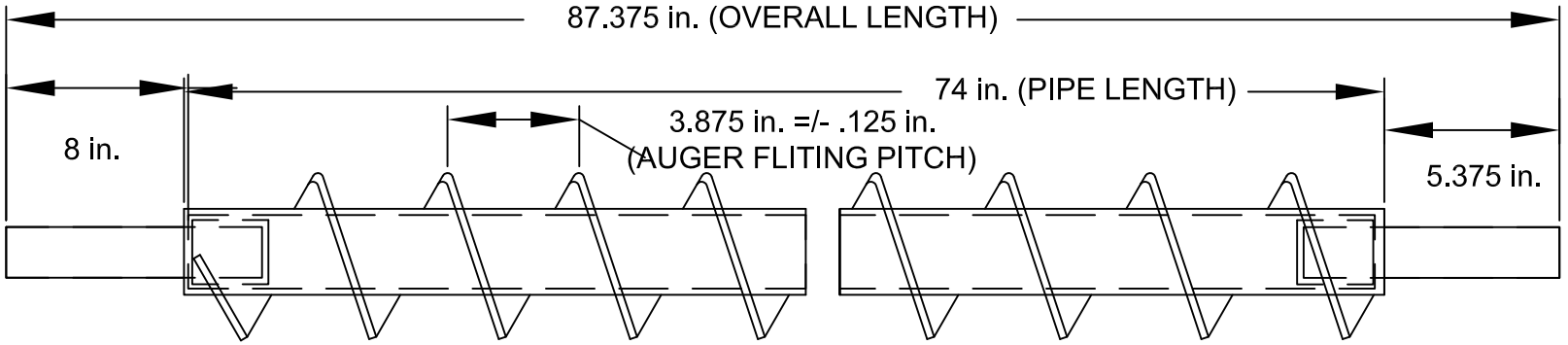


HELICOID FLIGHT (RIGHT HAND)
SINGLE CONTINUIOS SCREW TYPE
(BAR SIZE, BEFORE ROLLING, TO BE
SUCH THAT FLITING O.D. IS AS SHOWN
IN END VIEW AT RIGHT, AND OUTER
EDGE THICKNESS IS AS SHOWN IN
FLITING THICKNESS SPECIFICATION)

VIEW SHOWIING COMPLETE
AUGER WELDMENT

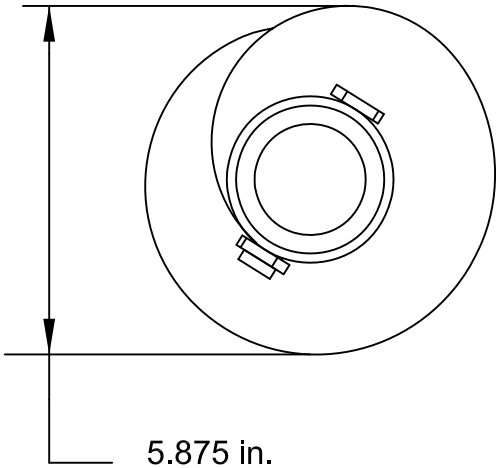
2 in. (2.375 O.D.)
SCHEDULE 80 (.20 in. WALL)
CARBON STEEL PIPE
(PIPE SIZE E.R.W. TUBING ACCEPTABLE

SPECIFICATION NOTES
1. PIPE PORTIONED WORTH (WITH WELDED FITTING) TO BE STRAIGHT TO GIVE MAXIMUM OF .20 IN. TOTAL RUNOUT
2. BOTH STUB SHAFT CENTERLINES TO LIE ON PIPE CENTERLINE TO GIVE MAXIMUS OF .20 IN. TOTAL RUNOUT
3. ALL SURFACES OF SLEEVE, SHAFT, AND OTHER PIPE WHICH MAKE CONTACT WITH EACH OTHER TO BE COATED WITH ANTI-SEIZE COMPOUND
4. SHAFT IS REMOVED, AND NOT USED. WHEN AUGER IS USED IN A DIRECT DRIVE APPLICATION

DO NOT SCALE DRAWING
TOLERANCES
(UNLESS OTHERWISE NOTED)

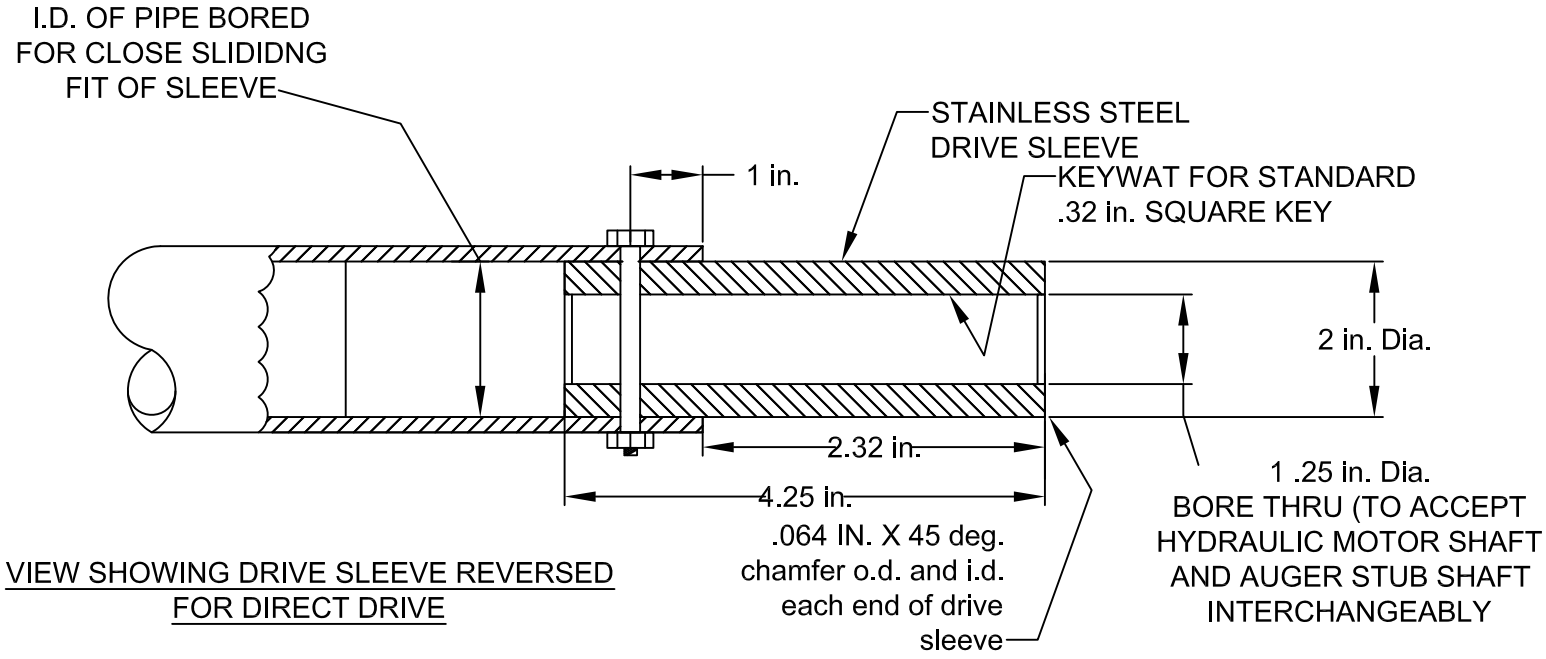
FLAME CUTTING, NIBBLING & WELDING	+/- .060
SHEARING & FORMING	+/- .030
PUNCHING	+/- .020
HOLE DIAMETERS	+ .015/- .005
ANGLES	+/- 2 DEG
DECIMAL MACHINING	0.0- +/- .040
	0.00- +/- .020
	0.000- +/- .005

IMPLIED TOLERANCES DO NOT APPLY
TO REFERENCE DIMENSIONS



PA DEPARTMENT OF TRANSPORTATION

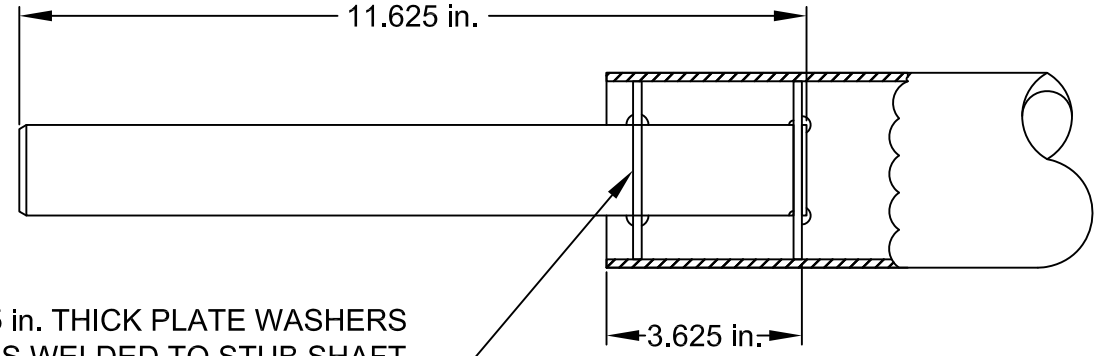
REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THOUGH)		
NO.	DATE	BY			
1	01-09-98	DLW			
2	05-28-02	DWG	DRAWN BY DLW	SCALE N/A	EQN-6
3	9-20-07	BAG	DATE 01-09-98	CHK'D BY WHM	SHEET 1 OF 3



VIEW SHOWING DRIVE SLEEVE REVERSED
FOR DIRECT DRIVE

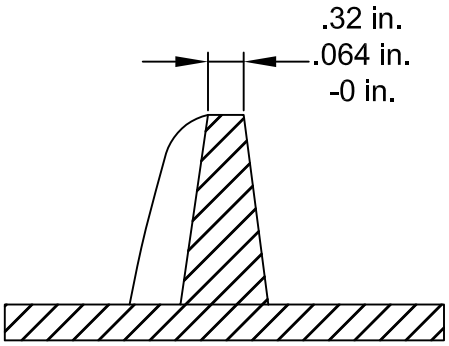
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THROUGH)		
NO.	DATE	BY			
1	01-09-98	DLW			
2	05-28-02	DWG	DRAWN BY DLW	SCALE N/A	EQN-6
3	9-20-07	BAG	DATE 01-09-98	CHK'D BY WHM	SHEET 2 OF 3

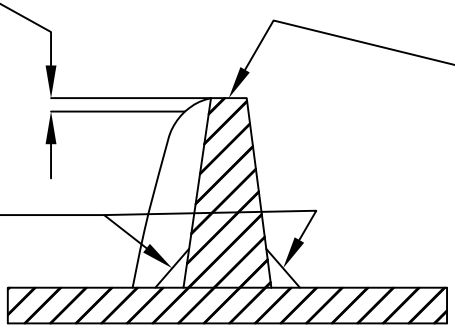


.125 in. THICK PLATE WASHERS CONTINIOUS WELDED TO STUB SHAFT AND AUGER PIPE

WASHERS TO FIT I.D. OF PIPE WITH CLOSE SLIDING FIT SO NO FLEXING OF SHAFT EXISTS AFTER FINAL WELDING



FLITING THICKNESS SPECIFICATION (BEFORE HARDSURFACING



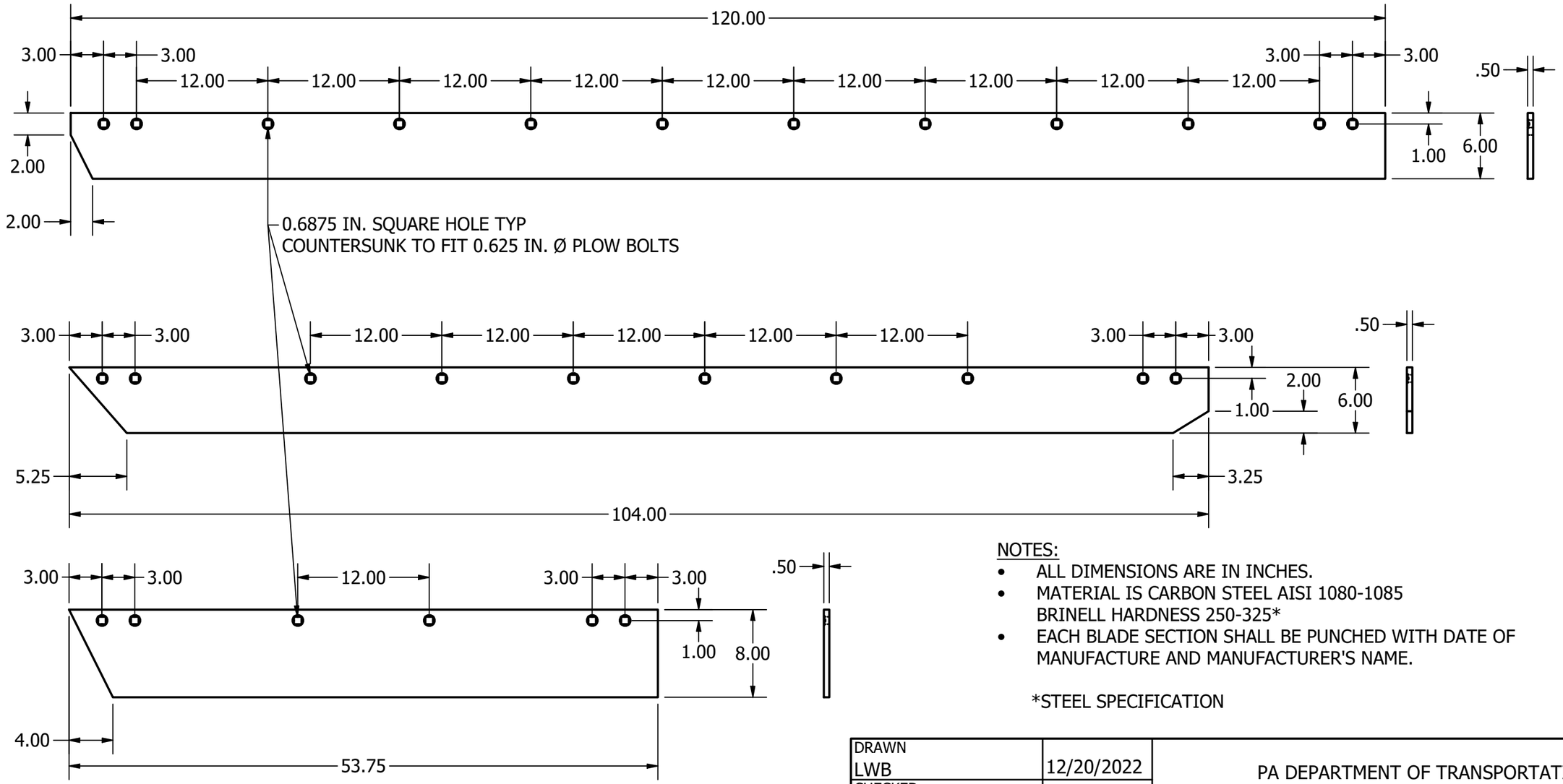
.125 in. (MINIMUM) HARDSURFACE

CONTINIOUS WELD BOTH SIDES OF FLITING

OUTER FLITE PERIPHERY CONTINUOUSLY HARDSURFACED WITH ABRASIVE RESISTANCE WELDING ROD (OR WIRE) EQUIVALENT TO STUDY 121 (ROCKWELL HARDNESS C-44), AND TO BE FULL WIDTH OF FLITING THICKNESS AT OUTEREDGE

WELDING AND HARDSURFACE SPECIFICATION

PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THROUGH)		
NO.	DATE	BY			
1	1-09-98	DLW			
2	05-28-02	DWG	DRAWN BY DLW	SCALE N/A	EQN-6
3	09-20-07	BAG	DATE 01-09-98	CHK'D BY WHM	SHEET 3 OF 3

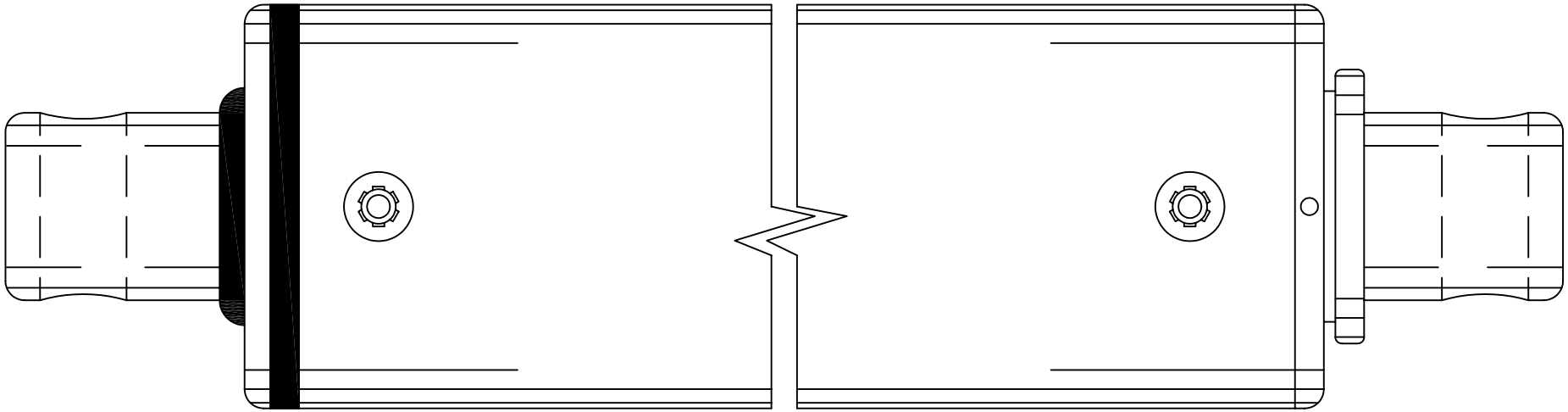


NOTES:

- ALL DIMENSIONS ARE IN INCHES.
- MATERIAL IS CARBON STEEL AISI 1080-1085 BRINELL HARDNESS 250-325*
- EACH BLADE SECTION SHALL BE PUNCHED WITH DATE OF MANUFACTURE AND MANUFACTURER'S NAME.

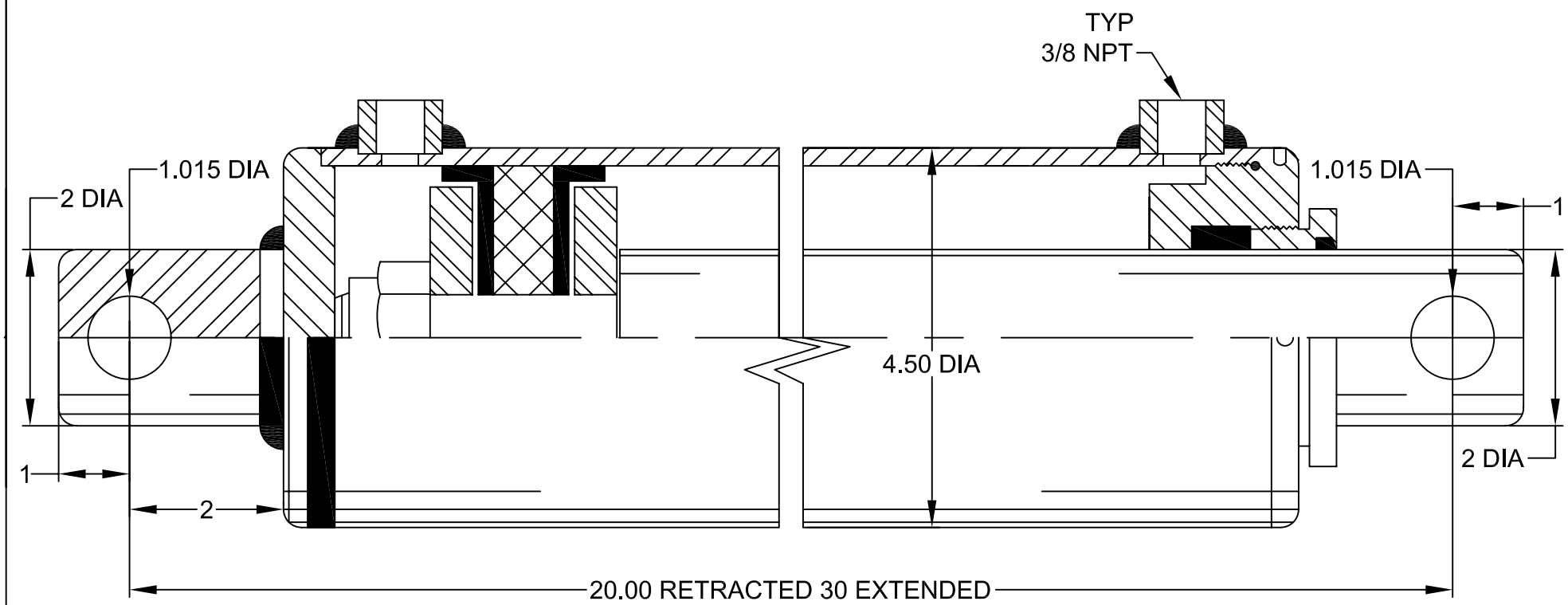
*STEEL SPECIFICATION

DRAWN LWB	12/20/2022	PA DEPARTMENT OF TRANSPORTATION
CHECKED		TITLE: STEEL CUTTING EDGES FOR SNOW PLOWS
QA		
MFG		
APPROVED		
		SIZE B / DWG NO EQN-16A-2022 / REV
		SCALE 1/10 / SHEET 1 OF 1

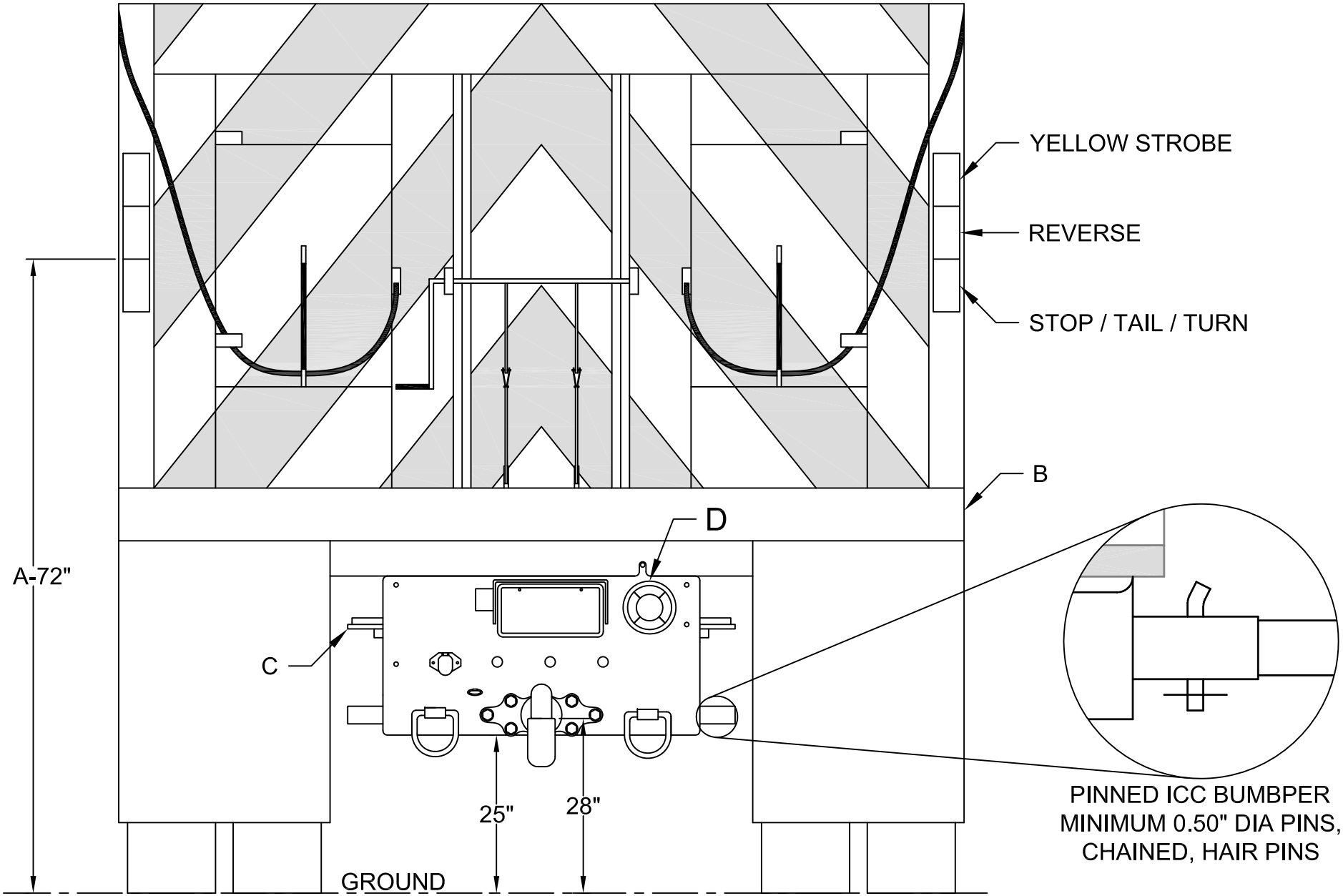


PA DEPARTMENT OF TRANSPORTATION

REVISIONS			PLOW RAM		
NO.	DATE	BY			
1					
2			DRAWN BY CJW	SCALE N/A	EQN-24
3			DATE 12-11-06	CHK'D BY KGK	SHEET 1 OF 2
4					
5					



PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			PLOW RAM		
NO.	DATE	BY			
1					
2			DRAWN BY CJW	SCALE N/A	EQN-24
3			DATE 12-11-06	CHK'D BY KGK	SHEET 2 OF 2
4					
5					



NOTES:

A. HEIGHT OF LIGHTS SHLL NOT EXCEED 72". MEASURED FROM GROUND LEVEL TO TOP OF STOP / TAIL / TURN LIGHT WHEN IS BODY UNLOADED.

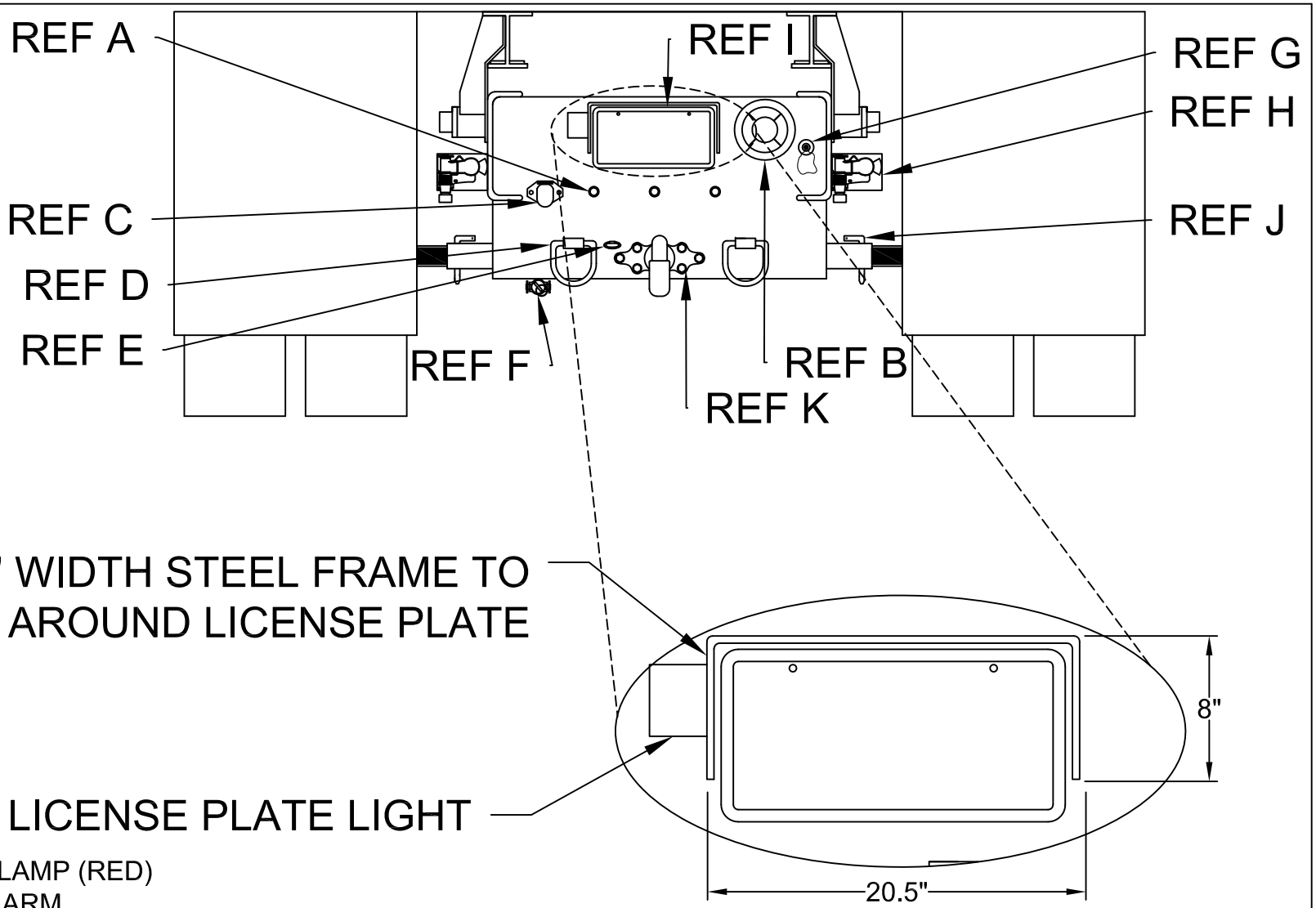
B. SHALL BE ONE PIECE DESIGN, $\frac{3}{8}$" X 6" MINIMUM 60661-T6. IT SHALL BE COMPLETELY WELDED AND SURFACE SHALL BE FLUSH FULL LENGTH TO ALLOW MOUNTING OF THE SPREADER WITH NO GAPS.

C. GLAD HANDS

D. PLACE AS HIGH AS POSSIBLE ON REAR MODULE.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			REAR MODULE WITH RECESSED LICENSE PLATE		
NO.	DATE	BY			
1	08-08-19	KBD			
2	07-21-23	DVC	DRAWN BY JJB	SCALE N/A	EQN-26B
3			DATE 08-02-16	CHK'D BY	SHEET 1 OF 3



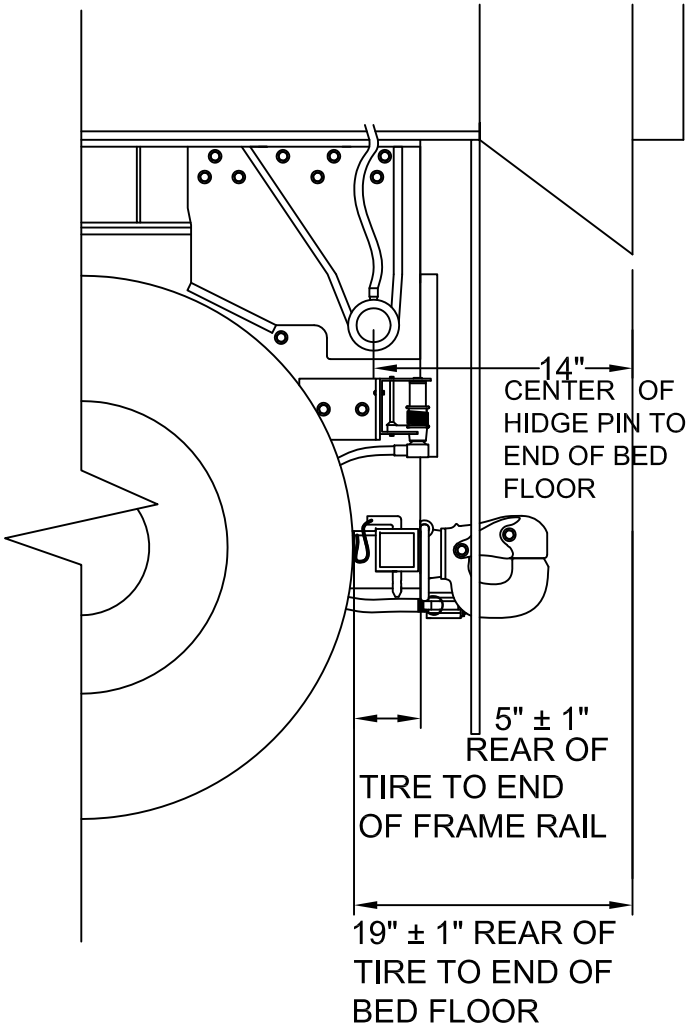
NOTES:

A. REFLECTORIZED M/C LAMP (RED)
B. ECCO 450 BACK UP ALARM
C. TRAILER 7 ROUND PIN TYPE RECEIVER
D. EACH "D" RING - MINIMUM BRAKING STRENGTH EQUIVALENT TO HITCH WEIGHT
E. TRAILER BRAKE-AWAY RING
F. PRE WET LIQUID SUPPLY
G. AUGER SENSOR
H. TRAILER AIR BRAKE GLAD HANDS MUST NOT EXTEND PAST FRAME RAIL
I. LICENSE PLATE
J. MIN .5" DIA PINS, CHAINED, HAIR PINS
K. HITCH

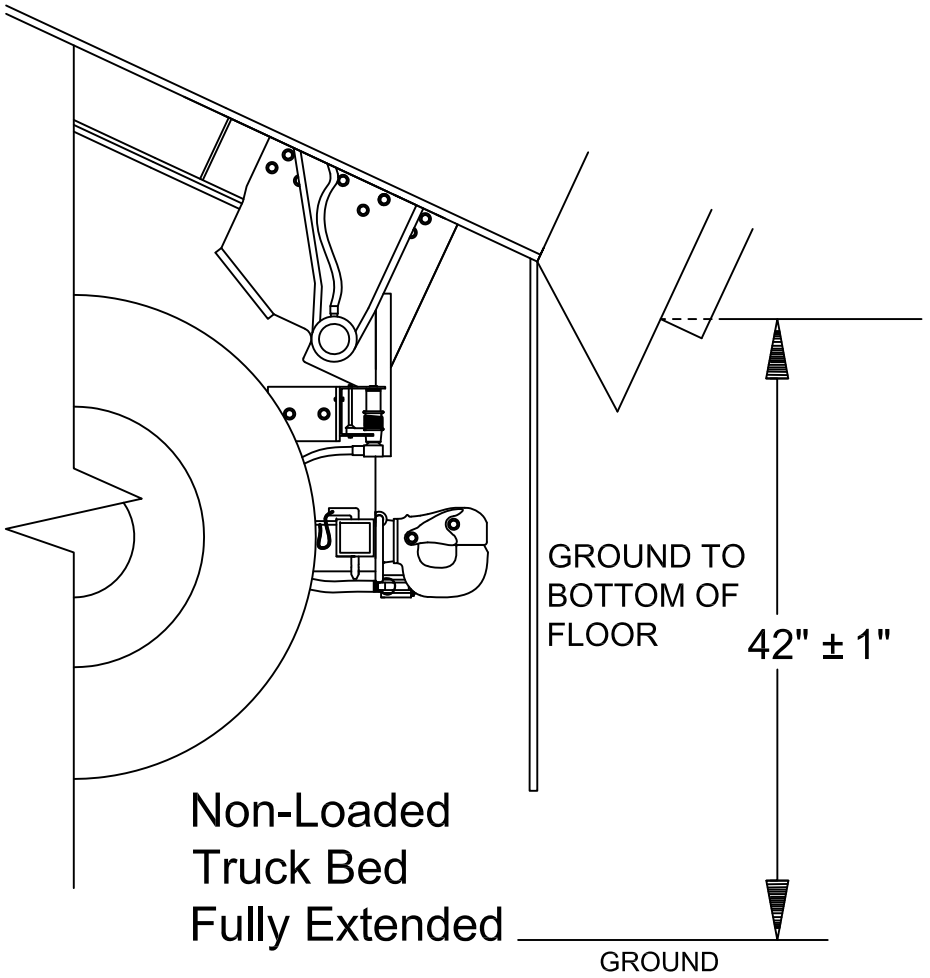
Note: Lisence plate with stailsteel hardware with locking nuts

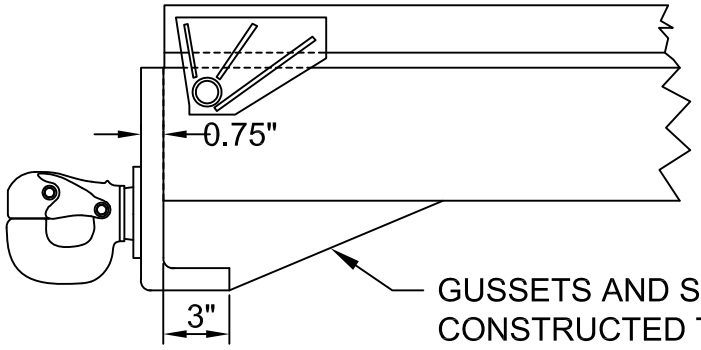
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			REAR MODULE WITH RECESSED LICENSE PLATE		
NO.	DATE	BY			
1	08-08-19	JJB			
2	07-21-23	DVC	DRAWN BY JJB	SCALE N/A	EQN-26B
3			DATE 08-02-16	CHK'D BY	SHEET 2 OF 3



SIDE VIEW





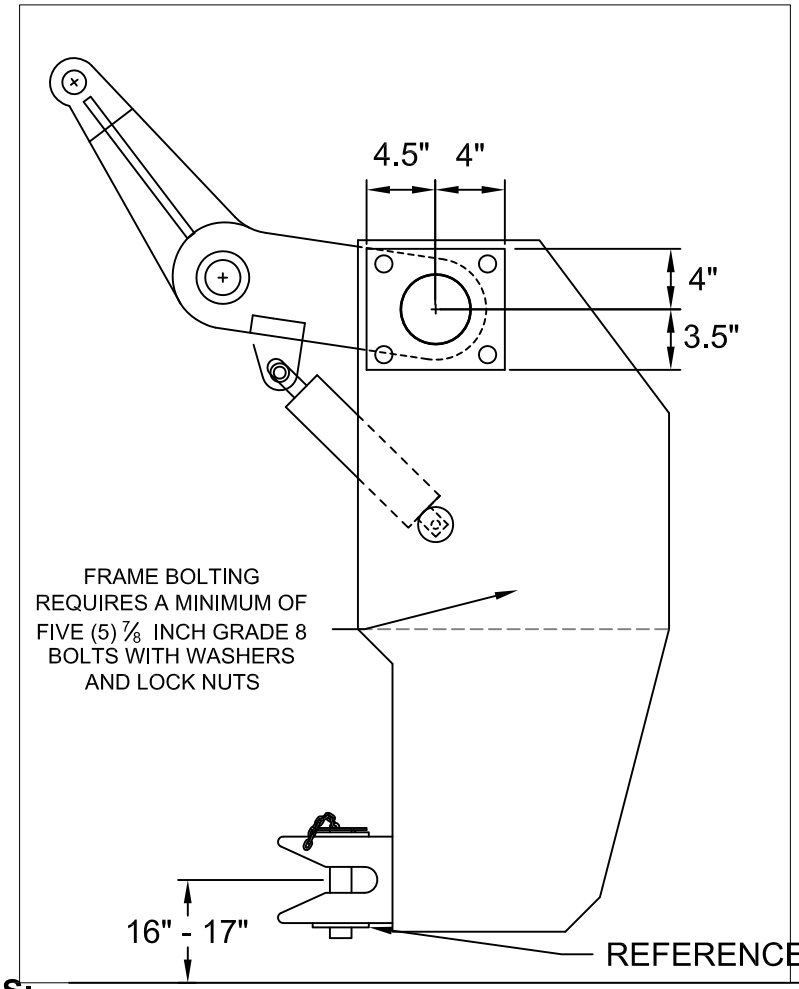
GUSSETS AND SUPPORTS SHALL BE CONSTRUCTED TO MEET 25 TON PINTLE REQUIREMENTS.

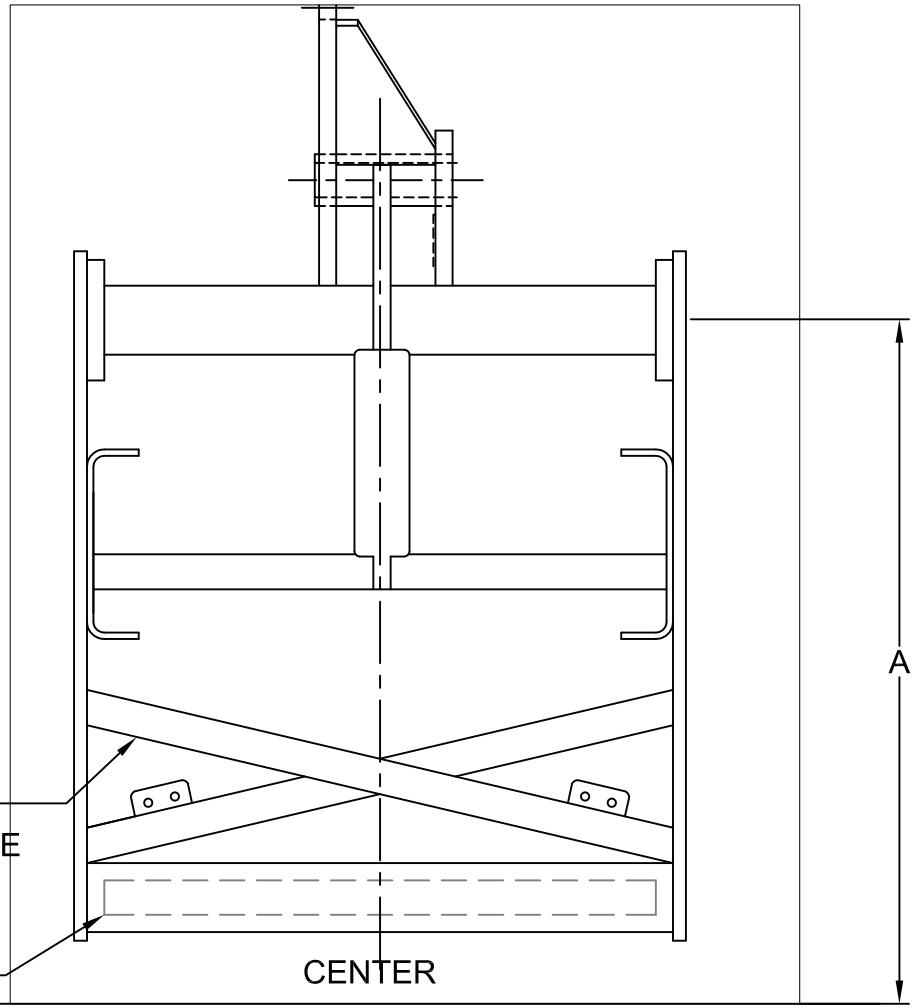
DUMP TRUCK REAR MODULE

THIS DRAWING IS NOT INTENDED TO SHOW ACTUAL BODY HINGE PIN PLACEMENT. CORRECT BODY HINGE PIN PLACEMENT TO MEET THE VEHICLES INTENT STATEMENT IS THE VENDORS RESPONSIBILITY.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			TANDEM AXLE DUMP TRUCK REAR MODULE		
NO.	DATE	BY			
1	08-08-19	KBD			
2	07-21-23	DVC	DRAWN BY KBD	SCALE	EQN-26B
3			DATE 07-15-18	CHK'D BY	Sheet 3 of 3



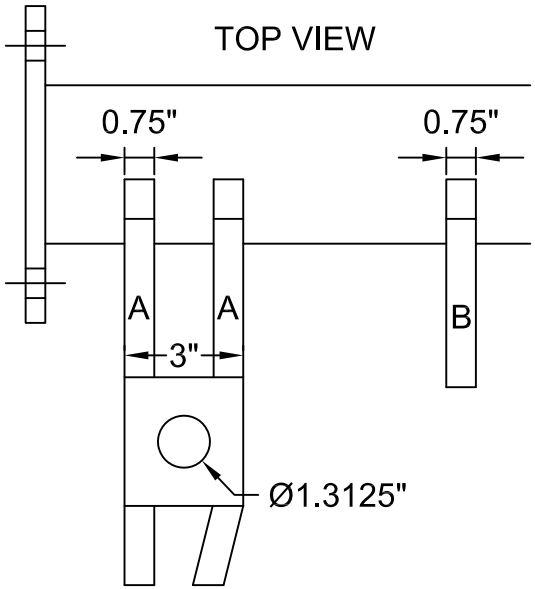


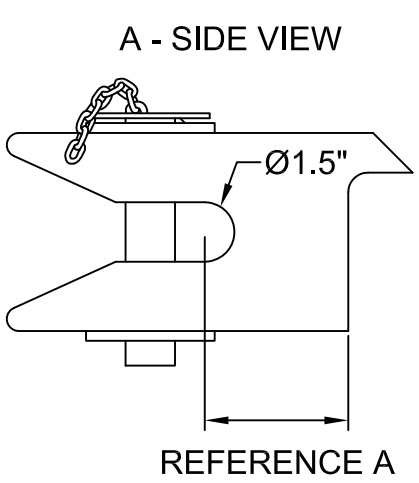
NOTES:

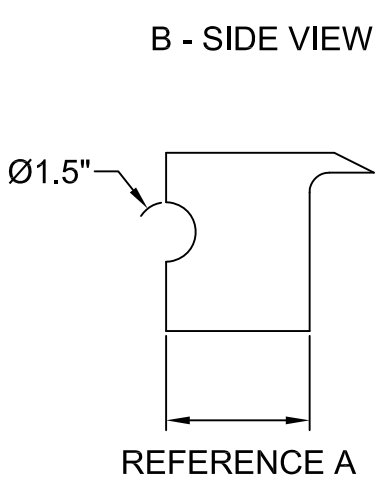
- ALL GREASE ZERKS SHALL BE SURROUNDED BY A SHORT LENGTH OF PIPE (WELDED IN PLACE) OR PLACED IN A RECESSED HOLE.
- "A" - HEIGHT SHALL BE SUFFICIENT TO AFFORD UNRESTRICTED LIFT FOR PENNDOT PLOWS. 16 INCH MINIMUM LIFT.
- ALL HYDRAULIC CONNECTIONS TO THE PLOW HOIST CYLINDER SHALL BE POSITIONED TO THE SIDES OR REAR TO PREVENT HOSE DAMAGE WHILE CONNECTING / DISCONNECTION TO THE FRONT PLOW.
- ALL FINAL DIMENSIONS AND ANGLES SHALL BE VERIFIED THROUGH FIELD VISITATIONS AND CORRESPONDING WITH THE FLEET MANAGEMENT DIVISION.

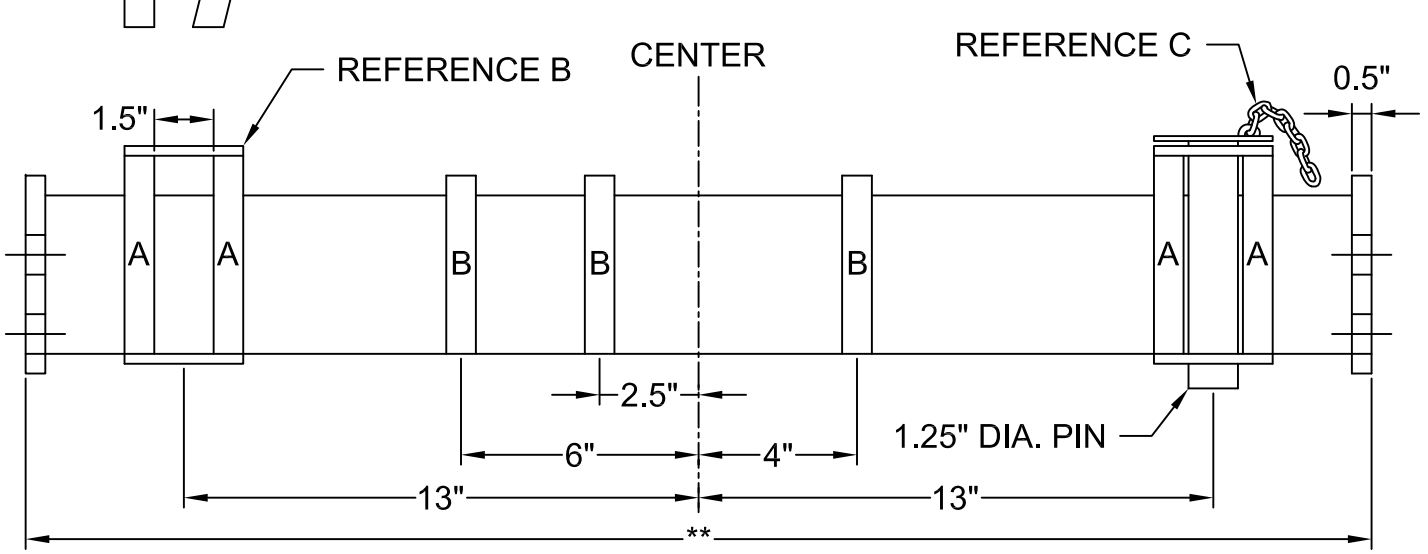
PA DEPARTMENT OF TRANSPORTATION

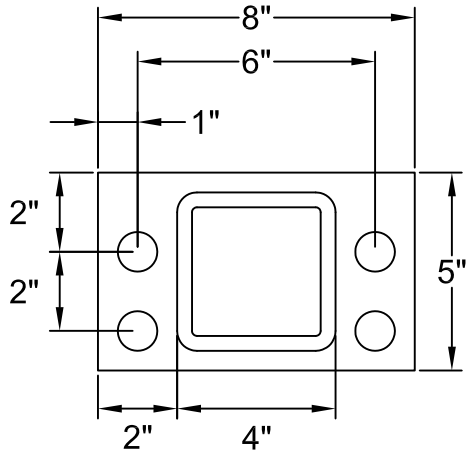
REVISIONS			FRONT PLOW HITCH ASSEMBLY		
NO.	DATE	BY			
1	04-27-15	GAW			
2	12-19-16	JJB	DRAWN BY SWW	SCALE N/A	EQN-50
3	08-02-18	KBD	DATE 09-25-95	CHK'D BY WHM	SHEET 1 OF 4











NOTES:

A. CENTER SUPPORT RADIUS OF SUPPORT "A" SHALL BE IN DIRECT LINE WITH PLOW PUSH BAR.

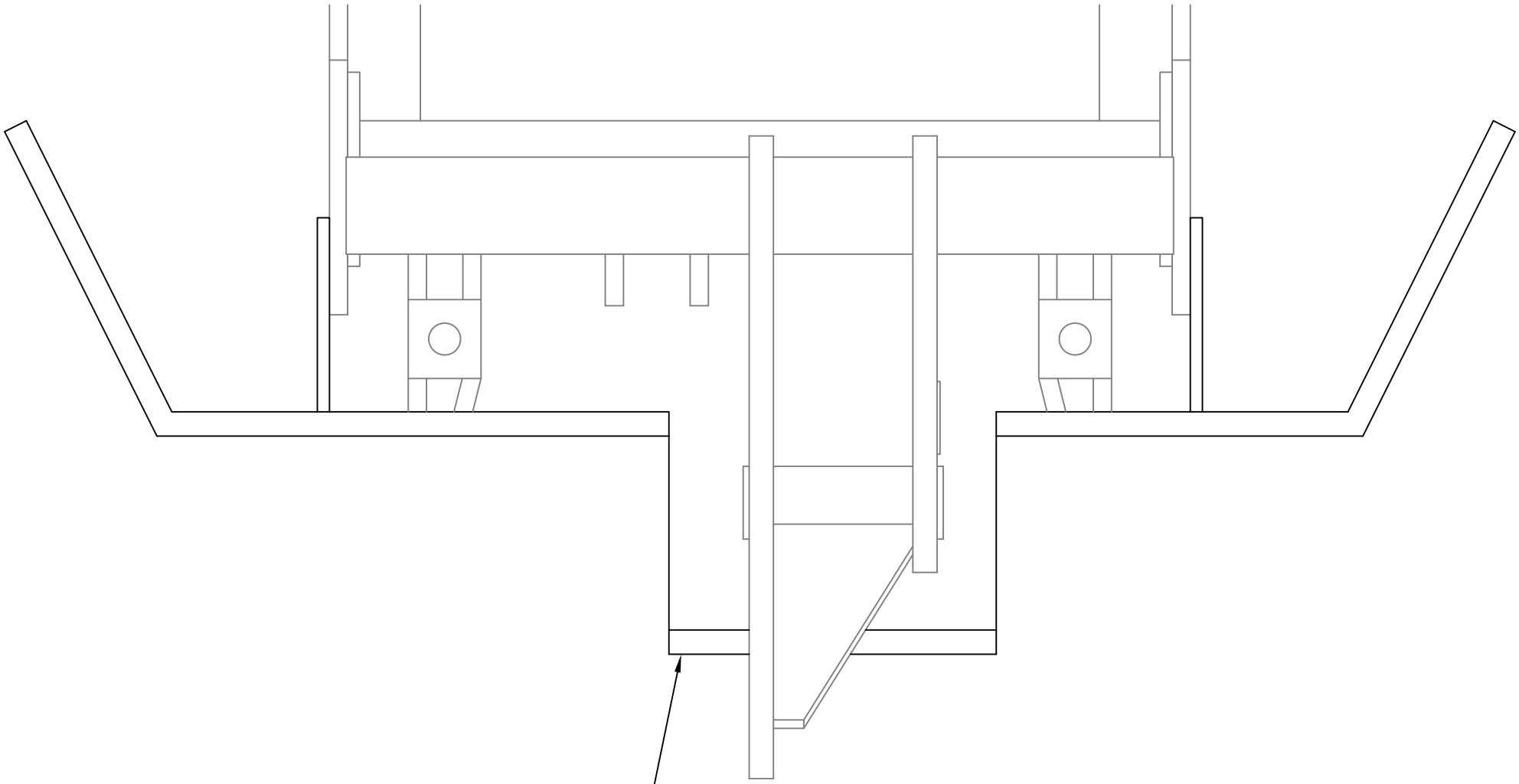
B. SUPPORT "A" SHALL HAVE 0.25" THICK PLATES ON TOP AND BOTTOM.

C. PLOW PINS SHALL BE ATTACHED WITH CHAIN TO PLOW FRAME.

* VARIABLE WIDTH ASSEMBLY, CHECK CHASSIS FRAME RAIL WIDTH *
ALL FINAL DIMENSIONS AND ANGLES SHALL BE VERIFIED THROUGH FIELD VISITATION AND CORRESPONDENCE WITH THE FLEET MANAGEMENT DIVISION.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			FRONT PLOW HITCH ASSEMBLY		
NO.	DATE	BY			
1	04-27-15	GAW			
2	12-19-16	JJB	DRAWN BY SWW	SCALE N/A	EQN-50
3	08-02-18	KBD	DATE 09-25-95	CHK'D BY WHM	SHEET 2 OF 4

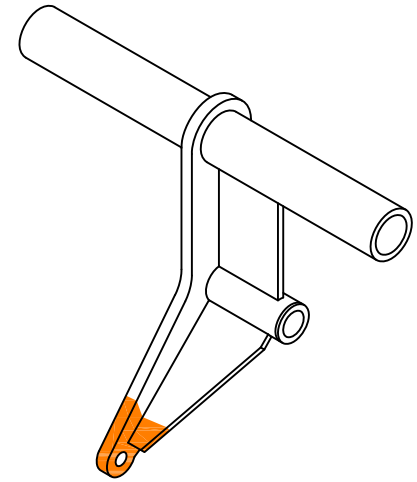


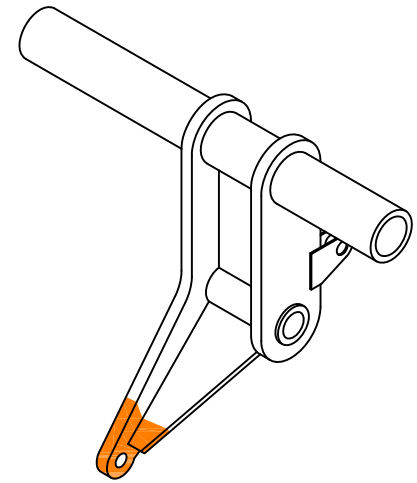
BUMPER SHALL EXTEND ACROSS THE ENTIRE FRONT OF TRUCK
(NOTE: BUMPER EXTENDS AROUND PLOW CYLINDER)

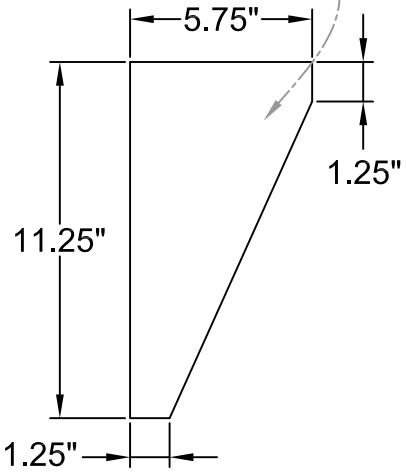
ADDITIONAL BUMPER SUPPORTS SHALL BE FABRICATED AND INSTALLED TO INSURE BUMPER RIGIDITY

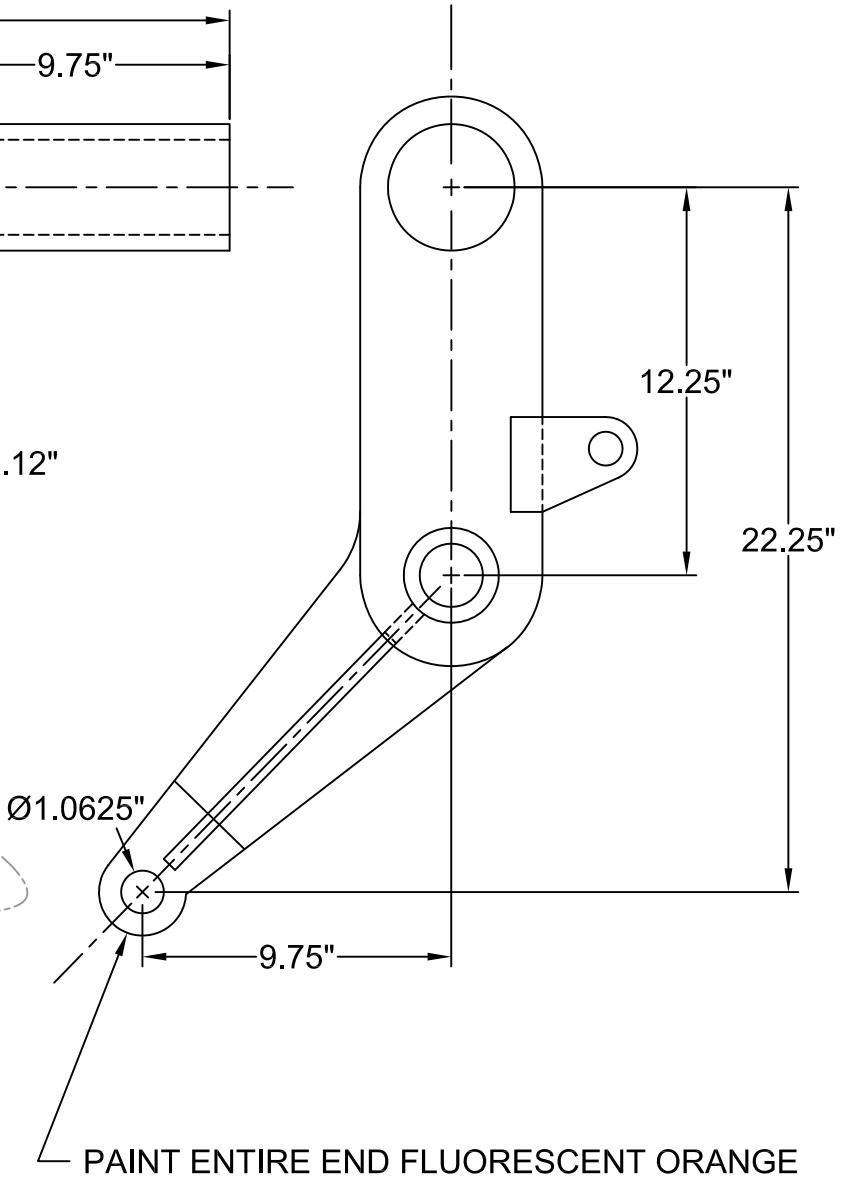
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			FRONT PLOW HITCH ASSEMBLY		
NO.	DATE	BY			
1	04-27-15	GAW			
2	12-19-16	JJB	DRAWN BY WHM	SCALE N/A	EQN-50
3	08-02-18	KBD	DATE 11-05-95	CHK'D BY WHM	SHEET 3 OF 4



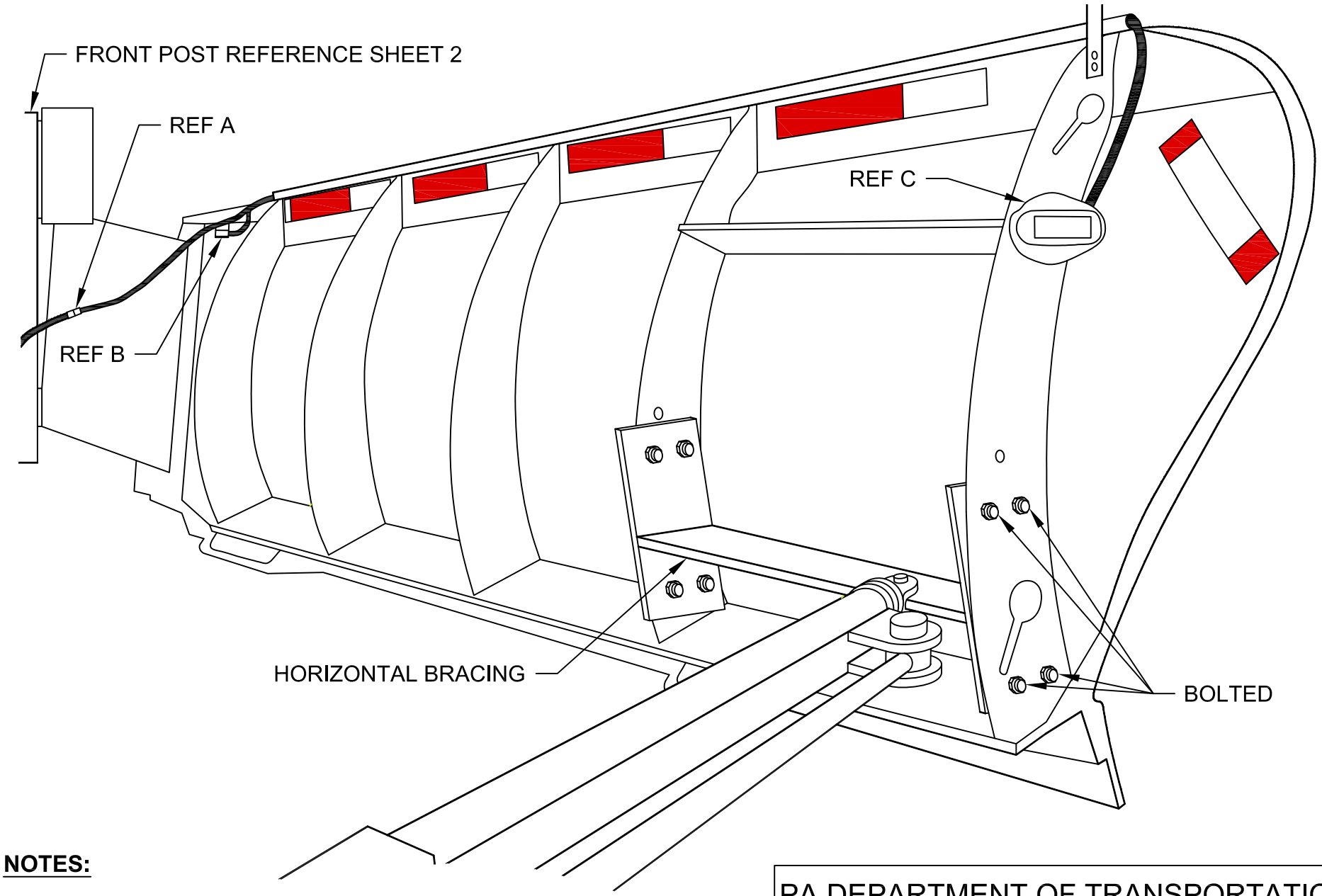






PA DEPARTMENT OF TRANSPORTATION

REVISIONS			FRONT PLOW HITCH ASSEMBLY		
NO.	DATE	BY			
1	04-27-15	GAW			
2	12-19-16	JJB	DRAWN BY DLW	SCALE N/A	EQN-50
3	08-02-18	KBD	DATE 01-05-95	CHK'D BY WHM	SHEET 4 OF 4



NOTES:

A. ALL WIRING CONNECTIONS SHALL BE SEALED AND WEATHER TIGHT. 2 PRONG DEUTSCHE CONNECTOR, MALE FROM WING AND FEMALE FROM VEHICLE.
B. MERCURY SWITCH. SHALL BE COMUS # CB08-90.
C. WING LIGHT. SHALL BE WHELEN MODEL # PAWINGWR.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			SNOWPLOW PATROL WING, MOUNTING ARRANGEMENTS		
NO.	DATE	BY			
1	12-19-16	JJB			
2	07-06-17	HMR	DRAWN BY JJB	SCALE N/A	EQN-60A
3			DATE 07-15-15	CHK'D BY	SHEET 1 OF 2

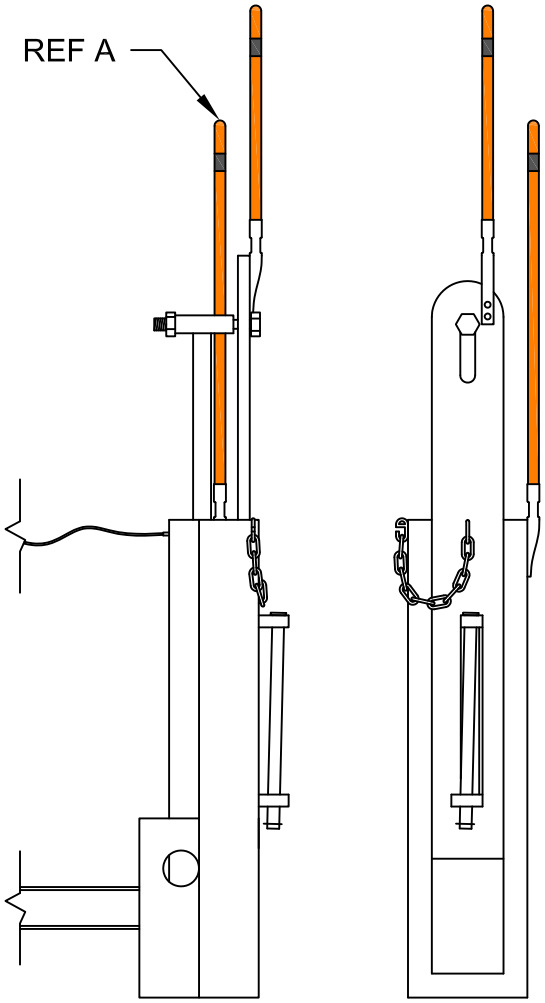
NOTES:

ALL PLOW GUIDES SHALL BE $\frac{3}{4}$" x 36" GALVANIZED STEEL CABLE HIGH VISIBILITY ORANGE, 2 BOLTS

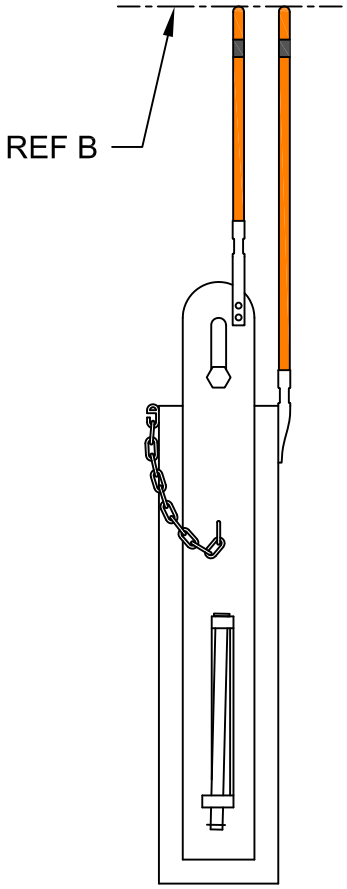
A. TWO PLOW GUIDES SHALL BE MOUNTED ON THE FRONT POST. A MINIMUM OF THE TOP 3 INCHES OF THE STATIONARY GUIDE SHALL BE VISIBLE FROM CAB.

