INSTRUCTIONS FOR THE PREPARATION OF THE CRANE INFORMATION FORM (CIF)

(NCC Form 08-001h, January 2024)

Section 1: Point of Contacts

1A. Enter the name, activity, phone number, and email address for the Project Manager POC.

1B. Enter the name, activity, phone number, and email address for the End User POC.

1C. Enter the name, activity, phone number, and email address for the Certifying Official POC.

1D. Enter the name, activity, phone number, and email address for the Facility Engineer or Design Manager POC.

Section 2: Location

2A. Provide the Activity Name and **UIC#** or **DODAAC#**.

UIC – Unit Identification Code

DODAAC – Department of Defense Activity Address Code (for non-Navy Installations)

2B. Provide the assigned project name, building name or number, room/area/bay for the new crane, and whether or not the building is a new construction.

2C. Provide the desired date for the crane to be installed and operational.

Section 3: Quantity and Type of Crane(s)

3A. Indicate the number of identical cranes required. If additional cranes are required that are not identical, submit a separate Crane Information Form for each different crane.

3B. Indicate the desired **Lifting Means** and **Hoist Power Source**.

Lifting Means – Wire Rope is the most common selection for NCC procurements. Chain is more appropriate for cranes with a lifting height of less than 20 ft. and a capacity of less than 6 tons.

Hoist Power Source – Electric is the most common selection for NCC procurements. Electric is not recommended for maximum anti-spark/hazardous environments. Pneumatic requires access to a sufficient shop air source and is recommended for maximum anti-spark/hazardous environments. Pneumatic is not recommended for ordnance cranes. Manual is viable for both maximum anti-spark/hazardous and ordnance cranes. Manual power is only an option when the selected **Lifting Means** is Chain.

3C. Indicate the **crane type**, **runway type**, and **crane (bridge) power** source.

Crane Type – For a brief explanation of crane types, refer to NAVFAC P-307 Appendix B.

Runway Type – Select the type of runway for the bridge crane to ride on. If Jib or Monorail are selected for Crane Type, this will be marked as N/A.

Power Source – Electric is the most common selection for NCC procurements. Pneumatic requires access to a sufficient shop air source and is most common for maximum anti-spark/hazardous environments. Manual is appropriate for cranes with a runway height of less than 20 ft. and a capacity of less than 6 tons.

3D. Indicate the **trolley type** and **trolley power source**.

Trolley Type – If Monorail or Single Girder are selected for Crane Type, then Underhung must be selected.

Trolley Power Source – Electric is the most common selection for NCC procurements. Pneumatic requires access to a sufficient shop air source and is most common for maximum anti-spark/hazardous environments. Manual (Chain Sprocket) is appropriate where pull type trolleys would be impractical due to either a high capacity or high hook lift height. Manual (Pull) is appropriate for cranes with infrequent or relatively short motion, a runway height of less than 20 ft. and a capacity of less than 3 tons. Neither Manual option is commercially available for maximum anti-spark/ordnance cranes.

Section 4: Crane/Runway Capacity

4A. Indicate the main hoist capacity in pounds, if an auxiliary hoist is required, and the auxiliary hoist capacity in pounds, if applicable.

1. Enter the main hoist capacity in pounds. As a rule of thumb, the main hoist should be sized such that the heaviest anticipated lift is at 80% of main hoist capacity. This will minimize the number of critical lifts (see NAVFAC P-307 10.4.1).
2. Indicate if an auxiliary hoist is required. In normal service the auxiliary hoist is used for most lifts since the need for the rated capacity of the main hoist is infrequent. An auxiliary hoist is not typically included for cranes below 15T capacity.
3. Enter the auxiliary hoist capacity in pounds. An auxiliary hoist has a lower lifting capacity (typically from 10 percent to 30 percent of the main hoist) but is correspondingly faster.

4B. Indicate if there will be multiple trolleys on the same bridge, the capacities of those trolleys, the resulting bridge capacity, whether tandem operation is required, and where the auxiliary hoist would be located if applicable.

1. Indicate if more than one trolley is required on the same bridge. This is not standard. Multiple trolleys on the same bridge are used for manipulation of lifted loads, or for lifts using equalizing beams in low headroom installation.
    a. Enter the trolleys and bridge capacities in pounds. The individual capacity of either trolley cannot exceed the bridge capacity. If the sum of the trolleys' capacities exceeds the capacity of the bridge, a networked overload capacity system will be required to ensure the bridge is not overloaded. If the sum of the trolleys' capacities is less than or equal to the bridge capacity, standard overload capacity systems are sufficient.
    b. Indicate if the multiple trolleys will be used to facilitate tandem operations. This will drive additional control system requirements. Please notify NCC if tandem operations will be performed using two different cranes.
    c. Select which trolley the auxiliary hoist will be located on if applicable. Select N/A if not applicable.

4C. Indicate if there are additional cranes on the same runway and provide specifics.

1. Indicate if there are additional cranes on the runway.
    a. Provide quantities and capacities of additional cranes. Ex. Crane 1, Qty. 1, 5T.

4D. Indicate if there are plans to add or remove additional cranes and provide specifics.

1. Indicate if there are plans to add or remove additional cranes.

a. Provide quantities, capacities, and any relevant details to the addition or removal of the additional cranes.

4E. Indicate if the crane runway is existing. If the runway is existing, a recent (typ. within 5 years) runway survey is required to be provided. If the runway is existing, indicate in Section 10H what the allowable stopping forces are of the existing crane end stops. If the runway is not existing, indicate in Section 10H who will be providing the crane runway, runway rail, and end stops.

4F. Indicate whether a recent rail survey is available, that meets the requirements of the applicable Acquisition Agreement for the project. If unsure, select N, and contact the designated project manager with NCC for further consideration. For information, **the acquisition agreement states**: "For cranes being installed on existing rails, the Supported Command shall provide a rail survey completed within the past 5 years." "NAVCRANECEN will not issue a Request for Proposal (RFP) without the completed rail survey and the determination of acceptable alignment."

Section 5: Crane Service and Environment

5A. Indicate if the crane will be **General Purpose Service (GPS)** or **Special Purpose Service (SPS)**.

General Purpose Service – Any crane not designated as an SPS crane is a GPS crane.
Special Purpose Service – Any crane that supports various lifting operations associated with the servicing of nuclear reactors and related components aboard vessels and in shore facilities.

