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1.0. PURPOSE AND SCOPE

- 1.1. The intent and purpose of this guideline document is to provide safe and consistent methods for loading and securement, for transportation to the destination, and for unloading and stockpiling of pipe and other cylindrical stock at the destination.
- 1.2. These guidelines are not meant to supersede or replace regulatory requirements, nor is it intended to be all inclusive of the applicable regulatory requirements. Instead, view this data as supportive and complementary to any operating requirements.

2.0. HAZARD ASSESSMENT

- 2.1. Hazard assessments are performed to identify pipe loading and unloading-related hazards, and to recommend the appropriate remedy or mitigation. Please keep in mind that the following are examples of conditions and hazards that should be considered while loading/unloading pipe (cylindrical stock) but, should not be considered an all-inclusive list.
- 2.2. Please refer to the sample Job Hazard Analysis (JHA)/Job Safety Analysis (JSA) in "Appendix A" for a list of common hazards/risk factors associated with loading and unloading pipe/cylindrical stock. A sampling of hazards/risk factors to be considered are:
 - Weight of the load lifted.
 - Range of the lift.
 - Location of the pipe.
 - Size and profile (i.e. bend) of the pipe.
 - Number and frequency of lifts performed.
 - Proper selection of equipment for the loading and unloading tasks.
 - Pinch points/line-of-fire area.
 - Overloaded or improperly loaded (poor weight distribution) trucks/rails/trailers.
 - Uneven and/or shifted loads reducing the overall stability of the load/vehicle.
 - Missing or damaged strapping/tie-downs.
 - Requirement for stanchions on trailers/trucks.
 - Potential energy stored in load.
 - Means of securement (tie down strap, banding, etc.).



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- Proximity of the operation to overhead power lines or other structures.
- Presence of ice, snow, mud or other environmental hazards.
- Worker safety when working from an elevated position.
- Proper selection of lifting rigging (chains, slings, straps, vacu-lifts, etc.).
- Qualified operators must run the lifting equipment.
- Change of ground conditions as it relates to equipment stability

2.3. Hazard assessments are reviewed, conducted, and/or updated:

- For each new task and/or when there is a change in how a task is performed.
- At the beginning of each shift.
- As needed.
- A change in environmental conditions.
- A change in terrain or weather conditions

3.0. RESPONSIBILITIES

3.1. **Management/Supervisor Responsibilities** (includes all personnel on site with a supervisory role)

Enforce guidelines governing the safe loading, unloading, inspection, and handling of pipe, including but not limited to confirming that:

- 3.1.1. A Site Hazard Assessment has been completed thoroughly and controls have been implemented to reduce or mitigate all recognized hazards to an acceptable level.
- 3.1.2. Designated procedures are communicated, available for review and followed.
- 3.1.3. Those individuals responsible for carrying out tasks have been sufficiently trained and are competent, hold any applicable/necessary certifications to safely perform the tasks.
- 3.1.4. Verify that all lifting equipment (i.e., cranes, forklifts, vacu-lifts, etc.) are inspected per the various regulatory and manufacturer requirements.
- 3.1.5. Participate in the development of specialized lifting plans when applicable for the intended/specified equipment. This may include but is not limited to, developing a critical lift plan/checklist under



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certain conditions, such as: The lift exceeds 80% of the rated capacity of crane/lifting equipment or, requires use of more than one crane.

- 3.1.6. Must confirm that personnel involved in the activity/activities are aware of the weight of the load.
- 3.1.7. Must monitor lifting/loading activities to verify safe loading/lifting capacities of the equipment and rigging are not exceeded. This applies to all equipment involved.

3.2. Health and Safety Responsibilities

- 3.2.1. Assist with developing specialized lifting plans, including but not limited to providing technical support for cranes and hoist lifting plans, when applicable/required.
- 3.2.2. Perform periodical audits of the mechanical lifting activities.
- 3.2.3. Review inspection reports for completeness and closure of deficiencies.
- 3.2.4. Assist Management/Supervisors in the development/enforcement of Safe Work Practices (SWPs), Training Programs, and compliance with applicable regulations.

3.3. Employee Responsibilities

- 3.3.1. Follow established procedures/protocols associated with the operations of loading and unloading pipe/cylindrical stock.
- 3.3.2. Operators shall be responsible for determining how many joints of pipe can be safely maneuvered/carried at one time, based on: characteristics of the load (e.g. weight, diameter, etc.); characteristics of the rigging equipment (e.g. engineered load rating); Adherence to the safe operating practices of lifting/transportation equipment in accordance with the manufacturer's instructions (e.g. engineered load rating chart, vehicle/trailer ratings, environmental factors such as slope, weather, etc.)
- 3.3.3. Employees shall visually inspect all rigging prior to use to determine if it is suitable for the lifting operations.
- 3.3.4. Verify that stakes/uprights on trailer edge, chocks on deck, strapping/tie-downs or other similar devices are of sufficient width and padded to prevent damage to or shift of the pipe/cylindrical stock when applicable.



