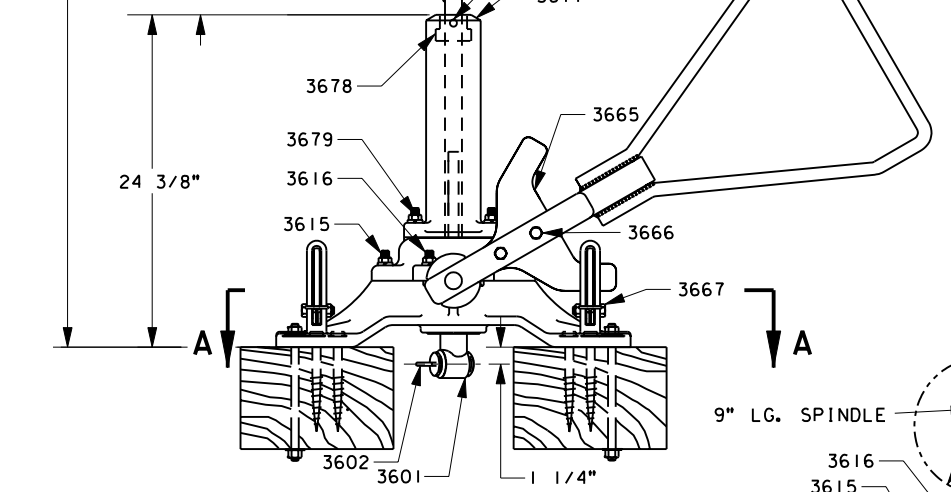
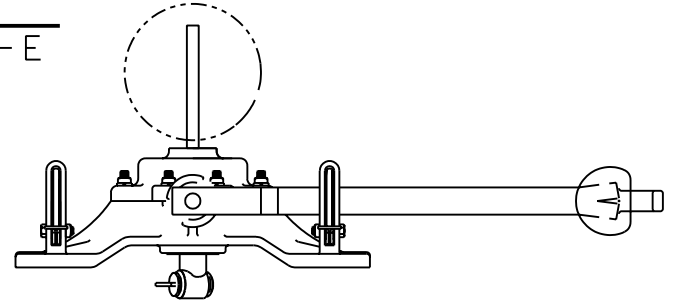
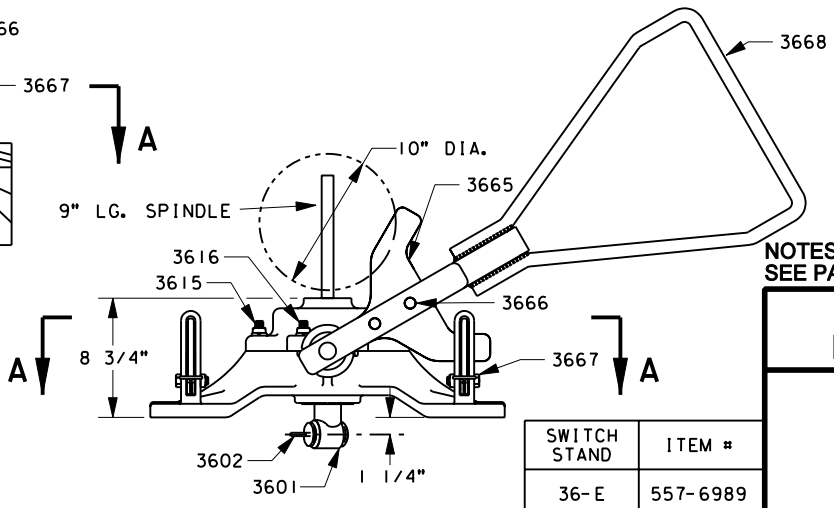


VIEW A-A
 36-EH AND 36-E



36-EH



36-E

NOTES:
 SEE PAGE 2 FOR NOTES AND DETAILS.

**UNION PACIFIC RAILROAD
 ENGINEERING STANDARDS**

**36-E AND 36-EH
 SWITCH STANDS**

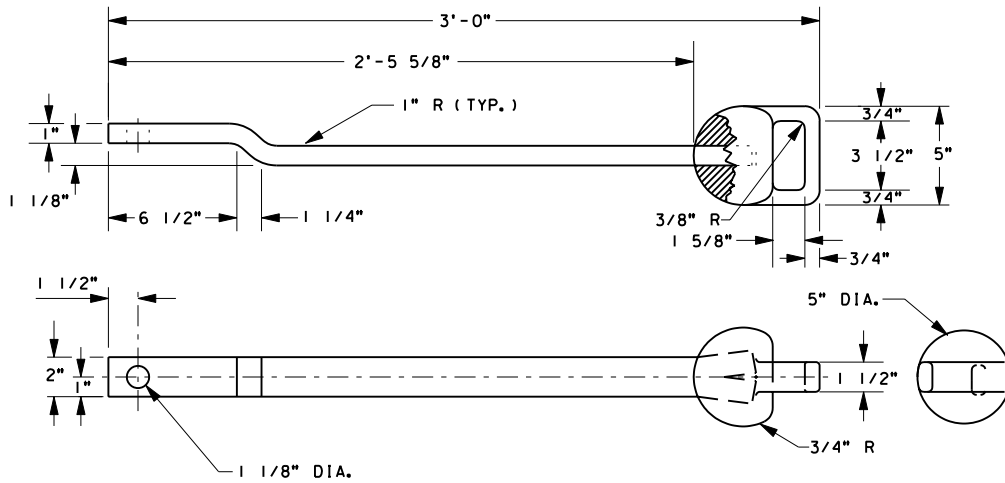
SWITCH STAND	ITEM #
36-E	557-6989
36-EH	557-6995
STRAIGHT HANDLE	557-6990



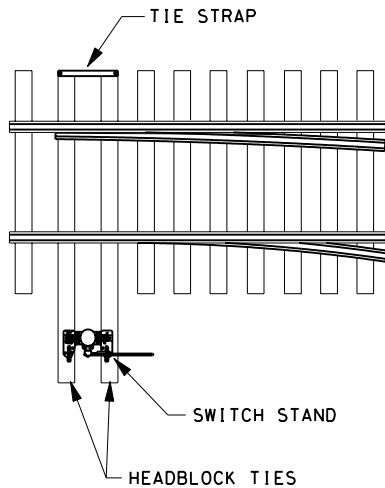
ADOPTED: DEC. 31, 1996
 REVISED: MAY 17, 2004
 FILE NO.: 2111D