5B. Indicate the CMAA #70/#74 or ASME HST Class of Service. If the class of service is unknown, complete main hoist and auxiliary hoist (if applicable) lift cases for NCC to determine. NCC policy requires all cranes to be minimum CMAA #70 Class C. Cranes designated as SPS, Hot (Molten) Metal Service, and Ordnance/Explosive Handling Service are required to be minimum CMAA #70 Class D. Cranes requiring a Class E or greater shall be discussed with NCC.

5C. Provide a brief description of the expected day to day operations the crane is expected to perform. Please note any specialized or priority lifts the crane is expected to perform. Be as specific as possible about what item will be lifted, how high, how far it will be carried, and how often the lift will be performed.

5D. Indicate the classification of crane, the hazardous environment if applicable, if an insulated link is required, is captivation required, are drip pans required, location of crane operation, ambient temperature range for the crane, and any additional environmental considerations.

1. Indicate the classification of the operating environment of the crane from among the options of **Non-Hazardous**, **Hazardous**, **Corrosive**, **Dusty**, **Ordnance/Explosive Handling Service**, **Hot (Molten) Metal Service**, or **Other**. More than one option can be selected.

Non-Hazardous – Any crane operational environment not classified as Hazardous per NFPA 70 Article 500.
Hazardous – Any crane operational environment classified as Hazardous per NFPA 70 ARTICLE 500.
Corrosive – Any crane operational environment classified as being corrosive per the user, i.e. high salinity. NCC can provide further guidance.
Dusty – Any crane operational environment classified containing fine particulates that would require special design considerations.

Ordnance/Explosive Handling Service – Any crane designated for handling ordnance/explosives.

Hot (Molten) Metal Service – Any crane designated for handling hot or molten metal.

Other – This is very uncommon. Any crane operational environment not already described. Please be descriptive for this unique case. Further discussion with NCC is likely required.

2. If the Operating Environment was selected as Hazardous, provide the NEC Class, Division, and Group as defined by NFPA 70 Article 500. If this information is not known, it can typically be found on the building or room General Arrangement Drawing. NCC is not responsible for determining the Class, Division, and/or Group.

2a. Indicate the height above the floor hazardous protection is required. Typical heights are 18 inches, 5 feet, and full height of the crane. These heights are driven by the Hazardous Class, Division, and Group identified via NFPA 70 Article 500. If this height is not known, guidance can be provided by NCC if Item #2 above has been completed fully.

3. If **Ordnance/Explosive Handling Service** is selected in Item #1 above, please indicate if insulated links are required to be procured with the crane(s). For indoor cranes, it is most typical for the insulated link(s), if required, be procured outside of the crane procurement as rigging gear. Insulated links are not required when all three of the following conditions are met. If any of the following three conditions are not met, an insulated link will be required.
    i. There is no threat of lightning strike during operations.
    ii. There is no chance for contact with overhead power lines.
    iii. RF emission control is in effect regardless of the Hazards of Electromagnetic Radiation to Ordnance (HERO) classifications of the ordnance being handled.
4. Indicate if captivation is required. Captivation is most typically a product of the crane being selected as **Special Purpose Service** in Item #5A. If captivation is required, please provide a brief explanation in the block provided as to the expectations from the crane contractor. If additional detail is being provided, please indicate that and provide all necessary documentation to NCC.
5. Indicate if drip pans or oil/grease tight gear cases are required. If either is required, please provide a brief description indicating where drip pans or oil/grease right gear cases would be required.
6. Indicate if the crane will operate indoors, outdoors, or both.
7. Indicate the ambient temperature range for the crane.
8. If the location of the supported command requires that seismic considerations be taken into account for this crane, provide the appropriate Design Category and Risk Category for your region.

Section 6: Crane Controls

6A. Indicate the primary and secondary (if applicable) methods of crane control.

1. Indicate the primary method of crane control from among the options of **Cab**, **Floor (Pendant)**, **Radio**, **Infrared**, **Wall**, or **Other (Please Explain in 10H)**.

Cab – An operator's cabin mounted to the crane, either to one of the bridge girders or the trolley. This is an option, and typically preferred, on larger cranes.
Floor (Pendant) – A pendant operating station suspended from the crane, either from the trolley or a separate messenger track. Further options are available in Item #6B below. This is a common hardwired option.
Radio – A bellybox style wireless radio controller. Further options are available in Item #6C below. This is a common wireless option. A typical NCC procurement will provide two radio controllers, one as the primary, and one as a backup per crane. Communicate to NCC if more or less are required per crane.
Infrared – A wireless infrared controller. This is an uncommon wireless option.
Wall – A wall mounted operating station. This can either be controls mounted directly to the wall mounted control enclosure or (rarely) an umbilical style pendant controller attached to the wall mounted control enclosure. This is an uncommon hardwired option.
Other (Please Explain in 10H) – This would be a rare case and would require further discussion with NCC in addition to the required detail in Item #10H below.

2. Indicate if a secondary method of crane control is required. If a secondary method of crane control is required, indicate the secondary method of crane control from among the options of **Cab**, **Floor (Pendant)**, **Radio**, **Infrared**, **Wall**, or **Other (Please Explain in 10H)**.

6B. If **Floor (Pendant)** controls are required per Item #6A or #6B above, indicate the required options and movement method. This section is also applicable if a wall mounted umbilical style pendant controller is desired.

1. Indicate the required options for the pendant from among the options of **Lockable**, **Detachable**, **Retractable**, and **Indicator Lights on the Pendant**. Multiple options may be selected.

Lockable – The pendant controls can be secured using some controlling method, typically a keyswitch disabling the pendant controls.
Detachable – The pendant controller, and its associated cabling, can be disconnected from wherever it connects to one the crane or wall mounted control enclosure.
Retractable – The pendant controller would be suspended from the crane using a cable reel, typically using a ratcheting clutch mechanism to move the pendant out of the way when not in use. A tag line is not required to be specified, but is recommended.
Indicator Lights on the Pendant – Lights can be provided integral to the pendant for status of power available, mainline energized, fault, slow speed, etc. Further discussion with NCC can be had to determine feasibility given specific project conditions.

2. Indicate the required method of Pendant Control Movement from among the options of **Separate Messenger Track** or **Suspended from Trolley**.

Separate Messenger Track – The pendant will move separate from the trolley using a festoon system. This is the most common, and preferred, selection for NCC procured pendant operated cranes.

Suspended from Trolley – The pendant will move as the trolley moves. This can cause issues when lifting larger loads. This would be an appropriate selection for monorail cranes.

6C. If **Radio** controls are required per Item #6A above, indicate the required control method, frequency range, and type of frequency.

1. Indicate the required radio control method from among the options of **Pushbutton Type Controls** or **Joystick Type Controls**.

