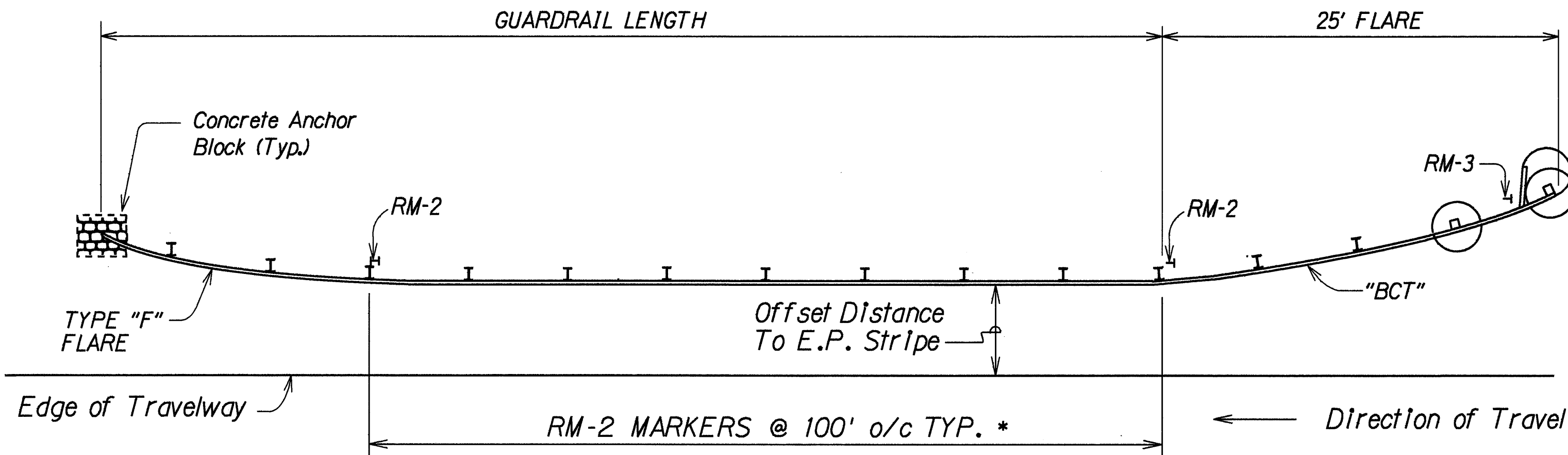
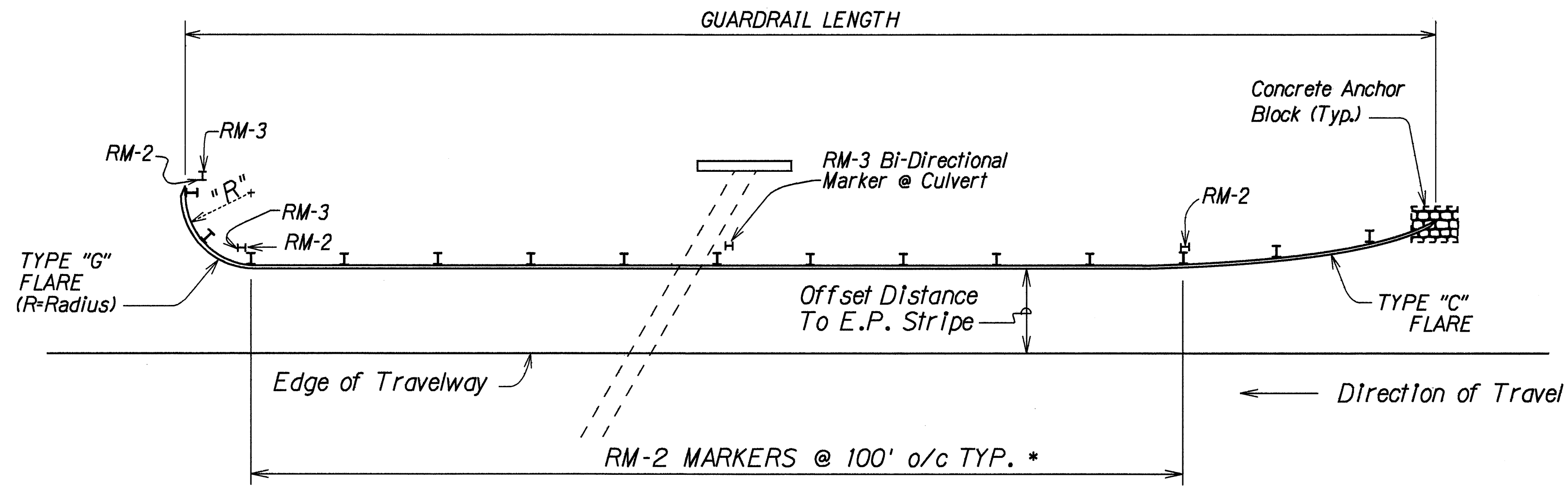


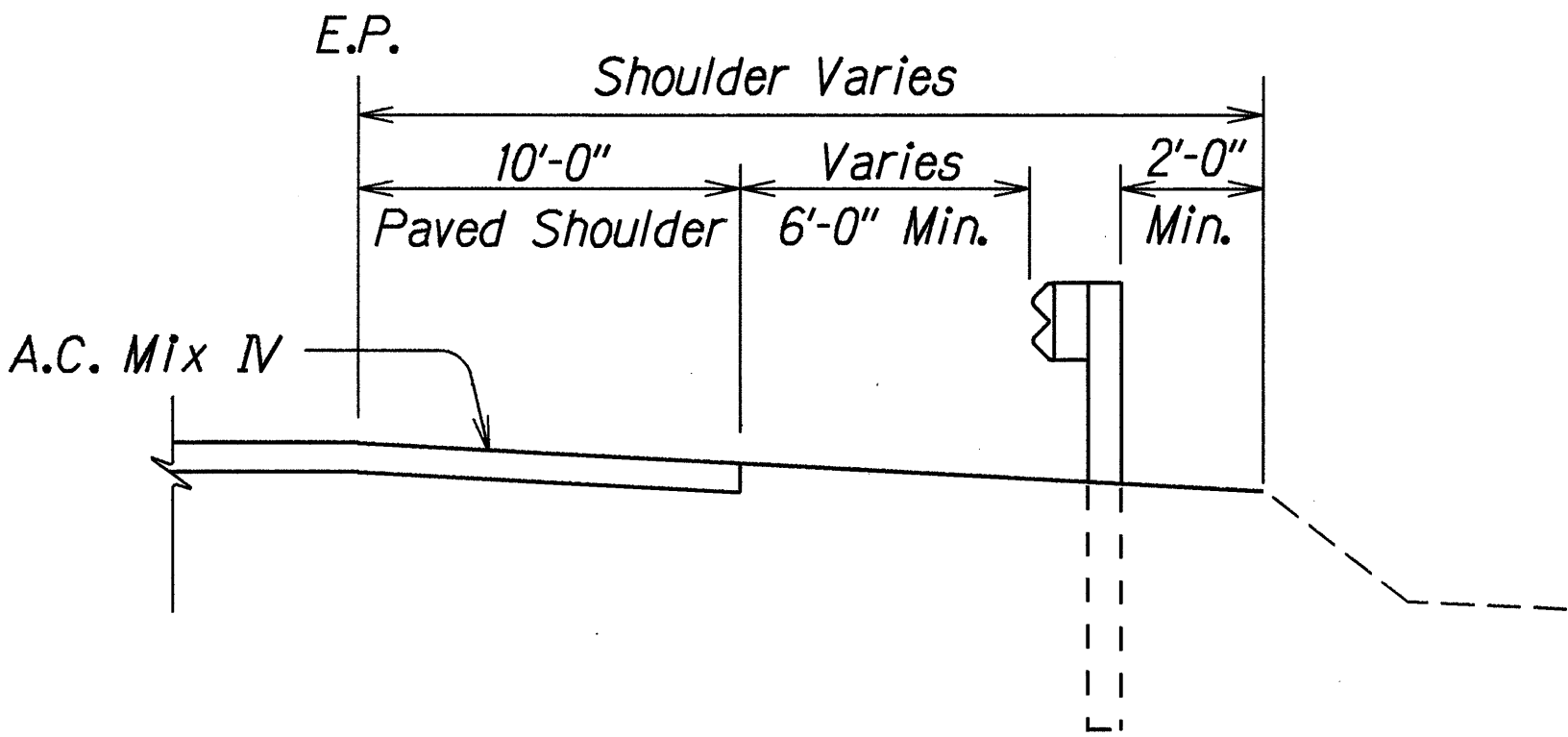
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-019-1(18)	1995	17	30



TYPICAL @ "BCT" & "F" END TREATMENT



TYPICAL @ "G" & "C" END TREATMENT



TYPICAL GUARDRAIL DETAIL
Not To Scale

NOTE:
* Exact location of Reflector Markers shall be determined in the field by the Engineer.

