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Maintenance Equipment Lighting Manual



September 1980

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Maintenance Equipment Lighting Charts

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IOWA DEPARTMENT OF TRANSPORTATION Highway Division Ames, Iowa

MAINTENANCE EQUIPMENT LIGHTING CHARTS

GENERAL

Attached are charts of equipment showing the lights, reflectors and flags required. Use these charts to check your equipment and change, add to, or remove as necessary so they conform to the information shown.

Please note the following:

These charts are to be regarded as minimum general requirements. Additional lighting may be required on some equipment for special applications. Requests for special lighting should be cleared through the District Mechanic.

All equipment used on the road, except mowers and equipment used only in signed work areas, must have turn signals visible front and rear. If towed equipment obscures these turn signals and stop light then these obscured lights must be displayed on the trailed equipment.

The charts show the approximate location and number of lights required. In some cases a combination tail, stop, turn and license light may be satisfactory where the sketch shows them separately. Clearance lights must be to the outside limits of width and show to the side as well as to either the front or rear. A slightly different position or arrangement of lights and reflectors will be satisfactory provided the required number and general location of lights and reflectors are used.

All equipment should have an Iowa Department of Transportation standard decal on both sides, unless there is insufficient area on which to place the standard decal. In those exceptional cases a rectangular decal may be requisitioned from the Office of Purchasing and Inventory.

In some cases it may be necessary to refer to two charts for complete lighting information. For instance, a "V" snow plow is shown mounted on a L.D. truck so if a "V" plow is mounted on a H.D. truck, it is necessary to refer to two charts for the combination.

Flags on some equipment must be lowered before driving into the garage. Flags are to be at the height shown in the charts and in good condition.

All red and amber reflectors shall be mounted not less than 20 inches or more than 42 inches above ground.

Rotating amber beacons are authorized on all pickups used for maintenance purposes. The beacon must be mounted on a staff fastened to the box or on car-top carriers. No holes will be drilled in the cab for mounting the rotating beacon. The foreman has the option of using the rotating beacon or the 6" rear facing flasher.

Strobe lights may be used on mowers in lieu of flashing lights. Either is legal.

Any flags shown on lighting charts as "red" may be either red or flourescent orange, except that the law requires a red flag (not orange) on projecting loads.

ROTATING AMBER BEACONS & SLOW MOVING VEHICLE EMBLEM

Any vehicle operated on the highway at less than 25 M.P.H. shall be equipped with at least one rotating amber beacon and a slow moving vehicle emblem.

The slow moving vehicle emblem shall be mounted point up at the rear of the vehicle, unobscured, at least two feet above the ground measured from the lower edge of the emblem.

The rotating amber beacon shall be visible front and rear, at least 42" high as measured to the lamp axis, and shall flash at least 60 F.P.M. but not more than 120 F.P.M. If more than one rotating amber beacon is used, they shall be mounted at the same level, as widely spaced as practicable and shall flash in unison.

BUMPERS

Rear bumpers on trucks are required whenever the distance between the ground and the bottom of the truck exceeds 30" and the distance between the back of the truck and any device underneath the bed of the truck is greater than 24".

LICENSE PLATES

Every vehicle operating on the public highways must have license plates displayed. Motor vehicles must have plates front and rear. Trailers have one plate only, mounted at the rear of the vehicle.

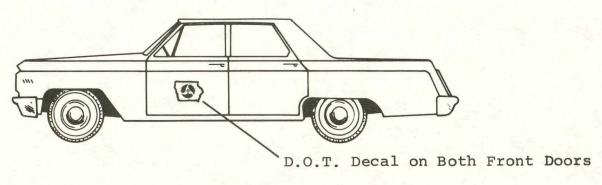
Exceptions to the requirement to display license plates are sign trailers, motor graders, crawler tractors, tractor mowers and rollers.

Lighting Chart AUTOMOBILE

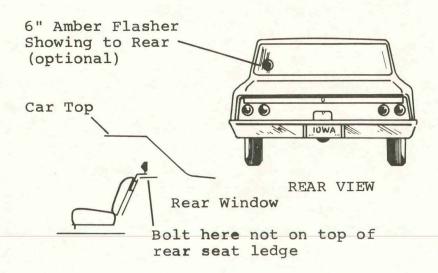


Standard Lighting Throughout

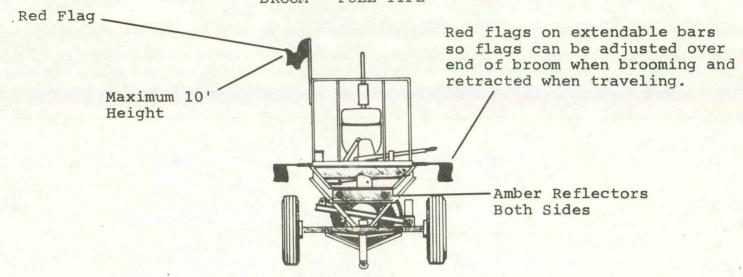
FRONT VIEW



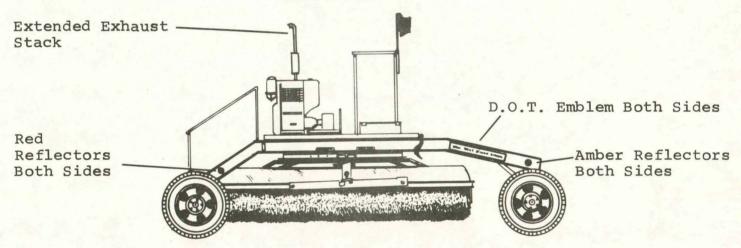
SIDE VIEW



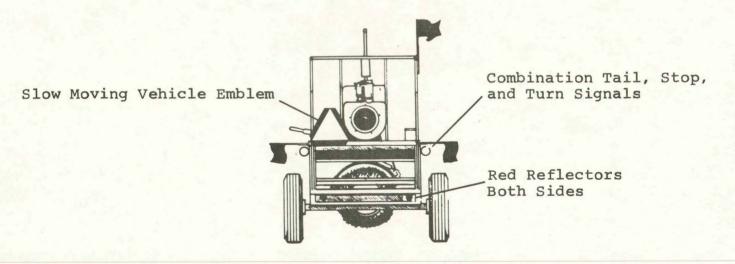
Lighting Chart BROOM - PULL TYPE



FRONT VIEW



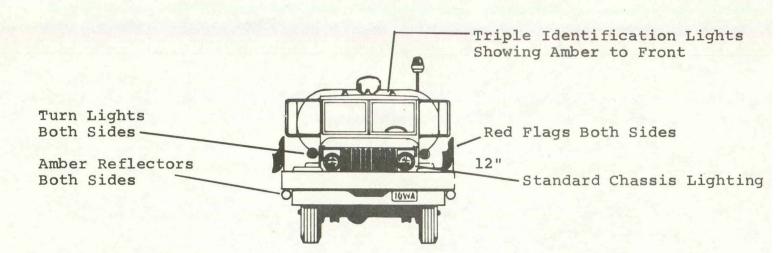
SIDE VIEW

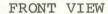


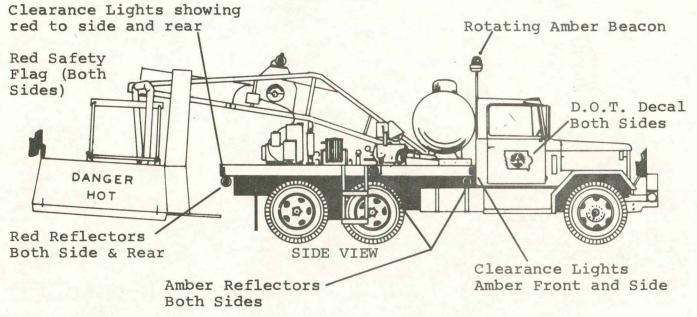
REAR VIEW

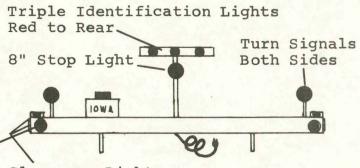
Note: Red Reflectors mounted not less than 20" or more than 42" above ground.

PAVEMENT BURNER



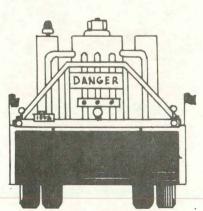






Clearance Lights Red to Rear and Sides

Red Reflectors Both Sides and Rear

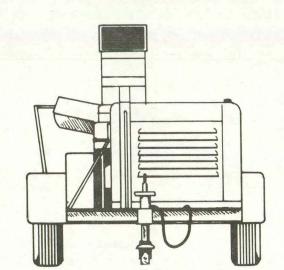


REAR VIEW

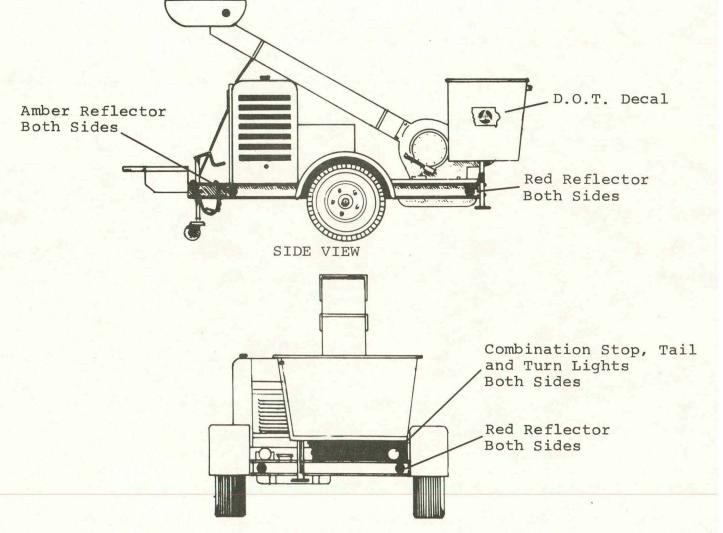
Note: Lighting assembly to be placed on back edge of burner hood. For transportin only. (Remove when using burners)

BRUSH CHIPPER

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Revised: 9-1-80



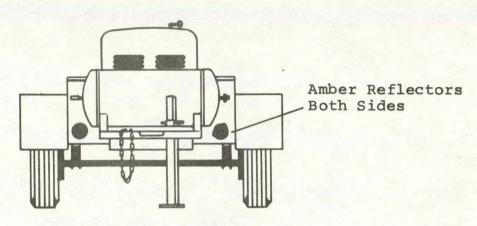
FRONT VIEW



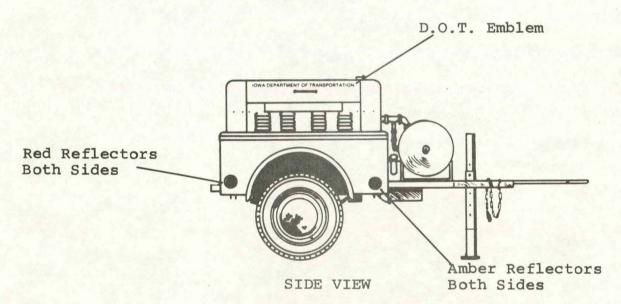
REAR VIEW

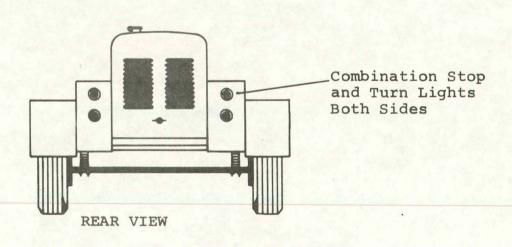
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COMPRESSOR - TWO WHEEL - PULL TYPE



