STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
F.A.I. 72	D-6 ITS #2	SANGAMON	30	21	- SHEETS
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-		

Contract # 72A18

(2) Horizontal handrail member shall be continuous thru fitting. Provide $\frac{7}{16}$" ø hole in fitting for $\frac{3}{8}$" ø bolt. Field drill $\frac{7}{16}$" ø hole in horizontal rail member. Provide washer and locknut for bolt. (Use $\frac{5}{16}$" eyebolts in $\frac{7}{16}$" ø holes on top rail at ends only.)
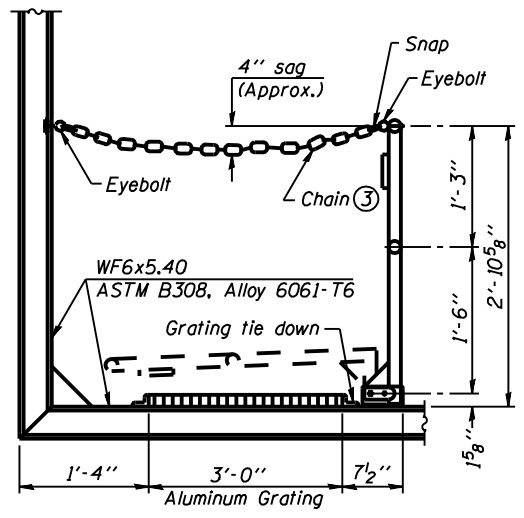
SIDE ELEVATION
(Showing safety chain w/o sign)

4" sag (Approx.)
Snap
Eyebolt
Eyebolt
Chain (3)
WF6x5.40 ASTM B308, Alloy 6061-T6
Grating tie down
1'-3"
1'-6"
2'-10 $\frac{5}{8}$"
1 $\frac{5}{8}$"
1'-4"   3'-0"   7 $\frac{1}{2}$"
Aluminum Grating
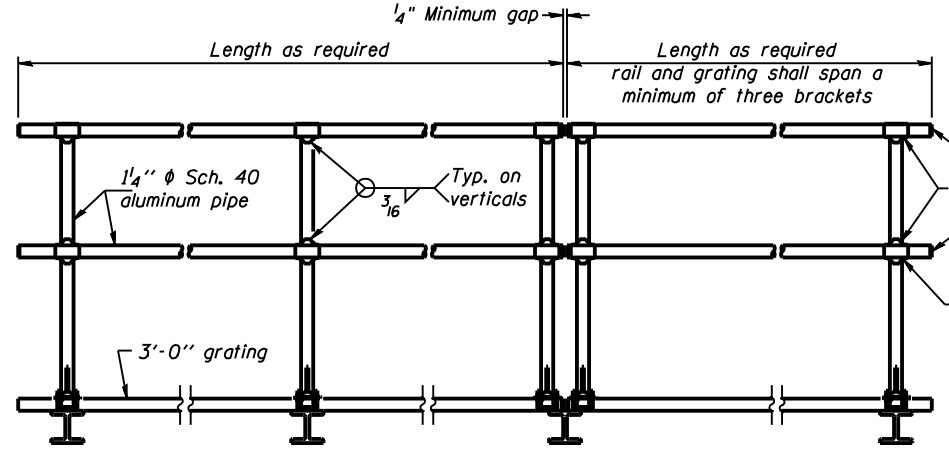
HANDRAIL DETAILS
Handrail pipe shall be ASTM B241, Alloy 6063-T6 or Alloy 6061-T6.

