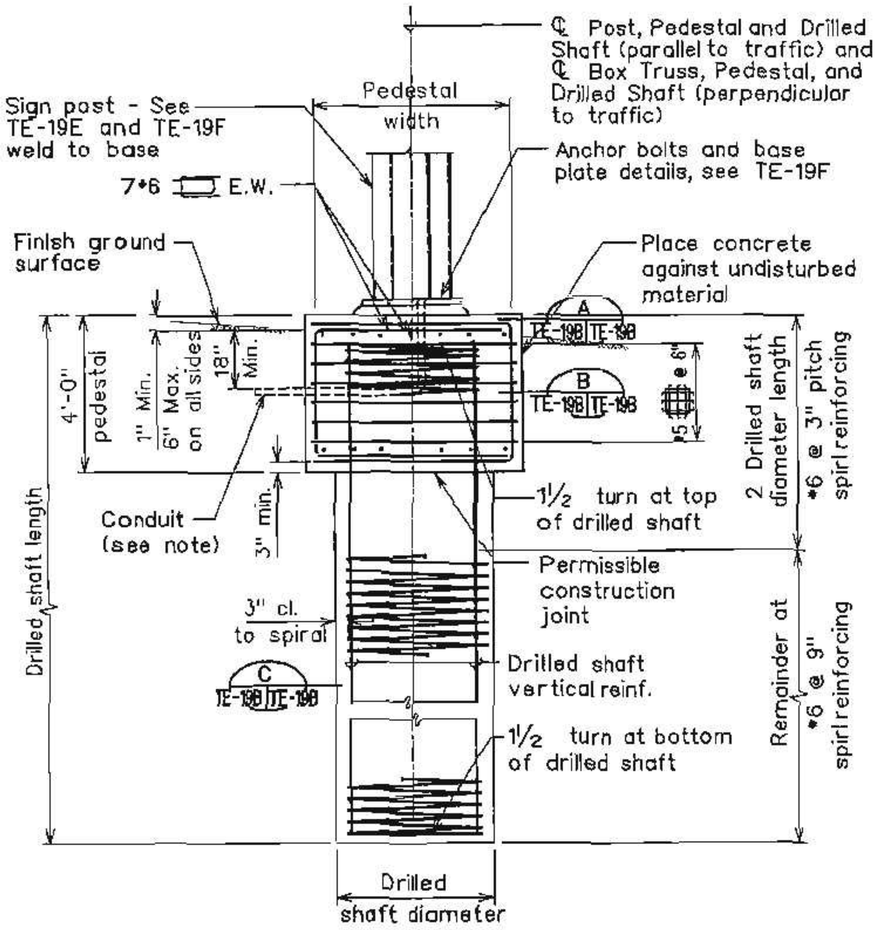
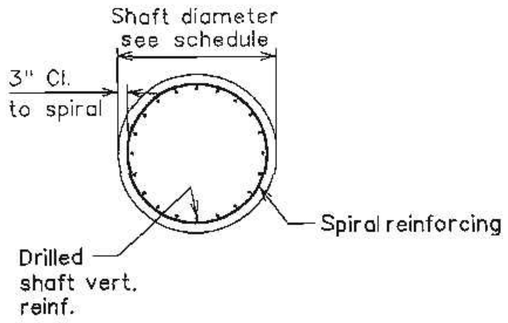
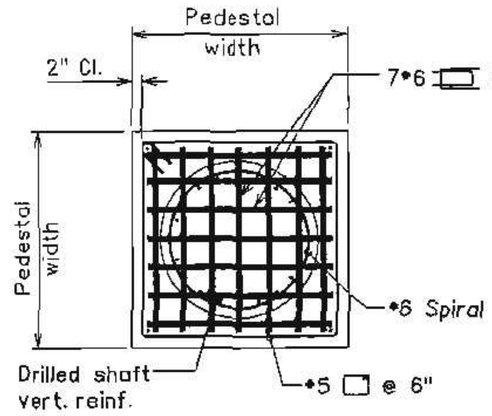


ELEVATION
Note to Scale

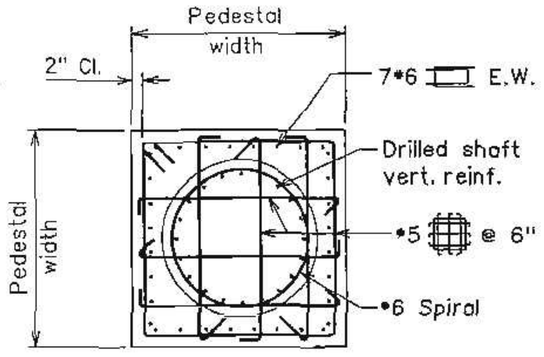


SECTION C
Not to Scale TE-19B TE-19B

Notes:
1. See TE-19D to TE-19D.5 for sign frame foundation schedule.
2. Total number of conduits into pole foundation shall be as indicated on Lighting plans. Conduit shall slope away from pole foundation. Conduit shall stub out 5'-0" minimum.
3. Grounding conductor shall be bonded to sign support as directed by the Engineer.
4. Drilled shaft vertical reinforcing shall be placed so that it does not conflict with the anchor bolts and anchor plates.

