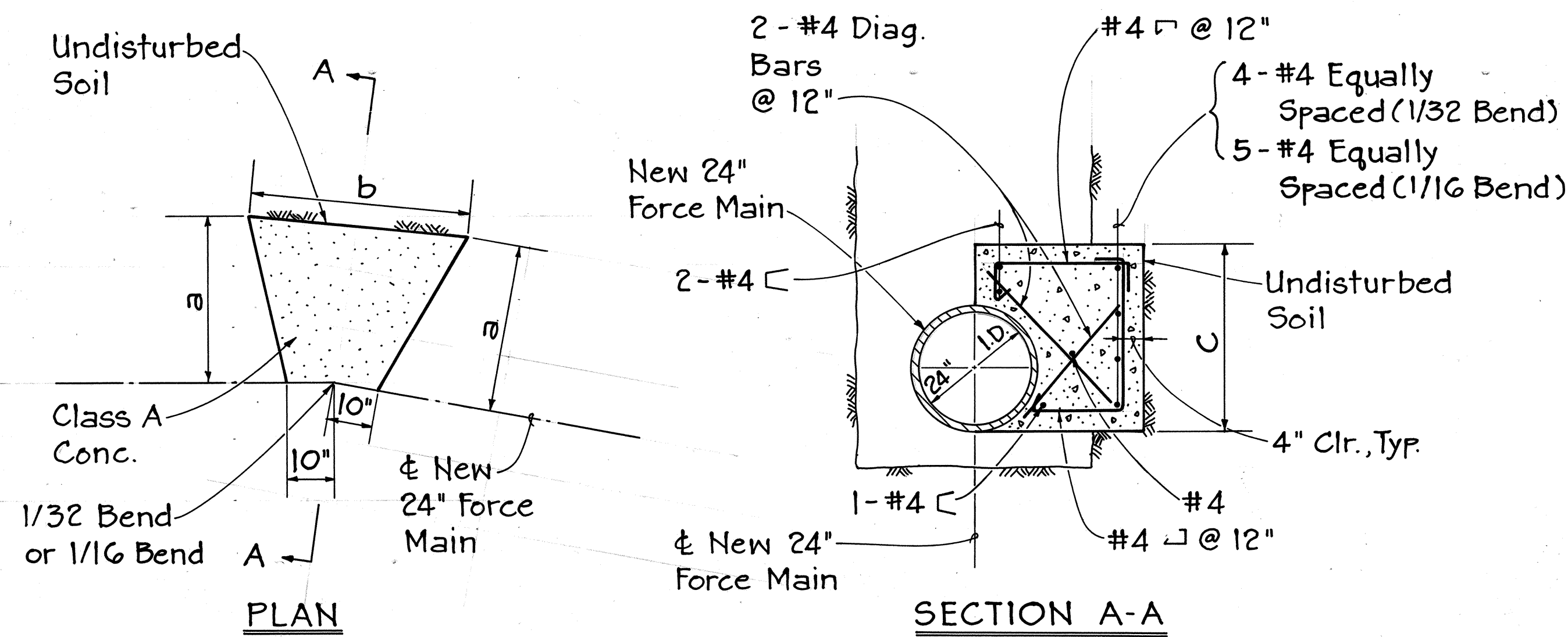
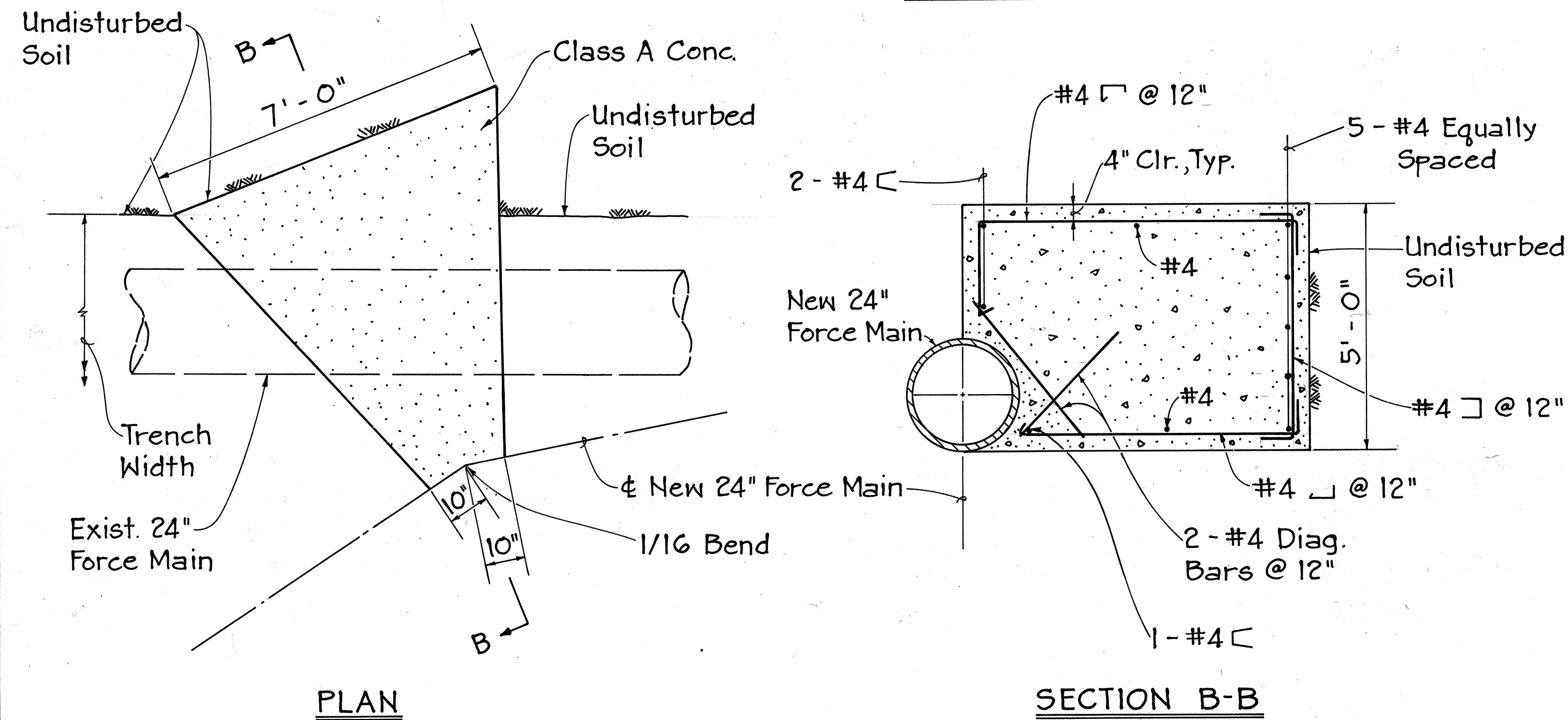


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-064-1(2)	1987	37	151



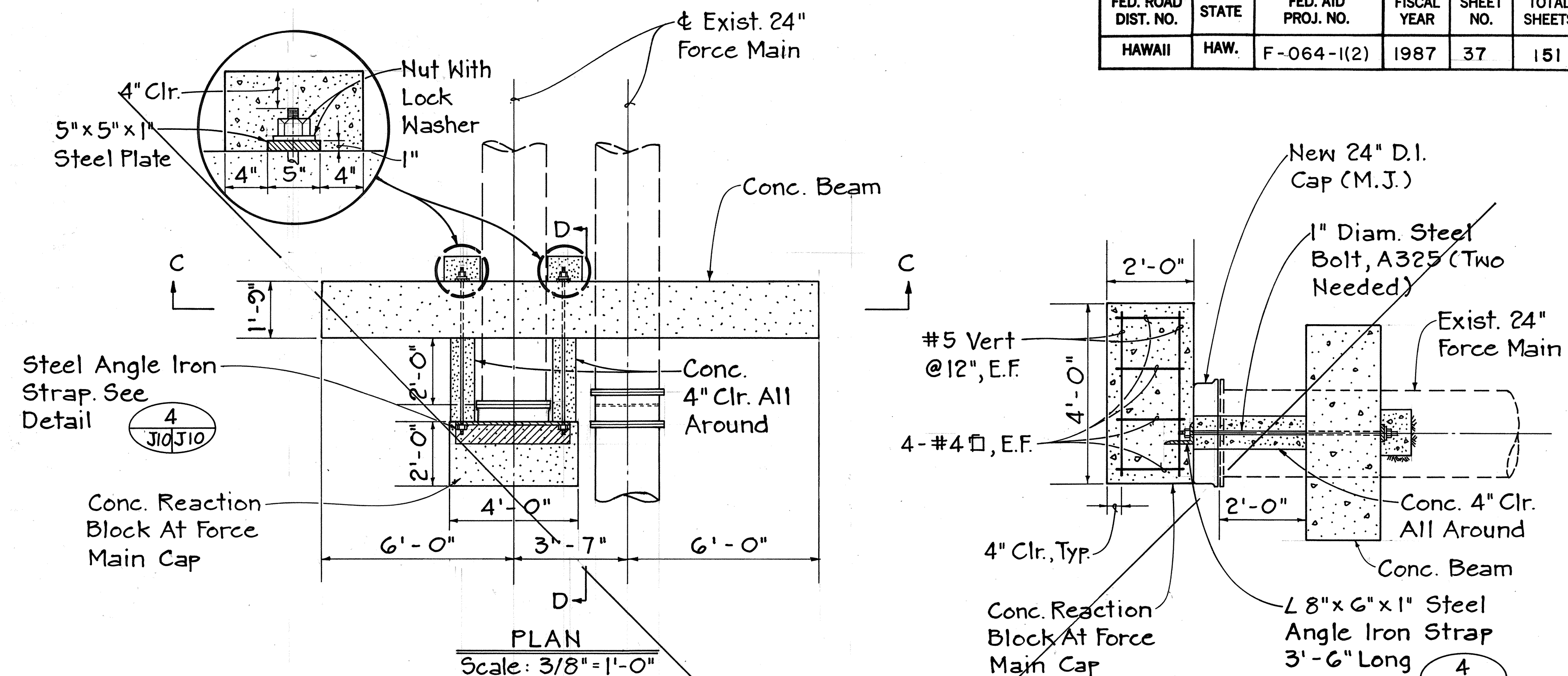
	a	b	c
1/32 Bend	3' Min.	4'-0"	4'-0"
1/16 Bend	4' Min.	7'-0"	5'-0"