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3.3.5. Employee(s) should inspect all pipe to ensure it is properly secured so as to prevent unplanned movement during loading/unloading activities

4.0. HAZARD MITIGATION

Personal Protective Equipment (PPE)

- Refer to INGAA Construction Safety Guidelines “CS-G-1 Basic Personal Protective Equipment (PPE)” for guidelines on PPE that should be worn by all individuals during and in the vicinity of construction-related activities.
- Hearing protection should be worn when noise level exceeds 85 dBa (In general, if you have to elevate your voice to talk to someone standing beside you, hearing protection is needed.)
- On occasions where steel banding is used, additional PPE should include face shields, protective sleeves and gloves

5.0. HAULING/LEAVING THE PIPE YARD AND/OR ENTERING A PUBLIC ROADWAY

- 5.1. Once the load is to leave the yard or enter the public roadway, the load must not exceed truck/trailer maximum weight requirements and must be secured with the appropriate number of properly sized and rated straps per the DOT and/or other Regulatory Requirements.
- 5.2. Drivers; shall check load securement devices. The initial road-check should be completed within the first 50 miles of travel.

* Subsequent load checks should occur every 150 miles as well as within 3 hours or with change of duty status (whichever comes first).
- 5.3. All devices and systems used to secure cargo to or within a vehicle must be capable of meeting the performance criteria. All vehicle structures, systems, parts and components used to secure cargo must be in proper working order when used to perform that function with no damaged or weakened components that could adversely affect their performance.
- 5.4. Each tie-down to be attached and secured in a manner that prevents it from becoming loose, unfastening, opening or releasing while the vehicle is in transit. All tie-downs and other components of a cargo securement system used to secure loads on a trailer equipped with rub rails must be located inboard of the rub rails whenever practicable. Also, edge protection must be used whenever a tie-down would be subject to abrasion or cutting at the point where it touches an article of cargo. The edge protection must resist abrasion, cutting and crushing.



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- 5.5. Articles of cargo that are likely to roll must be restrained by chocks, wedges, a cradle or other equivalent means to prevent rolling (i.e. nesting). The means of preventing rolling must not be capable of becoming unintentionally unfastened or loose while the vehicle is in transit. Articles of cargo placed beside each other and secured by transverse tie-downs must be:
- Placed in direct contact with each other, or
 - Prevented from shifting towards each other while in transit.
- 5.6. Drivers delivering pipe for stringing along ROW should follow supervisions directions for approved DOT/Permitted truck routes to and from ROW with ingress and egress points to ROW, before proceeding to location for unloading of pipe.

6.0. UNLOADING/ STRINGING ON THE RIGHT OF WAY (ROW):

6.1. General

- 6.1.1. Unloading, hauling, and stringing of line pipe shall begin after the right-of-way has been cleared and the associated work areas have been authorized by permit, state or local governing body, or owner.
- 6.1.2. Unauthorized personnel shall not be permitted near unloading areas.
- 6.1.3. When trucks are backing up or unloading there must always be a spotter present.
- 6.1.4. Supervision, operators, and all personnel should ensure area is clear of ground personnel and area is set up to remove pipe from trailer and that the ground surface is stable, for skidding or earthen berms before moving pipe. The trailer should be moved to terrain that will not affect the load's stability during the unloading process (i.e. parallel to slope vs. perpendicular).
- 6.1.5. Before any work is started, all above ground facilities (e.g., overhead power lines, valves, and piping assemblies) in the work areas shall be marked with warning signs, caution tape, or similar to increase their visibility to operators and personnel working in the area.

Note: Check Right-of-Way restrictions for potential matting requirements for other pipelines in area. Heavy equipment with minimal cover can damage existing pipelines.



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- 6.1.6. Pipe placement on slopes on a 30% grade or less, anchors or placed to prevent movement of each joint susceptible to move after placement.
- 6.1.7. The work areas shall be maintained so that all persons involved in unloading, hauling, or stringing of line pipe shall be able to see and be seen by all other persons engaged in the same process.
- 6.1.8. The work shall be performed in accordance with all state and local regulations and owner/operator specifications.
- 6.1.9. If construction line lists are provided that specify storage areas for the pipe, the requirements in the lists shall be followed.

