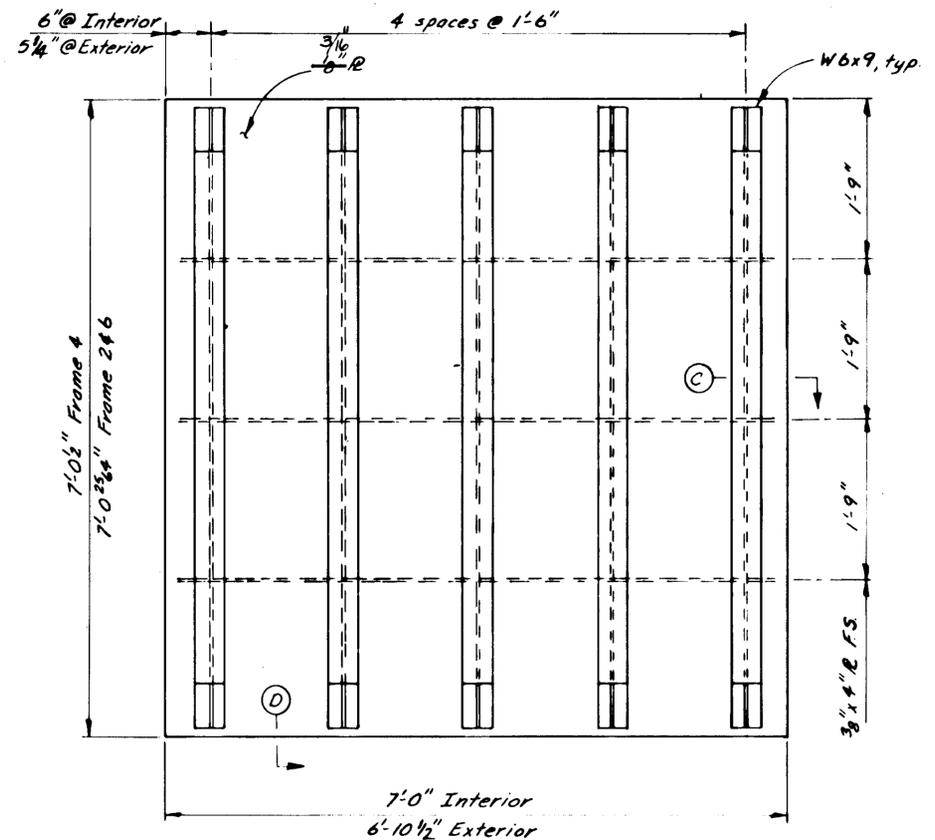


SECTION D

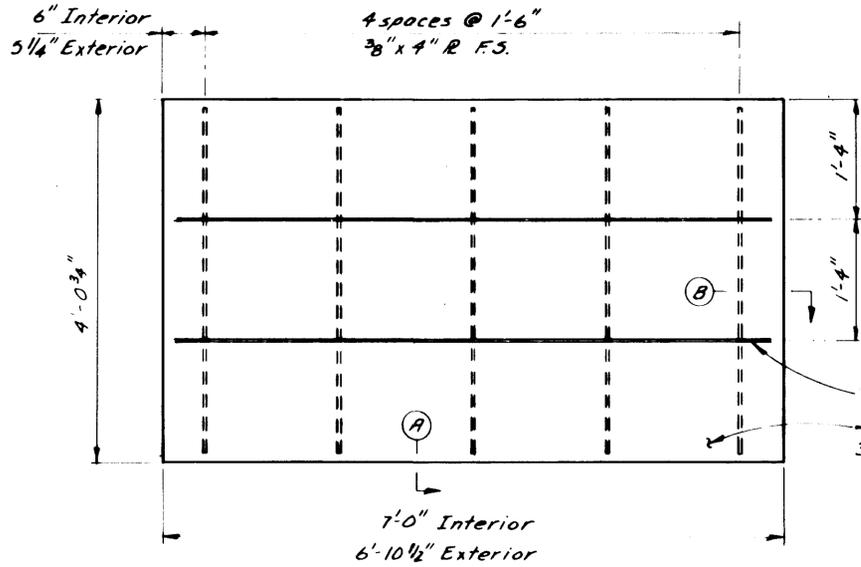
SECTION E



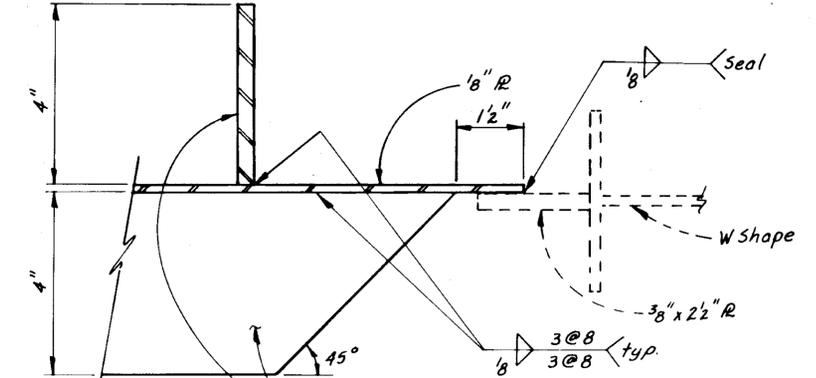
BRIDGE TO BARGE BEARING PAD (PLAN VIEW)



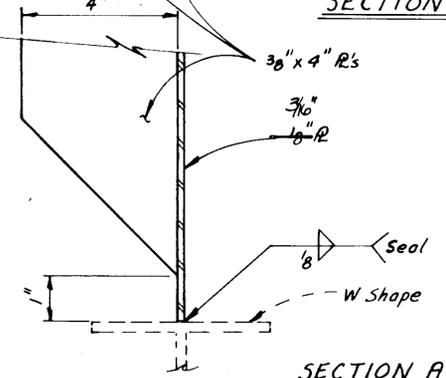
BULKHEADS - FRAMES 2, 4 & 6



BULKHEADS - FRAMES 1 & 7

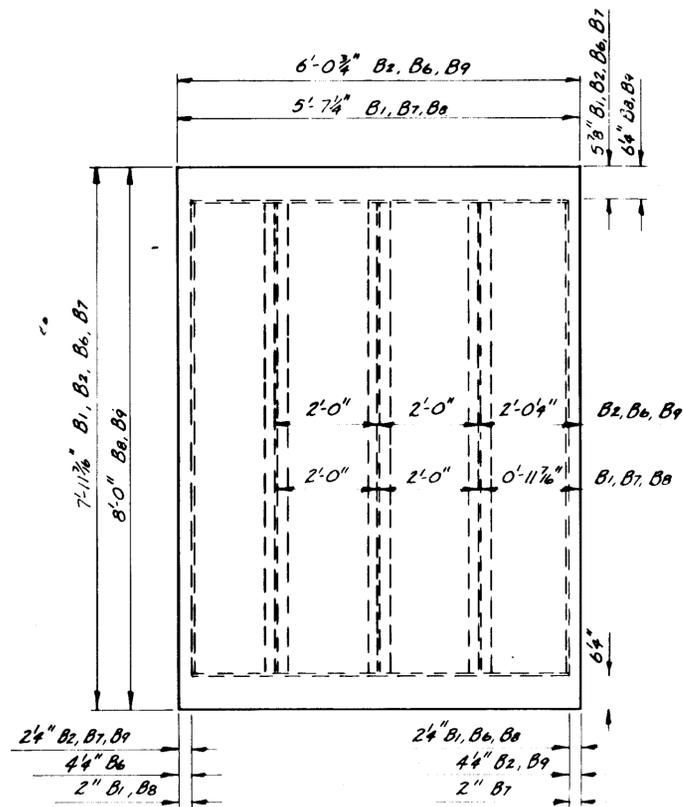


SECTION B

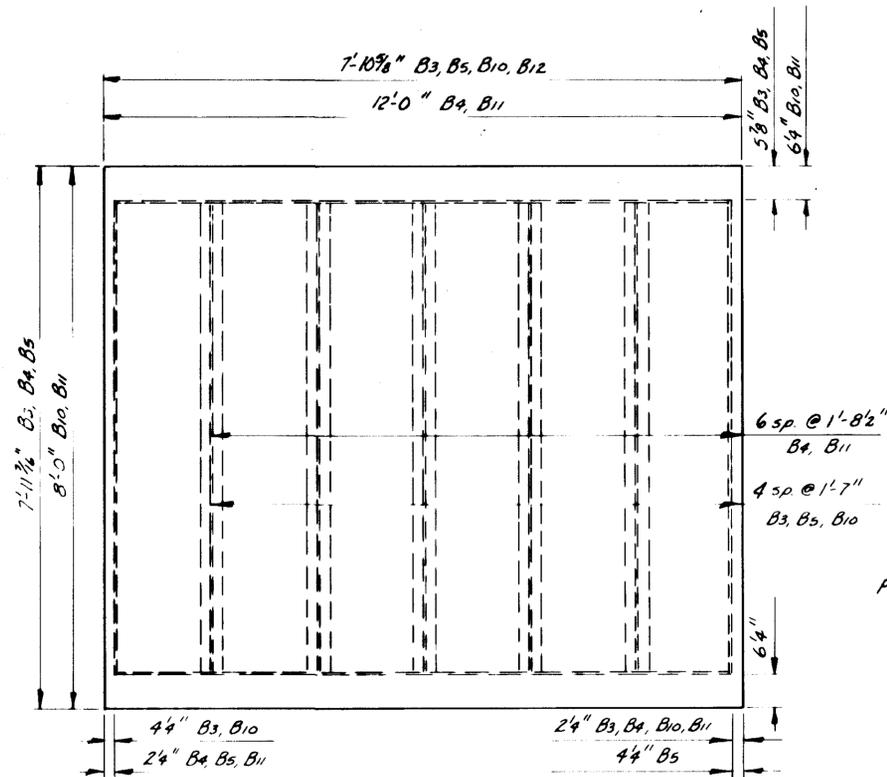


SECTION A

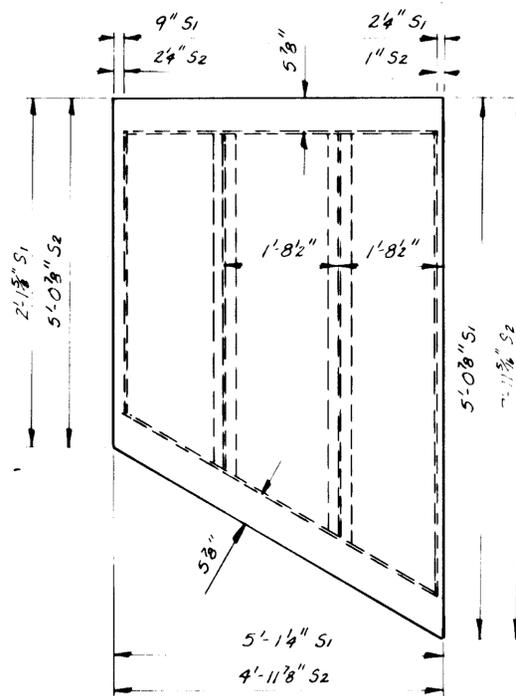
	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA			
	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	Ketchikan, Alaska			
WATERTIGHT BULKHEADS & BRIDGE BEARING DETAILS				
DESIGNED <i>JLL</i>	CHECKED <i>JS</i>	DRAWN <i>JLL</i>	DATE <i>2-87</i>	
PROJECT NUMBER FM-0922(2)	SHEET MF-15 OF 53			