TYPICAL CONCRETE REACTION BLOCK
Not To Scale
J4, J5, J9

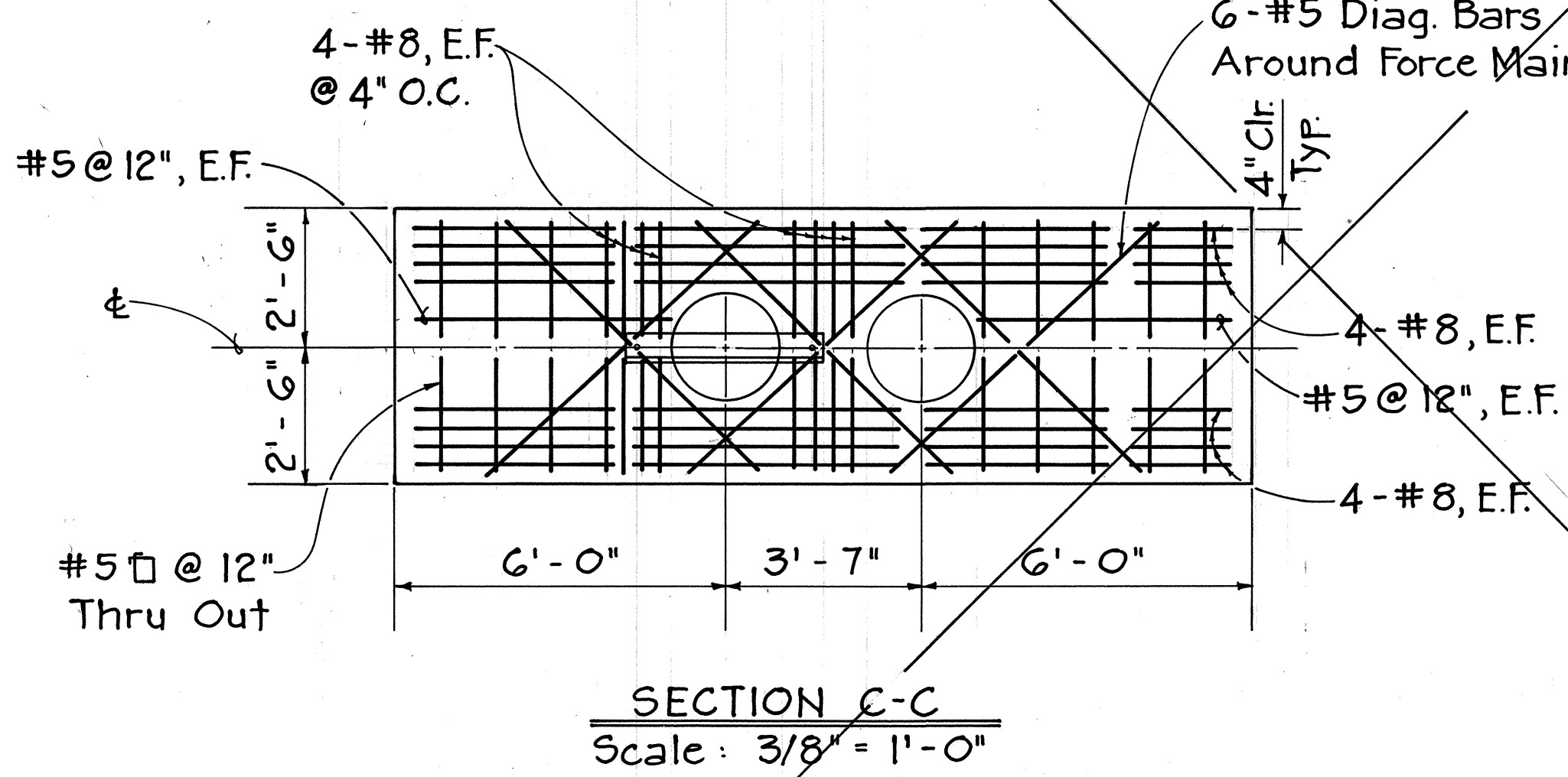


SPECIAL CONCRETE REACTION BLOCK
Not To Scale
J9, J10

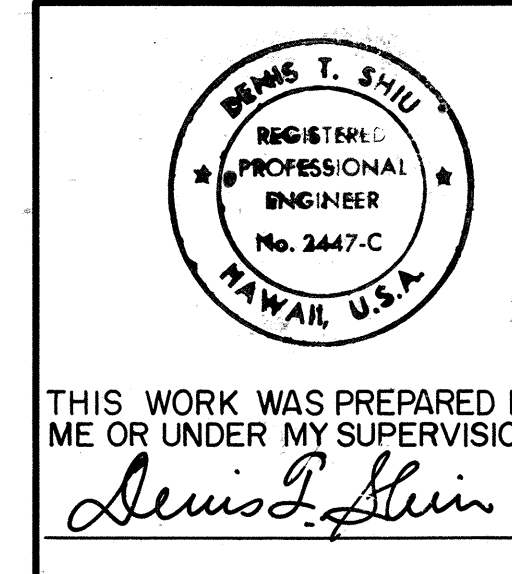
Note: Reaction block sizes based on an allowable lateral soil bearing pressure of 1000 pcf. Actual conditions to be verified in field.



CONCRETE BEAM WITH ANCHOR AND CONCRETE REACTION BLOCK AT FORCE MAIN CAP
Scale: 3/8" = 1'-0"
Scale: 1/2" = 1'-0"



STEEL ANGLE IRON STRAP
Scale: 1" = 1'-0"



DATE	REVISION

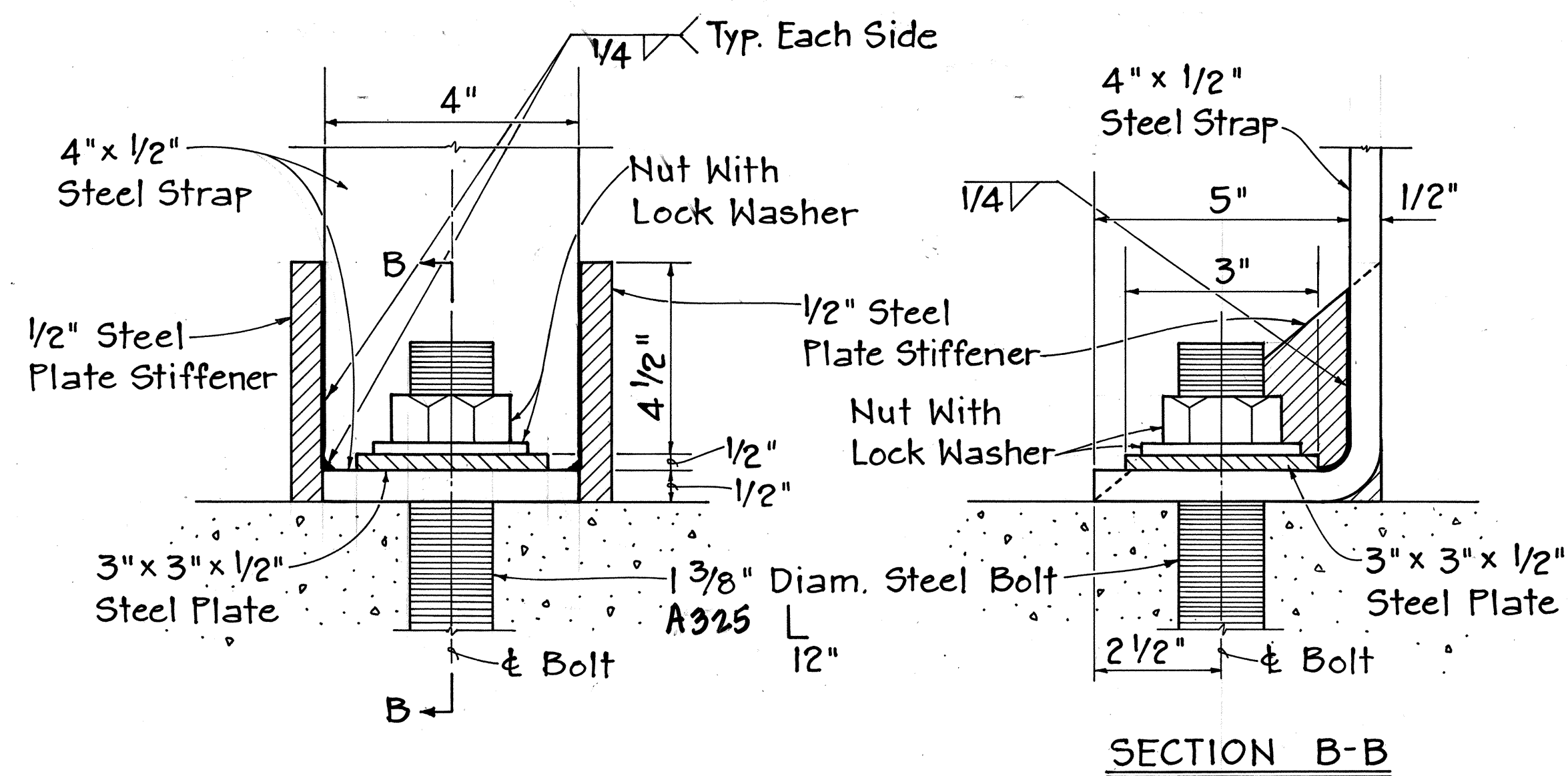
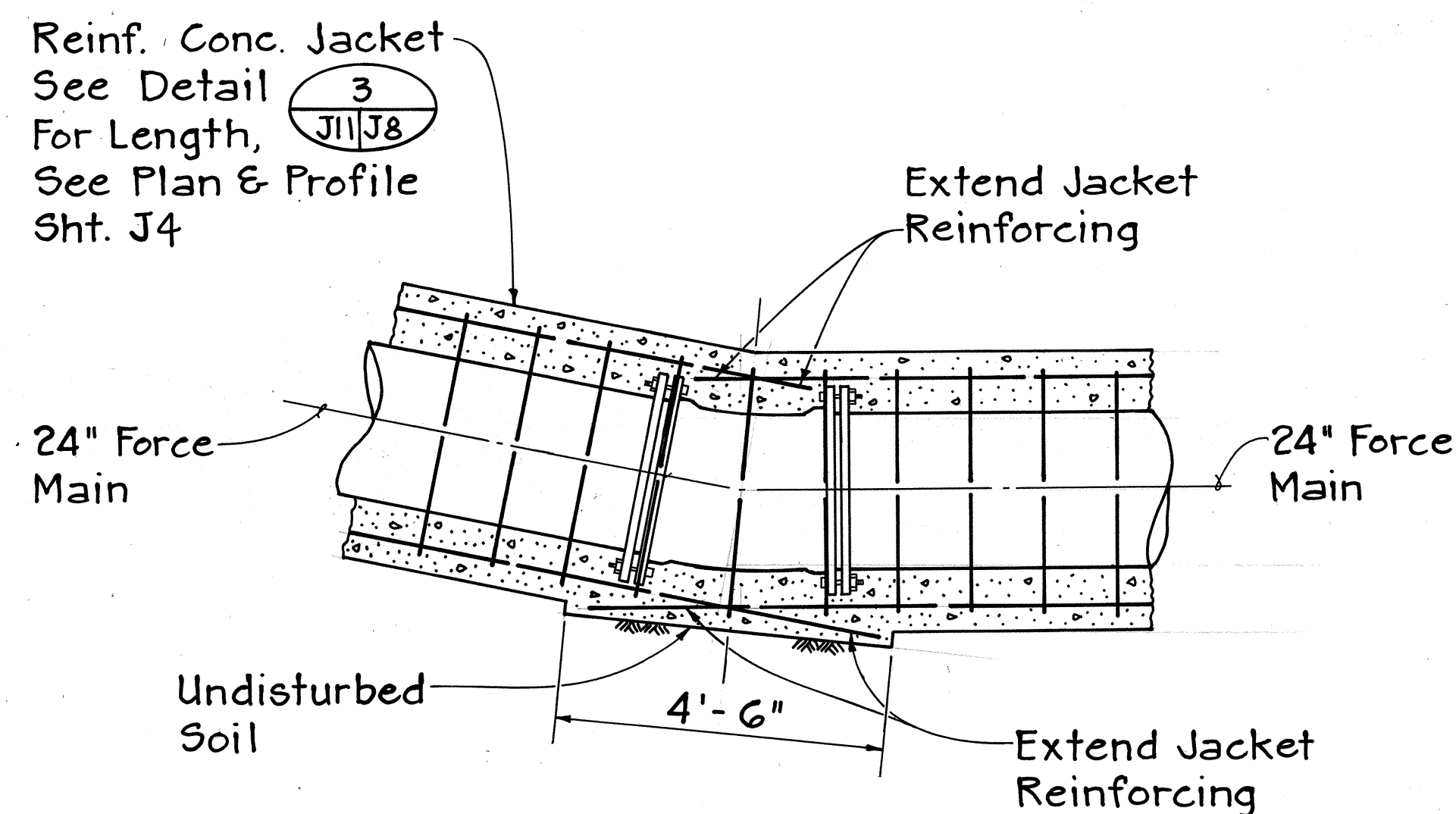
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FORCE MAIN DETAILS

