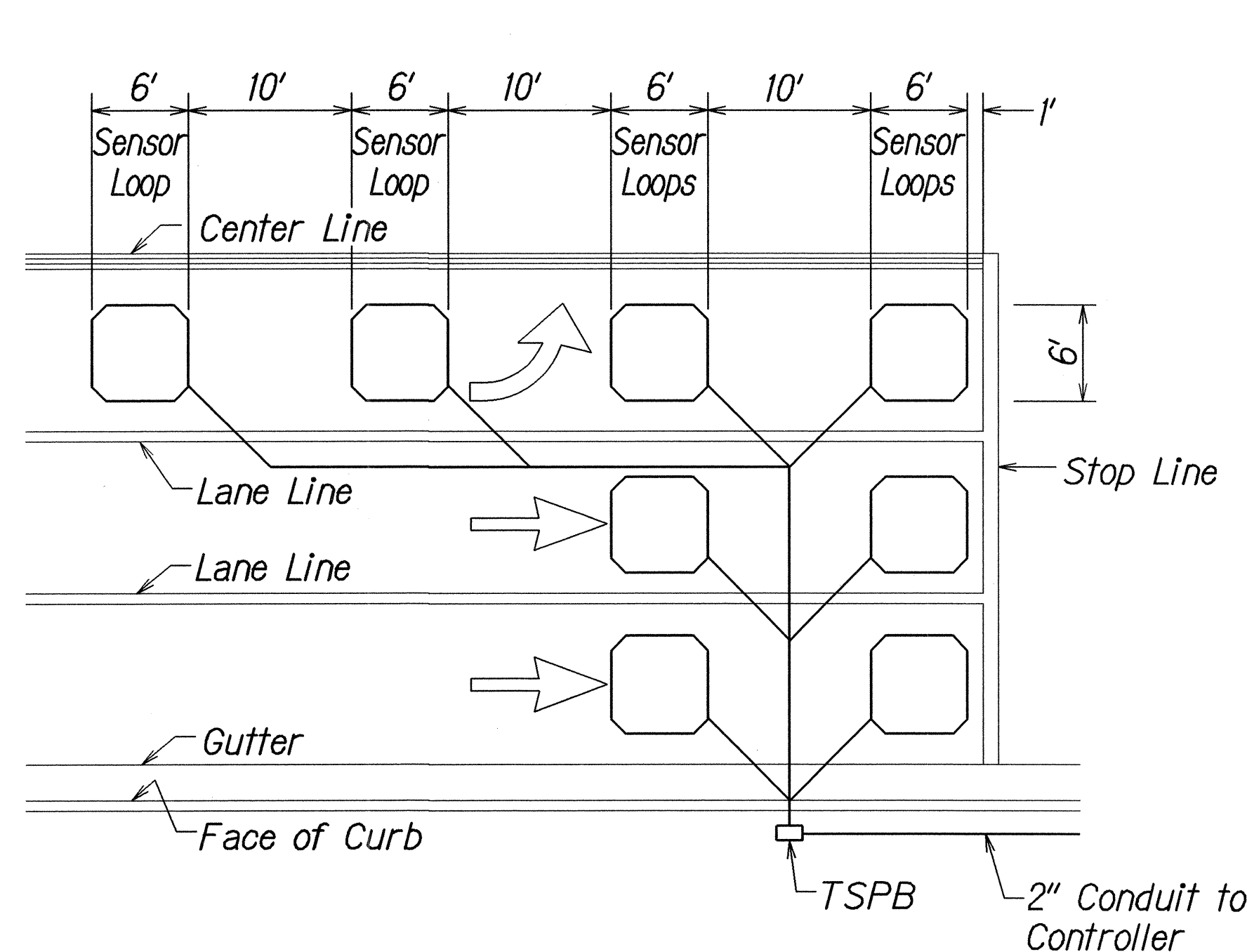


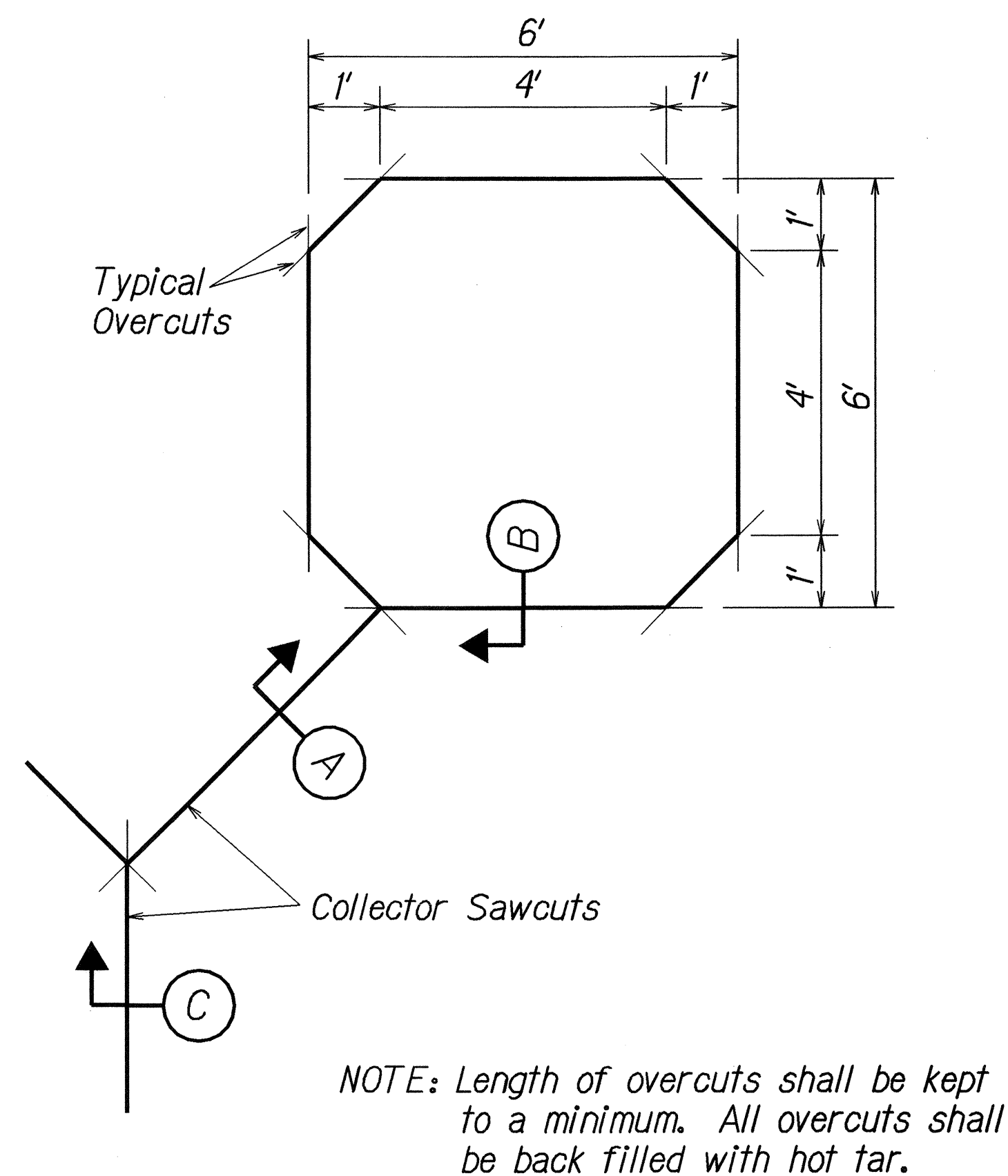
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	74	74