STD DWG
2111D
PAGE 1 OF 2

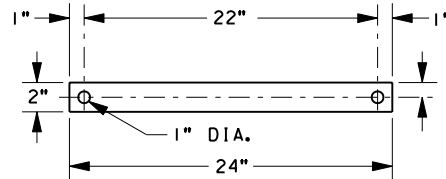
STD DWG
 2111D
 PAGE 1 OF 2



**OPTIONAL 36" STRAIGHT HANDLE
(USE FOR TIGHT CLEARANCE ONLY)**



TIE STRAP LOCATION



**TIE STRAP
TIE MOUNTING KIT**

KIT (ITEM NO. 557-7387)
INCLUDES (2) 3/4" X 10"
DOUBLE THREADED BOLTS,
(4) WASHERS, (4) LOCK NUTS,
(10) 15/16" X 7" LAG SCREWS,
(1) 1/2" X 2" X 24" STEEL STRAP
(2) STEEL BUSHINGS

NOTES:

1. 36-E RECOMMENDED USE: OTHER THAN MAIN TRACK AND MAIN TRACK CROSS OVERS.
2. 36-EH RECOMMENDED USE: MAIN TRACK.
3. FOR MAIN LINE INSTALLATION USE MOUNTING KIT ITEM #557-7387. FOR OTHER THAN MAIN TRACK, USE RECTANGULAR HEAD SCREW SPIKES. APPLY TIE STRAP ON HEADBLOCK TIES ON OPPOSITE SIDE OF TRACK FROM SWITCH STANDS.
4. LUBRICATE INTERNALLY AT LEAST ONCE A YEAR IN BUSY LOCATIONS.

BILL OF MATERIAL

QTY	CATALOG #	DRAWING #	DESCRIPTION
1	3674	C-3387	COVER (S-479)
1	3669	36E-6000	BASE (D-34678)
1	3601	GL-1909-9	SPINDLE
1	3602	SSC-100	CRANKEYE (GL-1889)
1	3668	PD-9405	TRI-HANDLE LEVER
2	3616	125114	SQ. HD. BOLT 3/4" X 3 1/4" LONG
2	3615	125108	SQ. HD. BOLT 3/4" X 4 3/4" LONG
1	3671	PD-9404	HUB (D-34629)
1	3665	D-34679	YOKE (D-34679)
2	3666	185145	3/4" BUTTON RIVETS
2	3672	E-3819	FOOT LATCH
1	3653	GL-3460	CRANK BUSHING
1	3654	233008	CRANK WASHER
1	3652	36E-1000	CRANK GL-1908
1	3656	215017	COTTER
2	3667	163006	1/2" X 2 1/4" HEX CAP SCREW
1	3677	S-480	STIFFENER S-480
1	3678	S-481	ADAPTER S-481
1		EXT #66	SPINDLE EXTENSION #66
2	3679	149001	SQUARE HEAD BOLT 1/2" X 2 1/2" LONG 2" THD.
2		200003	HEX NUT 1/2"
2		241008	SPRING WASHER-1/2"
2		189105	ANCO HEX NUT-1/2"
4		192004	HEX SECURITY NUT 3/4"-10
4		235102	SPRG WASHER 3/4"
1	3655	203111	HEX NUT HVY WFI 1/8-SLOTTED
2		191001	HEX SECURITY NUT-1/2"
1	3673	233017	FLAT WASHER 1 1/8"
2		430102	GREASE FITTING
2		1608B	GREASE FITTING
1		98296A455	ROLL PIN 5/16" X 2"

NOTE: SEE PAGE 1 FOR REST OF THE DWG.

