

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
&  
PUBLIC FACILITIES

PROPOSED HIGHWAY PROJECT  
DPS-0958(1)  
GASTINEAU CHANNEL CROSSING  
PHASE I

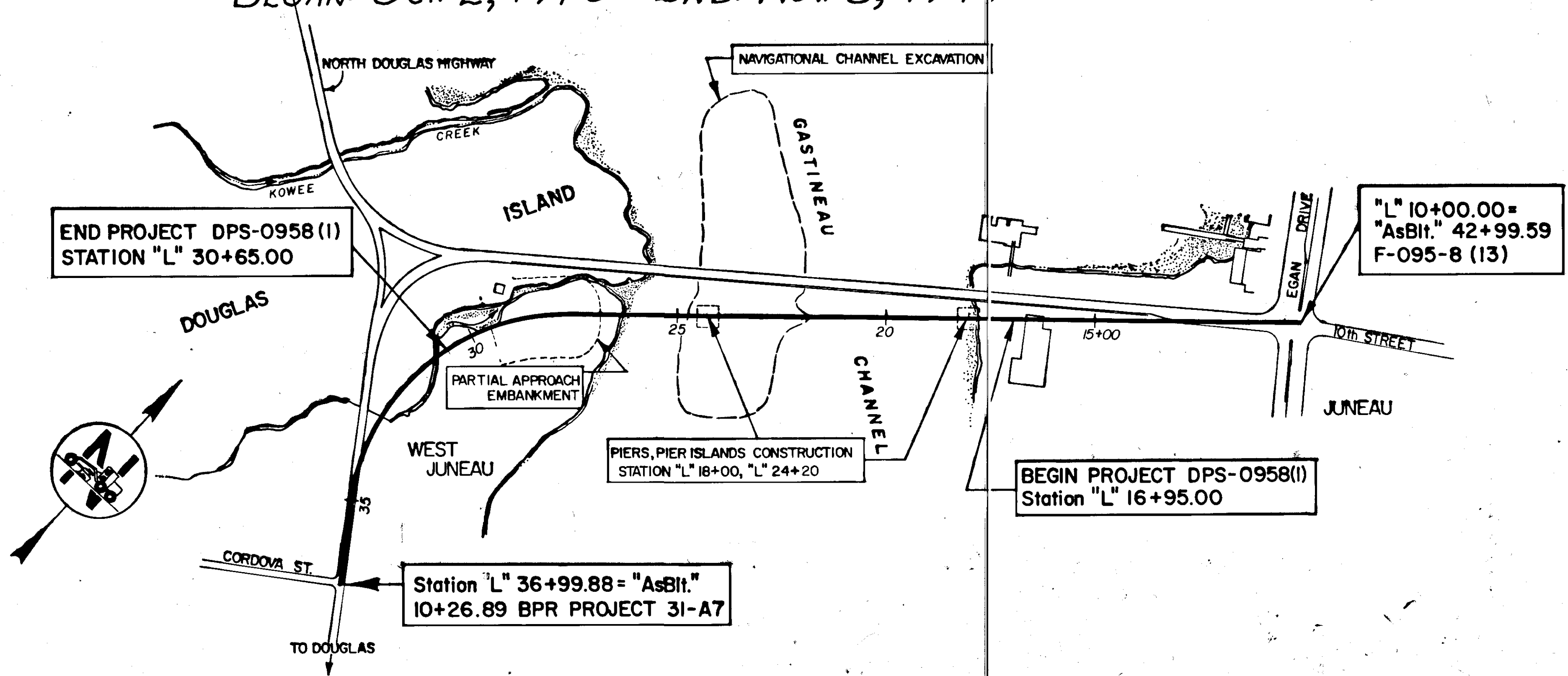
PIERS, PIER ISLANDS, STONE COLUMNS,  
PARTIAL APPROACH EMBANKMENT &  
NAVIGATIONAL CHANNEL EXCAVATION

"AS BUILT PLANS  
CONTRACTOR- MANSON-OSBERG COMPANY  
PROJECT ENGINEER: VERN V. HIRSCH  
BEGAN: OCT. 2, 1978 - END: NOV. 5, 1979

STATE	PROJECT	SHEET NO.	TOTAL SHEETS
ALASKA	DPS-0958(1)	1	18

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The following Standard Drawings apply to this project: A-1, C-00.04, C-10.02, C-11.02, D-20.10, U-03.00



STATE OF ALASKA  
DIVISION OF HIGHWAYS

APPROVED  
*Wallace K. Williams* DATE 5/4/78  
SOUTHEASTERN REGION  
DESIGN/CONSTRUCTION ENGINEER

STATE OF ALASKA  
DEPARTMENT OF TRANSPORTATION  
&  
PUBLIC FACILITIES

APPROVED  
*R. D. Shumway* Date 5/12/78  
DIRECTOR-HIGHWAY DESIGN & CONSTRUCTION

## ESTIMATE OF QUANTITIES

### VERTICAL CONTROL

The datum employed was based upon USC&GS 1960 MLLW, Elevation of 0.0. Tidal Bench Mark #21, located in the circular base for a flagpole in front of the Alaska National Guard Armory, is 25.93 feet above MLLW, and its elevation is 25.93. (MLLW=Mean Lower Low Water)

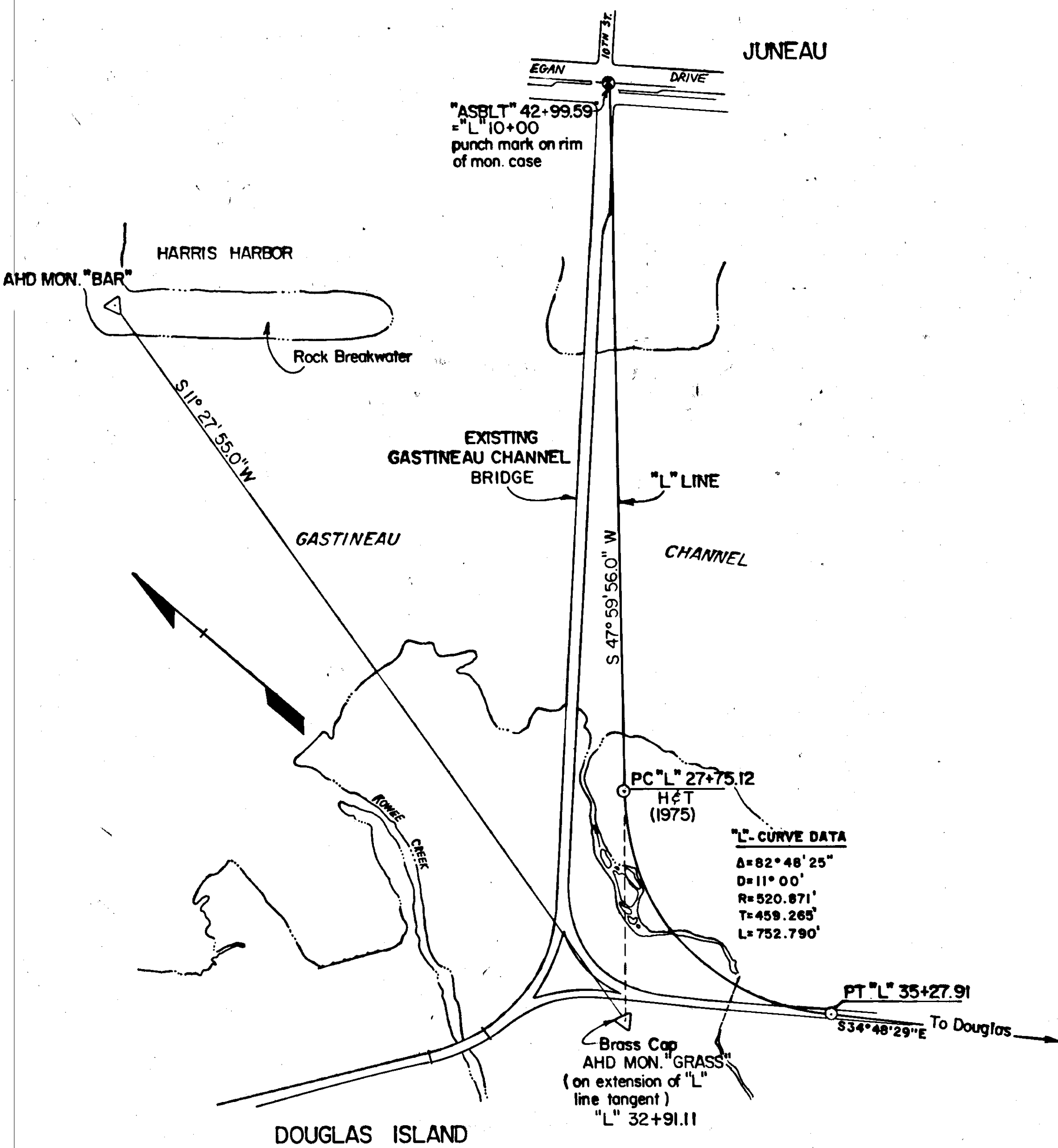
### HORIZONTAL CONTROL

Alaska Highway Department (AHD) Monuments "BAR" (N 2 363 998.907, E 2 538 876.690) and "GRASS" (N 2 361 986.725, E 2 538 443.832) are used as base reference line; the mean azimuth correction is  $\alpha = -0^{\circ} 40' 30''$  and the mean scale factor = 0.999933.