   Pushbutton Type Controls – This is an uncommon type of control for NCC procured radio controllers. Pushbuttons with detents are provided for crane control.

   Joystick Type Controls – This is the common type of control for NCC procured radio controllers. Joysticks, levers, or flippers are provided for crane control.

2. Indicate the frequency range for the radio controller and whether or not the frequency will be **Licensed** or **Unlicensed**.

   Licensed – This is the uncommon selection for NCC procurements. Frequencies in the licensed bands are reserved for critical operation and public safety systems. These frequencies require specific requests to, and approval from, the FCC. The requests and approval of the selected frequencies are the responsibility of the customer.

   Unlicensed – This is the common selection for NCC procurements. Common frequencies are 433MHz, 900MHz, and 2.4GHz. These frequencies are subject to interference in high radio traffic areas.

6D. If **Cab** controls are required per Item #6A above, indicate the required options for the cab controls, design, climate control, and cab access.

1. Indicate the required cab control options from among the options of **Lockable**, **Controls on operator's chair**, or **Controls on separate console**.

   Lockable – The cab controls can be secured using some controlling method, typically a keyswitch disabling the cab controls.

   Controls on operator's chair – The cab controls will be attached to the operator's chair, either integral to the chair or integral to attached operator's consoles.

   Controls on separate console – The cab controls will be mounted on separate consoles or pedestals in front of, or adjacent to, the operator's chair.

2. Indicate the required cab design options from among the options of **Enclosed**, **Open**, or **Skeleton (Radio Controlled)**.

   Enclosed – The cab is an enclosed space, with windows and a lockable door.

   Open – The cab is an open air cab design, relying on the climate control of the building.

   Skeleton (Radio Control) – The cab can be either enclosed or open, with no integral controls, only a space for the operator to control crane via a radio controller.

3. Indicate the required cab climate control options from among the options of **Heated**, **Air Conditioned**, or **Fan Cooled**.
   Heated – Self-explanatory.
   Air Conditioned – Self-explanatory.
   Fan Cooled – Self-explanatory.
4. Indicate the required cab access option from the options of **From crane** or **From building**.
   From crane – The operator's cab is accessed via traversing the crane using its own walkways and crossovers to enter the operator's cab.
   From building – The operator's cab is accessed via point directly from the building.

6E. If any crane control considerations are necessary, are not already covered in the above section, indicate in the section provided.

Section 7: Crane Speeds

7A. Indicate the required crane functions speeds. If desired speeds are not known, the Navy Crane Center can assist in making these decisions using references such as Crane Manufacturer's Association of America (CMAA) #70.
1. Indicate the required maximum and minimum bridge speeds, if applicable.
2. Indicate the required maximum and minimum trolley speeds.
3. Indicate the required maximum and minimum main hoist speeds.
4. Indicate the required maximum and minimum auxiliary hoist speeds, if applicable.
5. Indicate if the provided speeds are existing.
   a. If the answer is no to the above, indicate whether or not the existing electrical system is capable of handling the new crane function speeds. If UNSURE, NCC assistance can be provided.

7B. Indicate if a slow speed toggle switch is required for precision operations. The slow speed functionality is activated via a toggle, selector, or keyed switch typically located adjacent to the operator's controls.
   a. If the answer is yes to the above, indicate the desired percentage of maximum speed. Typical reduction is 25% of maximum speed.

Section 8: Crane Electrical Design

8A. Indicate the required electrification type, crane runway conductor supplier, existing crane runway conductors (if applicable), branch circuit characteristics, and the location and size of the existing crane disconnect switch.
1. Indicate the preferred crane runway electrification type from among the options of **Conductor Bar**, **Festoon**, **Energy Chain**, **Cable Reel**, or **Other (Please Explain in 10H)**.
   Conductor Bar – A rigid electrification system that is the most typical crane electrification type for NCC procurements. This system is not approved for certain environments, most typically full height hazardous cranes.
   Festoon – A flexible electrification system most suitable for short crane runways and full height hazardous environments.

Energy Chain – A flexible electrification system most suitable for short crane runways and full height hazardous environments. This system is also suitable for areas where captivation is a concern, as they have fewer components requiring captivation.

Cable Reel – A flexible, self-retracting electrification system most suitable for short crane runways and full height hazardous environments.

Other (Please Explain in 10H) – This would be a rare case and would require further discussion with NCC in addition to the required detail in Item #10H below.

2. Indicate who will be supplying the crane runway conductors (electrification system) from among the options of **Existing**, **Crane Contractor**, or **Building Contractor**.

   Existing – The electrification will remain as is with no updates required in the specification.

   Crane Contractor – The electrification and all associated hardware will be the responsibility of the Crane Contractor. This is a typical selection for NCC procurements.

   Building Contractor – The electrification and all associated hardware will be the responsibility of the Building Contractor. This is a typical selection for Waiver or Assist projects.

3. If **Existing** was selected in Item #2 above, indicate the Conductor Size in Amperes (A) and the Conductor Manufacturer's Name and Model #.
4. If **Existing** or **Building Contractor** was selected in Item #2 above, indicate the voltage and current rating of the crane branch circuit.
5. If **Existing** was selected in Item #2 above, indicate the Location, Frame Size, and Fuse/Circuit Breaker Size of the crane branch circuit floor level disconnect.
   a. Indicate the Location of the crane branch circuit floor level disconnect.
   b. Indicate the Frame Size, in Amperes, of the crane branch circuit floor level disconnect.
   c. Indicate the Fuse/Circuit Breaker Size, in Amperes, of the crane branch circuit floor level disconnect.

8B. Indicate the preferred trolley electrification type.

1. Indicate the preferred trolley electrification type from among the options of **Conductor Bar**, **Festoon**, **Energy Chain**, **Cable Reel**, or **Other (Please Explain in 10H)**.

   Conductor Bar – A rigid electrification system that is the least typical trolley electrification type for standard bridge crane procurements. This is a typical trolley electrification type for monorail cranes, where there is no bridge. This system is not approved for certain environments, most typically full height hazardous cranes.

   Festoon – A flexible electrification system that is the most typical trolley electrification system for NCC procurements.

   Energy Chain – A flexible electrification system. This system is suitable for areas where captivation is a concern, as they have fewer components requiring captivation.

Cable Reel – A flexible, self-retracting electrification system. This is not a typical electrification system. This system is suitable for full height hazardous environments.

Other (Please Explain in 10H) – This would be a rare case and would require further discussion with NCC in addition to the required detail in Item #10H below.

8C. Indicate the required electrical control type for each function (if applicable).