FRONT ELEVATION

$\frac{1}{4}$" Minimum gap
Length as required
Length as required rail and grating shall span a minimum of three brackets
$1\frac{1}{4}$" ø Sch. 40 aluminum pipe
$\frac{3}{16}$ Typ. on verticals
3'-0" grating
(2) (1) Install standard force-fit end caps or weld $\frac{1}{8}$" end plates with $\frac{1}{8}$" c.f.w. and grind smooth. (All rail ends)
Fittings-ASTM B26, Alloy 356-T7 or $1\frac{1}{2}$" ø aluminum pipe

ELEVATION AT HANDRAIL JOINT (4)
8"
$2\frac{1}{2}$"
$\frac{3}{4}$"
$1\frac{1}{4}$" $1\frac{1}{4}$"
$\frac{1}{4}$"
$1\frac{1}{2}$"
ℂ Sym.
Flat, out-out
No back gouge
G
Extension bar $\frac{1}{4}$" x 1" x 6" Each side

SECTION P-P
$2\frac{1}{4}$"
PL $\frac{3}{8}$" x 3" x 7"
ℂ $\frac{7}{16}$" ø holes for $\frac{3}{8}$" ø hex head bolts
L $2\frac{1}{2}$" x $2\frac{1}{2}$" x $\frac{5}{16}$"
5"
$\frac{1}{2}$"
$\frac{1}{4}$"
$1\frac{1}{2}$"
ℂ $\frac{3}{8}$" ø eyebolt hole
