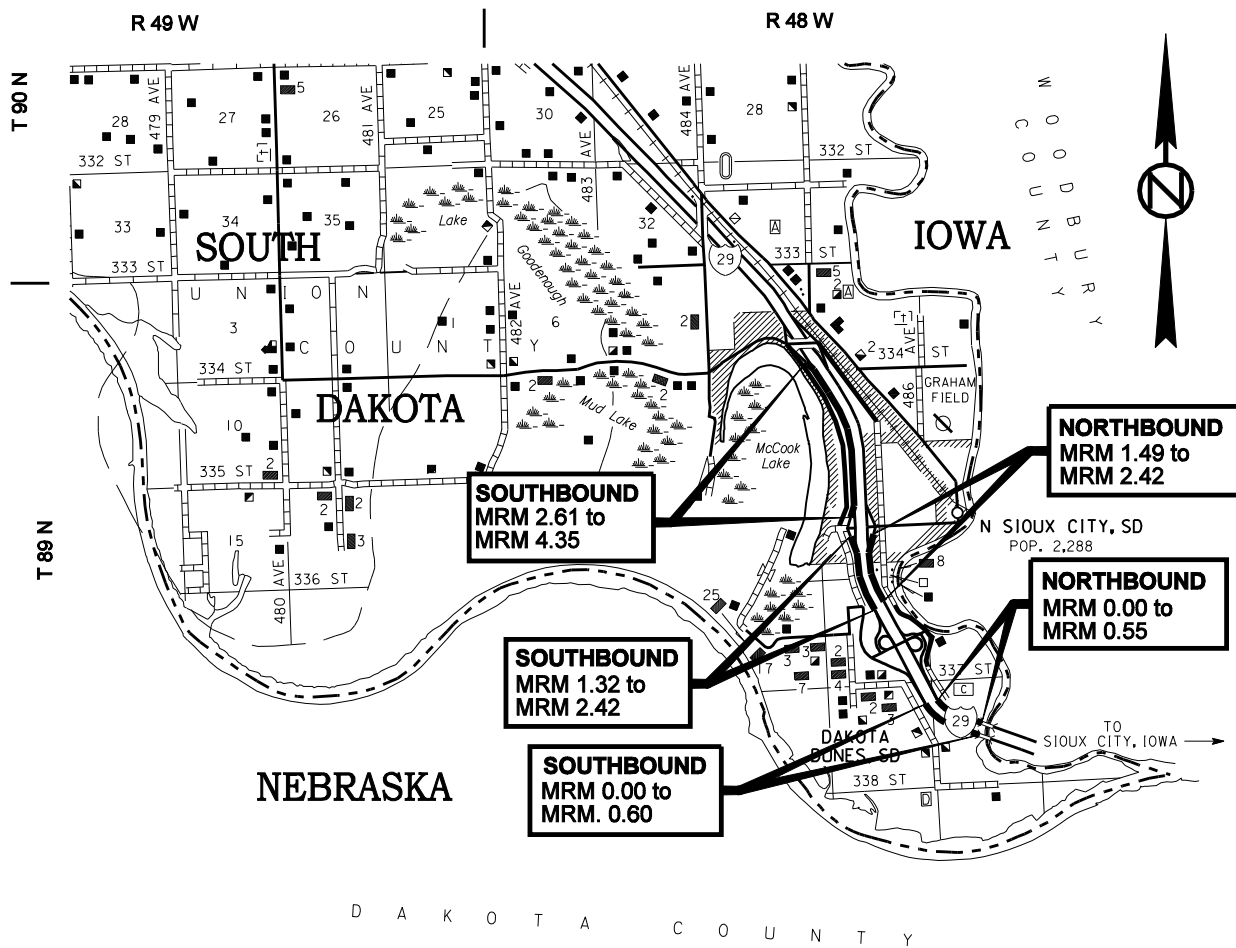


**IM 0291(102)0**  
**UNION COUNTY**  
**CHAIN LINK FENCE**  
**NB LENGTH: 1.48 MILES**  
**SB LENGTH: 3.32 MILES**  
**PCN 000T**