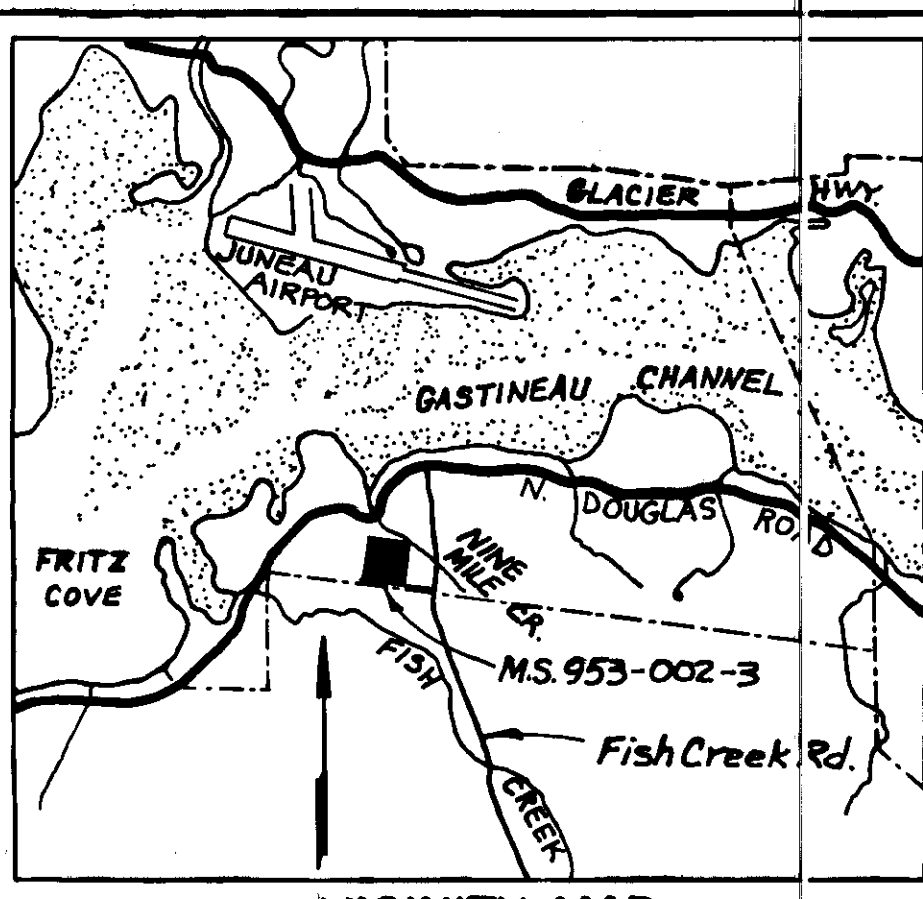
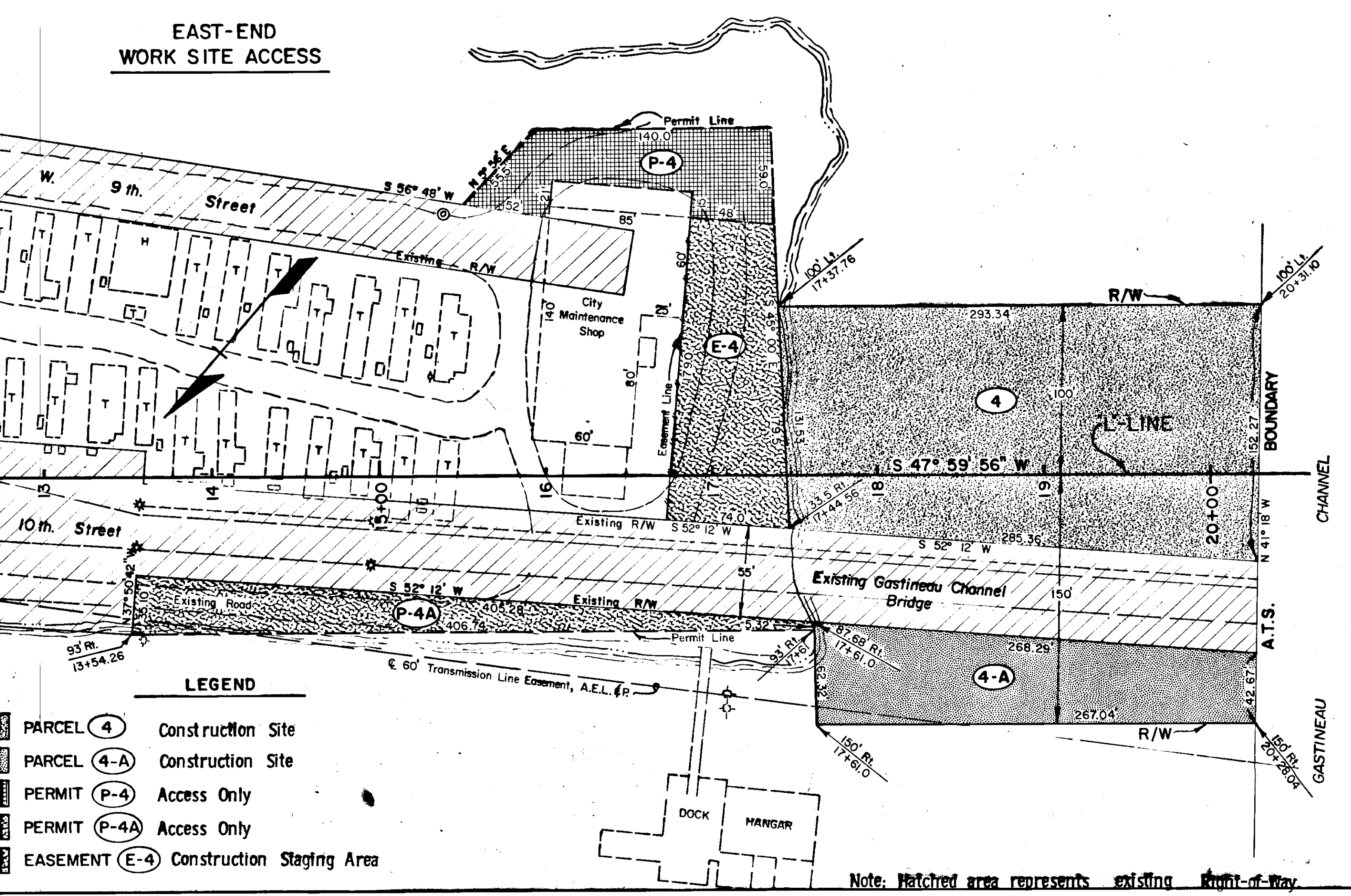
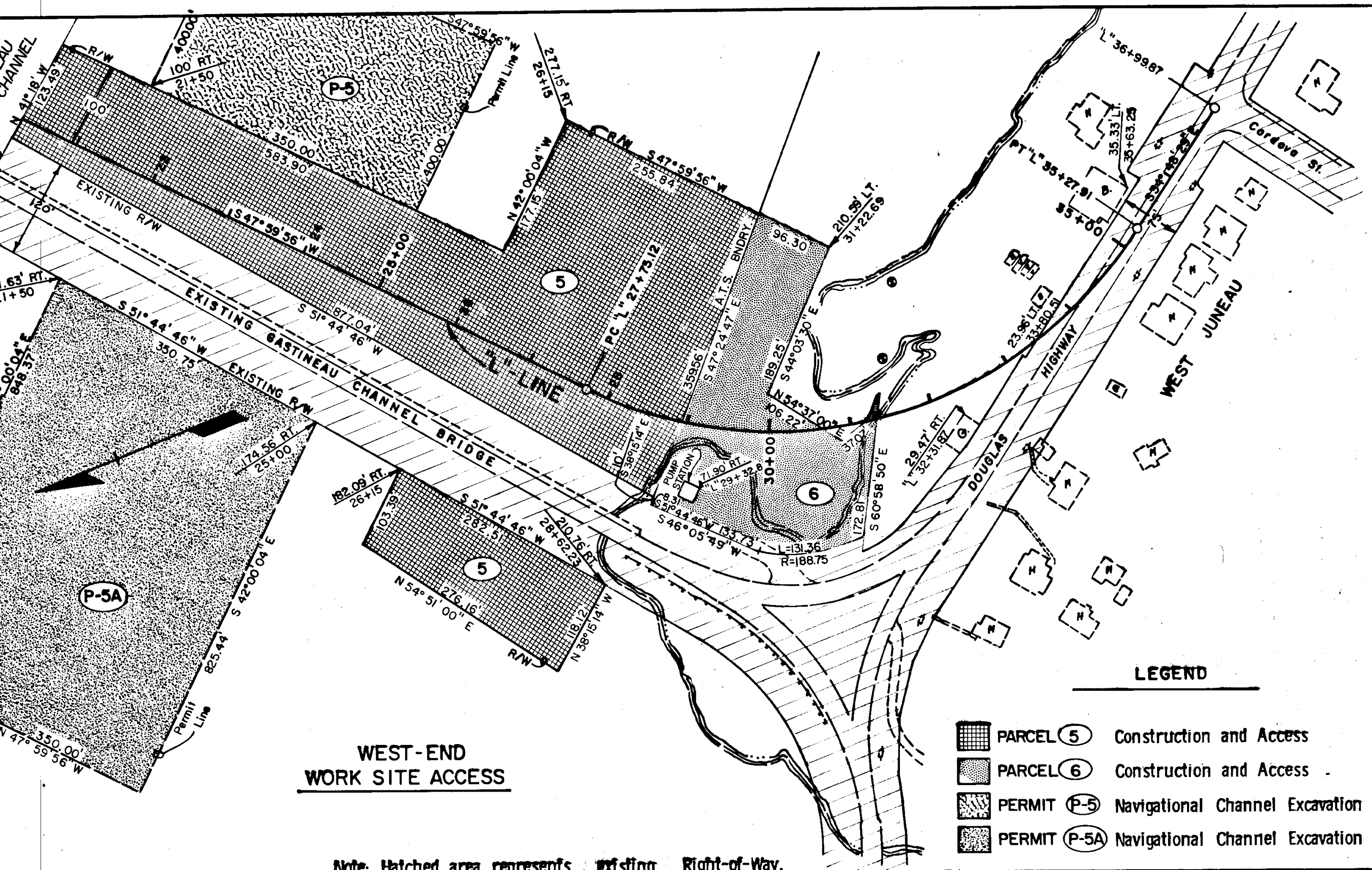
## ESTIMATE OF QUANTITIES

ITEM NO.	ITEM	UNIT	ROADWAY SUBTOTAL	BRIDGE SUBTOTAL	TOTAL
1	Furnishing and Maintaining Engineering Facilities	Lump Sum	All Req'd	All Req'd	All Req'd
110 (1)	Mobilization	Lump Sum	All Req'd	All Req'd	All Req'd
111 (1)	Temporary Erosion and Pollution Control	Con't Sum	All Req'd	All Req'd	All Req'd
112 (1)	Training Program in Accordance with FHWA Order Interim 7-2(2)	Con't Sum	All Req'd	All Req'd	All Req'd
114 (1)	Construction Engineering by the Contractor	Lump Sum	All Req'd	All Req'd	All Req'd
203 (3A)	Unclassified Excavation At Pier 2	Cubic Yard		4,900	4,900
203 (3B)	Navigational Channel Excavation	Cubic Yard	45,218		45,218
203 (5B)	Borrow	Ton	48,602		48,602
203 (6B)	Selected Material	Ton	954	46,260	47,214
207 (1)	Temporary Access Fill	Lump Sum		All Req'd	All Req'd
501 (5)	Class X Concrete	Lump Sum		All Req'd	All Req'd
503 (1)	Reinforcing Steel	Lump Sum		All Req'd	All Req'd
508 (1)	Stone Columns	Lump Sum		All Req'd	All Req'd
509 (1)	4' Diameter Steel Pipe Piles, Furnished	Lin. Foot		4,268	4,268
509 (2)	4' Diameter Steel Pipe Piles, Driven	Each		28	28
604 (2)	Sanitary Sewer Manhole	Each	3		3
604 (3)	Reconstruct Existing Manhole	Each	1		1
604 (7)	Sanitary Sewer Manhole, Pile Supported	Each	1		1
611 (2A)	Riprap, Class I	Ton	513		513
611 (2B)	Riprap, Class 11A	Ton	5,331	18,900	24,231
626 (1A)	8" Sewer Conduit	Lin. Foot	150		150
626 (1C)	12" Sewer Conduit, Force Main	Lin. Foot	350		350
626 (1E)	18" Sewer Conduit	Lin. Foot	100		100
626 (2)	Sleeved Sewer Conduit	Lin. Foot	220		220

BASIS OF ESTIMATE	
ITEM	FACTOR
203 (5B)	1.80 Tons/Cubic Yard
203 (6B)	1.80 Tons / Cubic Yard
611 (2A)	1.90 Tons / Cubic Yard
611 (2B)	1.90 Tons / Cubic Yard



"L" CURVE DATA	
$\Delta = 82^{\circ} 48' 25''$	
$D = 11^{\circ} 00'$	
$R = 520.871'$	
$T = 459.265'$	
$L = 752.790'$	