TYPICAL REFLECTOR MARKER INSTALLATION
AT GUARDRAILS
Not To Scale

- NOTES:
1. For New Guardrail Installation layouts on plan sheets 9 thru 12 .
 2. All Guardrail Rail Elements shall be 12.5 feet long unless otherwise specified on the plans .
 3. Linear feet of Guardrail length shown on Guardrail Installation Note on sheets 9 and 10 excludes 25 L.F. of BCT Pay Item.
 4. Stainless steel fasteners shall be used for all RM Installations.
 5. Reflector markers located behind guardrail shall be installed with steelpost. At all other locations reflector markers with flexible delineator posts shall be installed. Exact locations to be determined by the Engineer.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GUARDRAILS: DETAILS
AND NOTES**

QUEEN KAAHUMANU HWY RESURFACING
HONOKOHAU TO KEAHOLE
F.A. PROJECT NO. STP-019-1(18)

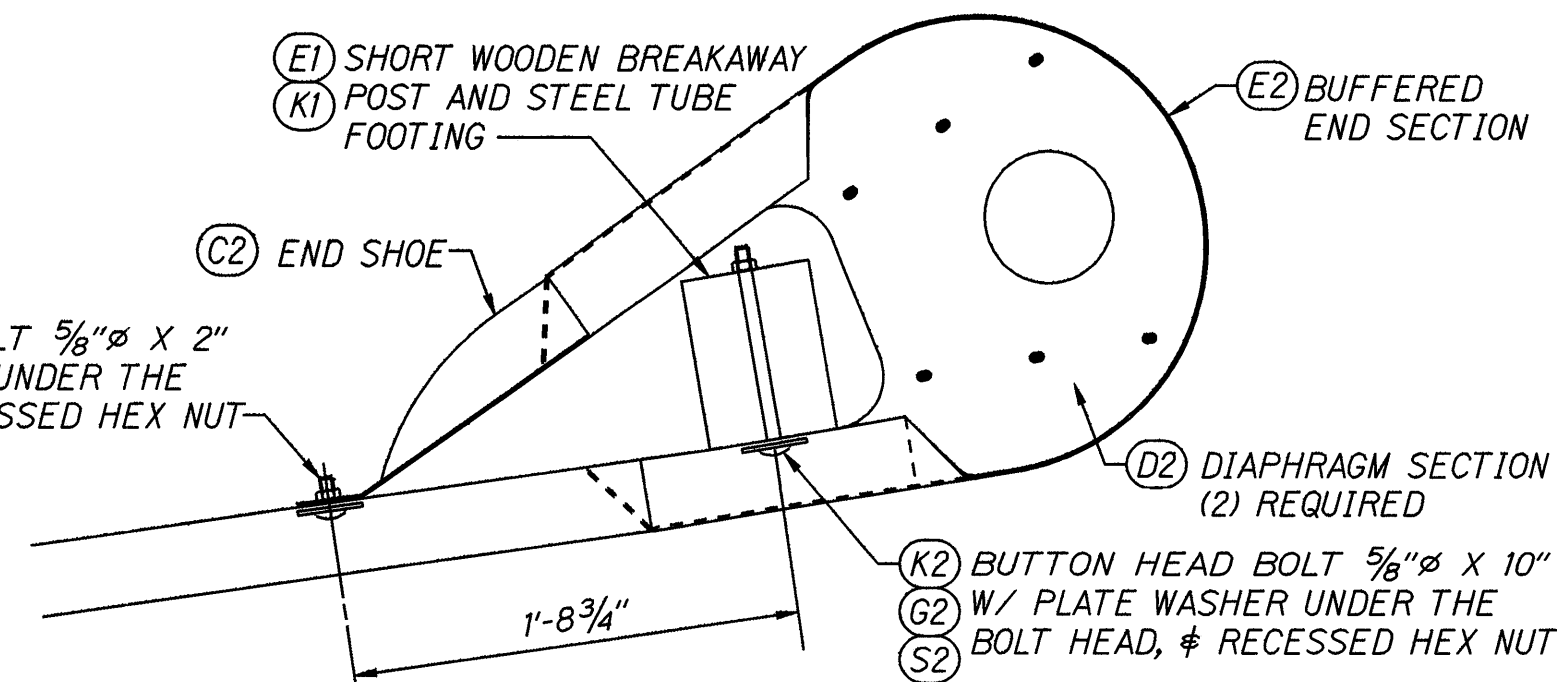
Scale: As Shown
Date: Feb., 1995

SHEET No. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-019-1(18)	1995	ADD. 17 S-1	30

NOTES

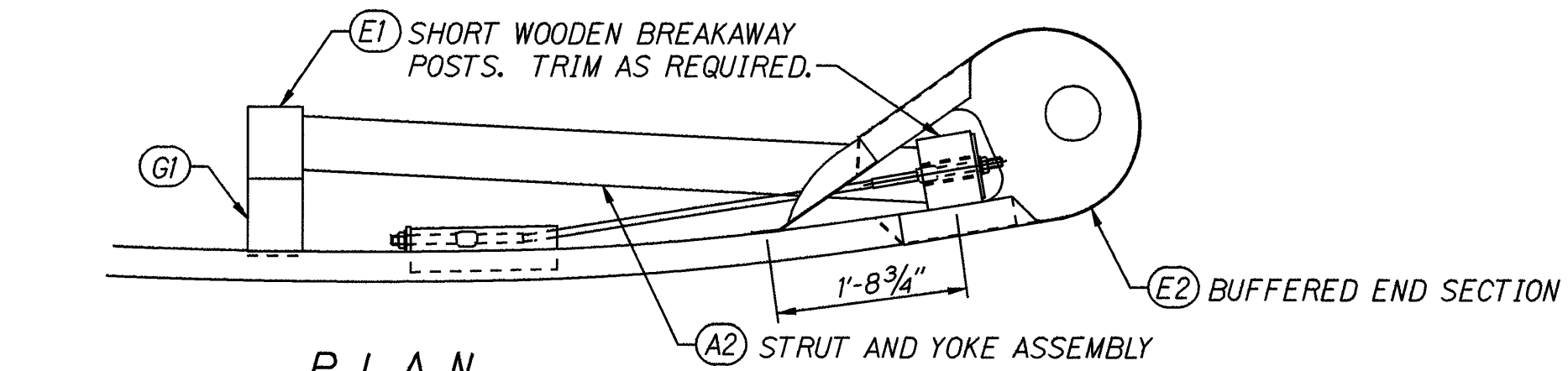
1. THE POST OFFSET DIMENSIONS ARE GIVEN TO THE CENTER OF THE TRAFFIC FACE OF THE BLOCKOUTS, EXCEPT AT THE FIRST POST, WHERE THE DIMENSION IS TO THE CENTER OF THE TRAFFIC FACE OF THE POST. OFFSET POINTS ARE TO BE LOCATED BY CHORD MEASUREMENTS AT THE BACK OF THE RAIL EQUAL TO THE NOMINAL POST SPACINGS SHOWN. POSTS ARE TO BE SET APPROXIMATELY RADIAL TO THE RAILING AT EACH POST LOCATION.