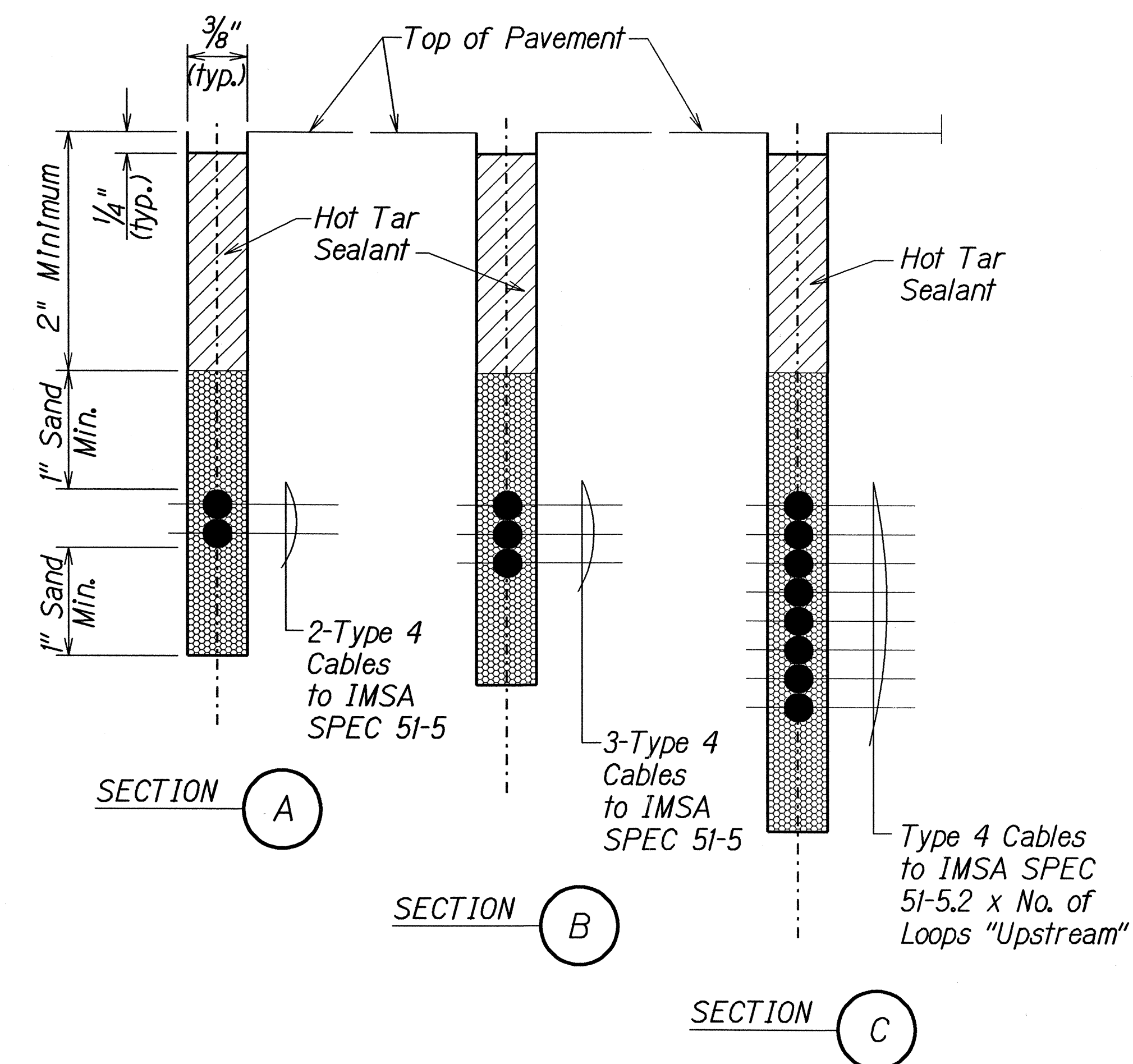
NOTES:

1. Center sensor loops in lanes.
2. Collector cables shall be twisted 2 turns per foot.
3. Number of loops and locations vary. See project plans.
4. Number and locations of collector sawcuts may be varied in the field to suit.