**STATE FURNISHED MATERIALS SITE**

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	DPS-0958 (I)	1978	3	18

**DESCRIPTION**

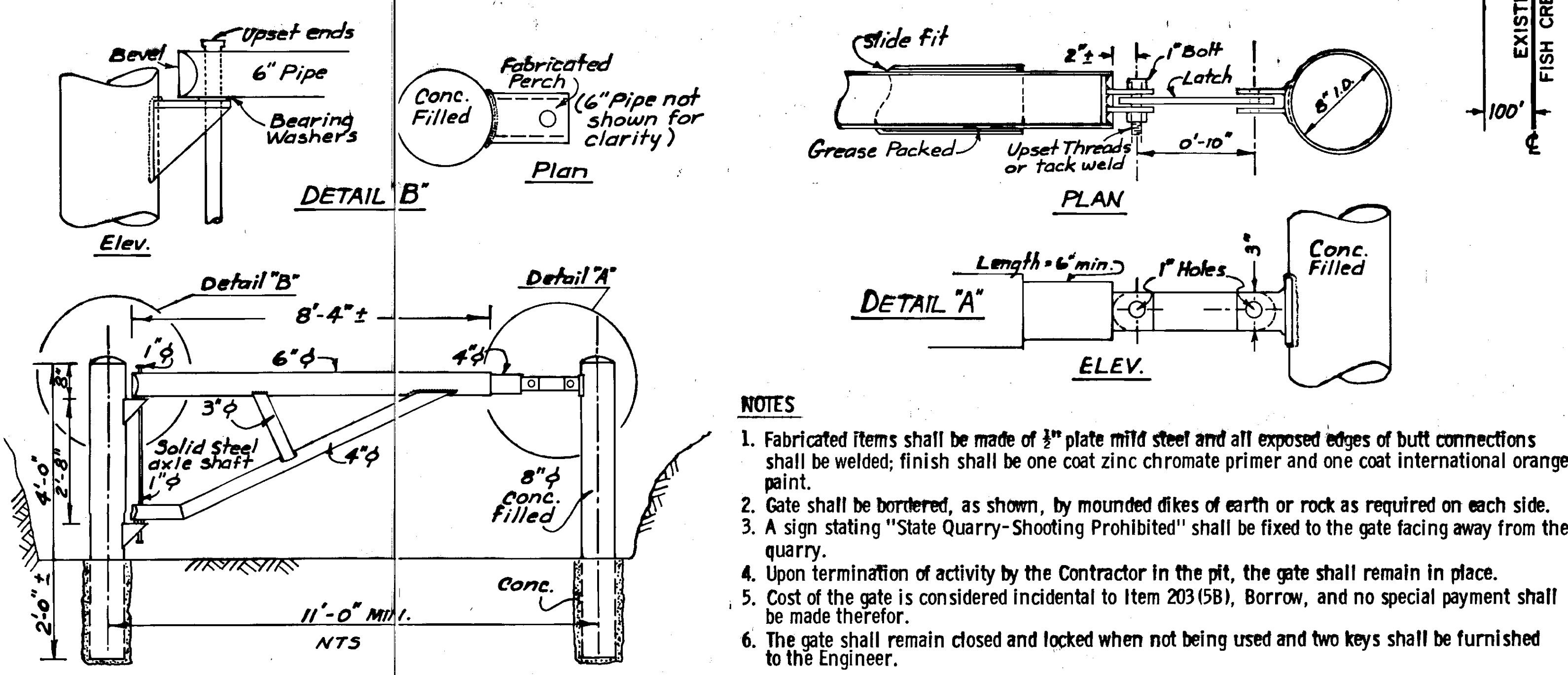
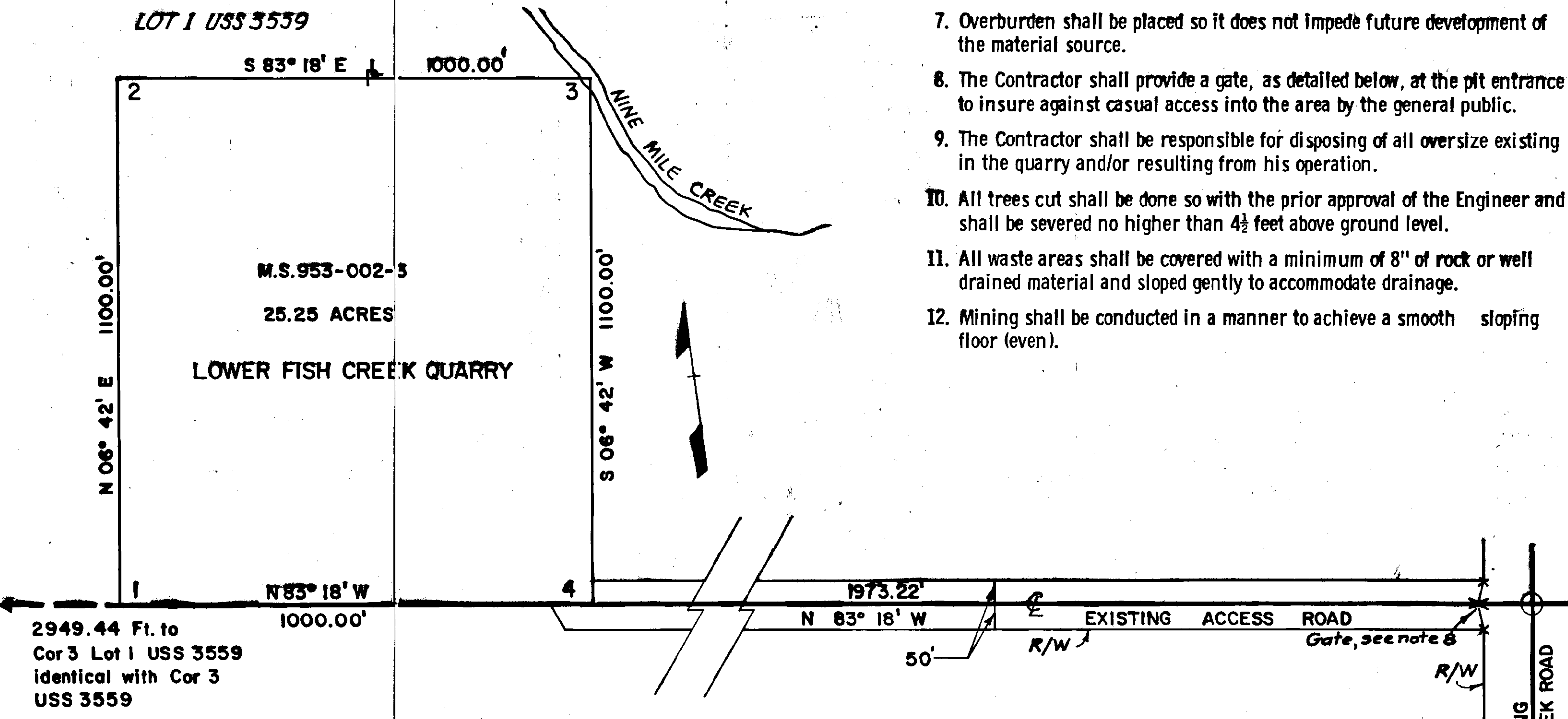
M. S. 953-002-3

A portion of Lot 1, USS 3559, Section 11, R66E, T41S CRM (Protracted) more particularly described as follows:

Beginning at Cor. No. 1 M. S. 953-002-3, a point on line 2-3 USS 3559 common with a line of US S 5504 from which Cor. No. 3, Lot USS 3559 common with Cor. 3 USS 3559 BEARS N 83° 18' W a distance of 2,949.44 feet; Thence N 6° 42' E, a distance of 1100 feet to Cor. 2 M.S. 953-002-3; Thence S 83° 18' E, a distance of 1,000.00 feet to Cor. 3; Thence S 6° 42' W, a distance of 1100 feet to Cor. 4 M.S. 953-002-3; Thence N 83° 18' W a distance of 1,000.00 feet to Cor. 1 M.S. 953-002-3, the place of Beginning: Containing in all 25.25 acres.

**GENERAL NOTES**

- The access road to the Quarry shall be graded and/or resurfaced periodically and upon completion to retain quality; access to the quarry shall not be obstructed except through use of the gate, as detailed below.
- If material is to be excavated in such a manner as to leave near-vertical faces, no unbentched face shall be left greater than 20' in height.
- On bentched faces, the benches shall be accessible and of sufficient width to allow future development of this area as a source of material.
- No excavation shall remain upon completion of materials removal which can impound water.
- No stockpile shall remain upon completion of materials removal unless approved by the Engineer.
- Upon completion of materials removal, no equipment or debris shall remain in the area. Clean-up shall be performed to the satisfaction of the Engineer.
