



# 7 PWS ANCHOR RODS VOLUME II

(2011) – 274 Rods

Fabrication Process

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### ADDITIONAL DOCUMENTS

ASTM A123 ASTM A143 ASTM A153 ASTM A354 ASTM A490 ASTM A788 ASTM F1470 ASME B1.13M

	ation Item	Component Description	Rod (no head) or Bolt (with head)	Threads Cut or Rolled	Supplier	Diameter (in)	Overall Length (ft)	Overall Length (mm)	Quantity Installed (not including spares)	De- Humidified Zone?	Tighten Method	Final Tension (fraction of Fu or UTS)	Date Tension or Loading Complete	Date Re- Inspected (by 4/8/13)	Date Re- Inspected (by 4/23/13)	Date Re- Inspected (by 5/5/13)	Notes
	1	E2 Shear Key - Connect to Concrete - Above Column, Under OBG [S1, S2]	rod	Cut	Dyson	3	17.2 10.0	5235 3035	60 36 - 96	No	Tension	0.7	3/5/2013	daily check	daily check	daily check	Tensioned to 0.75 Fy, with lockoff at ~ 0.7 Fu 32 of 96 rods broke after tensioning, then tension level lowered
	2	E2 Shear Key - Connect to Concrete - Above Bent Cap, Under Crossbeam [S3, S4]	rod	Cut	Dyson	3	21.9	6676	96	No	Tension	0.7	4/1/2013	daily check	daily check	daily check	Tensioned to 0.75 Fy, with lockoff at ~ 0.7 Fu
	2	E2 Bearing - Connect to Concrete - Under OBG [B1, B2, B3, B4]	rod	Cut	Dyson	3	22.6 22.2	6902 6777	64 32	NO	Tension	0.7	4/9/2013	daily check	daily check	daily check	Tensioned to 0.75 Fy, with lockoff at ~ 0.7 Fu
and Shear Keys	3	E2 Shear Key - Connect to OBG [S1, S2]	rod	Cut	Dyson	3	4.4 1.8	1337 537	96 64 - 320	No	Tension	0.7	9/12/2012	4/6/2013	4/17/13 to	5/3/2013	Tensioned to 0.75 Fy, with lockoff at $\sim$ 0.7 Fu
d Shea		E2 Shear Key - Connect to Crossbeam [S3, S4]	rod	Cut	Dyson	3	4.3 1.7	1312 512	96 64				0, 12, 2012	4/8/2013	4/23/13	0,0,2010	
ngs an	4	E2 Bearing - Connect to OBG [B1, B2, B3, B4]	rod	Cut	Dyson	2	3.6	1105	224	No	Tension	0.7	9/12/2012	4/6/2013	4/17/13 to 4/23/13	5/3/2013	Tensioned to 0.75 Fy, with lockoff at ~ 0.7 Fu
E2 Bearings	5	E2 Bearing Assembly Bolts (Spherical Bushing Halves)	rod	Cut	Dyson for Lubrite for Hochang	1	2.4	733	96	No	Tension	0.61	July 2009	not accessible	not accessible	not accessible	Connect 2 halves of the spherical bushing assembly housing together at Lubrite; rods are internal to bearings and <b>all rods are not</b> <b>accessible</b> after bearing assembly at Hochang (December 2009 & January 2010); rods tensioned to 0.7 Fy.
	6	E2 Bearing Assembly Bolts (Retaining Rings)	Socket Head Cap Screw	Cut	Dyson for Hochang	1	0.2	55	336	No	snug + 1/4 turn	~0.4	January 2010	4/6/2013 (for 32 accessible bolts)	4/23/2013 (for 32 accessible bolts)	5/3/2013 (for 32 accessible bolts)	Bolts thread into drill and tap holes to attach retaining rings that secure the Lubrite spherical bushing assembly in the bottom housing; bolts are mechanically galvanized, not hot dip galvanized; bolts are internal to bearings and not accessible after bearing assembly at Hochang, except for a small number of bolts in limited areas -> 32 of 336 bolts are accessible.
ge				55 Cut								<mark>0.26</mark>	<mark>9/26/2012</mark>	<mark>4/6/2013</mark>	<mark>4/20&amp;22/2013</mark>	<mark>5/4/2013</mark>	With DL after load transfer (current condition)
<mark>Cable</mark> Anchorage	7	PWS Anchor Rods - PWS Socket to Anchorage	rod	(20%) 219 Rolled (80%)	Dyson	<mark>3-1/2</mark>	27.9 to 31.8	8500 to 9700	<mark>274</mark>	Yes	Load Transfer	0.29 0.32 0.35	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	N/A N/A N/A	With DL + Added DL Service Load (Group 1) SEE (Seismic)
· ·								1840 to				0.33	7/14/2012	N/A	N/A	N/A	Load During Construction - Tensioned to 0.5 Fy
	8	Tower Saddle Tie Rods	rod	Rolled	Dyson	4	6.0 to 17.5	5325	25	Yes	Tension	0.68	N/A	4/6/2013	4/19/2013	5/3/2013	Additional tension in tie rods from cable with service load
Tower	9	Turned Rods at Tower Saddle Segment Splices	rod	Cut	Dyson	3 @ Threads [~3-1/16 @ Shank]	1.5 1.4	463 415	100 - 108	Yes	Tension snug	0.45	4/6/2011 7/14/2012	4/6/2013	4/19/2013	5/3/2013	Located at the 2 field splices connecting the 3 tower saddle segments; 100 rods tensioned prior to saddle erection; 8 rods only snug tight after tie rod tensioning due to conflict with tie rods.
of	10	Tower Saddle to Grillage Anchor Bolts	Hex Bolt	Cut	Dyson	3	1.2	360	90	Head Yes, Nut No	snug	~0.1	3/25/2013	4/6/2013	4/19/2013	5/3/2013	Snug tightened before and after load transfer: <b>Initial Tension</b> <b>complete on 5/20/2011</b> ; final tension complete on 3/25/2013.
Тор	11	Tower Outrigger Boom (for Maintenance) at Top of Tower	Hex Bolt	Cut	Dyson	3	2.1	630	4	No	snug	~0.1	July 2012	4/6/2013	4/19/2013	5/4/2013	Act as pins for swinging out and then securing the maintenance outrigger boom at the top of 2 of 4 tower head chimneys. At each boom, one bolt is loaded and other bolt is unloaded in the current boom position. The currently unloaded bolt will be installed snug tight when the boom is swung out for use (future position).
Bottom of Tower	12	Tower Anchor Rods - Tower at Footing (3" Dia)	rod	Cut	Vulcan Threaded Products	3	25.6	7789	388	Yes	Tension	0.48	4/17/2013	N/A	4/20/2013 4/22/2013	5/5/2013	Tensioned to 1800 kN = 404.7 kips; Tension before and after load transfer: Initial Tension Late 2010 through Early 2011; Final Tension 2013
Botto To	13	Tower Anchor Rods - Tower at Footing (4" Dia)	rod	Cut	for KOS for KFM (04-0120E4)	4	25.7	7839	36	Yes	Tension	0.37	4/17/2013	N/A	4/20/2013 4/22/2013	5/5/2013	Tensioned to 2530 kN = 568.8 kips; Tension before and after load transfer: Initial Tension Late 2010 through Early 2011; Final Tension 2013
East Saddles	14	East Saddle Anchor Rods	rod	Cut	Dyson for JSW	2	2.6	800	32	Yes	snug	~0.1	May 2010	4/7/2013	4/21/2013	5/3/2013	specified gap under nut/washer at one end of rod and 2 nuts snug against each other at other end of rod -> snug tight for portion of rod
	15	East Saddle Tie Rods	Hex Bolt	Cut	Dyson	3	4.7	1420	18	Yes	snug	~0.1 0.2	4/13/2012 N/A	N/A 4/7/2013	N/A 4/21/2013	N/A 5/3/2013	Snug tightened before load transfer Additional tension in tie rods from cable with service load
East Cable	16	B14 Cable Bands - Cable Brackets - at East End of Bridge - Strongback Anchor Rods	rod	Rolled	Dyson	3	10.3 to 11.1	3129 to 3372	24	No	Tension	0.16	2/8/2013	4/7/2013	4/21/2013	5/4/2013	pre-compress neoprene between strongback and cable band
W2 Bent Cap	17	W2 Bikepath Anchor Rods	rod	Cut	Dyson	~1-3/16 [Metric M30]	1.5	460	43	No	Not Dete	rmined Yet	N/A	N/A	N/A	N/A	Details for bikepath connections are being redesigned and are not final. The 18 anchor rods at the bottom connections will be abandoned. The 25 anchor rods at the top connections will be used and supplemented with additional anchor rods. These rods will be tensioned on the separate YBITS-2 Contract.

Load No.	Total	Release	Гаg Quantity	METS
LUAU NO.	Quantity	Orange	Blue	IVIETS
1	44	2	42	released
2	48	19	29	released
3	51	51	0	released
4	sent back	39	16	rejected
5	26	14	12	released
6	26	0	26	released
7	26	0	26	released
8	27	0	27	released
9	24	22	2	released
10	2	2	0	released
TOTAL	274			

# 14W, North Anchorage (Looking East)

132	136	133	137	128	134	122	129	135	123	130	116	124	108	117	109		
9300	9200	9000	8900	8700	8700	8600	8500	8500	8500	8500	8600	8700	8700	8900	9000		
OYP-3	OYO-9	OYL-4	OYN-7	OQY-26	OQX4-30	OQY-17A	OQY-21C	OQY-32	OYP-2	OYL-3	OYH-6	OQY-28	OQY-25	OYN-4	OYK-5		
27-Oct-11	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	18-Oct-11	21-Nov-11	21-Nov-11	?	?	?	?	?	?	?		
125	131	126	120	127	113	121	114	106	115	107	99	91	100	92	83		83
9300	9200	8900	8900	8700	8700	8600	8500	8500	8500	8500	8600	8700	8700	8900	9000		9000
OYM-10	OYH-1	OYN-6	OYG-1	OQY-31	OQY-29	OQY-9A	OQY-13C	OOH2-23	OOH2-2	OOH2-20	OQX3-13	OQX4-13	OQY-19	OYL-5	OPY2-26		ŀ
27-Oct-11	26-Oct-11	21-Nov-11	21-Nov-11	?	?	17-Oct-11	?	21-Nov-11	21-Nov-11	21-Nov-11	18-Oct-11	18-Oct-11	?	?	18-Oct-11		1-Jan-11
118	111	119	112	104	96	105	97	89	98	90	81	72	82	73	64		
9300	9200	8900	8900	8700	8700	8600	8500	8500	8500	8500	8600	8700	8700	8900	9000		
OYJ-10	OYO-3	OYO-8	OPY4-24	OYN-1	OQX4-23	OQX3-5	OQY-19C	OYG-2	OQY-27	OQY-3C	OQY-1A	OQY-2	OQY-15	OYN-5	OPY2-23		
27-Oct-11	26-Oct-11	21-Nov-11	?	27-Oct-11	17-Oct-11	17-Oct-11	21-Nov-11	21-Nov-11	21-Nov-11	21-Nov-11	18-Oct-11	18-Oct-11	18-Oct-11	?	18-Oct-11		I
101	110	102	94	103	95	87	78	88	79	70	80	71	62	53	63	54	
9300	9200	8900	8900	8700	8700	8600	8500	8500	8500	8500	8600	8700	8700	8900	9000	9300	
OYM-7	OYP-5	OYL-6	OYL-9	OYL-8	OQX4-5	OQY-6A	OQY-15C	OQY-18C	00F2-4	OQY-22C	OQX3-8	OQX4-11	OQX4-24	OYN-3	OPY2-4	OYJ-7	
27-Oct-11	26-Oct-11	21-Nov-11	21-Nov-11	?	17-Oct-11	17-Oct-11	21-Nov-11	?	21-Nov-11	21-Nov-11	18-Oct-11	18-Oct-11	18-Oct-11	?	18-Oct-11	25-Oct-11	
				1												· · · · · · · · · · · · · · · · · · ·	
84	93	85	76	86	77	68	59	69	60	51	61	43	52	44	36	45	37
<b>84</b> 9300	<b>93</b> 9200	<b>85</b> 8900	<b>76</b> 8900	<b>86</b> 8700	<b>77</b> 8700	<b>68</b> 8600	<b>59</b> 8500	<b>69</b> 8500	<b>60</b> 8500	<b>51</b> 8500	<b>61</b> 8600	<b>43</b> 8700	<b>52</b> 8700	<b>44</b> 8900	<b>36</b> 9000	<b>45</b> 9300	<b>37</b> 9400
9300 OOH2-7	9200 OYM-1	8900 OYK-4	8900 OYL-7	8700 OQX4-20	8700 OQX4-17	8600 OQY-12A	8500 OQY-23C	8500 OQY-14C	8500 OQY-20C	8500 OPY3-8	8600 OQX3-16	8700 OQX4-12	8700 OQX4-9	8900 OYG-4	9000 OPY2-38	9300 OYN-10	9400 OTD-2E
9300 OOH2-7	9200 OYM-1	8900 OYK-4 ?	8900 OYL-7 27-Oct-11	8700 OQX4-20 17-Oct-11	8700 OQX4-17 17-Oct-11	8600 OQY-12A 17-Oct-11	8500 OQY-23C 21-Nov-11	8500 OQY-14C	8500 OQY-20C 21-Nov-11	8500 OPY3-8 21-Nov-11	8600 OQX3-16 18-Oct-11	8700 OQX4-12	8700 OQX4-9	8900 OYG-4 ?	9000 OPY2-38 18-Oct-11	9300 OYN-10 25-Oct-11	9400 OTD-2E ?
9300 00H2-7 27-Oct-11 <b>74</b>	9200 OYM-1 26-Oct-11 <b>65</b>	8900 OYK-4 ? <b>75</b>	8900 OYL-7 27-Oct-11 <b>66</b>	8700 OQX4-20 17-Oct-11 <b>57</b>	8700 OQX4-17 17-Oct-11 <b>67</b>	8600 OQY-12A 17-Oct-11 <b>48</b>	8500 OQY-23C 21-Nov-11 <b>58</b>	8500 OQY-14C ? <b>49</b>	8500 OQY-20C 21-Nov-11 <b>41</b>	8500 OPY3-8 21-Nov-11 <b>50</b>	8600 OQX3-16 18-Oct-11 <b>42</b>	8700 OQX4-12 18-Oct-11 <b>34</b>	8700 OQX4-9 18-Oct-11 <b>26</b>	8900 OYG-4 ? <b>35</b>	9000 OPY2-38 18-Oct-11 <b>27</b>	9300 OYN-10 25-Oct-11 <b>20</b>	9400 OTD-2E ? 28
9300 00H2-7 27-Oct-11 <b>74</b> 9300	9200 OYM-1 26-Oct-11 <b>65</b> 9200	8900 OYK-4 ? <b>75</b> 8900	8900 OYL-7 27-Oct-11 <b>66</b> 8900	8700 OQX4-20 17-Oct-11 <b>57</b> 8700	8700 OQX4-17 17-Oct-11 <b>67</b> 8700	8600 OQY-12A 17-Oct-11 <b>48</b> 8600	8500 OQY-23C 21-Nov-11 <b>58</b> 8500	8500 OQY-14C ? <b>49</b> 8500	8500 OQY-20C 21-Nov-11 <b>41</b> 8500	8500 OPY3-8 21-Nov-11 <b>50</b> 8500	8600 OQX3-16 18-Oct-11 <b>42</b> 8600	8700 OQX4-12 18-Oct-11 <b>34</b> 8700	8700 OQX4-9 18-Oct-11 <b>26</b> 8700	8900 OYG-4 ? <b>35</b> 8900	9000 OPY2-38 18-Oct-11 <b>27</b> 9000	9300 OYN-10 25-Oct-11 <b>20</b> 9300	9400 OTD-2E ? 28 9400
9300 00H2-7 27-Oct-11 <b>74</b> 9300 R1002-OTD	9200 OYM-1 26-Oct-11 <b>65</b> 9200 OYJ-5	8900 OYK-4 ? <b>75</b> 8900 OYM-6	8900 OYL-7 27-Oct-11 <b>66</b> 8900 OYH-2	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21	8700 0QX4-17 17-Oct-11 <b>67</b> 8700 0QY-15A	8600 OQY-12A 17-Oct-11 <b>48</b> 8600 OQY-10A	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6	8500 OQY-14C ? <b>49</b> 8500 OYM-2	8500 OQY-20C 21-Nov-11 <b>41</b> 8500 OYG-3	8500 OPY3-8 21-Nov-11 <b>50</b> 8500 OYI-2	8600 OQX3-16 18-Oct-11 <b>42</b> 8600 OQY-14A	8700 OQX4-12 18-Oct-11 <b>34</b> 8700 OQX4-7	8700 OQX4-9 18-Oct-11 <b>26</b> 8700 OQX4-10	8900 OYG-4 ? <b>35</b> 8900 OYN-2	9000 OPY2-38 18-Oct-11 <b>27</b> 9000 OPY2-10	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24	9400 OTD-2E ? 28 9400 OYM-5
9300 0OH2-7 27-Oct-11 <b>74</b> 9300 R1002-OTD 27-Oct-11	9200 OYM-1 26-Oct-11 <b>65</b> 9200 OYJ-5 26-Oct-11	8900 OYK-4 ? <b>75</b> 8900 OYM-6 27-Oct-11	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11	8700 0QX4-17 17-Oct-11 <b>67</b> 8700 0QY-15A 17-Oct-11	8600 OQY-12A 17-Oct-11 <b>48</b> 8600 OQY-10A 17-Oct-11	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6 ?	8500 OQY-14C ? <b>49</b> 8500 OYM-2 ?	8500 OQY-20C 21-Nov-11 <b>41</b> 8500 OYG-3 ?	8500 OPY3-8 21-Nov-11 <b>50</b> 8500 OYI-2 ?	8600 0QX3-16 18-Oct-11 <b>42</b> 8600 0QY-14A 18-Oct-11	8700 0QX4-12 18-Oct-11 <b>34</b> 8700 0QX4-7 18-Oct-11	8700 OQX4-9 18-Oct-11 <b>26</b> 8700 OQX4-10 18-Oct-11	8900 OYG-4 ? <b>35</b> 8900 OYN-2 ?	9000 OPY2-38 18-Oct-11 <b>27</b> 9000 OPY2-10 18-Oct-11	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24 25-Oct-11	9400 OTD-2E ? 28 9400 OYM-5 ?
9300 0OH2-7 27-Oct-11 74 9300 R1002-OTD 27-Oct-11 55	9200 OYM-1 26-Oct-11 65 9200 OYJ-5 26-Oct-11 46	8900 OYK-4 ? <b>75</b> 8900 OYM-6 27-Oct-11	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11 30	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11 <b>47</b>	8700 OQX4-17 17-Oct-11 <b>67</b> 8700 OQY-15A 17-Oct-11 <b>39</b>	8600 OQY-12A 17-Oct-11 <b>48</b> 8600 OQY-10A 17-Oct-11 <b>31</b>	8500 OQY-23C 21-Nov-11 58 8500 OPY2-6 ? 40	8500 OQY-14C ? <b>49</b> 8500 OYM-2 ? <b>32</b>	8500 OQY-20C 21-Nov-11 41 8500 OYG-3 ? 24	8500 OPY3-8 21-Nov-11 <b>50</b> 8500 OYI-2 ? <b>33</b>	8600 0QX3-16 18-Oct-11 42 8600 0QY-14A 18-Oct-11 18-Oct-11	8700 0QX4-12 18-Oct-11 <b>34</b> 8700 0QX4-7 18-Oct-11 <b>25</b>	8700 0QX4-9 18-Oct-11 <b>26</b> 8700 0QX4-10 18-Oct-11 <b>18</b>	8900 OYG-4 ? <b>35</b> 8900 OYN-2 ? <b>12</b>	9000 OPY2-38 18-Oct-11 <b>27</b> 9000 OPY2-10 18-Oct-11 <b>19</b>	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24 25-Oct-11 <b>7</b>	9400 OTD-2E ? 28 9400 OYM-5 ? 13
9300 00H2-7 27-Oct-11 74 9300 R1002-OTD 27-Oct-11 55 9300	9200 OYM-1 26-Oct-11 9200 OYJ-5 26-Oct-11 46 9200	8900 OYK-4 ? <b>75</b> 8900 OYM-6 27-Oct-11 56 8900	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11 30 8900	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11 <b>47</b> 8700	8700 0QX4-17 17-Oct-11 67 8700 0QY-15A 17-Oct-11 39 8700	8600 OQY-12A 17-Oct-11 <b>48</b> 8600 OQY-10A 17-Oct-11 <b>31</b> 8600	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6 ? <b>40</b> 8500	8500 OQY-14C ? 49 8500 OYM-2 ? 32 8500	8500 OQY-20C 21-Nov-11 41 8500 OYG-3 ? 24 8500	8500 OPY3-8 21-Nov-11 50 8500 OYI-2 ? 33 8500	8600 OQX3-16 18-Oct-11 42 8600 OQY-14A 18-Oct-11 18-Oct-11 8600	8700 OQX4-12 18-Oct-11 <b>34</b> 8700 OQX4-7 18-Oct-11 <b>25</b> 8700	8700 OQX4-9 18-Oct-11 <b>26</b> 8700 0QX4-10 18-Oct-11 <b>18</b> 8700	8900 OYG-4 ? <b>35</b> 8900 OYN-2 ? <b>12</b> 8900	9000 OPY2-38 18-Oct-11 9000 OPY2-10 18-Oct-11 19 9000	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24 25-Oct-11 <b>7</b> 9400	9400 OTD-2E ? 28 9400 OYM-5 ? 13 9400
9300 0OH2-7 27-Oct-11 74 9300 R1002-OTD 27-Oct-11 55 9300 OOH2-17	9200 OYM-1 26-Oct-11 65 9200 OYJ-5 26-Oct-11 26-Oct-11 9200 OYH-3	8900 OYK-4 ? <b>75</b> 8900 OYM-6 27-Oct-11 <b>56</b> 8900 R1008-OQX	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11 27-Oct-11 30 8900 0YM-3	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11 <b>47</b> 8700 OQY-14	8700 OQX4-17 17-Oct-11 67 8700 OQY-15A 17-Oct-11 39 8700 QQY-3	8600 OQY-12A 17-Oct-11 <b>48</b> 8600 OQY-10A 17-Oct-11 <b>31</b> 8600 OQX3-2	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6 ? <b>40</b> 8500 0OH2-16	8500 OQY-14C ? 49 8500 OYM-2 ? 32 8500 OOH2-4	8500 OQY-20C 21-Nov-11 41 8500 OYG-3 ? 24 8500 OPY2-2	8500 OPY3-8 21-Nov-11 50 8500 OYI-2 ? 33 8500 OPY2-7	8600         0QX3-16         18-Oct-11         42         8600         0QY-14A         18-Oct-11         18-Oct-11         8600         0QY-14A         18-Oct-11         0QX-14A         18-Oct-11         0QX-14A         18-Oct-11         0QX-14A	8700 OQX4-12 18-Oct-11 <b>34</b> 8700 0QX4-7 18-Oct-11 <b>25</b> 8700 QQY-4	8700 OQX4-9 18-Oct-11 <b>26</b> 8700 0QX4-10 18-Oct-11 <b>18</b> 8700 QQX4-6	8900 OYG-4 ? <b>35</b> 8900 OYN-2 ? <b>12</b> 8900 R1007-OOH	9000 OPY2-38 18-Oct-11 9000 OPY2-10 18-Oct-11 18-Oct-11 9000 0PY2-29	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24 25-Oct-11 <b>7</b> 9400 OOF2-2	9400 OTD-2E ? 28 9400 OYM-5 ? 13 9400 OOF2-1
9300 00H2-7 27-Oct-11 74 9300 R1002-OTD 27-Oct-11 55 9300 00H2-17 25-Oct-11	9200 OYM-1 26-Oct-11 9200 OYJ-5 26-Oct-11 9200 OYH-3 26-Oct-11	8900 OYK-4 ? <b>75</b> 8900 OYM-6 27-Oct-11 <b>56</b> 8900 R1008-OQX 25-Oct-11	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11 30 8900 0YM-3 27-Oct-11	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11 <b>47</b> 8700 OQY-14 17-Oct-11	8700 OQX4-17 17-Oct-11 67 8700 OQY-15A 17-Oct-11 39 8700 0QY-3 17-Oct-11	8600 OQY-12A 17-Oct-11 48 8600 OQY-10A 17-Oct-11 31 8600 OQX3-2 17-Oct-11	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6 ? <b>40</b> 8500 0OH2-16 ?	8500 OQY-14C ? 49 8500 OYM-2 ? 32 8500 OOH2-4 ?	8500 OQY-20C 21-Nov-11 41 8500 OYG-3 ? 24 8500 OPY2-2 ?	8500 OPY3-8 21-Nov-11 50 8500 OYI-2 ? 33 8500 OPY2-7 25-Oct-11	8600         0QX3-16         18-Oct-11         42         8600         0QY-14A         18-Oct-11         18-Oct-11         100X3-11         18-Oct-11	8700 OQX4-12 18-Oct-11 8700 OQX4-7 18-Oct-11 8700 0QY-4 18-Oct-11	8700 OQX4-9 18-Oct-11 <b>26</b> 8700 0QX4-10 18-Oct-11 <b>18</b> 8700 0QX4-6 18-Oct-11	8900 OYG-4 ? <b>35</b> 8900 OYN-2 ? <b>12</b> 8900 R1007-OOH 25-Oct-11	9000 OPY2-38 18-Oct-11 <b>27</b> 9000 OPY2-10 18-Oct-11 9000 OPY2-29 18-Oct-11	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24 25-Oct-11 9400 OOF2-2 25-Oct-11	9400 OTD-2E ? 28 9400 OYM-5 ? 13 9400 OOF2-1 ?
9300 OOH2-7 27-Oct-11 74 9300 R1002-OTD 27-Oct-11 55 9300 OOH2-17 25-Oct-11 29	9200 OYM-1 26-Oct-11 9200 OYJ-5 26-Oct-11 9200 0YH-3 26-Oct-11 26-Oct-11	8900 OYK-4 ? <b>75</b> 8900 OYM-6 27-Oct-11 <b>56</b> 8900 R1008-OQX 25-Oct-11 <b>38</b>	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11 30 8900 0YM-3 27-Oct-11 14	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11 <b>47</b> 8700 OQY-14 17-Oct-11 <b>22</b>	8700 OQX4-17 17-Oct-11 67 8700 OQY-15A 17-Oct-11 39 8700 0QY-3 17-Oct-11 8	8600 OQY-12A 17-Oct-11 48 8600 OQY-10A 17-Oct-11 31 8600 OQX3-2 17-Oct-11 15	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6 ? <b>40</b> 8500 0OH2-16 ? <b>23</b>	8500 OQY-14C ? 49 8500 OYM-2 ? 32 8500 OOH2-4 ? 1	8500 OQY-20C 21-Nov-11 41 8500 OYG-3 ? 24 8500 OPY2-2 ? 9	8500 OPY3-8 21-Nov-11 50 8500 OYI-2 ? 33 8500 OPY2-7 25-Oct-11 16	8600 OQX3-16 18-Oct-11 42 8600 OQY-14A 18-Oct-11 8600 0QX3-11 18-Oct-11 18-Oct-11	8700 OQX4-12 18-Oct-11 8700 OQX4-7 18-Oct-11 8700 18-Oct-11 18-Oct-11 18-Oct-11	8700 OQX4-9 18-Oct-11 26 8700 OQX4-10 18-Oct-11 18-Oct-11 18-Oct-11 18-Oct-11 2	8900 OYG-4 ? 35 8900 OYN-2 ? 12 8900 R1007-OOH 25-Oct-11 6	9000 OPY2-38 18-Oct-11 9000 OPY2-10 18-Oct-11 18-Oct-11 18-Oct-11 18-Oct-11	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24 25-Oct-11 9400 OOF2-2 25-Oct-11 <b>3</b>	9400 OTD-2E ? 28 9400 OYM-5 ? 13 9400 00F2-1 ? 2 4
9300 OOH2-7 27-Oct-11 74 9300 R1002-OTD 27-Oct-11 55 9300 OOH2-17 25-Oct-11 29 9300	9200 OYM-1 26-Oct-11 9200 0YJ-5 26-Oct-11 9200 OYH-3 26-Oct-11 26-Oct-11 26-Oct-11	8900 OYK-4 ? <b>75</b> 8900 OYM-6 27-Oct-11 <b>56</b> 8900 R1008-OQX 25-Oct-11 <b>38</b> 8900	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11 30 8900 0YM-3 27-Oct-11 4 8900	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11 <b>47</b> 8700 OQY-14 17-Oct-11 <b>22</b> 8700	8700 OQX4-17 17-Oct-11 67 8700 0QY-15A 17-Oct-11 39 8700 0QY-3 17-Oct-11 8 8700	8600 OQY-12A 17-Oct-11 48 8600 OQY-10A 17-Oct-11 31 8600 OQX3-2 17-Oct-11 15 8600	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6 ? <b>40</b> 8500 0OH2-16 ? <b>23</b> 8500	8500 OQY-14C ? 49 8500 OYM-2 ? 32 8500 OOH2-4 ? 1 8500	8500 OQY-20C 21-Nov-11 41 8500 OYG-3 ( 24 8500 0PY2-2 ? 9 8500	8500 OPY3-8 21-Nov-11 50 8500 OYI-2 ? 33 8500 OPY2-7 25-Oct-11 16 8600	8600 OQX3-16 18-Oct-11 42 8600 OQY-14A 18-Oct-11 18-Oct-11 18-Oct-11 18-Oct-11 18-Oct-11	8700 OQX4-12 18-Oct-11 8700 0QX4-7 18-Oct-11 8700 0QY-4 18-Oct-11 18-Oct-11 18-Oct-11	8700 OQX4-9 18-Oct-11 <b>26</b> 8700 0QX4-10 18-Oct-11 <b>18</b> 0QX4-6 18-Oct-11 <b>18</b> -Oct-11 <b>2</b> 8700	8900 OYG-4 ? <b>35</b> 8900 OYN-2 ? <b>12</b> 8900 R1007-OOH 25-Oct-11 <b>6</b> 8900	9000 OPY2-38 18-Oct-11 9000 OPY2-10 18-Oct-11 9000 OPY2-29 18-Oct-11 18-Oct-11 18-Oct-11	9300 OYN-10 25-Oct-11 <b>20</b> 9300 0OH2-24 25-Oct-11 <b>7</b> 9400 0OF2-2 25-Oct-11 <b>3</b> 9300	9400 OTD-2E ? 28 9400 OYM-5 ? 13 9400 OOF2-1 ? 2 4 9300
9300 OOH2-7 27-Oct-11 74 9300 R1002-OTD 27-Oct-11 55 9300 OOH2-17 25-Oct-11 29	9200 OYM-1 26-Oct-11 9200 OYJ-5 26-Oct-11 9200 0YH-3 26-Oct-11 26-Oct-11	8900 OYK-4 ? 75 8900 OYM-6 27-Oct-11 56 8900 R1008-OQX 25-Oct-11 38 8900 R1010-OTD	8900 OYL-7 27-Oct-11 66 8900 OYH-2 27-Oct-11 30 8900 OYM-3 27-Oct-11 14 8900 R1005-OQW	8700 OQX4-20 17-Oct-11 <b>57</b> 8700 OQX4-21 17-Oct-11 <b>47</b> 8700 OQY-14 17-Oct-11 <b>22</b>	8700 OQX4-17 17-Oct-11 67 8700 OQY-15A 17-Oct-11 39 8700 0QY-3 17-Oct-11 8 8700 0QX4-18	8600 OQY-12A 17-Oct-11 48 8600 OQY-10A 17-Oct-11 31 8600 OQX3-2 17-Oct-11 15	8500 OQY-23C 21-Nov-11 <b>58</b> 8500 OPY2-6 ? <b>40</b> 8500 0OH2-16 ? <b>23</b>	8500 OQY-14C ? 49 8500 OYM-2 ? 32 8500 OOH2-4 ? 1	8500 OQY-20C 21-Nov-11 41 8500 OYG-3 ? 24 8500 OPY2-2 ? 9	8500 OPY3-8 21-Nov-11 50 8500 OYI-2 ? 33 8500 OPY2-7 25-Oct-11 16	8600 OQX3-16 18-Oct-11 42 8600 OQY-14A 18-Oct-11 8600 0QX3-11 18-Oct-11 18-Oct-11	8700 OQX4-12 18-Oct-11 8700 OQX4-7 18-Oct-11 8700 18-Oct-11 18-Oct-11 18-Oct-11	8700 OQX4-9 18-Oct-11 <b>26</b> 8700 0QX4-10 18-Oct-11 <b>18</b> 0QX4-6 18-Oct-11 <b>18</b> -Oct-11 <b>2</b> 8700 0QY-1	8900 OYG-4 ? 35 8900 OYN-2 ? 12 8900 R1007-OOH 25-Oct-11 6	9000 OPY2-38 18-Oct-11 9000 OPY2-10 18-Oct-11 9000 OPY2-29 18-Oct-11 18-Oct-11 18-Oct-11 0000 0PY2-24	9300 OYN-10 25-Oct-11 <b>20</b> 9300 OOH2-24 25-Oct-11 9400 OOF2-2 25-Oct-11 <b>3</b>	9400 OTD-2E ? 28 9400 OYM-5 ? 13 9400 00F2-1 ? 2 4

Strand Erection ← Anchor Rod Length Anchor Rod ID

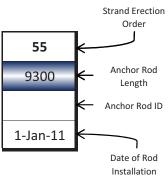
Order

Date of Rod Installation

# 14E, South Anchorage (Looking East)

109	117	100	124	116	130	123	115	135	129	122	134	128	137	133	127	136	132
9500	9400	9200	9100	9000	8900	8800	8800	8800	8800	8900	8900	9000	9100	9200	9300	9600	9700
OTD-23D	OYG-5	OYJ-6	OPY3-22	OPY2-35	OYJ-4	OQX5-19	OQX5-24	OQX5-28	OQX5-12	OQY-23B	OPY4-21	OPY2-37	OPY3-18	OYO-5	OOH-1E	OYJ-11	OYM-8
?	?	?	6-Oct-11	6-0ct-11	?	7-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	4-Nov-11	4-Nov-11	10-Oct-11	11-Oct-11	4-Nov-11	?	?	?
83	92	82	108	91	99	107	98	106	114	105	121	113	120	126	119	131	125
9500	9400	9200	9100	9000	8900	8800	8800	8800	8800	8900	8900	9000	9100	9200	9300	9600	9700
OTD-1D	OYI-4	OYN-11	OPY3-16	OPY2-39	OPY4-17	OQX5-27	OQX5-13	OQX5-22	OQX5-3	OPY4-22	OPY4-19	?	OPY3-9	R1011-OTD	OYJ-9	OOF4-2	00F5-4
?	?	?	6-Oct-11	6-Oct-11	7-Oct-11	7-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	4-Nov-11	4-Nov-11	10-Oct-11	11-Oct-11	4-Nov-11	?	?	11-Oct-11
64	73	63	72	81	71	90	80	89	97	88	96	104	112	103	111	118	110
9500	9400	9200	9100	9000	8900	8800	8800	8800	8800	8900	8900	9000	9100	9200	9300	9600	9700
OYH-7	OYM-4	OYO-4	OPY3-23	OPY2-22	OPY4-16	OQX5-23	OQX5-21	OQX5-15	OQX5-29	OPY4-20	OYI-3	OPY2-33	OPY3-25	OOH-4F	OYP-4	OYI-5	00F5-1
?	?	?	6-Oct-11	6-Oct-11	7-Oct-11	7-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	4-Nov-11	4-Nov-11	10-Oct-11	11-Oct-11	4-Nov-11	4-Nov-11	?	11-Oct-11
54	45	53	62	52	61	70	79	69	78	87	77	95	86	94	102	93	101
9500	9500	9200	9100	9000	8900	8800	8800	8800	8800	8900	8900	9000	9100	9200	9300	9600	9700
OOF3-8	OYM-9	OTD-4	OPY3-20	OPY2-20	OPY4-1	OQX5-11	OQX5-30	OQX5-14	OQX5-4	OPY4-10	OPY4-9	OPY2-28	OPY3-6	OTD-1H	OYO-7	OOF4-9	00F5-2
?	?	11-Oct-11	6-Oct-11	6-Oct-11	7-Oct-11	6-Oct-11	8-Oct-11	8-Oct-11	8-Oct-11	10-Oct-11	10-Oct-11	10-Oct-11	11-Oct-11	4-Nov-11	4-Nov-11	11-Oct-11	11-Oct-11
37	28	36	44	35	43	51	60	50	59	68	58	67	76	85	75	84	
<b>37</b> 9600	<b>28</b> 9500	<b>36</b> 9200	<b>44</b> 9100	<b>35</b> 9000	<b>43</b> 8900	<b>51</b> 8800	<b>60</b> 8800	<b>50</b> 8800	<b>59</b> 8800	<b>68</b> 8900	<b>58</b> 8900	<b>67</b> 9000	<b>76</b> 9100	<b>85</b> 9300	<b>75</b> 9300	<b>84</b> 9600	
																	The F
9600	9500	9200	9100	9000	8900	8800	8800	8800	8800	8900 OPY4-7	8900	9000 OPY2-36	9100 OPY3-27	9300	9300	9600	
9600 OYH-8	9500 OYJ-8	9200 OTD-16	9100 OPY3-26	9000 OPY2-18	8900 OPY4-13	8800 OQX5-8	8800 OQX5-18	8800 OQX5-26	8800 OQX5-6	8900 OPY4-7	8900 OPY4-8	9000 OPY2-36	9100 OPY3-27	9300 OOH-2F	9300 OYN-8	9600 OOF4-3	Ancho 9000 r other ro
9600 OYH-8 ?	9500 OYJ-8 ?	9200 OTD-16 5-Oct-11	9100 OPY3-26 6-Oct-11	9000 OPY2-18 6-Oct-11	8900 OPY4-13 6-Oct-11	8800 OQX5-8 6-Oct-11	8800 OQX5-18 7-Oct-11	8800 OQX5-26 8-Oct-11	8800 OQX5-6 8-Oct-11	8900 OPY4-7 10-Oct-11	8900 OPY4-8 10-Oct-11	9000 OPY2-36 10-Oct-11	9100 OPY3-27 11-Oct-11	9300 OOH-2F 4-Nov-11	9300 OYN-8 4-Nov-11	9600 OOF4-3	Ancho 9000 r
9600 OYH-8 ? <b>20</b>	9500 OYJ-8 ? <b>27</b>	9200 OTD-16 5-Oct-11 <b>19</b>	9100 OPY3-26 6-Oct-11 <b>26</b>	9000 OPY2-18 6-Oct-11 <b>34</b>	8900 OPY4-13 6-Oct-11 <b>42</b>	8800 OQX5-8 6-Oct-11 <b>33</b>	8800 OQX5-18 7-Oct-11 <b>41</b>	8800 OQX5-26 8-Oct-11 <b>49</b>	8800 OQX5-6 8-Oct-11 <b>40</b>	8900 OPY4-7 10-Oct-11 <b>48</b>	8900 OPY4-8 10-Oct-11 <b>57</b>	9000 OPY2-36 10-Oct-11 <b>66</b>	9100 OPY3-27 11-Oct-11 <b>56</b>	9300 OOH-2F 4-Nov-11 <b>65</b>	9300 OYN-8 4-Nov-11 <b>74</b>	9600 OOF4-3	Ancho 9000 r other roo in the ro
9600 OYH-8 ? <b>20</b> 9600	9500 OYJ-8 ? <b>27</b> 9500	9200 OTD-16 5-Oct-11 <b>19</b> 9200	9100 OPY3-26 6-Oct-11 <b>26</b> 9100	9000 OPY2-18 6-Oct-11 <b>34</b> 9000	8900 OPY4-13 6-Oct-11 <b>42</b> 8900	8800 OQX5-8 6-Oct-11 <b>33</b> 8800	8800 OQX5-18 7-Oct-11 <b>41</b> 8800	8800 OQX5-26 8-Oct-11 <b>49</b> 8800	8800 OQX5-6 8-Oct-11 <b>40</b> 8800	8900 OPY4-7 10-Oct-11 <b>48</b> 8900	8900 OPY4-8 10-Oct-11 <b>57</b> 8900 OPY4-11	9000 OPY2-36 10-Oct-11 <b>66</b> 9000	9100 OPY3-27 11-Oct-11 <b>56</b> 9100	9300 OOH-2F 4-Nov-11 <b>65</b> 9300	9300 OYN-8 4-Nov-11 <b>74</b> 9300	9600 OOF4-3	Ancho 9000 r other roo in the ro
9600 OYH-8 ? <b>20</b> 9600 OYH-9	9500 OYJ-8 ? <b>27</b> 9500 OTD-2D	9200 OTD-16 5-Oct-11 <b>19</b> 9200 OTD-17	9100 OPY3-26 6-Oct-11 <b>26</b> 9100 OPY3-24	9000 OPY2-18 6-Oct-11 <b>34</b> 9000 OPY2-9	8900 OPY4-13 6-Oct-11 <b>42</b> 8900 OQW-5	8800 OQX5-8 6-Oct-11 <b>33</b> 8800 OQX5-10	8800 OQX5-18 7-Oct-11 <b>41</b> 8800 OQX5-7	8800 OQX5-26 8-Oct-11 <b>49</b> 8800 OQX5-25	8800 OQX5-6 8-Oct-11 <b>40</b> 8800 OQX5-2	8900 OPY4-7 10-Oct-11 <b>48</b> 8900 OPY4-15	8900 OPY4-8 10-Oct-11 <b>57</b> 8900 OPY4-11	9000 OPY2-36 10-Oct-11 <b>66</b> 9000 OPY2-32	9100 OPY3-27 11-Oct-11 <b>56</b> 9100 OPY3-7	9300 OOH-2F 4-Nov-11 <b>65</b> 9300 OOH2-19	9300 OYN-8 4-Nov-11 <b>74</b> 9300 OOH-3F	9600 OOF4-3	Ancho 9000 r other roo in the roo that the 55
9600 OYH-8 ? <b>20</b> 9600 OYH-9 ?	9500 OYJ-8 ? <b>27</b> 9500 OTD-2D ?	9200 OTD-16 5-Oct-11 <b>19</b> 9200 OTD-17 5-Oct-11	9100 OPY3-26 6-Oct-11 <b>26</b> 9100 OPY3-24 5-Oct-11 <b>18</b> 9100	9000 OPY2-18 6-Oct-11 <b>34</b> 9000 OPY2-9 5-Oct-11 <b>11</b> 9000	8900 OPY4-13 6-Oct-11 42 8900 0QW-5 6-Oct-11 6-Oct-11 25 8900	8800 OQX5-8 6-Oct-11 <b>33</b> 8800 OQX5-10 6-Oct-11 <b>17</b> 8900	8800 OQX5-18 7-Oct-11 41 8800 OQX5-7 7-Oct-11 24 8800	8800 OQX5-26 8-Oct-11 <b>49</b> 8800 OQX5-25 7-Oct-11 <b>32</b> 8800	8800 OQX5-6 8-Oct-11 40 8800 OQX5-2 7-Oct-11 23 8800	8900 OPY4-7 10-Oct-11 <b>48</b> 8900 OPY4-15 10-Oct-11 <b>31</b> 8900	8900 OPY4-8 10-Oct-11 57 8900 OPY4-11 10-Oct-11 39 8900	9000 OPY2-36 10-Oct-11 <b>66</b> 9000 OPY2-32 10-Oct-11	9100 OPY3-27 11-Oct-11 <b>56</b> 9100 OPY3-7 11-Oct-11	9300 OOH-2F 4-Nov-11 <b>65</b> 9300 OOH2-19 4-Nov-11	9300 OYN-8 4-Nov-11 <b>74</b> 9300 OOH-3F 4-Nov-11	9600 OOF4-3	Ancho 9000 r other roo in the ro that the
9600 OYH-8 ? 20 9600 OYH-9 ? 13 9600 OOF4-5	9500 OYJ-8 ? 27 9500 OTD-2D ? 7	9200 OTD-16 5-Oct-11 9200 OTD-17 5-Oct-11 5-Oct-11 9200 0TD-5	9100 OPY3-26 6-Oct-11 <b>26</b> 9100 OPY3-24 5-Oct-11 <b>18</b> 9100 OPY3-2	9000 OPY2-18 6-Oct-11 <b>34</b> 9000 OPY2-9 5-Oct-11 <b>11</b> 9000 OPY2-21	8900 OPY4-13 6-Oct-11 42 8900 OQW-5 6-Oct-11 6-Oct-11 25 8900 OPY4-4	8800 OQX5-8 6-Oct-11 <b>33</b> 8800 OQX5-10 6-Oct-11 6-Oct-11 <b>17</b> 8900 OPY4-12	8800 OQX5-18 7-Oct-11 41 8800 OQX5-7 7-Oct-11 24 8800 QQX5-20	8800 OQX5-26 8-Oct-11 49 8800 OQX5-25 7-Oct-11 32 8800 OQX5-9	8800 OQX5-6 8-Oct-11 40 8800 OQX5-2 7-Oct-11 23 8800 OQX5-1	8900 OPY4-7 10-Oct-11 <b>48</b> 8900 OPY4-15 <b>31</b> 8900 OPY4-14	8900 OPY4-8 10-Oct-11 <b>57</b> 8900 OPY4-11 10-Oct-11 <b>39</b> 8900 OPY4-18	9000 OPY2-36 10-Oct-11 9000 OPY2-32 10-Oct-11 47 9000 OPY2-34	9100 OPY3-27 11-Oct-11 56 9100 OPY3-7 11-Oct-11 38 9100 OPY3-19	9300 OOH-2F 4-Nov-11 <b>65</b> 9300 OOH2-19 4-Nov-11 <b>46</b>	9300 OYN-8 4-Nov-11 <b>74</b> 9300 OOH-3F 4-Nov-11	9600 OOF4-3	Ancho 9000 r other roo in the roo that the 55
9600 OYH-8 ? 20 9600 OYH-9 ? 13 9600	9500 OYJ-8 ? 27 9500 OTD-2D ? 7 9600	9200 0TD-16 5-Oct-11 9200 0TD-17 5-Oct-11 9200 0TD-5 5-Oct-11	9100 OPY3-26 6-Oct-11 <b>26</b> 9100 OPY3-24 5-Oct-11 <b>18</b> 9100 OPY3-2 5-Oct-11	9000 OPY2-18 6-Oct-11 <b>34</b> 9000 OPY2-9 5-Oct-11 9000 OPY2-21 5-Oct-11	8900 OPY4-13 6-Oct-11 42 8900 0QW-5 6-Oct-11 45 8900 0PY4-4 6-Oct-11	8800 OQX5-8 6-Oct-11 33 8800 OQX5-10 6-Oct-11 17 8900 OPY4-12 6-Oct-11	8800 OQX5-18 7-Oct-11 41 8800 OQX5-7 7-Oct-11 24 8800 OQX5-20 7-Oct-11	8800 OQX5-26 8-Oct-11 <b>49</b> 8800 OQX5-25 7-Oct-11 <b>32</b> 8800	8800 OQX5-6 8-Oct-11 40 8800 OQX5-2 7-Oct-11 23 8800 OQX5-1 7-Oct-11	8900 OPY4-7 10-Oct-11 <b>48</b> 8900 OPY4-15 <b>31</b> 8900 OPY4-14	8900 OPY4-8 10-Oct-11 <b>57</b> 8900 OPY4-11 10-Oct-11 8900 OPY4-18 10-Oct-11	9000 OPY2-36 10-Oct-11 9000 OPY2-32 10-Oct-11 9000 OPY2-34 10-Oct-11	9100 OPY3-27 11-Oct-11 56 9100 OPY3-7 11-Oct-11 38 9100 OPY3-19	9300 OOH-2F 4-Nov-11 <b>65</b> 9300 OOH2-19 4-Nov-11 <b>46</b> 9300	9300 OYN-8 4-Nov-11 9300 OOH-3F 4-Nov-11 55 9300	9600 OOF4-3	Ancho 9000 r other roo in the roo that the 55
9600 OYH-8 ? 20 9600 OYH-9 ? 13 9600 OOF4-5 ? 4	9500 OYJ-8 ? 27 9500 OTD-2D ? 7 9600 9600 00F4-8 5-Oct-11 <b>3</b>	9200 OTD-16 5-Oct-11 9200 OTD-17 5-Oct-11 9200 0TD-5 5-Oct-11 5-Oct-11	9100 OPY3-26 6-Oct-11 26 9100 OPY3-24 5-Oct-11 59100 0PY3-2 5-Oct-11 5-Oct-11	9000 OPY2-18 6-Oct-11 <b>34</b> 9000 OPY2-9 5-Oct-11 9000 OPY2-21 5-Oct-11 5-Oct-11	8900 OPY4-13 6-Oct-11 42 8900 0QW-5 6-Oct-11 43 8900 0PY4-4 6-Oct-11 5	8800 OQX5-8 6-Oct-11 <b>33</b> 8800 OQX5-10 6-Oct-11 <b>17</b> 8900 OPY4-12 6-Oct-11 6-Oct-11	8800 OQX5-18 7-Oct-11 41 8800 OQX5-7 7-Oct-11 48800 0QX5-20 7-Oct-11 9	8800 OQX5-26 8-Oct-11 49 8800 OQX5-25 7-Oct-11 32 8800 OQX5-9 7-Oct-11 1	8800 OQX5-6 8-Oct-11 40 8800 OQX5-2 7-Oct-11 23 8800 OQX5-1 7-Oct-11 7-Oct-11	8900 OPY4-7 10-Oct-11 48 8900 OPY4-15 10-Oct-11 8900 0PY4-14 10-Oct-11 10-Oct-11	8900 OPY4-8 10-Oct-11 <b>57</b> 8900 OPY4-11 10-Oct-11 8900 0PY4-18 10-Oct-11 10-Oct-11	9000 OPY2-36 10-Oct-11 9000 OPY2-32 10-Oct-11 9000 0PY2-34 10-Oct-11 10-Oct-11	9100 OPY3-27 11-Oct-11 56 9100 OPY3-7 11-Oct-11 38 9100 OPY3-19 11-Oct-11 30	9300 OOH-2F 4-Nov-11 <b>65</b> 9300 OOH2-19 4-Nov-11 <b>46</b> 9300 OYN-10 4-Nov-11 <b>21</b>	9300 OYN-8 4-Nov-11 9300 OOH-3F 4-Nov-11 9300 OYN-9 4-Nov-11 29	9600 OOF4-3	Ancho 9000 r other roo in the roo that the 9300
9600 OYH-8 ? 20 9600 OYH-9 ? 13 9600 OOF4-5 ? 4 9500	9500 OYJ-8 ? 27 9500 OTD-2D ? 7 9600 00F4-8 5-Oct-11 5-Oct-11	9200 OTD-16 5-Oct-11 9200 OTD-17 5-Oct-11 9200 0TD-5 5-Oct-11 6 9200	9100 OPY3-26 6-Oct-11 <b>26</b> 9100 OPY3-24 5-Oct-11 <b>18</b> 9100 OPY3-2 5-Oct-11 5-Oct-11	9000 OPY2-18 6-Oct-11 <b>34</b> 9000 OPY2-9 5-Oct-11 9000 OPY2-21 5-Oct-11 5-Oct-11 <b>10</b> 9000	8900 OPY4-13 6-Oct-11 42 8900 0QW-5 6-Oct-11 45 8900 0PY4-4 6-Oct-11	8800 OQX5-8 6-Oct-11 33 8800 OQX5-10 6-Oct-11 6-Oct-11 8900 OPY4-12 6-Oct-11 16 8900	8800 OQX5-18 7-Oct-11 41 8800 OQX5-7 7-Oct-11 24 8800 OQX5-20 7-Oct-11 9 8800	8800 OQX5-26 8-Oct-11 49 8800 OQX5-25 7-Oct-11 32 8800 OQX5-9 7-Oct-11 1 8800	8800 OQX5-6 8-Oct-11 40 8800 OQX5-2 7-Oct-11 23 8800 OQX5-1 7-Oct-11 7-Oct-11 58800	8900 OPY4-7 10-Oct-11 8900 OPY4-15 10-Oct-11 8900 0PY4-14 10-Oct-11 10-Oct-11 8900	8900 OPY4-8 10-Oct-11 <b>57</b> 8900 OPY4-11 <b>10-Oct-11</b> <b>39</b> 0PY4-18 10-Oct-11 <b>22</b> 8900	9000 OPY2-36 10-Oct-11 9000 OPY2-32 10-Oct-11 9000 0PY2-34 10-Oct-11 10-Oct-11 10-Oct-11	9100 OPY3-27 11-Oct-11 <b>56</b> 9100 OPY3-7 11-Oct-11 <b>38</b> 9100 0PY3-19 11-Oct-11 <b>30</b> 9100	9300 OOH-2F 4-Nov-11 65 9300 OOH2-19 4-Nov-11 4-Nov-11 4-Nov-11 4-Nov-11 21 9300	9300 OYN-8 4-Nov-11 9300 OOH-3F 4-Nov-11 9300 OYN-9 4-Nov-11 29 9300	9600 OOF4-3	Ancho 9000 r other roo in the roo that the 9300
9600 OYH-8 ? 20 9600 OYH-9 ? 13 9600 OOF4-5 ? 4	9500 OYJ-8 ? 27 9500 OTD-2D ? 7 9600 00F4-8 5-Oct-11 5-Oct-11	9200 OTD-16 5-Oct-11 9200 OTD-17 5-Oct-11 9200 0TD-5 5-Oct-11 5-Oct-11	9100 OPY3-26 6-Oct-11 26 9100 OPY3-24 5-Oct-11 59100 0PY3-2 5-Oct-11 5-Oct-11	9000 OPY2-18 6-Oct-11 <b>34</b> 9000 OPY2-9 5-Oct-11 9000 OPY2-21 5-Oct-11 5-Oct-11	8900 OPY4-13 6-Oct-11 42 8900 0QW-5 6-Oct-11 43 8900 0PY4-4 6-Oct-11 5	8800 OQX5-8 6-Oct-11 <b>33</b> 8800 OQX5-10 6-Oct-11 <b>17</b> 8900 OPY4-12 6-Oct-11 <b>16</b>	8800 OQX5-18 7-Oct-11 41 8800 OQX5-7 7-Oct-11 48800 0QX5-20 7-Oct-11 9	8800 OQX5-26 8-Oct-11 49 8800 OQX5-25 7-Oct-11 32 8800 OQX5-9 7-Oct-11 1	8800 OQX5-6 8-Oct-11 40 8800 OQX5-2 7-Oct-11 23 8800 OQX5-1 7-Oct-11 7-Oct-11	8900 OPY4-7 10-Oct-11 8900 OPY4-15 10-Oct-11 8900 0PY4-14 10-Oct-11 8900 0PY4-2	8900 OPY4-8 10-Oct-11 <b>57</b> 8900 OPY4-11 <b>10-Oct-11</b> <b>39</b> 0PY4-18 10-Oct-11 <b>22</b> 8900 OPY4-6	9000 OPY2-36 10-Oct-11 9000 OPY2-32 10-Oct-11 9000 0PY2-34 10-Oct-11 9000 10-Oct-11 10-Oct-11	9100 OPY3-27 11-Oct-11 <b>56</b> 9100 OPY3-7 11-Oct-11 <b>38</b> 9100 OPY3-19 11-Oct-11 <b>30</b> 9100 0PY3-21	9300 OOH-2F 4-Nov-11 <b>65</b> 9300 OOH2-19 4-Nov-11 <b>46</b> 9300 OYN-10 4-Nov-11 <b>21</b>	9300 OYN-8 4-Nov-111 <b>74</b> 9300 OOH-3F 4-Nov-11 9300 OYN-9 4-Nov-11 <b>29</b> 9300 OOH2-6	9600 OOF4-3	Ancho 9000 r other roo in the roo that the 9300

PWS Anchor Rods for Lift 14E, E-Line norage, for Strands #5 and #113 are both ) mm rods. One rod is OPY2-30 and the rod is OPY2-31. The galvanizing has filled rod ID punch marks enough on those two e ID could not be conclusively determined.