B. BOTH PLOW GUIDES ON THE MAST SHALL BE LEVEL WHEN PLOW IS IN THE LOWERED POSITION AND RESTING ON A LEVEL SURFACE.

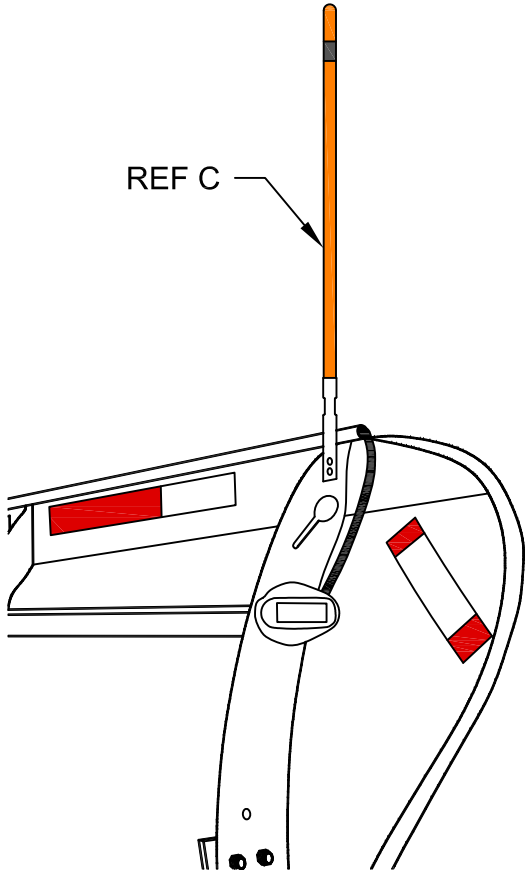
C. ONE PLOW GUIDE SHALL BE MOUNTED ON REAR OF WING PLOW.



RAISED POSITION

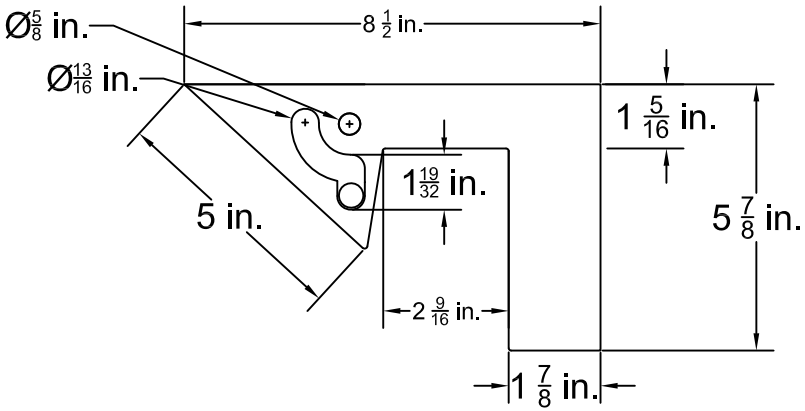


LOWERED POSITION

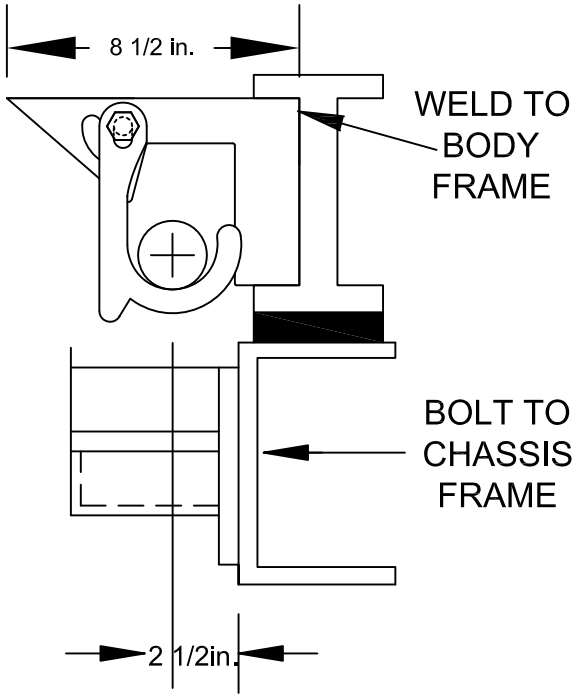


PA DEPARTMENT OF TRANSPORTATION

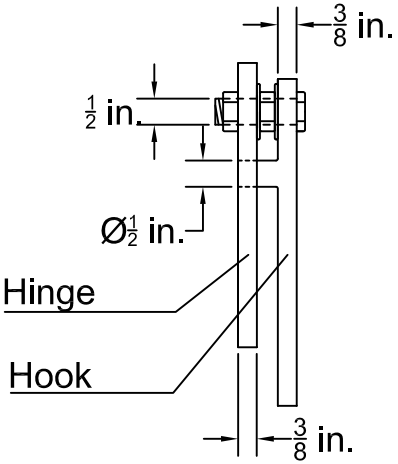
REVISIONS			SNOWPLOW PATROL WING, MOUNTING ARRANGEMENTS		
NO.	DATE	BY			
1	07-03-14	ACT			
2	12-19-16	JJB	DRAWN BY RAR	SCALE N/A	EQN-60A
3	07-06-17	HMR	DATE 07-15-15	CHK'D BY	SHEET 2 OF 2



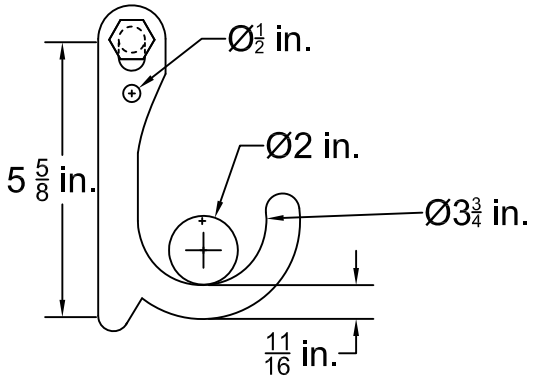
HINGE FRONT VIEW



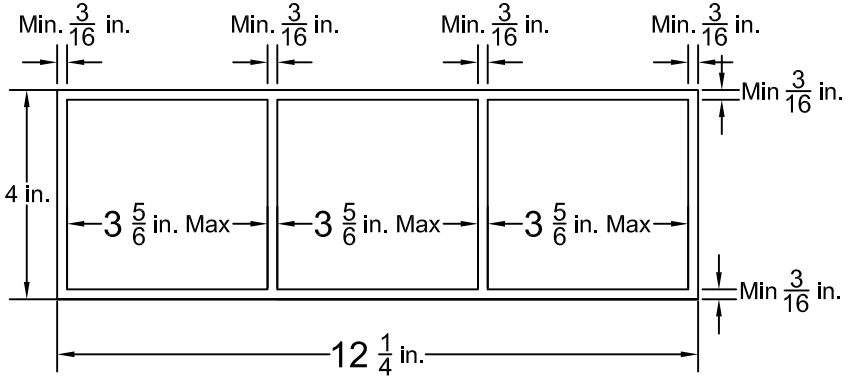
SYSTEM FRONT VIEW



HOOK-HINGE SYSTEM SIDE VIEW



HOOK FRONT VIEW



PROP STOP TOP VIEW

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			BED PROP SYSTEM		
NO.	DATE	BY			
1	7-13-09	TOD			
2	7-02-12	MJW	DRAWN BY WHM	SCALE N/A	EQN-62
3	6-05-14	ACT	DATE 11-06-89	CHK'D BY RED	SHEET 1 OF 2

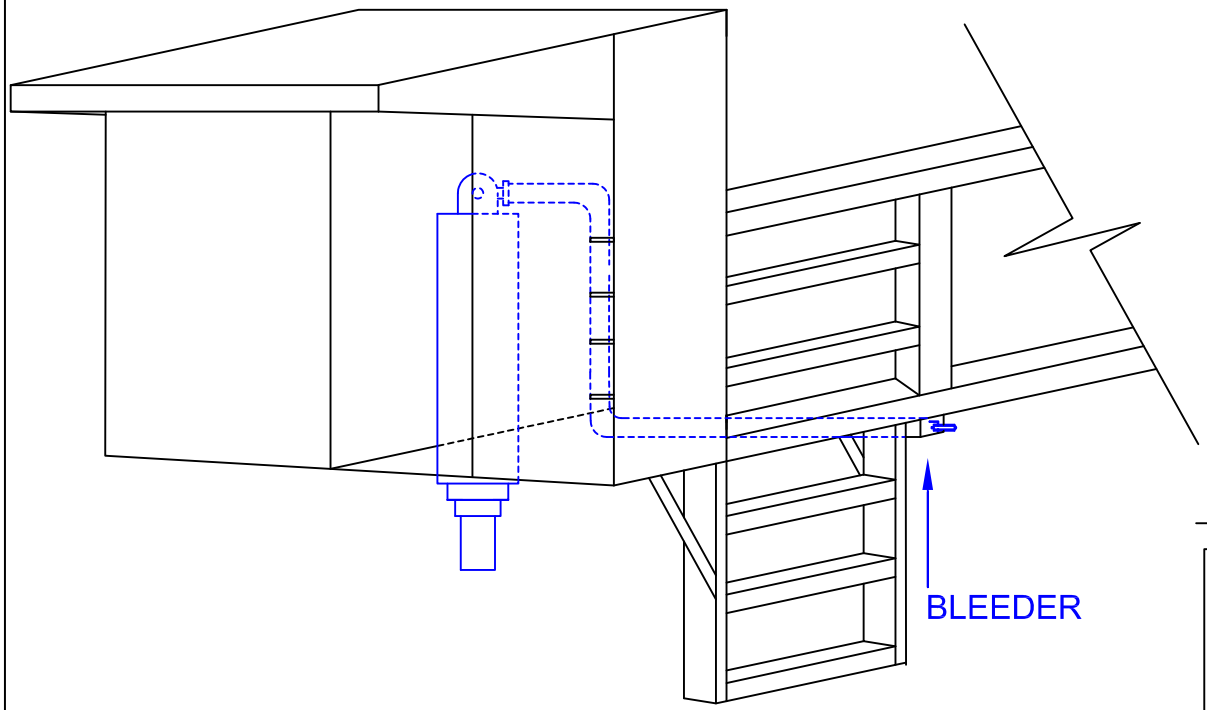
BILL OF MATERIAL	
	DESCRIPTION
A.	PROP STOP- 12 1/4 in. X 4 in. MINIMUM 3/16 in. STEEL CONSTRUCTION
B.	HINGE- 6 in. X 6 in. MINIMUM 3/16 in. ALUMINUM CONSTRUCTION
C.	POST- 2in. X 27in. (SCH80) STEEL PIPE
D.	HOOK- 4 in. X 6 1/2 in. MINIMUM 3/16 in. STEEL CONSTRUCTION

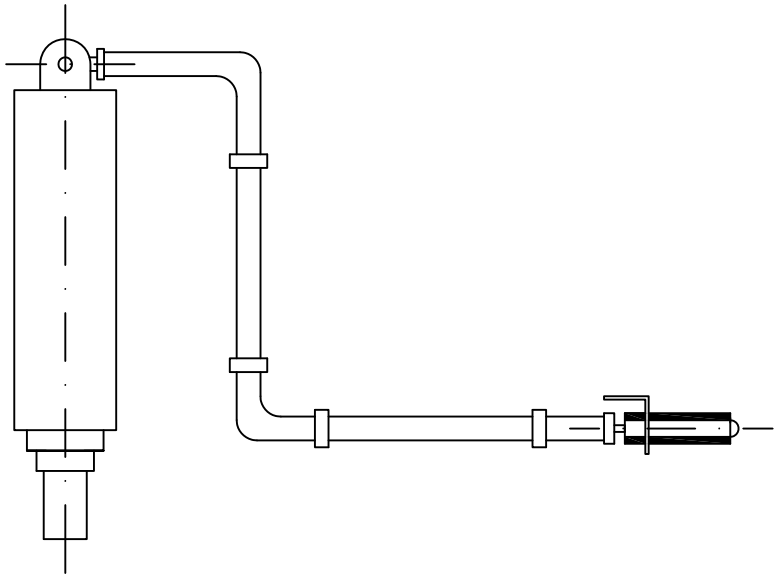
NOTES

- **TWO (2) SAFETY PROPS ARE REQUIRED PER VEHICLE.**
- **WHEN RELEASED FROM CRADLE, THE BED PROP SHALL BE FREE TO FREE-FALL. PROPS SHALL FALL INTO STOP "A" AS BED IS RAISED, UN-ASSISTED. HINGE "B" SHALL BE DESIGNED TO NOT ALLOW THE BED PROP TO TRAVEL PAST THE LAST POCKET ON THE PROP STOP "A".**
- **BOLTS SHALL BE GRADE 8 WITH GRADE 8 LOCK NUTS.**
- **ALL EDGES SHALL BE SMOOTH.**

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			BED PROP SYSTEM DUMP TRUCK		
NO.	DATE	BY			
1	7-13-09	TOD			
2	7-02-12	MJW	DRAWN BY WHM	SCALE N/A	EQN-62
3	6-05-14	ACT	DATE 11-06-89	CHK'D BY RED	SHEET 2 OF 2

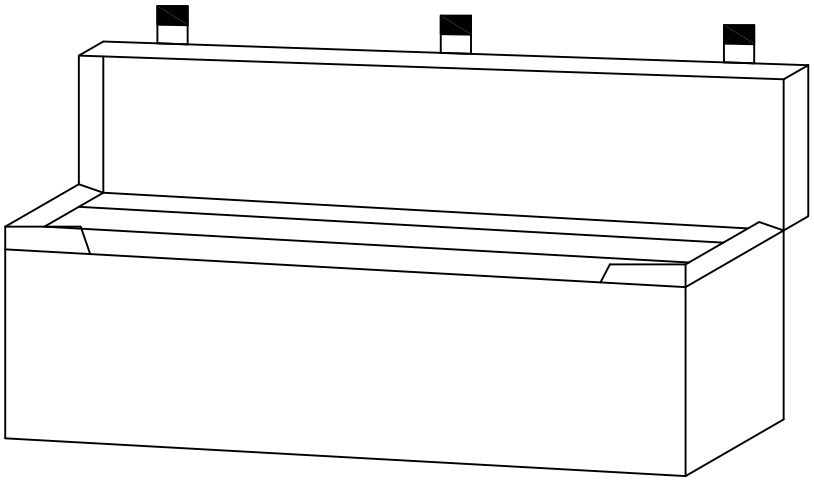




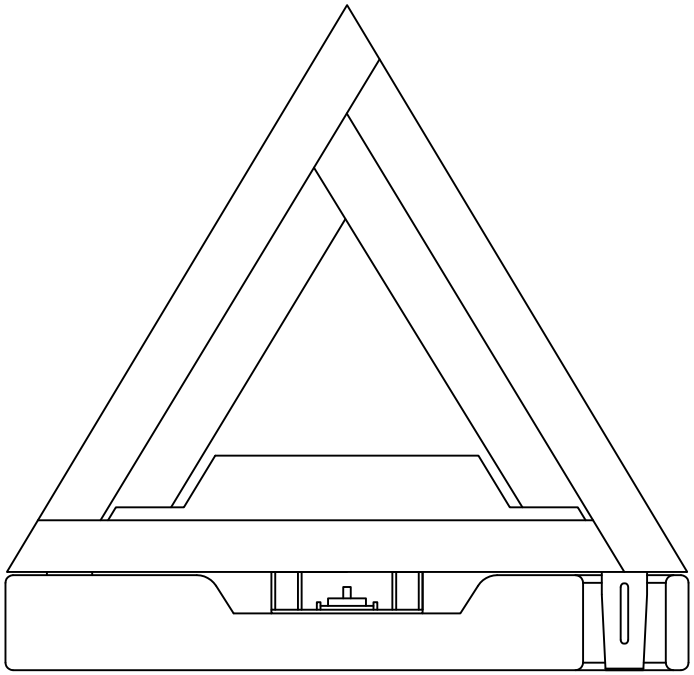
LINE SHALL BE SECURED WITH EXTRUDED CUSHION LOOP CLAMPS EVERY 12 inches (min) UTILIZING STUDS OR BOLTS.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			DUMP TRUCK HOIST CYLINDER BLEEDER		
NO.	DATE	BY			
1	10-24-06	CJW			
2	7-13-09	TOD	DRAWN BY DLW	SCALE N/A	EQN-63
3	7-02-12	MJW	DATE 08-14-97	CHK'D BY WHM	SHEET 1 OF 1

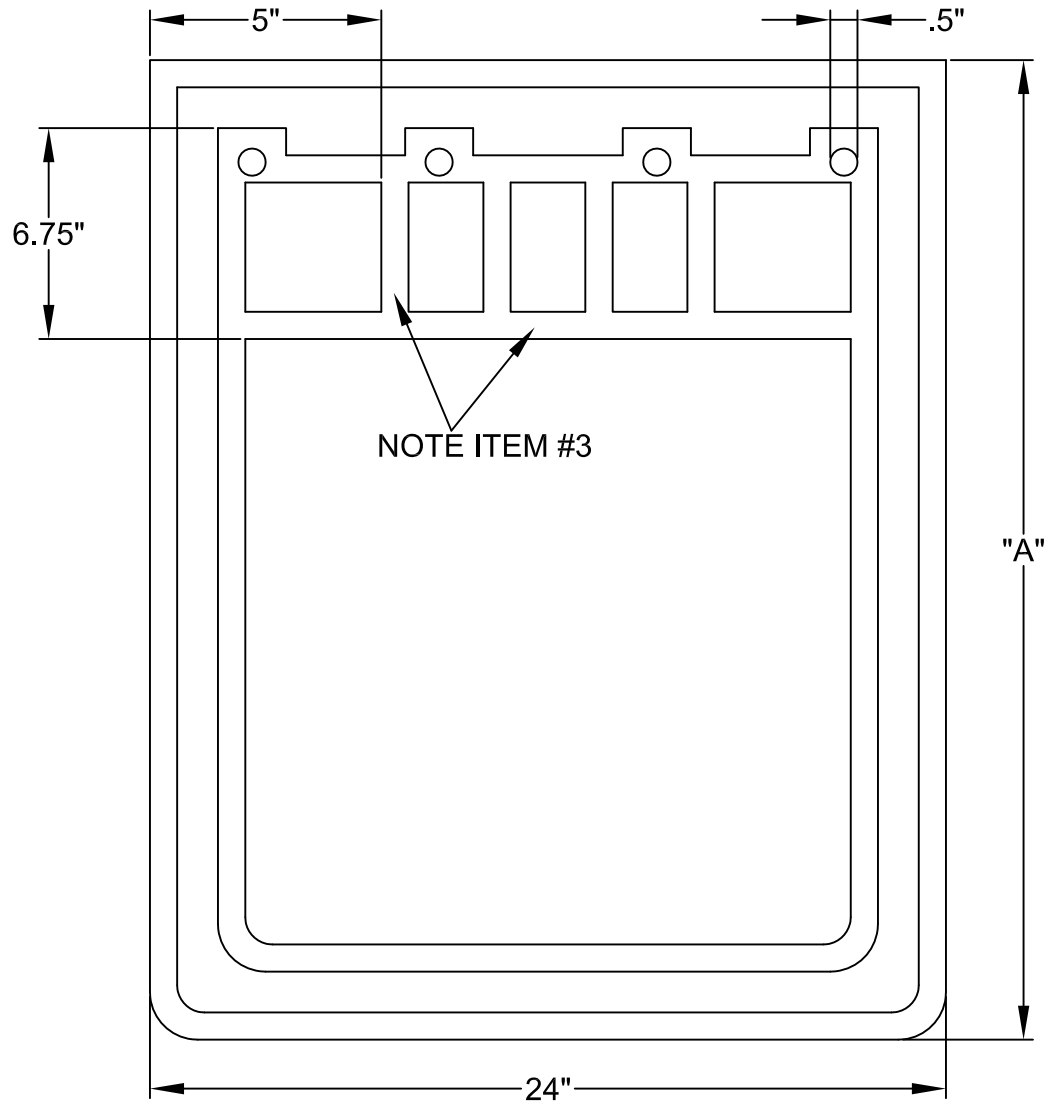


JAMES KING & CO.
TRIANGLE PART #1005
OR APPROVED EQUAL



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			TRIANGLE STORAGE BOX AND BRACKET		
NO.	DATE	BY			
1	05-31-07	KNH			
2	07-20-09	TOD	DRAWN BY WHM	SCALE N/A	EQN-66A
3	07-13-17	HMR	DATE 04-23-92	CHK'D BY RED	SHEET 1 OF 1



SAFETY

NOTE:
1. DIMENSION "A" DEPENDANT ON REQUISITION.
2. MUD FLAPS SHALL BE "UNMARKED"

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			SPLASH GUARDS-RUBBER TRAILER & TRUCK		
NO.	DATE	BY			
1	05-28-02	DWG			
2	11-28-06	CJW	DRAWN BY S.T.	SCALE N/A	EQN-66
3	07-20-09	TOD	DATE 11-18-87	CHK'D BY RED	SHEET 1 OF 2

FENDERS AND FLAPS: VEHICLES SPECIFIED UNDER THIS SUBCHAPTER SHALL BE EQUIPPED WITH FENDERS WHICH PROVIDE AT LEAST AS MUCH COVERAGE OF THE WHEEL AS THE ORIGINAL EQUIPMENT. ALL WHEELS SHALL BE SUFFICIENTLY COVERED WITH FENDERS OR FLAPS SO AS TO PREVENT LOOSE OBJECTS, RAIN, SNOW, AND THE LIKE FROM BEING THROWN ABOUT IN A MANNER WHICH MAY INTERFERE WITH OTHER PERSONS USING THE HIGHWAY.

REAR WHEEL SHIELDS: VEHICLE SPECIFIED UNDER THIS SUBCHAPTER EXCEPT TRUCK-TRACTOR WHILE TOWING A TRAILER SHALL BE CONSTRUCTED OR EQUIPPED AS FAR AS TO BAR WATER OR OTHER ROAD SURFACES THROWN FROM REAR WHEELS OF SUCH VEHICLE OR COMBINATION AT TANGENTS ESCEEDING 22.5 DEGREES, MEASURED FROM ROAD SURFACE FROM PASSING IN STRAIGHT LINE TO THE REAR OF SUCH VEHICLE. SEE 75 PA C554533 (RELATING TO REAR WHEEL SHIELDS)

AREA 6.75"x24" ACROSS THE TOP IS ACCEPTABLE IN SOLID VIS RIBS PROVIDED IT MEASURES .225" IN THICKNESS

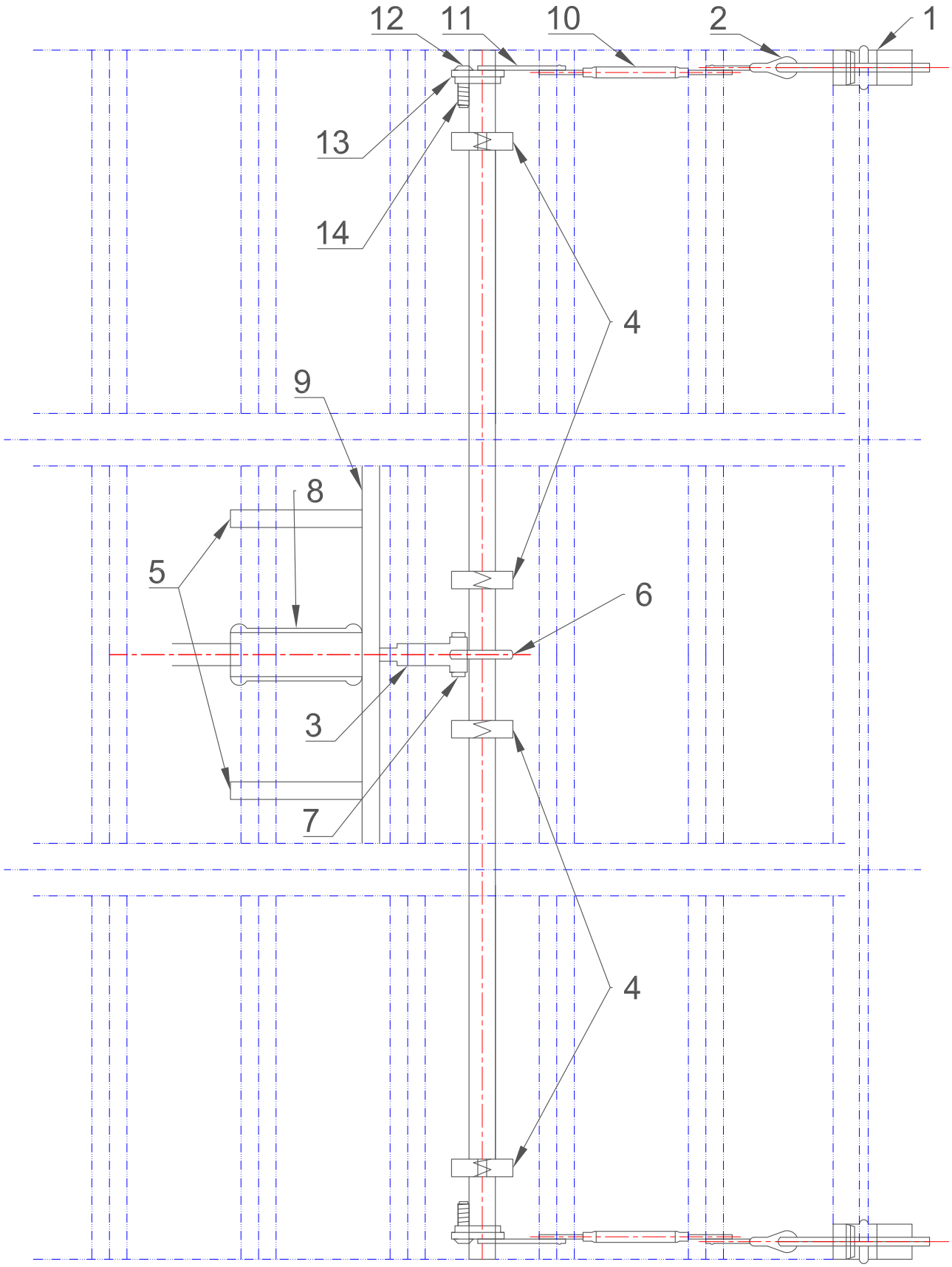
THE BODY OF SPLASH GUARD SHALL BE A MINIMUM OF .09375" THE TRIM AREA SHALL BE $\frac{3}{8}$" MINIMUM THICKNESS. THE BODY AREA IS THE AREA WITHIN THE OUTSIDE DIMENSIONS OF 24"x36" TOLERANCES +/- .250" THE WEIGHT OF THE SPLASH GUARD SHALL BE 6LBS FOR 24"x30" AND 7.5lbs x 24" x 36" MINIMUM.

NOTE:

1. MATERIAL: MOLDED NATURAL OR SYNTHETIC BLACK TIRE CHORD IMPREGNATED RUBBER. OIL AND SALT RESISTANT.
2. ANTI-SAIL NOT ACCEPTABLE.
3. MANUFACTURERS STANDARD SIZE ACCEPTABLE IF ALL MINIMUM THICKNESS, DIMENSIONS, AND WEIGHT SPECIFICATIONS ARE MET.
4. AS PER PA VEHICLES EQUIPMENT AND INSPECTION REGULATIONS, SECTION 175-108.
5. DIMENSION "A" WILL BE 30" OF 36" AS NECESSARY, WHEN INSTALLED TO MEET PA MOTOR VEHICLE CODE OR AS SPECIFIED ON THE CONTRACT.
6. MUD FLAPS SHALL BE "UNMARKED"

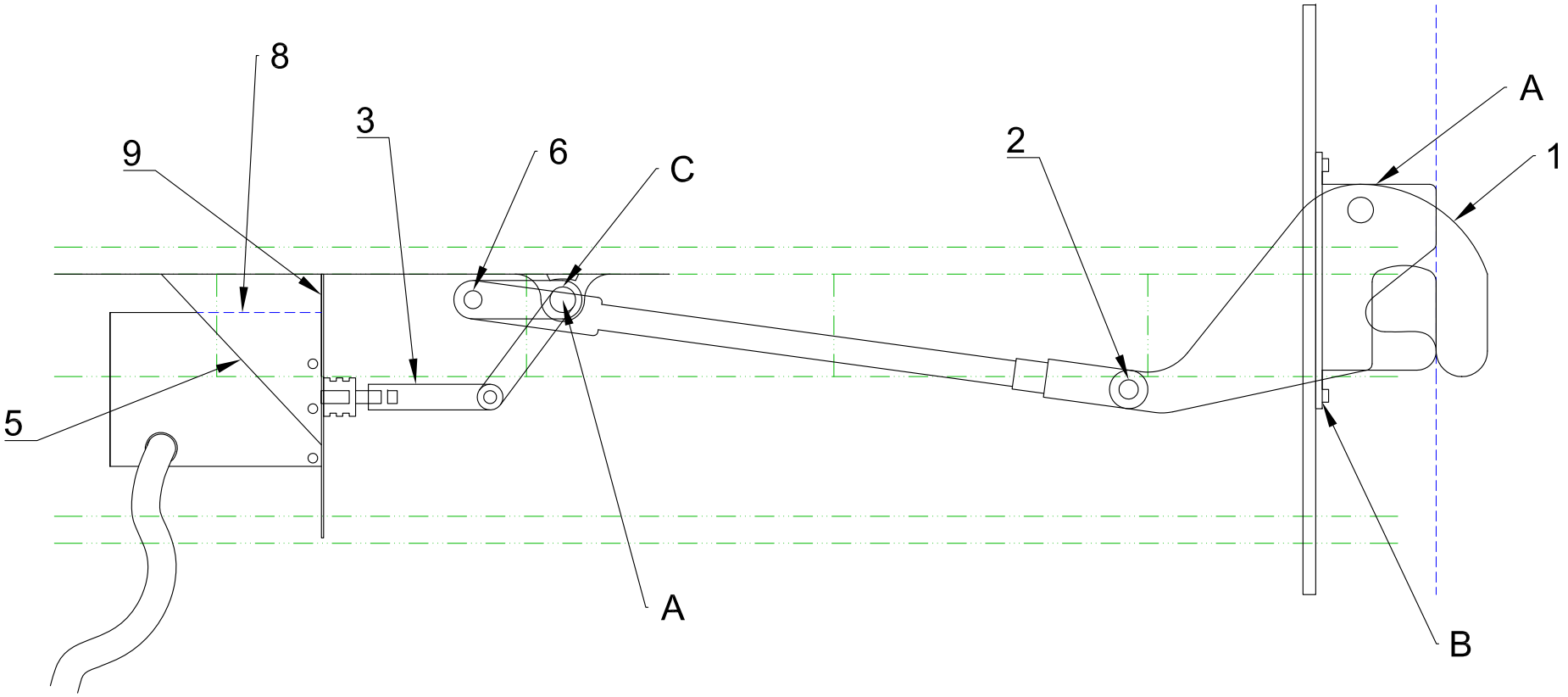
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			SPLASH GUARDS-RUBBER TRAILER & TRUCK		
NO.	DATE	BY			
1	05-28-02	DWG			
2	11-28-06	CJW	DRAWN BY S.T.	SCALE N/A	EQN-66
3	07-20-09	TOD	DATE 11-18-87	CHK'D BY RED	SHEET 2 OF 2



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			AIR TAILGATE, HARDWARE (DUMP TRUCK)		
NO.	DATE	BY			
1	10-06-97	DLW			
2	06-03-02	DWG	DRAWN BY WHM	SCALE 3:1	EQN-78A
3	07-13-17	JFM	DATE 08-04-95	CHK'D BY RED	SHEET 1 OF 3



AIR HOSE SHALL BE OF PROPER LENGTH AND CLAMPED SUFFICIENTLY TO ELIMINATE CHAFING. AIR LINE SHALL BE COVERED IN PLASTIC LOOM WHERE IT EXTENDS THROUGH THE BULKHEAD FITTING/S.

NOTES: A - DRILLED AND TAPED WITH ZERK FITTING OR NYLON BUSHING BUYERS TEL. (440) 974-8888

B - TAILGATE LATCHES MUST BE BOLTED IN, WELDED NOT ACCEPTABLE.

C - MUST BE ABLE TO BE ADJUSTED OVER CENTER INTO A LOCKING POSITION.

PA DEPARTMENT OF TRANSPORTATION

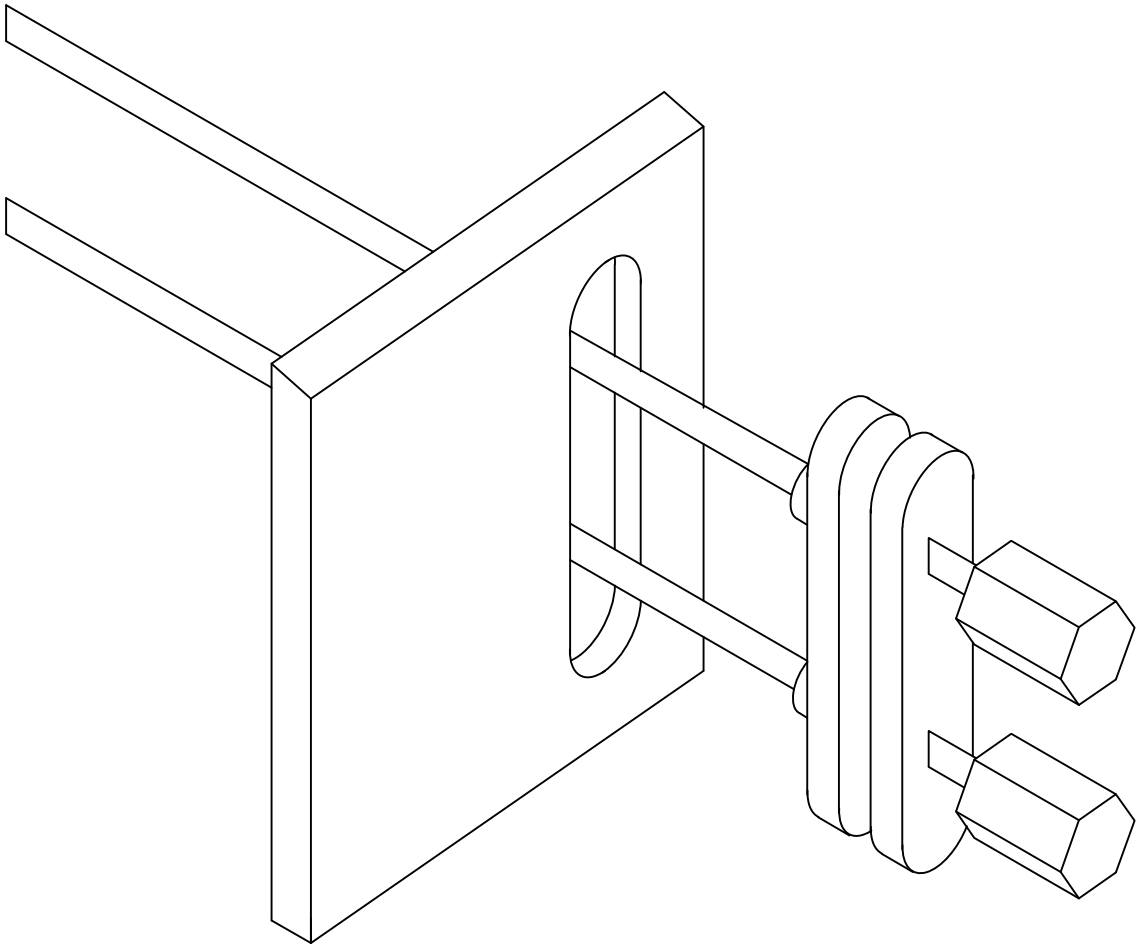
REVISIONS			AIR TAILGATE, HARDWARE (DUMP TRUCK)		
NO.	DATE	BY			
1	06-03-02	DWG			
2	05-30-13	JFM	DRAWN BY WHM	SCALE 2:1	EQN-78A
3	07-13-17	HMR	DATE 08-04-95	CHK'D BY RED	SHEET 2 OF 3

BILL OF MATERIAL (PARTIAL LIST)

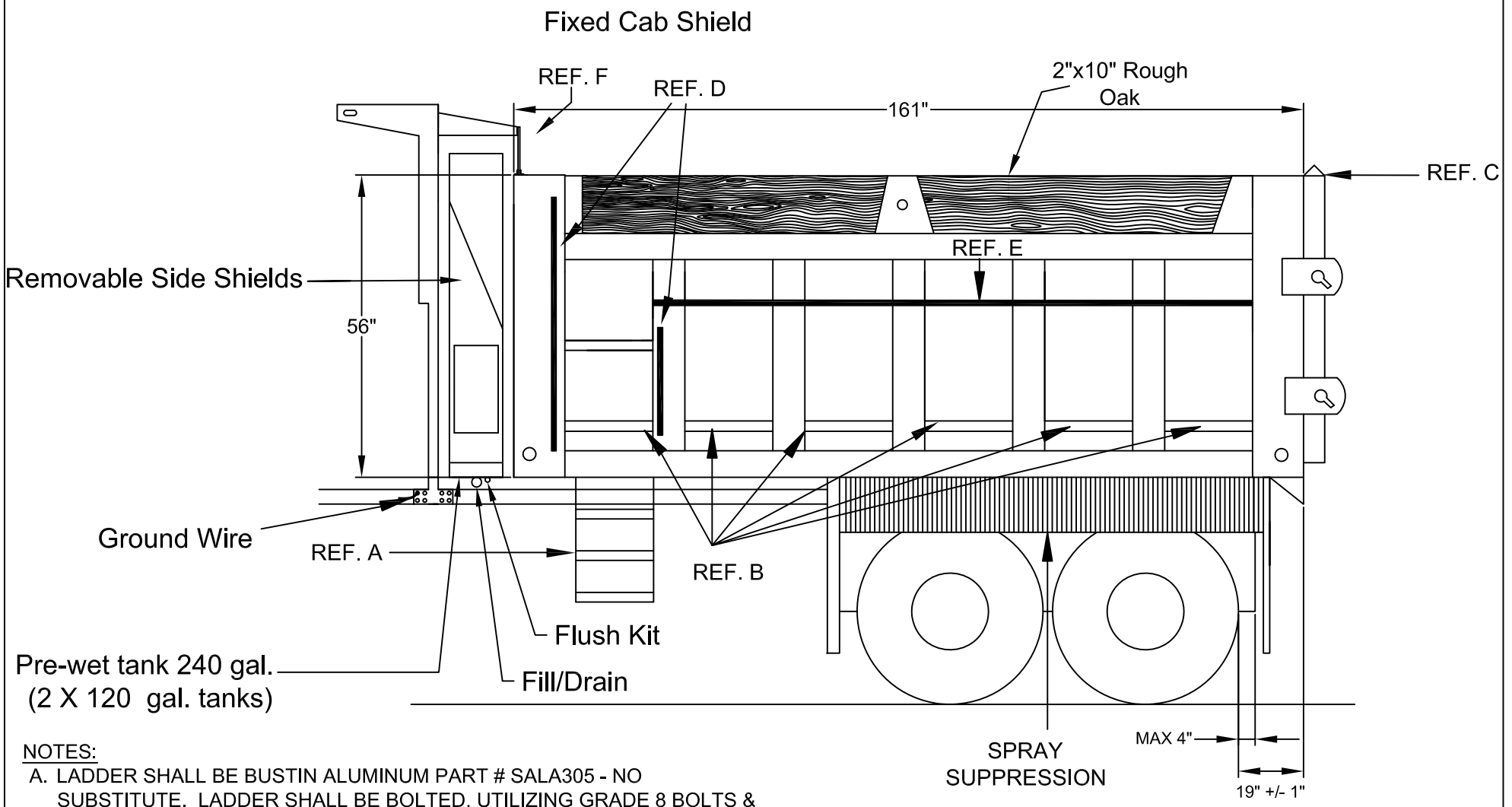
ITEM	QTY	DESCRIPTION
1	2	HEAVY HARDWARE ASSEMBLY (LATCHING)
2	2	CLEVIS (BUYERS #2708-6C/ .50 in.)
3	1	AIR CYLINDER CLEVIS
4	4	BEARING BLOCK ASSEMBLY (WITH ZERK FITTING)
5	2	GUSSET
6	1	CAM / LINKAGE
7	1	YOKE PIN (BUYERS #B2708-1/2-8A/ .75in.)
8	1	AIR CYLINDER (AIR OVER SPRING OR AIR OVER AIR)
9	1	CYLINDER SUPPORT PLATE
10	2	TURNBUCKLE .625 in. x 6 in.
11	2	REAR LENGTH BAR
12	2	BOLT .625 IN. x 2 in.
13	2	FLAT WASHER .625 in.
14	3	NUT .625 in. NYLON LOCK

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			AIR TAILGATE, HARDWARE (DUMP TRUCK)		
NO.	DATE	BY			
1	10-06-97	DLW			
2	06-03-02	DWG	DRAWN BY WHM	SCALE N/A	EQN-78A
3	7-13-17	JFM	DATE 08-04-95	CHK'D BY RED	SHEET 3 OF 3



DRAWN LWB	1/5/2023	PA DEPARTMENT OF TRANSPORTATION
CHECKED		TITLE
QA		C.B. RADIO CONNECTIONS
MFG		
APPROVED		
		SIZE A / DWG NO EQN-78 / REV
		SCALE / SHEET 1 OF 1



NOTES:

A. LADDER SHALL BE BUSTIN ALUMINUM PART # SALA305 - NO SUBSTITUTE. LADDER SHALL BE BOLTED, UTILIZING GRADE 8 BOLTS & LOCK NUTS, MOUNTED ON CENTER BETWEEN THE REAR OF THE DRIVERS SIDE FRONT CORNER POST AND THE FRONT OF THE FIRST VERTICAL SIDE BRACE.

B. STEPS SHALL BE FULL WIDTH BETWEEN VERTICAL SIDE BRACES AND FLUSH WITH OUTSIDE EDGE OF BRACES, BUSTIN PART #DE0602 (PART # FOR 20 FOOT LENGTH), 2 3/4" WIDTH X 1 1/2" HIGH X 3/16" THICKNESS WITH SERRATED EDGES OR EQUAL.

C. INVERTED 1 1/2 INCH ANGLE ALUMINUM.

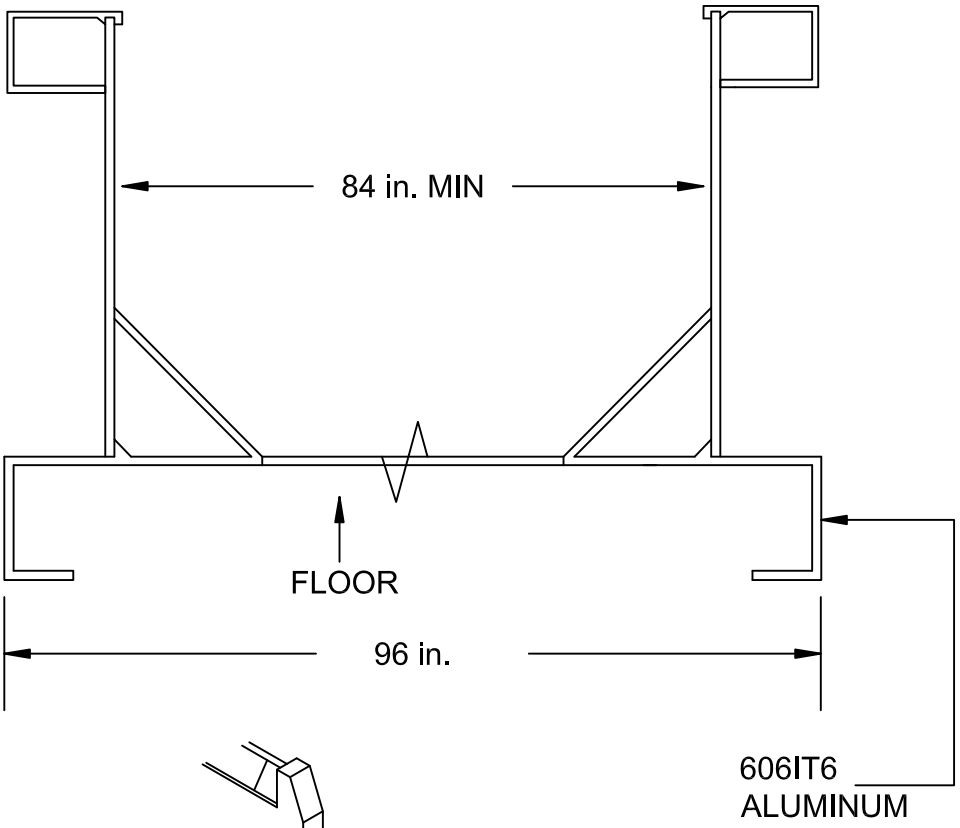
D. GRAB HANDLES 3/4 INCH ALUMINUM.

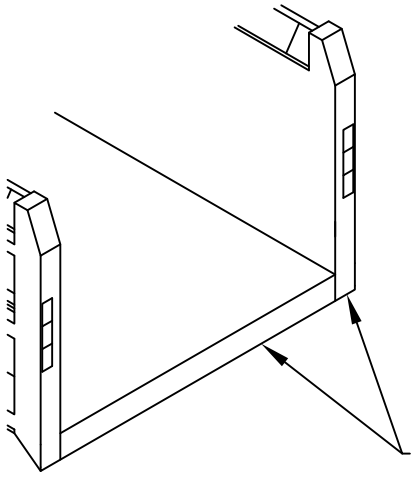
E. 3/4 INCH ALUMINUM ROUND STOCK FOR TARP TIE DOWN.

F. MATERIAL GUARD 1" THICK SKIRT BOARD RUBBER PER SPECIFICATION.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-23-12	MJW			
2	04-27-15	GAW	DRAWN BY DLW	SCALE N/A	EQN-79A
3	12-20-16	JJB	DATE 10-08-97	CHK'D BY WHM	SHEET 1 OF 10





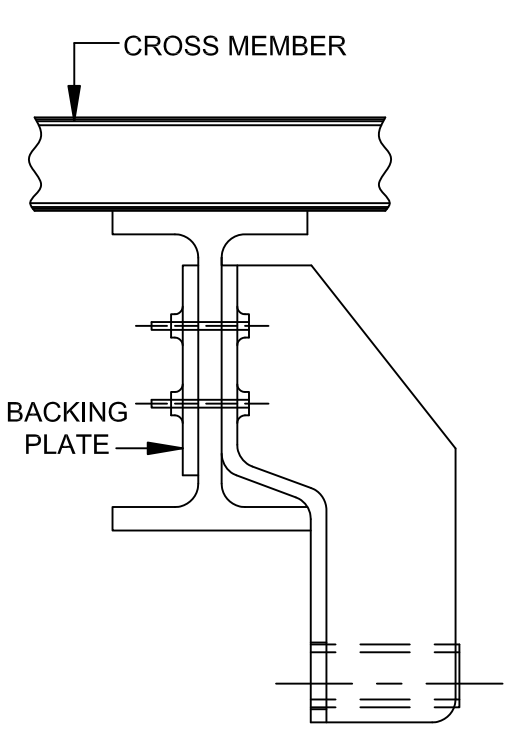
REAR BOLSTERS AND ENTIRE REAR FLOOR SEAL SHALL BE COMPLETELY FLUSH TO ALLOW FOR MOUNTING OF SPREADER

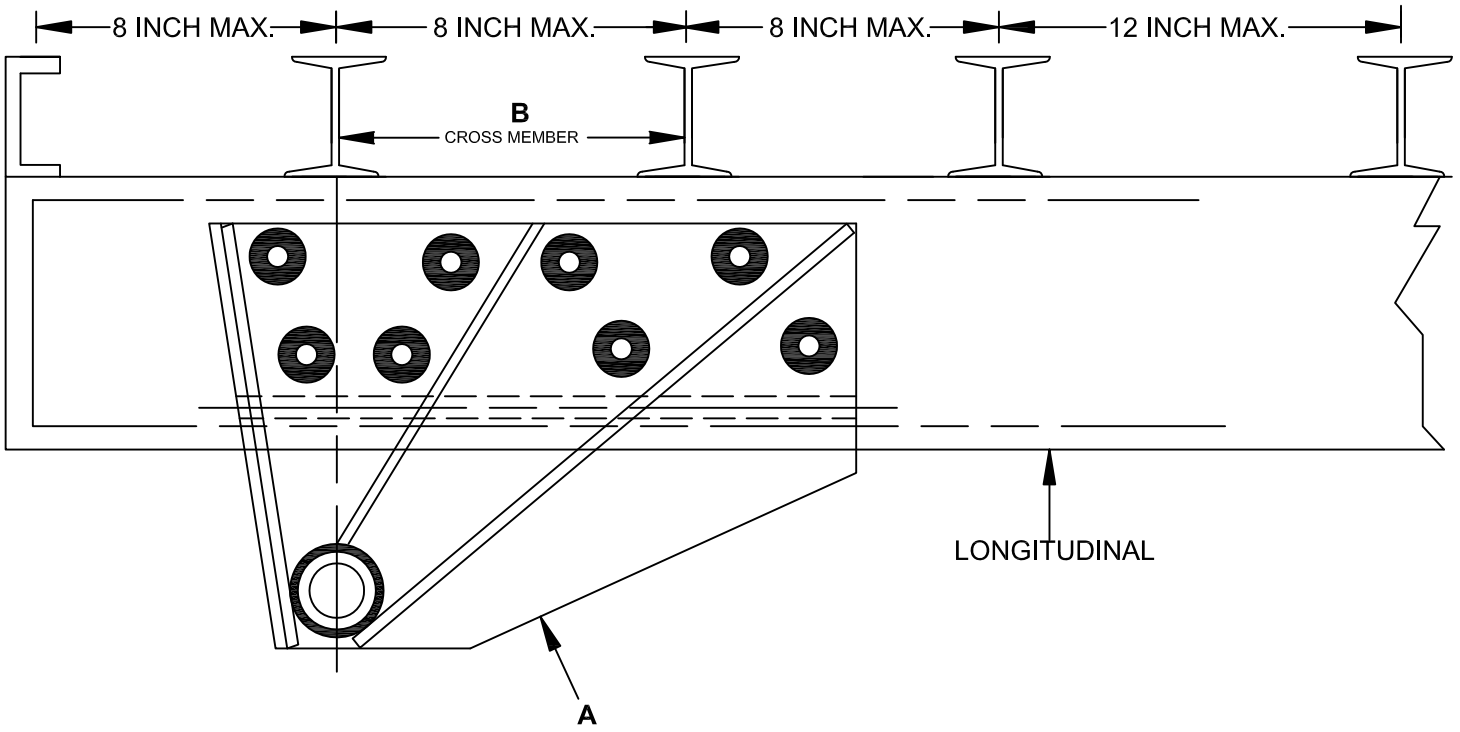
NOTES

1. ONE-PIECE BODY FLOOR SHALL BE .375 in. MINIMUM THICK ABRASION-RESISTANT ALUMINUM OF GRADE 5454H 34.
2. THE MATERIALS HAULED IN THESE VEHICLES WILL BE SALT, ABRASIVE AGGREGATE, WET MUD, ETC.
3. OVERALL WIDTH OF BODY SHALL NOT EXCEED 96 INCHES.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-23-12	MJW			
2	04-27-15	GAW	DRAWN BY DLW	SCALE N/A	EQN-# 79A
3	12-29-16	JJB	DATE 11-05-97	CHK'D BY WHM	SHEET 2 OF 10



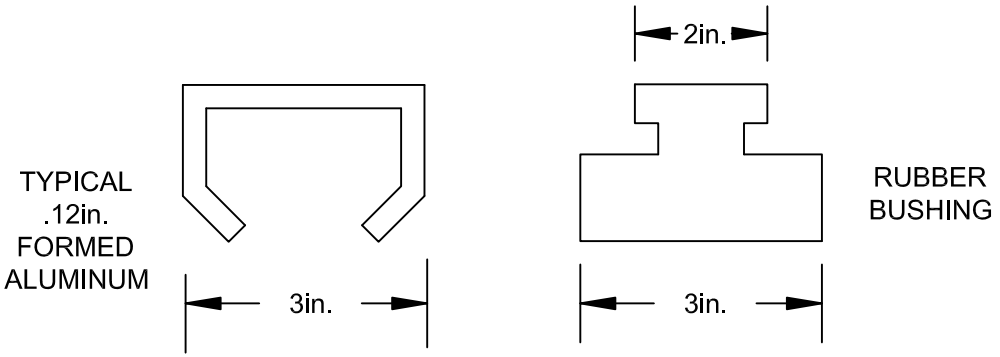


NOTES:

A. BED MOUNTING BRACKETS SHALL BE A WEB STYLE DESIGN AND SPAN ACCROSS TWO CROSS MEMBERS. THE WEB MOUNT SHALL BE DESIGNED FOR SEVERE DUTY SERVICE. THE BOLTS (8 MINIMUM) SHALL BE OF GRADE 8 MINIMUM WITH SELF-LOCKING GRADE 8 NUTS.

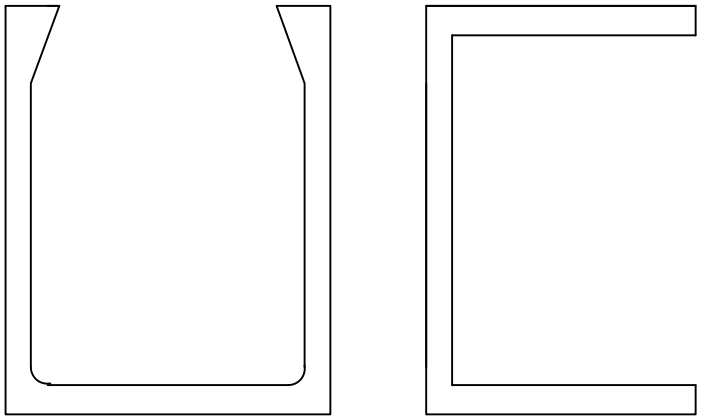
B. THE LAST FOUR CROSS-MEMBERS SHALL BE PLACED ON 8 INCH MAXIMUM CENTERS, WITH THE BALANCE ON 12 INCH MAXIMUM CENTERS.