PANELS B1, B2, B6, B7, B8, B9

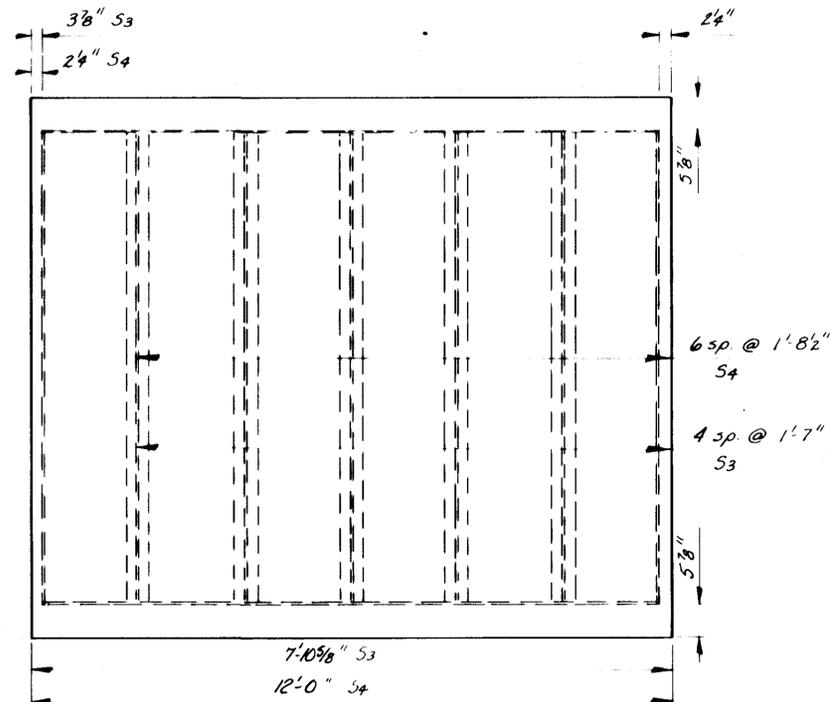


PANELS B3, B4, B5, B10, B11



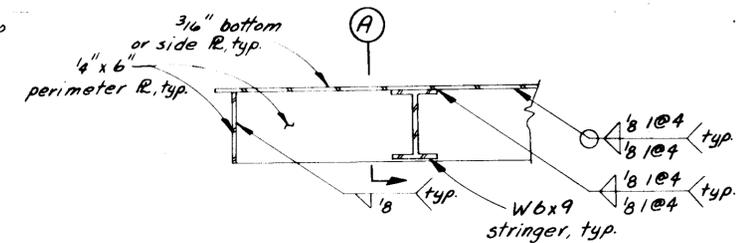
PANELS S1, S2

Note: S1 & S2, 2 req'd ea. type as shown, 2 req'd ea. type w/ weldments on near side.

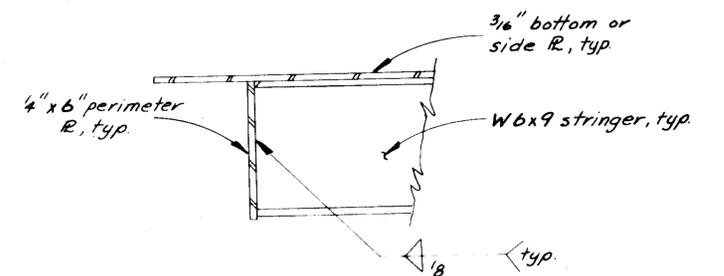


PANELS S3, S4

Note: S3 & S4, 2 req'd ea. type as shown, 2 req'd ea. type w/ weldments on near side.

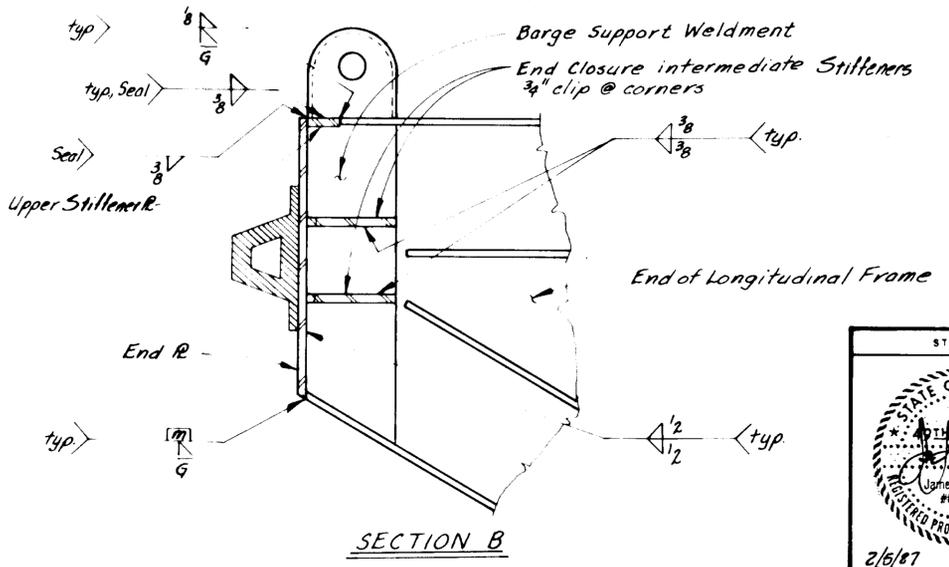
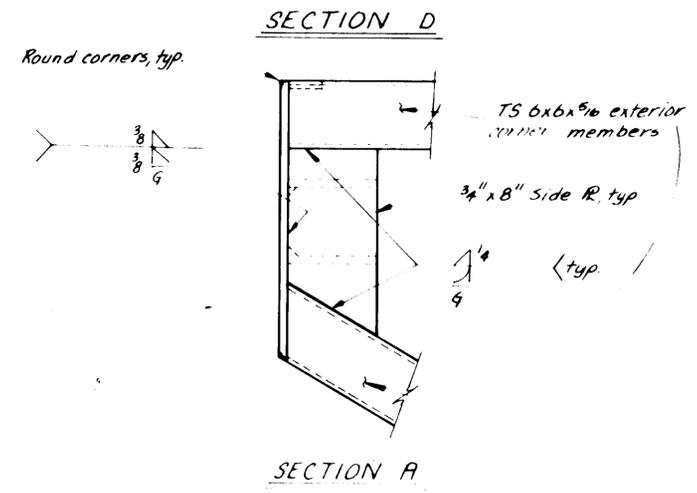
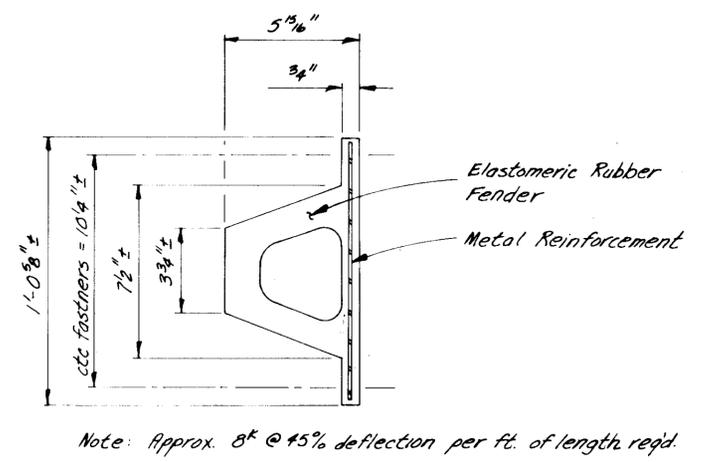
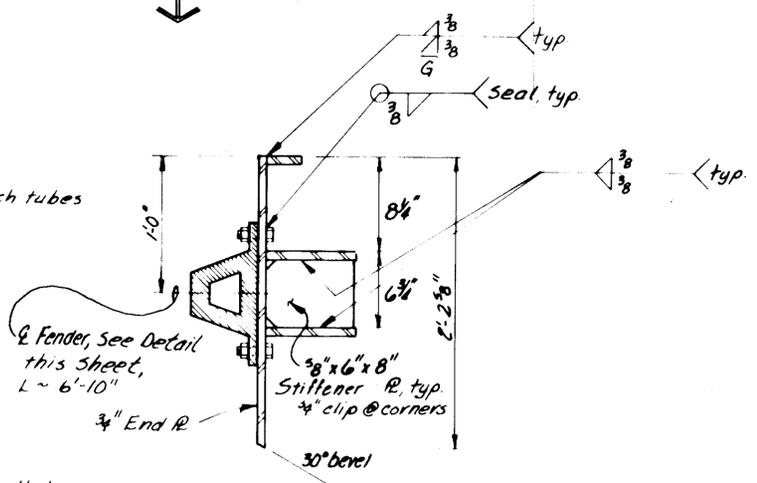
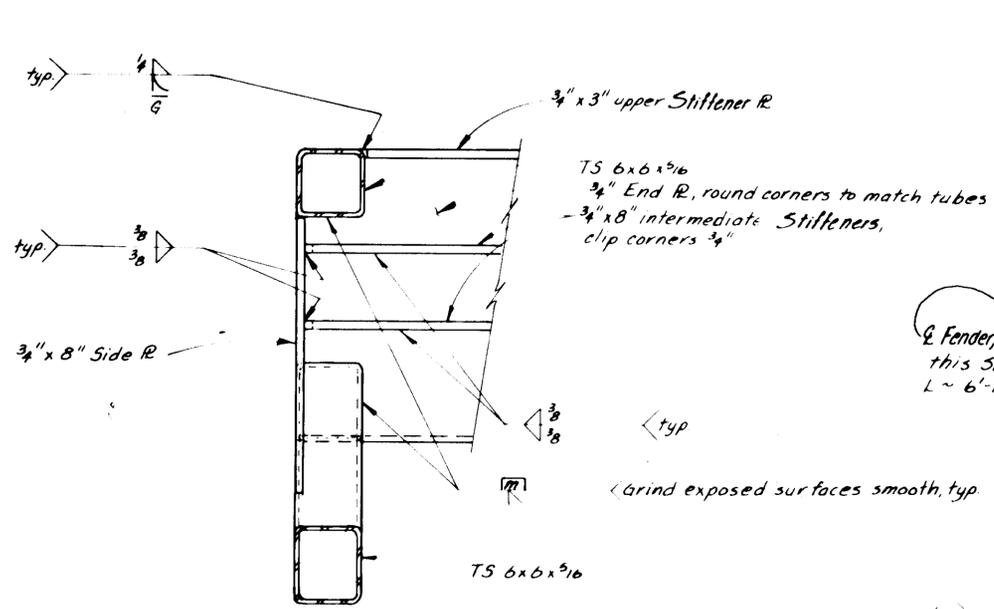
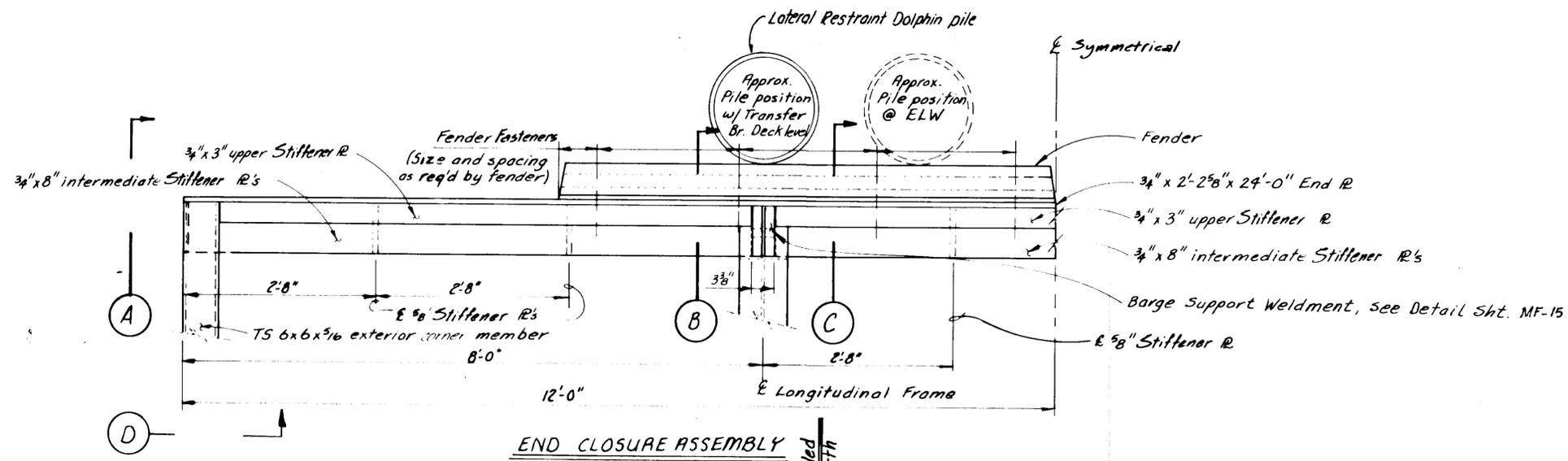