1 2 3 4 5 6	1 2	00F2-1	(mm)		Date - Orange	Date - Blue	Date
3 4 5			9400	1	-	30-Aug-11	6-Sep-11
4 5		00F3-4	9500	1	-	30-Aug-11	6-Sep-11
4 5	3	00F4-3	9600	1	-	30-Aug-11	6-Sep-11
5	4	OOF4-8	9600	1	-	30-Aug-11	6-Sep-11
	5	00F4-9	9600	1	-	30-Aug-11	6-Sep-11
0	6	00F5-1	9700	1	-	30-Aug-11	6-Sep-11
7	7	00F5-2	9700	1	-	30-Aug-11	6-Sep-11
8	8	OOF5-4	9700	1	-	30-Aug-11	6-Sep-11
9	9	OOH2-22	9300	1	-	30-Aug-11	6-Sep-11
10	10	OOH2-6	9300	1	-	30-Aug-11	6-Sep-11
11	11	OPY2-10	9000	1	-	30-Aug-11	6-Sep-11
12	12	OPY2-18	9000	1	-	30-Aug-11	6-Sep-11
13	13	OPY2-20	9000	1	-	30-Aug-11	6-Sep-11
14	14	OPY2-21	9000	1	-	30-Aug-11	6-Sep-11
15	15	OPY2-22	9000	1	-	30-Aug-11	6-Sep-11
16	16	OPY2-23	9000	1	-	30-Aug-11	6-Sep-11
17	17	OPY2-24	9000	1	_	30-Aug-11	6-Sep-11
18	18	OPY2-25	9000	1	-	30-Aug-11	6-Sep-11
19	19	OPY2-26	9000	1	_	30-Aug-11	6-Sep-11
20	20	OPY2-4	9000	1	_	30-Aug-11	6-Sep-11
21	21	OPY2-9	9000	1	-	30-Aug-11	6-Sep-11
22	22	OPY3-1	9100	1	-	30-Aug-11	6-Sep-11
23	23	OPY3-2	9100	1	_	30-Aug-11	6-Sep-11
24	24	OPY3-6	9100	1	-	30-Aug-11	6-Sep-11
25	25	OPY3-7	9100	1	_	30-Aug-11	6-Sep-11
26	26	OPY3-9	9100	1	-	30-Aug-11	6-Sep-11
27	20	OPY4-1	8900	1	-	30-Aug-11	6-Sep-11
28	28	OPY4-10	8900	1	-	30-Aug-11	6-Sep-11
29	29	OPY4-11	8900	1	_	30-Aug-11	6-Sep-11
30	30	OPY4-12	8900	1	-	30-Aug-11	6-Sep-11
31		OPY4-13	8900	1	-	30-Aug-11	6-Sep-11
32	32	OPY4-2	8900	1	-	30-Aug-11	6-Sep-11
33	33	OPY4-4	8900	1	-	30-Aug-11	6-Sep-11
34	33	OPY4-6	8900	1	-	30-Aug-11	6-Sep-11
35	35	OPY4-7	8900	1	-	30-Aug-11	6-Sep-11
36	36	OPY4-8	8900	1	-	30-Aug-11	6-Sep-11
37	37	OPY4-9	8900	1	-	30-Aug-11	6-Sep-11
38	38	00W-3	8900	1	30-Aug-11	-	6-Sep-11
39	39	OQW-5	8900	1	30-Aug-11	-	6-Sep-11
40	40	OTD-16	9200	1	-	30-Aug-11	6-Sep-11
40	40	OTD-10	9200	1	-	30-Aug-11	6-Sep-11
42	42	OTD-18	9200	1	-	30-Aug-11	6-Sep-11
43	43	OTD-4	9200	1	-	30-Aug-11	6-Sep-11
44	44	OTD 4 OTD-5	9200	1	-	30-Aug-11	6-Sep-11
45	1	OPY2-27	9000	2	_	30-Aug-11	2-Sep-11
46	2	OPY2-28	9000	2	_	30-Aug-11	2-Sep-11 2-Sep-11
40	3	OPY2-29	9000	2	-	30-Aug-11	2-Sep-11 2-Sep-11
47	4	OPY2-30	9000	2	-	30-Aug-11	2-Sep-11 2-Sep-11
48	5	OPY2-30	9000	2	_	30-Aug-11	2-Sep-11 2-Sep-11

Total No.	No. by Load	Rod ID No.	Rod length (mm)	Load No.	Tag Release Date - Orange	Tag Release Date - Blue	Jobsite Arrival Date
50	6	OPY2-32	9000	2	-	30-Aug-11	2-Sep-11
51	7	OPY2-33	9000	2	-	30-Aug-11	2-Sep-11
52	8	OPY2-34	9000	2	-	30-Aug-11	2-Sep-11
53	9	OPY2-35	9000	2	-	30-Aug-11	2-Sep-11
54	10	OPY2-36	9000	2	-	30-Aug-11	2-Sep-11
55	11	OPY2-37	9000	2	-	30-Aug-11	2-Sep-11
56	12	OPY2-38	9000	2	-	30-Aug-11	2-Sep-11
57	13	OPY2-39	9000	2	-	30-Aug-11	2-Sep-11
58	14	OPY3-16	9100	2	-	30-Aug-11	2-Sep-11
59	15	OPY3-18	9100	2	-	30-Aug-11	2-Sep-11
60	16	OPY3-19	9100	2	-	30-Aug-11	2-Sep-11
61	17	OPY3-20	9100	2	-	30-Aug-11	2-Sep-11
62	18	OPY3-21	9100	2	-	30-Aug-11	2-Sep-11
63	19	OPY3-22	9100	2	-	30-Aug-11	2-Sep-11
64	20	OPY3-23	9100	2	-	30-Aug-11	2-Sep-11
65	21	OPY3-24	9100	2	-	30-Aug-11	2-Sep-11
66	22	OPY3-25	9100	2	-	30-Aug-11	2-Sep-11
67	23	OPY3-26	9100	2	-	30-Aug-11	2-Sep-11
68	24	OPY3-27	9100	2	-	30-Aug-11	2-Sep-11
69	25	OPY4-14	8900	2	_	30-Aug-11	2-Sep-11
70	26	OPY4-15	8900	2	-	30-Aug-11	2-Sep-11
71	27	OPY4-16	8900	2	_	30-Aug-11	2-Sep-11
72	28	OPY4-17	8900	2	-	30-Aug-11	2-Sep-11
73	29	OPY4-18	8900	2	-	30-Aug-11	2-Sep-11
74	30	OQX4-10	8700	2	30-Aug-11	-	2-Sep-11
75	31	OQX4-11	8700	2	30-Aug-11	-	2-Sep-11
76	32	OQX4-12	8700	2	30-Aug-11	-	2-Sep-11
77	33	OQX4-13	8700	2	30-Aug-11	-	2-Sep-11
78	34	OQX4-5	8700	2	30-Aug-11	-	2-Sep-11
79	35	OQX4-6	8700	2	30-Aug-11	-	2-Sep-11
80	36	OQX4-7	8700	2	30-Aug-11	-	2-Sep-11
81	37	OQX4-9	8700	2	30-Aug-11	_	2-Sep-11
82	38	OQX5-1	8800	2	30-Aug-11	-	2-Sep-11
83	39	OQX5-10	8800	2	30-Aug-11	_	2-Sep-11
84	40	OQX5-11	8800	2	30-Aug-11	-	2-Sep-11
85	41	OQX5-2	8800	2	30-Aug-11	-	2-Sep-11
86	42	OQX5-3	8800	2	30-Aug-11	_	2-Sep-11
87	43	OQX5-4	8800	2	30-Aug-11	-	2-Sep-11
88	44	0QX5-5	8800	2	30-Aug-11	-	2-Sep-11 2-Sep-11
89	45	OQX5-6	8800	2	30-Aug-11	-	2-Sep-11
90	46	0QX5-7	8800	2	30-Aug-11	-	2-Sep-11 2-Sep-11
91	47	OQX5-8	8800	2	30-Aug-11	-	2-Sep-11
92	47	OQX5-9	8800	2	30-Aug-11	-	2-Sep-11 2-Sep-11
93	<b>48</b> 1	OQX3-11	8600	3	31-Aug-11	-	6-Sep-11
94	2	OQX3-11 OQX3-13	8600	3	31-Aug-11		6-Sep-11
95	3	OQX3-15	8600	3	31-Aug-11	-	6-Sep-11
96	4	OQX3-10 OQX3-2	8600	3	31-Aug-11 31-Aug-11	-	6-Sep-11
97	5	OQX3-2 OQX3-5	8600	3	31-Aug-11	-	6-Sep-11
98	6	OQX3-3 OQX3-7	8600	3	31-Aug-11 31-Aug-11	-	6-Sep-11
50	U	00/3-7	8000	5	JI-AUG-II	-	D-Sep-11 Page 2

Total No.	No. by Load	Rod ID No.	Rod length (mm)	Load No.	Tag Release Date - Orange	Tag Release Date - Blue	Jobsite Arrival Date
99	7	OQX3-8	8600	3	31-Aug-11	-	6-Sep-11
100	8	OQX4-17	8700	3	31-Aug-11	-	6-Sep-11
101	9	OQX4-18	8700	3	31-Aug-11	-	6-Sep-11
102	10	OQX4-20	8700	3	31-Aug-11	-	6-Sep-11
103	11	OQX4-21	8700	3	31-Aug-11	-	6-Sep-11
104	12	OQX4-22	8700	3	31-Aug-11	-	6-Sep-11
105	13	OQX4-23	8700	3	31-Aug-11	-	6-Sep-11
106	14	OQX4-24	8700	3	31-Aug-11	-	6-Sep-11
107	15	OQX5-12	8800	3	31-Aug-11	-	6-Sep-11
108	16	OQX5-13	8800	3	31-Aug-11	-	6-Sep-11
109	17	OQX5-14	8800	3	31-Aug-11	-	6-Sep-11
110	18	OQX5-15	8800	3	31-Aug-11	-	6-Sep-11
111	19	OQX5-16	8800	3	31-Aug-11	-	6-Sep-11
112	20	OQX5-17	8800	3	31-Aug-11	-	6-Sep-11
113	21	OQX5-18	8800	3	31-Aug-11	-	6-Sep-11
114	22	OQX5-19	8800	3	31-Aug-11	-	6-Sep-11
115	23	OQX5-20	8800	3	31-Aug-11	-	6-Sep-11
116	24	OQX5-21	8800	3	31-Aug-11	-	6-Sep-11
117	25	OQX5-22	8800	3	31-Aug-11	-	6-Sep-11
118	26	OQX5-23	8800	3	31-Aug-11	-	6-Sep-11
119	27	OQX5-24	8800	3	31-Aug-11	-	6-Sep-11
120	28	OQX5-25	8800	3	31-Aug-11	-	6-Sep-11
120	29	OQX5-26	8800	3	31-Aug-11	_	6-Sep-11
121	30	OQX5-20	8800	3	31-Aug-11		6-Sep-11
122	31	OQX5-28	8800	3	31-Aug-11	-	6-Sep-11
123	32	OQX5-29	8800	3	31-Aug-11	_	6-Sep-11
124	33	OQX5-29	8800	3	31-Aug-11		6-Sep-11
125	33	0QXJ-30 0QY-1	8700	3	31-Aug-11	-	6-Sep-11
120	35	OQY-10A	8600	3	31-Aug-11	-	6-Sep-11
127	35	OQY-12A	8600	3	31-Aug-11	-	6-Sep-11
128	30	0QY-12A	8700	3	31-Aug-11		6-Sep-11
		OQY-14 OQY-14A	8600	3	-	-	-
130 131	38 39	0Q1-14A 0QY-15	8700	3	31-Aug-11	-	6-Sep-11 6-Sep-11
131	40	OQY-15A	8700	3	31-Aug-11 31-Aug-11	-	6-Sep-11
132	40	OQY-16	8700	3	31-Aug-11	-	
				3	-	-	6-Sep-11
134	42	OQY-17A	8600	3	31-Aug-11	-	6-Sep-11
135	43	OQY-19	8700		31-Aug-11	-	6-Sep-11
136	44	OQY-1A	8600	3	31-Aug-11	-	6-Sep-11
137	45	OQY-2	8700	3	31-Aug-11	-	6-Sep-11
138	46	OQY-3	8700	3	31-Aug-11	-	6-Sep-11
139	47	OQY-3A	8600	3	31-Aug-11	-	6-Sep-11
140	48	OQY-4	8700	3	31-Aug-11	-	6-Sep-11
141	49	OQY-4A	8600	3	31-Aug-11	-	6-Sep-11
142	50	OQY-6A	8600	3	31-Aug-11	-	6-Sep-11
143	51	OQY-9A	8600	3	31-Aug-11	-	6-Sep-11
144	1	00F2-2	9400	5	-	20-Oct-11	24-Oct-11
145	2	00F3-8	9500	5	20-Oct-11	-	24-Oct-11
146	3	00F4-2	9600	5	-	20-Oct-11	24-Oct-11
147	4	OOF4-4	8500	5	-	20-Oct-11	24-Oct-11 Page 2

Total No.	No. by Load	Rod ID No.	Rod length (mm)	Load No.	Tag Release Date - Orange	Tag Release Date - Blue	Jobsite Arrival Date
148	5	00F4-5	9600	5	20-Oct-11	_	24-Oct-11
149	6	OOH2-10	9300	5	20-Oct-11	_	24-Oct-11
150	7	OOH2-16	8500	5	20-Oct-11	-	24-Oct-11
151	8	OOH2-17	9300	5	20-Oct-11	-	24-Oct-11
152	9	OOH2-19	9300	5	-	20-Oct-11	24-Oct-11
153	10	OOH2-24	9300	5	-	20-Oct-11	24-Oct-11
154	11	OOH2-4	8500	5	20-Oct-11	-	24-Oct-11
155	12	OOH2-7	9300	5	-	20-Oct-11	24-Oct-11
156	13	OOH2-8	9300	5	-	20-Oct-11	24-Oct-11
157	14	OPY2-15	8500	5	20-Oct-11	-	24-Oct-11
158	15	OPY2-2	8500	5	-	20-Oct-11	24-Oct-11
159	16	OPY2-6	8500	5	-	20-Oct-11	24-Oct-11
160	17	OPY2-7	8500	5	-	20-Oct-11	24-Oct-11
161	18	OTD-12	9200	5	-	20-Oct-11	24-Oct-11
162	19	OTD-13	8500	5	-	20-Oct-11	24-Oct-11
163	20	R1001-OPY	8900	5	20-Oct-11	-	24-Oct-11
164	21	R1002-OTD	9300	5	20-Oct-11	-	24-Oct-11
165	22	R1005-OQW	8900	5	20-Oct-11	_	24-Oct-11
166	23	R1006-OTD	9500	5	20-Oct-11	-	24-Oct-11
167	24	R1007-00H	8900	5	20-Oct-11	_	24-Oct-11
168	25	R1008-OQX	8900	5	20-Oct-11	-	24-Oct-11
169	26	R1010-OTD	8900	5	20-Oct-11	-	24-Oct-11
170	1	OYG-3	8500	6	-	21-Oct-11	26-Oct-11
170	2	OYG-4	8900	6	-	21-Oct-11	26-Oct-11
172	3	OYG-5	9400	6	-	21-Oct-11	26-Oct-11
172	4	OYH-1	9200	6	-	21-Oct-11	26-Oct-11
174	5	OYH-2	8900	6	-	21-Oct-11	26-Oct-11
175	6	OYH-3	9200	6	-	21-Oct-11	26-Oct-11
176	7	ОҮН-6	8600	6	-	21-Oct-11	26-Oct-11
177	8	OYI-2	8500	6	-	21-Oct-11	26-Oct-11
178	9	OYJ-10	9300	6	-	21-Oct-11	26-Oct-11
179	10	OYJ-5	9200	6	-	21-Oct-11	26-Oct-11
180	11	OYJ-7	9300	6	-	21-Oct-11	26-Oct-11
181	12	OYL-7	8900	6	-	21-Oct-11	26-Oct-11
182	13	OYL-8	8700	6	-	21-Oct-11	26-Oct-11
183	14	OYM-1	9200	6	_	21-Oct-11	26-Oct-11
184	15	OYM-10	9300	6	-	21-Oct-11	26-Oct-11
185	16	OYM-2	8500	6	-	21-Oct-11	26-Oct-11
186	10	OYM-3	8900	6	-	21-Oct-11	26-Oct-11
180	18	OYM-4	9400	6	_	21-Oct-11	26-Oct-11
188	10	OYM-6	8900	6	-	21-Oct-11	26-Oct-11
189	20	OYM-7	9300	6	_	21-Oct-11	26-Oct-11
190	20	OYN-1	8700	6	-	21-Oct-11	26-Oct-11
190	22	OYN-10	9300	6	-	21-Oct-11	26-Oct-11
191	23	OYN-2	8900	6	-	21-Oct-11	26-Oct-11
192	24	OYO-3	9200	6	-	21-Oct-11	26-Oct-11
193	24	OYP-3	9300	6	-	21-Oct-11	26-Oct-11
194	23	OYP-5	9200	6	_	21-Oct-11	26-Oct-11
195	1	OOH-2F	9300	7	-	25-Oct-11	28-Oct-11

Total No.	No. by Load	Rod ID No.	Rod length (mm)	Load No.	Tag Release Date - Orange	Tag Release Date - Blue	Jobsite Arrival Date
197	2	OOH-3F	9300	7	-	25-Oct-11	28-Oct-11
198	3	OPY4-19	8900	7	-	25-Oct-11	28-Oct-11
199	4	OPY4-20	8900	7	-	25-Oct-11	28-Oct-11
200	5	OPY4-21	8900	7	-	25-Oct-11	28-Oct-11
201	6	OPY4-22	8900	7	-	25-Oct-11	28-Oct-11
202	7	OQX4-30	8700	7	-	25-Oct-11	28-Oct-11
203	8	OQY-19C	8500	7	-	25-Oct-11	28-Oct-11
204	9	OQY-20C	8500	7	-	25-Oct-11	28-Oct-11
205	10	OQY-21C	8500	7	-	25-Oct-11	28-Oct-11
206	11	OQY-22C	8500	7	-	25-Oct-11	28-Oct-11
207	12	OQY-23B	8900	7	-	25-Oct-11	28-Oct-11
208	13	OQY-25	8700	7	-	25-Oct-11	28-Oct-11
209	14	OQY-26	8700	7	-	25-Oct-11	28-Oct-11
210	15	OQY-3C	8500	7	-	25-Oct-11	28-Oct-11
211	16	OTD-1H	9200	7	-	25-Oct-11	28-Oct-11
212	17	OYH-7	9500	7	-	25-Oct-11	28-Oct-11
213	18	OYH-9	9600	7	_	25-Oct-11	28-Oct-11
214	19	OYI-3	8900	7	-	25-Oct-11	28-Oct-11
215	20	OYI-4	9400	7	-	25-Oct-11	28-Oct-11
216	21	OYJ-11	9600	7	-	25-Oct-11	28-Oct-11
217	22	OYJ-4	8900	7	-	25-Oct-11	28-Oct-11
218	23	OYJ-6	9200	7	-	25-Oct-11	28-Oct-11
219	24	OYJ-9	9300	7	-	25-Oct-11	28-Oct-11
220	25	OYM-8	9700	7	-	25-Oct-11	28-Oct-11
220	26	OYM-9	9500	7	-	25-Oct-11	28-Oct-11
222	1	OOH-1E	9300	8	-	27-Oct-11	31-Oct-11
223	2	OOH-4F	9200	8	-	27-Oct-11	31-Oct-11
224	3	OPY4-24	8900	8	-	27-Oct-11	31-Oct-11
225	4	OQY-13C	8500	8	-	27-Oct-11	31-Oct-11
226	5	OQY-14C	8500	8	-	27-Oct-11	31-Oct-11
227	6	OQY-15C	8500	8	-	27-Oct-11	31-Oct-11
228	7	OQY-18C	8500	8	_	27-Oct-11	31-Oct-11
229	8	OQY-23C	8500	8	-	27-Oct-11	31-Oct-11
230	9	OQY-27	8500	8	-	27-Oct-11	31-Oct-11
231	10	OQY-28	8700	8	_	27-Oct-11	31-Oct-11
232	11	OQY-29	8700	8	-	27-Oct-11	31-Oct-11
232	12	OQY-31	8700	8	-	27-Oct-11	31-Oct-11
234	13	OQY-32	8500	8	-	27-Oct-11	31-Oct-11
235	14	OTD-1D	9500	8	-	27-Oct-11	31-Oct-11
236	15	OTD-23D	9500	8	-	27-Oct-11	31-Oct-11
230	16	OTD-2D	9500	8	-	27-Oct-11	31-Oct-11
238	10	OTD-2E	9400	8	-	27-Oct-11	31-Oct-11
239	18	OYL-5	8900	8	-	27-Oct-11	31-Oct-11
240	10	OYL-6	8900	8	-	27-Oct-11	31-Oct-11
240	20	OYL-9	8900	8	_	27-Oct-11	31-Oct-11
241	20	OYN-10	9300	8	-	27-Oct-11	31-Oct-11
242	22	OYN-11	9200	8	-	27-Oct-11	31-Oct-11
243	22	OYN-3	8900	8	_	27-Oct-11	31-Oct-11
					_		
245	24	OYN-4	8900	8	-	27-Oct-11	31-Oct-11 Page

		Rod ID No.	Rod length	Load No.	Tag Release	Tag Release	Jobsite Arrival
Total No.	No. by Load	Nou ib No.	(mm)	LUAU NO.	Date - Orange	Date - Blue	Date
246	25	OYN-5	8900	8	-	27-Oct-11	31-Oct-11
247	26	OYO-4	9200	8	-	27-Oct-11	31-Oct-11
248	27	OYO-6	9300	8	-	27-Oct-11	31-Oct-11
249	1	00F2-4	8500	9	28-Oct-11	-	1-Nov-11
250	2	OOH2-2	8500	9	-	28-Oct-11	1-Nov-11
251	3	OOH2-20	8500	9	-	28-Oct-11	1-Nov-11
252	4	OOH2-23	8500	9	28-Oct-11	-	1-Nov-11
253	5	OPY3-8	8500	9	28-Oct-11	-	1-Nov-11
254	6	OYG-1	8900	9	28-Oct-11	-	1-Nov-11
255	7	OYG-2	8500	9	28-Oct-11	-	1-Nov-11
256	8	OYH-8	9600	9	28-Oct-11	-	1-Nov-11
257	9	OYI-5	9600	9	28-Oct-11	-	1-Nov-11
258	10	OYJ-8	9500	9	28-Oct-11	-	1-Nov-11
259	11	OYK-4	8900	9	28-Oct-11	-	1-Nov-11
260	12	OYK-5	9000	9	28-Oct-11	-	1-Nov-11
261	13	OYL-4	9000	9	28-Oct-11	-	1-Nov-11
262	14	OYM-5	9400	9	28-Oct-11	-	1-Nov-11
263	15	OYN-6	8900	9	28-Oct-11	-	1-Nov-11
264	16	OYN-7	8900	9	28-Oct-11	-	1-Nov-11
265	17	OYN-8	9300	9	28-Oct-11	-	1-Nov-11
266	18	OYN-9	9300	9	28-Oct-11	-	1-Nov-11
267	19	OYO-5	9200	9	28-Oct-11	-	1-Nov-11
268	20	OYO-7	9300	9	28-Oct-11	-	1-Nov-11
269	21	OYO-8	8900	9	28-Oct-11	-	1-Nov-11
270	22	OYO-9	9200	9	28-Oct-11	-	1-Nov-11
271	23	OYP-4	9300	9	28-Oct-11	-	1-Nov-11
272	24	R1011-OTD	9200	9	28-Oct-11	-	1-Nov-11
273	1	OYL-3	8500	10	11-Nov-11	-	22-Nov-11
<u>274</u>	2	OYP-2	8500	10	11-Nov-11	-	22-Nov-11

DEPARTMENT O DIVISION OF ENGINE Office of Structural Mater Quality Assurance and S	EERING SEI	RVICES	Cont		
Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493			Cont Cty: <u>SF/ALA</u> Rte: <u>80</u> File #:	ract #: <u>04-0120F4</u> 0 PM: <u>13.2/13.9</u> <u>76.15</u>	
		SOURCE INSPECTIO	N REPORT		
	r:Siegentha 333 Burn Oakland,	na Road	Report Date In	<b>No:</b> SIR-003468 spected: 14-Jul-2011	
Project Name: Prime Contractor: Contractor:	Americar	erstructure a Bridge/Fluor Enterprises, a JV orp. & Subs		I Arrival Time:800parture Time:1630Location:Painesville, OH	
Quality Control Co Material transfer: Stock Transfer: Rebar Test Witnes Other: Bridge No:		Linda Welsh          Yes       No       N/A         Yes       No       N/A         Yes       No       N/A         Yes       No       N/A         Yes       No       N/A	Quality Control Prese Sampled Items: OK to Cut: Delayed/Cancelled:	□ Yes □ No ☑ N/A □ Yes □ No ☑ N/A □ Yes □ No ☑ N/A	
Bid Item:	66		Component: Main Cable Anchor Rods Lot No:		

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Linda Welsh who accompanied this QAI to the location where main cable anchor rod machining activities were in-process.

This QAI randomly observed QC personnel perform External and Internal Go Gauge and No-Go gauge inspection of the anchor rods for 3.5" diameter, A354 grade BD, Q&T main cable anchor rods heat #3M75738, lot #OPY. Rods that are being inspected have not been given individual ID numbers at this time. Rods that have been found to be deficient have been set aside for rework. Pitch Micrometer mapping of these rods still need to be performed.

Work is in progress on 3.5" diameter, A354 grade BD, Q&T main cable anchor rods heat #3M75738, lot #OPY within the roll threading shop at this time. Rods that have been previously deemed deficient by means of Pitch Micrometer, Go and No-Go gauging inspections are also being reworked at this time. (See attached photos)

( Continued Page 2 of 2 )





### **Summary of Conversations:**

Other basic communication was performed between this QAI and the QCM during this visit.

#### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Broening, Dustyn	Quality Assurance Inspector
<b>Reviewed By:</b>	Edmondson, Fred	QA Reviewer

DEPARTMENT O DIVISION OF ENGINE Office of Structural Mater Quality Assurance and S	EERING SERVIO		NC		Country of th	#: <u>04-0120F4</u>	
Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493				Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>			
	S	SOUR	CE INSPECTIO	N REPORT			
	r:Siegenthaler, 333 Burma F Oakland, CA	Road			Report No: Date Inspect	SIR-003481 ted: 15-Jul-2011	
Project Name: Prime Contractor: Contractor:	SAS Superst American Br Dyson Corp.	ridge/Flu	-	0	SM Departu	ival Time: 800 are Time: 1630 ocation: Painesville, OH	
Quality Control Co Material transfer: Stock Transfer: Rebar Test Witnes Other: Bridge No:	s:	Linda We ☐ Yes ☐ Yes ] Yes	elsh No Z N/A No Z N/A No Z N/A	Quality Contro Sampled Items OK to Cut: Delayed/Cancel	: lled:	<ul> <li>✓ Yes □ No</li> <li>□ Yes □ No Ø N/A</li> </ul>	
Bid Item:	<b>ridge No:</b> 34-0006 <b>id Item:</b> 66			Component: Main Cable Anchor Rods Lot No:			

#### **Summary of Items Observed:**

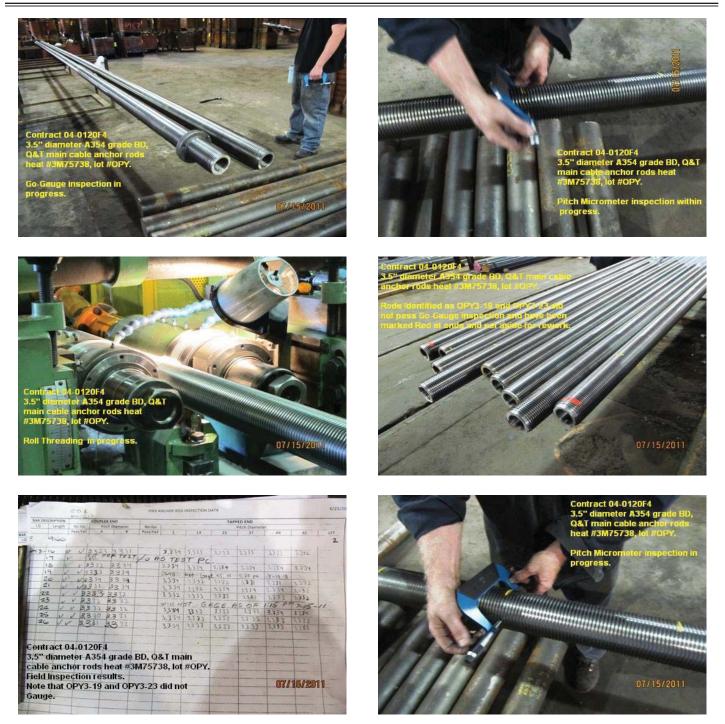
On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Linda Welsh who accompanied this QAI to the location where main cable anchor rod machining activities were in-process.

This QAI randomly observed QC personnel perform Pitch Micrometer, External and Internal Go Gauge and No-Go gauge inspection of the anchor rods for 3.5" diameter, A354 grade BD, Q&T main cable anchor rods heat #3M75738, lot #OPY. Rods identified as OPY3-26, OPY3-22, OPY3-16, OPY3-17, OPY3-18, OPY3-20, OPY3-21, OPY3-24 and OPY3-25 have been found to be acceptable by QC personnel. Rods identified as OPY3-19 and OPY3-23 have been found to be deficient have been set aside for rework.

Work is in progress on 3.5" diameter, A354 grade BD, Q&T main cable anchor rods heat #3M75738, lot #OPY and heat #4M76367, lot #OQX within the roll threading shop at this time. Rods that have been previously deemed deficient by means of Pitch Micrometer, Go and No-Go gauging inspections are also being reworked at this time. (See attached photos)

( Continued Page 2 of 3 )



### **Summary of Conversations:**

Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

(Continued Page 3 of 3)

Inspected By: Broening, Dustyn

Quality Assurance Inspector

**Reviewed By:** Edmondson,Fred

QA Reviewer

DEPARTMENT O DIVISION OF ENGINI Office of Structural Mate Quality Assurance and S Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133	EERING SER' rials	VICES	ON	Cty: <u>SF/ALA</u>	Rte: <u>80</u> PN	
(707) 649-5453 (707) 649-5493					File #: <u>/(</u>	5.15
		SOUR	CE INSPECTIO	N REPORT		
<b>Resident Enginee</b>	•				Report No:	SIR-003483
Address	: 333 Burma	a Road			Date Inspec	ted: 21-Jul-2011
City	Oakland, C	CA 94607				
Project Name:	SAS Super	rstructure			OSM Arr	ival Time: 800
<b>Prime Contractor:</b>	American	Bridge/Fl	uor Enterprises, a JV	0	SM Departı	ure Time: 1630
Contractor:	Dyson Cor	rp. & Sub	8		L	ocation: Painesville, OH
Quality Control Co	ontact:	Russ We	elsh	Quality Contro	ol Present:	🗹 Yes 🗌 No
Material transfer:		<b>Yes</b>	🗆 No 🗹 N/A	Sampled Items	•	🗹 Yes 🗆 No 🗆 N/A
Stock Transfer:		<b>Yes</b>	🗆 No 🗹 N/A	OK to Cut:		🗆 Yes 🗆 No 🗹 N/A
<b>Rebar Test Witnes</b>	s:	<b>Yes</b>	🗆 No 🗹 N/A	Delayed/Cance	elled:	🗆 Yes 🗆 No 🗹 N/A
Other:				-		
Bridge No:	34-0006			<b>Component:</b>	Main Cabl	e Anchor Rods
Bid Item:	66			Lot No:	B337-014-	-11

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Manager (QCM) Russell Welsh who accompanied this QAI to the location where main cable anchor rod machining activities were in-process.

This QAI received MTR's for A354 grade BD, Q&T main cable anchor rods, from heat #3M75738, to be MT tested per ASTM F1470, Table 3 requirements. These rods are from mixed heat treat lot numbers OPY and OQW, a total of (104ea) rods are within this heat number. A total of (9ea) rods have been selected per Table 3 requirements and email dated 7/20/11 accepting the quantity of the mixed heat treat lots to be combined as a total from the mill heat. These rods selected were identified by a green spray paint mark and are to be set aside after threading has been completed and accepted by QC. QCM relayed that MT testing is scheduled to be performed on Monday, July 25, 2011.

This QAI selected one anchor rod for sampling from each heat #3M75738-2, Dyson assigned heat treat lot #OPY and heat #3M75738-1 heat treat lot #OQW. The frequency of sampling was in conformance with contract documents and included one 1200mm threaded stock and two 300mm raw stock from both heat treat lot numbers OPY and OQW.

This QA inspector reviewed the supporting documentation and verified that the anchor rod material conformed to

( Continued Page 2 of 3 )

A354 Gr. BD quench & tempered round stock. Note that amended MTR's are to be faxed to the Trans Lab that distinguish heat #3M75738-1 as heat treat lot OQW and heat #3M75738-2 as heat treat lot OPY. This amended MTR was not available at time of sampling.

The sampled coupons were placed in a wooden box. The box was closed-up with steel bands for shipment to the Caltrans Trans Lab.

A TL 101 with supporting documentation was placed into a pouch and placed within the box. This QA inspector assigned Lot No. B337-014-11 to this sample shipment. (See attached photos).







# Summary of Conversations:

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

(Continued Page 3 of 3)

Inspected By: Broening, Dustyn

Quality Assurance Inspector

**Reviewed By:** Edmondson,Fred

QA Reviewer



STATE OF CALIFORNIA · DEPARTMENT OF TRANSPORTATION

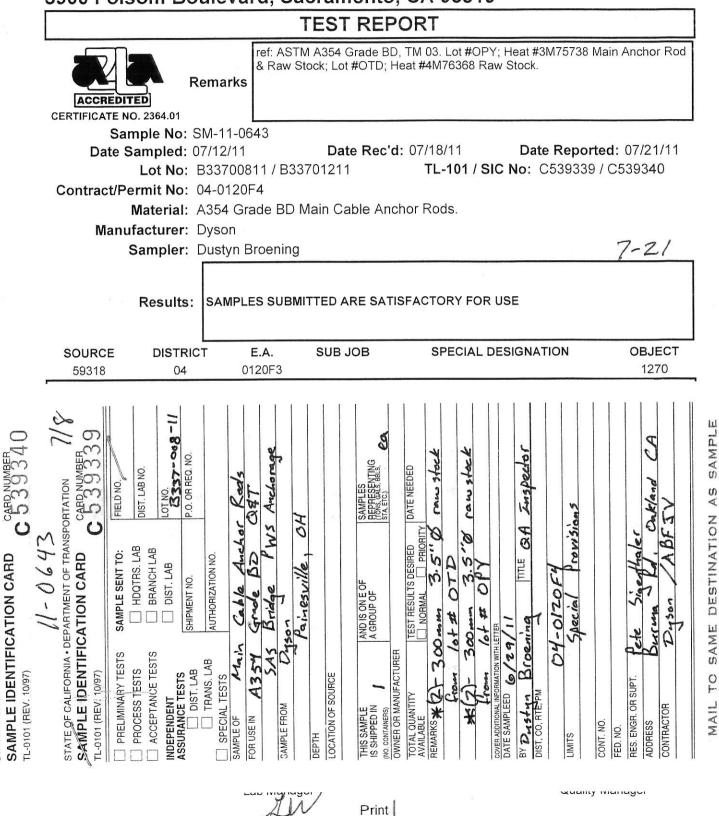
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## Structural Materials Testing Laboratory 5900 Folsom Boulevard, Sacramento, CA 95819



A S

MAIL



sportation ing Laboratory 60 Kip	75 Deg F	Tested By	EMcCrory EMcCrory EMcCrory EMcCrory		
Department of Transportation Structural Materials Testing Laboratory UTM: BALDWIN 60 Kip	Temperature 75 ]	Elongation in 4 x d	16.6 16.6 16.4 16.2 ØK		
I	Te	ength	164820 164860 01 163900 165560 01K		
	11-0643	lffset	146279 145361 0K 147661 0K		
· .	SM Number = 11-0643	Area	0.1995 0.2003 0.2011 0.2011		
		Diameter	0.504 0.505 0.506 0.506		
		Heat Number	ору ОТD OTD		
	<b>Ealtrans</b>	Sample	B A B		

.505 SAMPLES

Wednesday, July 20, 2011

Page 1 of 1

STATE OF CALIFC TRANSPOR	STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION TRANSPORTATION LABORATORY	UT OF TRANS	SPORTATION					S. M. NO.	. 490	~			NVED /	1		
<b>REPORT OF TESTS</b> TL - 619 (REV. 5/95)	= TESTS							T 101 NO.	340		8	CONT. M.O. OR P.O. NO	C/C	0. NO.	5	
								LOT NO.	012	11		F.A.P. NO.	S	3		
TEST NAME					DISTRICT	COUNTY		ROUTE	-		<u>a</u>	POST MILES	v			
CONTRACTOR	na mangana na mangana ang mangana na mangana				SAMPLED BY			DATE SAMPLED	0		<u></u>	SUPPLY SOURCE	URCE			
AGENCY					MANUFACTURER	EB		MATERIAL TESTED FOR	TED FOR		-					
AMP	HEAT NO.	SIZE	AREA	A	VIELC	YIELD MEa	nr.	ULTIMATE PST	ELONG.	1	COLD	CHEMI	CHEMICAL ANALYSIS	ALYSIS		<
NO. TYPE			BEFORE	AFTER	ACTUAL	PSI	ACTUAL	-MPa-	%	AHEA R		C WN	d	S	IS	E u
H	079	504	2.004	2,336		146279		164820	16.6							
29	//	505	2.0042.325	2.325		145361		164460 16	16,0	5						
Å	070	506	2,004 2,333	2,333		146699		163900 16.4	16.4					+		
20	11	Soo.	505 2,005 2,329	2329		147161		165560 110,2	110,2			 				
															+	
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															+	
										-						Singlement can be det
SPECIFICATIONS	4324 BT	181										-		-	-	
REMARKS																
DATE TESTED	120/11	TESTED BY	EUN					APPROVED BY	ВУ							
FM 3018 M 95																

### STRUCTURAL MATERIALS TESTING LABORATORY FORM TM-3 (REV. 07/11)

# FASTENER ASSEMBLY WORKSHEET

APPROVED FOR USE BY SMTL QUALITY MANAGER Aple & Marty

SM Number	11-0643	Lot Number	B337012	Date Received	7/18
Contract Number	84-01201=4	TL-0101 Number	C539340	Date Tested	7/21
Lab Technician	FRED	Test Temperature	70°	Page	of

BOLTS: A354	GRAde	BD	Main C	oble An	ichok Y	20cl	
Sample No.	1			2	2		[
Heat / Mfg. Lot No.	3M75738						
Product Markings							
Size	3.5 "	/					
Pitch Diameter	3.332	3.333	V				
Bolt Length							
Ring Gage Go/No-Go							
Zinc Coating Thick.							
Hardness: Rc / Rb		41900/dea.u.e.04440////////////////////////////////					
Spacing							
, 505 Wedge Tensile							

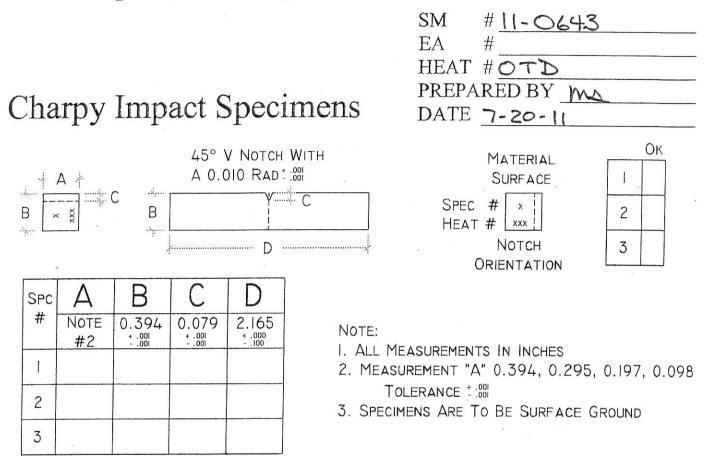
NUTS:	-					
Sample No.	Side	1	Side	2	[	T
Mfg. Lot No.	3.545		3.546			
Product Markings	21249	/ .	- 21249	/		
a		/ -	3.33351			
Plug Gage Go/No-Go						
Zinc Coating Thick.						
Hardness: Rc / Rb						
Spacing						
Nut Proof Load						

WASHER:				
Sample No.				
Mfg. Lot No.				
Product Markings				
Zinc Coating Thick.				
Hardness: Rc / Rb				
Spacing				

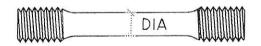
STRUCTURAL MATERIALS TESTING LABORATORY FORM TL-652 (REV. 3/05)		TEST SPECIMEN PREPARATION AND RECORD	TION APPROVED FOR USE BY SMILL QUALITY MANAGER: \$ PORPA
SM No. // - 0643	Contract No. ロサーロロのデイ	Requesting Lab Technician	In Date Needed
TL-0101 No. C 539340	E.A./Spec. Desg./Object	Date Received	Date Tested/Provided
Work Requested Work Standard round tension test specimen. circle	101 # DN1	OPY, OTD	[] Chemistry Lab type of material:
one: 0.500" [] standard rectangular tension test specimen, circle one: 18" long, 8" gage	pluse M	machine 500	work nequested [] neoprene verification [] oil swell
8" long, 2" gage length [] Charpy, circle one: 10mm x 10mm 10mm x 7.5mm	21 A 4 13	<u>5</u> 2 2	<ul><li>[] zinc coating weight</li><li>[] steel chemistry analysis</li></ul>
<ul> <li>[] hardness measurement sample (fasteners)</li> <li>[] weld nugget</li> </ul>	)	)	□ outer ← [] see instructions
]] chemistry slug [] other:		8	[] Other (explain)
[] see instructions →			
Comments or further instructions		The received service is acceptable	otable
		Receiving Lab Technician	Sian Date

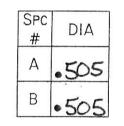
STRUCTURAL MATERIALS TESTING LABORATORY FORM TL-652a (REV. 10/10)

# Specimen Preparation Information



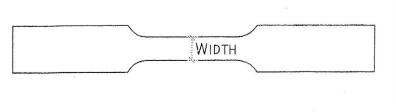
# **Reduced Tensile Round Specimens**





NOTE: SPECIMEN DIA 1. 0.500 +.010 2. 0.350 +.007

# Reduced Tensile Flat Specimens



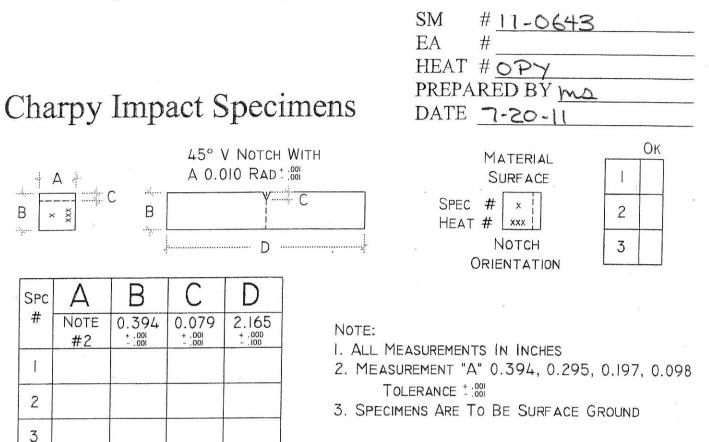
SPC #	Width
A	• 2
В	

NOTE: SPECIMEN WIDTH

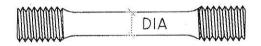
A REAL PROPERTY.	APPROVED FOR USE BY SMTL	
and a state of the	QUALITY MANAGER	
ARCHIVE.	agile AMartz	

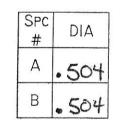
#### STRUCTURAL MATERIALS TESTING LABORATORY FORM TL-652a (REV. 10/10)

# Specimen Preparation Information



# Reduced Tensile Round Specimens

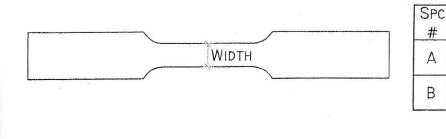




WIDTH

NOTE: SPECIMEN DIA 1. 0.500 +.000 2. 0.350 +.007 -.007

# Reduced Tensile Flat Specimens



NOTE: SPECIMEN WIDTH

APPR	OVED FC	DR USE E	BY SMTL
	QUALITY		
Ó	gile E	1 Ma	ty



## THE DYSON CORPORATION

53 Freedom Road Painesville, Ohio 44077 440.946.3500 / fax 440.352.2700

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## PACKING SLIP

PC	O Number	660110-SA-0	17 CO 022	Date	7/13/201	1	Salesperson	Pat She	effield
S O	American B	Bridge / Fluor JV			S H		es Office of Testing & en Weldon (916) - 22		y Services
Ľ	375 Burma l	Road			I		olsom Blvd.		
D	Oakland				Р	Sacram	iento		
T O		4607	USA		Т	CA	95819	USA	
0	Buyer:				0				

5	Shipment No. 30210	Ship Via Conway	Freight PPD & Allow		Dyson Rep	Bill of La 31802	0	Terms Net 30
Iten	ı	Description		Job No	Est. Delivery	Quantity	Shipped	Weight (lbs)
38	(1) 3.50" - 4UNC 2	PLE MATERIALS C( B x 1200mm (47.25 m (11 81") of Threa	") Lg. Double		7/15/11 s / T-NC-OMC	2 sets	1	120

(To be selected from each Heat Treat Lot for 8900mm -9100mm Rods)

(104) bars (1) threaded 1200mm Length sample to Translad CONEOPY CA lot # B337-012-11 7/12/11 DB



Geary W. Ridenour

Quality Assurance Representative

#### CERTIFIED MATERIAL TEST REPORT CUSTOMER ORDER NUMBER CUSTOMER PART NUMBER HEAT NUMBER WORK ORDER NUMBER DATE 31637 3M75738 142992 102 3/23/11 REPORT TO SHIP TO TURRET STEEL IND. INC. TURRET STEEL 105 PINE STREET PICK UP AT MILL IMPERIAL , PA 15126-1142 ORDERED GRADE SIZE LENGTH 3.52" 4140 30' CUSTOMER SPECIFICATIONS ASTM A354-07 GRADE BD; Q&T; AIM RC 35 / 37; TSI-130 4/13/07 CHEMICAL ANALYSIS C Mn Ρ S Si Ni Cr Mo Cu Sn Al 0.41 0.014 0.030 0.20 0.95 0.09 1.04 0.17 0.18 0.010 0.025 V Cb Ca N2 0.003 0.002 0.0013 0.0076 GRAIN SIZE SPECIFICATION ASTM E112 (5-8) % OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) MID RADIUS CENTER SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC PAGE 1 We certify that these data are correct and in compliance with specified requirements. Gerdau MacSteel Arkansas

CONTINUED ON PAGE 2

5225 Planter Road

Fort Smith, AR 72902



#### CERTIFIED MATERIAL TEST REPORT CUSTOMER ORDER NUMBER CUSTOMER PART NUMBER HEAT NUMBER WORK ORDER NUMBER DATE 31637 142992 102 3M75738 3/23/11 REPORT TO SHIP TO TURRET STEEL IND. INC. TURRET STEEL 105 PINE STREET PICK UP AT MILL IMPERIAL , PA 15126-1142 ORDERED GRADE SIZE LENGTH 4140 3.52" 30' CUSTOMER SPECIFICATIONS ASTM A354-07 GRADE BD; Q&T; AIM RC 35 / 37; TSI-130 4/13/07 HARDENABILITY SPECIFICATION ASTM A304 ACTUAL J1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 18 20 22 24 26 28 30 32 34 55 54 53 52 52 52 51 51 50 50 49 47 46 45 44 42 40 38 37 36 35 34 33 33 MACROCLEANLINESS SPECIFICATION ASTM E381 (S3-R2-C2) PLATE I PLATE II S R C AVERAGE 1 7 1 NONE PHYSICALS SPECIFICATION ASTM A434 02.0 IN TENSILE (KSI) % ELONGATION YIELD (KSI) REDUCTION OF AREA 162.0 144.0 15.0 49.0 DI CALCULATION SPECIFICATION REPORT 5.561 AUTO ULTRASONIC SPECIFICATION 100% PAGE 2 We certify that these data are correct and in compliance with specified requirements. Gerdau MacSteel Arkansas 5225 Planter Road Geary W. Ridenour Fort Smith, AR 72902 Quality Assurance Representative

CONTINUED ON PAGE 3



#### CERTIFIED MATERIAL TEST REPORT

CUSTOMER ORDER NUMBER CUSTOMER PART NUMBER			<i>неат NUMBER</i> ЗМ75738	work order Number 142992 102	DATE 3/23/11		
REPORT TO			<b>SHIP T</b>	0			
TURRET STEEL IN 105 PINE STREET	D. INC.	TURRET STEEL PICK UP AT MILL					
IMPERIAL , PA 15126-1142 ,							
	ORDERED						
GRADE SIZE 4140 3.52"			LENGTH 30'				
CUSTOMER SPECIFICATIONS ASTM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07							
MATERIAL ULTRASON	IC TESTED FOR INTERNAL S	DUNDI	NESS.				

