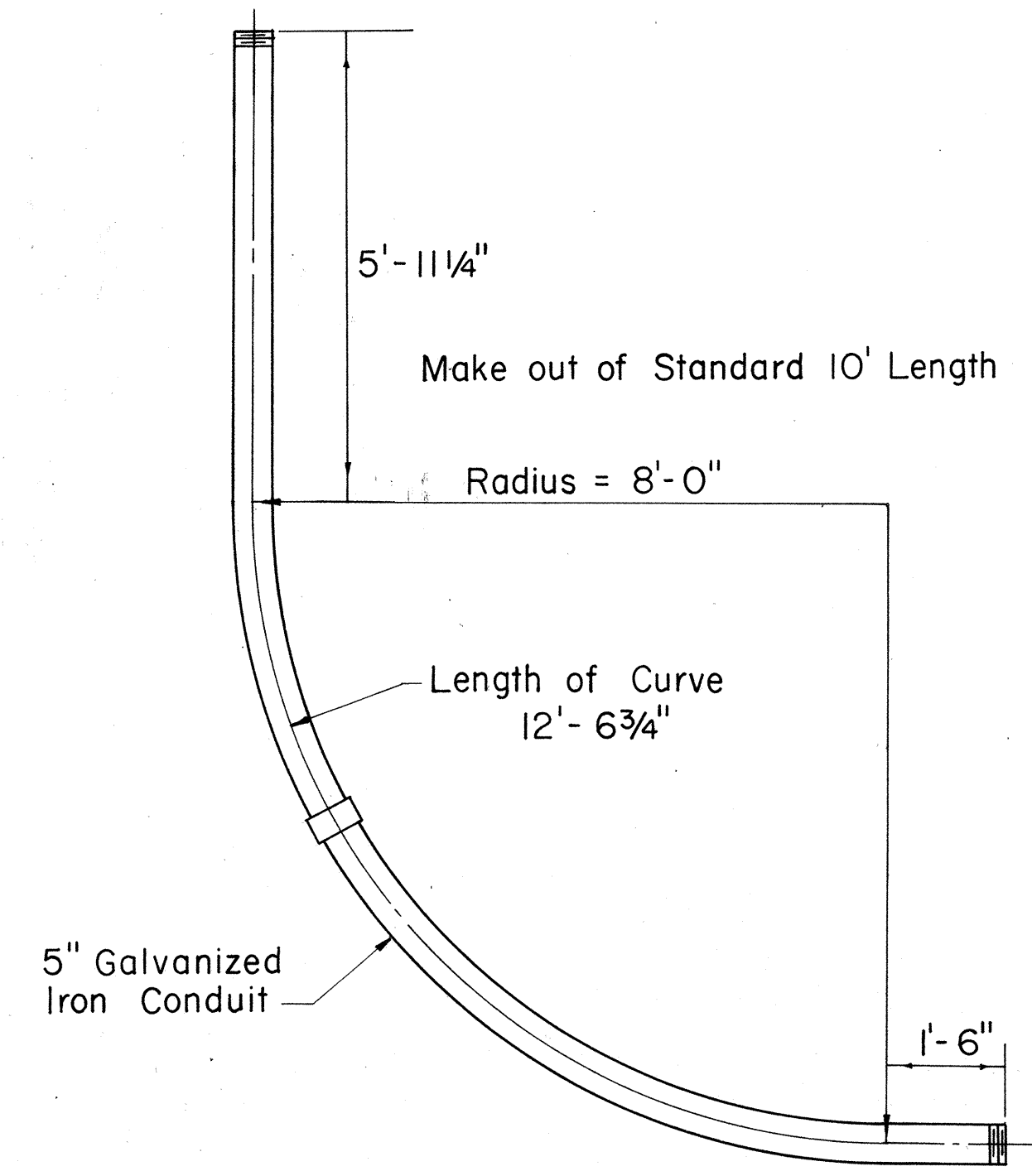
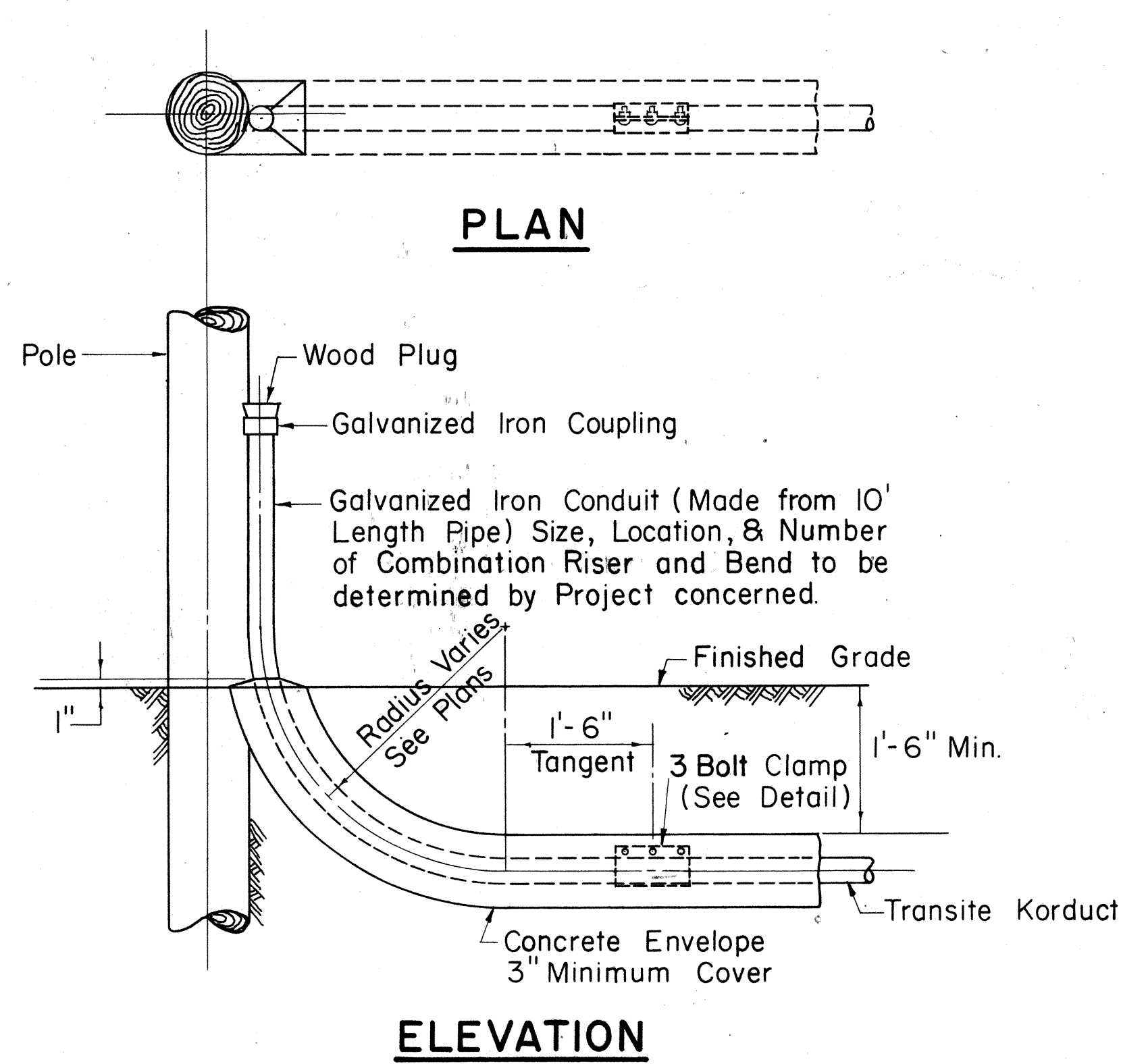