1. Indicate the required electrical control type for the main hoist from among the options of **Inverter (Speed Points)**, **Inverter (Infinitely Variable)**, **2 Speed**, or **Other**.
2. Indicate the required electrical control type for the auxiliary hoist from among the options of **Inverter (Speed Points)**, **Inverter (Infinitely Variable)**, **2 Speed**, or **Other**.
3. Indicate the required electrical control type for the trolley from among the options of **Inverter (Speed Points)**, **Inverter (Infinitely Variable)**, **2 Speed**, or **Other**.
4. Indicate the required electrical control type for the bridge among the options of **Inverter (Speed Points)**, **Inverter (Infinitely Variable)**, **2 Speed**, or **Other**.

Inverter (Speed Points) – This is the less common of the two Inverter options. Inverters use Variable Frequency Drives (VFDs) requiring less maintenance and more precision than other control types. Using speed points limit the number of different speeds available based on the number of selected speed points.

Inverter (Infinitely Variable) – This is the more common of the two Inverter options and the most common control option for NCC procurements. Inverters use Variable Frequency Drives (VFDs) requiring less maintenance and more precision than other control types. Infinitely variable inverter controls provide an infinite number of speed points.

2 Speed – Two speed controls require single or two speed squirrel cage motors controlled by contactors. This selection is not common and not compatible for use with VFDs. Two speed controls require more maintenance and provide less precision than inverter controls, but do not use any electronic based controls and are suitable for hazardous environments given their compatibility with hazardous rated enclosures.

Other – This would be a rare case and would require further discussion with NCC in addition to providing any available details in the space provided.

8D. Indicate the inverter speed points (if applicable), if an hour meter is required, if a data logger is required, if a laptop is desired, and if EMI suppression is required.

1. If any function was selected with **Inverter (Speed Points)** in Item #8C above, indicate the required number of speed points for each applicable function.
2. Indicate if an hour meter is required for each individual function. An hour meter provided for each function is valuable in tracking runtime per function for maintenance purposes. An hour meter is already required to be provided to indicate total crane runtime.
3. Indicate if a data logger is required for the crane. The data logger will provide fault code readouts for each function, assisting in troubleshooting. This functionality is not typically a feature of smaller, less complex, single hoist cranes.

4. Indicate if a laptop is desired to connect to the crane electrical drives. The laptop can be used to interface with the VFDs to download fault logs and parameter lists and more easily adjust parameters. The customer must be able to provide applicable site-specific cybersecurity and IT requirements.
5. Indicate if electromagnetic interference suppression is required. If **Radio** was selected in Item #6B above, this will be provided automatically. If the crane installation site experiences signification radio frequency noise, this might be required for proper crane operation.

8E. Indicate if indicator lights are required and where they will be mounted.

1. If yes was selected in Item #8E above, indicate where the lights will be mounted from among the options of **Bridge** or **Trolley**.

   Bridge – The lights will be mounted to the bridge girder. This option is typical and preferred for double girder cranes. The crane contractor will have the liberty of determining whether to mount the lights directly to the bottom or side of the girder as long as the lights are visible to the operator and ground level personnel.

   Trolley – The lights will be mounted to the trolley. This option is typical and preferred for single girder and monorail cranes.

Section 9: Safety

9A. Indicate the type of overload lockout and the percentage it will be set at.

1. Indicate the type of overload lockout from among the options of **Electrical** or **Mechanical (Not common)**.

   Electrical – This most common type of overload lockout. The lockout is accomplished either integral to the VFD, using an integrated feature of the VFD to verify the crane does not overload, or via a separate system using additional hardware such as load cells or links. Electrical lockouts are adjustable and are the preferred selection for NCC procurements.

   Mechanical (Not common) – This type of lockout is specific to certain types of hoists, such as pneumatic or chain operated.

   a. Indicate the percentage of the crane's rated capacity where the overload lockout will be set. The NCC recommended range is 95% to 100%. Lower than 95% can result in nuisance trips if the crane is operated at or near capacity, while over 100% will result in an overload of the crane/hoist.
2. Indicate if an overload warning system is desired and the percentage it will be set at. The overload warning system is an additional system provided as a part of the crane. The overload warning system uses additional hardware to determine the weight carried by the hoist and provide an early indication via indicator lights when the hoist is approaching its max capacity.

   a. Indicate the percentage of the crane's rated capacity where the overload warning will be set. The NCC recommended range is 80% to 90% and at least 5% below the overload lockout percentage set in Item #9A above.

9B. Indicate if anti-collision interlocks are required and describe their desired operational characteristics. Anti-collision interlocks are used when there are multiple cranes on the same runway. The systems can be set-up with warnings, slowdowns, and lockouts.

a. Indicate the desired operational characteristics for the anti-collision system. Consider the following questions when describing the operational characteristics. An example response is provided.

i. How close should the cranes be able to get to each other before action is taken?

ii. What happens when the cranes get within a certain distance of each other? Warning, slowdown, stop, or multiple?
Example: No warning. 25% Slowdown at 10 feet. Stop at 5 feet.

9C. Indicate which warning devices are required. All cab and radio operated cranes are required to have at least one warning device. Cranes that can only be operated via a pendant are exempt from requiring a warning device as long as the ability of the operator to warn persons in the path of the load is not impaired. For all audible options, excluding the horn, consider requesting a momentary alarm silencer.

9D. Indicate if travel limits are required, for which function they apply, their operational characteristics, whether the crane will cross over to another runway, whether the trolley will cross to another bridge/track, and whether the crane will pass through a door.

1. Indicate if travel limits are required. Travel limits are used when there is a need to slow down or stop the crane/trolley prior to contacting the end stops of the associated runway. The systems can be set-up with warnings, slowdowns, and lockouts.
   a. Indicate whether the functionality is required for the Trolley, Bridge, or Both.
   b. Indicate the desired operational characteristics for the travel limits. Consider the following questions when describing the operational characteristics. An example response is provided.
      i. How close should the bridge/trolley be able to get to the end stops before action is taken?
      ii. What happens when the bridge/trolley gets within a certain distance of the end stops? Warning, slowdown, stop, or multiple?
      Example: Trolley: No warning. 25% Slowdown at 5 feet. No stop.
      Bridge: Warning at 10 feet. Slowdown at 5 feet. Stop at 1 foot.
2. Indicate if the crane will cross over to another runway.
3. Indicate if the trolley will cross over to another crane bridge or another section of track.
4. Indicate if the crane will pass through doors.

9E. Indicate if a Load Indicating Device (LID) is required, where it will be located, and whether it should be a separate system from the capacity overload protection system.