- Overburden shall be placed so it does not impede future development of the material source.
- The Contractor shall provide a gate, as detailed below, at the pit entrance to insure against casual access into the area by the general public.
- The Contractor shall be responsible for disposing of all oversize existing in the quarry and/or resulting from his operation.
- All trees cut shall be done so with the prior approval of the Engineer and shall be severed no higher than 4 1/2 feet above ground level.
- All waste areas shall be covered with a minimum of 8" of rock or well drained material and sloped gently to accommodate drainage.
- Mining shall be conducted in a manner to achieve a smooth sloping floor (even).



**NOTES**

- Fabricated items shall be made of 3/8" plate mild steel and all exposed edges of butt connections shall be welded; finish shall be one coat zinc chromate primer and one coat international orange paint.
- Gate shall be bordered, as shown, by mounded dikes of earth or rock as required on each side.
- A sign stating "State Quarry-Shooting Prohibited" shall be fixed to the gate facing away from the quarry.
- Upon termination of activity by the Contractor in the pit, the gate shall remain in place.
- Cost of the gate is considered incidental to Item 203 (5B), Borrow, and no special payment shall be made therefor.
- The gate shall remain closed and locked when not being used and two keys shall be furnished to the Engineer.

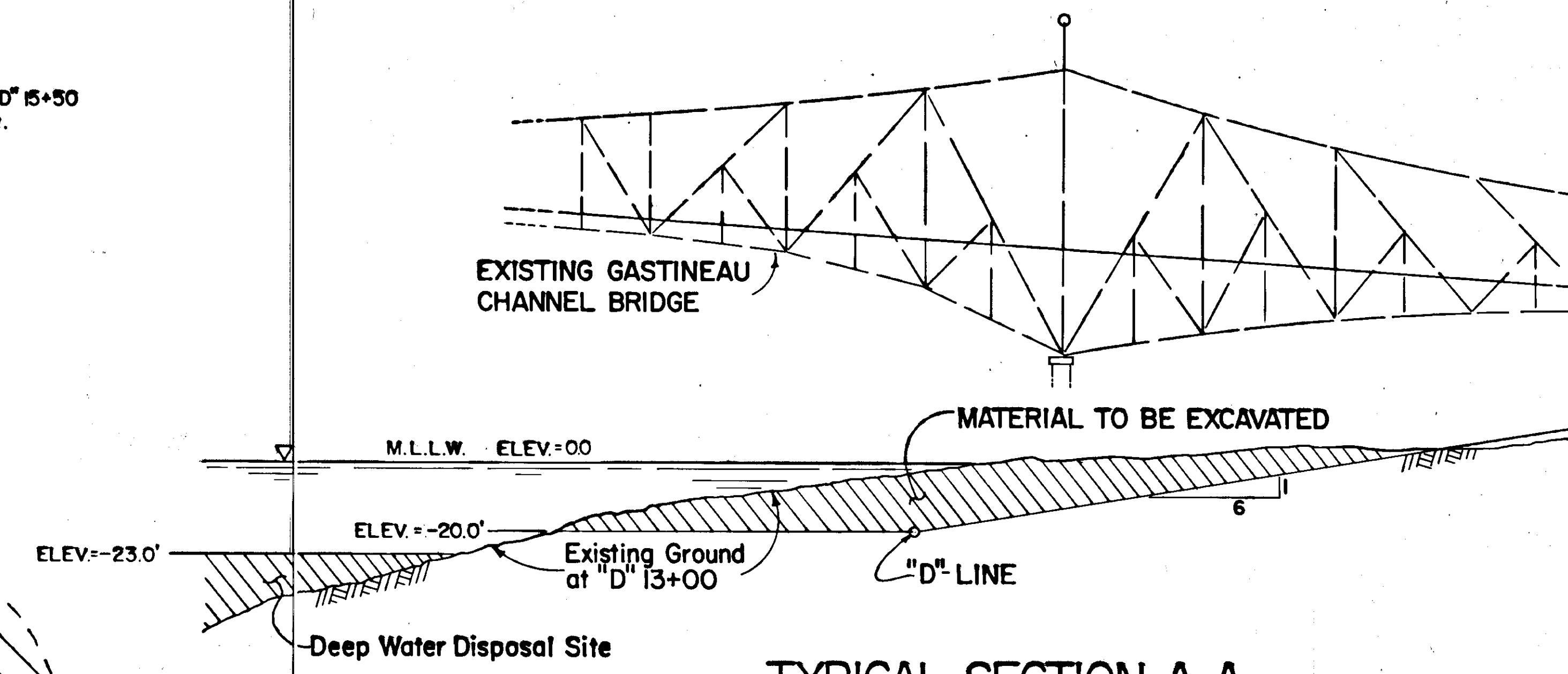
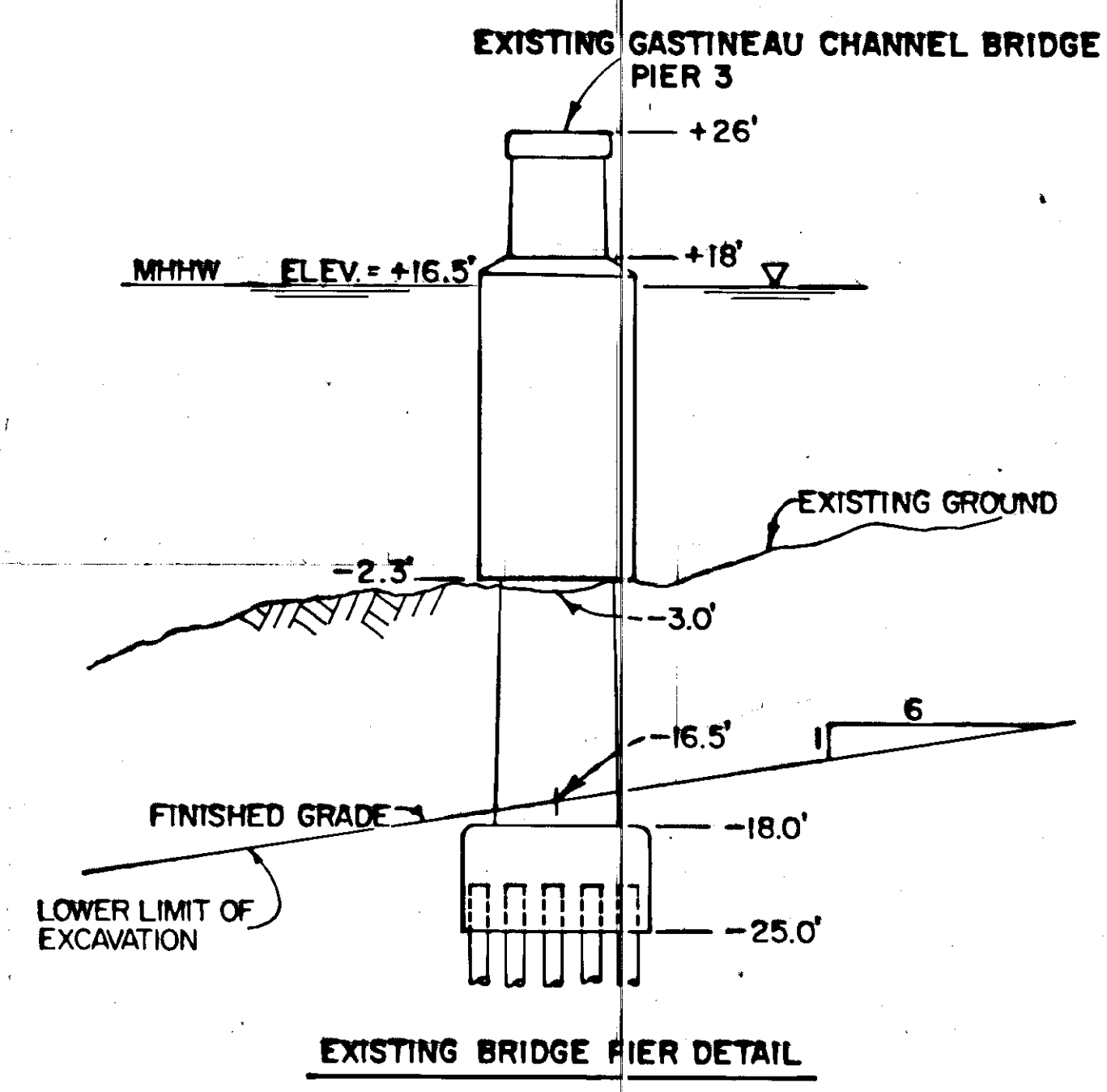
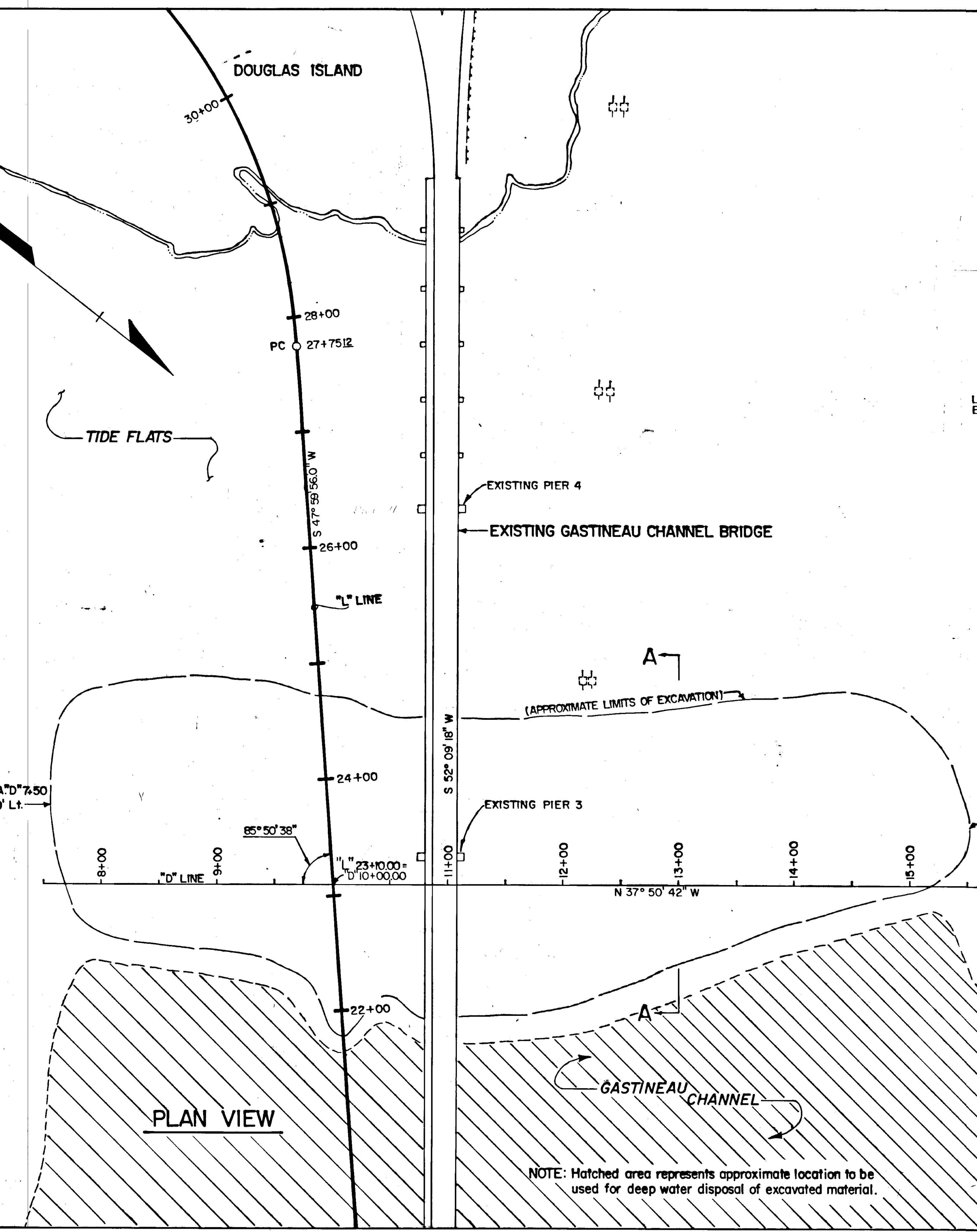
**PIT ENTRANCE SECURITY GATE DETAIL**