- THE BODY SHALL BE SHOCK MOUNTED TO AVOID STRESS ON ROUGH ROADS WHEN EMPTY.
- "FULL-LENGTH" BODY TO FRAME RUBBER MOUNTING SYSTEM.
- THE REAR PIN HINGE SHALL BE A MINIMUM OF 2 INCH DIAMETER, AND SHALL HAVE A GREASABLE HINGE BUSHING 1/2 INCH WALL.
- THERE SHALL BE MYLAR OR APPROVED EQUAL BETWEEN METAL BRACKETS AND ALUMINUM LONGITUDINAL RAILS

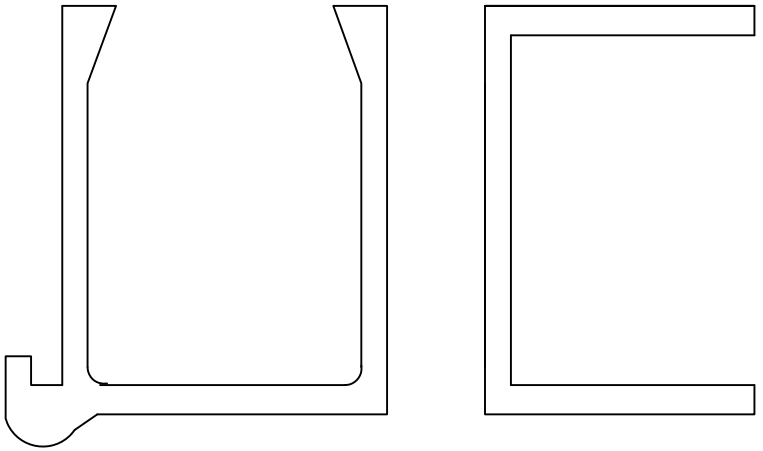


PA DEPARTMENT OF TRANSPORTATION

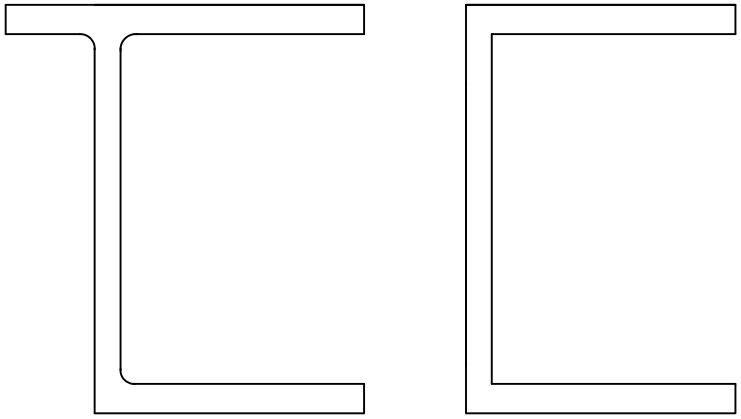
REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-13-09	TOD			
2	07-23-12	MJW	DRAWN BY DLW	SCALE N/A	EQN-79A
3	04-27-15	GAW	DATE 09-25-97	CHK'D BY WHM	SHEET 3 OF 10



APPROVED HOIST CYLINDER
CHANNEL EXTRUSIONS



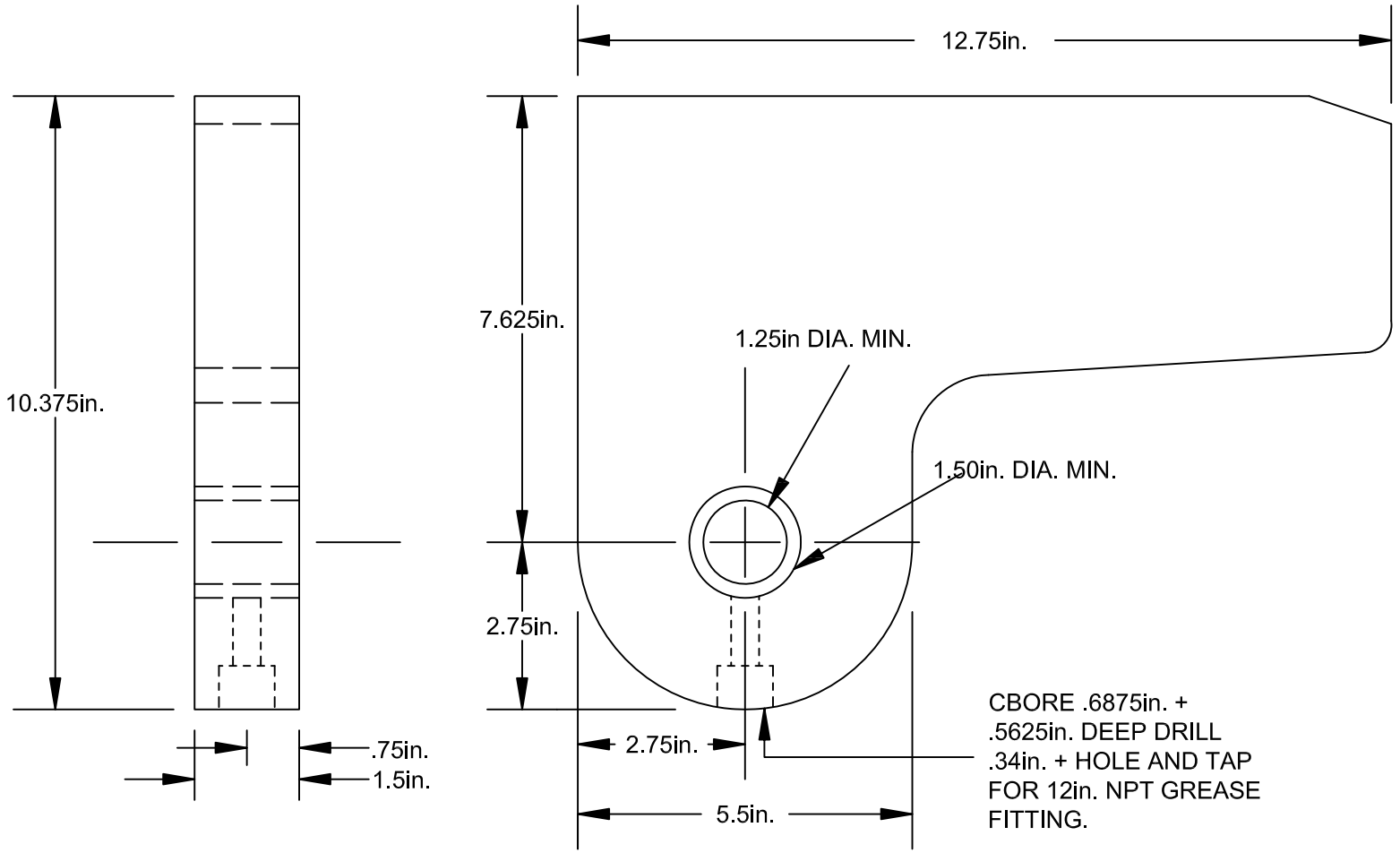
APPROVED FRONT CROSS
MEMBER EXTRUSION



APPROVED REAR
CROSSMEMBER EXTRUSIONS

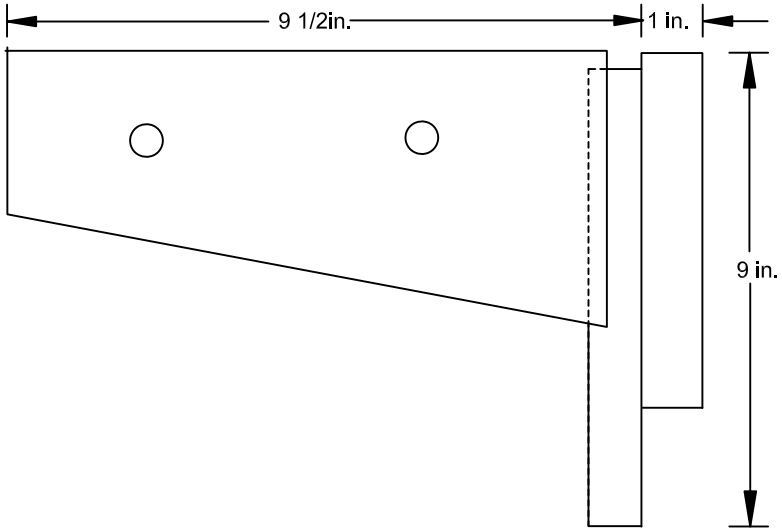
PA DEPARTMENT OF TRANSPORTATION

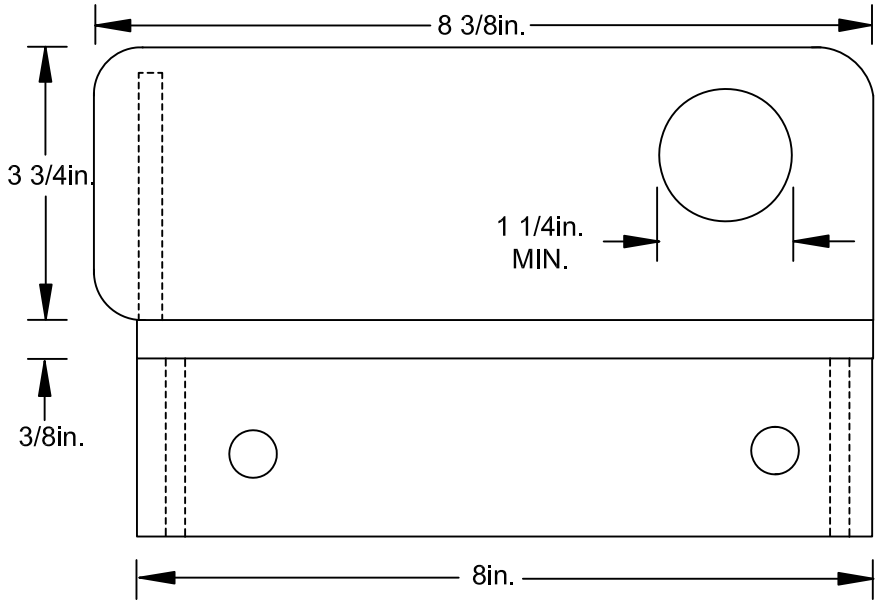
REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-23-12	MJW			
2	04-27-15	GAW	DRAWN BY TOD	SCALE N/A	EQN-79A
3			DATE 07-13-09	CHK'D BY DMA	SHEET 4 OF 10

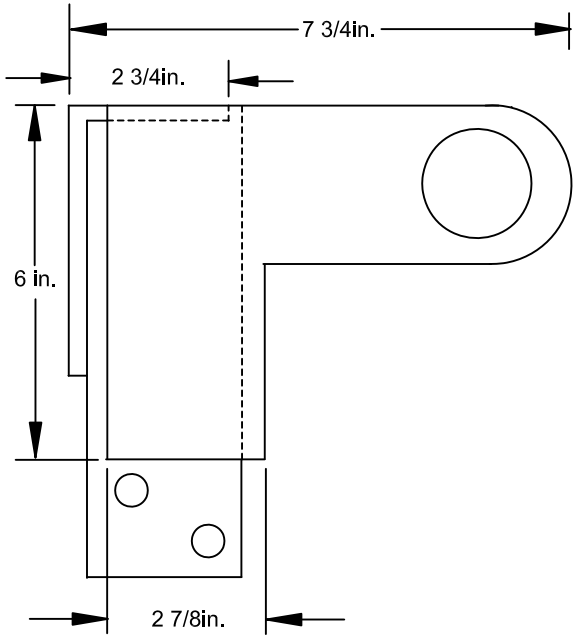


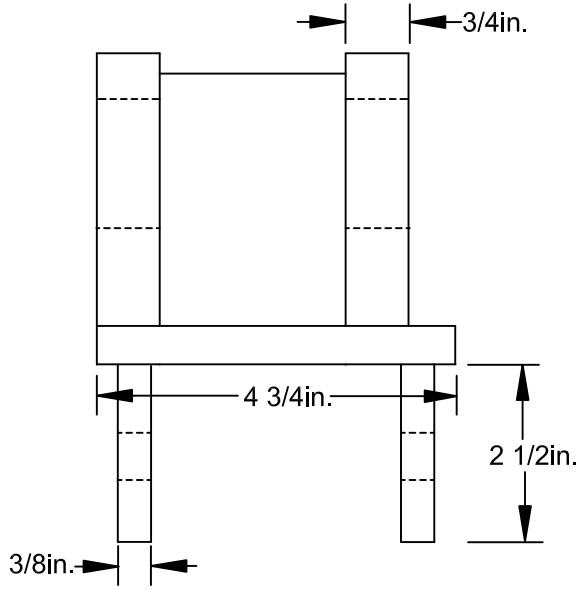
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-13-09	TOD			
2	07-23-12	MJW	DRAWN BY DLW	SCALE N/A	EQN-# 79A
3	04-27-15	GAW	DATE 09-25-97	CHK'D BY WHM	SHEET 5 OF 10







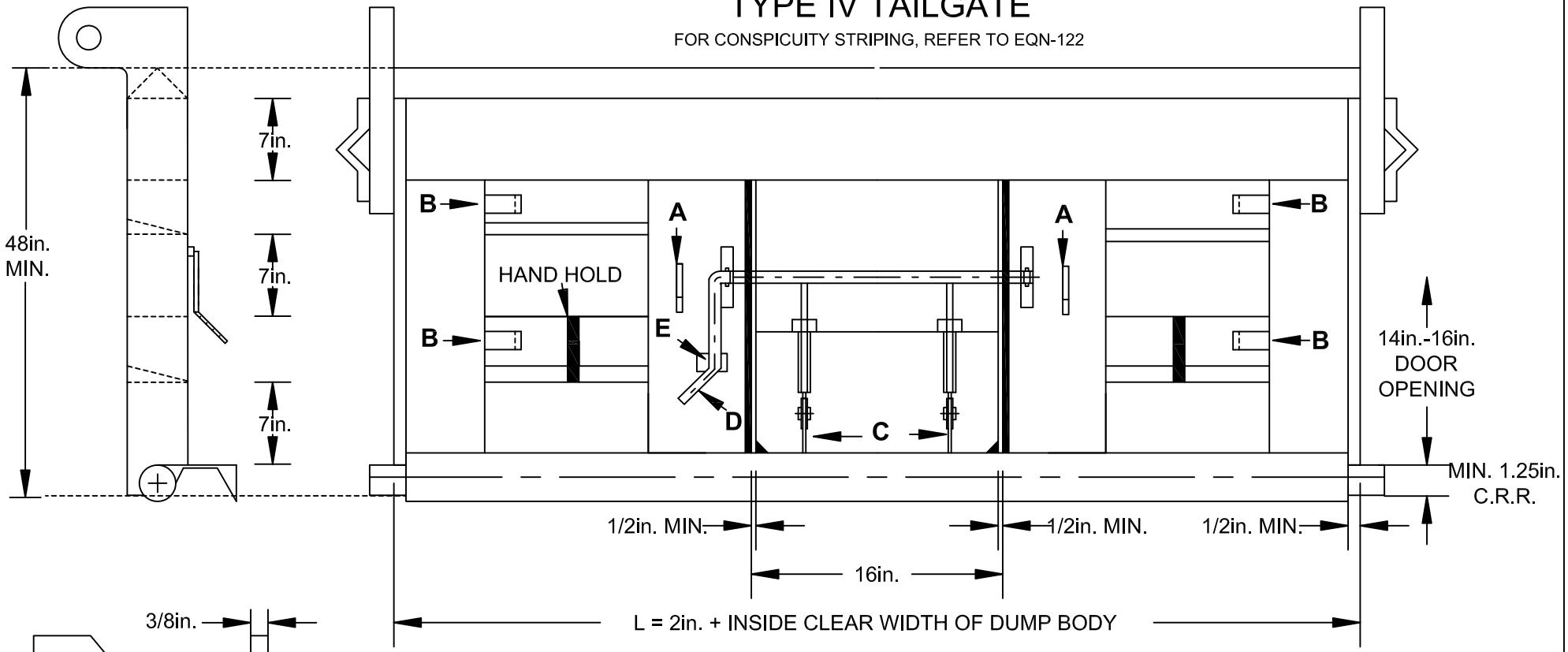


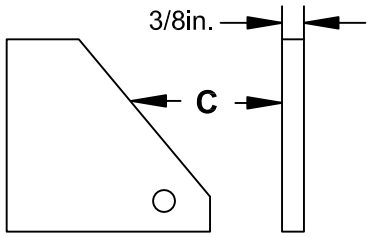
PA DEPARTMENT OF TRANSPORTATION

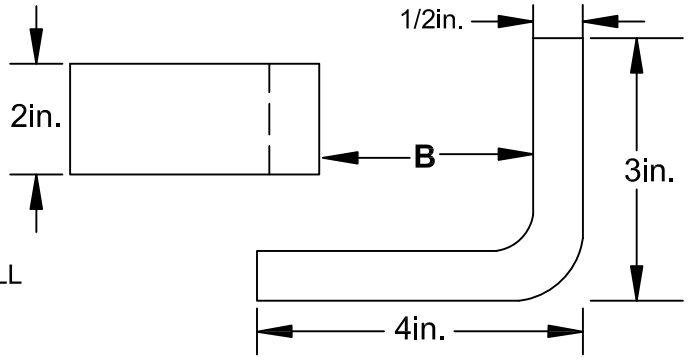
REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-23-12	MJW			
2	04-27-15	GAW	DRAWN BY TOD	SCALE N/A	EQN-# 79A
3			DATE 07-13-09	CHK'D BY DMA	SHEET 6 OF10

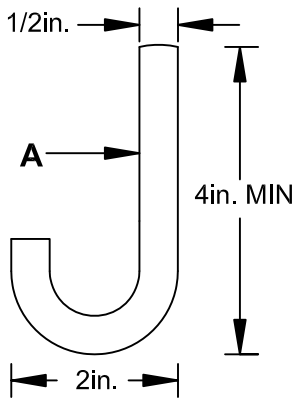
TYPE IV TAILGATE

FOR CONSPICUITY STRIPING, REFER TO EQN-122









NOTES:

A. THERE SHALL BE 2 "J" HOOKS PER TAILGATE AND SHALL BE FULLY WELDED AS CHAIN HOLDERS.

B. THERE SHALL BE 4 TAILGATE CHAIN BRACKETS FULLY WELDED TO THE TAILGATE.

C. THERE SHALL BE 2 EARS MADE OF 3/8 INCH 304 STAINLESS STEEL FULLY WELDED TO THE MATERIAL CHUTE DOOR.

D. 1in. DIA. H.R.R. LIFT HANDLE WITH GRIP COVER. SUFFICIENT CLEARANCE AS TO NOT HIT KNUCKLES OF HAND WHEN APPLYING.

E. STRIKE PLATE SHALL BE SUFFICIENT DIMENSION TO COVER HANDLE STRIKING AREA, MINIMUM 3/16 INCH MATERIAL THICKNESS.

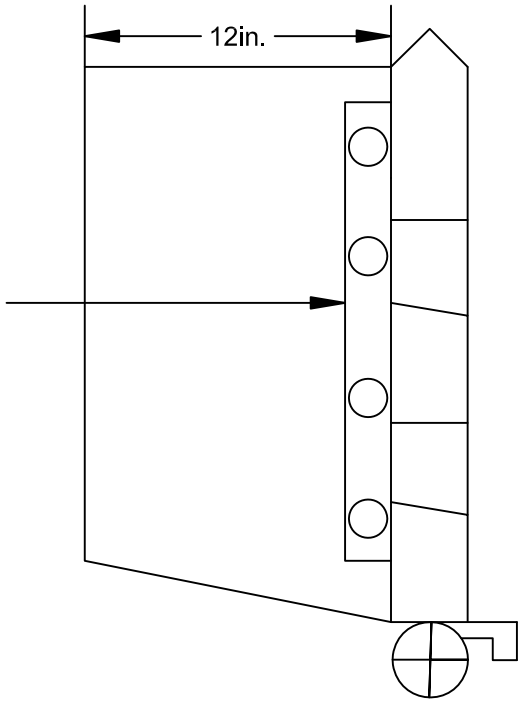
- HORIZONTAL CROSS-MEMBER ABOVE THE DOOR SHALL BE ONE CONTINUOUS RUN ACROSS TAILGATE.
- 1/4 INCH SLIDING GATE TYPE 304 STAINLESS STEEL.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-13-09	TOD			
2	07-23-12	MJW	DRAWN BY SM	SCALE N/A	EQN-79A
3	04-27-15	GAW	DATE 08-11-93	CHK'D BY RED	SHEET 7 OF 10

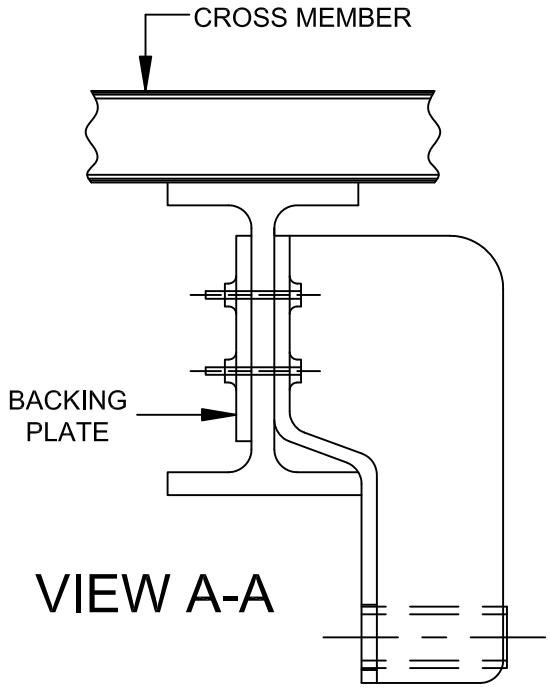
TAILGATE WINGS
LEFT AND RIGHT INSIDE

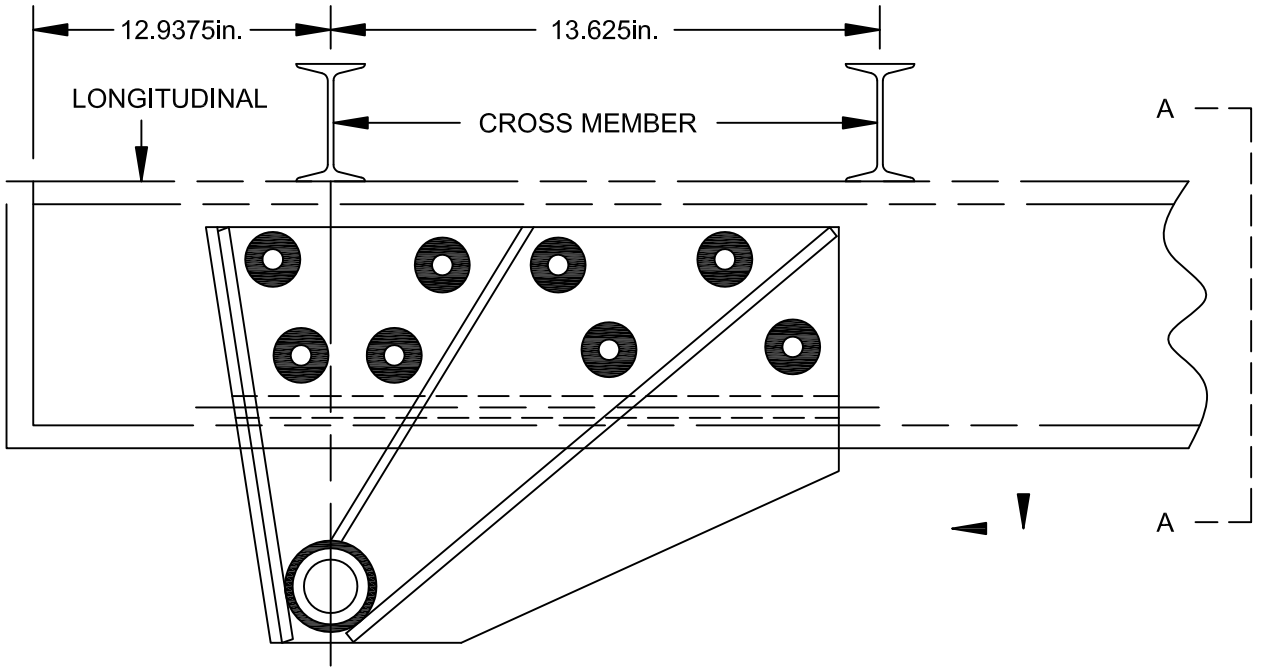
NOTES:
2in. ANGLE ALUMINUM WITH 4 SLOTTED HOLES .375in. X 1in. ON OUTER SIDE. .375in. STAINLESS STEEL COUNTERSUNK MACHINE SCREWS WITH STAINLESS STEEL NUTS AND FLAT WASHERS SHALL BE USED.



PA DEPARTMENT OF TRANSPORTATION

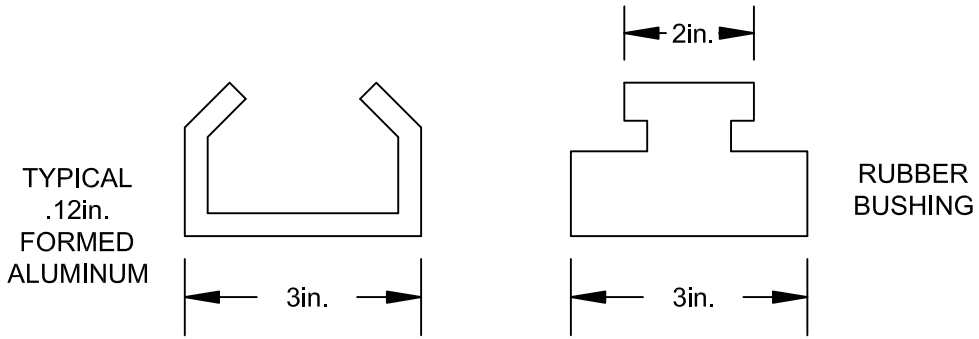
REVISIONS			TYPE IV DUMP BODY		
NO.	DATE	BY			
1	07-13-09	TOD			
2	07-23-12	MJW	DRAWN BY SM	SCALE N/A	EQN-79A
3	04-27-15	GAW	DATE 08-11-93	CHK'D BY RED	SHEET 8 OF 10





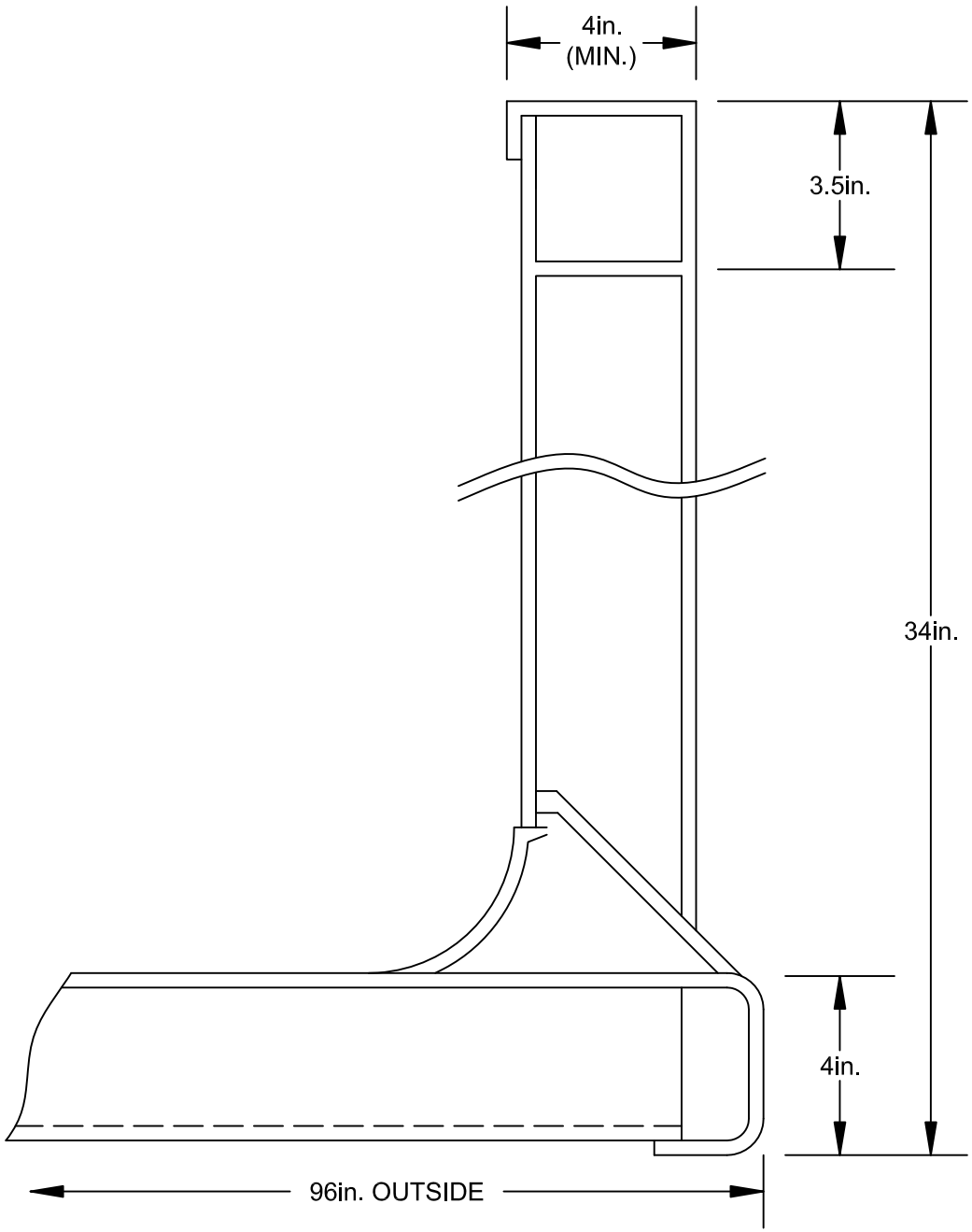
NOTES:

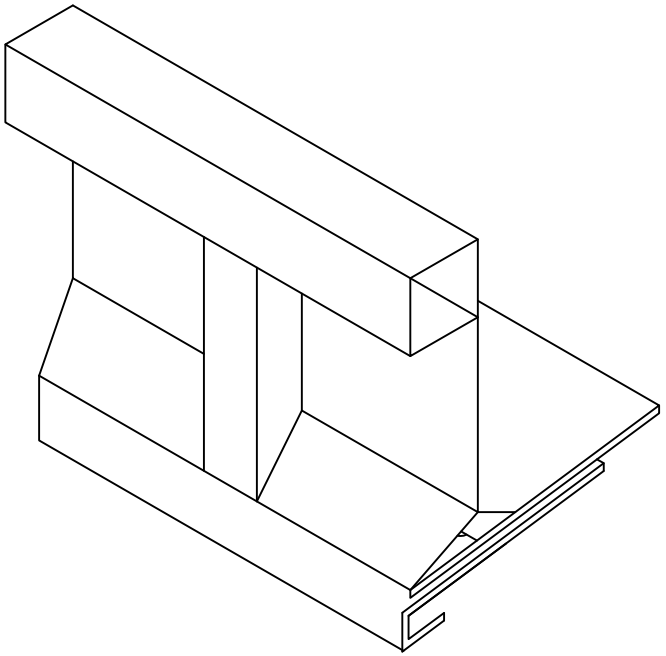
1. THE ABOVE STRUCTURE SHALL BE FURNISHED ON THE LAST FOUR CROSS-MEMBERS.
2. THE LAST FOUR CROSS-MEMBERS SHALL BE PLACED ON 8in. CENTERS, WITH THE BALANCE ON 12in. CENTERS.
3. THE BODY SHALL BE SHOCK MOUNTED TO AVOID STRESS ON ROUGHT ROADS WHEN EMPTY.
4. THE WEB MOUNT SHALL BE DESIGNED FOR SEVERE DUTY SERVICE.
5. THE BOLTS SHALL BE OF GRADE 8 MIN. WITH SELF-LOCKING GRADE 8 NUTS.
6. THE REAR PIN HINGE SHALL BE A MI. OF 2.2in. DIA., AND THE HINGE BUSHING (GREASABLE) SHALL BE A 2.875in. O.D. X 2.12in. I.D. MIN. TOLERANCES AND SIZES. PIN SIZES SMALLER THAN 2.116in. ARE ACCEPTABLE IF THEY ARE STANDARD WITH A VENDOR.
7. ALL DIMENSIONS ARE IN INCHES.
8. "FULL-LENGTH" BODY TO FRAME RUBBER MOUNTING SYSTEM.
9. ANY VARATION TO THIS DESIGN REQUIRES, PRIOR TO BUILD, WRITTEN AUTHORIZATION.



PA DEPARTMENT OF TRANSPORTATION

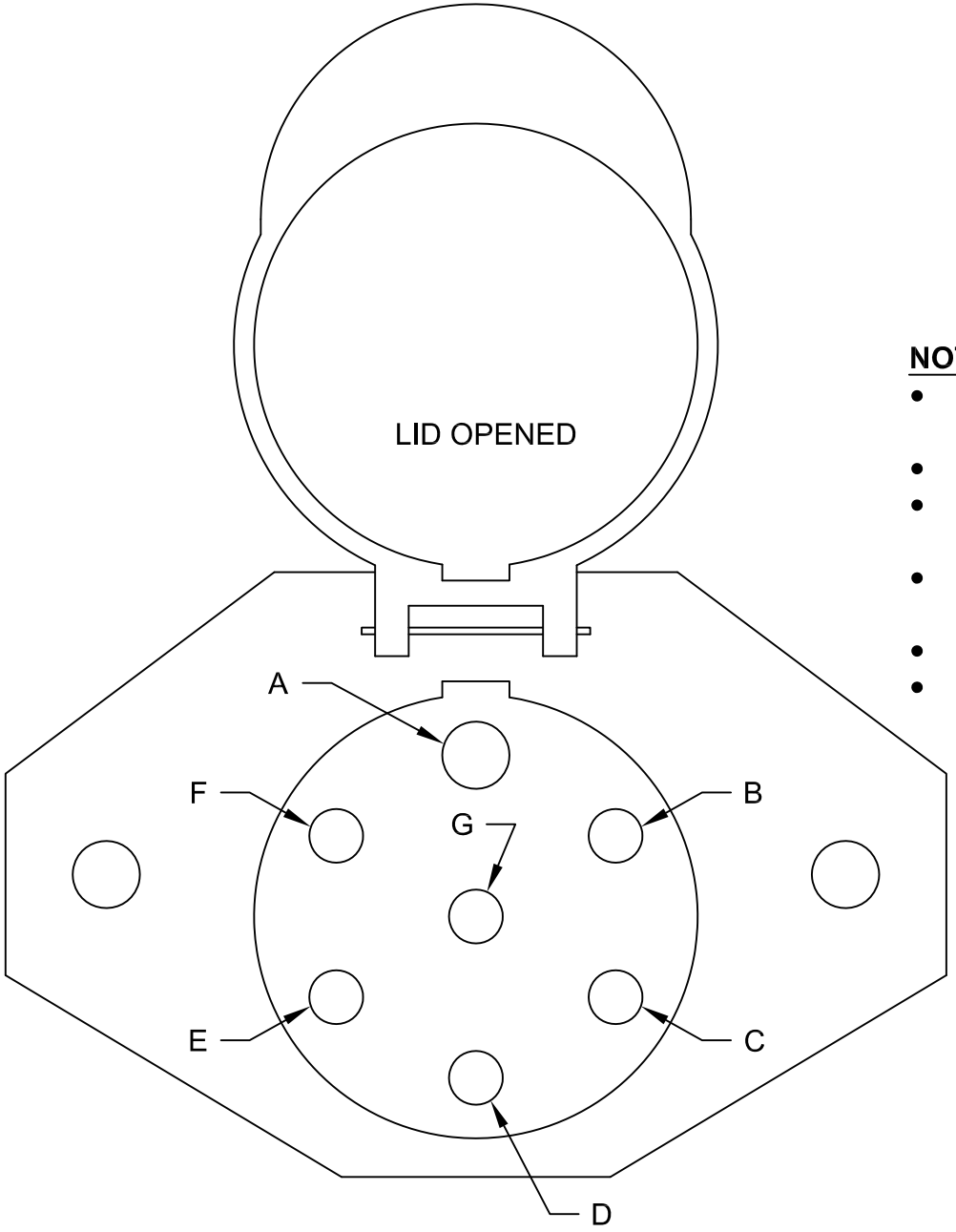
REVISIONS			TYPE IV 62,000 lb. TANDEM ALUMINUM BODY		
NO.	DATE	BY			
1	04-27-15	GAW			
2			DRAWN BY DLW	SCALE N/A	EQN-79A
3			DATE 09-25-97	CHK'D BY WHM	SHEET 9 OF 10

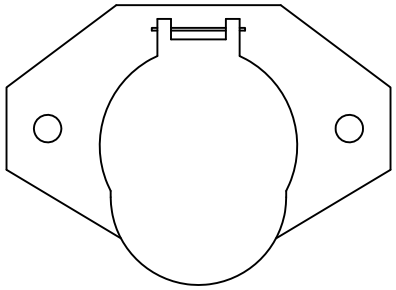




PA DEPARTMENT OF TRANSPORTATION

REVISIONS			TYPE IV 62,000 lb. TANDEM ALUMINUM BODY		
NO.	DATE	BY			
1	05-11-07	KNH			
2	04-27-15	GAW	DRAWN BY DLW	SCALE N/A	EQN-79A
3			DATE 09-25-97	CHK'D BY WHM	SHEET 10 OF 10





LID CLOSED

NOTES:

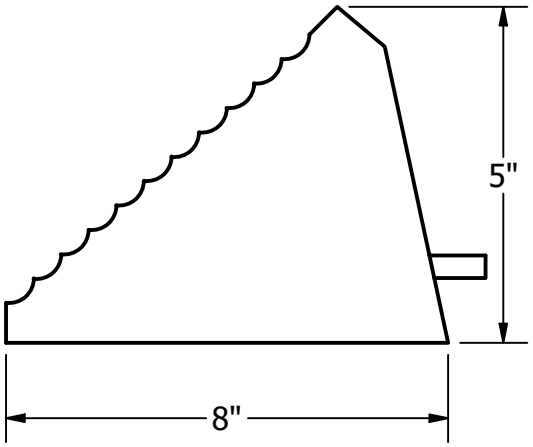
- VIEW OF FEMALE CONNECTOR, STANDING AT REAR OF TRUCK, LOOKING AT THE CONNECTOR.
- BRAKE LIGHTS SHALL FUNCTION WITH TURN SIGNALS.
- WIRE SHALL BE 7 WAY (1-10 GAUGE; 6-12 GAUGE) PER ATA COLOR CODE, CLAMPED EVERY 18" MINIMUM.
- CONNECTION SHALL BE MADE USING FACTORY OEM TRAILER WIRING HARNESS.
- ALL CONNECTIONS SHALL BE WATER TIGHT.
- ALL PINS SHALL BE ROUND STYLE.

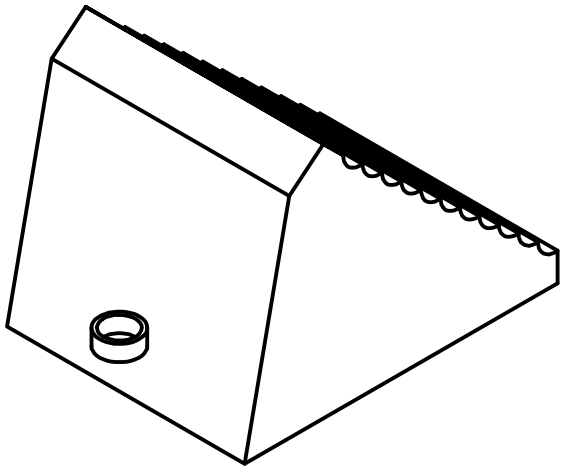
WIRING NOTES:

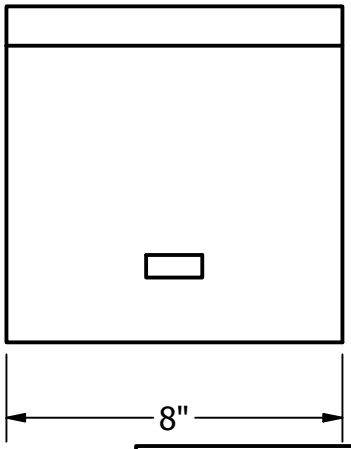
A. WHITE: GROUND - 10
B. BLACK: MARKER -12
C. YELLOW: LEFT TURN & BRAKE - 12
D. RED: STOP / BRAKE -12
E. GREEN: RIGHT TURN & BRAKE - 12
F. BROWN: TAIL - 12
G. BLUE: ABS -12

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			WIRING DIAGRAM / 7 WAY ROUND PIN FEMALE CONNECTOR		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-80A
3			DATE 08-02-16	CHK'D BY	SHEET 1 OF 1







NOTES:
- CHOCK HOLDERS SHALL BE ALUMINUM
- TWO CHOCKS PER TRUCK SHALL BE SUPPLIED
- EACH PAIR OF CHOCKS SHALL HAVE 4' OF 3/8" NYLON ROPE CONNECTING THE TWO CHOCKS TOGETHER

DRAWN LWB	12/19/2022
CHECKED	
QA	
MFG	
APPROVED	

PA DEPARTMENT OF TRANSPORTATION

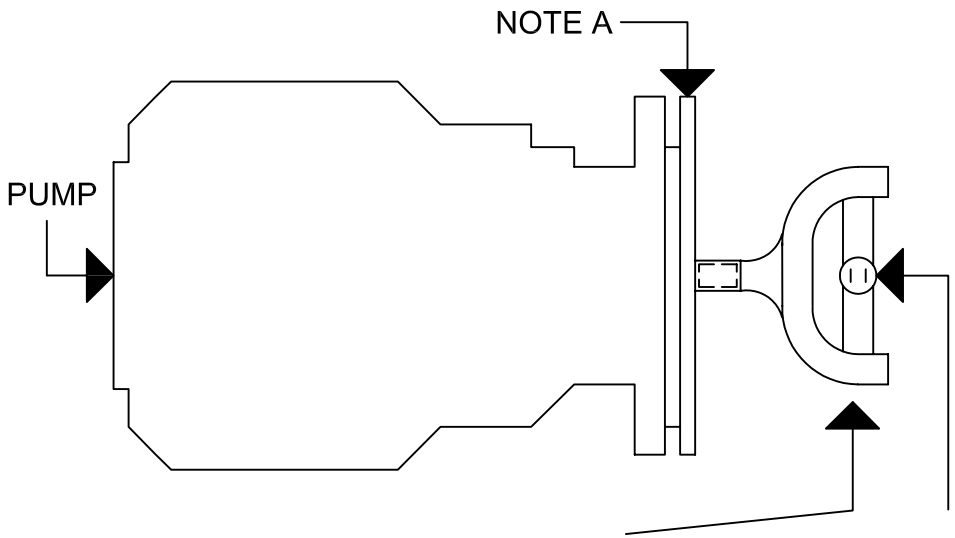
TITLE

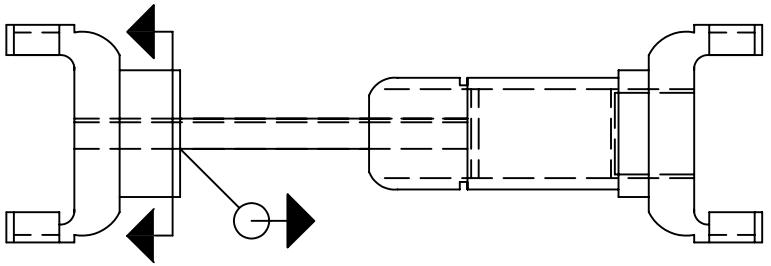
5" X 8" X 8" CHOCK AND HOLDER

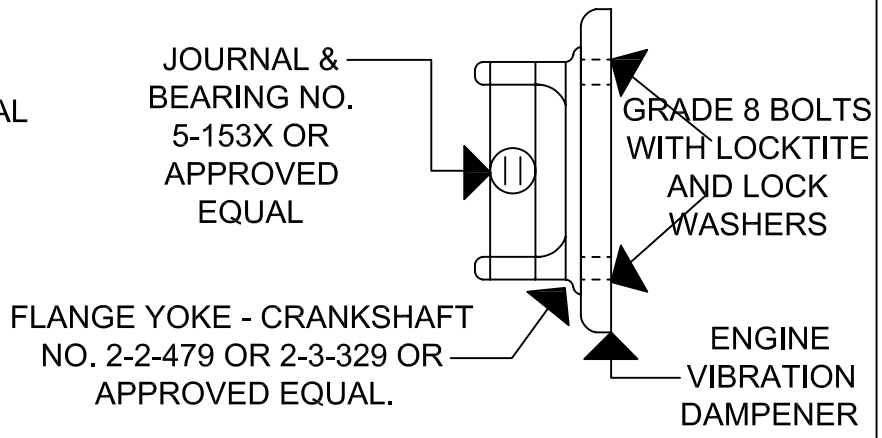
SIZE		DWG NO	REV
A		EQN-82B	

SCALE 1 / 4

SHEET 1 OF 1







NOTE A

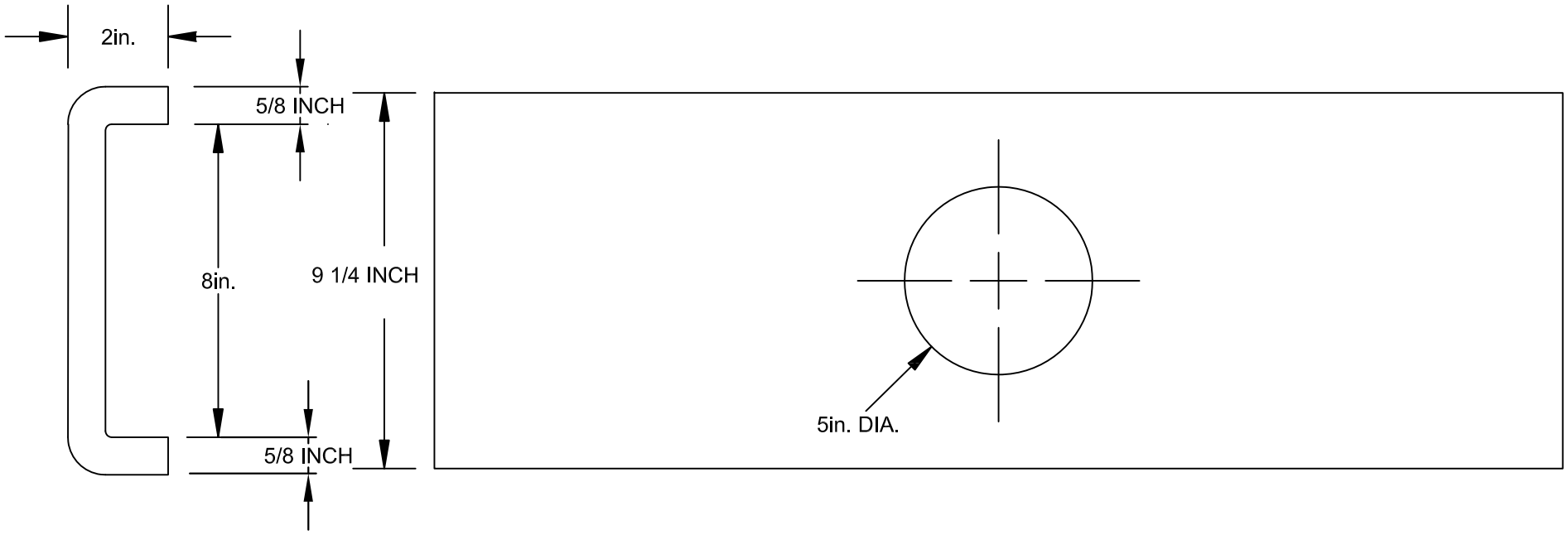
PUMP MOUNTING BRACKET SHALL BE $\frac{5}{8}$ in., MINIMUM, FORMED STEEL CHANNEL. AS PER EQN - 90 SHEET 2

NOTES:

1.) DRIVESHAFT ASSEMBLY SHALL BE FACTORY BALANCED.
2.) SPICER 1310 SERIES, OR NEAPCO. NO SUBSTITUE. STANDARDIZATION.
3.) SLEEVE YOKE SHALL BE 1.375 in. I.D. 16 SPLINES.
4.) END YOKE ADAPTER SHALL ACCOMODATE 1.5 in., KEYED SHAFT.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			DUMP TRUCK PTO ASSEMBLY		
NO.	DATE	BY			
1	4-6-07	KNH			
2	07-20-09	TOD	DRAWN BY DLW	SCALE N/A	EQN-# 90
3			DATE 07/17/97	CHK'D BY WHM	SHEET 1 OF 2



PUMP MOUNTING BRACKET, REGARDLESS OF DESIGN, SHALL BE A MINIMUM 5/8 in. FORMED STEEL CHANNEL. THE PUMP BRACKET SHALL BE SLOPED TO MATCH THE ENGINE CRANKSHAFT. WIDTH DIMENSION SHALL BE FULL FRAME RAIL WIDTH. BRACKETRY TO ATTACH PUMP MOUNTING BRACKET TO TRUCK FRAME RAILS SHALL BE MINIMUM 5/8 in. THICKNESS. BRACKETS SHALL BE EITHER FULLY WELDED OR USE 3/4 in. GRADE 8 BOLTS OF SUFFICIENT LENGTH AND GRADE 8 LOCK NUTS, MINIMUM TWO BOLTS PER MOUNTING SURFACE.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			PUMP MOUNTING BRACKET		
NO.	DATE	BY			
1	07-03-97	DLW			
2	06-03-02	DWG	DRAWN BY SWW	SCALE N/A	EQN-90
3	07-20-09	TOD	DATE 12-04-95	CHK'D BY RED	SHEET 2 OF 4

TRANSMISSION POWER TAKE OFF:

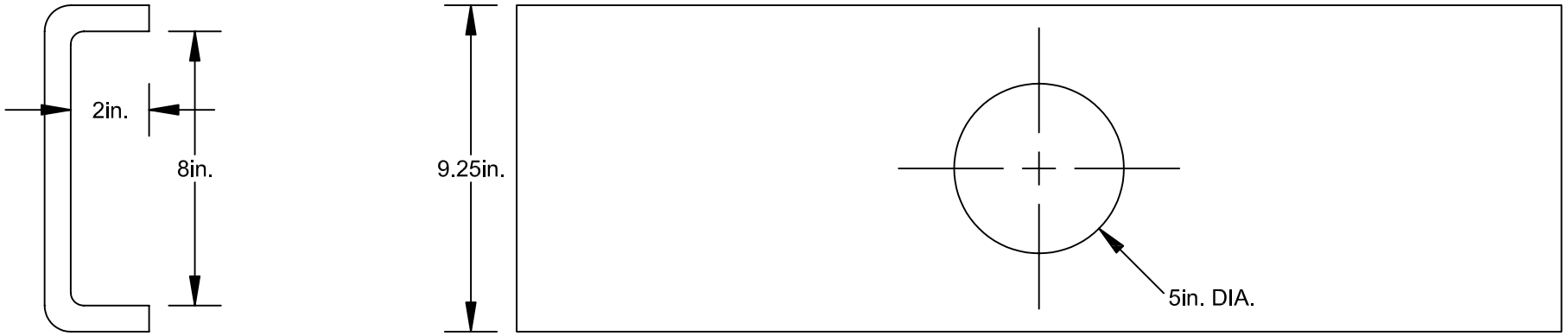
POWER TAP:

IF A MD/HD SERIES WORLD CLASS ALLISON AUTOMATIC TRANSMISSION IS PRESENT AND INCLUDES POWER TAKE OFF OPENINGS, THE FOLLOWING SPECIFICATIONS SHALL PREVAIL.

THE TRANSMISSION SHALL PROVIDE TWO (2) OPENINGS, ONE ON EITHER SIDE, AND UTILIZE A TEN (10) BOLT MOUNTING PAD. tHE POWER TAKE OFF MUST BE SIZED TO EXCEED THE MAXIMUM TORQUE AND HORSEPOWER DEMANDS REQUIRED WHEN THE PUMP IS OPERATING AT MAXIMUM. A RATIO OF ONE HUNDRED PERCENT (100%) WILL BE USED WITH DIESEL ENGINE. A.S.A.E. "C" STRAIGHT KEY SHAFT MUST BE INCLUDED ON THIS CONSTANT MESH POWER TAKE OFF AND REQUIRE NO SHIFTING MECHANISM. THAT IS TO SAY THAT THE POWER TAKE OFF WILL PROVIDE LIVE POWER WHEN EVER THE ENGINE IS IN OPERATION. THE UNIT MST PROVIDE UP TO SEVENTY-SIX (76hp) PER ONE THOUSAND ENGINE REVOLUTIONS PER MINUTE (1000rpm). THE 1310 DRIVE LINE SPECIFICATION WILL APPLY THE SAME AS FOR A FRONT END POWER TAKE OFF APPLICATION. THE FLANGE YOKE WILL BE REPLACED WITH THE PROPER END YOKE TO MAATCH THE POWER TAKE OFF OUTPUT SHAFT.

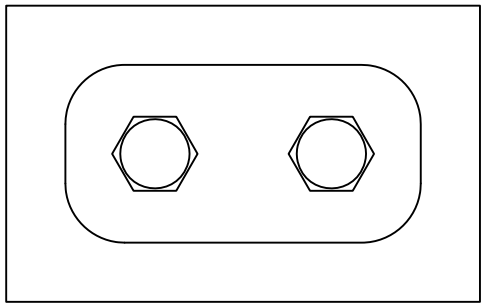
THE MUNCIE CONSTANT DRIVEN PTO (NO SUBSTITUTE, STANDARDIZATION) SHALL BE SE FOR THE MD AND HD SERIES ALLISON WORLD CLASS TRANSMISSION. THE CD10 IS RATED FROM 310 lb. / 140.61kg. TO 400 lb. / 181.44 kg.-FT. AND 2500 RPM AND IS AVAILABLE WITH 4 OUTPUT SHAFT OPTIONS. THESE INCLUDE AN S.A.E. "C" 2 BOLT MOUNT AND S.A.E "B" 2 & 4 BOLT MOUNT FOR HYDRAULIC PUMPS. THE 1.25in. / 3.18cm. ROUND OUTPUT SHAFT IS STANDARD.

PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			DUMP TRUCKS PTO ASSEMBLY		
NO.	DATE	BY			
1	4-5-07	KNH			
2			DRAWN BY DLW	SCALE N/A	EQN-# 90
3			DATE 07/17/97	CHK'D BY WHM	SHEET 3 OF 4



PUMP MOUNTING BRACKET SHOWN IS FOR REFERENCE. PUMP MOUNTING BRACKET, REGARDLESS OF DESIGN, SHALL BE A MINIMUM OF .6250in. THICK STEEL MATERIAL. THE PUMP BRACKET SHALL BE SLOPED TO MATCH THE ENGINE CRANKSHAFT. WIDTH DIMENSION WILL BE DETERMINED BY FRAME RAIL WIDTH.

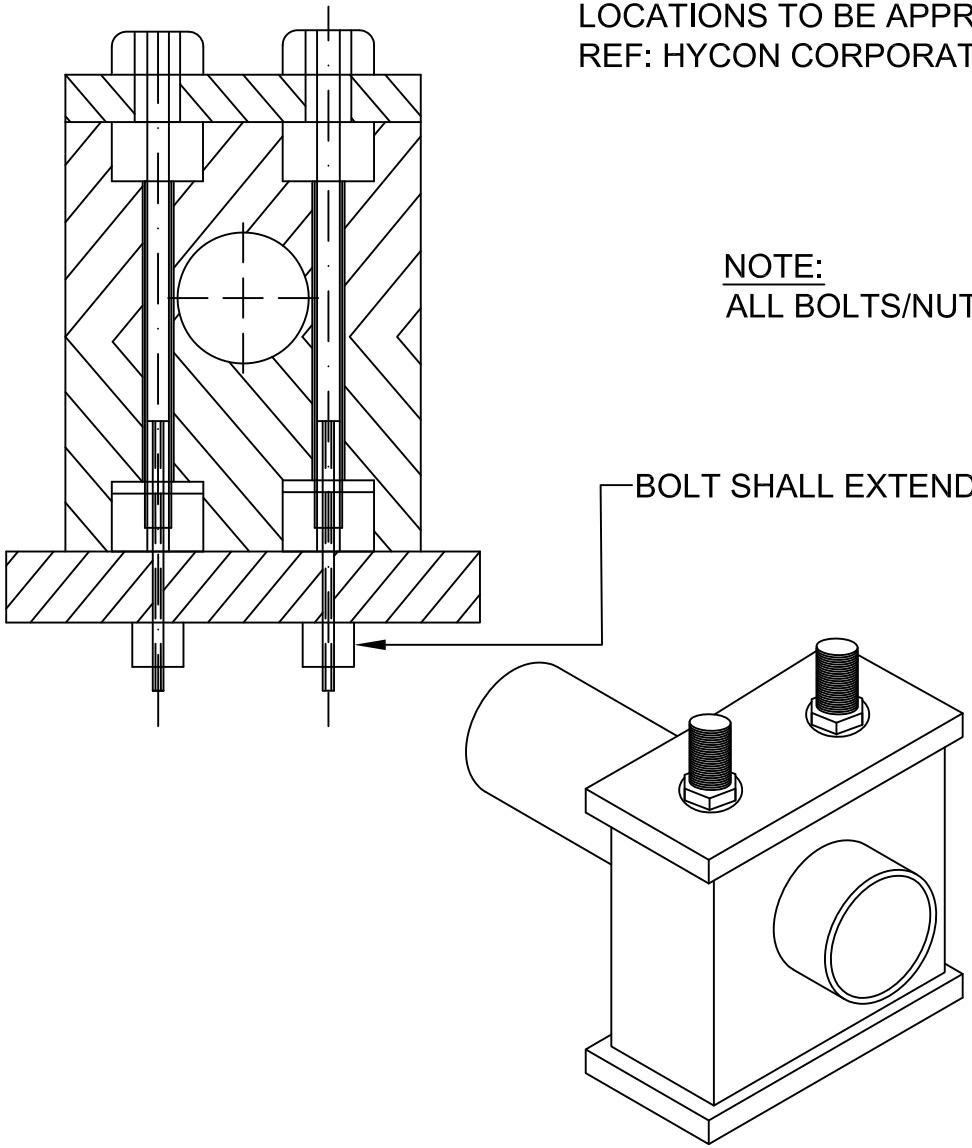
PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			PUMP MOUNTING BRACKET		
NO.	DATE	BY			
1	07-03-97	DLW			
2	06-03-02	DJA	DRAWN BY SWW	SCALE N/A	EQN-90
3	06-12-07	KNH	DATE 12-04-95	CHK'D BY RED	SHEET 4 OF 4



HYDRAULIC HOSES/ FITTINGS

HYDRAULIC HOSES SHALL NOT EXTEND BELOW THE TOP OF THE FRONT AXLE. ALL HYDRAULIC HOSES SHALL BE ADEQUATELY CLAMPED, SHIELDED FROM EXHAUST SYSTEM AND PREVENTED FROM RUBBING UP AGAINST ANY PART OF THE TRUCK FRAME BODY.

HYCON CLAMPS AS REQUIRED TO PREVENT CHAFFING OR RUBBING. DUE TO THE VARIATIONS OF SIZES PART NUMBERS HAVE NOT BEEN INCLUDED. WELD-ON OR BOLT-ON ARE ACCEPTABLE. AVAILABLE IN STANDARD AND HEAVY DUTY SERIES. LOCATIONS TO BE APPROVED BY CHIEF, FLEET MANAGEMENT DIVISION
REF: HYCON CORPORATION, LEHIGH VALLEY, PA OR BEHRINGER PIPE SYSTEM INC.



NOTE:
ALL BOLTS/NUTS SHALL BE COATED WITH NEVER SIEZE.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			HYCON HOSES AND CLAMPS		
NO.	DATE	BY			
1	10-02-06	CJW			
2	12-20-16	JJB	DRAWN BY LM	SCALE N/A	EQN-94
3	07-26-18	KBD	DATE RED	CHK'D BY 11-03-78	SHEET 1 OF 5

FRONT COUPLERS SHALL BE MOUNTED TO A MANIFOLD PLATE POSITIONED IN THE CENTER OF THE FRONT FRAME EXTENSION WHICH HOUSES THE PTO ASSEMBLY. MOUNTING SEQUENCE SHALL BE AS FOLLOWS MOVING TOP TO BOTTOM WHEN FACING THE RIGHT SIDE OF THE VEHICLE:

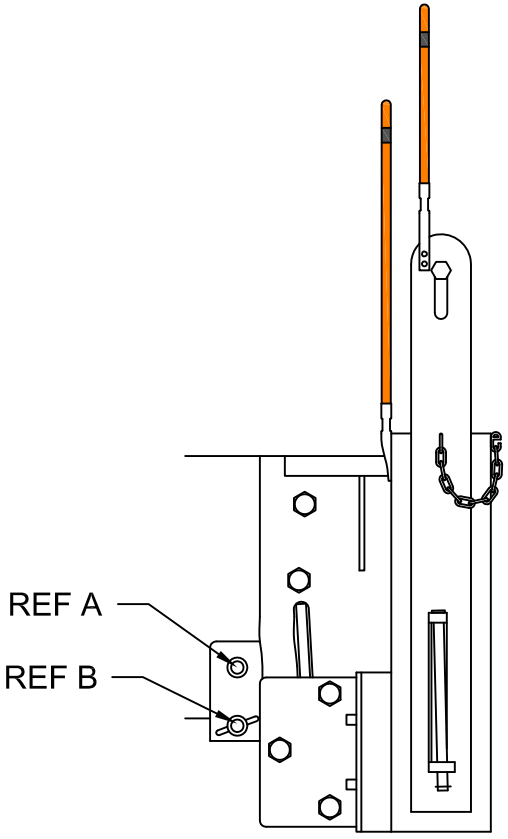
TWO (2) WING COUPLERS: UPPER BEING 5100-S2-8B AEROQUIP MALE AND LOWER BEING 5100-S1-8B AEROQUIP FEMALE

REAR COUPLERS SHALL BE MOUNTED TO A MANIFOLD PLATE ATTACHED AND CENTERED TO THE BOTTOM OF REAR FRAME CROSS MEMBER OR MOUNTED THROUGH REAR CROSS MEMBER IF POSSIBLE. MOUNTING SEQUENCE SHALL BE AS FOLLOWS MOVING TOP TO BOTTOM WHEN FACING THE RIGHT SIDE OF THE VEHICLE:

TWO (2) LIFT WING COUPLERS: UPPER BEING 5100-S2-8B AEROQUIP MALE AND LOWER BEING 5100-S1-8B AEROQUIP FEMALE

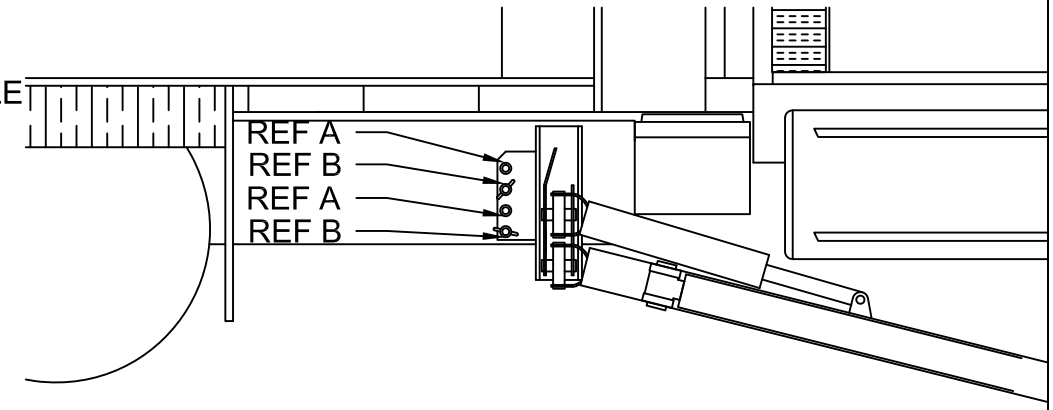
TWO (2) EXTEND WING COUPLERS: UPPER BEING 5100-S2-8B AEROQUIP MALE AND LOWER BEING 5100-S1-8B AEROQUIP FEMALE

COUPLERS SHALL HAVE DUST PLUGS AFFIXED WITH CHAINS TO PREVENT LOSS OF CAPS.



FRONT COUPLERS

NOTES:
A. 5100-S2-8B MALE
B. 5100-S1-8B FEMALE



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			HYCON HOSES AND CLAMPS		
NO.	DATE	BY			
1	12-20-16	JJB			
2	07-13-17	HMR	DRAWN BY LM	SCALE N/A	EQN-94
3	07-26-18	KBD	DATE RED	CHK'D BY 11-03-78	SHEET 2 OF 5

FRONT COUPLERS SHALL BE MOUNTED TO A MANIFOLD PLATE POSITIONED IN THE CENTER OF THE FRONT FRAME EXTENSION WHICH HOUSES THE PTO ASSEMBLY. MOUNTING SEQUENCE SHALL BE AS FOLLOWS MOVING LEFT TO RIGHT WHEN FACING THE FRONT OF THE VEHICLE:

TWO (2) REVERSIBLE PLOW COUPLERS 5100-S2-8B AEROQUIP MALE, 5100-S1-8B AEROQUIP FEMALE.