1. Indicate if an LID is required. A load indicating device is an operational aide and does not have lockout features. The system displays the weight seen by the hoist to the operator via a display. This is not a common or recommended option for monorail, single girder, or any packaged hoist cranes.

a. Indicate the location of the display. This can be on the bottom of the girder or trolley for floor operated cranes, in the operator's cab for cab operated cranes, or a mix of both for hybrid setups.
b. Indicate if the LID is required to be separate from the capacity overload protection system.

9F. Indicate the desired walkway configuration, if trolley access is required and any pertinent details, and the preferred fall protection methods.
1. Indicate the desired walkway configuration for the crane. If the desired configuration is not shown, use **Other, Please Explain** to detail the specifics of the desired configuration.
2. Indicate if Trolley access is required. Trolley access is available only if bridge walkways are being provided.
a. If Trolley access is required, indicate the desired method for Trolley access in the space provided. Be as detailed as possible. As an example, consider whether access via crossover platform or drive girder walkway is preferred.
b. If Trolley access is required, indicate the preferred fall protection method.

Section 10: Other Crane Considerations

10A. Indicate if floodlights are desired and the preferred floodlight type. This lighting selection will also apply to walkway lights, if walkways are being provided. If walkway lights are not required, indicate in Item #10H below.
1. Indicate if floodlights on the operator's cab or bridge are desired.
a. If floodlights are desired, indicate the preferred type of light bulb for the floodlights.

10B. Indicate if special painting considerations are required and the additional details for the special paint.
a. Indicate any additional paint requirements in the space provide that have not already been addressed via other selections made earlier in the CIF.

10C. Indicate who will provide certified test weights, rigging gear, and riggers, and how much lead time the Government will need to provide the aforementioned items.
a. If the Government is responsible for providing test weights, rigging gear, and riggers to support field testing and acceptance of the crane, how much advanced notice will the Government need to be able to support?

10D. Indicate how many hard copies of the operation and maintenance manuals and drawings are required to be provided by the crane contractor upon crane acceptance. Hard copies are in addition to digital copies. Two copies of each are typical.

10E. Indicate if operational and maintenance training are required, for how many people, for how long, and detail any specialized training topics.
a. Indicate how many people for both operational and maintenance training.
b. Indicate how many hours for both operational and maintenance training.
c. Indicate if specialized training is required for newer technology the maintenance and operations personnel will be unfamiliar with.

10F. Indicate if an extended warranty period is needed and for how long, and whether rapid warranty response is required and what the response time should be.

1. Indicate if an extended warranty period is required. An extended warranty is any period after the standard one year period following crane acceptance. This is an unusual request and additional cost is associated with an extended warranty period. Further discussion with NCC would be required to determine an appropriate length.
    a. Indicate how long the extended warranty period would be.
2. Indicate if rapid response is required for the warranty. This is not a typical request, and is usually only applicable to high priority, high cost, and complex cranes. Further discussion with NCC would be required.
    a. Indicate how long the response period would be, dictating how quickly the contractor must respond to each warrant request.

10G. Indicate if facility drawings will be provided to NCC, what format they will be provided in, and whether or not they can released as a part of the RFP. Providing facility drawings to NCC allows NCC to support finalizing the RFP and providing any missing configuration details to the crane contractor.
    a. Indicate in what format the drawings will be provided. (PDF, AutoCAD, etc.)
    b. Indicate whether the drawings can be provided as a part of the RFP.

10H. Indicate in the space provide any additional details related to procurement of the crane not already covered in the CIF.

NOTE: <u>Pages 8 through 13 are OVER HEAD CRANE CLEARANCE WORKSHEETS. Pages 8/9, 10/11, and 12/13 correspond to the crane type selected in Item #3C above. Only one worksheet needs to be completed for each unique crane.</u>

NOTE: <u>All mandatory information/dimensions will be marked "M" in this instruction.</u>

NOTE: <u>All conditionally mandatory information/dimensions that are contingent on another feature(s) of the crane or building will be marked "CM" in this instruction.</u>

NOTE: <u>All other fields are optional and shall be filled with readily available information.</u>

Page 8: Over Head Crane Clearance Worksheet for Under Running Single Girder Crane

- **(M)** <u>Compass Direction:</u> Indicate the compass direction associated with the plan view of the crane. When the actual location of the building falls between two directions, select the direction preferred for labeling of the crane controls.
- <u>Plan View:</u>
    - **(M)** UNDER RUNNING SINGLE GIRDER CRANE
        - NEW: Select this Radio button if the crane(s) being procured is not replacing an existing crane of the same or similar specification.
        - EXISTING: Select this Radio button if the crane(s) being procured is replacing an existing crane of the same or similar specification.
    - **(M)** RUNWAY SYSTEM
        - NEW: Select this Radio button if the runway system supporting the crane(s) being procured is being provided new. This is typical for new construction.

- EXISTING: Select this Radio button if the runway system supporting the crane(s) being procured is not being provided new. This is typical for replacement (existing) cranes.

- Elevation/View X-X:
  - **(M)** A: Crane Span. Distance between the centerlines of the crane runway rails. Enter value in feet-inches.
  - **(M)** B: Hook Lift. Distance from the operating floor to the saddle of the main hook when at the primary upper limit switch. Enter value in feet-inches or round up to the next 1 foot.
  - **(M)** C: Head Height. Distance from the top of the crane rail to the lowest obstruction in the building such as roof truss, lights, sprinklers, etc. Enter value in feet-inches.
  - **(M)** D: Rail Height. Distance from the operating floor to the top of the crane rail. Enter value in feet-inches.
  - **(M)** E: Left Side Approach. The maximum distance from the center of the saddle of the main hook to the centerline of the crane runway rail when the trolley parks against the left trolley stops. This will determine how close the crane hook can get to the building walls. Enter value in feet-inches.
  - **(M)** F: Right Side Approach. The maximum distance from the center of the saddle of the main hook to the centerline of the crane runway rail when the trolley parks against the right trolley stops. This will determine how close the crane hook can get to the building walls. Enter value in feet-inches.
  - **(CM)** G. Hook-to-Pendant Spacing. The distance between the center of the main hook saddle and the pendant conductor cable. This dimensions is required when the pendant is suspended from the trolley and when the crane operator requires extra distance from the load on the hook. Enter value in feet-inches.
  - H. Pendant Height. The height reference for the pendant push button station. If no value is provided, the standard value of 4ft. will be entered and used. Enter value in feet-inches.
  - **(M)** I. Side Clearance. This value is pre-filled and governed by Navy Crane Center as the minimum side clearance from crane structure to building stationary objects.
  - **(M)** J. Top Clearance. This value is pre-filled and governed by Navy Crane Center as the minimum top clearance from crane structure to building stationary objects.
  - **(CM)** K. Side Obstruction. The measurement from the centerline of crane runway rail to the first obstruction on the side of the building. The measurement is used to determine the overall length of the crane while maintaining the minimum requirement of **Dimension I**. This is mandatory for existing structures. Provide only the smallest value for K available. Enter value in feet-inches.
  - **(CM)** L. Floor Obstruction Dimension #1. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
  - **(CM)** M. Floor Obstruction Dimension #2. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
  - **(CM)** N. Floor Obstruction Dimension #3. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.

