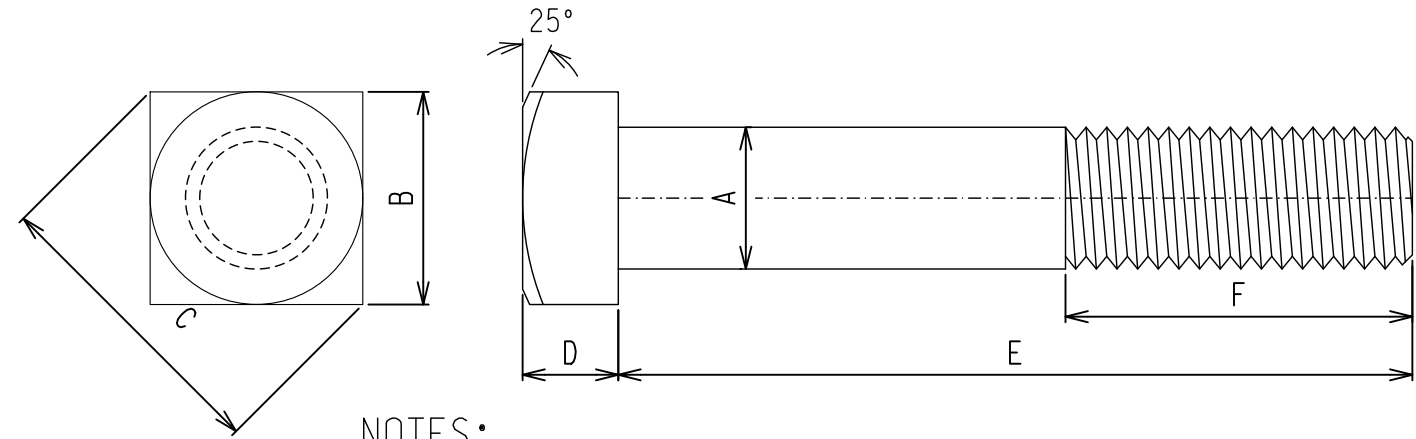


SQUARE BOLT

ITEM NO.	NOMINAL SIZE	A		B			C		D			E	F	THDS. INCH
		BODY DIAMETER		WIDTH ACROSS FLATS			WIDTH ACROSS CORNERS		HEIGHT OF HEAD UNFINISHED			LENGTH OF BOLT	LENGTH OF THREAD	
		MAX.	MIN.	NOM.	MAX.	MIN.	MAX.	MIN.	NOM.	MAX.	MIN.			
1	3/4	0.768	0.737	1 1/8	1.125	1.088	1.591	1.494	1/2	0.524	0.476	2 1/2 ± 1/8	1 3/4 ± 1/4	10
2	3/4	0.768	0.737	1 1/8	1.125	1.088	1.591	1.494	3/8	0.395	0.355	2 1/2 ± 1/8	1 3/4 ± 1/4	10
3	3/4	0.768	0.737	1 1/8	1.125	1.088	1.591	1.494	1/2	0.524	0.476	3 1/2 ± 1/8	1 3/4 ± 1/4	10
4	3/4	0.768	0.737	1 1/8	1.125	1.088	1.591	1.494	1/2	0.524	0.476	10 1/2 ± 1/8	3 ± 1/4	10
5	3/4	0.768	0.737	1 1/8	1.125	1.088	1.591	1.494	1/2	0.524	0.476	3 1/4 ± 1/8	1 3/4 ± 1/4	10
6	3/4	0.768	0.737	1 1/8	1.125	1.088	1.591	1.494	1/2	0.524	0.476	2 1/2 ± 1/8	1 3/8 ± 1/4	10
7														
8	1/2	0.895	0.862	1 5/16	1.312	1.269	1.856	1.742	5/32	0.620	0.568	3 3/4 ± 1/8	1 5/8 ± 3/32	9
9	1/2	0.895	0.862	1 5/16	1.312	1.269	1.856	1.742	5/32	0.620	0.568	4 1/2 ± 1/8	2 ± 3/32	9
10	1/2	0.895	0.862	1 5/16	1.312	1.269	1.856	1.742	5/32	0.620	0.568	4 3/4 ± 1/8	1 5/8 ± 3/32	9
11	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	6 3/4 ± 1/8	2 1/2 ± 5/16	8
12	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	2 1/2 ± 1/8	2 1/4 ± 5/16	8
13	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	3 1/2 ± 1/8	2 1/4 ± 5/16	8
14	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/8	0.395	0.355	2 1/4 ± 1/8	2 1/4 ± 5/16	8
15	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	4 1/2 ± 1/8	2 1/4 ± 5/16	8
16	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	6 ± 1/8	2 1/4 ± 5/16	8
17	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	7 1/2 ± 1/8	2 1/2 ± 5/16	8
18	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	8 1/2 ± 1/8	2 1/2 ± 5/16	8
19	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	9 1/2 ± 1/8	2 1/2 ± 5/16	8
20	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/8	0.395	0.355	3 1/2 ± 1/8	2 1/2 ± 5/16	8
21	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	3 3/4 ± 1/8	2 1/4 ± 5/16	8
22	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/8	0.395	0.355	3 3/4 ± 1/8	2 1/4 ± 5/16	8
23	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/8	0.395	0.355	4 1/2 ± 1/8	2 1/4 ± 5/16	8
24	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/32	0.684	0.628	4 1/2 ± 1/8	2 1/4 ± 5/16	8
25	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/8	0.395	0.355	4 1/2 ± 1/8	2 1/4 ± 5/16	8
26	1	1.022	0.986	1 1/2	1.500	1.450	2.121	1.991	3/8	0.395	0.355	2 1/4 ± 5/16	2 1/4 ± 5/16	8
27														
28														
29														
30														