STATE	PROJECT DESIGNATION	YEAR	SHEET NO.	TOTAL SHEETS
ALASKA	DPS-0958(1)	1978	4	18

# NAVIGATIONAL CHANNEL EXCAVATION

### GENERAL NOTES

- EXCAVATION AND DEPOSITION OF EXCAVATED MATERIAL WILL NOT BE PERMITTED BETWEEN FEBRUARY 1 AND MAY 31.
- IF EXCAVATED MATERIAL IS DISPOSED OF IN DEEP WATER, NO MATERIAL SHALL BE DEPOSITED HIGHER THAN ELEVATION MINUS 23.0 UPON COMPLETION OF EXCAVATION.
- EXCAVATION LIMITS SHOWN ARE INTENDED AS A GUIDE ONLY. SLIGHT DEVIATIONS MAY OCCUR.
- SUB CUTTING WILL NOT BE ALLOWED WITHIN 50 FEET OF THE EXISTING GASTINEAU CHANNEL BRIDGE PIER 3.



TYPICAL SECTION A-A  
NTS

NOTE: Hatched area represents approximate location to be used for deep water disposal of excavated material.

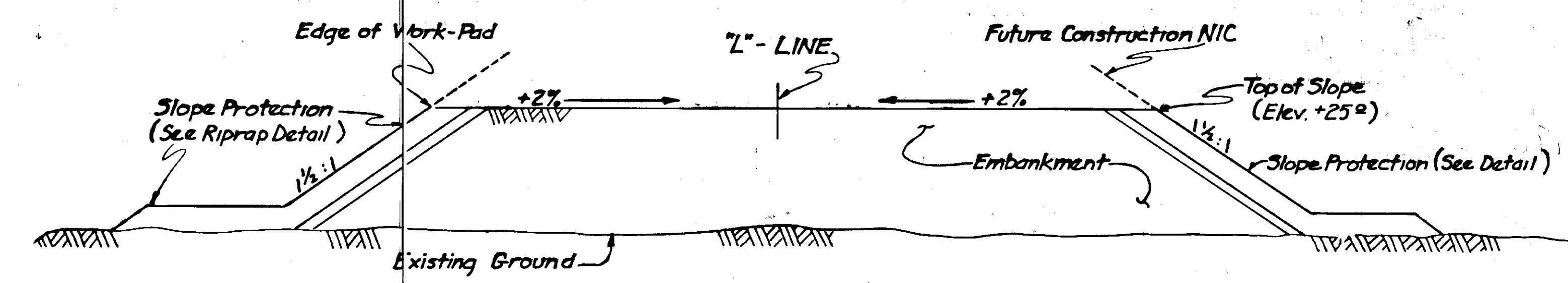
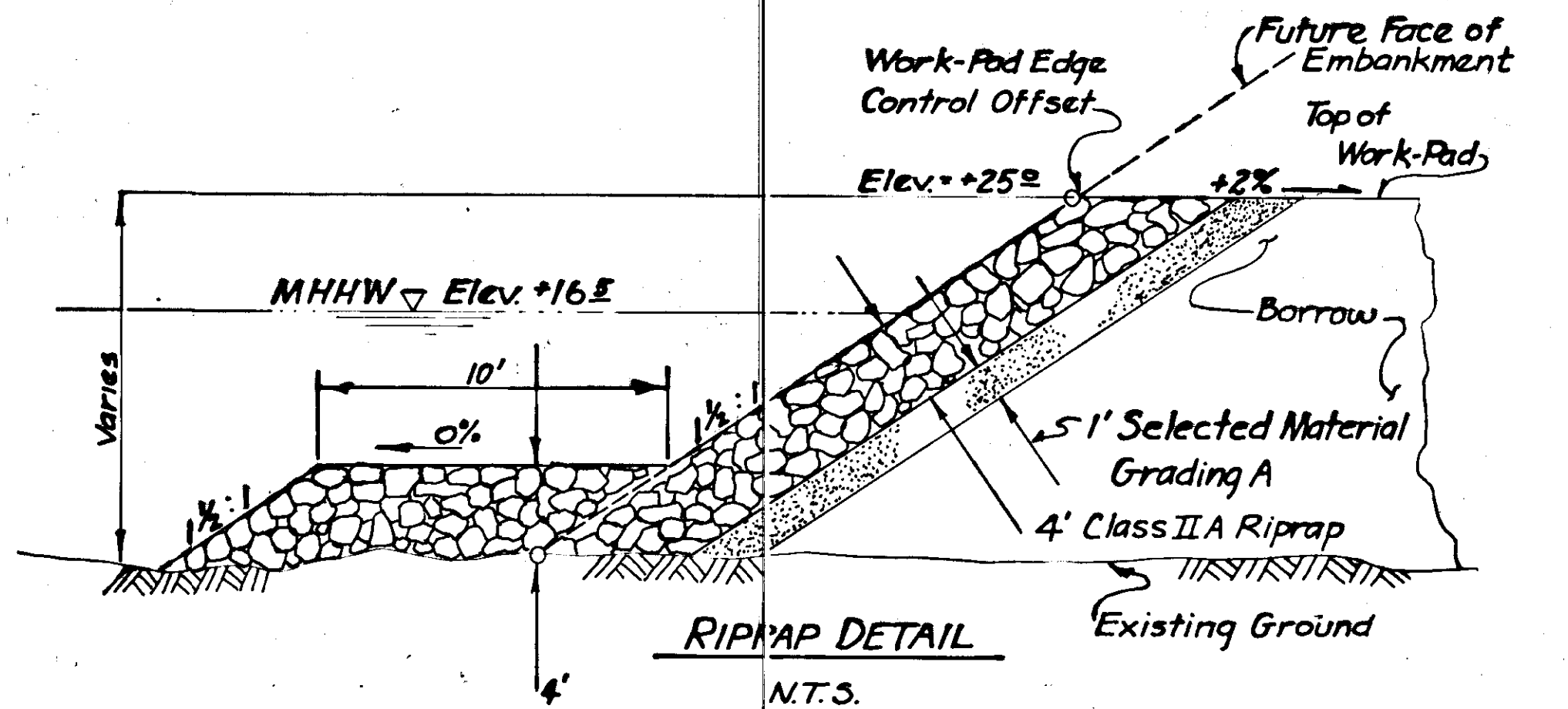
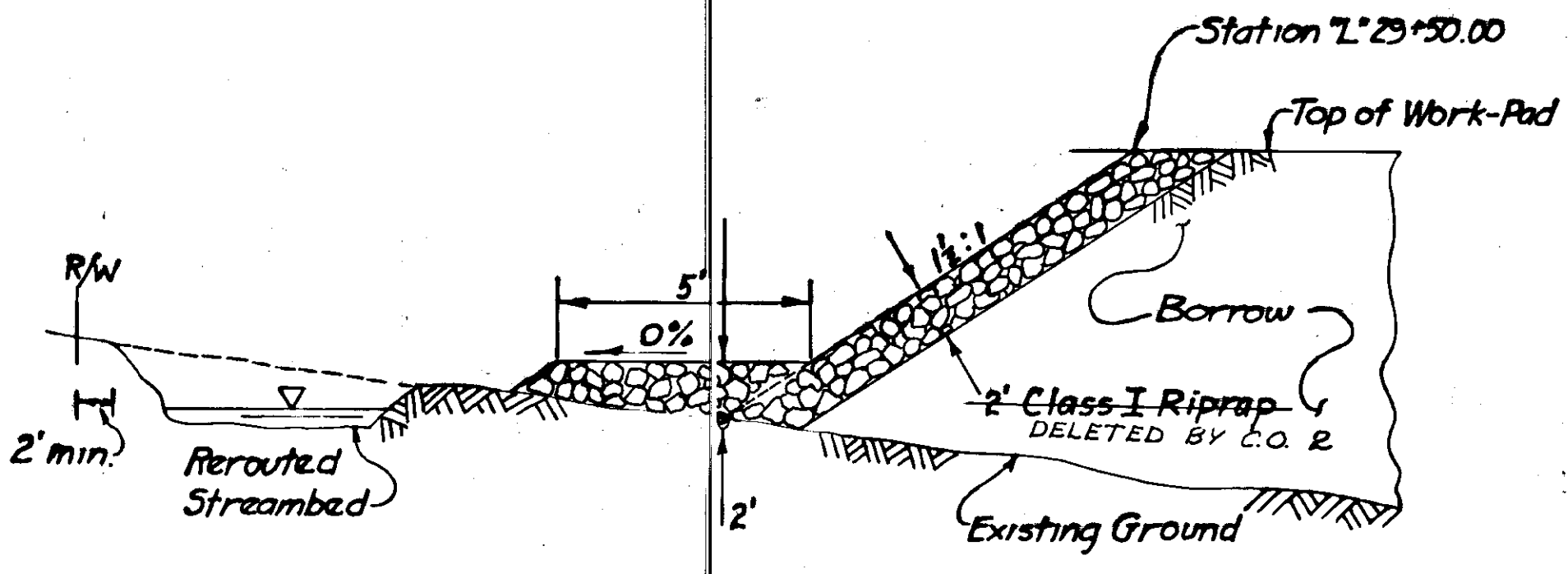
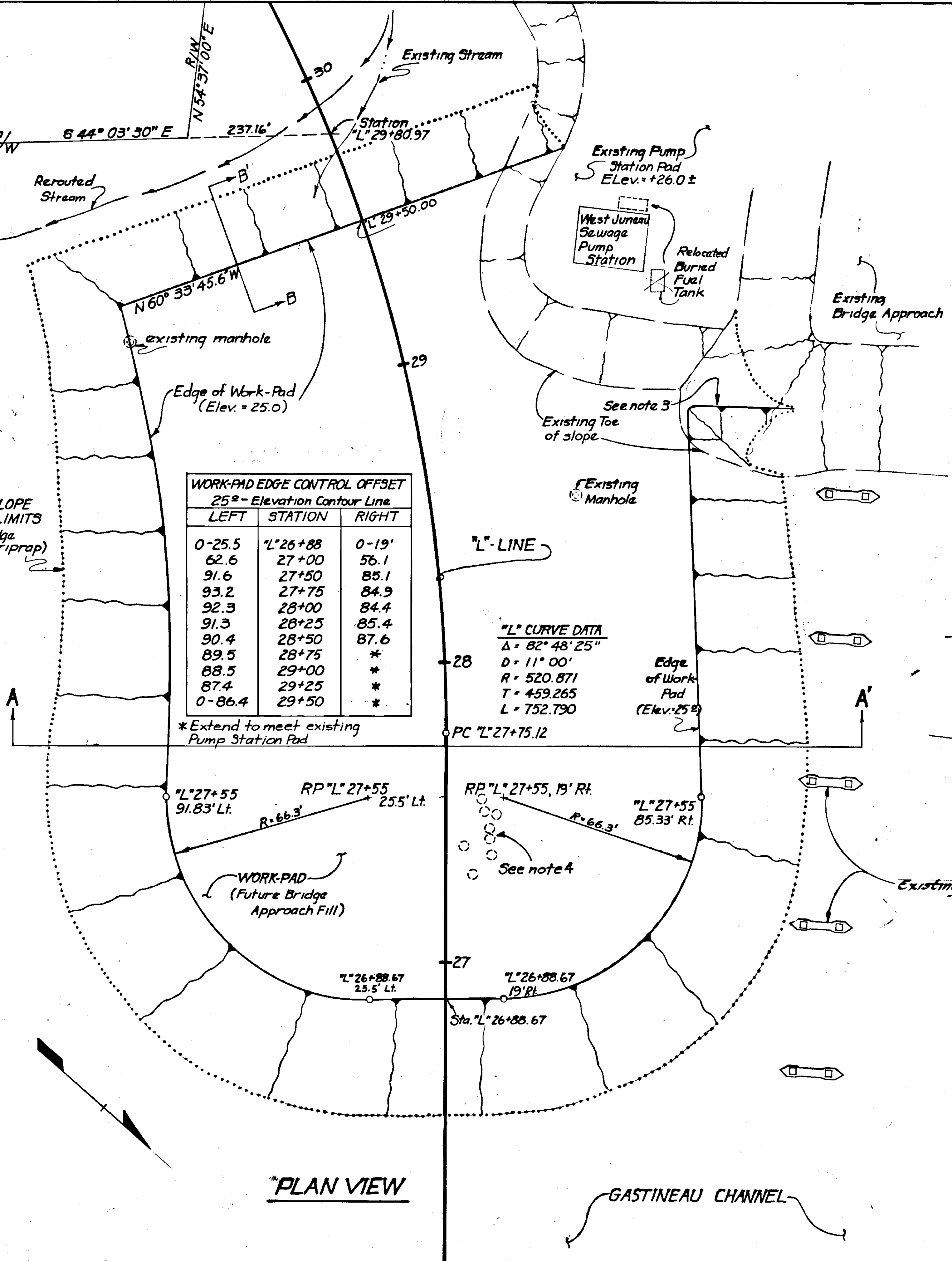
## WORK-PAD DETAILS