QUENCH TIME, TEMP, ME SPECIFICATION REPORT

TREATMENT	TEMP F	TIME(MIN.)	MEDIA
AUSTENIZE OUENCH	1650 0	8.30	WATER
TEMPER	1110	8.30	MALDI

REDUCTION RATIO

RATIO= 7.1 TO 1.0

CIRCOGRAPH..... 100%

CIRCOGRAPH TESTED FOR SURFACE IMPERFECTIONS

\*\* MATERIAL 100% MELTED AND MANUFACTURED IN THE U.S.A. BY THE ELECTRIC ARC FURNACE AND CONTINUOUS CASTING METHOD. THE PRODUCT HAS NOT BEEN REPAIRED BY WELDING AND THIS MATERIAL HAS NOT BEEN EXPOSED TO MERCURY OR TO ANY OTHER METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURES DURING PROCESSING OR WHILE IN OUR POSSESSION. GERDAU MACSTEEL MONITORS ALL INCOMING SCRAP AND ALL HEATS OF STEEL TO ENSURE THAT PRODUCTS SHIPPED ARE FREE OF RADIOACTIVE MATERIAL.

a

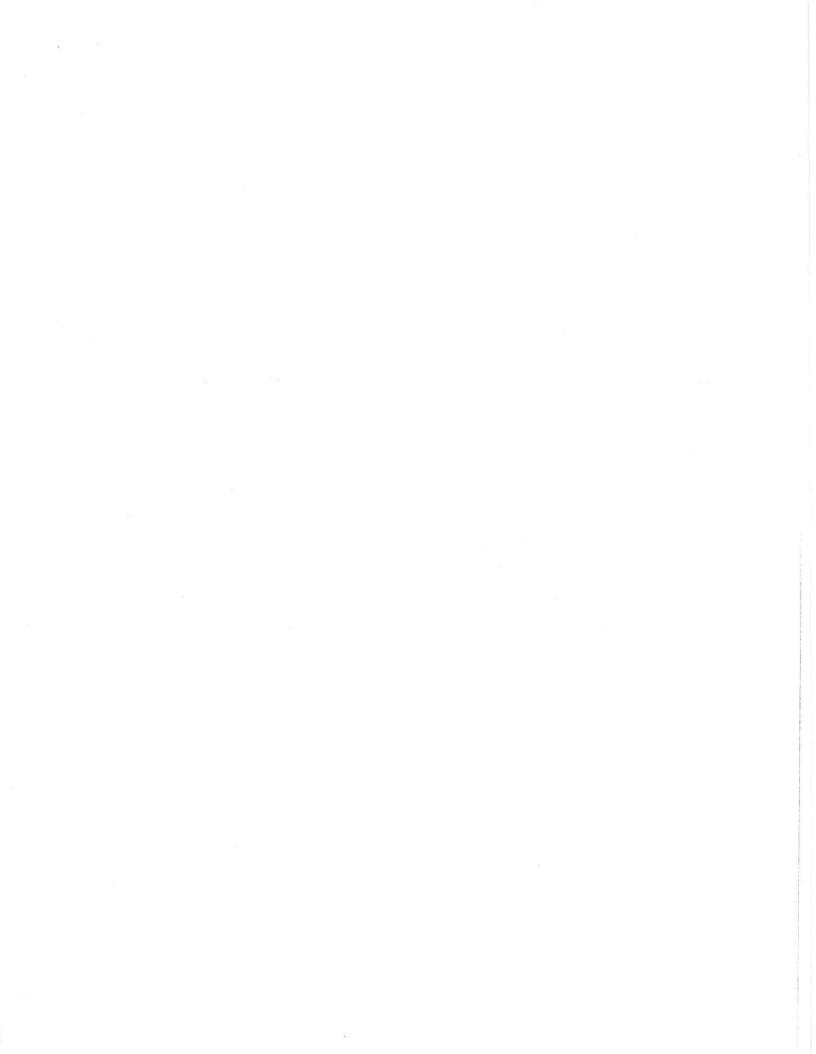
Quality Assurance Representative

Geary W. Ridenour

PAGE 3 OF 3

We certify that these data are correct and in compliance with specified requirements.

Gerdau MacSteel Arkansas 5225 Planter Road Fort Smith, AR 72902



CA 10+ #8337-008-11 6/29/11



#### CERTIFIED MATERIAL TEST REPORT

BIRDER TO         BIRDER ALL         D/ 2/ 2/ 11           BIRDER TO         BIRTO         BIRTO           TURRET STEEL IND. INC.         TURRET STEEL         PICK UP AT MILL           IMPERIAL, PA 15126-1142         ,         TURRET STEEL           4140         ORDERED	CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	<i>неат NUMBER</i> ЗМ75738	WORK ORDER NUMBER	DATE 3/23/11
TURRET STEEL IND. INC.       TURRET STEEL         105 FINE STREET       DICK UP AT MILL         IMPERIAL , PA 15126-1142       ,         4140       00000         3.52"       301         4140       3.52"         301       100000         ASTM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07         CHEMICAL ANALYSIS         C       Mn         C       Mn         0.41       0.95       0.014       0.030       0.20       0.09       1.04       0.17       0.18       0.010       0.025         V       Cb       Ca       N2       0.003       0.002       0.0013       0.0076         GRAIN SIZE       SPECIFICATION ASTM E112 (5-8)       \$       0F GRAIN 5-8       AVG         M 100       7.0			L		5/25/11
105 FINE STREET       PICK UP AT MILL         IMPERIAL, PA 15126-1142       ,         ORDERED         4140       3.52"         30°       1000000         ASTM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07         CHEMICAL ANALYSIS         C       Mn         C       Mn         P       S         Si       Ni         C       Mn         O.014       0.030       0.20       0.09         V       Cb       Ca       N2         0.003       0.002       0.0013       0.0076         GRAIN SIZE       SPECIFICATION ASTM E112 (5-8)       \$         * OF GRAIN 5-8       AVG         M 100       7.0	REPORTIO		SHIP TO		
IMPERIAL , PA 15126-1142         ORDERED         ATM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07         CHEMICAL ANALYSIS         C       Mn       P       S       Si       Ni       Cr       Mo       Cu       Sn       A1         0.41       0.95       0.014       0.030       0.20       0.09       1.04       0.17       0.18       0.010       0.025         V       Cb       Ca       N2       0.003       0.002       0.0013       0.0076         GRAIN SIZE       SPECIFICATION ASTM E112 (5-8)         % OF GRAIN       5-8       AVG         M 100       7.0       37.0       38.0       35.8       HRC         IMID RADIUS       SUPRAGE AVERAGE         32.3       37.0       38.0       35.8       HRC		D. INC.	TURRET STEEL		
ORDERED           4140         3.52"         30."           LENGTH           ASTM A354-07 GRADE ED; Q&T AIM RC 35 / 37; TSI-130 4/13/07           CHEMICAL ANALYSIS           CHEMICAL ANALYSIS           C         Mn P S Si Ni Cr Mo Cu Sn Al           0.41         0.95         0.014         0.030         0.20         0.09         1.04         0.17         0.18         0.010         0.025           V         Cb Ca N2           0.003         0.002         0.0013         0.0076           GRAIN SIZE         SPECIFICATION ASTM E112 (5-8)           & OF GRAIN         5-8         AVG           M         100         7.0         IAM 35-37RC)           CENTER MID RADIUS SURFACE AVERAGE           32.3         37.0         38.0         35.8 HRC	105 PINE STREET		PICK UP AT MI		
ORDERED           4140         3.52"         30."           LENGTH           ASTM A354-07 GRADE ED; Q&T AIM RC 35 / 37; TSI-130 4/13/07           CHEMICAL ANALYSIS           CHEMICAL ANALYSIS           C         Mn P S Si Ni Cr Mo Cu Sn Al           0.41         0.95         0.014         0.030         0.20         0.09         1.04         0.17         0.18         0.010         0.025           V         Cb Ca N2           0.003         0.002         0.0013         0.0076           GRAIN SIZE         SPECIFICATION ASTM E112 (5-8)           & OF GRAIN         5-8         AVG           M         100         7.0         IAM 35-37RC)           CENTER MID RADIUS SURFACE AVERAGE           32.3         37.0         38.0         35.8 HRC					
GRADE         30'           ASTM         A354-07         GRADE         BD;         QAT;         AIM         RC 35 / 37;         TSI-130         4/13/07           CUSTOMER SPECIFICATIONS ASTM A354-07         GRADE         BD;         QAT;         AIM         RC 35 / 37;         TSI-130         4/13/07           CHEMICAL ANALYSIS           C         Mn         P         S         Si         Ni         Cr         Mo         Cu         Sn         Al           0.41         0.95         0.014         0.030         0.20         0.09         1.04         0.17         0.18         0.010         0.025           V         Cb         Ca         N2         N2         N1         Cr         Mo         Cu         Sn         Al           0.41         0.95         0.014         0.030         0.20         0.09         1.04         0.17         0.18         0.010         0.025           V         Cb         Ca         N2         N2	IMPERIAL , PA 15	5126-1142	ř		
4140       3.52"       30"         CUNTOMER SPECIFICATIONS         ASTM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07         CHEMICAL ANALYSIS         C Mm P S Si Ni Cr Mo Cu Sn Al         0.41       0.95       0.014       0.030       0.20       0.09       1.04       0.17       0.18       0.010       0.025         V       Cb       Ca       N2       0.003       0.002       0.0013       0.0076         GRAIN SIZE       SPECIFICATION ASTM E112 (5-8)         * OF GRAIN       5-8       AVG         M 100       7.0       ASTM MID RADIUS         AREWEWED         ATE MID RADIUS SURFACE AVERAGE         32.3         AVERAGE         AVERAGE         AVERAGE         AREWEWED         DATE AVERAGE         AVERAGE         AVERAGE         AREWEWED         DATE AVERAGE         DATE AVERAGE         DATE AVERAGE         DATE AVERAGE         DATE AVERAGE	07405		·		
ASTM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07 CHEMICAL ANALYSIS C Mn P S Si Ni Cr Mo Cu Sn Al 0.41 0.95 0.014 0.030 0.20 0.09 1.04 0.17 0.18 0.010 0.025 V Cb Ca N2 0.003 0.002 0.0013 0.0076 GRAIN SIZE SPECIFICATION ASTM Ell2 (5-8) * OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. REWEWED DATE47511 DYSON			3		
C       Mn       P       S       Si       Ni       Cr       Mo       Cu       Sn       Al         0.41       0.95       0.014       0.030       0.20       0.09       1.04       0.17       0.18       0.010       0.025         V       Cb       Ca       N2       0.003       0.002       0.0013       0.0076         GRAIN SIZE       SPECIFICATION ASTM E112 (5-6)       *<	ASTM A354-07 GRADE	CUSTOMER SPECIFICA BD; Q&T AIM RC 35 / 37	тюмs ; TSI-130 4/13/	07	
0.41 0.95 0.014 0.030 0.20 0.09 1.04 0.17 0.18 0.010 0.025 V Cb Ca N2 0.003 0.002 0.0013 0.0076 GRAIN SIZE SPECIFICATION ASTM E112 (5-8) * OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. PENEWED DATEADS II DYSON	5	CHEMICAL ANAL	YSIS		
V Cb Ca N2 0.003 0.002 0.0013 0.0076 GRAIN SIZE SPECIFICATION ASTM E112 (5-8) * OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. REWEWED DATEA 511 DYSON	C Mn	P S Si Ni	Cr Mo	Cu Sn	Al
0.003 0.002 0.0013 0.0076 GRAIN SIZE SPECIFICATION ASTM ELL2 (5-8) % OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. PEVIEWED DATE47511 DYSON	0.41 0.95 0.	014 0.030 0.20 0.09	1.04 0.17	0.18 0.010	0.025
GRAIN SIZE SPECIFICATION ASTM E112 (5-8) % OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. EVVEWED DATE 415111 DYSON	V Cb	Ca N2			
* OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. DEVIEWED DATE 4 D 5 11 DYSON	0.003 0.002 0.	0013 0.0076			2
* OF GRAIN 5-8 AVG M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. DEVIEWED DATE 4 D 5 11 DYSON					
M 100 7.0 HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC	GRAIN SIZE	SPECIFICATION ASTM E112	(5-8)		
HARDNESS SPECIFICATION Q&T (AIM 35-37RC) CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. PEVIEWED DATE47511 DYSON	% OF GRAIN 5-8	AVG			
CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. REVIEWED DATE4D5111 DYSON	M 100	7.0			
CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC Q.A. REVIEWED DATE4D5111 DYSON					
32.3 37.0 38.0 35.8 HRC Q.A. REVIEWED DATE 4 D5 11 DYSON	HARDNESS	SPECIFICATION Q&T (AIM 3)	5-37RC)		
Q.A. DEVIEWED DATE 4 DSTIL DYSON		CENTER MID RADIUS	SURFACE AVERAG	GE	
Q.A. PEVIEWED DATE405111 DYSON		32.3 37.0	38.0 35.8	HRC	
Q.A. PEVIEWED DATE 4D5111 DYSON					
DATEADSIII DYSON					
DATE 405 II DYSON PAGE 1		Q.A. CX			
PAGE 1		DATE	111		
PAGE 1		DYSO	N		
PAGE 1					
	PAGE 1			1	
We certify that these data are correct and in compliance with specified requirements.	We certify the	hat these data are correct and in comp	ollance with specified re	quirements.	
M V	Gerdau MacSteel Arkansas		- 4 - 3	P	
Geary W. Ridenour	5225 Planter Road		Neary W.	Kecteron Geary	W. Ridenour
	Fort Smith, AR 72902 CONTINUED ON PAGE 2		Qual	ity Assurance Representative	



CERTIFIED MATERIAL TEST REPORT								
customer order number 31637	CUSTOMER PART NUMBER	<i>неат NUMBER</i> ЗМ75738	WORK ORDER NUMBER         DATE           142992         102         3/23/11					
REPORT TO		SHIP TO						
TURRET STEEL IN	D. INC.	TURRET STEEL						
105 PINE STREET		PICK UP AT M	ILL					
IMPERIAL , PA 1	5126-1142	1						
	ORDERED							
GRADE 4140	3.52"	3	LENGTH					
ASTM A354-07 GRAD	CUSTOMER SPECIFICA E BD; Q&T AIM RC 35 / 37	тюкs ; TSI-130 4/13/	<sup>′</sup> 07					
HARDENABILITY	SPECIFICATION ASTM A304							
ACTUAL								
	6 7 8 9 10 11 12 13 1 52 51 51 50 50 49 47 46 4							
MACROCLEANLINESS	SPECIFICATION ASTM E381	(S3-R2-C2)						
PLATE 1	L P	LATE II	х.					
S R AVERAGE 1 1	C 1 NONE							
PHYSICALS	SPECIFICATION ASTM A434							
	02.0	<u>IN</u>						
TENSILE (KSI)	YIELD (KSI) % ELONGAT	ION REDUCTIO	N OF AREA					
162.0	144.0 15.0	49	.0					
DI CALCULATION	SPECIFICATION REPORT							
5.561								
AUTO ULTRASONIC	SPECIFICATION 100%	O.A.RI	NIEWED					
		DATE	And III					
			SON					
		and the second second	and and a second s					
PAGE 2								
	that these data are correct and in com	pliance with specified re	equirements.					
Gerdau MacSteel Arkansas 5225 Planter Road		- A. W	V.					
Fort Smith, AR 72902		- Y Lary R.	Geary W. Ridenour					

CONTINUED ON PAGE 3



# 5591 MORRILL ROAD JACKSON, MICHIGAN 49201

CERTIFIED MATERIAL TEST REPORT							
customer order number 31637	CUSTOMER PART NUMBER	<i>неат NUMBER</i> ЗМ75738	<i>WORK ORDER NUMBER</i> 142992 102	DATE 3/23/11			
REPORT TO		SHIP T	o				
TURRET STEEL INI	D. INC.	TURRET STEEL					
105 PINE STREET		PICK UP AT M					
	. e.						
IMPERIAL , PA 15	5126-1142	,					
P	ORDEREL	>					
GRADE 4140	size 3.52 "		LENGTH 30'				
ASTM A354-07 GRADE	CUSTOMER SPECIFIC, BD; Q&T AIM RC 35 / 3	атионя 7; TSI-130 4/13	/07				
MATERIAL ULTRASON	IC TESTED FOR INTERNAL	SOUNDNESS.					
QUENCH TIME, TEMP, ME	SPECIFICATION REPORT						
TREATMENT TEM	PF TIME(MIN.)	MEDIA					
AUSTENIZE 165	0 8.30						
	0	WATER					
TEMPER 111	0 8.30						
REDUCTION RATIO							
RATIO= 7.1 TO	1.0						
CIRCOGRAPH	SPECIFICATIO	DN 100%					
CIRCOGRAPH TESTED	FOR SURFACE IMPERFECTIO	ONS					
** MATERIAL 100% MELTED AND MANUFACTURED IN THE U.S.A. BY THE ELECTRIC ARC FURNACE AND CONTINUOUS CASTING METHOD. THE PRODUCT HAS NOT BEEN REPAIRED BY WELDING AND THIS MATERIAL HAS NOT BEEN EXPOSED TO MERCURY OR TO ANY OTHER METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURES DURING PROCESSING OR WHILE IN OUR POSSESSION. GERDAU MACSTEEL MONITORS ALL INCOMING SCRAP AND ALL HEATS OF STEEL TO ENSURE THAT PRODUCTS SHIPPED ARE FREE OF RADIOACTIVE MATERIAL.							
PAGE 3 OF 3							
We certify th	nat these data are correct and in com	pliance with specified r	equirements.				
Gerdau MacSteel Arkansas		£	P				
5225 Planter Road		- Keang he		W. Ridenour			
Fort Smith, AR 72902	A COLORED AND A	Qu	ality Assurance Representative				

CA 10+ # B337-008-11

6/29/11

Quality Assurance Representative



5591 MORRILL ROAD JACKSON, MICHIGAN 49201

	CER	TIFIED MATER	IAL TEST REP	ORT			
CUSTOMER ORDER NUMBER		PART NUMBER	HE	AT NUMBER 176368	worк orde 142993	A NUMBER	DATE 3/29/11
REPORT TO							5/25/13
TURRET STEEL 105 PINE STRE	IND. INC. ET			SHIPTC ET STEEL UP AT M			)
IMPERIAL , PA	15126-1142		ć		877		
GRADE	- T	ORDE	RED				
4140	3.5	<i>size</i> 52 "			LENG" 32'	TH	
ASTM A354-07 CP		CUSTOMER SPE	CIFICATIONS				
ASTM A354-07 GR	ADE DD; QAT; F	AIM RC 35 /	37; TSI-	130 4/13,	/07		
* · · ·							
		CHEMICAL A	NALYSIS				
C Mn	P S	Si	Ni Cr	Мо	Cu	Sn	Al
0.42 0.97	0.014 0.030	0.20 0.	09 1.04	0.17	0.18	0.010	0.023
V Cb	Ca N2						
0.003 0.002	0.0013 0.0060						20
RAIN SIZE	SPECIFICATI	ON ASTM E1.	12 (5-8)				
% OF GRAIN 5-8	AVG						
ā 100	7.0	and the second descent second s				er nom er er gennen (* 19	
ARDNESS	SPECIFICATIO	ON Q&T (AIM	1 35-37RC)				
	CENTER M 31.9	MID RADIUS 35.6	SURFACE 38.8	AVERAG 35.4		,	A.
		Q.A.	EVIEWED GIJII SON				n

CONTINUED ON PAGE 2



1

······	CERTIFIED MATERIAL 1	EST REPORT		
CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	HEAT NUMBER	WORK ORDER NUMBER	DATE
31637		4M76368	142993 104	3/29/11
REPORT TO		8HIP TO		
TURRET STEEL IND	. INC.	TURRET STEEL		
105 PINE STREET		PICK UP AT MI	T.T.	
IMPERIAL , PA 15:	126-1142	1		а.
				1
GRADE	ORDERED			
4140	size 3.52"		LENGTH	
		and the second state of th	2'	
ASTM A354-07 GRADE	CUSTOMER SPECIFICA BD; Q&T AIM RC 35 / 37	10NS	07	
		1 101-100 4/10/	07	
HARDENABILITY S	PECIFICATION ASTM A304			
	ta bornanter konstructuren konstructuren internetik internetikari er etter ita e			
ACTUAL				
J1 2 3 4 5 6	7 8 9 10 11 12 13 1	4 15 16 18 20 2	2 24 26 28 3	0 32 34
57 56 56 56 55 54	54 54 53 52 51 51 49 4	9 47 46 45 43 4	1 40 39 38 3	8 37
	PECIFICATION ASTM E381			
PLATE I	P	LATE II		
S R	C			)
AVERAGE 1 1	1 NONE			
PHYSICALS S				
THIDICHID D	PECIFICATION ASTM A434			1
	02.0	TN		
	02.0	7.74		
TENSILE (KSI) Y	IELD (KSI) % ELONGAT	ION REDUCTIO	N OF AREA	
150.0	130.0 16.5	48	. 0	
DI CALCULATION S	PECIFICATION REPORT	•		
5.706				
AUTO ULTRASONIC SI	PECIFICATION 100%	Q.A.	BEVIEWED	8
		5.47	(als 1	
		. JAT	E([3])	
		No. of the second	DISUN	,
PAGE 2				
We certify the	at these data are correct and in comp	liance with specified re	quirements.	
Gerdau MacSteel Arkansas		<i>V</i>	$\supset$	
5225 Planter Road	. 19 M	Ren del	Vidensum	
Fort Smith, AR 72902		Quali	ty Assurance Representative	W. Ridenour

CONTINUED ON PAGE 3



### CERTIFIED MATERIAL TEST REPORT

customer order number 31637	CUSTOMER PART NUMBER	<i>неат NUMBER</i> 4 М 7 6 3 6 8	WORK ORDER NUMBER	DATE 3/29/11

REPORT TO

TURRET STEEL IND. INC. 105 PINE STREET

TURRET STEEL PICK UP AT MILL

1

SHIP TO

IMPERIAL , PA 15126-1142

	ORDERED	
GRADE 4140	size 3.52"	LENGTH .32 '
ASTM A354-07 GRADE	CUSTOMER SPECIFICATIONS BD; Q&T AIM RC 35 / 37; TS	SI-130 4/13/07
MATERIAL ULTRASONI QUENCH TIME, TEMP, ME S	C TESTED FOR INTERNAL SOUND	NESS.
TREATMENT TEMP		DIA
AUSTENIZE 1650 QUENCH 0 TEMPER 1090	8.30 WA	TER
REDUCTION RATIO RATIO= 7.1 TO 1 CIRCOGRAPH		00% Q.A. DEVIEWED
** MATERIAL 100% ARC FURNACE BEEN REPAIRE TO MERCURY O TEMPERATURES GERDAU MACSTE	AND CONTINUOUS CASTING METH D BY WELDING AND THIS MAT	ERIAL HAS NOT BEEN EXPOSED THAT IS LIQUID AT AMBIENT IN OUR POSSESSION. RAP AND ALL HEATS OF STEEL
PAGE 3 OF 3 We certify the Gerdau MacSteel Arkansas 5225 Planter Road Fort Smith, AR 72902	at these data are correct and in compliance	e with specified requirements.

SIR-003491

### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493

**Project Name:** 

**Contractor:** 

Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

# SOURCE INSPECTION REPORT

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607

SAS Superstructure

Prime Contractor: American Bridge/Fluor Enterprises, a JV

Dyson Corp. & Subs

OSM Arrival	<b>T</b> • 000

OSM Arrival Time: 800 OSM Departure Time: 1630 Location: Painesville, OH

<b>Quality Control Contact</b>	: Russ Wels	sh		Quality Contro	ol Present:	Yes	No	
Material transfer:	Yes	No	N/A	Sampled Items	:	Yes	No	N/A
Stock Transfer:	Yes	No	N/A	OK to Cut:		Yes	No	N/A
<b>Rebar Test Witness:</b>	Yes	No	N/A	Delayed/Cance	elled:	Yes	No	N/A
Other:								
Bridge No: 34-0	006			<b>Component:</b>	Main Cable A	Anchor Ro	ods	
<b>Bid Item:</b> 66				Lot No:				

### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

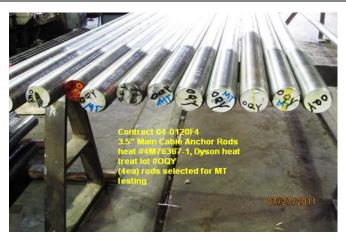
This QAI met with Dyson QC Manager (QCM) Russell Welsh who accompanied this QAI to the location where main cable anchor rod machining activities were in-process.

This QAI received MTR's for A354 grade BD, Q&T main cable anchor rods, heat #4M76367-1, Dyson heat treat lot #OQY (quantity of 48ea). This QAI randomly selected (4ea) from this lot to be MT tested per ASTM F1470, Table 3 requirements. Also selected were (5ea) from heat #4M76367-2, Dyson lot #OQX (quantity of 58ea) to be MT tested per ASTM F1470, Table 3 requirements. These rods selected were identified by a blue paint marker at the ends and are to be set aside after gauging is accepted by QC.

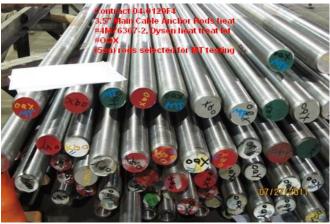
Work is in progress on 3.5" diameter, A354 grade BD, Q&T main cable anchor rods heat #4M76367-1, Dyson heat treat lot #OQY within the roll threading shop at this time.

# SOURCE INSPECTION REPORT

(Continued Page 2 of 2)







### **Summary of Conversations:**

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Broening, Dustyn	Quality Assurance Inspector
<b>Reviewed By:</b>	Edmondson,Fred	OA Reviewer

SIR-003515

Date Inspected: 03-Aug-2011

### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

# SOURCE INSPECTION REPORT

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607

Project Name:	1	SAS Superstructure			OSM Arrival Time: 800				
Prime Contracto	or: American	American Bridge/Fluor Enterprises, a JV		OSM Departu	re Time:	1630			
Contractor:	Contractor:Dyson Corp. & SubsLocation: Pain				ainesvill	e, OH			
Quality Control	Contact:	Russ Wels	sh		<b>Quality Control Present:</b>	Yes	No		
Material transfe	r:	Yes	No	N/A	Sampled Items:	Yes	No	N/A	
Stock Transfer:		Yes	No	N/A	OK to Cut:	Yes	No	N/A	
Rebar Test Witn	ess:	Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A	
Other:									
Bridge No:	34-0006				<b>Component:</b> Main Cable	e Anchor Re	ods		
Bid Item:	66				Lot No:				

### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Manager (QCM) Russell Welsh who accompanied this QAI to the location where main cable anchor rod activities were in-process.

Dyson has prepared (30ea) Main Cable Anchor Rods to be shipped to Monnig Ind. galvanizing facility. Dyson is selecting rods from heat #4M76367-2, Dyson lot #OQX that have been deemed acceptable and per specification. These rods are to be shipped at Dysons' own risk per Sales Manager Pat Shefield due to no results from the Caltrans Translab for lot #OQX. The main cable anchor rods that are to be shipped at Dysons' own risk are as follows:

- First bundle consists of OQX5-6, OQX5-1, OQX5-5, OQX5-2, OQX5-3 and OQX5-4.
- Second bundle consists of OQX5-25, OQX5-27, OQX5-26, OQX5-28, OQX5-29 and OQX5-16.
- Third bundle consists of OQX5-20, OQX5-22, OQX5-19, OQX5-24, OQX5-23 and OQX5-21.
- Fourth bundle consists of OQX5-13, OQX5-15, OQX5-14, OQX5-30, OQX5-17 and OQX5-18.
- Fifth bundle consists of OQX5-9, OQX5-10, OQX5-7, OQX5-11, OQX5-12 and OQX5-8.
- Sixth bundle consists of OQX4-8, OQX4-9, OQX4-10, OQX4-11 and OQX4-12.

# SOURCE INSPECTION REPORT

(Continued Page 2 of 2)



### **Summary of Conversations:**

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Broening, Dustyn	Quality Assurance Inspector
<b>Reviewed By:</b>	Edmondson, Fred	QA Reviewer

SIR-003519

Date Inspected: 05-Aug-2011

### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

# SOURCE INSPECTION REPORT

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607

Project Name: Prime Contractor Contractor:	: Americar	SAS Superstructure American Bridge/Fluor Enterprises, a JV Dyson Corp. & Subs		OSM Arriva OSM Departure	e Time:	1630	• OU	
Contractor:	Dyson Co	orp. & Subs				cation: Pa	inesviii	e, OH
Quality Control (	Contact:	Russ Wels	h		<b>Quality Control Present:</b>	Yes	No	
Material transfer	•	Yes	No	N/A	Sampled Items:	Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:	Yes	No	N/A
Rebar Test Witne	ess:	Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A
Other:								
Bridge No:	34-0006				<b>Component:</b> Main Cable	Anchor Ro	ods	
Bid Item:	66				Lot No:			

#### Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Manager (QCM) Russell Welsh who accompanied this QAI to the location where main cable anchor rod activities were in-process.

Dyson has prepared (40ea) Main Cable Anchor Rods to be shipped to Monnig Ind. galvanizing facility. Dyson is selecting rods from heat #4M76367-2, Dyson lot #OQX and heat #4M76367-1, Dyson lot #OQY that have been deemed acceptable and per specification. These rods are to be shipped at Dysons' own risk per Sales Manager Pat Shefield due to no results from the Caltrans Translab for lot #OQX and OQY. The main cable anchor rods that are to be shipped at Dysons' own risk are as follows:

- First bundle consists of OQY-25, OQY-26, OQX-4-24, OQX-4-23, OQX-4-22, OQX-4-21 and OQX-4-20.
- Second bundle consists of OQY-30, OQY-28, OQY-27, OQY-31, OQY-29 and OQY-32.
- Third bundle consists of OQX-3-2, OQY-3A, OQY-4A, OQY-6A, OQY-1A, OQX-3-8, OQX-3-7 and OQX-3-5.

• Fourth bundle consists of OQY-9A, OQY-15, OQY-10A, OQY-14, OQY-19, OQX-4-17, OQX-4-18, and OQY-16.

• Fifth bundle consists of OQY-1, OQY-2, OQY-4 and OQY-3.

• Sixth bundle consists of OQX-3-11, OQX-3-13, OQX-3-16, OQY-12A, OQY-14A, OQY-15A, OQY-17

# SOURCE INSPECTION REPORT

( Continued Page 2 of 2 )

This QAI randomly observed QC personnel perform Pitch Micrometer inspection of the anchor rods for 3.5" diameter, A354 grade BD, Q&T main cable anchor rods and have been found to be acceptable by QC personnel. See attached photos.







## Summary of Conversations:

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Broening, Dustyn	Quality Assurance Inspector
<b>Reviewed By:</b>	Edmondson, Fred	QA Reviewer

# State of California Department of Transportation

# **Structural Materials Testing Laboratory** 5900 Folsom Boulevard, Sacramento, CA 95819



04

#### TEST REPORT ref: ASTM A354 BD, TM03. Heat #3M75738-1, Code #OQW; Heat #3M75738-2, Code #OPY; Heat #4M76367-1, Code #OQY; Heat #4M76367-2, Code #OQX Remarks ACCREDITED CERTIFICATE NO. 2364.01 Sample No: SM-11-0720 Date Sampled: 07/21/11 Date Rec'd: 07/25/11 Date Reported: 08/08/11 Lot No: B33701411 TL-101 / SIC No: C539341 Contract/Permit No: 04-0120F4 Material: 3.5" A354 BD Main Cable Anchor Rods Manufacturer: Dyson 8-8 Sampler: Dustyn Broening SAMPLES SUBMITTED ARE SATISFACTORY FOR USE Results: SUB JOB SPECIAL DESIGNATION OBJECT DISTRICT E.A. SOURCE 04 0120F3 1270 59318 00 SAMPLE LOT NO. B337-014-11 P.O. OR REQ. NO. Anchorag 2 2 2 2 ø rawatock Inspecho DATE NEEDE **IIST. LAB N**C DESTINATION AS STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION IELD NO 1201310-3 200 0 nchol BB 3 Q 04-012064 TEST RESULTS DESIRED HDQTRS. LAB ŝ **BRANCH LAB** SAMPLE SENT TO: AUTHORIZATION NO. LITLE SAMPLE IDENTIFICATION CARD alnes will DIST. LAB 200V SHIPMENT NO. AND IS ON E OF A GROUP OF POCIA. NORMA 472 SAME 200 A 354 S Main DWNER OR MANUFACTUREF PRELIMINARY TESTS ACCEPTANCE TESTS Z TRANS. LAB 333 PROCESS TESTS DIST. LAB INDEPENDENT ASSURANCE TESTS OCATION OF SOURCE TL-0101 (REV. 10/97) SPECIAL TESTS RES. ENGR. OR SUPT. TOTAL QUANTITY AVAILABLE Ť SAMPLEED MAIL 1200 THIS SAMPLE IS SHIPPED IN CONTRACTOR SAMPLE FROM CONTAINERS) 2 EMARKS FOR USE IN **VDDRESS** SAMPLE OF CONT. NO °, FED. NO. IMITS 5 DEPTH Quality Manager Lap wanager Print

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Department of Transportation Structural Materials Testing Laboratory UTM: BALDWIN 60 Kip

\_75 Deg F\_

Temperature

SM Number = 11-0720



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Tested By		EMcCrory	EMcCrory	EMcCrory	EMcCrory	EMcCrory	EMcCrory	EMcCrory	EMcCrory
Elongation in 4 x d	(%)	16.7 AV	16.5 01	15.9	16.4 OK	15.2	16.3 OK	16.3 11	15.3 00
Tensile Strength	(bsi)	163970 AL	165620 01	164320	164570 01	166220	166900 UK	166070 51	164550 01
Stress at Offset	(bsi)	142434 AV	146783 UN	144868	144192 01	147099	148527 01	147282	147254 00
Area	$(in^2)$	0.2003	0.2003	0.2003	0.2011	0.2011	0.2003	0.2011	0.2035
Diameter	(in)	0.505	0.505	0.505	0.506	0.506	0.505	0.506	0.509
Heat Number		MDO	MOO	OPY	OPY	QQY	oqY	хдо	хдо
Sample		A	В	A	B	А	B B	А	В

Friday, August 05, 2011

Page 1 of 1

8:14 AM

STATE OF CALIFORNIA • DEP <b>TRANSPORTATION</b> <b>REPORT OF TESTS</b> TL - 619 (REV. 5/95)	STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION TRANSPORTATION LABORATORY REPORT OF TESTS TL - 619 (REV. 5/95)	ENT OF TRAN	SPORTATION			Louis and a second second	S. M. NO. 11 - 0720 7 101 NO. 25 393411 LOT NO.	20		DATE RECEIVED 7/25/11 cont	DATE RECEIVED 7/25/1/ cont w.b OR P.O. NO. 64 - C/2074 F.A.P. NO.	0. NO.	ν. 
TEST NAME				DISTRICT	COUNTY		ROUTE			POST MILES	ILES		
CONTRACTOR				SAMPLED BY			DATE SAMPLED			SUPPLY	SUPPLY SOURCE		
AGENCY				MANUFACTURER	ER		MATERIAL TESTED FOR	ED FOR					
AMPI	HEAT NO.	SIZE	REA	YIELD-MP&	MPe <sup>-</sup>	NLT	ULTIMATE PST	ELONG. RE	RED. COLD		CHEMICAL ANALYSIS	ALYSIS	R
NO. TYPE			BEFORE AFTER	ACTUAL	PSI	ACTUAL	-MPa-			υ	d NW	s SI	БШ
A	000	505	2008 2.344		142434		163970	16,7					
2	11	505	20082,340		4683		165620	16.5					
					146783								
A	074	SOS	2.008 2328		141868		164320 15.9	15.9					
R	11	506	2.0062.334		144192		164520 16.4	16.4					
A	004	506	21506 2310		147079		166220	15,2					
60	11	505	2.006 2332		148527		166200 163	16.3					
				×									
Н	CQX	506	2.006332		147282		166070	16.3					
20	11	509	2.0062312		147254		164550 15.3	15.3					
SPECIFICATIONS	354	35H BD											
REMARKS													
	7/10	TESTED BY	FUN				APPROVED BY	37					
FM 3018 M 95	1												

FASTENER ASSEMBLY WORKSHEET

APPROVED FOR USE BY SMTL QUALITY MANAGER Agille & Martz

SM Number	11-0720	Lot Number		Date Received	7/25/11
Contract Number	04-0120F4	TL-0101 Number	C539341	Date Tested	8/4/11
Lab Technician	FRED	Test Temperature		Page_	of

BOLTS: Gende A354	BD. Main C	able A.	vchor	Lods			
Sample No.	1A		1B		12		ID
Heat / Mfg. Lot No.	OQW		OPVI		DQY		Dax
Product Markings			ł.				6
Size	3.5 "						8.~>
Pitch Diameter	3.336	- /	3.336		3.334	V	3.3321
Bolt Length	3.332	3	3.332		3.331	5	3.331
Ring Gage Go/No-Go							
Zinc Coating Thick.							
Hardness: Rc / Rb-							
Spacing ·					-	a and the second s	
. 505 Wedge Tensile							

NUTS:				
Sample No.				
Mfg. Lot No.				
Product Markings				
Size				
Plug Gage Go/No-Go		<i>v</i>		
Zinc Coating Thick.			Y	
Hardness: Rc / Rb				
Spacing	9			
Nut Proof Load				

WASHER:			
Sample No.			
Mfg. Lot No.			
Product Markings			
Zinc Coating Thick.			
Hardness: Rc / Rb			
Spacing			

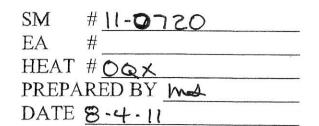
RE BY SMIL	af e		,	
APPROVED FOR USE BY SMIL QUALITY MANAGER: SYERRY	Date Needed $\mathcal{HSHP}$	Date Tested/Provided	<ul> <li>[] Chemistry Lab type of material: Work Requested</li> <li>[] neoprene verification</li> <li>[] oil swell</li> <li>[] oil swell</li> <li>[] zinc coating weight</li> <li>[] zinc coating weight</li> <li>[] zinc coating weight</li> <li>[] other:</li> <li>[] other:</li> <li>[] Other (explain)</li> </ul>	CSS//
RATION	hnician		1] Chemistry Lab         type of material:         Work Requested         1] neoprene vei         1] oil swell         1] zinc coating v         1] steel chemist         1] other:         ← [] see instructi         1] Other (explain)	acceptable
TEST SPECIMEN PREPARATION AND RECORD	Requesting Lab Technician ${\cal S}/{\cal E}{\cal N}$	Date Received	505's from each	The received service is acceptable Receiving Lab Technician
	Contract No. 04-0120F3	E.A./Spec. Desg./Object 040000018 3	2 505's Slug Heat code OPT OQ	
STRUCTURAL MATERIALS TESTING LABORATORY FORM TL-652 (REV. 3/05)	SM NO. //-0720	TL-0101 No. C539341	Machine Shop Work Requested Nork Requested Dene: 0.500" I standard round tension test specimen, circle one: 18" long, 8" gage 8" long, 2" gage length I Charpy, circle one: 10mm × 10mm 10mm × 7.5mm I hardness measurement sample (fasteners) I weld nugget I chemistry slug I other: I see instructions →	Comments or further instructions

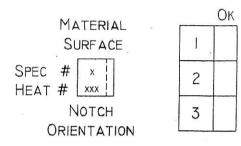
Charpy Impact Specimens

45° V NOTCH WITH

A 0.010 RAD + :001

# Specimen Preparation Information





SPC #	А	В	С	D
#	NOTE #2	0.394 + .001 001	0.079	2.165
I				
. 2				
3				

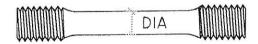
В

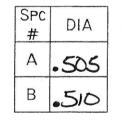
..... В

### NOTE:

- I. ALL MEASUREMENTS IN INCHES
- 2. MEASUREMENT "A" 0.394, 0.295, 0.197, 0.098 TOLERANCE + .001
- 3. SPECIMENS ARE TO BE SURFACE GROUND

# **Reduced Tensile Round Specimens**

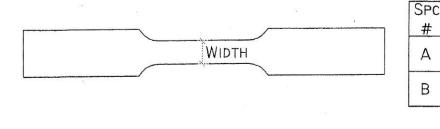




WIDTH

NOTE: SPECIMEN DIA 1. 0.500 + 010 - 0102. 0.350 + 007

# **Reduced Tensile Flat Specimens**



NOTE: SPECIMEN WIDTH 1.  $0.500 \div 000$ 

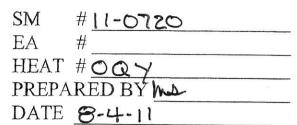
APF	ROVE	D FOR	USE	BY SM	TL
	QUA		IANA	GEŖ	
/	An	le H-	Ma	ity	

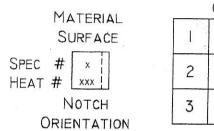
Charpy Impact Specimens

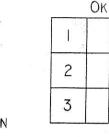
45° V NOTCH WITH

A 0.010 RAD + .001

# Specimen Preparation Information







SPC #	А	В	С	D
#	Note #2	0.394 + .001 001	0.079	2.165 + .000 100
1				
2				
3				

В

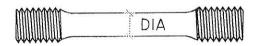
.....¢ C

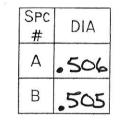
B

NOTE:

- I. ALL MEASUREMENTS IN INCHES
- 2. MEASUREMENT "A" 0.394, 0.295, 0.197, 0.098 TOLERANCE + .001
- 3. SPECIMENS ARE TO BE SURFACE GROUND

# **Reduced Tensile Round Specimens**

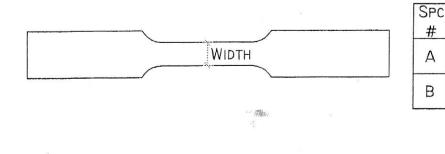




WIDTH

NOTE: SPECIMEN DIA 1. 0.500 <sup>+.010</sup> 2. 0.350 +.007

# **Reduced Tensile Flat Specimens**

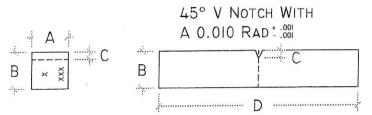


NOTE: SPECIMEN WIDTH 1. 0.500 + 010

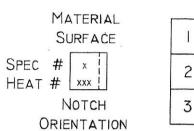
APPRC	VED FOR USE BY S	MTL
Q	UALITY MANAGER	
a	jile HMartz	

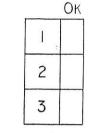
# Specimen Preparation Information

# Charpy Impact Specimens



SM	#11-0720
EA	#
HEAT	#OQW
PREPA	RED BY MS.
DATE	8-4-11





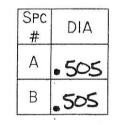
SPC #	А	В	С	D
#	NOTE #2	0.394 + .001 001	0.079	2.165 + .000 100
1	÷			-
2		2		
3				

NOTE:

- I. ALL MEASUREMENTS IN INCHES
- 2. MEASUREMENT "A" 0.394, 0.295, 0.197, 0.098 TOLERANCE + .001
- 3. SPECIMENS ARE TO BE SURFACE GROUND

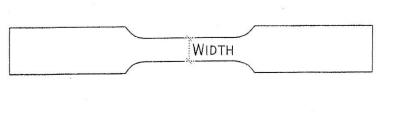
# **Reduced Tensile Round Specimens**

MMMMM	X	- mannana
	DIA	
wwwwww		



NOTE: SPECIMEN DIA 1.  $0.500 \pm 0.000$ 2. 0.350 +.007

# **Reduced Tensile Flat Specimens**



SPC #	WIDTH
A	,
В	

NOTE: SPECIMEN WIDTH 1.  $0.500 \div 000$ 

APP	ROVED FOR USE BY SMTL
	QUALITY MANAGER
L	Apile AMarty

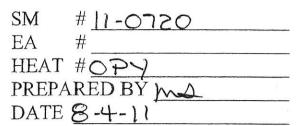
Charpy Impact Specimens

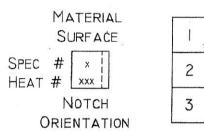
45° V NOTCH WITH

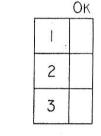
...... C

A 0.010 RAD + :001

# Specimen Preparation Information







R Δ SPC # NOTE 0.394 0.079 2.165 + .000 + .001 + .001 #2 1 2 3

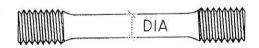
В

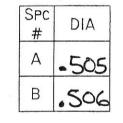
A B

NOTE:

- 1. ALL MEASUREMENTS IN INCHES
- 2. MEASUREMENT "A" 0.394, 0.295, 0.197, 0.098 TOLERANCE + .001
- 3. SPECIMENS ARE TO BE SURFACE GROUND

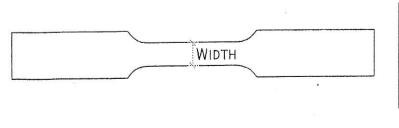
# **Reduced Tensile Round Specimens**





NOTE: SPECIMEN DIA 1. 0.500 +.010 2. 0.350 +.007

# **Reduced Tensile Flat Specimens**



SPC WIDTH # A В

NOTE: SPECIMEN WIDTH 1. 0.500 <sup>+</sup> :010

A	PPR	OVE	D FOI	R USE	BY	SMT	Ľ
	C	QUAL	ITY N	MANA	GEF	3	
	0	1 get	n H	M	ant.	5	
		12		and the second			



CH lot #		
7/21/11	B	11-0720
		,

Note that ammended cert is pending. To be faxed to JACKSON, MICHIGAN 49201 Trans Lab.

# CERTIFIED MATERIAL TEST REPORT

CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	HEAT NUMBER	WORK ORDER NUMBER	DATE
31637		3M75738-1	142992 102	5/12/11

REPORT TO

TURRET STEEL IND. INC. 105 PINE STREET TURRET STEEL

SHIP TO

PICK UP AT MILL

1

IMPERIAL , PA 15126-1142

GRADE         SIZE         LENGTH           4140         3.52"         30'
CUSTOMER SPECIFICATIONS ASTM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07
CHEMICAL ANALYSIS
C Mn P S Si Ni Cr Mo Cu Sn Al
0.41 0.95 0.014 0.030 0.20 0.09 1.04 0.17 0.18 0.010 0.025
V Cb Ca N2
0.003 0.002 0.0013 0.0076
GRAIN SIZE SPECIFICATION ASTM E112 (5-8)
% OF GRAIN 5-8 AVG
M 100 7.0
HARDNESS SPECIFICATION Q&T (AIM 35-37RC)
CENTER MID RADIUS SURFACE AVERAGE 32.3 37.0 38.0 35.8 HRC
PAGE 1
We certify that these data are correct and in compliance with specified requirements.
Gerdau MacSteel Arkansas         5225 Planter Road         Fort Smith, AR 72902         Quality Assurance Representative

CONTINUED ON PAGE 2



	CERTIFIED MATERIAL	TEST REPORT	1
customer order number 31637	CUSTOMER PART NUMBER	<i>неат NUMBER</i> ЗМ75738	WORK ORDER NUMBER         DATE           142992         102         5/12/11
REPORT TO		SHIP TO	D
TURRET STEEL II	ND. INC.	TURRET STEEL	
105 PINE STREE	Γ	PICK UP AT M	ILL
IMPERIAL , PA :		, .	
GRADE	ORDERE size		LENGTH
4140	3.52" CUSTOMER SPECIFI		30'
ASTM A354-07 GRAI	DE BD; Q&T AIM RC 35 / 3	37; TSI-130 4/13	/07
HARDENABILITY	SPECIFICATION ASTM A304	1	
	6 7 8 9 10 11 12 13 52 51 51 50 50 49 47 46		
MACROCLEANLINESS	SPECIFICATION ASTM E383	(S3-R2-C2)	
PLATE	I	PLATE II	
S R AVERAGE 1 1	C 1 NONE	C	
PHYSICALS	SPECIFICATION ASTM A434	ł	
	02.0	) IN	
TENSILE (KSI)	YIELD (KSI) % ELONGA	TION REDUCTION	ON OF AREA
147.0	126.0 18.6	5 5	2.0
DI CALCULATION	SPECIFICATION REPORT		
5.561			
AUTO ULTRASONIC	SPECIFICATION 100%		
A010 ULIKABONIC	SFICILICATION 1000		
PAGE 2			
	fy that these data are correct and in co	ompliance with specified	requirements.
Gerdau MacSteel Arkansas 5225 Planter Road		Kennth	Geary W. Ridenour
Fort Smith, AR 72902		<u> </u>	Quality Assurance Representative

#### CONTINUED ON PAGE 3



	CERTIFIED MATERIAL	TEST REPORT		
customer order number 31637	CUSTOMER PART NUMBER	<i>неат NUMBER</i> ЗМ75738	work order number 142992 102	DATE 5/12/11
REPORT TO	a	SHIP -	го	
TURRET STEEL IN	DINC	TURRET STEEI		
105 PINE STREET		PICK UP AT N		
IMPERIAL , PA 1	5126-1142	1		
00405		)	LENGTH	
GRADE 4140	3.52"		30'	
ASTM A354-07 GRAD	customer specific, E BD; Q&T AIM RC 35 / 3	ATIONS 7; TSI-130 4/13	3/07	
	NIC TESTED FOR INTERNAL .	CUNDNESS		
		300mmme353.		
QUENCH TIME, TEMP, ME	SPECIFICATION REPORT			
TREATMENT TEN	MP F TIME(MIN.)	MEDIA		
AUSTENIZE 165	50 8.30			
QUENCH TEMPER 11:	0 10 8.30	WATER		
REDUCTION RATIO			a.	
RATIO= 7.1 TO	1 0			
				R
CIRCOGRAPH	SPECIFICATIO	JN 100%		
CIRCOGRAPH TESTE	D FOR SURFACE IMPERFECTION	ONS		
ARC FURNACE BEEN REPAII TO MERCURY TEMPERATURES GERDAU MACS	0% MELTED AND MANUFACTUR AND CONTINUOUS CASTING RED BY WELDING AND THIS OR TO ANY OTHER METAL 2 S DURING PROCESSING OR WI FEEL MONITORS ALL INCOMIN HAT PRODUCTS SHIPPED ARE	METHOD. THE S MATERIAL HAS ALLOY THAT IS HILE IN OUR POS NG SCRAP AND AI	PRODUCT HAS NOT BEEN EXP LIQUID AT AMB SESSION. L HEATS OF ST	NOT OSED IENT EEL
PAGE 3 OF 3 We certify Gerdau MacSteel Arkansas	that these data are correct and in cor	npliance with specified	requirements.	
5225 Planter Road		Keam	W. Fidenon Goa	ry W. Ridenour
Fort Smith, AR 72902		pres y	Quality Assurance Representative	

CA 10+ # D'557-019-11 7/21/11 DB

GERDAU MAESTEEL

Note that animended pending. To be faxed to cest is Trans Lab 5591 MORRILL ROAD JACKSON, MICHIGAN 49201

	CERTIFIED MATERIAL	TEST REPORT		
CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	неат NUMBER 3М75738-2	work order NUMBER	DATE 3/23/11

REPORT TO

TURRET STEEL IND. INC. 105 PINE STREET

IMPERIAL , PA 15126-1142

TURRET STEEL PICK UP AT MILL

1

SHIP TO

GRADE		1	ORDEF			LENG	тн	
4140			.52" 30'					
ASTM A354	-07 GRADE	BD; Q&T	CUSTOMER SPEC AIM RC 35 /	FICATIONS 37; TSI-13	30 4/13/	07		
		5	CHEMICAL AN	ALYSIS	20 10			
С	Mn	P S	Si 1	Ji Cr	Мо	Cu	Sn	Al
0.41 (	0.95 0.	014 0.03	0 0.20 0.0	)9 1.04	0.17	0.18	0.010	0.025
v	Cb	Ca N2						
0.003 0	0.002 0.	0013 0.00	76					
GRAIN SIZE		SPECIFICA'	TION ASTM E11	.2 (5-8)				
% OF GRAIN	15-8	AVG						
M 100		7.0						
HARDNESS		SPECIFICA	FION Q&T (AIM	35-37RC)				
		CENTER 32.3	MID RADIUS 37.0	SURFACE 38.0	AVERA 35.8	GE HRC		
			Q.A. P DATE	EVIEWED DSTII VSON				
			and the set of the set	ar Agen Baharan a san salan dan dan bang				
PAGE 1								
	We certify t	hat these data	are correct and in c	compliance with	specified re	quirement	ls.	
Gerdau MacSteel					Allery W	Ficturon	Geary W	Ridenour
Fort Smith, AR 729	902				Qui	ality Assurance R	epresentative	



CERTIFIED MATERIAL TEST REPORT						
CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	<i>неат NUMBER</i> ЗМ75738	WORK ORDER NUMBER	DATE 3/23/11		
REPORT TO		SHIP TO	)			
TURRET STEEL IN	ID. INC.	TURRET STEEL				
105 PINE STREET		PICK UP AT M				
IMPERIAL , PA 1	5106 1140					
IMPERIAL , PA 1		I				
GRADE		)	LENGTH			
4140	3.52"		30'			
ASTM A354-07 GRAD	CUSTOMER SPECIFICA E BD; Q&T AIM RC 35 / 3		/07			
HARDENABILITY	SPECIFICATION ASTM A304			5.		
ACTUAL						
	6 7 8 9 10 11 12 13 1					
55 54 53 52 52	52 51 51 50 50 49 47 46 4	15 44 42 40 38 3	37 36 35 34 3	3 33		
MACROCLEANLINESS	SPECIFICATION ASTM E381	(S3-R2-C2)				
PLATE	I	PLATE II				
S R	C					
AVERAGE 1 1	1 NONE					
PHYSICALS	SPECIFICATION ASTM A434					
	02.0	IN				
TENSILE (KSI)	YIELD (KSI) % ELONGAT	ION REDUCTIO	N OF AREA			
162.0	144.0 15.0	4 9	9.0			
DI CALCULATION	SPECIFICATION REPORT					
5.561		Sector and a sector of the sec	and the second			
AUTO ULTRASONIC	SPECIFICATION 100%		EVIEWED HISSIN VSON			
PAGE 2						
We certify	that these data are correct and in com	pliance with specified r	equirements.			
Gerdau MacSteel Arkansas		ľ.	, P			
5225 Planter Road		Keen to	Fictoron Geory	W. Ridenour		
Fort Smith, AR 72902		<u><u> </u></u>	ality Assurance Representative			
CONTINUED ON PAGE 3				di		



#### CERTIFIED MATERIAL TEST REPORT

CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER		DATE 3/23/11		
REPORT TO			SHIP TO		
TURRET STEEL IN	D. INC.		RRET STEEL		
105 PINE STREET		PI	CK UP AT MI	LL	
	2				
IMPERIAL , PA 1	5126-1142	,			
	ORDERED	)		(	
<i>GRADE</i> 4140	size 3.52 "		3	LENGTH	1
ASTM A354-07 GRADI	CUSTOMER SPECIFICA E BD; Q&T AIM RC 35 / 37		I-130 4/13/	07	
MATERIAL ULTRASON	NIC TESTED FOR INTERNAL S	SOUNDI	NESS.		
סנופארט יידאר יידאס אר	SPECIFICATION REPORT				
QUENCH IIME, IEMP, ME	SPECIFICATION REPORT				
TREATMENT TEN	AP F TIME(MIN.)	MEI	AIQ		
AUSTENIZE 165	50 8.30				
QUENCH TEMPER 111	0 8.30	WAT	PER		
IEMPER 11	0.30				
REDUCTION RATIO					
RATIO= 7.1 TO	1.0				
CIRCOGRAPH	SPECIFICATIC	N 10	)0%		
CIRCOGRAPH TESTEL	) FOR SURFACE IMPERFECTIC	NS			
ARC FURNACE BEEN REPAIN TO MERCURY TEMPERATURES GERDAU MACST	% MELTED AND MANUFACTURE AND CONTINUOUS CASTING ED BY WELDING AND THIS OR TO ANY OTHER METAL A DURING PROCESSING OR WH EEL MONITORS ALL INCOMIN MAT PRODUCTS SHIPPED ARE	METHO MATE LLOY ILE I G SCR	D. THE P RIAL HAS THAT IS L N OUR POSS AP AND ALL	RODUCT HAS NOT BEEN EXPO IQUID AT AMB ESSION. HEATS OF STR	NOT DSED IENT EEL
PAGE 3 OF 3			Q D	A. BEVIEWED ATE A DSIN	
100 C	that these data are correct and in com	Inliance	with specified re	auirements	
Gerdau MacSteel Arkansas	that these data are contest and in com	pilance	Man specified re	$\sim$ 72	
5225 Planter Road			Keans W	. Fidenon Gear	y W. Ridenour
Fort Smith, AR 72902		5	Qu.	ality Assurance Representative	

1-1 -- 6-227-014-11 7/21/11 >B



Note that ammended cert is pending. To be fixed to 5591 Trans Lab. DB

SHIP TO

5591 MORRILL ROAD JACKSON, MICHIGAN 49201

#### 1 CERTIFIED MATERIAL TEST REPORT HEAT NUMBER CUSTOMER PART NUMBER WORK ORDER NUMBER DATE CUSTOMER ORDER NUMBER 4M76367-1 142985 102 5/12/11 31637

REPORT TO

105 PINE STREET

TURRET STEEL IND. INC.