TYPICAL PARTIAL SECTION

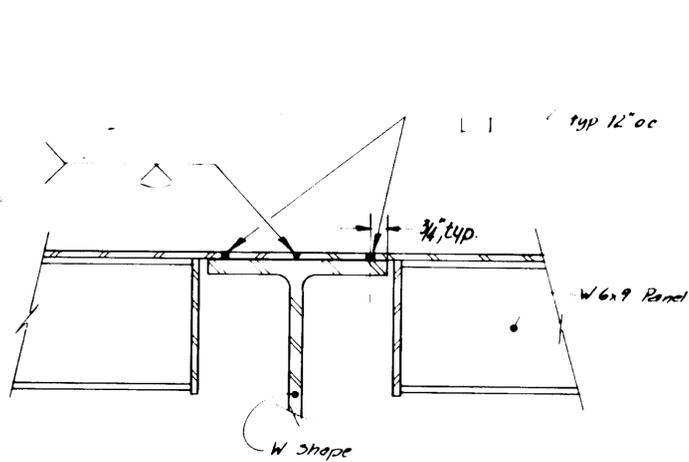


SECTION A

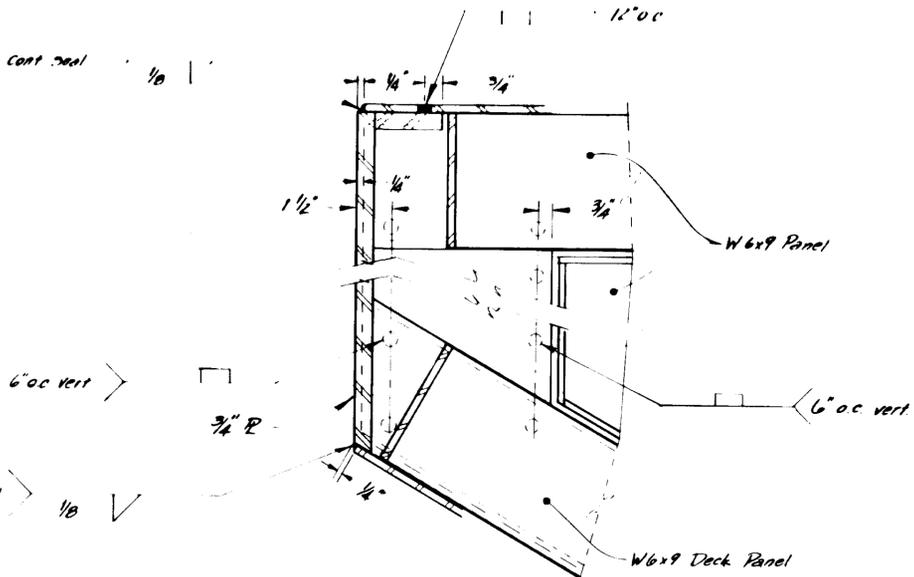
	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	Ketchikan		Alaska	
	PANELS B1-B11 & S1-S4			
DESIGNED <i>JHL</i>	CHECKED <i>JS</i>	DRAWN <i>JHL/CS</i>	DATE <i>2/87</i>	
PROJECT NUMBER FM-0922(2)	SHEET MF-17 OF 53			



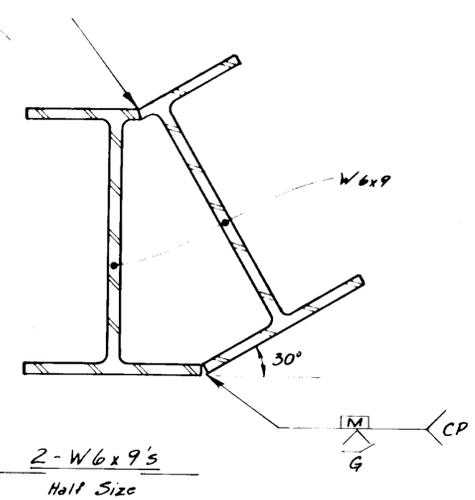
	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA			
	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	Ketchikan		Alaska	
END CLOSURE ASSEMBLY AND FENDER DETAILS				
DESIGNED <i>JAL</i>	CHECKED <i>LS</i>	DRAWN <i>ML/LS</i>	DATE <u>2-87</u>	
PROJECT NUMBER <u>FM-0922(2)</u>		SHEET <u>MF-18</u> OF <u>53</u>		



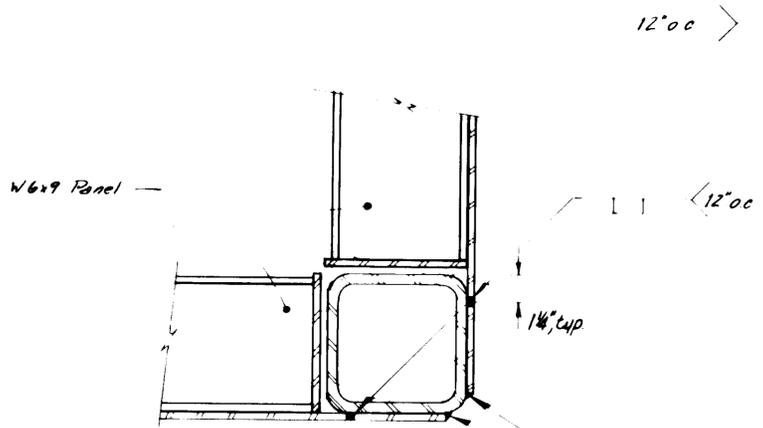
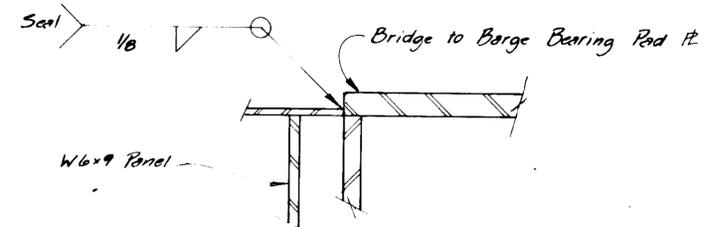
SECTION (B)
3" x 1'-0"



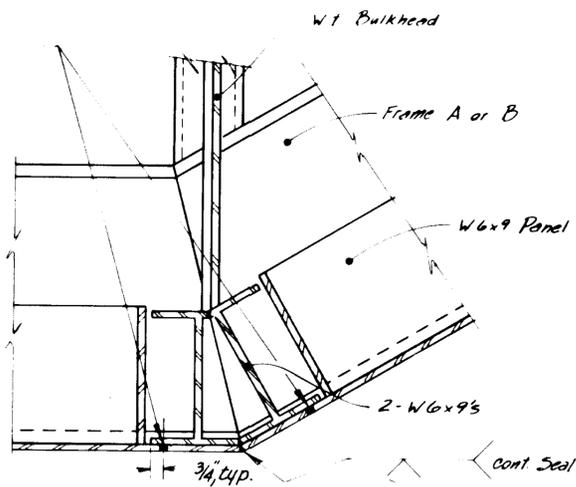
SECTION (A)
3" x 1'-0"



SECTION (D)
3" x 1'-0"



SECTION (C)
3" x 1'-0"