<b>DESIGN DESIGNATION</b>	
ADT(2008)	11930
ADT(2028)	21750
DHV	2960
D	100%
T DHV	7.2%
T ADT	15.9%
V	65 MPH

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**INDEX OF SHEETS**

Sheet 1	Layout Map
Sheet 2	Index of Sheets
Sheet 3	Estimate of Quantities
Sheet 4	Table of Fence Quantities
Sheets 5 – 7	Plan Notes
Sheets 8 & 9	Details for Chain Link Fence
Sheet 10	Traffic Control

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ESTIMATE OF QUANTITIES

<b>Bid Item Number</b>	<b>Item</b>	<b>Quantity</b>	<b>Unit</b>
009E0010	Mobilization	Lump Sum	LS
100E0100	Clearing	Lump Sum	LS
110E0600	Remove Fence	25,167	Ft
621E0160	6' Chain Link Fence with Tension Wired Top	25,167	Ft
634E0120	Traffic Control, Miscellaneous	Lump Sum	LS

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**TABLE OF FENCE QUANTITIES**

<b>LANE</b>	<b>INTERSTATE 29 MRM TO MRM (LOCATION)</b>	<b>REMOVE FENCE Ft</b>	<b>6 FT CHAIN LINK FENCE W/ TENSION TOP Ft</b>	<b>NOTES</b>
NBL	0.00 to 0.55	2962	2962	Tie into Bridge Abutment and Existing Fence
NBL	1.49 to 2.00	2699	2699	
NBL	2.00 to 2.42	2213	2213	
SBL	0.00 to Exit 1 On Ramp	3147	3147	Tie into Bridge Abutment and Existing Fence
SBL	1.32 to 2.00	3574	3574	Tie into Existing Chain Link Fence
SBL	2.00 to 2.42	2222	2222	
SBL	Exit 2 Off Ramp to 3.00	2043	2043	
SBL	3.00 to 4.00	5081	5081	
SBL	4.00 to Exit 4 On Ramp	1226	1226	
<b>Totals</b>		<b>25167</b>	<b>25167</b>	

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**SPECIFICATIONS**

Standard Specifications for Roads and Bridges, 2004 Edition and Required Provisions, Supplemental Specifications and/or Special Provisions as included in the Proposal.

**COMPLETION DATE**

All work shall be completed on or before July 2, 2010.

**UTILITIES**

The Contractor shall contact the involved utility companies through South Dakota One Call (1-800-781-7474) prior to starting work. It shall be the responsibility of the Contractor to coordinate work with the utility owners to avoid damage to existing facilities.

Utilities are not planned to be affected on this project. If utilities are identified near the improvement area through the SD One Call Process as required by South Dakota Codified Law 49-7A and Administrative Rule Article 20:25, the Contractor shall contact the Project Engineer to determine modifications that will be necessary to avoid utility impacts.

**COORDINATION BETWEEN CONTRACTORS**

A separate contract for Project No. IM 0291(115)0 - PCN 01PJ has been awarded to another Contractor for add turn lane and signal on Exit 1 from MRM 0.550 to MRM 0.760.

The Contractor shall schedule his work so as not to interfere with or hinder the progress of the work performed by other Contractors on the concrete pavement resurfacing project.

**HISTORICAL PRESERVATION OFFICE CLEARANCES**

To obtain State Historic Preservation Office (SHPO) clearance, a cultural resources survey may need to be conducted by a qualified archaeologist. The Contractor shall arrange and pay for this survey. In lieu of a cultural resources survey, the Contractor could request a literature search on the site and provide evidence that the site has been previously disturbed by farming, mining, or construction activities with a landowner statement that no artifacts have been found on the site. Jim Donohue, State Archaeological Research Center at 605-394-1937 shall be contacted for a literature search.

If borrow material is furnished from within the current geographical reservation boundaries or historic boundaries of the Lake Traverse, Yankton, or Flandreau-Santee reservations, the Contractor shall obtain THPO (Tribal Historical Preservation Office) clearance from the Tribal Cultural Resources Officer. This requirement is in addition to the SHPO clearance. If no Tribal contact exists, the required SHPO clearance shall suffice, with documentation of Tribal contact efforts provided to SHPO.