TURRET STEEL PICK UP AT MILL

1

IMPERIAL , PA 15126-1142

	ORDERED	
<i>GRADE</i> 4140	size 3.52"	LENGTH 29'
ASTM A354-07 GRADE	CUSTOMER SPECIFICATIONS BD; Q&T AIM RC 35 / 37; TSI	-130 4/13/07
	CHEMICAL ANALYSIS	
C Mn F	P S Si Ni C	r Mo Cu Sn Al
0.41 0.96 0.0	014 0.028 0.18 0.08 1.0	3 0.17 0.16 0.010 0.023
V Cb C	Ca N2	
0.004 0.002 0.0	0010 0.0082	
GRAIN SIZE S	SPECIFICATION ASTM E112 (5-8)	
% OF GRAIN 5-8 A	AVG	
M 100 7	7.0	
HARDNESS	SPECIFICATION Q&T (AIM 35-37R	C)
	CENTER MID RADIUS SURFA	
x		
PAGE 1		
We certify th	hat these data are correct and in compliance	with specified requirements.
Gerdau MacSteel Arkansas 5225 Planter Road Fort Smith, AR 72902	-	Quality Assurance Representative

CONTINUED ON PAGE 2



customer order number 31637	CUSTOMER PART NUMBER	<i>неат NUMBER</i> 4М76367	<i>work order number</i> 142985 102	<i>DATE</i> 5/12/11
REPORT TO		SHIP T	0	
TURRET STEEL INI 105 PINE STREET	D. INC.	TURRET STEEL PICK UP AT M		
IMPERIAL , PA 15	5126-1142 ORDEF	, 250		
GRADE 4140	3.52"		LENGTH 29'	
	CUSTOMER SPEC E BD; Q&T AIM RC 35 /	IFICATIONS 37; TSI-130 4/13		
HARDENABILITY	SPECIFICATION ASTM A3	)4		
ACTUAL J1 2 3 4 5 57 56 55 55 54 5	6 7 8 9 10 11 12 13 54 54 53 52 52 51 50 49	3 14 15 16 18 20 9 47 46 45 43 41		
MACROCLEANLINESS	SPECIFICATION ASTM E38	31 (S3-R2-C2)		
PLATE ]		PLATE II		
S R AVERAGE 1 1	C 1 NOI	٧E		
PHYSICALS	SPECIFICATION ASTM A43	34		
	02	.O IN		
TENSILE (KSI)	YIELD (KSI) % ELONO	GATION REDUCTI	ON OF AREA	
150.0	128.0 18	.8 5	6.0	
DI CALCULATION	SPECIFICATION REPORT			
5.454				
AUTO ULTRASONIC	SPECIFICATION 100%			
PAGE 2				
	that these data are correct and in	compliance with specified	requirements.	
Gerdau MacSteel Arkansas 5225 Planter Road Fort Smith, AR 72902		- Kenn	Quality Assurance Representative	ry W. Ridenour

#### CONTINUED ON PAGE 3



	CERTIFIED MATERIAL	TEST REPORT		
customer order number 31637	CUSTOMER PART NUMBER	HEAT NUMBER	WORK ORDER NUMBER	DATE
21037		4M76367	142985 102	5/12/11
REPORT TO		SHIP T	D	
TURRET STEEL IN	D. INC.	TURRET STEEL		
105 PINE STREET		PICK UP AT M	ILL	
IMPERIAL , PA 15	5126-1142	,		
	ORDERE	D		
GRADE 4140	size 3.52 "		LENGTH 29'	
	CUSTOMER SPECIFIC	ATIONS		
ASTM A354-07 GRADI	E BD; Q&T AIM RC 35 / 3	7; TSI-130 4/13	/07	
MATERIAL ULTRASON	NIC TESTED FOR INTERNAL	SOUNDNESS		
QUENCH TIME, TEMP, ME	SPECIFICATION REPORT			
TREATMENT TEN	MP F TIME(MIN.)	MEDIA		
AUSTENIZE 164	45 8.30			
QUENCH TEMPER 108	0 30 8.30	WATER		
REDUCTION RATIO	50 0.50			
RATIO= 7.1 TO	1.0			
CIRCOGRAPH	SPECIFICATI	ON 100%		
CIRCOGRAPH TESTEI	D FOR SURFACE IMPERFECTI	ONS		
ARC FURNACE BEEN REPAIF TO MERCURY TEMPERATURES GERDAU MACST	0% MELTED AND MANUFACTUR AND CONTINUOUS CASTING RED BY WELDING AND THI OR TO ANY OTHER METAL 5 DURING PROCESSING OR W TEEL MONITORS ALL INCOMI HAT PRODUCTS SHIPPED ARE	METHOD. THE S MATERIAL HAS ALLOY THAT IS HILE IN OUR POS NG SCRAP AND AL	PRODUCT HAS NOT BEEN EXPO LIQUID AT AMB SESSION. L HEATS OF STI	NOT OSED IENT EEL
PAGE 3 OF 3				
We certify	that these data are correct and in con	mpliance with specified	requirements.	
Gerdau MacSteel Arkansas		L	Not?	
5225 Planter Road		Kenyk		y W. Ridenour
Fort Smith, AR 72902		C	uality Assurance Representative	



CA	10+ # B337-014-11
	7/21/11 78
	11 ) and ded

Note that a more .	ded
Cert is pending .	To
be faxed to	5591 MORRILL ROAD
Trans Lab	JACKSON, MICHIGAN 49207
North K	

CODEDQX

CERTIFIED MATERIAL TEST REPORT				
CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	<i>неат NUMBER</i> 4М76367 <b>- Z</b>	WORK ORDER NUMBER	DATE 3/23/11

REPORT TO

TURRET STEEL IND. INC. 105 PINE STREET SHIP TO

TURRET STEEL PICK UP AT MILL

1

IMPERIAL , PA 15126-1142

			0	RDERED					
GRADE		2	SIZE				LENG1	пн	
4140		3	.52"				29.		
ASTM A354-07	GRADE	BD; Q&T	AIM RC 3	5 / 37;	ONS TSI-13	80 4/13,	/07		
			CHEMICA	L ANALY	SIS				
C M	in P	S	Si	Ni	Cr	Мо	Cu	Sn	Al
0.41 0.9	96 0.0	14 0.02	8 0.18	0.08	1.03	0.17	0.16	0.010	0.023
v c	Cb C	a N2							
0.004 0.0	0.0	010 0.00	32						
GRAIN SIZE	S	PECIFICA	rion astm	E112 (	5-8)				
% OF GRAIN	5-8 A	VG							
M 100	7	.0							
HARDNESS	S	PECIFICA	TION Q&T	(AIM 35	-37RC)				
		CENTER 31.9	MID RAD 35.1		URFACE 37.8	AVERA	AGE 9 HRC		
				Q.i	A. BEVIEWI TE 372 DYSON				
PAGE 1							5		
N	le certify that	at these data	are correct an	nd in comp	liance with	specified r	equirement	s.	
Gerdau MacSteel Ark	ansas					L	P		
5225 Planter Road						Kley h	Hidenou		Ridenour
Fort Smith, AR 72902						<u>Q</u>	uality Assurance Re	presentative	
CONTINUED ON PAG	E 2								



# CODE OQX

# CERTIFIED MATERIAL TEST REPORT

CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	HEAT NUMBER	WORK ORDER NUMBER	DATE
31637		4M76367	142985 102	3/23/11

REPORT TO

8HIP TO

TURRET STEEL IND. INC. 105 PINE STREET TURRET STEEL PICK UP AT MILL

,

IMPERIAL , PA 15126-1142

ORDERED							
GRADE 4140	size 3.52"	LENGTH 29'					
		120 4/12/02					
ASIM A354-07 GRADE	BD; Q&T AIM RC 35 / 37; TSI	-130 4/13/0/					
HARDENABILITY	SPECIFICATION ASTM A304						
ACTUAL							
	5 7 8 9 10 11 12 13 14 15 1 54 53 52 52 51 50 49 47 46	16 18 20 22 24 26 28 30 32 34 45 43 41 41 40 38 37 36 35					
MACROCLEANLINESS	SPECIFICATION ASTM E381 (S3-R	2-C2)					
PLATE I	PLATE	II					
S R AVERAGE 1 1	C 1 NONE						
PHYSICALS S	SPECIFICATION ASTM A434						
	02.0 IN						
TENSILE (KSI) Y	IELD (KSI) % ELONGATION	REDUCTION OF AREA					
151.0	134.0 19.6	57.0					
DI CALCULATION S	PECIFICATION REPORT						
5.454							
AUTO ULTRASONIC S	PECIFICATION 100%						
		USA OXIEWEN					
		DATE 304(1)					
PAGE 2		The second se					
We certify th	at these data are correct and in compliance v	with specified requirements.					
Gerdau MacSteel Arkansas		L D					
5225 Planter Road		Klay H. Fickeron Geary W. Ridenour					
Fort Smith, AR 72902		Quality Assurance Representative					
CONTINUED ON PAGE 3							



CODEOQX

CERTIFIED MATERIAL TEST REPORT					
CUSTOMER ORDER NUMBER	CUSTOMER PART NUMBER	HEATNUMBER	WORK ORDER NUMBER	DATE	
31637		4M76367	142985 102	3/23/11	

REPORT TO SHIP TO TURRET STEEL IND. INC. TURRET STEEL 105 PINE STREET PICK UP AT MILL

1

IMPERIAL , PA 15126-1142

20 <sup>-</sup>	ORDERED						
GRADE 4140	size 3.52"	LENGTH 29 '					
CUSTOMER SPECIFICATIONS ASTM A354-07 GRADE BD; Q&T AIM RC 35 / 37; TSI-130 4/13/07							
MATERIAL ULTRASONIC TESTED FOR INTERNAL SOUNDNESS							
QUENCH TIME, TEMP, ME SPECIFICATION REPORT							
TREATMENT TEMP	F TIME(MIN.) MH	EDIA					
AUSTENIZE 1645 QUENCH 0 TEMPER 1080	WZ	ATER					
REDUCTION RATIO							
RATIO= 7.1 TO 1	. 0						
CIRCOGRAPH	SPECIFICATION 1	100%					
CIRCOGRAPH TESTED FOR SURFACE IMPERFECTIONS							
** MATERIAL 100% MELTED AND MANUFACTURED IN THE U.S.A. BY THE ELECTRIC ARC FURNACE AND CONTINUOUS CASTING METHOD. THE PRODUCT HAS NOT BEEN REPAIRED BY WELDING AND THIS MATERIAL HAS NOT BEEN EXPOSED TO MERCURY OR TO ANY OTHER METAL ALLOY THAT IS LIQUID AT AMBIENT TEMPERATURES DURING PROCESSING OR WHILE IN OUR POSSESSION. GERDAU MACSTEEL MONITORS ALL INCOMING SCRAP AND ALL HEATS OF STEEL TO ENSURE THAT PRODUCTS SHIPPED ARE FREE OF RADIOACTIVE MATERIAL.							
		Q.A SEVIEWER DATE 3 28 11 DYSON					
PAGE 3 OF 3	a 6						
We certify that	t these data are correct and in complianc	e with specified requirements.					
Gerdau MacSteel Arkansas 5225 Planter Road		ANP					
Fort Smith, AR 72902		Quelity Assurance Representative					

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and the second sec	TRAIGHT BILL OF LADING – ORIGINAL iect to the classifications and tariffs in effect on the dat		ling.		Shipp	er's No.	31860
*			Company	•	Agent	's No.	
Pa	ainesville, Ohio	(SCA			0.0000	SON CORPORATIO	
A [	below, in apparent good order, except as noted (contents and condition of content rery service <b>y</b> be performed hereunder shall be subject to all the conditions not pre	L) ale Is of packages unknown) marked, consigned, phibited by law, whether printed or written, her	and destined as shown below, which sai ein contained, including the conditions o	HOM d carrier agrees to ca n the back hereol, wh	rry to destination it	on its route or otherwise to	deliver to another carrier on li
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Destination	SAA KR WARMANT	,	tate CK	(Mail	or Street Addre	ss of Consignee-forpu	rposes of notification on
	V		Dolivory Addross <sup>†</sup>				
			( <sup>1</sup> To be filled in only when	shipper desire	es and govern	ning tariffs provide	for delivery thereat.)
Delivering Ca	irrier		Car or Vehicle Initials	••••••		No	
Additional Sh	ipment Information		Weight	Class	Check	Eroight obarg	DDEDAID
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	ROUGH STEEL FORGINGS 104780					consignee, withou signor, the consign	t recourse on the con- nor shall sign the follow-
	STEEL BARS I/S 104340					ing statement The carrier may de of this shipment w and all other lawfu	cline to make delivery thout payment of freight charges.
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	40CS 1200mm					Collect On Del	ivery
	8 pcs 300 mm					\$and	remit to
	Attn Glen Weld.	M					
	All 22	7 7251				C. O. D. Charge	Shipper
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of the prop	/here the rate is dependent on value, s erty as follows: d or declared value of the property is s						
Ū	iability Limitation for loss or damage o						
NOTE (3) C	ommodities requiring special or additi	onal care or attention	in handling or stor	ving must	be so ma	rked and pac	kaged as to
ensure safe	e transportation with ordinary care. See	e Sec. 2(e) or NMFC It	em 360.				
Notify if probl	em enroute or at delivery				and the second second	(for information	nal purposes only)
Cond traight	Name	Fax N	NO.	Tel. No.			
Send freight I	Company Name	City	Street			State	Zip
Shipper		Carrier					
Per_	t.	Per			Dat	te	
This is to cortify that	Shipper Certification the above named materials are properly classified, C	arrier acknowledges receipt of packag	Carrier Certificatio		w response infor	mation was made	
packaged, marke	d and labeled, and are in proper condition for a	vailable and/or carrier has the DOT em	ergency response guidebook or e	quivalent docume	nt in the vehicle.		
Per	10/11	?er====================================					
							/ı
	ON CORPORATION om Rd., Painesville, OH 44077						
	-office address of shipper.	* MARK WITH "X" TO DE	SIGNATE HAZARDOUS M	ATERIAL AS I	DEFINED IN	TITLE 49 OF FEDE	RAL REGULATION

SIR-003582

Date Inspected: 11-Aug-2011

### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

# SOURCE INSPECTION REPORT

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607

Project Name:	<b>ne:</b> SAS Superstructure <b>ractor:</b> American Bridge/Fluor Enterprises, a JV			OSM Arrival Time: 800 OSM Departure Time: 1630					
<b>Prime Contractor</b>									
Contractor:	Dyson Corp. & Subs				Location: Painesville, OH				
Quality Control Contact: Russ Welsh				Quality Contro	ol Present:	Yes	No		
Material transfer:		Yes	No	N/A	Sampled Items:		Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:		Yes	No	N/A
Rebar Test Witne	ss:	Yes	No	N/A	Delayed/Cancelled: Yes No		No	N/A	
Other:									
Bridge No:	34-0006				<b>Component:</b>	Main Cable	Anchor Ro	ods	
Bid Item:	66				Lot No:	B337-024-11	and B33	7-025-1	1

### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Manager (QCM) Russell Welsh who accompanied this QAI to the location where main cable anchor rod activities were in-process.

Dyson has prepared (41ea) 3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rods and (6ea) 1300mm length extension rods to be shipped to Monnig Ind. galvanizing facility. Dyson is selecting rods from heat #4M76367-2, Dyson lot #OQX and heat #4M76367-1, Dyson lot #OQY, heat #3M75738-2, Dyson lot #OPY, heat #4M76368-1, Dyson lot #OTD, heat #4M76368-3, Dyson lot #OOH and extension rods from heat # 3M75738-1, Dyson lot #OQW that have been deemed acceptable and per specification. The main cable anchor rods that are to be shipped are as follows:

- First bundle consists of OTD-2E, OTD-1D, OTD-2D, OTD-3D, OTD-1H and OOH-2-F.
- Second bundle consists of OOH-1F, OOH-1E, OOH-4F, OOH-5F, OOH-3F and OPY2-8 (Note that OPY2-8 was assigned a separate green tag with CA lot #B337-025-11. This Rod was cut threaded previously).
- Third bundle consists of OPY-4-22, OQY-4-23B, OPY-4-19, OPY-4-20 and OPY-4-21.
- Fourth bundle consists of OQY-7C, OQY-6C, OQY-10C, OQY-9C and OQX-2-8.
- Fifth bundle consists of OQY-19C, OQY-18C, OQY-17C, OQY-16C and OQY-15C.
- Sixth bundle consists of OPY-4-24, OQY-11C, OQY-12C, OQY-13C and OQY-14C.
- Seventh bundle consists of OQY-23C, OQY-24C, OQY-21C and OQY-20C.

# SOURCE INSPECTION REPORT

( Continued Page 2 of 3 )

- Eighth bundle consists of OQY-4C, OQY-3C, OQY-2C, OQY-1C and OQX-2-5.
- Pallet consists of extension rods OQX6-1, OQX-2, OQX-3, OQW2-4, OQW2-5 and OQW2-6.

This QAI attached a Green Tag with Lot No. B337-024-11 to the material to be shipped. Supporting documentation which includes MTR's, Certificates of Conformance and NDT test results are enclosed within an envelope and have been attached to the pallet with the extension rods.

Dyson has prepared (1ea) 3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rod to be shipped to Monnig Ind. galvanizing facility. Dyson is selecting rod from heat #3M75738-2, Dyson lot #OPY that have been deemed acceptable and per specification. This main cable anchor rod was previously cut threaded and not roll threaded. This rod has been bundled within the second bundle listed above and is designated as OPY2-8.

This QAI attached a Green Tag with Lot No. B337-025-11 and supporting documentation which includes MTR's, Certificates of Conformance and NDT test results are enclosed within an envelope and have been attached to the material to be shipped.



# SOURCE INSPECTION REPORT

(Continued Page 3 of 3)



### **Summary of Conversations:**

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Broening, Dustyn	Quality Assurance Inspector
<b>Reviewed By:</b>	Edmondson, Fred	QA Reviewer

# DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.8</u>

# **COMPONENT MATERIAL INSPECTION REPORT**

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607

Contractor: Dyson Corp. & Subs

**Location:** Painesville, OH

Bridge No.: 34-0006

**Report No:** CMI-000374 **Date Inspected:** 11-Aug-2011

OSM Arrival Time: 800 OSM Departure Time: 1630 Component:# Main Cable Anchor Rod

The following material has been inspected in accordance with Section 6 of the Standard Specifications at the above location. At this point in the fabrication process it appears to comply with contract plans and specifications.

To be shipped to the following vendor or locations: Monnig Industries 400 Industrial Drive, Glasgow, MO 65254

Lot # Bid Item # B337-024-11 66	<b>Quantity</b> 41	ea	Material Description 3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rods
B337-024-11 66	6	ea	3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rod
			Extensions

**Identification:** 3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rods and Extension Rods **Summary of Items Observed:** 

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Manager (QCM) Russell Welsh who accompanied this QAI to the location where main cable anchor rod activities were in-process.

Dyson has prepared (41ea) 3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rods and (6ea) 1300mm length extension rods to be shipped to Monnig Ind. galvanizing facility. Dyson is selecting rods from heat #4M76367-2, Dyson lot #OQX and heat #4M76367-1, Dyson lot #OQY, heat #3M75738-2, Dyson lot #OPY, heat #4M76368-1, Dyson lot #OTD, heat #4M76368-3, Dyson lot #OOH and extension rods from heat # 3M75738-1, Dyson lot #OQW that have been deemed acceptable and per specification. The main cable anchor rods that are to be shipped are as follows:

• First bundle consists of OTD-2E, OTD-1D, OTD-2D, OTD-3D, OTD-1H and OOH-2-F.

• Second bundle consists of OOH-1F, OOH-1E, OOH-4F, OOH-5F, OOH-3F and OPY2-8 (Note that OPY2-8

was assigned a separate green tag with CA lot #B337-025-11. This Rod was cut threaded previously).

- Third bundle consists of OPY-4-22, OQY-4-23B, OPY-4-19, OPY-4-20 and OPY-4-21.
- Fourth bundle consists of OQY-7C, OQY-6C, OQY-10C, OQY-9C and OQX-2-8.
- Fifth bundle consists of OQY-19C, OQY-18C, OQY-17C, OQY-16C and OQY-15C.
- Sixth bundle consists of OPY-4-24, OQY-11C, OQY-12C, OQY-13C and OQY-14C.
- Seventh bundle consists of OQY-23C, OQY-24C, OQY-21C and OQY-20C.



# **COMPONENT MATERIAL INSPECTION REPORT**

(Continued Page 2 of 3)

- Eighth bundle consists of OQY-4C, OQY-3C, OQY-2C, OQY-1C and OQX-2-5.
- Pallet consists of extension rods OQX6-1, OQX-2, OQX-3, OQW2-4, OQW2-5 and OQW2-6.

This QAI attached a Green Tag with Lot No. B337-024-11 to the material to be shipped. Supporting documentation which includes MTR's,Certificates of Conformance and NDT test results are enclosed within an envelope and have been attached to the pallet with the extension rods. Reference this QAI 6034 report dated 8/11/11.

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

Nina Choy 510-385-5910



### **Summary of Conversations:**

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for

## COMPONENT MATERIAL INSPECTION REPORT

( Continued Page 3 of 3 )

your project.

Inspected By:	Broening, Dustyn	Quality Assurance Inspector

Reviewed By: Edmondson, Fred

QA Reviewer

TL-6011,Component Material Inspection Report

## DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493

## **COMPONENT MATERIAL INSPECTION REPORT**

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607

Contractor: Dyson Corp. & Subs

**Location:** Painseville, OH

Bridge No.: 34-0006

The following material has been inspected in accordance with Section 6 of the Standard Specifications at the above location. At this point in the fabrication process it appears to comply with contract plans and specifications.

To be shipped to the following vendor or locations: Monnig Industries 400 Industrial Drive, Glasgow, MO 65254

Lot #	Bid Item #	Quantity		Material Description
B337-025-1	1 66	1	ea	3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rod

Identification: 3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rod

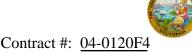
## **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Manager (QCM) Russell Welsh who accompanied this QAI to the location where main cable anchor rod activities were in-process.

Dyson has prepared (1ea) 3.5" diameter A354 grade BD, Q&T Main Cable Anchor Rod to be shipped to Monnig Ind. galvanizing facility. Dyson is selecting rod from heat #3M75738-2, Dyson lot #OPY that have been deemed acceptable and per specification. This main cable anchor rod was previously cut threaded and not roll threaded. This rod has been bundled within the second bundle and is designated as OPY2-8. Reference this QAI 6034 report dated 8/11/11.

This QAI attached a Green Tag with Lot No. B337-025-11 and supporting documentation which includes MTR's, Certificates of Conformance and NDT test results are enclosed within an envelope and have been attached to the material to be shipped.



EDMUND G. BROWN Jr., Governor

Cty: SF/ALA Rte: 80 PM: 13.2/13.9

76.8

Report No: CMI-000373

Date Inspected: 11-Aug-2011

OSM Arrival Time: 800

**Component:**# Main Cable Anchor Rods

OSM Departure Time: 1630

File #:

## **COMPONENT MATERIAL INSPECTION REPORT**

( Continued Page 2 of 2 )



## **Summary of Conversations:**

As noted in the body of the report above. Other basic communication was performed between this QAI and the QCM during this visit.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Broening, Dustyn	Quality Assurance Inspector
<b>Reviewed By:</b>	Edmondson, Fred	QA Reviewer

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>99.15</u>

## SOURCE INSPECTION REPORT

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607 Report No:SIR-003589Date Inspected:25-Aug-2011

Project Name: Prime Contractor Contractor:	: American	erstructure Bridge/Flue Inductries	or Enterp	rises, a JV	OSM Arrival Time: 900 V OSM Departure Time: 1730 Location: Glasgow, MO					
Quality Control C Material transfer: Stock Transfer: Rebar Test Witne	:	Andrew M Yes Yes Yes	lonning No No No	N/A N/A N/A	Quality Contro Sampled Items OK to Cut: Delayed/Cance	:	Yes Yes Yes Yes	No No No No	N/A N/A N/A	
Other: Bridge No: Bid Item:	N/A 34-0006 66				Component: Lot No:	PWS Anchor N/A	r Rods			

## **Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager, was present at Monning Industries Inc. in Glasgow, MO as requested to monitor the galvanizing of Parallel Wire Strand (PWS) High Strength Rods from Dyson Corporation for use on the San Francisco / Oakland / Bay Bridge (SFOBB), Self Anchored Suspension (SAS) project.

This QA Inspector met with Monning Industries General Manager Ryan Monning and Andrew Monning and was informed of the status of galvanizing the material and preparation of the various documents for inspection and release of the material for shipping. This QA Inspector was informed of the following:

There were 201 high strength rods at Monning, all rods had been blasted and galvanized. Monning was in the process of performing Quality Control (QC) inspections and packaging for shipment.

This QA Inspector was informed the material had arrived without a "Green Tag" from Dyson Corporation and that Monning had received a package this morning (1100 hours) containing various documents such as the Certificates Of Conformance (COC) from Dyson Corporation.

Dyson Corporation has previously arranged shipping of material from Monning Industries. Monning Industries has grouped the PWS Anchor Rods into proposed shipping bundles, but is not aware of a date for shipment.

This QA Inspector was provided access to the shop area and observed there appeared to be 201 high strength rods at the facility in the following stages:

## SOURCE INSPECTION REPORT

( Continued Page 2 of 3 )

152 - rods were galvanized, had a spherical nut and jam nut threaded onto the applicable end, the threads were wrapped in cloth and tapped, then multiple rods (5-6) were then banded together. See photo below

42 – rods were galvanized and in various stages of being completed which ranged from waiting for QC inspection, nuts to be threaded and being wrapped for shipment. See photo below.

6 - rods approximately 1310 mm in length were banded onto a pallet.

1- rod identified as OPY-2-11 had been rejected and red tagged by Monning QC Inspector Robert Cole. This QA Inspector was informed a spherical nut could not be threaded by hand onto the tapered end as required by contract documents.

This QA Inspector was informed by Andrew Monning that documents had arrived at 1100 hours this date from Dyson Corporation. This QA Inspector performed a review of the documents and observed the following documents had been provided and/or were not correct as noted below.

The COC from Dyson had the incorrect bid item number and part name – bid item 68 and Suspender System was used.

The inspection reports in accordance with ABF-RFI-002502R00 (measurements of the tapered and coupler ends) was not provided.

The document identifying the heat treatment code for each heat of steel was not provided. Typically each heat of steel has had two heat treatment identification codes/numbers.

A shipper identifying and listing the applicable pieces sent to Monning.

This QA Inspector was provided some of the required documentation form Monning Industries and during a review of these documents this QA Inspector observed the following.

The COC did not reference the applicable ASTM standard for the galvanizing (ASTM A123)

A QC Inspection report for the blasting was not provided.

This QA Inspector spoke with Andrew Monning regarding the QC Inspection reports for galvanizing and was informed that a report could be generated for each high strength rod, for all rods and/or for each truck load of rods to be shipped which had been done for previous shipments. This QA Inspector was informed that shipping documents for the shipment of the high strength rods to the jobsite had not been provided by Dyson therefore QC reports for the galvanizing thickness had not been generated. Andrew Monning assured this QA Inspector all required QC inspections had been performed and had been entered into the computer.

This QA Inspector randomly observed the following QC functions this date. This QA Inspector observed QC Inspector Robert Cole using a mechanical thickness gauge to verify the galvanizing/zinc thickness at multiple random locations on approximately 10 of the 42 rods in various process stages. This QA Inspector confirmed with

## SOURCE INSPECTION REPORT

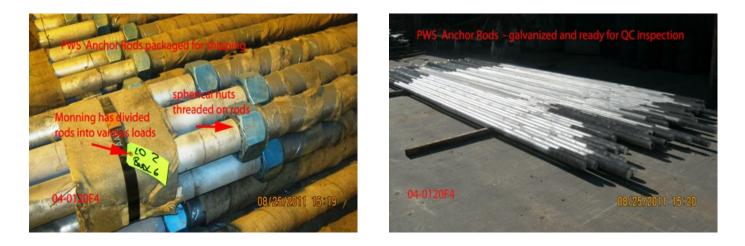
( Continued Page 3 of 3 )

QC Inspector Robert Cole the instrument had been calibrated just prior to performing the inspections.

During observations around the shop this date this QA Inspector observed the identification numbers of each high strength rod had been written in black marker approximately in the middle of each rod. This QA Inspector performed a random verification on approximately 10% of the rods at Monning Industries that the identification number had been transferred correctly.

In general the status of the high strength rods regarding galvanizing and a partial review of the QC documents required for tagging the rods has been performed as noted above.

## **Summary of Conversations:**



## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>99.15</u>

## SOURCE INSPECTION REPORT

Resident Engineer:Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607 Report No:SIR-003594Date Inspected:26-Aug-2011

Project Name: Prime Contractor: Contractor:	I	e	or Enterp	orises, a JV	OSM Arrival Time: 900 OSM Departure Time: 1730 Location: Glasgow, MO					
Quality Control C Material transfer: Stock Transfer: Rebar Test Witnes		Ryan Mon Yes Yes Yes	nig No No No	N/A N/A N/A	Quality Contro Sampled Items OK to Cut: Delayed/Cance	:	Yes Yes Yes Yes	No No No No	N/A N/A N/A	
Other: Bridge No: Bid Item:	N/A 34-0006 66				Component: Lot No:	PWS Anchor N/A	Rods			

## **Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager, was present at Monnig Industries Inc. in Glasgow, MO as requested to monitor the galvanizing of Parallel Wire Strand (PWS) High Strength Rods from Dyson Corporation for use on the San Francisco / Oakland / Bay Bridge (SFOBB), Self Anchored Suspension (SAS) project.

This QA Inspector met with Monnig Industries General Manager Ryan Monnig and Andrew Monnig and was informed of the following status regarding the galvanizing of the PWS Anchor Rods:

Monnig QC Inspector Robert Cole had rejected two more rods for not being able to hand thread a spherical nut to the end of the threads. This QA Inspector was informed by QC Inspector Robert Cole the following rods had been rejected; OQX4-5 and OPY2-8. QC Inspector Robert Cole informed this QA the nut on rod OPY2-8 could only be threaded for approximately 450 mm of the thread length and the nut for OQX4-5 stopped approximately 200 mm from the full length. This QA Inspector verified the nut could not hand threaded on to each of the rods above. This brings the total count of rods rejected at Monnig to 3. This QA Inspector observed that all 3 rods had been separated and that a QC – Reject tag had been attached, see photo below.

QC Inspector Robert Cole informed this QA Inspector he had rejected the following 3 rods due to galvanizing issues; OQY-12A, OQX3-13 and OQX5-26. This QA Inspector observed the rods had been re-blasted to remove the galvanizing and were re-galvanized within 4 hours of blasting.

This QA Inspector finished the review of the certification documents that had arrived form Dyson Corporation the previous day. The certifications were in 14 separate packages containing a range of rods from 3 to 32. This QA

## SOURCE INSPECTION REPORT

( Continued Page 2 of 3 )

Inspector observed that in addition to what was reported yesterday a Magnetic Particle Testing (MT) report was not present for steel heat number 4M76367-1. As of this date Monnig has not received a shipper for the PWS Anchor Rods from Dyson Corporation. This QA Inspector created a list of the 201 rods separated by the 14 certification packages in an effort to organize them for tractability and shipping. This QA Inspector was contacted by Dyson Corporation project coordinator Pat Sheffield regarding the status of the certification packages. This QA Inspector informed him of the following items observed from the review:

The COC from Dyson did not have the correct bid item number and part description. This QA Inspector stated the material appeared to be bid item 66 and PWS Anchor Rods.

The inspection report in accordance with ABF-RFI-002502R00 (measurements of the threads at each end) was not provided.

The document identifying the heat treatment of each heat of steel was not provided. Typically each heat of steel has had two heat treatment identification codes/numbers.

A shipper identifying and listing the applicable pieces sent to Monnig and a shipper for the material to the jobsite.

A MT report did not appear to be present for steel heat number 4M76367-1.

Mr. Sheffield stated he would look into these comments and make corrections as needed. The number of COC was discussed and this QA Inspector stated that whatever was requested by American Bridge/Fluor should be submitted.

This QA Inspector had a conversation with Structural Material Representative (SMR) Kittric Guest regarding the status of the PWS Anchor Rods and was informed of the following:

The following heat treat codes were Blue Tag items (OOH, OOF, OTD and OPY) and the Material Suitability Documentation Report (TL-6013) would be electronically forwarded to this QA Inspector.

The check samples for all the material have been completed and accepted.

This QA Inspector observed Monnig personnel were in the process of threading the spherical nuts on to the remaining rods and packaging them for shipment. This QA Inspector observed the threaded sections of the rods were wrapped was a cloth material and tapped. Then several rods (usually 5-6) were bundled together using wood to separate the rods and nuts.

## **Summary of Conversations:**

This QA Inspector had general conversations with Monnig General Manager Ryan Monnig and other Monnig personnel. Except as described above there were no other notable conversations.

## SOURCE INSPECTION REPORT

(Continued Page 3 of 3)



## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

SIR-003595

Date Inspected: 29-Aug-2011

### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials **Quality Assurance and Source Inspection** 

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493

Contract #: 04-0120F4 Cty: SF/ALA Rte: 80 PM: 13.2/13.9 File #: 99.15

**Report No:** 

## SOURCE INSPECTION REPORT

**Resident Engineer:**Siegenthaler, Peter Address: 333 Burma Road City: Oakland, CA 94607

<b>Project Name:</b>					OSM Arrival Time: 900				
<b>Prime Contract</b>	or: Americar	Bridge/Flu	or Enterp	orises, a JV	OSM Departure Time: 1730				
Contractor:	Monnig I	Monnig Industries			Location: Glasgow, MO				MO
Quality Control	Contact:	Ryan Mor	nnig		Quality Control	ol Present:	Yes	No	
Material transfer:		Yes	No	N/A	Sampled Items:		Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:		Yes	No	N/A
Rebar Test Wit	ness:	Yes	No	N/A	Delayed/Cance	elled:	Yes	No	N/A
Other:	N/A								
Bridge No:	34-0006				<b>Component:</b> PWS Anchor R		r Rods		
Bid Item:	66				Lot No:	N/A			

#### **Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager, was present at Monnig Industries Inc. in Glasgow, MO as requested to monitor the galvanizing of Parallel Wire Strand (PWS) High Strength Rods from Dyson Corporation for use on the San Francisco / Oakland / Bay Bridge (SFOBB), Self Anchored Suspension (SAS) project.

This QA Inspector met with Monnig Industries General Manager Ryan Monnig and Andrew Monnig and was informed of the following status regarding the galvanizing of the PWS Anchor Rods:

Monnig QC Inspector Robert Cole had rejected two rods for not meeting the galvanizing requirements of ASTM A123, the galvanizing was not bonded to the base material. This QA Inspector was informed by QC Inspector Robert Cole the following rods would be re-blasted and re-galvanized; OQX5-9 and OQX5-10. This QA Inspector performed a visual verification of the rods prior to blasting, see photo below. This QA Inspector periodically observed the processing of these rods, see photo below after blasting and in line to start the galvanizing process. This QA Inspector observed the galvanizing process was performed within 4 hours of the blasting and appeared to comply with the contract requirements.

During random observations this QA Inspector observed the first load of rods from Dyson for galvanizing had not been identified with the rod specific alpha-numerical identification. This QA Inspector notified Andrew Monnig of this observation and was informed the ID's would be marked with a black marker in the middle of each rod, like all other rods. This QA Inspector randomly observed this process during the shift.

This QA Inspector was informed by Andrew Monnig that Dyson Corporation had emailed 14 new certification



## SOURCE INSPECTION REPORT

( Continued Page 2 of 2 )

packages for the PWS Anchor Rods this afternoon. This QA Inspector performed a review of the documents and observed all issues appeared to have been corrected except a Magnetic Particle Testing (MT) report for steel heat 4M76367-1 and a shipper for the material were not present. Later this afternoon project coordinator Pat Sheffield form Dyson Corporation called this QA to confirm receipt of the new documents and was informed of the findings. Mr. Sheffield informed this QA Inspector Dyson was coordinating shipping with Monnig and that 2 trucks would arrive tomorrow (Tuesday / 8/30/11) and 2 trucks the following day (Wednesday / 8/31/11) to transport the material to the job site and that a shipper was in the process of being created. Andrew Monnig informed this QA Inspector the material had arrived from Dyson in 5 truck loads and that the shippers were needed to transfer material into 4 truck loads.

This QA Inspector observed that as of this date all material had been galvanized and only approximately 12 rods remained in the process of having the nuts threaded on and packaged for shipping. This QA Inspector observed that of the 201 PWS Anchor Rods present at Monnig 3 had been rejected by QC personnel for not being able to be thread a nut by hand and of the remaining 198 rods: 111 were be Orange Tagged and 87 Blue Tagged.

## **Summary of Conversations:**

This QA Inspector had general conversations with Monnig General Manager Ryan Monnig and other Monnig personnel. Except as described above there were no other notable conversations.





## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

#### DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING SERVICES Office of Structural Materials **Quality Assurance and Source Inspection** Contract #: 04-0120F4 Bay Area Branch Cty: SF/ALA Rte: 80 PM: 13.2/13.9 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 File #: 76.25A (707) 649-5453 (707) 649-5493 MATERIAL SUITABILITY REPORT **Resident Engineer:**Siegenthaler, Peter **Report No:** MSR-000052 Address: 333 Burma Road **Report Date:** 30-Aug-2011 City: Oakland, CA 94607 SMR Authorization #: **Project Name:** SAS Superstructure Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date of NCR:** Contractor: Dyson Corp. & Subs Location: Monnig Ind. Glasgow, MO The following material has been inspected and found not to comply with contract plans and specifications; however, METS has determined this material may be suitable for its intended purpose. .... ...

Lot #	Bid Item #	Quan	tity	Material Description
B219-007-11	66	42	ea	PWS High Strength Anchor Rods - Load - 1
B219-009-11	66	29	ea	PWS High Strength Anchor Rods - Load - 2

#### **Identification:**

one Blue Tag attached to each load (2-tags total) see photos below **Description of Non-Conformance (NCRs):** 

#### Summary of Items Observed:

This QA Inspector observed the following PWS Rods were part of load-1: OPY4-1, OPY4-2, OPY4-4, OPY4-6, OPY4-7, OPY4-8, OPY4-9, OPY4-10, OPY4-11, OPY4-12, OPY4-13, OPY2-4, OPY2-9, OPY2-10, OPY2-18, OPY2-20, OPY2-21, OPY2-22, OPY2-23, OPY2-24, OPY2-25, OPY2-26, OPY3-1, OPY3-2, OPY3-6, OPY3-7, OPY3-9, OTD-4, OTD-5, OTD-16, OTD-17, OTD-18, OOH2-6, OOH2-22, OOF2-1, OOF3-4, OOF4-3, OOF4-8, OOF4-9, OOF5-1, OOF5-2 and OOF5-4.

This QA Inspector observed the following PWS Rods were part of load -2: OPY4-14, OPY4-15, OPY4-16, OPY4-17, OPY4-18, OPY2-27, OPY2-28, OPY2-29, OPY2-30, OPY2-31, OPY2-32, OPY2-33, OPY2-34, OPY2-35, OPY2-36, OPY2-37, OPY2-38, OPY2-39, OPY3-16, OPY3-18, OPY3-19, OPY3-20, OPY3-21, OPY3-22, OPY3-23, OPY3-24, OPY3-25, OPY3-26 and OPY3-27.

BTL item: Heat treatment lots OOF, OOH, OTD and OPY contained some rods with thread sizes outside the specified range. Per RFI 2502 it was determined that oversized threads would be fit for purposes provided the nut is able to thread freely down the bar/rod and an acceptable dimensional report is submitted.

This QA Inspector observed a spherical nut and regular nut were threaded full length and shipped as such. This QA Inspector observed a dimensional report from Dyson Corporation accepting the rods was submitted for the heat treatment lots.

## MATERIAL SUITABILITY REPORT

(Continued Page 2 of 2)

This QA Inspector observed a Certificate Of Compliance (COC), Material Test Report (MTR), Magnetic Particle Testing reports per material heat and shipper were submitted from Dyson Corporation. This QA Inspector observed a COC and QC reports for blasting and galvanizing were submitted from Monnig Industries. The documents submitted appeared to comply with the contract requirements. This QA Inspector previously confirmed with Structural Material Representative (SMR) Kittric Guest the material check samples had been accepted.

## **Summary of Conversations:**

This QA Inspector had general conversations with Monnig Industries personnel and the SMR. Except as described above there were no other notable conversations.



## Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTAT <b>MATERIAL SUITABILITY TAG</b> 42-Rods TL-0625 (REV. 04/04) © 07 103684	ION
SMR REF. NO. 554-021-11	e
STATE LOT NO. 	<u>*</u>
CONTRACT NO. 64-0120F4 8/30/11	

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION MATERIAL SUITABILITY TAG TL-0625 (REV. 04/04) @ 07 103684 29-Rods
SMR REF. NO. 554-021-11
STATE LOT NO. B219-009-11
CONTRACT NO. 04-0120F4 8/30/11

# **Monnig Industries, Inc.**

HOT DIP & MECHANICAL GALVANIZING P.O. BOX 98 GLASGOW, MO 65254 PH. 660-338-2242 FAX: 660-338-5199

## AUGUST 30, 2011

DYSON CORPORATION 50 FREEDOM ROAD PAINESVILLE, OH 44077

## **RE: GALVANIZING CERTIFICATE-CALTRAN**

THIS WILL CERTIFY THAT THE RODS GALVANIZED ON THE ATTACHED SPREADSHEET MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS OF ASTM A-123 & F2329 SPECIFICATIONS.