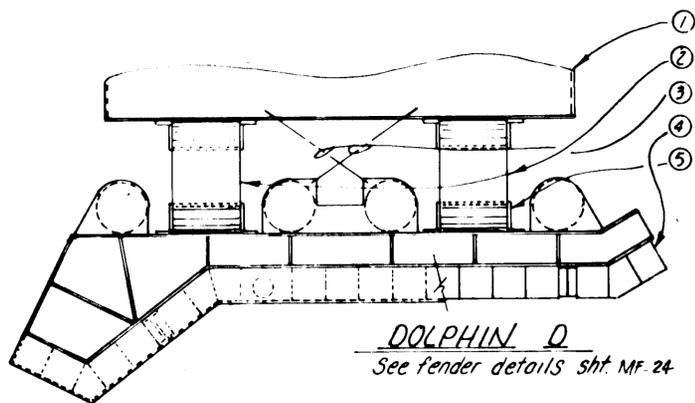
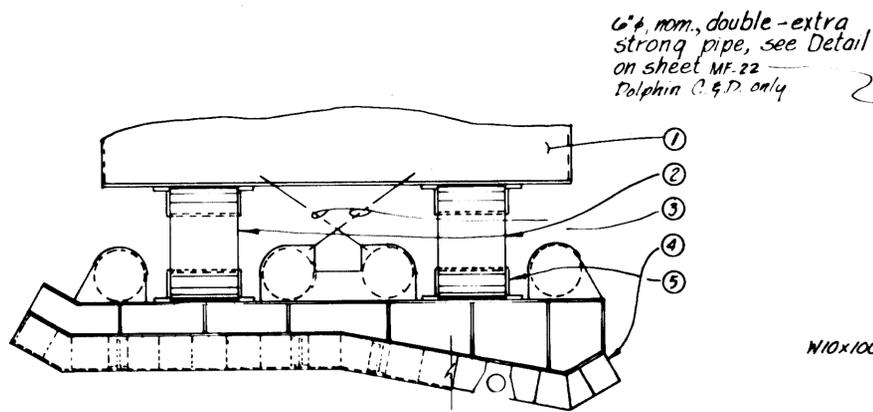
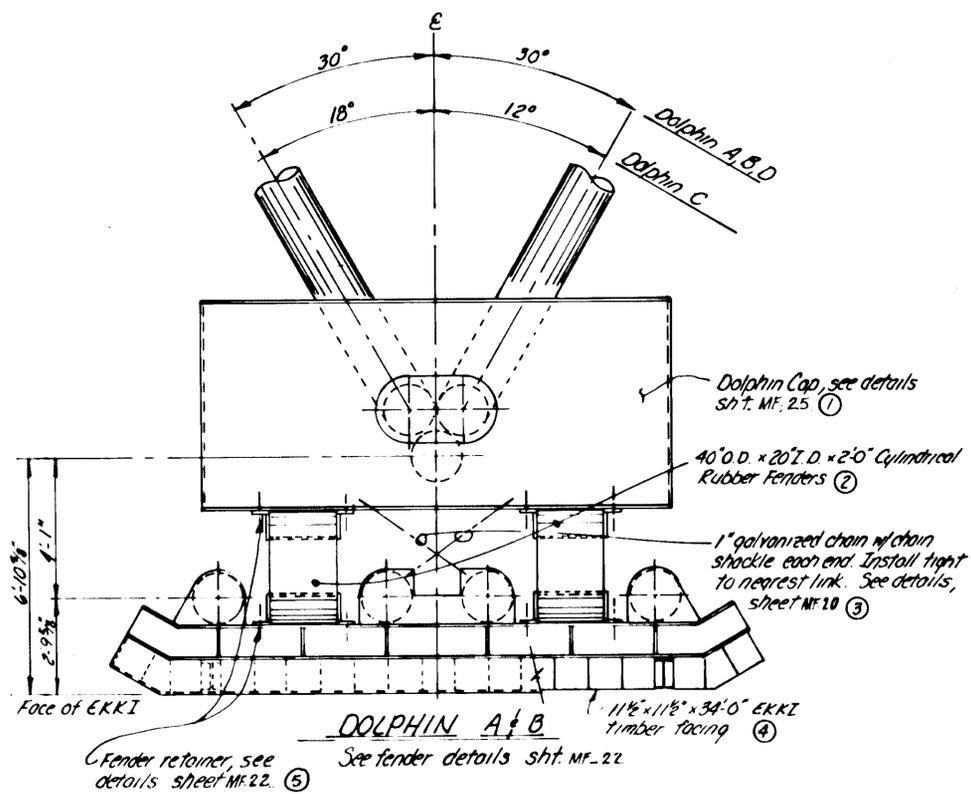


ELEVATION
BOTTOM PANEL CONN @ MAIN FRAME A OR B
3" x 1'-0"

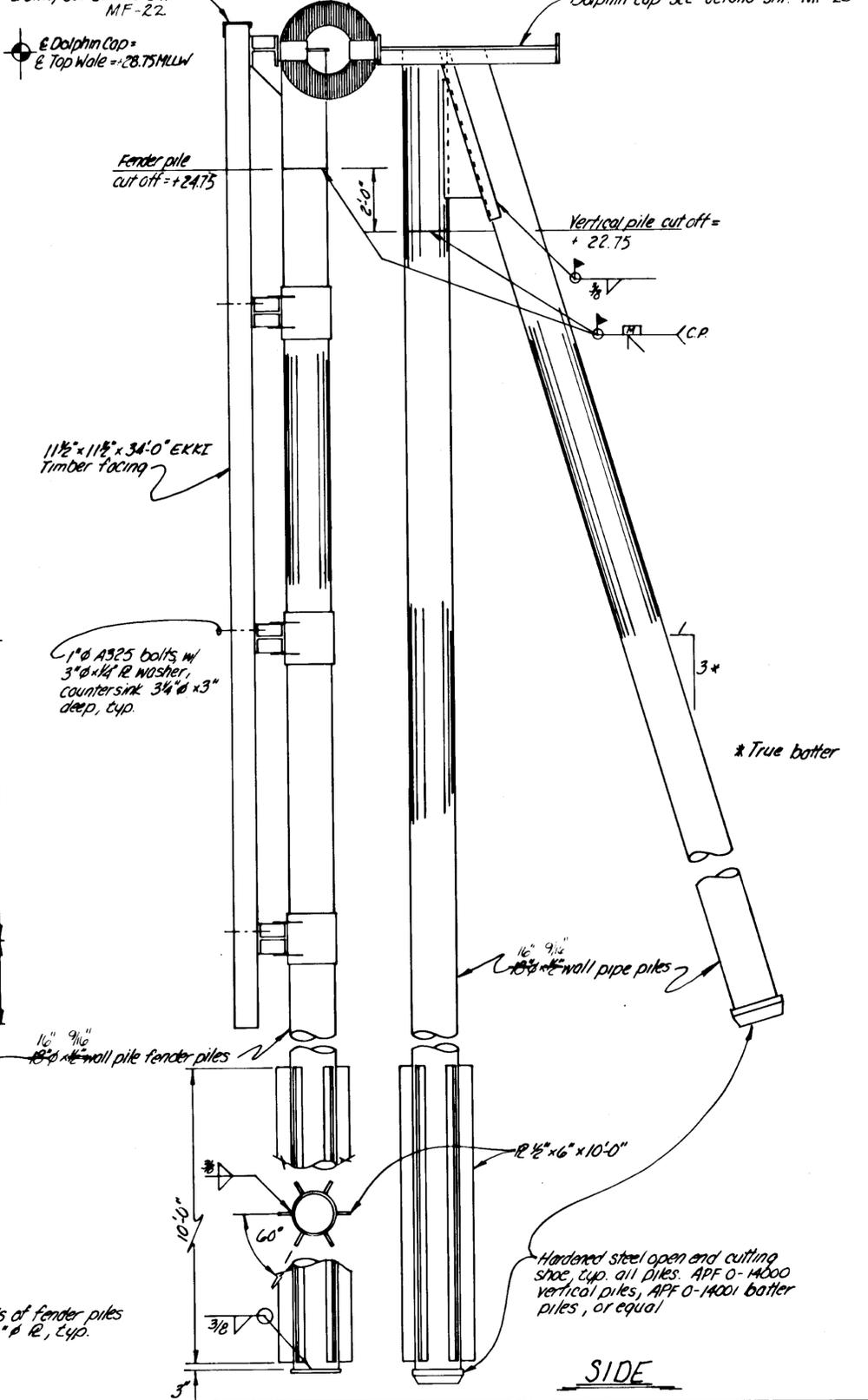
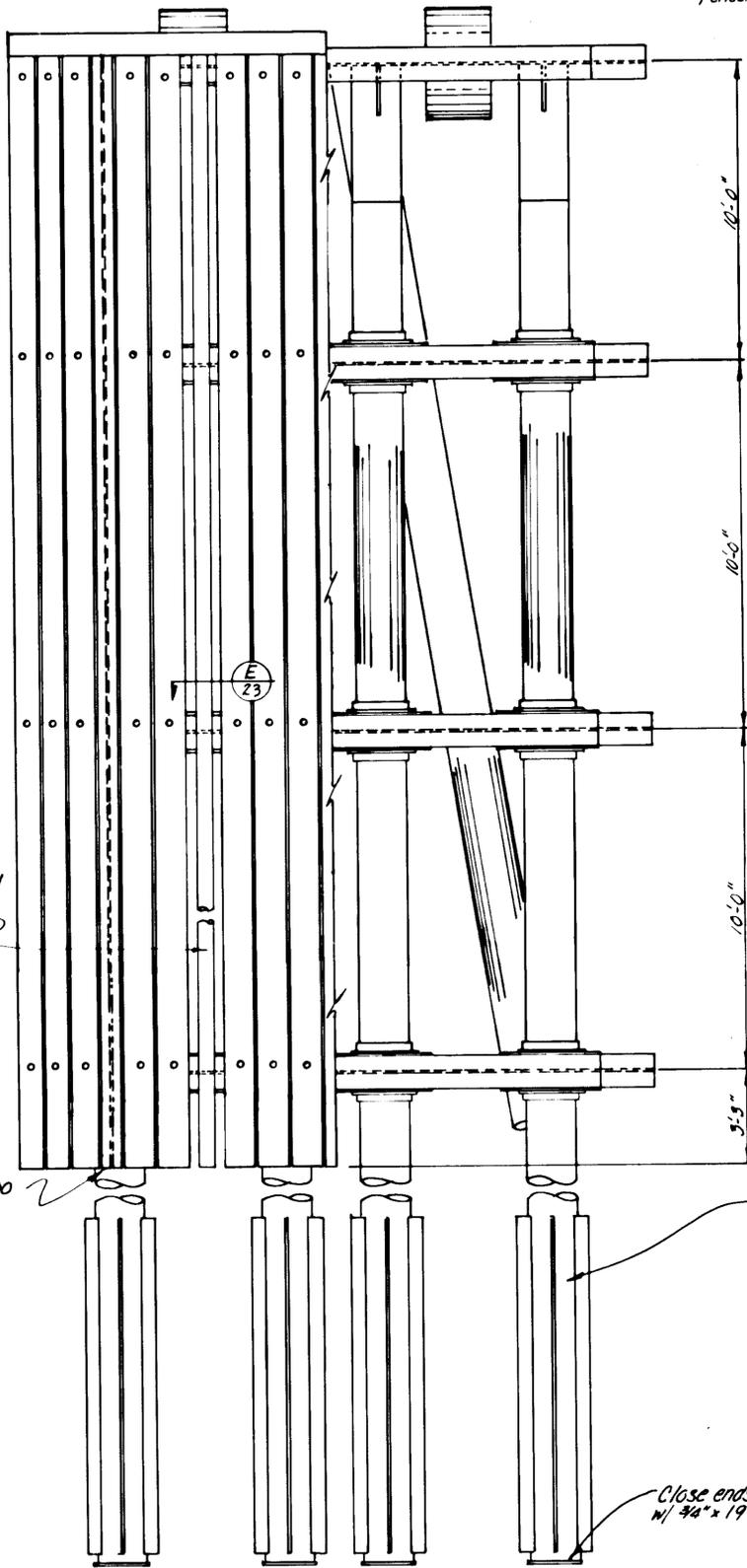
STAMP		DO NOT SCALE THIS DRAWING - USE DIMENSIONS	
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
Ketchikan		Alaska	
PANEL CONNECTION & MISC. DETAILS			
DESIGNED <i>JAL</i>	CHECKED <i>JS</i>	DRAWN <i>JAL</i>	DATE <i>2-87</i>
PROJECT NUMBER <i>FM-0922(2)</i>	SHEET <i>MF-19</i> OF <i>53</i>		