31	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	4 1/2 ± 1/8	2 1/2 ± 11/32	7
32	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	6 ± 1/8	2 1/2 ± 11/32	7
33	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	7 1/2 ± 1/8	2 1/2 ± 11/32	7
34	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	8 1/2 ± 1/8	2 1/2 ± 11/32	7
35	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	5 1/2 ± 1/8	2 1/2 ± 11/32	7
36	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	9 1/2 ± 1/8	2 3/4 ± 11/32	7
37	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	10 ± 1/8	2 3/4 ± 11/32	7
38	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	10 1/2 ± 1/8	2 3/4 ± 11/32	7
39	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	11 ± 1/8	2 3/4 ± 11/32	7
40	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	11 1/2 ± 1/8	2 3/4 ± 11/32	7
41	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	12 ± 1/8	2 3/4 ± 11/32	7
42	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	12 1/2 ± 1/8	2 3/4 ± 11/32	7
43	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	13 ± 1/8	2 3/4 ± 11/32	7
44	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	13 1/2 ± 1/8	2 3/4 ± 11/32	7
45	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	14 ± 1/8	2 3/4 ± 11/32	7
46	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	14 1/2 ± 1/8	2 3/4 ± 11/32	7
47	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	15 ± 1/8	2 3/4 ± 11/32	7
48	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	15 1/2 ± 1/8	2 3/4 ± 11/32	7
49	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	16 ± 1/8	2 3/4 ± 11/32	7
50	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	16 1/2 ± 1/8	2 3/4 ± 11/32	7
51	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	17 ± 1/8	2 3/4 ± 11/32	7
52	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	17 1/2 ± 1/8	2 3/4 ± 11/32	7
53	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	6 1/2 ± 1/8	2 3/4 ± 11/32	7
54	1 1/8	1.149	1.110	1 11/16	1.687	1.631	2.386	2.239	3/4	0.780	0.720	5 1/2 ± 1/8	2 3/4 ± 11/32	7
55														
56														
57														
58														
59														
60	1 1/4	1.277	1.234	1 7/8	1.875	1.812	2.652	2.489	21/32	0.876	0.812	4 ± 1/8	2 3/4 ± 11/32	7

FOR ITEM NUMBERS 56 TO 129 SEE PLAN NO. GTS-1308 SHEET 2 OF 2



NOTES:

- ALL DIMENSIONS ARE IN INCHES.
- BOLTS TO CONFORM TO AREMA SPECIFICATIONS, AND IN GENERAL TO SPECIFICATION SAE J429 FOR MECHANICAL AND MATERIAL REQUIREMENTS FOR EXTERNALLY THREADED FASTENERS.
- ALL 1 3/8" BOLTS TO BE GRADE 8 AND CONFORM TO THE REQUIREMENTS OF SAE J429.

NUMBER LEGEND

GTS-1308/16
 TRACK STANDARDS-DRAWING NUMBER.
 ITEM NUMBER (SPECIFIC BOLT SIZE REQUIRED).