TWO (2) PLOW HOIST CYLINDER COUPLER 5100-S1-8B AEROQUIP FEMALE, RIGHT OF PUMP, OR SNAP TITLE 78-N8-6F

REAR COUPLERS SHALL BE MOUNTED TO A MANIFOLD PLATE ATTACHED AND CENTERED TO THE BOTTOM OF REAR FRAME CROSS MEMBER OR MOUNTED THROUGH REAR CROSS MEMBER IF POSSIBLE. MOUNTING SEQUENCE SHALL BE AS FOLLOWS MOVING LEFT TO RIGHT WHEN FACING THE REAR OF THE VEHICLE:

$\frac{1}{2}$" SPINNER 5100-S2-10B AEROQUIP, MALE, OR SNAP TITE 78N12F

$\frac{3}{4}$" AUGER 5100-S2-12B AEROQUIP MALE, OR SNAP TITE 78N12-12F

1" RETURN 5100-S2-16B AEROQUIP MALE, OR SNAP TIE 78N16-16F

COUPLERS SHALL HAVE DUST PLUGS AFFIXED CHAINS TO PREVENT LOSS OF CAPS.

AEROQUIP	SNAP-TITE	PARKER-HANNFIN	FASTENER
5100-S7-8S	78DC-8		
5100-S2-8B	78N8-6F		
5100-S2-10B	78N12-8F	6105-08	
5100-S2-12B	78N12-12F	6105-12	FB 12/34NPT-M5
5100-S2-16B	78N16-16F	6105-16	FB 16/1NPT-M5
5100-S7-12S	78DC-12	6105-12	FB 12/34NPT-F5
5100-S7-16S	78DC-16	6105-16	FB 16/1NPT-F5

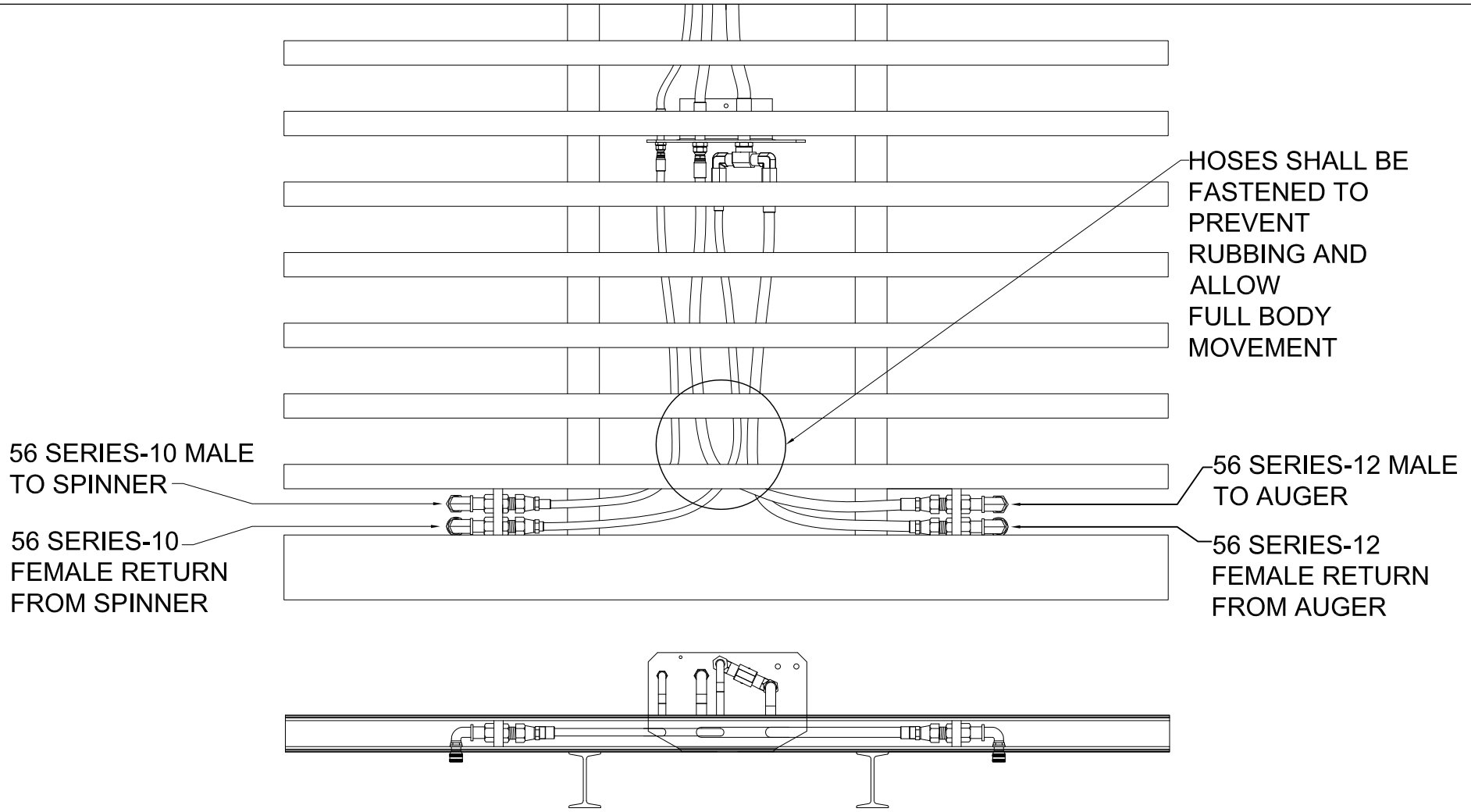
NOTES:

Aeroquip 1-800-230-1996

Snaptite 814-838-5700

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			HYCON HOSES AND CLAMPS		
NO.	DATE	BY			
1					
2			DRAWN BY KBD	SCALE	EQN-94
3			DATE 07-26-18	CHK'D BY	Sheet 3 of 5



LOOKING FROM REAR OF BODY

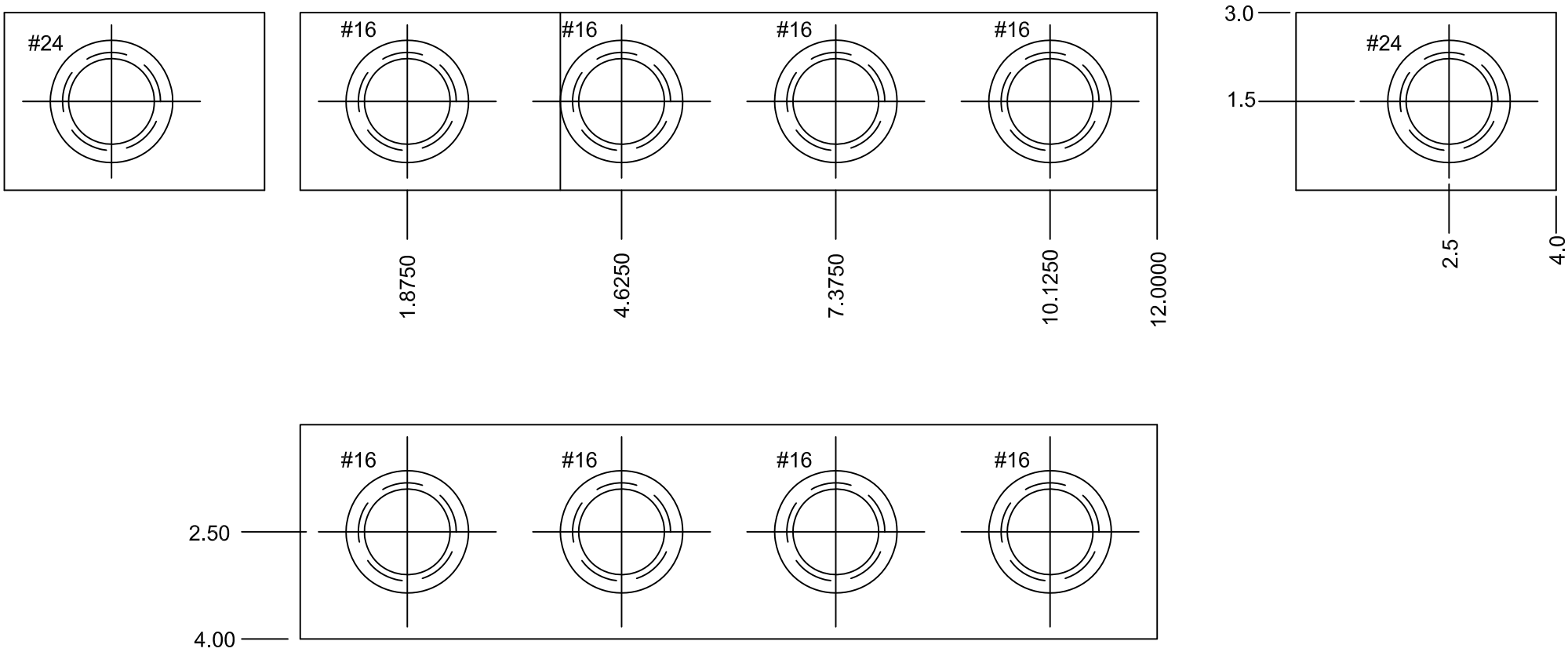
5600 SERIES, 1 EACH (MALE & FEMALE) ON EACH SIDE, QUICK COUPLERS MUST BE USED FOR SPINNER & AUGER CONNECTIONS.

4,000 PSI HOSES WITH JIC HOSE ENDS SHALL BE USED.

ONLY APPROVED STEEL HYDRAULIC FITTINGS SHALL BE USED.

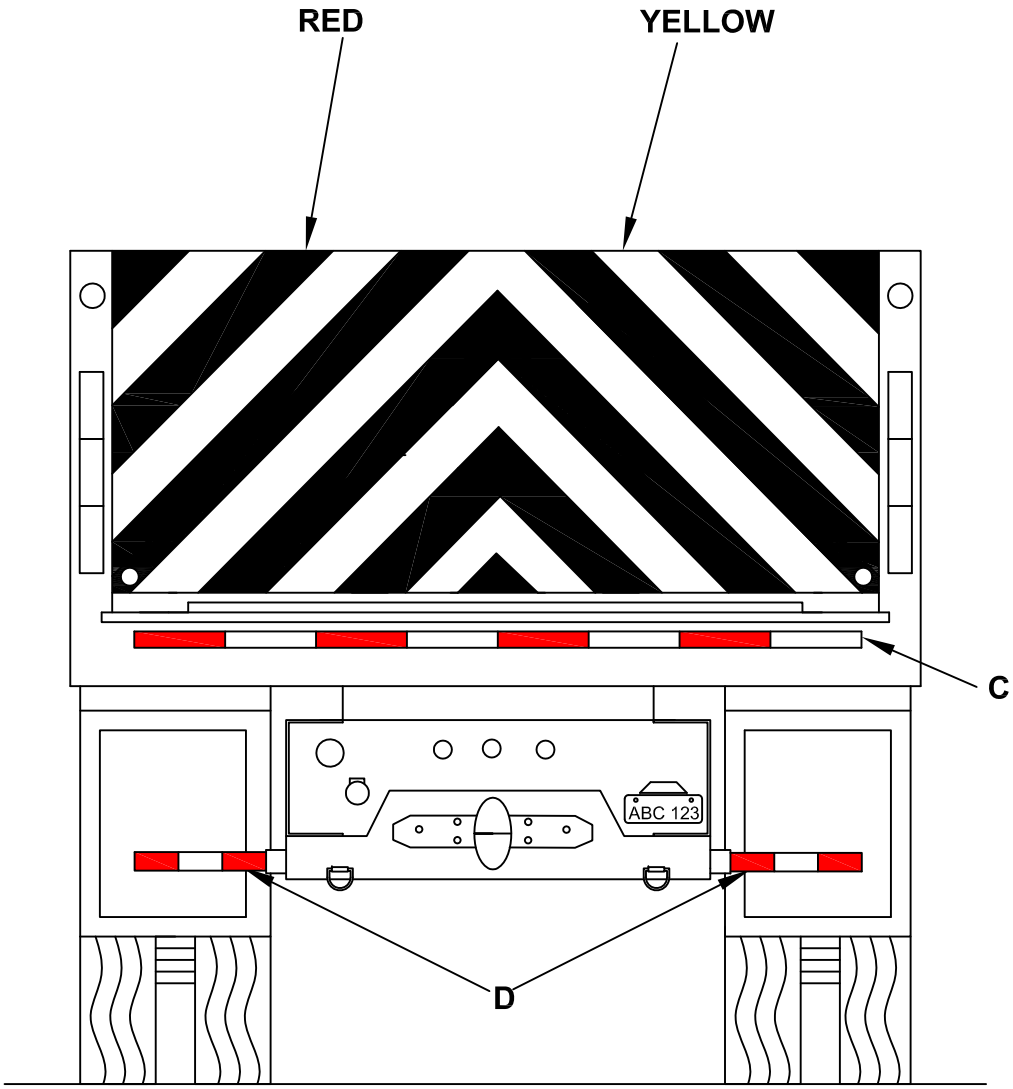
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			Rear Hose Manifold		
NO.	DATE	BY			
1	8/1/13	JFM			
2	7/17/17	HMR	DRAWN BY JDS	SCALE N/A	EQN-94
3	7/26/18	KBD	DATE 6/15/12	CHK'D BY	SHEET 4 OF 5



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			2 HYDRAULIC COMPONENT OVERVIEW HEADER BLOCK		
NO.	DATE	BY			
1	08-03-01	DWG			
2	11-02-06	CJW	DRAWN BY GAH	SCALE N/A	EQN-94
3	07-26-18	KBD	DATE 03-01-00	CHK'D BY LA	SHEET 5 OF 5



A THE ALUMINUM TAILGATE SHALL BE UNPAINTED. THE TAILGATE SHALL BE STRIPED AS SHOWN WITH 8" WIDE ALTERNATING RED/YELLOW BANDS CREATING A CHEVRON (INVERTED V) AT 45 DEGREE ANGLES, ACROSS THE GATE TO SERVE AS A SAFETY WARNING SYSTEM.

B TAPE SHALL BE REFLEXITE DAYBRIGHT V92 CONSPICUITY SHEETING. RED - SRHI4R PN# 18716, LIME - SRHI4Y PN# 18836 VC 312. TWO 4" SHEETS CAN BE COMBINED TO EQUAL THE 8" REQUIREMENT.

C THE ENTIRE WIDTH DIRECTLY UNDER THE TAILGATE SHALL BE COVERED WITH 1 1/2" WIDE SCOTCHLITE CONSPICUITY SHEETING SERIES 980 OR REFLEXITE CONSPICUITY II SYSTEM. MATERIAL SHALL BE RED/SILVER, CONTINUOUS BACKING.

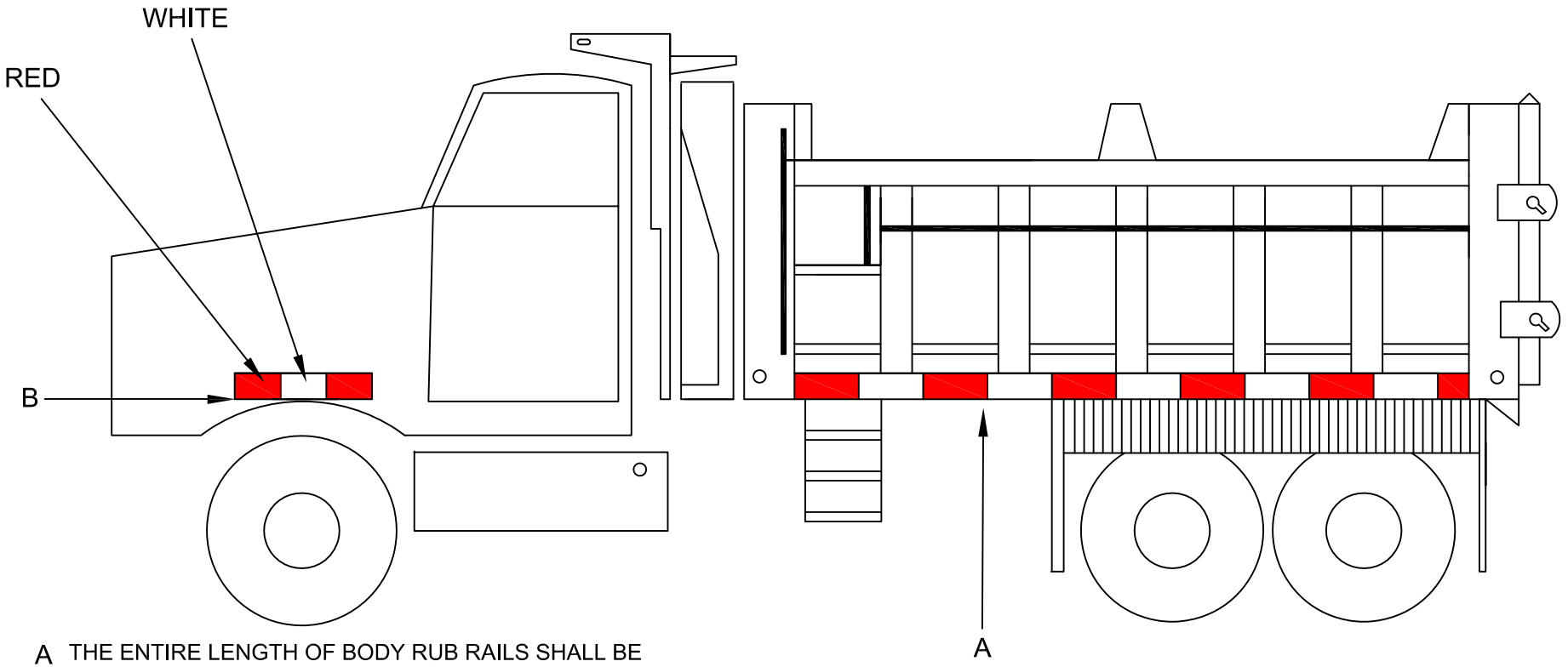
D THE ENTIRE LENGTH OF BOTH ICC BARS SHALL BE COVERED WITH 1 1/2" WIDE SCOTCHLITE CONSPICUITY SHEETING SERIES 980 OR REFLEXITE CONSPICUITY II SYSTEM. MATERIAL SHALL BE RED/SILVER, CONTINUOUS BACKING.

THIS DRAWING SHALL BE FOR CONSPICUITY REFERENCE ONLY, NOT TAILGATE CONSTRUCTION.

THIS VEHICLE SHALL COMPLY WITH THE RULES OF THE NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA). THE MOST CURRENT REGULATIONS SHALL BE ADHERED TO.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			DUMP BODY REFLECTIVE SHEETING		
NO.	DATE	BY			
1	12-23-09	PMK			
2	05-20-13	JFM	DRAWN BY GRL	SCALE N/A	EQN-122
3	06-30-14	ACT	DATE 10-11-94	CHK'D BY RED	SHEET 1 OF 2



A THE ENTIRE LENGTH OF BODY RUB RAILS SHALL BE COVERED WITH 2" WIDE SCOTCHLITE CONSPICUITY SHEETING SERIES 980 OR REFLEXITE CONSPICUITY II SYSTEM MATERIAL SHALL BE RED/SILVER, CONTINUOUS BACKING.

B THE AREA ABOVE FRONT TIRES SHALL BE COVERED WITH MINIMUM 18 INCHES, 2" WIDE SCOTCHLITE CONSPICUITY SHEETING SERIES 980 OR REFLEXITE CONSPICUITY II SYSTEM MATERIAL SHALL BE RED/SILVER, CONTINUOUS BACKING. ITEM B NEEDS TO BE AS CLOSE AS POSSIBLE IN A STRAIGHT LINE WITH ITEM A. ALTERNATE PLACEMENT OF ITEM B NEEDS TO BE APPROVED BY THE CHIEF OF THE EQUIPMENT DIVISION

THE CHIEF OF THE EQUIPMENT DIVISION SHALL APPROVE ALL STRIPING AND MONITOR THE PRODUCTION BY THE SUCCESFUL VENDOR. ALL DIMENSIONS IN INCHES.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			DUMP BODY REFLECTIVE SHEETING		
NO.	DATE	BY			
1	12-23-09	PMK			
2	05-20-13	JFM	DRAWN BY TOD	SCALE N/A	EQN-122
3	06-30-14	ACT	DATE 07-14-09	CHK'D BY DAA	SHEET 2 OF 2

NOTE : THIS LIGHT DESIGN IS ONE OF TWO LIGHT DESIGN THAT ARE ACCEPTABLE

Female Plug

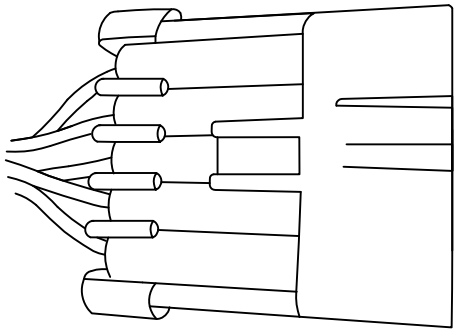
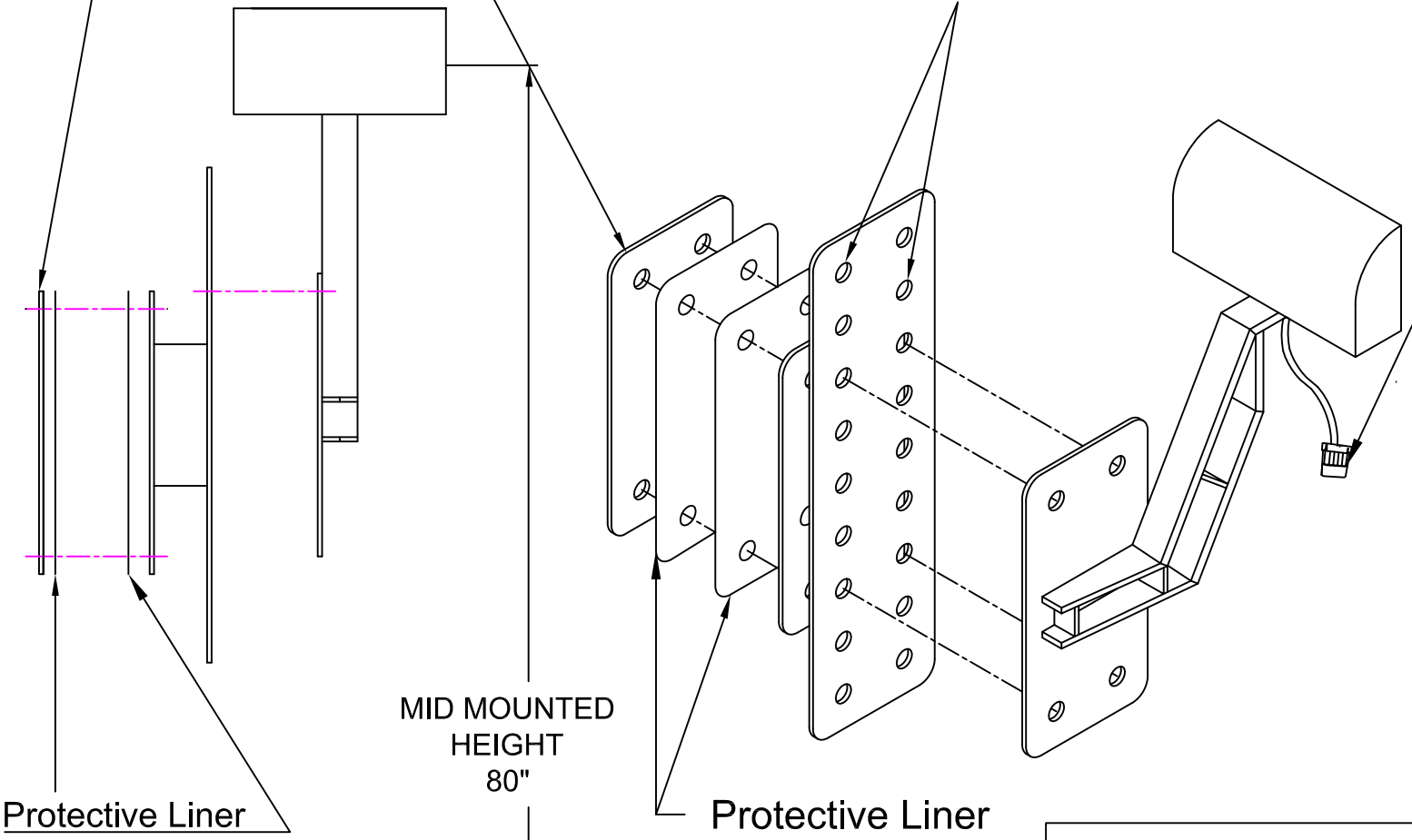


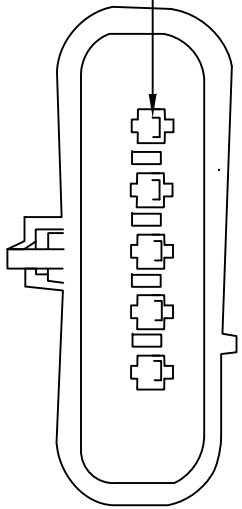
PLATE MOUNTED FAST TO TRUCK

ADDITIONAL HOLES TO ALLOW 6" OF VERTICAL HEIGHT ADJUSTMENT (3" UP AND 3" DOWN FROM ORIGINAL HEIGHT)



Packard 5 Way

Male Plug & Terminals



Protective Liner

MID MOUNTED HEIGHT 80"

Protective Liner

GROUND LEVEL

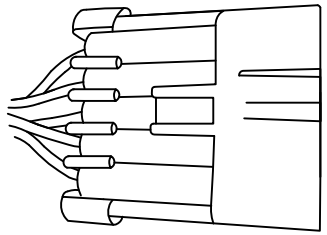
PA DEPARTMENT OF TRANSPORTATION

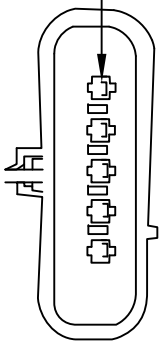
REVISIONS			HEADLIGHT ADJUSTMENT BRACKET		
NO.	DATE	BY			
1	07-26-18	KBD			
2			DRAWN BY JJB	SCALE N/A	EQN-180
3			DATE 07-19-16	CHK'D BY	SHEET 1 OF 2

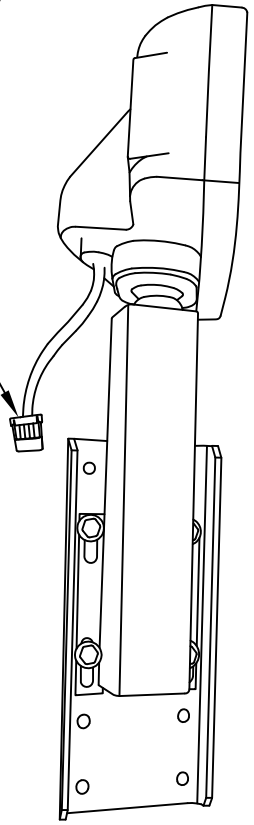
NOTE : THIS LIGHT DESIGN IS ONE OF TWO LIGHT DESIGN THAT ARE ACCEPTABLE

Packard 5 Way

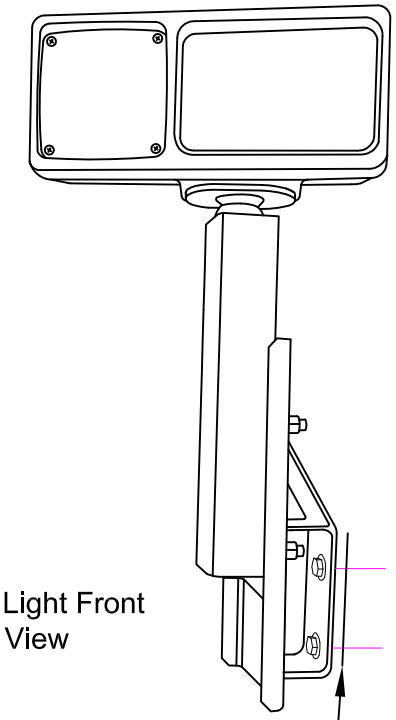
Female Plug





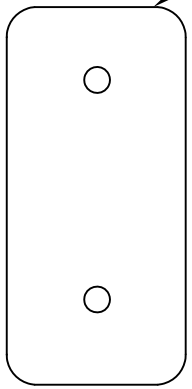


Light Side View

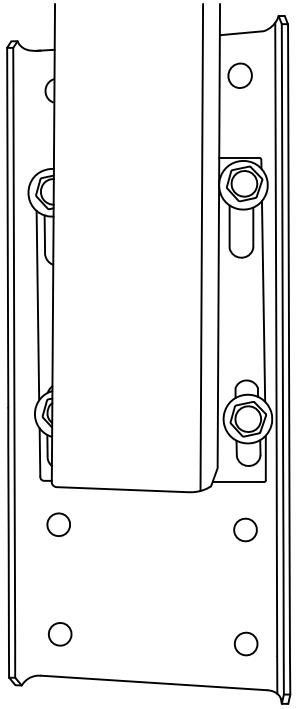


Light Front View

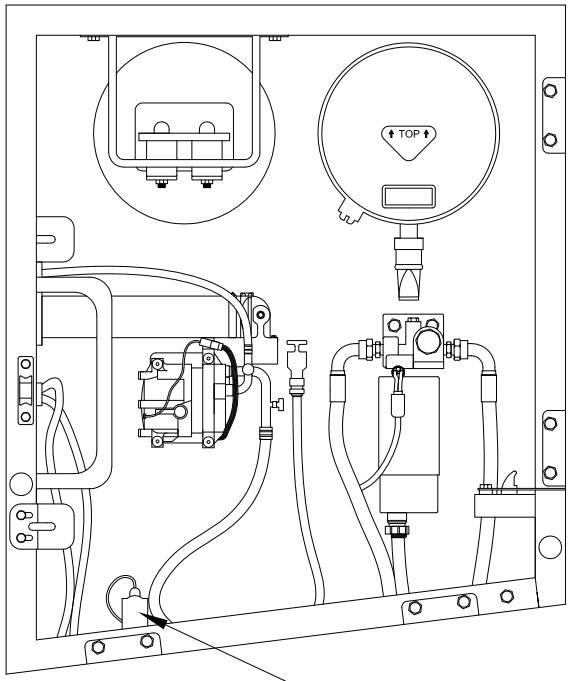
Protective Liner

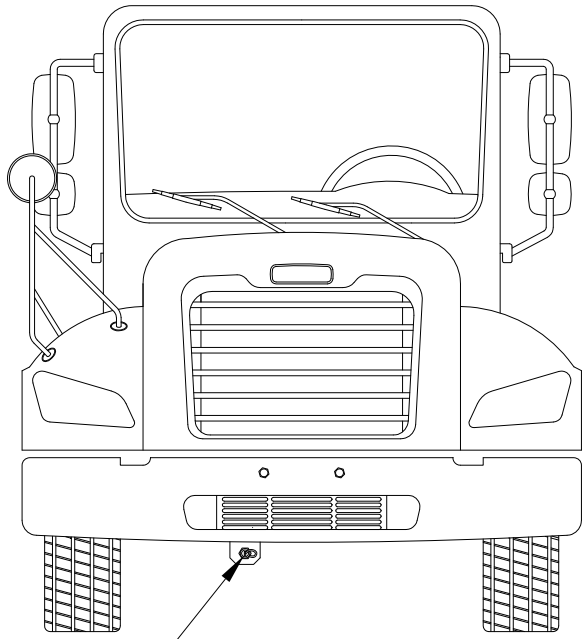


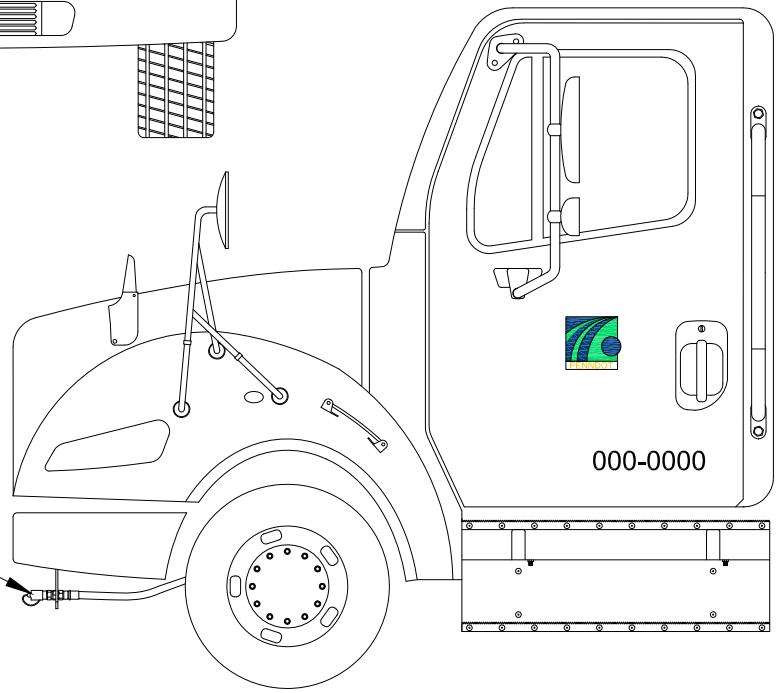
Light Bracket

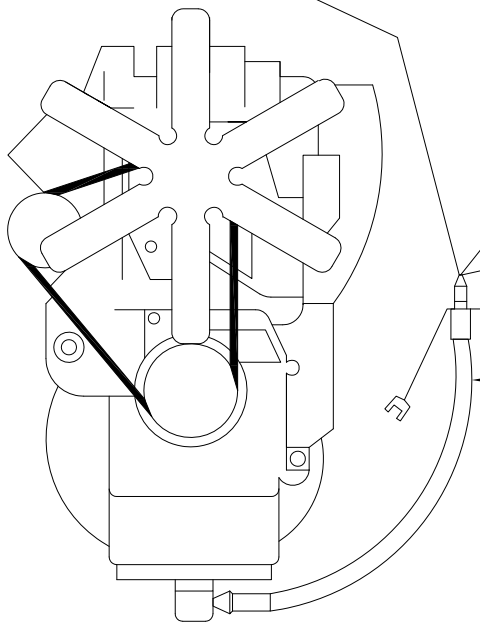


PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			Plow Truck Light & Bracket		
NO.	DATE	BY			
1					
2			DRAWN BY KBD	SCALE	EQN-180
3			DATE 07-26-18	CHK'D BY	Sheet 2 OF 2









DISCONNECT COUPLING

FLOCS ENGINE KIT

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			FAST LUBEOIL CHANGE SYSTEM OVERVIEW AND PARTS LIST		
NO.	DATE	BY			
1	07-01-03	BLD			
2	10-20-06	CJW	DRAWN BY DLW	SCALE N/A	EQN-351A
3	06-19-13	JFM	DATE 08-22-97	CHK'D BY WHM	SHEET 1 OF 2

1. CONTACT AEROQUIP WITH YOUR DRAIN PAN PLUG SIZE
2. AEROQUIP DEALER TELEPHONE NUMBERS:

ADVANCED FLUID CONNECTORS.....717-757-1068
AIR BRAKE & POWER EQUIPMENT CO..717-622-6188
AMERICAN BEARING & POWER.....717-569-3291
GOODALL RUBBER COMPANY.....610-534-2100
POWER DRIVES INC.....814-833-8181
R L MILLER INC.....412-833-6800
R L MILLER INC.....814-456-8900
SRG/BEVCO.....610-358-3100
VOTO MANUFACTURERS SALES CO....814-226-7101

FLOCS SHALL INCLUDE, BUT NOT LIMITED TO:

A. DUST CAP 5657-12
B. HOSE TO SUIT LENGTH
C. HOSE FITTING TO SUIT
D. ADAPTER TO SUIT
E. HOSE CLAMP #900729-6
F. BRACKET TO SUIT
G. COUPLING 5602-12-12S

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			FAST LUBEOIL CHANGE SYSTEM OVERVIEW AND PARTS LIST		
NO.	DATE	BY			
1	07-01-03	BLD			
2	10-20-06	CJW	DRAWN BY DLW	SCALE N/A	EQN-351A
3	06-19-13	JFM	DATE 08-22-97	CHK'D BY WHM	SHEET 2 OF 2

CENTRALIZED LUBRICATION SYSTEM
ON ROAD EQUIPMENT EQN-501

THERE SHALL BE AN AUTOMATIC CENTRALIZED LUBRICATION SYSTEM PROFESSIONALLY INSTALLED TO MAINTAIN ALL THE DAILY, WEEKLY, AND MONTHLY LUBRICATION POINTS. ONLY ELECTRICITY CONTROLLED, #2 CHASSIS GREASE SYSTEMS SHALL BE ACCEPTED. THE USE OF PNEUMATIC SYSTEMS IS UNACCEPTABLE. THE REQUIREMENTS FOR THE LUBRICATION SYSTEM COMPONENTS AND INSTALLATION PROCEDURES ARE OUTLINED BELOW. IT IS THE RESPONSIBILITY OF THE VENDOR TO ENSURE THAT THE AUTOMATIC LUBRICATION SYSTEM COMPLIES WITH ALL OF THESE REQUIREMENTS.

1. PERFORMANCE REQUIREMENTS

- THE SYSTEM PUMP SHALL BE CAPABLE OF DELIVERING NLGI #2 GREASE OVER A TEMPERATURE RANGE OF -10° F TO 120° F.
- THE PUMP SHALL HAVE AN INTEGRAL ADJUSTABLE TIMER TO CHANGE THE GREASE DELIVERY INTERVALS AS NEEDED.
- THE SYSTEM SHALL USE A FUSED ELECTRIC PUMP, EITHER 12V DC OR 24V DC DEPENDING ON APPLICATION. PNEUMATIC PUMPS ARE NOT ACCEPTABLE.
- THE PUMP SHALL BE EQUIPPED WITH A PRESSURE RELIEF VALVE DEVICE AT THE PUMP OUTLET TO PROTECT THE PUMP FROM DAMAGE DUE TO OVER PRESSURE.
- FOR EASE OF SERVICE, THE PUMP SHALL HAVE A PUMPING ELEMENT LOCATED ON THE SIDE THAT CAN BE REMOVED AND REPLACED OR REPAIRED AS NEEDED WITHOUT HAVING TO REMOVE OR DISASSEMBLE THE PUMP.
- THE PUMP SHALL USE A CLEAR OR TRANSLUCENT RESERVOIR TO ALLOW FOR VISUAL INSPECTION OF THE GREASE LEVEL. RESERVOIR SHALL HAVE A FULL LEVEL INDICATOR. BLADDER TYPE RESERVOIRS ARE NOT ACCEPTABLE.
- THE GREASE RESERVOIR SHALL BE A MINIMUM FOUR POUND CAPACITY.
- THE SYSTEM SHALL HAVE A CAB MOUNTED FAULT LIGHT THAT WILL NOTIFY THE OPERATOR OF A LUBE SYSTEM FAULT AND LOW GREASE LEVEL. IF AT ANY POINT THE SYSTEM WILL NOT TAKE GREASE, THE FAULT LIGHT SHALL ILLUMINATE.
- THE SYSTEM SHALL BE A POSITIVE DISPLACEMENT SERIES PROGRESSIVE TYPE, USING PRIMARY AND SECONDARY VALVES.
- ALL SECONDARY VALVES SHALL BE NON-SEGMENTED TO MINIMIZE THE POTENTIAL LEAK PATH AND/OR SOURCES OF CONTAMINATION.
- ALL VALVES SHALL BE MADE OF CORROSION RESISTANT COATED CARBON STEEL.
- THE POSITIVE DISPLACEMENT PROPORTIONING VALVES SHALL HAVE A TEE AND HIGH BACK PRESSURE GREASE FITTINGS AT EACH VALVE INLET FOR MANUAL FILLING, SYSTEM TESTING, AND TO FILL REPAIRED LINES.
- THE SYSTEM SHALL HAVE A MANUAL OVERRIDE FITTING TO ENABLE THE SYSTEM TO BE MANUALLY OPERATED IF THE PUMP IS INOPERABLE.
- EQUIPMENT SHALL HAVE A 2 YEAR MANUFACTURER'S WARRANTY.

2. INSTALLATION REQUIREMENTS - ON ROAD

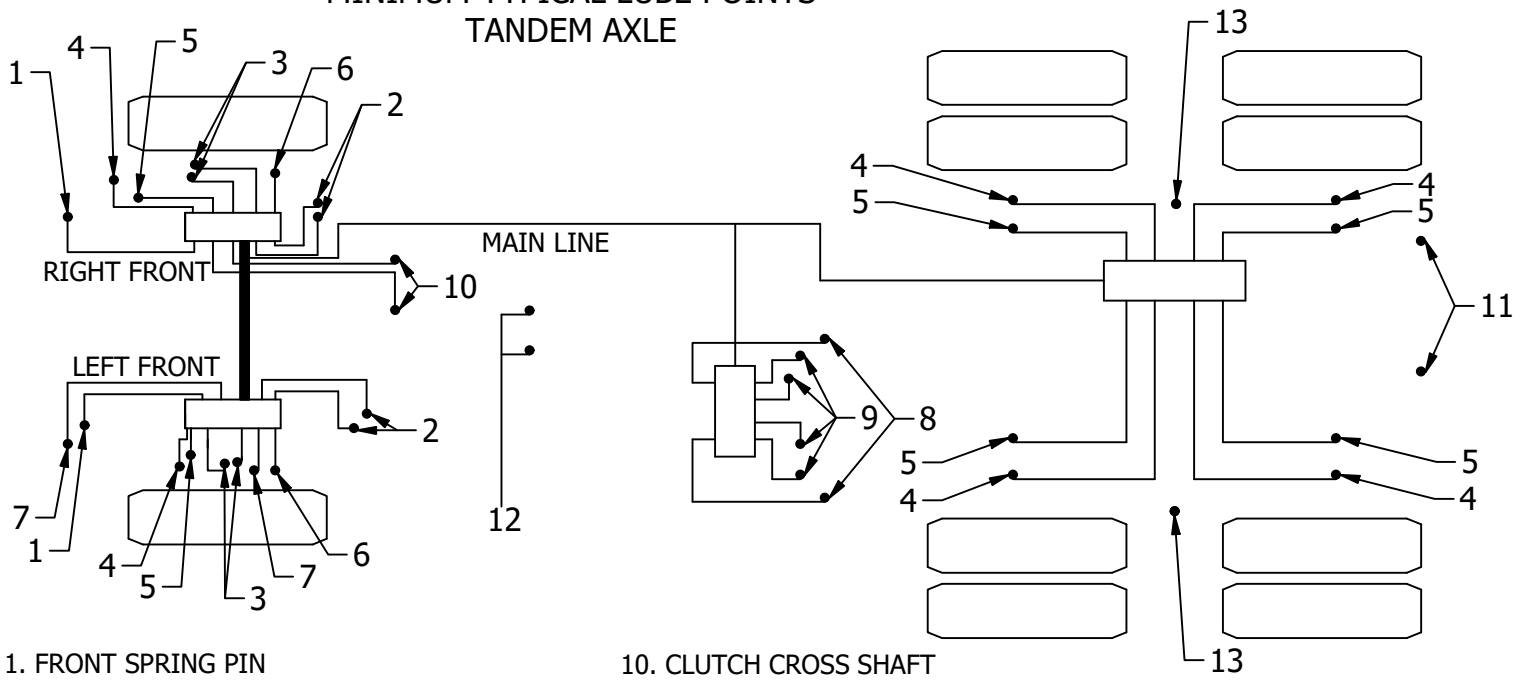
- THE SYSTEM SHALL USE ONLY HIGH PRESSURE HOSE (4,000 PSIG OPERATING, 10,000 PSIG BURST). ALL HOSES ARE TO BE OF US STANDARD SIZES (1/8" ID, 5/16" OD) AND READILY AVAILABLE FROM LOCAL SOURCES.
- ALL HOSES SHALL USE A TWO-PIECE REUSABLE HOSE END WITH QUICK DISCONNECTS AT THE VALVE OUTLET FOR EASE OF INSPECTION AND REPAIR.
- ALL LINES FROM THE SECONDARY VALVES TO THE CHASSIS OR BODY INLETS POINTS SHALL BE FLEXIBLE WITH AT LEAST A 500 PSI WORKING PRESSURE. ALL TUBING SHALL BE STANDARD SIZE (1/4" OD) AND READILY AVAILABLE FROM LOCAL SOURCES.
- ALL LINE RUNS WILL BE SECURED TO THE CHASSIS OR AIR LINES VIA TIE WRAPS. PROTECTIVE WRAP SHALL BE USED FOR ALL LINES RUN OVER ANY EDGE OF THE CHASSIS AND ESPECIALLY AY THE TERMINATION POINTS FOR FRONT SUSPENSION INCLUDING UPPER AND LOWER KING PINS, TIE ROD ENDS, AND ANY EXPOSED LINES THAT ARE NOT FIXED. THE USE OF STEEL TUBING IS PROHIBITED.
- THE PUMP SHALL BE INSTALLED IN A SAFE LOCATION ON THE TRUCK CHASSIS THAT IS PROTECTED AND EASY TO MONITOR THE GREASE LEVEL AND REFILL. FOR EXACT MOUNTING LOCATION, CONTACT PENNDOT EQUIPMENT DIVISION, SPECIFICATION UNIT - 717-787-2123.
- GROUND LEVEL FILLING SHALL BE PROVIDED FOR ALL LUBE SYSTEMS. REMOTE LINES ARE ACCEPTABLE IF RESERVOIR IS VIEWABLE FROM REMOTE FILL LOCATION.
- INSTALLATIONS SHALL BE WARRANTED FOR 2 YEARS OF OPERATION.

DRAWN LWB	12/28/2022	PA DEPARTMENT OF TRANSPORTATION			
CHECKED		TITLE			
QA		CENTRALIZED LUBE SYSTEM			
MFG					
APPROVED		SIZE A		DWG NO EQN-501	REV
		SCALE		SHEET 1 OF 2	

MINIMUM TYPICAL LUBE POINTS
TANDEM AXLE

MINIMUM TYPICAL VEHICLE LUBE POINTS.

*ALL LUBRICATION POINTS SHALL BE INCORPORATED INTO THE ON-BOARD GREASE SYSTEM. INCLUDING ALL CHASSIS AND BODY POINTS, EXCEPT LOCATIONS RESTRICTED BY ROTATING DESIGN; IE: DRIVESHAFT & PTO



1. FRONT SPRING PIN
2. FRONT SPRING SHACKLES (UPPER AND LOWER)
3. KING PIN (UPPER AND LOWER)
4. BRAKE CAM SHAFT
5. BRAKE SLACK ADJUSTER
6. TIE ROD
7. DRAG LINK
8. FIFTH WHEEL PIVOT (IF APPLICABLE)
9. FIFTH WHEEL PLATE (IF APPLICABLE)
10. CLUTCH CROSS SHAFT
11. REAR DUMP BED HINGE (1 EACH SIDE)
12. TOP AND BOTTOM HOIST CYL.
13. DEPENDING ON APPLICATION, ALL REAR SUSPENSION, TRUNIONS, LEAF SPRINGS

DRAWN LWB	12/28/2022	PA DEPARTMENT OF TRANSPORTATION
CHECKED		TITLE: CENTRALIZED LUBE SYSTEM
QA		
MFG		
APPROVED		
		SIZE A / DWG NO EQN-501 / REV
		SCALE / SHEET 2 OF 2

ITEM NUMBER	DESCRIPTION	TRUCK REAR LB.	TRUCK REAR KG.	TRUCK FRONT LB.	TRUCK FRONT KG.	TOTAL LB. OR KG.
1.	CHASSIS WEIGHT					
2.	DIESEL FUEL					
3.	DRIVER					200 lb.
4.	BODY					
5.	BODY HOIST					
6.	SPREADER					
7.	PLOW FRAME					
8.	SNOW PLOW					*
9.	FRONT PTO, ADAPTER & PUMP					
10.	PAYLOAD					
11.	HYDRAULIC OIL & TANK					
12.	PATROL STYLE WING PLOW					
13.	FRONT WING POST (PATROL)					
14.	REAR WING POST (PATROL)					
15.	PREWET TANK ___ GALLON					

NOTES:

(1) THE INFO. SHALL BE SUBMITTED IN ITS ENTIRETY & SUBMITTED WITH BID.

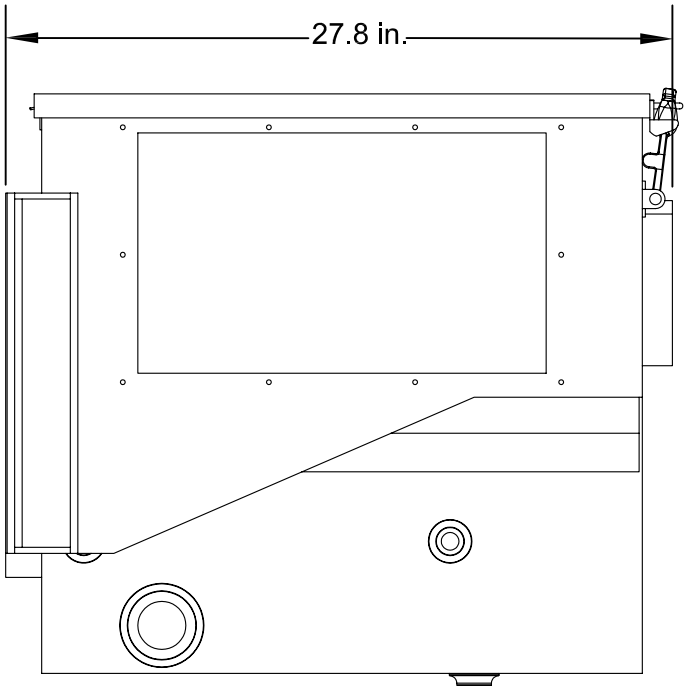
(2) ALL THE ACCESSORIES REQUIRED TO BE "FULLY OPERATIONAL" MUST BE INCLUDED IN THE CALCULATION OF WEIGHTS, AS APPLICABLE.

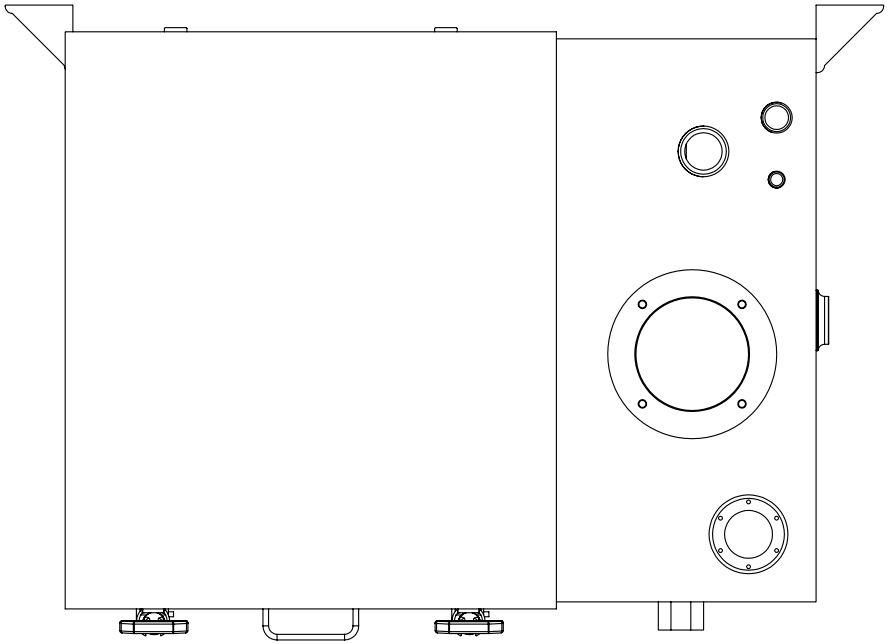
(3) FOR INFORMATION:
MATERIAL WEIGHTS:
SALT 2,000 lb. PER CUBIC YARD
AGGREGATE 2,800 lb. PER CUBIC YARD

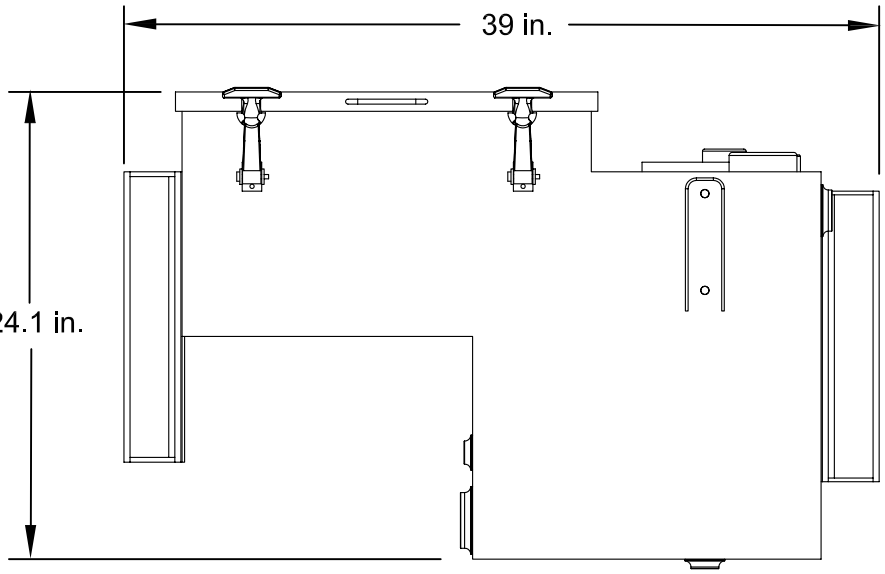
(*) TYPE II = 2,900 lb. TYPE IV = 3,500 lb.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			DUMP TRUCK WEIGHT DISTRIBUTION MINIMUM DATA REQUIRED		
NO.	DATE	BY			
1	05-16-07	KNH			
2	07-20-09	TOD	DRAWN BY DLW	SCALE N/A	EQN-507B
3	07-24-18	KBD	DATE 07-14-97	CHK'D BY WHM	SHEET 1 OF 1



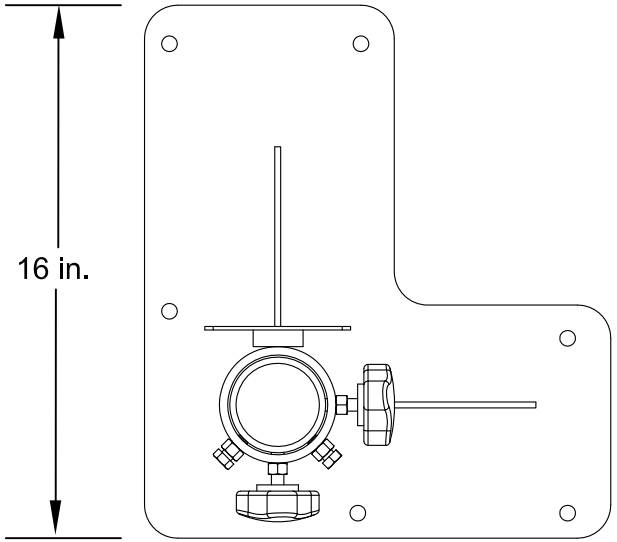


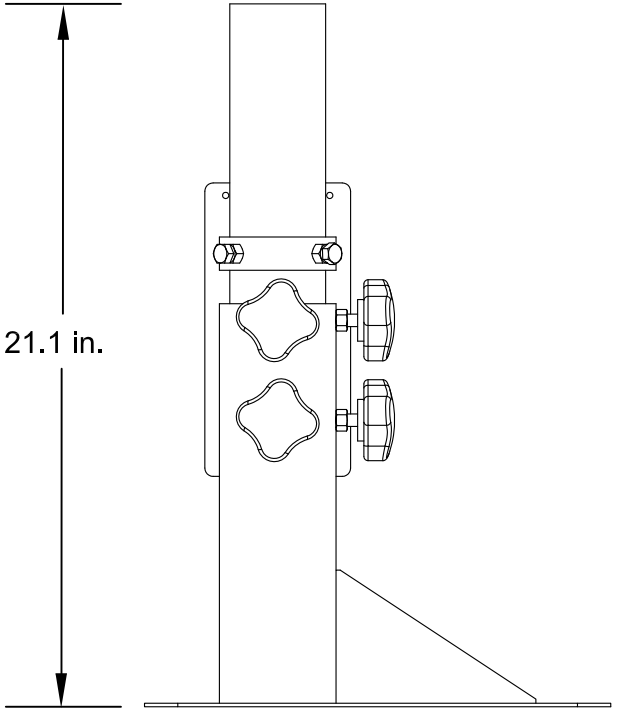


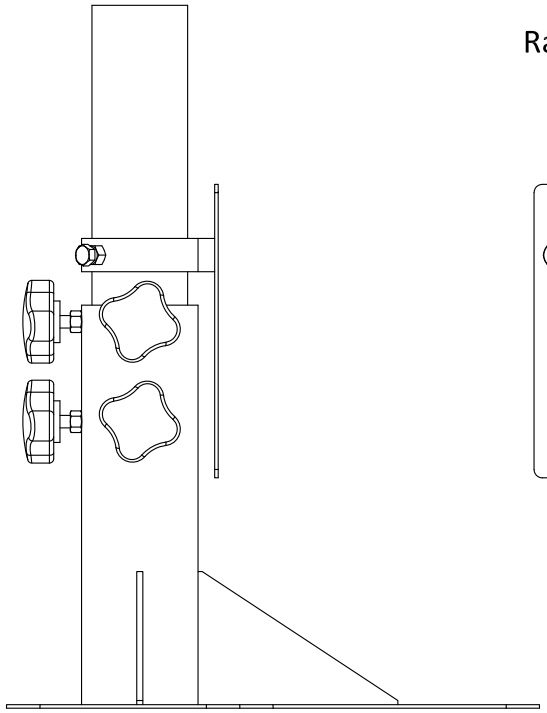
PA DEPARTMENT OF TRANSPORTATION

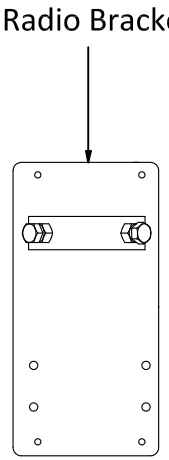
REVISIONS			DUMP TRUCK VALVE ENCLOSURE / TANK COMBO		
NO.	DATE	BY			
1					
2			DRAWN BY TOD	SCALE N/A	EQN-508
3			DATE 11-03-09	CHK'D BY DMA	SHEET 1 OF 1

NOTE: SPREADER CONTROL BASE SHALL BE PROPERLY BRACED TO ELIMINATE FLOOR FLEX. ADDITIONAL SUPPORT BRACKET SHALL BE VENDORS RESPONSIBILITY.

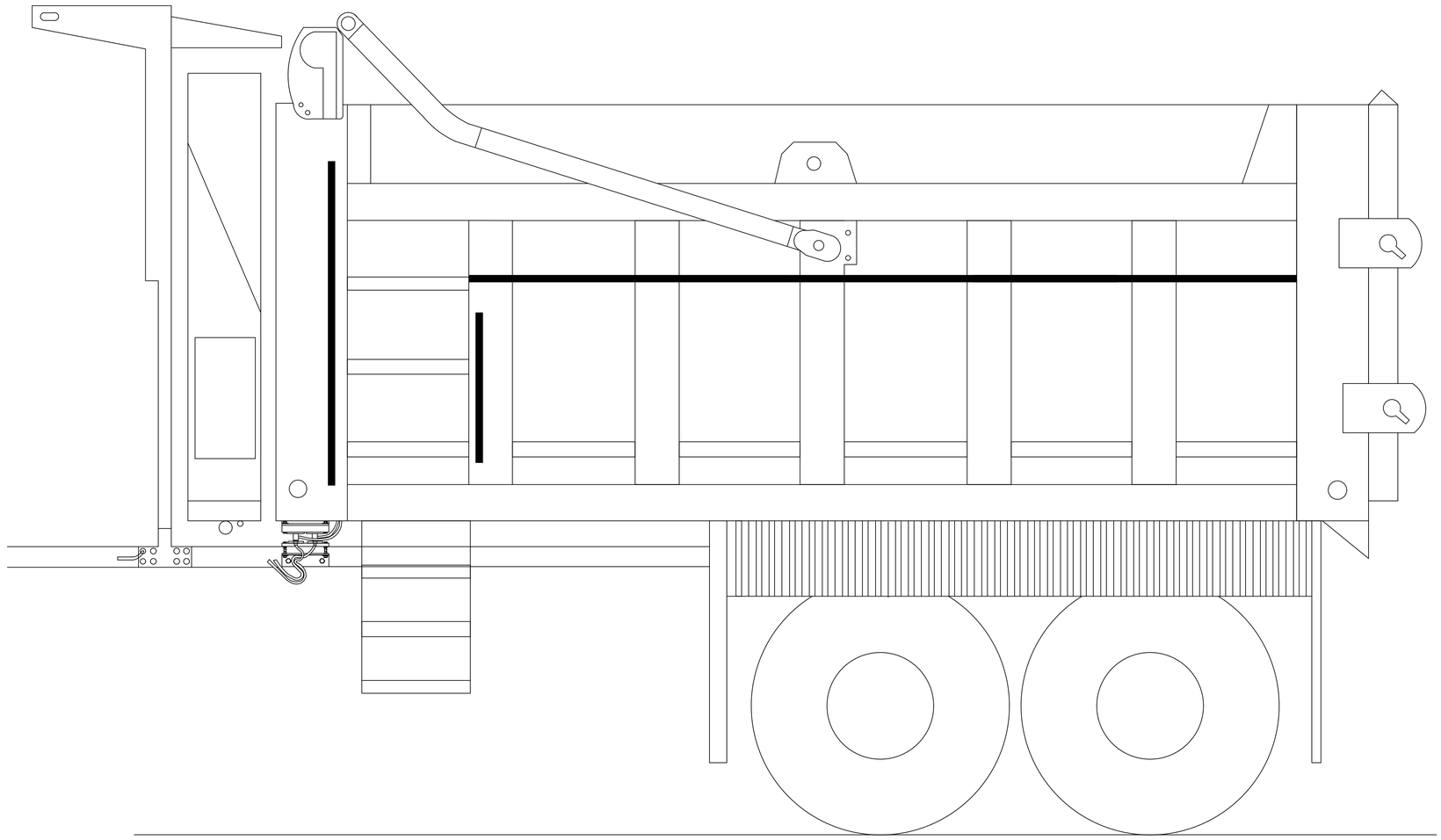


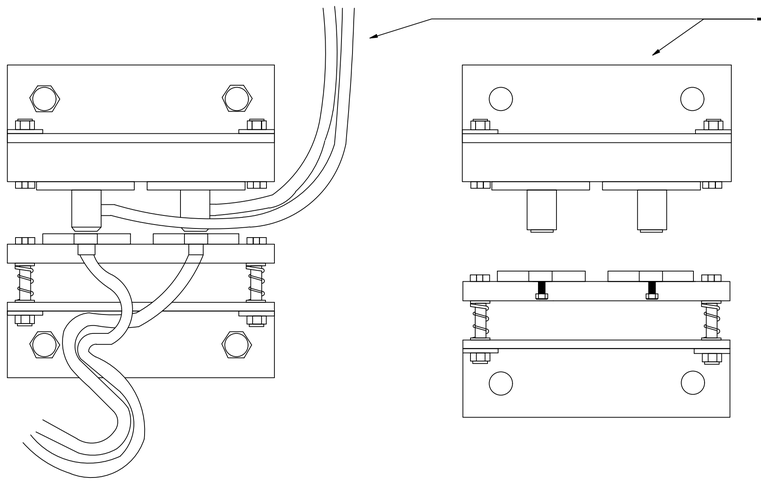






PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			DUMP TRUCK SPREADER CONTROL BASE WITH RADIO BRACKET		
NO.	DATE	BY			
1					
2			DRAWN BY TOD	SCALE N/A	EQN-509
3			DATE 11-03-09	CHK'D BY DMA	SHEET 1 OF 1





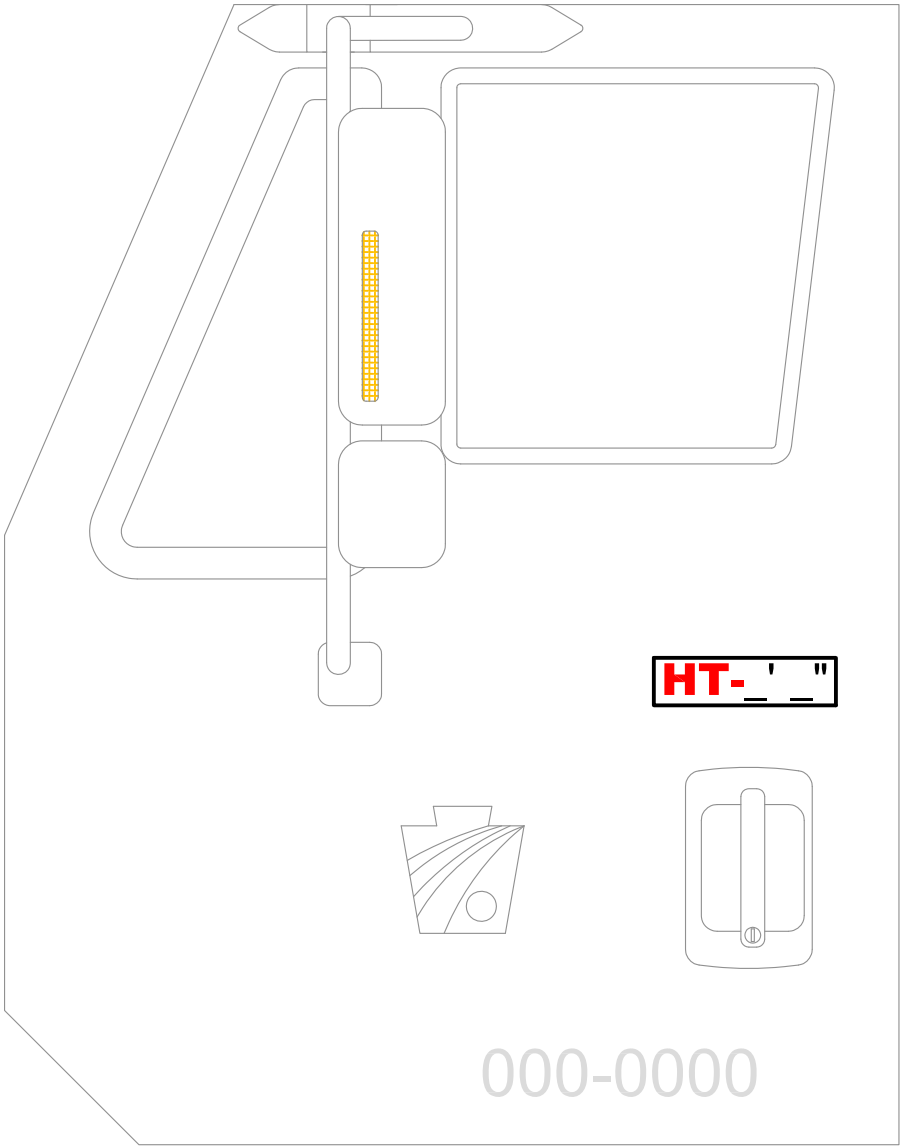
-SCALED BY 5

PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			WIRELESS CONNECT AND TARP		
NO.	DATE	BY			
1	07-20-23	DVC			
2			DRAWN BY JFM	SCALE N/A	EQN 550
3			DATE 05-28-13	CHECKED BY INT	SHEET 1 OF 1

THERE SHALL BE A PERMANENT DECAL AFFIXED BY EACH ENTRY POINT. THE SAME PERMANENT DECAL SHALL BE AFFIXED BY EACH LADDER, PLATFORM OR STEP DESIGNED TO BE CLIMBED OR STEPPED ON. MEASUREMENTS OF DECAL ARE REFERENCED ABOVE.