- **(CM)** O. Pit Depth. If a pit exists within the crane service area and crane operation requires the hook to be lowered in to a pit then a value for **Dimension P** is required. Enter value in feet-inches.
- **(CM)** P. Wheel Spacing. The center-to-center distance for the end truck wheels of the existing crane, if one exists. Enter value in feet-inches.

- UNDER RUNNING CRANE:
  - **(CM)** Runway Type. Select the applicable existing runway type from among the provided options.
  - **(M)** Hangar Load. This value represents the maximum allowable loading at the runway track beam support, excluding impact. Enter value in lbs.
- Notes. Provide note(s) for clarification or additional information.

Page 9: Over Head Crane Building Worksheet for Under Running Single Girder Crane

- **(M)** Compass Direction: Indicate the compass direction associated with the plan view of the crane. When the actual location of the building falls between two directions, select the direction preferred for labeling of the crane controls.
- Plan View:
  - **(M)** Main Power Disconnect. Select the approximate location for the main power disconnect.
  - **(M)** AA. Runway Length. Enter the value for the crane runway. Enter value in feet-inches.
  - **(M)** BB_1. End Approach #1. Enter in the value for the desired hook approach from centerline of hook to the end of the runway beam. Enter value in feet-inches.
  - **(M)** BB_2. End Approach #2. Enter in the value for the desired hook approach from centerline of hook to the building wall or nearest obstruction. Enter value in feet-inches.
  - **(M)** CC_1. End Approach #3. Enter in the value for the desired hook approach from centerline of hook to the end of the runway beam. Enter value in feet-inches.
  - **(M)** CC_2. End Approach #4. Enter in the value for the desired hook approach from centerline of hook to the building wall or nearest obstruction. Enter value in feet-inches.
  - **(M)** DD_1. End Stop Location #1. Enter in the value for the distance between the face of the bridge end stop and the end of the runway beam. A positive value indicates the end stop is mounted within the bounds of the runway beam, while a negative value indicates the end stop is mounted outside the bounds of the runway beam, typically to the facility wall. Enter value in feet-inches.
  - **(M)** DD_2. End Stop Location #2. Enter in the value for the distance between the face of the bridge end stop and the end of the runway beam. A positive value indicates the end stop is mounted within the bounds of the runway beam, while a negative value indicates the end stop is mounted outside the bounds of the runway beam, typically to the facility wall. Enter value in feet-inches.
  - **(CM)** EE. Floor Level Disconnect Distance. Provide a distance when the crane main power disconnect is located a significant distance away from the end of the runway. Enter value in feet-inches.

- **(M)** FF. Floor Obstruction Dimension #4. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
- **(M)** GG. Floor Obstruction Dimension #5. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.

- CRANE ELECTRIFICATION:
  - **(M)** Voltage. Provide the crane branch circuit supply voltage.
  - **(M)** Current. Provide the crane branch circuit supply current.
  - **(M)** Frequency. Provide the crane branch circuit supply frequency.
  - **(M)** Phase. Provide the number of the phases for the crane branch circuit.
- EXISTING RUNWAY CONDUCTOR CONFIGURATION:
  - **(CM)** Orientation. Select either "Vertical" or "Horizontal" only if the existing electrification is being reused for the new crane.
    - **(CM)** HH. Distance to Tread #1. This value represents the distance from the top of the electrification to the top of the runway tread. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** II. Distance to Tread #2. This value represents the distance from the bottom of the electrification to the top of the runway tread. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** JJ. Distance to Runway. This value represents the distance from the outside edge of the electrification to the runway centerline. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** KK. Electrification Information. Provide the original equipment manufacturer name and the type of electrification. This is only required if the existing electrification is being reused.
- Notes. Provide note(s) for clarification or additional information.

Page 10: Over Head Crane Clearance Worksheet for Top Running Single Girder Crane

- **(M)** Compass Direction: Indicate the compass direction associated with the plan view of the crane. When the actual location of the building falls between two directions, select the direction preferred for labeling of the crane controls.
- Plan View:
  - **(M)** TOP RUNNING SINGLE GIRDER CRANE
    - NEW: Select this Radio button if the crane(s) being procured is not replacing an existing crane of the same or similar specification.
    - EXISTING: Select this Radio button if the crane(s) being procured is replacing an existing crane of the same or similar specification.
  - **(M)** RUNWAY SYSTEM
    - NEW: Select this Radio button if the runway system supporting the crane(s) being procured is being provided new. This is typical for new construction.

        - EXISTING: Select this Radio button if the runway system supporting the crane(s) being procured is not being provided new. This is typical for replacement (existing) cranes.

- Elevation/View X-X:
    - **(M)** A: Crane Span. Distance between the centerlines of the crane runway rails. Enter value in feet-inches.
    - **(M)** B: Hook Lift. Distance from the operating floor to the saddle of the main hook when at the primary upper limit switch. Enter value in feet-inches or round up to the next 1 foot.
    - **(M)** C: Head Height. Distance from the top of the crane rail to the lowest obstruction in the building such as roof truss, lights, sprinklers, etc. Enter value in feet-inches.
    - **(M)** D: Rail Height. Distance from the operating floor to the top of the crane rail. Enter value in feet-inches.
    - **(M)** E: Left Side Approach. The maximum distance from the center of the saddle of the main hook to the centerline of the crane runway rail when the trolley parks against the left trolley stops. This will determine how close the crane hook can get to the building walls. Enter value in feet-inches.
    - **(M)** F: Right Side Approach. The maximum distance from the center of the saddle of the main hook to the centerline of the crane runway rail when the trolley parks against the right trolley stops. This will determine how close the crane hook can get to the building walls. Enter value in feet-inches.
    - **(CM)** G. Hook-to-Pendant Spacing. The distance between the center of the main hook saddle and the pendant conductor cable. This dimensions is required when the pendant is suspended from the trolley and when the crane operator requires extra distance from the load on the hook. Enter value in feet-inches.
    - H. Pendant Height. The height reference for the pendant push button station. If no value is provided, the standard value of 4ft. will be entered and used. Enter value in feet-inches.
    - **(M)** I. Side Clearance. This value is pre-filled and governed by OSHA as the minimum side clearance from crane structure to building stationary objects.
    - **(M)** J. Top Clearance. This value is pre-filled and governed by OSHA as the minimum top clearance from crane structure to building stationary objects.
    - **(CM)** K. Side Obstruction. The measurement from the centerline of crane runway rail to the first obstruction on the side of the building. The measurement is used to determine the overall length of the crane while maintaining the minimum requirement of **Dimension I**. This is mandatory for existing structures. Provide only the smallest value for K available. Enter value in feet-inches.
    - **(CM)** L. Floor Obstruction Dimension #1. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
    - **(CM)** M. Floor Obstruction Dimension #2. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
    - **(CM)** N. Floor Obstruction Dimension #3. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.