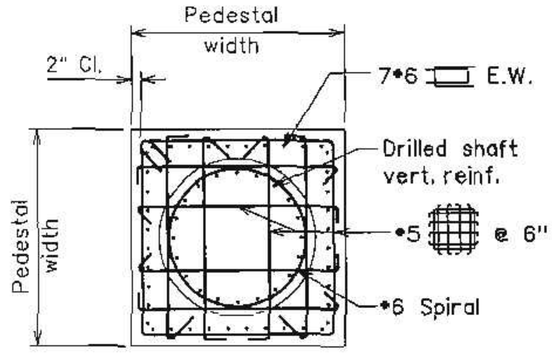


SECTION A
Not to Scale TE-18A TE-19B



5'-6" WIDE PEDESTAL

SECTION B
Not to Scale TE-18A TE-19B



6'-6" WIDE PEDESTAL

TYPICAL SIGN POST DRILLED SHAFT FOUNDATION DETAIL

DATE	REVISION	APP'D.
00/00/00	X	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLAN TE-19B
SIGN POST DRILLED SHAFT FOUNDATION

SIGN FRAME FOUNDATION SCHEDULE - FOUNDATIONS IN STIFF CLAY ABOVE THE GROUND WATER TABLE														
Soil Type	Sign Type	DRILLED SHAFT - LEVEL GROUND				DRILLED SHAFT - 2H:1V SLOPING GROUND				SPREAD FOOTING				
		Drilled Shaft			Pedestal	Drilled Shaft			Pedestal	Size			Reinforcing	
		Diameter	Length	Vert. Reinf.	Width	Diameter	Length	Vert. Reinf.	Width	Length "L"	Width "W"	Depth "t"	"x" Bars	"y" Bars
Stiff Clay	I	60"	22'-0"	20-#11	6'-6"	60"	24'-0"	20-#11	6'-6"	11'-0"	8'-0"	4'-0"	#9 @ 12"	#8 @ 12"
		48"	24'-0"	16-#10	5'-6"	48"	28'-0"	16-#10	5'-6"					
	II	60"	24'-0"	20-#11	6'-6"	60"	28'-0"	20-#11	6'-6"	12'-0"	8'-0"	4'-0"	#10 @ 12"	#8 @ 12"
		48"	34'-0"	16-#10	5'-6"									
	III	60"	30'-0"	20-#11	6'-6"	60"	32'-0"	20-#11	6'-6"	13'-0"	10'-0"	4'-0"	#10 @ 12"	#8 @ 12"
	IV	60"	38'-0"	20-#11	6'-6"	60"	38'-0"	20-#11	6'-6"	14'-0"	10'-0"	4'-0"	#10 @ 10"	#8 @ 12"
	V	60"	20'-0"	20-#11	6'-6"	60"	22'-0"	20-#11	6'-6"	12'-0"	7'-0"	3'-6"	#9 @ 10"	#8 @ 12"
		48"	22'-0"	16-#10	5'-6"	48"	26'-0"	16-#10	5'-6"					
	VI	60"	22'-0"	20-#11	6'-6"	60"	24'-0"	20-#11	6'-6"	14'-0"	7'-0"	4'-0"	#10 @ 12"	#8 @ 12"
		48"	24'-0"	16-#10	5'-6"	48"	28'-0"	16-#10	5'-6"					
	VII	60"	24'-0"	20-#11	6'-6"	60"	28'-0"	20-#11	6'-6"	15'-0"	7'-0"	4'-0"	#10 @ 10"	#8 @ 12"
		48"	26'-0"	16-#10	5'-6"									
	VIII	60"	26'-0"	20-#11	6'-6"	60"	30'-0"	20-#11	6'-6"	15'-0"	8'-0"	4'-0"	#10 @ 10"	#8 @ 12"
		48"	30'-0"	16-#10	5'-6"									

Note:

1. See TE-19B & TE-19C for foundation details.
2. Sign called for shall have the foundations for the specific site conditions that exist. Alternate designs shall be stamped by a registered Engineer in the State of Hawaii in each of the related disciplines. The design and drawings shall be submitted to the Engineer for approval.
3. The Contractor may select the size of shaft to build using the corresponding values in the table. If boxes are not filled in, a design for that particular shaft is not available. A special design could be performed. See note 2 for the requirements.