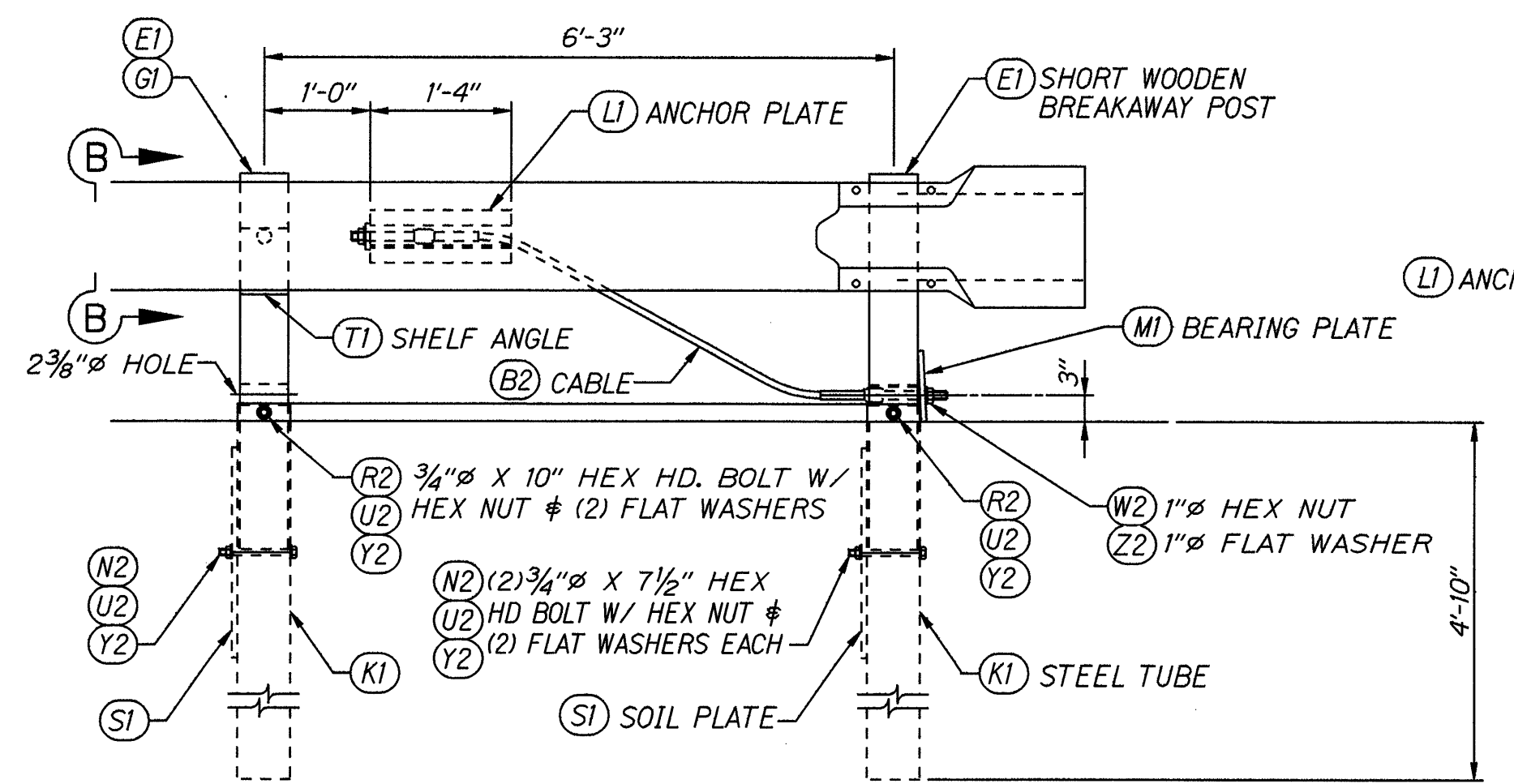
BUFFERED END ASSEMBLY

SUMMARY OF COMPONENTS

FIND NO.	DESCRIPTION
(A1)	GUARDRAIL, 12GA X 12'-6"
(B1)	GUARDRAIL, 12GA X 12'-6"
(C1)	GUARDRAIL, 12GA X 12'-6"
(D1)	BREAKAWAY LINE POST, TIMBER - 6" X 8" X 6'-0"
(E1)	BREAKAWAY POST, TIMBER - 5 1/2" X 7 1/2" X 3'-6 1/2"
(G1)	BLOCK, TIMBER - 5 1/2" X 7 1/2" X 1'-2"
(H1)	POST - W6 X 8.5 X 6'-0"
(J1)	BLOCK - W6 X 8.5 X 1'-2"
(K1)	SOIL TUBE - TS 8 X 6 X .188 X 5'-0"
(L1)	CABLE ANCHOR BRACKET
(M1)	BEARING PLATE
(R1)	PIPE SPACER
(S1)	SOIL PLATE
(T1)	SHELF ANGLE
(A2)	STRUT & YOKE ASSEMBLY
(B2)	CABLE ASSEMBLY
(C2)	END SHOE
(D2)	DIAPHRAGM PLATE
(E2)	BUFFERED END SECTION
(G2)	WASHER, PLATE
(H2)	BOLT, SPLICE 5/8" X 1 1/4"
(J2)	BOLT, POST 5/8" X 2"
(K2)	BOLT, POST 5/8" X 10"
(L2)	BOLT, POST 5/8" X 18"
(M2)	BOLT, HEX 5/8" X 1 1/2"
(N2)	BOLT, HEX 3/4" X 7 1/2"
(R2)	BOLT, HEX 3/4" X 10"
(S2)	NUT, HEX, RECESSED 5/8"
(T2)	NUT, HEX 5/8"
(U2)	NUT, HEX 3/4"
(W2)	NUT, HEX 1"
(X2)	WASHER, FLAT 5/8"
(Y2)	WASHER, FLAT 3/4"
(Z2)	WASHER, FLAT 1"