To facilitate SHPO and THPO responses, the Contractor should submit a cultural resources survey report or the results of the literature search along with a legal description of the site, a topographical map with the site clearly marked, and evidence of prior site disturbance to Terrence G. Keller, DOT Environmental Supervisor, 700 East Broadway Avenue, Pierre, SD 57501-2586 (605-773-3721). Allow 30 days from the date this information is submitted to the Environmental Engineer for SHPO approval. The Contractor is responsible for obtaining all required permits and clearances for the borrow and/or waste disposal site(s) prior to commencing construction activities at the borrow and/or waste disposal site(s). The Contractor shall provide the required permits and clearances to the Engineer at the preconstruction meeting.

**WASTE DISPOSAL SITE**

The Contractor will be required to furnish a site(s) for the disposal of construction/demolition debris generated by this project.

Construction/demolition debris may not be disposed within the State ROW.

The waste disposal site(s) shall be managed and reclaimed in accordance with the following from the General Permit for Highway, Road, and Railway Construction/Demolition Debris Disposal Under the South Dakota Waste Management Program issued by the Department of Environment and Natural Resources.

The waste disposal site(s) shall not be located in a wetland, within 200 feet of surface water, or in an area that adversely affects wildlife, recreation, aesthetic value of an area, or any threatened or endangered species, as approved by the Engineer.

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**WASTE DISPOSAL (CONTINUED)**

If the waste disposal site(s) is located such that it is within view of any ROW, the following additional requirements shall apply:

1. Construction/demolition debris consisting of concrete, asphalt concrete or other similar materials shall be buried in a trench completely separate from wood debris. The final cover over the construction/demolition debris shall consist of a minimum of 1 foot of soil capable of supporting vegetation. Waste disposal sites provided outside of the State ROW shall be seeded in accordance with Natural Resources Conservation Service recommendations. Seeding recommendations may be obtained through the appropriate County NRCS Office. The Contractor shall control the access to waste disposal sites not within the State ROW through the use of fences, gates, and placement of a sign or signs at the entrance to the site stating No Dumping Allowed.
2. Concrete and asphalt concrete debris may be stockpiled within view of the ROW for a period of time not to exceed the duration of the project. Prior to project completion, the waste shall be removed from view of the ROW or buried and the waste disposal site reclaimed as noted above.

The above requirements will not apply to waste disposal sites that are covered by an individual solid waste permit as specified in SDCL 34A-6-58, SDCL 34A-6-1.13, and ARSD 74:27:10:06.

Failure to comply with the requirements stated above may result in civil penalties in accordance with South Dakota Solid Waste Law, SDCL 34A-6-1.31.

Cost for furnishing waste disposal site(s), disposing of waste, maintaining control of access (fence, gates and signs) and reclamation of the waste disposal site(s) shall be incidental to the contract unit prices for the various items.

**RESTORATION OF INSLOPES AND DITCHES**

Any slope area or ditch that is rutted or otherwise unduly disturbed during fencing operations shall be restored and seeded by the Contractor, at no expense to the State. Cost for this work shall be incidental to the contract unit prices for the various items.

**REMOVE (WOVEN/BARB) FENCE**

The Contractor shall remove the existing right-of-way fence that is to be replaced as designated in the plans and/or as ordered by the Engineer.

Limited Access Security - All fence removed during any one working day is to be replaced during the same day if livestock are being restrained.

**CLEARING**

Prior to installing right-of-way fence, the fence alignment shall be cleared of all trees, tree branches, tree stumps, brush, vegetation, debris, bladed and leveled to the satisfaction of the Engineer. Sod cleared from the fence alignment may be disposed on the interstate ditch back slope. Lumps or clods over 3 inches in diameter shall be broken up.

All existing Benchmarks and property corners adjacent to the ROW Fence will be identified by the state prior to work starting. Any benchmark and/or property corners disturbed during the fence replacement operation shall be restored at the Contractors expense.

Clearing will be paid for at the contract lump sum price. Payment shall be full compensation for labor and equipment necessary to clear the entire line for fence and smooth ground irregularities.