SAND ISLAND ROAD WIDENING
2ND BRIDGE AND APPROACHES
FEDERAL AID PROJECT NO. F-064-1(2)

SCALE: AS NOTED DATE: JUN, 1986
SHEET NO. J10 OF 17 SHEETS

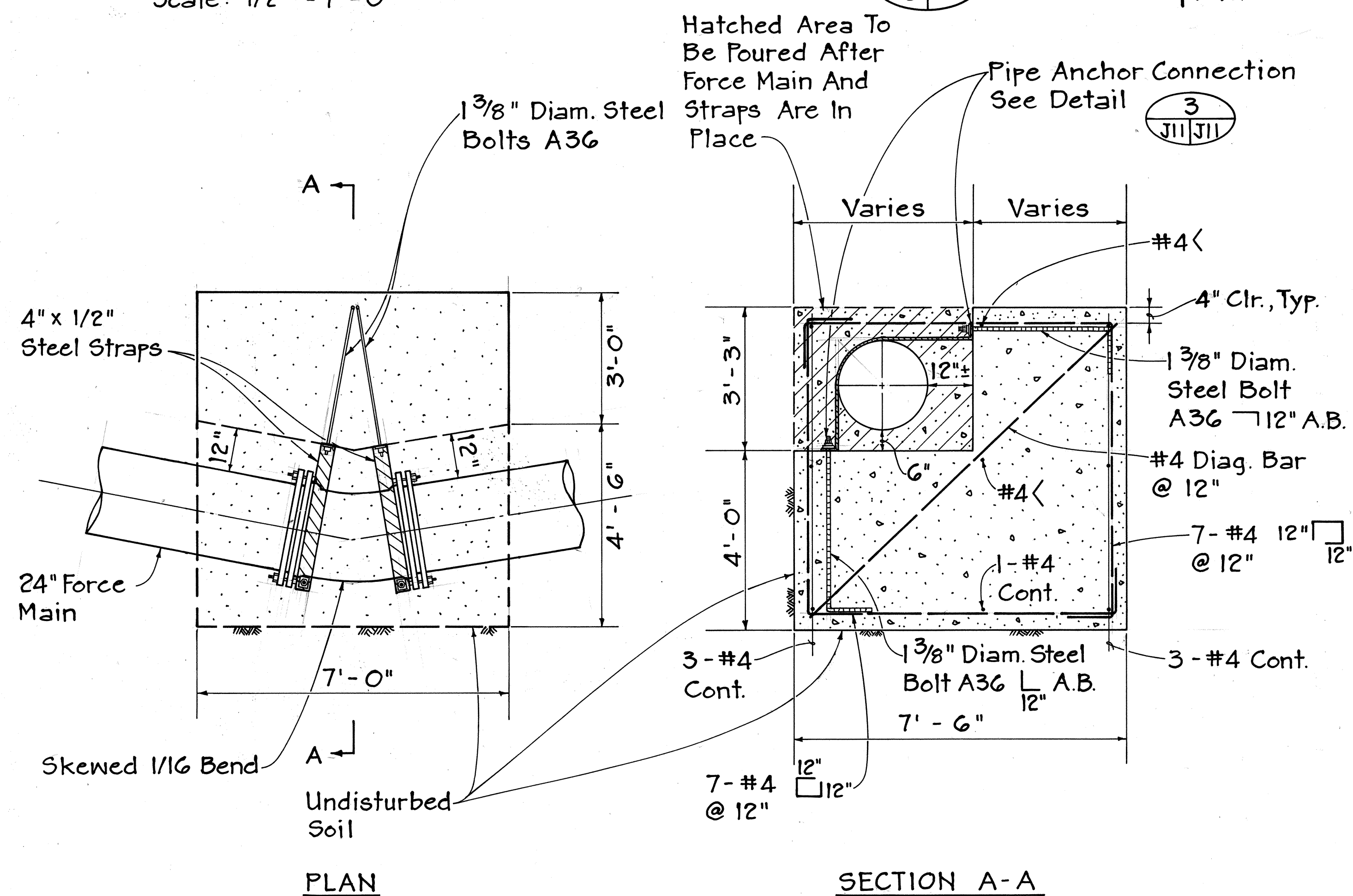
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-064-1(2)	1987	38	151



PIPE ANCHOR CONNECTION 3
Not To Scale
J11/J11

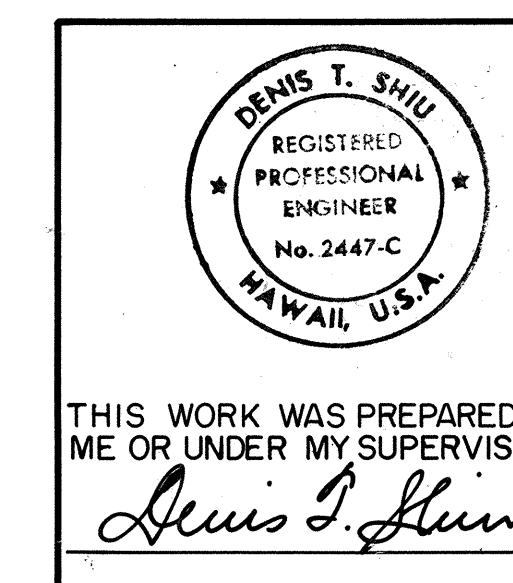
Note: Reaction block sizes based on an allowable lateral soil bearing pressure of 1000 pcf. Actual conditions to be verified in field.

REACTION BLOCK FOR 1/32 BEND (B.V.)
AT STA. 53+06
Scale: 1/2" = 1'-0"



CONCRETE REACTION BLOCK FOR SKEWED 1/16 BEND AT STA. 52+00±
Scale: 1/2" = 1'-0"