PA DEPARTMENT OF TRANSPORTATION

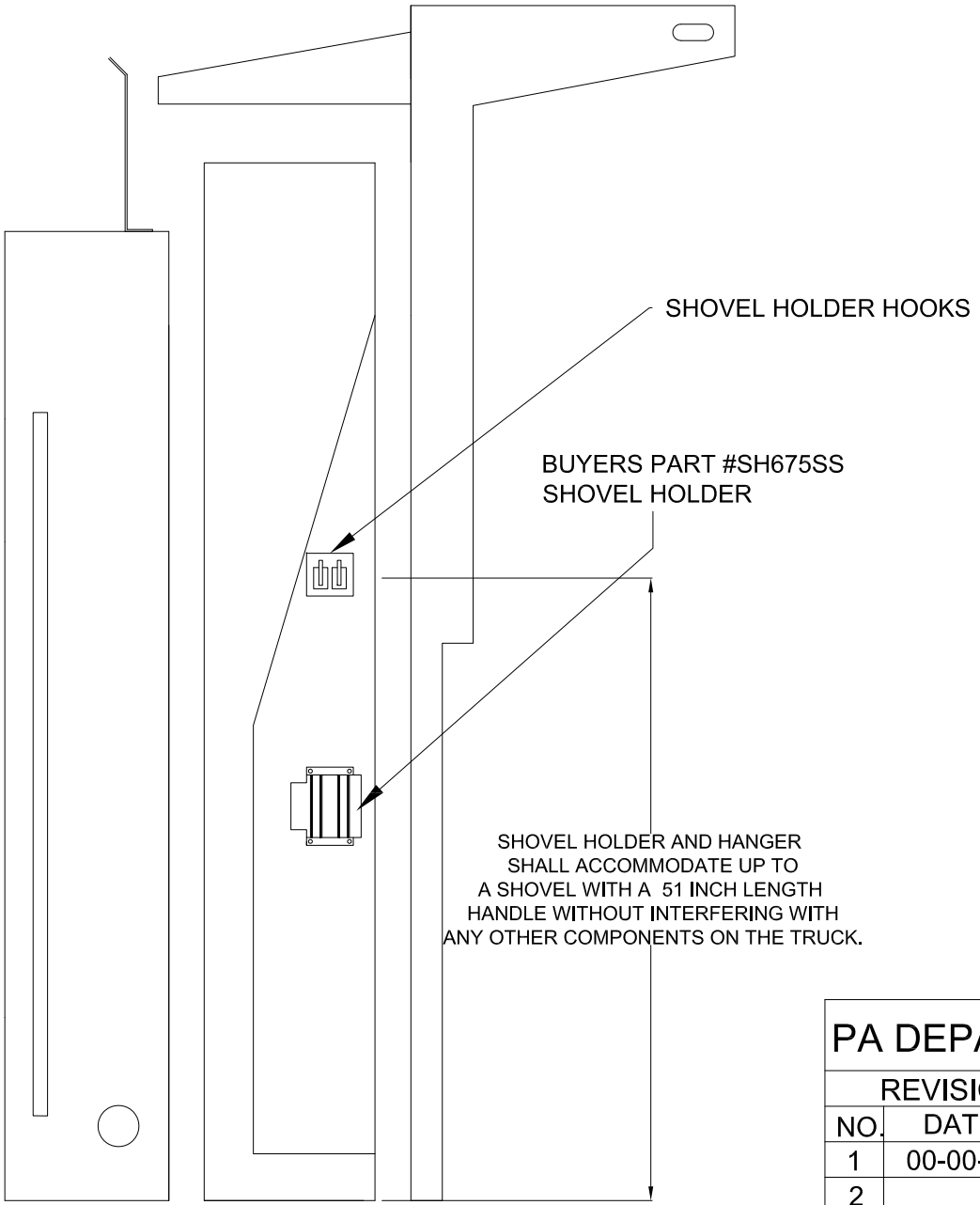
REVISIONS			THREE POINTS OF CONTACT STICKER		
NO.	DATE	BY			
1	12-20-16	JJB			
2	07-06-17	HMR	DRAWN BY GAW	SCALE N/A	EQN-552-1
3	07-24-18	KBD	DATE 03-23-15	CHK'D BY TOD	SHEET 1 OF 1



THERE SHALL BE A PERMANENT DECAL, 2 INCH HIGH RED LETTERS ON WHITE BACKGROUND AFFIXED BY THE DRIVER SIDE DOOR HANDLE OR OPERATOR STATION STATING THE OVERALL MAXIMUM TRAVEL HEIGHT OF THE COMPLETED AND UNLOADED UNIT.

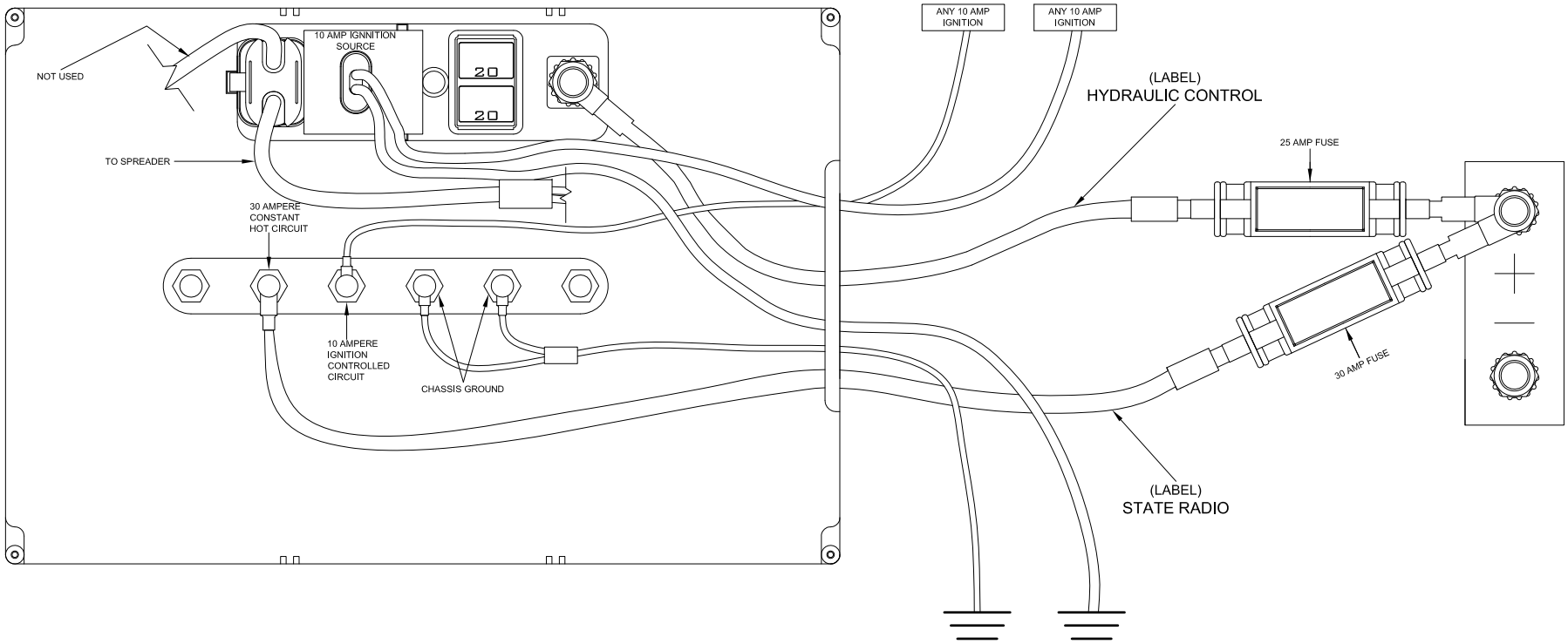
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			MAX TRAVEL HEIGHT STICKER		
NO.	DATE	BY			
1	07-06-17	HMR			
2	07-25-18	KBD	DRAWN BY JFM	SCALE 2	EQN-552
3			DATE 05-29-13	CHK'D BY INT	SHEET 1 OF 1



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			SHOVEL HOLDER		
NO.	DATE	BY			
1	00-00-00	INT			
2			DRAWN BY JFM	SCALE 2.2	EQN-557
3			DATE 05-20-13	CHK'D BY INT	SHEET 1 OF 1



NOTE:

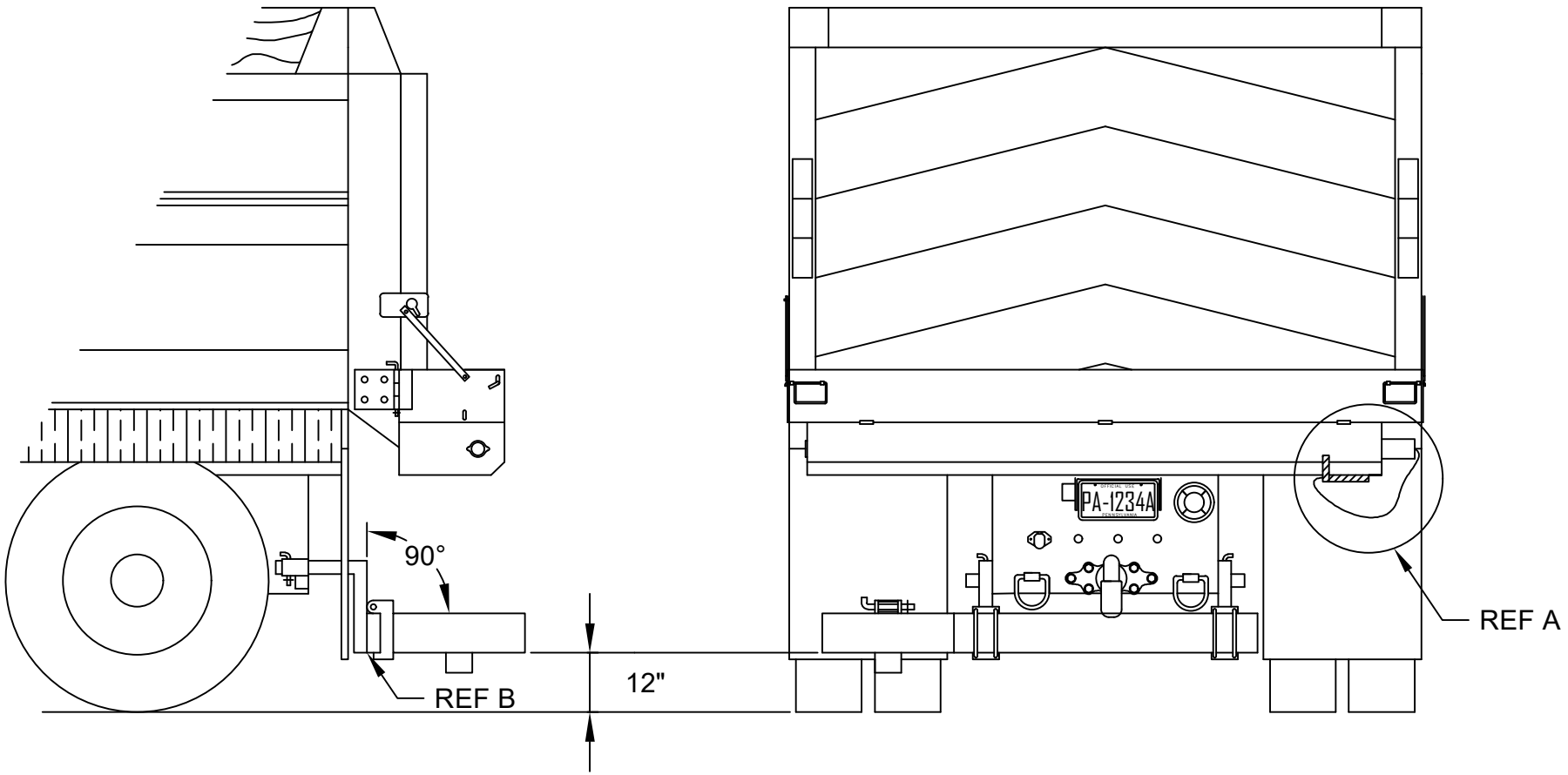
EACH CIRCUIT SHALL BE SUPPLIED INDIVIDUALLY, LABELED, PROPERLY SIZED, PROTECTED FROM WEATHER, AND SEALED TO BE WATERTIGHT.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
1	00-00-00	INT
2		
3		

POWER DISTRIBUTION BOX FOR STATE RADIO AND SPREADER CONTROLS

DRAWN BY	SCALE	
JFM	N/A	EQN-562
DATE	CHK'D BY	SHEET 1 OF 1
01-08-14	INT	

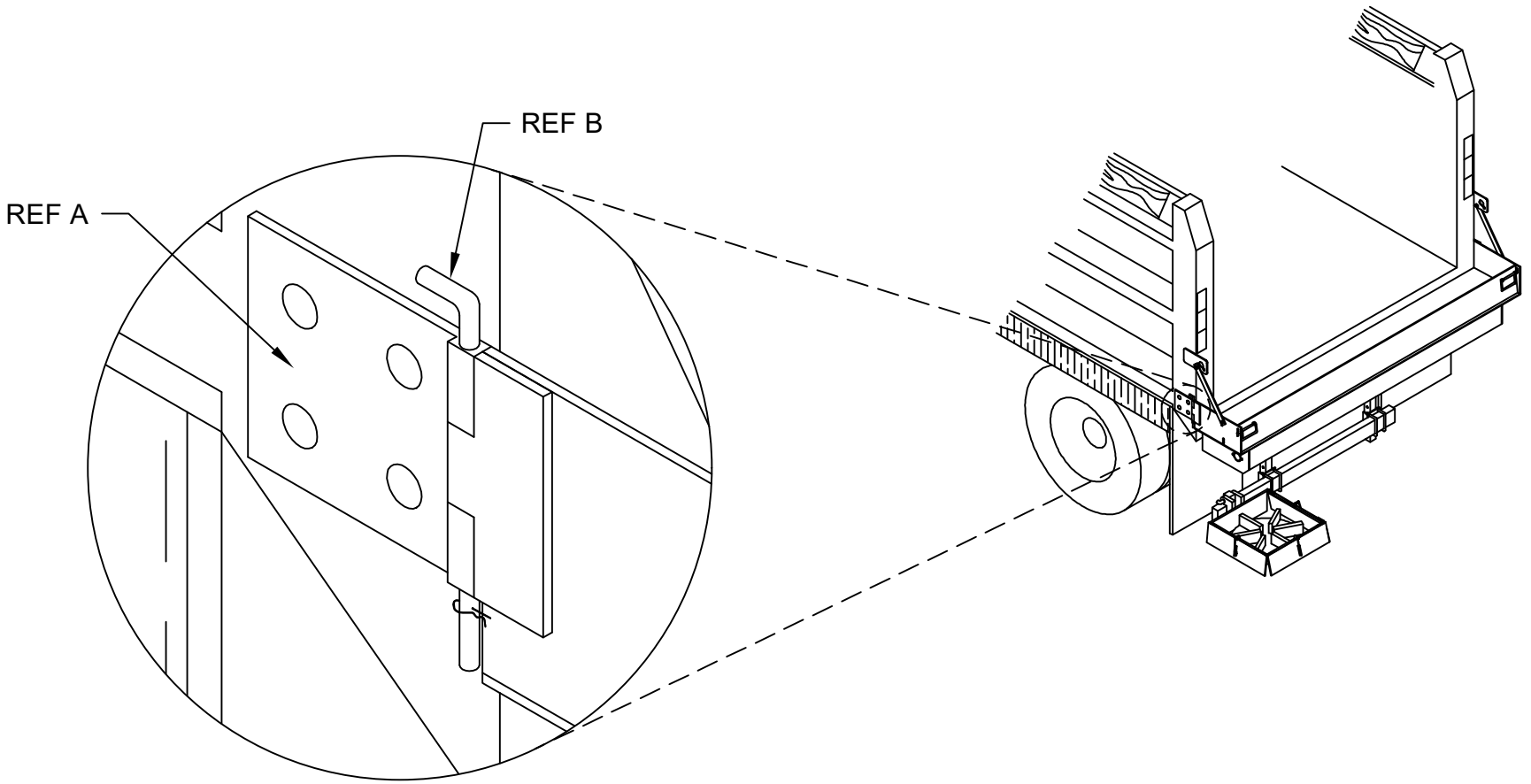


MEASURED FROM GROUND TO BOTTOM OF SPINNER PLATE.
(WHEN SPINNER IS MOUNTED AT LOWEST SETTING.
REFERENCE SHEET 6)

NOTES:

A. STANDARD OEM HYDRAULIC LOCK OUT MECHANISM.
B. SPINNER MUST BE PERPENDICULAR TO BODY & AT LOWEST SETTING MUST BE LEVEL WITH VERTICAL SQUARE TUBE

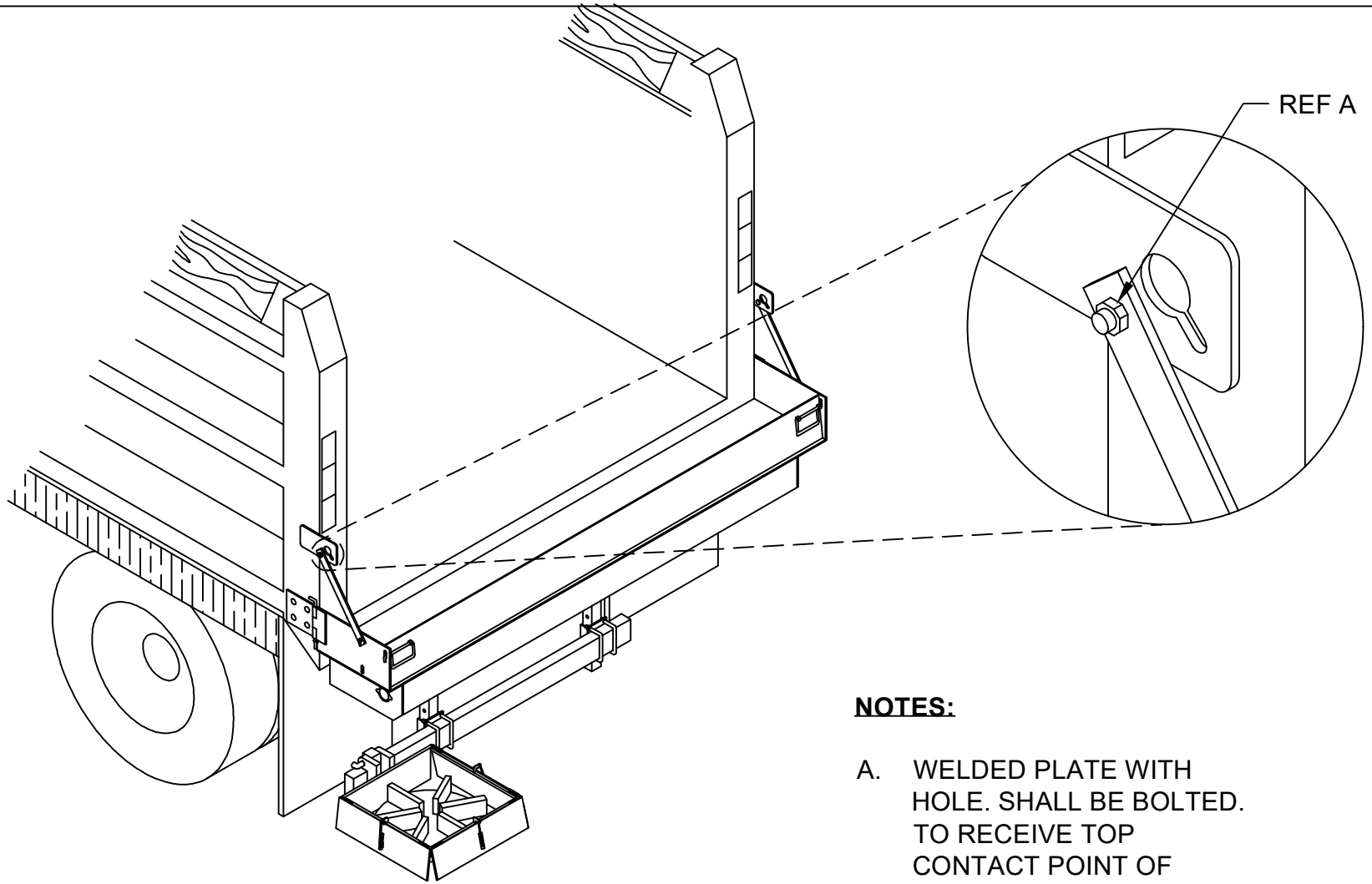
PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 1 OF 14



NOTES:

A. MOUNTING HARDWARE. TO RECEIVE BOTTOM CONTACT POINT OF SPREADER. REFERENCE EQN-3A.
B. PIN WITH R CLIP. TO ALLOW QUICK DISCONNECT FROM TRUCK.

PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 2 OF 14

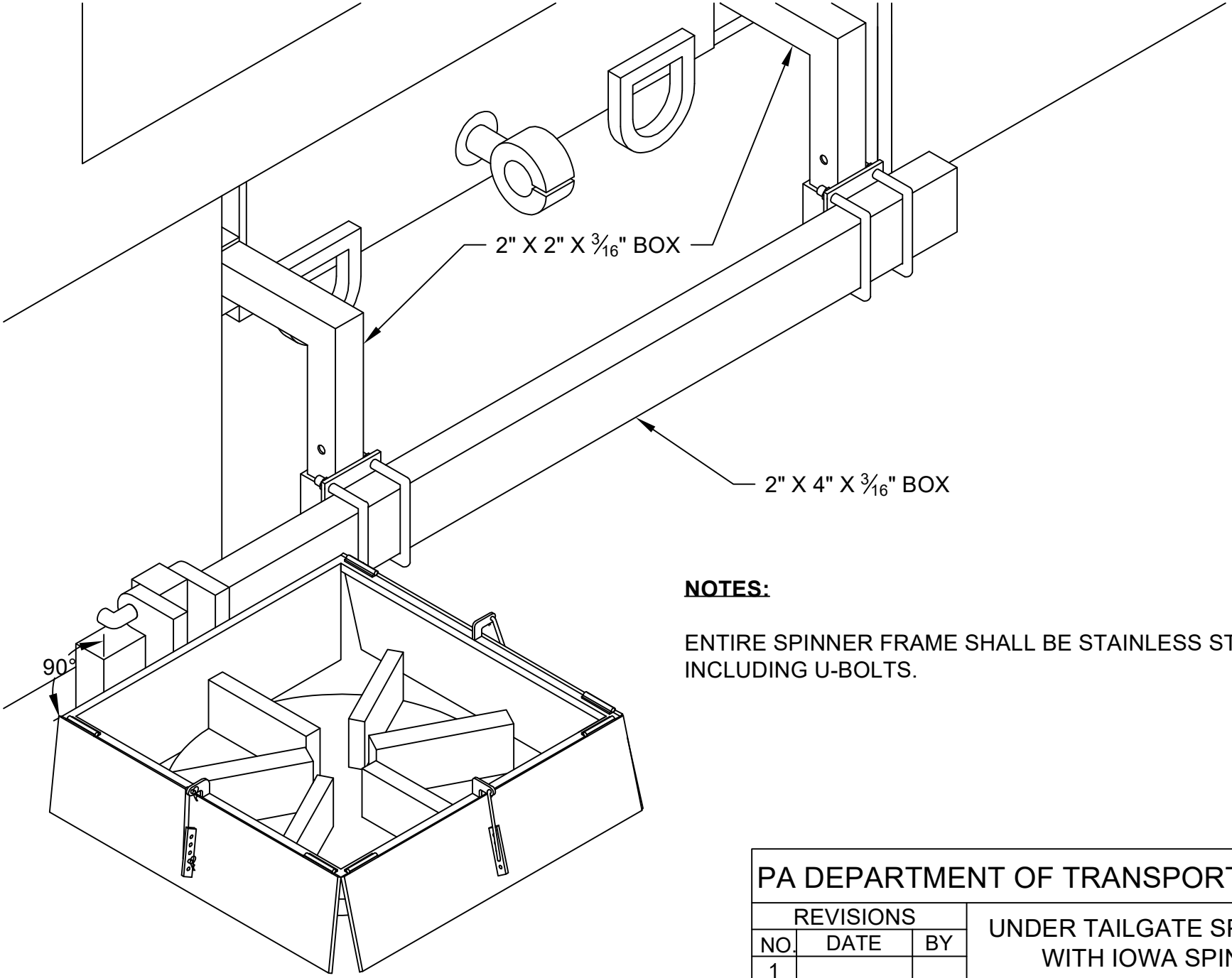


NOTES:

A. WELDED PLATE WITH HOLE. SHALL BE BOLTED. TO RECEIVE TOP CONTACT POINT OF SPREADER. REFERENCE EQN-3A.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 3 OF 14

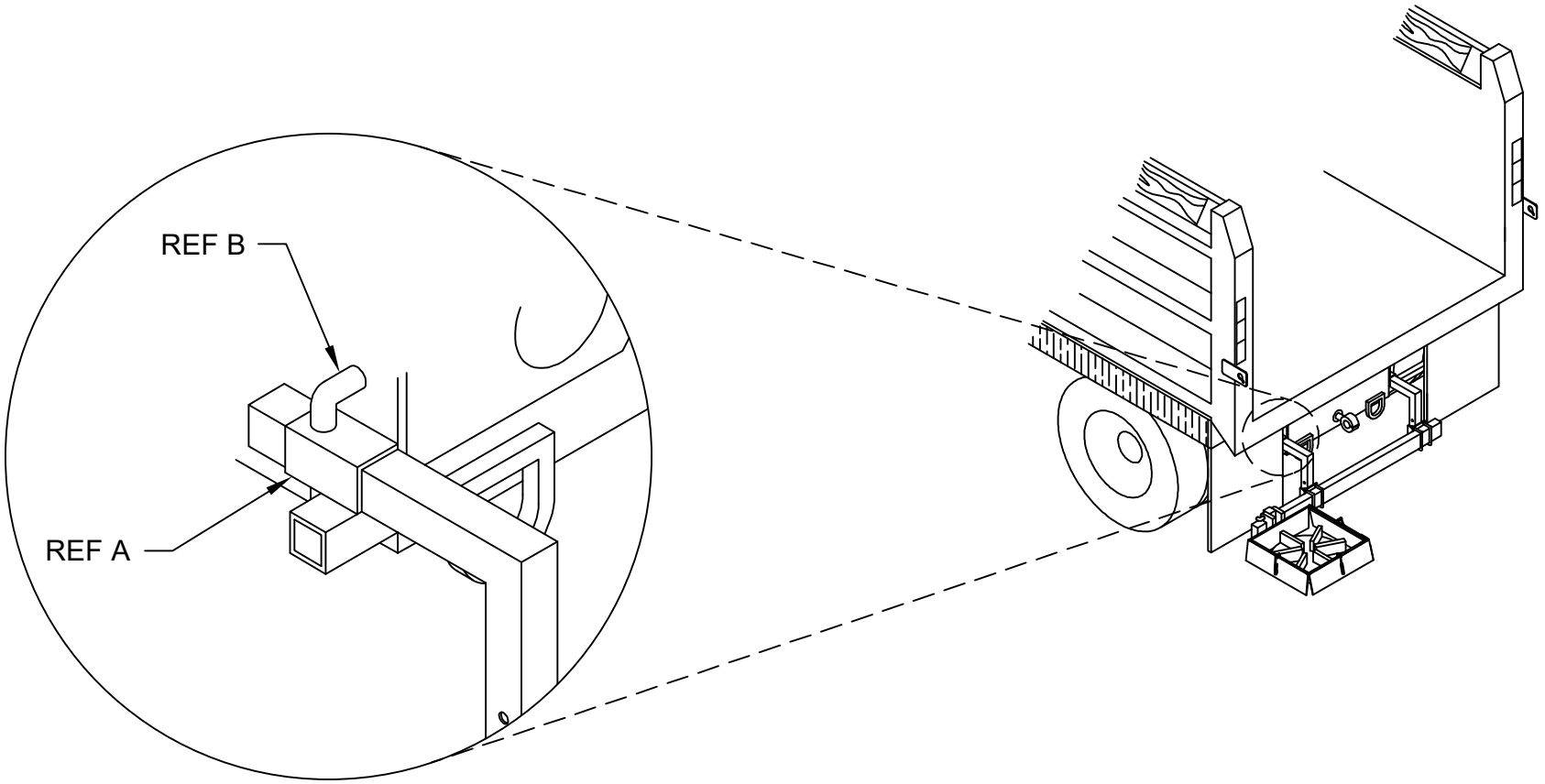


NOTES:

ENTIRE SPINNER FRAME SHALL BE STAINLESS STEEL INCLUDING U-BOLTS.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 4 OF 14

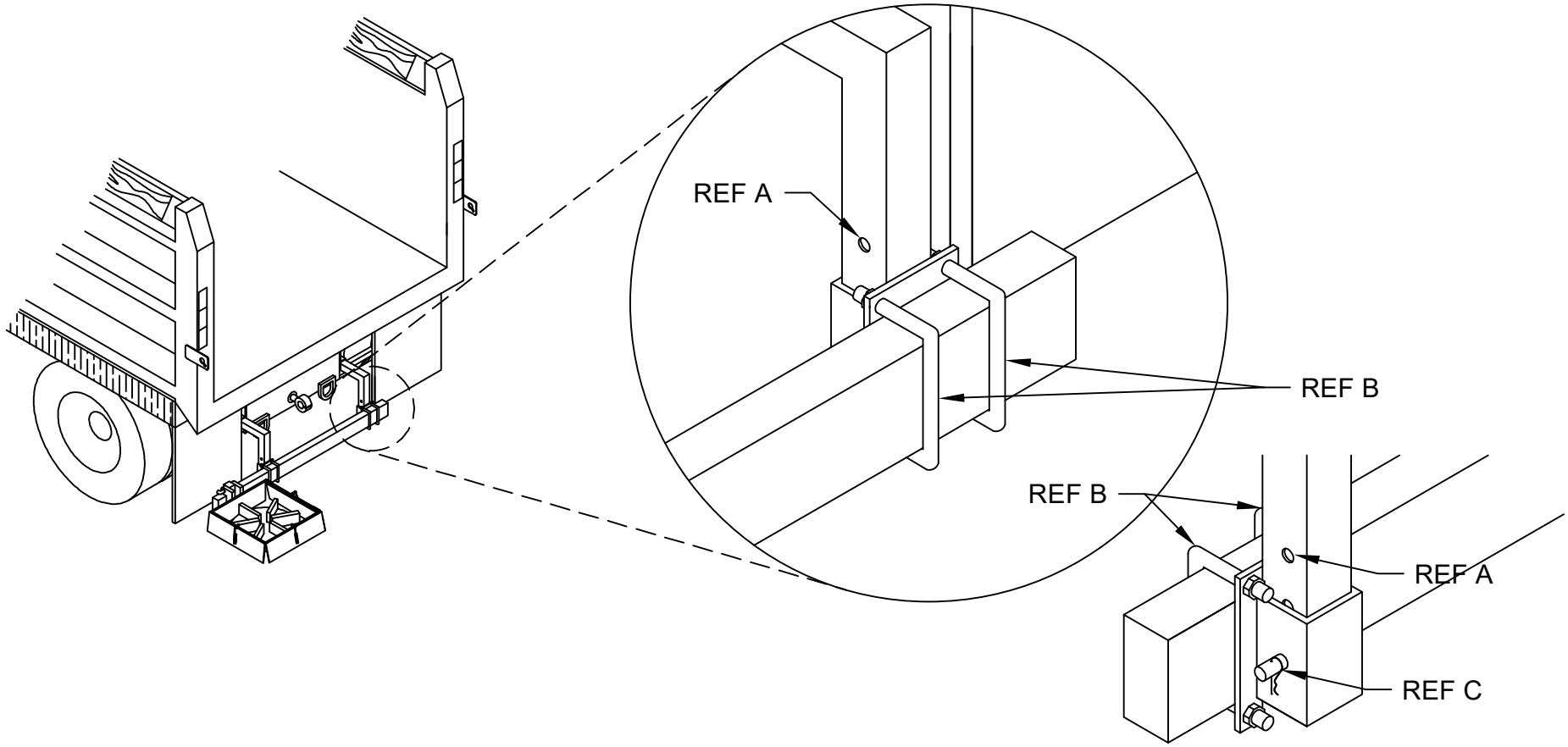


NOTES:

A. WELDED 2 INCH RECEIVER. SHALL BE MOUNTED TO NOT INTERFERE WITH ICC BUMPER.
B. PIN WITH R CLIP. TO SECURE SPINNER MOUNT TO CHASSIS.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 5 OF14

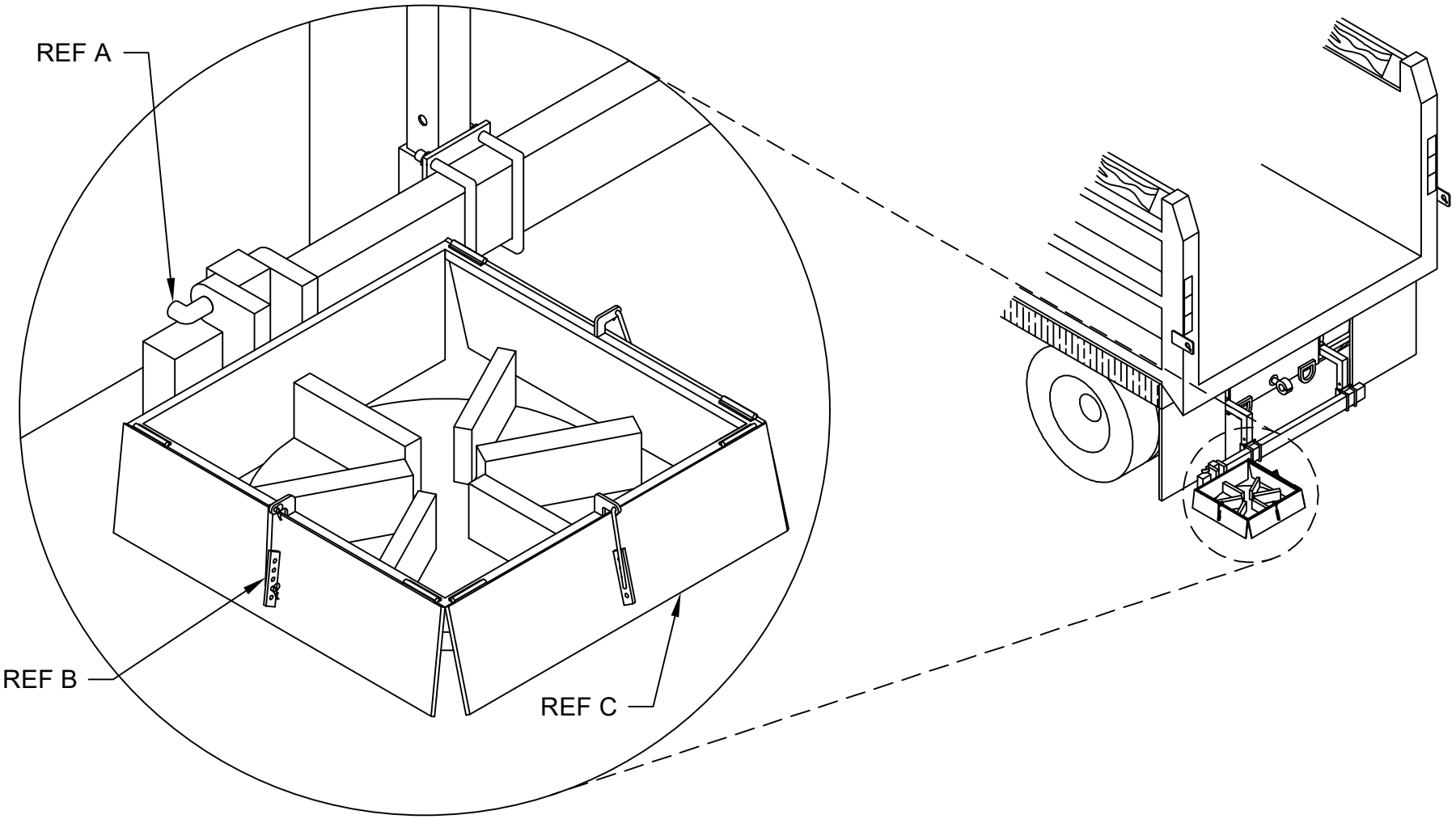


NOTES:

A. VERTICAL ADJUSTMENT HOLES. 2 INCH SPACING ON CENTER.
B. U BOLTS. TO ALLOW HORIZONTAL ADJUSTMENT OF SPINNER.
C. PIN WITH R CLIP. TO ALLOW VERTICAL ADJUSTMENT OF SPINNER.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 6 OF 14

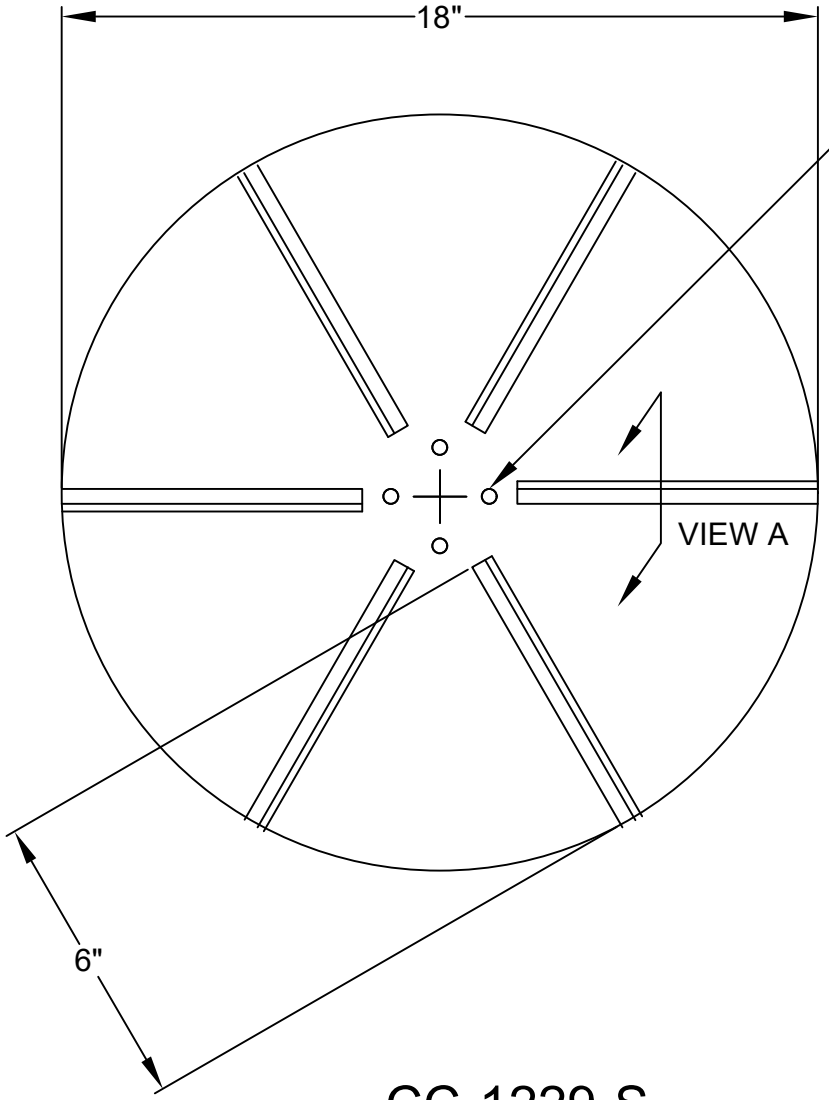


NOTES:

A. PINNED MECHANISM WITH R CLIP. TO ALLOW VERTICAL MOVEMENT OF SPINNER IF CONTACTED BY THE GROUND.
B. FLAP BRACKET. TO ALLOW HEIGHT ADJUSTMENT OF SPINNER FLAPS.
C. IOWA STYLE SPINNER FLAPS. TO ALLOW DIRECTIONAL SPREADING OF MATERIAL.

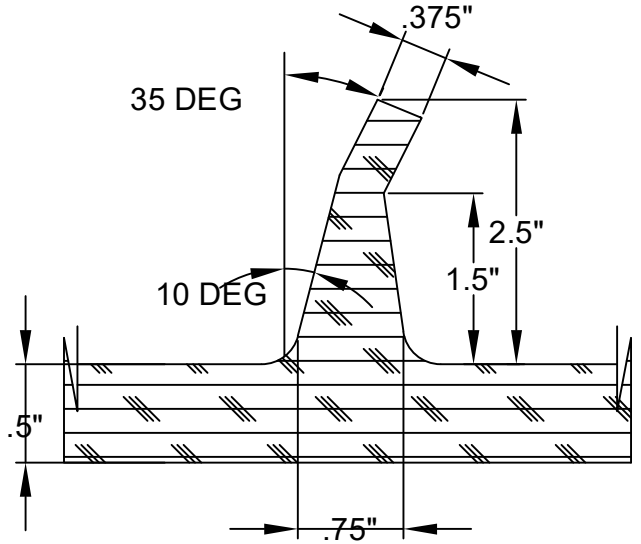
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 7 OF 14



.375 Dia. HOLE REINFORCED
WITH STEEL WASHERS (4)
PLACES ON 4" B.C.

NOTES:
1. MATERIAL 80 DURO. URETHANE
2. WEIGHT 8.1 lbs. PER PIECE
3. ROTATION: COUNTER CLOCKWISE
4. ALL DIMENSIONS IN INCHES.

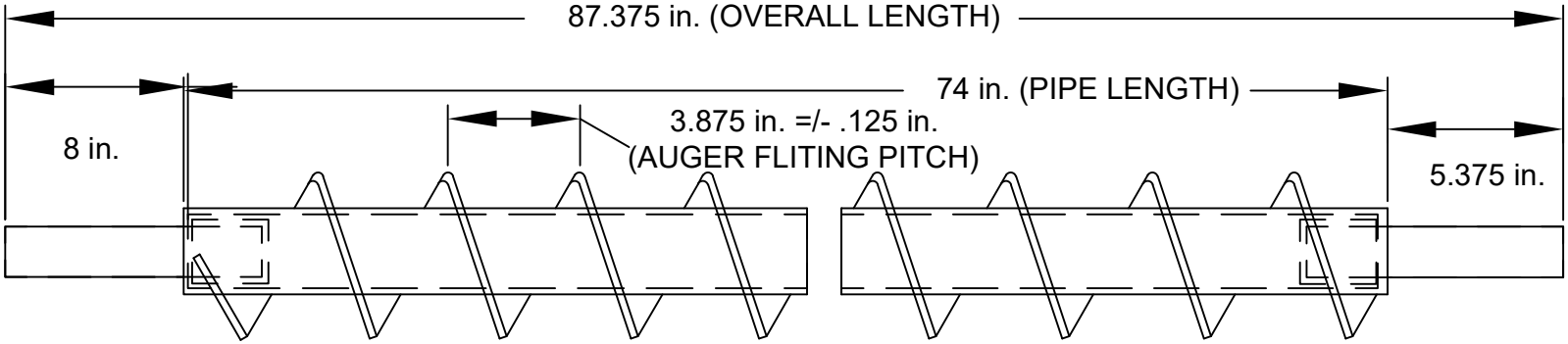


CC-1229-S

C.U.E. Inc
11 Leonberg Township
16066 U.S.A.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		SPINNER / SPREADER TAILGATE URETHANE		
DATE	BY			
06-03-02	DWG			
05-23-07	CJW	DRAWN BY DLW	SCALE	EQN-568
07-25-18	KBD	DATE 02-03-98	CHK'D BY	SHEET 8 OF 14



HELICOID FLIGHT (RIGHT HAND)
SINGLE CONTINUIOS SCREW TYPE
(BAR SIZE, BEFORE ROLLING, TO BE SUCH THAT FITING O.D. IS AS SHOWN IN END VIEW AT RIGHT, AND OUTER EDGE THICKNESS IS AS SHOWN IN FLITING THICKNESS SPECIFICATION)

VIEW SHOWIING COMPLETE AUGER WELDMENT

2 in. (2.375 O.D.)
SCHEDULE 80 (.20 in. WALL)
CARBON STEEL PIPE
(PIPE SIZE E.R.W. TUBING ACCEPTABLE

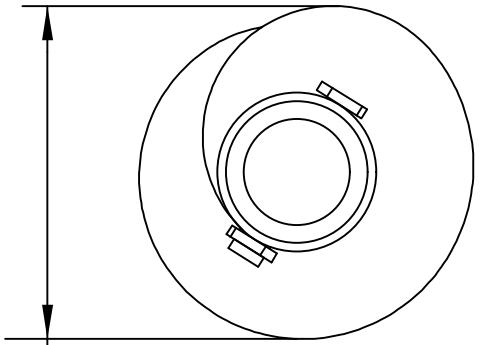
SPECIFICATION NOTES

1. PIPE PORTIONED WORTH (WITH WELDED FITTING) TO BE STRAIGHT TO GIVE MAXIMUM OF .20 IN. TOTAL RUNOUT
2. BOTH STUB SHAFT CENTERLINES TO LIE ON PIPE CENTERLINE TO GIVE MAXIMUS OF .20 IN. TOTAL RUNOUT
3. ALL SURFACES OF SLEEVE, SHAFT, AND OTHER PIPE WHICH MAKE CONTACT WITH EACH OTHER TO BE COATED WITH ANTI-SEIZE COMPOUND
4. SHAFT IS REMOVED, AND NOT USED. WHEN AUGER IS USED IN A DIRECT DRIVE APPLICATION

DO NOT SCALE DRAWING
TOLERANCES
(UNLESS OTHERWISE NOTED)

FLAME CUTTING, NIBBLING & WELDING	+/- .060
SHEARING & FORMING	+/- .030
PUNCHING	+/- .020
HOLE DIAMETERS	+ .015/- .005
ANGLES	+/- 2 DEG
DECIMAL MACHINING	0.0- +/- .040
	0.00- +/- .020
	0.000- +/- .005

IMPLIED TOLERANCES DO NOT APPLY TO REFERENCE DIMENSIONS



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THOUGH)		
NO.	DATE	BY			
1	05-28-02	DWG			
2	9-20-07	BAG	DRAWN BY DLW	SCALE N/A	EQN-568
3	7-25-18	KBD	DATE 01-09-98	CHK'D BY WHM	SHEET 9 OF 14

DRIVE BEARINGS: THE FOLLOWING SHALL INDICATE MINIMUM REQUIREMENTS INCLUDING ALL GENUINE PARTS, ACCESSORIES, EQUIPMENT, AND SAFETY FEATURES CONSIDERED STANDARD, WHETHER MENTIONED HEREIN OR NOT. THE VEHICLE SHALL COMPLY WITH ALL CURRENT APPLICABLE FEDERAL SAFETY STANDARDS AND OSHA REQUIREMENTS.

THE PUPROSE OF THESE SPECIFICAATIONS IS TO DESCRIBE A BEARING CAPABLE OF BEING USED ON OUR TAILGATE SPREADERS.

UNLESS OTHERWISE SPECIFIED, EACH UNIT SHALL INCLUDE ALL SPECIFIED PARTS, MADE AVAILABLE FOR THE INDICATED MODEL BY THE EQUIPMENT MANUFACTURER. SPECIFIEDITEMS NOT AVAILABLE THROUGH THE EQUIPMENT MANUFACTURER SHALL CONFORM TO THE BEST QUALITY STANDARDS KNOWN TO THAT PARTICULAR INDUSTRY.

EACH UNIT SHALL BE CLEAN, LUBRICATED, AND SERVICED READY FOR IMMEDIATE OPERATION.

PERFORMANCE: THE PROPOSED UNIT SHALL BE IDENTICAL WITH THE STANDARD OR IMPROVED MODEL AND A CURRENT PRODUCTION UNIT IN USE BY THE INDUSTRY FOR THE PAST TWELVE MONTHS PRECEDING THIS BID OPENING.
IT SHALL BE THE RESPONSIBILITY OF THE BIDDER TO ASSURE THAT THE PROPOSED EQUIPMENT CONFORMS TO THE SPECIFICATIONS AND PERFORMS SATISFACTORILY ACCORDING TO THESE SPECIFICATIONS.

GRADE: REFERENCE:AMERICAN FRICTION BEARING MANUFACTURERS ASSOCIATION #1, PRECISION

TYPE: SELF-ALIGNING, ANTI-FRICTION, THRUST, RE-LUBE TYPE.

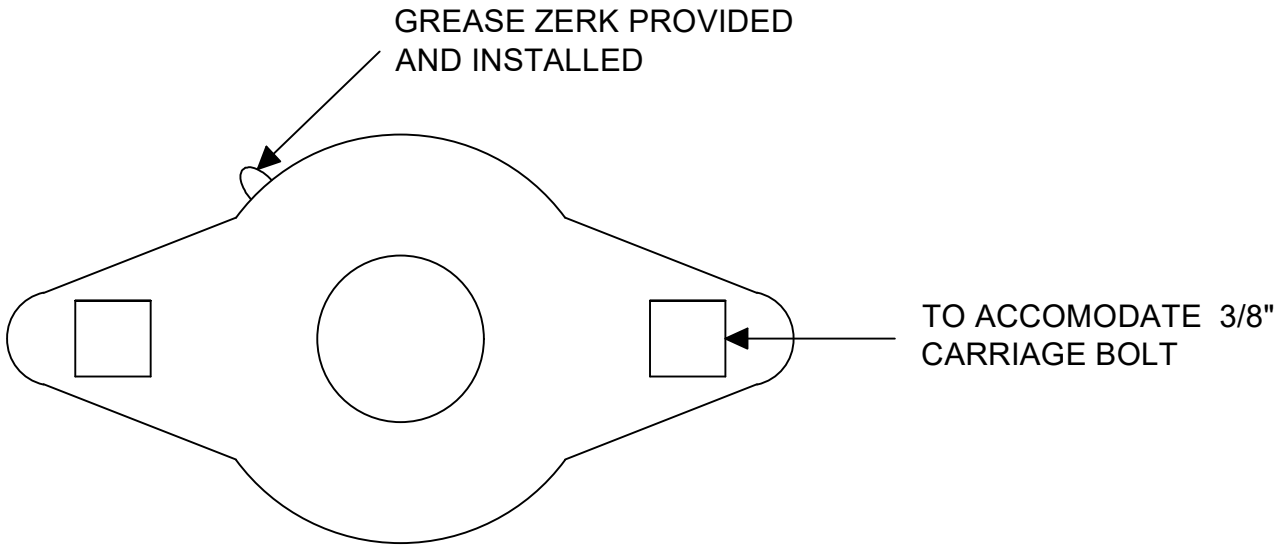
MOUNTING: 2 BOLT UNIT FLANGED UNIT TYPE. SEE DRAWING.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			SPREADER BEARING INFORMATION		
NO.	DATE	BY			
1	4-4-07	KNH			
2	07-25-18	KBD	DRAWN BY DLW	SCALE N/A	EQN - 568
3			DATE 06/26/97	CHK'D BY WHM	SHEET 10 OF 14

MOUNTINGS:

2 BOLT (SQUARE HOLES) FLANGED UNIT TYPE. SEE DRAWING.



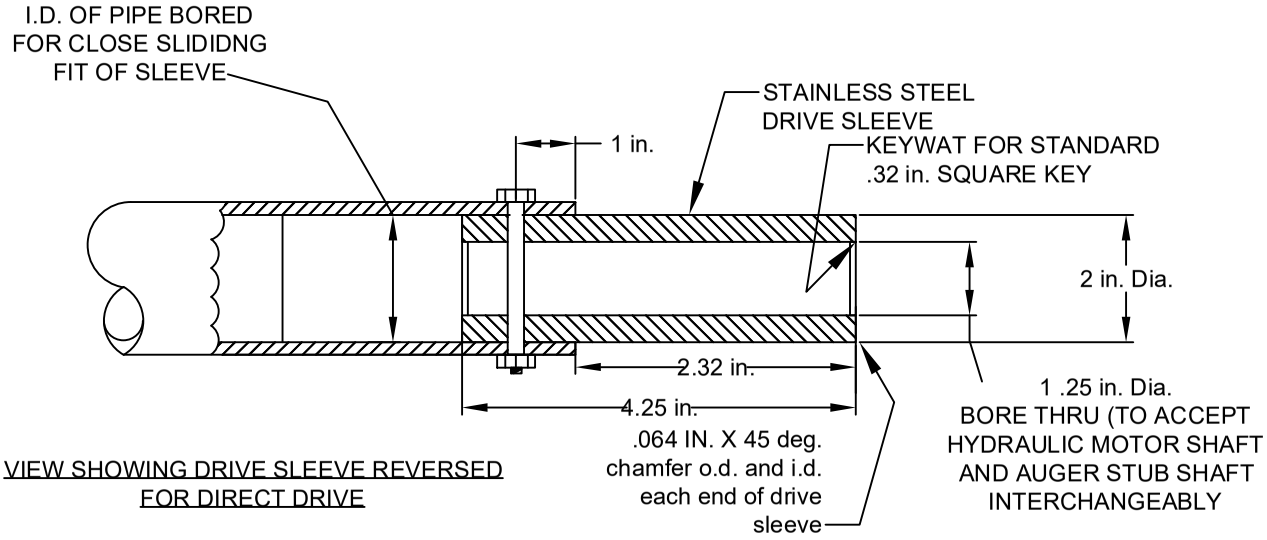
SHAFT DIAMETER: 1-1/4"

LOCKING: RETAINING COLLAR SHALL BE ECCENTRIC WITH SET SCREW.

HOUSING: CASE, DUCTILE OR MALEABLE IRON.