**FENCE ALIGNMENT**

Where fence is being removed and replaced, fence shall be installed on the same alignment as existing. It shall be the Contractor's responsibility to preserve the fence alignment.

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**CHAINLINK FENCE**

The new chain link fence shall be constructed with a minimum height of 72 inches. The Contractor shall furnish all new chain link fencing materials and steel posts in the fence construction.

**GENERAL MAINTENANCE OF TRAFFIC**

Removing, relocating, covering, salvaging and resetting of permanent traffic control devices, including delineation, shall be the responsibility of the Contractor. Cost for this work shall be incidental to the contract unit prices for the various items unless otherwise specified in the plans. Any delineators and signs damaged or lost shall be replaced by the Contractor at no cost to the State.

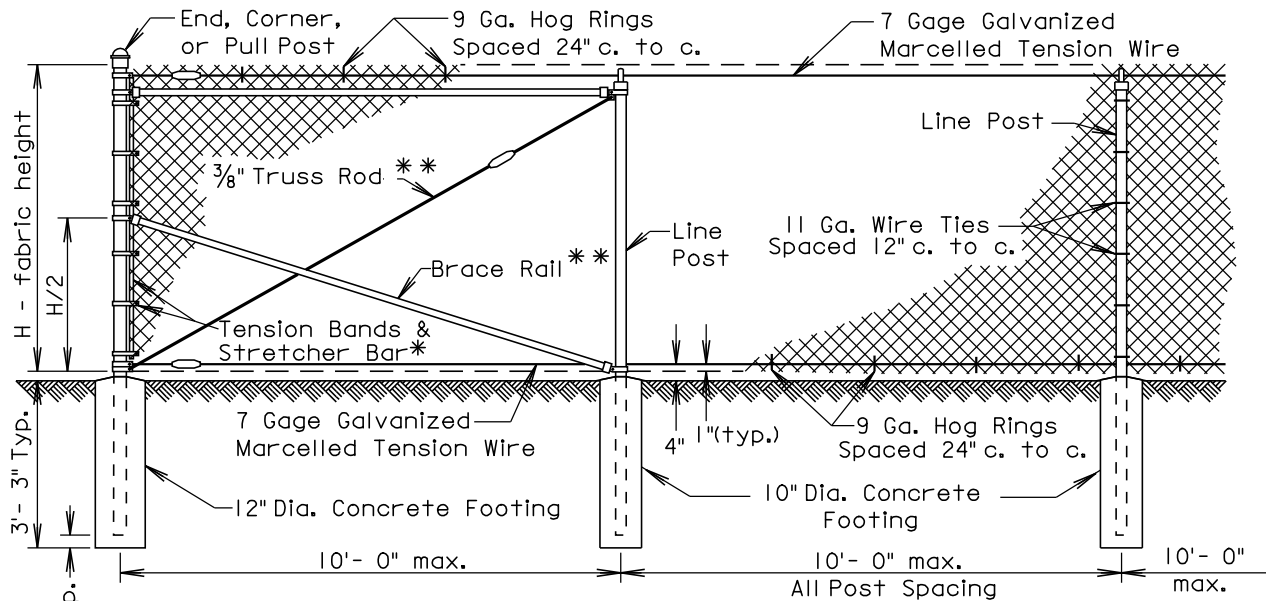
Storage of vehicles and equipment shall be outside the clear zone and as near as possible to the right-of-way line. Contractor's employees should mobilize at a location off the right-of-way and arrive at the work sites in a minimum number of vehicles necessary to perform the work.

Indiscriminate driving and parking of vehicles within the right-of-way will not be permitted. Any damage to the vegetation, surfacing, embankment, delineators and existing signs resulting from such indiscriminate use shall be repaired and/or restored by the Contractor, at no expense to the State, and to the satisfaction of the Engineer.

The Contractor shall provide documentation that all breakaway sign supports comply with FHWA NCHRP 350 crash-worthy requirements. The Contractor shall provide installation details at the preconstruction meeting for all breakaway sign support assemblies.

Cost for traffic control, including signs, shall be included in the contract lump sum price for Traffic Control, Miscellaneous.