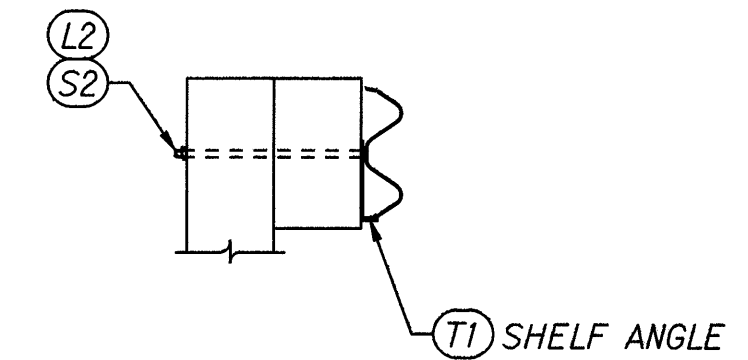


PLAN

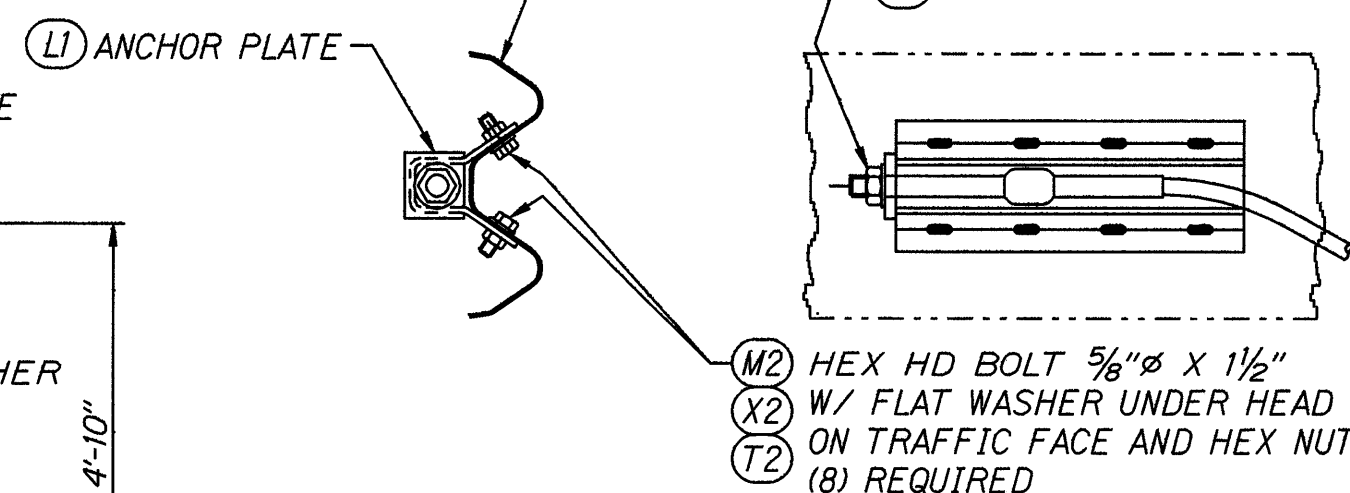


ELEVATION

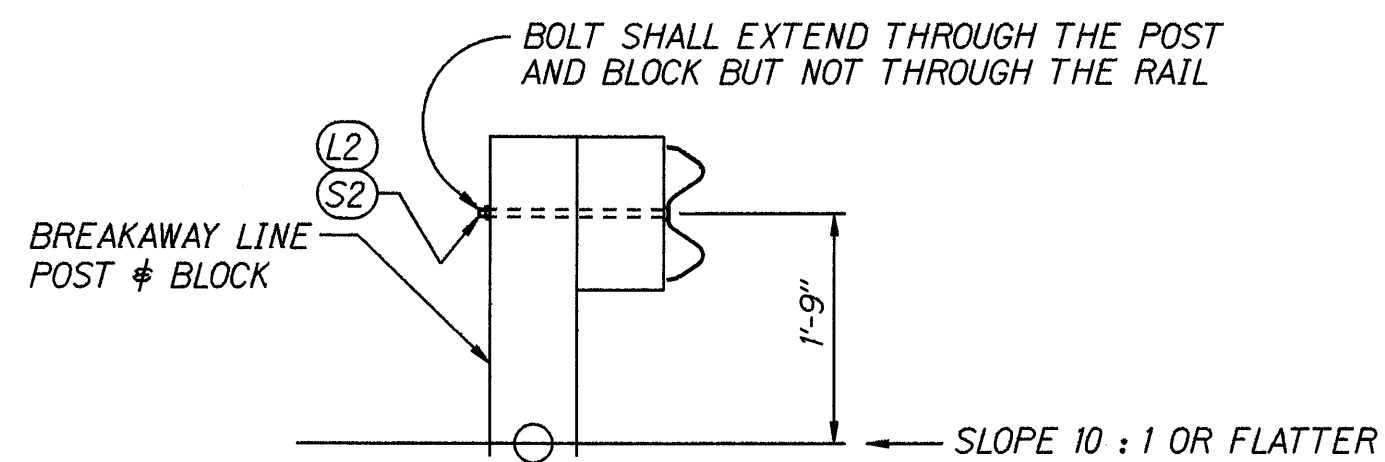
BUFFERED END & ANCHORAGE ASSEMBLY



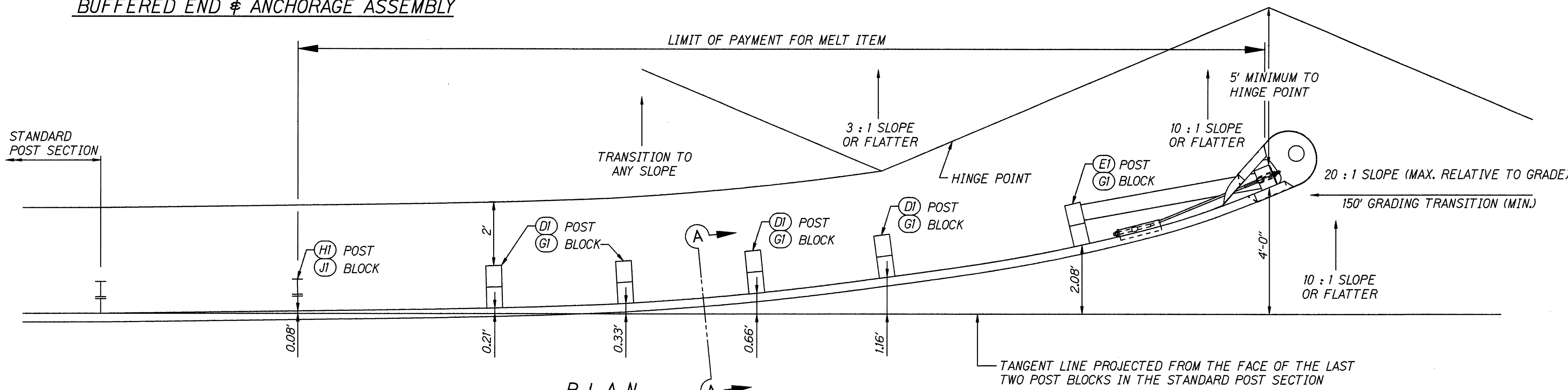
SECTION B - B



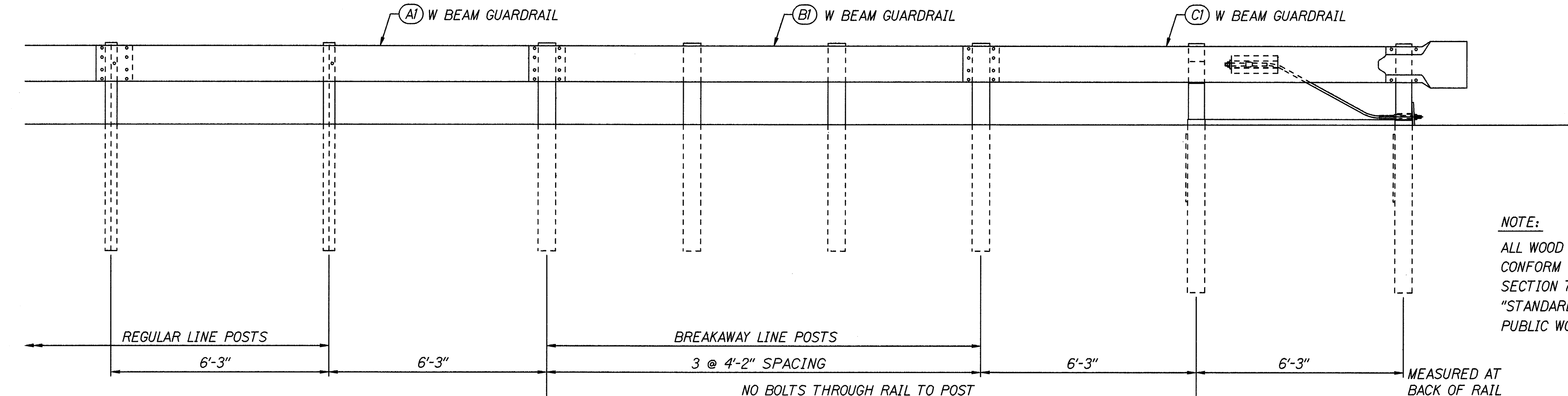
ANCHOR PLATE ASSEMBLY DETAILS



SECTION A - A



PLAN



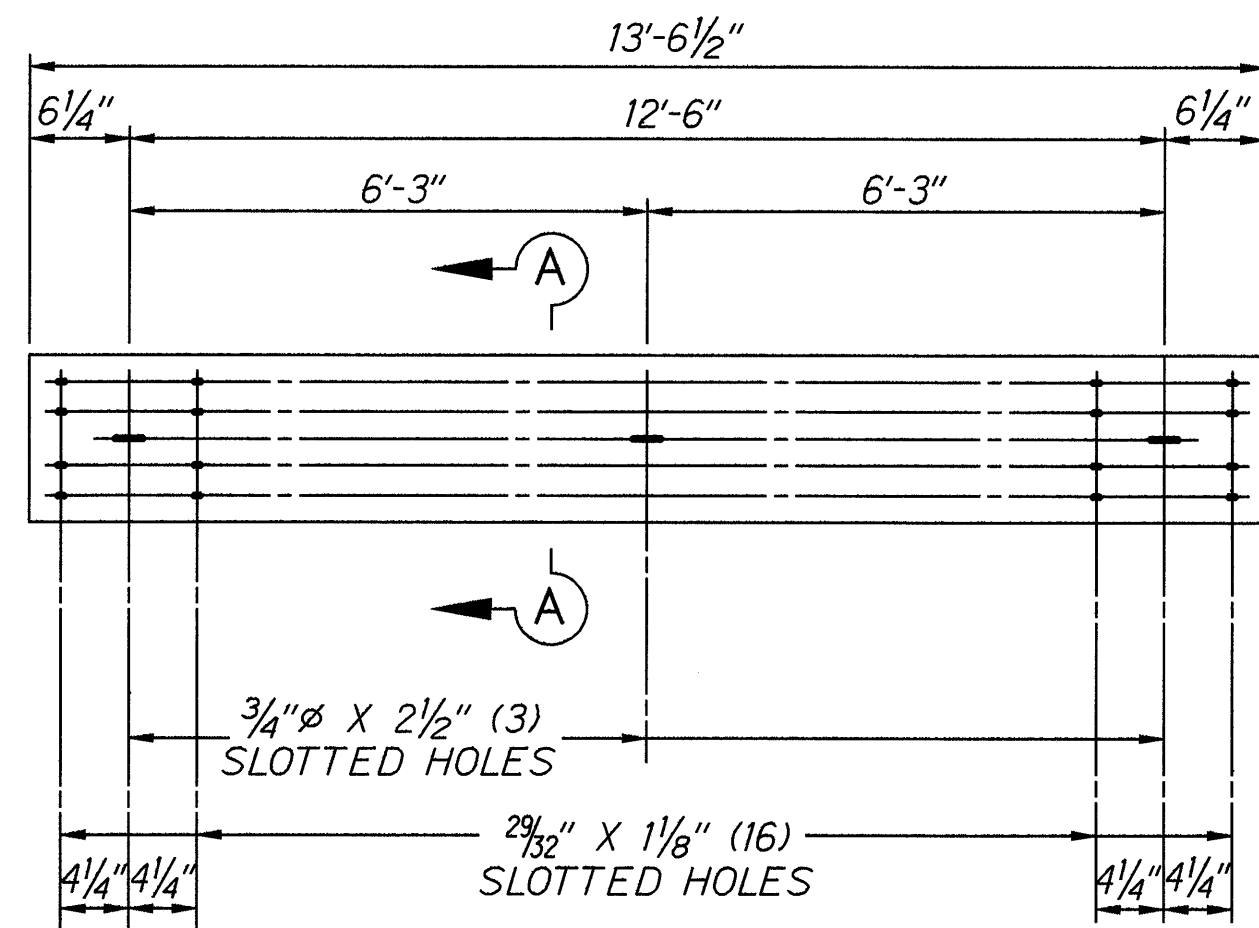
ELEVATION

NOTE:
ALL WOOD COMPONENTS SHALL BE TREATED TO CONFORM WITH ANY OF THE ACCEPTED METHODS IN SECTION 714 OF THE DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND PUBLIC WORKS CONSTRUCTION", 1994.

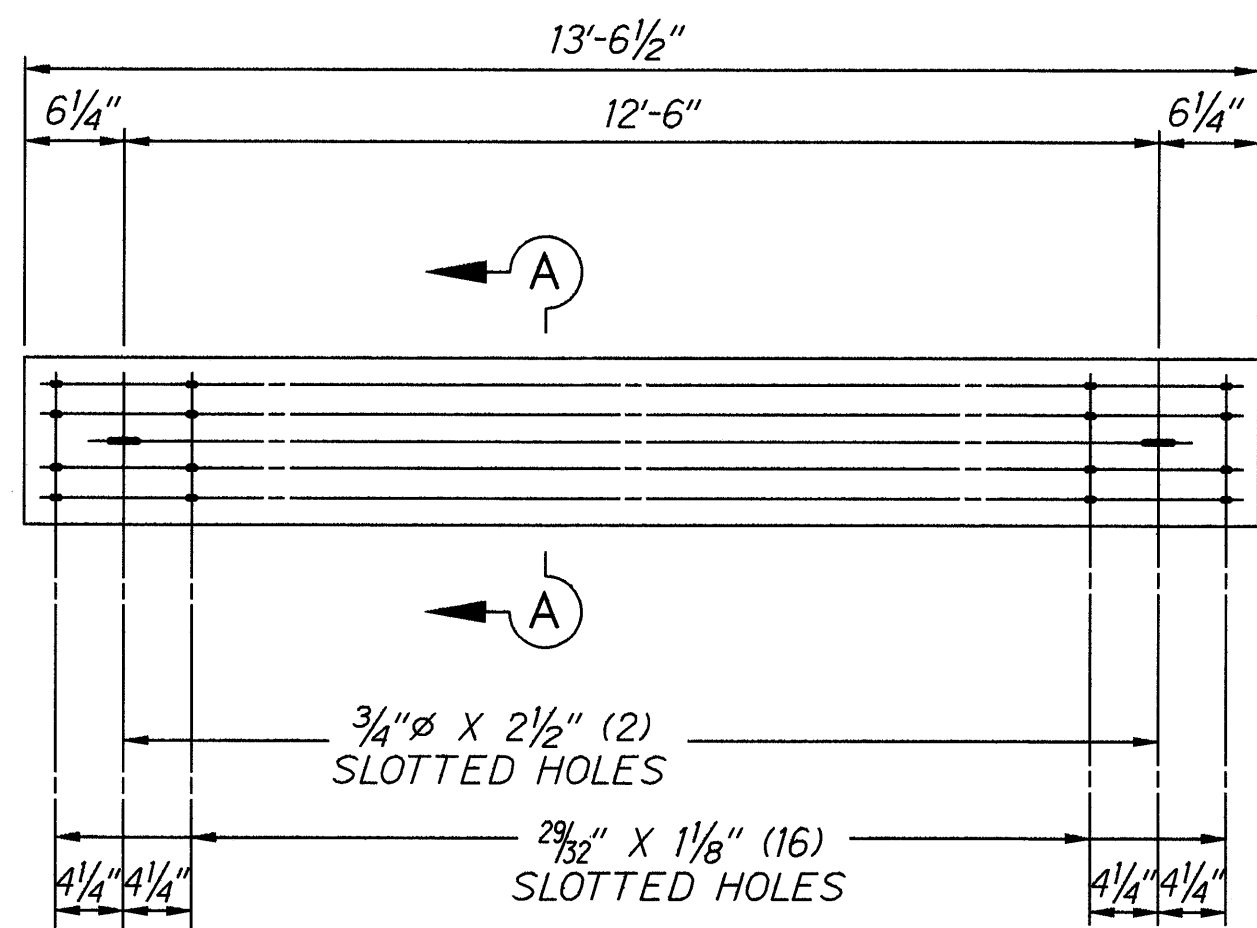
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MODIFIED ECCENTRIC LOADER
TERMINAL (MELT)
POST LAYOUT & ERECTION DETAILS
QUEEN KAAHUMANU HWY RESURFACING
HONOKOHAU TO KEAHOE
F.A. PROJECT NO. STP-019-1(18)
Not to Scale Date: Feb, 1995
SHEET No. 1 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-019-1(18)	1995	ADD. 17 S-2	0