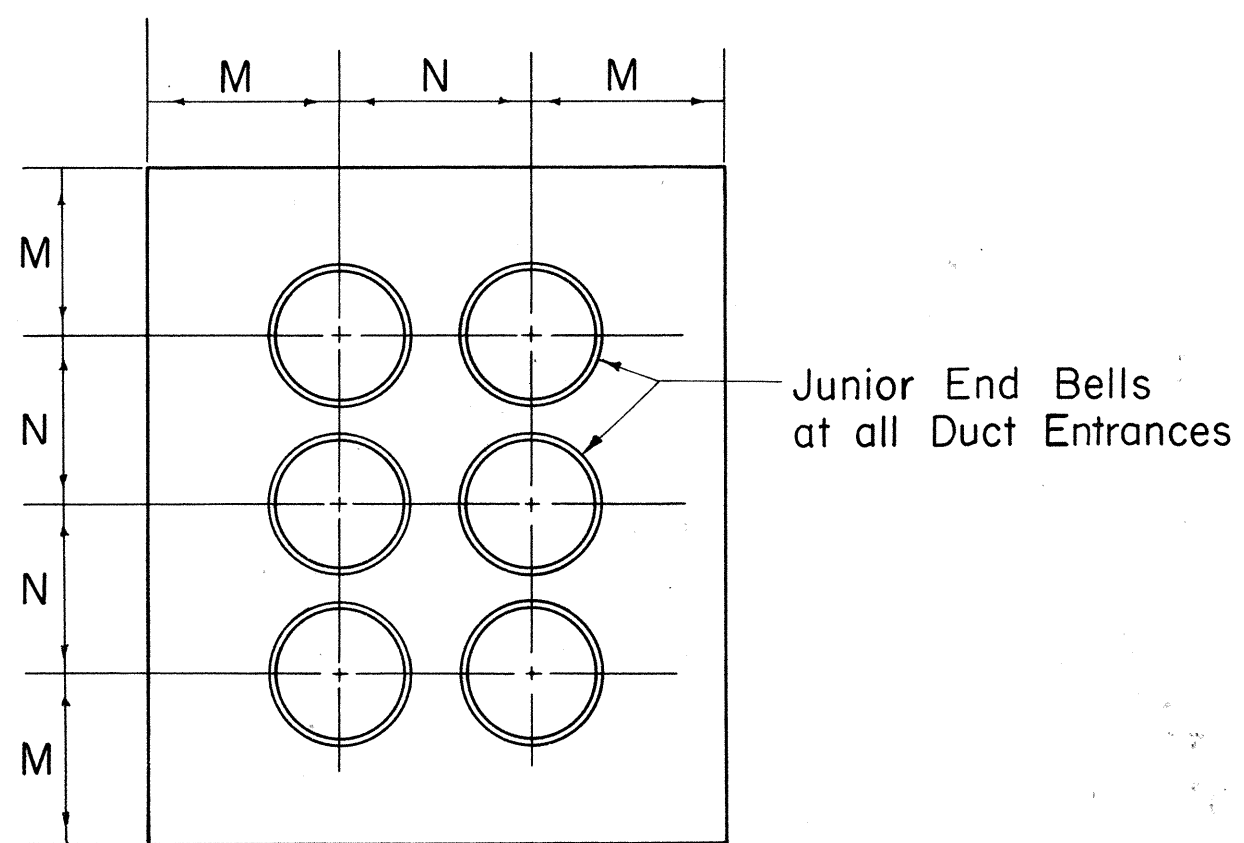
FED. AID DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	HA-1(32)-5 Unit 1	1966	56	73



46 KV COMBINATION RISER AND BEND
(8'-0" RADIUS)
Not to Scale



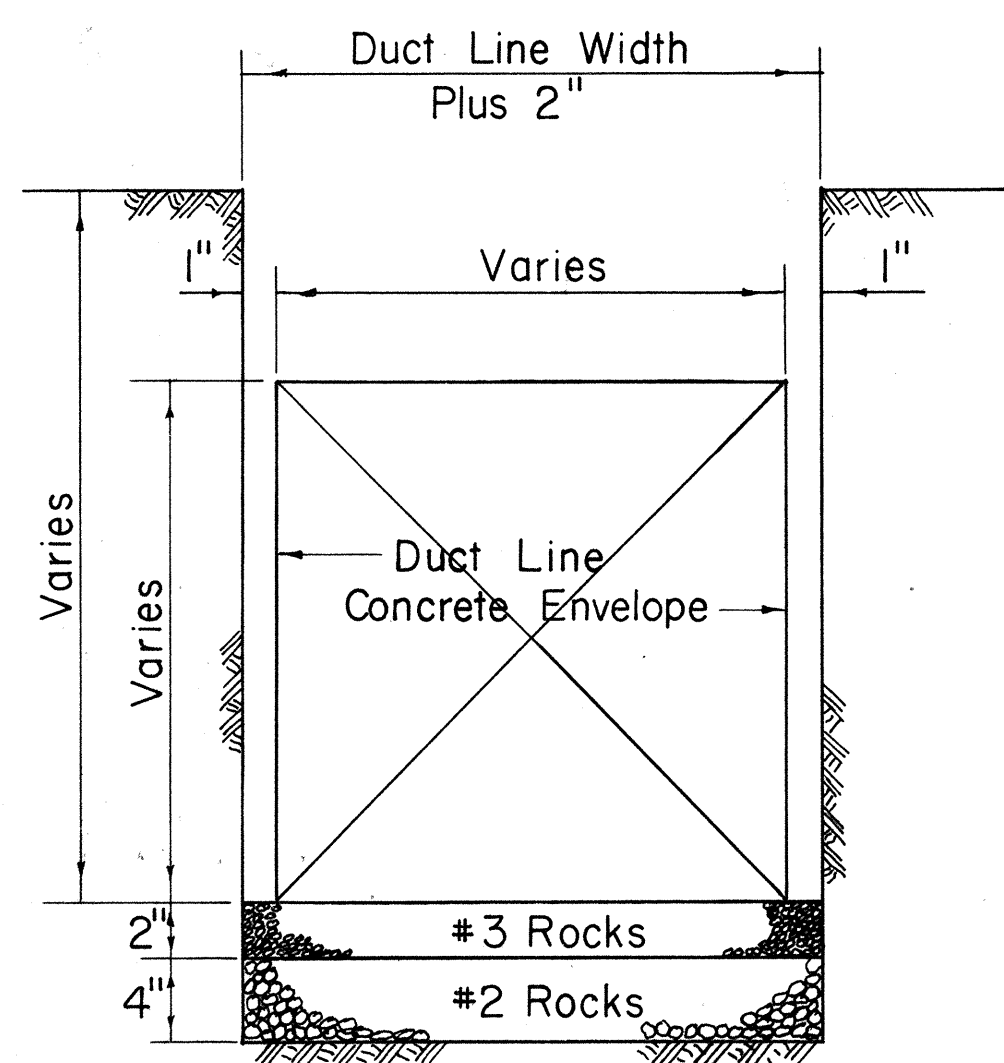
TYPICAL DETAIL COMBINATION RISER AND BEND
Scale: 3/4" = 1'-0"