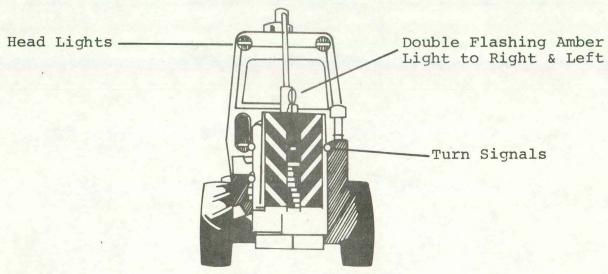
FRONT VIEW



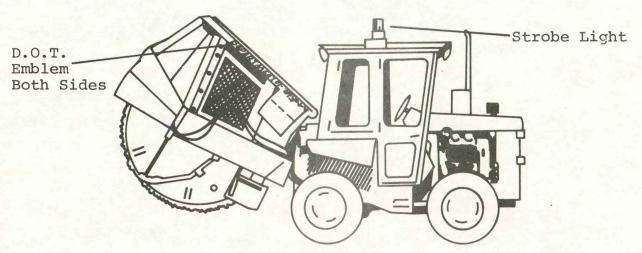


Revised: 9-1-80

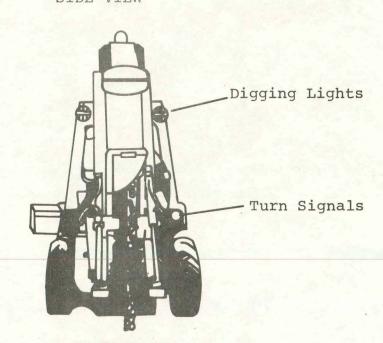
Cutter Concrete



FRONT VIEW

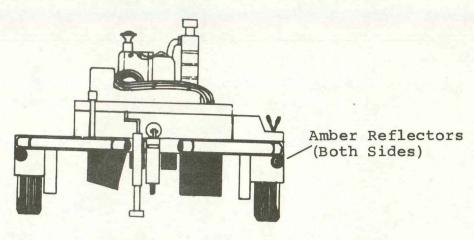


SIDE VIEW

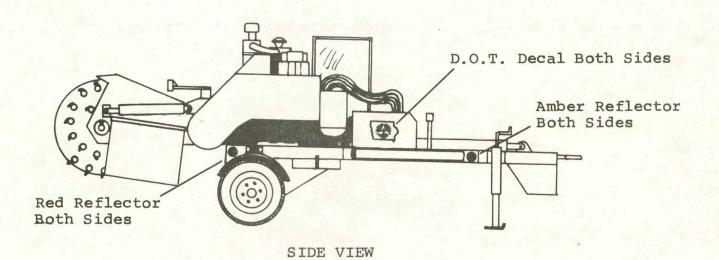


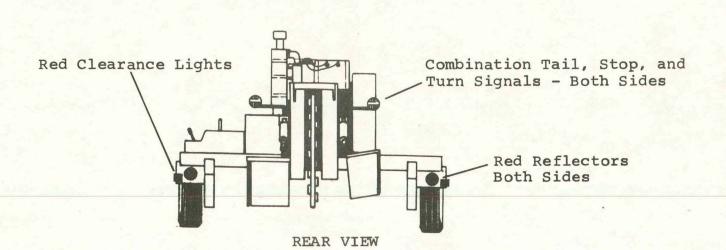
REAR VIEW

Lighting Chart STUMP CUTTER



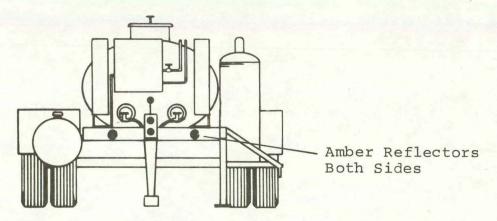
FRONT VIEW



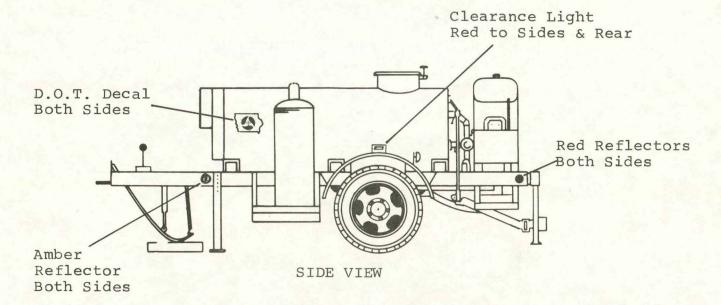


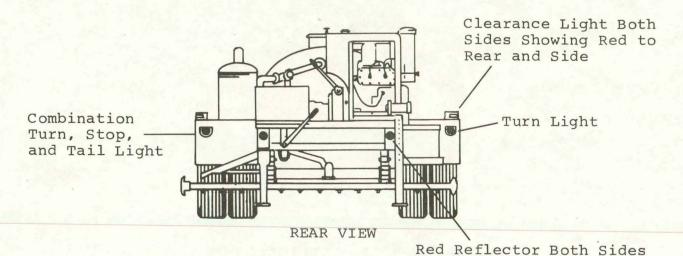
Page 11 Revised: 9-1-80

Lighting Chart DISTRIBUTOR PULL TYPE



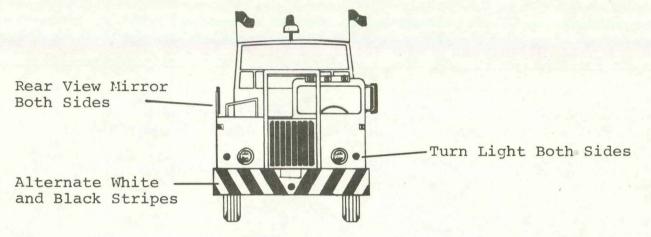
FRONT VIEW



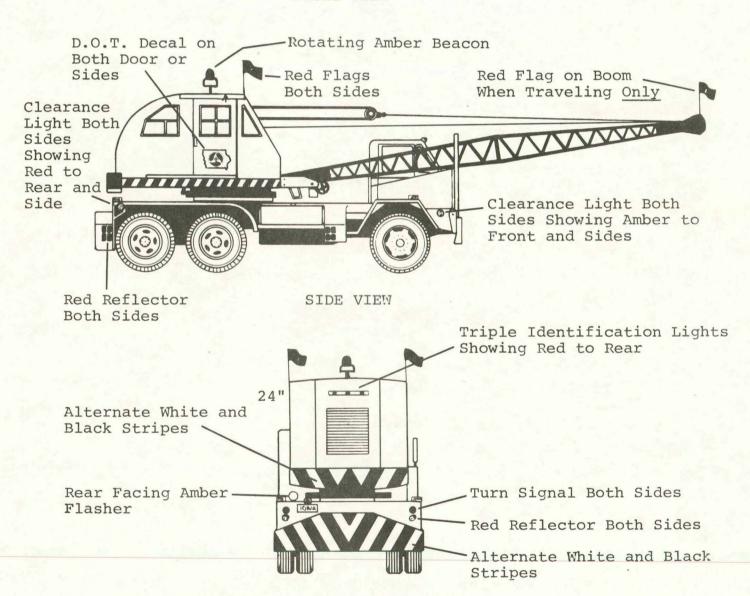


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DRAGLINE CARRIER MOUNTED

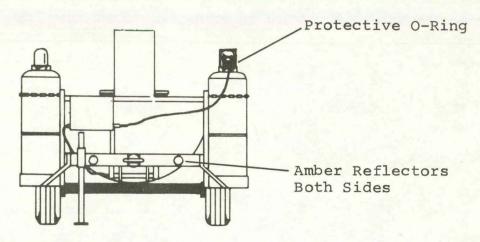


FRONT VIEW

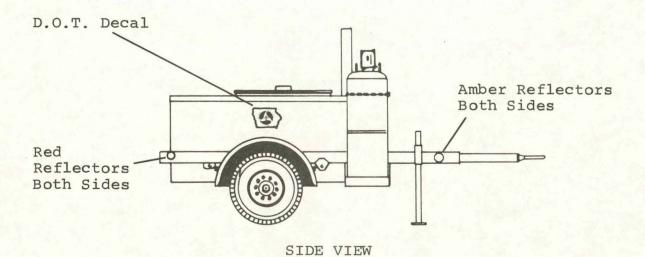


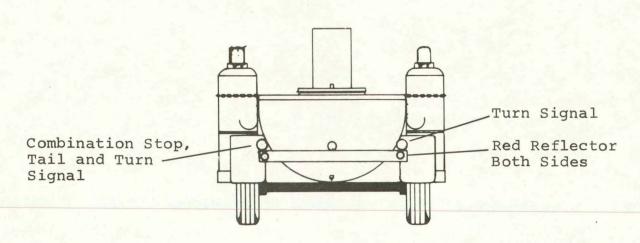
REAR VIEW

TAR KETTLE



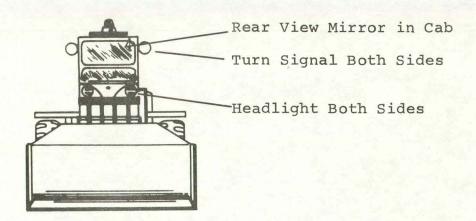
FRONT VIEW



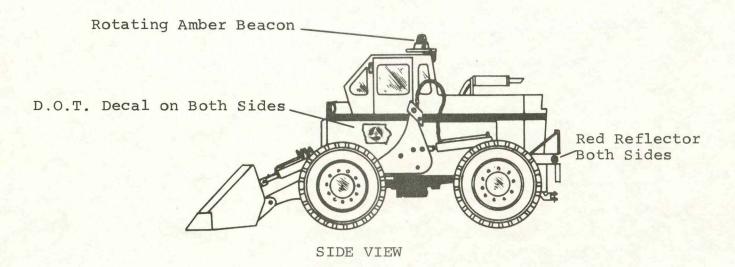


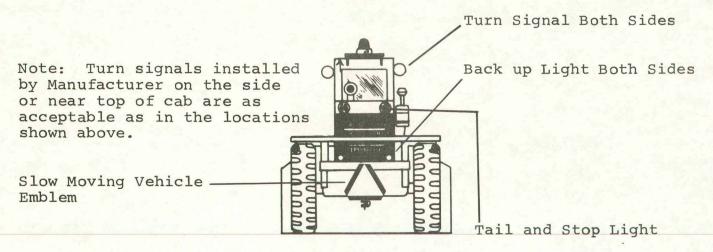
REAR VIEW

MEDIUM AND HEAVY DUTY LOADER



FRONT VIEW



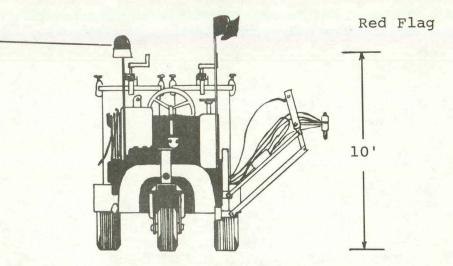


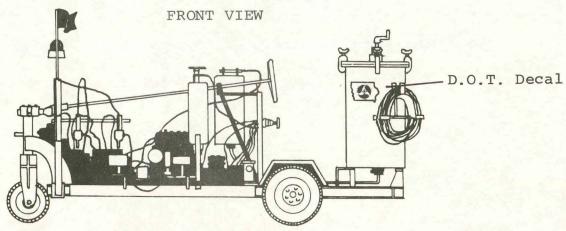
Page 15 Revised: 9-1-80

Lighting Chart

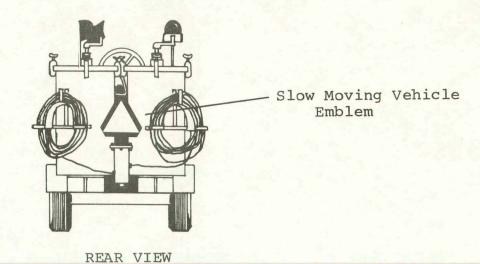
3 OR 4 WHEEL CURB PAINTING MACHINE

Rotating Amber Beacon, Brackets for Mounting on Either Side

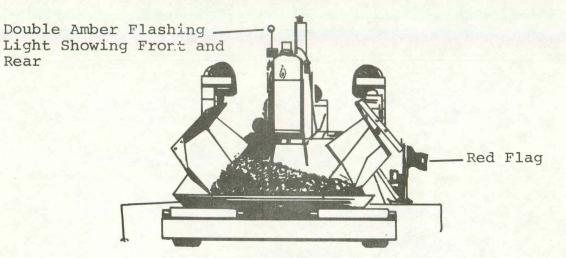




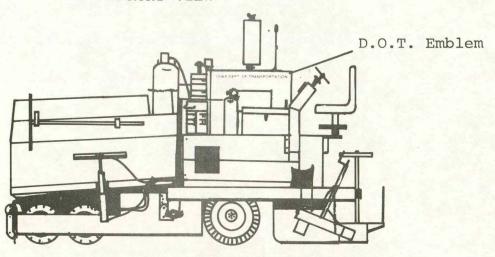