1'-$2\frac{1}{2}$"
WF6x5.04 web
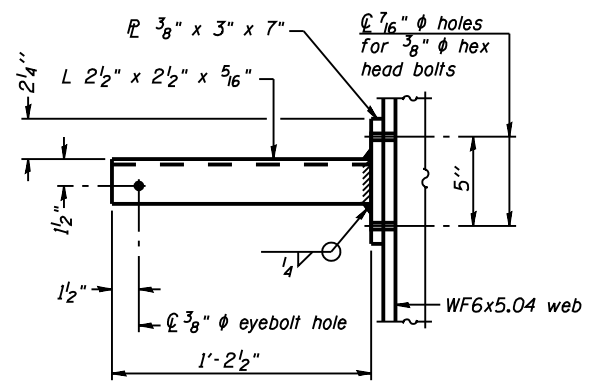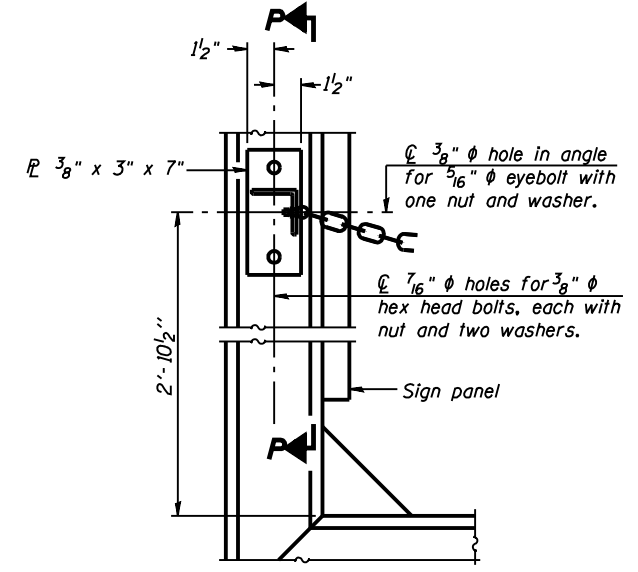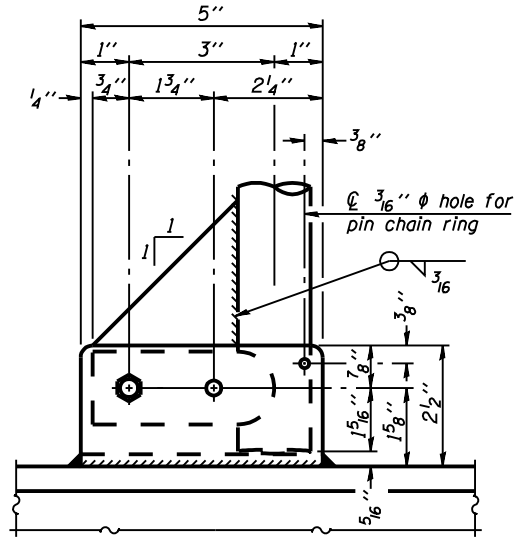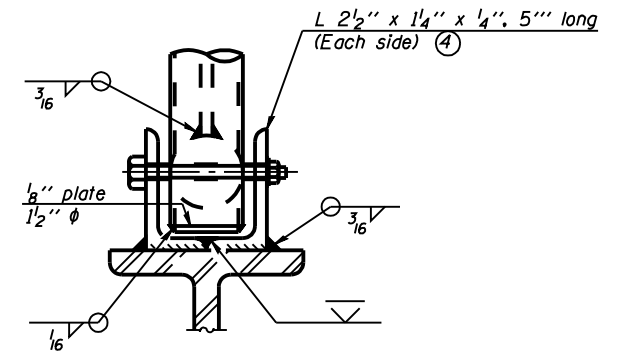
ALTERNATE SAFETY CHAIN ATTACHMENT
(With Sign Present)
Items not shown same as "Side Elevation" of "Handrail Details"
$1\frac{1}{2}$" $1\frac{1}{2}$"
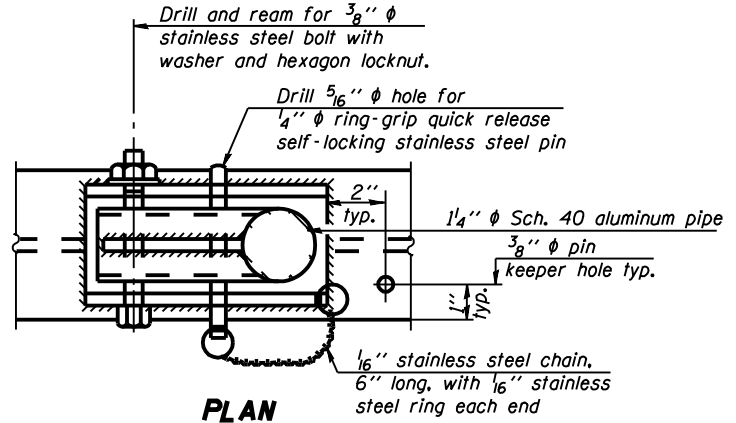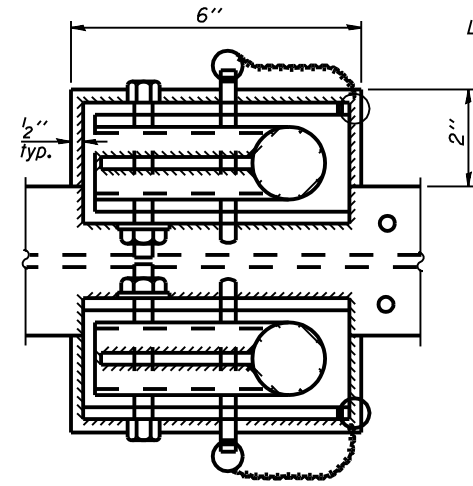P
PL $\frac{3}{8}$" x 3" x 7"
ℂ $\frac{3}{8}$" ø hole in angle for $\frac{5}{16}$" ø eyebolt with one nut and washer.
ℂ $\frac{7}{16}$" ø holes for $\frac{3}{8}$" ø hex head bolts, each with nut and two washers.
Sign panel
2'-10 $\frac{1}{2}$"
P

SIDE ELEVATION
5"
1" 3" 1"
$\frac{1}{4}$"
$\frac{3}{4}$" $1\frac{3}{4}$" $2\frac{1}{4}$"
$\frac{3}{8}$"
ℂ $\frac{3}{16}$" ø hole for pin chain ring
$\frac{3}{16}$
$\frac{3}{8}$"
1 $\frac{5}{16}$" 1 $\frac{5}{8}$" $2\frac{1}{2}$"
$\frac{5}{16}$