J4, J8 2
J11



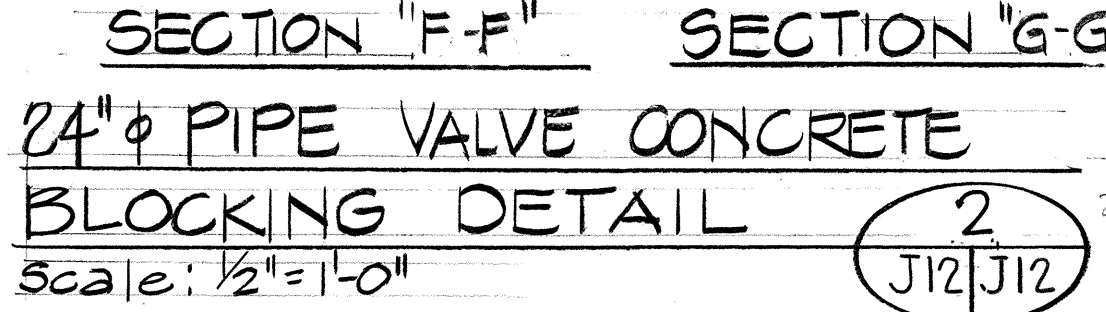
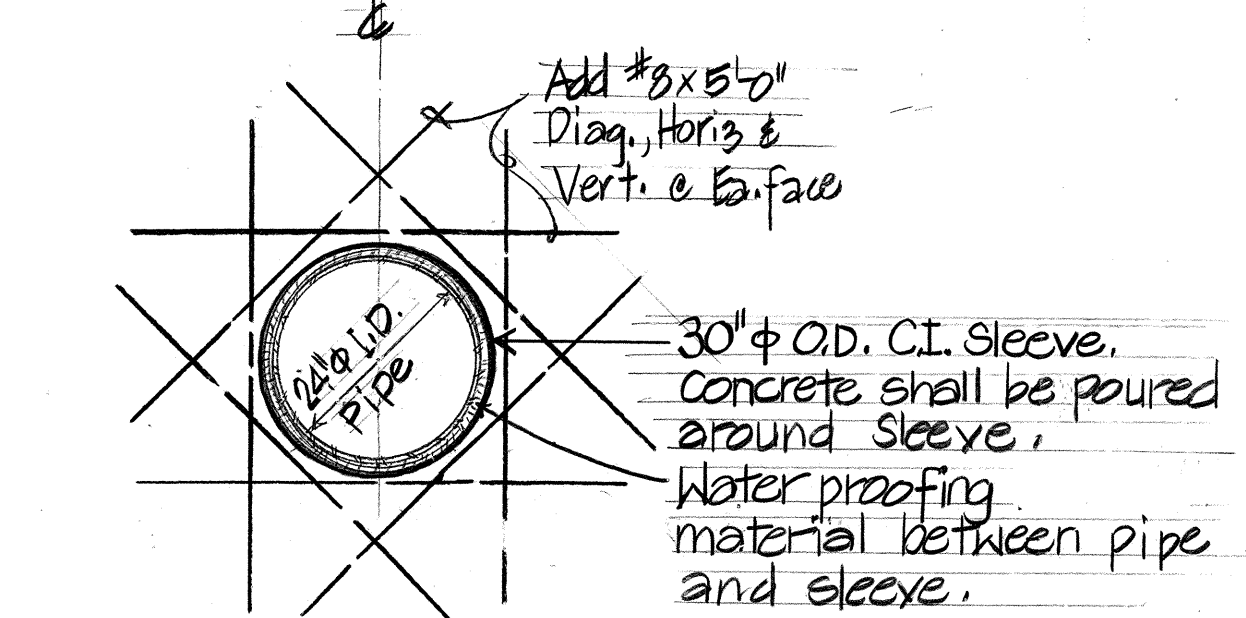
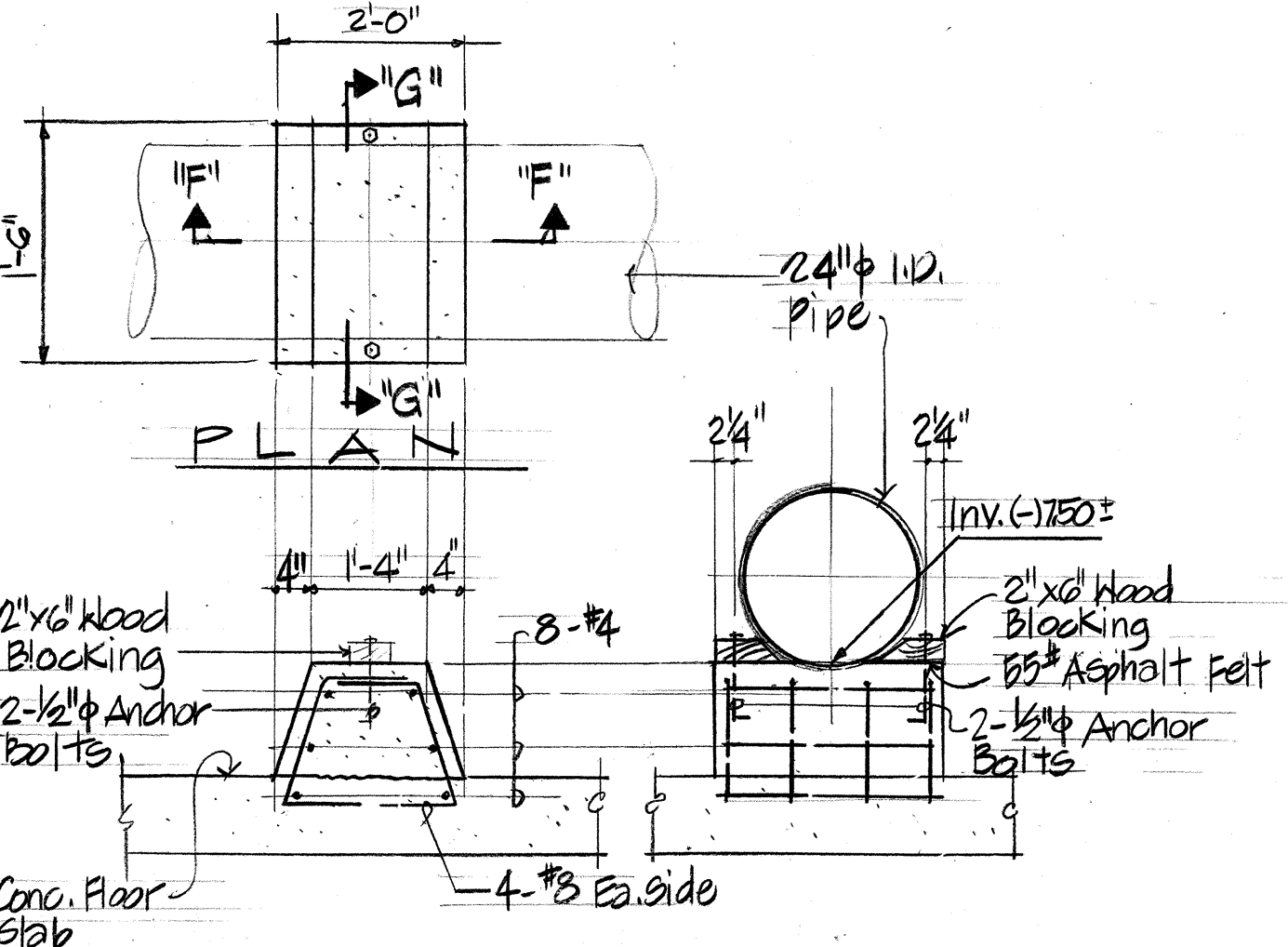
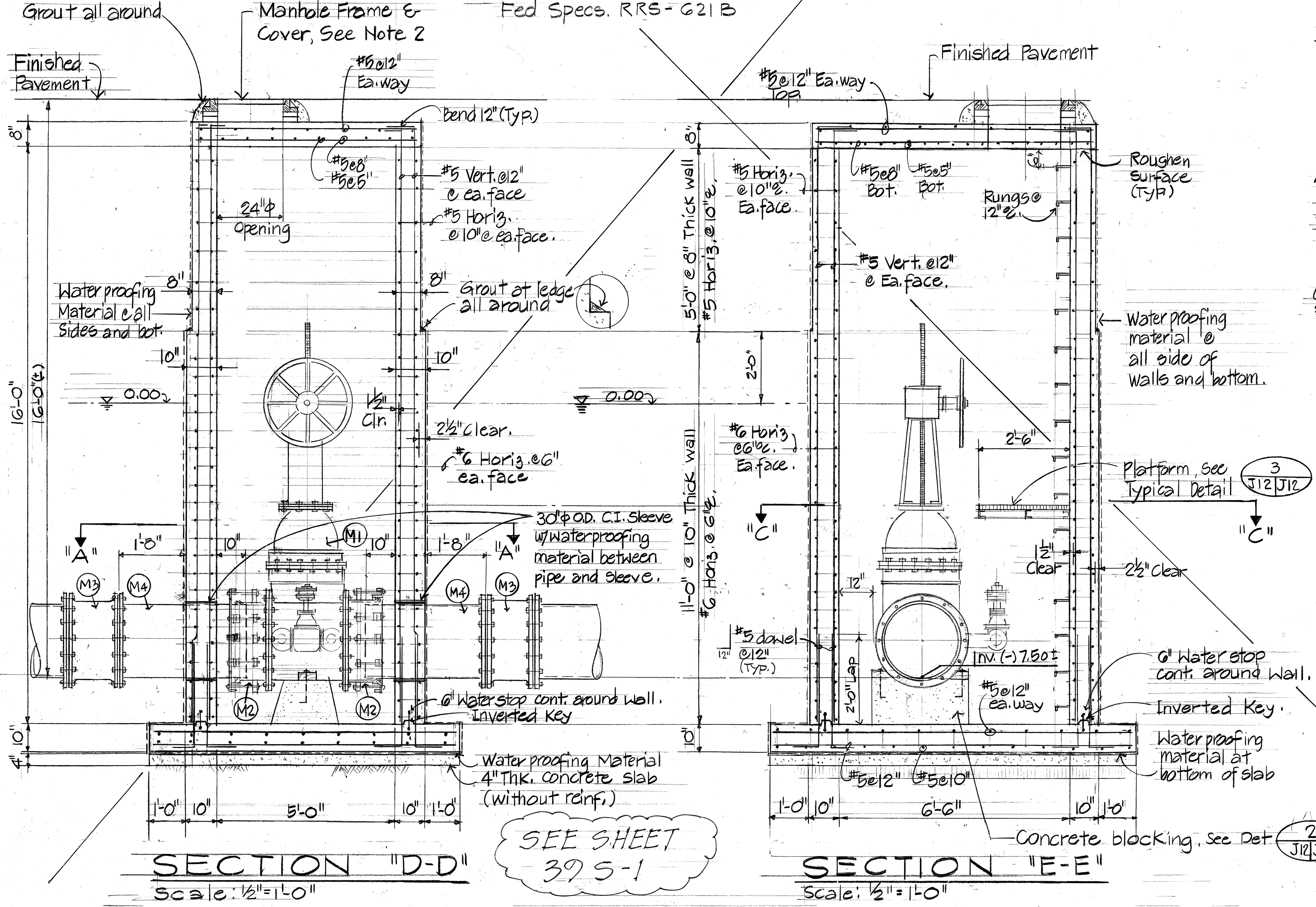
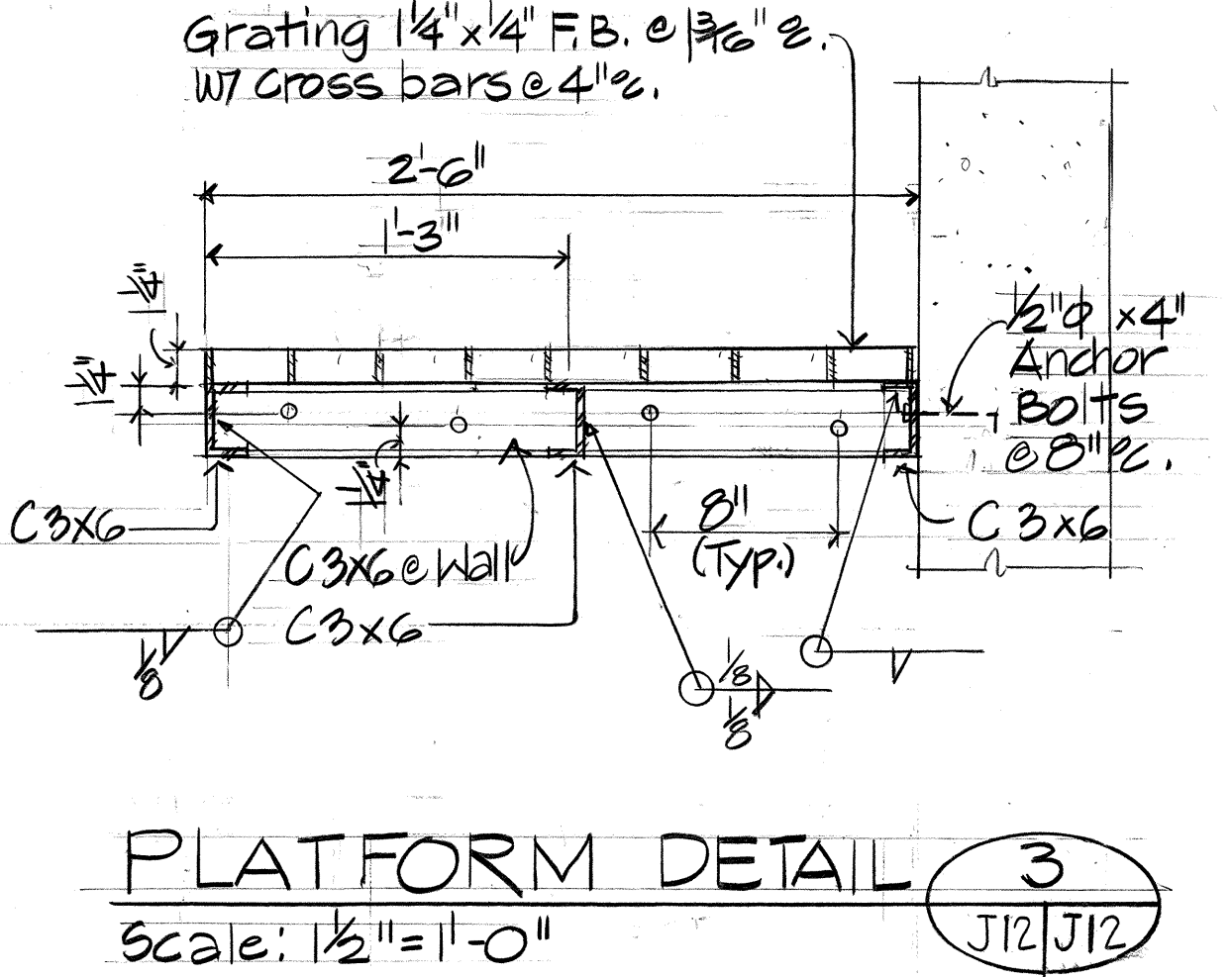
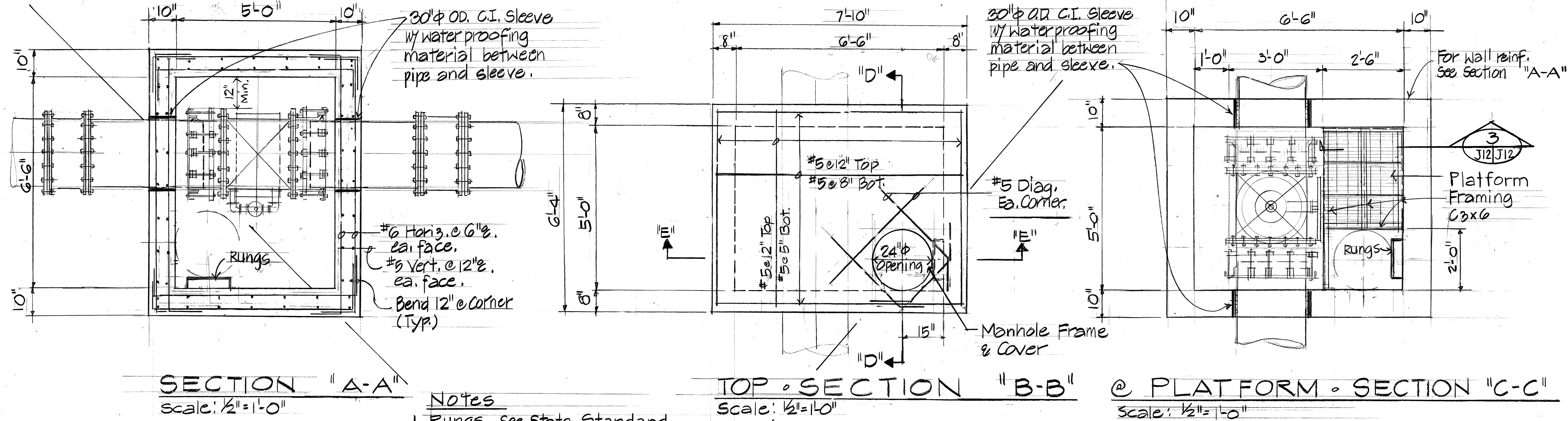
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FORCE MAIN DETAILS