**UNION PACIFIC RAILROAD
ENGINEERING STANDARDS**

**36-E AND 36-EH
SWITCH STANDS**

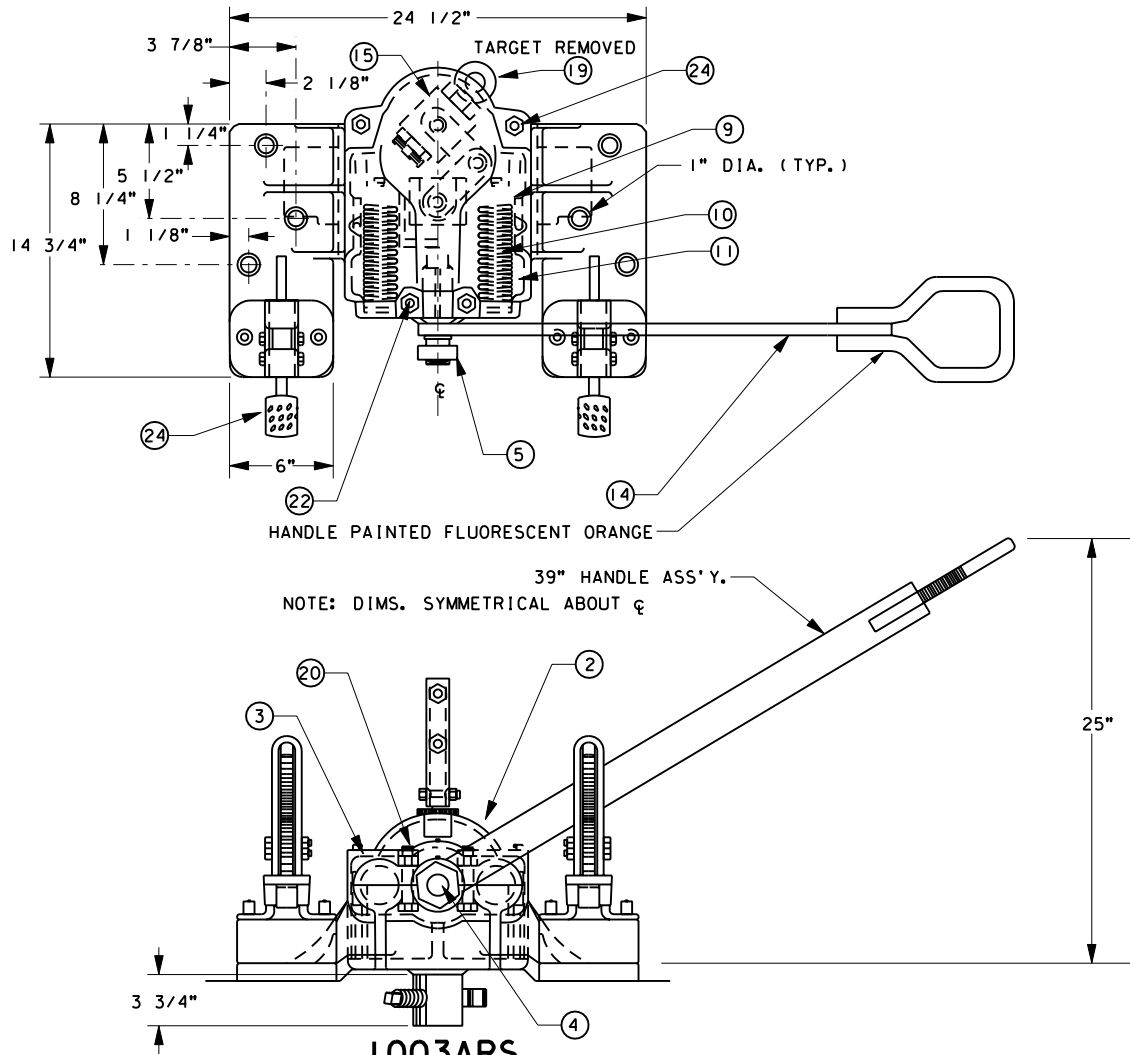


ADOPTED: DEC. 31, 1996
REVISED: MAY 17, 2004
FILE NO.: 2111D

STD DWG

2111D

PAGE 2 OF 2



1003ARS
ITEM NO. 557-7039

PARTS LIST		
NO.	1003ARS	AUTOMATIC SWITCH STAND
1	1117C	BASE 1003ARS
2	1016	COVER
3	1017	HOUSING
4	1018A	TOGGLE
5	100CHXNTNE	HEX NUT
6	1.00FWUSS	FLAT WASHER
7	1024	FORK
8	1080	LINK
9	1013	SPRING BOLT
10	1014	SPRING OUTSIDE
11	1015	SPRING INSIDE
12	1214	PIN TOGGLE
13	1215	PIN FORK
14	1003-36	39 LEVER ARM ASS'Y. NO. 3
15	1227	GREASE FITTING
16	1429	GREASE (EVERY 6 MOS.)
17	1021	WASHER FORK
18	10198	SPINDLE ASS'Y. 2 3/4" DIA.
19	1248	SCREW 1 3/4"
20	.625C03.50SH2	5/8-11 X 3 1/2" SH. BOLT
21	.625C04.50SH2	5/8-11 X 4 1/2" SH. BOLT
22	.625CHXNTNE	5/8-11 HEX NYLON INSERT
23	.625FWUSS	5/8" FLAT WASHER
24	1067	FOOT LATCH
25	1066	LOCK BRACKET
26	1068	BUSHING

NOTES:
ORDER TARGET AND MAST SEPARATELY.
RECOMMENDED USE: OTHER THAN MAIN TRACK.
GREASE STAND EVERY NINETY DAYS
SWITCH STAND TO BE INSTALLED USING
15/16" X 7" COACH SCREWS.
FOR TARGET AND MAST, SEE STD DWG 2020

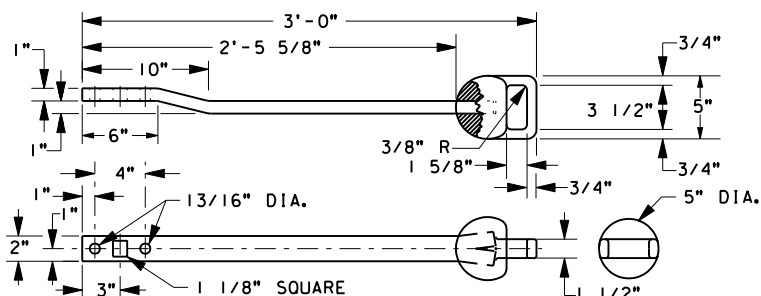
UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

NO. 1003ARS AUTOMATIC
SWITCH STAND



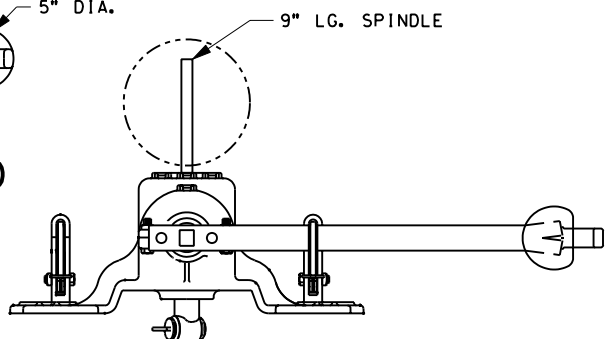
ADOPTED: DEC. 30, 1996
REVISED:
FILE NO.: 2120

STD DWG
2120

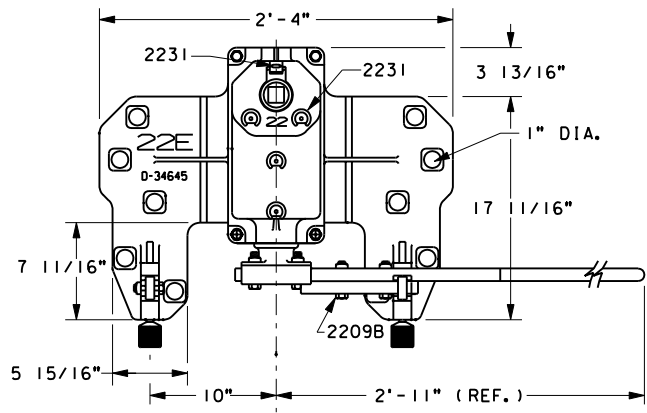


**OPTIONAL 36" STRAIGHT HANDLE
(USE FOR TIGHT CLEARANCE ONLY)**

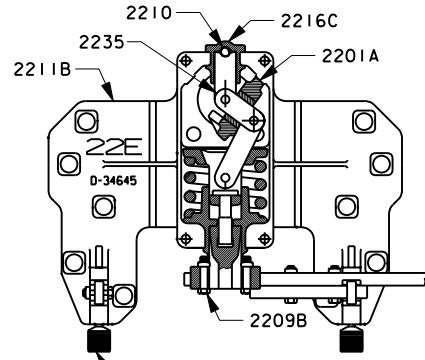
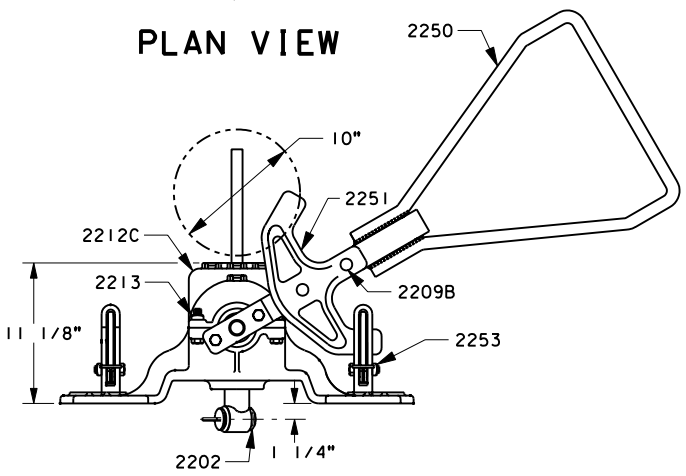
ITEM NO. 557-6957



**STAND WITH OPTIONAL
36" STRAIGHT HANDLE**



PLAN VIEW



**PLAN VIEW
WITH COVER REMOVED**

NOTES:
RECOMMENDED USE: OTHER THAN MAIN TRACK.