FRONT ELEVATION
See "ELEVATION" at right for dimensions.
L $2\frac{1}{2}$" x $1\frac{1}{4}$" x $1\frac{1}{4}$", 5'" long (Each side) (4)
$\frac{3}{16}$
$\frac{1}{8}$" plate $1\frac{1}{2}$" ø
$\frac{3}{16}$
$\frac{1}{16}$
$\frac{3}{16}$

PLAN
DETAIL E HANDRAIL HINGE
Drill and ream for $\frac{3}{8}$" ø stainless steel bolt with washer and hexagon locknut.
Drill $\frac{5}{16}$" ø hole for $\frac{1}{4}$" ø ring-grip quick release self-locking stainless steel pin
2" typ.
$1\frac{1}{4}$" ø Sch. 40 aluminum pipe
$\frac{3}{8}$" ø pin keeper hole typ.
1" typ.
$\frac{1}{16}$" stainless steel chain, 6" long, with $\frac{1}{16}$" stainless steel ring each end
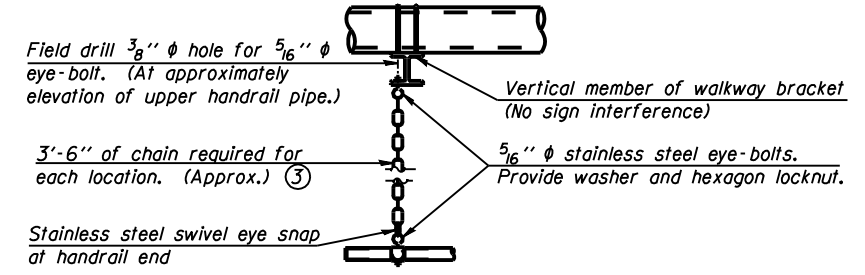
PLAN AT HANDRAIL JOINT
Details not shown same as "PLAN"
6"
$\frac{1}{2}$" typ.
2"
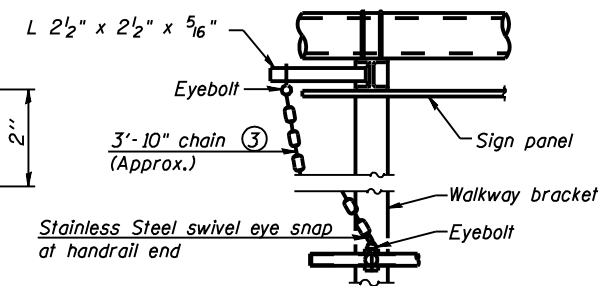
ALTERNATE SAFETY CHAIN ATTACHMENT
Details not shown similar to "Safety Chain" Details
(Walkway omitted for clarity)
L $2\frac{1}{2}$" x $2\frac{1}{2}$" x $\frac{5}{16}$"
Eyebolt
3'-10" chain (3) (Approx.)
Stainless Steel swivel eye snap at handrail end
Sign panel
Walkway bracket
Eyebolt

(3) $\frac{3}{16}$" type 304L stainless steel chain, approximately 12 links per foot.

(4) Extrusions may be used in lieu of the details shown, with approval of the Engineer.

SAFETY CHAIN
One required for each end of each walkway.
Field drill $\frac{3}{8}$" ø hole for $\frac{5}{16}$" ø eye-bolt. (At approximately elevation of upper handrail pipe.)
Vertical member of walkway bracket (No sign interference)
3'-6" of chain required for each location. (Approx.) (3)
$\frac{5}{16}$" ø stainless steel eye-bolts. Provide washer and hexagon locknut.
Stainless steel swivel eye snap at handrail end

OVERHEAD SIGN STRUCTURES
ALTERNATE ALUMINUM HANDRAIL DETAILS
FOR DMS

F.A.I. 72 (I-72)
SECTION D-6 ITS #2
SANGAMON COUNTY