- **(CM)** O. Pit Depth. If a pit exists within the crane service area and crane operation requires the hook to be lowered in to a pit then a value for **Dimension P** is required. Enter value in feet-inches.
- **(CM)** P_1. Existing Wheel Spacing. The center-to-center distance for the end truck wheels of the existing crane, if one exists. Enter value in feet-inches.
- P_2. Adjacent Wheel Spacing. The center-to-center distance for the end truck wheels of an adjacent crane, if one exists, for the purposes of **Dimension Q** below. Enter value in feet-inches or mark N/A.
- **(CM)** Q. Adjacent Crane Spacing. The center-to-center distance for the end truck wheels of two adjacent cranes when positioned bumper-to-bumper. This value is required when two cranes exist on the same runway. Enter value in feet-inches.

- TOP RUNNING CRANE:
  - **(CM)** Rail Size. This value represents the runway rail size in ASCE lbs/yard and is required for existing structures. For new structures where the value is not yet known, the Navy Crane Center can assist in providing an estimated value.
  - **(M)** Wheel Load. This value represents the maximum allowable loading at the runway beam support, excluding impact. Enter value in lbs.
- Notes. Provide note(s) for clarification or additional information.

Page 11: Over Head Crane Building Worksheet for Top Running Single Girder Crane

- **(M)** Compass Direction: Indicate the compass direction associated with the plan view of the crane. When the actual location of the building falls between two directions, select the direction preferred for labeling of the crane controls.
- Plan View:
  - **(M)** Main Power Disconnect. Select the approximate location for the main power disconnect.
  - **(M)** AA. Runway Length. Enter the value for the crane runway. Enter value in feet-inches.
  - **(M)** BB_1. End Approach #1. Enter in the value for the desired hook approach from centerline of hook to the end of the runway beam. Enter value in feet-inches.
  - **(M)** BB_2. End Approach #2. Enter in the value for the desired hook approach from centerline of hook to the building wall or nearest obstruction. Enter value in feet-inches.
  - **(M)** CC_1. End Approach #3. Enter in the value for the desired hook approach from centerline of hook to the end of the runway beam. Enter value in feet-inches.
  - **(M)** CC_2. End Approach #4. Enter in the value for the desired hook approach from centerline of hook to the building wall or nearest obstruction. Enter value in feet-inches.
  - **(M)** DD_1. End Stop Location #1. Enter in the value for the distance between the face of the bridge end stop and the end of the runway beam. A positive value indicates the end stop is mounted within the bounds of the runway beam, while a negative value indicates the end stop is mounted outside the bounds of the runway beam, typically to the facility wall. Enter value in feet-inches.
  - **(M)** DD_2. End Stop Location #2. Enter in the value for the distance between the face of the bridge end stop and the end of the runway beam. A positive value indicates the

end stop is mounted within the bounds of the runway beam, while a negative value indicates the end stop is mounted outside the bounds of the runway beam, typically to the facility wall. Enter value in feet-inches.

- **(CM)** EE. Floor Level Disconnect Distance. Provide a distance when the crane main power disconnect is located a significant distance away from the end of the runway. Enter value in feet-inches.
- **(M)** FF. Floor Obstruction Dimension #4. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
- **(M)** GG. Floor Obstruction Dimension #5. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.

- CRANE ELECTRIFICATION:
  - **(M)** Voltage. Provide the crane branch circuit supply voltage.
  - **(M)** Current. Provide the crane branch circuit supply current.
  - **(M)** Frequency. Provide the crane branch circuit supply frequency.
  - **(M)** Phase. Provide the number of the phases for the crane branch circuit.
- EXISTING RUNWAY CONDUCTOR CONFIGURATION:
  - **(CM)** Orientation. Select either "Vertical" or "Horizontal" only if the existing electrification is being reused for the new crane.
    - **(CM)** HH. Distance to Tread #1. This value represents the distance from the top of the electrification to the top of the runway tread. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** II. Distance to Tread #2. This value represents the distance from the bottom of the electrification to the top of the runway tread. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** JJ. Distance to Runway. This value represents the distance from the outside edge of the electrification to the runway centerline. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** KK. Electrification Information. Provide the original equipment manufacturer name and the type of electrification. This is only required if the existing electrification is being reused.
- Notes. Provide note(s) for clarification or additional information.

Page 12: Over Head Crane Clearance Worksheet for Top Running Double Girder Crane

- **(M)** Compass Direction: Indicate the compass direction associated with the plan view of the crane. When the actual location of the building falls between two directions, select the direction preferred for labeling of the crane controls.
- Plan View:
  - **(M)** CAB/NO CAB: Indicate the general location for the crane operator's cabin, or mark **NO CAB** is an operator's cabin is not required.

- **(M)** WALKWAY/NO WALKWAY: If walkways are desired, select one or both of the boxes provided. If no walkways are desired, leave blank.
- **(M)** CROSSOVER/NO CROSSOVER: If crossovers are desired, select one or both of the boxes provided. If no crossovers are desired, leave blank.