TYPICAL DUCT DETAIL AT MANHOLE WALL

Not to Scale

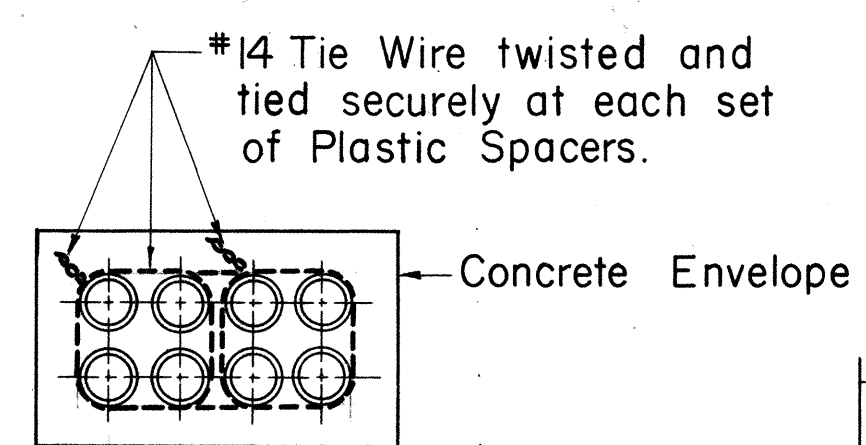
SIZE	M	N
3"	5"	6"
4"	5 1/2"	7"
4 1/2"	5 1/2"	7 1/2"
5"	6"	8"



TYPICAL EXCAVATION DETAIL

Not to Scale

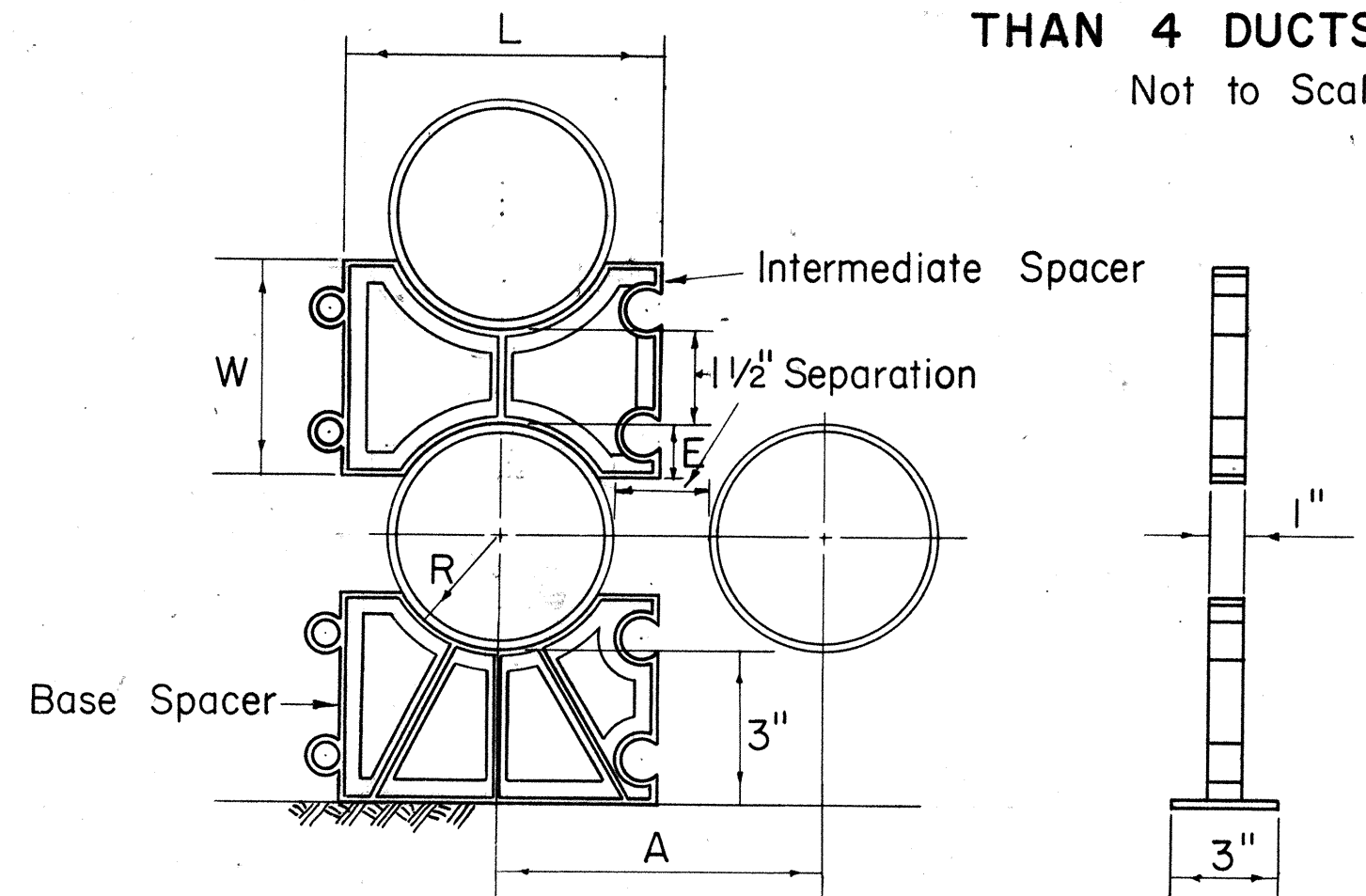
- NOTES**
1. Size of Concrete Envelope and Depth of Excavation to be determined by Project concerned.
 2. Widen Trench Excavation when Forms are used.
 3. Rock Foundation required only when Water is encountered.