SIDE VIEW



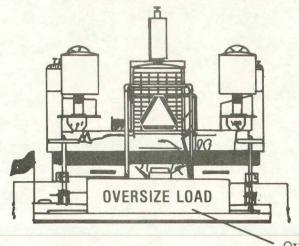
Revised: 9-1-80



FRONT VIEW



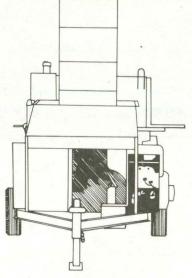
SIDE VIEW



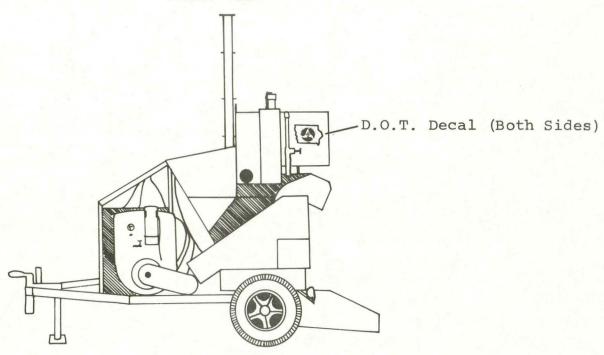
Oversize Load Sign

ASPHALT CEMENT MIXER

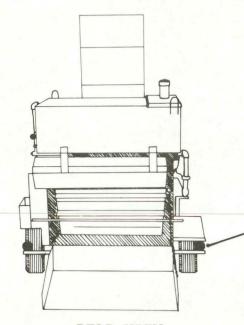
Page 17 Revised: 9-1-80



FRONT VIEW

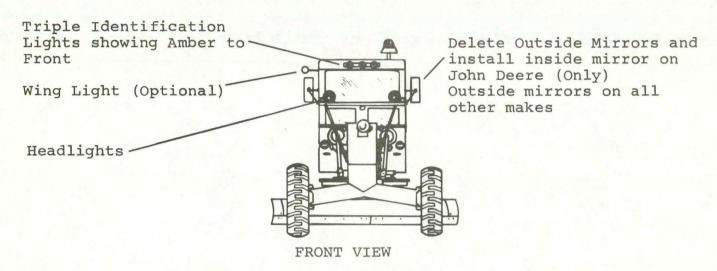


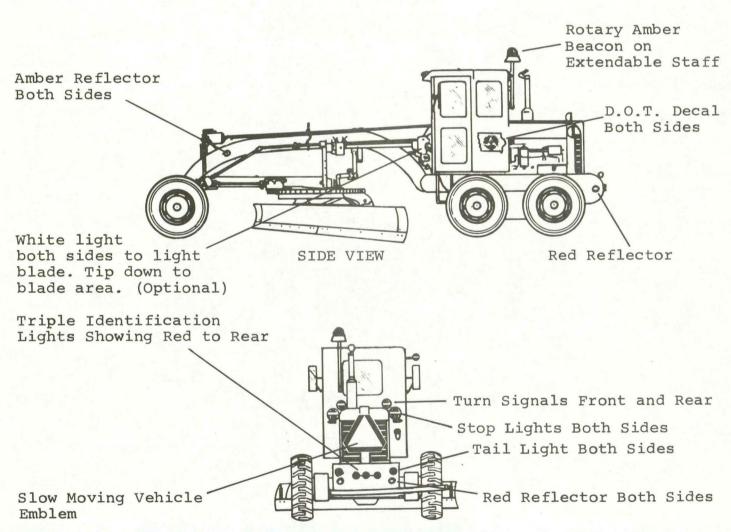
SIDE VIEW



Combination Stop, Tail and Turn Light (Both Sides)

MOTOR GRADER

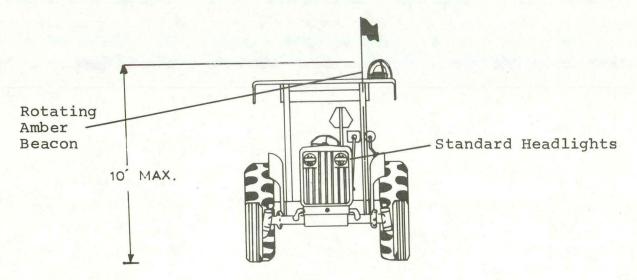




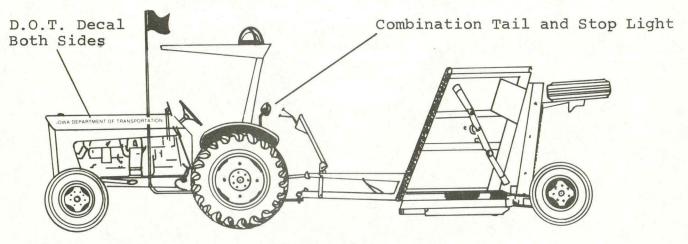
15 ft. GANG MOWER

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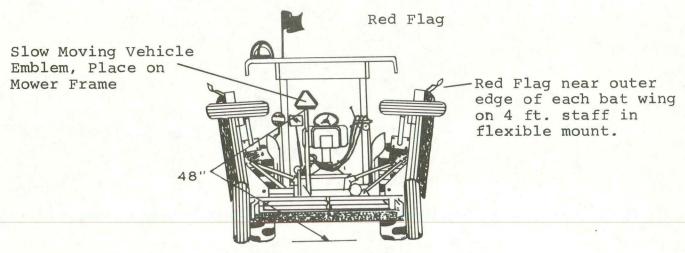
Revised: 9-1-80



FRONT VIEW

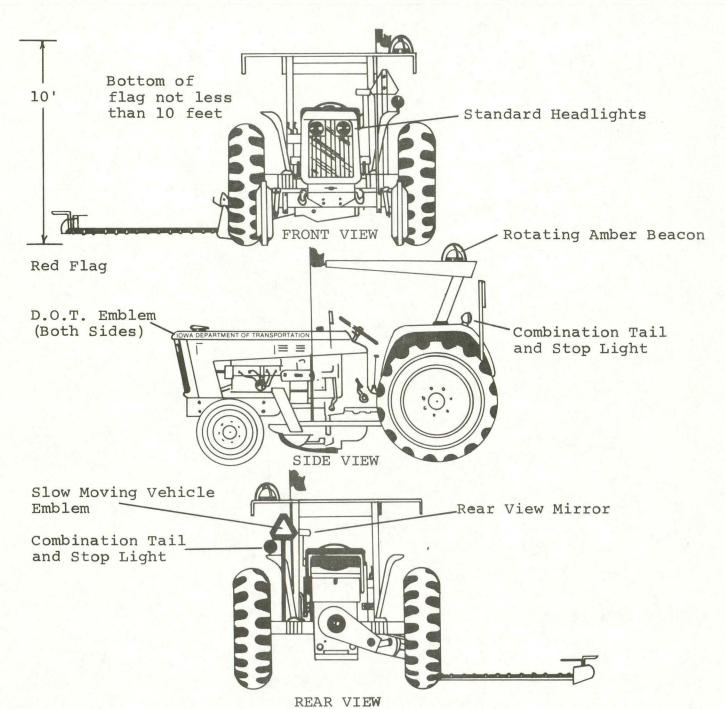


SIDE VIEW



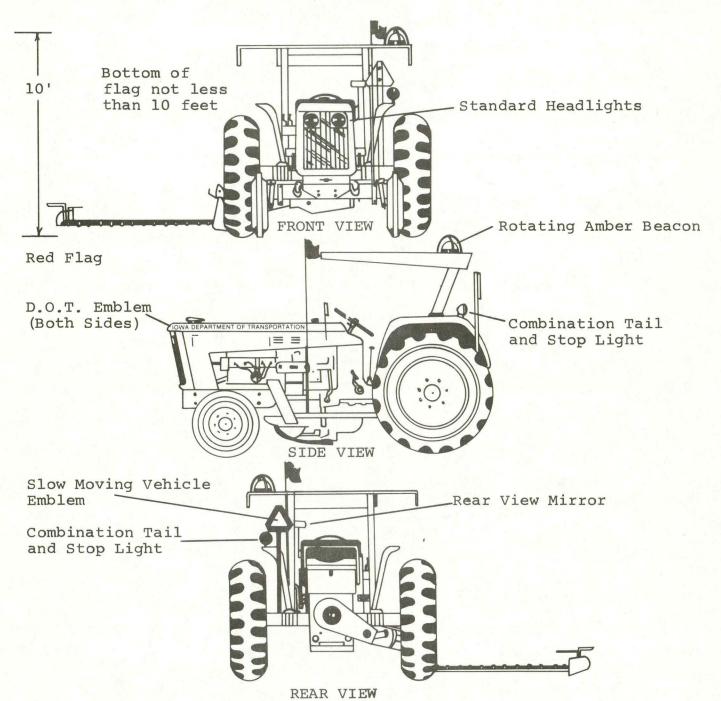
REAR VIEW

Note: Rear View Mirror to be placed for operator's best rear view.



Note: Rear view mirror to be placed for operator's best rear view.

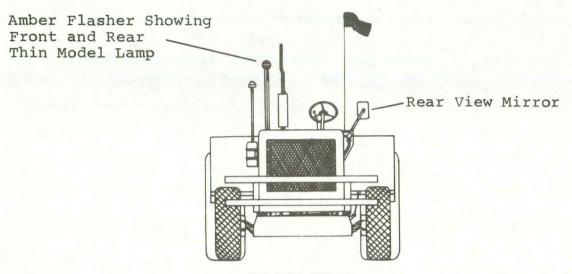
MOWERS - SICKLE AND ROTARY



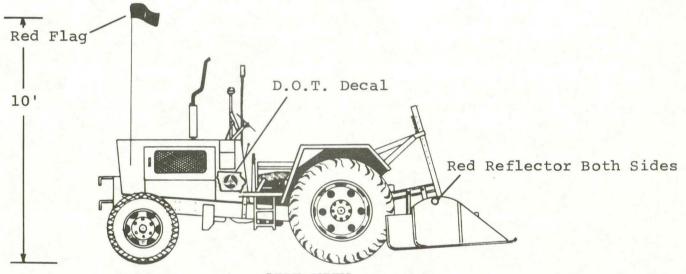
Note: Rear view mirror to be placed for operator's best rear view.

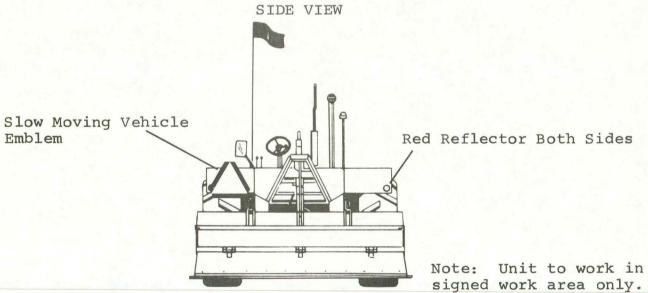
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Revised: 9-1-80



FRONT VIEW

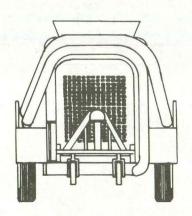




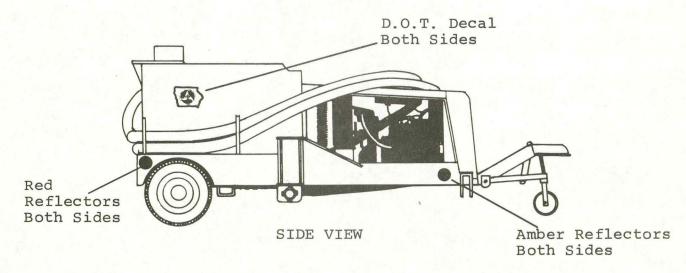
REAR VIEW

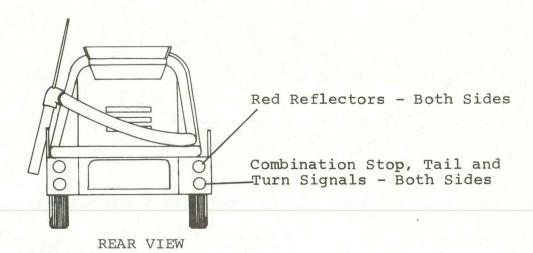
Note: Unit to work in signed work area only. Will not be roaded after dark.