SAND ISLAND ROAD WIDENING
2ND BRIDGE AND APPROACHES
FEDERAL AID PROJECT NO. F-064-1(2)

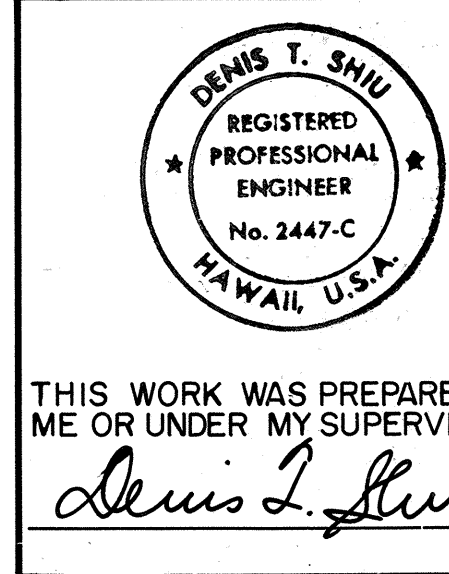
SCALE: AS NOTED DATE: JUN, 1986
SHEET NO. J11 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-064-1(2)	1987	39	151



- 24" PIPE ITEMS**
- (M1) 24" Pipe Valve (Fig.) #150 O.S.C.Y.
 - (M2) 24" Steel Flange Coupling Adapter
 - (M3) 24" Sleeve 15" Long (M.J.)
 - (M4) 24" Pipe @ wall (w/ 3" wide x 1/4" thk. steel p. collar welded to pipe.)