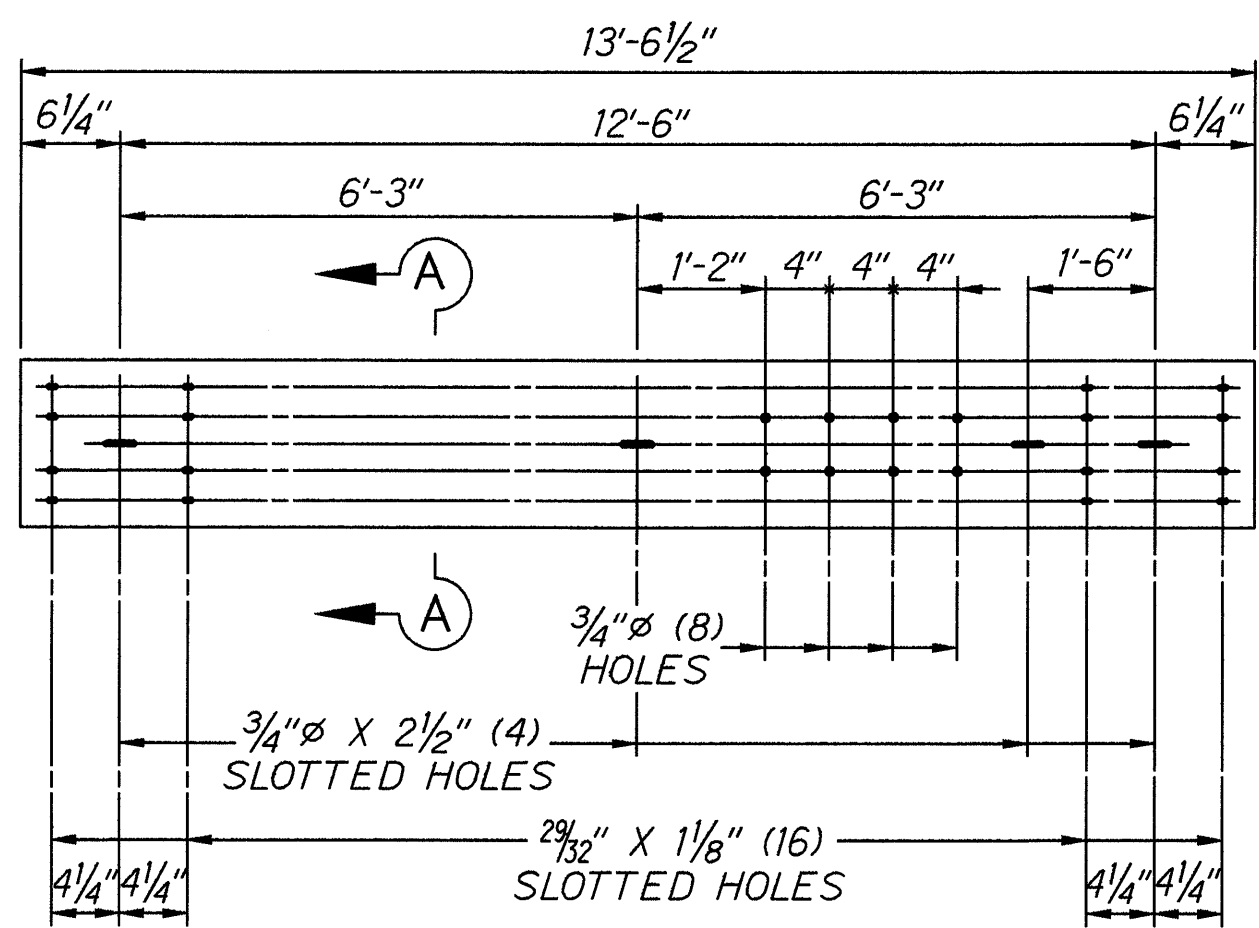
MATERIAL SCHEDULE					
FIND PIECE No.	MARK	MATERIAL	LENGTH FEET	INCHES	WEIGHT UNIT WEIGHT REMARKS
A1		GUARDRAIL, W-BEAM			95.0 AI23
		12 GA. W-BEAM GUARDRAIL	12	6	89.0 M180
B1		GUARDRAIL, W-BEAM			95.0 AI23
		12 GA. W-BEAM GUARDRAIL	12	6	89.0 M180
C1		GUARDRAIL, W-BEAM			95.0 AI23
		12 GA. W-BEAM GUARDRAIL	12	6	89.0 M180
D1		BREAKAWAY LINE POST			88.0
		TIMBER POST 6 X 8	6	0	352.0 M168
E1		BREAKAWAY POST, SHORT			44.6
		TIMBER POST 5 1/2 X 7 1/2	3	6 1/2	89.2 M168
G1		BLOCK			16.8
		TIMBER BLOCK 5 1/2 X 7 1/2	1	2	84.0 M168
H1		POST			54.9 AI23
		W6 X 8.5	6	0	52.0 A36
J1		BLOCK			11.0 AI23
		W6 X 8.5	1	2	10.1 A36
K1		SOIL TUBE			88.9 AI23
		TS 8 X 6 X .1875	5	0	170.8 A500B
L1		CABLE ANCHOR BRACKET			19.3 AI23
a		PL 1/4 X 12 3/8	1	4	17.6 A36
b		PL 1/2 X 2 3/4	0	3	1.17 A36
M1		BEARING PLATE			11.9 AI23
		PL 3/8 X 8	0	8	11.3 A36
		PL 3/16 X 1	0	8	0.4 A36
R1		POST SLEEVE			1.76 AI23
		PIPE 2" STD	0	5 1/2	1.67 A53
S1		SOIL PLATE			84.8 AI23
		PL 1/4 X 24	2	0	40.8 A36
T1		SHELF ANGLE			3.7 AI23
		PL 1/4 X 6	0	8 1/2	3.61 A36