METRIC CONVERSION: 1 inch=25.4mm, 1 foot=304.8mm

1	18/07/27	ADDED IMPERIAL TO METRIC CONVERSION NOTE
No.	Date	Revision
		By Approved

Standard / **SQUARE BOLT (NO NUT)**

Drawn **GEK** Checked **GWM** Approved **[Signature]**
 VP Engineering & Asset Management



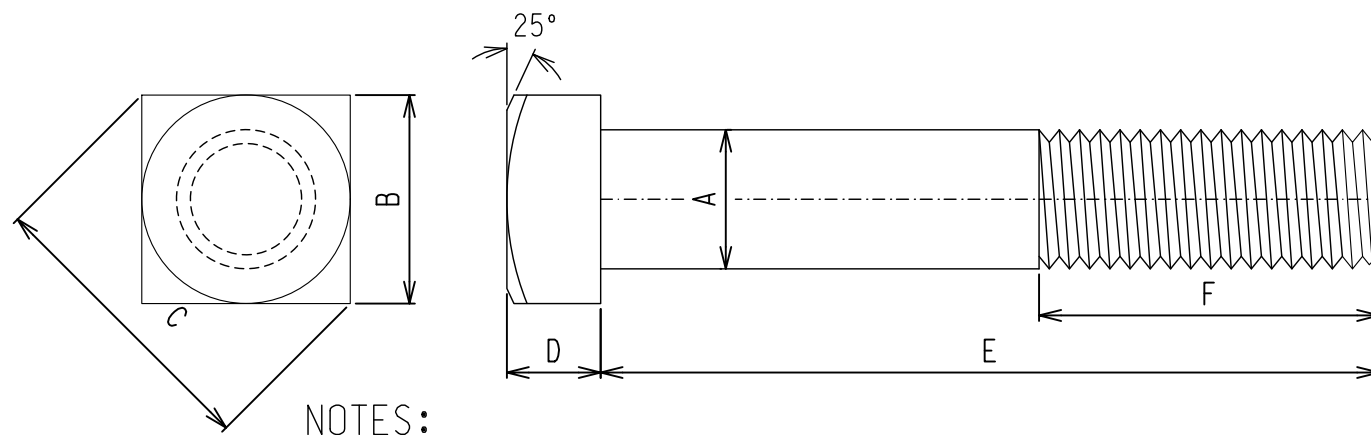
METROLINX

Date **SEPT 15/2017** Plan Number **GTS-1308** Rev **1**

REFERENCE: TS-1308_R8 Sheet 1 OF 2

SQUARE BOLT

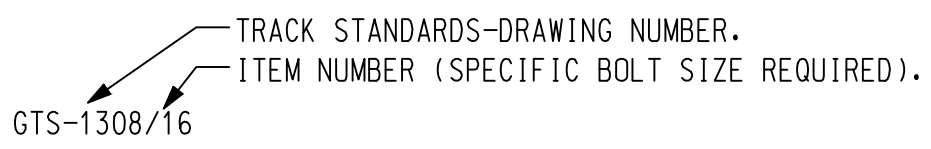
ITEM NO.	NOMINAL SIZE	A		B			C		D			E	F	THDS. INCH
		BODY DIAMETER		WIDTH ACROSS FLATS			WIDTH ACROSS CORNERS		HEIGHT OF HEAD UNFINISHED			LENGTH OF BOLT	LENGTH OF THREAD	
		MAX.	MIN.	NOM.	MAX.	MIN.	MAX.	MIN.	NOM.	MAX.	MIN.			
61	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	7 ± 1/8	3 + 1/32	7
62	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	7 1/2 ± 1/8	3 + 1/32	7
63	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	1/2	0.524	0.476	7 1/2 ± 1/8	3 + 1/32	7
64	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	8 ± 1/8	3 + 1/32	7
65	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	1/2	0.524	0.476	8 ± 1/8	3 + 1/32	7
66	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	8 1/2 ± 1/8	3 + 1/32	7
67	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	1/2	0.876	0.812	9 ± 1/8	3 + 1/32	7
68	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	9 1/2 ± 1/8	3 + 1/32	7
69	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	10 ± 1/8	3 + 1/32	7
70	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.524	0.476	10 ± 1/8	3 + 1/32	7
71	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	10 1/2 ± 1/8	3 + 1/32	7
72	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.524	0.476	10 1/2 ± 1/8	3 + 1/32	7
73	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	11 ± 1/8	3 + 1/32	7
74	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	11 1/2 ± 1/8	3 + 1/32	7
75	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.524	0.476	12 ± 1/8	3 + 1/32	7
76	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	12 1/2 ± 1/8	3 + 1/32	7
77	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	13 ± 1/8	3 + 1/32	7
78	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	13 1/2 ± 1/8	3 + 1/32	7
79	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	14 ± 1/8	3 + 1/32	7
80	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	14 1/2 ± 1/8	3 + 1/32	7
81	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	15 ± 1/8	3 + 1/32	7
82	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	15 1/2 ± 1/8	3 + 1/32	7
83	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	16 ± 1/8	3 + 1/32	7
84	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	16 1/2 ± 1/8	3 + 1/32	7
85	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	17 ± 1/8	3 + 1/32	7
86	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	17 1/2 ± 1/8	3 + 1/32	7
87	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	18 ± 1/8	3 + 1/32	7
88	1/4	1.277	1.234	1/8	1.875	1.812	2.652	2.489	2/32	0.876	0.812	19 ± 1/8	3 + 1/32	7
89														
90														
91														
92														
93	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	5 ± 1/8	3 + 1/32	6
94	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	4 1/2 ± 1/8	3 + 1/32	6
95	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	1/2	0.524	0.476	7 1/2 ± 1/8	3 1/4 + 1/32	6
96	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	1/2	0.524	0.476	5 ± 1/8	3 1/4 + 1/32	6