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

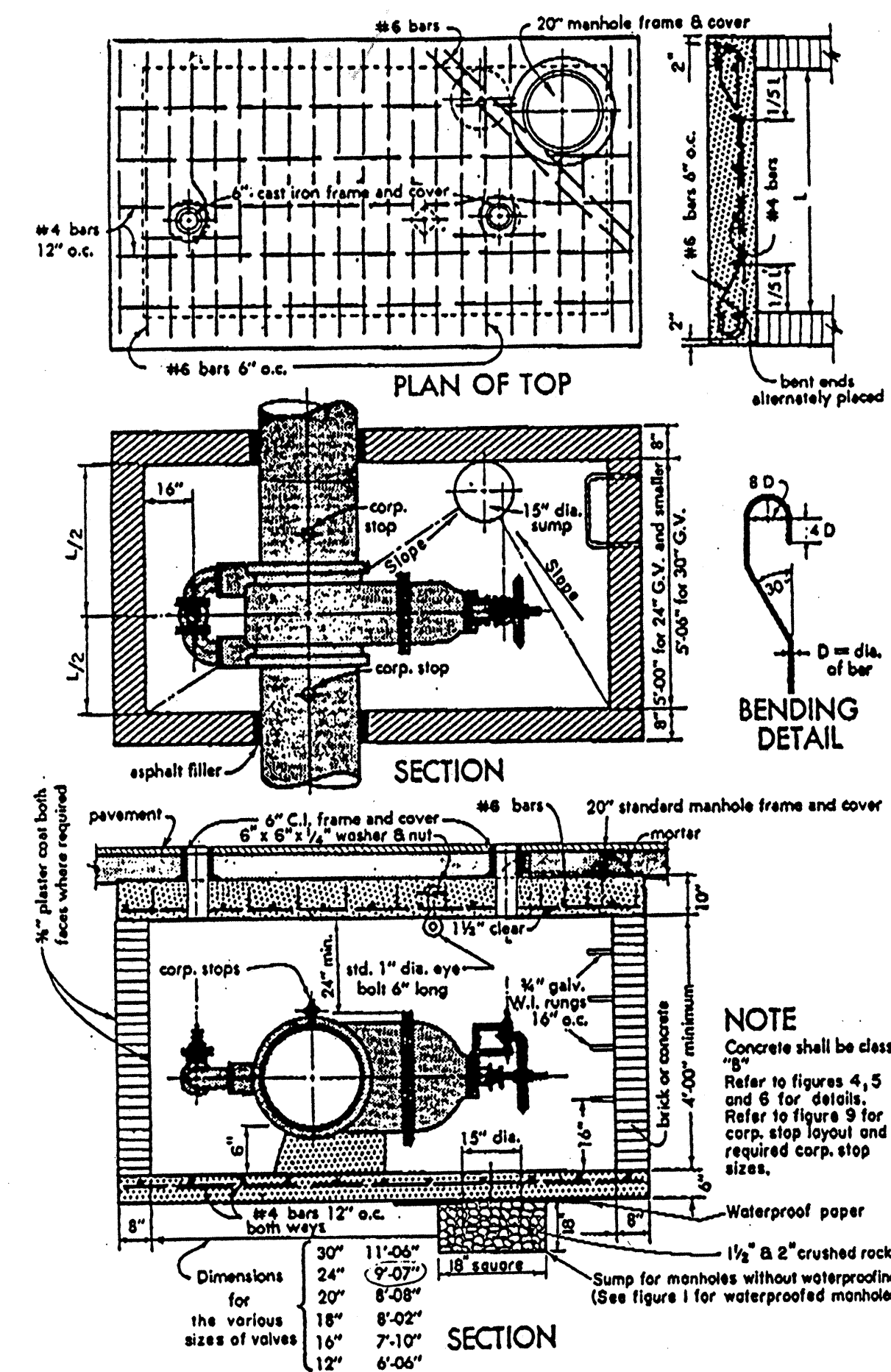
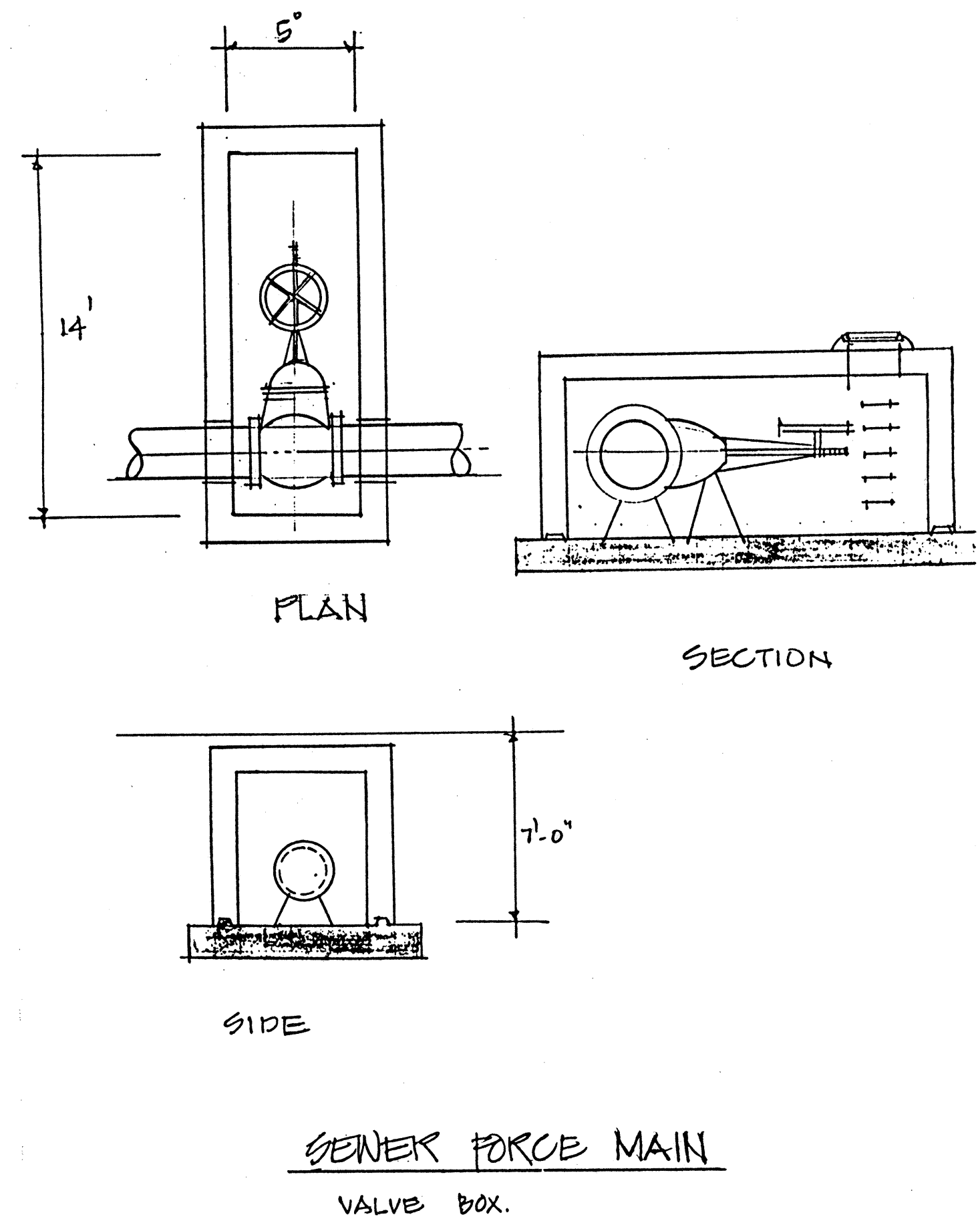
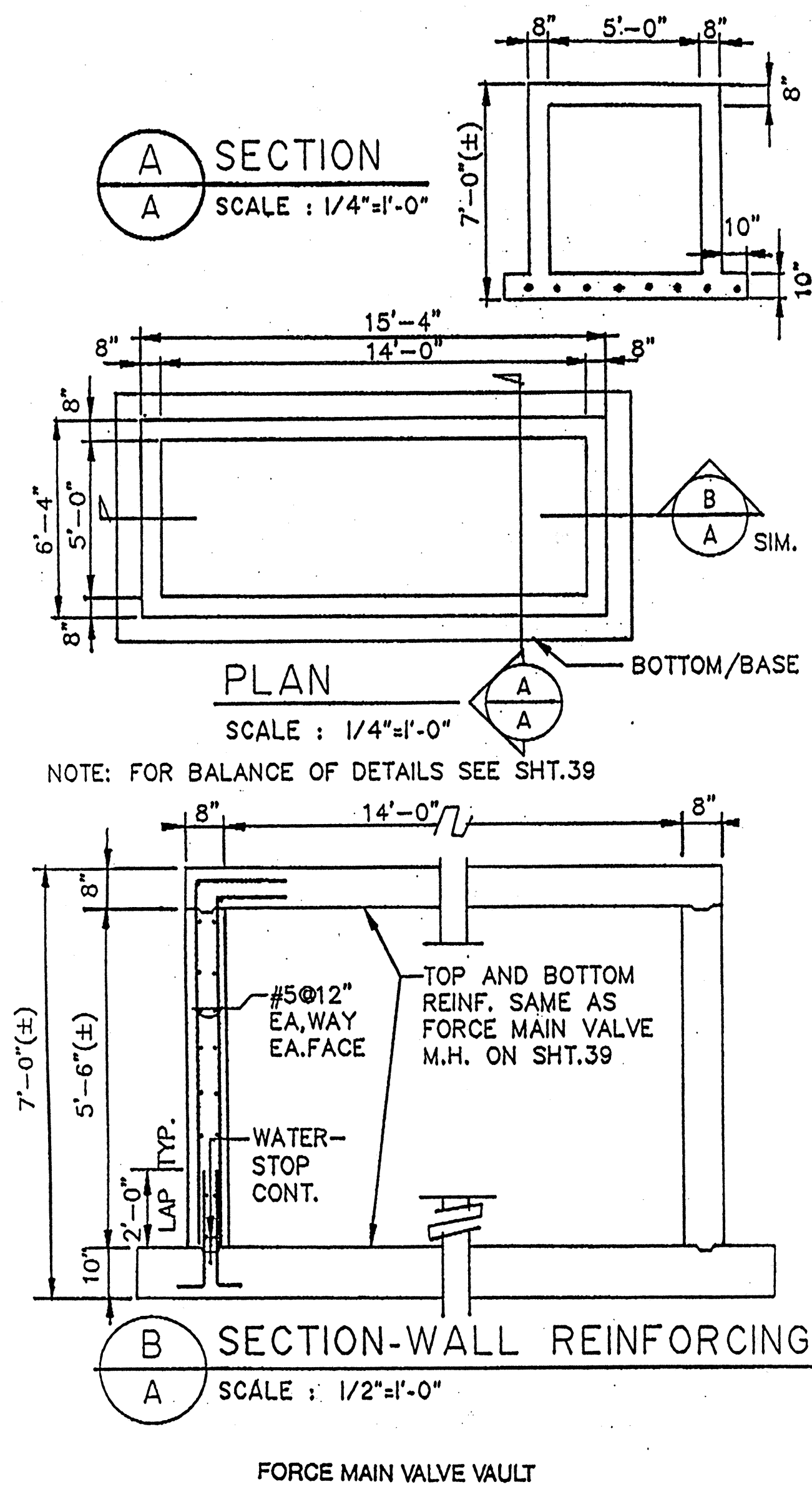


DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION FORCE MAIN VALVE MANHOLE AND DETAILS SAND ISLAND ROAD WIDENING 2ND BRIDGE AND APPROACHES FEDERAL AID PROJECT NO. F-064-1(2)	
SCALE: AS NOTED DATE: JUN. 1986 SHEET NO. J12 OF 17 SHEETS	

FORCE MAIN VALVE MANHOLE AT STA. 54 + 90 (S.I. Access Road)

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-064-1(2)	1987	395-1	151



TYPE A MANHOLE
FOR BEVEL GEARED VALVES

Note: This Tracing/Detail Prepared
During "As-Built" Posting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FORCE MAIN VALVE
MANHOLE AND DETAILS

SAND ISLAND ROAD WIDENING
2ND BRIDGE AND APPROACHES
FEDERAL AID PROJECT NO. F-064-1(2)

SHEET No. OF SHEETS

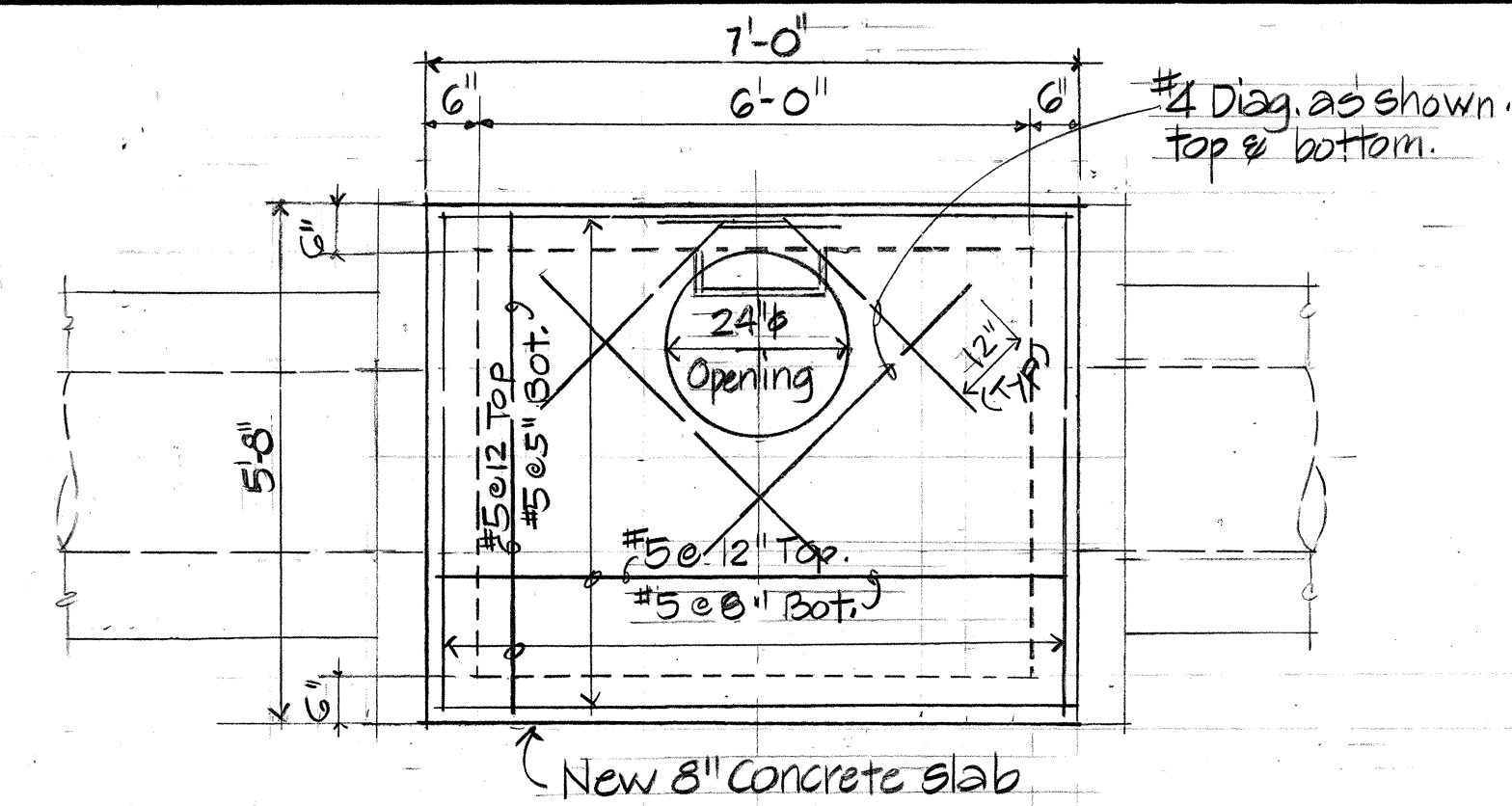
"AS-BUILT"