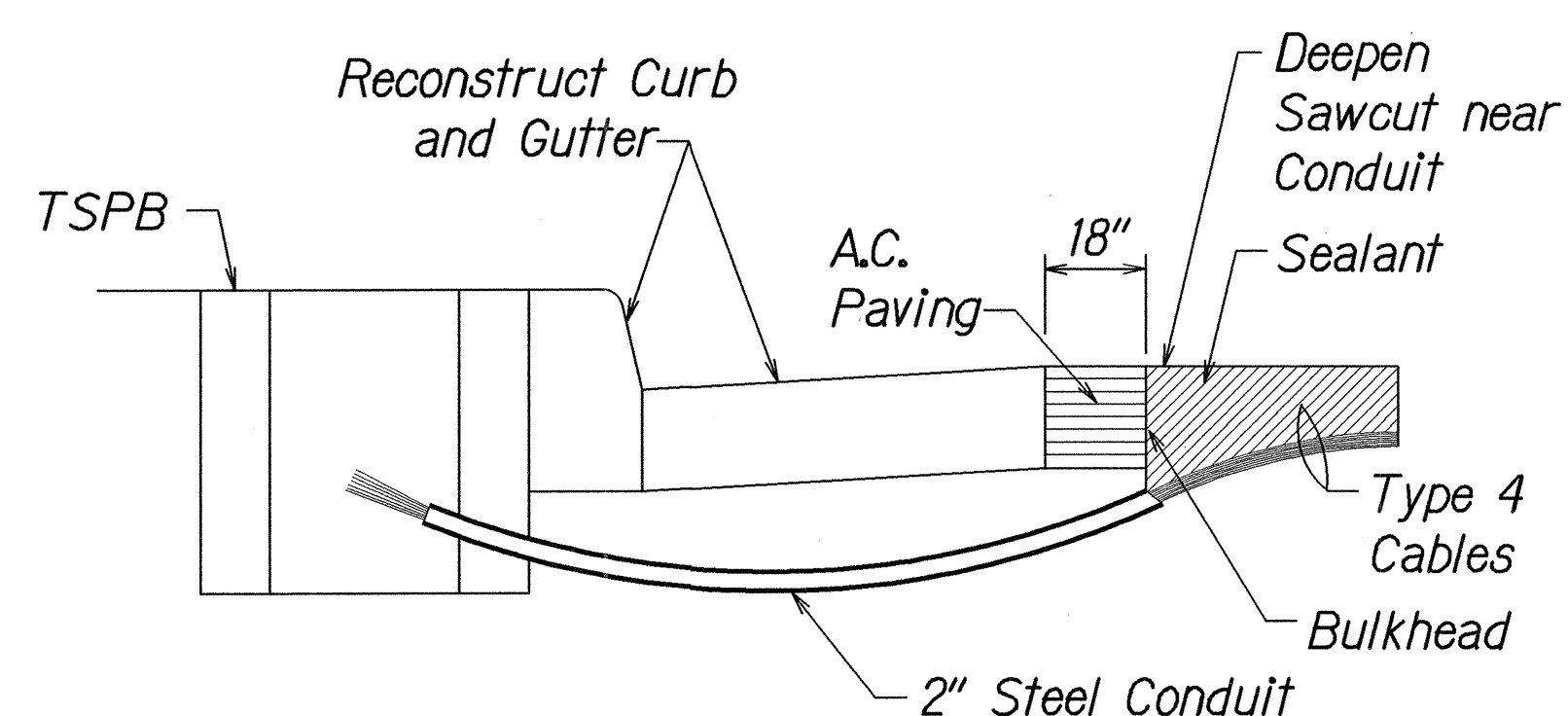
TYPICAL SENSOR LOOP LAYOUT



TYPICAL SENSOR LOOP SAWCUT DETAIL



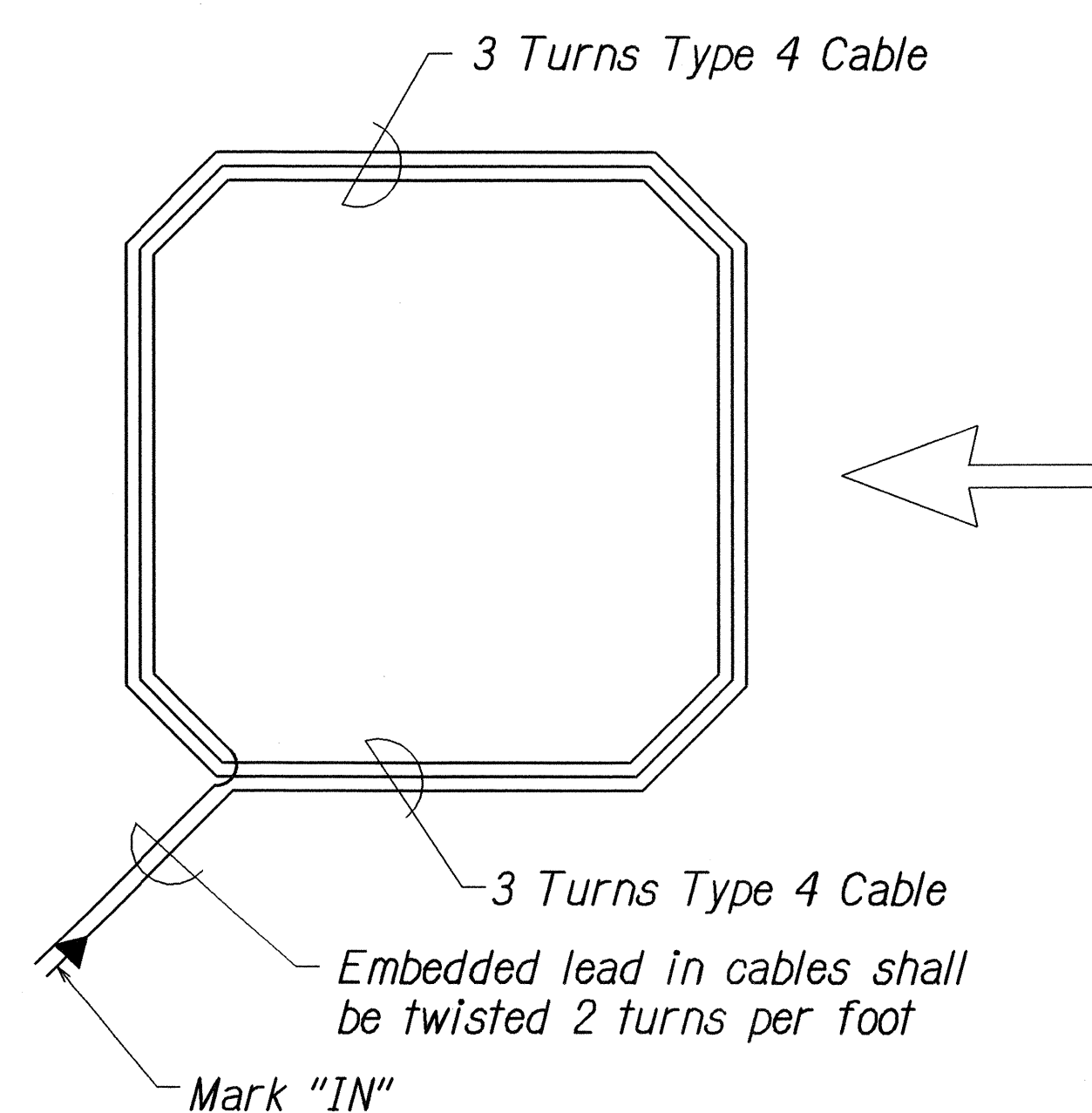
TYPICAL SECTION THROUGH SENSOR LOOP



NOTES ON CONSTRUCTION AT END OF SAWCUT

1. Seal roadway end of conduit after installation of conductors.
2. Install bulkhead across conduit trench.
3. Place hot tar in sawcut.
4. Backfill over conduit with new A.C.
5. Reconstruct curb and gutter as required.

DETAIL OF SENSOR LOOP INSTALLATION AT EDGE OF ROADWAY



TYPICAL SENSOR LOOP WIRING DIAGRAM

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
REVISIONS	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