### GENERAL NOTES

1. THE EXISTING STREAM WHICH CROSSES THE "L"-LINE AT STATION 29+75 SHALL BE REROUTED, AS SHOWN, TO MISS THE AREA OF CONSTRUCTION. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK AND NO SPECIAL PAYMENT WILL BE MADE THEREFOR.
2. EMBANKMENT CONTROL WILL BE THE TOP EDGE OF THE WORK PAD (ELEVATION +25) AND IS LOCATED AS SHOWN ON THE PLANS; SLOPE LIMITS ARE INTENDED AS A GUIDE AND ARE APPROXIMATE ONLY.
3. AT STATION "L" 28+60, RT., THE WORK PAD SHALL BE WIDENED, AS SHOWN, SO THAT THE EDGE COINCIDES WITH THE FACE OF THE EXISTING BRIDGE APPROACH, AS DIRECTED BY THE ENGINEER.
4. THE EXISTING PILING AT APPROXIMATE STATION "L" 27+50 RT. SHALL BE REMOVED TO GROUND LINE AND DISPOSED OF, AND COBBLES AND BOULDERS SHALL BE MOVED BEYOND STATION "L" 27+90. THESE ITEMS SHALL BE INCIDENTAL TO OTHER ITEMS OF WORK.
5. ROCKS, BROKEN CONCRETE, OR OTHER SOLID MATERIALS WHICH WOULD INTERFERE WITH FUTURE PILE DRIVING SHALL NOT BE PLACED BETWEEN STATION "L" 27+20 AND STATION "L" 27+90, BETWEEN THE LIMITS OF THE RIPRAP. 40'L & 40'RT 11-6-78

### WORK-PAD ESTIMATED QUANTITIES

COMPONENT	UNIT	QUANTITY
Borrow	CY	27,001
Selected Material, Grading A	CY	530
Riprap, Class I	CY	270
Riprap, Class IIA	CY	2,806



**PLAN VIEW**

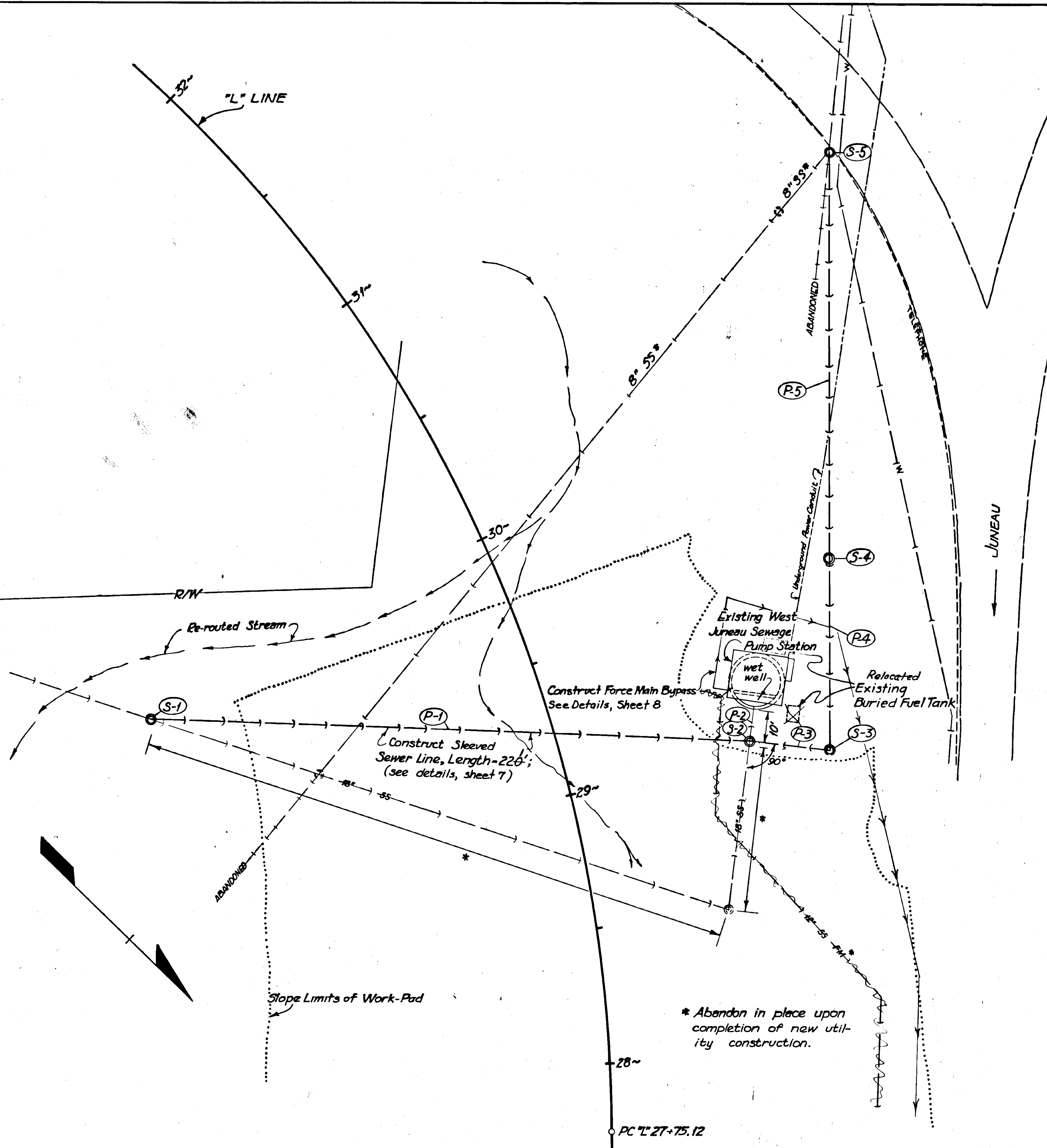
GASTINEAU CHANNEL

## UTILITIES

### GRAVITY SEWER LINE MODIFICATIONS

#### GENERAL NOTES

1. STATIONS AND OFFSETS ARE APPROXIMATE ONLY AND SHALL BE LOCATED IN THE FIELD AS SHOWN BY PLAN DIMENSION AND AS DIRECTED BY THE ENGINEER.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT THE FUNCTIONING UTILITIES REMAIN IN SERVICE DURING THE PERIOD OF CONSTRUCTION; ANY TEMPORARY BY-PASSES REQUIRED SHALL BE DONE SO BY THE CONTRACTOR, AND CONSIDERED INCIDENTAL TO ITEM 604(2), SANITARY SEWER MANHOLES.
3. THE EXISTING BURIED FUEL TANK NEXT TO THE PUMP STATION IS TO REMAIN IN PLACE AND IN SERVICE. THE LOCATION SHOWN IS APPROXIMATE AND IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY ITS LOCATION AND INSURE ITS PROTECTION DURING CONSTRUCTION.
4. ALL NEW SEWER PIPES SHOWN ON THIS SHEET SHALL BE DUCTILE IRON AND SHALL CONFORM TO SECTION 707 OF THE SPECIAL AND STANDARD SPECIFICATIONS.