REFERENCE: LINK BELT FXWG 2E2ou, FAFNIR GVFTDS, ROBERTS FBPZ-2OL, BROWNING MODEL #VF2E-120SM, SST MODEL #SAFG 206-20G, IPTCI MODEL SALF 206-20

PA DEPARTMENT OF TRANSPORTATION				
REVISIONS		SPREADER BEARING INFORMATION		
DATE	BY			
4-4-07	KNH			
07-25-18	KBD	DRAWN BY DLW	SCALE N/A	EQN- 568
		DATE 06/26/97	CHK'D BY WHM	SHEET 11 OF 14



PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THROUGH)		
NO.	DATE	BY			
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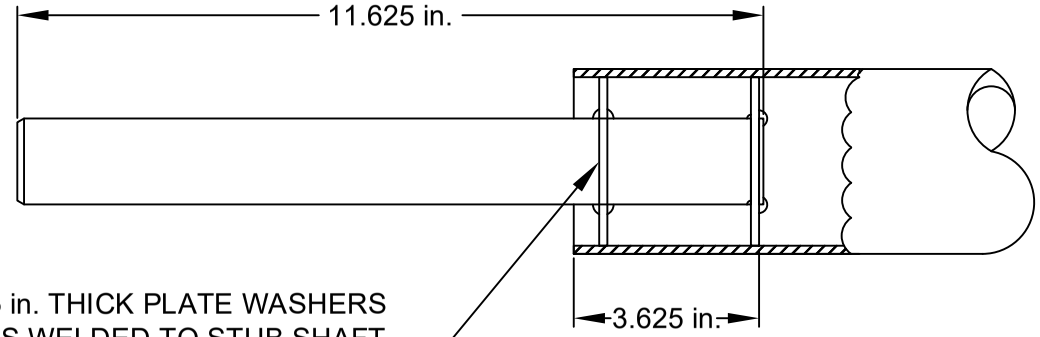
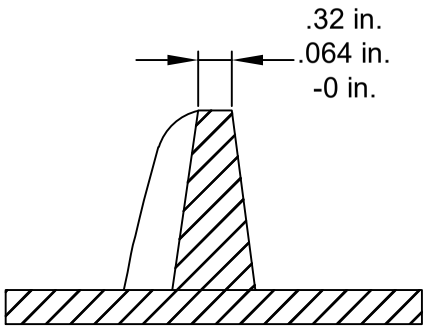
3	07-25-18	KBD	DATE 01-09-98	CHKD BY WHM	SHEET 10 OF 14

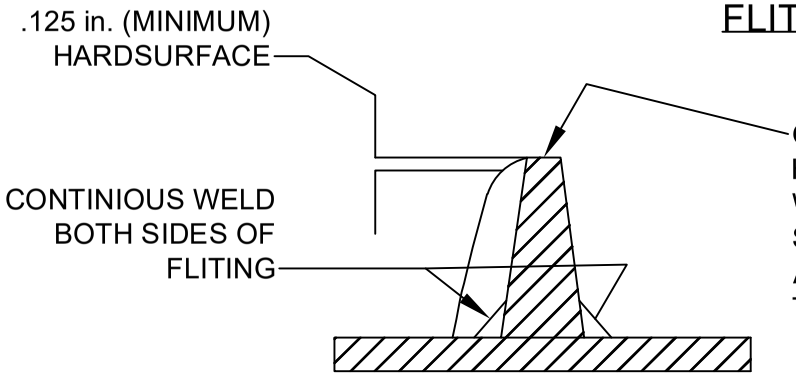


.125 in. THICK PLATE WASHERS
CONTINIOUS WELDED TO STUB SHAFT
AND AUGER PIPE

WASHERS TO FIT I.D. OF PIPE WITH
CLOSE SLIDING FIT SO NO FLEXING
OF SHAFT EXISTS AFTER FINAL WELDING



FLITING THICKNESS SPECIFICATION (BEFORE HARDSURFACING

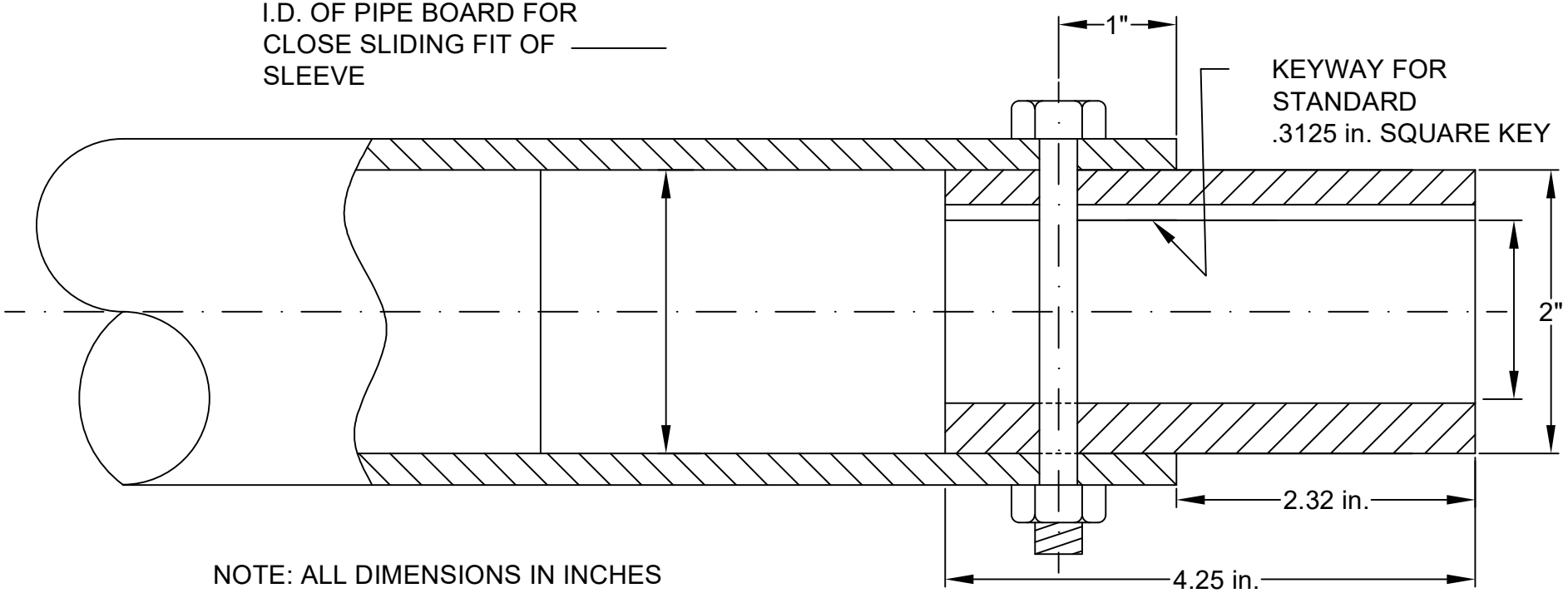


OUTER FLITE PERIPHERY CONTINUOUSLY HARDSURFACED WITH ABRASIVE RESISTANCE WELDING ROD (OR WIRE) EQUIVALENT TO STUDY 121 (ROCKWELL HARDNESS C-44), AND TO BE FULL WIDTH OF FLITING THICKNESS AT OUTEREDGE

WELDING AND HARDSURFACE SPECIFICATION

PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THROUGH)		
NO.	DATE	BY			
1	05-28-02	DWG			
2	09-20-07	BAG	DRAWN BY DLW	SCALE N/A	EQN-568
3	07-25-18	KBD	DATE 01-09-98	CHK'D BY WHM	SHEET 11 OF 14

VIEW SHOWING DRIVE SLEEVE REVERSED FOR DIRECT DRIVE OF 1994 AND UP, STAINLESS AND RUBBER THROUGH SPREADERS



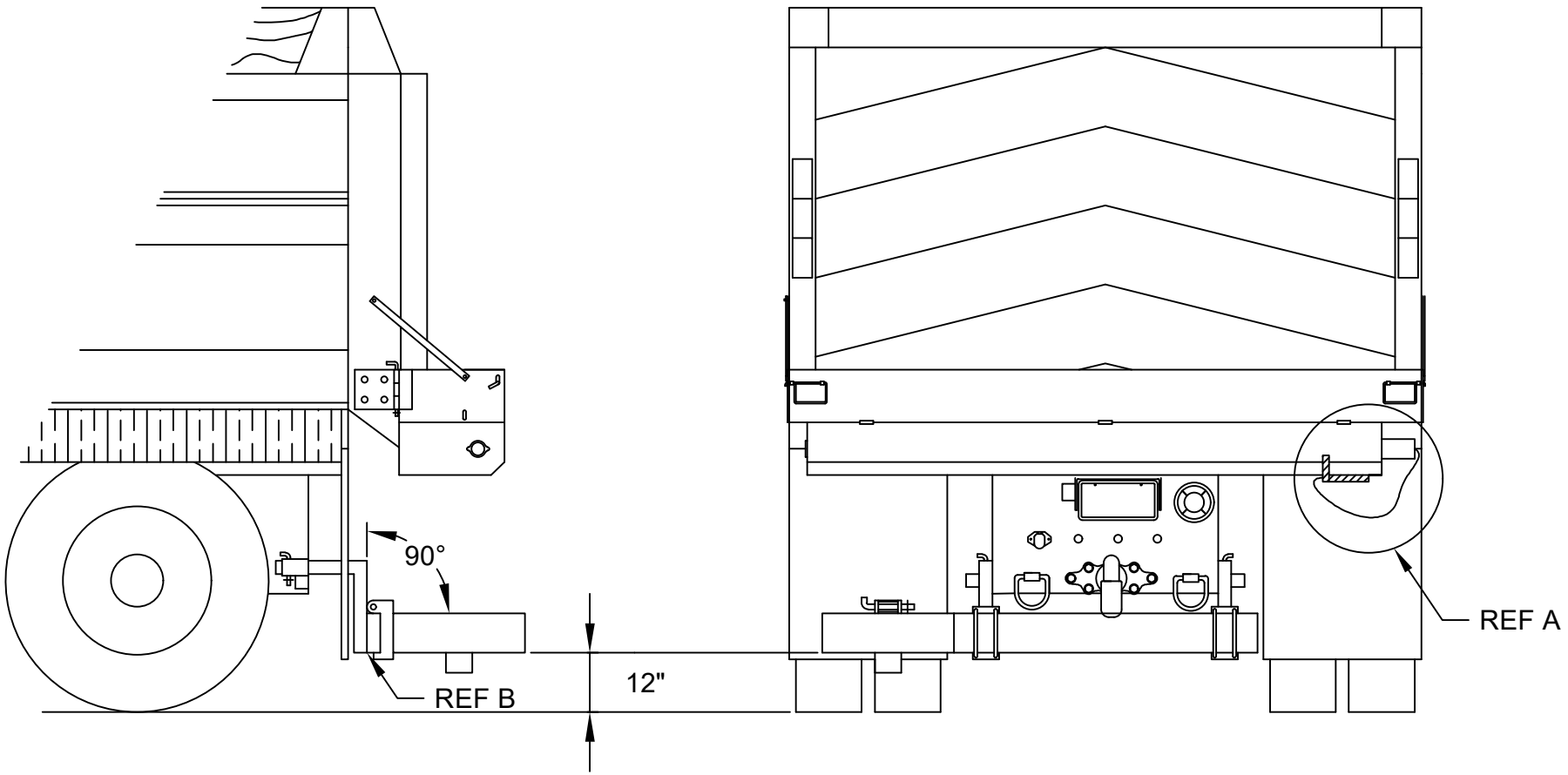
NOTE: ALL DIMENSIONS IN INCHES

1.25 in. Dia BORE THROUGH (TO ACCEPT HYDRAULIC MOTOR SHAFT AND AUGER STUB SHAFT INTERCHANGEABLY)

SPREADER TAILGATE

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			Auger Drive Sleeve Instructions		
NO.	DATE	BY			
1	05-22-02	DWG			
2	10-02-06	CJW	DRAWN BY DLW	SCALE N/A	EQN-568
3	07-25-18	KBD	DATE 01-02-98	CHK'D BY WHM	SHEET 14 OF 14



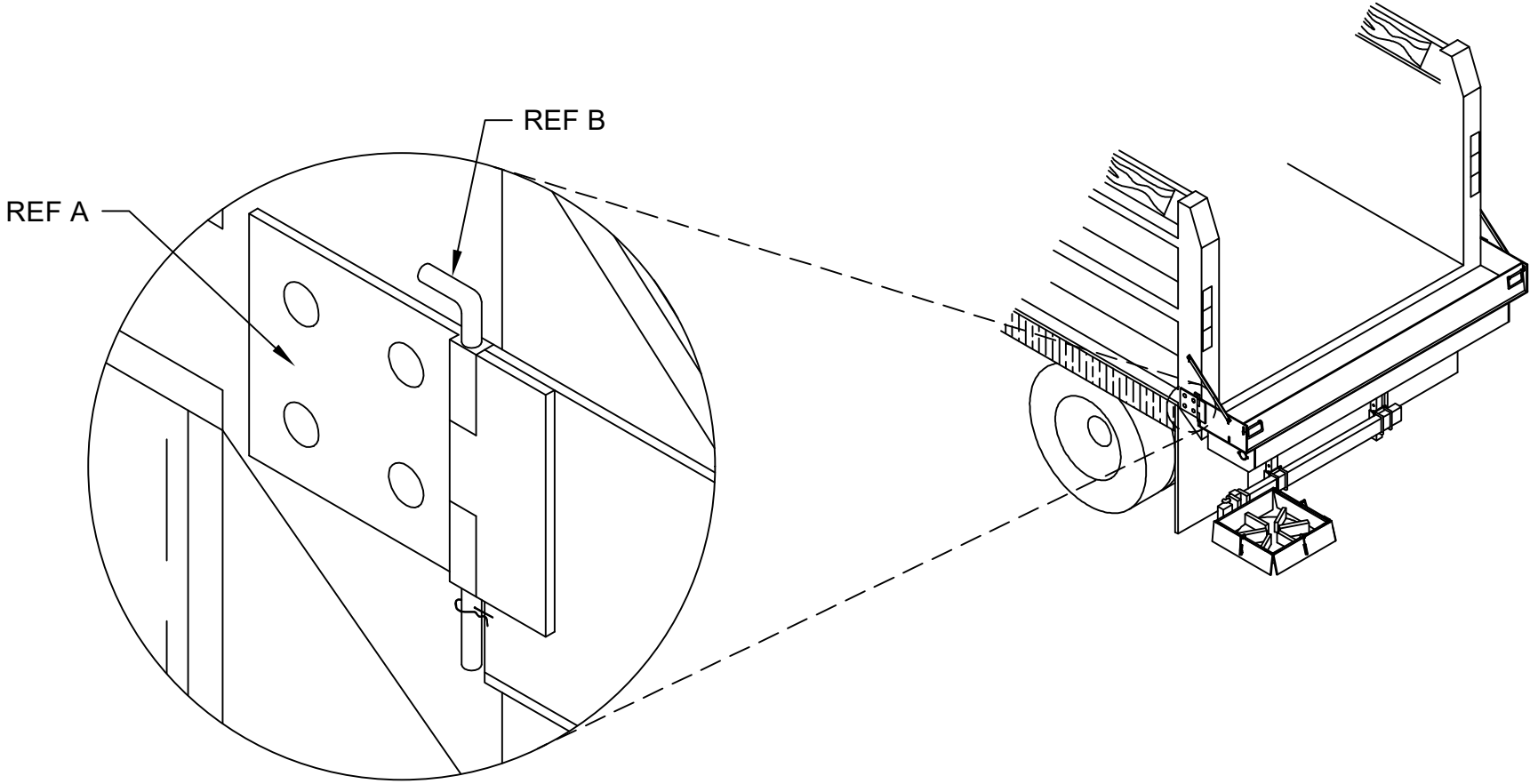
MEASURED FROM GROUND TO BOTTOM OF SPINNER PLATE.
(WHEN SPINNER IS MOUNTED AT LOWEST SETTING.
REFERENCE SHEET 6)

NOTES:

A. STANDARD OEM HYDRAULIC LOCK OUT MECHANISM.
B. SPINNER MUST BE PERPENDICULAR TO BODY & AT LOWEST SETTING MUST BE LEVEL WITH VERTICAL SQUARE TUBE

PA DEPARTMENT OF TRANSPORTATION

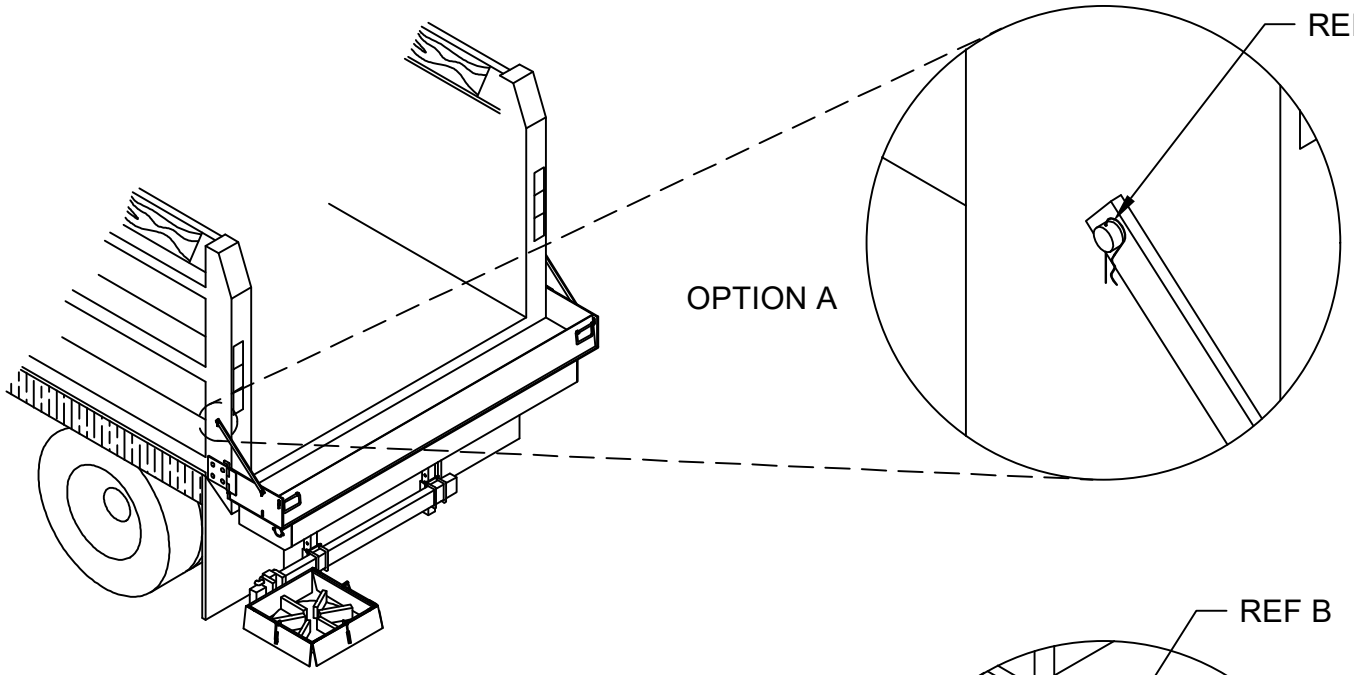
REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 1 OF 14



NOTES:

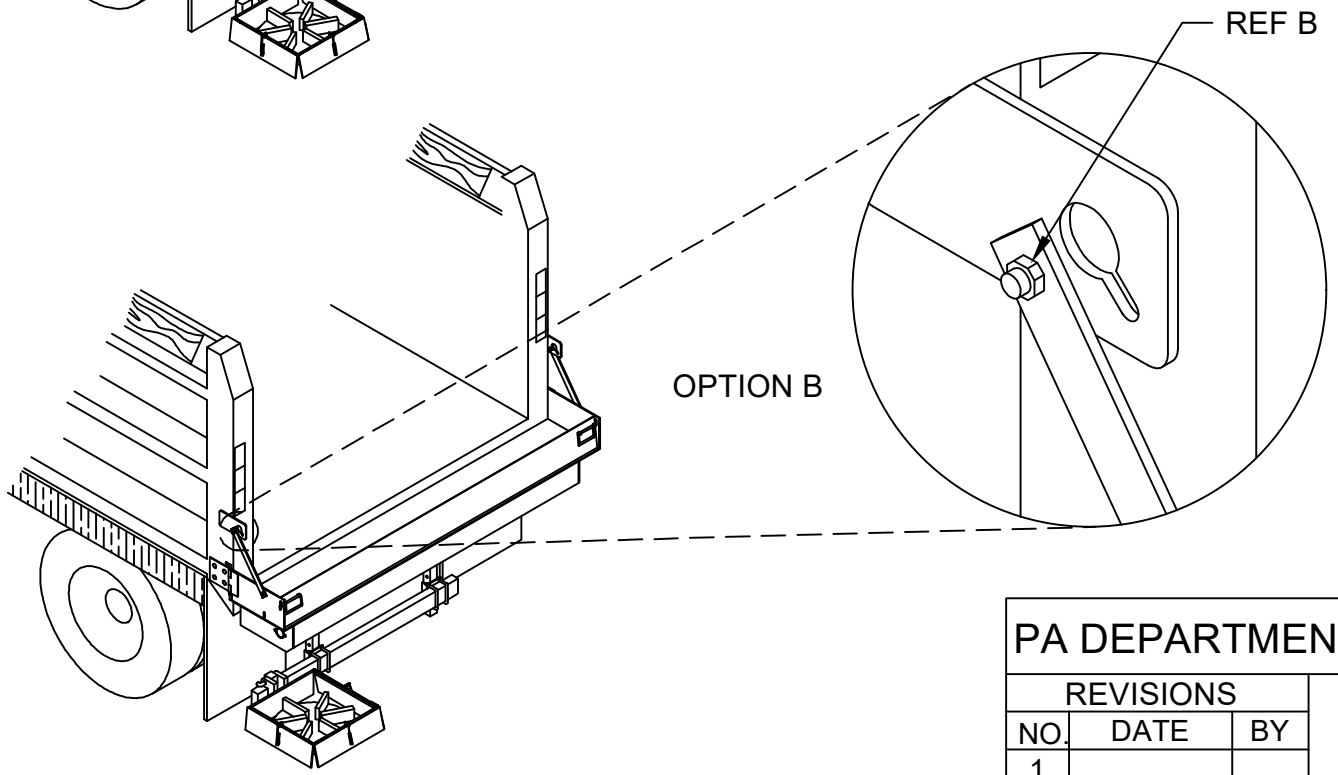
A. MOUNTING HARDWARE. TO RECEIVE BOTTOM CONTACT POINT OF SPREADER. REFERENCE EQN-3A.
B. PIN WITH R CLIP. TO ALLOW QUICK DISCONNECT FROM TRUCK.

PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 2 OF 14



NOTES:

A. WELDED PIN WITH R CLIP. TO RECEIVE TOP CONTACT POINT OF SPREADER. REFERENCE EQN-3A.



NOTES:

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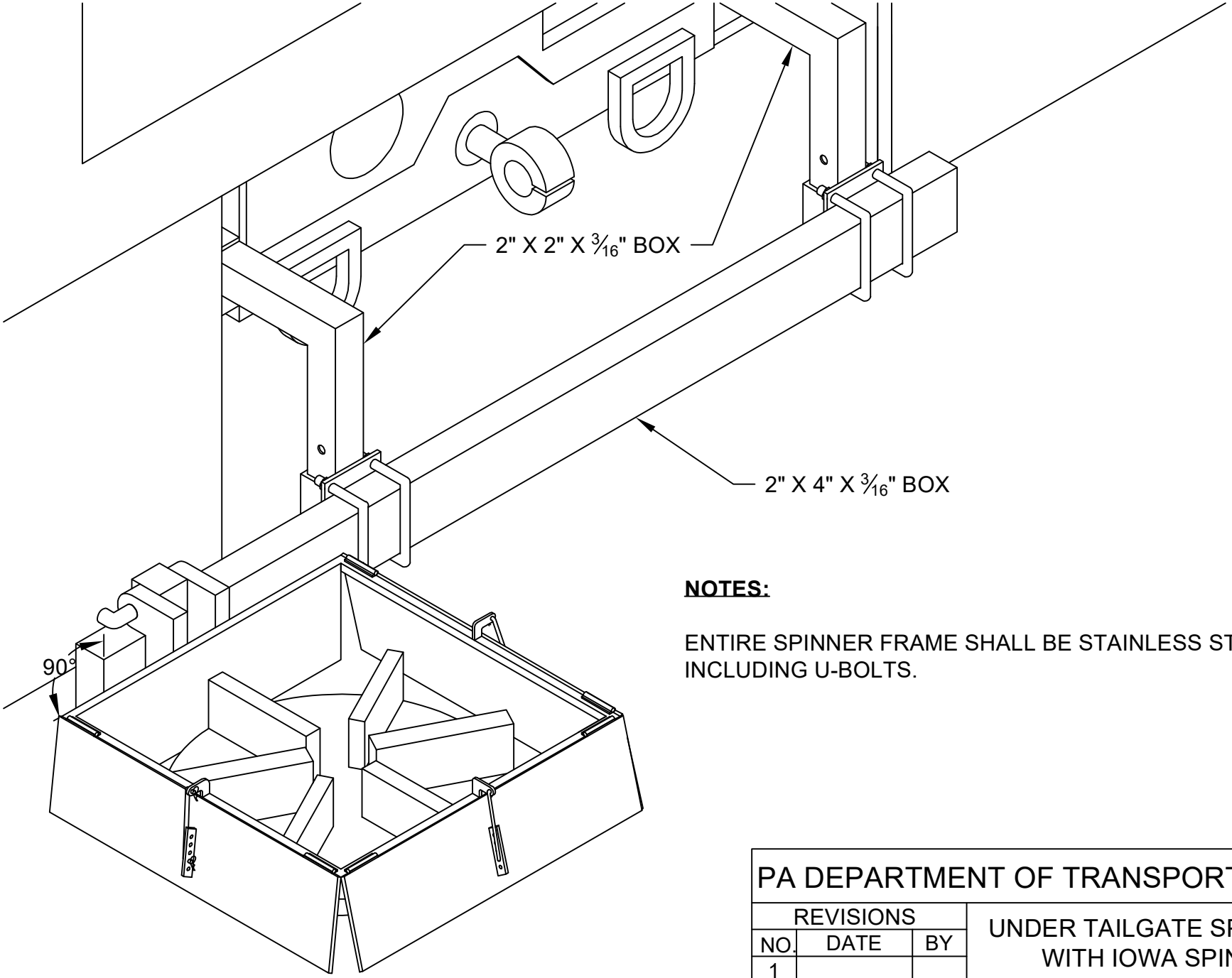
PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
1					
2			DRAWN BY JJB	SCALE N/A	EQN-568
3			DATE 07-25-18	CHK'D BY	SHEET 3 OF 14



NOTES:

ENTIRE SPINNER FRAME SHALL BE STAINLESS STEEL INCLUDING U-BOLTS.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
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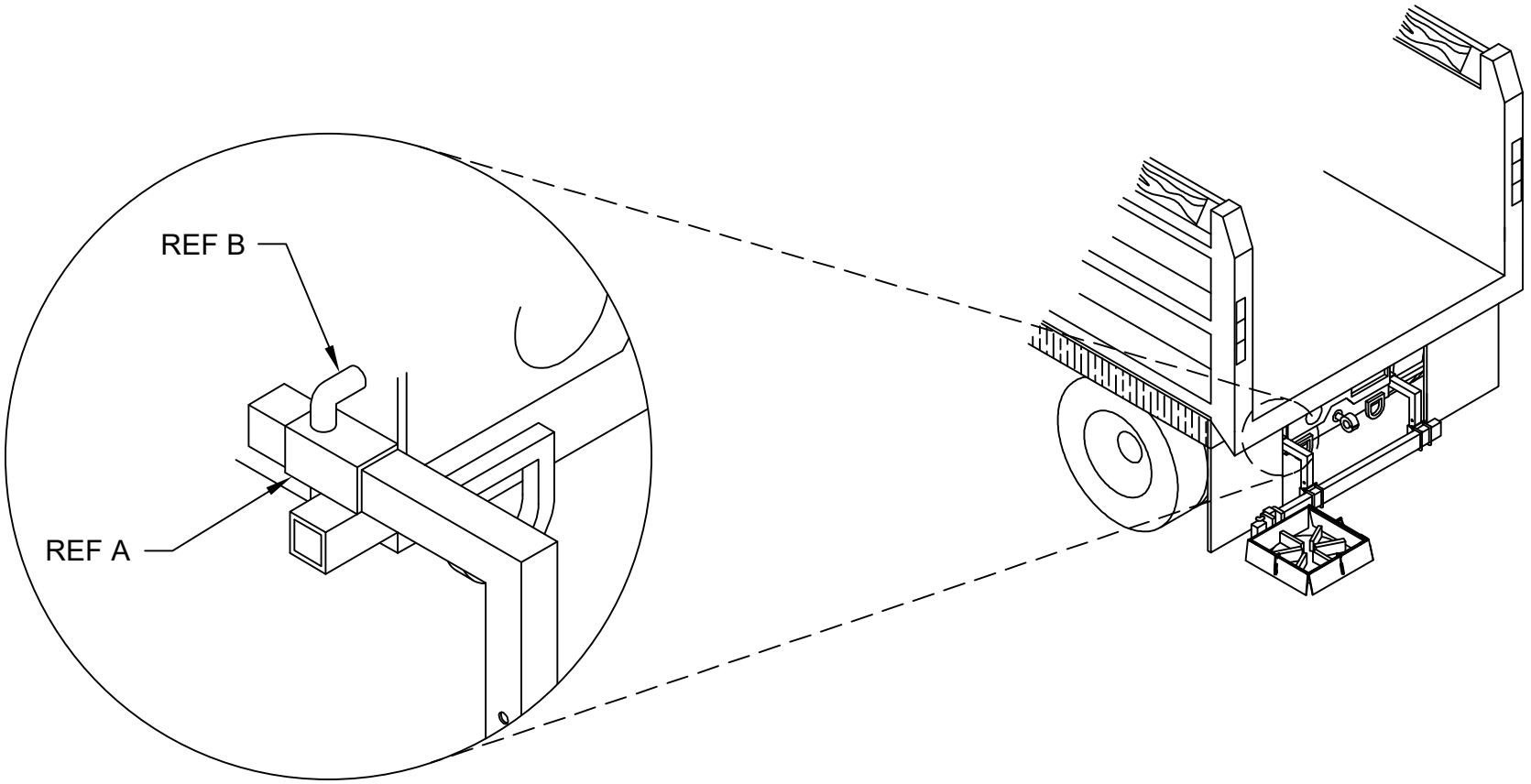

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PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
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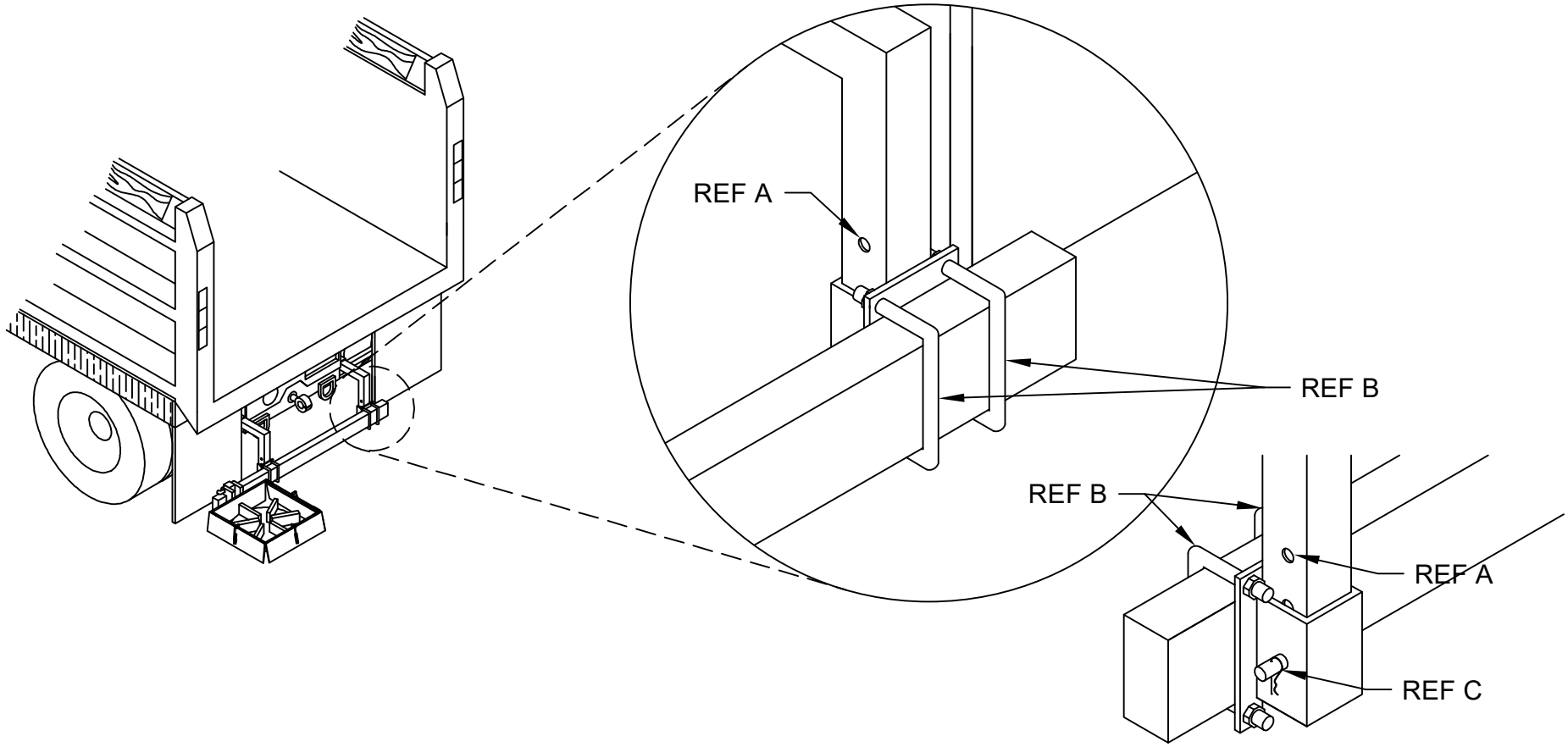

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PA DEPARTMENT OF TRANSPORTATION

REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
NO.	DATE	BY			
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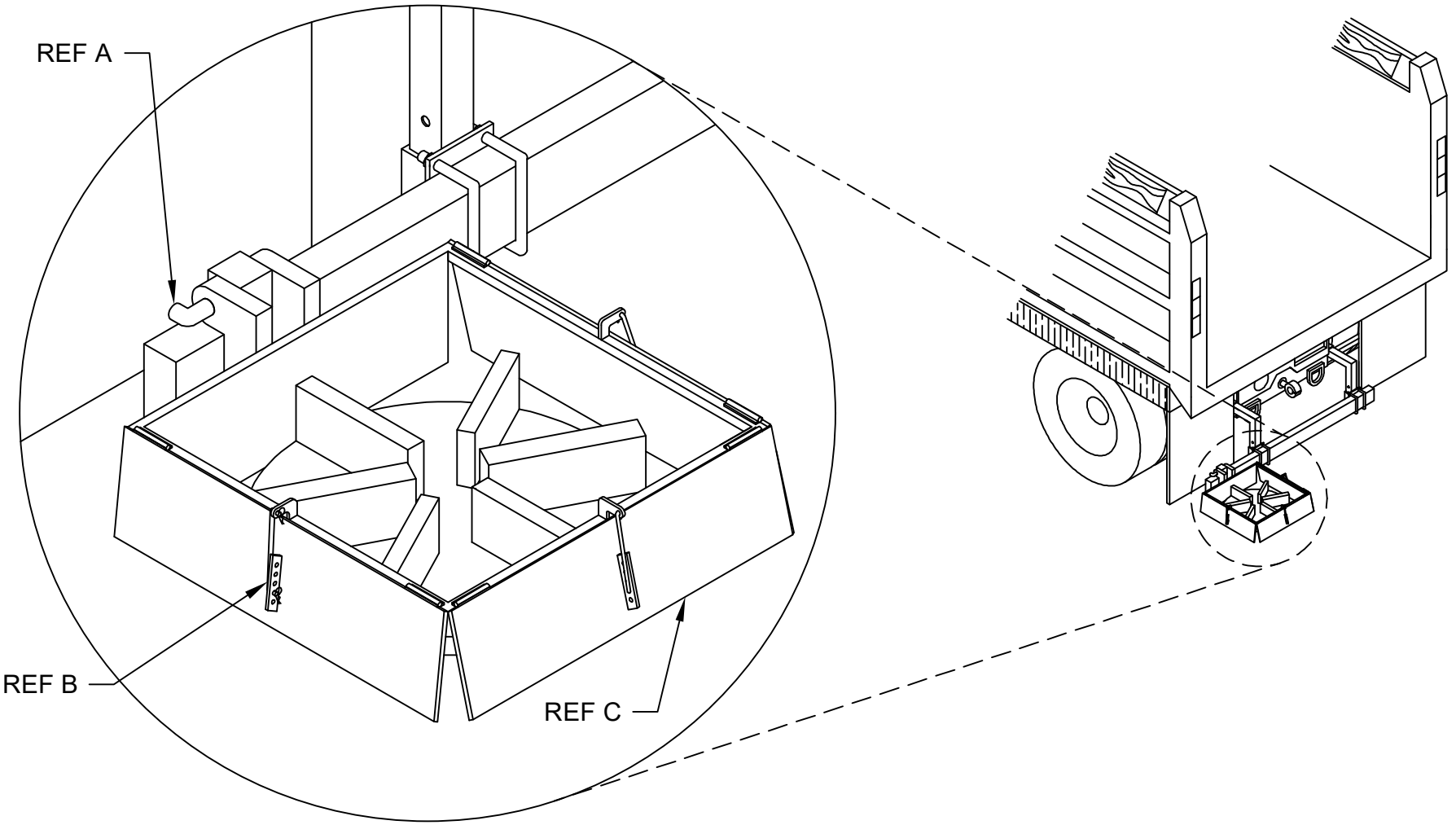

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PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			UNDER TAILGATE SPREADER WITH IOWA SPINNER		
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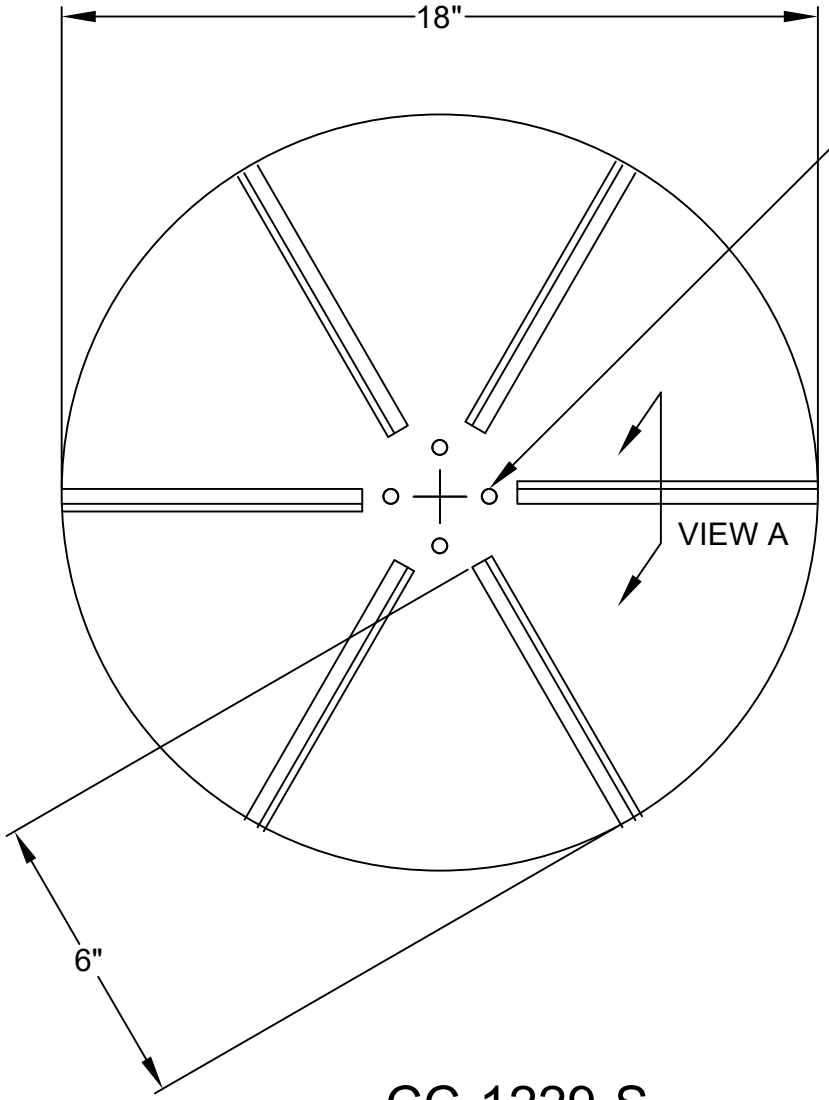

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PLACES ON 4" B.C.

NOTES:
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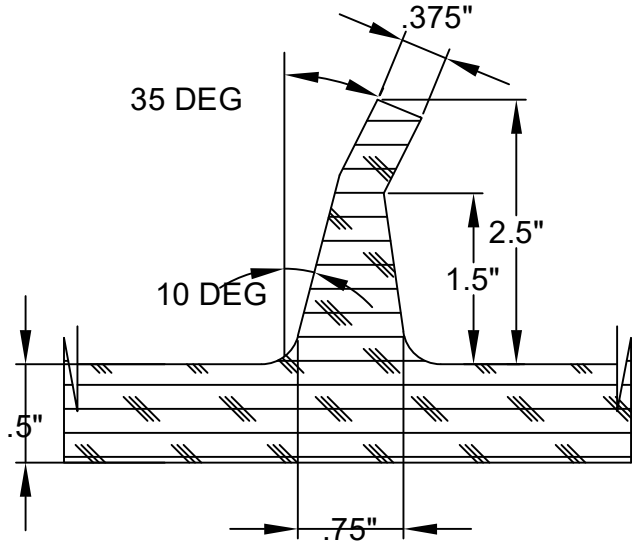
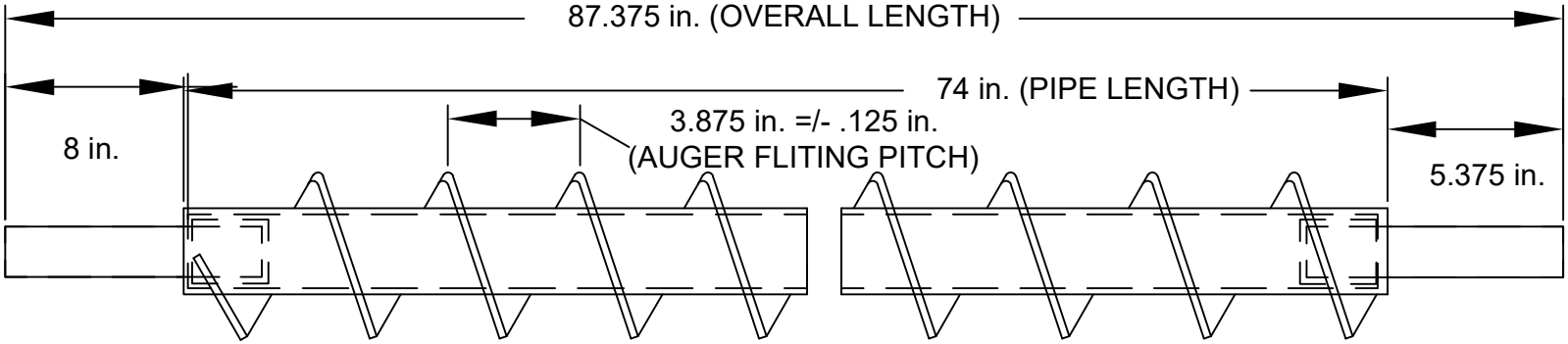


CC-1229-S

C.U.E. Inc
11 Leonberg Township
16066 U.S.A.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		SPINNER / SPREADER TAILGATE URETHANE		
DATE	BY			
06-03-02	DWG			
05-23-07	CJW	DRAWN BY DLW	SCALE	EQN-568
07-25-18	KBD	DATE 02-03-98	CHK'D BY	SHEET 8 OF 14



HELICOID FLIGHT (RIGHT HAND)
SINGLE CONTINUIOS SCREW TYPE
(BAR SIZE, BEFORE ROLLING, TO BE SUCH THAT FITING O.D. IS AS SHOWN IN END VIEW AT RIGHT, AND OUTER EDGE THICKNESS IS AS SHOWN IN FLITING THICKNESS SPECIFICATION)

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2 in. (2.375 O.D.)
SCHEDULE 80 (.20 in. WALL)
CARBON STEEL PIPE
(PIPE SIZE E.R.W. TUBING ACCEPTABLE

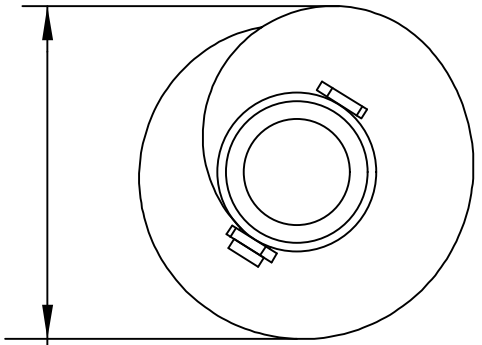
SPECIFICATION NOTES

1. PIPE PORTIONED WORTH (WITH WELDED FITTING) TO BE STRAIGHT TO GIVE MAXIMUM OF .20 IN. TOTAL RUNOUT
2. BOTH STUB SHAFT CENTERLINES TO LIE ON PIPE CENTERLINE TO GIVE MAXIMUS OF .20 IN. TOTAL RUNOUT
3. ALL SURFACES OF SLEEVE, SHAFT, AND OTHER PIPE WHICH MAKE CONTACT WITH EACH OTHER TO BE COATED WITH ANTI-SEIZE COMPOUND
4. SHAFT IS REMOVED, AND NOT USED. WHEN AUGER IS USED IN A DIRECT DRIVE APPLICATION

DO NOT SCALE DRAWING
TOLERANCES
(UNLESS OTHERWISE NOTED)

FLAME CUTTING, NIBBLING & WELDING	+/- .060
SHEARING & FORMING	+/- .030
PUNCHING	+/- .020
HOLE DIAMETERS	+ .015/- .005
ANGLES	+/- 2 DEG
DECIMAL MACHINING	0.0- +/- .040
	0.00- +/- .020
	0.000- +/- .005

IMPLIED TOLERANCES DO NOT APPLY TO REFERENCE DIMENSIONS



5.875 in.
+/- .125 in. O.D.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THOUGH)		
NO.	DATE	BY			
1	05-28-02	DWG			
2	9-20-07	BAG	DRAWN BY DLW	SCALE N/A	EQN-568
3	7-25-18	KBD	DATE 01-09-98	CHK'D BY WHM	SHEET 9 OF 14

DRIVE BEARINGS: THE FOLLOWING SHALL INDICATE MINIMUM REQUIREMENTS INCLUDING ALL GENUINE PARTS, ACCESSORIES, EQUIPMENT, AND SAFETY FEATURES CONSIDERED STANDARD, WHETHER MENTIONED HEREIN OR NOT. THE VEHICLE SHALL COMPLY WITH ALL CURRENT APPLICABLE FEDERAL SAFETY STANDARDS AND OSHA REQUIREMENTS.

THE PUPROSE OF THESE SPECIFICAATIONS IS TO DESCRIBE A BEARING CAPABLE OF BEING USED ON OUR TAILGATE SPREADERS.

UNLESS OTHERWISE SPECIFIED, EACH UNIT SHALL INCLUDE ALL SPECIFIED PARTS, MADE AVAILABLE FOR THE INDICATED MODEL BY THE EQUIPMENT MANUFACTURER. SPECIFIEDITEMS NOT AVAILABLE THROUGH THE EQUIPMENT MANUFACTURER SHALL CONFORM TO THE BEST QUALITY STANDARDS KNOWN TO THAT PARTICULAR INDUSTRY.

EACH UNIT SHALL BE CLEAN, LUBRICATED, AND SERVICED READY FOR IMMEDIATE OPERATION.

PERFORMANCE: THE PROPOSED UNIT SHALL BE IDENTICAL WITH THE STANDARD OR IMPROVED MODEL AND A CURRENT PRODUCTION UNIT IN USE BY THE INDUSTRY FOR THE PAST TWELVE MONTHS PRECEDING THIS BID OPENING.
IT SHALL BE THE RESPONSIBILITY OF THE BIDDER TO ASSURE THAT THE PROPOSED EQUIPMENT CONFORMS TO THE SPECIFICATIONS AND PERFORMS SATISFACTORILY ACCORDING TO THESE SPECIFICATIONS.

GRADE: REFERENCE:AMERICAN FRICTION BEARING MANUFACTURERS ASSOCIATION #1, PRECISION

TYPE: SELF-ALIGNING, ANTI-FRICTION, THRUST, RE-LUBE TYPE.

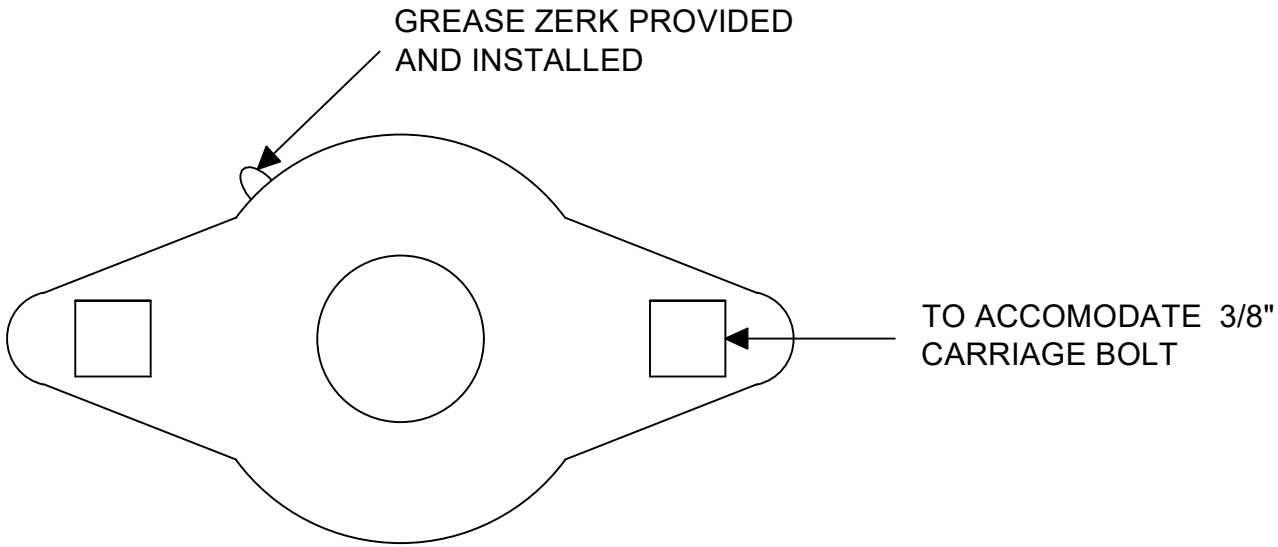
MOUNTING: 2 BOLT UNIT FLANGED UNIT TYPE. SEE DRAWING.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			SPREADER BEARING INFORMATION		
NO.	DATE	BY			
1	4-4-07	KNH			
2	07-25-18	KBD	DRAWN BY DLW	SCALE N/A	EQN - 568
3			DATE 06/26/97	CHK'D BY WHM	SHEET 10 OF 14

MOUNTINGS:

2 BOLT (SQUARE HOLES) FLANGED UNIT TYPE. SEE DRAWING.



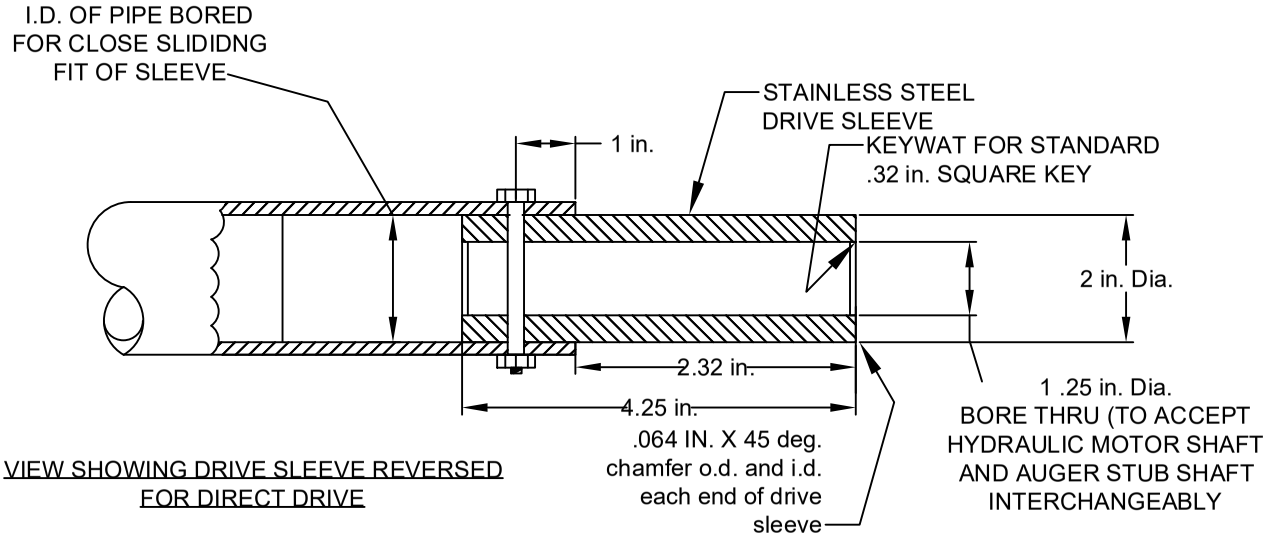
SHAFT DIAMETER: 1-1/4"

LOCKING: RETAINING COLLAR SHALL BE ECCENTRIC WITH SET SCREW.

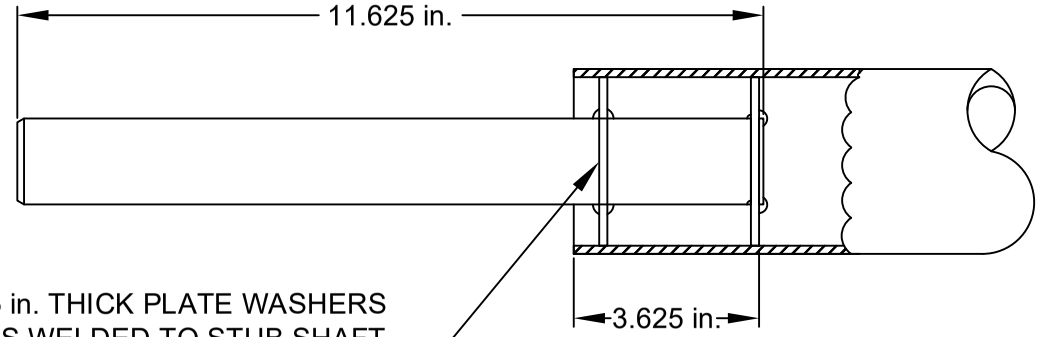
HOUSING: CASE, DUCTILE OR MALEABLE IRON.

REFERENCE: LINK BELT FXWG 2E2ou, FAFNIR GVFTDS, ROBERTS FBPZ-2OL, BROWNING MODEL #VF2E-120SM, SST MODEL #SAFG 206-20G, IPTCI MODEL SALF 206-20

PA DEPARTMENT OF TRANSPORTATION				
REVISIONS		SPREADER BEARING INFORMATION		
DATE	BY			
4-4-07	KNH			
07-25-18	KBD	DRAWN BY DLW	SCALE N/A	EQN- 568
		DATE 06/26/97	CHK'D BY WHM	SHEET 11 OF 14

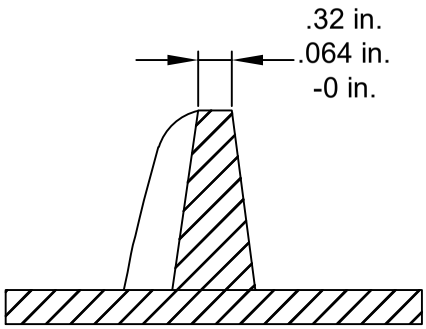


PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THROUGH)		
NO.	DATE	BY			
1	05-28-02	DWG			
2	9-20-07	BAG	DRAWN BY DLW	SCALE N/A	EQN-568
3	07-25-18	KBD	DATE 01-09-98	CHKD BY WHM	SHEET 10 OF 14

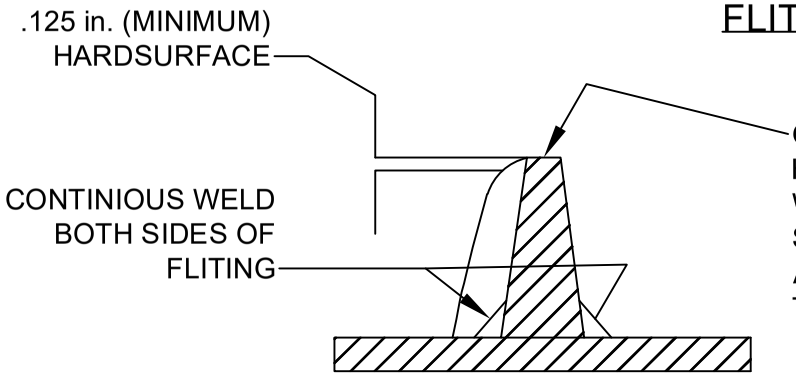


.125 in. THICK PLATE WASHERS
CONTINIOUS WELDED TO STUB SHAFT
AND AUGER PIPE

WASHERS TO FIT I.D. OF PIPE WITH
CLOSE SLIDING FIT SO NO FLEXING
OF SHAFT EXISTS AFTER FINAL WELDING



FLITING THICKNESS SPECIFICATION (BEFORE HARDSURFACING

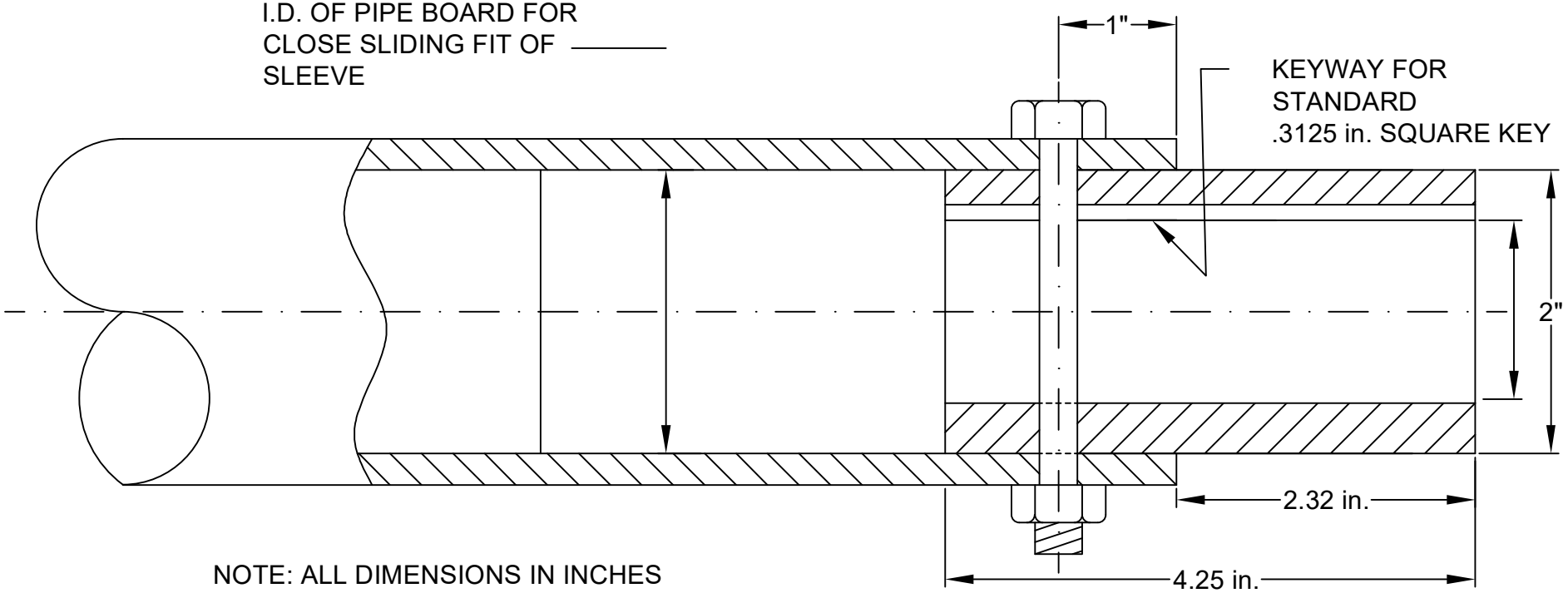


OUTER FLITE PERIPHERY CONTINUOUSLY HARDSURFACED WITH ABRASIVE RESISTANCE WELDING ROD (OR WIRE) EQUIVALENT TO STUDY 121 (ROCKWELL HARDNESS C-44), AND TO BE FULL WIDTH OF FLITING THICKNESS AT OUTEREDGE

WELDING AND HARDSURFACE SPECIFICATION

PA DEPARTMENT OF TRANSPORTATION					
REVISIONS			PennDOT SPREADER AUGER DETAIL (S/S & RUBBER THROUGH)		
NO.	DATE	BY			
1	05-28-02	DWG			
2	09-20-07	BAG	DRAWN BY DLW	SCALE N/A	EQN-568
3	07-25-18	KBD	DATE 01-09-98	CHK'D BY WHM	SHEET 11 OF 14

VIEW SHOWING DRIVE SLEEVE REVERSED FOR DIRECT DRIVE OF 1994 AND UP, STAINLESS AND RUBBER THROUGH SPREADERS



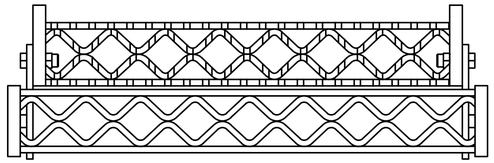
NOTE: ALL DIMENSIONS IN INCHES

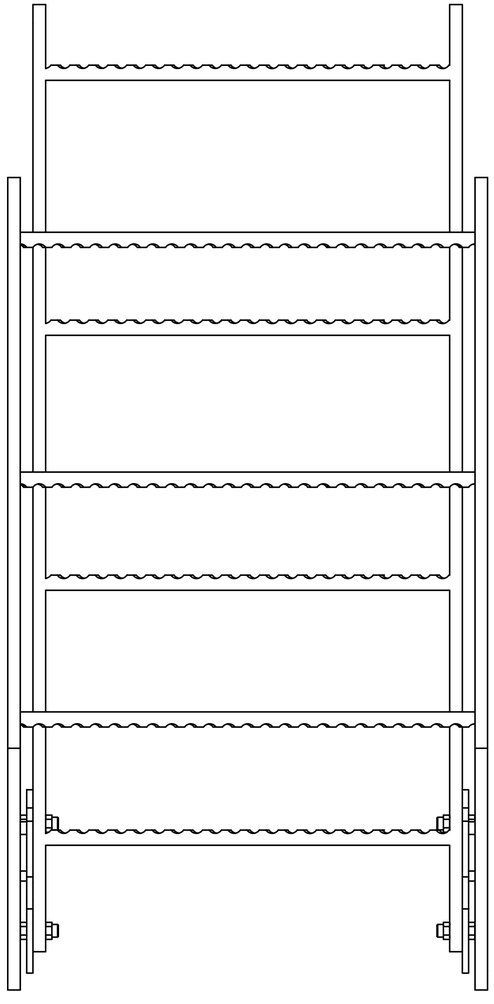
1.25 in. Dia BORE THROUGH (TO ACCEPT HYDRAULIC MOTOR SHAFT AND AUGER STUB SHAFT INTERCHANGEABLY)

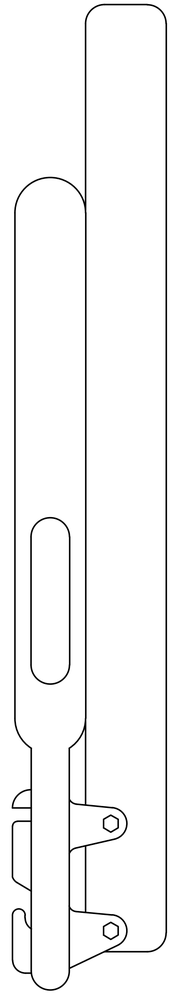
SPREADER TAILGATE

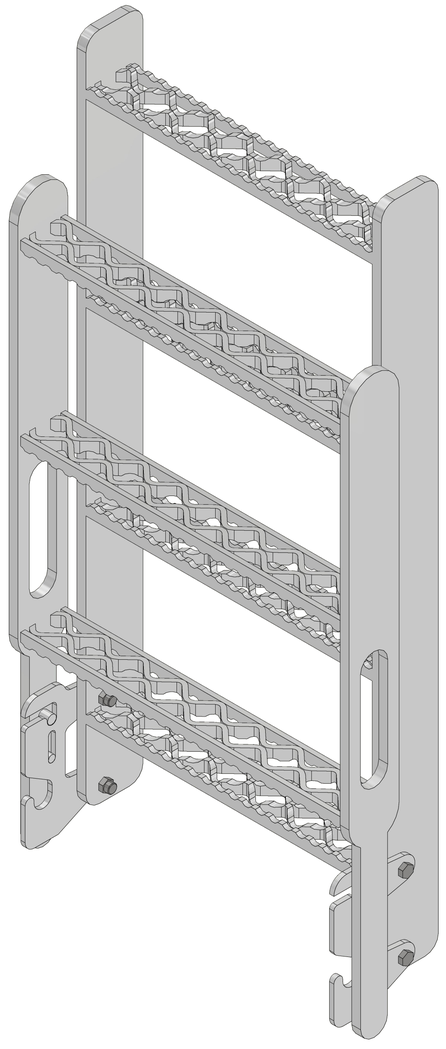
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			Auger Drive Sleeve Instructions		
NO.	DATE	BY			
1	05-22-02	DWG			
2	10-02-06	CJW	DRAWN BY DLW	SCALE N/A	EQN-568
3	07-25-18	KBD	DATE 01-02-98	CHK'D BY WHM	SHEET 14 OF 14