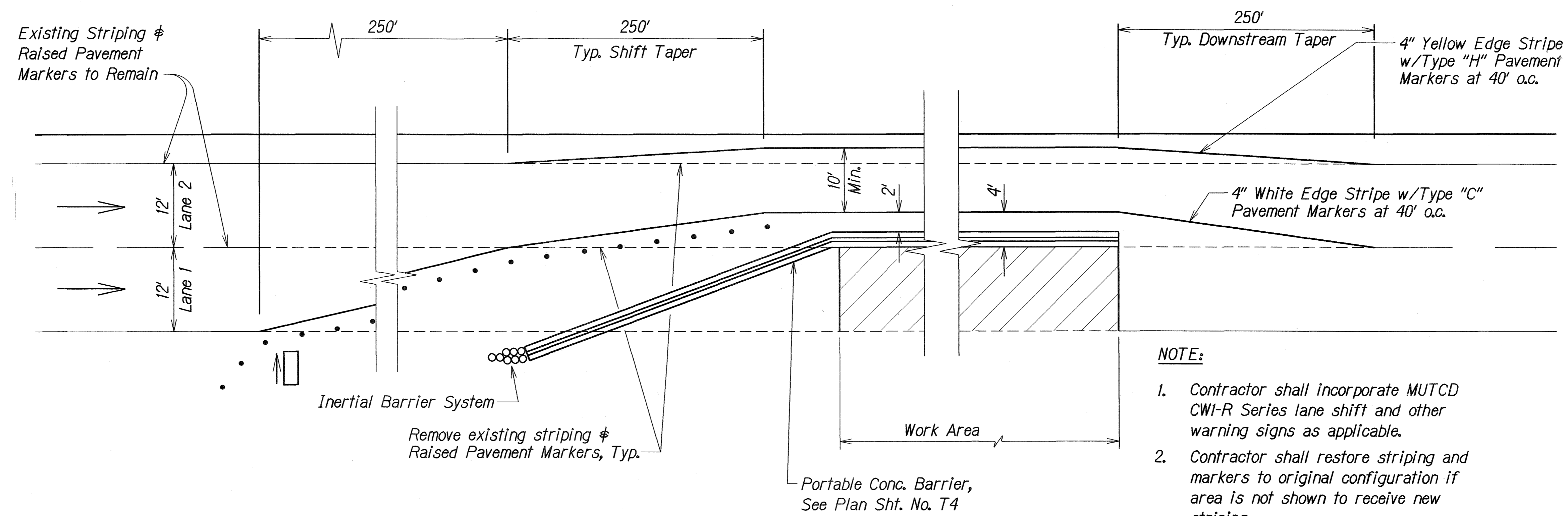
LOOP DETECTOR DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAU STREET to H-2 INTERCHANGE
FEDERAL AID PROJECT NO. NH-099-1(24)

Not to Scale Date: June 2006

SHEET No. 74 OF 18 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	ADD. 74S-1	74



- NOTE:**
- Contractor shall incorporate MUTCD CWI-R Series lane shift and other warning signs as applicable.
 - Contractor shall restore striping and markers to original configuration if area is not shown to receive new striping.
 - Removal and installation of temporary and permanent striping and markers will not be paid for separately, and shall be considered incidental to Other Contract Items.

TEMPORARY STRIPING PLAN - LANE SHIFT ON 2 LANE ROAD
Not To Scale

- LEGEND:**
- • • Channeling Device
 - ↑ Arrow Board

SURVEY PLOTTED BY	DATE
DESIGNED BY	2/8/07
TRACED BY	
NOTE BOOK	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
DATE	

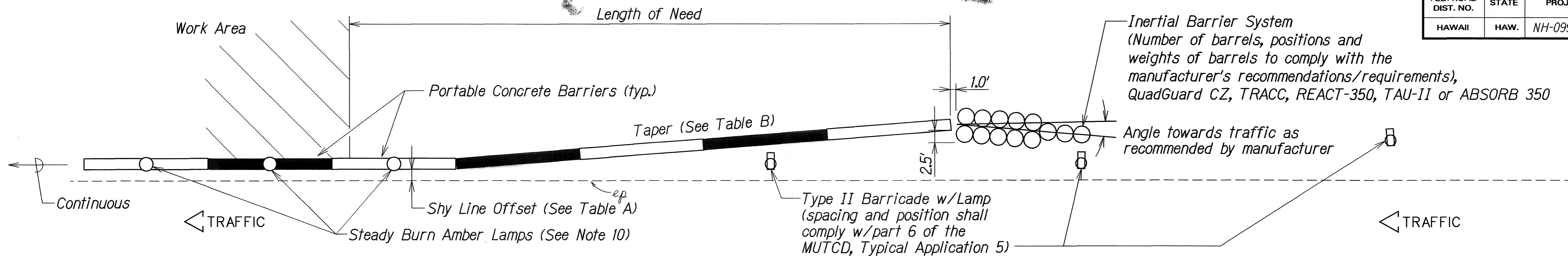
2/8/07	Added this Sheet to Contract Plans.
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TEMPORARY STRIPING PLAN
KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAI STREET to H-2 INTERCHANGE
FEDERAL AID PROJECT NO. NH-099-1(24)
Scale: As Shown Date: June 2006
SHEET No. 718 OF 18 SHEETS