#### SANITARY SEWER SUMMARIES

PIPE SUMMARY							
PIPE NUMBER	PIPE DIAMETER	DESIGN LENGTH	FROM		TO		PERCENT GRADE
			STRUCTURE	OUTLET ELEV.	STRUCTURE	INLET ELEV.	
P-1*	18"	220' 22"	S-1	6.18-.13	S-2	5.60-.32	-0.26-.37
P-2**	18"	10'	S-2	5.55-.32	PUMP STA.	5.53	-0.20-.10
P-3	18"	30'	S-3	5.75	S-2	5.60-.32	-0.50-.13
P-4	18"	70'	S-4	14.49	S-3	10.64-.84	-5.90-.21
P-5	8"	150' 51"	S-5	29.74	S-4	21.49	-5.50-.44

\* In conjunction with Subsidence Sleeve ( see detail )  
 \*\* Existing pipe to remain in place ( non-furnished item )  
 NOTE: Lengths apply to intersection points of Q's of conduits.

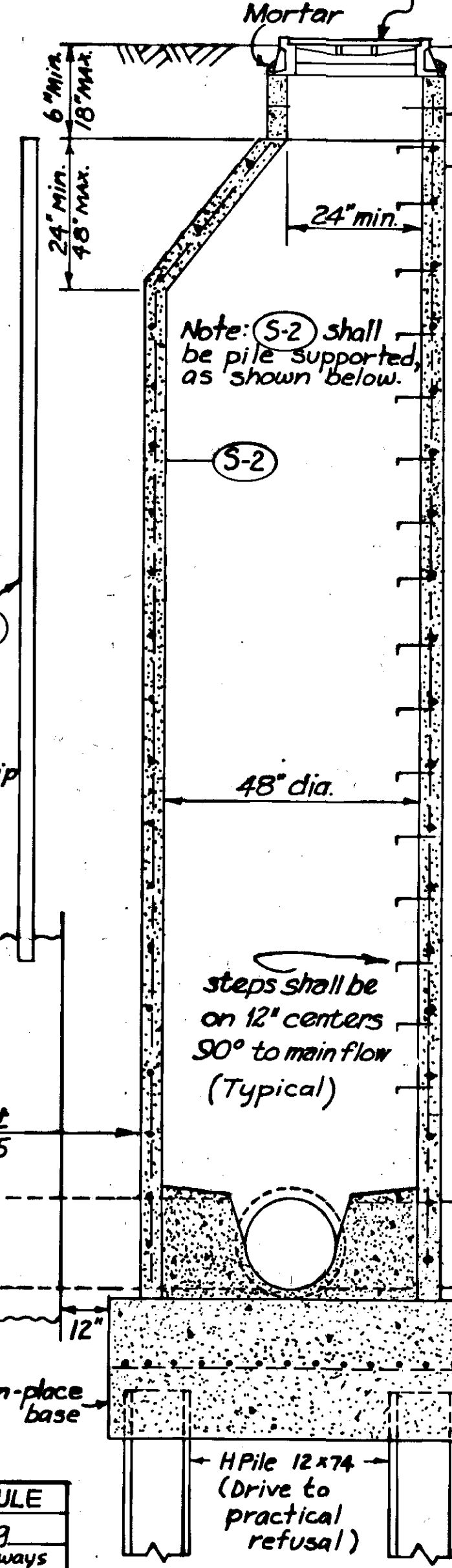
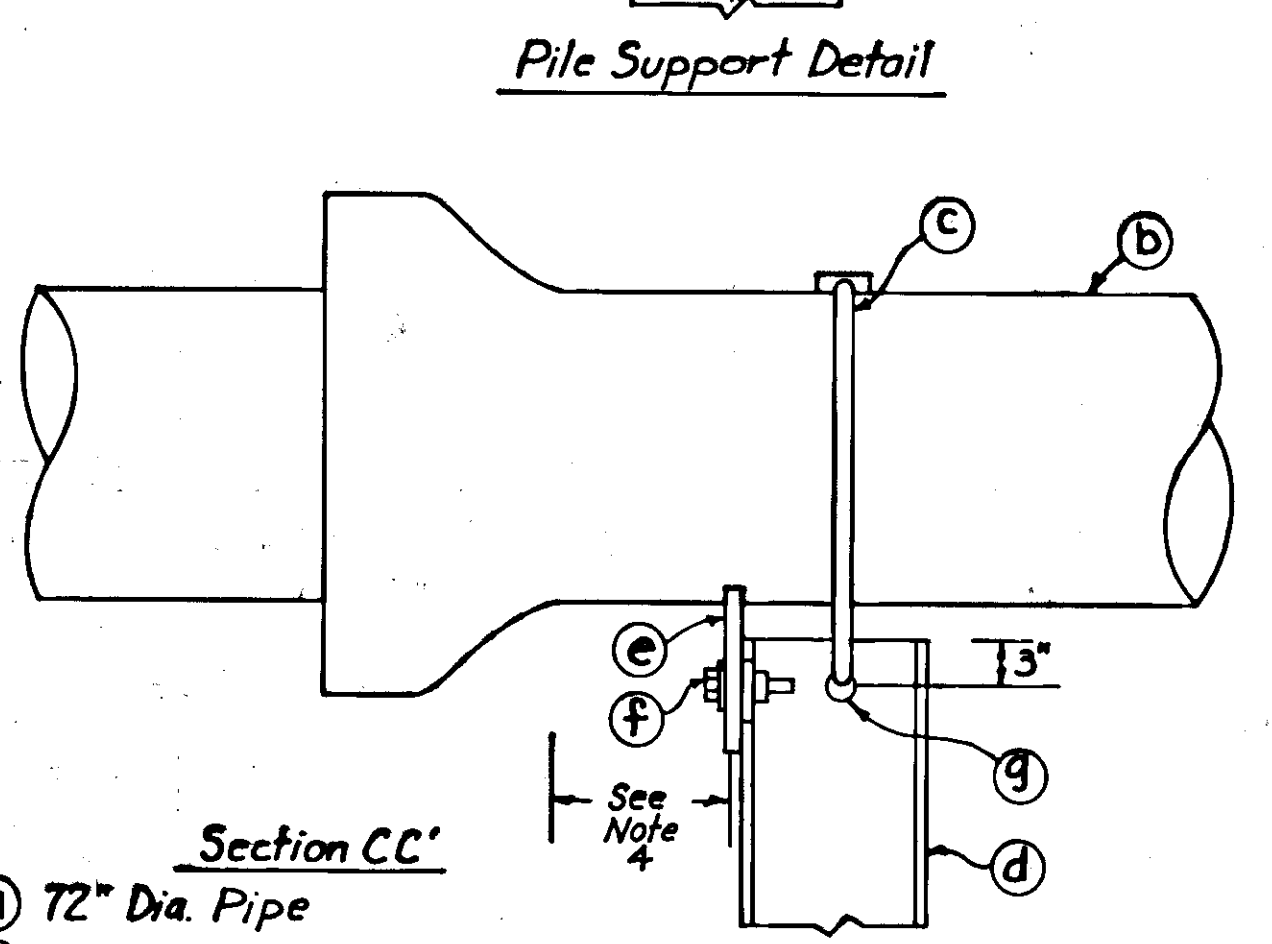
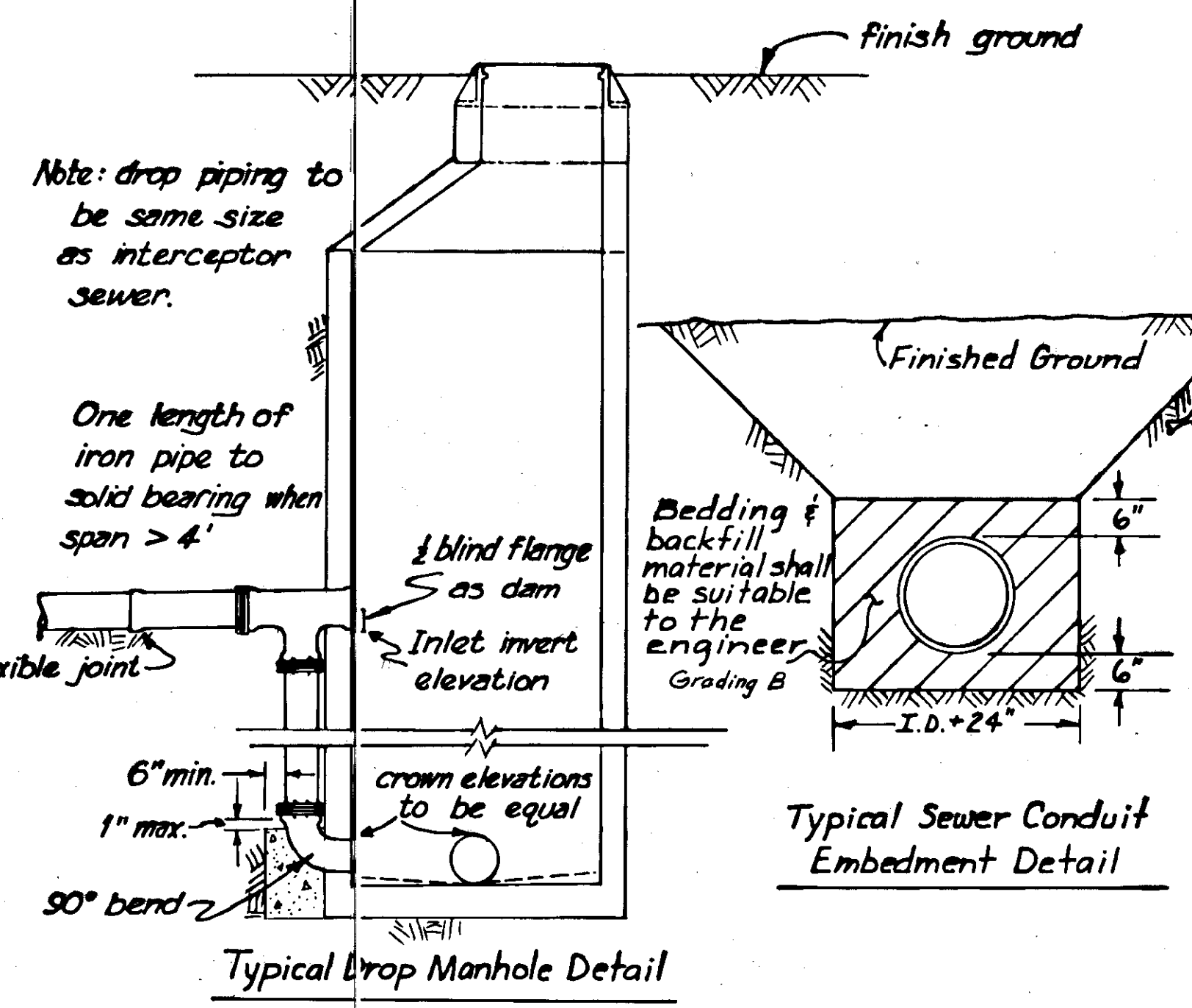
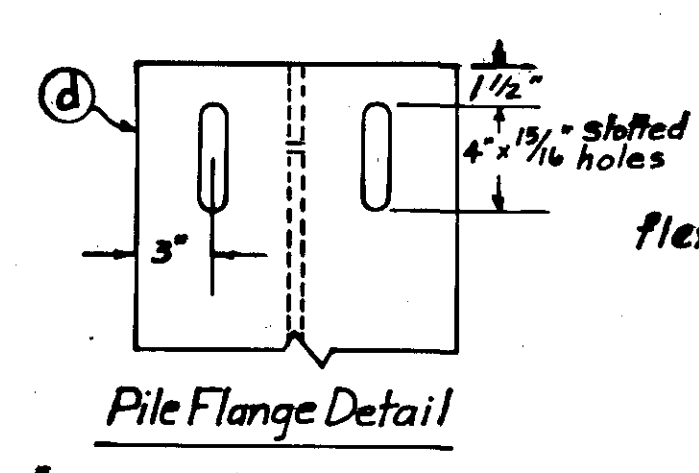
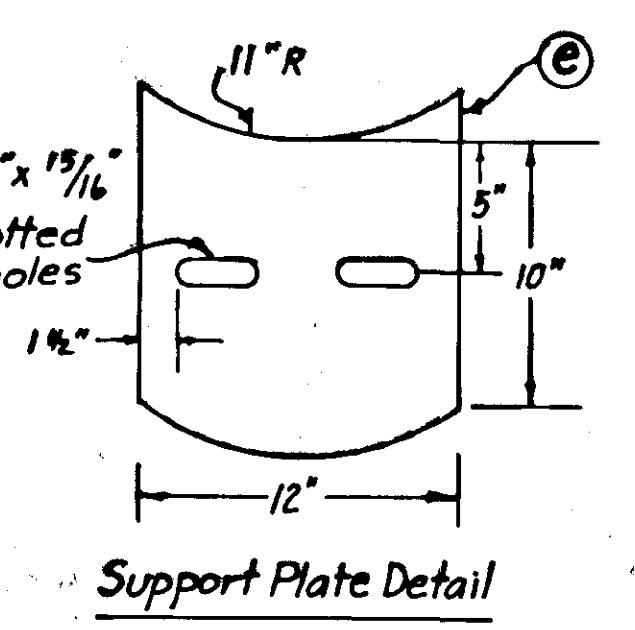
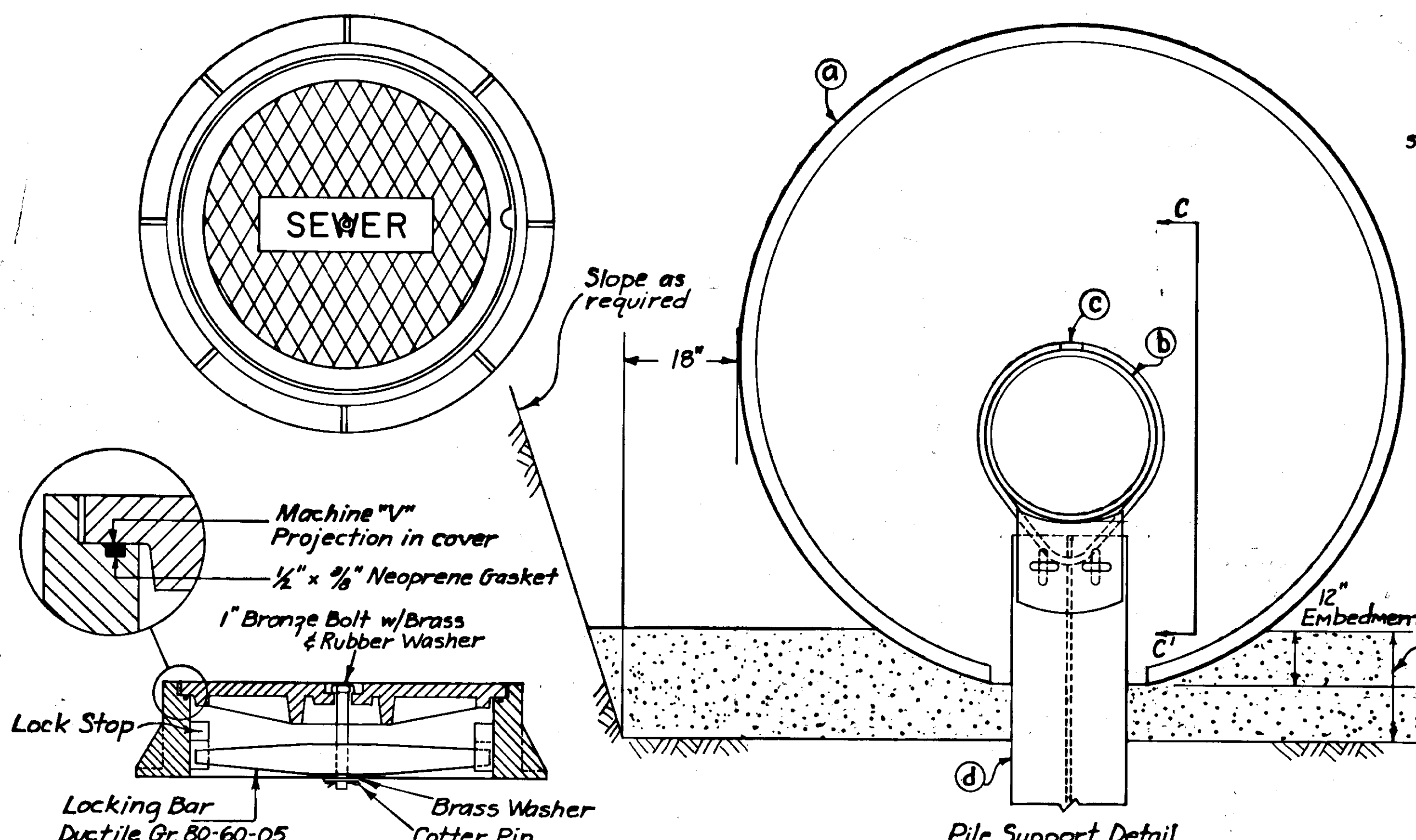
STRUCTURE SUMMARY							
	MANHOLE NUMBER	LOCATION		INVERT ELEV.		TOP ELEV.	REMARKS
		STATION	OFFSET	INLET	OUTLET		
CONSTRUCT	S-1	"L" 29+90	138' Lt.	6.29-.13	6.18-.13	16.0-.8	Watertight Cover
CONSTRUCT	S-2	"L" 29+04	68' Rt.	5.60-.32	5.55-.32	27.0-.2	Piling Supported
CONSTRUCT	S-3	"L" 28+94	96' Rt.	10.64-.84	5.75	26.7-.9	Drop Manhole
CONSTRUCT	S-4	"L" 29+35	116' Rt.	21.49	14.49	28.0-.274	Drop Manhole
RECONSTRUCT	S-5	"L" 30+59	179' Rt.	30.18	29.74	34.9	