TIE WIRE DETAIL

FOR DUCT LINE MORE THAN 4 DUCTS WIDE

Not to Scale

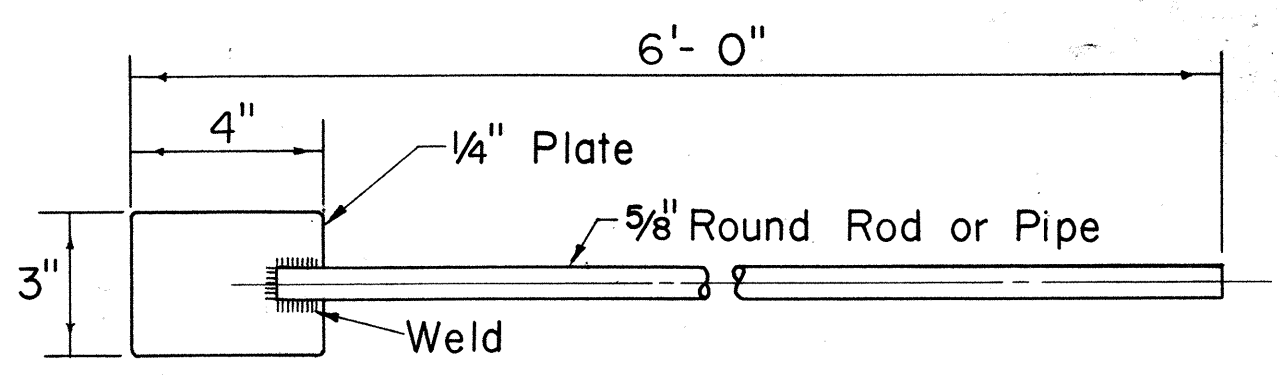


TYPICAL PLASTIC SPACERS

Not to Scale

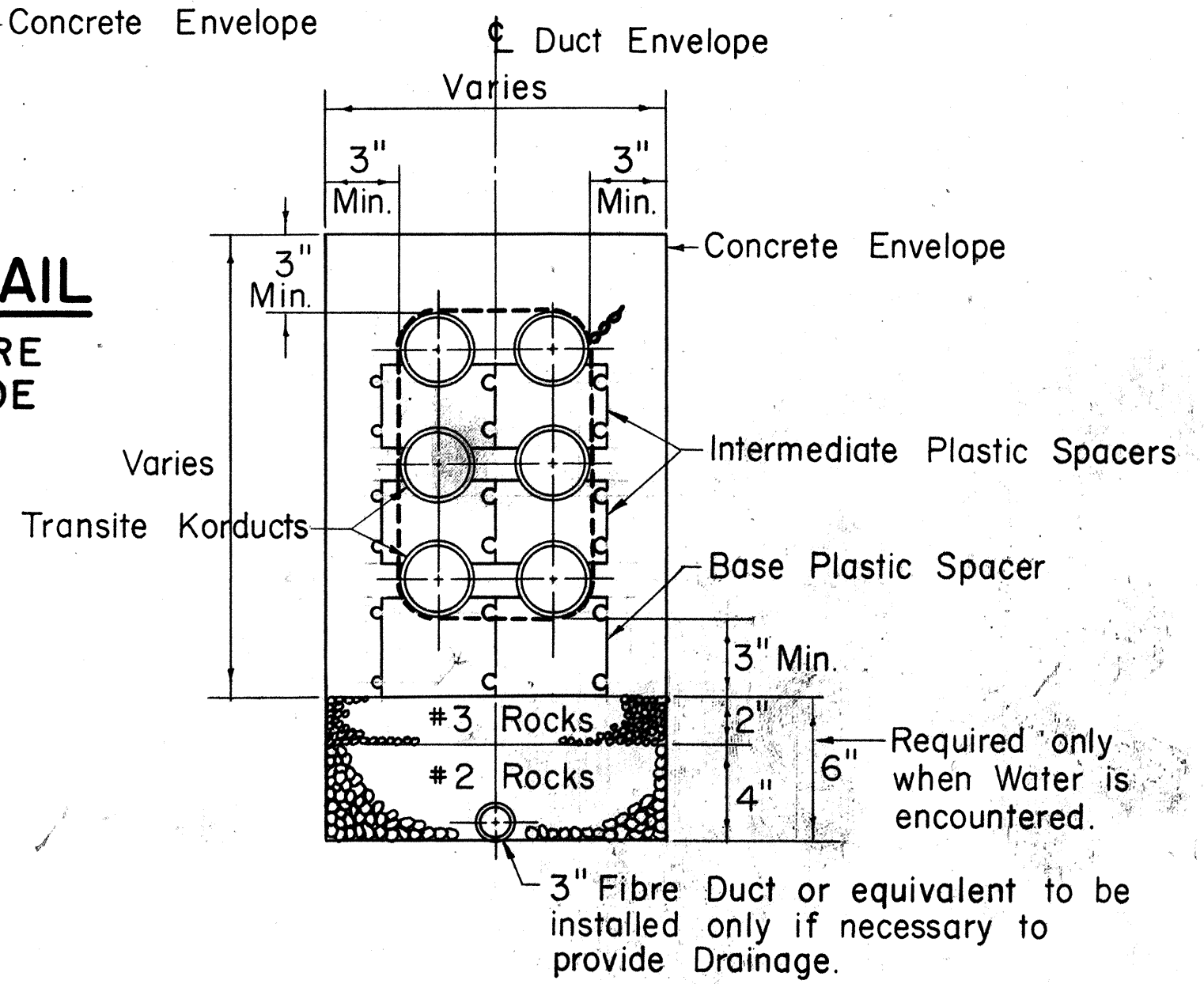
SIZE	R	E	W	A	L
3"	1 27/32"	7/8"	3 1/4"	5 1/8"	5"
4"	2 13/32"	1 1/8"	3 3/4"	6 1/4"	6 1/8"
4 1/2"	2 23/32"	1 1/4"	4"	6 7/8"	6 3/4"
5"	3 1/16"	1 3/8"	4 1/4"	7 5/8"	7 1/2"