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UNION COUNTY**



\* Tension Bands shall be spaced 12" c. to c.  
 \*\* Are not required for 3' thru 5' fences.  
 ○ Tightening Device such as shown on Plate No. 621.03

Component	End, Corner & Pull Post		Line Post			Top & Brace Rail	
	Round Pipe Nominal	Roll Formed Steel	Round Pipe Nominal	"C" Section	H-Beam Steel	Round Pipe Nominal	Roll Formed Steel
Size	3.00" O. D.	3.5" x 3.5"	2.50" O. D.	1.875"x1.625"	2.25"x1.70"	1.625" O. D.	1.625"x1.25"
Weight (lb. / ft.)	5.79 or 4.64	5.14	3.65 or 3.12	2.34	3.43	2.27 or 1.84	1.35

**GENERAL NOTES:**

Specific details of manufacture of component parts of the complete fence construction shall be subject to the approval of the Engineer. Commercially available items produced specifically for the use intended shall be used wherever possible in the construction of the fence.

"H" (Height of Fabric) shall be as shown on the Plans. Fabric is available in the the following heights; 36", 42", 48", 60", 72", 84", 96", 108", 120", & 144". Fabric heights 60 inches and under shall be knuckled at both selvages. Fabric heights 72 inches and over shall be knuckled at one selvage and twisted at the other selvage.

Chain Link Fabric shall be 2" mesh, No. 9 gage galvanized wire securely fastened to Tension Wire, Line Post, Rails, Braces and Stretcher Bars spaced as shown hereon.

Fence may be constructed with either Round Pipe, "C" Section, "H" Beam, or roll Formed Steel components as shown in the table above. Line post may be Round Pipe, "C" Section, or "H" Beam. The Corner Post and Rails shall be either Round Pipe or Roll Formed Steel. The type of components used shall have prior approval by the Engineer before construction.

All post shall have a means to securely hold the top tension wire in position and allow for the removal and replacement of a post without damaging the top tension wire.

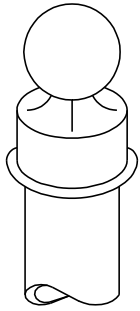
Where fence must cross small bodies of water (such as drainage areas or ponds) that could freeze during the winter, use 11 gage Hog Rings. Provide only two ties per Tension Wire and Top Rail between line posts.

March 31, 2000

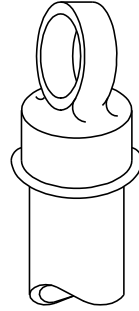
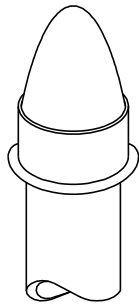
<b>SD DOT</b>	<b>CHAIN LINK FENCE WITH TENSION WIRED TOP</b>	PLATE NUMBER <b>621.02</b>
		Sheet 1 of 1

**Published Date: 2nd Qtr. 2009**

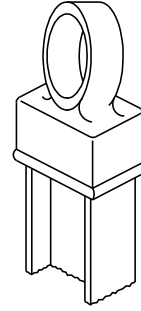




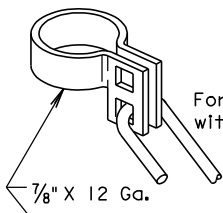
For End, Corner  
and Pull Posts



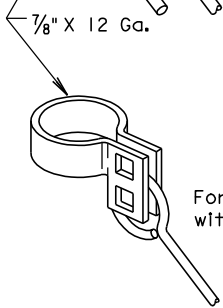
For Line Posts



Typical Post Tops  
(Shown for example only)

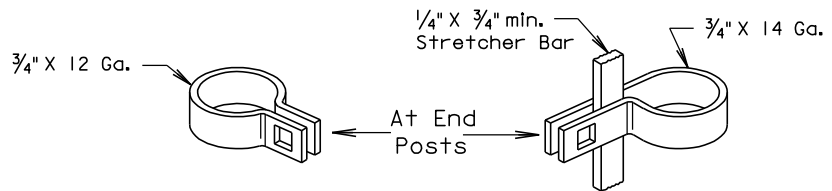


For use  
without Bolt



For use  
with Bolt

Brace & Truss Bands

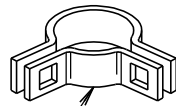


1/4" X 3/4" min.  
Stretcher Bar

3/4" X 12 Ga.