MUD PUMP

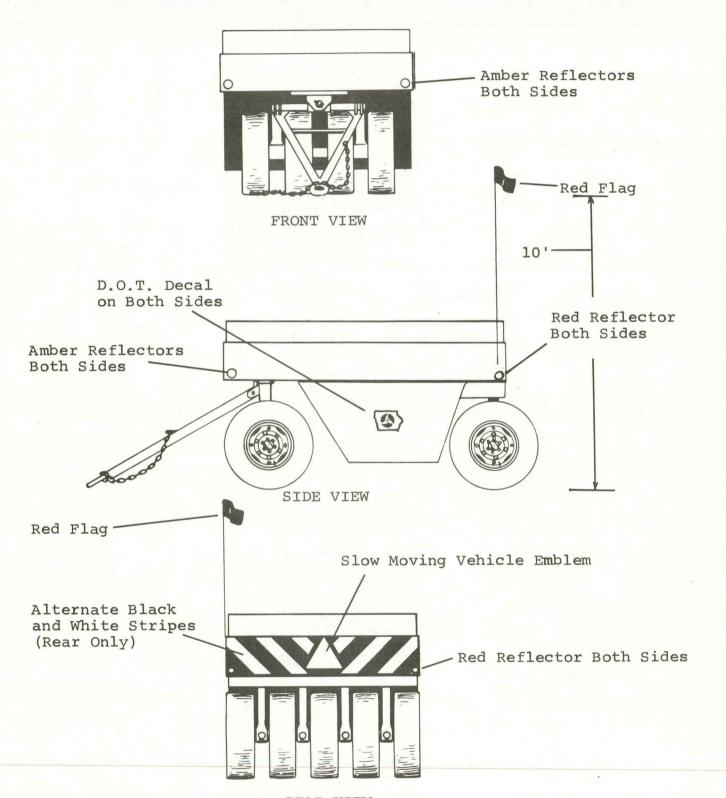


FRONT VIEW





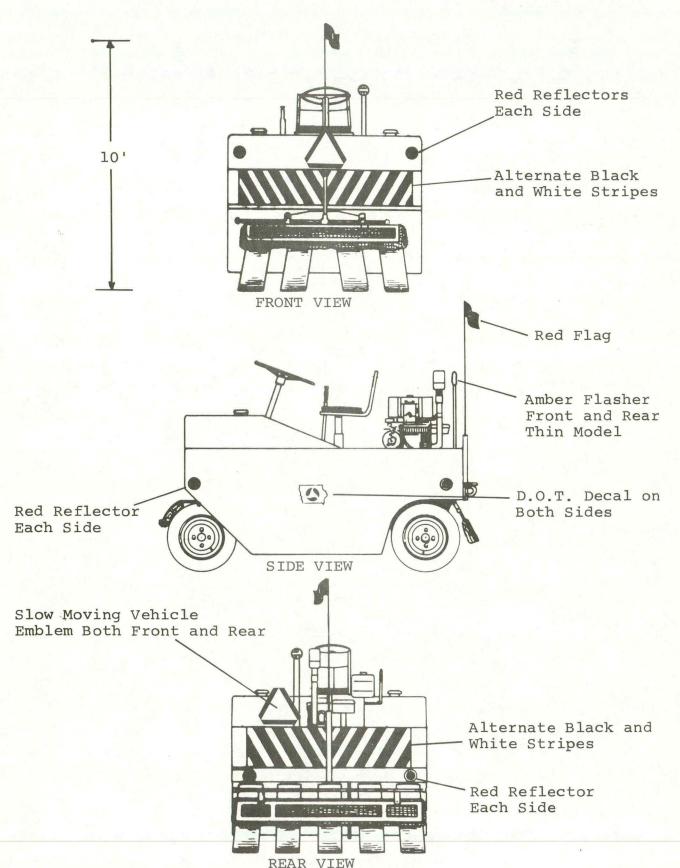
Lighting Chart ROLLER RUBBER - PULL TYPE



REAR VIEW

Note: No travel on highway after dark.

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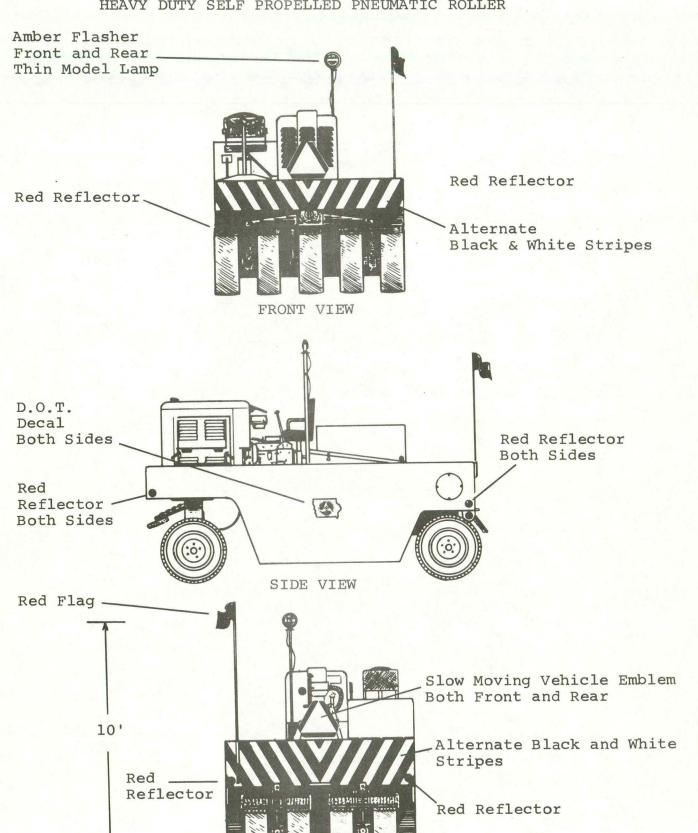


Note: Roller will be working on traveled way only in signed work area. No travel on highway after dark.

Page 25

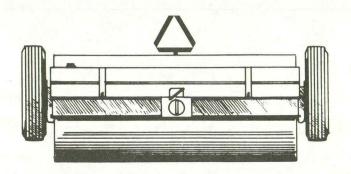
Revised: 9-1-80

HEAVY DUTY SELF PROPELLED PNEUMATIC ROLLER

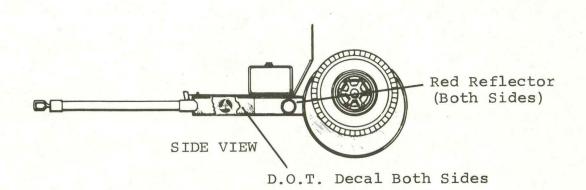


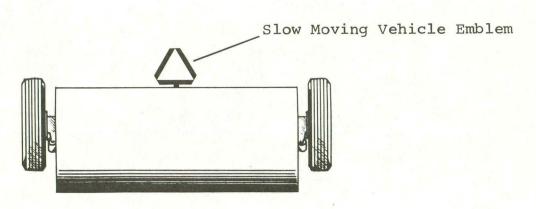
Lighting Chart

ROLLER - STEEL PULL TYPE



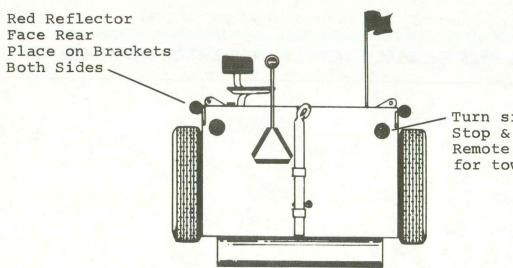
FRONT VIEW



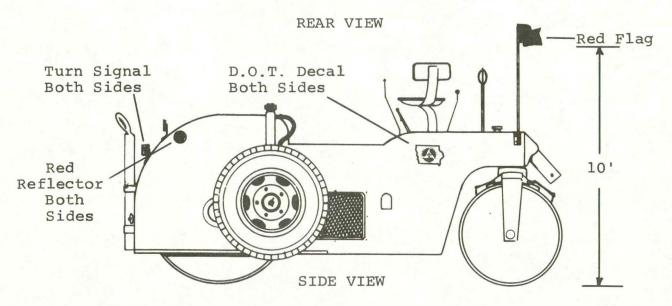


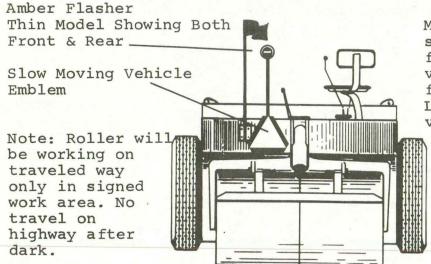
REAR VIEW

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Turn signal both sides Stop & Tail Lights Remote from truck lights for towing

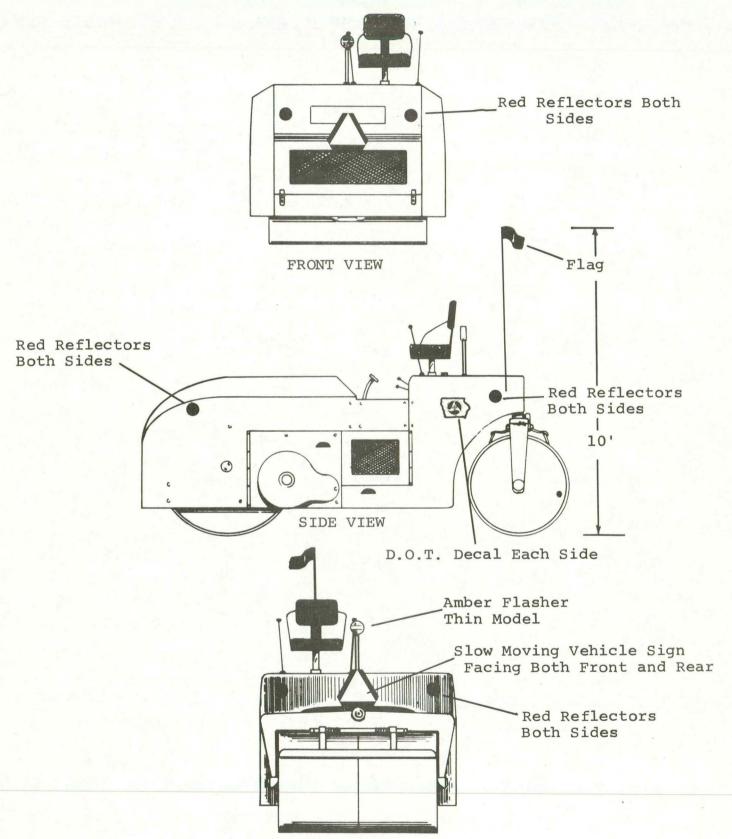




Mount amber flasher and slow moving vehicle sign on fold down staff. Slow moving vehicle sign must be down for transporting. Use Thin Lamp for flasher. Slow moving vehicle sign facing front and rear.

Note: Reflectors not less than 20" or more than 42" above ground.