2/5/87

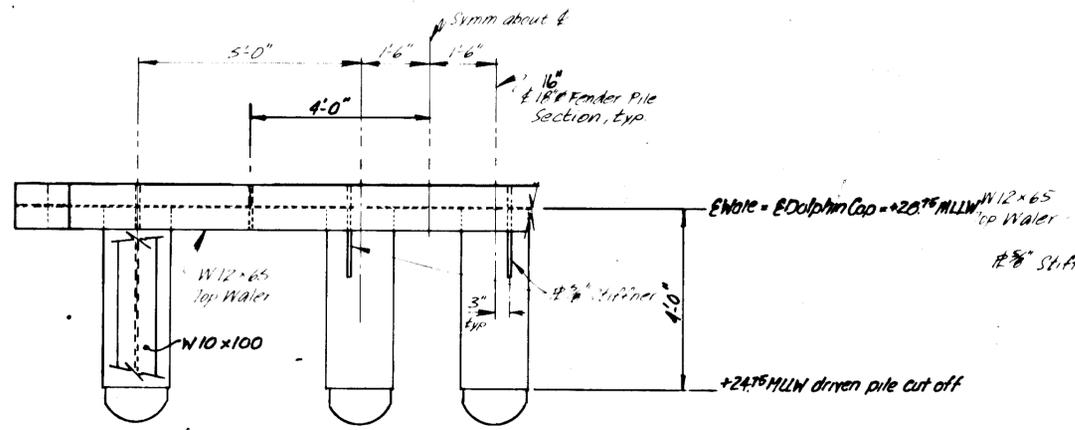


PLAN
 3/8" = 1'-0"

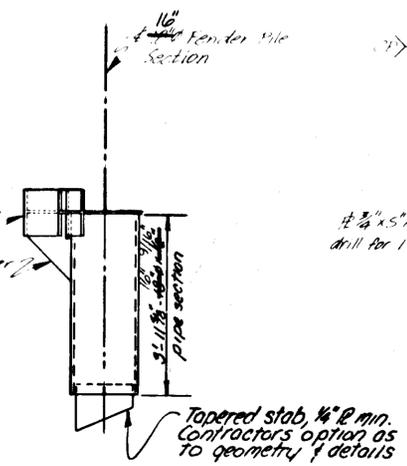


ELEVATION
 3/8" = 1'-0"

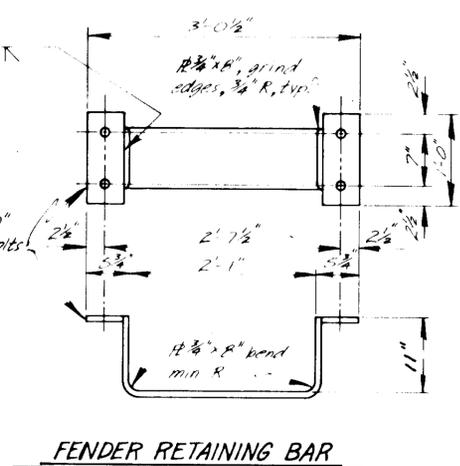
STAMP		DO NOT SCALE THIS DRAWING - USE DIMENSIONS	
		STATE OF ALASKA	
		DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES	
		KETCHIKAN	ALASKA
DOLPHIN PLAN & ELEVATIONS			
DESIGNED <i>JAL</i>	CHECKED <i>JS</i>	DRAWN <i>JAL</i>	DATE <i>2-87</i>
PROJECT NUMBER FM-0922(2)		SHEET MF-21 OF 53	



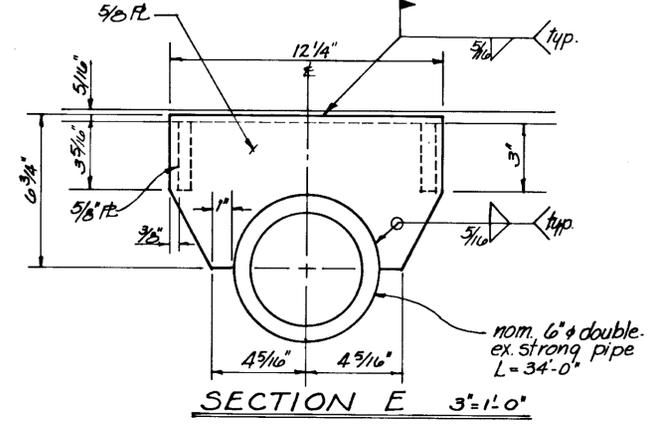
ELEVATION



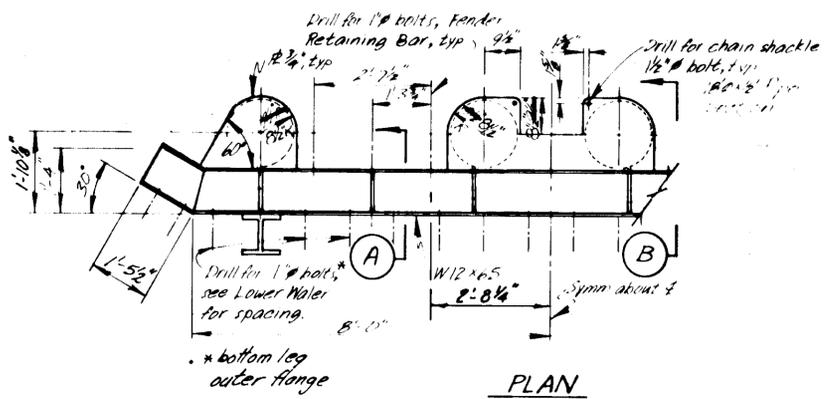
END ELEVATION



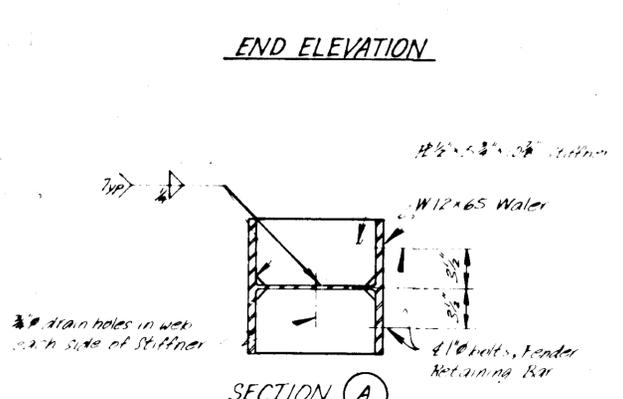
FENDER RETAINING BAR



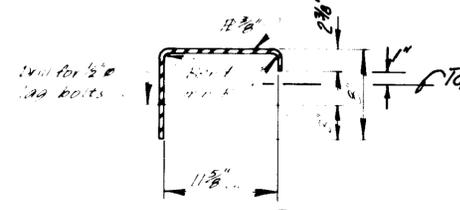
SECTION E 3'-1'-0"