IT IS RECOMMENDED THAT SWITCH STANDS BE INSPECTED AND LUBRICATED AT LEAST ONCE A YEAR IN BUSY LOCATIONS OR ADD OIL IN "OIL CUPS" WITH ANY GOOD GRADE ENGINE OIL. RECOMMEND OIL WITH GRAPHITE CONTENT (SUMMER-SAE 60, WINTER-SAE 40).

IF SWITCH STAND IS DISASSEMBLED, REGREASING OF ALL INTERNAL PARTS IS REQUIRED. APPLY GREASE LIBERALLY IN "THRUST BUSHING" CAVITY, BOTH ENDS "SPRING BASE", "SPINDLE" SLOT, AND ALL BEARING SURFACES (TEXACO NO. 904 GREASE).

SWITCH STAND TO BE INSTALLED USING 15/16" X 7" COACH SCREWS.

FOR COACH SCREWS, SEE STD DWG 0450
FOR SWITCH TARGET DETAILS, SEE STD DWG 2020
FOR TRACK IDENTIFICATION, SEE STD DWG 2205
FOR CONNECTING ROD ASSEMBLY, SEE STD DWG 2175
FOR SWITCH PADLOCK, SEE STD 2050

QTY	CATALOG #	DRAWING #	DESCRIPTION
1	2235	22-5103	LINKAGE AND SPRING CAGE ASSY. (SEE ASSY DWG FOR PARTS DWGS)
1	2216C	22-6201	THRUST BUSHING
1	2210	289.01.01	THRUST BALL 1" DIA.
1	2212C	22-6100	COVER (S-604-C)
1	2252	22E-6000	BASE (D-34645)
1	2201A	—	SPINDLE (GL-2762) (DRILLED PER CUST.)
1	2202	SSC-100	CRANK EYE (GL-1889)
1	2250	92-7506	TRI-HANDLE LEVER
4	2213	201.12.06	SO. HD. BOLT 5/8" X 3" LONG
4		202.15.07	HEX NUT 5/8"-11
4		203.15.03	LOCK WASHER 5/8"
4	2209B	201.12.07	SO. HD. BOLT 3/4" X 2 3/4" LONG
4		202.15.07	SECURITY NUT 3/4"-10
5	2231	251.01.01	1608B GREASE FITTING - DRIVE TYPE
1	2207		TARGET (PER CUSTOMER)
1	2208A		TARGET MAST (PER CUSTOMER)
2			BOLT
2			NUT
1	2251	PD-9461	YOKE (D-34637)
2	2253		1/2" X 2 1/4" HEX CAP SCREW
2			HEX SECURITY NUT
2	2254	S-618A	FOOT LATCH

**UNION PACIFIC RAILROAD
ENGINEERING STANDARDS**

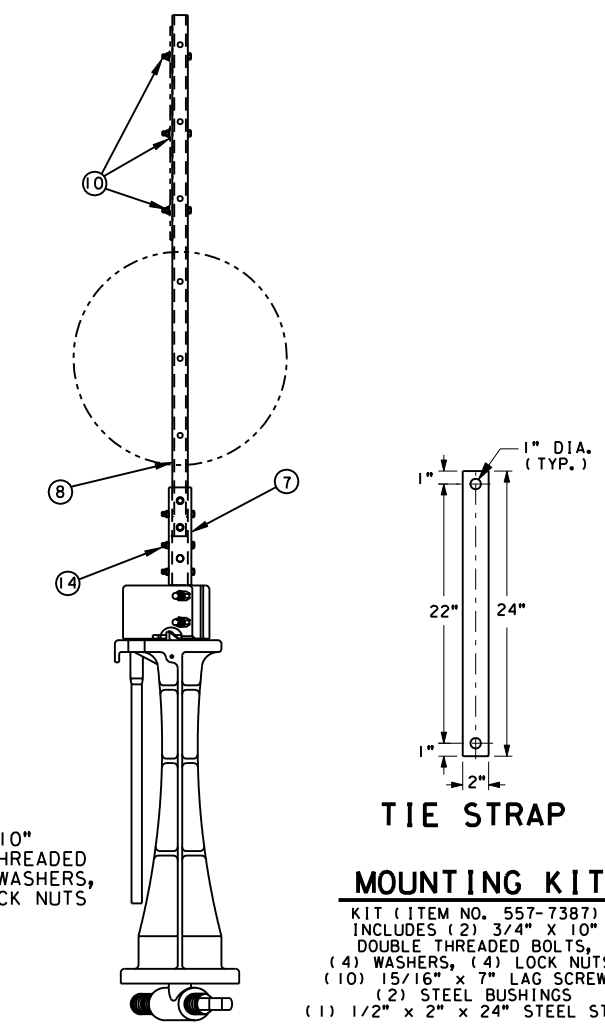
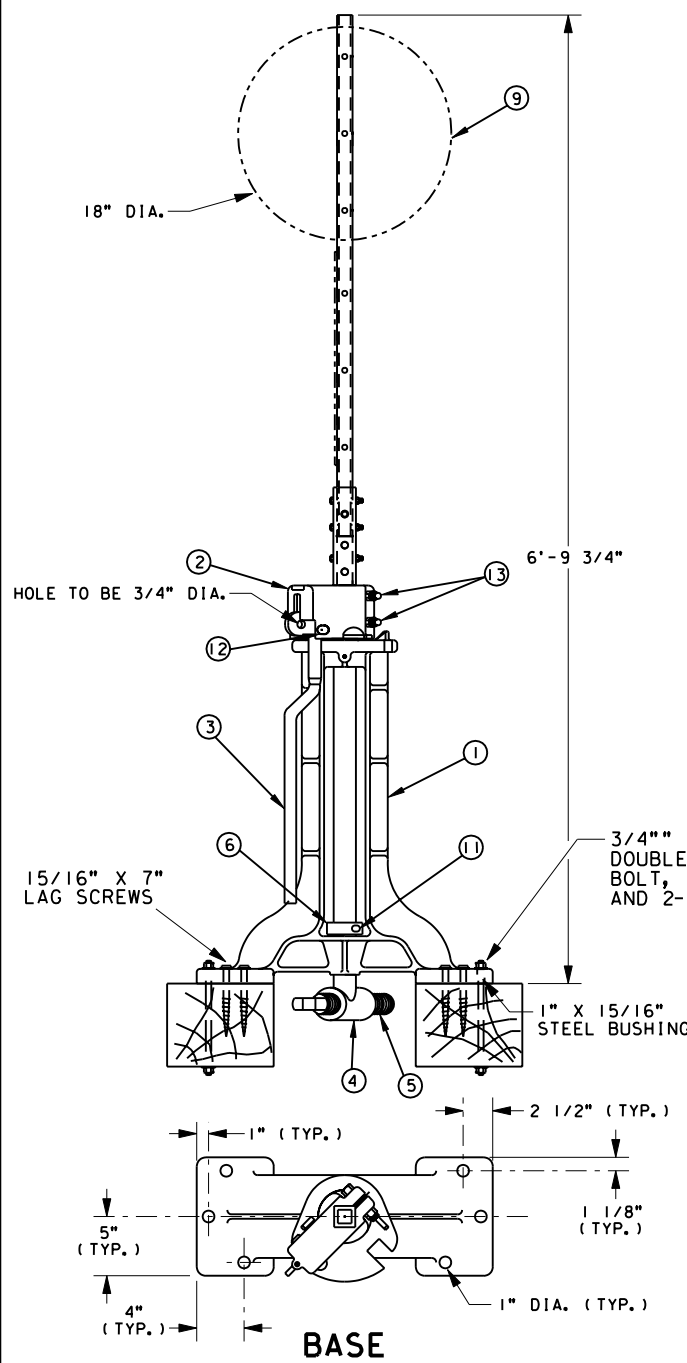
**NO. 22-E
SWITCH STAND**