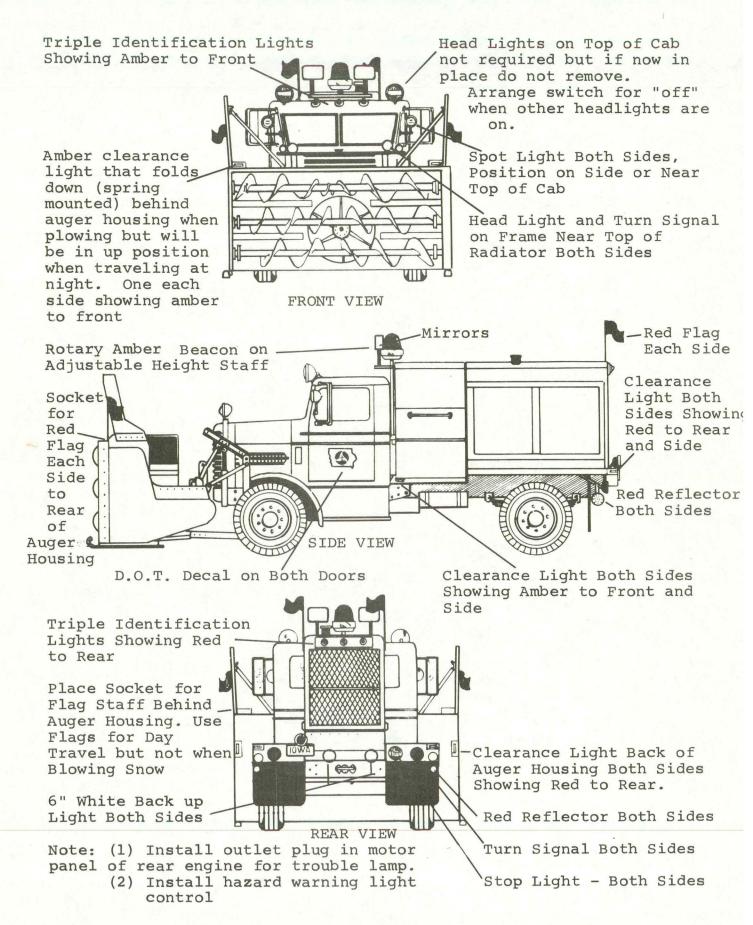
STEEL ROLLER SELF-PROPELLED 5 TO 8 TON



REAR VIEW

Note: Unit to work in signed work area and be transported from job to job on trailer.

MAINTENANCE DEPARTMENT LIGHTING CHART ROTARY SNOW PLOW TRUCK



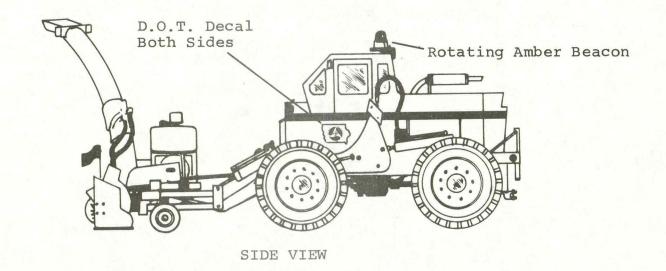
ROTARY SNOW PLOW on LOADER

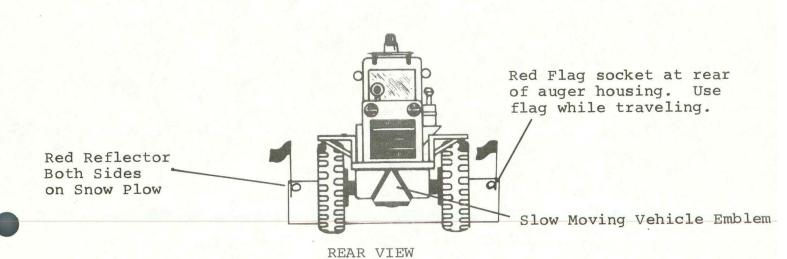
Amber Reflector Both Sides
Spring mounted to be up when traveling and down out of the way when pushing snow

Turn Signals Both Sides

Red Flag Socket at Rear of Auger Housing. Use Flag when Traveling.

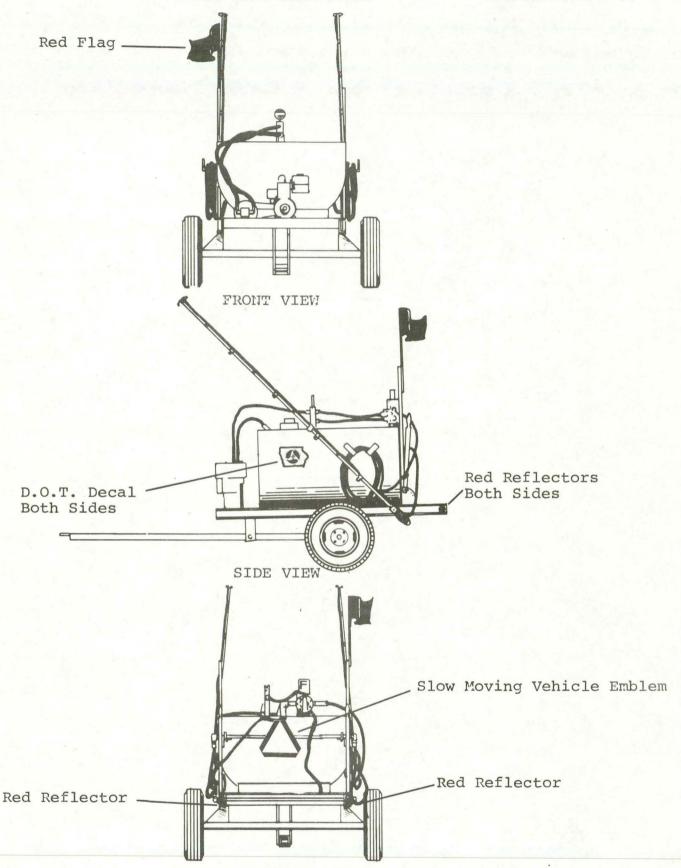
FRONT VIEW





TRAIL TYPE WEED SPRAY

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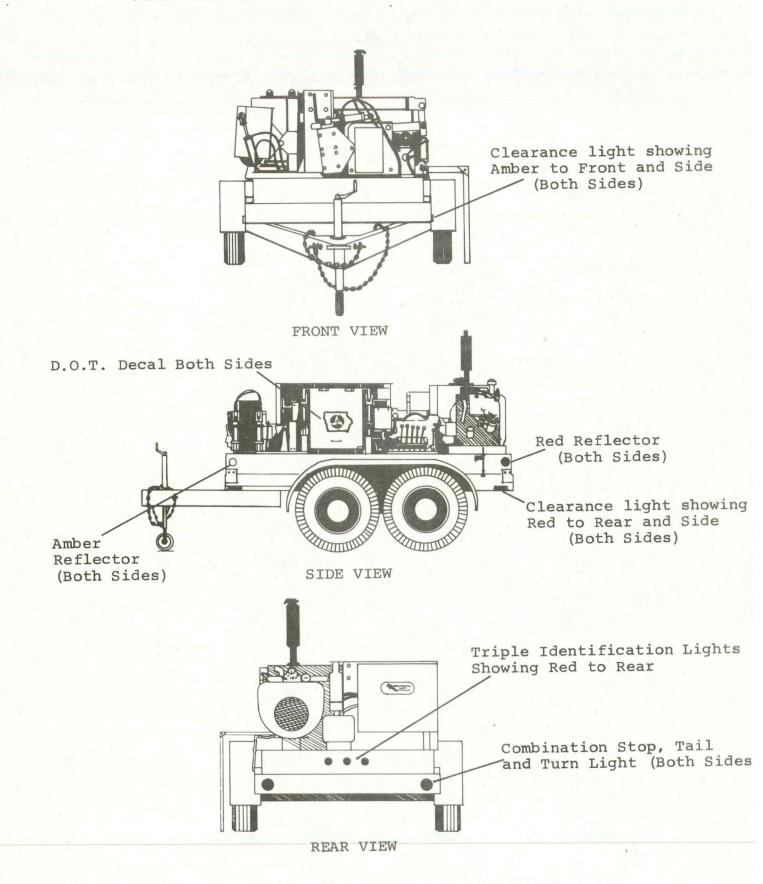


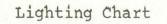
REAR VIEW

Note: If this unit is towed on the road with a truck, turn, stop, and tail lights will be

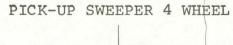
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GUARD RAIL AND DELINEATOR POST STRAIGHTNER





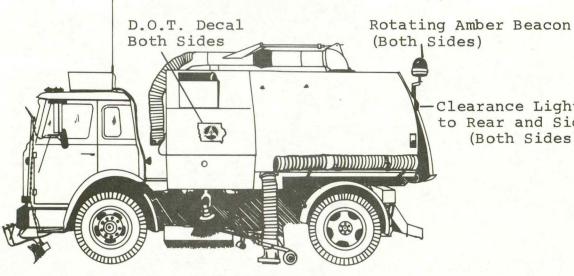
Page 33. Revised: 9-1-80





-Standard Chassis Lighting

FRONT VIEW



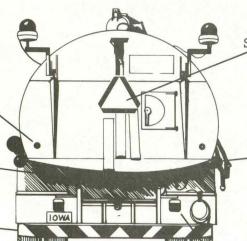
Clearance Light Red to Rear and Side (Both Sides)

SIDE VIEW

Red Reflector (Both Sides)

Triple Identification Showing Red to Rear

Alternate Black and White Stripes



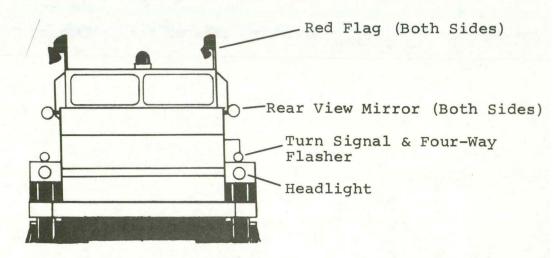
Slow Moving Vehicle Emblem Note: Emblem is to be made obscure when traveling at highway speed.

6" Amber Flasher Lights Both Sides caused to alternate flashes (Ping Pong)

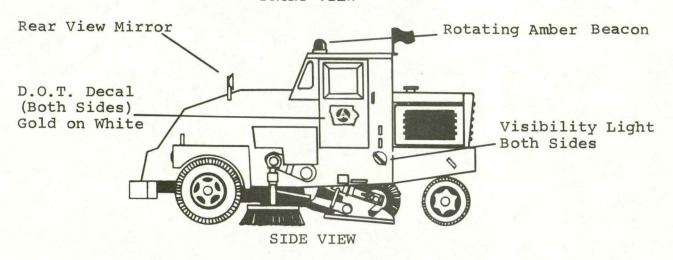
REAR VIEW

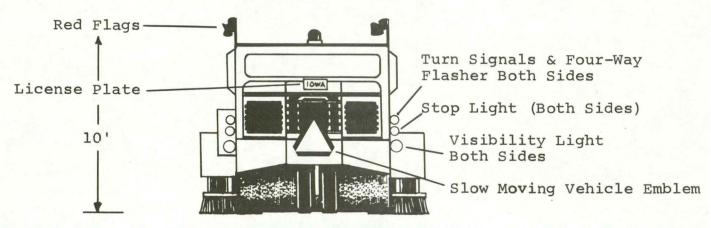
Combination Stop, Tail and Turn Light (Both Sides)

SELF PROPELLED PICKUP TYPE SWEEPER



FRONT VIEW

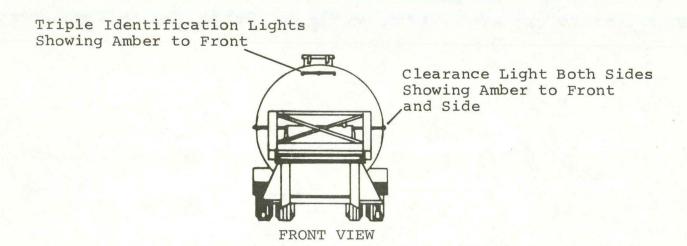


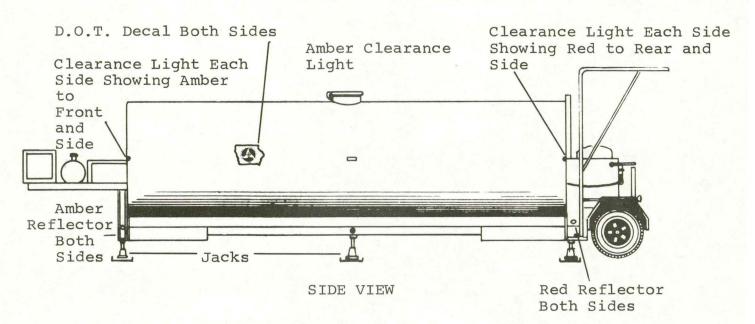


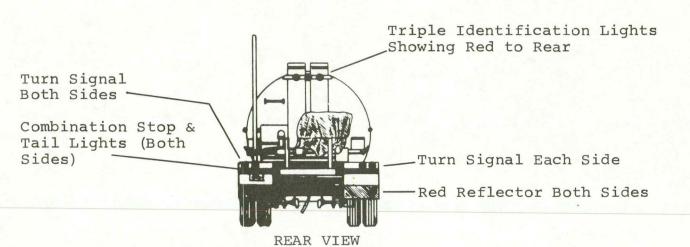
REAR VIEW

Note: Place red reflectors on each side of back end and on each side near back end. Place amber reflectors on each side of front and on each side near front end.

