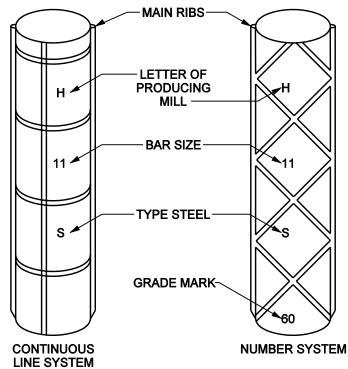
THE ASTM SPECIFICATIONS FOR BILLET-STEEL, RAIL-STEEL, AXLE-STEEL, AND LOW-ALLOY REINFORCING BARS (A 615, A 616, A 617, A 706 RESPECTIVELY) REQUIRE IDENTIFICATION MARKS TO BE ROLLED INTO THE SURFACE OF ONE SIDE OF THE BAR TO DENOTE THE PRODUCER'S MILL DESIGNATION, BAR SIZE, TYPE OF STEEL AND MINIMUM YIELD DESIGNATION.



GRADE MARKS				
INCH -	POUND	BARS		

ASTM STANDARD REINFORCING BARS				
BAR SIZE	AREA (SQ. IN.)	WEIGHT (LBS./FT.)	DIAMETER (IN.)	
#3	.11	.376	.375	
# 4	.20	.668	.500	
# 5	.31	1.043	.625	
#6	.44	1.502	.750	
#7	.60	2.044	.875	
#8	.79	2.670	1.000	
# 9	1.00	3.400	1.128	
#10	1.27	4.303	1.270	
#11	1.56	5.313	1.410	
#14	2.25	7.650	1.693	
#18	4.00	13.600	2.257	

GRADE 60 BARS SHOW THESE MARKS IN THE FOLLOWING ORDER:

1ST-PRODUCING MILL (USUALLY A LETTER)
2ND-BAR SIZE NUMBER (#3 THROUGH #18)
3RD-TYPE OF STEEL
4TH-MINIMUM YIELD DESIGNATION
MINIMUM YIELD DESIGNATION IS
USED FOR GRADE 60 BARS ONLY
AND MAY BE EITHER ONE SINGLE
LONGITUDINAL LINE (GRADE LINE)
OR THE NUMBER 60 (GRADE MARK)

TYPE OF STEEL

- S- BILLET MEETING SUPPLEMENTARY REQUIREMENT (S1) OF A 615
- N- FOR BILLET (A 615)
- R- FOR RAIL (A 616) MEETING BEND TEST REQUIREMENTS OF ASTM A 617 GRADE 60 (PER ACI 318-83)
- I- FOR RAIL (A 616)
- A- FOR AXLE (A 617)
- W- FOR LOW ALLOY (A 706)

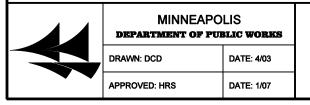
MNDOT SPEC, REF, 3301

BILLET STEEL BARS AASHTO M 31
RAIL STEEL BARS AASHTO M 42
AXLE STEEL BARS AASHTO M 53

GRADE 60 MINNEAPOLIS CURB BOX REBAR

CURRENT ASTM SPECIFICATIONS COVER BAR SIZES #14 AND #18 IN A615 AND IN A706 ONLY *DIMENSIONS ARE NOMINAL

> MINNEAPOLIS DESIGN REFERENCE MNDOT SPEC. REF. 3301 NOT TO SCALE



REBAR

STANDARD PLATE NO. SEWR-6017