**ITEM NO.
557-6956**



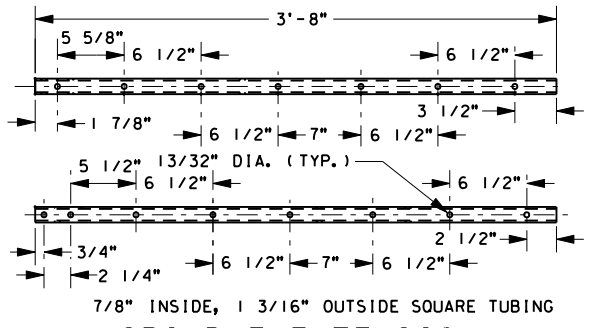
ADOPTED: DEC. 30, 1996
REVISED: APRIL 17, 2000
FILE NO.: 2216B

**STD DWG
2116B**



TIE STRAP

MOUNTING KIT
KIT (ITEM NO. 557-7387)
INCLUDES (2) 3/4" X 10"
DOUBLE THREADED BOLTS,
(4) WASHERS, (4) LOCK NUTS,
(10) 15/16" X 7" LAG SCREWS,
(2) STEEL BUSHINGS
(1) 1/2" X 2" X 24" STEEL STRAP



ITEM NO.	NO. REOD.	PART NO.	DESCRIPTION
1	1	11209E	MAIN CASTING (MODIFIED AS SHOWN)
2	1	11212E	LEVER BRACKET
3	1	11213E	HAND LEVER
4	1	11201E	SPINDLE
5	1	11202E	CRANK EYE
6	1	11210E	COLLAR
7	2	11216E	SPLICE BRACKET
8	1	962023	SPINDLE EXTENSION
9	1		TARGET (SUPPLIED BY U. P.)
10	3		3/8" X 2" BOLT SO. HD. / HEX HD. NUT & FLAT WASHER (SUPPLIED BY U. P.)
11	1	11211E	RIVET 1/2" X 3 3/4" BUT. HD.
12	1	11214E	RIVET 5/8" X 3 1/4"
13	2	11215E	7/8" X 3 3/4" H. T. MACH. BOLTS/ HEX SLOTTED NUTS & 3/16" X 1 1/2" COTTER/SPRING WASHER
14	6	11217E	3/8" X 2 1/2" MACH. BOLTS/ SO. HD. & HEX. ANCO. NUTS

NOTES:
RECOMMENDED USE, MAIN TRACK.
FOR SWITCH STAND MOUNTING KIT, USE ITEM NO. 557-7387.
APPLY TIE STRAP ON HEADBLOCK TIES ON OPPOSITE SIDE OF TRACK FROM SWITCH STANDS.
MINIMUM CONNECTING ROD LENGTH IS 6'-0 3/4".
FOR SWITCH TARGET DETAILS, SEE STD DWG 2020
FOR TRACK IDENTIFICATIONS, SEE STD DWG 2205
FOR CONNECTING ROD ASSEMBLY, SEE STD DWG 2175

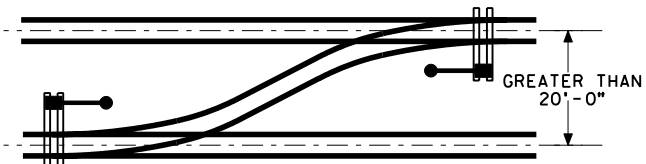
UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

NO. 112E HIGH SWITCH STAND

ITEM NO. 557-7028

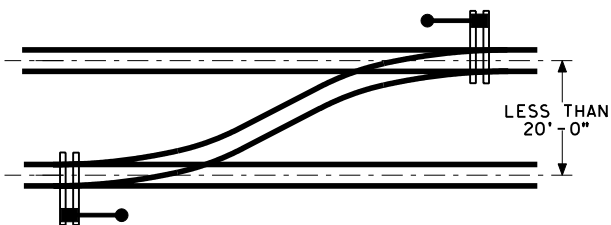
ADOPTED: DEC. 31, 1996
REVISED:
FILE NO.: 2103

STD DWG
2103



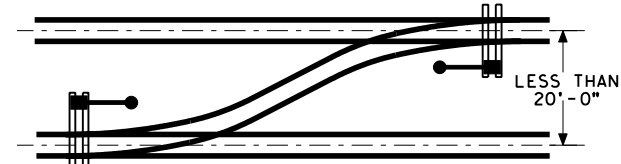
GREATER THAN 20'-0" (INSIDE PLACEMENT)

	SWITCH STANDS	ROD LENGTH	HEADBLOCK TIE LENGTH
MAIN LINE	112E, 36EH	7'-0"	17'-0"
YARD	22E, 36E, 1003, 1004	5'-0"	15'-0"