For 1 1/2" Separation



CONCRETE DUCT ENVELOPE TAMPING ROD

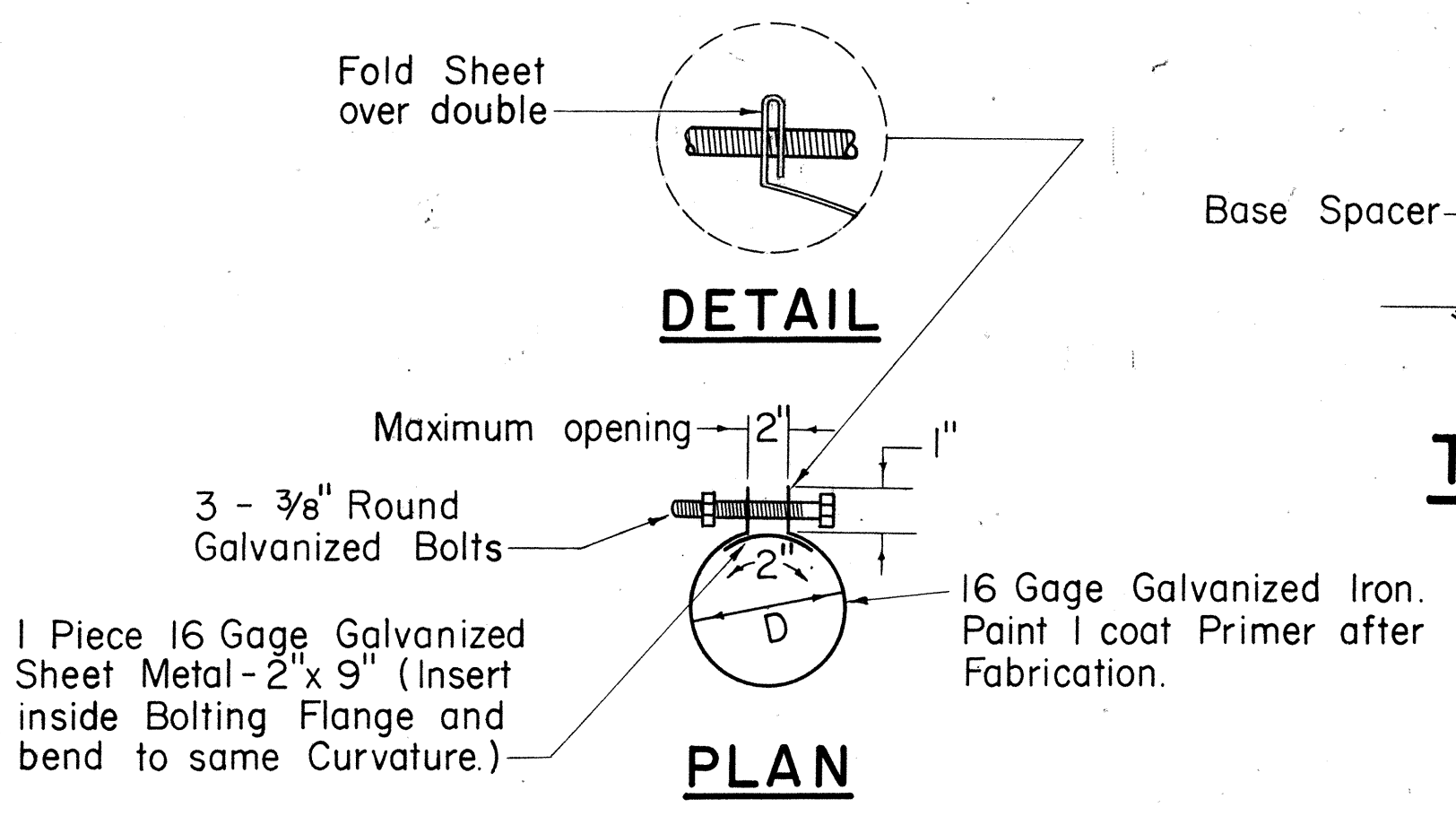
Scale: 3" = 1'-0"



TYPICAL DUCT PLASTIC SPACERS & DRAINAGE SECTION

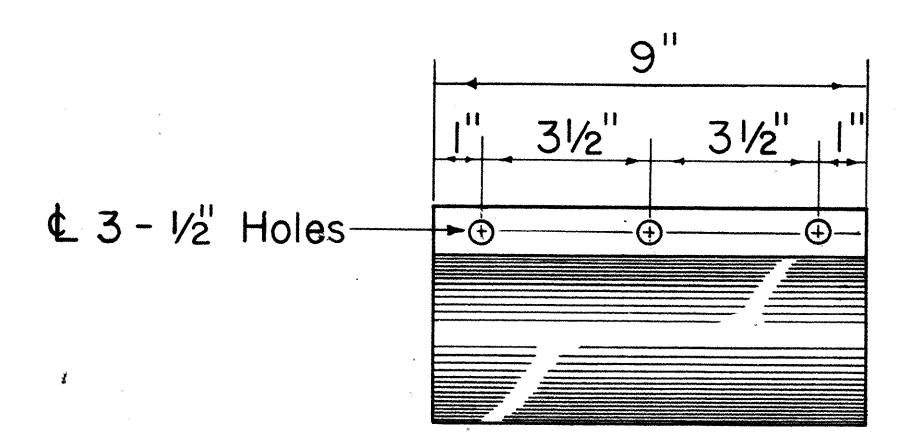
(6 WAY DUCT SHOWN - 3 HIGH - 2 WIDE)

Not to Scale



3 BOLT CLAMP DETAIL

Scale: 3" = 1'-0"



ELEVATION

APPROVED:

HAWAIIAN ELECTRIC CO., INC. DATE

HECo, Inc. Drawing Number

18585

SHEET No. 1 OF 2 SHEETS

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STANDARD DETAILS

CONSTRUCTION STANDARDS

TRANSITE KORDUCTS

UNDERGROUND DUCT LINES

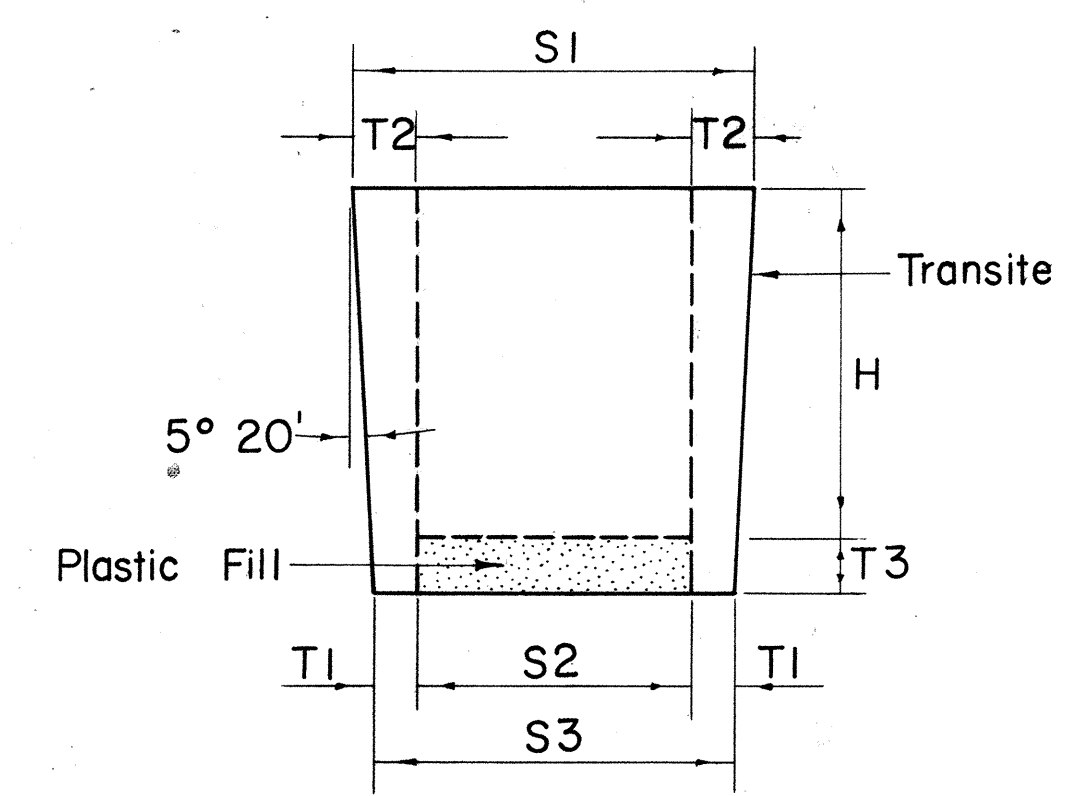
Scale: As Noted

Date

SHEET NO.

OF

SHEETS



PLUGS FOR TRANSITE KORDUCTS

Not to Scale

SIZE	H	S1	S2	S3	T1	T2	T3
3"	4"	3 3/8"	2"	2 5/8"	5/16"	11/16"	3/4"
4"	4 1/2"	4 27/64"	2 3/4"	3 37/64"	13/32"	27/32"	3/4"
4 1/2"	4 1/2"	4 59/64"	3"	4 5/64"	35/64"	31/32"	3/4"
5"	4 1/2"	5 27/64"	3 1/2"	4 37/64"	35/64"	31/32"	3/4"

JUNIOR END BELLS

Not to Scale

SIZE	D1	D2	F	X	E	R
3"	3 25/64"	4 1/2"	1 11/32"	1 29/32"	1 1/4"	1 3/4"
4"	4 25/64"	5 3/4"	1 9/16"	1 9/16"	3/8"	2"
4 1/2"	4 57/64"	6 1/4"	1 9/16"	1 9/16"	3/8"	2"
5"	5 29/64"	7"	1 9/16"	1 7/16"	1 1/2"	2"

Note "X"

- Provide one set of Spacers
- (a) 10 Ft. straight run for 4 Ducts high or less.
 - (b) 5 Ft. straight run for 5 Ducts high or more.

TRANSITE KORDUCTS

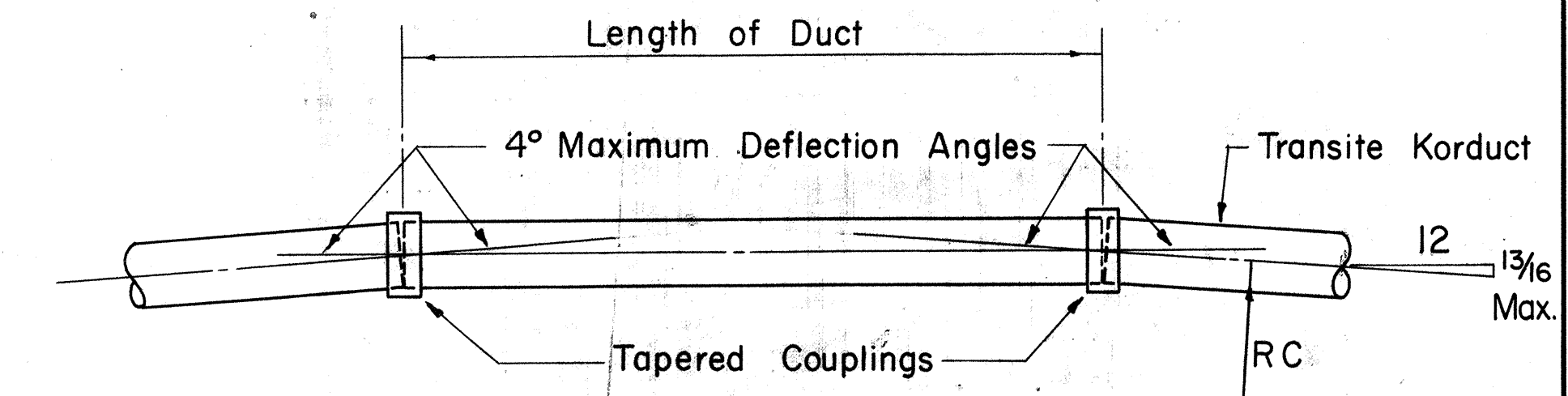
Not to Scale

SIZE	D1	D3	C	P	T
3"	3 25/64"	3 35/64"	1 1/8"	7/8"	17/64"
4"	4 25/64"	4 35/64"	1 1/4"	1"	17/64"
4 1/2"	4 57/64"	5 3/64"	1 1/4"	1"	17/64"
5"	5 29/64"	5 39/64"	1 25/64"	1 1/8"	19/64"

TAPERED COUPLINGS

Not to Scale

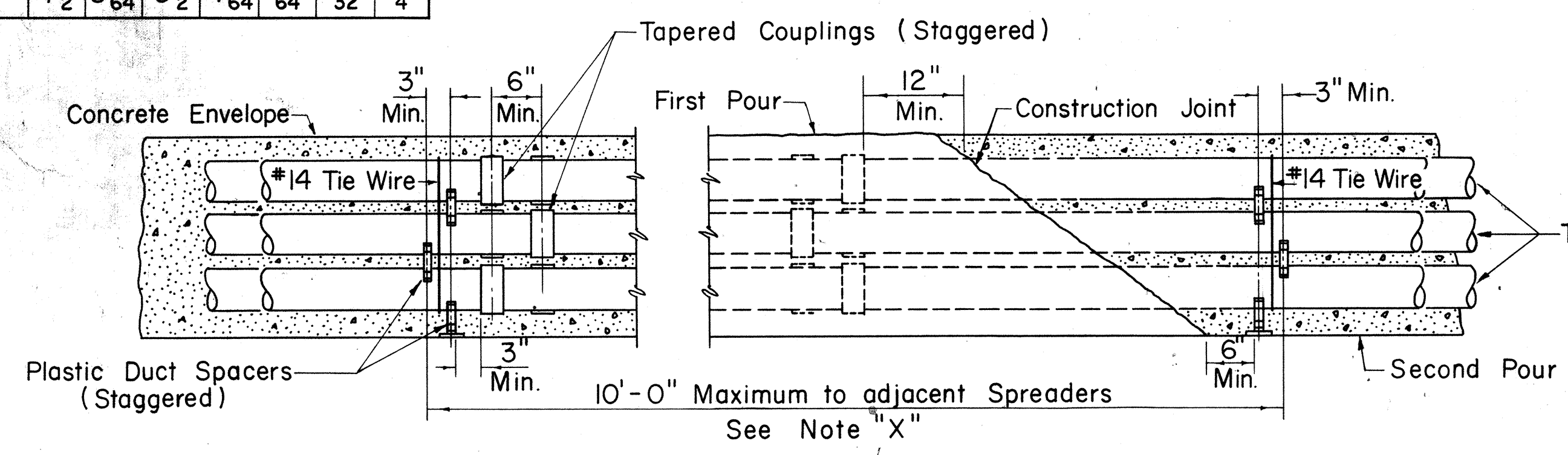
SIZE	D1	D2	L
3"	3 25/32"	4 11/64"	2 1/4"
4"	4 25/64"	5 3/16"	2 1/2"
4 1/2"	4 57/64"	5 49/64"	2 1/2"
5"	5 29/64"	6 21/64"	2 3/4"