# UTILITIES

## SLEEVED SEWER CONDUIT DETAIL

### GENERAL NOTES

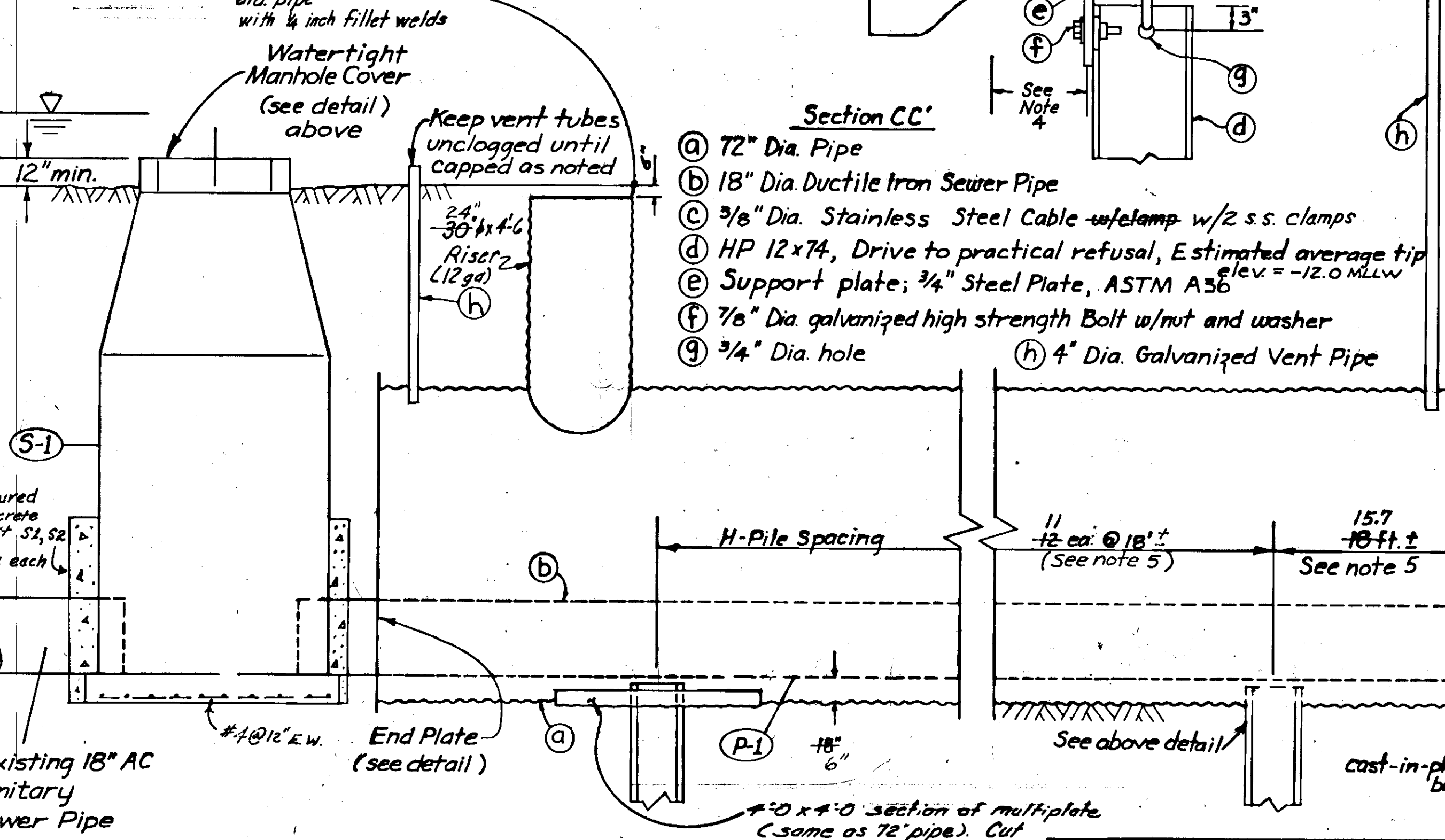
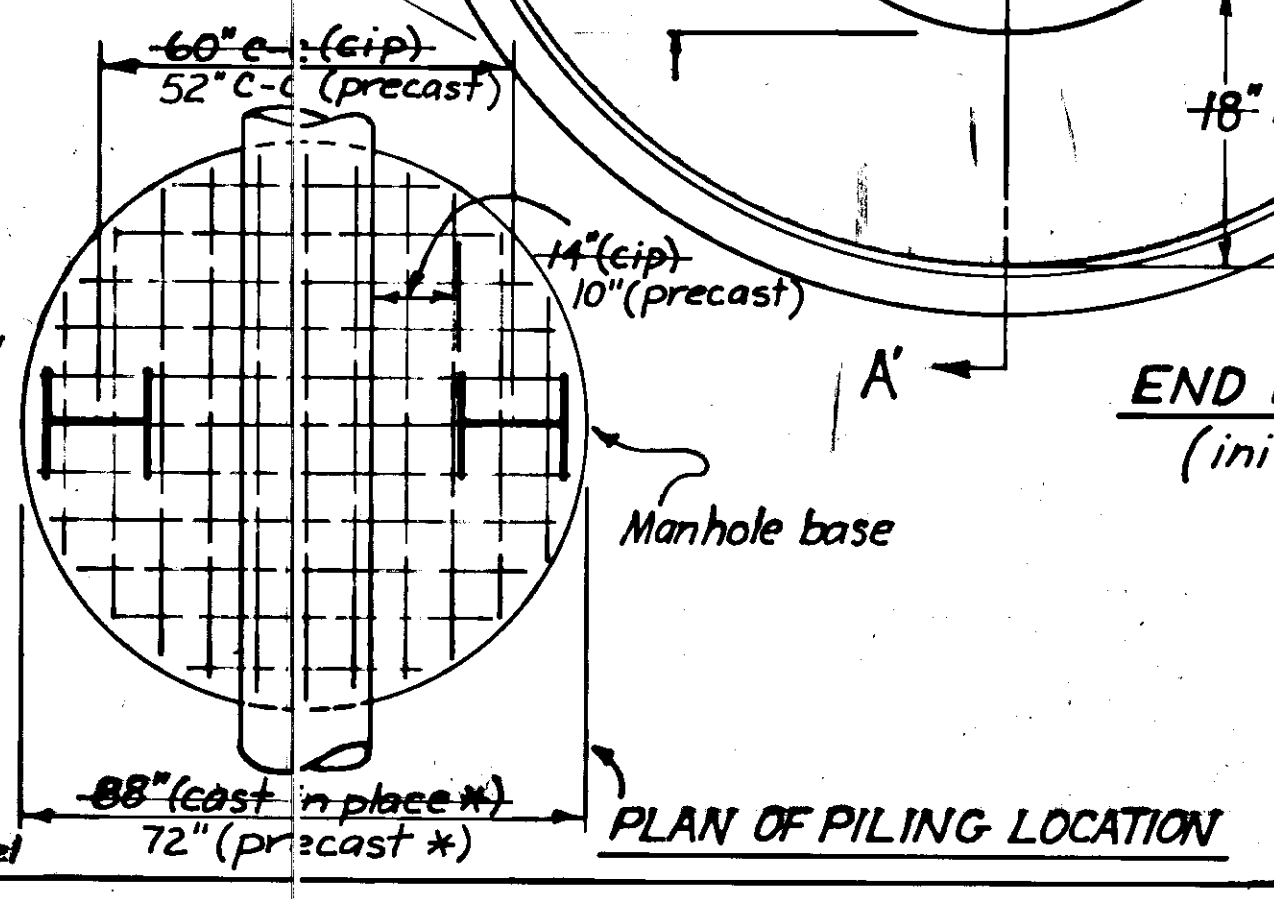
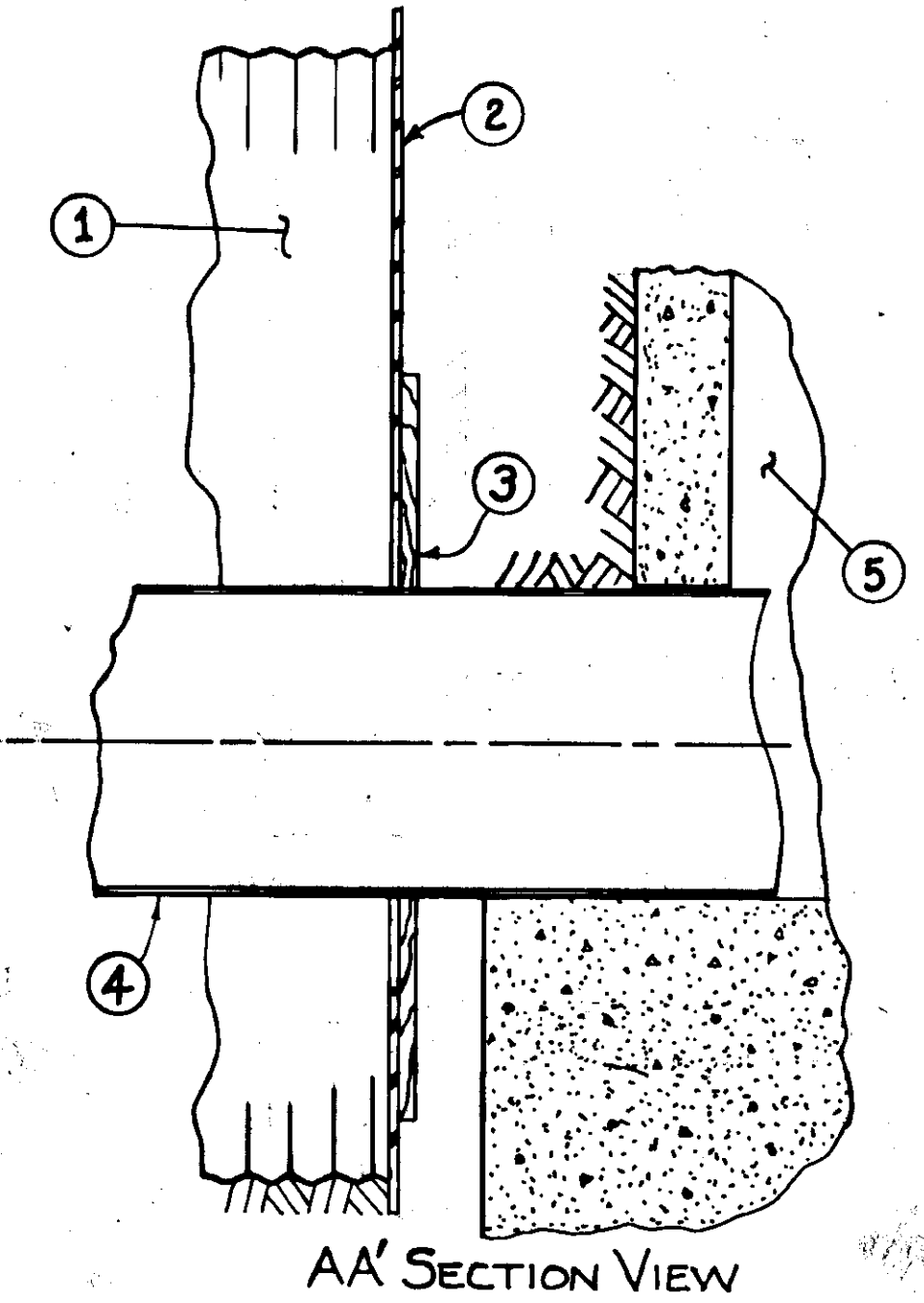
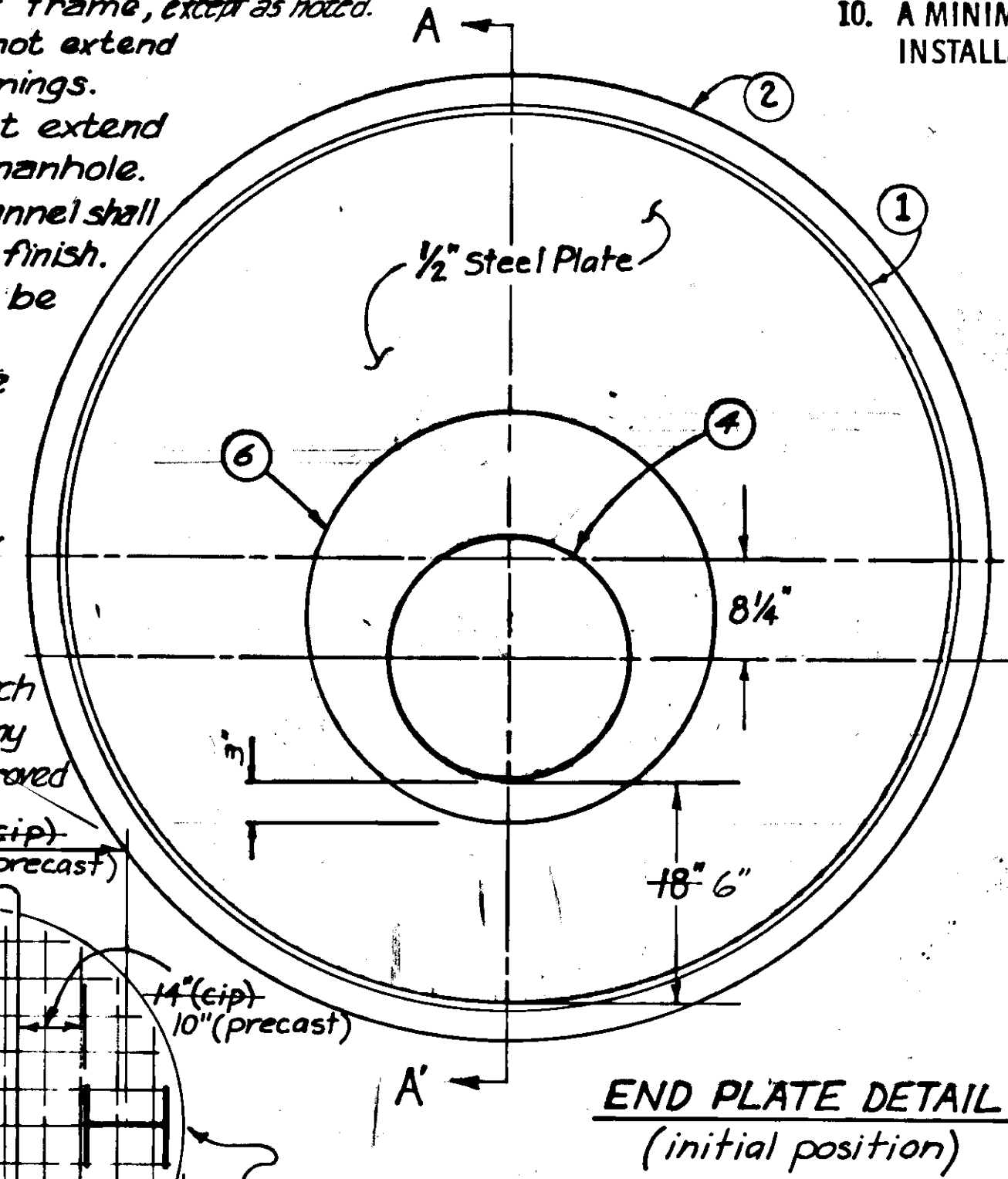
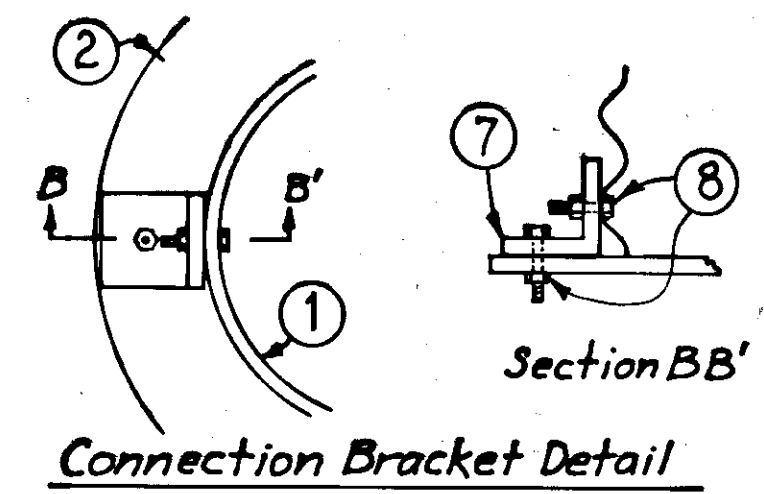
- ALL FIELD PRODUCED HOLES AND SLOTS IN THE PILING SHALL BE GROUND AT THE PERIMETER TO REMOVE ROUGH EDGES AND SLAG AND COATED WITH TAR MASTIC 106 OR AN APPROVED EQUIVALENT.
- A 3/8" DIAMETER STEEL CABLE SHALL BE STRAPPED THROUGH THE PILE WEB AND AROUND THE SEWER PIPE AND SHALL BE SNUGLY CLAMPED.
- AN 18" SQUARE HOLE SHALL BE CUT IN THE 72 INCH PIPE TO ACCOMMODATE THE H-PILE.
- THE SEWER JOINT SHALL BE LOCATED SO THAT THE BELL END OF THE PIPE IS ADJACENT TO, BUT NOT RESTING ON, THE SUPPORT PLATE.
- PILING SHALL BE INSTALLED AT 18 FT. INTERVALS FROM THE FACE OF MANHOLE S2 OR AT INTERVALS TO COINCIDE WITH THE MANUFACTURED ASSEMBLED PIPE LENGTHS ( UP TO 25 FOOT LENGTHS ) AS APPROVED BY THE ENGINEER.
- 72" DIAMETER PIPE SHALL WITHSTAND A HEIGHT OF COVER LOADING OF 55 FEET AND SHALL BE ASBESTOS BONDED, ASPHALT COATED.
- 4" DIAMETER GALVANIZED VENT PIPES, SADDLE SUPPORTED, SHALL BE INSTALLED AT EACH END OF THE 72" PIPE, AND THE VENT PIPES SHALL BE CAPPED WHEN THE 72" PIPE IS FULL OF WATER, AS DIRECTED BY THE ENGINEER.
- DURING INSTALLATION, THE 72" PIPE AND THE SEWER PIPE SHALL BE SECURED TO PREVENT BUOYANT UPLIFT. FINAL INSTALLATION SHALL INCLUDE PROVIDING THE 72" PIPE WITH A MINIMUM OF 4 FEET OF COVER, AND FILLING THE 72" PIPE WITH WATER (THROUGH A VENT PIPE) TO A MINIMUM OF HALF CAPACITY, AS DIRECTED BY THE ENGINEER.
- 3/8" DIAMETER STAINLESS STEEL CABLE SHALL COMPLY WITH ASTM SPECIFICATION A308-55 LATEST REVISION.
- A MINIMUM OF 4 CONNECTION BRACKETS SHALL BE UNIFORMLY INSTALLED PER END PLATE, SEE DETAIL.



### SEWER MANHOLE NOTES

- Minimum channel diameter shall be equal to inside diameter of pipe.
- Joints shall be full tongue and groove design.
- Ground at cover shall be graded to within 1" of top of frame, except as noted.
- Reinforcing Steel shall not extend into invert pipe openings.
- Ends of pipe shall not extend more than 3" into manhole.
- Manhole shelf and channel shall receive a steel trowel finish.
- Rubber joints shall be used on all manhole joints except those involving concrete adjusting rings.

**DELETED**  
 8. Manholes greater than 20' in height shall be equipped with a fall prevention system such as the Norton Company "Saf-T-Climb", or approved equal.



COVER HEIGHT	SIZE	SPACING
> 20'	#6	@ 6" both ways
< 20'	#4	@ 12" both ways

NOTE: minimum 2" clearance on all reinforcing steel

\* refers to method of construction of barrel

- 72" Pipe (ID)
- 1/2" Steel End Plate, 78" diameter
- 3/4" CDX Plywood Ring Dia = 20" x 48"
- 18" Ductile iron Sanitary Sewer Pipe (OD = 19.5")
- Concrete Manhole S-1 & S-2
- 32" Diameter Hole in end plate
- Connection Bracket
- 3/4" multiplate bolt w/ nut