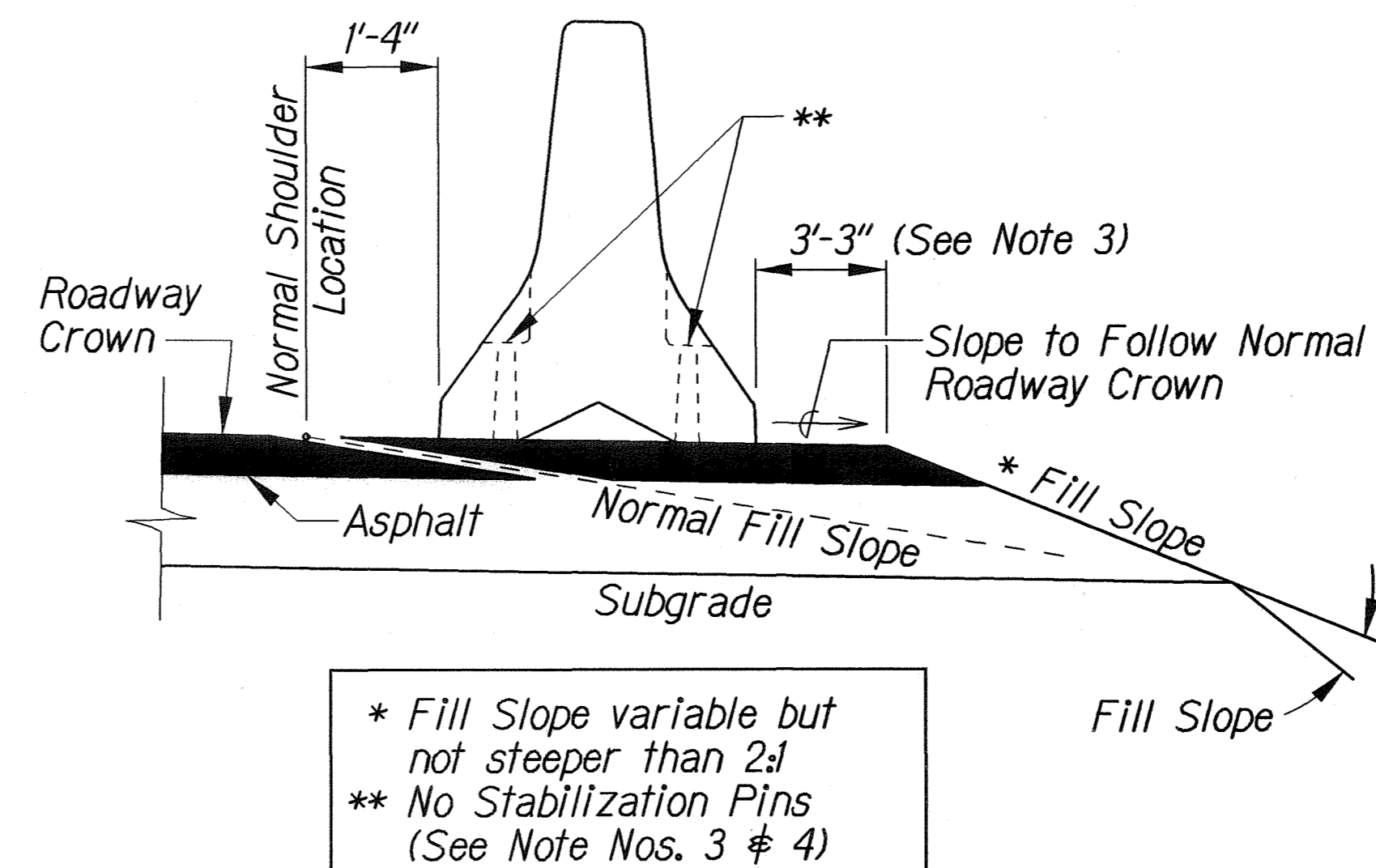
ADD. 74S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	ADD. 74S-2	74