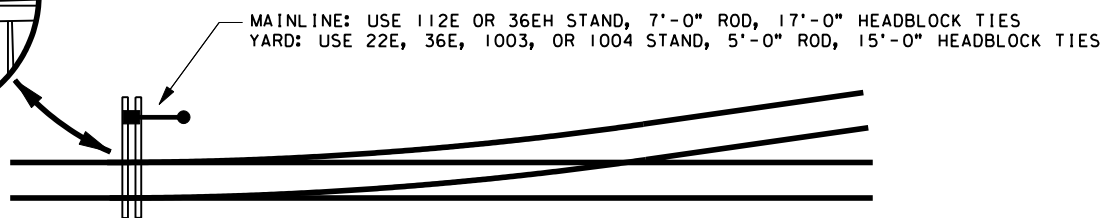
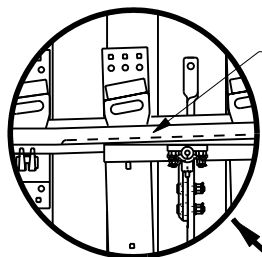
LESS THAN 20'-0" (OUTSIDE PLACEMENT)

	SWITCH STANDS	ROD LENGTH	HEADBLOCK TIE LENGTH
MAIN LINE	112E, 36EH	7'-0"	17'-0"
YARD	22E, 36E, 1003, 1004	5'-0"	15'-0"



13'-0" TO 20'-0" (INSIDE PLACEMENT)

	SWITCH STANDS	ROD LENGTH	HEADBLOCK TIE LENGTH
MAIN LINE	36E WITH STRAIGHT HANDLE	3'-4"	14'-0"
YARD	22E, 36E, WITH STRAIGHT HANDLE	3'-4"	14'-0"



TYPICAL ALIGNMENT

SINGLE TRACK, NO CLEARANCE RESTRICTIONS

NOTES:

SWITCH STANDS ARE TO BE PLACED:

- 1) ON THE CLOSED POINT SIDE OF THE TRACK WHEN THE SWITCH IS LINED FOR THE MAIN TRACK.
- 2) NO LESS THAN 8'-6" (HIGH STANDS) OR 6'-0" (LOW STANDS) FROM THE CENTER OF ANY TRACK TO ANY PART OF THE STAND OR TARGET IN ITS MOST RESTRICTIVE POSITION.
- 3) WITH THE HANDLE POINTING TOWARD THE FROG (22E, 36E, 36EH, 1003, 1004).
- 4) FIRMLY ATTACHED TO THE HEADBLOCK TIES.

SPRING SWITCH WILL BE EQUIPPED WITH A 36E, 36EH, OR A 112E SWITCH STAND.

**UNION PACIFIC RAILROAD
ENGINEERING STANDARDS**

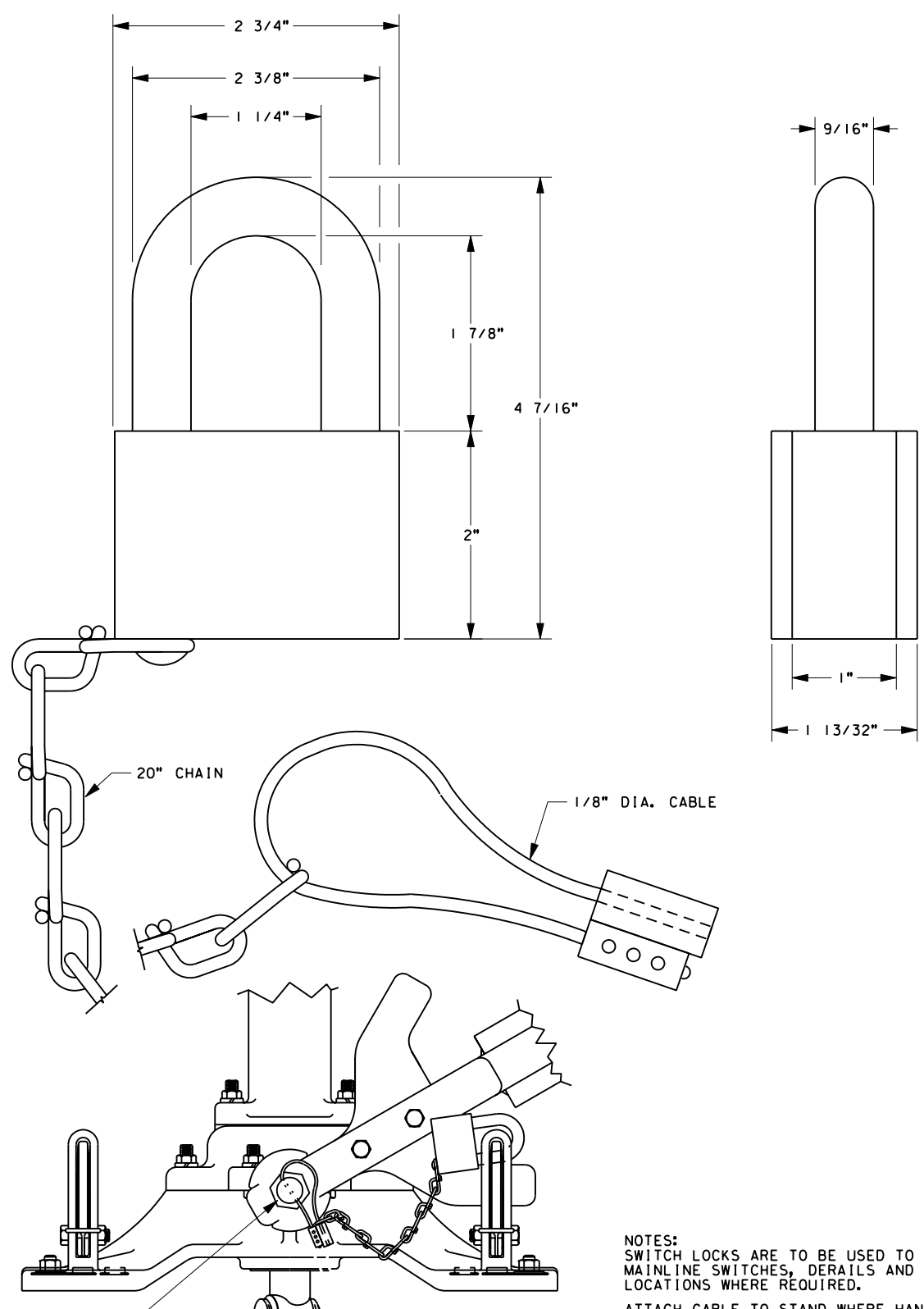
**SWITCH STAND
PLACEMENT**



ADOPTED: MARCH 1, 1998
REVISED: APRIL 14, 1999
FILE NO.: 2101A

**STD DWG
2101A**

**STD DWG
2101A**



ON A 36E, 36EH, 1003ARS, AND 104ARS, REMOVE THE COTTER PIN AND INSTALL CABLE IN THE EXISTING HOLE. FOR HIGH COLUMN STANDS, CABLE TO BE INSTALLED THROUGH LOCK RETAINER HOLE.