ONE - GUARDRAIL - A1

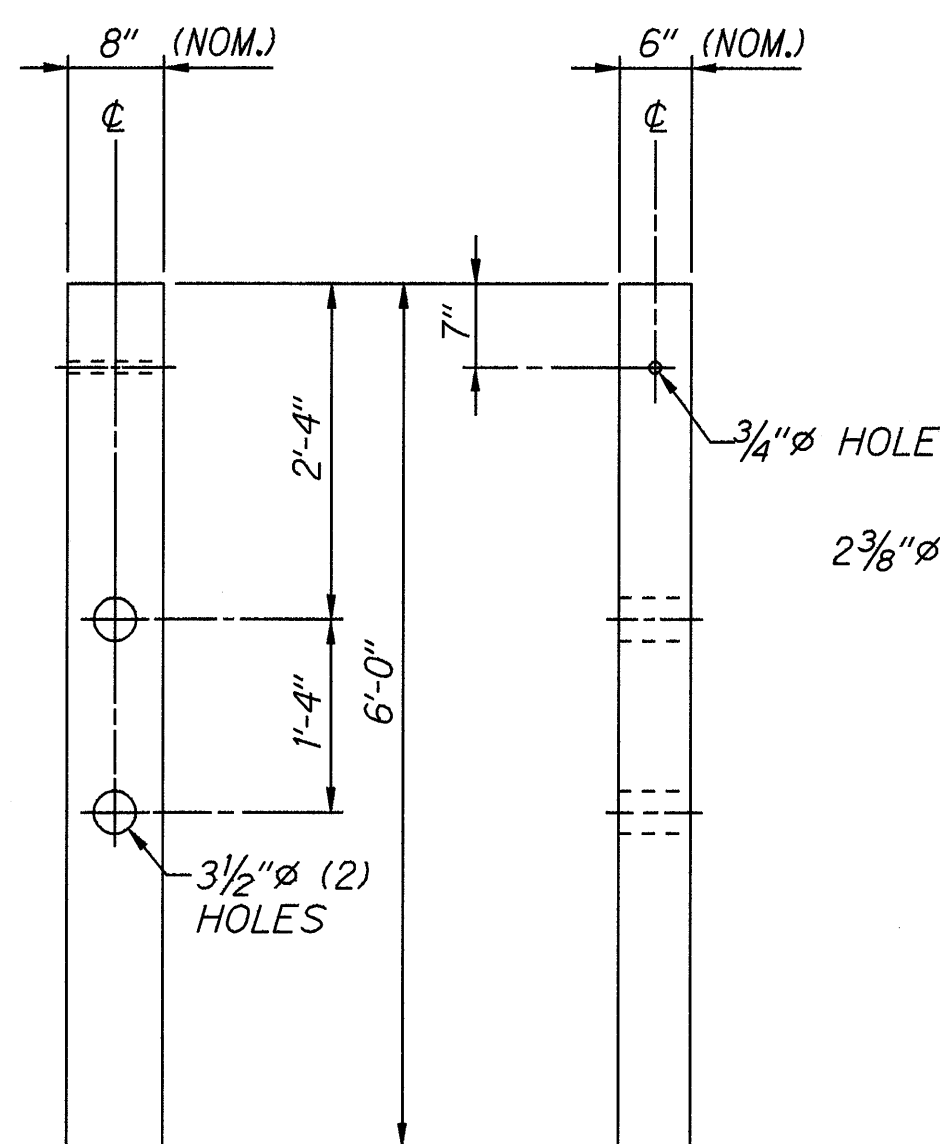


ONE - GUARDRAIL - B1

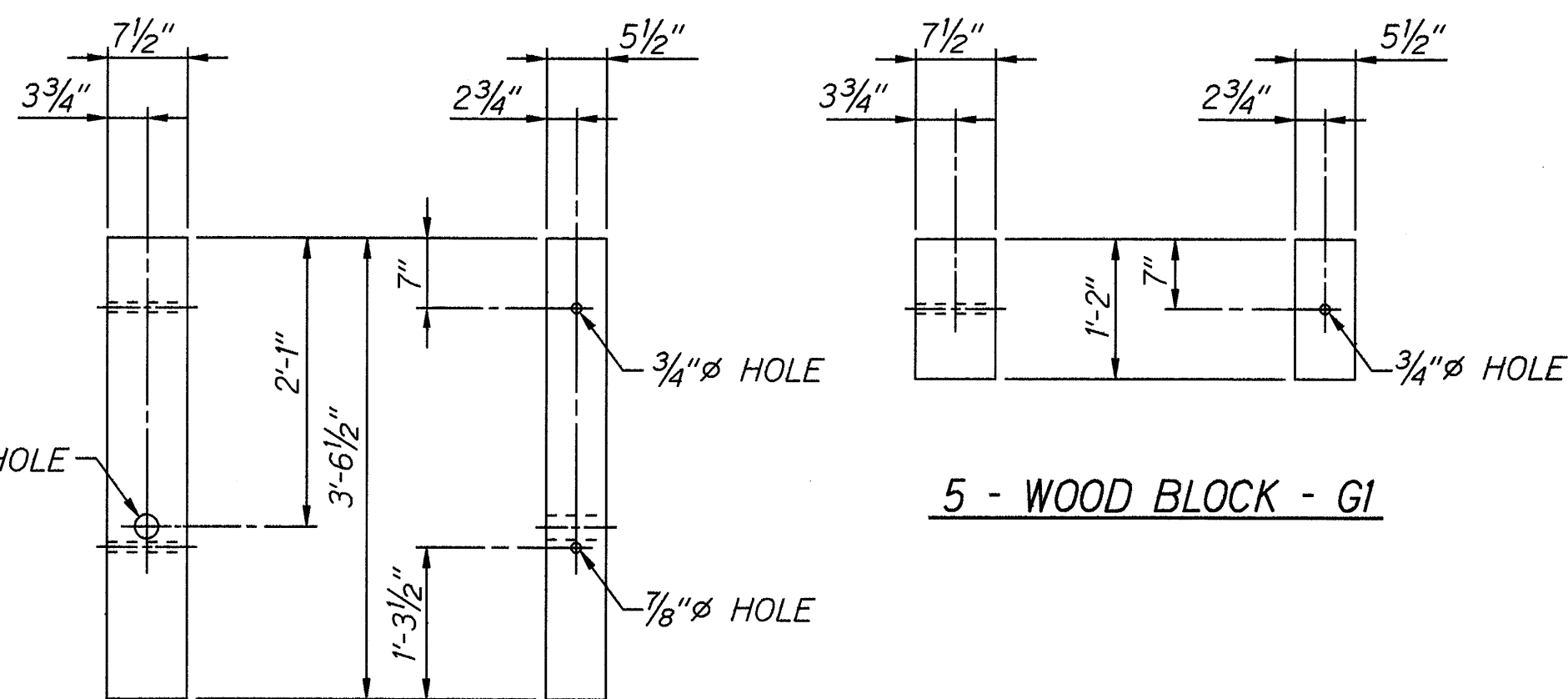


ONE - GUARDRAIL - C1

SECTION A - A

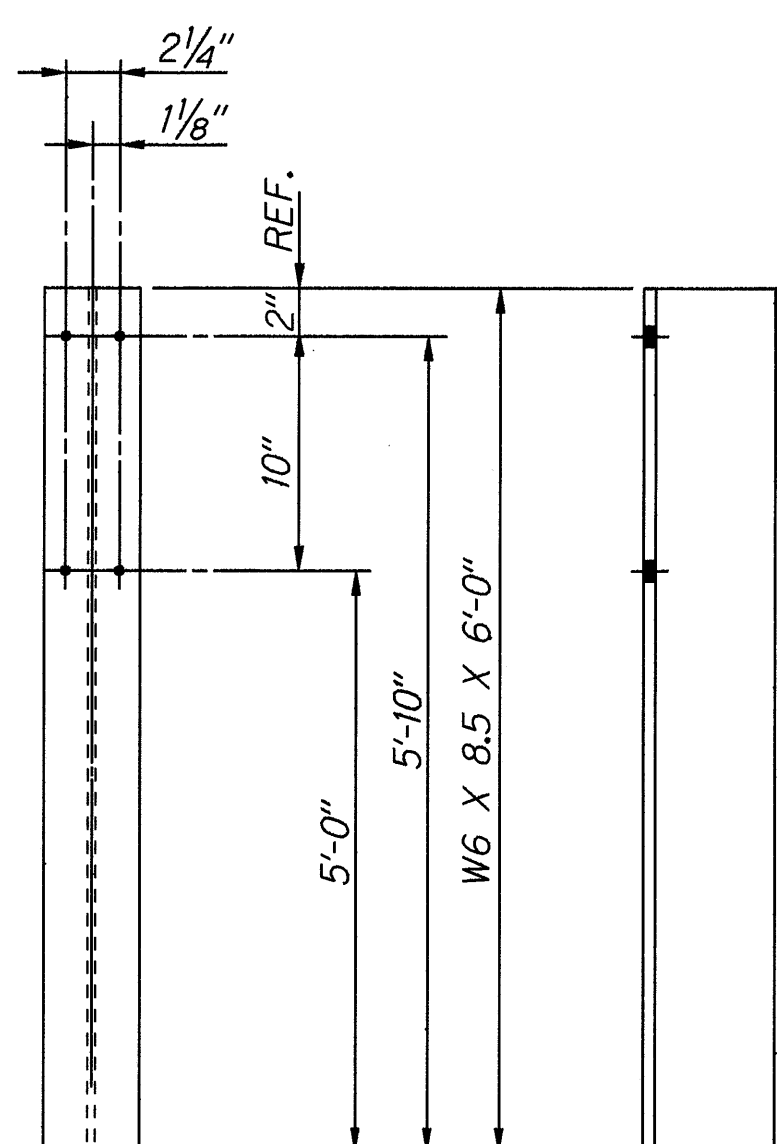


4 - WOOD POST - D1

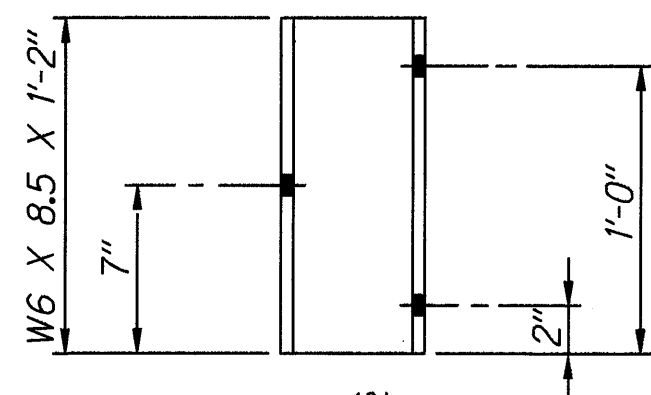


2 - WOOD POST - E1

5 - WOOD BLOCK - G1