TYPICAL DETAIL - PORTABLE CONCRETE BARRIER END TREATMENT
Scale: 1" = 10'-0"

METAL REINFORCEMENT TABLE				
MARK	LOCATION	BAR SIZE	(NO. BARS)	SKETCH
H-1	Horizontal in Barrier Tied Inside V-1 Bars	#5	(6)	19'-3"
H-2	Centered Above Scuppers Long. & Transversely	#5	(6)	6'-6"
H-3	Tied Above H-1 Bars to Support H-2, Tied to V-1	#4	(2)	1'-6"
S-1	Horizontal in Top of Wing Wall & in Floor Back Wall	#4	(2)	
S-2	Horizontal Around Slots Between V-1's @ Scuppers	#4	(2)	
V-1	Vertical in Barrier (3) Each End & (2) at Each Scupper	#5	(16)	



STANDARD INSTALLATION
(See Note No. 1)

TABLE A SHY LINE OFFSETS *	
DESIGN SPEED (mph)	SHY LINE OFFSETS
70	10.0'
65	9.0'
60	8.5'
55	7.0'
50	6.5'
45	6.0'
40	5.0'
35	4.5'
30	3.5'
≤ 25	2.0'

TABLE B MAXIMUM TAPERS FOR CONCRETE BARRIER		
DESIGN SPEED (mph)	TAPER	
	INSIDE SHY LINE	BEYOND SHY LINE
70	30:1	20:1
65	28:1	19:1
60	26:1	18:1
55	24:1	16:1
50	21:1	14:1
45	18:1	12:1
40	17:1	11:1
35	15:1	9:1
≤ 30	13:1	8:1

* Note: Minimum shy line offset for tangent sections shall be 2'-0".

- NOTES:
- For end treatment, layout, crash cushions and where needed see Project Plans or Special Provisions.
 - Barriers must be pinned together and cannot exceed the Table of Maximum Tapers.
 - The concrete barrier "Standard Installation" design allows for 3'-3" of outward lateral movement if the barrier is struck. Barrier installations that require less than the 3'-3" of outward lateral movement should have stabilization pins.
 - ASTM A-36 steel shall be used for the connection pin, connection loops and stabilization pins. A one piece pin with a 3" rounded top may be used in place of the detailed connection pin if the one piece pin meets ASTM A-36 requirements.
 - A 4" white PVC sleeve may be used to form the lifting hole and if used the sleeve is to be left in place.
 - Concrete shall be Class A and reinforcing shall be Grade 60.
 - Identification and date of design will be as follows:
**PROPERTY OF HDOT
OCT 2001**
Text letters and numbers shall be shown as on Standard Plan Shf. No. B-01. "PROPERTY OF HDOT" may be changed depending upon ownership. All Portable Concrete Barriers made for HDOT will be subject to rejection, if "PROPERTY OF HDOT" is not imprinted. The Contractor shall bear the cost of the rejected Portable Concrete Barriers.
 - Minimum tangent length for portable Concrete Barrier System shall be 100' (5 units). This minimum does not include the required system length of the Inertial Barrier System.
 - Install steady burn amber lamps on portable concrete barriers @ 20.0' o.c. Installing, maintaining and removing each steady burn amber lamp including changing of batteries and bulbs shall be considered incidental to applicable portable concrete barrier items.

ORIGINAL PLAN
NOTE BOOK
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE 2/8/07
e:\hnpcc\add52

2/8/07	Added this Sheet to Contract Plans.
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTABLE CONCRETE BARRIER

KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAU STREET to H-2 INTERCHANGE
FEDERAL AID PROJECT NO. NH-099-1(24)

Scale: As Shown Date: June 2006

SHEET No. T18 OF 18 SHEETS