395-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-064-1(2)	1987	40	151

NOTES:

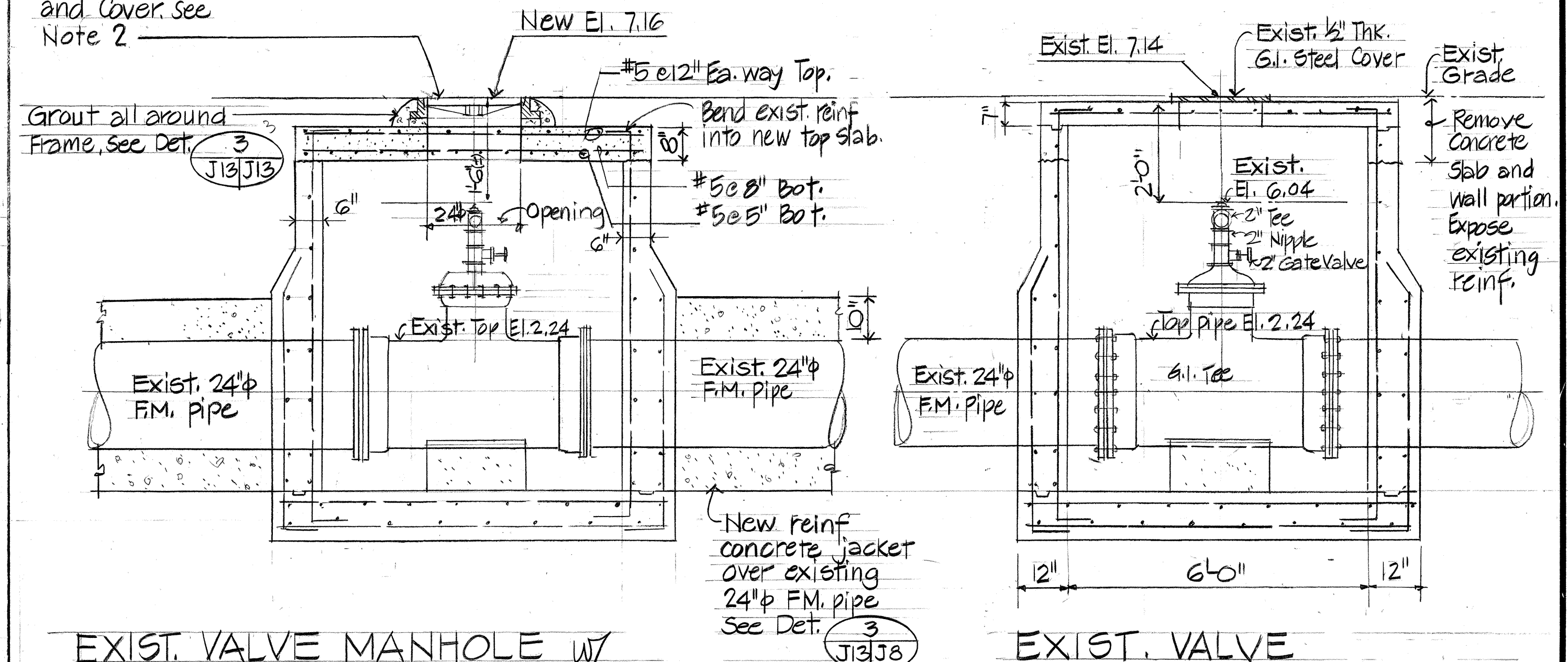
- Existing Valve Manhole Section, Piping, Valves, dimensions, etc. were taken from record drawings. Contractor to verify existing condition and to notify the Engineer of any discrepancies.
- Remove existing Manhole top slab. Bend existing wall vert. reinf. into new top slab. At existing wall roughen surface and brush on Epoxy Adhesive before new concrete slab is poured.



TOP PLAN

Scale: 1/2" = 1'-0"

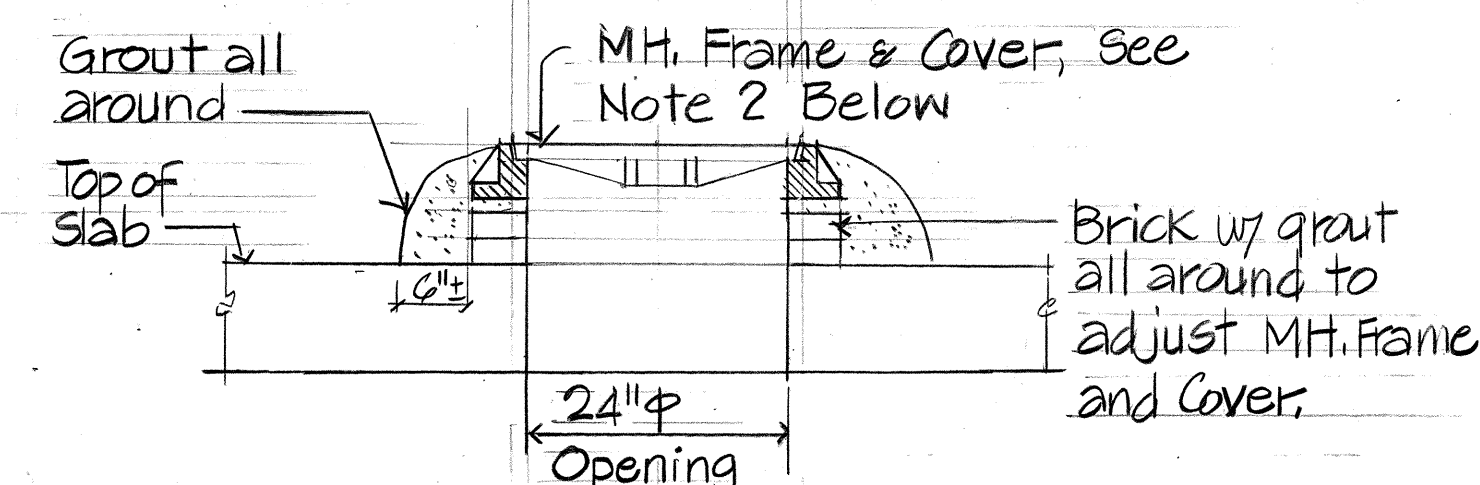
New M.H. Frame and Cover. See Note 2



EXIST. VALVE MANHOLE w/ NEW CONCRETE SLAB

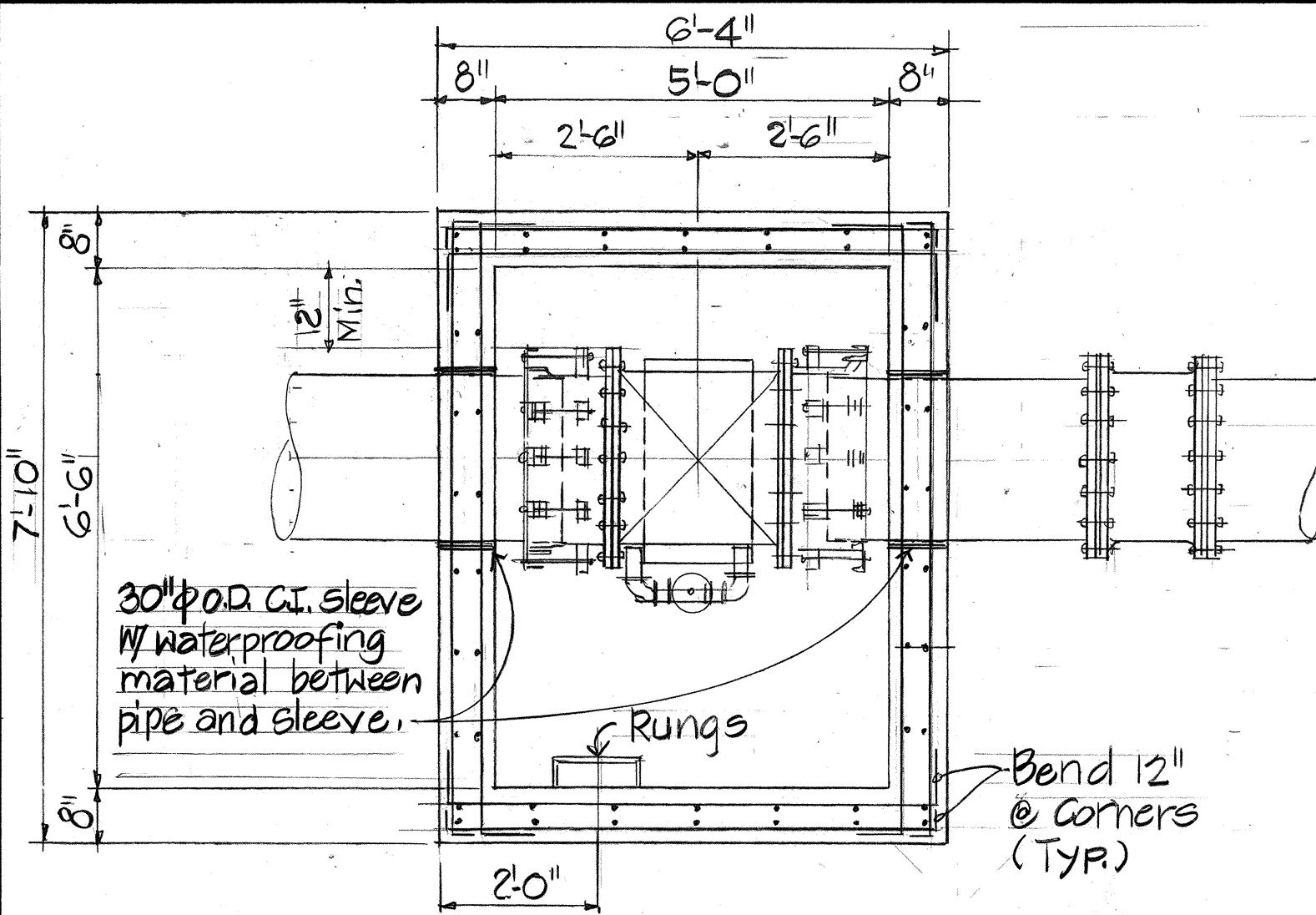
Scale: 1/2" = 1'-0"