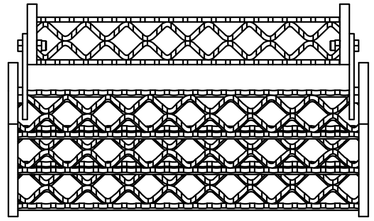


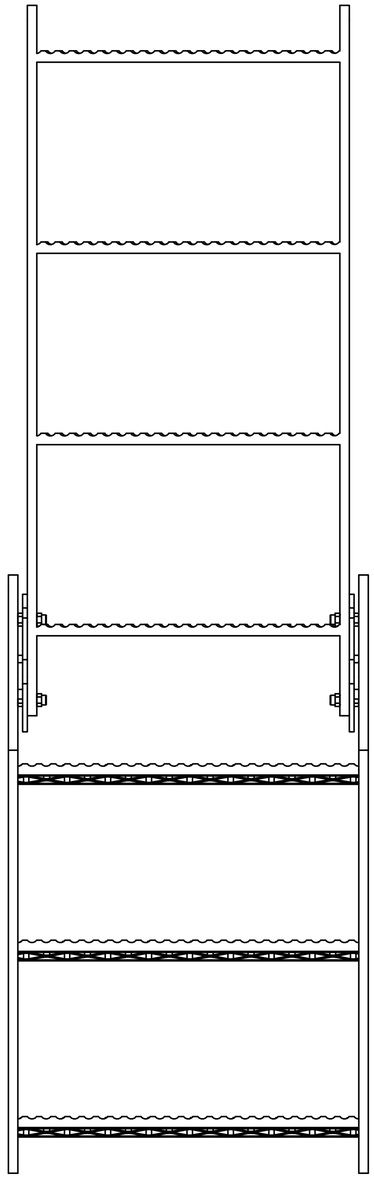


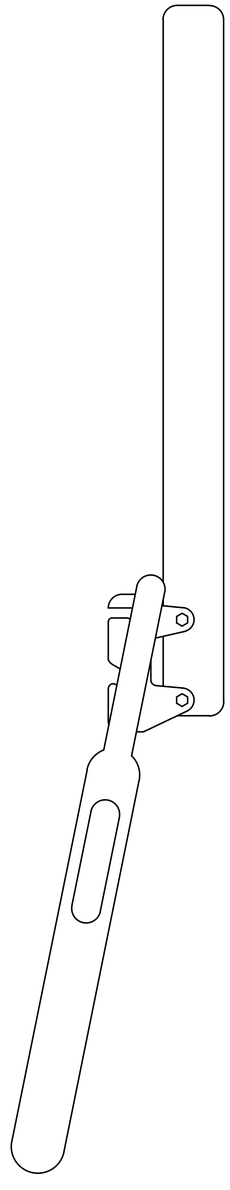


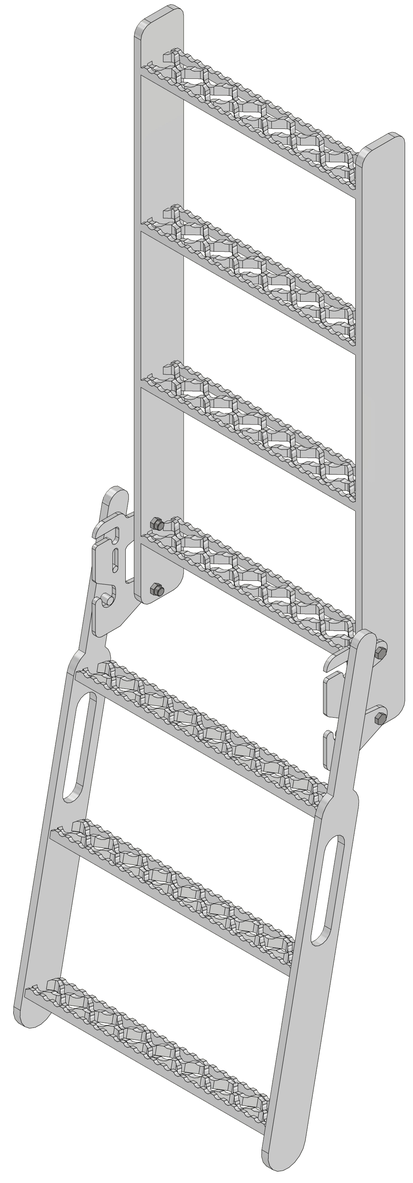


DRAWN LWB	8/8/2022	PA DEPARTMENT OF TRANSPORTATION	
CHECKED		TITLE	
QA		DUMP TRUCK FOLDING STEP	
MFG			
APPROVED		SIZE D	DWG NO EQN-1090-2022 REV
		SCALE 1 : 1	SHEET 1 OF 2

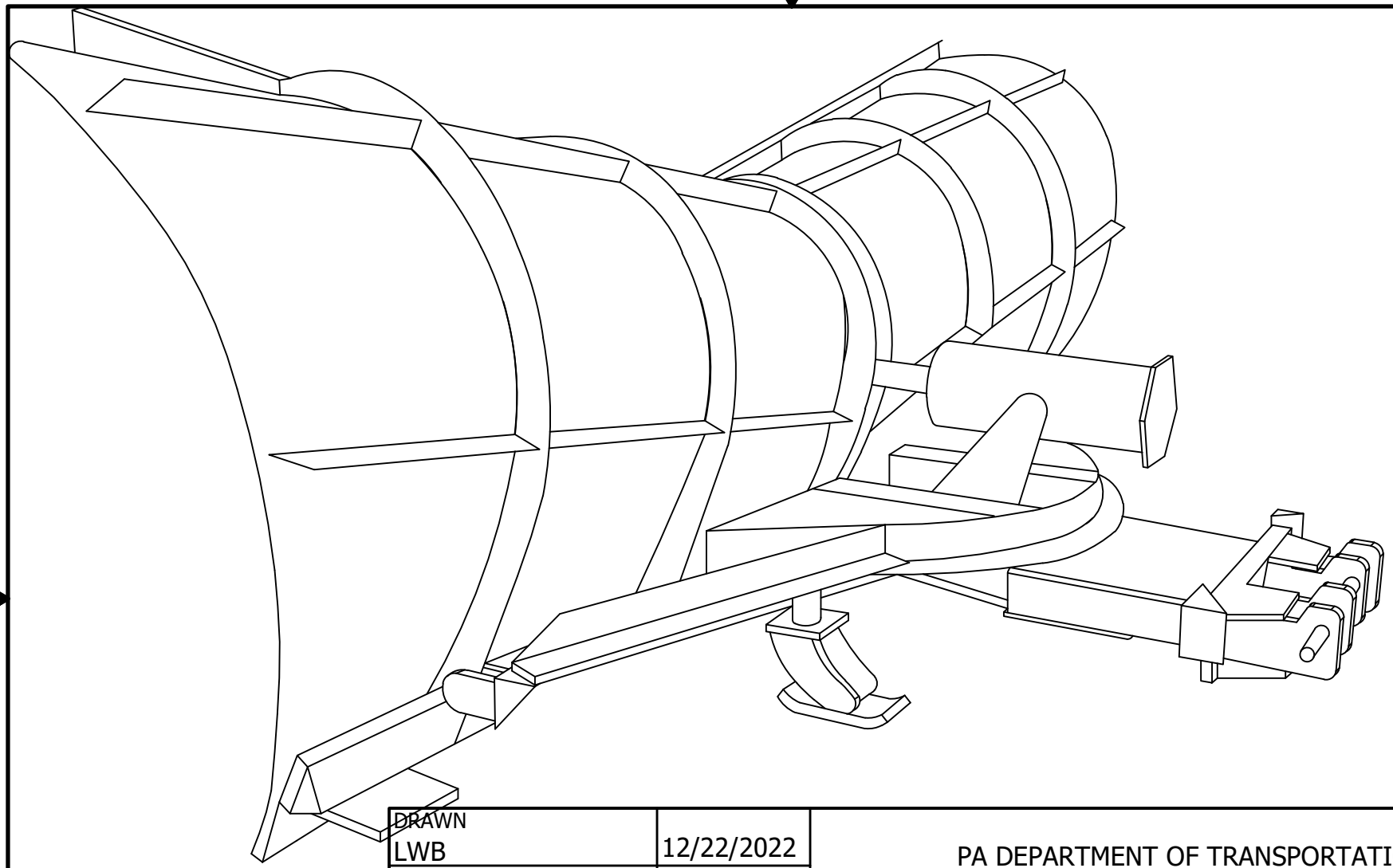




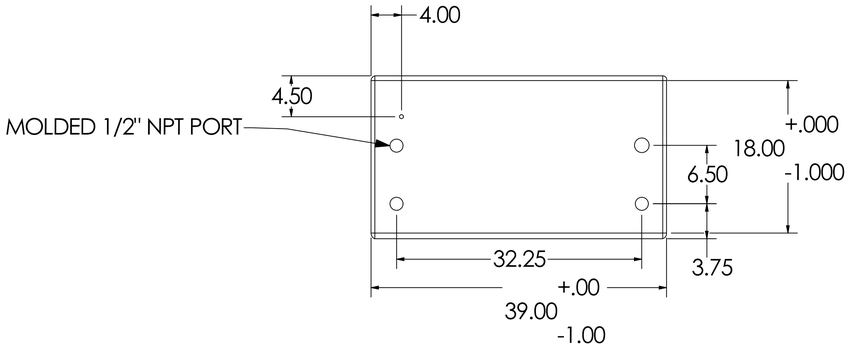


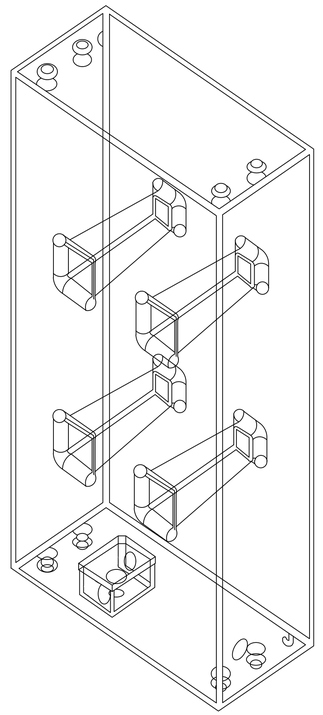


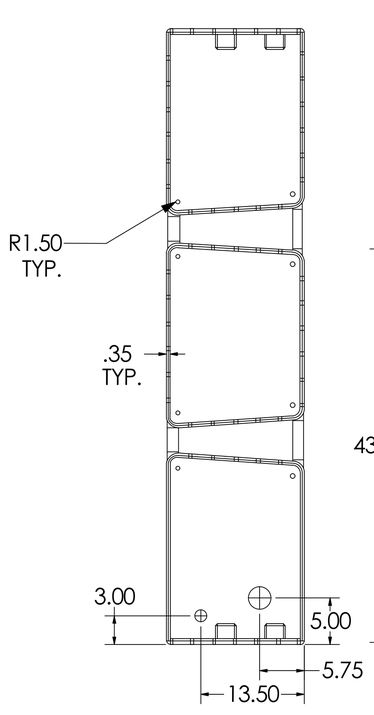
DRAWN LWB	8/8/2022	PA DEPARTMENT OF TRANSPORTATION	
CHECKED		TITLE	
QA		DUMP TRUCK FOLDING STEP	
MFG			
APPROVED		SIZE D	DWG NO EQN-1090-2022 REV
		SCALE 3/4	SHEET 2 OF 2



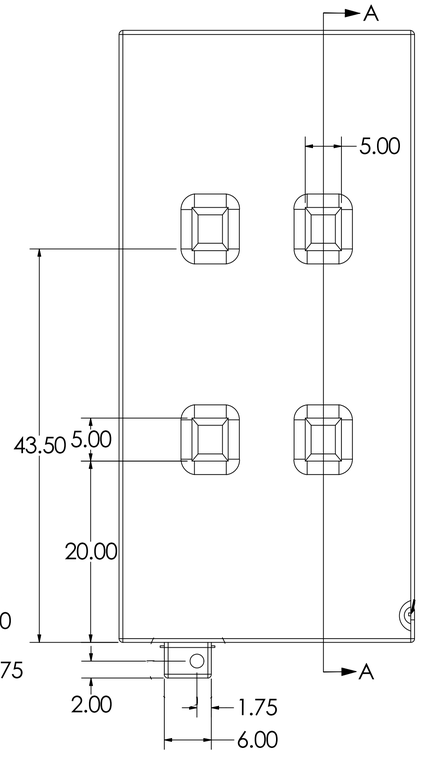
DRAWN LWB	12/22/2022	PA DEPARTMENT OF TRANSPORTATION	
CHECKED		TITLE	
QA		REVERSIBLE TWO WAY PLOW	
MFG			
APPROVED			
		SIZE A	DWG NO EQN-1097 / REV
		SCALE	SHEET 1 OF 1

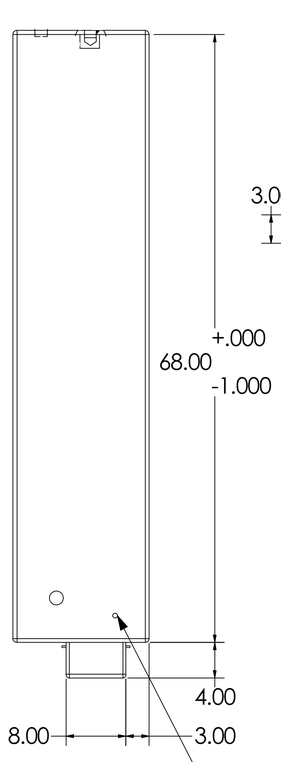


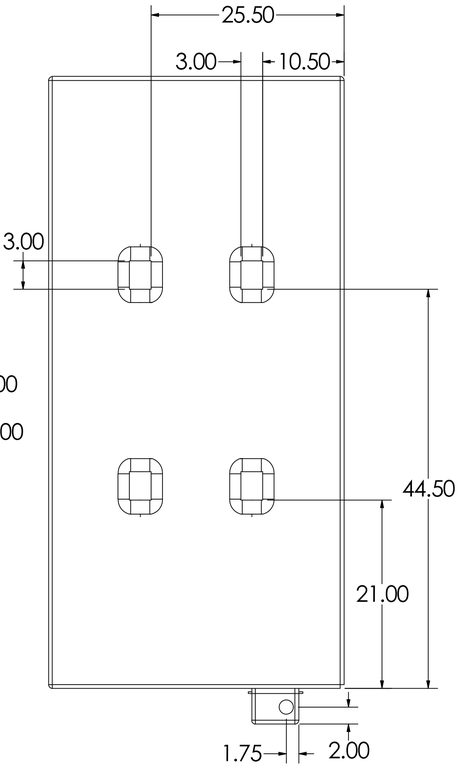




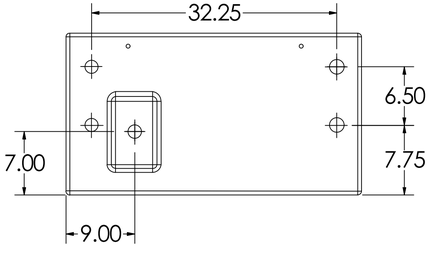
SECTION A-A







MOLDED 1/2" NPT PORT



REVISIONS		
NO.	DATE	BY
1	5-23-23	DVC
2		
3		

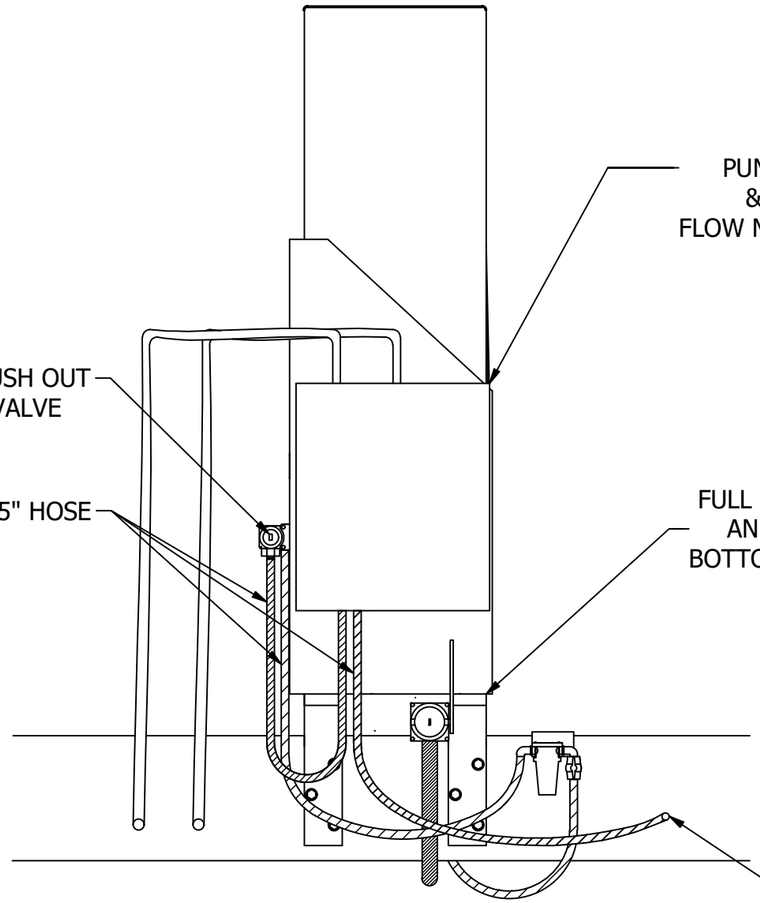
PA DEPARTMENT OF TRANSPORTATION

TITLE: Dump Trucks 190 Pre-wet Tanks

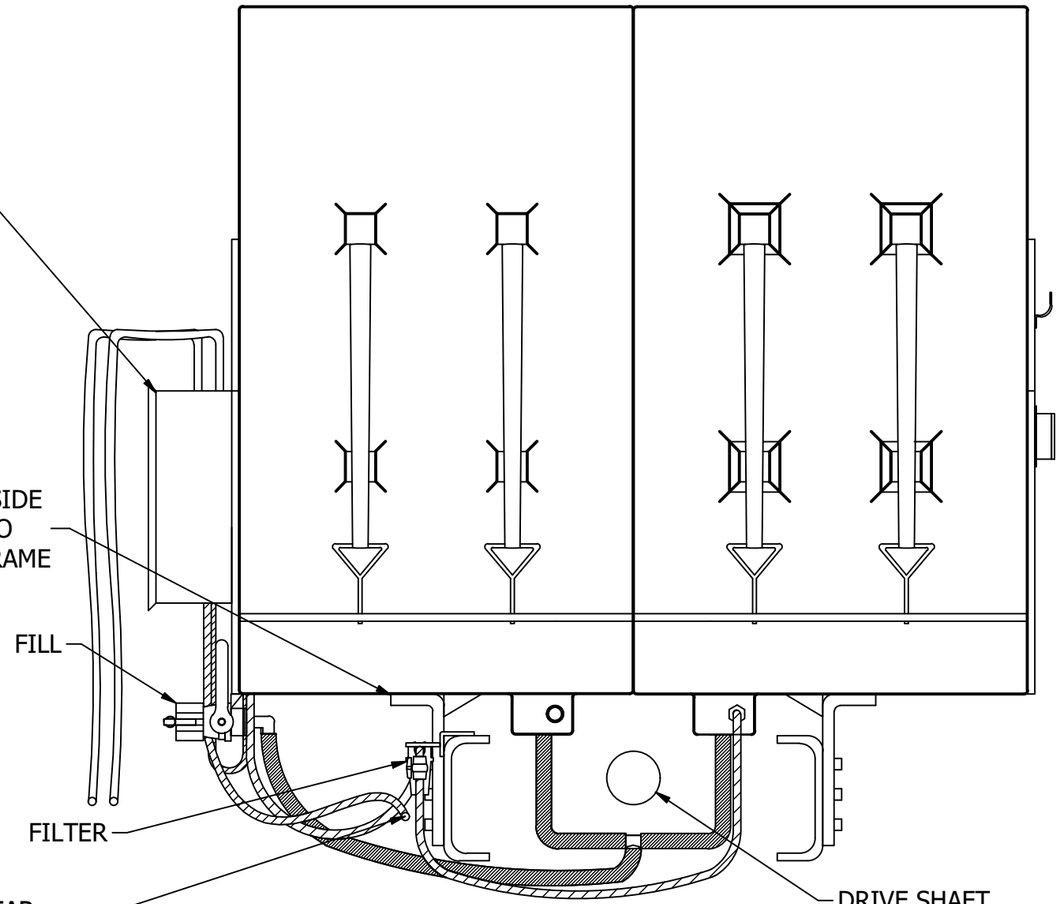
DATE: 9-16-2020

DWG NO: EQN-1098 B

SHEET 1 of 2



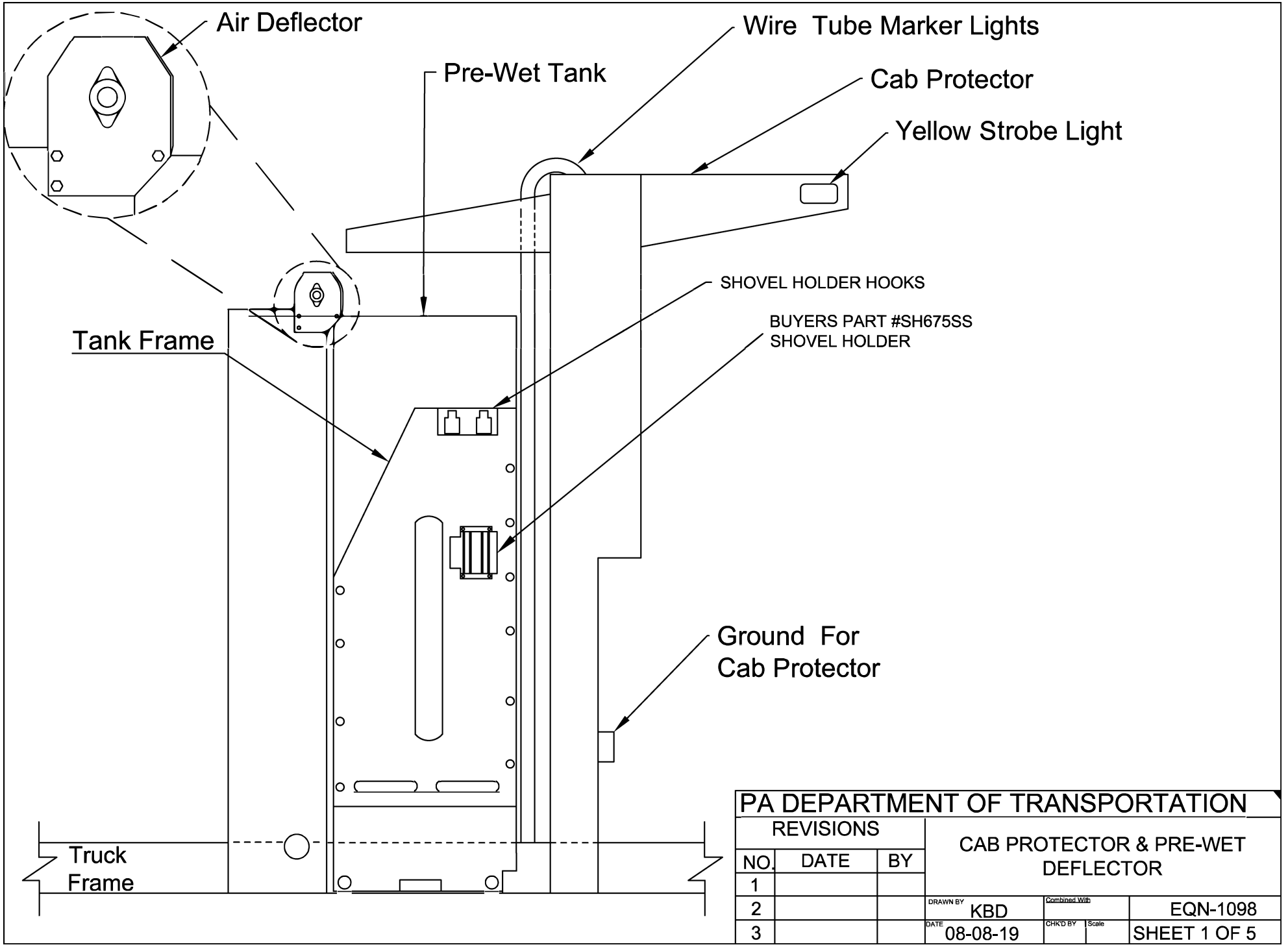
SIDE VIEW



FRONT VIEW

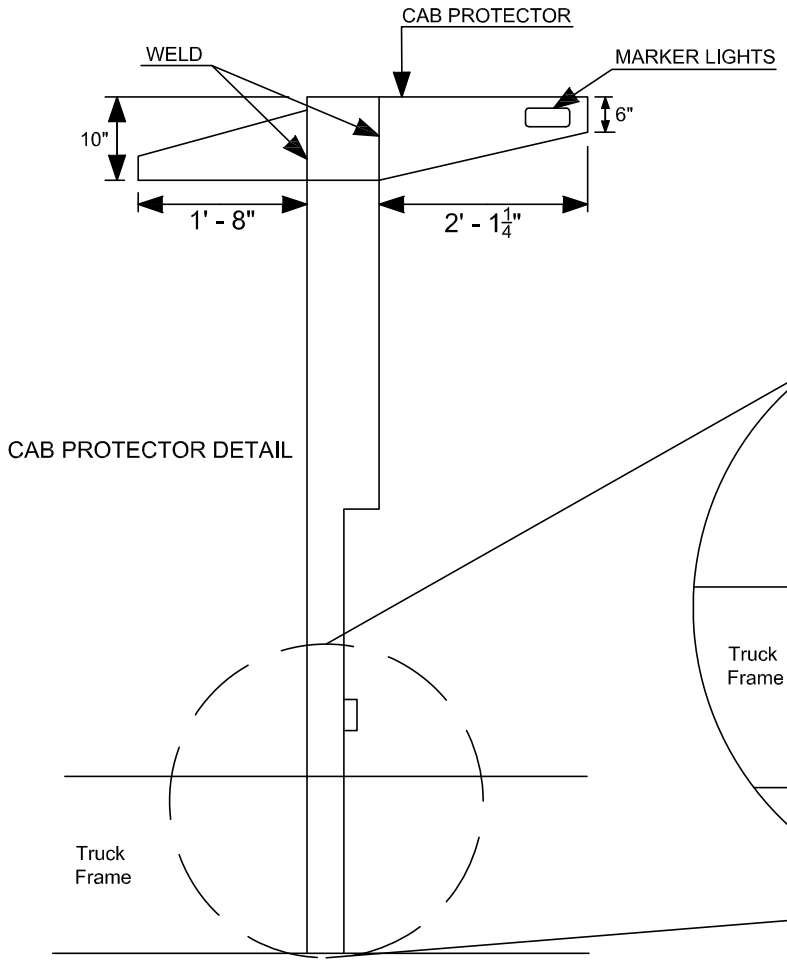
NOTE:
STAINLESS STEEL SUB-FRAME

DRAWN LWB	7/13/2022	PA DEPARTMENT OF TRANSPORTATION
CHECKED		TITLE: PRE-WET TANK 190 GALLON SPECIFICATIONS AND HOSE DIAGRAMS
QA		
REVISIONS		
DVC	7-19-23	
		SIZE B · DWG NO EQN-1098-B · REV
		SCALE 1/15 · SHEET 2 OF 2

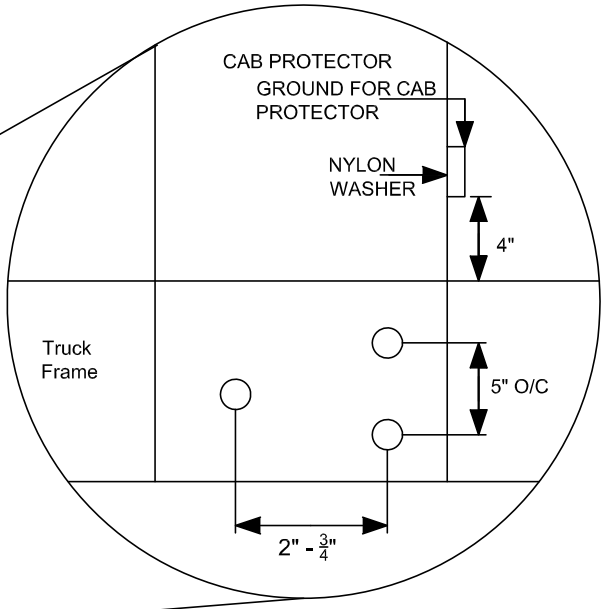


PA DEPARTMENT OF TRANSPORTATION

REVISIONS			CAB PROTECTOR & PRE-WET DEFLECTOR		
NO.	DATE	BY			
1					
2			DRAWN BY KBD	Combined With	EQN-1098
3			DATE 08-08-19	CHK'D BY / Scale	SHEET 1 OF 5



CAB PROTECTOR DETAIL

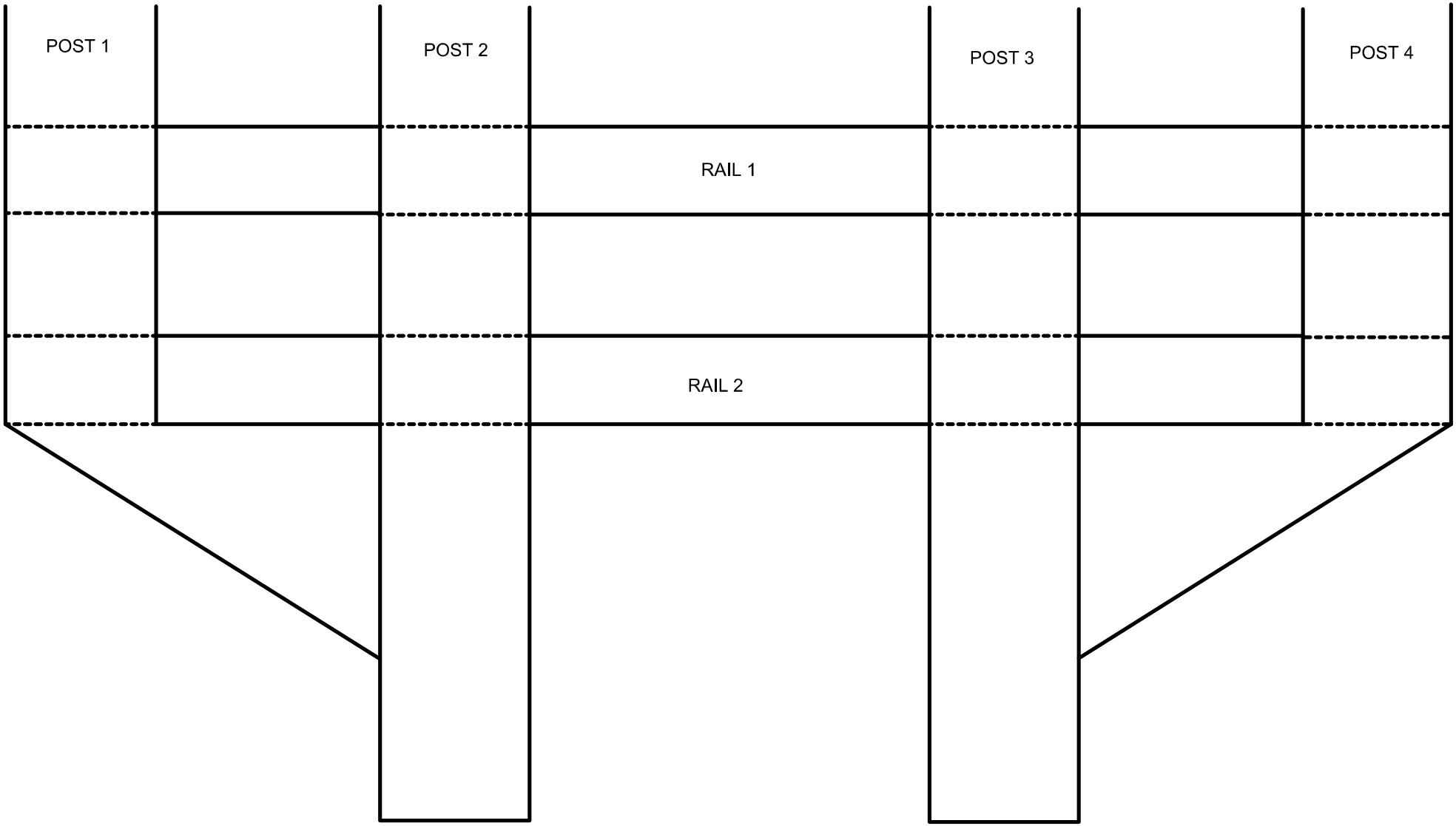


NOTE:

- TOP OF CAB PROTECTOR IS WELDED LIKE SHOWN IN DRAWINGS.
- CAB PROTECTOR IS BOLTED TO TRUCK FRAME.
- WHITE NYLON WASHER TO BE PLACED BETWEEN NUT/BOLT OF GROUND AND ALUMINUM CAB PROTECTOR.

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			CAB PROTECTOR & PRE-WET DEFLECTOR			
NO.	DATE	BY				
1			DRAWN BY KBD	Combined With		EQN-1098
2			DATE 08-08-19	CHK'D BY N/A	Scale N/A	SHEET 2 OF 5
3						

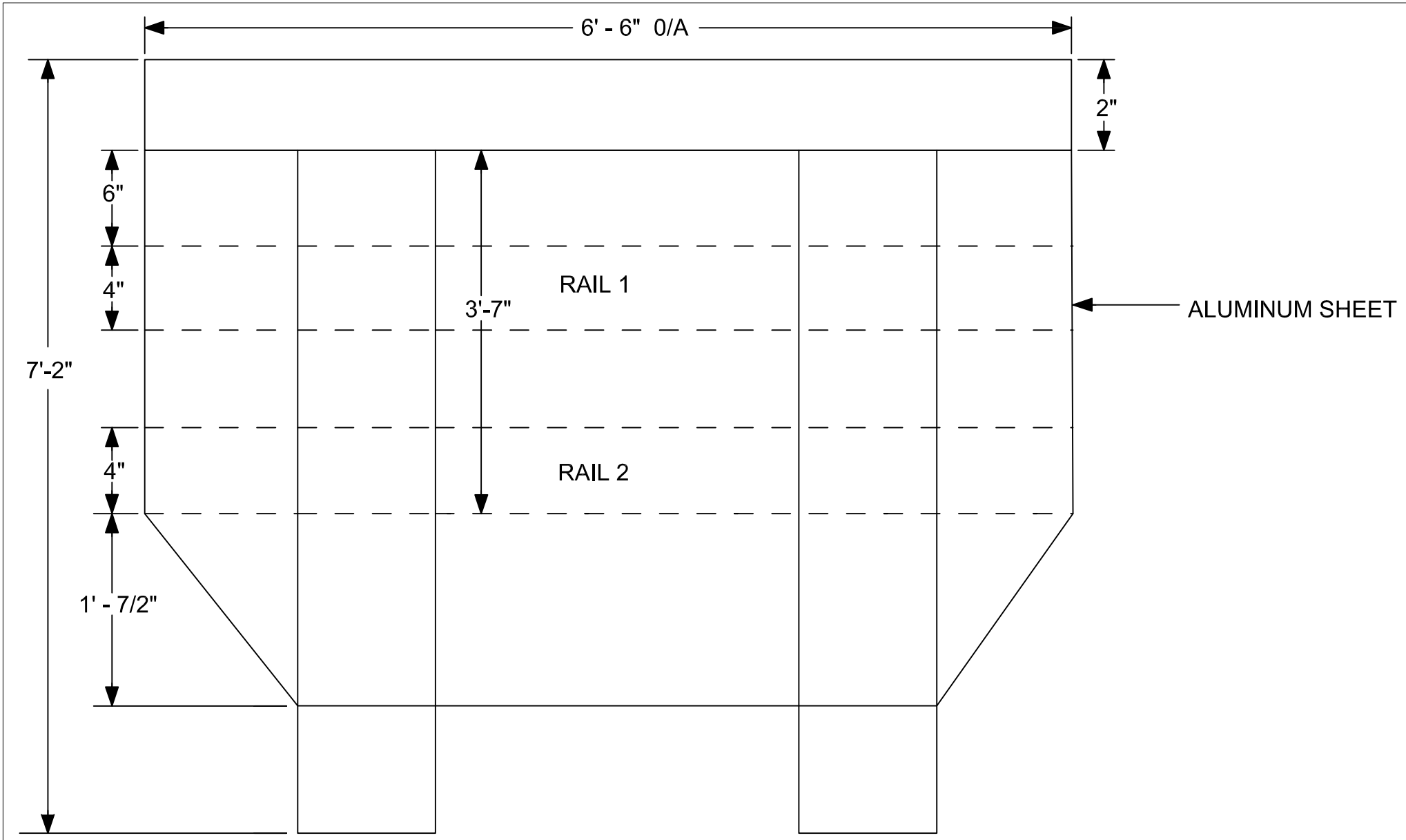


CAB PROTECTOR

LOOKING FROM BACK

PA DEPARTMENT OF TRANSPORTATION

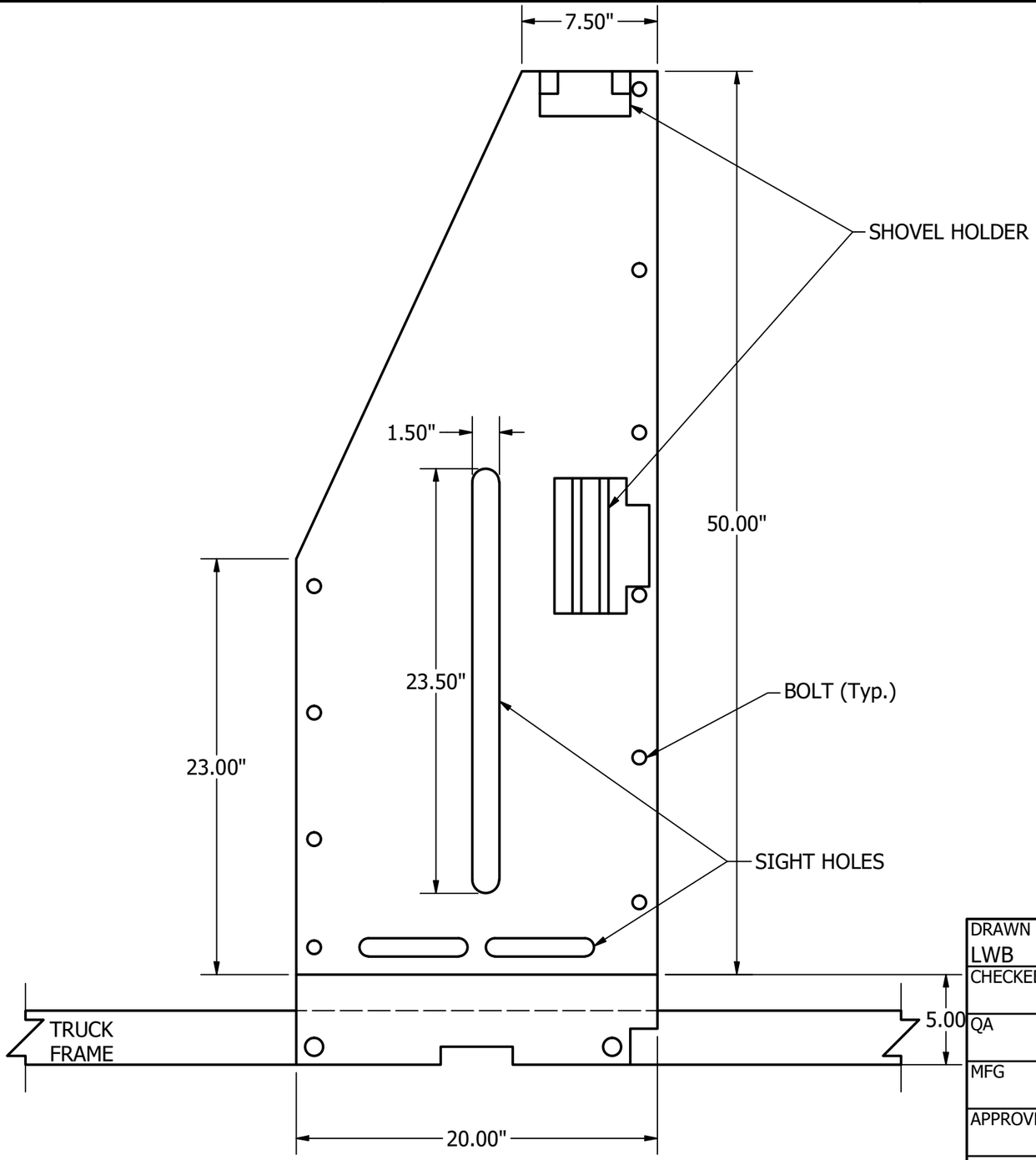
REVISIONS			CAB PROTECTOR & PRE-WET TANK DEFLECTOR			
NO.	DATE	BY				
1						
2			DRAWN BY KBD	Combined With		EQN-1098
3			DATE 08-08-19	CHK'D BY N/A	Scale N/A	SHEET 3 OF 5



CAB PROTECTOR

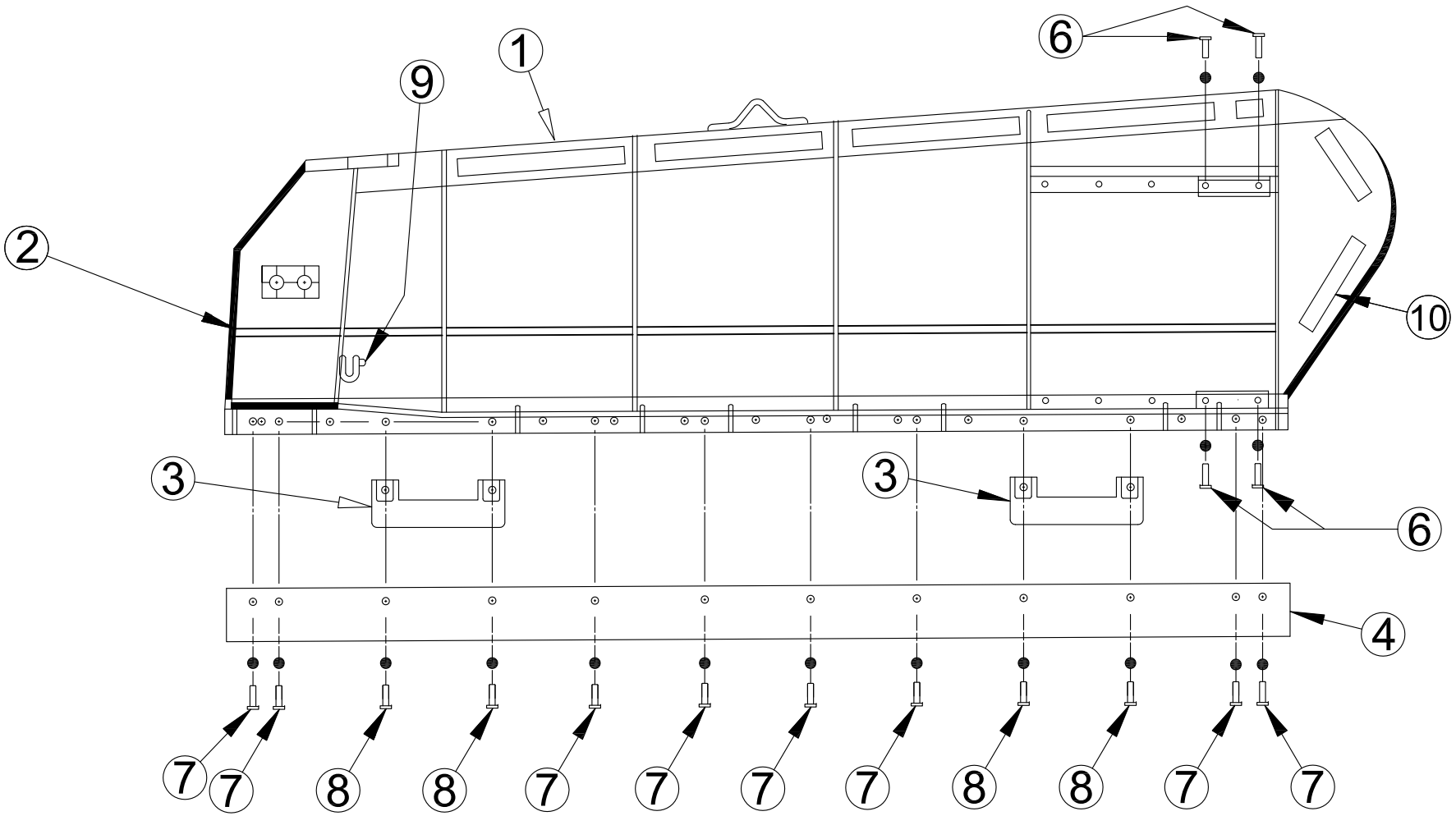
LOOKING FROM FRONT

PA DEPARTMENT OF TRANSPORTATION						
REVISIONS			CAB PROTECTOR & PRE-WET TANK DEFLECTOR			
NO.	DATE	BY				
1						
2			DRAWN BY KBD	Combined With		EQN-1098
3			DATE 08-08-19	CHK'D BY N/A	Scale N/A	SHEET 4 OF 5



NOTE:
SHOVEL HOLDER SHOULD BE ABLE TO HOLD A 51" SHOVEL WITHOUT INTERFERING WITH OTHER COMPONENTS

DRAWN LWB	8/18/2022	PA DEPARTMENT OF TRANSPORTATION
CHECKED		TITLE: CAB PROTECTOR & PRE-WET DEFLECTOR
QA		
MFG		
APPROVED		
		SIZE B · DWG NO EQN-1098-2022 · REV
		SCALE 1/7 · SHEET 5 OF 5



ITEM	PART NO.	REQ.	DESCRIPTION
1	17519-DA	1	11' WING MOLDBOARD (RH)
2	17553-BA	1	BRACE PLATE (RH)
3	16697-C	2	6" CAST MOLDBOARD SHOE
4	17564-A1	1	1/2" x 6" x 120" LG. w/SQ. CTSK HOLES
5	17566-A	1	1-1/2" DIA. 4" LG. GR. 8 w/SLOTTED HEX NUT, FW COTTER
6	5308-A329	4	5/8" DIA. x 2-1/4" LG. GR. 8 w/LN
7	5308-A113	8	5/8" DIA. x 2-1/2" LG. GR. PLOW BOLT w/LN & FW
8	5308-A481	4	5/8" DIA. x 3-1/2" LG. GR. PLOW BOLT w/LN & FW
9	P-116-843	1	1/2" CHAIN SHACKLE w/5/8" DIA. SCREW PIN
10	P-116-430	1	REFLECTIVE TAPE

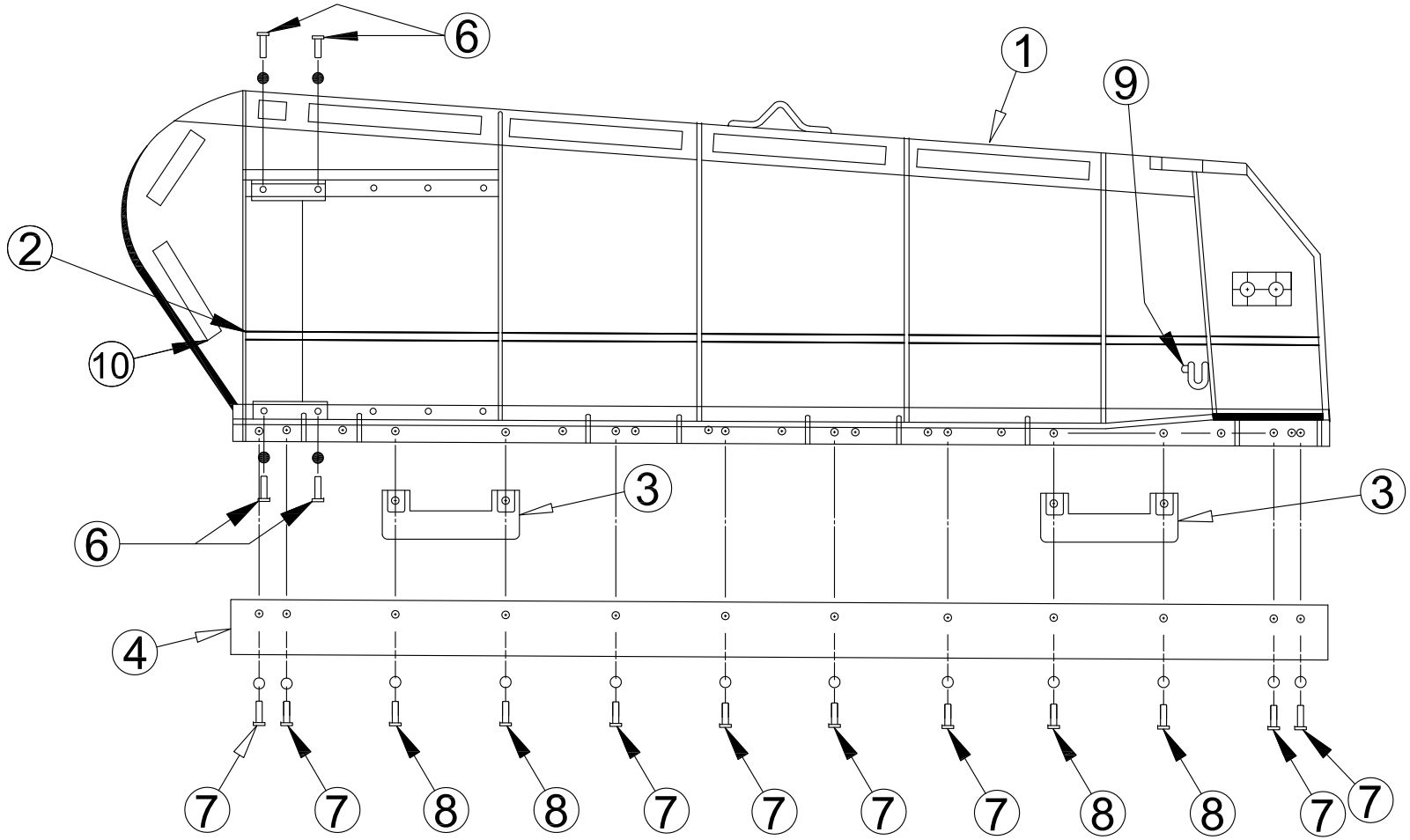
RIGHT WING

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
1		
2		
3		

Right Hand 11' Wing Moldboard Ass'y

DRAWN BY KBD	Combined With		EQN-1099
DATE 07-18-19	CHK'D BY	Scale	SHEET 1 of 14



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6	5308-A329	4	5/8" DIA. x 2-1/4" LG. GR. 8 w/LN
7	5308-A113	8	5/8" DIA. x 2-1/2" LG. GR. PLOW BOLT w/LN & FW
8	5308-A481	4	5/8" DIA. x 3-1/2" LG. GR. PLOW BOLT w/LN & FW
9	P-116-843	1	1/2" CHAIN SHACKLE w/5/8" DIA. SCREW PIN
10	P-116-430	1	REFLECTIVE TAPE

LEFT WING

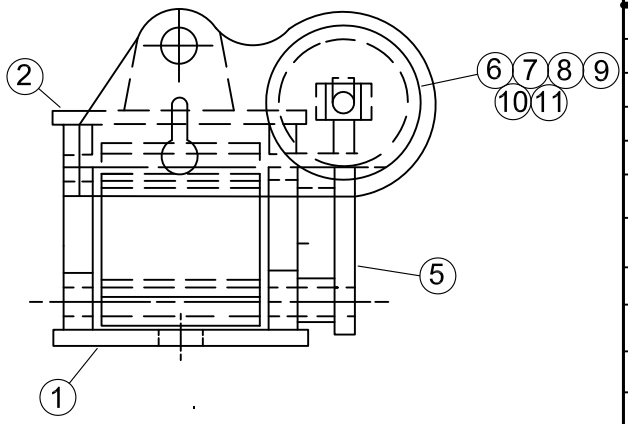
PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
1		
2		
3		

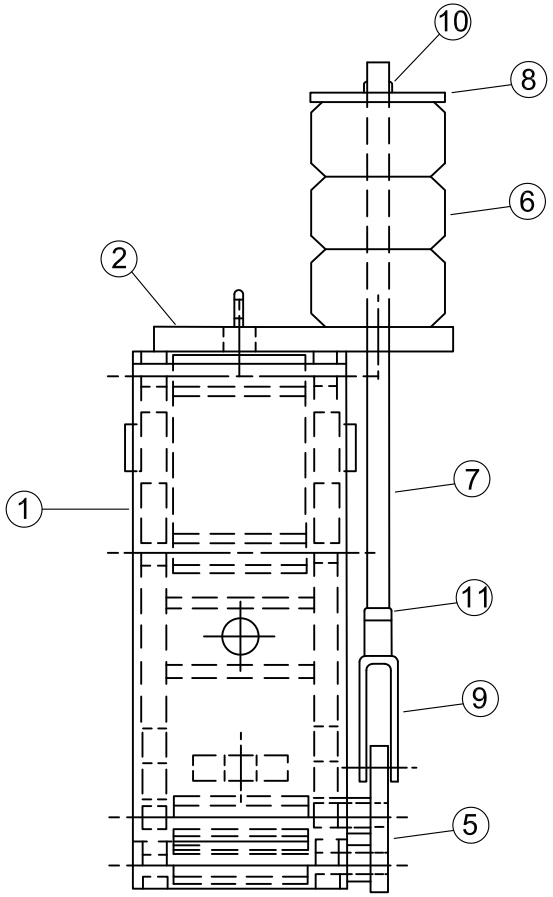
Left Hand 11' Wing Moldboard Ass'y

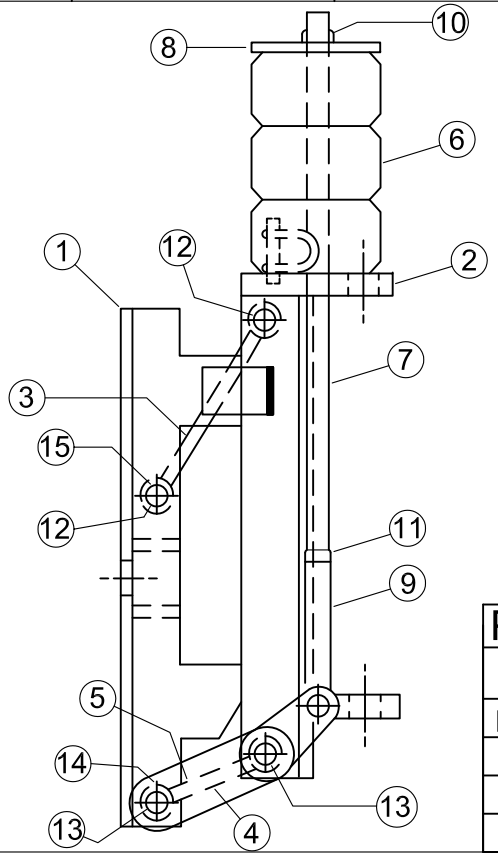
DRAWN BY KBD | Combined With | EQN-1099

DATE 07-18-19 | CHK'D BY | Scale | SHEET 2 of 14



ITEM	PART NO.	DESCRIPTION	REQ'D	NAME
1	17477-B	SEE DRWG.	1	FRONT MTG. PLATE WLDMT
2	17481-B	SEE DRWG.	1	REAR MTG PLATE WLDMT.
3	17485-A	SEE DRWG.	1	TOP LINKAGE
4	17486-A	SEE DRWG.	1	BOTTOM LINKAGE
5	17488-A	SEE DRWG.	1	SIDE LINKAGE
6	P-116-838	AEON A760-75	1	TIMBREN SPRING
7	17489-A	3/4" DIA. ROD x 25 LG. C.F.	1	ADJUSTING ROD
8	17490-A	----	1	SPACER
9	P-116-839	----	1	YOKE
10	P-130-68	3/4" LOCK NUT	1	LOCK NUT
11	P-130-23	3/4" NUT	2	NUT
12	5308-A477	7/8 - 9 UNC x 9 - 1/2 LG. w/LOCK NUT	2	CAPSCREW GR. 8
13	5308-A478	7/8 - 9 UNC x 12 LG. w/LOCK NUT	3	CAPSCREW GR. 8
14	P-129-2	1/8" NPT (SCREW IN STRAIGHT)	1	ZERK
15	P-129-178	1/8" NPT (SCREW IN 45 DEG)	1	ZERK
16	17565-A	SEE DRWG.	1	HINGE PIN





R.H. SHOWN
L.H. OPPOSITE

1 REQ'D PER UNIT

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
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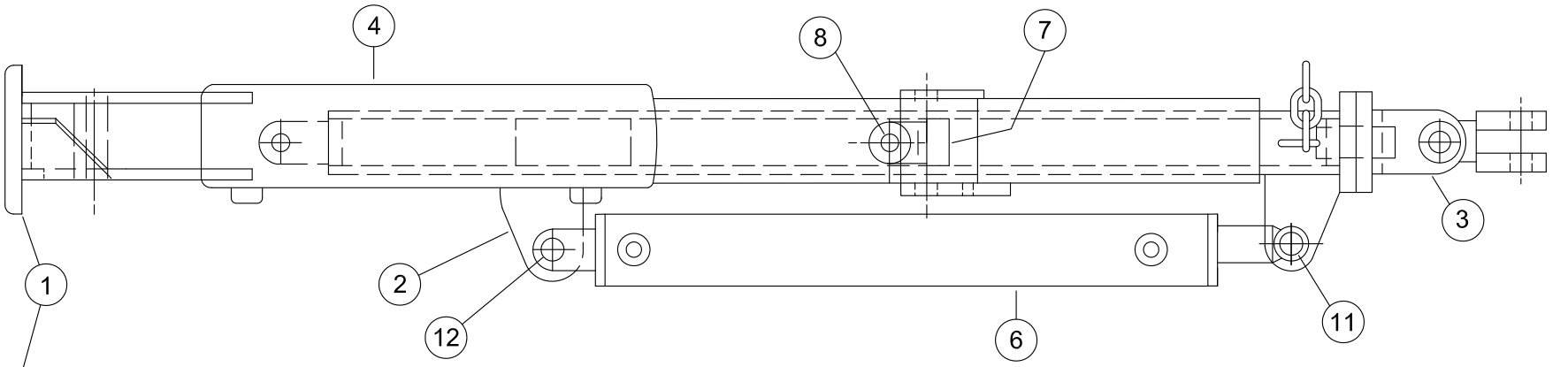
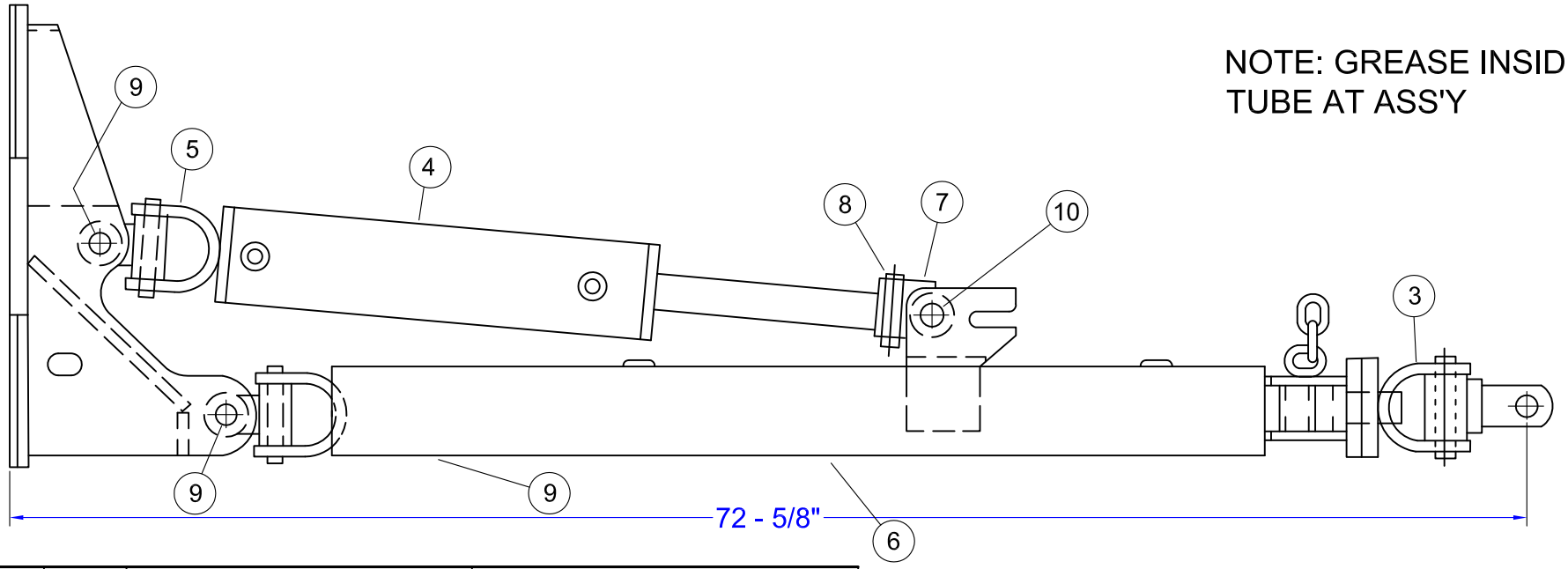
TRIP LINKAGE FOR WING PLOW

DRAWN BY	Combined With	
KBD		EQN-1099
DATE	CHK'D BY	Scale
07-18-19		Sheet 3 of 14