TANK (BITUMINOUS) 8000 GALLON - PULL TYPE



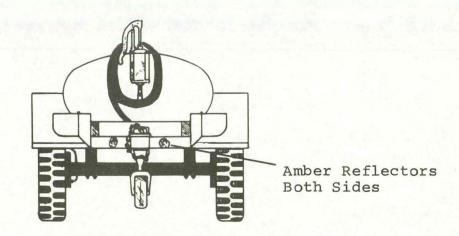




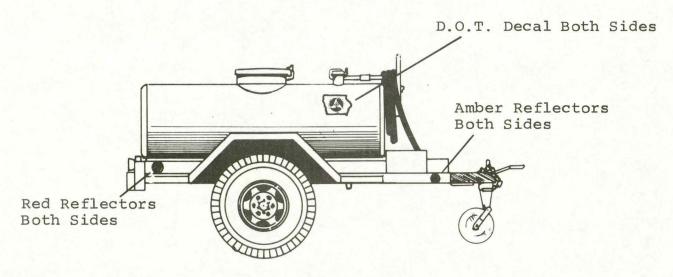
Note: Support tank on all jacks when used for storage of bitumen. Tank to be completely empty before moving.

Reflectors to be not less than 20"

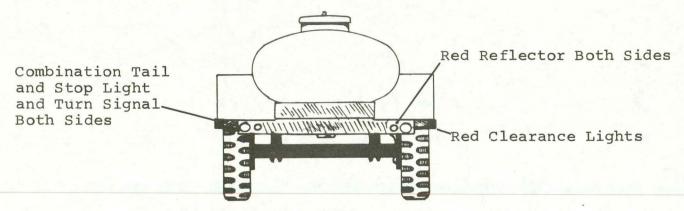
Lighting Chart TWO WHEELED WATER TANK



FRONT VIEW



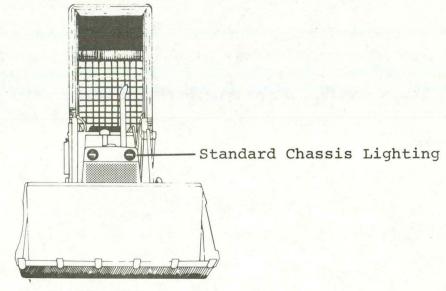
SIDE VIEW



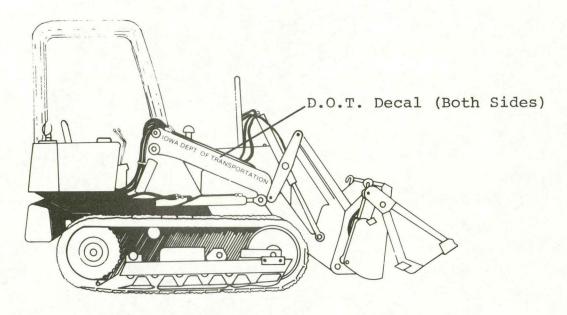
REAR VIEW

Lighting Chart
MEDIUM DUTY CRAWLER TRACTOR WITH BUCKET

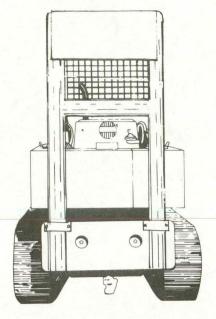
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FRONT VIEW

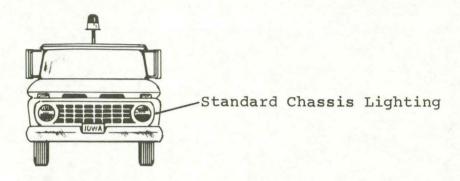


SIDE VIEW

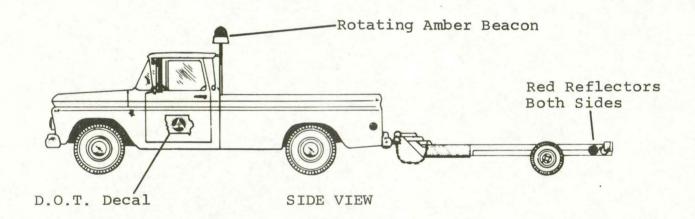


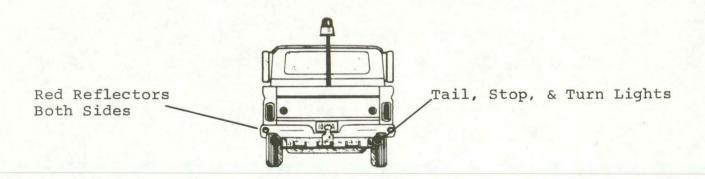
REAR VIEW

TRAILER FOR CURB PAINTING MACHINE

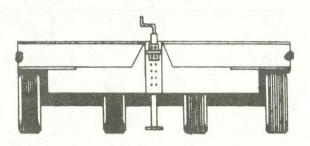


FRONT VIEW

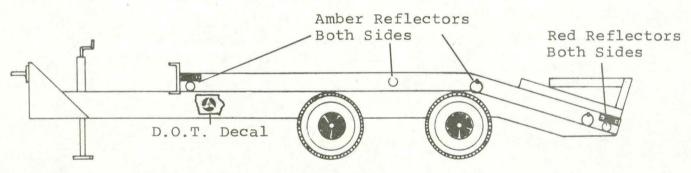




8-WHEEL LOW BOY TRAILER

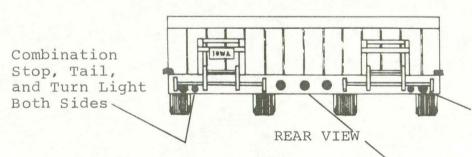


FRONT VIEW



Clearance light both sides at widest part of bed and as far forward as possible. Showing amber front and side set out on frame to outside of wheels.

SIDE VIEW



Clearance light both sides showing red to rear and side and red reflector both sides. Set on frame out from bed to place clearance light to outside of wheels.

Red reflectors Both Sides

Note: In order to obtain 20"

minimum height for red

reflectors on rear of

this unit, it may be

necessary to mount them

on the fold-down loading ramps.