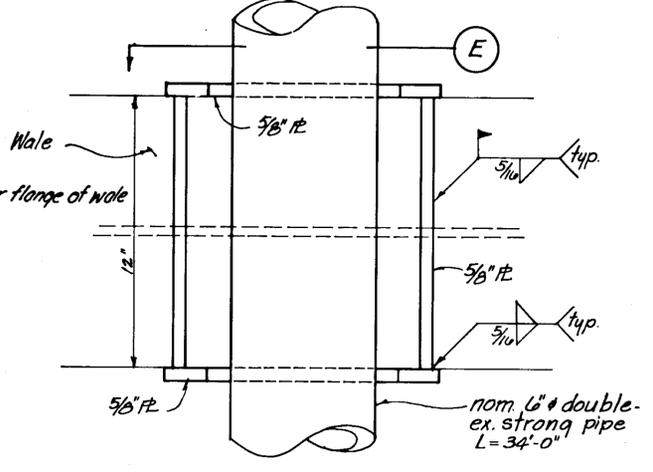
PLAN TOP RAIL & WALER



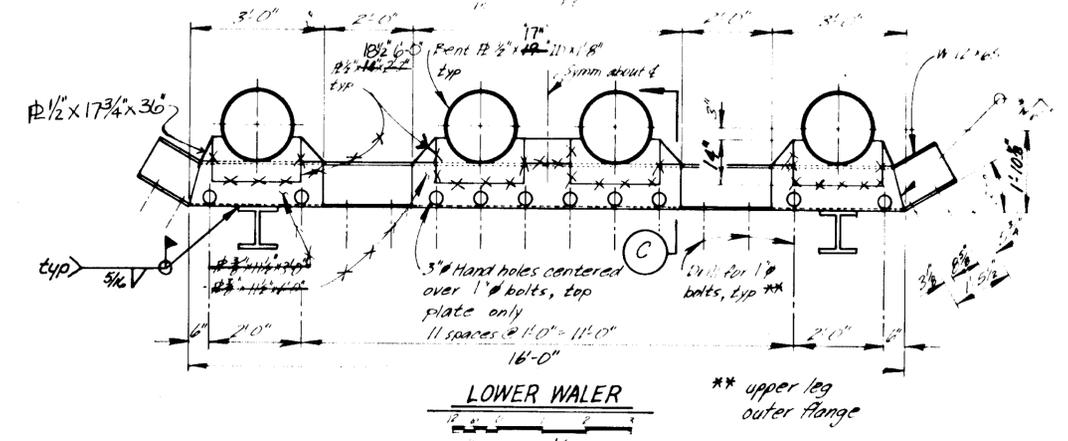
SECTION A



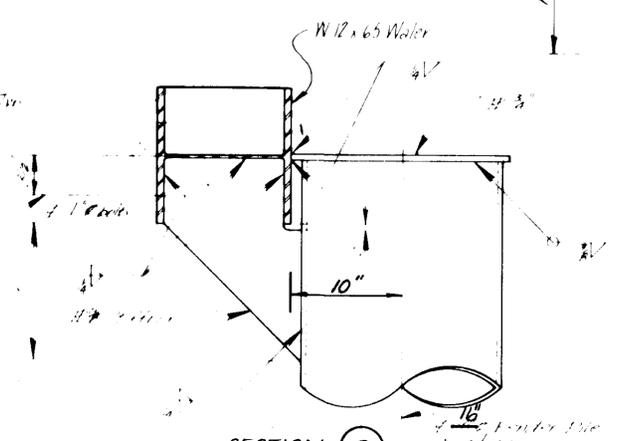
SECTION D



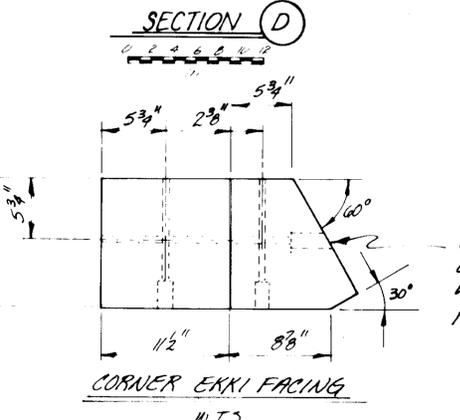
ELEVATION F 3'-1'-0"



LOWER WALER

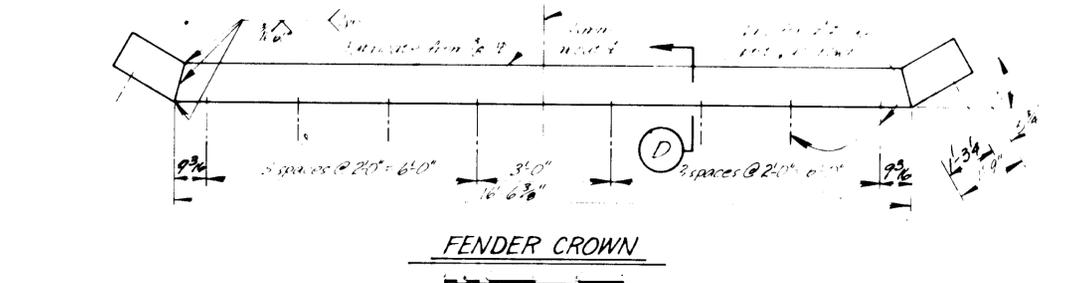


SECTION B

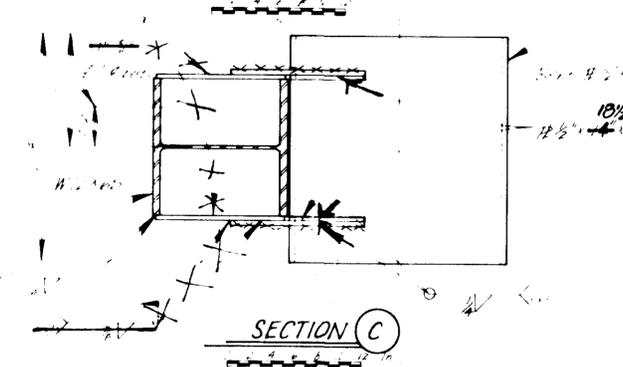


CORNER EKKI FACING N.T.S.

Drill and countersink 4" below facing to Wale bolt, as shown. 1" bolt, nut & washer, typ.

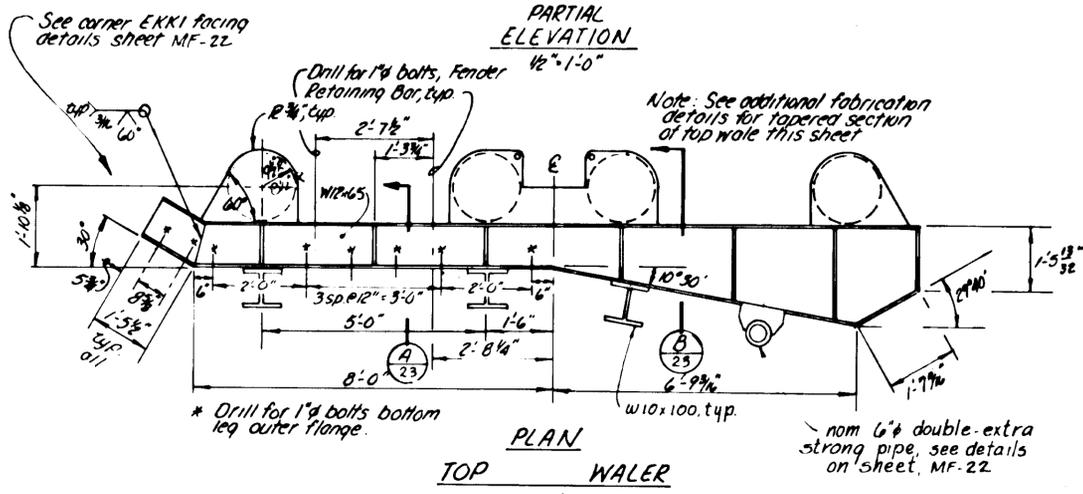
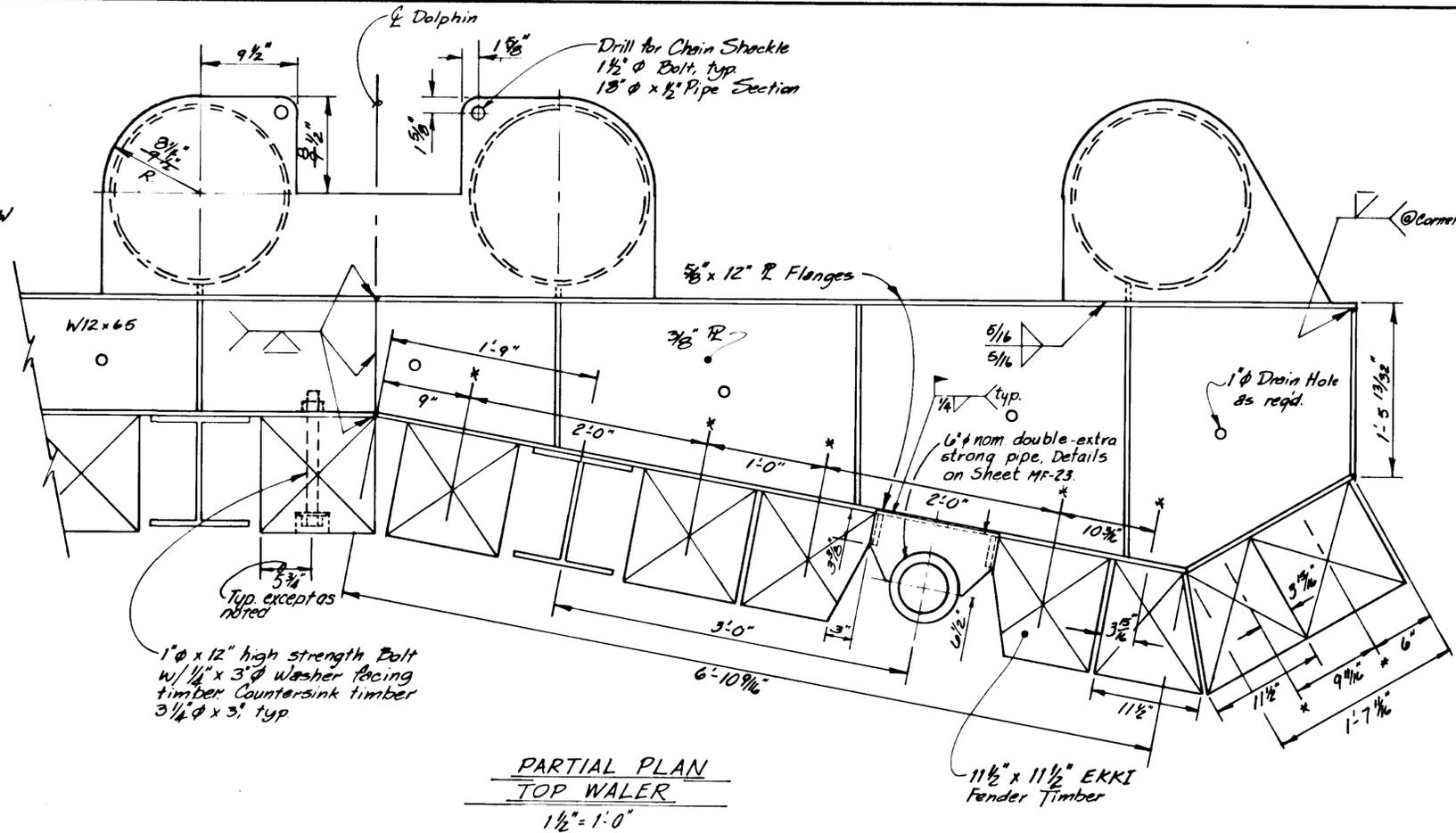
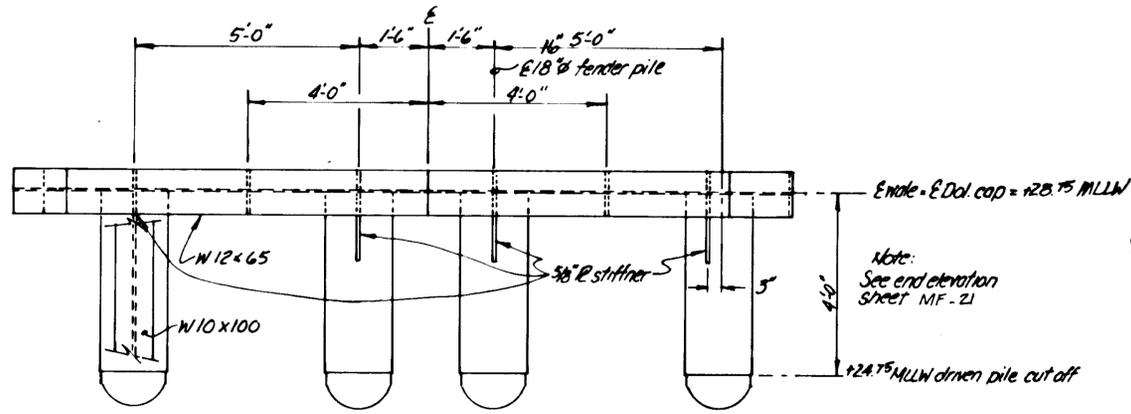