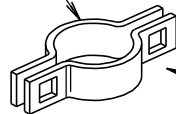
3/4" X 14 Ga.

At End  
Posts



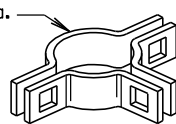
At Corner  
Posts

7/8" X 12 Ga.



At Line  
Pull Posts

7/8" X 12 Ga.



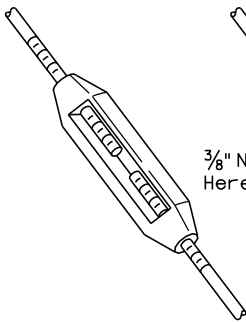
Three Way

1" X 11 Ga.

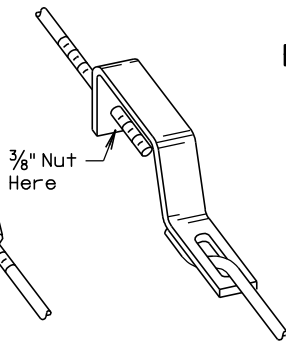
Brace Bands

Tension Bands

NOTE: Bands shall be rectangular for  
"C" Section and "H" Beam Posts.

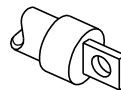


3/8" Turnbuckle

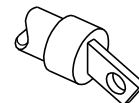


11 Ga. Tightener

Tightening Devices



Straight Tip



Offset Tip

Rail Ends

March 31, 2000

Published Date: 2nd Qtr. 2009

S  
D  
D  
O  
T

HARDWARE FOR CHAIN LINK FENCE

PLATE NUMBER  
621.03

Sheet 1 of 1

**IM 0291(102)0  
UNION COUNTY**

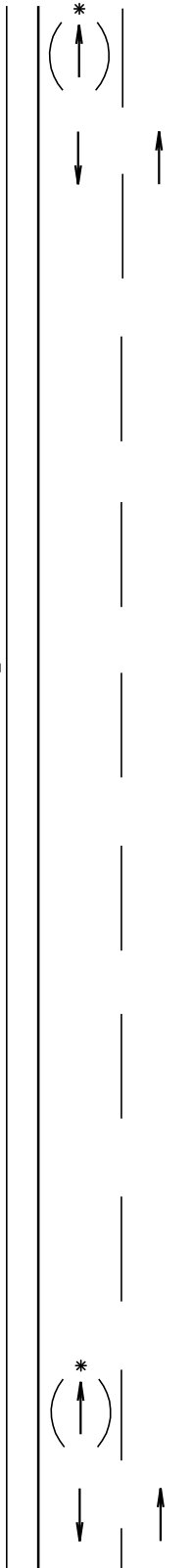
The signs illustrated are not required if the work space is behind a barrier, more than 2 feet behind the curb, or 15 feet or more from the edge of any roadway.

The signs illustrated shall be used where there are distracting situations; such as: vehicles parked on shoulder, vehicles accessing the work site via the highway, and equipment traveling on or crossing the roadway to perform work operations.

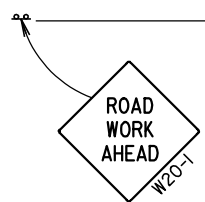
The ROAD WORK AHEAD sign may be replaced with other appropriate signs, such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.

\* If the work space is on a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

For short term, short duration, or mobile operations, all signs and channelizing devices with an activated flashing or revolving yellow light is used.



Posted Speed Prior to Work (M.P.H.)	Spacing of Advance Warning Signs (Feet) (A)
0 - 30	200
35 - 40	350
45 - 50	500
55	750
60 - 75	1000



July 1, 2005

**Published Date: 2nd Qtr. 2009**

**S  
D  
D  
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T**

**GUIDES FOR TRAFFIC CONTROL DEVICES  
WORK BEYOND THE SHOULDER**

PLATE NUMBER  
**634.01**

Sheet 1 of 1