- Elevation/View X-X:
  - **(M)** A: Crane Span. Distance between the centerlines of the crane runway rails. Enter value in feet-inches.
  - **(M)** B: Hook Lift. Distance from the operating floor to the saddle of the main hook when at the primary upper limit switch. Enter value in feet-inches or round up to the next 1 foot.
  - **(M)** C: Head Height. Distance from the top of the crane rail to the lowest obstruction in the building such as roof truss, lights, sprinklers, etc. Enter value in feet-inches.
  - **(M)** D: Rail Height. Distance from the operating floor to the top of the crane rail. Enter value in feet-inches.
  - **(M)** E: Left Side Approach. The maximum distance from the center of the saddle of the main hook to the centerline of the crane runway rail when the trolley parks against the left trolley stops. This will determine how close the crane hook can get to the building walls. Enter value in feet-inches.
  - **(M)** F: Right Side Approach. The maximum distance from the center of the saddle of the main hook to the centerline of the crane runway rail when the trolley parks against the right trolley stops. This will determine how close the crane hook can get to the building walls. Enter value in feet-inches.
  - **(CM)** G. Hook-to-Hook Spacing. The distance between the center of the main hook saddle and the center of the auxiliary hook saddle. This dimensions is required when the distance between the two hooks is critical, such as for two-hook lifts. Enter value in feet-inches.
  - H. Pendant Height. The height reference for the pendant push button station. If no value is provided, the standard value of 4ft. will be entered and used. Enter value in feet-inches.
  - **(M)** I. Side Clearance. This value is pre-filled and governed by OSHA as the minimum side clearance from crane structure to building stationary objects.
  - **(M)** J. Top Clearance. This value is pre-filled and governed by OSHA as the minimum top clearance from crane structure to building stationary objects.
  - **(CM)** K. Side Obstruction. The measurement from the centerline of crane runway rail to the first obstruction on the side of the building. The measurement is used to determine the overall length of the crane while maintaining the minimum requirement of **Dimension I**. This is mandatory for existing structures. Provide only the smallest value for K available. Enter value in feet-inches.
  - **(CM)** L. Rail Size. This value represents the runway rail size in ASCE lbs/yard and is required for existing structures. For new structures where the value is not yet known, the Navy Crane Center can assist in providing an estimated value.
  - **(CM)** M. Floor Obstruction Dimension #1. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.

- **(CM)** N. Floor Obstruction Dimension #2. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
- **(CM)** O. Floor Obstruction Dimension #3. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
- **(CM)** P. Pit Depth. If a pit exists within the crane service area and crane operation requires the hook to be lowered in to a pit then a value for **Dimension P** is required. Enter value in feet-inches.
- **(CM)** Q. Four Wheel Crane Wheel Spacing. The center-to-center distance for the end truck wheels of the existing crane, if one exists and it has four wheels. Enter value in feet-inches.
- **(CM)** R. Four Wheel Crane Wheel Load. This value represents the maximum allowable loading at the runway beam support, excluding impact, for a four wheel crane. Enter value in lbs.
- **(CM)** S. Adjacent Crane Spacing. The center-to-center distance for the end truck wheels of two adjacent cranes when positioned bumper-to-bumper. This value is required when two cranes exist on the same runway. Enter value in feet-inches.
- **(CM)** T. Eight Wheel Crane End Truck Spacing. The center-to-center distance for the interior wheels of the two separate end trucks of the existing crane, if one exists and it has eight wheels. Enter value in feet-inches.
- **(CM)** U. Eight Wheel Crane Wheel Spacing. The center-to-center distance for the end trucks wheels of the existing crane, if one exists and it has eight wheels. Enter value in feet-inches.
- **(CM)** V. Eight Wheel Crane Wheel Load. This value represents the maximum allowable loading at the runway beam support, excluding impact, for an eight wheel crane. Enter value in lbs.

- Source for Data. Provide the source of the wheel load data for **Dimensions R and V**.
- Notes. Provide note(s) for clarification or additional information.

Page 13: Over Head Crane Building Worksheet for Top Running Double Girder Crane

- **(M)** Compass Direction: Indicate the compass direction associated with the plan view of the crane. When the actual location of the building falls between two directions, select the direction preferred for labeling of the crane controls.
- **(CM)** Crane Access: Indicate the side of the building which has a crane access ladder, if one exists. Otherwise, mark N/A.
- Plan View:
  - **(M)** Main Power Disconnect. Select the approximate location for the main power disconnect.
  - **(M)** AA. Runway Length. Enter the value for the crane runway. Enter value in feet-inches.
  - **(M)** BB_1. End Approach #1. Enter in the value for the desired hook approach from centerline of hook to the end of the runway beam. Enter value in feet-inches.
  - **(M)** BB_2. End Approach #2. Enter in the value for the desired hook approach from centerline of hook to the building wall or nearest obstruction. Enter value in feet-inches.

- **(M)** CC_1. End Approach #3. Enter in the value for the desired hook approach from centerline of hook to the end of the runway beam. Enter value in feet-inches.
- **(M)** CC_2. End Approach #4. Enter in the value for the desired hook approach from centerline of hook to the building wall or nearest obstruction. Enter value in feet-inches.
- **(M)** DD_1. End Stop Location #1. Enter in the value for the distance between the face of the bridge end stop and the end of the runway beam. A positive value indicates the end stop is mounted within the bounds of the runway beam, while a negative value indicates the end stop is mounted outside the bounds of the runway beam, typically to the facility wall. Enter value in feet-inches.
- **(M)** DD_2. End Stop Location #2. Enter in the value for the distance between the face of the bridge end stop and the end of the runway beam. A positive value indicates the end stop is mounted within the bounds of the runway beam, while a negative value indicates the end stop is mounted outside the bounds of the runway beam, typically to the facility wall. Enter value in feet-inches.
- **(CM)** EE. Floor Level Disconnect Distance. Provide a distance when the crane main power disconnect is located a significant distance away from the end of the runway. Enter value in feet-inches.
- **(M)** FF. Floor Obstruction Dimension #4. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.
- **(M)** GG. Floor Obstruction Dimension #5. This value is required when a permanent obstruction exists within the crane operating envelope. Enter value in feet-inches.

- CRANE ELECTRIFICATION:
  - **(M)** Voltage. Provide the crane branch circuit supply voltage.
  - **(M)** Current. Provide the crane branch circuit supply current.
  - **(M)** Frequency. Provide the crane branch circuit supply frequency.
  - **(M)** Phase. Provide the number of the phases for the crane branch circuit.
- EXISTING RUNWAY CONDUCTOR CONFIGURATION:
  - **(CM)** Orientation. Select either “Vertical” or “Horizontal” only if the existing electrification is being reused for the new crane.
    - **(CM)** HH. Distance to Tread #1. This value represents the distance from the top of the electrification to the top of the runway tread. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** II. Distance to Tread #2. This value represents the distance from the bottom of the electrification to the top of the runway tread. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** JJ. Distance to Runway. This value represents the distance from the outside edge of the electrification to the runway centerline. This value is only applicable if the existing electrification is being reused. Enter value in feet-inches.
    - **(CM)** KK. Electrification Information. Provide the original equipment manufacturer name and the type of electrification. This is only required if the existing electrification is being reused.

- Notes. Provide note(s) for clarification or additional information.