Triple identification lights showing red to rear

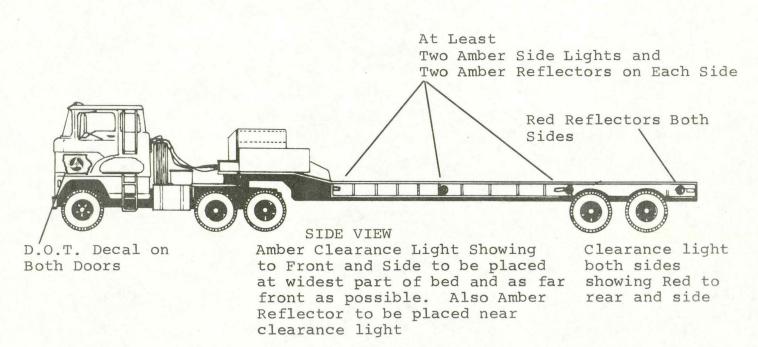
Page 40 Revised: 9-1-80

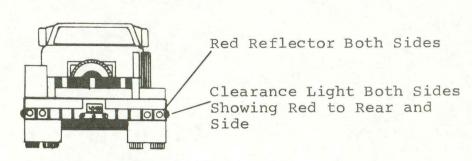
Lighting Chart

LOW BOY SEMI TRAILER

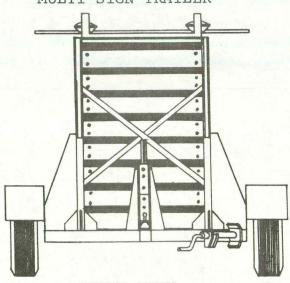


FRONT VIEW

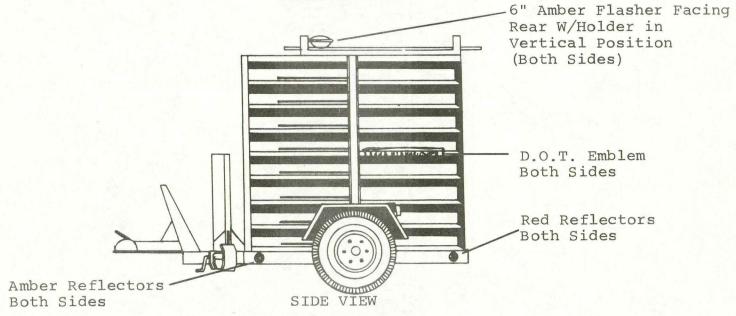


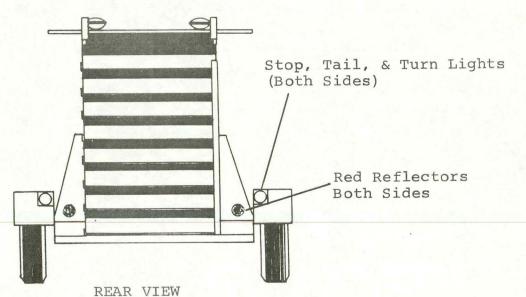




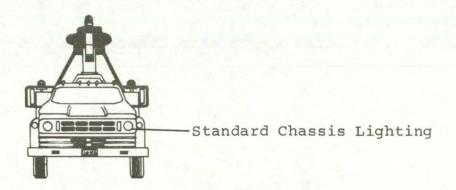


FRONT VIEW

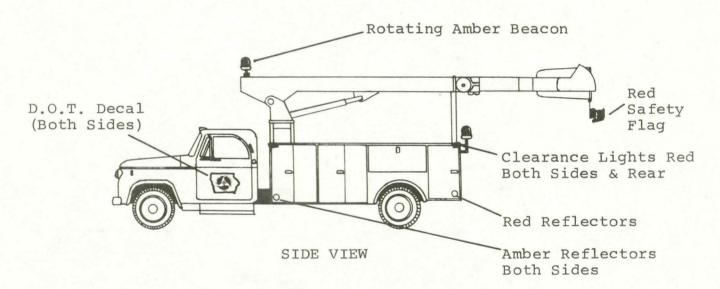


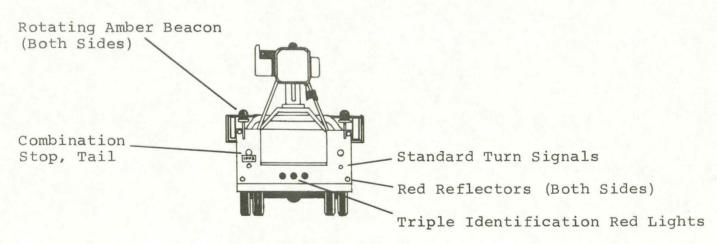


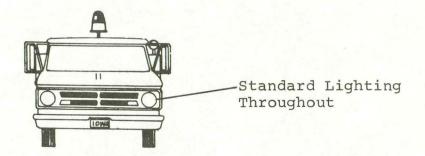
AERIAL BOOM TRUCK



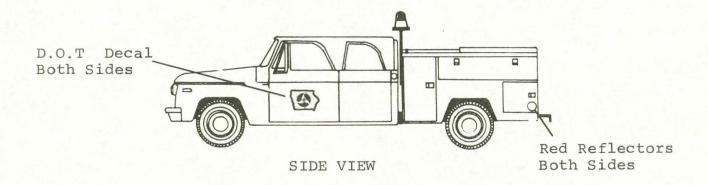
FRONT VIEW

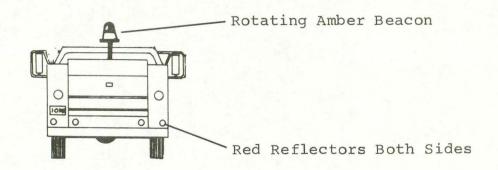






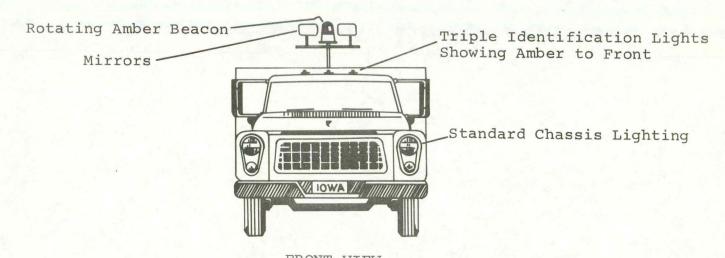
FRONT VIEW

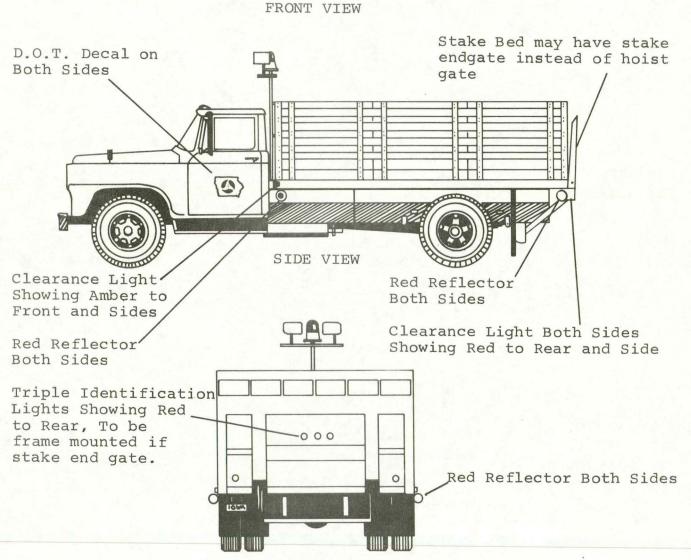




REAR VIEW

TRUCK - STAKE OR FLAT BED CENTERLINE NURSE TRUCK

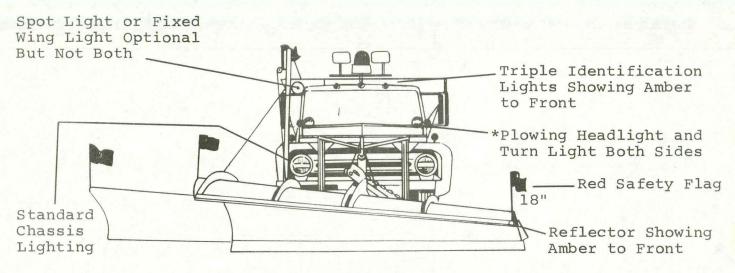




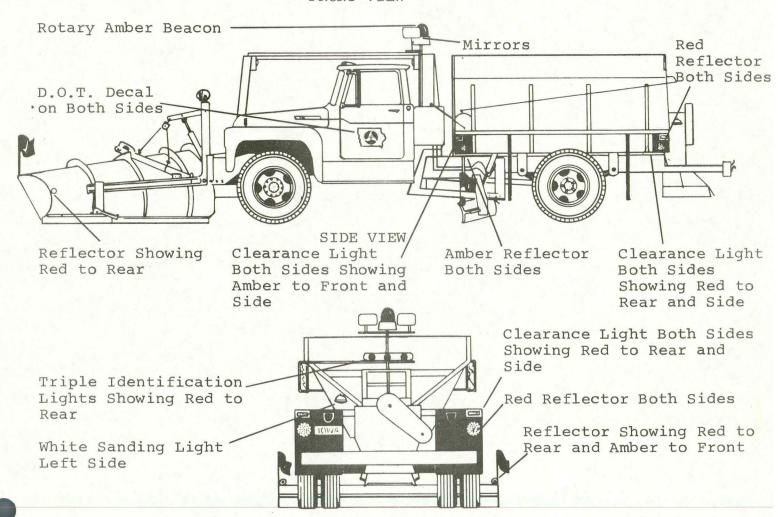
REAR VIEW

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Lighting Chart TANDEM, EXTRA HEAVY DUTY & HEAVY DUTY TRUCK With SPREADER BOX, PLOW, WING



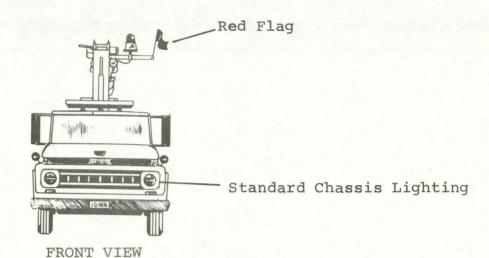
FRONT VIEW



REAR VIEW

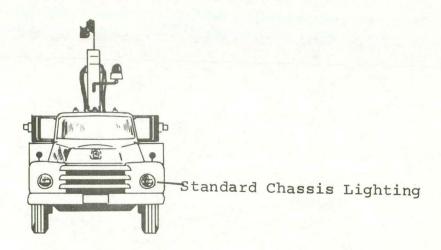
Note: Remote mounted turn signals only if regular signals are not visible with plow in raised position.

"CHERRY PICKER" HI-LIFT BOOM TRUCK

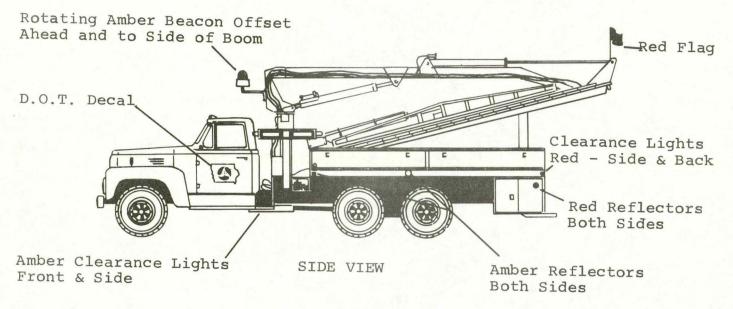


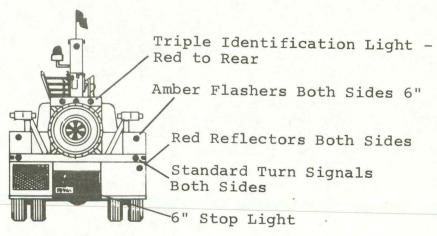
Rotating Amber Beacon Offset to Side of Boom Red Flag Red Reflectors SIDE VIEW Both Sides D.O.T Decal Amber Reflectors Amber Reflectors Both Sides Front and Side Amber Clearance Lights Triple Identification Lights Front and Side Red to Rear Red Flags each side of basket Rotating Amber Beacon while traveling only Both Sides Mounted on under side Red Clearance Side and Rear Both Sides of basket Stop Lights. Standard Turn Signals Flashers Both Sides Both Sides Red Reflectors Both Sides

"SNOOPER" UNDER SPAN BOOM TRUCK

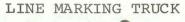


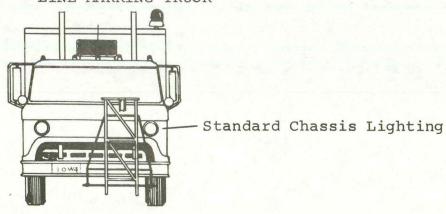
FRONT VIEW



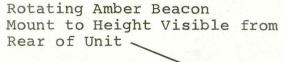


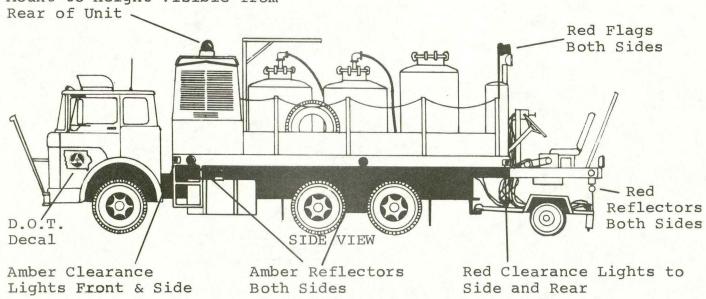
REAR VIEW

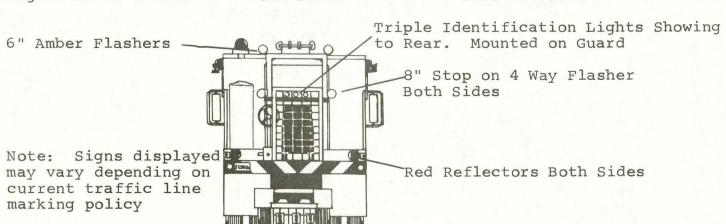




FRONT VIEW



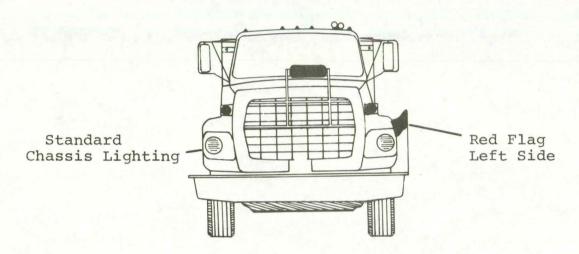




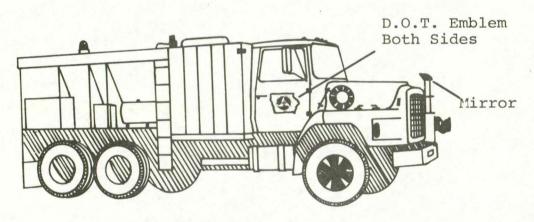
LIGHTING CHART

Truck, Machine, Slurry

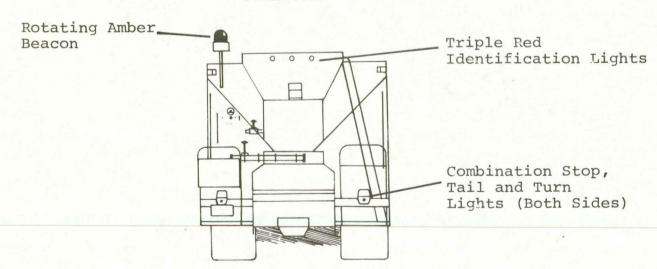
Revised: 9-1-80



FRONT VIEW

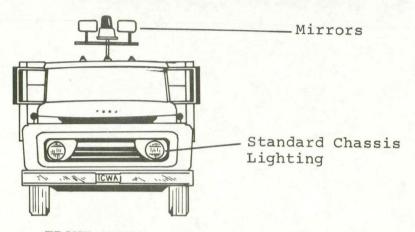


SIDE VIEW

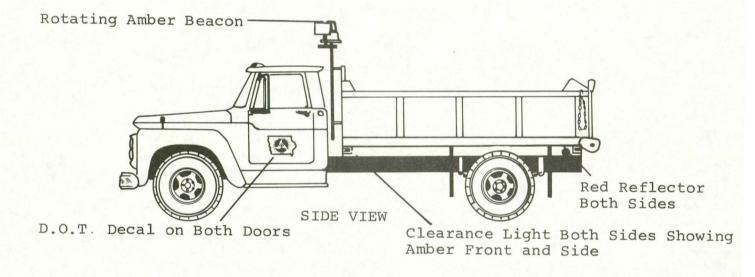


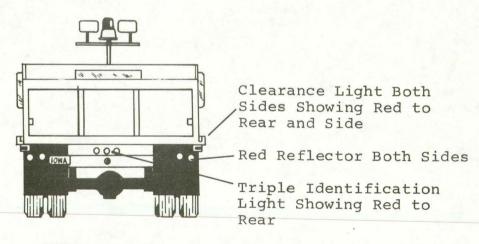
REAR VIEW

Lighting Chart MEDIUM DUTY TRUCK WITH DUMP BODY



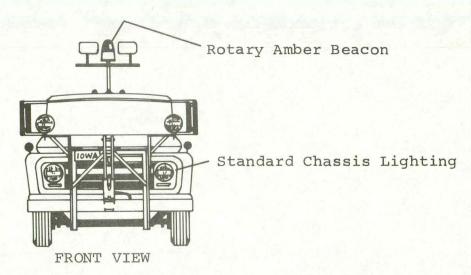
FRONT VIEW

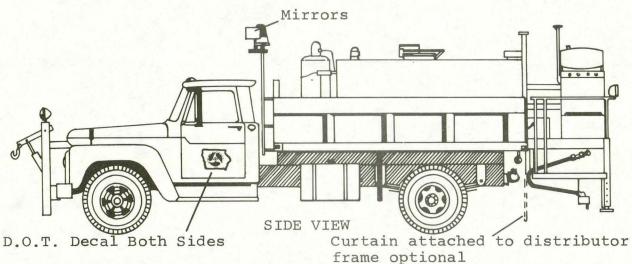




REAR VIEW

MEDIUM DUTY TRUCK WITH SLIP IN DISTRIBUTOR

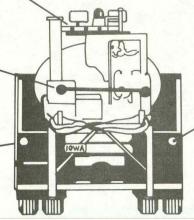




Triple Identification Lights Showing Red to Rear

Combination Tail, Stop, Turn Signal Both Sides

Clearance Light Showing
Red to Rear if truck
clearance light is
obstructed by
Distributor