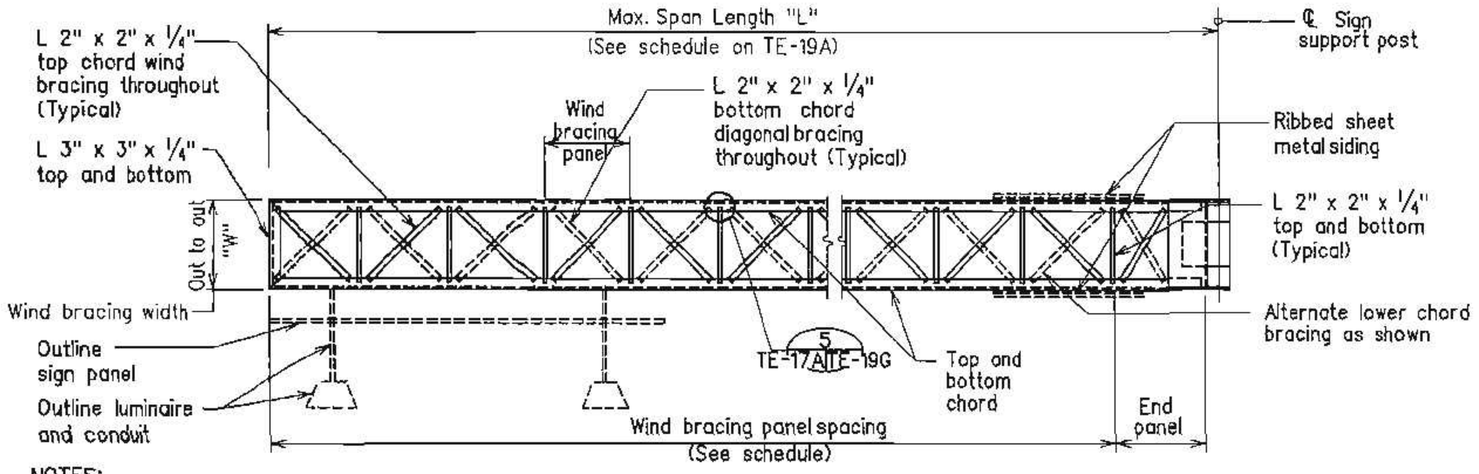
SIGN FRAME FOUNDATION SCHEDULE FOR FOUNDATIONS IN STIFF CLAY ABOVE THE GROUND WATER TABLE

DATE	REVISION	APP'D.
00/00/00	X	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD PLAN TE-19D