TYPICAL APPLICATION DETAIL

NOTES:
SWITCH LOCKS ARE TO BE USED TO SECURE ALL MAINLINE SWITCHES, DERAILS AND OTHER LOCATIONS WHERE REQUIRED.
ATTACH CABLE TO STAND WHERE HANDLE MAY BE THROWN WITHOUT INTERFERENCE AND AS TO NOT CAUSE A SAFETY HAZARD.

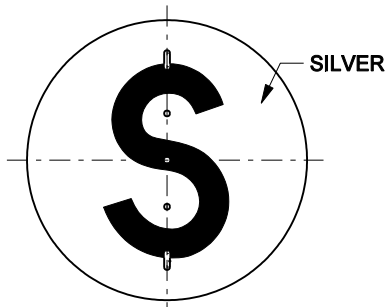
UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

SWITCH PADLOCK

ITEM NUMBERS		
CABLE	KEY	LOCK
170-6440	170-4094	170-6438

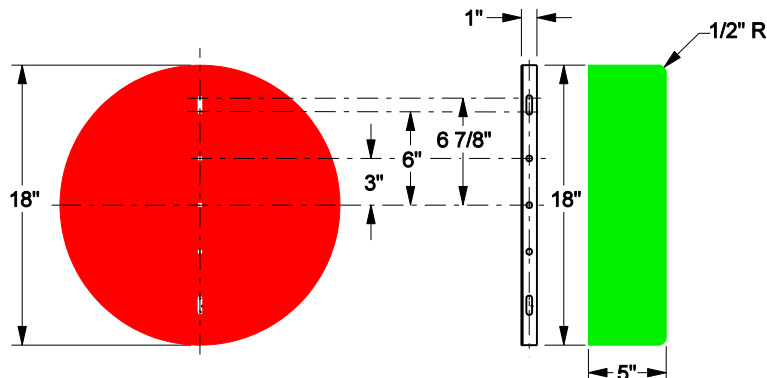
UNION PACIFIC
ADOPTED: MARCH 1, 1998
REVISED:
FILE NO.: 2050

STD DWG 2050



18" SILVER SPRING SWITCH TARGET

ITEM NO. 557-7780



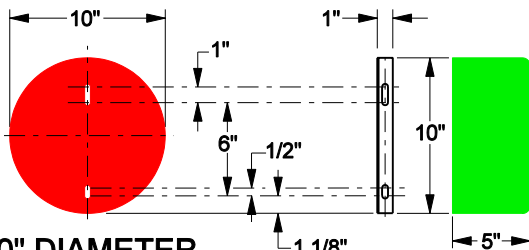
18" DIAMETER RED TARGET

ITEM NO. 557-7758

18" GREEN TARGET

ITEM NO. 557-7603

ALL 18" TARGETS HAVE IDENTICAL HOLES SYMMETRIC ABOUT HORIZONTAL CENTERLINE



10" DIAMETER RED TARGET

ITEM NO. 557-7713

10" GREEN TARGET

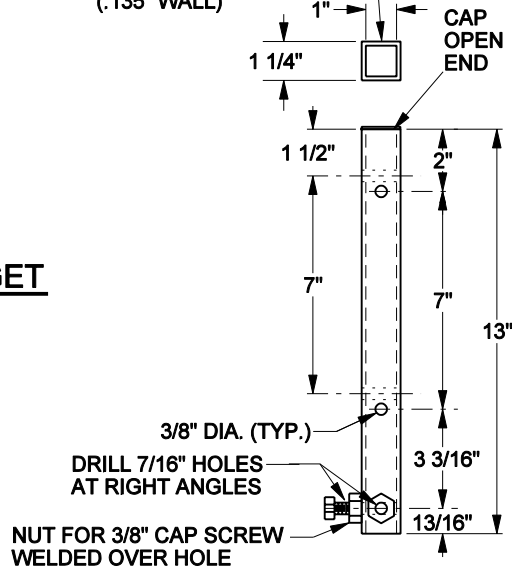
ITEM NO. 557-7599



PURPLE DERAIL TARGET

ITEM NO. 393-1290 ("A" = 6 7/8")
 ITEM NO. 557-7647 ("A" = 10")
 ITEM NO. 557-7669 ("A" = 18")

SQUARE STEEL TUBING (.135" WALL)



TARGET ROD MAST

ITEM NO. 557-7895

NOTES:

1. ALL TARGETS TO BE 0.080" ALUMINUM.
2. ALL TARGETS TO BE DOUBLE SIDED.
3. ALL HOLES TO HAVE 3/16" RADIUS.
4. 18" DIAMETER RED TARGET TO HAVE NO. 3872 HIGH INTENSITY REFLECTIVE SURFACE. THESE TARGETS ARE FOR USE ON ALL MAINLINE SWITCH STANDS.
5. 10" DIAMETER TARGET TO HAVE "3M" NO. 3272 ENGINEER GRADE REFLECTIVE SURFACE. THESE TARGETS FOR USE ON ALL YARD AND INDUSTRY SWITCH STANDS.
6. 18" DIAMETER SILVER TARGET TO HAVE NO. 3290 WHITE REFLECTIVE SURFACE WITH 12" SILK SCREENED P.R.A. SERIES "D" BLACK LETTERS "S" ON BOTH SIDES. THIS TARGET FOR USE ON SWITCH STANDS ATTACHED TO A SPRING SWITCH.
7. 6 7/8", 10", AND 18" DIAMETER PURPLE TARGET WILL HAVE NO. 3290 SILVER REFLECTIVE SURFACE REVERSE SCREENED WITH "3M" PROCESS NO. 893 (PURPLE) INK TO FORM A SILVER P.R.A. SERIES "D" LETTER "D" ON A PURPLE BACKGROUND FOR EACH SIDE. THE 18" DIAMETER TARGET TO BE USED ON ALL HIGH STANDS OR LOW STANDS THAT HAVE A HIGH MAST. THE 10" DIAMETER PURPLE TARGET TO BE USED ON LOW STANDS THAT HAVE A LOW MAST AND SIGN POSTS MARKING THE LOCATION OF DERAILS. 6 7/8" DIAMETER PURPLE TARGET TO BE USED ON CLOSE CLEARANCE DERAIL PER UPRR STD DWG 2008.
8. 10" AND 18" GREEN TARGETS TO HAVE NO. 3277 REFLECTIVE SURFACE. 10" TARGETS ARE FOR LOW AND GROUND STANDS AND THE 18" TARGET IS FOR ALL OTHER SWITCH STAND TYPES. 10" TARGET IS REQUIRED FOR BOTH SIDES OF MAST. THESE TARGETS ARE REQUIRED ON ALL SWITCH STANDS IN NON-SIGNALIZED TERRITORY AND ARE REQUIRED BY LAW IN THE STATES OF MISSOURI AND WISCONSIN.
9. TARGET MAST: VENDOR TO SUPPLY 1 EACH - 1 1/2" ZINC PLATED 3/8" GRADE 5 CAP SCREW 5/8" ZINC PLATED 3/8" GRADE 5 CAP SCREW MAST TO BE PAINTED FLAT BLACK.