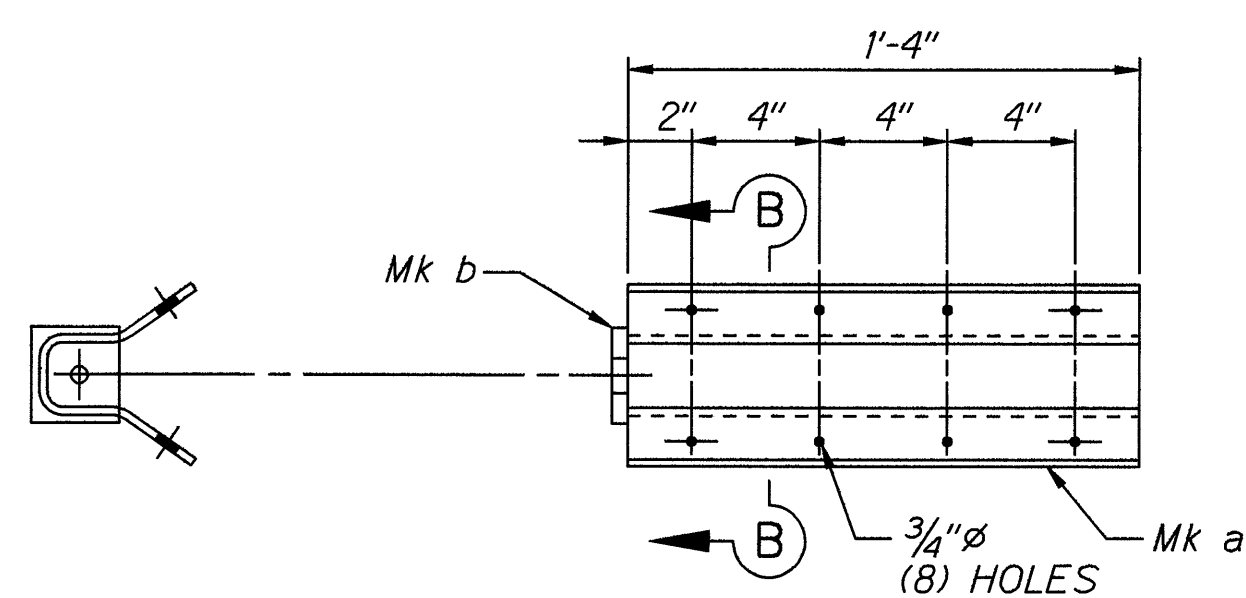


ONE - POST - H1

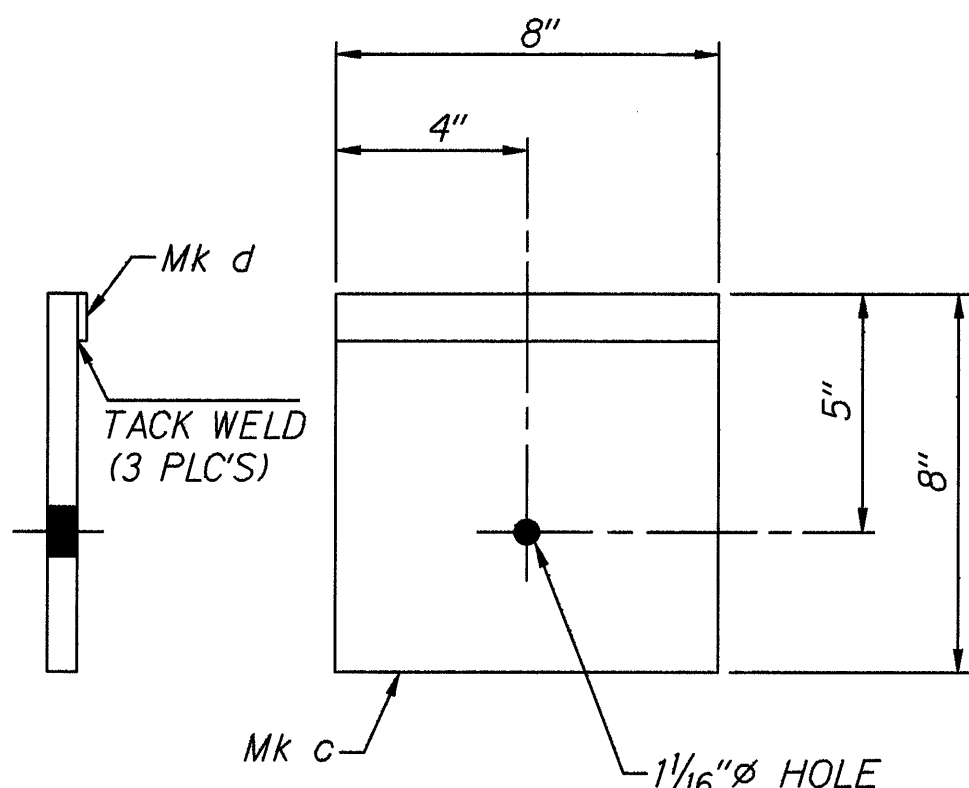


ALL HOLES 13/16" Ø
(6) REQD. @ 2 1/4" GA

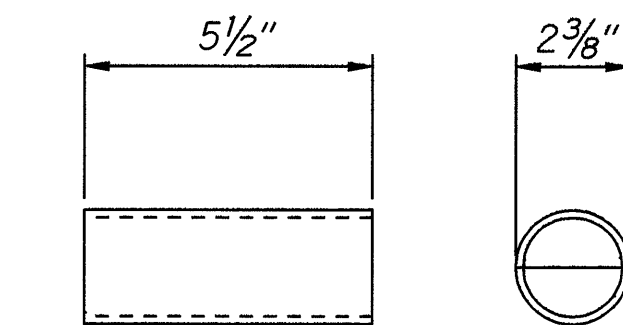
ONE - BLOCK - J1



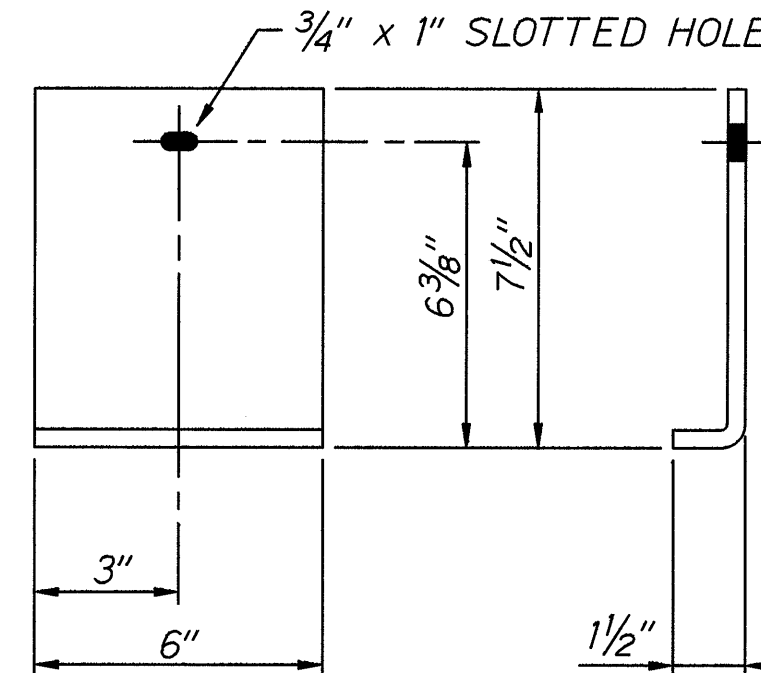
SECTION B - B
ONE - CABLE ANCHOR BRACKET - L1