### 44 PWS ANCHOR RODS

## ROD ID/MIL THICKNESS MEASUREMENTS

· OPY2-18 / 5.5	OPY2-20 / 6.0	OPY2-21 / 5.0	OPY2-22 / 6.0	OPY2-23 / 6.5
OPY2-24 / 6.5	OPY2-25 / 6.0	OPY2-26 / 6.5	OPY2-10 / 6.5	OPY2-4 / 7.0
OPY2-9 / 6.0	OPY3-1 / 6.5	OPY3-2 / 6.5	OPY3-6 / 6.0	OPY3-7 / 6.5
OPY3-9 / 6.5	OTD-16 / 6.5	OTD-17 / 6.5	OTD-18 / 7.0	OTD-5 / 6.5
OTD-4 / 7.0	OOH2-6 / 7.0	OOH2-22 / 6.5	OOF2-1 / 6.5	OOF3-4 / 6.0
OOF4-3 / 4.5	OOF4-8 / 5.5	OOF4-9 / 7.0	OOF5-1 / 6.5	OOF5-2 / 6.5
OOF5-4 / 6.0	OPY4-1 / 6.5	OPY4-2 / 6.5	OQW-3 / 6.5	OPY4-4 / 7.0
OQW-5 / 6.5	OPY4-6 / 6.5	OPY4-7 / 5.5	OPY 4-8 / 7.0	OPY4-9 / 6.5
OPY4-10 / 6.5	OPY4-11 / 6.5	OPY4-12 / 5.0	OPY4-13 / 6.0	

PATRICIA S. WESTHUES NOTARY PUBLIC STATE OF MISSOURI HOWARD COUNTY MY COMMISSION EXP. APR. 18, 2012

HN MONNIG, / PRESIDENT

thur

PATRICIA S. WESTHUES, NOTARY PUBLIC



Phoenix Manufacturing, Inc. P.O. BOX 330 26666 Von Holten Rd. Cole Camp, MO. 65325 660-668-2611 660-668-3160 (fax)

SSPC-SP10 Near White Metal Blast

Near-White Blast Cleaning - Removal of nearly all mill scale, rust, rust scale, paint, or foreign matter by the use of abrasives propelled through nezzles or by centrifugal wheels, to the degree hereafter specified. A Near-White Blast Cleaned Surface Finish is defined as one from which all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter have been completely removed from the surface except for very light shadows, very slight streaks or shight discolorations caused by rust stain, mill scale oxides, or light, tight residues of paint or coating that may remain. At least 95 percent of each square inch of surface area shall be free of all visible residues, and the remainder shall be limited to the light discoloration menuoned above

## 44 PWS ANCHOR RODS

ROD IDS

	OPY2-20	OPY2-21	OPY2-22	OPY2-23
OPY2-18		OPY2-26	OPY2-10	· OPY2-4
OPY2-24	<u>OPY2-25</u>	OPY3-2	OPY3-6	OPY3-7
OPY2-9	<u>OPY3-1</u>	OTD-17	OTD-18	OTD-5
OPY3-9	OTD-16		OOF2-1	0013-4
OTD-4	OOH2-6	OOH2-22	OOF5-1	# 00F5-2
OOF4-3	OOF4-8	OOF4-9	L	$\frac{1}{100} \frac{1}{100} \frac{1}$
OOF5-4	OPY4-1	OPY4-2	OQW-3	$\frac{OPY4-9}{OPY4-9}$
OOW-5	OPY4-6	OPY4-7	OPY 4-8	UP14-9
OPY4-10	OPY4-11	OPY4-12	OPY4-13	<u> </u>

Dem Col

DYSON		dom Road	440-946	5-3500
DN DOMEST	TIC NUT Painesville	e, OH 44077		2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112051	660110-SA-017 CO 022	8900 MM	24 pcs	8/31/11
CUSTOMER American Bridge / 375 Burma Road Oakland , CA 946 USA		PRODUCT DESCI 3.50°-4UNC 2A x 8960mm OA (13.78°) on opposite end. Drill ASTM-A123 widdle meal ble SPECIFICATIONS ASTM-A354 Grz	RIPTION L PWS anchor rad w/1850mm of useable ( & tap 2°4, SUNC-2A x filmm deep on 185 sy network of estimation III TEM 66 - FUR	iread one end and 280mm Amm liteaded end, HDG per NISH PWS CAMLE SYSTEM VISIONS
DOMUNO				

#### DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OPY4-1, OPY4-2, OQW-3, OPY4-4, OQW-5, OPY4-6, OPY4-7, OPY4-8, OPY4-9, OPY4-10, OPY4-11, OPY4-12, OPY4-13, OPY4-14, OPY4-15, OPY4-16, OPY4-17, OPY4-18, OPY4-19, OPY4-20, OPY4-21, OPY4-22, OQY-23B, OPY4-24 Heat treatment lot OQW is from heat of steel ID 3M75738-1 O repeat

Heat treatment lot OPY is from heat of steel ID 3M75738-2 Heat treatment lot OQY is from heat of steel ID 4M76367-1

Attachments: Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

PWS ANCHOR RODS and EXTENSION ROD THREAD MAPPING

TTN7
31,
U5
100
đ

Date	BAR				0	COUPLER END					TAPPE	TAPPED END			
Measured		LENGTH	LENGTH	DYSON	No-Go	Pitch Diameter [in.]	reter [in.]	No-Ga		Pitch	n Diameter F	Diameter Readings (+/- 1 Pitch) [Inches]	1 Pitch) [Inc	hes]	
	CODE / BAR	MM	FT./IN	S.O.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	2.25"	12.75"	24.75"	36.75"	48.75"	60.75"
8/1/11	OPY4-1	0068	29'-2.39"	112051	Pass	3.332	3.332	Pass	3.334	3.331	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-2	8900	29'-2.39"	112051	Pass ·	3.330	3.332	Pass	3.330	3.330	3.330	3.331	3.332	3.332	3,331
8/1/11	00.W-3	8900	29'-2.39"	112051	Pass	3.334	3.334	Pass	3.334	3.333	. 3.334	3.334	3.334	3.333	3.334
8/1/11	OPY4-4	8900	29'-2.39"	112051	Pass	3.330	3.331	Pass	3.331	3.330	3.330	3.330	3.331	3.331	3.331
8/1/11	00W-5	8900	29'-2.39"	112051	Pass	3.323	3.33I	Pass	3.332	3.332	3.329	3.329	3.330	3.331	3.331
8/1/11	OPY4-6	8900	29'-2.39"	112051	Pass	3.331	3.331	Pass	3.332	3.329	3.329	3.329	· 3.330	3.329	3.329 -
8/1/11	OPY4-7	8900	29'-2.39"	112051	Pass	3.327	3.333	Pass	3.334	3.333	3.33I	3.331	3.331	3,331 ·	3.331
8/1/11	OPY4-8	8900	29'-2.39"	112051	Pass	3.327	3.333	Pass	3,333	3.333	3.334	3.333	3.334	3.334	3.334
8/1/11	0PY4-9 ·	8900	29'-2.39"	112051	Pass	3.329	3.332	Pass	3.333	3.333	3.333	3.333	3.333	3.330	3.333
8/1/11	OPY4-10	8900	29'-2.39"	112051	Pass	3.330	3.333	Pass	3.332	3.332	3.331	3.331	3.332	3.332	3.331
8/1/11	0PY4-11	8900	29"-2.39"	112051	Pass	. 3.323	3.331	Pass	3.333	3.332	3.332	3.332	3.332	3.332	3.332
B/1/11	OPY4-12	8900	29'-2.39"	112051	Pass	3.323	3.331	Pass	3.333	3.332	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-13	0068	29'-2.39"	112051	Pass	3.326	3.333	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
8/1/11	OPY4-14	8900	29'-2.39"	112051	Pass	3.324	3.332	Pass	3.332	3.332	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-15	8900 ·	29'-2.39"	112051	Pass	3.323	3.330	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3:334
8/1/11	OPY4-16	8900	29'-2.39"	112051	Pass	3.323	3.329	Pass	3.333	3.332	3.332	3.331	3.331	3.330	3.330
8/1/11	OPY4-17	8900	29'-2.39"	112051	Pass	3.324	3.332	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
8/1/11	OPY4-18	8900	29'-2.39"	1120211	Pass	3.331	3.331	Pass	3.332	3.331	3.331	3.331	3.331	3.331	3.331
8/6/11	OPY4-19	8900	"95-2-'92	112051	Pass	3.333	3.334	Pass	3.333	3.333	3.331	3.332	3.331	3.332	3.331
8/6/11	OPY4-20	8900	29'-2.39"	112051	Pass	3.331	3.333	Pass	3.323	3.333	3.333	3.333	3.333	3.333	3.333
8/6/11	OPY4-21	0068	29'-2.39"	112051	Pass	3.328	3.332	Pass	3.328	3.333	3.332	3.333	3.333	3.331	. 3.331
8/6/11	OPY4-22	0068	29'-2.39"	112051	Pass	3.330	3.333	Pass	3.325	3.333	3.333	3.333	3.333	3.333	3.333
8/6/11	OQY-23B	8900	29'-2.39"	112051	Pass	3.330	3.331	Pass	3.333	3.333	3.332	3,332	3.332	3.332	3.332
8/6/11	OPY4-24	8900	29'-2.39"	112051	Pass	3.323	3.332	Pass	3.329	3.333	3,333	3.333	3.333	3.333	3.334
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										a second system framework organization					

#### S DYSON CORP. 53 Freedom Road 440-946-3500 D N DOMESTIC NUT Painesville, OH 44077 440-352-2700 fax DYSON CUSTOMER ITEM QUANTITY DATE ORDER# ORDER# NUMBER SHIPPED SHIPPED L 112052 660110-SA-017 CO 022 9000 MM 24 pcs8/31/11 CUSTOMER PRODUCT DESCRIPTION American Bridge / Fluor JV 3.50"-4UNC-2A x 9000mm (29'-6.33") OAL #WS Anchor Rod w/1850mm (72,83") of useable thread one 3.30 "HORE 24 A SOLUTION (2270.337) OTL 11 YO ADDING WILDOWNAD (23.657) DEED ON eed and 2010mm (13.787) on opposite and, Drill & The 272-1-1/2 UNC-2A & Glumn (23.67) DEED ON 1850mm threaded coul. HDG net ASTM-A123 w/with metal blast prior to calvanize IDD TEAM (6-375 Burma Road SPECIFICATIONS Oakland CA 94607 ASTM-A354 Grade BD with special provisions USA 10-1.59, 10-1.60, 10-1.61 std specifications 75-1.05

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OPY2-18, OPY2-20, OPY2-21, OPY2-22, OPY2-23, OPY2-24, OPY2-25, OPY2-26, OPY2-10, OPY2-4, OPY2-9, OPY2-27, OPY2-28, OPY2-29, OPY2-30, OPY2-31, OPY2-32, OPY2-33, OPY2-34, OPY2-35, OPY2-36, OPY2-37, OPY2-38, OPY2-39

Heat treatment lot OPY is from heat of steel ID 3M75738-2

Attachments:

Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A.

D-repat

Q.A. Admin. Assistant 8/29/11

LARGE DIAMETER FASTENERS & FORGINGS / STANDARDS & SPECIALS / COMMERCIAL, MILITARY & NUCLEAR SPECIFICATIONS

PWS ANCHOR RODS and EXTENSION ROD THREAD MIAPPING

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Matrix         Description         Control module         Control module <th>Date</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>COUPLER END</th> <th>9</th> <th></th> <th></th> <th></th> <th>TAPPE</th> <th>TAPPED END</th> <th></th> <th></th> <th></th>	Date						COUPLER END	9				TAPPE	TAPPED END			
OPF-List         Num         Fr_/Ms         Start         A375         A375         A375         A375         A375         A375         A357	Weasured	_	LENGTH		DYSON	No-Go	Pitch Dia	meter [In.]	No-Go		Pitcl	h Diameter F	teadings (+/-	1 Pitch) [Inc	thes]	
Winter         Winter<	11/02/3		MM	FT./IN	S.O.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	25	12.75"	24.75"	36.75"	48.75"	60.75"
OPT-21         9000         124-50*         110037         Fass         3330         5335         3331         3335	TT/nc/a	PT-7140		29-6-50	112052	Pass	3.330	3.333	Pass	3.329	3.332	3.334	3.335	3.336	3.338	3.340
WYC-25         3000         25-559         11202         Fass         3331         3330         Fass         33313         33313         33313	TT/nc/n	12-21-D	2000	24-6.50	112052	Pass	3.329	3.329	Pass	3.329	3.333	3.335	3.333	3.337	3.342	3.339
OPTC24         3000         276-56         11055         Fue         3334	TT/ns/9	12-27-0	0006	29'-6.50"	112052	Pass	3.327	3.330	Pass	3.334	3.329	3.331	3.334	3.336	3.334	3.339
OPT242         2000         247-647         11.0762         Pass         3.335         Pass         3.335         Pass         3.335         Pass         3.335 <th< td=""><td>TT/Ac/9</td><td>Ur12-22</td><td>0005</td><td>29-6.50</td><td>112052</td><td>Pass</td><td>3.329</td><td>3.340</td><td>Pass</td><td>3.332</td><td>3.335</td><td>3.337</td><td>3.339</td><td>3,340</td><td>3.341</td><td>3.347</td></th<>	TT/Ac/9	Ur12-22	0005	29-6.50	112052	Pass	3.329	3.340	Pass	3.332	3.335	3.337	3.339	3,340	3.341	3.347
OP7247         900         276-557         11002         Pass         3233         Pass         3233         Pass         3234         3239         3234         3239         3234         3239         3234         3239         3234         3239         3234         3239         3234	TT/nc/a	10P12-21	0006	29'-6.50"	112052	Pass	3.331	3.336	Pass	3.325	3.330	3.334	3.332	3.335	3.337	3.328
OPP2-26         TIADG2         Fast         3.321         3.333         Fasts         3.334         3.334         3.335         3.334         3.335         3.334         3.335         <	TT/nc/a	42-21-0	DUDE	296.50"	112052	Pass	3.329	3.332	Pass	3.326	3.326	3.328	3.329	3.330	3.337	EFF F
OPY-240         9000         124 (54)         110537         Pass         3334         3335         3341         3335         3341         3345         3341         3345         3341         3345         3341         3345         3341         3345		52-27-10 25 CMGO	2000	29'-6.50"	112052	Pass	3.327	3.333	Pass	3.328	3.334	3.335	3.336	3.338	3.341	3.341
OPT7-410         9010         276-567         112052         Pass         3.336         3.337	TT/nc/a	0112-20	2000	29'-6.50"	112052	Pass	3.334	3.338	Pass	3.330	3.335	3.340	3.343	3.341	3.344	3 344
OPT249         9000         29'6.50'         11202         Fass         3.324         3.325         5.323         3.337         <	TT/97/0	DT-71-0	0006	29'-6.50"	112052	Pass	3.328	3.330	Pass	3.326	3.331	3.332	3.335	3.337.	3, 320	9290
OPY-22:         9000         137:6:567         112022         Pass         3.331         3.335         3.335         3.335         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.337         3.336         3.337	17/97/9	DPY2-4	9000	29'-6.50"	112052	Pass	3.324	3.328	Pass	3.329	3.329	3.334	3.335	UES.E	DEF E	חבב ב
OPT7-25         9000         276-35         112052         Pass         3.332         2.332         3.337         <	11/07/0	E-2740	0006	29'-6.50"	112052	Pass	3.328	3.333	Pass	3.331	3.335	3.336	3.337	3.340	225 5	עבב ב
OPTY2-28         9900         29-6-37         112052         Pass         3331         3332         3331         3332         3331         3332         3331	TT/CT//	- 12-21-D	9006	29'-6.33"	112052	Pass	3.334	3.332	Pass	3.334	3.332	3.330	3.330	1331	חבב ב	1000
Phytical         9000         275-63.4         112022         Pess         3333         Fess         3333         Fess         3332         3333         3332         3332         3332         3332         3332         3332         3332         3333         3332         3332         3333         3332         3333	11/21//	0P12-28	0006	29'-6.33"	112052	Pass	3.331	3.332	Pass	3.327	3.331	3.331	3.331	1330	1 221	LEEE
OPTY-240         9000         276-53*         112022         Pess         3332         3333         3332         3333	11/51/1	0PY2-29	0006	29'-6.33"	112052	Pass	3.333	3.333	Pass	3.326	3.334	3.333	2327	C55 5		1000
OPY2-31         D000         25'-6.3''         112052         Pass         3.331         3.332         3.331         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.333         3.332         3.333         3.332         3.333	11/51//	OPY2-30	0006	29'-6.33"	112052	Pass	3.332	3.332	Pass	3.327	3.333	755.5	1 227	2000	2000	700.0
OPY2-32         9000         22-6-33*         11202         Pess         3332         3332         3332         3332         3332         3332         3332         3332         33331         33331	11/51/1	OPY2-31	0006	29'-6.33"	112052	Pass	3.331	3.331	Pass	3.333	3,333	2222	100 0	20000	ארכים	755.5
OPYX-33         DOOD         25'-6.31'         112052         Pass         3.332         7.332         3.333         3.333         3.331	1	OPY2-32	0006	29'-6.33"	112052	Pass	3.332	3.334	Pass	3.323	755.5	2222			20010	765.6
OPV2-34         9000         129'6.53*         11052         Pass         3.333         Pass         3.333         3.331         3.331		DPY2-33	0006	29'-6.33"	112052	Pass	3.332	3.332	Pass	3.330	3 333	1 CEE E	CEE E	100.0	705.0	2,334
DYP2-35         9000         29-6.33*         112052         Psss         3332         3333         Psss         3334		OPY2-34	9000	29'-6.33"	112052	Pass	3.333	3.333	Pass	3.333	5333	2000	מנה ב	TCC.C	100.0	155.5
OPY2-36         9000         29 <sup>6</sup> .6.3 <sup>-1</sup> 112022         Pass         3.332         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333	11/51//	OPY2-35	0006	29'-6.33"	112052	Pass	3.332	3.333	Pass	3.327	3 337	DEF F	2 320	700-0	000°C	555.5
UP-V2-31         112052         Pass         3.332         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.331	11/ST/1	0PY2-36	0005	29'-6.33"	112052	Pass	3.332	3.333	Pass	3.328	3.33I	3.332	1 333	ALL F	100.0	+cc.c
UPT.230         3000         29'6.53*         112052         Pass         3.330         3.331         Pass         3.331         3.331         3.331           OPY239         9000         29'6.53*         112052         Pass         3.332         3.331         3.331         3.331           Image: Second	TT/CT/1	UP12-3/	0006	29'-6.33"	112052	Pass	3.332	3,334	Pass	3.332	3.333	3.332	3.333	3.333	2000	2000
WT (23)       3000       23-6.33*       112052       Pass       3.332       3.332       3.331       3.331       3.331         1       1       1       1       1       1       1       1       3.331       3.331       3.331       3.331       3.331       3.331       3.331       3.331       1       1	TT/CT/1		2000	296.33	112052	Pass	3.330	3.331	Pass	3.325	3.331	3.331	3.331	155 5	155 5	1000
	TT/CT/	UF12-55	2000	29'-6.33"	112052	Pass	3.332	3.332	Pass	3.332	3.332	155 5	7255	162 6	1000	+
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#### DYSON CORP. 53 Freedom Road 440-946-3500 DOMESTIC NUT Painesville, OH 44077 440-352-2700 fax DYSON CUSTOMER ITEM QUANTITY ORDER# DATE ORDER# NUMBER SHIPPED SHIPPED L 112053 660110-SA-017 CO 022 9100 MM 16 pcs 8/31/11 CUSTOMER PRODUCT DESCRIPTION 3.50°-4UNC-2A x 9100mm (29-10.27°) OAL PWS Anchor Rod w/1850mm (72.83°) of useable thread one end and 280mm (13.78°) on opposite end. Drill & Tap 2°-4-1/2 UNC-2A x 60mm (2.36°) Deep on 1850mm threaded end 100G net ASTAL-A123 w/while netal blast none to calvaniza BID (TEA) 66 -American Bridge / Fluor JV 375 Burma Road Oakiand, CA 94607 SPECIFICATIONS

ASTM-A354 Grade BD with special provisions 10-1.59, 10-1.60, 10-1.61 std specifications 75-1.05

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DRAWING

USA

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar 1.D.'s: OPY3-1, OPY3-2, OPY3-6, OPY3-7, OPY3-9, OPY3-16, OPY3-18, OPY3-19, OPY3-20, OPY3-21, OPY3-22, OPY3-23, OPY3-24, OPY3-25, OPY3-26, OPY3-27 Heat treatment lot OPY is from heat of steel ID 3M75738-2

Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A

Q.A. Admin. Assistant 8/29/11

ARGE DIAMETER FASTENERS & FORGINGS / STANDARDS & SPECIALS / COMMERCIAL, MILITARY & NUCLEAR SPECIFICATIONS

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			60.75"	3.332	3.329	3.334	3.331	3.338	3.332	3.334	155.5	Teer E	725 5	3.334	3.334	3.333	3.333	3.331							Ι											Ì	
		ches]	48.75"	3.332	3.328	3.335	3.329	3.337	3.332	3.34	100.0	TCC-C	3.333	3.334	3.334	3.333	3.333	3.331																			
		Pitch Ulameter Readings (+/- 1 Pitch) [Inches]	36.75	3.330	3.330	3.333	3.325	3.336	255.5	455.5	122 2	7222	3.333	3.334	3.333	3.333	3.333	3.331					-														
	TAPPED END	leadings (+/	-54.75	U55.5	3.328	355.5	175.5	955.5	NCC.C	+cc.c	C22.5	3.334	3.333	3.334	3.333	3.333	3.333	3.331						~		 											_
	TAPPE	Ulameter F	5/.7T	07C.C	975-5	165.6	07C.C	CCC.C	NEE E	1225 E	3.332	3.334	3.333	3.334	3.333	3.333	3.333	3.331					 														
		יזר ר	2212	ארב ב	47C.C	275.5	בבב ב	ודב ב	PEE E	CEE E	3.332	3.332	3.333	3.332	3.333	3.333	3.333	3.331									-										
		0 7E"	3 374	3 374	3 375	3 372	775.5	DFF.F	3.334	3.334	3.334	3.334	3.332	3.334	3.334	3.334	3.334	3.332																			
	No.Go	Pace/Fail	SSEd	Pase	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass																									
	ater (In 1	12.75"	3.333	3.328	3.33D	3.331	3.329	3.331	3.334	3.334	3.334	3.334	3.332	3.332	3.332	3.331	3.332	3.332									_				_	-					
COLIDIER END		0.75"	3.328	3.327	3.328	3.329	3.328	3.323	3.332	3.333	3.334	3.331	3.333	255.5	755.5	122.C	155.5	2.335																			
	No-Go	Pass/Fail	Pass	· Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	- SSE4	Darr	0111		SCD															. 				
	DYSON	5.0.#	112053	112053	112053	112053	112053	112053	112053	112053	112053	112053	112053	CCU2TT	LIZNS	112063	117052																				
	LENGTH	FT./IN	29'-10.25"	29'-10.25"	29'-10.25"	29'-10.25"	29'-10.25"	29'-10.27"	29'-10.27"	29'-10.27"	29'-10.27"		17.01- 22	"TC 01.'PC	"72.01-'92	"75 01-'95	79'-10 77"					_		-													
	LENGTH	MM			9100							DOLO	-		-		T	1														 					
BAR	1.0	CODE / BAR	OPY3-1	OPY3-2	0PY3-6	OPY3-7	OPY3-9	OPY3-16 -	OPY3-18	OPY3-19	UP 73-20	ODV2.77	0PY3-23	OPY3-24	OPY3-25	OPY3-26	OPY3-27					_															
Date	Measured		1				1	-	-			0 11/01/2				1	1				 					 			+	_	+					_	_

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DYSON C	ORP.			
DN DOMEST	IC NUT Pair	3 Freedom Road nesville, OH 44077	440-94 440-35	5-3500 2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112054	660110-SA-017 CO 0	5200 WW	6 pc	8/31/11
CUSTOMER American Bridge / F 375 Burma Road Oakland , CA 94607 USA		PRODUCT DESCR 3.50°-440C-2A × 920Emat OAL opposite end, Drill & tap 2°-4.500 w/white metal blast prior to univer SPECIFICATIONS ASTM-A354 Grac	IPTION PWS and in rod w/IR50mm of useable is NC-2A x 60mm deep on IR50mm directed in DD TEAL 66 - FURNISH PWS C le BD with special prov 0-1.61 std specification	iteail one end & 280mm en lend. HDG per ASTM-A123 NILE SVSTEM

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OTD-16, OTD-17, OTD-18, OTD-5, OTD-4, OTD-1H Heat treatment lot OTD is from heat of steel ID 4M76368-1

Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

ARGE DIAMETER FASTENERS & FORGINGS / STANDARDS & SPECIALS / COMMERCIAL, MILITARY & NUCLEAR SPECIFICATIONS

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		LEINUT	LENGTH	DYSON	No-Ga	Pitch Dia	Pitch Diameter [In.]	No-Go		Pitch	h Diamator 6	tarred CIVU			
11/20/9		MIN	NI/IN	S.O.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	7 75"	יייייייייייייייייייייייייייייייייייייי	" 13 75" 2. 2. 1 Pitch) [Inches]	- 1 Pitch) [Inc	ches]	
6/27/11	(2-010) 21-010	0025	"25.2-'DE	112054 (A)	Pass	3.325	3.330	Pass		3.328	3.34	24./5 335	36.75	48.75"	60.75"
6/27/11	OTD-18 (OID-4)	0026	13C C7.7- NC	(A) P2U2LL	Pass	3.329	3.334	Pass	3.323	3.330	3.332	3,336	CZC-C	875'S	3.328
6/27/11	0TD-5	9200	301-7 25"	(V) +COTT	SSB4	3.330	3.331	Pass	3.334	3.337	3.332	3.326	755 5	acc t	545.C
6/26/11	070-4	9200	30'-2.75"	(A) PENSIT	rass rach	3.325	3.334	Pass	3.324	3.329	3.332	3.333	3.335	1327	47C.C
8/10/11	HI-GTD	9200	30'-7 20"	101 100211	Lass Lass	5,523	3.329	Pass	3.327	3.328	3.326	3.325	LCEE	3 375	17C.C
			27-2	+C02TT	Pass	3.333	3.332	Pass	3.333	3.333	3.333	3.333	3.333	3.333	3.324
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AUGUST 31, 201

#### 2°S DYSON CORP. 53 Freedom Road 440-946-3500 DOMESTIC NUT Painesville, OH 44077 440-352-2700 fax DYSON CUSTOMER ITEM QUANTITY DATE ORDER# ORDER# NUMBER SHIPPED SHIPPED L 112055 660110-SA-017 CO 022 9300 MM 7 pcs 8/31/11 \*\*\*\*\*\*\*\* CUSTOMER PRODUCT DESCRIPTION American Bridge / Fluor JV 3.50°-4UNC 2A x 9300mm OAL PWS Archor Rad w/1850aum of ustable intend one end and 280mm on opposite end. Dtill & tap 2°-4.5UNC-2A x 60mm duep on 3850mm direaded end. HOG per ASTM-A123 w/within metal blost mitor to ealyanize. DD CTEM 66 - FURNISH PWS CADLE SYSTEM 375 Burma Road Oakland, CA 94607 SPECIFICATIONS USA

ASTM-A354 Grade BD with special provisions 10-1.59, 10-1.60, 10-1.61 std specifications 75-1.05

#### DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OOH2-6, OOH2-22, OOH-1F, OOH-2F, OOH-3F, OOH-4F, OOH-5F Heat treatment lot OOH is from heat of steel ID

getached

Attachments: Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

MAPPING	
<b>XTENSION ROD THREAD</b>	
WS ANCHOR RODS and EXTENSION F	

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		36" CA 76"	_ _	-	30 3.330		+	+	34 3.334	_																
	Inchar]		+	+-	3,330	+	+	+	3.334			 														
	T Ditch1	36.75"	3.343	3.337	3.329	3.332	3.332	3.333	3.334																	Perr
	Pitch Diameter Readines (+/- 1 Bitch) Br	24.75"	3.340	3.328	3.330	3.329	3.333	3.333	3.334																	
TABRE	Diameter R	12.75"	3.335	3.323	3.331	3.332	3.333	3.333	3.334			1														
	Pitch	2.25"	3.334	3.326	3.330	3.327	3.333	3.333	3.334											+						_
		0.75"	3.328	3.326	3.330	3.330	3.333	3.333	3.334												 			_		
	Na-Go	Pass/Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass								_							 		
	leter [In.]	12.75"	3.334	3.328	3.333	3.333	3.333	3.333	3.334					_					_							
COUPLER END	Pitch Diameter [In.]	0.75"	3.330	3.324	3.324	3.326	3.332	3.328	555.5																 	
Ŭ	No-Go	Pass/Fail	Pass	SSEA	SSEA	2257	rass	Pass	2352																	
	DYSON	5.0.#	SCUPT	CCU211	1170CE	110UCE	230011	112055	000377																 	
	LENGTH	NI/.14	"26 2.0- 05	"br 30'-05	30'-6.14"	30'-6.14"	30'-6 14"	+T-0-00															 			
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244	CODE / BAD	00H2-6	00H2-22	OOH-1F	OOH-2F	OOH-3F	OOH-4F	OOH-5F																		
Jan 1	Datucaaivi	6/27/11 0	1	1		1												    			+					_

2 DYSON C	ORP.			······································
DN DOMEST		53 Freedom Road inesville, OH 44077	440-94 440-35	6-3500 2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112056	660110-SA-017 CO		3 pcs	8/31/11
CUSTOMER American Bridge / F 375 Burma Road Oakland , CA 94607 USA		PRODUCT DESCRI, 3.50°-10NC-2A x 9400mm (30°-10 200mm on opposite end. Dritt & to ASTM-A123 w/white metal bins in SPECIFICATIONS ASTM-A354 Grad	PTION ADR') OAL PWS Anchor Rod w/1650m p 2* 4 SUNC-2A x 60mm deep on 1850m rise to valvanize RID ITEA1 66 - FURN e BD with special prov b-1.61 std specification	om bireaded end. HDG per ISH PWS CARLESYSTEM VISIONS

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.: OOP2-1, OOH-1E, OTD-2E
 Heat treatment lot OOF is from heat of steel ID 4M76368-2

Heat treatment lot OOH is from heat of steel ID 4M76368-3 Heat treatment lot OTD is from heat of steel ID 4M76368-1

Attachments:

Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

LARGE DIAMETER FASTENERS & FORGINGS / STANDARDS & SPECIALS / COMMERCIAL, MILITARY & NUCLEAR SPECIFICATIONS

			60.75"			-																									
		nches]	+	+	3.333	_																									
		- 1 Pitch) [Ii	36.75"	3,332	555.5	555.5																									
	TAPPED END	eadings (+/	24.75"	252.5	555.5 555.5	CCC.C																									
	TAPPE	Pitch Diameter Readings (+/- 1 Pitch) [Inches]	12.75"	UCC.6	CCC.C	7000								 							_					 					_
		Pitch	2.25	C2000	122 5	102.0									 									 _							_
			0.75" 2 32A	E25 E	5373																			 							
		No-Go	Pass/Fail	Pass	Pass						 						 		 												
-	1 1	leter [In.]	3.347	3.329	3.330						 				 				 												
COLIDIED END	Ditch Diam	Pitcn Dian	3.343 3.347	3.323	3.323																				-					 	
	Nn-Go		Pass		1	1									 		_					 									
	DYSON	+		112056	112056							 																			
	LENGTH	FT./IN	30'-10"	30,-10.08"	30'-10.08"					-		 			+-																
-	LENGTH	-			9400 3(													_ -												 	
BAR		BAR	00F2-1	OOH-1E	OTD-2E																	 _									
Date	Measured		1 1	1	8/10/11 0									 	 			_													

225 DYSON C	ORP.			
DN DOMEST	53 Fre	edom Road lle, OH 44077	440-946 440-352	6-3500 2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112057	660110-SA-017 CO 022	9500 MM	4 pcs	8/31/11
CUSTOMER American Bridge / F 375 Burma Road Oakland , CA 94607 USA	luor JV	PRODUCT DESCH 3.50°-4UNC-2A x 95001mni OA 2000mm on opposite end. Drild ASTM-A123 wAvhine menal Mar SPECIFICATIONS ASTM-A354 Gra	L PWS Ancher Rod w/1850aum (72.83*) of L lap 2"-I.SUNC-2A x 60mm deep on 1850 M mior to palveniza - BBD ITEM 66 - FIIRM	mm threaded end, HDG per NSH PWS CABLE SYSTEM /ISIONS

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OOF3-4, OTD-1D, OTD-2D, OTD-3D

Heat treatment lot OOF is from heat of steel ID 4M76368-2 Heat treatment lot OTD is from heat of steel ID 4M76368-1

<u>Attachments:</u> Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah

Q.A. Admin. Assistant 8/29/11

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Measured 6/25/11 0 8/10/11 0	1:D	LENGTH	-	DYSON	1	Ditch Diam					IAPPI	LAPPED END	Pitch Diameter Readings (+/- 1 Pitch) [Inched		
		-	-		09-01		Pitch Diameter [In.]	NPGO		Pito	h Diameter			- hac	
	CODE / BAR	WW	FT./IN	5.0.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	2.25"	12.75"	24.75"	36.75"	18 75"	60 7C"
	1001-3-4	9500	"2-'IE	112057	- 1		3.326	Pass	3.323	3.330	3.330			EFF F	022 E
		2002	20.2-15	112057	- 1		3.330	Pass	3.333	3.333	3.331	3.331	3.331	TFE.E	125 5
		0055	20.2-15	112057	Pass		3.333	Pass	3.333	3.333	3.333	3.333	3.333	555.5	225 5
	110-30	9500	31'-2.02"	112057	Pass		3.333	Pass	3.333	222 5	222 2	CCC C			
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DYSON CORP. 53 Freedom Road 440-946-3500 D N DOMESTIC NUT Painesville, OH 44077 440-352-2700 fax DYSON CUSTOMER ITEM QUANTITY DATE ORDER# ORDER# NUMBER SHIPPED SHIPPED 660110-SA-017 CO 022 L 112058 9600 MM 3 pcs 8/31/11 CUSTOMER PRODUCT DESCRIPTION 3.50°-4UNC-2A x 9600mm OAL PWS Anchor Rod w/1850mm of useable thread one end & 280mm on opposite end, Drill & tap 2°4.5UNC-2A x 60mm deep on 1850mm threaded end, HBG per ASTM-A123 w/white notal blast prior to volvanize. BID ITEM 66 - FURNISH PWS CABLE SYSTEM American Bridge / Fluor JV 375 Burma Road SPECIFICATIONS Oakland, CA 94607 ASTM-A354 Grade BD with special provisions USA 10-1.59, 10-1.60, 10-1.61 std specifications 75-1.05

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OOF4-3, OOF4-8, OOF4-9

Heat treatment lot OOF is from heat of steel ID 4M76368-2

Attachments:

Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

LARGE DIAMETER FASTENERS & FORGINGS / STANDARDS & SPECIALS / COMMERCIAL, MILITARY & NUCLEAR SPECIFICATIONS

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Iter         Inc.         Transe and mg (+1         Pick) [Intres]           12.55         Pass         3.325         3.333         3.327         3.327         3.327           12.55         Pass         3.325         3.333         3.337         3.337         3.331           3.332         Pass         3.333         3.333         3.337         3.331         1.331           3.332         Pass         3.333         3.333         3.333         3.331         1.331           1.333         Pass         3.333         3.333         3.331         1.333         3.331           3.332         Pass         3.333         3.333         3.331         1.333         3.331           1.334         Pass         3.335         3.333         3.331         1.333         3.331           1.334         Pass         3.332         3.333         3.331         1.44         1.44           1.335         Pass         3.336         3.331         1.44         1.44           1.334         Pass         3.332         3.331         1.44         1.44           1.335         Pass         3.336         3.331         1.44         1.44           1	ILD         LENGTH         LENGTH         DESCH         LENGTH         DESCH         DESCH <t< th=""><th>ndle</th><th>BAK</th><th></th><th></th><th></th><th></th><th>COLIPLER END</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></t<>	ndle	BAK					COLIPLER END									
MM         F/10         SS.4         Past/Pail         Correl         Past/Pail         Stat/Pail	COOR (BAA)         MM         FT/(N         S.O. #         Pass/Fail         D.25"         T.2.7"         Pass/Fail         D.75         Z.23           OOK43         9500         31.6"         11.2038         Pass         3.323         Pass         3.325         3.333         3.325         3.333           ODF49         9600         31.6"         11.2038         Pass         3.333         Pass         3.335         3.333         3.335 <td< th=""><th>Measured</th><th>0.1</th><th>LENGTH</th><th></th><th>DYSON</th><th></th><th>Pitch Dia</th><th>meter [in.]</th><th>-</th><th></th><th>line</th><th>TAPPI</th><th>ED END</th><th></th><th></th><th></th></td<>	Measured	0.1	LENGTH		DYSON		Pitch Dia	meter [in.]	-		line	TAPPI	ED END			
Other         Sect         11:55         Fest         323         5212         745         3233 <th< th=""><th>Obted         Section         31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5-         31-5-2</th><th>1</th><th>CODE / BAR</th><th>MM</th><th>FT./IN</th><th>5.0.#</th><th>Pass/Fail</th><th>0.75"</th><th>17.75"</th><th>-</th><th>0 75"</th><th>PILO</th><th>n Diameter</th><th>Readings (+/-</th><th>1 Pitch) [inc</th><th>ches]</th><th></th></th<>	Obted         Section         31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5- 31-5- 31-5-         31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5- 31-5-         31-5-2	1	CODE / BAR	MM	FT./IN	5.0.#	Pass/Fail	0.75"	17.75"	-	0 75"	PILO	n Diameter	Readings (+/-	1 Pitch) [inc	ches]	
Other         500         31-6*         11305         Fast         3330         3331         <	000443         9600         11-6*         110086         Fass         3330         3332         3330	6/27/11		9600	31'-6"	112058	Pass	3.323	3.327		3.375	5 232	C/-7T	24.75	36.75	48.75"	60.75"
Oldet-9       960       11.005       7331	ODG450         9600         11-5 <sup>4</sup> 1323         7336         3333         3336         3333           1         1         1         1         1         1         1         1         3         333         3336         3333         3336         3333         3336         3333         3336         3333         3336         3336         3333         3336         333	6/27/11		9600	31'-6"	112058	Pass	3.326	3.328		3 375	UES E	17C.C	675°5	275.5	3.327	3.328
		6/27/11	00F4-9	9600	31'-6"	112058	Pass	3.330	3.332		3 375	BCF F	םנב ב		1200	5.328	5.329
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#### DYSON CORP. 53 Freedom Road DOMESTIC NUT Painesville, OH 44077 DYSON CUSTOMER ITEM ORDER# ORDER# All IMADED

*		NOWBER	SHIPPED	SHIPPED
L 112059	660110-SA-017 CO 022	9700 MM	3 рс	8/31/11
<i>CUSTOMER</i> American Bridge / 375 Burma Road Oakland , CA 9460 USA		PRODUCT DESCH 3.50°-40NC-2A x 9700mm0A opposite end. Drift & tap 2°-4.51 witchile metal blast mint to rady SPECIFICATIONS ASTM-A354 Gra	RIPTION L PWS Anchor Rod w/1850mm of ustable t UNC-2A x 60mm deep on 1850mm (lucade anize OLD LTEM 66 - FURNISH PWS C2	hread one end and 260mm on d end. HDG per ASTM-A123 ADJF SVSTEM VISIONS

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar 1.D.'s: OOF5-1, OOF5-2, OOF5-4

Heat treatment lot OOF is from heat of steel ID 4M76368-2

Attachments: Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Jehorah A

440-946-3500

QUANTITY

440-352-2700 fax

DATE

Q.A. Admin. Assistant 8/29/11

PWS ANCHOR RODS and EXTENSION ROD THREAD MAPPING

LENGTH         LENGTH         DYSON         No-Go         Pitch Diameter [In.]         No-Go         Pitch Diameter Readings (+/-1 Pitch) [Inches]           SAR         MM         FT./IN         S.O. #         Pass/Fail         0.75"         12.75"         Pass/Fail         0.75"         36.75"         48.75"         48.75"         48.75"         64.75"         36.75"         48.75"         6           9700         31'-10"         112059         Pass         3.322         3.328         3.322         3.327         3.327         3.326         3.327         3.327         3.326         3.326         3.326         3.327         3.326         3.326         3.326         3.327         3.326         3.327         3.327         3.326         3.327         3.327         3.327         3.326         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.326         3.376         3.377         3.377         3.377         3.377         3.377         3.376         3.376	-			-												
I.D         LENGTH         LENGTH         DYSON         No-Go         Pitch Diameter [In.]         No-Go         Pitch Diameter Readings (+/- 1 Pitch) [Inches]           CODE / BAR         MM         FT./IN         S.O.#         Pass/Fail         0.75"         12.75"         Pass/Fail         0.75"         3.327         3.328         3.328         3.332         3.332         3.337         48.75"	-	BAR	_				DUDUER EN	-								
LENGTH         LENGTH         DYSON         No-Go         Pitch Diameter [In.]         No-Go         Pitch Diameter Readings (+/- 1 Pitch) [Inches]           CODE/ BAR         MM         FT./IN         S.O. #         Pass/Fail         0.75"         12.75"         Pass/Fail         0.75"         12.75"         24.75"         36.75"         48.75"           OOF5-1         9700         31'-10"         112059         Pass         3.329         Pass         3.328         3.332         3.332         3.332         3.331         9.331           OOF5-2         9700         31'-10"         112059         Pass         3.327         3.328         3.324         3.327         3.326         9.332         3.327         3.327         3.326         3.327         3.327         3.327         3.327         3.328         3.326         3.327         3.326         3.326         3.327         3.327         3.328         3.327         3.327         3.326         3.327         3.328         3.327         3.327         3.326         3.327         3.327         3.328         3.327         3.327         3.328         3.327         3.327         3.326         3.377         3.327         3.328         3.327         3.327         3.376         3.3	7	4		_								TAPPE	D END			
CODE / BAR         MIM         FT./IN         S.O. #         Pass/Fail         0.75"         12.75"         Pass/Fail         0.75"         12.75"         Pass/Fail         0.75"         12.75"         2.25"         12.75"         24.75"         36.75"         48.75"         4	-	2.1	LENGTH		DYSON	No-Go	Pitch Dia	meter [In ]	No.60		1-1:0					
OOF5-1         9700         31'-10"         11/10         5.0, #         Pass/Fail         0.75"         12.75"         12.75"         24.75"         36.75"         48.75"           OOF5-1         9700         31'-10"         112059         Pass         3.329         Pass         3.328         3.332         3.332         3.334         3.331           OOF5-4         9700         31'-10"         112059         Pass         3.328         Pass         3.322         3.332         3.332         3.331         3.331           OOF5-4         9700         31'-10"         112059         Pass         3.328         Pass         3.324         3.327         3.327         3.326         3.327         3.327         3.326         7.327         3.327         3.326         3.327         3.327         3.328         3.327         3.327         3.326         7.327         3.327         3.328         3.327         3.326         7.376         3.376         7.376         3.376         7.376         3.376         7.376         3.376         7.376         3.376         7.76         3.376         7.76         3.376         7.76         3.376         7.76         7.766         7.766         7.766         7.766			848.0					International and	00-01		PITCL	I Ulameter R	eadings (+/-	1 Pitch) find	hed	
OOF5-1         9700         31'-10"         112059         Pass         3.327         3.329         Pass         3.328         3.332         3.332         3.332         3.337         3.331         3.331         3.332         3.332         3.332         3.331         3.331         3.332         3.332         3.331         3.331         3.332         3.332         3.331         3.326         3.331         3.326         3.332         3.332         3.332         3.332         3.327         3.326         3.326         3.327         3.327         3.326         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327         3.327 <t< td=""><td></td><td>COUL / BAN</td><td>IVIIVI</td><td>L FI-/IN</td><td>S.O. #</td><td>Pass/Fail i</td><td>175"</td><td>" 77 76"</td><td>Dare /rait</td><td>=</td><td></td><td></td><td></td><td></td><td>622.</td><td></td></t<>		COUL / BAN	IVIIVI	L FI-/IN	S.O. #	Pass/Fail i	175"	" 77 76"	Dare /rait	=					622.	
OUT5-1         9700         311-10"         112059         Pass         3.329         Pass         3.328         3.332         3.332         3.334         3.331           OOF5-2         9700         31'-10"         112059         Pass         3.328         Pass         3.328         3.332         3.332         3.332         3.334         3.331           OOF5-4         9700         31'-10"         112059         Pass         3.328         Pass         3.324         3.327         3.327         3.326         3.326         3.327         3.326         3.326         3.326         3.326         3.326         7.327         3.326         3.326         3.326         3.326         3.326         3.327         3.326         3.326         3.326         3.326         3.326         3.326         3.326         3.326         3.326         3.326         3.326         3.327         3.327         3.327         3.327         3.327         3.326         3.326         3.326         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.376         3.37						in them.		C/-7T	HEJ/SSPA		2.25"	12.75"	"27 DC	ייסר שב	1 111 08	11100
OOF5-2         9700         31'-10"         112059         Pass         3.328         3.332         3.332         3.332         3.334         3.331           OOF5-4         9700         31'-10"         112059         Pass         3.327         3.328         3.322         3.332         3.332         3.334         3.331           OOF5-4         9700         31'-10"         112059         Pass         3.327         3.328         3.327         3.326           3.32         31'-10"         112059         Pass         3.327         3.328         3.327         3.326		1-5-100	9700	131'-10"	117059		<b>776 C</b>		-						10.13	51'00
IOUF5-2         9700         31'-10"         112059         Pass         3.327         3.328         Pass         3.324         3.331         3.326         3.321         3.326         3.327         3.326         3.326         3.327         3.326         3.326         3.327         3.326         3.326         3.327         3.326         3.326         3.327         3.326         3.326         3.327         3.326         3.326         3.327         3.326         3.327         3.326         3.327         3.326         3.327         3.326         3.327         3.326         3.327         3.326         3.377         3.326         3.377         3.327         3.326         3.377         3.327         3.326         3.377         3.327         3.327         3.326         3.377         3.376         3.377         3.377         3.376         3.377         3.377         3.376	1		i			CCD	1700	3.325	Pass	3.328	2 227	ככב כ		, r r		
OOF5-4         9700         31'-10"         112059         Pass         3.327         9.327         3.327         3.326         3.327         3.326           A         9700         31'-10"         112059         Pass         3.327         Pass         3.327         3.328         3.327         3.326		2-5-10C		31'-10"	113050	1110		0000				3000	700.0	352.5	3.331	3.332
100-5-4 9700 31'-10" 112059 Pass 3.327 3.327 Pass 3.323 3.328 3.328 3.328 3.373 3.375 3.375						5CD 1	170.0	3.328	Pass	3.324	E25.E	3 376	LCE E		1000	111
3.328 3.328 3.328 3.328 3.373 3.375		10F5-4		31'-10"	112059	Daco	TCE E						1900	120.0	3.326	626.E
								170.0	rass	3.323	3.328	3.327	3.328	575.5	3 376	2 276

STORIA Materials Technology Stork Herron Testing Laboratories

6/13/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 6/3/2011

Test Report No.: DYS006-11-06-26885-1 \*REVISED

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

P.O. No.: 78333 / 78375	TEST REPORT
P.O. NO.: 78333778375	ITAR-CONTROLLED DATA

Sample Description: MT On-Site Wet Fluorescent Cal Trans Witness of Anchor Rods Representing 3.50"-4UNC 2A x Random Lengths\*, 6/6/2011, Heat#/Heat Codes: 4M76368/OOF and 4M76368/OOH \*

## MAGNETIC PARTICLE INSPECTION REPORT

Standard:	ASTM F788	-06 (Acceptance C	Criteria)	
	SOP 42.03	ASTM E1444 (Me	thod) per ASTA	/ A 490/
Procedure:		cial Provisions 10-		
		Caltrans Standard		75-1.05
METHOD				
Dry Dry			🕅 Wet	
PARTICLES				
3A Black      3A Black      3     1 Gray      1 G	14A 14AM Olher	*Part Preparatio	ed n	Wet Particle Carrier; Magnaflux Carrier II Pre Mixed Concentration MI Batch No.
CURRENT				
☐ AC			FWDC	
Central Conduc	tor (AMPS)		Head Shot	(AMPS)
Coil (AMPS)	N D: 0			IPS/Spacing)
Field Verified by: EQUIPMENT	Pie Gage		] Hall Effect Pro	be
Magnaflux H-72	0 S/N:	0-10-5	· 	
Yoke AC		Cal Due D 3005 Spacing: 4" -		
				ate: 12/1/11

The above leading was performed in accordance with the falest revision of the applicable commercial, military and/or International lest method unless otherwise noted. The above sorvices were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 1, Revision 3 dated 830/09, information and statements in this report are derived from material, information on/for specifications furnished by the client and exclude any expressed or implied wirranties as to the fitness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this taboratory. The recording of false, ficilitous or fraudulent statements or entries on this document may be pulshed as a felony under Federal Statutes. Sample remnants are held for a minimum of 6 monits following issuance of test results, at which point they will be ulscarded unless notified in writing by the client. This material was not contaminated by mercury or chlorinated solvents during the handling and processing at Slork-Herron Testing Laboratories facilities.

Karen Banne

Karen Baumiller Customer Services Manager

STORIS

Materials Technology

Stork Herron Testing Laboratories

6/13/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 6/3/2011

Test Report No .: DYS006-11-06-26885-1 \*REVISED

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

P.O. No.: 78333 / 78375

TEST REPORT

Quantity*	Desult
	Results*
4 PCS OOH Heat# 4M76368 3.50"-4UNC-2A	
X Random Length Rods*	O.D. only was inspected and found to be acceptable
4 PCS OOF Heat# 4M76368 3.50"-4UNC-2A	O.D. only was inspected and found
X Random Length Rods*	to be acceptable
Comments: "ID of tube only"- Magnetic Flux Field ca	part be verified for an all the standard
cursory examination was performed for informational	purposes only.*
cursory examination was performed for informational Marking Requirements:	purposes only.*
Marking Requirements:	purposes only.*
Marking Requirements: Demag and post cleaning requirements:	purposes only.*
Marking Requirements: Demag and post cleaning requirements:	ertification: ASNT-SNT-TC-1A

The reported results represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

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\*REVISED: Corrected quantity/sample descriptions (6/13/11). Corrected part preparation and standard/ procedure (6/14/11). Added Heat Number, Code, Lengths, Comments and expanded Results (8/01/11).

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Larger Romen

Karen Baumiller Customer Services Manager

STDRK Materials Technology

# Stork Herron Testing Laboratories

6/17/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 6/15/2011

Test Report No.: DYS006-11-06-27669-1 REVISED Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

P.O. No.: 78540	TEST REPORT
F.O. NO., 78540	ITAR-CONTROLLED DATA

Sample Description: MT On-site Wet Fluorescent Exam of Anchor Rods Representing 3.50"-4UNC 2A x Random Lengths\*, 6/16/11, ASTM E 1444 SOP 42.03, ASTM F788, Heat#/Heat Code: 4M76368/OTD\*

# MAGNETIC PARTICLE INSPECTION REPORT

Standard:	ASTM F788	-06 (Acceptance	Criteria)	
	the state of the s	ASTM E1444 (M		4 4400
Procedure:		cial Provisions 10		V 7450
		Caltrans Standar		75-1 05
METHOD				
Dry	2000 10		Wet	
PARTICLES				7 . • • • • • • • • • • • • • • • • • • •
🗌 3A Black 🛛	14A 14AM Other	Part Preparation None Requited Solvent Cleated Grinding Other Preclet Customer	red an	Wet Particle Carrier: Magnaflux Carrier II Pre Mixed Concentration MI Batch No.
			1	
Central Conduc	ctor (AMPS)		FWDC	S 34 5
Coil (AMPS)  Field Verified by: Pie Gage QQI Hall Effect Probe				
EQUIPMENT			Hall Effect Pro	obe
Magnaflux H-72	0 S/N:	Cal Due I	)ale:	
Yoke 🗌 AC 🛛	DC S/N: 3	1005 Spacing: 4"		Date: 12/1/11
		·····		

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Luda Illeche

Michael R. Gaydos General Manager, COO

STORK Materials Technology

# Stork Herron Testing Laboratories

6/17/2011

Steve Marsh Dyson Corp, 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 6/15/2011

Test Report No.: DYS006-11-06-27669-1 REVISED Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

P.O. No.: 78540

TEST REPORT

ITAR-CONTROLLED DATA

INSPECTION RESULTS	
Quantity	Results
3 PCS OTD, Heat# 4M76368* 3.50"-4UNC-2A X Random Lengths* PWS Anchor R	O.D. only was inspected and found to be acceptable* od
Comments: "ID of tube only"- Magnetic Flu Field canno cursory examination was performed for informational pu Marking Requirements:	t be verified for sensitivity; thus only a provident of the sensitivity of the sensitivit
Demag and post cleaning requirements:	
Inspected by: Cert Matthew Novak Lev	ification: ASNT-SNT-TC-1A el II 🛛 II

The reported results represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

### Export Controlled (ITAR)

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\*REVISED (08/01/11): Added Heat Number, Length, Comments and expanded Results.

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Reydos liche

Michael R. Geydos General Manager, COO

# **Monnig Industries, Inc.**

HOT DIP & MECHANICAL GALVANIZING P.O. BOX 98 GLASGOW, MO 65254 PH. 660-338-2242 FAX: 660-338-5199

# AUGUST 30, 2011

# DYSON CORPORATION 50 FREEDOM ROAD PAINESVILLE, OH 44077

# **RE: GALVANIZING CERTIFICATE-CALTRAN**

# THIS WILL CERTIFY THAT THE RODS GALVANIZED ON THE ATTACHED SPREADSHEET MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS OF ASTM A-123 & F2329 SPECIFICATIONS.

# **48 PWS ANCHOR RODS**

# ROD ID/MIL THICKNESS MEASUREMENTS

OPY4-14 / 6.0	OPY4-15 / 6.5	OPY4-16 / 6.5	OPY4-17 / 6.5	OPY4-18 / 7.0
OPY2-27 / 6.0	OPY2-28 / 6.5	OPY2-29 / 6.5	OPY2-30 / 6.5	OPY2-31 / 6.0
OPY2-32 / 6.5	OPY2-33 / 6.0	OPY2-34 / 4.5	OPY2-35 / 7.0	OPY2-36 / 6.0
OPY2-37 / 6.5	OPY2-38 / 6.5	OPY2-39 / 6.5	OPY3-16 / 6.5	OPY3-18 / 6.5
OPY3-19 / 6.0	OPY3-20 / 6.0	OPY3-21 / 6.5	OPY3-22 / 6.5	OPY3-23 / 5.5
OPY3-24 / 6.5	OPY3-25 / 6.5	OPY3-26 / 5.0	OPY3-27 / 6.0	OQX4-5 / 7.0
OQX4-6 / 6.5	OQX4-7 / 6.5	OQX4-9 / 6.5	OQX4-10 / 6.0	OQX4-11 / 6.5
OQX4-12 / 5.5	OQX 4-13 / 6.5	OQX5-1 / 6.0	OQX5-2 / 6.5	OQX5-3 / 6.5
OQX5-4 / 5.0	OQX5-5 / 6.0	OQX5-6 / 6.0	OQX5-7 / 6.0	OQX5-8 / 5.5
OQX5-9 / 6.5	OQX5-10 / 6.5	OQX5-11 / 6.0		
OQX4-12 / 5.5 OQX5-4 / 5.0	OQX 4-13 / 6.5 OQX5-5 / 6.0	OQX5-1 / 6.0 OQX5-6 / 6.0	OQX5-2 / 6.5	OQX5-3 / 6.5

PATRICIA S. WESTHUES NOTARY PUBLIC STATE OF MISSOURI HOWARD COUNTY MY COMMISSION EXP. APR. 18, 2012

,

HN MONNIG, / PRESIDENT

thue

PATRICIA S. WESTHUES, NOTARY PUBLIC



Phoenix Manufacturing, Inc. P.O. BOX 330 26666 Von Holten Rd. Cole Camp, MO. 65325 660-668-2611 660-668-3160 (fax)

SSPC-SP10 Near White Metal Blast

Near-White Blast Cleaning - Removal of nearly all mill scale, rust, rust scale, paint, or foreign matter by the use of abrasives propelled through nozzles or by centrifugal wheels, to the degree hereafter specified. A Near-White Blast Cleaned Surface Finish is defined as one from which all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter have been completely removed from the surface except for very light shadows, very slight streaks or shglu discolorations caused by rust stain, mill scale oxides, or light, tight residues of paint or coating that may remain. At least 95 percent of each square inch of surface area shall be free of all visible residues, and the remainder shall be limited to the light discoloration mentioned above

# 48 PWS ANCHOR RODS

# **ROD IDs**

OPY4-14	OPY4-15	OPY4-16	OPY4-17	OPY4-18
OPY2-27	OPY2-28	OPY2-29	OPY2-30	OPY2-31
OPY2-32	OPY2-33	OPY2-34	OPY2-35	OPY2-36
OPY2-37	OPY2-38	OPY2-39	OPY3-16	OPY3-18
OPY3-19	OPY3-20	OPY3-21	OPY3-22	OPY3-23
OPY3-24	OPY3-25	OPY3-26	OPY3-27	0QX4-5
OQX4-6	OQX4-7	OQX4-9	OQX4-10	00X4-11
OQX4-12	OQX 4-13	OQX5-1	OQX5-2	DQX5-3
OQX5-4	OQX5-5	OQX5-6	OQX5-7	00X5-8
OQX5-9	OQX5-10	OQX5-11		

Dan Edd

# CERTIFICATE OF COMPLIANCE

DYSON		dom Road	440-946	5-3500
DN DOMEST	TIC NUT Painesville	e, OH 44077		2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112051	660110-SA-017 CO 022	8900 MM	24 pcs	8/31/11
CUSTOMER American Bridge / 375 Burma Road Oakland , CA 946 USA		PRODUCT DESCI 3.50°-4UNC 2A x 8960mm OA (13.78°) on opposite end. Drill ASTM-A123 widdle meal bla SPECIFICATIONS ASTM-A354 Grz	RIPTION L PWS anchor rad w/1850mm of useable ( & tap 2°4, SUNC-2A x filmm deep on 185 sy network of estimation III TEM 66 - FUR	iread one end and 280mm Amm liteaded end, HDG per NISH PWS CAMLE SYSTEM VISIONS
DOMUNO				

### DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OPY4-1, OPY4-2, OQW-3, OPY4-4, OQW-5, OPY4-6, OPY4-7, OPY4-8, OPY4-9, OPY4-10, OPY4-11, OPY4-12, OPY4-13, OPY4-14, OPY4-15, OPY4-16, OPY4-17, OPY4-18, OPY4-19, OPY4-20, OPY4-21, OPY4-22, OQY-23B, OPY4-24 Heat treatment lot OQW is from heat of steel ID 3M75738-1 O repeat

Heat treatment lot OPY is from heat of steel ID 3M75738-2 Heat treatment lot OQY is from heat of steel ID 4M76367-1

Attachments: Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

PWS ANCHOR RODS and EXTENSION ROD THREAD MAPPING

TTN7
31,
U5
100
đ.