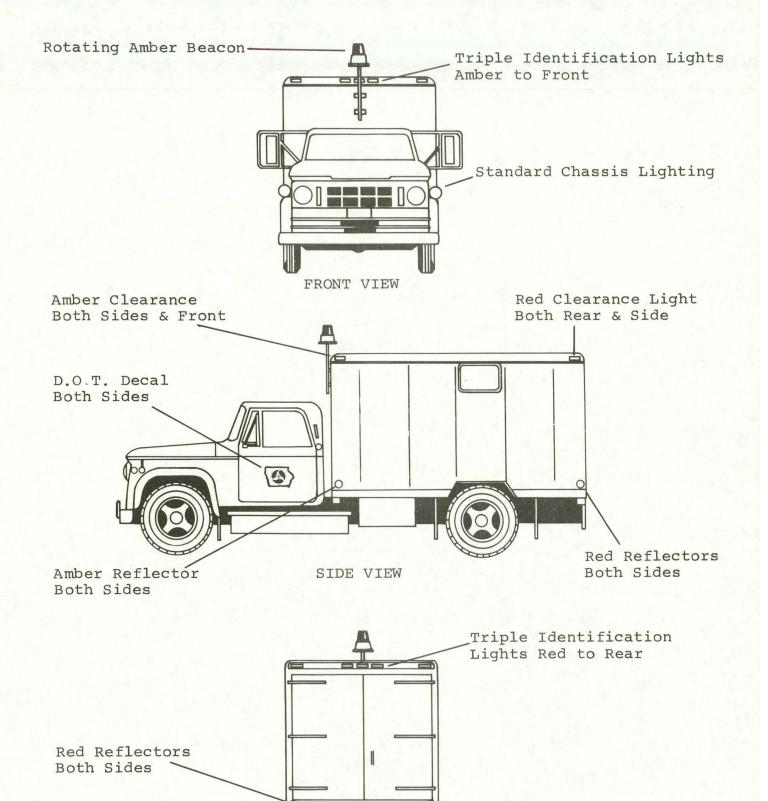


Red Reflector Both Sides

Note: Rotating beacon will be visible above distributor from rear

REAR VIEW

MEDIUM DUTY TRUCK WITH VAN BODY

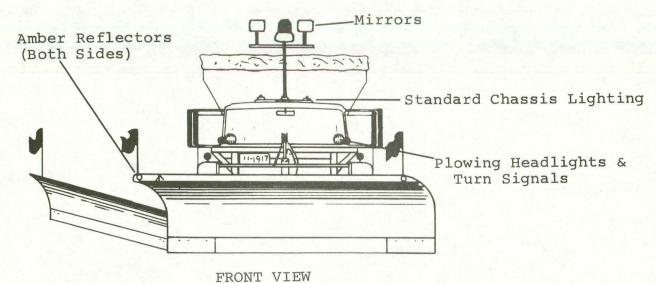


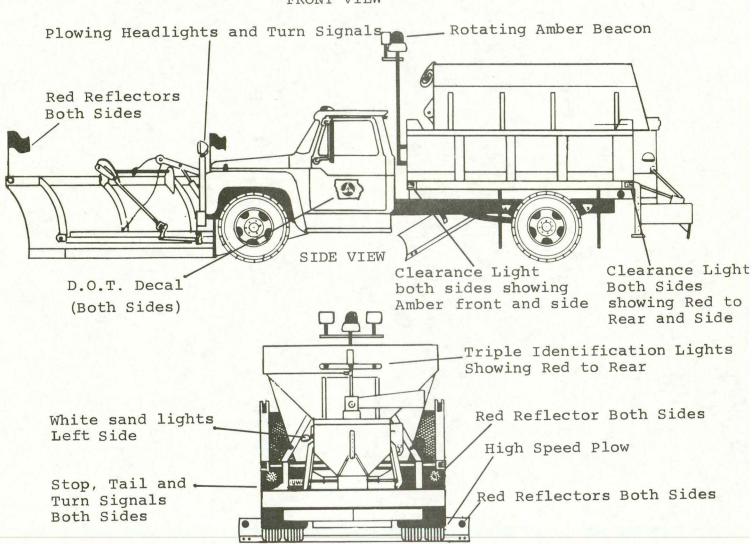
REAR VIEW

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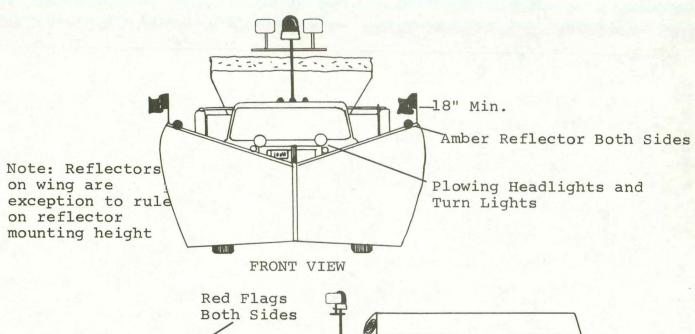
RIGHT OR LEFT HAND WING, REVERSIBLE PLOW AND HIGH SPEED PLOW

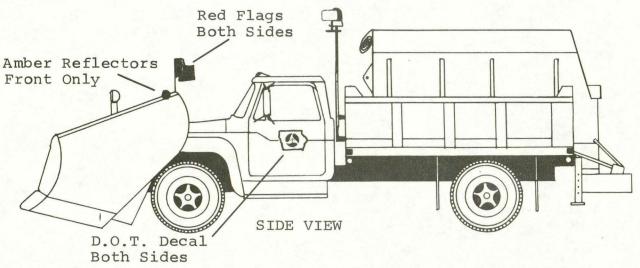


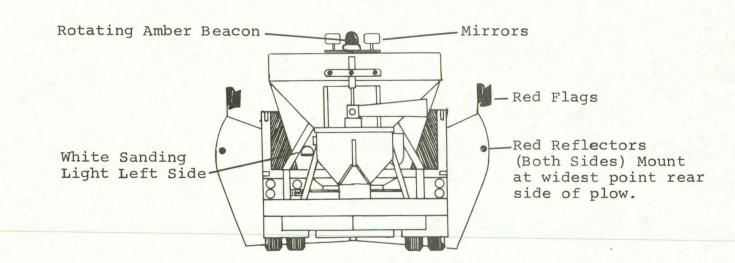


REAR VIEW

MEDIUM DUTY TRUCK WITH V SNOW PLOW



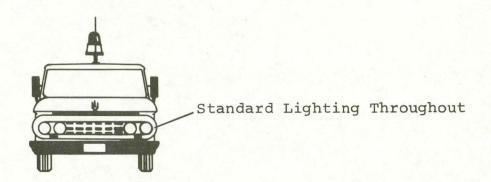




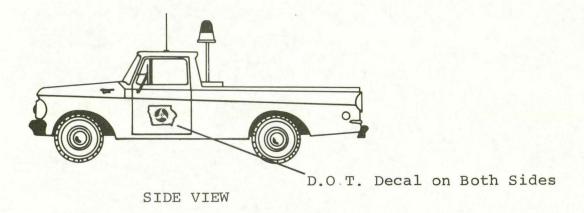
Page 55
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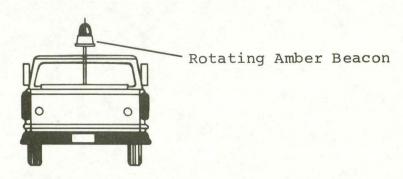
Lighting Chart

PICKUP TRUCK



FRONT VIEW

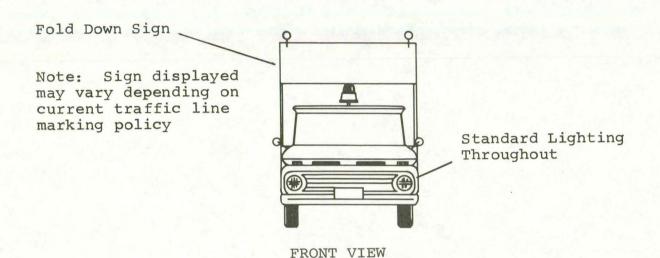


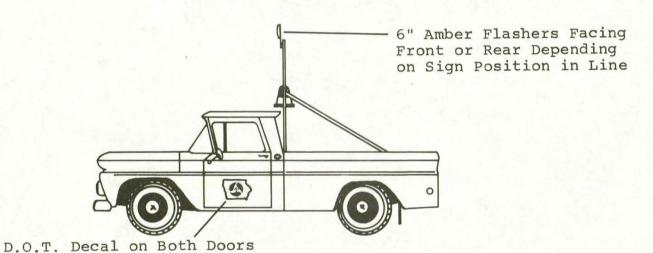


REAR VIEW

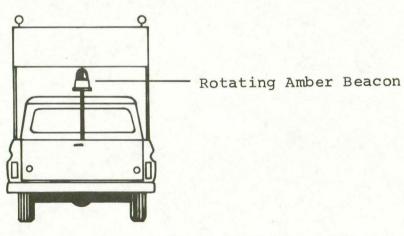
Note: If spotlight is needed request hand held, sealed beam type which plugs into cigarette lighter.

LINE MARKING PICKUP

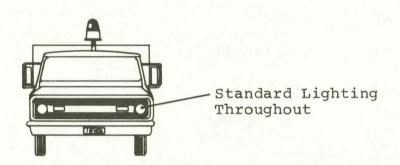




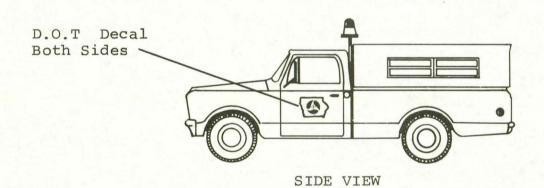
SIDE VIEW

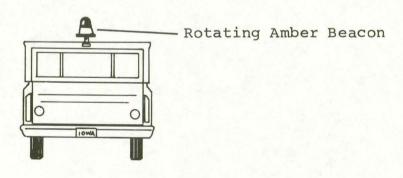


Lighting Chart PICKUP WITH TOPPER



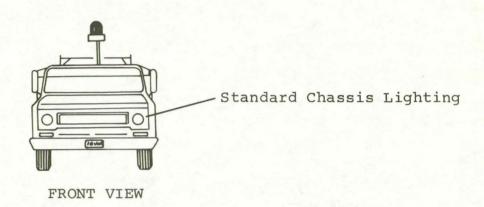
FRONT VIEW





REAR VIEW

3/4 & 1 TON PICKUP WITH FLAT OR STAKE BED



Amber Clearance Min. 12" Both Front & Side Red Clearance Both Back & Side D.O.T. Decal Red Reflector Both Sides Both Sides SIDE VIEW Amber Reflector Both Sides *Rotating Amber Beacon (Optional) Min. Mounting Height 12 inches above cab Triple Identification Lights Red to Rear 000 Red Clearance Lights Red Reflector Both Sides Both Sides REAR VIEW

*Mounting bracket should be adjustable with minimum height as shown and capability of extension to clear any load or equipment on the truck bed.