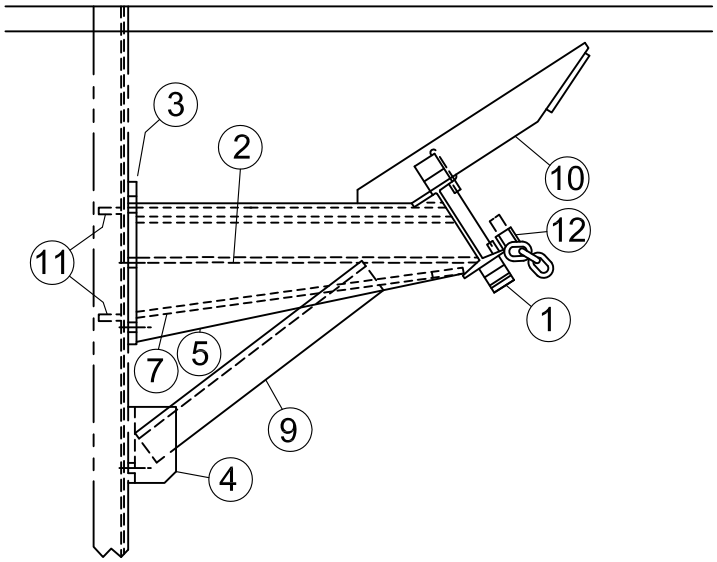


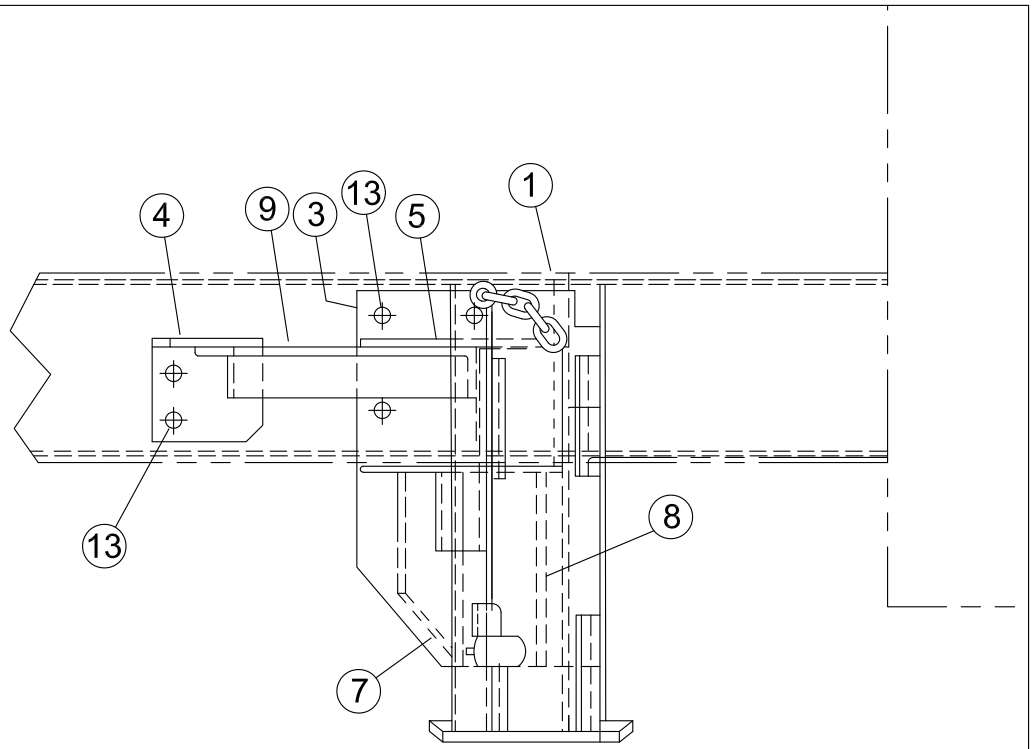
NOTE: GREASE INSIDE TUBE AT ASS'Y

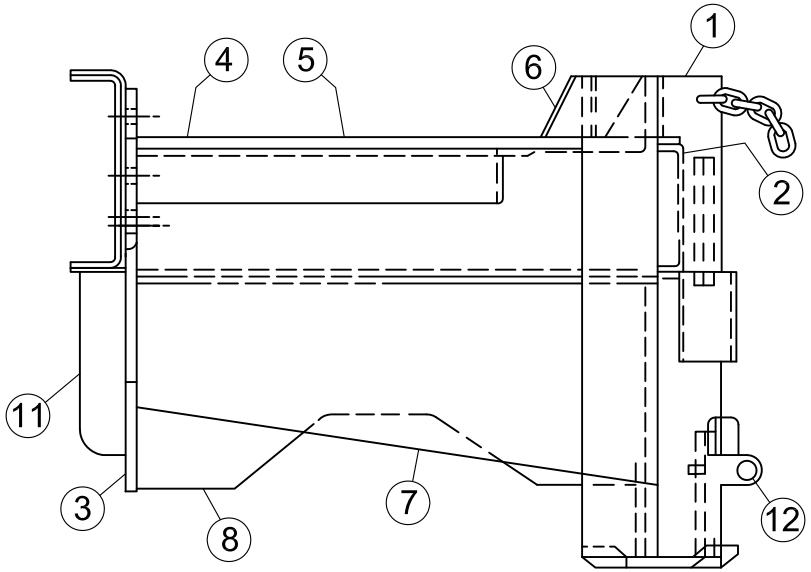
ITEM	PART NO.	REQ'D	NAME	DESCRIPTION
1	17543-B	1	REAR POST SLIDE	SEE DRWG.
2	17550-B	1	OUTER PUSH BRACE	SEE DRWG.
3	17557-B	1	INNER PUSH BRACE	SEE DRWG.
4	P-114-110	1	TOP HYD. CYLINDER	4 x 13-1/4 S.A
5	17551-A	1	SWIVEL FLANGE	SEE DRWG. (USED CYL. ITEM #4)
6	P-114-109	1	SIDE HYD. CYLINDER	3 x 24 D.A.
7	17551-A	1	CYL. ROD END SWIVEL TUBE	SEE DRWG.
8	F-159-4	1	PIN	1" DIA. x 3-1/2" LG. CRR
9	11685-A10	2	PIN	1" DIA. x 5" LG. w/HAIR PIN
10	5308-A377	1	CAPSCREW GR. 8	1" -8 UNC x 6 LG. w/JAM NUT
11	5308-A479	1	CAPSCREW GR. 8	1" -8 UNC x 4 LG. w/JAM NUT
12	5308-A480	1	CAPSCREW GR. 8	1" -8 UNC x 3-1/2 LG. w/JAM NUT

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			REAR WING PUSH BRACE FOR WING PLOW		
NO.	DATE	BY			
1					
2			DRAWN BY KBD	Combined With	EQN-1099
3			DATE 07-18-19	CHK'D BY / Scale	Sheet 4 of 14







ITEM	PART NO.	REQ.	NAME	DESCRIPTION
1	17569-B	1	I-BEAM WLDMT.	SEE DRWG.
2	17570-A	1	RECT. TUBE	SEE DRWG.
3	17571-A	1	SIDE PLATE	
4	17572-A	1	MTG. ANGLE	
5	17573-A	2	REINF. PLATE	
6	5855-A-141	2	GUSSET	
7	17574-A	1	GUSSET	
8	17575-A	1	REINF. BAR	
9	F-118-46	1	REINF. ANGLE	
10	17626-A	1	WING UP STOP	SEE DRWG.
11	14658-A20	2	REINF. BAR	
12	17134-A3	1	PIN	1" DIA. x 5-1/2 LG. w/HAIR PIN
13	5308-A261	7	CAPSCREW GR. 8	3/4-10 UNC x 2-1/2 LG. w/LOCK NUT

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
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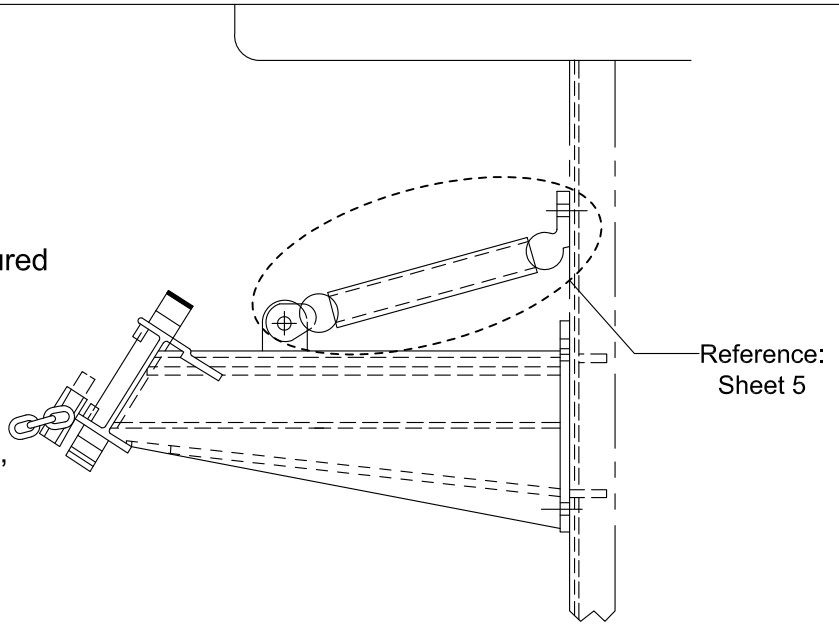
PASS. SIDE REAR POST FOR WING PLOW

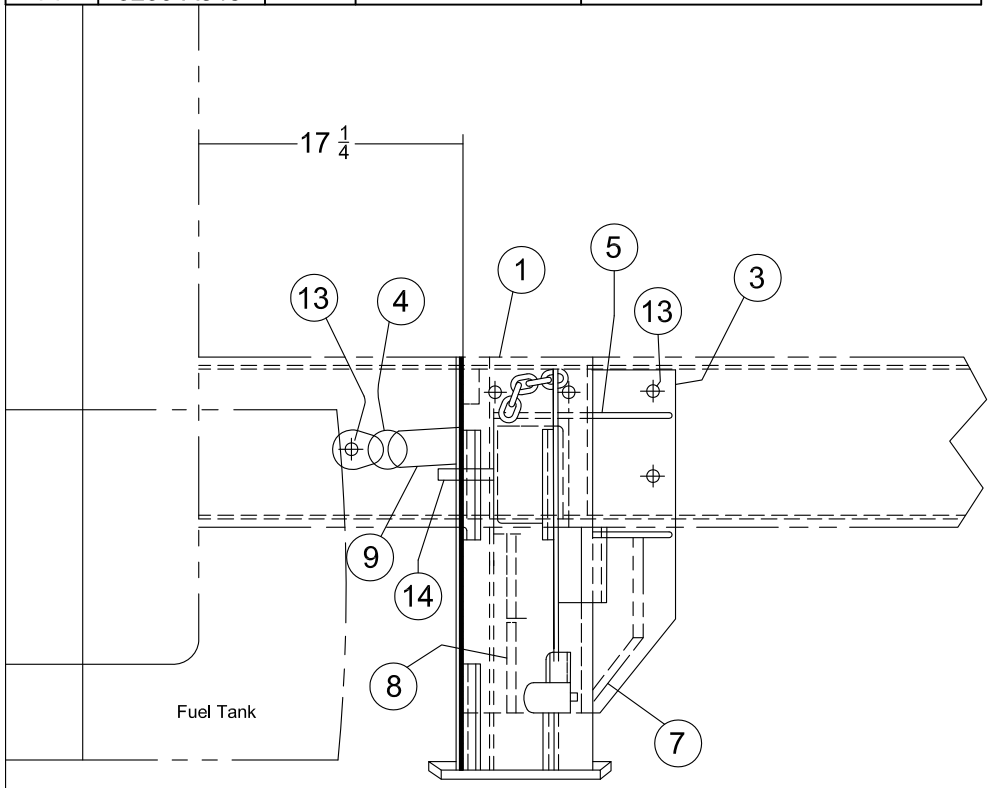
DRAWN BY	KBD	Combined With		EQN-1099
DATE	07-18-19	CHK'D BY	Scale	Sheet 5 of 14

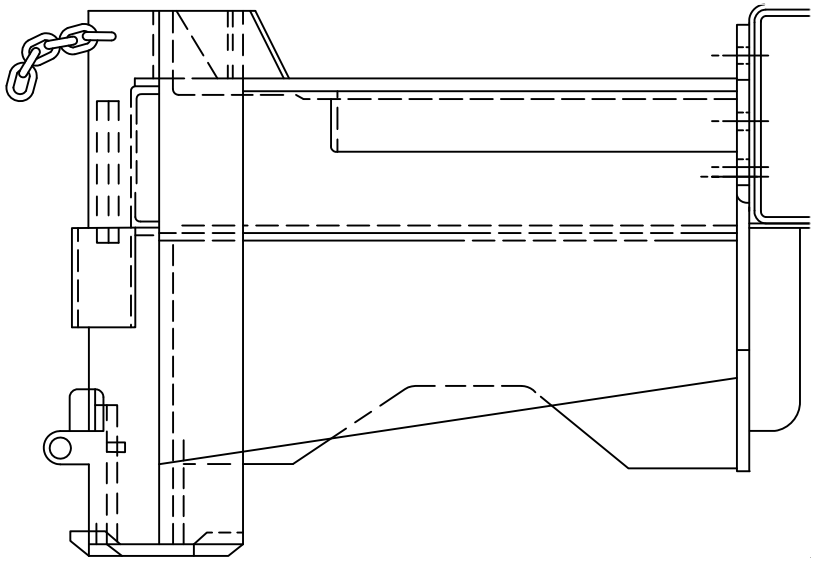
ITEM	PART NO.	REQ'D	NAME	DESCRIPTION
1	17569-B	1	I-BEAM WLDNT.	SEE DRWG.
2	17570-A	1	RECT. TUBE	SEE DRWG.
3	17571-A	1	SIDE PLATE	
4	10098-3	2	END FITTING	CAST
5	17573-A	2	REINF. PLATE	
6	5855-A141	2	GUSSET	
7	17574-A	1	GUSSET	
8	17575-A	1	REINF. BAR	
9	F-245-26	1	SUPPORT PIPE	
10	17626-A	1	WING UP STOP	SEE DRWG.
11	14658-A28	2	REINF. BAR	
12	17134-A3	1	PIN	1" DIA. x 5-1/2 LG. w/HAIR PIN
13	5308-A261	7	CAPSCREW GR. 8	3/4-10 UNC x 2-1/2 LG. w/LOCK NUT
14	5250-A348	1	EAR	

NOTE:

1) Install End Fittings Item #4, as shown
2) Measure Distance Between End Fittings, Item #4
3) Add 7/8" To Measured Distances & Cut Pipes, Item #9, To These Lengths
4) Install Pipes, Item #9, To End Fittings, Item #4, As Shown & Weld All Around







PA DEPARTMENT OF TRANSPORTATION

DRIVERS SIDE REAR POST

REVISIONS		
NO.	DATE	BY
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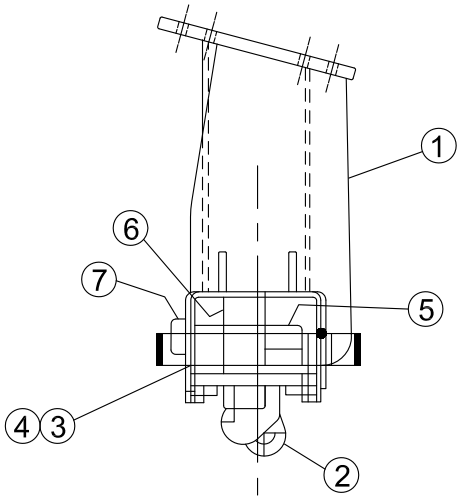
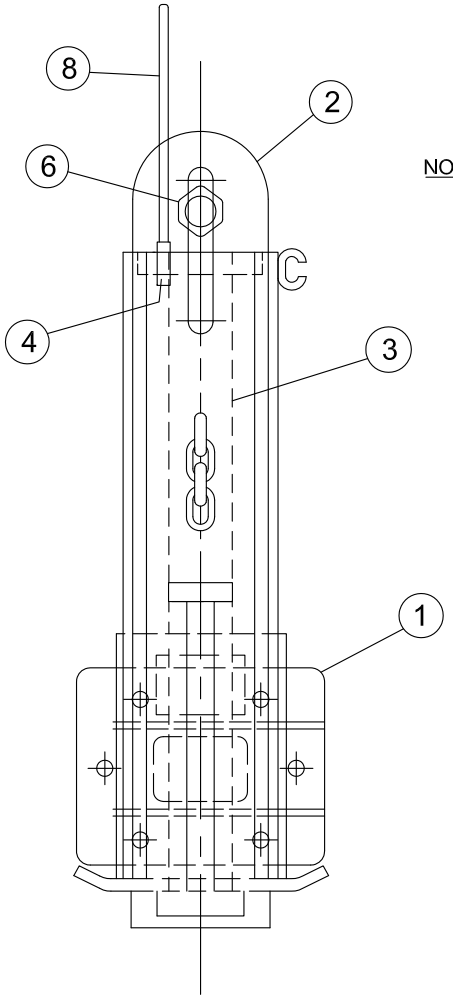
DRAWN BY KBD | Combined With | EQN-1099

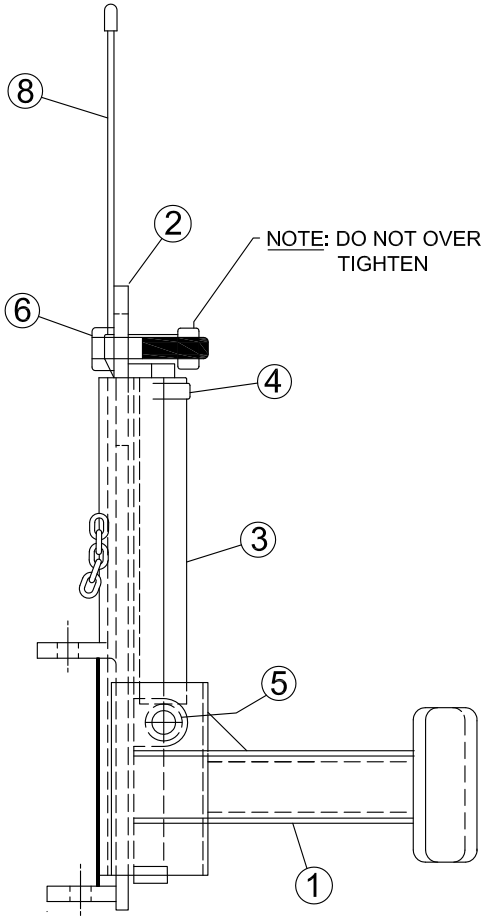
DATE 07-18-19 | CHK'D BY | Scale | Sheet 6 of 14

ITEMS	PART NO.	REQ.	NAME	DESCRIPTION
1	17492-D	1	FRONT POST WLDMT.	SEE DRWG.
2	17502-C	1	SLIDE WLDMT.	SEE DRWG.
3	P-114-108	1	HYD. CYLINDER	2-1/2 x 15 D.A.
4	17504-A	1	CYL. HOLD DOWN	
5	F-176-3	1	PIN (BOTTOM CYL.)	1-1/2 DIA. x 7-1/2 LG. HRR
6	5308-A475	1	CAPSCREW GR. 8	1-1/4-7 UNC x 6 LG. w/LOCK NUT
7	5308-A476	1	CAPSCREW GR. 8	1/4-20 UNC x 3 LG. w/LOCK NUT
8	P-116-637	1	MARKER POLE	BUYERS





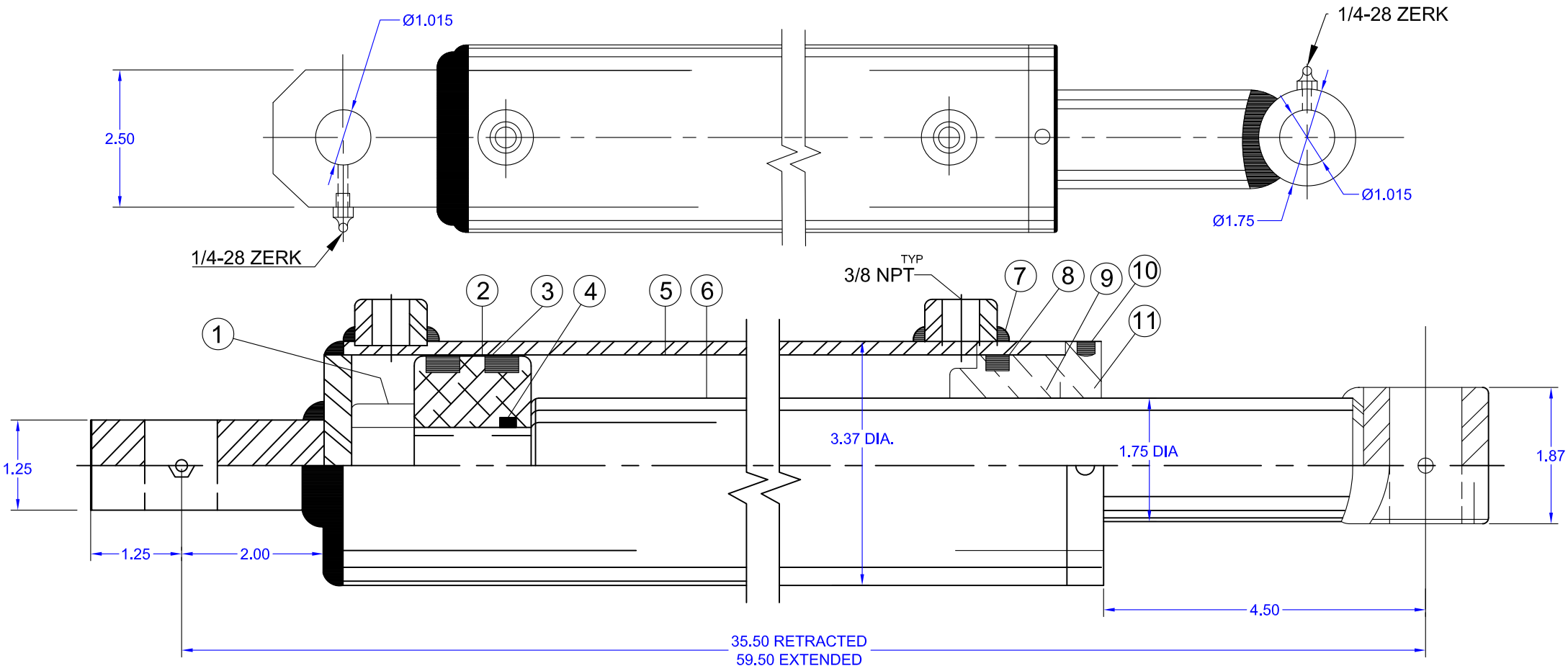
NOTE: GREASE SLIDE PLATE AT ASS'Y



NOTE: DO NOT OVER TIGHTEN

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			FRONT POST ASS'Y			
NO.	DATE	BY				
1						
2			DRAWN BY KBD	Combined With		EQN-1099
3			DATE 07-18-19	CHK'D BY	Scale	Sheet 7 of 14



ITEM	PART NO.	DESCRIPTION	REQ'D
1	P-114-23103	SLOTTED NUT	1
2	P-114-22306	PISTON (ALUM)	1
3	x	POLYPAK	2
4	x	'O' RING	1
5	P-114-109-JACKET	JACKET ASSEMBLY	1
6	P-114-109-ROD	PISTON ROD	1
7	x	'O' RING	1
8	x	BACKUP WASHER	1
9	x	POLYPAK (TYPE 'B')	1
10	P-114-13632	GLAND NUT	1
11	x	ROD WIPER	1

x = SEAL REPAIR KIT NO.
DA-300-175-RPK-POP
INCLUDES ITEMS: 3,4,7,8,9,11

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
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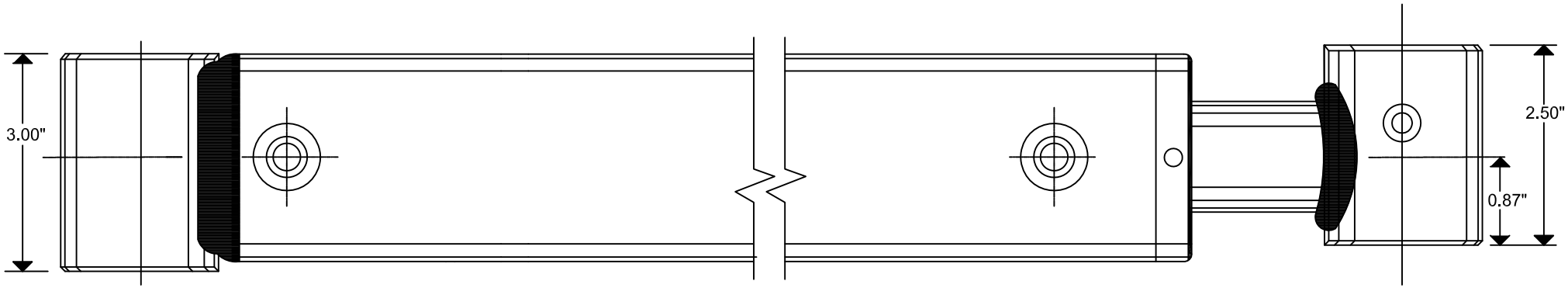
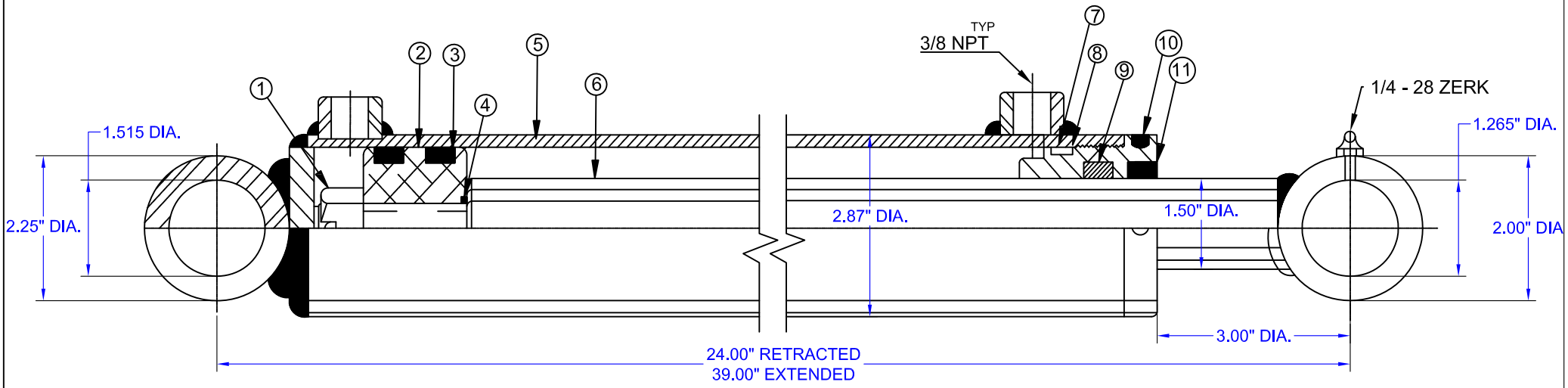
PARTS DRWG. FOR P-114-109
3" BORE x 24" STROKE D.A
CYL.

DRAWN BY	Combined With	
KBD		EQN-1099
DATE 07-18-19	CHK'D BY	Scale / Sheet 8 of 14





ITEM	PART NO.	DESCRIPTION	REQ'D
1	P-114-23079	SLOTTED NUT	1
2	P-114-22251	PISTON (ALUM)	1
3	x	POLYPAK	2
4	x	'O' RING	1
5	P-114-108-JACKET	JACKET ASSEMBLY	1
6	P-114-108-ROD	PISTON ROD	1
7	x	'O' RING	1
8	x	BACKUP WASHER	1
9	x	POLYPAK (TYPE 'B')	1
10	P-114-13535	GLAND NUT	1
11	x	ROD WIPER	1

x = SEAL REPAIR KIT NO.
DA-250-150-RPK
INCLUDES ITEMS: 3,4,7,8,9,11

FRONT POST CYLINDER

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
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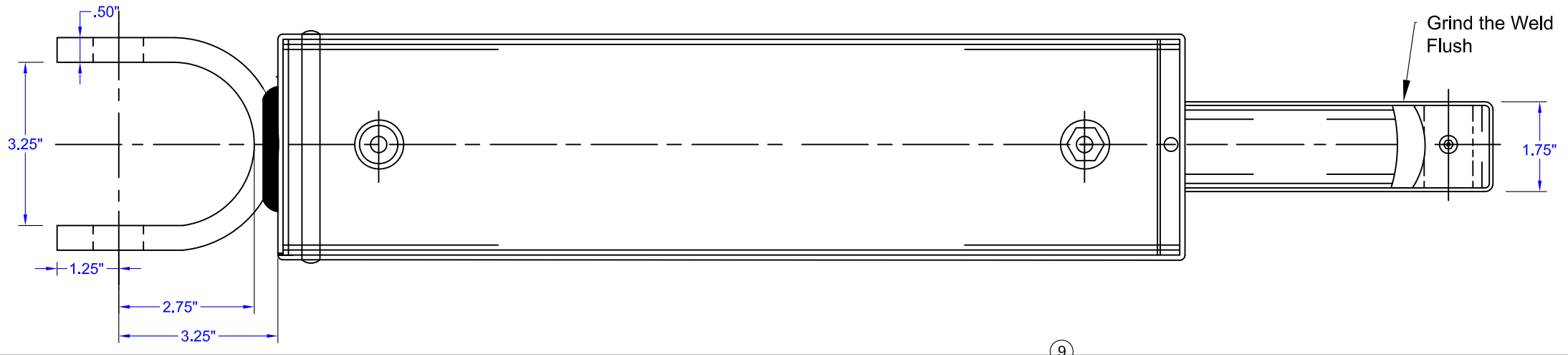
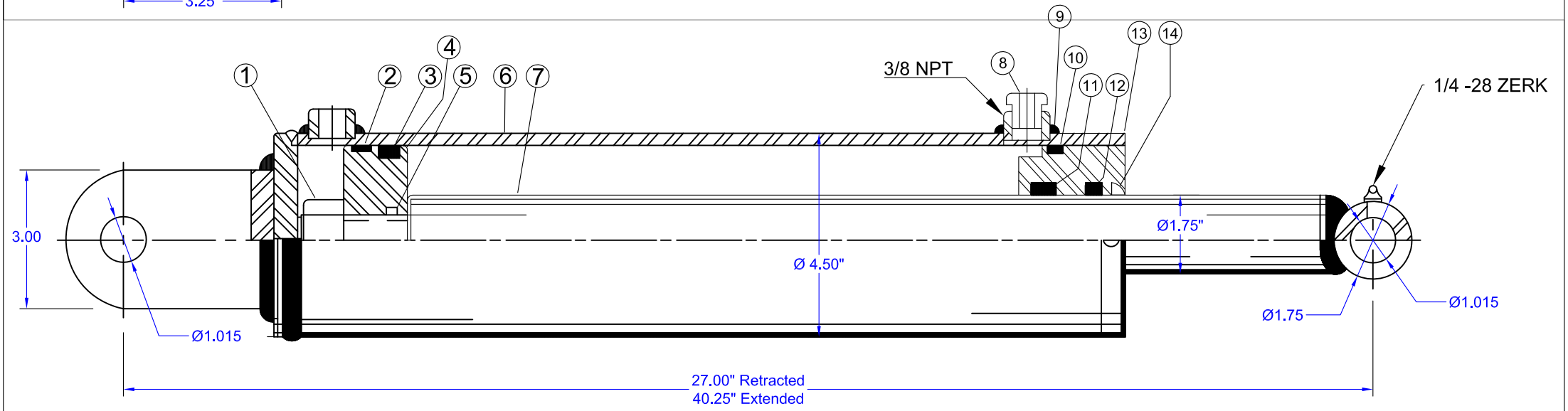
PARTS DRWG. FOR P-114-108
2-1/2" BORE x 15" STROKE
D.A. CYL.

DRAWN BY KBD	Combined With		EQN-1099
DATE 07-18-19	CHK'D BY	Scale	Sheet 9 of 14





ITEM	PART NO.	DESCRIPTION	REQ'D	ITEM	PART NO.	DESCRIPTION	REQ'D
1	P-114-23100	SLOTTED NUT	1	10	X	BACKUP WASHER	1
2	X	WEAR RING	1	11	X	WEAR RING	1
3	X	POLYPAK	1	12	X	'O' RING	1
4	P-114-22408	PISTON (STEEL)	1	13	P-114-110-HEADSTOCK	HEADSTOCK	1
5	X	'O' RING	1	14	X	ROD WIPER	1
6	P-114-110-JACKET	JACKET ASSEMBLY	1				
7	P-114-110-ROD	PISTON ROD	1				
8	P-114-3437	3/8 NPT BREATHER	1				
9	X	'O' RING	1				

x = SEAL REPAIR KIT NO.
SA-400-175-RPK-WPD
INCLUDES ITEMS: 2,3,5,9,10,11,12,14

PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
1		
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PARTS DRWG. FOR P-114-108
2-1/2" BORE x 15" STROKE
D.A. CYL.

DRAWN BY	Combined With	EQN-1099
KBD		
DATE	CHK'D BY / Scale	Sheet 10 of 14
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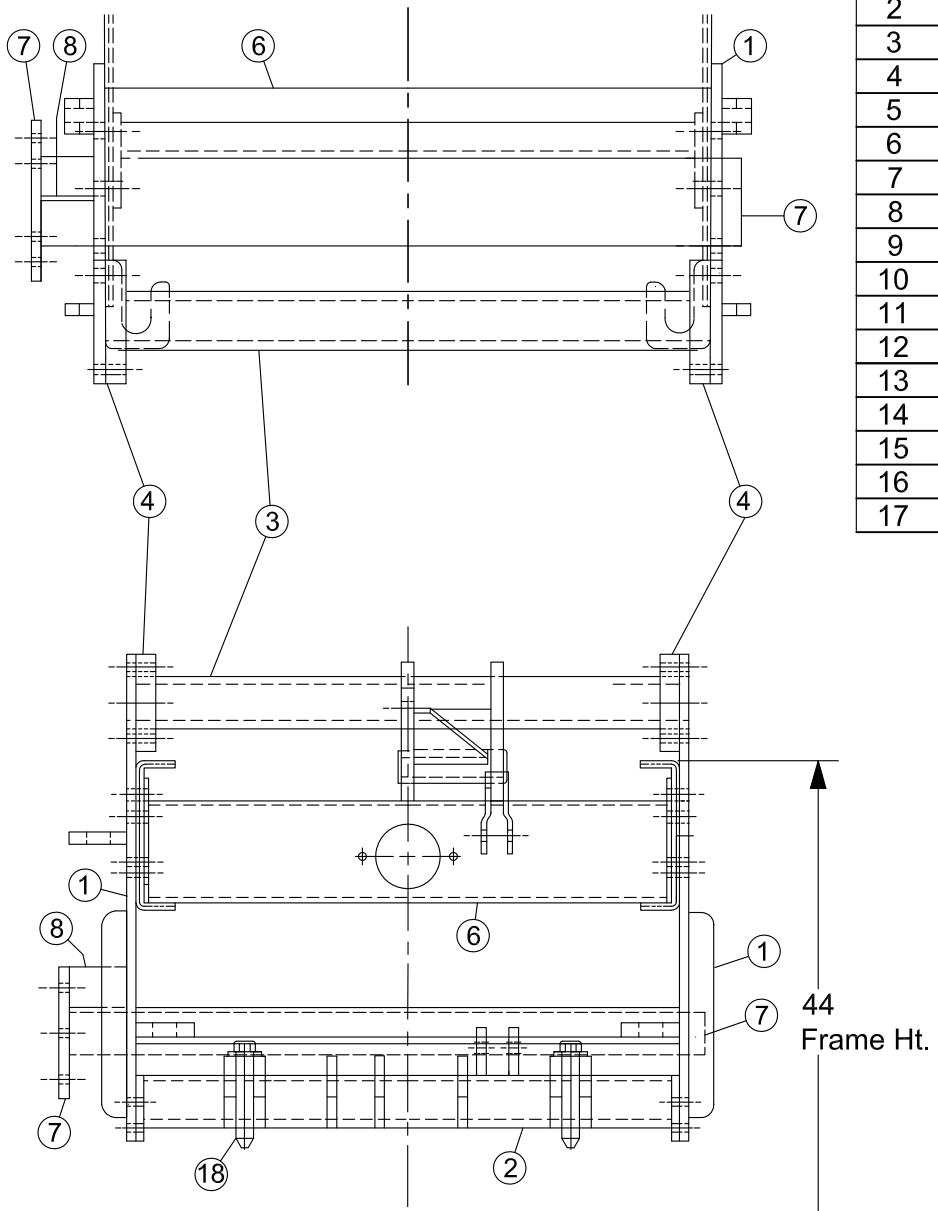
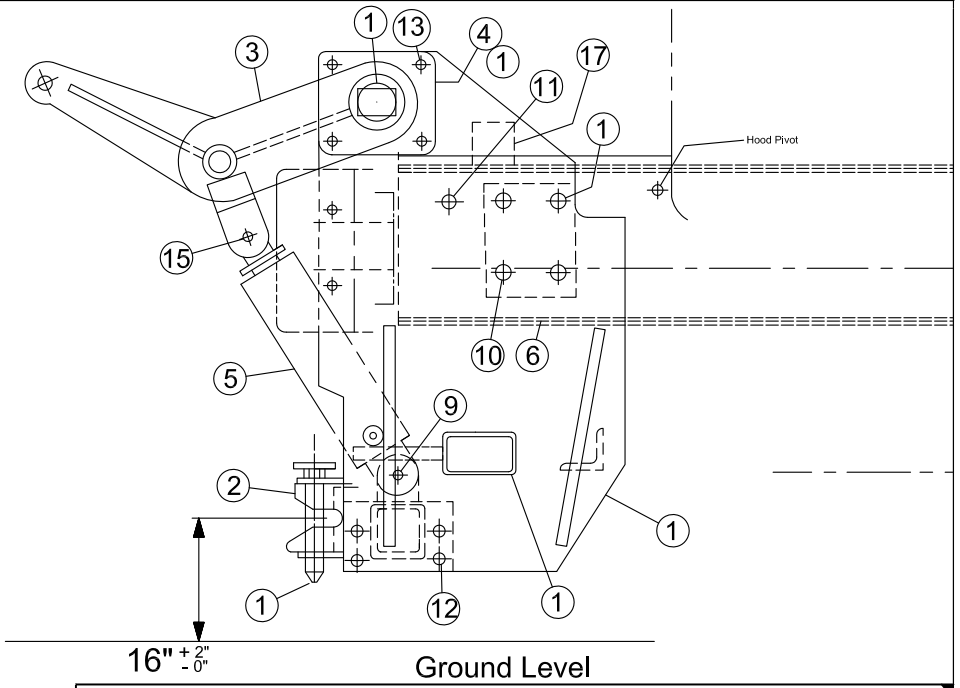
ITEM	PART NO.	REQ'D	NAME	DESCRIPTION
1	17505-c		SIDE PLATE	SEE DRWG.
2	17507-C	1	PENN. D.O.T. PUSH	SEE DRWG.
3	17514-C	1	LIFT BEAM	SEE DRWG.
4	17522-A	2	BEARING BLOCK	SEE DRWG.
5	P-114-71	1	LIFT CYL.	4 x 10 D.A.
6	17523-B	1	PUMP MTG. CHANNEL	SEE DRWG.
7	F-048-47	1	REINF. CROSS ANGLE	---
8	17134-A2	2	PIN (PLOW HOOK UP)	1 - 1/4" DIA. x 7-1/2" LG. w/HAIR PIN
9	11685-A2	1	PIN (BOTTOM CYL.)	1" DIA. x 4" LG. w/COTTER PIN
10	5308-A473	8	CAPSCREW GR. 8	1" - 8 UNC x 3 - 1/4 LG. w/LOCK NUT
11	5308-A474	2	CAPSCREW GR. 8	1" - 8 UNC x 2 - 3/4 LG. w/LOCK NUT
12	5308-A261	8	CAPSCREW GR. 8	3/4-10 UNC x 2-1/2 LG. w/LOCK NUT
13	5308-A304	8	CAPSCREW GR. 8	5/8-11 UNC x 3-1/2 LG. w/LOCK NUT
14	P-129-2	2	ZERK	1/8 NPT (SCREW IN STRAIGHT)
15	13606-A2	1	PIN (TOP CYL.)	3/4 DIA. x 4 LG. w/COTTER
16	14953-A	1	SERIAL NO. PLATE	---
17	F-118-16	2	SHEAR ANGLE	---



HITCH WITH WING



PA DEPARTMENT OF TRANSPORTATION

REVISIONS		
NO.	DATE	BY
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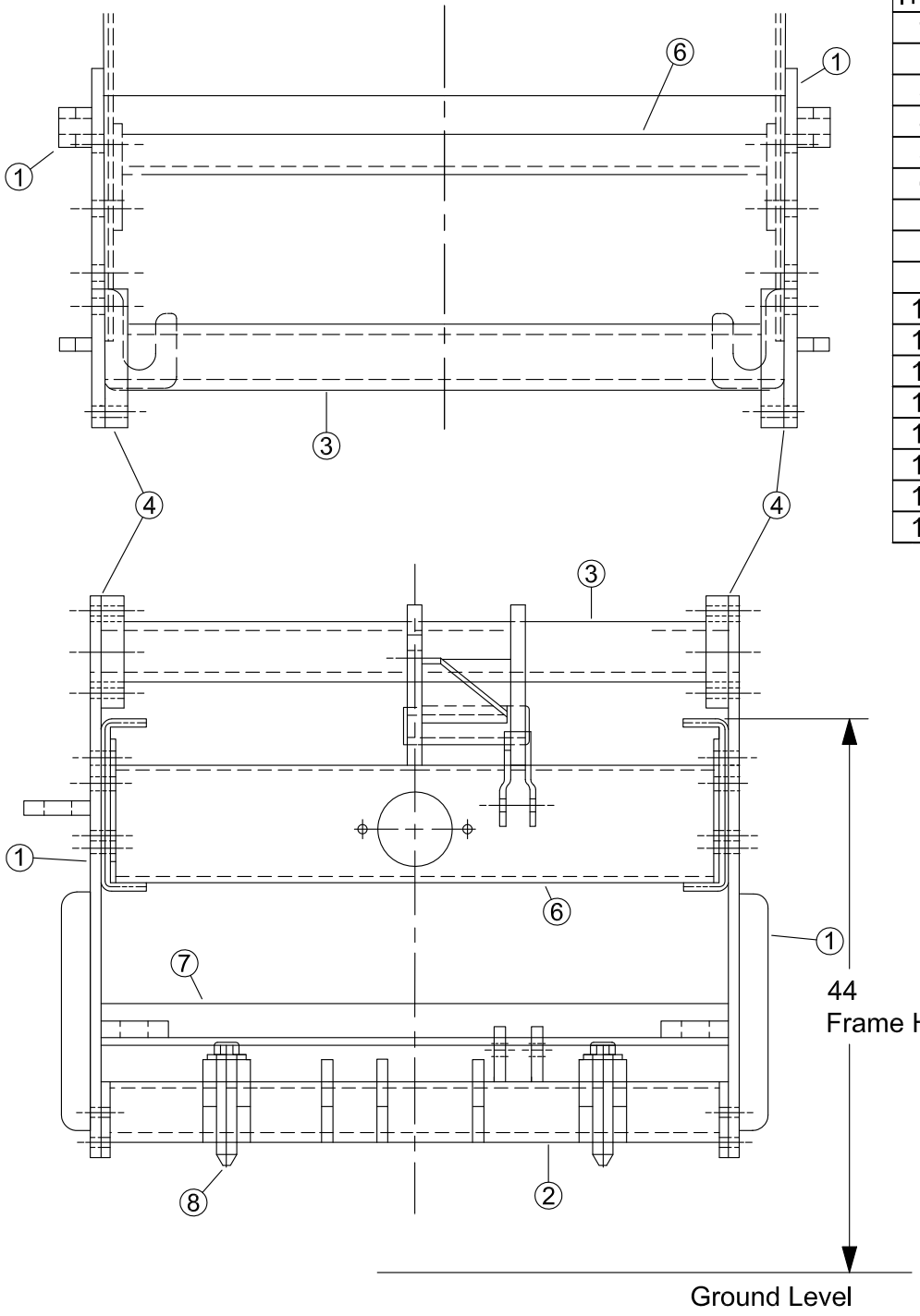
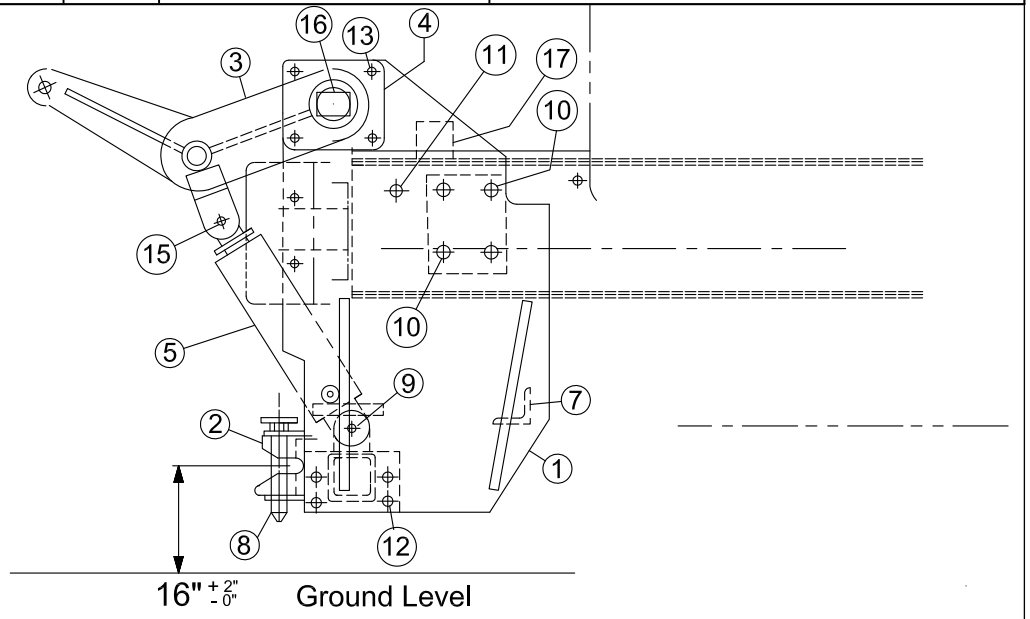
PD FOR HFF HITCH ASS'Y HICH W/FRAME EXT. & STAT. GRILLE

DRAWN BY KBD	Combined With		EQN-1099
DATE 07-18-19	CHK'D BY	Scale	Sheet 11 of 14



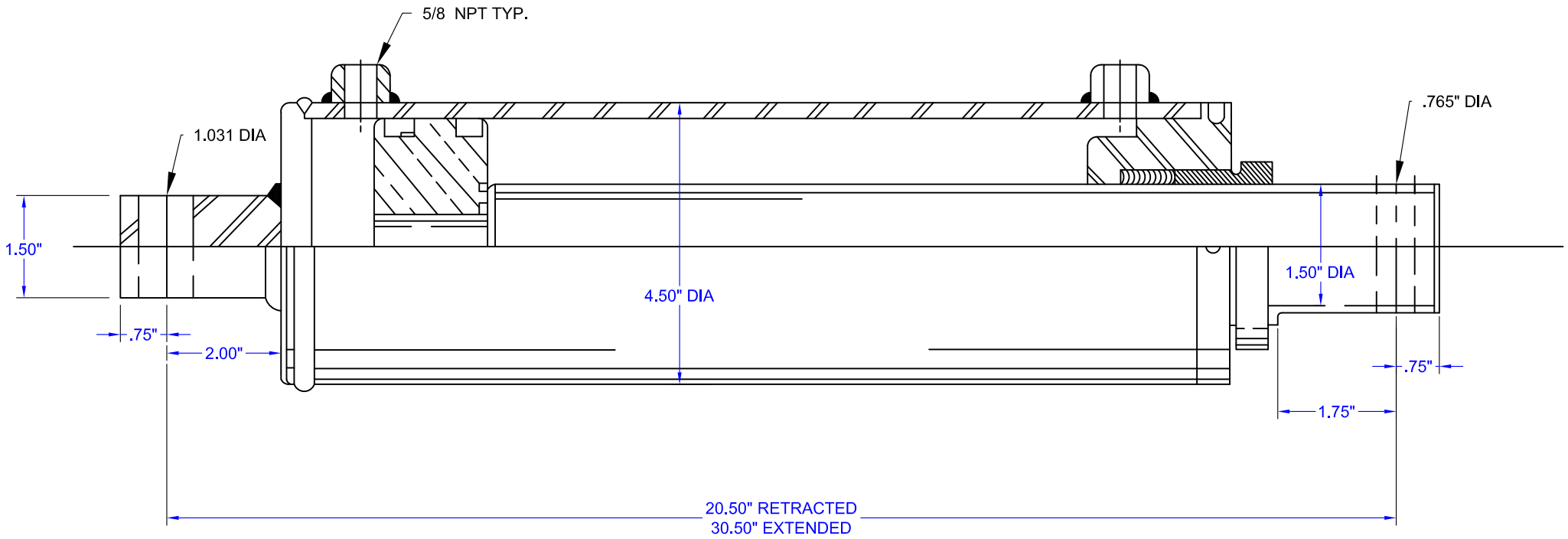
ITEM	PART NO.	REQ'D	NAME	DESCRIPTION
1	17581-C		SIDE PLATE	SEE DRWG.
2	17507-C	1	PENN. D.O.T. PUSH	SEE DRWG.
3	17514-C	1	LIFT BEAM	SEE DRWG.
4	17522-A	2	BEARING BLOCK	SEE DRWG.
5	P-114-71	1	LIFT CYL.	4 x 10 D.A.
6	17523-B	1	PUMP MTG. CHANNEL	SEE DRWG.
7	F-118-47	1	REINF. CROSS ANGLE	---
8	17134-A2	2	PIN (PLOW HOOK UP)	1 - 1/4" DIA. x 7-1/2" LG. w/HAIR PIN
9	11685-A2	1	PIN (BOTTOM CYL.)	1" DIA. x 4" LG. w/COTTER PIN
10	5308-A473	8	CAPSCREW GR. 8	1" - 8 UNC x 3 - 1/4 LG. w/LOCK NUT
11	5308-A474	2	CAPSCREW GR. 8	1" - 8 UNC x 2 - 3/4 LG. w/LOCK NUT
12	5308-A261	8	CAPSCREW GR. 8	3/4-10 UNC x 2-1/2 LG. w/LOCK NUT
13	5308-A304	8	CAPSCREW GR. 8	5/8-11 UNC x 3-1/2 LG. w/LOCK NUT
14	P-129-2	2	ZERK	1/8 NPT (SCREW IN STRAIGHT)
15	13606-A2	1	PIN (TOP CYL.)	3/4 DIA. x 4 LG. w/COTTER
16	14953-A	1	SERIAL NO. PLATE	---
17	F-118-16	2	SHEAR ANGLE	---



HITCH WITH NO WING

PA DEPARTMENT OF TRANSPORTATION

REVISIONS			HFF ASS'Y w/FRAME EXT. AND STAT. GRILLE		
NO.	DATE	BY			
1					
2			DRAWN BY KBD	Combined With	EQN-1099
3			DATE 07-18-19	CHK'D BY / Scale	Sheet 12 of 14

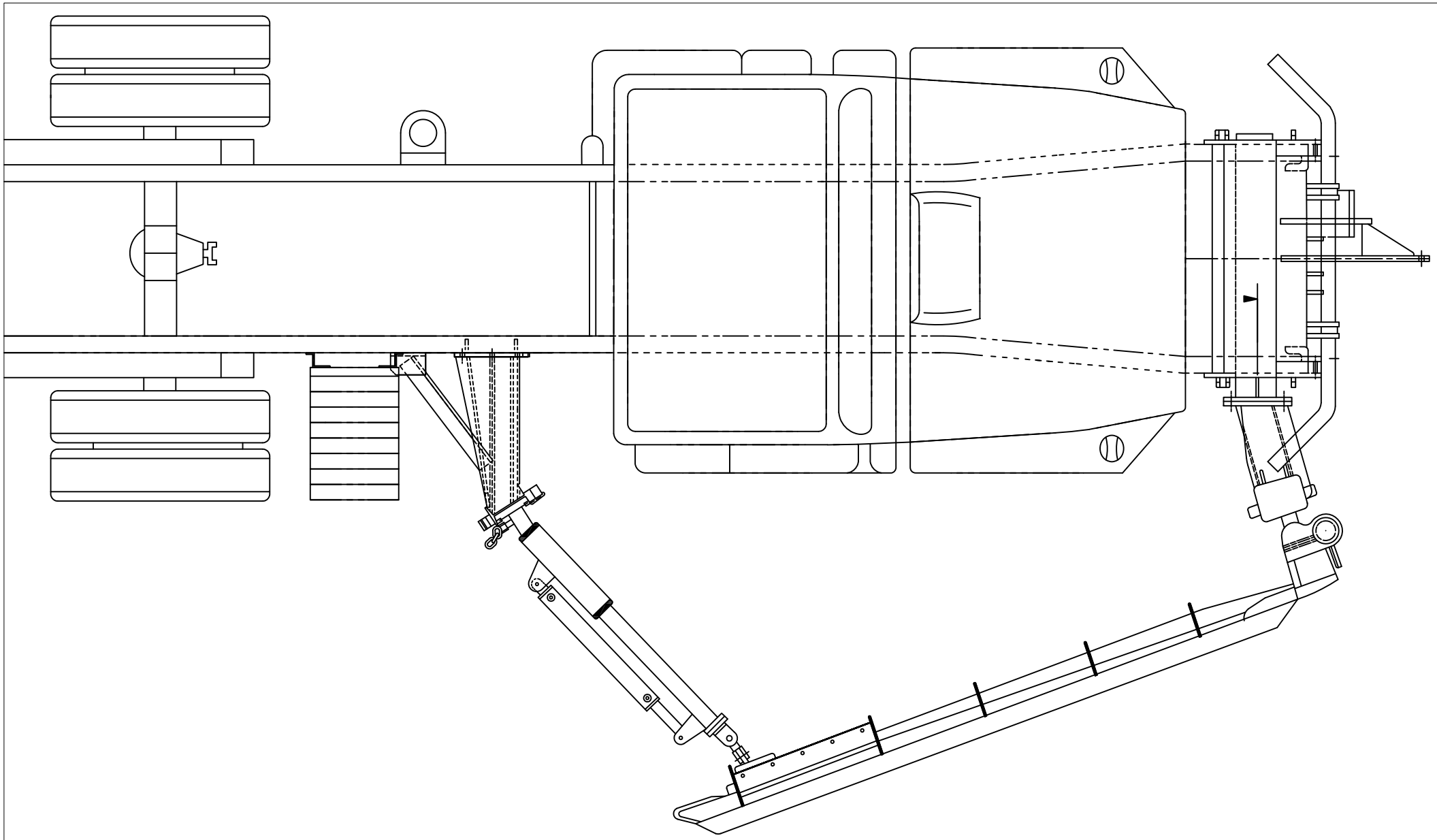


ITEM	PART NO.	DESCRIPTION	REQ'D
1	P-114-23100	LOCKNUT	1
2	P-114-22401	PISTON WITH SEALS	1
3	P-114-21350	POLYPAK	2
4	P-114-18214	'O' RING	1
5	P-114-71-JACKET	JACKET ASSEMBLY	1
6	P-114-71-ROD	PISTON ROD	1
7	P-114-15200	PACKING ROD	1
8	P-114-18344	'O' RING	1
9	P-114-14401	HEADSTOCK	1
10	P-114-13620	GLAND NUT	1
11	P-114-12200	ROD WIPERS	1

SEAL REPAIR KIT NO.
DA400-200-PRKPV
INCLUDES ITEMS: 3,4,7,8 & 11

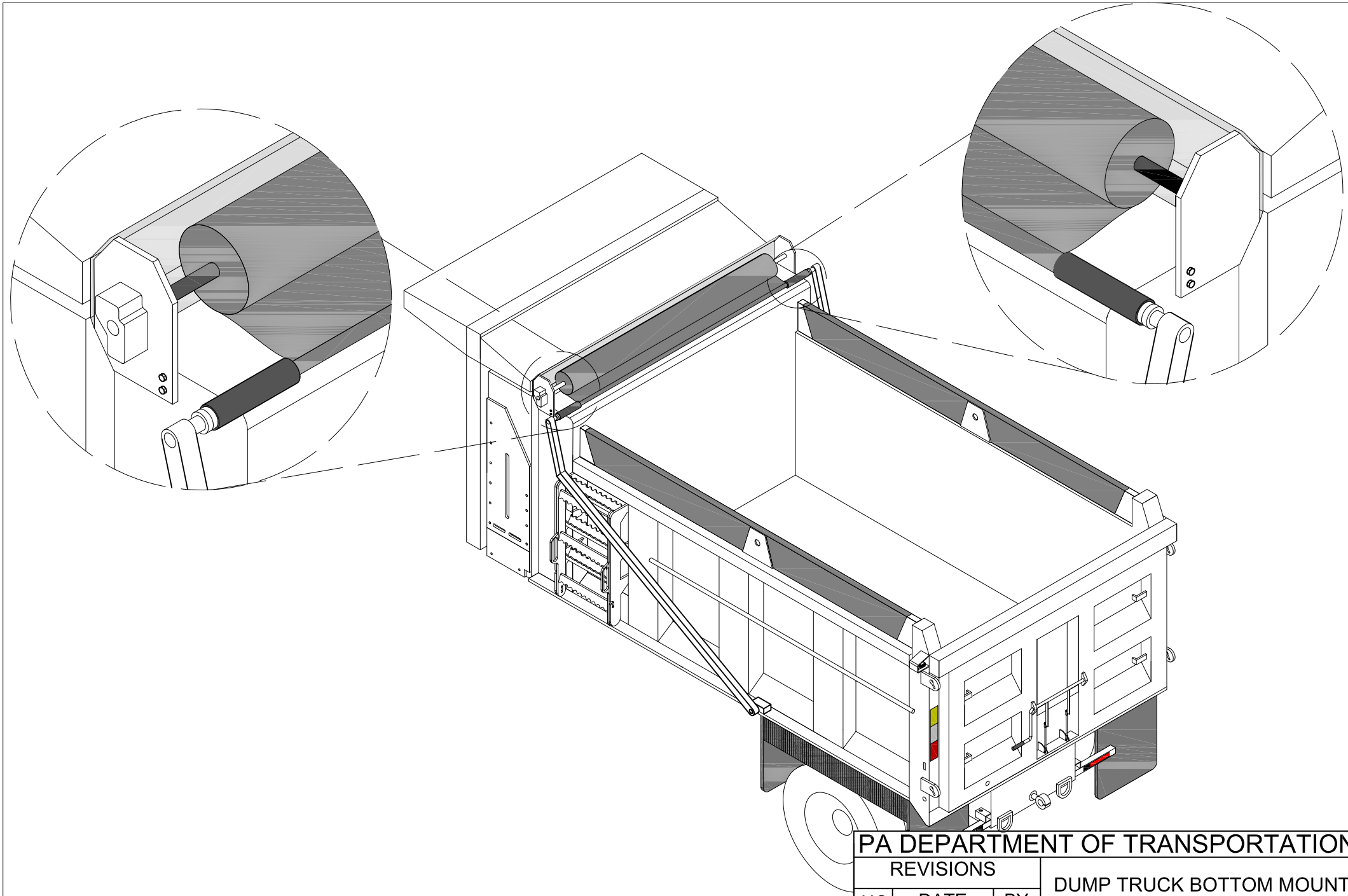
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			P-114-71 4 x 10 D.A. CYLINDER			
NO.	DATE	BY				
1						
2			DRAWN BY KBD	Combined With		EQN-1099
3			DATE 07-18-19	CHK'D BY	Scale	Sheet 13 of 14



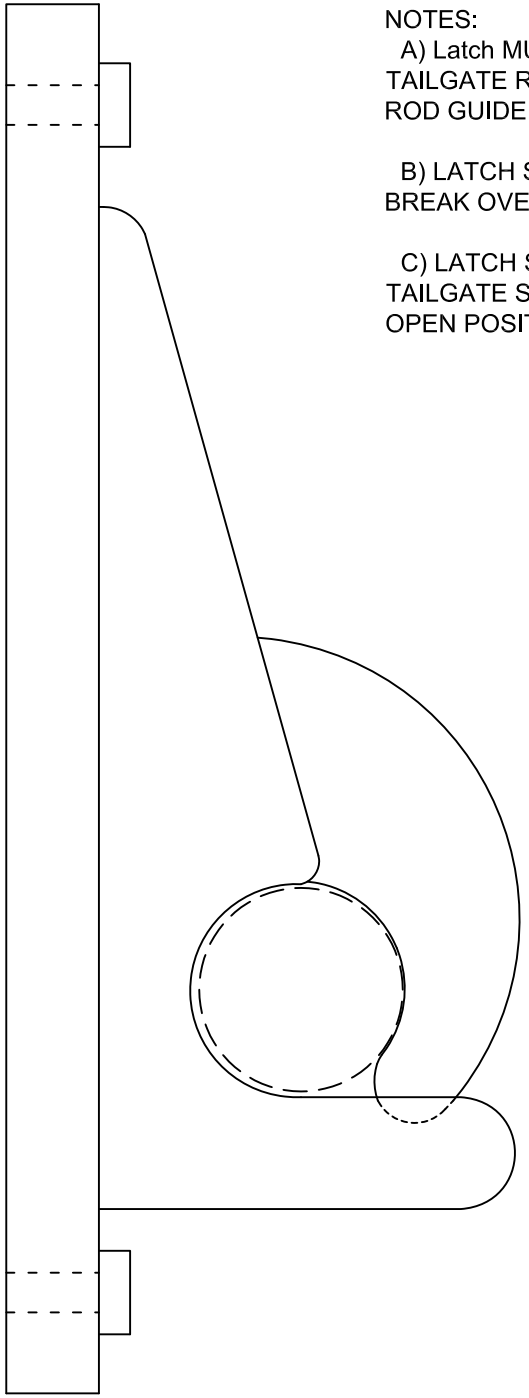
PA DEPARTMENT OF TRANSPORTATION

REVISIONS			WING PLOW AND DUMP TRUCK TOP VIEW			
NO.	DATE	BY				
1						
2			DRAWN BY KBD	Combined With		EQN-1099
3			DATE 07-18-19	CHK'D BY	Scale	Sheet 14 of 14



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			DUMP TRUCK BOTTOM MOUNTED TARP		
NO.	DATE	BY			
1					
2			DRAWN BY KBD	Combined With	EQN-1100
3			DATE 08-06-19	CHK'D BY / Scale	SHEET 1 OF 1

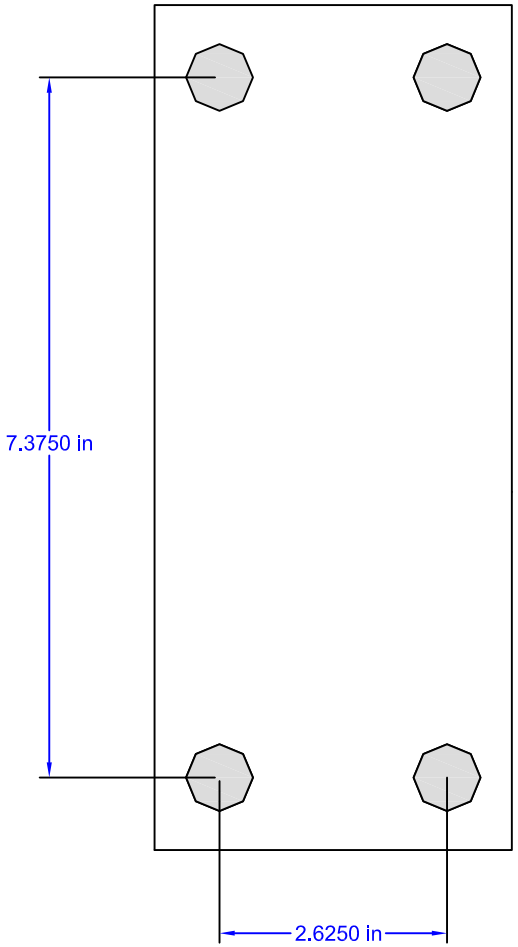


NOTES:

A) Latch MUST FULLY CLOSE ON TAILGATE ROD AND ENGAGE TAILGATE ROD GUIDE FINGERS.

B) LATCH SHALL BE ADJUSTED TO BREAK OVER CENTER WHEN CLOSED.

C) LATCH SHALL NOT INTERFERE WITH TAILGATE SWING WHEN LATCH IS IN THE OPEN POSITION.



PA DEPARTMENT OF TRANSPORTATION

REVISIONS			Dump Truck Latch			
NO.	DATE	BY				
1						
2			DRAWN BY KBD	Combined With		EQN-1105
3			DATE 07-29-19	CHK'D BY	Scale	SHEET 1 OF 1