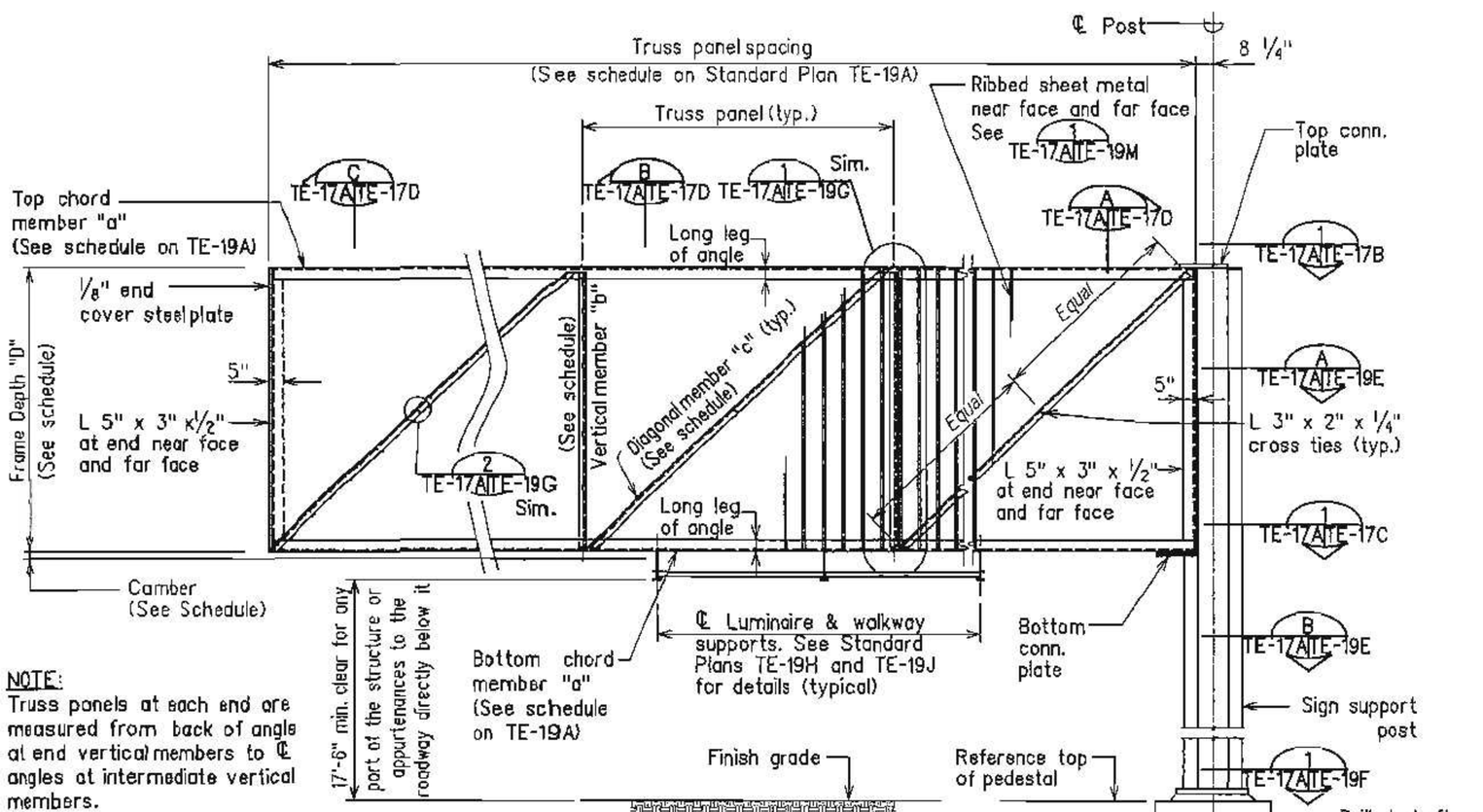
SIGN FRAME
FOUNDATION SCHEDULE



NOTES:
1. See TE-19A for sign frame schedule.
2. For luminaire walkway support details see TE-19H and TE-19J.

TYP. PLAN - TOP AND BOTTOM WIND BRACE FRAMING
SIGN FRAME - TYPES I thru IV INCLUSIVE

Not to Scale



NOTE:
Truss panels at each end are measured from back of angle at end vertical members to ℄ angles at intermediate vertical members.

ELEVATION - CANTILEVER TRUSS FRAMING DETAIL
SIGN FRAME - TYPES I thru IV INCLUSIVE

Not to Scale

GENERAL NOTES

1. Design Specifications:
   (A) Design shall conform w/ the latest AASHTO Standard Specifications for the Structural Supports for Highway Signs, Luminaires & Traffic Signals and its interim supplements and modifications by the Highways Division, Department of Transportation State of Hawaii. Materials & Fabrication shall conform to the requirements of the Standard Specifications & Special Provisions.
   (B) Latest HDOT Memorandum with subject title "Design Criteria for Bridges and Structures."
2. Loads:
   (A) Basic Wind Speed: 105 mph.
   (B) Recurrence Interval of 100 years.
   (C) Fatigue importance factor, IF, shall be based on Fatigue Category I for Sign structures.
   (D) Sign structures shall be designed for a truck induced gust based on a truck speed of 20 MPH over the posted speed.
   (E) Galloping and naturol wind gusts shall be considered for cantilevered sign structures.
   (F) Natural wind gusts shall be considered for all sign structures.
3. Materials:
   (A) All concrete strengths shall be as noted below:

Item No.	Structural Parts	Classes of Concrete	Specified Compressive Strength f'c (28 Days)
(1)	Footing and Pedestal	-	4,500 psi

   See specifications for drilled shaft concrete.
   All concrete with a 28 day compressive strength of 4,000 psi or greater shall have a maximum W/C ratio of 0.45.
   (B) All connection bolts shall be AASHTO M164 bolts and anchor bolts shall be AASHTO M314-105 bolt.
   (C) Aluminum members and surfaces in contact with structural steel shall be isolated with neoprene material as approved by the Engineer.
4. General:
   (A) See General Notes on B-01 for additional information.
   (B) Alternate designs in accordance with the plans and specifications shall use the Service Load Design Method and shall be stamped by a registered engineer of the State of Hawaii in the related discipline and submitted to the Engineer for approval.
   (C) All sign support posts shall be outside of the clear zone or shielded by an appropriate traffic barrier system. The traffic barrier system shall be submitted to the Engineer for his approval.
   (D) The Contractor shall use templates while installing the anchor bolts. Anchor bolts shall be vertical.
   (E) Excavation and backfill shall be considered incidental to the cost of the sign foundation.
   (F) Unless otherwise noted all truss members shall be welded all around at joints with 3/16" fillet weld.
   (G) Apply one coat of zinc coated metal primer and three coats of weatherproof dark green enamel over zinc coating conforming to the specifications to all structural steel members. Submit coatings to the Engineer for approval.

DATE	REVISION	APP'D.
00/00/00	X	

STANDARD PLAN TE-17A
CANTILEVER OVERHEAD SIGN ELEVATION & DETAILS