Date	BAR				0	COUPLER END					TAPPE	TAPPED END			
Measured		LENGTH	LENGTH	DYSON	No-Go	Pitch Diameter [in.]	reter [in.]	No-Ga		Pitch	n Diameter F	Diameter Readings (+/- 1 Pitch) [Inches]	1 Pitch) [Inc	hes]	
	CODE / BAR	MM	FT./IN	S.O.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	2.25"	12.75"	24.75"	36.75"	48.75"	60.75"
8/1/11	OPY4-1	0068	29'-2.39"	112051	Pass	3.332	3.332	Pass	3.334	3.331	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-2	8900	29'-2.39"	112051	Pass ·	3.330	3.332	Pass	3.330	3.330	3.330	3.331	3.332	3.332	3,331
8/1/11	00.W-3	8900	29'-2.39"	112051	Pass	3.334	3.334	Pass	3.334	3.333	. 3.334	3.334	3.334	3.333	3.334
8/1/11	OPY4-4	8900	29'-2.39"	112051	Pass	3.330	3.331	Pass	3.331	3.330	3.330	3.330	3.331	3.331	3.331
8/1/11	00W-5	8900	29'-2.39"	112051	Pass	3.323	3.33I	Pass	3.332	3.332	3.329	3.329	3.330	3.331	3.331
8/1/11	OPY4-6	8900	29'-2.39"	112051	Pass	3.331	3.331	Pass	3.332	3.329	3.329	3.329	· 3.330	3.329	3.329 -
8/1/11	OPY4-7	8900	29'-2.39"	112051	Pass	3.327	3.333	Pass	3.334	3.333	3.33I	3.331	3.331	3,331 ·	3.331
8/1/11	OPY4-8	8900	29'-2.39"	112051	Pass	3.327	3.333	Pass	3,333	3.333	3.334	3.333	3.334	3.334	3.334
8/1/11	0PY4-9 ·	8900	29'-2.39"	112051	Pass	3.329	3.332	Pass	3.333	3.333	3.333	3.333	3.333	3.330	3.333
8/1/11	OPY4-10	8900	29'-2.39"	112051	Pass	3.330	3.333	Pass	3.332	3.332	3.331	3.331	3.332	3.332	3.331
8/1/11	OPY4-11	8900	29"-2.39"	112051	Pass	. 3.323	3.331	Pass	3.333	3.332	3.332	3.332	3.332	3.332	3.332
B/1/11	OPY4-12	8900	29'-2.39"	112051	Pass	3.323	3.331	Pass	3.333	3.332	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-13	0068	29'-2.39"	112051	Pass	3.326	3.333	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
8/1/11	OPY4-14	8900	29'-2.39"	112051	Pass	3.324	3.332	Pass	3.332	3.332	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-15	8900 ·	29'-2.39"	112051	Pass	3.323	3.330	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3:334
8/1/11	OPY4-16	8900	29'-2.39"	112051	Pass	3.323	3.329	Pass	3.333	3.332	3.332	3.331	3.331	3.330	3.330
8/1/11	OPY4-17	8900	29'-2.39"	112051	Pass	3.324	3.332	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
8/1/11	OPY4-18	8900	29'-2.39"	1120211	Pass	3.331	3.331	Pass	3.332	3.331	3.331	3.331	3.331	3.331	3.331
8/6/11	OPY4-19	8900	"95-2-'92	112051	Pass	3.333	3.334	Pass	3.333	3.333	3.331	3.332	3.331	3.332	3.331
8/6/11	OPY4-20	8900	29'-2.39"	112051	Pass	3.331	3.333	Pass	3.323	3.333	3.333	3.333	3.333	3.333	3.333
8/6/11	OPY4-21	0068	29'-2.39"	112051	Pass	3.328	3.332	Pass	3.328	3.333	3.332	3.333	3.333	3.331	. 3.331
8/6/11	OPY4-22	0068	29'-2.39"	112051	Pass	3.330	3.333	Pass	3.325	3.333	3.333	3.333	3.333	3.333	3.333
8/6/11	OQY-23B	8900	29'-2.39"	112051	Pass	3.330	3.331	Pass	3.333	3.333	3.332	3,332	3.332	3.332	3.332
8/6/11	OPY4-24	8900	29'-2.39"	112051	Pass	3.323	3.332	Pass	3.329	3.333	3,333	3.333	3.333	3.333	3.334
												·			
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										a second system framework organization					

# CERTIFICATE OF COMPLIANCE

### S DYSON CORP. 53 Freedom Road 440-946-3500 D N DOMESTIC NUT Painesville, OH 44077 440-352-2700 fax DYSON CUSTOMER ITEM QUANTITY DATE ORDER# ORDER# NUMBER SHIPPED SHIPPED L 112052 660110-SA-017 CO 022 9000 MM 24 pcs8/31/11 CUSTOMER PRODUCT DESCRIPTION American Bridge / Fluor JV 3.50"-4UNC-2A x 9000mm (29'-6.33") OAL #WS Anchor Rod w/1850mm (72,83") of useable thread one 375 Burma Road SPECIFICATIONS Oakland CA 94607 ASTM-A354 Grade BD with special provisions USA 10-1.59, 10-1.60, 10-1.61 std specifications 75-1.05

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OPY2-18, OPY2-20, OPY2-21, OPY2-22, OPY2-23, OPY2-24, OPY2-25, OPY2-26, OPY2-10, OPY2-4, OPY2-9, OPY2-27, OPY2-28, OPY2-29, OPY2-30, OPY2-31, OPY2-32, OPY2-33, OPY2-34, OPY2-35, OPY2-36, OPY2-37, OPY2-38, OPY2-39

Heat treatment lot OPY is from heat of steel ID 3M75738-2

Attachments:

Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A.

D-repat

Q.A. Admin. Assistant 8/29/11

LARGE DIAMETER FASTENERS & FORGINGS / STANDARDS & SPECIALS / COMMERCIAL, MILITARY & NUCLEAR SPECIFICATIONS

PWS ANCHOR RODS and EXTENSION ROD THREAD MIAPPING

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Matrix         Description         Control module         Control module <th>Date</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>COUPLER END</th> <th>9</th> <th></th> <th></th> <th></th> <th>TAPPE</th> <th>TAPPED END</th> <th></th> <th></th> <th></th>	Date						COUPLER END	9				TAPPE	TAPPED END			
OPF-List         Num         Fr_/Ms         Start         A375         A375         A375         A375         A375         A375         A357	Weasured	_	LENGTH		DYSON	No-Go	Pitch Dia	meter [In.]	No-Go		Pitcl	h Diameter F	teadings (+/-	1 Pitch) [Inc	thes]	
Winter         Winter<	11/02/3		MM	FT./IN	S.O.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	25	12.75"	24.75"	36.75"	48.75"	60.75"
OPT-21         9000         124-50*         110037         Fass         3330         5335         3331         3335	TT/nc/a	PT-7140		29-6-50	112052	Pass	3.330	3.333	Pass	3.329	3.332	3.334	3.335	3.336	3.338	3.340
WYC-25         3000         25-559         11202         Fass         3331         3330         Fass         33313         33313         33313	TT/nc/n	12-21-D	2000	24-6.50	112052	Pass	3.329	3.329	Pass	3.329	3.333	3.335	3.333	3.337	3.342	3.339
OPTC24         3000         276-56         11055         Fue         3334	TT/ns/9	12-27-0	0006	29'-6.50"	112052	Pass	3.327	3.330	Pass	3.334	3.329	3.331	3.334	3.336	3.334	3.339
OPT242         2000         247-647         11.0762         Pass         3.335         Pass         3.335         Pass         3.335         Pass         3.335 <th< td=""><td>TT/Ac/9</td><td>Ur12-22</td><td>0005</td><td>29-6.50</td><td>112052</td><td>Pass</td><td>3.329</td><td>3.340</td><td>Pass</td><td>3.332</td><td>3.335</td><td>3.337</td><td>3.339</td><td>3,340</td><td>3.341</td><td>3.347</td></th<>	TT/Ac/9	Ur12-22	0005	29-6.50	112052	Pass	3.329	3.340	Pass	3.332	3.335	3.337	3.339	3,340	3.341	3.347
OP7247         900         276-557         11002         Pass         3233         Pass         3233         Pass         3234         3239         3234         3239         3234         3239         3234         3239         3234         3239         3234         3239         3234	TT/nc/a	10P12-21	0006	29-6.50	112052	Pass	3.331	3.336	Pass	3.325	3.330	3.334	3.332	3.335	3.337	3 328
OPP2-45         9900         29-65/F         1102/C         Fast         3331         Fast         3331         Fast         3331         3334	TT/nc/a	42-21-0	DUDE	296.50"	112052	Pass	3.329	3.332	Pass	3.326	3.326	3.328	3.329	3.330	3.337	EFF F
OPY-240         9000         124 (54)         110537         Pass         3334         3335         3341         3335         3341         3345         3341         3345         3341         3345         3341         3345         3341         3345		52-27-10 25 CMGO	2000	29'-6.50"	112052	Pass	3.327	3.333	Pass	3.328	3.334	3.335	3.336	3.338	3.341	3.341
OPT7-410         9010         276-567         112052         Pass         3.336         3.337	TT/nc/a	0112-20	2000	29'-6.50"	112052	Pass	3.334	3.338	Pass	3.330	3.335	3.340	3.343	3.341	3.344	3 344
OPT249         9000         29'6.50'         11202         Fass         3.324         3.325         5.323         3.337         <	TT/97/0	DT-71-0	0006	29'-6.50"	112052	Pass	3.328	3.330	Pass	3.326	3.331	3.332	3.335	3.337.	3, 320	2 3 3 0
OPY-22:         9000         137:6:567         112022         Pass         3.331         3.335         3.335         3.335         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.336         3.337         3.336         3.337	17/97/9	DPY2-4	9000	29'-6.50"	112052	Pass	3.324	3.328	Pass	3.329	3.329	3.334	3.335	UES.E	DEF E	חבב ב
OPT7-25         9000         276-35         112052         Pass         3.332         2.332         3.337         <	11/07/0	E-2740	0006	29'-6.50"	112052	Pass	3.328	3.333	Pass	3.331	3.335	3.336	3.337	3.340	225 5	עבב ב
OPTY2-28         9900         29-6-37         112052         Pass         3331         3332         3331         3332         3331         3332         3331	TT/CT//	- 12-21-D	9006	29'-6.33"	112052	Pass	3.334	3.332	Pass	3.334	3.332	3.330	3.330	1331	חבב ב	1000
Phytical         9000         275-63.4         112022         Pess         3333         Fess         3333         Fess         3332         3333         3332         3332         3332         3332         3332         3332         3332         3333         3332         3333         3332         3333	11/21//	0P12-28	0006	29'-6.33"	112052	Pass	3.331	3.332	Pass	3.327	3.331	3.331	3.331	1330	1 221	LEEE
OPTY-240         9000         276-53*         112022         Pess         3332         3333         3332         3333         3332         3333	11/51/1	0PY2-29	0006	29'-6.33"	112052	Pass	3.333	3.333	Pass	3.326	3.334	3.333	2327	C55 5		
OPY2-31         D000         25'-6.3''         112052         Pass         3.331         3.332         3.331         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.332         3.333         3.332         3.333         3.332         3.333	11/51//	OPY2-30	0006	29'-6.33"	112052	Pass	3.332	3.332	Pass	3.327	3.333	755.5	1 227	2000	2000	700.0
OPY2-32         9000         22-6-33*         11202         Pess         3332         3332         3332         3332         3332         3332         3332         3332         33331         33331	11/51/1	OPY2-31	0006	29'-6.33"	112052	Pass	3.331	3.331	Pass	3.333	3,333	2222	100 0	20000	ארכים	755.5
OPYX-33         DOOD         25'-6.31'         112052         Pass         3.332         7.332         3.333         3.333         3.331	1	OPY2-32	0006	29'-6.33"	112052	Pass	3.332	3.334	Pass	3.323	755.5	2222			20010	765.6
OPV2-34         9000         129'6.53*         11052         Pass         3.333         Pass         3.333         3.331         3.331		DPY2-33	0006	29'-6.33"	112052	Pass	3.332	3.332	Pass	3.330	3 333	1 CEE E	CEE E	100.0	705.0	2,334
DYP2-35         9000         29-6.33*         112052         Psss         3332         3333         Psss         3334         3334         3334         3334         3334         3334         3334         3334         3334         3334         3334         3334         3333		OPY2-34	9000	29'-6.33"	112052	Pass	3.333	3.333	Pass	3.333	5333	2000	מנה ב	TCC.C	100.0	155.5
OPY2-36         9000         29 <sup>6</sup> .6.3 <sup>-1</sup> 112022         Pass         3.332         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333         3.332         3.333	11/51//	OPY2-35	0006	29'-6.33"	112052	Pass	3.332	3.333	Pass	3.327	3 337	DEF F	2 320	700-0	000°C	555.5
UP-V2-31         112052         Pass         3.332         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.333         3.331	11/ST/1	0PY2-36	0005	29'-6.33"	112052	Pass	3.332	3.333	Pass	3.328	3.33I	3.332	1 333	ALL F	100.0	+cc.c
UPT.230         3000         29'6.53*         112052         Pass         3.330         3.331         Pass         3.331         3.331         3.331           OPY239         9000         29'6.53*         112052         Pass         3.332         3.331         3.331         3.331           Image: Second	TT/CT/1	UP12-3/	0006	29'-6.33"	112052	Pass	3.332	3,334	Pass	3.332	3.333	3.332	3.333	3.333	2000	2000
WT (23)       3000       23-6.33*       112052       Pass       3.332       3.332       3.331       3.331       3.331         1       1       1       1       1       1       1       1       3.331       3.331       3.331       3.331       3.331       3.331       3.331       3.331       1       1	TT/CT/1		2000	296.33	112052	Pass	3.330	3.331	Pass	3.325	3.331	3.331	3.331	155 5	155 5	1000
	TT/CT/	UF12-55	2000	29'-6.33"	112052	Pass	3.332	3.332	Pass	3.332	3.332	155 5	7255	162 6	1000	+
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# CERTIFICATE OF COMPLIANCE

### DYSON CORP. 53 Freedom Road 440-946-3500 DOMESTIC NUT Painesville, OH 44077 440-352-2700 fax DYSON CUSTOMER ITEM QUANTITY ORDER# DATE ORDER# NUMBER SHIPPED SHIPPED L 112053 660110-SA-017 CO 022 9100 MM 16 pcs 8/31/11 CUSTOMER PRODUCT DESCRIPTION 3.50°-4UNC-2A x 9100mm (29-10.27°) OAL PWS Anchor Rod w/1850mm (72.83°) of useable thread one end and 280mm (13.78°) on opposite end. Drill & Tap 2°-4-1/2 UNC-2A x 60mm (2.36°) Deep on 1850mm threaded end 100G net ASTAL-A123 w/while netal blast none to calvaniza BID (TEA) 66 -American Bridge / Fluor JV 375 Burma Road Oakiand, CA 94607 SPECIFICATIONS

ASTM-A354 Grade BD with special provisions 10-1.59, 10-1.60, 10-1.61 std specifications 75-1.05

\*\* \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

DRAWING

USA

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar 1.D.'s: OPY3-1, OPY3-2, OPY3-6, OPY3-7, OPY3-9, OPY3-16, OPY3-18, OPY3-19, OPY3-20, OPY3-21, OPY3-22, OPY3-23, OPY3-24, OPY3-25, OPY3-26, OPY3-27 Heat treatment lot OPY is from heat of steel ID 3M75738-2

Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A

Q.A. Admin. Assistant 8/29/11

ARGE DIAMETER FASTENERS & FORGINGS / STANDARDS & SPECIALS / COMMERCIAL, MILITARY & NUCLEAR SPECIFICATIONS

N ROD THREAD MAPPING	
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			60.75"	3.332	3.329	3.334	3.331	3.338	3.332	3.334	155.5	Teer E	725 5	3.334	3.334	3.333	3.333	3.331							Ι											Ì	
		ches]	48.75"	3.332	3.328	3.335	3.329	3.337	3.332	3.34	100.0	TCC-C	3.333	3.334	3.334	3.333	3.333	3.331																			
		Pitch Ulameter Readings (+/- 1 Pitch) [Inches]	36.75	3.330	3.330	3.333	3.325	3.336	255.5	455.5	122 2	7222	3.333	3.334	3.333	3.333	3.333	3.331					-														
	TAPPED END	leadings (+/	-54.75	U55.5	3.328	355.5	175.5	955.5	NCC.C	+cc.c	C22.5	3.334	3.333	3.334	3.333	3.333	3.333	3.331						~		 											_
	TAPPE	Ulameter F	5/.7T	07C.C	975-5	165.6	07C.C	CCC.C	NEE E	1225 E	3.332	3.334	3.333	3.334	3.333	3.333	3.333	3.331					 														
		יזר ר	2212	ערב ב	47C.C	275.5	בבב ב	ודב ב	PEE E	CEE E	3.332	3.332	3.333	3.332	3.333	3.333	3.333	3.331									-										
		0 7E"	3 374	3 374	3 375	3 372	775.5	DFF.F	3.334	3.334	3.334	3.334	3.332	3.334	3.334	3.334	3.334	3.332																			
	No.Go	Pace/Fail	SSEd	Pase	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass																									
	ater (In 1	12.75"	3.333	3.328	3.33D	3.331	3.329	3.331	3.334	3.334	3.334	3.334	3.332	3.332	3.332	3.331	3.332	3.332									_				_	-					
COLIDIER END		0.75"	3.328	3.327	3.328	3.329	3.328	3.323	3.332	3.333	3.334	3.331	3.333	255.5	755.5	122.C	155.5	2.335																			
	No-Go	Pass/Fail	Pass	· Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	- SSE4	Darr	0111		SCD															. 				
	DYSON	5.0.#	112053	112053	112053	112053	112053	112053	112053	112053	112053	112053	112053	CCU2TT	LIZNS	112063	117052																				
	LENGTH	FT./IN	29'-10.25"	29'-10.25"	29'-10.25"	29'-10.25"	29'-10.25"	29'-10.27"	29'-10.27"	29'-10.27"	29'-10.27"		17.01- 22	"TC 01.'PC	"72.01-'92	"75 01-'95	79'-10 77"					_		-													
	LENGTH	MM			9100							DOLO	-		-		T	1														 					
BAR	1.0	CODE / BAR	OPY3-1	OPY3-2	0PY3-6	OPY3-7	OPY3-9	OPY3-16 -	OPY3-18	OPY3-19	UP 73-20	ODV2.77	0PY3-23	OPY3-24	OPY3-25	OPY3-26	OPY3-27					_															
Date	Measured		1				1	-	-			0 11/01/2				1	1				 					 			+	_	+					_	_

Stork Herron Testing Laboratories
-
Material Testing and Non-Destructive Testing
5405 E. Schaaf Road
Cleveland, OH 44131
USA
Төlephone : (216) 524-1450
Fax : (216) 524-1459
Websile ; www.storkherron.com
TEST REPORT
ITAR-CONTROLLED DATA

Sample Description: On-Site MT Exam of Anchor Rods Representing 3.50"-4UNC 2A x Random Lengths\*, Material ASTM-A354, Gr. BD, Spec.: ASTM A490, ASTM F788, MIL-I-45208, AM#1 Applies, Heat#/Heat Codes 3M75738/OPY and OQW,\* Customer PO# 660110-SA-017 CO 022

### MAGNETIC PARTICLE INSPECTION REPORT

Standard:	ASTM F788-06 (Acceptance Criteria)								
	SOP 42.03 /	ASTM E1444 (Me	lhod) per ASTN	A490 /					
Procedure:	Caltran Special Provisions 10-1.59, 10-1.60 and 10-1.61,								
and Caltrans Standard Specifications 75-1.05									
METHOD									
Dry			🛛 Wet						
PARTICLES									
1 Gray	14A 14AM Other	Part Preparation None Requir Solvent Clea Grinding Other Precle Customer	eđ n	Wet Particle Carrier: Magnaflux Carrier II Pre Mixed Concentration MI Batch No.					
CURRENT									
AC			FWDC						
Central Condu	ctor (AMPS)	U.	Head Shot (AMPS)						
Coil (AMPS)			Prods (AMPS/Spacing)						
Field Verified by: Rie Gage QQI Hall Effect Probe									
EQUIPMENT									
Magnaflux H-7	Magnaflux H-720 S/N: Cal Due Date:								
Yoke AC & DC S/N: 3005 Spacing: 4" – 6" Cal Due Date: 12/1/11									

The above testing was performed in accordance with the lotest revision of the applicable commercial, military and/or International test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 3 dated 67.0/09. Information and statements in bits report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied warranities as to the filness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this laboratory. The recording of false, fictilious or traudulent statements or entries on this document may be puncished as a felony under Federal Statutes. Sample remnants are held for a minimum of 6 months following issuance of test results, at which point they will be discorded unless notified in writing by the client. This material was not contaminated by mercury or chlorinated solvents during the handling and processing at Stork-Herron Testing Laboratories facilities.

Michel & Light

Michael R. Gaydos General Manager, COO

# STORK

Materials Technology

7/27/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 7/22/2011

Test Report No.: DYS006-11-07-30317-1 REVISED Stork Herron Testing Laboratories

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

### TEST REPORT

ITAR-CONTROLLED DATA

INSPECTION RESULTS

P.O. No.: 79155

Quantity	Results
9 PCS OPY, OQW,* Heat# 3M75738 3.50"-4UNC-2A X Random Lengths* PWS Anchor Rod OPY3-16 OPY3-18 OPY3-23 OPY3-24 OPY3-19 OPY3-25 OPY3-20 OPY3-27 OPY3-21	O.D. only was inspected and found to be acceptable
be verified for sensitivity; thus only a	quest "ID of tube only"- Magnetic Flux Field cannot cursory examination was performed for ndications were noted at the time of inspection.*

Demay and post deaming requirem	
Inspected by:	Certification: ASNT-SNT-TC-1A
Matthew Novak	

The reported results represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

Export Controlled (ITAR)

This document contains technical data whose export and re-export/re-transfer is subject to control by the U.S. Department of State under the Arms Export Control Act and the International Traffic in Arms Regulations. The Department of State's prior written approval is required for the export or re-export/re-transfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

\*REVISED (08/01/11): Added Heal Code, Heal Number, Length, and expanded Comments.

The above testing was performed in accordance with the latest revision of the applicable commercial, military and/or International test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Duality Assurance Program Eultion 1, Revision 3 dated 6/30/09, information and statements In this report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied warranties as to the illness of the material tested or nalyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this faboratory. The recording of talse, fictilious or fraudvlent statements or entries on this document may be punished as a folony under Federal Statules. Sample remnants are held for a minimum of 6 months following issuance of test results, al which point they will be discarded unless notified in writting by the client. This material value and commanded by mercury or chlorinated solvents during the handling and processing at Stark-Herron Testing Laboratories facilities.

Nichof R. Supdace

Michael R. Gaydos General Manager, COO



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# 09/02/2011 10:46

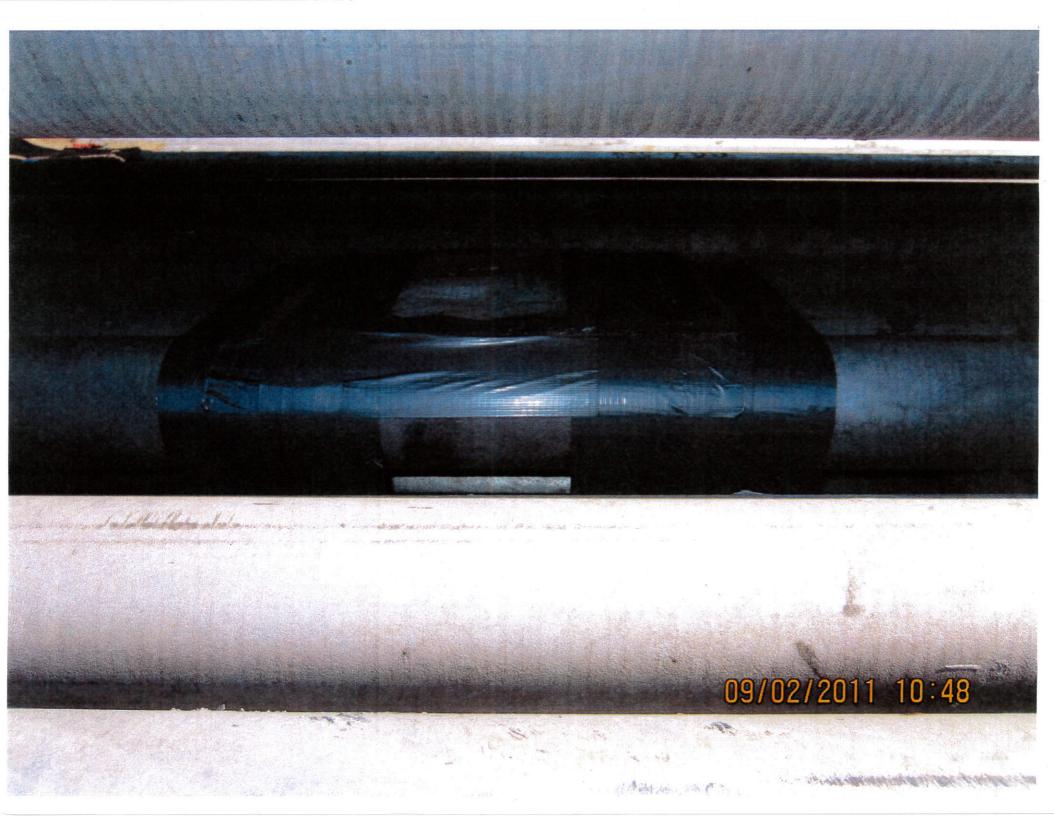
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# 09/02/2011 10:47







Shipped to: Jobsite

### DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection Contract #: 04-0120F4 Bay Area Branch Cty: SF/ALA Rte: 80 PM: 13.2/13.9 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 File #: 1.9 (707) 649-5453 (707) 649-5493 **REPORT OF INSPECTION OF MATERIAL** Resident Engineer: Siegenthaler, Peter Report No: RIM-000098 Address: 333 Burma Road Date Inspected: 30-Aug-2011 City: Oakland, CA 94607 Project Name: SAS Superstructure **OSM Arrival Time: 900** Prime Contractor: American Bridge/Fluor Enterprises, a JV OSM Departure Time: 1730 **Contractor:** Monnig Industries Location: Glasgow, MO The following material has been inspected in accordance with Section 6 of the Standard Specifications and found to substantially comply\* with contract plans and specifications. Item Lot # **Bid Item#** Quantity **Material Description** B219-008-11 1 66 2 PWS Anchor Rod - load - 1 2 B219-010-11 66 19 PWS Anchor Rod - load -2

**Identification:** one Orange Tag attached to each load (2)

# **Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager, was present at Monnig Industries Inc. in Glasgow, MO as requested to release the Parallel Wire Strand (PWS) High Strength Anchor Rods for use on the San Francisco / Oakland / Bay Bridge (SFOBB), Self Anchored Suspension (SAS) project.

This QA Inspector met with Monnig Industries General Manager Ryan Monnig and was informed all PWS Anchor Rods had been galvanized, passed QC inspections, spherical and regular nuts had been threaded on all rods and that all rods had been packaged for shipment.

This QA Inspector observed the following PWS Rods were part of load-1: OQW-3 and OQW-5.

This QA Inspector observed the following PWS Rods were part of load-2: OQX4-5, OQX4-6, OQX4-7, OQX4-9, OQX4-10, OQX4-11, OQX4-12, OQX4-13, OQX5-1, OQX5-2, OQX5-3, OQX5-4, OQX5-5, OQX5-6, OQX5-7, OQX5-8, OQX5-9, OQX5-10 and OQX5-11.

This QA Inspector was provided a Certificate of Compliance (COC), Material Test Reports (MTR's), Magnetic Particle Testing (MT) inspection reports per material heat, Thread Dimension reports and a shipper from Dyson Corporation for the PWS Anchor Rods in loads 1 and 2.

This QA Inspector was provided a COC, Quality Control (QC)Blasting report and QC inspection report for galvanizing thicknesses from Monnig Industries for the PWS Anchor Rods in loads 1 and 2.

This QA Inspector had previously confirmed with Structural Material Representative (SMR) Kittric Guest that all material check samples had been accepted.



# **REPORT OF INSPECTION OF MATERIAL**

( Continued Page 2 of 2 )

The documents provided appeared to comply with the contract requirements therefore an Orange Tag was placed in a plastic pouch and attached to each load.

This QA Inspector randomly observed as the material listed above was loaded onto each truck. See photos of documentation package and overall truck loaded shipment below.

# **Summary of Conversations:**

This QA Inspector had general conversations with Monnig General Manager Ryan Monnig and other Monnig personnel. Except as described above there were no other notable conversations.









# Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510-385-5910), who represents the Office of Structural Materials for your project.

Inspected By:	Hager, Craig	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell, Bill	QA Reviewer

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION INSPECTION RELEASE TAG /ord#( TL-0624 (REV. 10/97) 2- rcds STATE LOT NO. 3219-008-11 CONTRACT NO. 04-0120F4 RELEASED (\*) BY FM 92 1554 Based upon selective sampling

COOPTATION
STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION INSPECTION RELEASE TAG load # L TL-0624 (REV. 10/97)
STATE LOT NO. B219-10-11
CONTRACT NO. 64-0120F4
RELEASED (*) BY Crais Hager 8/11/30
• Based upon selective sampling

Shipped to: jobsite

# DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>1.9</u>

# **REPORT OF INSPECTION OF MATERIAL**

Resident Engineer:Siege	enthaler, Peter	<b>Report No:</b> RIM-000097					
Address: 333 H	Burma Road	Date Inspected: 31-Aug-2011					
City: Oakl	land, CA 94607						
Project Name: SAS Supe	erstructure	OSM Arrival Time: 900					
Prime Contractor: Ame	erican Bridge/Fluor Enterprises	s, a JV OSM Departure Time: 1730					
Contractor: Monnig Industries Location: Glasgow, N							
The following material has been inspected in accordance with Section 6 of the Standard Specifications and found to substantially comply* with contract plans and specifications.							
Item Lot #	Bid Item# Quantity	Material Description					

1	B219-011-11	66	51	PWS Anchor Rods - load-3
2	B219-013-11	66	39	PWS Anchor Rods - load-4

**Identification:** one tag attached to each load (2)

# **Summary of Items Observed:**

This Quality Assurance (QA) Inspector, Craig Hager, was present at Monnig Industries Inc. in Glasgow, MO as requested to release the Parallel Wire Strand (PWS) High Strength Anchor Rods for use on the San Francisco / Oakland / Bay Bridge (SFOBB), Self Anchored Suspension (SAS) project.

This QA Inspector met with Monnig Industries General Manager Ryan Monnig and was informed all PWS Anchor Rods had been galvanized, passed QC inspections, spherical and regular nuts had been threaded on all rods and that all rods had been packaged for shipment.

This QA Inspector observed the following PWS Rods were part of load-3: OQY-1A, OQX3-2, OQY-3A, OQY-4A, OQX3-5, OQY-6A, OQX3-7, OQX-8, OQY-9A, OQY-10A, OQX3-11, OQY-12A, OQX3-13, OQY-14A, OQY-15A, OQX3-16, OQY-17A, OQY-1, OQY-2, OQY-3, OQY-4, OQY-14, OQY-15, OQY-16, OQX4-17, OQX4-18, OQY-19, OQX4-20, OQX4-21, OQX4-22, OQX4-23, OQX4-24, OQX5-12, OQX5-13, OQX5-14, OQX5-15, OQX5-16, OQX5-17, OQX5-18, OQX5-19, OQX5-20, OQX5-21, OQX5-22, OQX5-23, OQX5-24, OQX5-25, OQX5-26, OQX5-27, OQX5-28, OQX5-29 and OQX5-30.

This QA Inspector observed the following PWS Rods were part of load-4: OQY-1C, OQY-2C, OQY-3C, OQY-4C, OQX2-5, OQY-6C, OQY-7C, OQX2-8, OQY-9C, OQY-10C, OQY-11C, OQY-12C, OQY-13C, OQY-14C, OQY-15C, OQY-16C, OQY-17C, OQY-18C, OQY-19C, OQY-20C, OQY-21C, OQY-22C, OQY-23C, OQY-24C, OQY-25, OQY-26, OQY-27, OQY-28, OQY-29, OQX4-30, OQY-31, OQY-32, OQY-23B, OQX6-1, OQX6-2, OQX6-3, OQW2-4, OQW2-5 and OQW2-6.

This QA Inspector was provided a Certificate of Compliance (COC), Material Test Reports (MTR's), Magnetic Particle Testing (MT) inspection reports per material heat, Thread Dimension reports and a shipper from Dyson Corporation for the PWS Anchor Rods in loads 3 and 4.



# **REPORT OF INSPECTION OF MATERIAL**

(Continued Page 2 of 3)

This QA Inspector was provided a COC, Quality Control (QC)Blasting report and QC inspection report for galvanizing thicknesses from Monnig Industries for the PWS Anchor Rods in loads 3 and 4.

This QA Inspector had previously confirmed with Structural Material Representative (SMR) Kittric Guest that all material check samples had been accepted.

The documents provided appeared to comply with the contract requirements therefore an Orange Tag was placed in a plastic pouch and attached to each load.

This QA Inspector randomly observed as the material listed above was loaded onto each truck. See photos of documentation package and overall truck loaded shipment below.

# **Summary of Conversations:**

This QA Inspector had general conversations with Monnig General Manager Ryan Monnig and other Monnig personnel. Except as described above there were no other notable conversations.



# Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for

# **REPORT OF INSPECTION OF MATERIAL**

( Continued Page 3 of 3 )

your project.

Inspected By:Hager, CraigQuality Assurance Inspector

**Reviewed By:** 

Levell, Bill

QA Reviewer

STATE OF CALIFORNIA • DEPARTMENT OF TRANS	portation
STATE LOT NO. 8219-011-11	
CONTRACT NO. 04-0120F4	in the
RELEASED (*) BY DATE STOCK	11
FM 92 1554 • Based upon selective sampling	

# CERTIFICATE OF COMPLIANCE

DYSON		dom Road	440-946-3500				
DN DOMEST	TIC NUT Painesville	e, OH 44077	440-352-2700 fax				
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED			
L 112051	660110-SA-017 CO 022	8900 MM	24 pcs	8/31/11			
CUSTOMER American Bridge / 375 Burma Road Oakland , CA 946 USA		PRODUCT DESCI 3.50°-4UNC 2A x 8960mm OA (13.78°) on opposite end. Drill ASTM-A123 widdle meal ble SPECIFICATIONS ASTM-A354 Grz	RIPTION L PWS anchor rad w/1850mm of useable ( & tap 2°4, SUNC-2A x filmm deep on 185 sy network of estimation III TEM 66 - FUR	iread one end and 280mm Amm liteaded end, HDG per NISH PWS CAMLE SYSTEM VISIONS			
DOMUNO							

### DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OPY4-1, OPY4-2, OQW-3, OPY4-4, OQW-5, OPY4-6, OPY4-7, OPY4-8, OPY4-9, OPY4-10, OPY4-11, OPY4-12, OPY4-13, OPY4-14, OPY4-15, OPY4-16, OPY4-17, OPY4-18, OPY4-19, OPY4-20, OPY4-21, OPY4-22, OQY-23B, OPY4-24 Heat treatment lot OQW is from heat of steel ID 3M75738-1 O repeat

Heat treatment lot OPY is from heat of steel ID 3M75738-2 Heat treatment lot OQY is from heat of steel ID 4M76367-1

Attachments: Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

PWS ANCHOR RODS and EXTENSION ROD THREAD MAPPING

TTN7
31,
U5
100
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Date	BAR				0	COUPLER END					TAPPE	TAPPED END			
Measured		LENGTH	LENGTH	DYSON	No-Go	Pitch Diameter [in.]	reter [in.]	No-Ga		Pitch	n Diameter F	Diameter Readings (+/- 1 Pitch) [Inches]	1 Pitch) [Inc	hes]	
	CODE / BAR	MM	FT./IN	S.O.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	2.25"	12.75"	24.75"	36.75"	48.75"	60.75"
8/1/11	OPY4-1	0068	29'-2.39"	112051	Pass	3.332	3.332	Pass	3.334	3.331	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-2	8900	29'-2.39"	112051	Pass ·	3.330	3.332	Pass	3.330	3.330	3.330	3.331	3.332	3.332	3,331
8/1/11	00.W-3	8900	29'-2.39"	112051	Pass	3.334	3.334	Pass	3.334	3.333	. 3.334	3.334	3.334	3.333	3.334
8/1/11	OPY4-4	8900	29'-2.39"	112051	Pass	3.330	3.331	Pass	3.331	3.330	3.330	3.330	3.331	3.331	3.331
8/1/11	00W-5	8900	29'-2.39"	112051	Pass	3.323	3.33I	Pass	3.332	3.332	3.329	3.329	3.330	3.331	3.331
8/1/11	OPY4-6	8900	29'-2.39"	112051	Pass	3.331	3.331	Pass	3.332	3.329	3.329	3.329	· 3.330	3.329	3.329 -
8/1/11	OPY4-7	8900	29'-2.39"	112051	Pass	3.327	3.333	Pass	3.334	3.333	3.33I	3.331	3.331	3,331 ·	3.331
8/1/11	OPY4-8	8900	29'-2.39"	112051	Pass	3.327	3.333	Pass	3,333	3.333	3.334	3.333	3.334	3.334	3.334
8/1/11	0PY4-9 ·	8900	29'-2.39"	112051	Pass	3.329	3.332	Pass	3.333	3.333	3.333	3.333	3.333	3.330	3.333
8/1/11	OPY4-10	8900	29'-2.39"	112051	Pass	3.330	3.333	Pass	3.332	3.332	3.331	3.331	3.332	3.332	3.331
8/1/11	OPY4-11	8900	29"-2.39"	112051	Pass	. 3.323	3.331	Pass	3.333	3.332	3.332	3.332	3.332	3.332	3.332
B/1/11	OPY4-12	8900	29'-2.39"	112051	Pass	3.323	3.331	Pass	3.333	3.332	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-13	0068	29'-2.39"	112051	Pass	3.326	3.333	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
8/1/11	OPY4-14	8900	29'-2.39"	112051	Pass	3.324	3.332	Pass	3.332	3.332	3.332	3.332	3.332	3.332	3.332
8/1/11	OPY4-15	8900 ·	29'-2.39"	112051	Pass	3.323	3.330	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3:334
8/1/11	OPY4-16	8900	29'-2.39"	112051	Pass	3.323	3.329	Pass	3.333	3.332	3.332	3.331	3.331	3.330	3.330
8/1/11	OPY4-17	8900	29'-2.39"	112051	Pass	3.324	3.332	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
8/1/11	OPY4-18	8900	29'-2.39"	1120211	Pass	3.331	3.331	Pass	3.332	3.331	3.331	3.331	3.331	3.331	3.331
8/6/11	OPY4-19	8900	"95-2-'92	112051	Pass	3.333	3.334	Pass	3.333	3.333	3.331	3.332	3.331	3.332	3.331
8/6/11	OPY4-20	8900	29'-2.39"	112051	Pass	3.331	3.333	Pass	3.323	3.333	3.333	3.333	3.333	3.333	3.333
8/6/11	OPY4-21	0068	29'-2.39"	112051	Pass	3.328	3.332	Pass	3.328	3.333	3.332	3.333	3.333	3.331	. 3.331
8/6/11	OPY4-22	0068	29'-2.39"	112051	Pass	3.330	3.333	Pass	3.325	3.333	3.333	3.333	3.333	3.333	3.333
8/6/11	OQY-23B	8900	29'-2.39"	112051	Pass	3.330	3.331	Pass	3.333	3.333	3.332	3,332	3.332	3.332	3.332
8/6/11	OPY4-24	8900	29'-2.39"	112051	Pass	3.323	3.332	Pass	3.329	3.333	3,333	3.333	3.333	3.333	3.334
												·			
											-				
										a second system framework organization					

# **Monnig Industries, Inc.**

HOT DIP & MECHANICAL GALVANIZING P.O. BOX 98 GLASGOW, MO 65254 PH. 660-338-2242 FAX: 660-338-5199

# AUGUST 30, 2011

DYSON CORPORATION 50 FREEDOM ROAD PAINESVILLE, OH 44077

# **RE: GALVANIZING CERTIFICATE-CALTRAN**

THIS WILL CERTIFY THAT THE RODS GALVANIZED ON THE ATTACHED SPREADSHEET MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS OF ASTM A-123 & F2329 SPECIFICATIONS.

# 44 PWS ANCHOR RODS

# ROD ID/MIL THICKNESS MEASUREMENTS

· OPY2-18 / 5.5	OPY2-20 / 6.0	OPY2-21 / 5.0	OPY2-22 / 6.0	OPY2-23 / 6.5
OPY2-24 / 6.5	OPY2-25 / 6.0	OPY2-26 / 6.5	OPY2-10 / 6.5	OPY2-4 / 7.0
OPY2-9 / 6.0	OPY3-1 / 6.5	OPY3-2 / 6.5	OPY3-6 / 6.0	OPY3-7 / 6.5
OPY3-9 / 6.5	OTD-16 / 6.5	OTD-17 / 6.5	OTD-18 / 7.0	OTD-5 / 6.5
OTD-4 / 7.0	OOH2-6 / 7.0	OOH2-22 / 6.5	OOF2-1 / 6.5	OOF3-4 / 6.0
OOF4-3 / 4.5	OOF4-8 / 5.5	OOF4-9 / 7.0	OOF5-1 / 6.5	OOF5-2 / 6.5
OOF5-4 / 6.0	OPY4-1 / 6.5	OPY4-2 / 6.5	OQW-3 / 6.5	OPY4-4 / 7.0
OQW-5 / 6.5	OPY4-6 / 6.5	OPY4-7 / 5.5	OPY 4-8 / 7.0	OPY4-9 / 6.5
OPY4-10 / 6.5	OPY4-11 / 6.5	OPY4-12 / 5.0	OPY4-13 / 6.0	

PATRICIA S. WESTHUES NOTARY PUBLIC STATE OF MISSOURI HOWARD COUNTY MY COMMISSION EXP. APR. 18, 2012

HN MONNIG, / PRESIDENT

thur

PATRICIA S. WESTHUES, NOTARY PUBLIC



Phoenix Manufacturing, Inc. P.O. BOX 330 26666 Von Holten Rd. Cole Camp, MO. 65325 660-668-2611 660-668-3160 (fax)

SSPC-SP10 Near White Metal Blast

Near-White Blast Cleaning - Removal of nearly all mill scale, rust, rust scale, paint, or foreign matter by the use of abrasives propelled through nezzles or by centrifugal wheels, to the degree hereafter specified. A Near-White Blast Cleaned Surface Finish is defined as one from which all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter have been completely removed from the surface except for very light shadows, very slight streaks or shight discolorations caused by rust stain, mill scale oxides, or light, tight residues of paint or coating that may remain. At least 95 percent of each square inch of surface area shall be free of all visible residues, and the remainder shall be limited to the light discoloration menuoned above

# 44 PWS ANCHOR RODS

ROD IDS

	OPY2-20	OPY2-21	OPY2-22	OPY2-23
OPY2-18		OPY2-26	OPY2-10	· OPY2-4
OPY2-24	<u>OPY2-25</u>	OPY3-2	OPY3-6	OPY3-7
OPY2-9	<u>OPY3-1</u>	OTD-17	OTD-18	OTD-5
OPY3-9	OTD-16		OOF2-1	0013-4
OTD-4	OOH2-6	OOH2-22	OOF5-1	# 00F5-2
OOF4-3	OOF4-8	OOF4-9	L	$\frac{1}{100} \frac{1}{100} \frac{1}$
OOF5-4	OPY4-1	OPY4-2	OQW-3	$\frac{OPY4-9}{OPY4-9}$
OOW-5	OPY4-6	OPY4-7	OPY 4-8	UP14-9
OPY4-10	OPY4-11	OPY4-12	OPY4-13	<u> </u>

Den Col

Stork Herron Testing Laboratories
-
Material Testing and Non-Destructive Testing
5405 E. Schaaf Road
Cleveland, OH 44131
USA
Төlephone : (216) 524-1450
Fax : (216) 524-1459
Websile ; www.storkherron.com
TEST REPORT
ITAR-CONTROLLED DATA

Sample Description: On-Site MT Exam of Anchor Rods Representing 3.50"-4UNC 2A x Random Lengths\*, Material ASTM-A354, Gr. BD, Spec.: ASTM A490, ASTM F788, MIL-I-45208, AM#1 Applies, Heat#/Heat Codes 3M75738/OPY and OQW,\* Customer PO# 660110-SA-017 CO 022

### MAGNETIC PARTICLE INSPECTION REPORT

Standard:	ASTM F788-	-06 (Acceptance C	criteria)	
	SOP 42.03 /	ASTM E1444 (Me	lhod) per ASTN	A490 /
Procedure:	Caltran Spec	cial Provisions 10-	1.59, 10-1.60 ai	nd 10-1.61,
1	and Caltrans	Slandard Specifi	cations 75-1.05	
METHOD				
Dry			🛛 Wet	
PARTICLES				
1 Gray	14A 14AM Other	Part Preparation None Requir Solvent Clea Grinding Other Precle Customer	eđ n	Wet Particle Carrier: Magnaflux Carrier II Pre Mixed Concentration MI Batch No.
CURRENT				
AC			FWDC	
Central Condu	ctor (AMPS)	U.	Head Sho	t (AMPS)
Coil (AMPS)			Prods (AN	MPS/Spacing)
Field Verified by:	🛛 Pie Gag		Hall Effect Pr	obe
EQUIPMENT				
Magnaflux H-7	20 S/N:	Cal Due I	Dale:	
X Yoke 🗌 AC	DC S/N:	3005 Spacing: 4"	- 6" Cal Due [	Dale: 12/1/11

The above testing was performed in accordance with the lotest revision of the applicable commercial, military and/or International test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 3 dated 67.0/09. Information and statements in bits report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied warranities as to the filness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this laboratory. The recording of false, fictilious or traudulent statements or entries on this document may be puncished as a felony under Federal Statutes. Sample remnants are held for a minimum of 6 months following issuance of test results, at which point they will be discorded unless notified in writing by the client. This material was not contaminated by mercury or chlorinated solvents during the handling and processing at Stork-Herron Testing Laboratories facilities.

Michel & Light

Michael R. Gaydos General Manager, COO

# STORK

Materials Technology

7/27/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 7/22/2011

Test Report No.: DYS006-11-07-30317-1 REVISED Stork Herron Testing Laboratories

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

### TEST REPORT

ITAR-CONTROLLED DATA

INSPECTION RESULTS

P.O. No.: 79155

Quantity	Results
9 PCS OPY, OQW,* Heat# 3M75738 3.50"-4UNC-2A X Random Lengths* PWS Anchor Rod OPY3-16 OPY3-18 OPY3-23 OPY3-24 OPY3-19 OPY3-25 OPY3-20 OPY3-27 OPY3-21	O.D. only was inspected and found to be acceptable
be verified for sensitivity; thus only a	quest "ID of tube only"- Magnetic Flux Field cannot cursory examination was performed for ndications were noted at the time of inspection.*

Demay and post deaming requirem	
Inspected by:	Certification: ASNT-SNT-TC-1A
Matthew Novak	

The reported results represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

Export Controlled (ITAR)

This document contains technical data whose export and re-export/re-transfer is subject to control by the U.S. Department of State under the Arms Export Control Act and the International Traffic in Arms Regulations. The Department of State's prior written approval is required for the export or re-export/re-transfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

\*REVISED (08/01/11): Added Heal Code, Heal Number, Length, and expanded Comments.

The above testing was performed in accordance with the latest revision of the applicable commercial, military and/or International test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Duality Assurance Program Eultion 1, Revision 3 dated 6/30/09, information and statements In this report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied warranties as to the illness of the material tested or nalyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this faboratory. The recording of talse, fictilious or fraudvlent statements or entries on this document may be punished as a folony under Federal Statules. Sample remnants are held for a minimum of 6 months following issuance of test results, al which point they will be discarded unless notified in writting by the client. This material value and commanded by mercury or chlorinated solvents during the handling and processing at Stark-Herron Testing Laboratories facilities.

Nichof R. Supdace

Michael R. Gaydos General Manager, COO

# **Monnig Industries, Inc.**

HOT DIP & MECHANICAL GALVANIZING P.O. BOX 98 GLASGOW, MO 65254 PH. 660-338-2242 FAX: 660-338-5199

# AUGUST 30, 2011

# DYSON CORPORATION 50 FREEDOM ROAD PAINESVILLE, OH 44077

# **RE: GALVANIZING CERTIFICATE-CALTRAN**

# THIS WILL CERTIFY THAT THE RODS GALVANIZED ON THE ATTACHED SPREADSHEET MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS OF ASTM A-123 & F2329 SPECIFICATIONS.