METHOD OF FORMING CURVES

Not to Scale

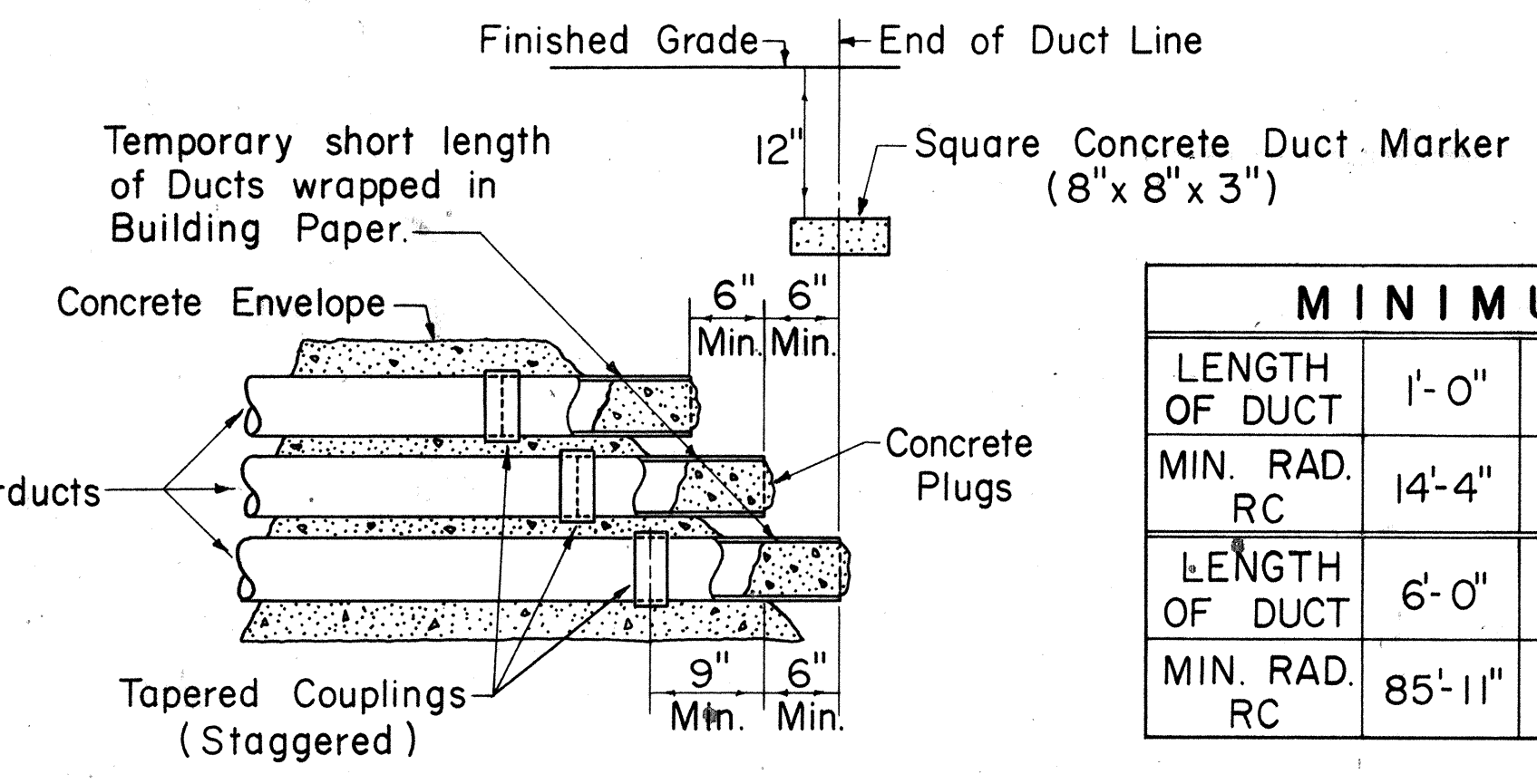
	MINIMUM RADIUS TO FORM CURVES									
LENGTH OF DUCT	1'-0"	1'-6"	2'-0"	2'-6"	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	5'-6"
MIN. RAD. RC	14'-4"	21'-6"	28'-8"	35'-10"	42'-11"	50'-1"	57'-3"	64'-5"	71'-7"	78'-9"
LENGTH OF DUCT	6'-0"	6'-6"	7'-0"	7'-6"	8'-0"	8'-6"	9'-0"	9'-6"	10'-0"	
MIN. RAD. RC	85'-11"	93'-1"	100'-3"	107'-5"	114'-7"	121'-8"	128'-10"	136'-0"	143'-2"	



