

**Attachment Two
Requirements Matrix
Request for Proposal Number 6152 Z1**

Firm Name: _____

Bidders are instructed to complete a Requirements Matrix for a License Plate Blanking Line. Bidders are required to describe in detail how their proposed solution meets the conformance specification outlined within each Business Requirement. The State requires the bidder to describe "how" the components they are bidding will achieve success on this contract. Bidders should not infer that the absence of detailed requirements means that the State does not consider a specific area or activity important or unnecessary. The State requires the bidder to propose solutions and services that meet the State's requirements.

The requirements matrix is used to document and track the requirements from the proposal through testing to verify that the requirement has been completely fulfilled. The Contractor will be responsible for maintaining the contract set of Baseline Requirements.

The matrix should indicate how the bidder intends to comply with the requirement and the effort required to achieve that compliance. It is not sufficient for the bidder to simply state that it intends to meet the requirements of the RFP. The State will consider any such response to the requirements in this RFP to be non-responsive and the bid may be rejected. The narrative should provide the State with sufficient information to differentiate the bidder's solution from other bidders' solutions.

I. ITEM 1 - ONE (1) - HORIZONTAL PALLET DECOILER

- A. The de-coiler shall be designed to stage and process aluminum coils at a minimum of 5" wide to 12.125" wide and from 0.018" to 0.032" thick, stored on pallets.
- B. Motor driven table capacity shall be nominally 60" diameter x 6000 pound minimum load with a maximum stack height of 37".
- C. The machine should be suitable for front or side loading.
- D. The machine should incorporate numerous features (dancer arm, material sensors, heavy duty control arm roller, automatic acceleration and deceleration controls, independent controls for payoff speed and dancer sensitivity, core expander, etc.) to eliminate jerking and edge damage.
- E. To minimize damage to raw materials, polyurethane (or equivalent) coatings should be incorporated to reduce material damage as it is processed.
- F. Unit should be configurable for clockwise or counterclockwise rotation and Right-to-Left or Left-to-Right operation.

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| Proposal Instructions: Item #1 Explain how the equipment being bid meets each of these specifications. Bidder should submit detailed specifications, drawings and/or literature that shows how the equipment meets these specifications. Describe any additional or alternative specifications in detail. Describe the utility requirements of the equipment. |
| Bidder Response: |

II. ITEM 2- ONE (1) STRAIGHTENER, POWER DRIVEN, 12"

- A. The straightener should be a power-driven, cabinet-mounted unit designed for straightening coil stock.
- B. The machine shall have the capability to straighten coil stock of up to approximately 12" wide with a thickness capacity of approximately .018"-.125".
- C. To ensure best quality, a minimum of seven individually adjustable hardened and ground straightening rolls with a minimum diameter of 2" should be incorporated.
- D. At the exit of the straightener, a free stock storage loop should control the modulating drive motor to regulate feed between straightener and applicator using position sensing components to detect loop position.
- E. Controls for forward and reverse travel as well as end of aluminum detector to stop the unit in the event material supply is empty shall be included.
- F. Machine guarding shall protect all pinch points.

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| Proposal Instructions: Item #2 Explain how the equipment being bid meets each of these specifications. Bidder should submit detailed specifications, drawings and/or literature that shows how the equipment meets these specifications. Describe any alternative specifications in detail. Describe the utility requirements of the equipment.. |
| Bidder Response: |