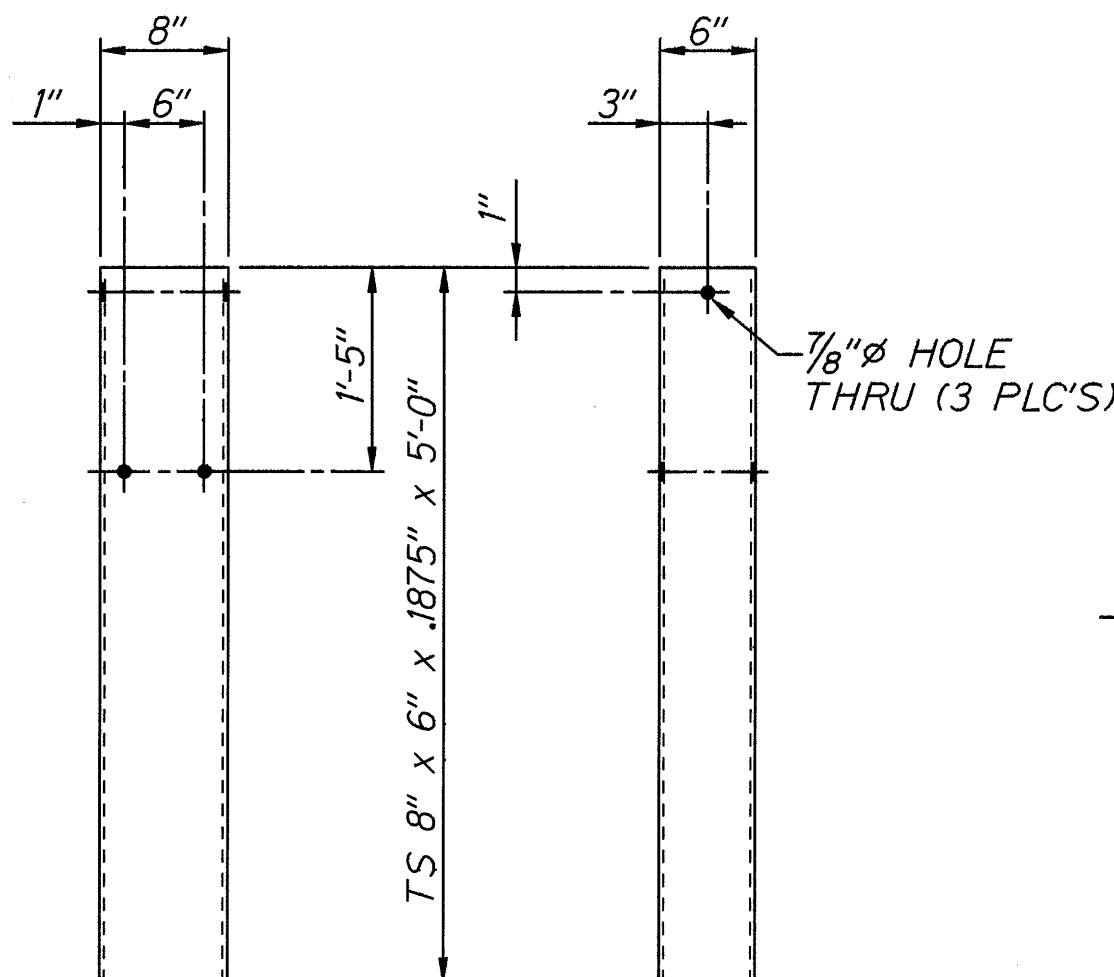
ONE - BEARING PLATE - M1



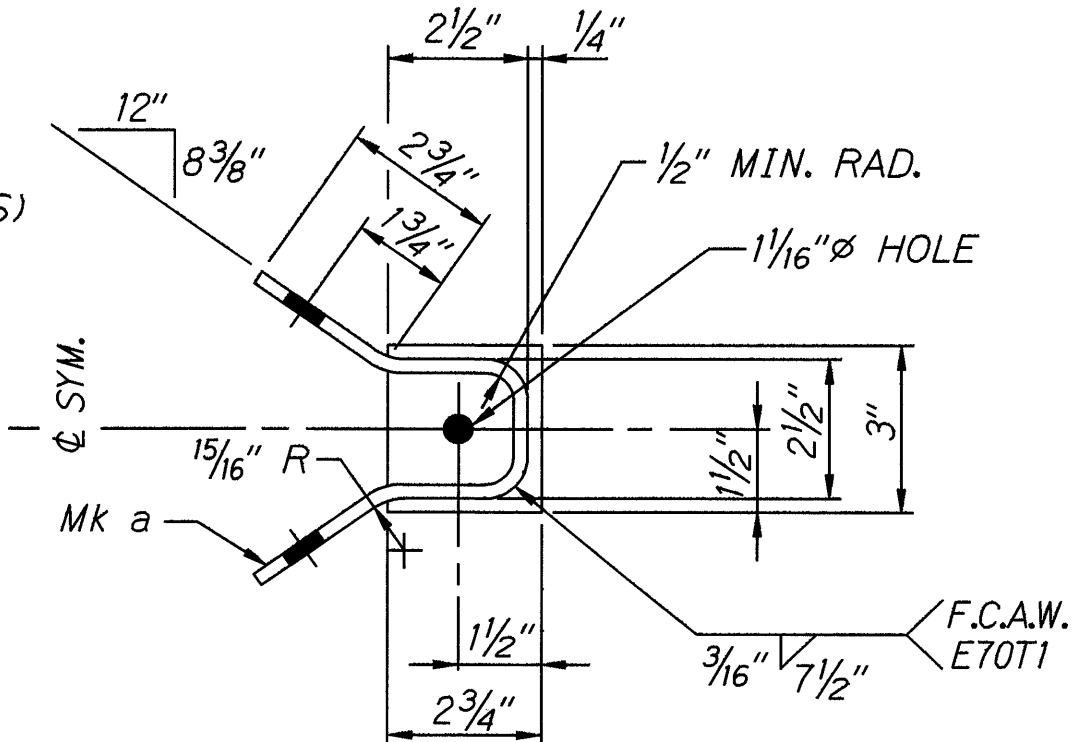
ONE - PIPE SPACER - R1



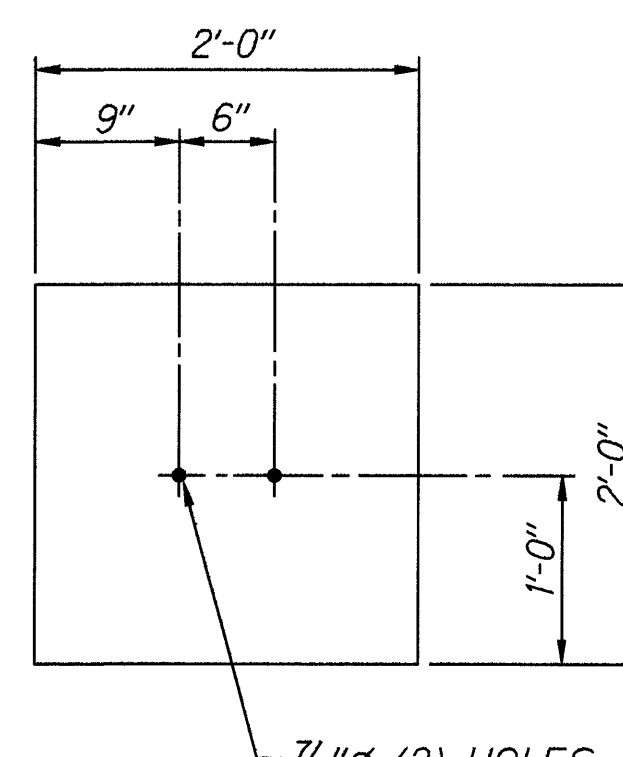
ONE - SHELF ANGLE - T1



2 - SOIL TUBE - K1



SECTION B - B
ONE - CABLE ANCHOR BRACKET - L1



2 - SOIL PLATE - S1

ORIGINAL PLAN	DATE	BY
SURVEY PLOTTED BY		
DRAWN BY		
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MODIFIED ECCENTRIC LOADER
TERMINAL (MELT)
COMPONENT DETAILS
QUEEN KAAHUMANU HIGHWAY RESURFACING
HONOKOHAU TO KEAHOLE
F. A. PROJECT NO. STP-019-1(18)
Not to Scale Date: Feb., 1995
SHEET No. 2 OF 3 SHEETS

MATERIAL SCHEDULE

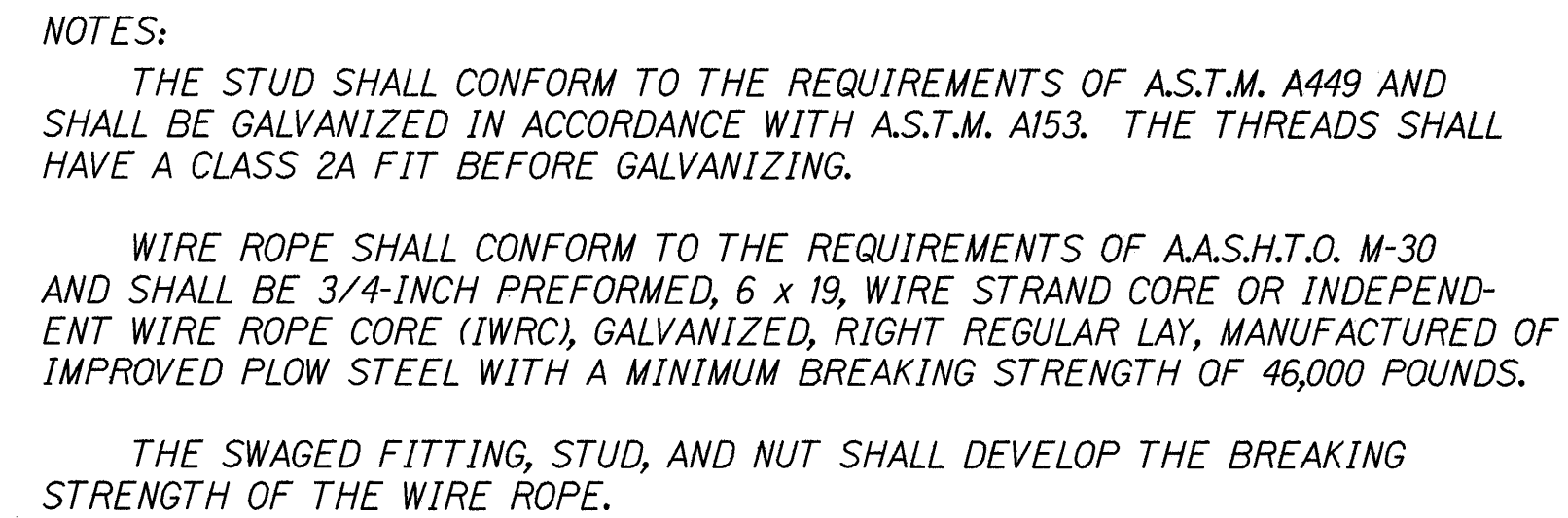
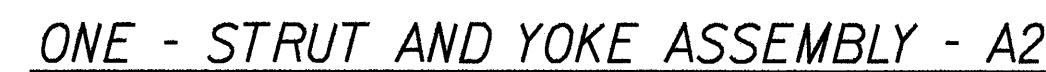
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MODIFIED ECCENTRIC LOADER
TERMINAL (MELT)
COMPONENT DETAILS

QUEEN KAAHUMANU HIGHWAY RESURFACING
HONOKOHAU TO KEAHOLE
F. A. PROJECT NO. STP-019-1(18)

Not to Scale Date: Feb., 1995

SHEET No. 3 OF 3 SHEETS



ONE - CABLE ASSEMBLY - B2



file name: melt3.dgn

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY <u>X</u>	_____
foltraffic/sf	TRACED BY _____	_____
gell/mel3dd	DESIGNED BY <u>X</u>	_____
	QUANTITIES BY _____	_____
	CHECKED BY _____	_____