6.2. Pipe and Coating Care When Unloading

- 6.2.1. Any activity that would distort, dent, or otherwise damage the line pipe or pipe coating shall not be permitted.
- 6.2.2. The pipe shall not be permitted to drop or strike objects. Comment: These events can result in personnel injury or pipe/coating damage.
- 6.2.3. Padding used on the pipe during transportation shall be retained and used for stockpiling pipe or shall be disposed of in accordance with applicable regulations

6.3. Pipe Stringing by Rigging

Pipe center/balance point is found and lifted at that location of pipe, to equalize weight distribution. A tagline is utilized by ground personnel to minimize pipe movement while pipe is moved to area preventing damage and operator safety. Ground personnel must avoid placing themselves under the suspended load or within potential pinch areas while controlling the pipe.

6.4. Stringing with a trained vacuum unit operator

- 6.4.1. The operator's responsibility to ensure ground personal are clear before removing pipe from trailer and while moving pipe to area for placement.
- 6.4.2. Drivers delivering pipe for stringing pipe along ROW should follow supervisions directions for approved truck routes to and from ROW with ingress and egress to ROW for entering public roads, before unloading and pipe placement.
- 6.4.3. Pipe placement along ROW by skids supports are arranged so to support pipe safely with a skid crotch to prevent rolling and high enough placement off any ground material.



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7.0. STRINGING

7.1. Line Pipe Care

- 7.1.1. The same equipment and handling techniques shall be used for stringing pipe.
- 7.1.2. Pipe shall not be dragged or pulled into position while stringing or moving pipe along the right-of-way.
- 7.1.3. Pipe shall not be dropped or rolled into place along the right-of-way.
- 7.1.4. When moving pipe along the right-of-way for stringing activities, make sure the pipe being moved is properly secured to prevent damage to the pipe and pipe coating.

7.2. Location

- 7.2.1. Pipe shall be placed within the limits of the right-of-way in appropriate areas (e.g., workspace and staging areas).
- 7.2.2. Pipe shall not be strung across erosion control devices.
- 7.2.3. Pipe shall be strung in the appropriate areas, permitting space for equipment, spoil pile placement, or other right-of-way activities to be performed without damaging the pipe.
- 7.2.4. Pipe shall be supported on-site with skids, sandbags, or other appropriate material, elevating the pipe and keeping the pipe free of water and debris.
- 7.2.5. Supports shall be spaced to minimize deflection of the supported pipe.
- 7.2.6. Padding shall be used as needed to prevent damage to the coating.
- 7.2.7. Must ensure that the pipe ends are not in contact with the ground so that deleterious material does not enter pipe.
- 7.2.8. Earth berms in place of skids may be used with approval by the Owner/Operator.
- 7.2.9. Certain support devices (e.g., plastic support cones) shall not be permitted on sloped surfaces unless additional support frames are constructed around the supports.
- 7.2.10. For special cases (e.g., pipe is left strung on the right-of-way overnight, for drastic weather conditions, etc.), caps may be placed on the end of the pipe to prevent entry of animals, debris, and water.



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7.2.11. Spools of polyethylene and reinforced thermoplastic pipe shall be placed in secure areas to prevent damage to the pipe and the possibility of these spools tipping over and falling into the work area or onto personnel.

7.3. Gaps and Passage

7.3.1. Stringing the pipe on-site shall be performed in a manner that causes minimal interference with the normal use of the land. This includes, but is not limited to, the following:

- Use of the land by the public in cases of road/trail crossings
- Use of the land for agricultural and farming purposes by the landowner.
- Use the laydown of the yard and ROW to allow trucks to enter without intervening with the jobsite.

7.3.2. Gaps shall be provided in the piping at appropriate intervals to permit the movement of equipment and access of personnel to the trench and other work areas.

7.3.3. If there is a need for livestock, traffic, or landowners to pass through the right-of-way, additional gaps shall be provided as required.

7.4. Pups

7.4.1. Pups (sections of pipe shorter than standard length) must be tied into the piping at the end of each day rather than at the end of the job to prevent the final sections of the pipeline from being constructed of all pups.

7.4.2. Pups of the length (Owner specified) must be hauled ahead daily as part of the stringing work. (Brought forward or scrapped.)

7.4.3. Pups that do not have Material Test Reports or heat numbers must not be used.

7.4.4. Heat number and other markings on pups must be marked before cutting to ensure traceability

8.0. HISTORY OF REVISIONS

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0	5/20/2020	Initial Issue