FENDER CROWN

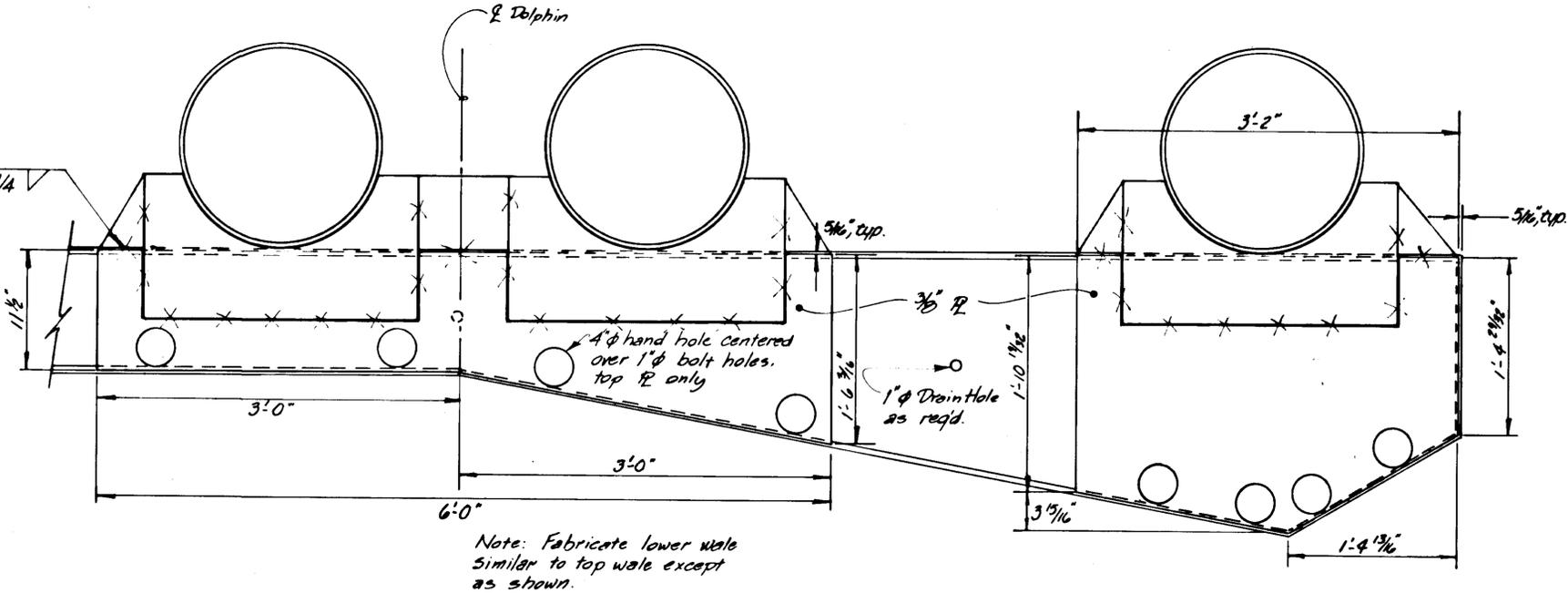
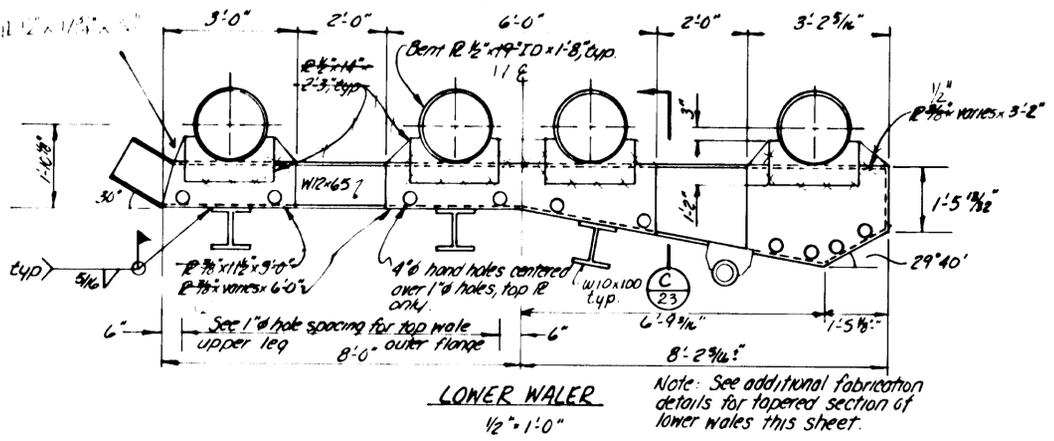


SECTION C

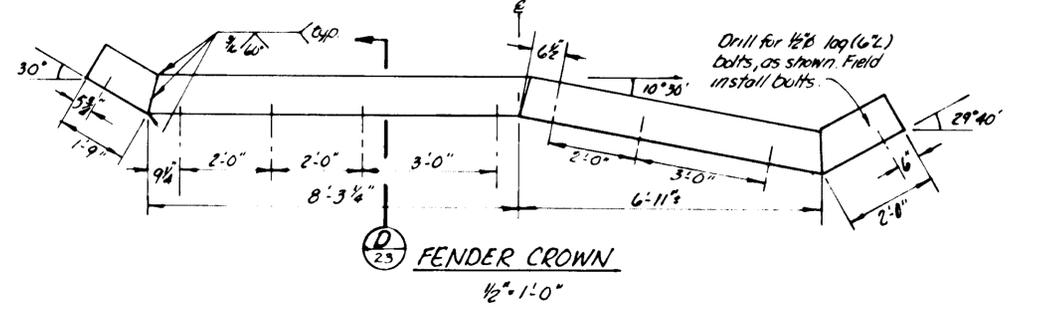
	DO NOT SCALE THIS DRAWING - USE DIMENSIONS			
	STATE OF ALASKA			
	DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
	Ketchikan		Alaska	
DOLPHIN FENDER DETAILS A' & B'				
DESIGNED BS	CHECKED S	DRAWN LVB	DATE 2-87	
PROJECT NUMBER FM-0922(2)	SHEET MF-22		OF 53	



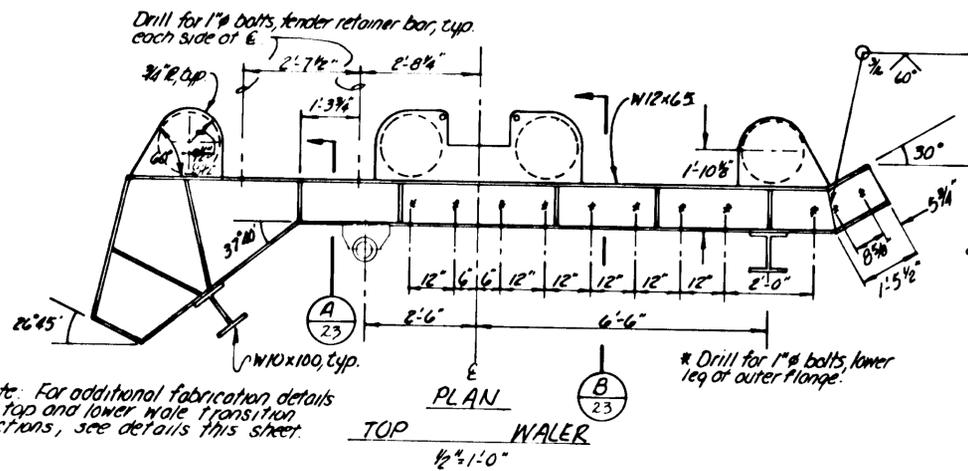
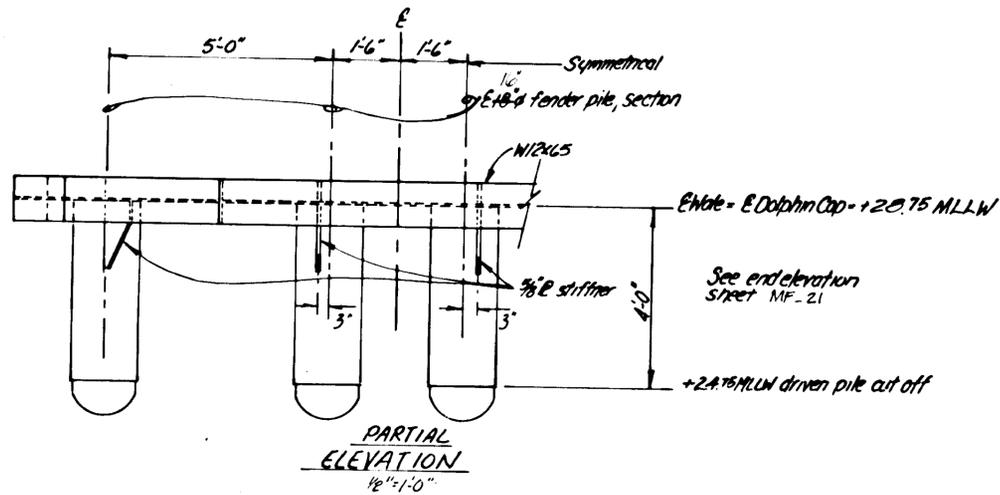
PARTIAL PLAN TOP WALER
1/2" = 1'-0"