III. ITEM 3 - ONE (1) GRAPHIC LICENSE PLATE APPLICATOR

- A. This unit should be preassembled on a structural frame and designed to be integrated into a new or existing license plate blanking system for the purpose of applying plain or graphic reflective sheeting to aluminum substrate for passenger or motorcycle plates.
- B. The applicator shall be designed to permit the application of reflective sheeting in rolls at least 200 yards long, with a minimum width of 6.75" to a maximum width of 13" and wound on either 3" or 6" I.D. cores as required to be consistent with the reflective sheeting materials used.
- C. The laminating machine shall be equipped with either a 3" or 6" diameter expansion mandrel to allow quick and safe set-up.
- D. This machine should be capable of stretching the preprinted reflective sheeting from 1 - 2%" at a fixed repeat spacing using a variety of tension modes and other control features as required to ensure the best possible quality of the finished license plates:
 - 1. Operation modes
 - a. The line is desired to be run in either an auto run mode or manual mode
 - i. Automatic Mode
In this mode, tension is automatically controlled based on measured distance between registration marks using an optical sensor and PLC software.
 - ii. Manual-Stretch Mode
In this operating mode, tension is constantly adjustable as a percentage of full tension which allows the tension to be constant independent from the winding diameter of the remainder of the coil.
 - b. The applicator / graphic laminator must be capable of a variety of program capabilities and shall be capable of automatic guiding edge control with the ability to adjust lamination to the middle, or to the left or right edge of the aluminum strip if required. All necessary parameter adjustments shall be accomplished through a central operator control panel.
 - 2. Basic Parameters

- a. These items are listed as basic requirements necessary to facilitate installation with existing infrastructure and are listed to simplify implementation.
- b. Maximum laminator speed approximately 0.7 meters/second
- c. Maximum laminating width 13"
- d. Compressed air supply 90 to 120 PSI
- e. In feed loop control included
- f. Out feed loop control included
- g. IEC 61131-3 PLC controlled
- h. Warning indicators

3. Storage Loop

Between the laminator and roll feeding device, a storage loop control system should control the amount of material in the buffer loop to avoid stopping the laminating process during the cut cycle in the blanking press. The height of the loop is continuously measured by a contactless sensor to automatically synchronize the speed for a smooth material output from the laminator. A heavy duty servo controlled drive system automatically regulates the output speed to match demand, providing smooth delivery of material to the roll feed system.

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| <p>Proposal Instructions: Item #3 Explain how the equipment being bid meets each of these specifications. Bidder should submit detailed specifications, drawings and/or literature that shows how the equipment meets these specifications. Describe any alternative specifications in detail. Describe the utility requirements of the equipment.</p> |
| <p>Bidder Response:</p> |

IV. ITEM 4 - ONE (1) GRAPHIC REGISTRY SERVO FEED SYSTEM

- A. The Servo Driven Electronic Roll Feeding device is recommended to ensure proper positioning of the laminated strip into the blanking press.
 - 1. This shall be a field-proven, microprocessor controlled system capable of operating at speeds up to approximately 1 meter per second and must coordinate with the blanking press.
 - 2. Footage and plate counter options should also be included.

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| <p>Proposal Instructions: Item #4 Explain how the equipment being bid meets each of these specifications. Bidder should submit detailed specifications, drawings and/or literature that shows how the equipment meets these specifications. Describe the utility requirements of the equipment. Describe any alternative specifications in detail.</p> |
| <p>Bidder Response:</p> |

V. ITEM 5 - ONE (1) BLANKING PRESS

- A. The Blanking Press shall be robust, with a high quality rigid frame designed to maintain high accuracy and provide increased tooling life by minimizing deflection.

- B. All moving parts shall be precision machined and designed for smooth power transmission, quiet operation and long life.
- C. Press shall have sufficient blanking force to complete a finished license plate blank each stroke, including punching all mounting holes, cutting radius corners, cutoff of blank and forming of the plate rim.
- D. It is desired that the plates be stamped to size with a hydraulically actuated press. Our recommendation for the manufacturing line is an electric motor driven hydraulic press with a pump to produce a maximum working pressure of 45 ton at approximately 70 cycles per minute powering a 1" diameter, double acting hydraulic cylinder.
- E. Press should be able to be operated in a variety of modes including slow manual operation, manual single stroke, and automatic continuous.
- F. Minimum 40 gallon reservoir should be included with the hydraulic pump. A forced air cooling system should ensure proper operating temperatures.
- G. Operating controls shall be designed to provide safe and simple operation. All necessary features to operate the press shall be integrated into the central control panel. The central control panel will provide all necessary operating controls as well as a system to display error codes / messages and other diagnostic information.
- H. A reliable scrap ejection system shall eject scrap materials with each stroke of the press. Waste removal shall not require tools or disassembly of the blanking line.
- I. A belt conveyor with integral plate counter shall remove finished blanks from the press area for subsequent manual or automated handling and processing