# **48 PWS ANCHOR RODS**

# ROD ID/MIL THICKNESS MEASUREMENTS

OPY4-14 / 6.0	OPY4-15 / 6.5	OPY4-16 / 6.5	OPY4-17 / 6.5	OPY4-18 / 7.0
OPY2-27 / 6.0	OPY2-28 / 6.5	OPY2-29 / 6.5	OPY2-30 / 6.5	OPY2-31 / 6.0
OPY2-32 / 6.5	OPY2-33 / 6.0	OPY2-34 / 4.5	OPY2-35 / 7.0	OPY2-36 / 6.0
OPY2-37 / 6.5	OPY2-38 / 6.5	OPY2-39 / 6.5	OPY3-16 / 6.5	OPY3-18 / 6.5
OPY3-19 / 6.0	OPY3-20 / 6.0	OPY3-21 / 6.5	OPY3-22 / 6.5	OPY3-23 / 5.5
OPY3-24 / 6.5	OPY3-25 / 6.5	OPY3-26 / 5.0	OPY3-27 / 6.0	OQX4-5 / 7.0
OQX4-6 / 6.5	OQX4-7 / 6.5	OQX4-9 / 6.5	OQX4-10 / 6.0	OQX4-11 / 6.5
OQX4-12 / 5.5	OQX 4-13 / 6.5	OQX5-1 / 6.0	OQX5-2 / 6.5	OQX5-3 / 6.5
OQX5-4 / 5.0	OQX5-5 / 6.0	OQX5-6 / 6.0	OQX5-7 / 6.0	OQX5-8 / 5.5
OQX5-9 / 6.5	OQX5-10 / 6.5	OQX5-11 / 6.0		
OQX4-12 / 5.5 OQX5-4 / 5.0	OQX 4-13 / 6.5 OQX5-5 / 6.0	OQX5-1 / 6.0 OQX5-6 / 6.0	OQX5-2 / 6.5	OQX5-3 / 6.5

PATRICIA S. WESTHUES NOTARY PUBLIC STATE OF MISSOURI HOWARD COUNTY MY COMMISSION EXP. APR. 18, 2012

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HN MONNIG, / PRESIDENT

thue

PATRICIA S. WESTHUES, NOTARY PUBLIC



Phoenix Manufacturing, Inc. P.O. BOX 330 26666 Von Holten Rd. Cole Camp, MO. 65325 660-668-2611 660-668-3160 (fax)

SSPC-SP10 Near White Metal Blast

Near-White Blast Cleaning - Removal of nearly all mill scale, rust, rust scale, paint, or foreign matter by the use of abrasives propelled through nozzles or by centrifugal wheels, to the degree hereafter specified. A Near-White Blast Cleaned Surface Finish is defined as one from which all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter have been completely removed from the surface except for very light shadows, very slight streaks or shglu discolorations caused by rust stain, mill scale oxides, or light, tight residues of paint or coating that may remain. At least 95 percent of each square inch of surface area shall be free of all visible residues, and the remainder shall be limited to the light discoloration mentioned above

# 48 PWS ANCHOR RODS

# **ROD IDs**

OPY4-14	OPY4-15	OPY4-16	OPY4-17	OPY4-18
OPY2-27	OPY2-28	OPY2-29	OPY2-30	OPY2-31
OPY2-32	OPY2-33	OPY2-34	OPY2-35	OPY2-36
OPY2-37	OPY2-38	OPY2-39	OPY3-16	OPY3-18
OPY3-19	OPY3-20	OPY3-21	OPY3-22	OPY3-23
OPY3-24	OPY3-25	OPY3-26	OPY3-27	0QX4-5
OQX4-6	OQX4-7	OQX4-9	OQX4-10	00X4-11
OQX4-12	OQX 4-13	OQX5-1	OQX5-2	DQX5-3
OQX5-4	OQX5-5	OQX5-6	OQX5-7	00X5-8
OQX5-9	OQX5-10	OQX5-11		

Dan Edd

CERTIFI	CATE OF	COMPL	IANCE
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) PC DYSON CO		iom Road	440-946	-3500
DN DOMESTIC	NUT Painesville	e, OH 44077		-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112049	660110-SA-017 CO 022	8700 MM	31 pcs	8/31/11
CUSTOMER American Bridge / Flu 375 Burma Road Oakland , CA 94607 USA	10r JV	opposite end. Drill & Top 2*4 Washing metal black print to val SPECIFICATION ASTM-A354 Gr.	AL PWS Anchor Rod w/1850mm of useable ,5UNC+2A x 60mm deep on 1850mm duced ymize - BID ITEA1 66 - FURNISH PWS C	thread one end and 280mm on ed end. HDG per ASTM+A123 AIN & SYSTEM VISIONS

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OQX4-5, OQX4-6, OQX4-7, OQX4-9, OQX4-10, OQX4-11, OQX4-12, OQX4-13, OQY-1, OQY-2, OQY-3, OQY-4, OQY-14, OQY-15, OQY-16, OQX4-17, OQX4-18, OQY-19, OQX4-20, OQX4-21, OQX4-22, OQX4-23, OQX4-24, OQY-25, OQY-26, OQY-27, OQY-28, OQY-29, OQX4-30, OQY-31, OQY-32

Heat treatment lot OQX is from heat of steel ID 4M76367-2 Heat treatment lot OQY is from heat of steel ID 4M76367-1

Attachments: Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

w/ da.

Q.A. Admin. Assistant 8/29/11

PWS ANCHOR RODS and EXTENSION ROD THREAD MAPPING

BAK				כ	COUPLER END					TAPPED END				
I.D	LENGTH	LENGTH	DYSON	No-Ga	Pitch Diameter [In.]	neter [In.]	Na-Ga		Pitch	n Diameter F	Pitch Diameter Readings (+/- 1 Pitch) [inches]	- 1 Pitch] [inc	ches]	
CODE / BAR	MM	FT./IN	5.0.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	2.25"	12.75"	24.75"	36.75"	48.75	60.75"
00X4-5	8700	28'-6.52"	112049	Pass	3.323	3.331	Pass	3.331	3.333	3.334	3.334	3.334	3.334	3.334
00X4-6	8700	28'-6.52"	112049	Pass	3.323	3.328	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
00X4-7	8700	28'-6.52"	112049	Pass	3.323	3.332	Pass	3.334	3.331	3.332	3.332	3.332	3.332	3.332
00X4-9	8700	28'-6.52"	112049	Pass	3.327	3.329	Pass	3.333	3.333	3.332	3.332	3.332	3.332	3.332
00X4-10	8700	28'-6.52"	112049	Pass	3.327	3.332	Pass	3.332	3.332	3.332	3.331	3.331	3.331	3.332
00X4-11	8700	28'-6.52"	112049	Pass	3.329	3.334	Pass	3.332	3.330	3.330	3.331	165.6	3.331	3.331
00X4-12	8700	28'-6.52"	112049	Pass	3.332	3.334	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
00X4-13	8700	28'-6.52"	112049	Pass	3.323	3.334	Pass	3.333	3.331	3.332	3.331	3.33Z	3331	3.331
1-700	8700	28'-6.52"	112049	Pass	3.324	3.332	Pass	3.334	3.333	3.333	3.333	3.333 <sup>.</sup>	3.333	3.333
002-2	8700	28'-6.52"	112049	Pass	3.323	3.332	Pass	3.333	3.332	3.331	3.331	3.331	3.331	3.331
0QY-3	8700	28'-6.52"	112049	Pass	3.328	3.330	Pass	3.330	3.330	3.329	3.330	3.329	3.330	3,330
0QY-4	8700	28'-6.52"	112049	Pass	3.333	3.332	Pass	3.330	3.328	3.328	3.327	3.332	3.331	3.331
0QY-14	8700	28'-6.52"	112049	Pass -	3.332	3.332	Pass	3.331	3.331	3.331	3.331	3.329	3.331	3.331
21-700	8700	28'-6.52"	112049	Pass	3.325	3.333	Pass	3.326	3.332	3.333	3.333	3.333	3.333	3.333
0QY-15	8700	28'-6.52"	112049	Pass	3.332	3.332	Pass	3.331	3.331	3.331	3.331	3.331	3.331	3.331
00X4-17	8700	28'-6.52"	112049	Pass	3.334	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
00X4-18	8700	28'-6.52"	112049	Pass	3.323	3.331	Pass	3.333	3.333	3.333	3,333	3.334	3.332	3,333
61-YD0	8700	28'-6.52"	112049	Pass	3.324	3.332	Pass	3.333	3.333	3.332	3.331	3.331	3.332	3,332
00X4-20	8700	28'-6.52"	112049	Pass	3.325	3.332	Pass	3.333	3,333	3.333	3.332	3.332	3.332	3.332
00X4-21	8700	28'-6.52"	112049	Pass	3.323	3.332	Pass	3.334	3.331	3.332	3.332	3.332	3.332	3.332
00X4-22	8700	28'-6.52"	112049	Pass	3.327	3.333	Pass	3.332	3.333	3.333	3.334	3.333	3.333	3.334
00X4-23	8700	28'-6.52"	112049	Pass	3.331	3.334	Pass	3.331	3.330	3.329	3.329	3.330	3.330	3.330
00X4-24	8700	28'-6.52"	112049	Pass	3.323	3.331	Pass	3.331	3.331	3.331	3.332	3.332	3.332	3.332
0QY-25	8700	28'-6.52"	112049	Pass	3.323	3.331	Pass	3.331	3.331	155.E	3.332	3.332	3.332	3.332
0QY-26	8700	28'-6.52"	112049	Pass	3.328	3.333	Pass	3.333	3.333	3.333	3.333	3.33.2	3.332	3.332
0QY-27	8700	28'-6.52"	112049	Pass	3.327	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
0QY-28	8700	28'-6.52"	112049	Pass	3.327	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
0QY-29	8700	28'-6.52"	112049	Pass	3.330	3.334	Pass	3.332	3.332	3.332	3.331	3,331	3.331	3. <b>3</b> 31
0QX4-30	8700	28'-6.52"	112049	Pass	3.323	3.329	Pass	3.334	3.333	3.333	3.334	3.334	3.334	3. <b>3</b> 34
0QY-31	8700	28'-6.52"	112049	Pass	3.323	3.333	Pass	3.333	3.333	3.332	3.330	3.328	3.326	3.326
0QY-32	8700	28'-6.52"	112049	Pass	3.323	3.326	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.33,4
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AUGUST 31, 2011

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## CERTIFICATE OF COMPLIANCE

	53 Free	dom Road e, OH 44077	440-946 440-352	5-3500 2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112050	660110-SA-017 CO 022	8800 MM	30 pcs	8/31/11
CUSTOMER American Bridge / 375 Burma Road	Fluor JV	PRODUCT DESC D.50°-4LINC 2A x KBIIIImm (24 2Kilmms on opposite end. Drill ner ASTN-A123 sv/schile nysto	r-10.46") OAL PWS Anchor Rod w/1850m & Tap 2*-4.5UNC-2A x filmum (2.36") Dee I blast grior in enlycnize BID ITEAL 66 - F	p on 1850mm threaded end. HDG
Oakland, CA 946 USA	07		5 ade BD with special pro 10-1.61 std specification	

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OQX5-1, OQX5-2, OQX5-3, OQX5-4, OQX5-5, OQX5-6, OQX5-7, OQX5-8, OQX5-9, OQX5-10, OQX5-11, OQX5-12, OQX5-13, OQX5-14, OQX5-15, OQX5-16, OQX5-17, OQX5-8, OQX5-9, OQX5-20, OQX5-21, OQX5-22, OQX5-23, OQX5-24, OQX5-25, OQX5-26, OQX5-27, OQX-28, OQX5-29, OQX5-20, Heat treatment lot OQX is from heat of steel ID 4M76367-2

<u>Attachments:</u> Mill Test Report

Mag Particle Certification Galvanizing Certification Pitch Diameter Record

> repeat w/ 8130/11

> Q.A. Admin, Assistant 8/29/11

PWS ANCHOR RODS and EXTENSION ROD THREAD MAPPING

Date	BAR				0	COUPLER END					TAPPE	TAPPED END			
Measured		LENGTH	LENGTH	DYSON	No-Go	Pitch Diameter [In.]	teter [In.]	No-Go		Pitcl	h Diameter F	Pitch Diameter Readings (+/- 1 Pitch) [Inches]	1 Pitch) [Inc	hes]	
	CODE / BAR	MM	FT./IN	\$.0.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	2.25"	12.75"	24.75"	36.75"	48.75"	60.75*
11/62/2	OQX5-1	8800	28'-10.46"	112050	Pass	3.325	3.333	Pass	3.334	3.334	3.334	3.333	3.333	3.333	3.333
11/22/7	00X5-2	8800	28'-10.46"	112050	Pass	3.323	3.323	Pass	3.331	3.331	3.331	3.332	3.332	3.332	3.332
11/62/1	OQX5-3	8800	28'-10.46"	112050	Pass	3.330	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/29/11	00X5-4	8800	28'-10.46"	112050	Pass	3.334	3.323	Pass	3.323	3.333	3.333	3.333	3.333	3.333	3.333
11/22/7	00X5-5	8800	28'-10.46"	112050	Pass	3.333	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
I1/22/7	00X5-6	8800	28'-10.46"	112050	Pass	3.331	3.331	Pass	3.332	3.331	3.331	3.331	3.331	3.331	3.331
11/23/11	00X5-7	8800	28'-10.46"	112050	Pass	3.330	3.330	Pass	3.333	3.333	3.333	3.333	3.333	3.333	3.333
7/29/11	OQX5-8	8800	28'-10.46"	112050	Pass	3.333	3.333	Pass	3.333	3.334	3.334	3.334	3.334	3334	3.334
1/29/11	00X5-9	8800	28'-10.46"	112050	Pass	3.333	3.333	Pass	3.333	3.333	3.333	3.333	3.333	3.333	3.333
II/62/2	01-2XDO	8800	28'-10.46"	112050	Pass	3.332	3.333	Pass	3.327	3.33I	3.332	3.332	3.332	3.332	3.331
7/29/11	OQX5-11	8800	28'-10.46"	112050	Pass	3.334	3.332	Pass	3.332	3.332	3.332	3.331	3.331	3.331	3.331
1/29/11	OQX5-12	8800	28'-10.46"	112050	Pass	3.332	3.334	Pass	3.334	3.334	3.333	3.333	3.333	3.333	3.333
7/29/11	00X5-13	8800	28'-10.46"	112050	Pass	3.334	3.332	Pass	3.323	3.332	3,333	3.333	3.332	3.332	3.332
7/29/11	OQX5-14	8800	28'-10.46"	112050	Pass	3.332	3.334	pass	3.332	3.334	3.333	3.334	3.334	3.334	3.334
11/0E/2	00X5-15	8800	28'-10.46"	112050	Pass	3.331	3.332	Pass	3.323	3.334	3.334	3.334	3.334	3.334	3,334
7/30/11	00X5-16	8800	28"-10.46"	112050	Pass	3.331	3.331	Pass	3.333	3.334	3.332	3.332	3.332	3.333	3.334
7/30/11	OQX5-17	8800	28'-10.46"	112050	Pass	3.334	3.331	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
7/30/11	OQX5-18	8800	28'-10.46"	112050	Pass	3.334	3.334	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	00X5-19	8800	28'-10.46"	112050	Pass	3.334	3.334	Pass	3.334	3.334	9.334	3.334	3.334	3.334	3.334
7/3D/11	OQX5-20	8800	28'-10.46"	112050	Pass	3.334	3.334	. Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	OQX5-21	8800	28'-10.46"	112050	Pass	3.334	3.334	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	00X5-22	8800	28'-10.46"	112050	Pass	3.332	3.334	Pass	3.333	3.333	3.333	3.333	EEE'E	3.333	3.333
7/30/11	00X5-23	8800	28'-10.46"	112050	Pass	3.334	3.332	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
11/0E/1	00X5-24	8800	28'-10.46"	112050	Pass	3.333	3.334	Pass	3.333	3.333	3.333	3.333	3.333	3.333	3.333
11/02//1	00X5-25	8800	28'-10.46"	112050	Pass	3.334	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
	00X5-26	8800	28'-10.46"	112050	Pass	3.328	3.334	Pass	3.333	3.334	3.334	3.334	<b>3.</b> 334	3.334	3.334
	OQX5-27	8800	28'-10.46"	112050	Pass	3.327	3.333	Pass	3.334	3.333	3.334	3,333	3.334	3.334	3.334
1/30/11	OQX5-28	8800	28'-10.46"	112050	Pass	3.326	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
	OQX5-29	8800	28'-10.46"	112050	Pass	3.326	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	00X5-30	8800	28'-10.46"	112050	Pass	3.323	3.333	Pass	3.330	3.333	3.334	3.334 ·	3.334	3.334	3.334
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AUGUST 31, 201

STORIS Materials Technology

8/2/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 8/1/2011

Test Report No.: DYS006-11-08-30874-1

Stork Herron Testing Laboratories

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

P.O. No.: 79319

#### TEST REPORT

ITAR-CONTROLLED DATA

Sample Description: On-Site MT Exam of Nine (9) Anchor Rods Representing 3.50"- 4UNC 2A Random Length Rods, Material ASTM-A354, Gr. BD, Spec.: ASTM A490, ASTM F788, MIL-I-45208, AM#1 Applies, Heat#/Heat Code 4M76367/OQX & OQY, Customer PO# 660110-SA-017 CO 022

#### MAGNETIC PARTICLE INSPECTION REPORT

Standard:	ASTM F788-	06 (Acceptance C	Criteria)	-					
	SOP 42.03 /	ASTM E1444 (Me	lhod) per ASTM	1 A490					
Procedure:	Callran Spec	cial Provisions 10-	1.59, 10-1.60,						
	10-1.61 and	Caltrans Standard	Specifications	75-1.05					
METHOD									
Dry			🛛 Wet						
PARTICLES									
Magnaflux Partic BA Red 3A Black 1 Gray Batch No. 09D021	14A 14AM Other	Part Preparatio. None Requir Solvent Clea Grinding Other Precle Customer	ed л	Wet Particle Carrier; Magnaflux Carrier II Pre Mixed Concentration MI Batch No.					
CURRENT									
AC			FWDC						
Central Condu	ctor (AMPS)		🗋 Head Sho	t (AMPS)					
Coil (AMPS)			Prods (AN	MPS/Spacing)					
Field Verified by:	🛛 Pie Gag	e 🗌 QQI [	Hall Effect Pr	obe					
EQUIPMENT									
Magnaflux H-7	20 S/N:	Cal Due I	Date:						
Yoke 🗌 AC	🛛 DC S/N:	3005 Spacing: 4"	-6" Cal Due [	Date: 12/1/11					

The above lesting was performed in accordance with the falest revision of the applicable commercial, military and/or International test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 1, Revision 3 dated 6/30/09. Information and statements in his report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied werranities as to the fitness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in foll, without written approval of this taboratory. The recording of false, ficilitous or fraudulent statements or entries on this document may be punished as a felony under Federal Statutes. Sample remnants are held for a minimum of 6 months following Issuance of test results, at which point they will be discarded unless notified in writing by the client. This meterial was not contaminated by mercury or chlorinated solvents during the handling and processing at Stok-Herron Testing Laboratories facilities.

Relieve

Michael R. Gaydos General Manager, COO

#### STORIA' Materials Technology

8/2/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 8/1/2011

P.O. No.: 79319

Test Report No.: DYS006-11-08-30874-1

Stork Herron Testing Laboratories

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

TEST REPORT

ITAR-CONTROLLED DATA

INSPECTION RESULTS	
Quantity	Results
5 PCS OQX Heat #4M76367 3.50"-4UNC-2A X random lengths PWS Anchor F OQX5-3 OQX5-9 OQX5-10 OQX5-13 OQX5-15	O.D. only was inspected and found to be acceptable Rod
Comments: "ID of tube only"- Magnetic Flux Field only a cursory examination was performed for in	d cannot be verified for sensitivity; thus nformational purposes only.
Marking Requirements:	
Demag and post cleaning requirements:	
Inspected by:	Certification: ASNT-SNT-TC-1A
Matthew Novak	Level II 🛛 III

The reported results represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

Export Controlled (ITAR)

This document contains technical data whose export and re-export/re-transfer is subject to control by the U.S. Department of State under the Arms Export Control Act and the International Traffic in Arms Regulations. The Department of State's prior written approval is required for the export or re-export/re-transfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

The above testing was performed in accordance with the tatest revision of the applicable commercial, military and/or international test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 1, Revision 3 dated 6/30/09. Information and statements in this report are derived from material, information and/or specifications furnished by the cliont and exclude any expressed or implied warranties as to the fitness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our cliont and may not be used for edvertising purposes. This report shalt not be reproduced except in full, without written approval of this laboratory. The recording of false, fictilicos or fraudulent statements or entries on this document may be punished as a folony under Federal Statutes. Sampla remnants are held for a minimum of 6 months tollowing issuance of test results, at which point they will be discarded unless notified in writing by the client. This material was not contaminated by mercury or chlorinated solvents during the handling and processing at Stork-Herron Testing Laboratories facilities.

Religida Thicky

Michael R. Gaydos General Manager, COO

# **Monnig Industries, Inc.**

HOT DIP & MECHANICAL GALVANIZING P.O. BOX 98 GLASGOW, MO 65254 PH. 660-338-2242 FAX: 660-338-5199

#### AUGUST 30, 2011

DYSON CORPORATION 50 FREEDOM ROAD PAINESVILLE, OH 44077

#### **RE: GALVANIZING CERTIFICATE-CALTRAN**

THIS WILL CERTIFY THAT THE RODS GALVANIZED ON THE ATTACHED SPREADSHEET MEETS OR EXCEEDS THE MINIMUM REQUIREMENTS OF ASTM A-123 & F2329 SPECIFICATIONS.

**51 PWS ANCHOR RODS** 

## ROD ID/MIL THICKNESS MEASUREMENTS

OQX5-13 / 5.5	OQX5-14 / 5.0	OQX5-15 / 6.0	OQX5-16 / 6.0
OQX5-18 / 5.5	OQX5-19 / 6.0	OQX5-20 / 6.5	OQX5-21 / 6.0
OQX5-23 / 5.0	OQX5-24 / 5.5	OQX5-25 / 5.5	OQX5-26 / 5.5
OQX5-28 / 5.5	OQX5-29 / 6.0	OQX5-30 / 6.0	OQY-1A / 6.0
OQY-3A / 6.5	OQY-4A / 6.5	OQX3-5 / 6.5	OQY-6A / 6.0
OQX3-8 / 6.0	OQY-9A / 6.0	OQY-10A / 5.5	OQX3-11 / 6.0
OQX3-13 / 6.0	OQY-14A / 5.5	OQY-15A / 6.0	OQX3-16 / 6.0
OQY-1 / 6.5	OQY-2 / 6.0	OQY-3 / 6.0	OQY-4 / 5.5
OQY-15 / 6.5	OQY-16 / 5.5	OQX4-17 / 6.0	OQX4-18 / 5.0
OQX4-20 / 5.5	OQX4-21 / 6.0	OQX4-22 / 6.0	OQX4-23 / 5.5
	OQX5-18 / 5.5 OQX5-23 / 5.0 OQX5-28 / 5.5 OQY-3A / 6.5 OQX3-8 / 6.0 OQX3-13 / 6.0 OQY-1 / 6.5 OQY-15 / 6.5	OQX5-18 / 5.5         OQX5-19 / 6.0           OQX5-23 / 5.0         OQX5-24 / 5.5           OQX5-28 / 5.5         OQX5-29 / 6.0           OQY-3A / 6.5         OQY-4A / 6.5           OQX3-8 / 6.0         OQY-9A / 6.0           OQX3-13 / 6.0         OQY-14A / 5.5           OQY-1 / 6.5         OQY-2 / 6.0           OQY-15 / 6.5         OQY-16 / 5.5	OQX5-18 / 5.5         OQX5-19 / 6.0         OQX5-20 / 6.5           OQX5-23 / 5.0         OQX5-24 / 5.5         OQX5-25 / 5.5           OQX5-28 / 5.5         OQX5-29 / 6.0         OQX5-30 / 6.0           OQY-3A / 6.5         OQY-4A / 6.5         OQX3-5 / 6.5           OQX3-8 / 6.0         OQY-9A / 6.0         OQY-10A / 5.5           OQX3-13 / 6.0         OQY-14A / 5.5         OQY-15A / 6.0           OQY-1 / 6.5         OQY-2 / 6.0         OQY-3 / 6.0           OQY-15 / 6.5         OQY-16 / 5.5         OQX4-17 / 6.0

PATRICIA S. WESTHUES NOTARY PUBLIC STATE OF MISSOURI HOWARD COUNTY MY COMMISSION EXP. APR. 18, 2012

,

OHN MONNIG, PRESIDENT

thur

PATRICIA S. WESTHUES, NOTARY PUBLIC



Phoenix Manufacturing, Inc. P.O. BOX 330 26666 Von Holten Rd. Cole Camp, MO. 65325 660-668-2611 660-668-3160 (fax)

SSPC-SP10 Near White Metal Blast

Nenr-White Blast Cleaning - Removal of nearly all multiscale, rust, rust scale, paint, or foreign matter by the use of abrasives propelled through nozzles or by centurfugal wheels, to the degree hereafter specified. A Near-White Blast Cleaned Surface Finish is defined as one from which all oil, grease, dirt, mill scale, rust, corrosion products, oxides, paint or other foreign matter have been completely removed from the surface except for very light shadows, very slight streaks or slight discolorations caused by rust stain, mill scale oxides, or light, tight residues of paint or coating that may remain. At least 95 percent of each square inch of surface area shall be free of all verifies, and the remainder shall be limited to the light discoloration mentioned above.

#### 51 PWS ANCHOR RODS

OQX5-12	OQX5-13	OQX5-14	OQX5-15	OQX5-16
OQX5-17	OQX5-18	OQX5-19	OQX5-20	0QX5-21
OQX5-22	OQX5-23	OQX5-24	OQX5-25	OQX5-26
OQX5-27	OQX5-28	OQX5-29	OQX5-30	OQY-1A
OQX3-2	OQY-3A	OQY-4A	0QX3-5	OQY-6A
OQX3-7	OQX3-8	OQY-9A	OQY-10A	OQX3-11
OQY-12A	OQX3-13	OQY-14A	OQY-15A	OQX3-16
OQY-17A	OQY-1	OQY-2	OQY-3	*OQY-4
OQY-14	OQY-15	OQY-16	OQX4-17	OQX4-18
OQY-19	OQX4-20	OQX4-21	OQX4-22	OQX4-23
OOX4-24				

## ROD ID/MIL THICKNESS MEASUREMENTS

Jone Ed

## CERTIFICATE OF COMPLIANCE

DYSON C			440.046	2500
DN DOMEST		dom Roađ e, OH 44077	440-946 440-352	2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112048	660110-SA-017 CO 022	8600 MM	17 pcs	8/31/11
CUSTOMER American Bridge / 375 Burma Road Oakland, CA 9460 USA		PRODUCT DESC 3.50°-40NC 2A x 8600mm (1 end and 200mm (13.70°) on o 1850am ilucaded end. Mater wickling metal blad reint in w SPECIFICATION ASTM-A354 Gr	28'-2.58") OAL PWS Anchor Rod w/1850mm ppposite end. Drill & Tap 2"- 4-1/2 UNC 2A x inl per ASTM-A354, gr BD; Hot Dipped Gab abanize 311D ITEM 66 - FURNISH PWS C	с болпо (2.36°) Deep on varized per ASTM-A123 ань с SVSTEM Visions
	roduct listed above was manufactured, tested			

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OQY-1A, OQX3-2, OQY-3A, OQY-4A, OQX3-5, OQY-6A, OQX3-7, OQX-8, OQY-9A, OQY-10A, OQX3-11, OQY-12A, OQX3-13, OQY-14A, OQY-15A, OQX3-16, OQY-17A Heat treatment lot OQX is from heat of steel ID 4M76367-2

Heat treatment lot OQY is from heat of steel ID 4M76367-1

<u>Attachments:</u> Mill Test Report Mag Particle Certification Galvanizing Certification Pitch Diameter Record

Deborah A. Smith

Q.A. Admin. Assistant 8/29/11

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		60.75"	3.331	3.329	3.329	3.331	· 3.327	3.332	3.333	5.55 E	3.332	3.332	3.333	3.333	3.330	3.331	3.331	3.332	3.333																
	hes]	48.75"	3.332	3.329	3.330	3.329	3.327	3.334	3.333	3.334	3.332	3.332	3.333	3.332	3.330	3.332	3.331	3.332	3.333																_
	Pitch Diameter Readings (+/- 1 Pitch) [inches]	36.75"	3,332	3.329	3.329 -	3.330	3.327	3.334	3.333	3.334	3.332	3.332	3.333	3.333	3.330	3.332	3.331	3.332	3.333		 	 													_
) END	-/+/ (+/-	24.75"	3.332	3.331	3.330	3.330	3.327	3.332	3.333	3.334	3.332	3.332	3.334	3.333	3.330	3.333	3.331	3.332	3.333										-					 	
TAPPED END	Diameter Re	12.75"	3.332	3.331	3.330	3.331	3.328	3.332	3.334	3.334	3.332	3.332	3.333	3.333	3.330	3.333	3.332	3.333	3.333										_					 	
	Pitch I	2.25"	3.332	3.331	3.331	3.331	3.329	3.333	3.334	3.334	3.333	3.332	3.334	3,334	3.331	3,334	3.332	3.334	3.333											-				 	_
		0.75"	3:33Z	3.332	3.331	3.332	3.328	3.333	3.334	3.334	3.333	3.333	3.334	3.334	3.331	3.334	3.333	3.334	3.334	•										_					
	No-Go	Pass/Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	-Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass		 														_
	ter [In.]	12.75"	-	3.329	3.333	3.328	3.327	3.331	3.334	3.334	3.332	3.331	3.333	3.332	3.332	3.334	3.332	3.333	3.334		 		-												
UPLER END	Pitch Diameter [In.]	0.75"	3.331	3.323	3.327	3.323	3.325	3.323	3.323	3.323	3.332	3.323	3.329	3.331	3.329	3.325	3.326	3.327	3.329			 											 		
COUPI	No-Go	Pass/Fail	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass			 		 									 	 	-
	DYSON	S.O.#	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048	112048			_													_
	LENGTH	FT./IN	-				_			28'-2.58"	28'-2.58"	28'-2.58"						-	28'-2.58"			 		 										 	
-	LENGTH I	-						.8600 28	8600 28	8600 28	8600 28	8600 23	3600 28	8600 28					8600 28					 				 					 	 	
BAR	$\left  - \right $	/ BAR							-	1				A												 								 	-
-		copi					OQX3-5			OQX3-8	DQY-9A								0QY-17A	_	 														_
Date	Measured		8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11	8/5/11																

## CERTIFICATE OF COMPLIANCE

	53 Free	dom Road e, OH 44077	440-946 440-352	5-3500 2-2700 fax
DYSON ORDER#	CUSTOMER ORDER#	ITEM NUMBER	QUANTITY SHIPPED	DATE SHIPPED
L 112050	660110-SA-017 CO 022	8800 MM	30 pcs	8/31/11
CUSTOMER American Bridge / 375 Burma Road	Fluor JV	PRODUCT DESC D.50°-4LINC 2A x KBIIIImm (24 2Kilmms on opposite end. Drill ner ASTN-A123 sv/schile nysto	r-10.46") OAL PWS Anchor Rod w/1850m & Tap 2*-4.5UNC-2A x filmum (2.36") Dee I blast grior in enlycnize BID ITEAL 66 - F	p on 1850mm threaded end. HDG
Oakland, CA 946 USA	07		5 ade BD with special pro 10-1.61 std specification	

DRAWING

The product listed above was manufactured, tested, sampled, and inspected in accordance with the specification, purchase order, and any supplementary requirements and was found to meet those requirements unless otherwise noted.

1. The steel was melted and manufactured in the USA and the product was manufactured and tested in the USA. Bar I.D.'s: OQX5-1, OQX5-2, OQX5-3, OQX5-4, OQX5-5, OQX5-6, OQX5-7, OQX5-8, OQX5-9, OQX5-10, OQX5-11, OQX5-12, OQX5-13, OQX5-14, OQX5-15, OQX5-16, OQX5-17, OQX5-8, OQX5-9, OQX5-20, OQX5-21, OQX5-22, OQX5-23, OQX5-24, OQX5-25, OQX5-26, OQX5-27, OQX-28, OQX5-29, OQX5-20, Heat treatment lot OQX is from heat of steel ID 4M76367-2

<u>Attachments:</u> Mill Test Report

Mag Particle Certification Galvanizing Certification Pitch Diameter Record

> repeat w/ 8130/11

> Q.A. Admin, Assistant 8/29/11

PWS ANCHOR RODS and EXTENSION ROD THREAD MAPPING

Date	BAR				0	COUPLER END					TAPPE	TAPPED END			
Measured		LENGTH	LENGTH	DYSON	No-Go	Pitch Diameter [In.]	teter [In.]	No-Go		Pitcl	h Diameter F	Pitch Diameter Readings (+/- 1 Pitch) [Inches]	1 Pitch) [Inc	hes]	
	CODE / BAR	MM	FT./IN	\$.0.#	Pass/Fail	0.75"	12.75"	Pass/Fail	0.75"	2.25"	12.75"	24.75"	36.75"	48.75"	60.75*
11/62/2	OQX5-1	8800	28'-10.46"	112050	Pass	3.325	3.333	Pass	3.334	3.334	3.334	3.333	3.333	3.333	3.333
11/22/7	00X5-2	8800	28'-10.46"	112050	Pass	3.323	3.323	Pass	3.331	3.331	3.331	3.332	3.332	3.332	3.332
11/62/1	OQX5-3	8800	28'-10.46"	112050	Pass	3.330	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/29/11	00X5-4	8800	28'-10.46"	112050	Pass	3.334	3.323	Pass	3.323	3.333	3.333	3.333	3.333	3.333	3.333
11/22/7	00X5-5	8800	28'-10.46"	112050	Pass	3.333	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
I1/22/7	00X5-6	8800	28'-10.46"	112050	Pass	3.331	3.331	Pass	3.332	3.331	3.331	3.331	3.331	3.331	3.331
11/23/11	00X5-7	8800	28'-10.46"	112050	Pass	3.330	3.330	Pass	3.333	3.333	3.333	3.333	3.333	3.333	3.333
7/29/11	OQX5-8	8800	28'-10.46"	112050	Pass	3.333	3.333	Pass	3.333	3.334	3.334	3.334	3.334	3334	3.334
1/29/11	00X5-9	8800	28'-10.46"	112050	Pass	3.333	3.333	Pass	3.333	3.333	3.333	3.333	3.333	3.333	3.333
II/62/2	01-2XDO	8800	28'-10.46"	112050	Pass	3.332	3.333	Pass	3.327	3.33I	3.332	3.332	3.332	3.332	3.331
7/29/11	OQX5-11	8800	28'-10.46"	112050	Pass	3.334	3.332	Pass	3.332	3.332	3.332	3.331	3.331	3.331	3.331
1/29/11	OQX5-12	8800	28'-10.46"	112050	Pass	3.332	3.334	Pass	3.334	3.334	3.333	3.333	3.333	3.333	3.333
7/29/11	00X5-13	8800	28'-10.46"	112050	Pass	3.334	3.332	Pass	3.323	3.332	3,333	3.333	3.332	3.332	3.332
7/29/11	OQX5-14	8800	28'-10.46"	112050	Pass	3.332	3.334	pass	3.332	3.334	3.333	3.334	3.334	3.334	3.334
11/0E/2	00X5-15	8800	28'-10.46"	112050	Pass	3.331	3.332	Pass	3.323	3.334	3.334	3.334	3.334	3.334	3,334
7/30/11	00X5-16	8800	28"-10.46"	112050	Pass	3.331	3.331	Pass	3.333	3.334	3.332	3.332	3.332	3.333	3.334
7/30/11	OQX5-17	8800	28'-10.46"	112050	Pass	3.334	3.331	Pass	3.334	3.333	3.333	3.333	3.333	3.333	3.333
7/30/11	OQX5-18	8800	28'-10.46"	112050	Pass	3.334	3.334	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	00X5-19	8800	28'-10.46"	112050	Pass	3.334	3.334	Pass	3.334	3.334	9.334	3.334	3.334	3.334	3.334
7/3D/11	OQX5-20	8800	28'-10.46"	112050	Pass	3.334	3.334	. Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	OQX5-21	8800	28'-10.46"	112050	Pass	3.334	3.334	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	00X5-22	8800	28'-10.46"	112050	Pass	3.332	3.334	Pass	3.333	3.333	3.333	3.333	EEE'E	3.333	3.333
7/30/11	00X5-23	8800	28'-10.46"	112050	Pass	3.334	3.332	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
11/0E/1	00X5-24	8800	28'-10.46"	112050	Pass	3.333	3.334	Pass	3.333	3.333	3.333	3.333	3.333	3.333	3.333
11/02//1	00X5-25	8800	28'-10.46"	112050	Pass	3.334	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
	00X5-26	8800	28'-10.46"	112050	Pass	3.328	3.334	Pass	3.333	3.334	3.334	3.334	<b>3.</b> 334	3.334	3.334
	OQX5-27	8800	28'-10.46"	112050	Pass	3.327	3.333	Pass	3.334	3.333	3.334	3,333	3.334	3.334	3.334
1/30/11	00X5-28	8800	28'-10.46"	112050	Pass	3.326	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
	OQX5-29	8800	28'-10.46"	112050	Pass	3.326	3.333	Pass	3.334	3.334	3.334	3.334	3.334	3.334	3.334
7/30/11	00X5-30	8800	28'-10.46"	112050	Pass	3.323	3.333	Pass	3.330	3.333	3.334	3.334 ·	3.334	3.334	3.334
														-	
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											_				
								_				_			

AUGUST 31, 201

Materials Technology	
8/5/2011	 
Steve Marsh	Material Testing and Non-Destructive Testing
Dyson Corp.	
53 Freedom Road	5405 E, Schaaf Road
PAINESVILLE, OH 44077-1232	Cleveland, OH 44131
Letter and the web an interference of webs.	USA
Date Received: 8/3/2011	
	Telephone : (216) 524-1450
Test Report No.: DYS006-11-08-31132-1	Fax ; (216) 524-1459
	Website : www.storkherron.com
	TEAT BERAST
5 0 N 70010	 TEST REPORT
P.O. No.: 79319	ITAR-CONTROLLED DATA

Sample Description: One (1) Lot (4 Pcs.) MT Exam of Anchor Rods, Representing 3.50"- 4UNC 2A Random Length Rods, Material Per ASTM-A354, gr BD, ASTM E1444 Per ASTM A490 with Acceptance Per ASTM F788, MIL-I-45208A, AM#1 Applies, Cust PO # 660110-SA-017 CO 022, Heat #/Code 4M76367/OQY

#### MAGNETIC PARTICLE INSPECTION REPORT

STORIS

Standard:	ASTM F788-06 (Acceptance Criteria)				
Procedure:	SOP 42.03 / ASTM E1444(Method) per ASTM A490 /				
	Caltrans Special Provisions 10-1.59, 10-1.60, 10-1.61 and Caltrans Standard Specifications 75-1.05				
METHOD					
Dry		Wet			
PARTICLES					
BA Red         14A         No           3A Black         14AM         So           1 Gray         Other         UI           Batch No. 09D02K.         X			ed n eaner / Water	Wet Particle Carrier: Ardrox Base Oil Pre Mixed Concentration MI Lot No.	
CURRENT					
AC					
Central Conductor (AMPS)		Head Shot (AMPS)			
Coll (AMPS)		Prods (AMPS/Spacing)			
Field Verified by: 🛛 Pie Gage 🗌 QQI 🗌 Hall Effect Probe					
EQUIPMENT					
MagWerks MVS-2445 S/N: 000404 Cal Due Date: 9/22/2011			9/22/2011		
Magnaflux H-720 S/N: 81417 Cal Due Date: 9/22/2011					
🛛 Yoke 🔲 AC 🔀 DC S/N: 3005 Spacing: 4"-6" Cal Due Date: 12/1/11					

The above lesting was performed in accordance with the latest revision of the applicable commercial, military and/or International test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 1, Revision 3 dated 6/30/09. Information and statements in this report are derived from material, information and/or specifications furnished by the citent and exclude any expressed or implied warranties as to the fitness of the material tested or analyzed for any particular purpose or use. This report is the confidential property of our citent and may not be used for advertising purposes. This report shall not be reproduced accept in full, without written approval of this laboratority. The recording of false, fictilious or fraudulant statements or entries on this document may be punished as a felony under Federal Statutes. Sample remnants are held for a minimum of 6 months following issuence of test results, al which point they will be discorded unless notified in writing by the citent. This material was not contaminated by mercury or chlorinated solvants during the handling and processing al Slork-Herron Testing Laboratories facilities.

Lydra

Michael R. Gaydos General Manager, COD

#### Stork Herron Testing Laboratories

## Stork Herron Testing Laboratories

STORIA Materials Technology

8/5/2011

Steve Marsh Dyson Corp. 53 Freedom Road PAINESVILLE, OH 44077-1232

Date Received: 8/3/2011

Test Report No.: DYS006-11-08-31132-1

. . .

Material Testing and Non-Destructive Testing

5405 E. Schaaf Road Cleveland, OH 44131 USA

Telephone : (216) 524-1450 Fax : (216) 524-1459 Website : www.storkherron.com

P.O. No.; 79319

TEST REPORT ITAR-CONTROLLED DATA

AR-CONTROLLED DATA

INSPECTION RESULTS WO# 006-110831132 (PO# 79319)				
Quantity		Results		
4 PCS of 9 PCS Completes P.O. 793 OQY Heat # 4M76367 3.50"-4UNC-2A X Random Lengths OQY-4, OQY-3, OQY-2, OQY-1 For balance of order see Work Orde Dated 8/1/11, P.O. 79319	O.D. only was inspected and found to be acceptable			
Comments: Examined per customer request "ID of tube only" –Magnetic Flux Field cannot be verified for sensitivity; thus only a cursory examination was performed for informational purposes only, and no indications were noted at the time of inspection.				
Marking Requirements:				
Demag and post cleaning requirements: N/A				
Post Preservation: Ardrox 3968 Lot#: 05030711 Expiration Date: 4-13-2013				
Inspected by: Matthew Novak	Certification: Level ] II Recertification Date:6/25/1			

The reported results represent the actual attributes of the material tested and indicate full compliance with all applicable specification and contract requirements.

#### Export Controlled (ITAR)

This document contains technical data whose export and re-export/re-transfer is subject to control by the U.S. Department of State under the Arms Export Control Act and the International Traffic in Arms Regulations. The Department of State's prior written approval is required for the export or re-export/re-transfer of such technical data to any foreign person, foreign entity or foreign organization whether in the United States or abroad.

The above testing was performed in accordance with the latest revision of the applicable commercial, military and/or international test method unless otherwise noted. The above services were performed in accordance with Herron Testing Laboratories' Quality Assurance Program Edition 1, Revision 3 dated 6/30/08, Information and statements in this report are derived from material, information and/or specifications furnished by the client and exclude any expressed or implied warranties as to the filness of the material tested or analyzed for any perflocator purpose or use. This report is the confidential property of our client and may not be used for advertising purposes. This report shall not be reproduced except in full, without written approval of this laboratory. The recording of false, fictilious or fraudulant statements or entries on this document may be punished as a felony under Federal Statutes. Sample remnants are held for a minimum of 6 months following issuance of lest results, al which point they will be discarded unless notified in writing by the client. This material was not contaminated by mercury or chlorinated solvants during the handling and processing at Slork-Herron Testing Laboratorias facilities.

Religion

Michael R. Gaydos General Monager, COO

#### DEPARTMENT OF TRANSPORTATION DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection Contract #: 04-0120F4 Bay Area Branch Cty: SF/ALA Rte: 80 PM: 13.2/13.9 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 File #: 76.25A (707) 649-5453 (707) 649-5493 MATERIAL SUITABILITY REPORT Resident Engineer:Siegenthaler, Peter **Report No:** MSR-000051 Address: 333 Burma Road **Report Date:** 31-Aug-2011 City: Oakland, CA 94607 SMR Authorization #: **Project Name:** SAS Superstructure Prime Contractor: American Bridge/Fluor Enterprises, a JV **Date of NCR:** Contractor: Dyson Corp. & Subs Location: Monnig Ind. Glasgow, MO The following material has been inspected and found not to comply with contract plans and specifications; however, METS has determined this material may be suitable for its intended purpose. **Bid Item #** Quantity **Material Description** Lot # B219-012-11 66 16 ea PWS High Strength Anchor Rods - load - 4 **Identification:** one Blue Tag attached to each load (1 tag total) see photo below

**Description of Non-Conformance (NCRs):** 

#### **Summary of Items Observed:**

This QA Inspector observed the following PWS Rods were part of load -4: OPY4-19, OPY4-20, OPY4-21, OPY4-22, OPY4-24, OTD-1H, OOH-1F, OOH-2F, OOH-3F, OOH-4F, OOH-5F, OOH-1E, OTD-2E, OTD-1D, OTD-2D and OTD-3D.

BTL item: Heat treatment lots OOF, OOH, OTD and OPY contained some rods with thread sizes outside the specified range. Per RFI 2502 it was determined that oversized threads would be fit for purposes provided the nut is able to thread freely down the bar/rod and an acceptable dimensional report is submitted.

This QA Inspector observed a spherical nut and regular nut were threaded full length and shipped as such. This QA Inspector observed a dimensional report from Dyson Corporation accepting the rods was submitted for the heat treatment lots.

This QA Inspector observed a Certificate Of Compliance (COC), Material Test Report (MTR), Magnetic Particle Testing reports per material heat and shipper were submitted from Dyson Corporation. This QA Inspector observed a COC and QC reports for blasting and galvanizing were submitted from Monnig Industries. The documents submitted appeared to comply with the contract requirements. This QA Inspector previously confirmed with Structural Material Representative (SMR) Kittric Guest the material check samples had been accepted.

# MATERIAL SUITABILITY REPORT

(Continued Page 2 of 2)

## **Summary of Conversations:**

This QA Inspector had general conversations with Monnig Industries personnel and the SMR. Except as described above there were no other notable conversations.





#### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.25</u>B.yyy

# MATERIAL SUITABILITY DOCUMENTATION REPORT

Prime Contractor: American Bridge/Fluor Enterprises, a JVContractor: Dyson Corp. & SubsLocation: Painesville, OH

Report No:MSD-000785Date:21-Sep-2011BTL Mat Des.:BTL Item No.:

#### **Initiated By/Why:**

#### **BTL Summary:**

The shipment of PWS anchor rods from Monnig Ind to Pier 7 fell off the truck in Nevada and sustained various levels of damage including smeared threads and loss of galvanized coating. The Load consisted of 55 rods (49 full length and 6 short rods). The 6 short rods did not fall off the truck, however all 49 full length rods did. This shipment was previously released under Blue Tag B219-012-11 and Orange Tag B219-013-11. When the load arrived at Pier 7 on Sept 7, 2011, ABF personnel sent the entire shipment back to Dyson for mitigation.

#### **METS Comments**

METS Discussion:

#### **Proposed Resolution:**

The 6 short rods are acceptable 29 rods should be acceptable after repair to galvanizing (RFI forthcoming) 7 rods should be acceptable after repair to threads and galvanizing (RFI forthcoming) The remainder will be scrapped. Date discussed with the Construction Engineer: Time: Various: **Construction Comments** Name of the Construction Engineer involved: **Bob Brignanao Construction agrees with METS recommendation:** Yes No **Recommendation from Construction (If NO is checked above):** Discussions are currently ongoing with general concurrence between Construction and METS. **Contract Change Order required:** If Yes, CCO number: Yes No **Designer Comments** Name of Design Engineer involved (if applicable): **Recommendation from the Design Engineer (if applicable):** 

Yes

No

Screening Team involvement: Issue requires FAST Involvement:

TL-6013, Material Suitability Documentation Report

# MATERIAL SUITABILITY DOCUMENTATION REPORT

(Continued Page 2 of 2)

#### Yes No

Decision by FAST (if YES is checked above):

#### **METS Summary of Final Decision:**

33 Salvaged rods were later accepted via RFI process. See ABF RFIs 2588, 2585, 2579, 2578 and 2577.

#### **Comments:**

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Kit Guest 510-295-5393, who represents the Office of Structural Materials for your project.

Inspected By:	Guest,Kittric	Quality Assurance Inspector
<b>Reviewed By:</b>	Choy,Nina	QA Reviewer

**Reviewed By:** Choy,Nina







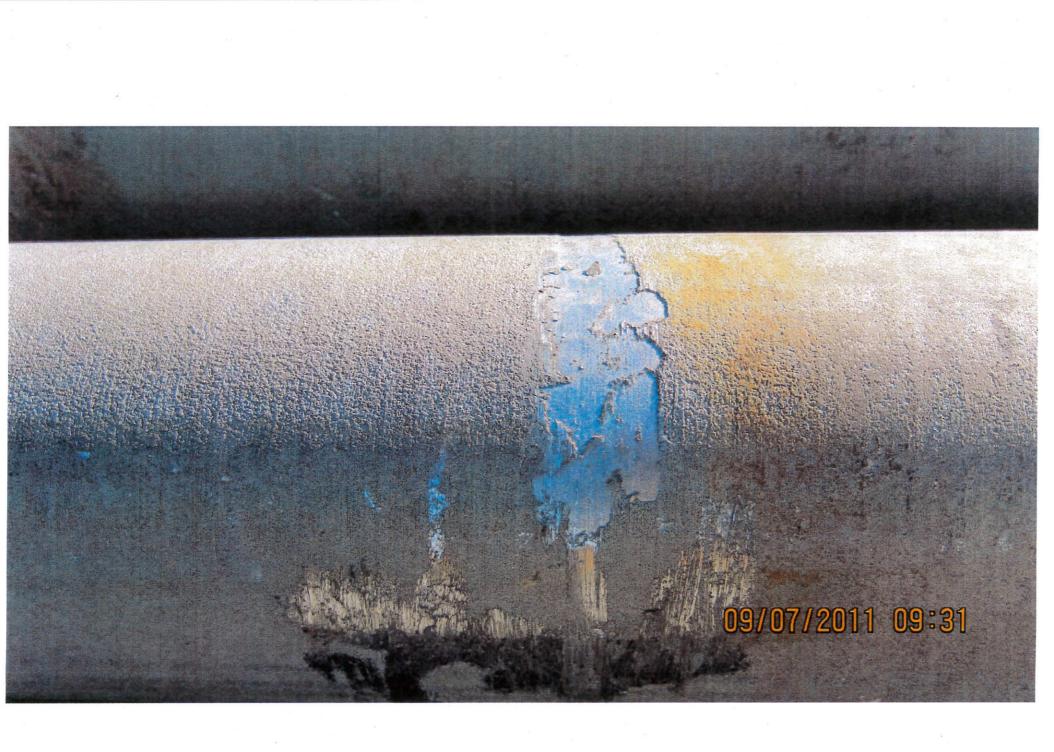


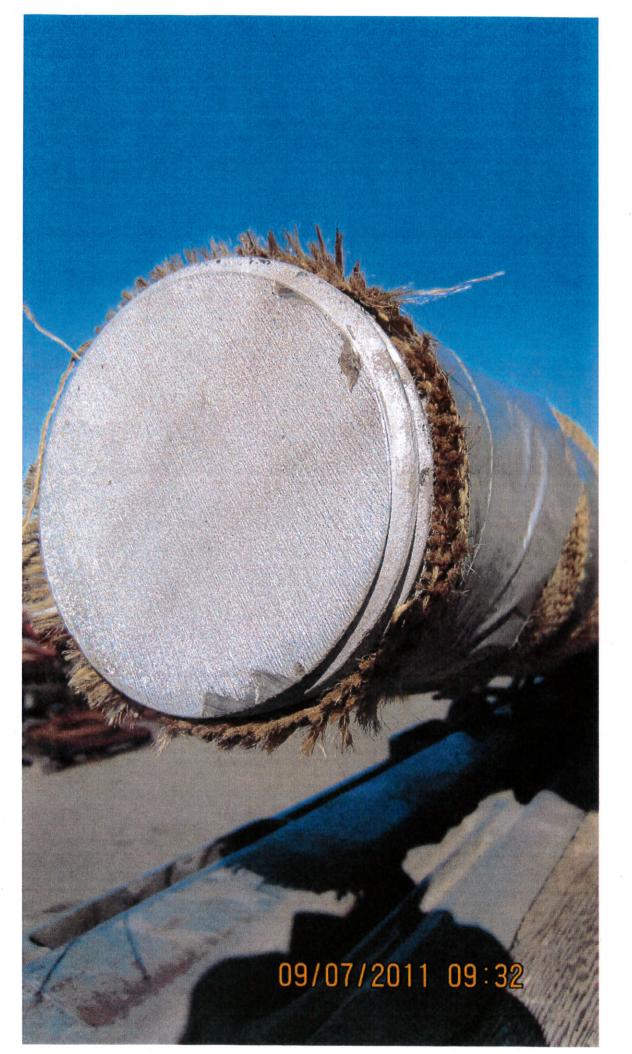


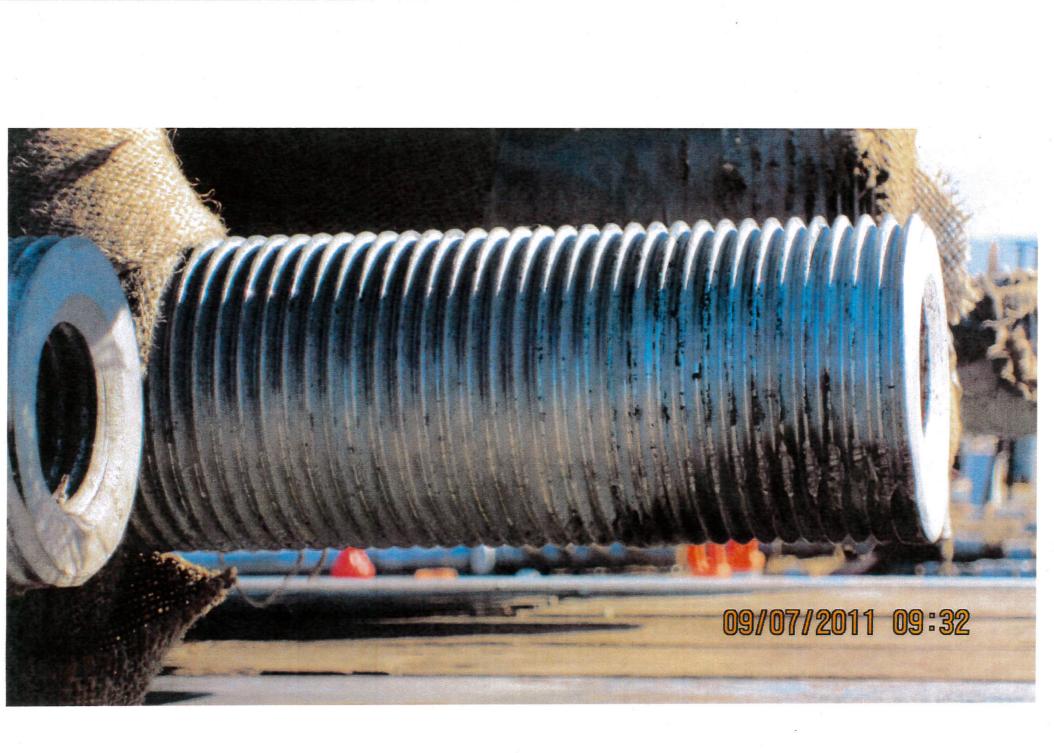




























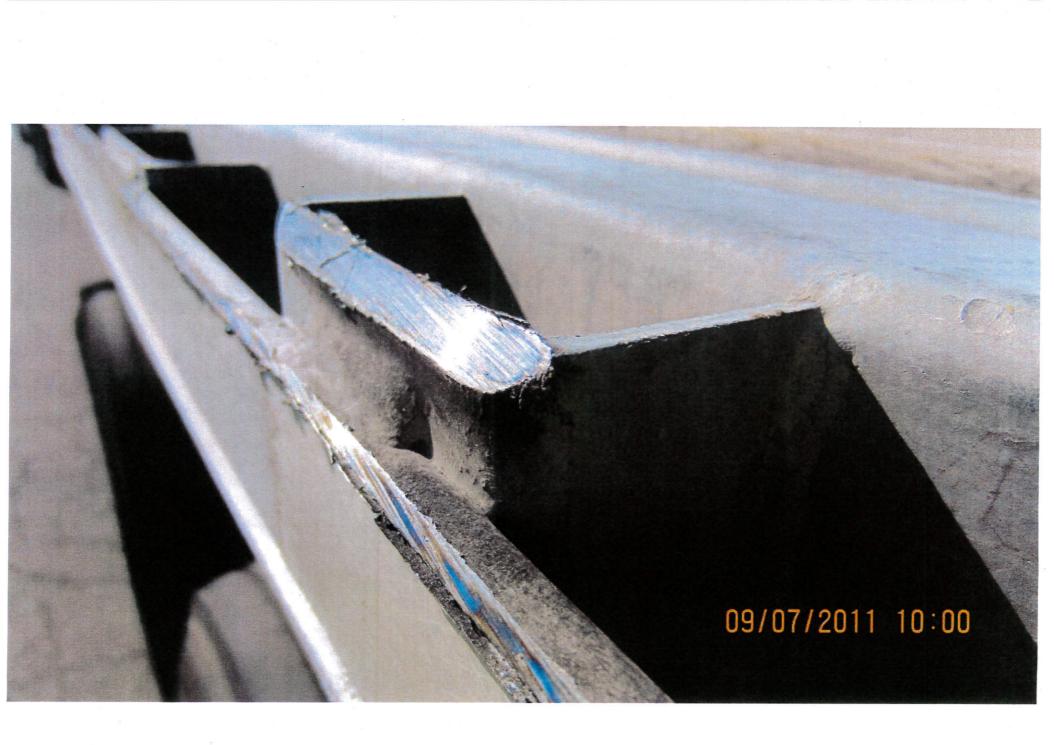














Date Inspected: 09-Sep-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name: Prime Contracto Contractor:	<b>ne Contractor:</b> American Bridge/Fluor Enterprises, a JV			OSM Arrival Time: 800 OSM Departure Time: 1630 Location: Painesville, O				
Quality Control Contact: Material transfer: Stock Transfer: Rebar Test Witness:		Russ Wels Yes Yes Yes Yes	sh No No No	N/A N/A N/A	Quality Control Present: Sampled Items: OK to Cut: Delayed/Cancelled:	Yes Yes Yes Yes Yes	No No No No	N/A N/A N/A
Other: Bridge No: Bid Item:	ge No: 34-0006				Component: Main Cable Lot No:	Anchor Ro	ods	

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Dustyn Broening was present at Dyson Corporation in Painesville, OH, as requested, to monitor the fabrication main cable PWS anchor rods for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson QC Manager (QCM)Rusell Welsh who accompanied this QAI to the location where machining of main cable anchor rods was in-process.