97	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	8 1/2 ± 1/8	3 1/4 + 1/32	6
98	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	1/2	0.524	0.476	8 1/2 ± 1/8	3 1/4 + 1/32	6
99	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	9 ± 1/8	3 1/4 + 1/32	6
100	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	9 1/2 ± 1/8	3 1/4 + 1/32	6
101	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	10 ± 1/8	3 1/4 + 1/32	6
102	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	10 1/2 ± 1/8	3 1/4 + 1/32	6
103	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	1/2	0.524	0.476	10 1/2 ± 1/8	3 1/4 + 1/32	6
104	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	11 ± 1/8	3 1/4 + 1/32	6
105	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	1/2	0.524	0.476	11 ± 1/8	3 1/4 + 1/32	6
106	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	11 1/2 ± 1/8	3 1/4 + 1/32	6
107	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	12 ± 1/8	3 1/4 + 1/32	6
108	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	13 ± 1/8	3 1/4 + 1/32	6
109	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	13 1/2 ± 1/8	3 1/4 + 1/32	6
110	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	14 ± 1/8	3 1/4 + 1/32	6
111	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	14 1/2 ± 1/8	3 1/4 + 1/32	6
112	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	15 ± 1/8	3 1/4 + 1/32	6
113	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	15 1/2 ± 1/8	3 1/4 + 1/32	6
114	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	16 ± 1/8	3 1/4 + 1/32	6
115	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	16 1/2 ± 1/8	3 1/4 + 1/32	6
116	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	17 ± 1/8	3 1/4 + 1/32	6
117	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	17 1/2 ± 1/8	3 1/4 + 1/32	6
118	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	18 ± 1/8	3 1/4 + 1/32	6
119	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	18 1/2 ± 1/8	3 1/4 + 1/32	6
120	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	19 ± 1/8	3 1/4 + 1/32	6
121	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	19 1/2 ± 1/8	3 1/4 + 1/32	6
122	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	20 ± 1/8	3 1/4 + 1/32	6
123	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	1/2	0.524	0.476	9 ± 1/8	3 1/4 + 1/32	6
124	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	1/2	0.524	0.476	9 1/2 ± 1/8	3 1/4 + 1/32	6
125	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	20 1/2 ± 1/8	3 1/4 + 1/32	6
126	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	21 ± 1/8	3 1/4 + 1/32	6
127	3/8	1.404	1.358	2/16	2.062	1.994	2.917	2.738	2/32	0.940	0.872	21 1/2 ± 1/8	3 1/4 + 1/32	6
128														
129														



NOTES:

- ALL DIMENSIONS ARE IN INCHES.
- BOLTS TO CONFORM TO AREMA SPECIFICATIONS, AND IN GENERAL TO SPECIFICATION SAE J429 FOR MECHANICAL AND MATERIAL REQUIREMENTS FOR EXTERNALLY THREADED FASTENERS.
- ALL 1 3/8" BOLTS TO BE GRADE 8 AND CONFORM TO THE REQUIREMENTS OF SAE J429.

NUMBER LEGEND



METRIC CONVERSION: 1 inch=25.4mm, 1 foot=304.8mm			
1	18/07/27	ADDED IMPERIAL TO METRIC CONVERSION NOTE	
No.	Date	Revision	By Approved
Standard		SQUARE BOLT (NO NUT)	
Drawn	GEK	Checked	GWM
		Approved	<i>[Signature]</i> VP Engineering & Asset Management
Date		Plan Number	Rev
SEPT 15/2017		GTS-1308	1
REFERENCE: TS-1308_R8		Sheet 2 OF 2	