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| <p>Proposal Instructions: Item #5</p> <p>Explain how the equipment being bid meets each of these specifications. Bidder should submit detailed specifications, drawings and/or literature that shows how the equipment meets these specifications. Describe the utility requirements of the equipment. Describe any alternative specifications in detail.</p> |
| <p>Bidder Response:</p> |

VI. ITEM 6 -THREE (3) TWO STAGE COMPOUND BLANKING I RIMMING DIE

- A. The compound blanking and rimming die will be customized to the requirements of the application.
 - 1. It shall produce one size of depressed flange license plate blanks with radius corners, four mounting holes and depressed flange border.
 - 2. Hole punching and forming of the depressed flange border will occur in the first stage.
 - 3. The second stage will perform the cutting processes and deliver the plate to the discharge conveyor for takeaway from the press.
- B. The cutting / embossing tools will be made of high quality tool steel with anti-adhesive coatings and hardened working elements to cut aluminum either with or without conversion coatings with a tolerance of $<\pm 0.010$.
- C. Two compound blanking dies for passenger size plates and one for Motorcycle size plates will be provided.
 - 1. All final drawings and BOM will be included in the documentation package after award of contract.
 - 2. The compound blanking and rimming die shall be designed for quick removal for easy switching between plate sizes as required.

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| <p>Proposal Instructions: Item #6 Explain how the equipment being bid meets each of these specifications. Bidder should submit detailed specifications, drawings and/or literature that shows how the equipment meets these specifications. Describe the utility requirements of the equipment. Describe any alternative specifications in detail..</p> |
| <p>Bidder Response:</p> |

VII. ITEM 7 - ONE (1) MAIN CONTROL SYSTEM

- A. The main control cabinet / panel shall contain all electronic elements required to operate and control this license plate blanking equipment and to diagnose any faults.
- B. This system shall be equipped with high-quality electrical and electronic components including IEC61131-3 compatible Programmable Logic Controls (PLC) and features to enable remote diagnostics via internet connections.
- C. The operator panel shall be equipped with a color touch screen, which displays all messages and operational parameters of the line.
- D. Intuitive menu handling and access to the implemented library of adjustments and configuration of the line (for a certain license plate dimension) enable an efficient adjustment of the line in order to produce different types of license plates.
- E. In addition to features identified above, the control system shall also incorporate different password levels for Administrators and Operators as well as output of general information such as quantities produced, end of roll, end of aluminum coil, etc.
- F. Electrical protection shall be provided for electrical components, drives and PLC's per UL 508 or similar recognized standard.

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| <p>Proposal Instructions: Item #7 . Explain how the equipment being bid meets each of these specifications. Bidder should submit detailed specifications, drawings and/or literature that shows how the equipment meets these specifications. Describe the utility requirements of the equipment. Describe any alternative specifications in detail..</p> |
| <p>Bidder Response:</p> |

VIII. Installation;

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| <p>Please provide detailed information on your installation process, including any potential need for building modifications and utilities needed. Describe your understanding of the environment and processes necessary to design and install a blanking line in a secured facility.</p> |
| <p>Bidder Response:</p> |

IX. Operation:

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| Please describe equipment operation process, including change over time, materials waste, start up and shut down process/time, and operator training needs. |
| Bidder Response: |

X. Service and Support;

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| Please describe the designed run rate of the license plate blanking line being bid. Describe the service and support that will be provided as a part of this response. CSI Emergency Response Levels: Critical – Line down with order backlog Requires 2 hour maximum call back response Next Day AM parts delivery 48 hour maximum lead time to have on-site support if needed to resolve issue Urgent – Line down No / Minimal order backlog Requires 2 hour maximum call back response 7 am to 5 pm Monday to Friday non Holiday Next Day parts delivery 48 hour Monday to Friday non Holiday on-site support if needed to resolve issue Issue – Line malfunction or non-optimal operation 8 hour maximum call back response 7 am to 5 pm Monday to Friday non Holiday 2 day parts delivery 1 week Monday to Friday non Holiday on-site support if needed to resolve issue Information request – Service, maintenance, how to or operational questions 8 hour maximum call back response 7 am to 5 pm Monday to Friday non Holiday. |
| Bidder Response: |

XI. Describe all extended warranties available for each piece of equipment below excluding costs.

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| Bidder Response: |
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