**UNION PACIFIC RAILROAD
 ENGINEERING STANDARDS**

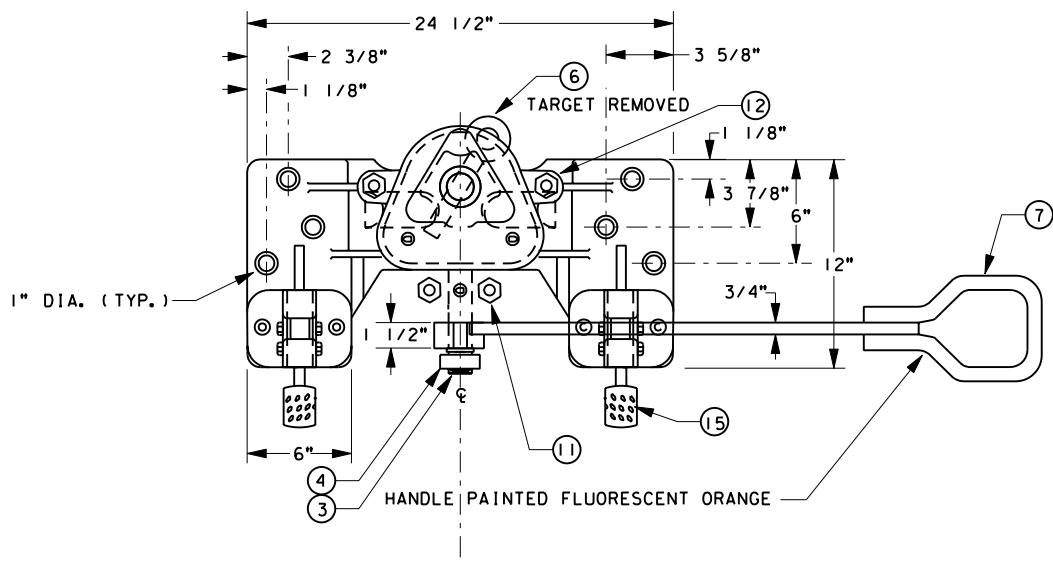
SWITCH TARGETS



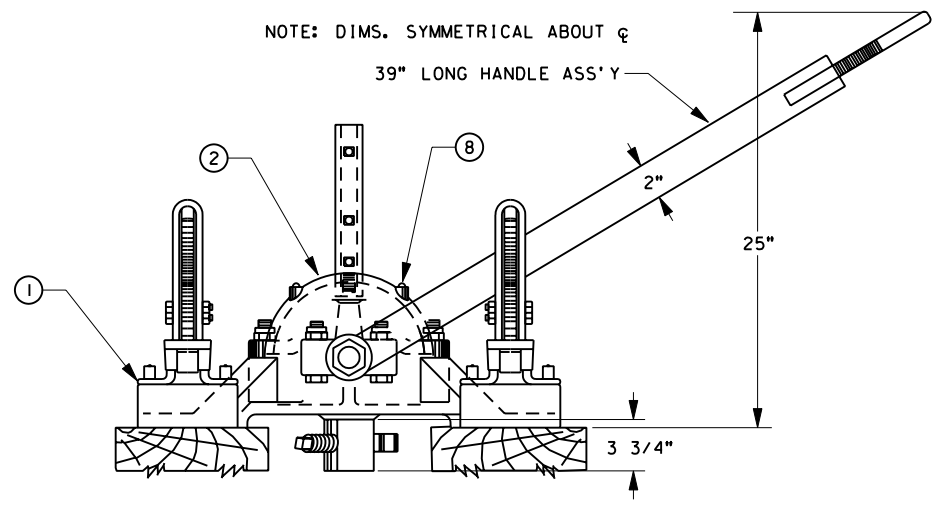
ADOPTED: DEC. 31, 1986
 REVISED: FEB. 11, 2008
 FILE NO.: 2020C

STD DWG
2020C

STD DWG
2020C



NOTE: DIMS. SYMMETRICAL ABOUT ϕ



1004ARS

NO.	PARTS LIST	
1	1038B	BASE 1003ARS
2	1059	COVER NO. 4
3	1042A	TOGGLE
4	100CHXNTNE	HEX NUT
5	1.00FWUSS	FLAT WASHER
6	1248	SCREW 1 3/4"
7	1004-36	39" LEVER ARM ASS'Y.
8	1227	GREASE FITTNG
9	1429	GREASE (EVERY 6 MOS.)
10	1040A5	SPINDLE ASS'Y. 4 2 3/4" DIA.
11	.625C03.50SH2	5/8-11 X 3 1/2" SH. BOLT
12	.625C04.50SH2	5/8-11 X 4 1/2" SH. BOLT
13	.625CHXNTNE	5/8-11 HEX NYLON INSERT
14	.625FWUSS	5/8" FLAT WASHER
15	1067	FOOT LATCH
16	1066	LOCK BRACKET
17	1068	BUSHING

NOTES:
ORDER TARGET AND MAST SEPARATELY.
RECOMMENDED USE: OTHER THAN MAIN TRACK.
GREASE STAND EVERY NINETY DAYS
SWITCH STAND TO BE INSTALLED USING
15/16" X 7" COACH SCREWS.
FOR TARGET AND MAST, SEE STD DWG 2020

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

NO. 1004ARS MANUAL
SWITCH STAND

ITEM NO.
557-7044



ADOPTED: DEC. 30, 1996
REVISED:
FILE NO.: 2121

STD DWG
2121