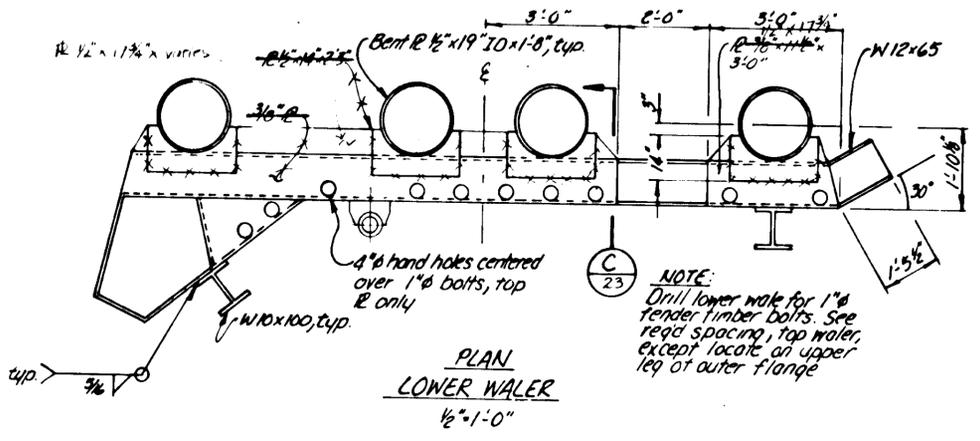
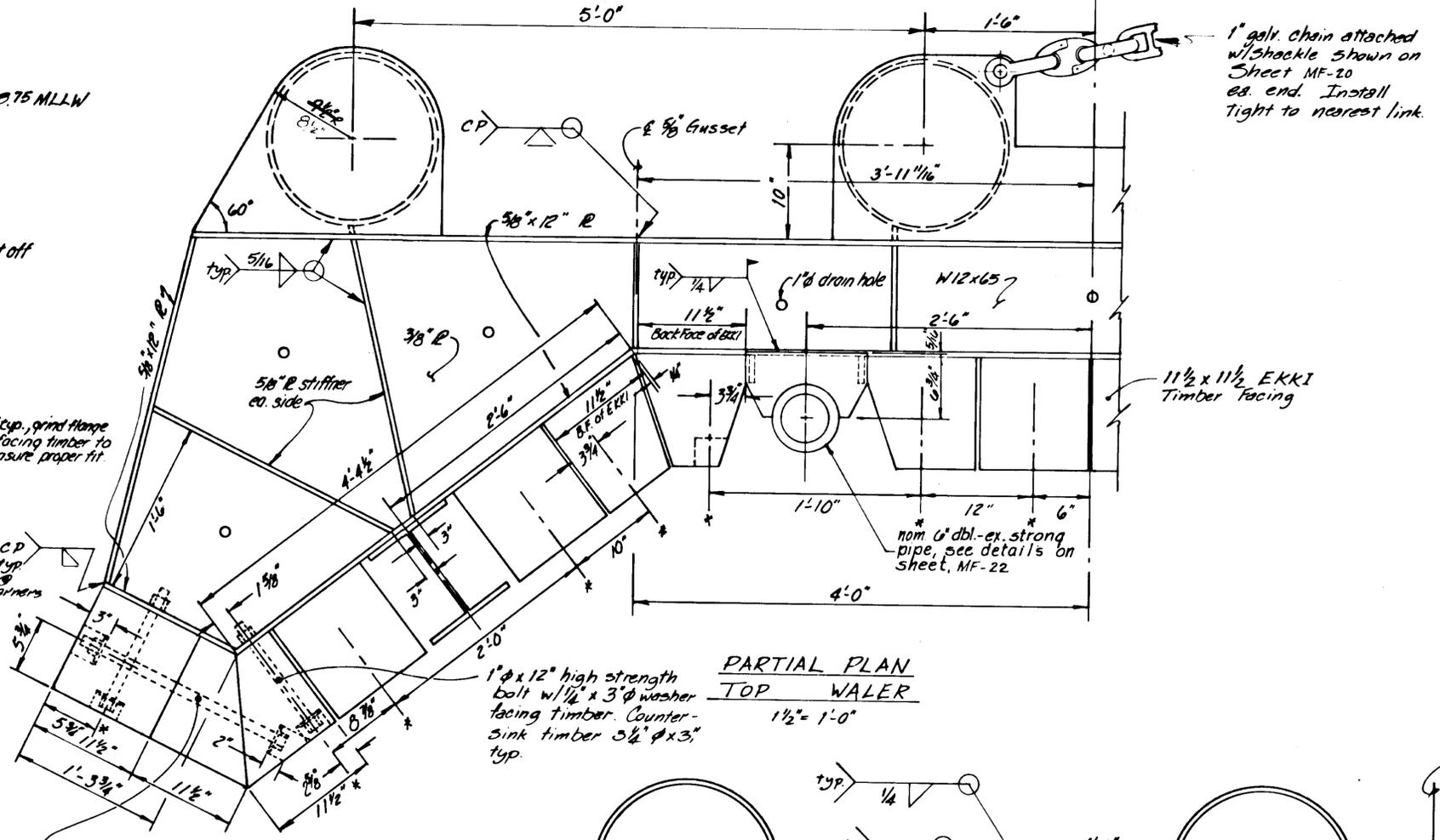
PARTIAL PLAN LOWER WALER
1/2" = 1'-0"



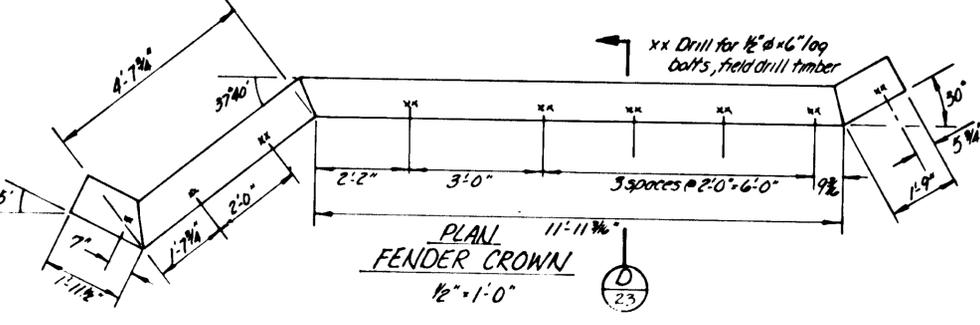
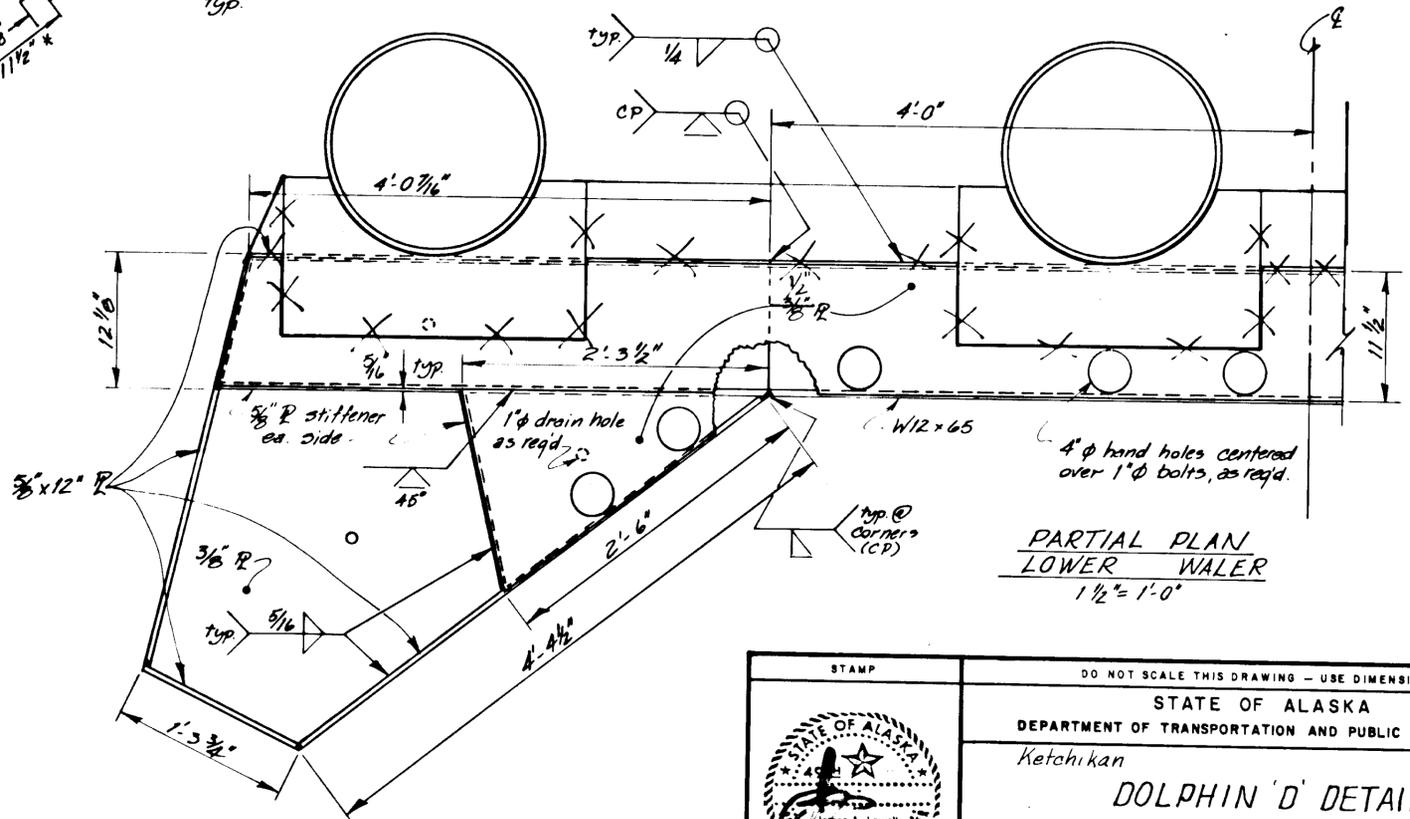
STAMP		DO NOT SCALE THIS DRAWING - USE DIMENSIONS	
STATE OF ALASKA DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES			
Ketchikan		Alaska	
DOLPHIN 'C' DETAILS			
DESIGNED <u>JAL</u>	CHECKED <u>JS</u>	DRAWN <u>JAL/DB</u>	DATE <u>2-87</u>
PROJECT NUMBER <u>FM-0922(2)</u>		SHEET <u>MF-23</u> OF <u>53</u>	



Note: For additional fabrication details of top and lower waler transition sections, see details this sheet.



1" x 2'-0" high strength bolt countersink 3/4" φ as shown. Stagger 6" below facing to wale bolt. Washers ea. end.



STAMP		DO NOT SCALE THIS DRAWING - USE DIMENSIONS	
		STATE OF ALASKA	
		DEPARTMENT OF TRANSPORTATION AND PUBLIC FACILITIES	
		Ketchikan	Alaska
DOLPHIN 'D' DETAILS			
DESIGNED JAL	CHECKED JS	DRAWN JAL/DB/GB	DATE 2-87
PROJECT NUMBER FM-0922(2)	SHEET MF-24		OF 53