EXISTING VALVE MANHOLE AT STA. 42+31



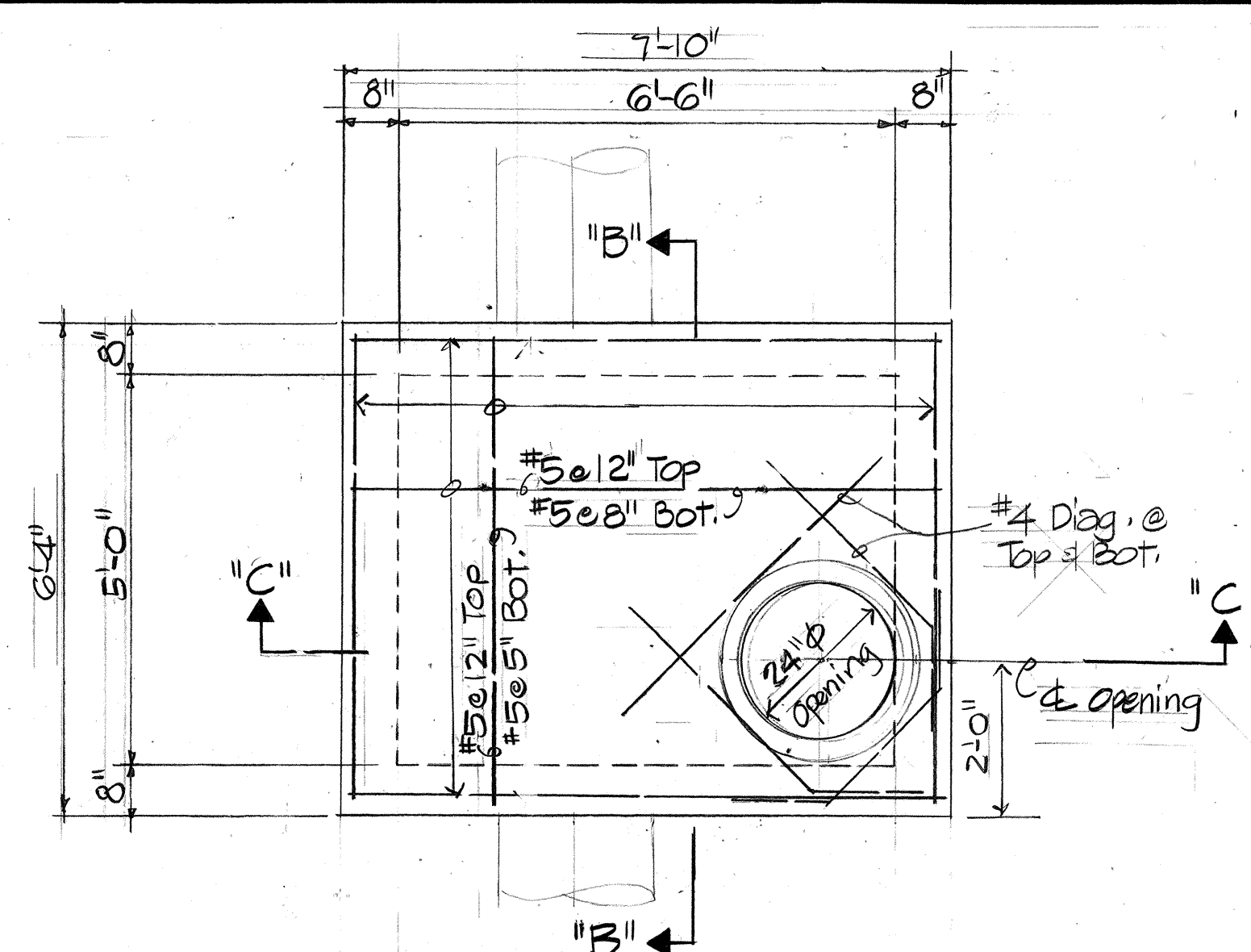
MANHOLE FRAME & COVER ADJUSTMENT DETAIL

N.T.S.



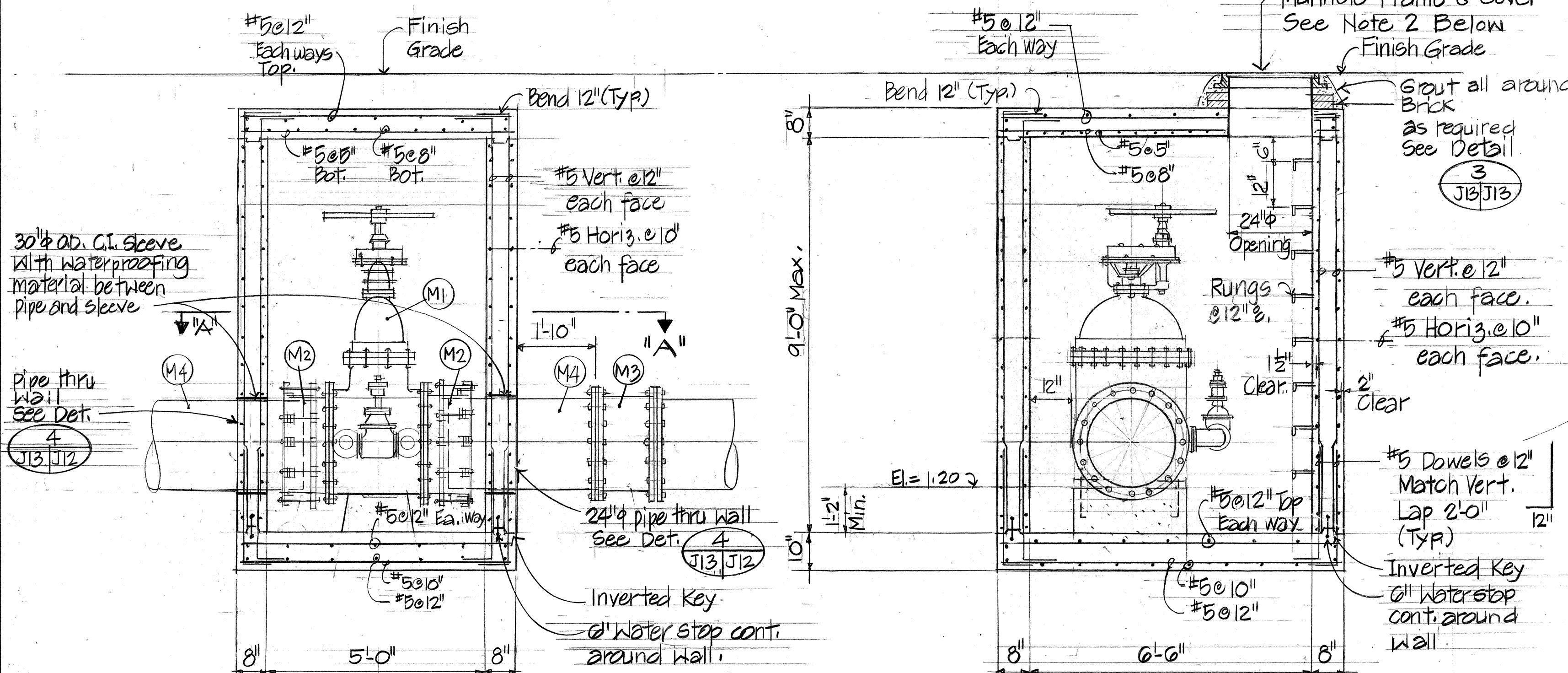
SECTION "A-A"

Scale: 1/2" = 1'-0"



TOP PLAN

Scale: 1/2" = 1'-0"



SECTION "B-B"

Scale: 1/2" = 1'-0"

SECTION "C-C"

Scale: 1/2" = 1'-0"

VALVE MANHOLE AT STA. 16+50 (Sand Island Parkway.)

24" PIPE VALVE VAULT ASSEMBLY

- (M1) 24" Pipe Valve (Fig) #150 N.R.S.
- (M2) 24" Steel Flange Coupling Adapter.
- (M3) 24" Pipe Sleeve 15" Long (M.J.)
- (M4) 24" Pipe at wall, w/ 1/2" wide x 1/4" Thk. Steel Plate Collar welded to pipe.

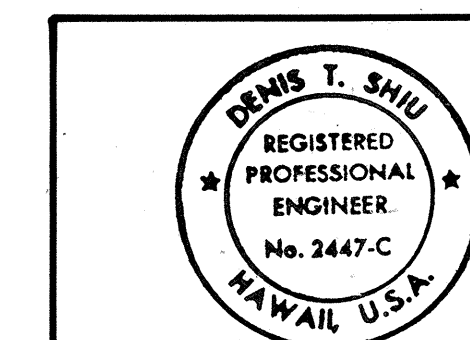
Notes:

- Rungs: See State Standard Details.
- Manhole Frame and Cover: 24" Opening (Heavy Duty) Fed Specs. RRS-G21B

J5, J9

1 J13

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NO.	_____



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Dennis T. Shin

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FORCE MAIN VALVE MANHOLE AND DETAILS

SAND ISLAND ROAD WIDENING
2ND. BRIDGE AND APPROACHES
FEDERAL AID PROJECT NO. F-064-1(2)

SCALE: AS NOTED DATE: JUN, 1986

SHEET NO. J13 OF 17 SHEETS