Work is in progress on 3.5" diameter, A354 grade BD, Q&T main cable anchor rods lot #OYG and OYH within the roll threading shop at this time. QCM has relayed that the 3" diameter ASTM F436 washers that are to be re-manufactured have not been started at this time. (See attached photos)

(Continued Page 2 of 2)





#### **Summary of Conversations:**

Other basic communication was performed between this QAI and the QCM during this visit.

#### Comments

Inspected By:	Broening, Dustyn	Quality Assurance Inspector
<b>Reviewed By:</b>	Edmondson,Fred	QA Reviewer

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

<b>Report No:</b>	SIR-003622
Date Inspecte	d: 12-Sep-2011

Project Name: Prime Contractor: Contractor:	American	erstructure Bridge/Fluc rp. & Subs	or Enterp	rises, a JV	OSM Arrival Time: 800 OSM Departure Time: 1630 Location: Painesville,					
Quality Control Co	ontact:	Mr. Russel	l Weslsh	-	<b>Quality Control Present:</b>	Yes	No			
Material transfer:		Yes	No	N/A	Sampled Items:	Yes	No	N/A		
Stock Transfer:		Yes	No	N/A	OK to Cut:	Yes	No	N/A		
Rebar Test Witness:		Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A		
Other:										
<b>Bridge No:</b> 34-0006					<b>Component:</b> Main cable	anchor rod	s			
Bid Item:	66				Lot No:					

#### Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Manager (QCM) Mr. Russell Welsh and ABF Inspector (ABFI) Mr. Mark Roach who accompanied this QAI to the location where Dyson personnel were in the process of sorting, for the purpose of identifying and inspecting for damage, the 3.5 inch main cable anchor rods that have been in a traffic accident while in-route to Oakland, CA. This QAI was informed that Dyson is not in possession of a Bill-of-Lading for this returned load of rods at this time.

#### **Summary of Conversations:**

As noted in the body of the report above. Other conversation fundamental to completion of the task at hand occurred between this QA inspector and Dyson Personnel.

#### Comments

(Continued Page 2 of 2)

Inspected By: Edmondson,Fred

Quality Assurance Inspector

**Reviewed By:** Levell,Bill

QA Reviewer

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

<b>Report No:</b>	SIR-003671	
Date Inspecte	d: 21-Sep-2011	

Project Name: Prime Contractor: Contractor:	American	erstructure Bridge/Flue orp. & Subs	or Enterp	orises, a JV	OSM Arriv OSM Departur Lo		1730	e, OH
Quality Control Control Control Control Control Material transfer: Stock Transfer:	ontact:	Russell W Yes Yes	elsh No No	N/A N/A	Quality Control Present: Sampled Items: OK to Cut:	Yes Yes Yes	No No No	N/A N/A
Rebar Test Witness:		Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A
Bridge No: Bid Item:	34-0006 66	6 Component: Lot No:			-	S Anchor	Rods	

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Manager (QCM) Mr. Russell Welsh, Sales Manager (SM) Mr. Pat Sheffield and ABF Inspector (ABFI) Mr. Mark Roach who accompanied this QAI to the locations where Dyson personnel have stored the 49 anchor rods that are in mitigation. Reference attached photographs.

This QAI visually inspected the threaded areas of the 49 anchor rods and the six extension rods and discovered one anchor rod OOH-5F, with smeared and flattened OD threads (9 linear inches on the 1850mm threaded end) had been overlooked and had been included in 24 rods to be re-galvanized without thread repair. There are now 23 rods that require re-galvanizing only - 12 are going to be re-threaded and re-galvanized - and 13 are scrapped. Anchor rod OOH-5F may be scrapped or re-threaded and re-galvanized.

The different categories are separated and the 13 scrapped out outside (in the yard).

This QAI verified the identification (I.D.) of the 23 to be galvanized and the 12 to be repaired and then galvanized. There are two discrepancies - the stamped I.D. - OTD-3D should be OTD-23D or vice-versa (wrong number on list) .and stamped I.D. - OQY-30 should be OQX4-30 or vice-versa.

Current Status - 3.5 inch PWS anchor rods

(Continued Page 2 of 3)

274 - required

143 - shipped to jobsite

49 - in mitigation (23 - re-galvanize, 13 - scrap, 12 - re-thread and re-galvanize, 1 - either scrap or re-thread and re-galvanize)

82 – in fabrication + 13 scrap to begin when material arrives



(Continued Page 3 of 3)



#### **Summary of Conversations:**

Sales Manager Sheffield commented that a shipment date for the anchor rods that require re-galvanizing only has not been determined at this date.

#### Comments

Inspected By:	Edmondson,Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Date Inspected: 26-Sep-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

<b>Project Name:</b>	SAS Sup	erstructure			OSM Arrival Time: 800				
<b>Prime Contract</b>	tor: American	American Bridge/Fluor Enterprises, a JV			<b>OSM Departure Time:</b> 1630				
Contractor:	Dyson Co	Dyson Corp. & Subs			Loc	cation: Pa	inesvill	e, OH	
Quality Control	l Contact:	Russell W	elsh		Quality Contro	ol Present:	Yes	No	
Material transfer:		Yes	No	N/A	Sampled Items	:	Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:		Yes	No	N/A
Rebar Test Wit	ness:	Yes	No	N/A	A Delayed/Cancelled: Yes		Yes	No	N/A
Other:									
Bridge No:	34-0006				<b>Component:</b> 3.5 inch		S Anchor	Rods	
Bid Item:	66				Lot No:				

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Manager (QCM) Mr. Russell Welsh, Sales Manager (SM) Mr. Pat Sheffield.

This QAI observed the in-process cutting (shortening) of previously cut-threaded 3.5 inch anchor rods. The coupler end of the rods is being cut and will be cut-threaded to match the cut threads on the tapped end. The acceptance criteria of the cut threads on the anchor rods to be reworked will be as stated in ABF RFI 2502R00.

Anchor rod OOH-5F, with smeared and flattened OD threads (9 linear inches on the 1850mm threaded end) previously included in 24 rods to be regalvanized without thread repair is going to be salvaged by cutting, rethreading and regalvanizing.

Current Status - 3.5 inch PWS anchor rods

274 -Required
143 - Shipped to jobsite
49 - In mitigation (30 – galvanize repair, 13-scrap, 6-thread and galvanize repair,

TL-6034, Source Inspection Report

(Continued Page 2 of 2)

82 - In fabrication + 13-scrap to begin when material arrives



#### **Summary of Conversations:**

Sales Manager Sheffield commented that a shipment date for the anchor rods that require re-galvanizing only will be September 27, 2011.

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Date Inspected: 27-Sep-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

<b>Project Name:</b>	SAS Sup	SAS Superstructure				OSM Arrival Time: 800				
Prime Contract	tor: America	: American Bridge/Fluor Enterprises, a JV			Ο	SM Departur	e Time:	1630		
Contractor:	Dyson C	Dyson Corp. & Subs			Location: Painesville, OH					
Quality Control Contact:		Russell W	elsh		Quality Contro	l Present:	Yes	No		
Material transfer:		Yes	No	N/A	Sampled Items:		Yes	No	N/A	
Stock Transfer	:	Yes	No	N/A	OK to Cut:		Yes	No	N/A	
Rebar Test Wit	tness:	Yes	No	N/A	<b>Delayed/Cance</b>	lled:	Yes	No	N/A	
Other:										
Bridge No:	34-0006		<b>Component:</b>	3.5 inch Mai	n Cable A	nchor F	<b>l</b> ods			
Bid Item:	66				Lot No:					

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCs) Mr. Russell Welsh, Sales Manager (SM) Mr. Pat Sheffield, and Caltrans Structures Material Representative (SMR) Mr. Kit Guest.

This QAI observed the in-process cutting (shortening) of previously cut-threaded 3.5 inch anchor rods. The coupler end of the rods will be cut-threaded to match the cut threads on the tapped end. The acceptance criteria of the cut threads on the anchor rods to be reworked will be as stated in ABF RFI 2502R00.

This QAI and SMR Guest discovered to anchor rods identified as OQY-12C and OQY-21C with smeared OD threads (approximately 75mm in length on the tapped end) previously included in 24 rods to be regalvanized without requiring thread repair. Dyson is going to reinspect the anchor rods that are slated to go to Monnig without thread repair.

This QAI and SMR Kit observed 40 anchor rods with the tap end roll-threaded and stored with the threaded end protected with burlap and 43 anchor rods where the roll threading is in-process. SM Sheffield commented that Dyson is waiting to determine how many of which length is needed to complete the 274 required prior to cutting and roll threading the coupler end.

(Continued Page 2 of 2)

Current Status - 3.5 inch PWS anchor rods

- 274 -Required
- 143 Shipped to jobsite
- 49 In mitigation (28 galvanize repair, 13-scrap, 8-thread and galvanize repair,
- 82 In fabrication + 13 to replace scrapped rods



#### **Summary of Conversations:**

Sales Manager Sheffield commented that a shipment date for the damaged anchor rods that require re-galvanizing only will be September 29, 2011. Also, SM Sheffield commented that the material necessary for completing the 3. 5 inch anchor rod order of 274 is on-site and in-process.

#### Comments

Inspected By:	Edmondson,Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Date Inspected: 29-Sep-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name: SAS Superstructure					OSM Arrival Time: 800			
Prime Contract	tractor: American Bridge/Fluor Enterprises, a JV			OSM Depart	ure Time:	1630		
Contractor:	Dyson C	Dyson Corp. & Subs			I	Location: Pa	ainesvill	e, OH
Quality Contro	l Contact:	Russell W	elsh		Quality Control Present:	Yes	No	
Material transfer:		Yes	No	N/A	Sampled Items:	Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:	Yes	No	N/A
Rebar Test Wit	tness:	Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A
Other:								
Bridge No:	<b>dge No:</b> 34-0006		<b>Component:</b> 3.5 inch M	Iain Cable A	nchor F	₹ods		
Bid Item:	66				Lot No:			

#### Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCs) Mr. Russell Welsh, Sales Manager (SM) Mr. Pat Sheffield, Mr. MarK Roach KTA inspector and Mr. Raymond Reick, ABF.

This QAI observed Dyson personnel performing visual inspection of the following galvanized 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) involved in the accident - Ref. MSD-00785 for shipment to Monnig Industries, 400 Industrial Drive, Glasgow, MO.

OPY4-24, OQY-18C,OQY-31, OQY-13C,OQY-28, OQY-29, OTD-2E, OQY-15C, OPY4-22,OPY4-21, OQY-23B, OPY4-20, OQY23C, OQY20C,OQY-22C, OTD-1H,OPY4-19, OQY-3C, OTD-23D, OTD-1D, OTD-2D, OOH-2F, OOH-3F, OQY-25, OQY-14C, OQY-26, OQX4-30, OQY-19C, OQY-21C, OOH-4F, OOH-1E, OQY-27, and OQY-32.

The following anchor rods were previously cut-threaded and will be included in this shipment: OPY2-13, OPY2-15, OPY2-3, OPY2-7, OTD-12, OOH2-19, OOH2-10, OOH2-7, OOH2-8, OOH2-17, OOH2-24, OOF2-2, OOF3-8, OOF4-2, OOF4-5.

This QAI observed that roll-threading of the remaining anchor rods is continuing.

( Continued Page 2 of 2 )

Current Status - 3.5 inch PWS anchor rods.

274 -Required
143 - Shipped to jobsite
49 - In mitigation (28 – galvanize repair, 13-scrap, 8-thread and galvanize repair,
82 – In fabrication + 13 to replace scrapped rods

#### **Summary of Conversations:**

Sales Manager Sheffield commented that a shipment date for the damaged anchor rods that require re-galvanizing will be September 30, 2011.





#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Date Inspected: 30-Sep-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name: SAS Superstructure					OSM Arrival Time: 800					
Prime Contractor: American Bridge/Fluor Enterprises, a JV					C	SM Departur	e Time:	1630		
Contractor:	Contractor: Dyson Corp. & Subs				Location: Painesville, OF					
Quality Contro	l Contact:	Russell W	elsh		Quality Contro	ol Present:	Yes	No		
Material transfer:		Yes	No	N/A	Sampled Items:		Yes	No	N/A	
Stock Transfer:		Yes	No	N/A	OK to Cut:		Yes	No	N/A	
Rebar Test Wit	mess:	Yes	No	N/A	Delayed/Cancelled:		Yes	No	N/A	
Other:										
Bridge No:	34-0006				<b>Component:</b> 3.5 inch Main Cable Anchor Rod			<b>l</b> ods		
Bid Item:	66				Lot No:	B305-021-1	1			

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCs) Mr. Russell Welsh, Sales Manager (SM) Mr. Pat Sheffield, and Mr. Mark Roach, KTA inspector and Mr. Raymond Reick, ABF.

This QAI observed Dyson personnel preparing to ship the following galvanized 33 ea - 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) involved in the accident (Ref. MSD-00785) for shipment to Monnig Industries, 400 Industrial Drive, Glasgow, MO.

OPY4-24, OQY-18C,OQY-31, OQY-13C,OQY-28, OQY-29, OTD-2E,OQY-15C, OPY4-22,OPY4-21, OQY-23B, OPY4-20, OQY23C, OQY20C,OQY-22C, OTD-1H,OPY4-19, OQY-3C, OTD-23D, OTD-1D, OTD-2D, OOF-2F, OOH-3F, OQY-25, OQY-14C, OQY-26, OQX4-3O, OQY-19C, OQY-21C, OOH-4F, OOH-1E, OQY-27, and OQY-32.

Anchor rods OOH-1F and OOH-5F are going to Monnig, with this shipment, for sand blasting only and will be returned to Dyson for further processing that will include extending the thread length on the tapped end.

This QAI was presented supporting documents which included MTR's, Certificates of Conformance and NDT tests results. After reviewing the documentation, this QAI attached a Green Tag with Blue Dot to the

(Continued Page 2 of 2)

documentation and assigned Lot No. B305-021-11. (Reference MSDR 00785).

The supporting documentation and Green Tag with Blue Dot was placed into a plastic pouch and taped to one of the bundles of rods to be shipped. Reference attached photographs.

Current Status - 3.5 inch PWS anchor rods

274 -Required

143 - Shipped to jobsite

- 49 In mitigation (33 to Monnig for galvanize coating repair 10-1-11, 2- thread and galvanize coating repair, 14-scrap
- 82 In fabrication + 14 to replace scrapped rods





#### **Summary of Conversations:**

Sales Manager Sheffield informed this QAI that the shipment of the damaged anchor rods that require re-galvanizing will be Saturday October 1, 2011.

#### Comments

Inspected By:	Edmondson,Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

TL-6011,Component Material Inspection Report

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials **Quality Assurance and Source Inspection** 

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493

#### Contract #: 04-0120F4 Cty: SF/ALA Rte: 80 PM: 13.2/13.9 File #: 76.8

Report No: CMI-000380

Date Inspected: 30-Sep-2011

OSM Arrival Time: 800

**Component:**# 3.5" dia. Main Cable Anchor Rods

OSM Departure Time: 1630

## COMPONENT MATERIAL INSPECTION REPORT

Resident Engineer: Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Contractor: Dyson Corp. & Subs

Location: Painesville, OH

Bridge No.: 34-0006

The following material has been inspected in accordance with Section 6 of the Standard Specifications at the above location. At this point in the fabrication process it appears to comply with contract plans and specifications.

To be shipped to the following vendor or locations: Monnig Industries, Inc., 400 Industrial Drive, Glasgow, MO 65254

Lot #	Bid Item #	Quantity		Material Description
B305-021-1	1 66	33	ea	3.5" diameter A354 Grade BD, Q&T main cable anchor rods

**Identification:** 3.5" diameter, A354 Grade BD, Q&T, Main Cable Anchor Rods

#### **Summary of Items Observed:**

This QAI observed Dyson personnel preparing to ship the following galvanized 33 ea - 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) involved in the accident (Ref. MSD-00785) for shipment to Monnig Industries, 400 Industrial Drive, Glasgow, MO.

OPY4-24, OQY-18C, OQY-31, OQY-13C, OQY-28, OQY-29, OTD-2E, OQY-15C, OPY4-22, OPY4-21, OQY-23B, OPY4-20, OQY23C, OQY20C, OQY-22C, OTD-1H, OPY4-19, OQY-3C, OTD-23D, OTD-1D, OTD-2D, OOF-2F, OOH-3F, OQY-25, OQY-14C, OQY-26, OQX4-3O, OQY-19C, OQY-21C, OOH-4F, OOH-1E, OQY-27, and OQY-32.

Anchor rods OOH-1F and OOH-5F are going to Monnig, with this shipment, for sand blasting only and will be returned to Dyson for further processing that will include extending the thread length on the tapped end.

This QAI was presented supporting documents which included MTR's, Certificates of Conformance and NDT tests results. After reviewing the documentation, this QAI attached a Green Tag with Blue Dot to the documentation and assigned Lot No. B305-021-11. (Reference MSDR 00785).

The supporting documentation and Green Tag with Blue Dot was placed into a plastic pouch and taped to one of the bundles of rods to be shipped. Reference attached photographs.

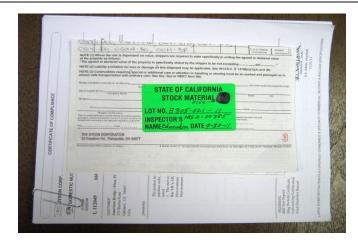


EDMUND G. BROWN Jr., Governor



# **COMPONENT MATERIAL INSPECTION REPORT**

( Continued Page 2 of 2 )





#### **Summary of Conversations:**

Sales Manager Sheffield informed this QAI that the shipment of the damaged anchor rods that require re-galvanizing will be Saturday October 1, 2011.

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell, Bill	QA Reviewer

Date Inspected: 03-Oct-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name: SAS Superstructure					OSM Arrival Time: 800					
Prime Contractor: American Bridge/Fluor Enterprises, a JV					OSM Departu	re Time:	1630			
Contractor:	Contractor: Dyson Corp. & Subs				Location: Painesville, OF					
Quality Contro	l Contact:	Russell W	elsh		Quality Control Present:	Yes	No			
Material transfer:		Yes	No	N/A	Sampled Items:	Yes	No	N/A		
Stock Transfer:		Yes	No	N/A	OK to Cut:	Yes	No	N/A		
Rebar Test Wit	iness:	Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A		
Other:										
Bridge No:	34-0006				<b>Component:</b> 3.5 inch Main cablr Anchor Rods			ods		
Bid Item:	66				Lot No:					

#### Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCs) Mr. Russell Welsh, Sales Manager (SM) Mr. Pat Sheffield, and Mr. Mark Roach, KTA inspector.

This QAI observed that Dyson has shipped the 33 ea - 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) involved in the accident (Ref. MSD-00785) to Monnig Industries, 400 Industrial Drive, Glasgow, MO. Anchor rods OOH-1F and OOH-5F sent to Monnig, with this shipment for sand blasting only, has not returned to Dyson for further processing. Further processing will include extending the thread length on the tapped end.

This QAI observed that Dyson personnel have completed roll-threading the 80 remaining main cable anchor rods (tapped end only). This QAI observed Dyson personnel measuring the pitch-diameter (mapping) of the roll-threaded tapped end of the anchor rods. This QAI observed Dyson personnel steel-dye stamping identification on the tapped ends for traceability purposes. QCS Welsh commented to this QAI that the results of the mapping will be made available to this QAI.

Current Status - 3.5 inch PWS anchor rods

( Continued Page 2 of 2 )

#### 274 -Required

- 143 Shipped to jobsite
- 33 Shipped to Monnig for galvanize coating repair 10-1-1,
- 2 Shipped to Monnig for blasting only, will return ti Dyson for extending threads on tapped end.

14-scrap

82 - In fabrication (plus 14 to replace scrapped rods)



#### **Summary of Conversations:**

As

noted above.

#### Comments

Inspected By:	Edmondson,Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Date Inspected: 04-Oct-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name:	SAS Sup	erstructure			OSM Arrival Time: 800					
<b>Prime Contract</b>	<b>Contractor:</b> American Bridge/Fluor Enterprises, a JV			<b>OSM Departure Time:</b> 1630						
Contractor:	Dyson Co	Dyson Corp. & Subs			Location: Painesville, O					
Quality Control	Contact:	Russell W	elsh		Quality Control Present:	Yes	No			
Material transfer:		Yes	No	N/A	Sampled Items:	Yes	No	N/A		
Stock Transfer:		Yes	No	N/A	OK to Cut:	Yes	No	N/A		
Rebar Test Wit	ness:	Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A		
Other:										
Bridge No:	34-0006				<b>Component:</b> 3.5 inch Main Cable Anchor Roo		Rods			
Bid Item:	66				Lot No:					

#### Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCS) Mr. Russell Welsh, Sales Manager (SM) Mr. Pat Sheffield, and Mr. Mark Roach, KTA inspector.

This QAI was informed that Dyson plans to include the following cut-threaded - 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) in the next shipment to Monnig. All of the following anchor rods are to be 8500mm in length. The anchor rods are identified as: OPY2-2, OPY2-6, OPY3-8, OTD-13, OOH2-23, OOH2-16, OOH2-20, OOH2-2, OOH2-4, OOF2-4, OOF4-4, OPY2-13, OPY2-15, OPY2-3 and OPY2-7. Anchor rods OPY2-13, OPY2-15, OPY2-3 and OPY2-7 will be shortened from 9000mm to 8500mm.

Current Status - 3.5 inch PWS anchor rods. 274 - Required

143 - Shipped to jobsite.

- 33 Shipped to Monnig for galvanize coating repair 10-1-11. (Accident)
- 2 Shipped to Monnig for blasting only, will return to Dyson for extending threads on tapped end.
- 14 Scrapped
- 80 Roll-threaded on tapped-end only .

TL-6034, Source Inspection Report

( Continued Page 2 of 2 )

16 - Cut-threaded needed to make a total of 274.

#### **Summary of Conversations:**

As noted above.

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name:SAS SuperstructurePrime Contractor:American Bridge/Fluor Enterprises, a JV					OSM Arrival Time: 800 OSM Departure Time: 1630				
		e	or Emert	11868, a J v	Ľ	-			~ .
Contractor:	Dyson Co	Dyson Corp. & Subs				Loc	cation: Pa	inesvill	e,CA
Quality Control	Contact:	Russell W	elsh		Quality Contro	ol Present:	Yes	No	
Material transfer:		Yes	No	N/A	Sampled Items:		Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:		Yes	No	N/A
Rebar Test Witn	ess:	Yes	No	N/A	Delayed/Cance	elled:	Yes	No	N/A
Other:									
Bridge No:	34-0006				<b>Component:</b> 3.5 inch Main Cable Anchor Rods			lods	
Bid Item:	66				Lot No: B305-022-11 and B305-023-11			1	

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCS) Mr. Russell Welsh, Sales Manager and Mr. Mark Roach, KTA inspector.

This QAI observed Dyson personnel preparing the following 15ea cut-threaded - 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) for shipment to Monnig. All of the following anchor rods are 8500mm in length. The anchor rods are identified as:

OPY2-2, OPY2-6, OPY3-8, OTD-13, OOH2-23, OOH2-16, OOH2-20, OOH2-2, OOH2-4, OOF2-4, OOF4-4, OPY2-13, OPY2-15, OPY2-3 and OPY2-7. Anchor rods OPY2-13, OPY2-15, OPY2-3 and OPY2-7 have been shortened from 9000mm to 8500mm. Referenced attached photos.

The following 11ea anchor rods are cut-threaded at various lengths and will be included in this shipment: OTD-12, OOH2-19, OOH2-10, OOH2-7, OOH2-8, OOH2-17, OOH2-24, OOF2-2, OOF3-8, OOF4-2, OOF4-5. Referenced attached photos.

This QAI conducted a random visual inspection and review of the Material Test Reports (MTR's) for 55ea 3.50" -4UNC-2B, A563 GR DH Heavy Hex Spherical Nuts and 7.00" – 4UNC 2A X 3.50" – 4UNC 2B Heavy Hex Coupling Nuts which are to be sent to The Art Galvanizing Works Inc. at 3935 Valley Rd, Cleveland,



ORT Report No: SIR-003701 Date Inspected: 05-Oct-2011

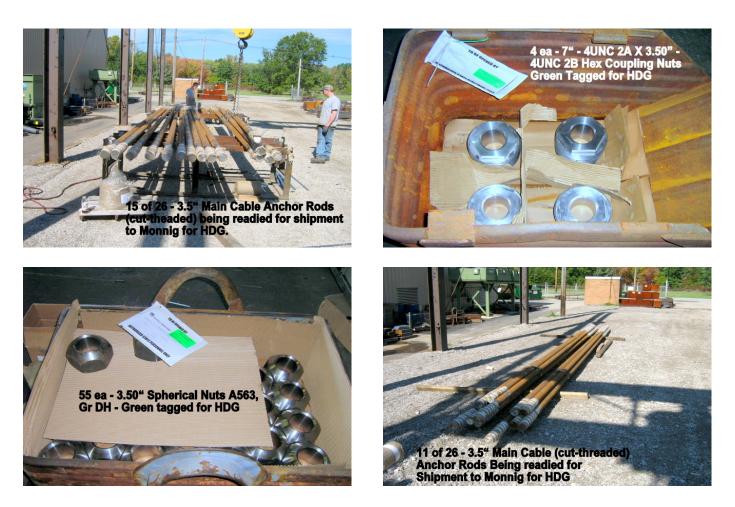
( Continued Page 2 of 3 )

OH for Hot Dip Galvanizing (HDG). This QAI verified that the spherical nuts and coupling nuts will be returned to Dyson for internal threading.

The nuts were placed in separate "Dyson buckets" for transporting to and from The Art Galvanizing Works. This QAI attached Green Tags with Lot No. B305-22-11 to the bucket with the coupling nuts and Lot No. B305-23-11 to the bucket with the spherical nuts for traceability purposes. Reference attached photos.

Current Status - 3.5 inch PWS anchor rods. 274 - Required

- 143 Shipped to jobsite.
- 33 Shipped to Monnig for galvanize coating repair 10-1-11 (accident).
- 2 Shipped to Monnig for blasting returning to Dyson to extend threads on tapped-end (accident).
- 14- Scrapped (accident).
- 80 Roll-threaded on tapped-end only.
- 16 Cut-threaded needed to make a total of 274.
- 26 Cut-threaded are being readied for shipment to Monnig.



#### **Summary of Conversations:**

Conversation fundamental to completion of the tasks at hand occurred between this QAI and Dyson personnel

(Continued Page 3 of 3)

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Date Inspected: 07-Oct-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name:SAS SuperstructurePrime Contractor:American Bridge/Fluor Enterprises, a JV					OSM Arrival Time: 800 OSM Departure Time: 1630				
Contractor:					C	-	cation: Pa		e OH
									•, •11
Quality Control Contact:		Russell W	elsh		<b>Quality Control Present:</b>		Yes	No	
Material transfer:		Yes	No	N/A	Sampled Items:		Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:		Yes	No	N/A
<b>Rebar Test Witnes</b>	s:	Yes	No	N/A	Delayed/Cance	elled:	Yes	No	N/A
Other:									
Bridge No:	34-0006				<b>Component:</b> 3.5 inch Main cable Anchor Rods			ods	
Bid Item:	66				Lot No: B305-024-11 and B305-025-11			11	

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCs) Mr. Russell Welsh and Mr. Mark Roach, KTA inspector.

This QAI observed Dyson personnel preparing to ship 34 ea - 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) for shipment to Monnig Industries, 400 Industrial Drive, Glasgow, MO.

This QAI was presented supporting documentation which included MTR's, Certificates of Conformance and NDT tests results. After reviewing the documentation, this QAI attached a Green Tag to the documentation and assigned Lot No. B305-024-11 to the following anchor rods: (cut-threaded) OPY3-8, OOH2-23, OOH2-16, OOH2-4, OOF2-4, OPY2-15, OOH2-17, OOH2-10, OOF3-8, OOF4-5, (roll-threaded) R1001-OPY, R1002-OTD, R1005-OQW, R1006-OTD, R1007-OOH, R1008-OQX, R1010-OTD, and R1011-OTD.

This QAI attached a Green tag with Blue Dot to the documentation and assigned Lot No. B305-25-11 to the following (cut-threaded) anchor rods with oversize pitch-diameters (Reference MSDR – 00784): OPY2-2, OPY2-6, OTD-13, OOH2-20, OOH2-2, OOF4-4, OPY2-13, OPY2-3, OPY2-7, OOH2-8, OOH2-19, OOH2-24, OOH2-7, OOF2-2 and OTD-12, OOF4-2.

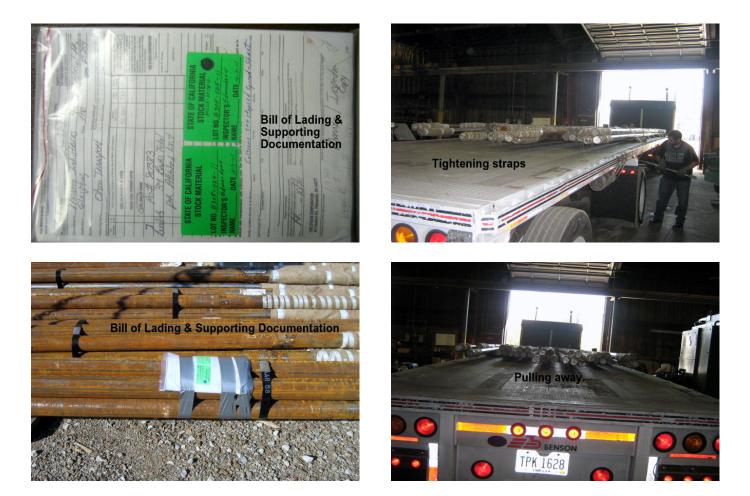
( Continued Page 2 of 3 )

The supporting documentation with Green Tag, Lot No. B305-024-11 and Green Tag with Blue Dot Lot No. B305-025-11 was placed into a plastic pouch and taped to one of the bundles of rods to be shipped. Reference attached photographs.

Current Status - 3.5 inch PWS anchor rods

274 - Required

- 143 Shipped to jobsite
- 33 to Monnig for galvanize coating repair 10-1-11, (accident)
- 2 thread and galvanize coating repair, (accident and to return to Dyson)
- 14 scrapped (accident)
- 34 shipped to Monnig 10-7-11
- 80 In fabrication



#### **Summary of Conversations:**

Fundamental conversation, necessary for completion of the tasks at hand, occurred between this QAI and Dyson personnel.

(Continued Page 3 of 3)

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

# **REQUEST FOR INFORMATION (RFI)**

RFI No.: ABF-RFI-002595R00	Submitted By: Baltzer, Karsten	Pages: 1 Pages Attached:
RFI Date: 06-October-2011	Contact Name: Baltzer, Karsten	Phone No. 510-808-4598
Subject: PWS Anchor Caltrans	Sampling	
References:		
Sub/Sup: DYS Su	b RFI #:	
Response Required by: 11-Oct	ober-2011 Response af	fects critical path activity? Yes

#### **Description:**

Following Working Campus discussion ABFJV propose the following sampling for each of the remaining 8 heats of PWS Anchor Rods.

Threaded sampling for each Heat:

Before the 9700mm long PWS Anchor Rods are cut to length Caltrans will identify what rod, from the heat, the threaded samples are to come from.

Dyson will roll additional 800 mm of thread on the coupler end. After rolling the PWS Anchor Rods will be cut to 8900mm and the 800mm cutoff threaded part will be provided to Caltrans for testing.

Two 300mm material sample from each heat:

When the remaining PWS Anchor Rods, from the heat, are cut to length the cutoff will be mark with the heat number and two 300mm samples from the cutoff will be provided to Caltrans for testing.

#### **Contractor Disposition:**

This RFI is being submitted for:

The Cost and Time Impact from this RFI is: Not selected

Response:	Agreed Ext. Due Date:
	Pages: 1
	Pages Attached: 0
The proposed modification to the QA sampling plan is ac	ceptable.

#### Administrative Action:

This response resolves the RFI.

### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.8</u>

## **COMPONENT MATERIAL INSPECTION REPORT**

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Contractor: Dyson Corp. & Subs

**Location:** Painesville, OH

Bridge No.: 34-0006

Report No: CMI-000383 Date Inspected: 07-Oct-2011

OSM Arrival Time: 800 OSM Departure Time: 1630

**Component:**# 3.5 inch Main Cable Anchor Rods

The following material has been inspected in accordance with Section 6 of the Standard Specifications at the above location. At this point in the fabrication process it appears to comply with contract plans and specifications.

To be shipped to the following vendor or locations: Monnig Industries, 400 Industrial Drive, Glasgow, MO.

Lot # Bid B305-024-1166	l Item #	<b>Quantity</b> 18	ea	Material Description 3.5" diameter A354 Grade BD, Q&T main cable anchor rods
B305-025-11 66		16	ea	3.5" diameter A354 Grade BD, Q&T main cable anchor

#### Identification:

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCs) Mr. Russell Welsh and Mr. Mark Roach, KTA inspector.

This QAI observed Dyson personnel preparing to ship 34 ea - 3.5" diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) for shipment to Monnig Industries, 400 Industrial Drive, Glasgow, MO.

This QAI was presented supporting documentation which included MTR's, Certificates of Conformance and NDT tests results. After reviewing the documentation, this QAI attached a Green Tag to the documentation and assigned Lot No. B305-024-11 to the following anchor rods: (cut-threaded) OPY3-8, OOH2-23, OOH2-16, OOH2-4, OOF2-4, OPY2-15, OOH2-17, OOH2-10, OOF3-8, OOF4-5, (roll-threaded) R1001-OPY, R1002-OTD, R1005-OQW, R1006-OTD, R1007-OOH, R1008-OQX, R1010-OTD, and R1011-OTD.

This QAI attached a Green tag with Blue Dot to the documentation and assigned Lot No. B305-25-11 to the following (cut-threaded) anchor rods with oversize pitch-diameters (Reference MSDR – 00784): OPY2-2, OPY2-6, OTD-13, OOH2-20, OOH2-2, OOF4-4, OPY2-13, OPY2-3, OPY2-7, OOH2-8, OOH2-19, OOH2-24, OOH2-7, OOF2-2 and OTD-12, OOF4-2.

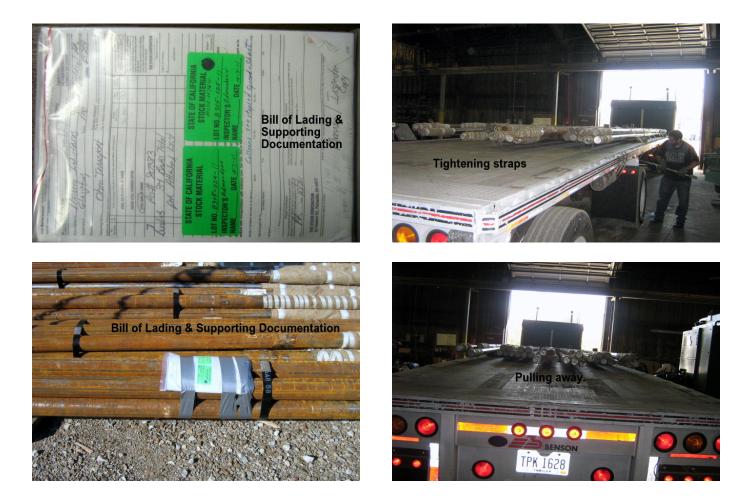
The supporting documentation with Green Tag, Lot No. B305-024-11 and Green Tag with Blue Dot Lot No.



# COMPONENT MATERIAL INSPECTION REPORT

( Continued Page 2 of 2 )

B305-025-11 was placed into a plastic pouch and taped to one of the bundles of rods to be shipped. Reference attached photographs.



#### **Summary of Conversations:**

Fundamental conversation, necessary for completion of the tasks at hand, occurred this QAI and Dyson personnel.

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell, Bill	QA Reviewer

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name:	SAS Sup	perstructure				OSM Arriv	al Time:	800	
<b>Prime Contract</b>	tor: America	American Bridge/Fluor Enterprises, a JV			<b>OSM Departure Time:</b> 1630				
Contractor:	Dyson C	son Corp. & Subs			Loo	cation: Pa	inesvill	le,OH	
Quality Control	l Contact:	Russell W	elsh		Quality Contro	ol Present:	Yes	No	
Material transf	er:	Yes	No	N/A	Sampled Items	:	Yes	No	N/A
Stock Transfer:	:	Yes	No	N/A	OK to Cut:		Yes	No	N/A
Rebar Test Wit	ness:	Yes	No	N/A	Delayed/Cancelled: Yes No		N/A		
Other:									
Bridge No:	34-0006				<b>Component:</b>	3.5 inch mai	n cable an	chor roo	ds
Bid Item:	66				Lot No:				

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at the Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCS) Mr. Russell Welsh and Mr. Mark Roach, KTA inspector.

This QAI observed Dyson personnel measuring the pitch diameters of roll-threaded 3.5 inch diameter, A354 Grade BD, Q&T main cable anchor rods (anchor rods. This QAI observed that roll-threading of the coupler end of the remaining anchor rods is in process.

This QAI observed the anchor rods, selected by this QAI on 10-7-11 to provide the samples (eight heat treatment lots) to be sent to the Caltrans translab, were roll threaded for a length of ten feet at the coupler end, over the weekend. The tapped end of these anchor rods was roll-threaded and thread protected in the past. The anchor rods mentioned above are identified as follows: OYG-1,OYH-2,OYI-3,OYJ-4,OYL-5,OYM-6,OYN-7 and OYO-8.

Current Status - 3.5 inch PWS anchor rods

#### 274 – Required

143 - Shipped to jobsite

TL-6034, Source Inspection Report

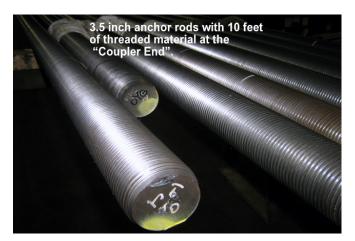


Date Inspected: 10-Oct-2011

(Continued Page 2 of 2)

- 33 to Monnig for galvanize coating repair 10-1-11, (accident)
- 2 thread and galvanize coating repair, (accident and to return to Dyson)
- 14 scrapped (accident)
- 34 shipped to Monnig 10-7-11
- 80 In fabrication





#### **Summary of Conversations:**

Fundamental conversation, necessary to complete the tasks at hand, occurred between this QAI and Dyson personnel. During a telephone conversation, this QAI and SMR Kit Guest reviewed contract documents that indicate the threaded anchor rods (above)to be are used for sampling are in general compliance with the project contract documents.

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Date Inspected: 11-Oct-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name:	roject Name: SAS Superstructure				OSM Arrival Time: 800			
Prime Contract	or: America	n Bridge/Flu	or Enterp	orises, a JV	OSM Departu	re Time:	1630	
Contractor:	Dyson C	Dyson Corp. & Subs		L	ocation: Pa	ainesvill	e, Ohio	
Quality Control	Contact:	Linda We	lsh		Quality Control Present:	Yes	No	
Material transfe	er:	Yes	No	N/A	Sampled Items:	Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:	Yes	No	N/A
Rebar Test With	ness:	Yes	No	N/A	Delayed/Cancelled:	Yes	No	N/A
Other:								
Bridge No:	34-0006				<b>Component:</b> 3.5 inch m	ain cable an	chor roo	ds
Bid Item:	66				Lot No:			

#### Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at the Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCI) Ms. Linda Welsh and Mr. Mark Roach, KTA inspector.

This QAI observed Dyson personnel measuring the pitch diameters of roll-threaded 3.5 inch diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods. This QAI observed that roll-threading of the coupler end of the remaining anchor rods is in process.

The overhead crane used for positioning the anchor rods for cutting does not work. Dyson has called in a company to trouble-shoot and repair the crane. In the meantime, Dyson will arrange a work-around for cutting the rods to be sampled (8 heat treatment lots - 8 rods - 24 pieces).

Current Status - 3.5 inch PWS anchor rods

274 - Required

143 - Shipped to jobsite33 - to Monnig for galvanize coating repair 10-1-11, (accident)

TL-6034, Source Inspection Report

( Continued Page 2 of 2 )

- 2 thread and galvanize coating repair, (accident and to return to Dyson)
- 14 scrapped (accident)
- 34 shipped to Monnig 10-7-11
- 80 In fabrication

#### **Summary of Conversations:**

Fundamental conversation, necessary to complete the tasks at hand, occurred between this QAI and Dyson personnel.

#### Comments

Inspected By:	Edmondson,Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer

Shipped to: Oakland,

CA

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.9</u>

# **REPORT OF INSPECTION OF MATERIAL**

Resi	dent Engineer:(	Casey, William		Report No: RIM-000106
	Address: 3	33 Burma Road		Date Inspected: 12-Oct-2011
	City: C	akland, CA 946	507	
Proje	ct Name: SAS S	Superstructure		OSM Arrival Time: 800
Prime	e Contractor: A	merican Bridge	/Fluor Enterprises	s, a JV <b>OSM Departure Time:</b> 1630
Cont	ractor: Dyson Co	orp. & Subs		Location: Painesville, OH
The for substa	ollowing material antially comply*	has been inspectively with contract place	cted in accordance ans and specificat	e with Section 6 of the Standard Specifications and found to ions.
<b>Item</b> 1	Lot # B305-026-11	<b>Bid Item#</b> 53	<b>Quantity</b> 5	Material Description 3.00" 4UNC 2B Heavy Hex Nut, A563 Gr. DH, HDG
2	B305-026-11	53	5	3.00" 4UNC 2A X 25" Heavy Hex Bolt, A354 Gr. BD,
				HDG,
3	B305-026-11	53	5	3.00" dia. Hardened Flat Washer, F436 Type 1, HDG,
4	B305-026-11	53	9	1.00" dia. 8UNC 2A X 33" Double End Stud, A354 Gr. BC,
				HDG,
			10	
5	B305-026-11	53	18	1.00" 8UNC 2B Dyson D-Loc Nut w/ Poly insert, A563 Gr.
5	B305-026-11	53	18	DH, HDG.
5 6	B305-026-11 B305-027-11	53 66	6 18	•

Identification: 1.00", 3.00", 3.5" Bolts, Nuts and Washers

#### **Summary of Items Observed:**

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at the Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCS) Mr. Russell Welsh and Mr. Mark Roach, KTA inspector.

This QAI reviewed supporting documentation and conducted a random visual inspection of the following items to be shipped to the job-site. The items appeared to in general compliance with the contract documents and this QAI assigned Lot Numbers as follows: Lot No. B305-027-11 - 6 ea 3.50"- 4UNC 2B X 51" Extension Rods, A354 Gr. BD, HDG, and Lot No. B305-026-11 for the following: 5 ea - 3.00" 4UNC 2A X 25" Heavy Hex Bolt, A354 Gr. BD, HDG, 5 ea - 4UNC 2B Heavy Hex Nut, A563 Gr. DH, HDG, 5 ea - 3.00" dia. Hardened Flat Washer, F436 Type 1, HDG, 9 ea - 1.00" dia. 8UNC 2A X 33" Double End Stud, A354 Gr. BC, HDG, 18 ea - 1.00" 8UNC 2B Dyson D-Loc Nut w/ Poly insert, A563 Gr. DH, HDG.

# **REPORT OF INSPECTION OF MATERIAL**

( Continued Page 2 of 2 )





#### **Summary of Conversations:**

Fundamental conversation, necessary to complete the tasks at hand, occurred between this QAI and Dyson personnel.

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell, Bill	QA Reviewer

Date Inspected: 13-Oct-2011

#### DEPARTMENT OF TRANSPORTATION

DIVISION OF ENGINEERING SERVICES Office of Structural Materials Quality Assurance and Source Inspection

Bay Area Branch 690 Walnut Ave.St. 150 Vallejo, CA 94592-1133 (707) 649-5453 (707) 649-5493 Contract #: <u>04-0120F4</u> Cty: <u>SF/ALA</u> Rte: <u>80</u> PM: <u>13.2/13.9</u> File #: <u>76.15</u>

**Report No:** 

## SOURCE INSPECTION REPORT

Resident Engineer:Casey, William Address: 333 Burma Road City: Oakland, CA 94607

Project Name: Prime Contract Contractor:	or: America	<ul><li>SAS Superstructure</li><li>r: American Bridge/Fluor Enterprises, a JV Dyson Corp. &amp; Subs</li></ul>			OSM Arrival Time: 800 OSM Departure Time: 1630 Location: Painesville, OH				
Quality Control Contact:		Russell Welsh			<b>Quality Control Present:</b>		Yes	No	
Material transfer:		Yes	No	N/A	Sampled Items:		Yes	No	N/A
Stock Transfer:		Yes	No	N/A	OK to Cut:		Yes	No	N/A
<b>Rebar Test Witness:</b>		Yes	No	N/A	Delayed/Cancelled:		Yes	No	N/A
Other:					-				
Bridge No:	34-0006				<b>Component:</b>	<b>Component:</b> 3.50" Main Cable Anchor Rods		ls	
<b>Bid Item:</b> 53 and 66		5			Lot No:	B305-026-11 through B305-035-11			

#### Summary of Items Observed:

On this date, Quality Assurance Inspector (QAI) Fred Edmondson was present at the Dyson Corporation in Painesville, OH as requested to monitor the fabrication of various high strength rods, bolts and washers for the San Francisco Oakland Bay Bridge (SFOBB) project.

This QAI met with Dyson Corporation Quality Control Supervisor (QCS) Mr. Russell Welsh and Mr. Mark Roach, KTA inspector.

This QAI randomly observed Dyson personnel cutting the sample pieces from the roll-threaded 3.5 inch diameter A354 Grade BD, Q&T main cable anchor rods (anchor rods) with Heat Numbers A113149 and A113151. The samples have been selected by this QAI from the eight Heat Treatment Batches (Lots), from the above heat numbers, as follows: Lot OYG/OYK – Lot OYG, Lot OYH, Lot OYI/OYP – OYI, Lot OYJ, Lot OYL, Lot OYM, Lot OYN and Lot OYO.

For some heat treatment lots, the threaded sample is from a different anchor rod (same heat treatment lot) than the two "Material Only" samples to enable compliance with individual anchor rod length requirements. The heat number and heat treatment alphabetical code, (above) are on the MTRs and COC's. The samples are identified by Lot Codes.

This QA inspector reviewed the supporting documentation and verified the anchor rod material is in general conformed to A354 Gr. BD Q & T round stock.

( Continued Page 2 of 3 )

The sampled coupons were placed onto four wooden pallets and secured with steel bands and shrink wrap for shipment to the Caltrans translab. Two heat treatment lots were placed on each pallet.

To identify each heat treatment lot, 2 ea TL-101s (8 total) with supporting documentation were attached to each pallet. This QAI assigned a unique Lot Number (B305 -028-11 through the B305-035-11) to each heat treatment lot.

This QAI reviewed supporting documentation and conducted a random visual inspection of the following items to be shipped to the job-site. The items appeared to in general compliance with the contract documents and this QAI assigned Lot Numbers as follows: Lot No. B305-027-11- 6 ea 3.50"- 4UNC 2B X 51" Extension Rods, A354 Gr. BD, HDG, Lot No. B305-026-11- 5 ea - 3.00" 4UNC 2A X 25" Heavy Hex Bolt, A354 Gr. BD, HDG, 5 ea - 4UNC 2B Heavy Hex Nut, A563 Gr. DH, HDG, 5 ea - 3.00" dia. Hardened Flat Washer, F436 Type 1, HDG, 9 ea - 1.00" dia. 8UNC 2A X 33" Double End Stud, A354 Gr. BC, HDG, 18 ea - 1.00" 8UNC 2B Dyson D-Loc Nut w/ Poly insert, A563 Gr. DH, HDG.

Current Status - 3.5 inch PWS anchor rods

274 – Required

- 143 Shipped to jobsite
- 33 to Monnig for galvanize coating repair 10-1-11, (accident)
- 2 thread and galvanize coating repair, (accident and to return to Dyson)
- 14 scrapped (accident)
- 34 shipped to Monnig 10-7-11
- 80 In fabrication





(Continued Page 3 of 3)



#### **Summary of Conversations:**

Fundamental conversation, necessary to complete the tasks at hand, occurred between this QAI and Dyson personnel.

#### Comments

Inspected By:	Edmondson, Fred	Quality Assurance Inspector
<b>Reviewed By:</b>	Levell,Bill	QA Reviewer