TYPICAL DUCT ENVELOPE ELEVATION

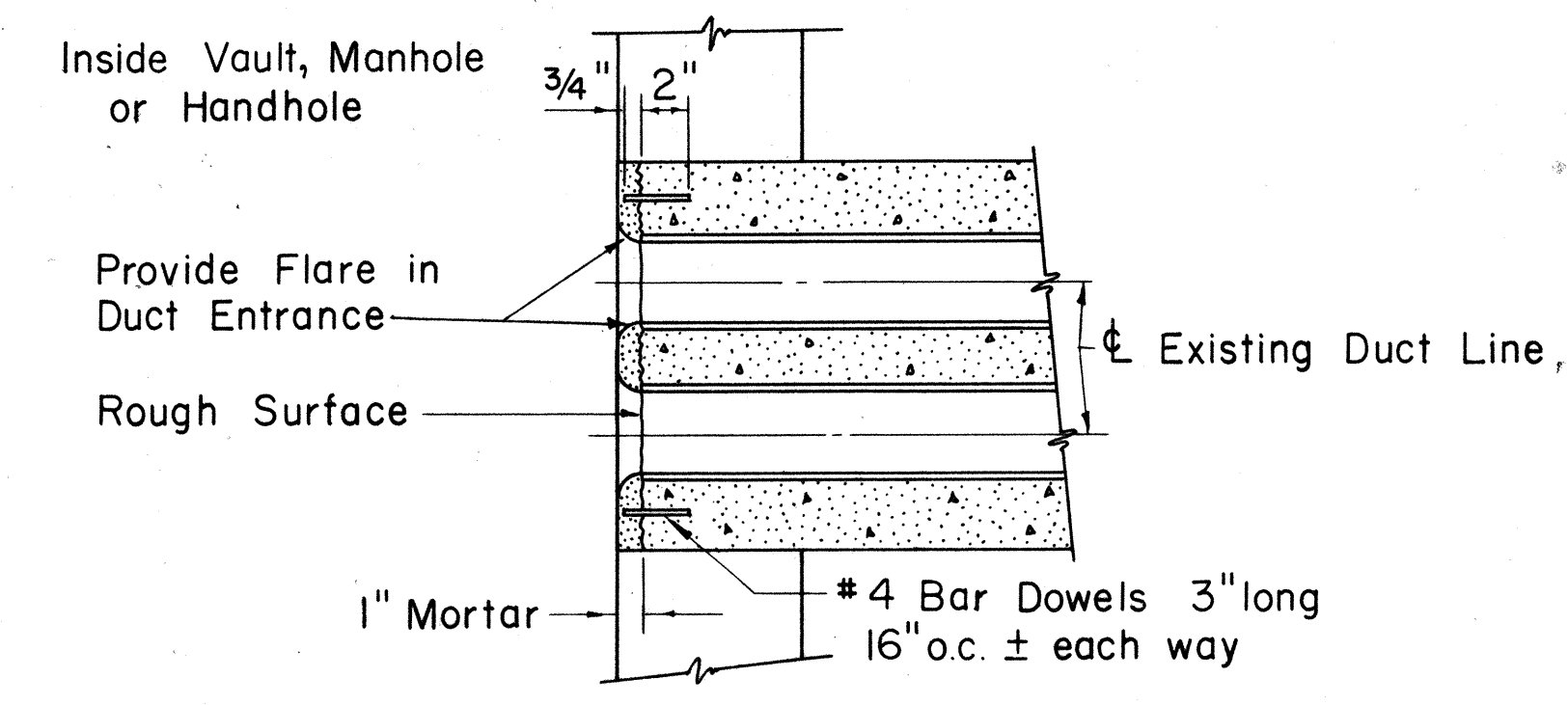
(6 WAY DUCT LINE SHOWN)

Not to Scale



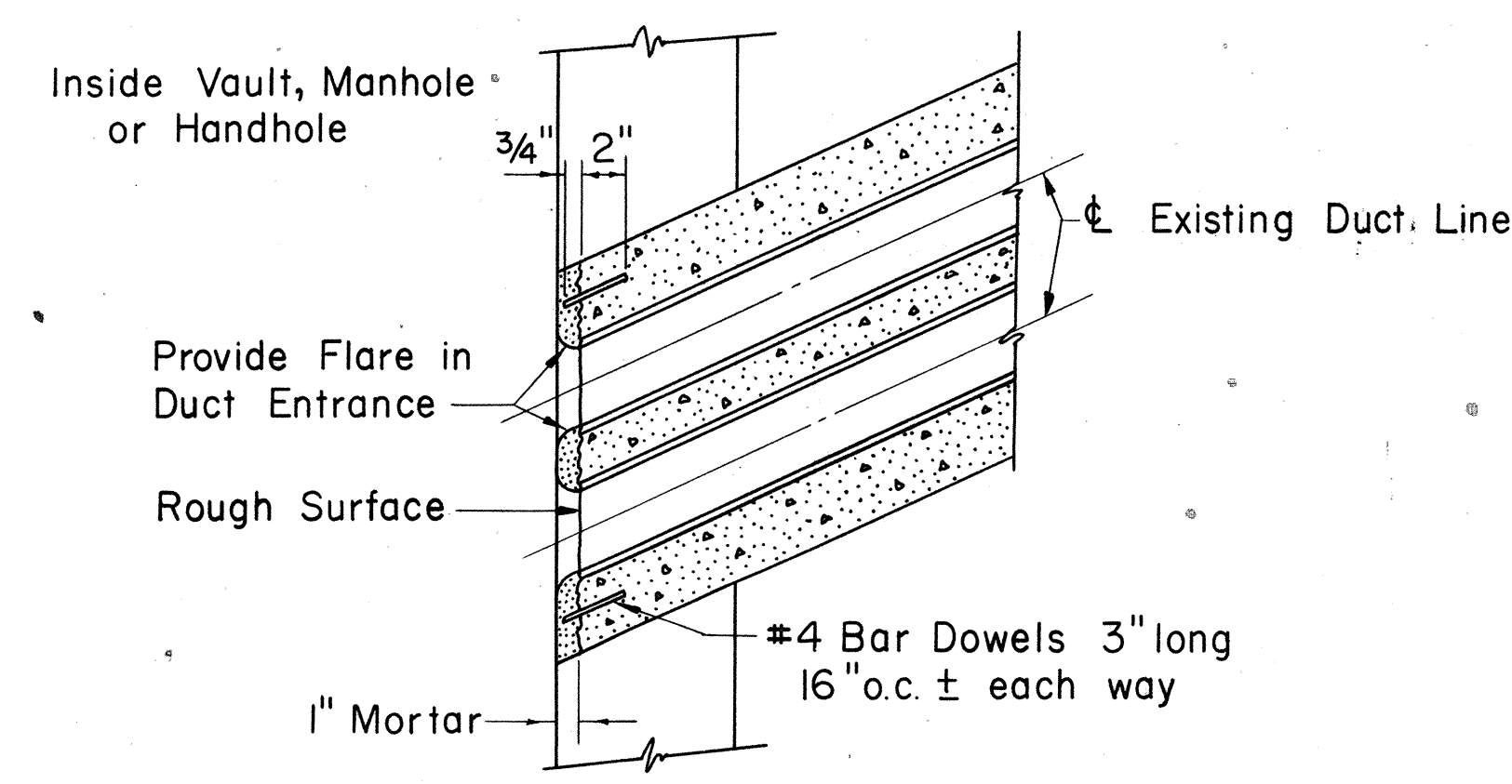
TYPICAL STUB OUT DETAIL

Not to Scale



DUCT LINE ENTRANCE AT EXISTING DUCT LINE

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



DUCT LINE DIAGONAL ENTRANCE

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

APPROVED:

HAWAIIAN ELECTRIC CO., INC. DATE

HECo., Inc. Drawing Number

18585

SHEET No. 2
OF 2 SHEETS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

CONSTRUCTION STANDARDS
TRANSITE KORDUCTS
UNDERGROUND DUCT LINES

Scales: As Noted Date

SHEET NO. OF SHEETS