



Materials Testing Laboratory  
15700 E. 32<sup>nd</sup> Avenue  
Aurora, Colorado 80011  
(303)326-8270

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**MATERIAL PRE-QUALIFICATION FOR  
TYPE S75  
APPROVED** For use until June 1, 2019

<b>Company Name:</b>	<b>Brannan Sand &amp; Gravel Co.</b>
<b>Contact Person:</b>	<b>Doug Wingo (dwingo@brannan1.com)</b>
<b>Mailing Address:</b>	<b>2500 East Brannan Way Denver, Colorado 80229</b>
<b>Telephone No.:</b>	<b>303-853-5346</b>
<b>PLANT NAME:</b>	<b>I-76 PLANT ONLY</b>
<b>PLANT LOCATION:</b>	<b>7291 Colorado Blvd.</b>

**JOB MIX SPECIFICATION**

<b>Product Identification Code: (AS FOUND ON DELIVERY TICKET)</b>	<b>LOWER LIMIT</b>	<b>40009-18</b>	<b>UPPER LIMIT</b>
Percentage of RAP	OK	<b>0</b>	0% RAP
Percent Passing 1" Sieve	100	<b>100</b>	100
Percent Passing 3/4" Sieve	90	<b>96</b>	100
Percent Passing 1/2" Sieve	71	<b>77</b>	83
Percent Passing 3/8" Sieve	68	<b>74</b>	80
Percent Passing No. 4 Sieve	58	<b>63</b>	68
Percent Passing No. 8 Sieve	43	<b>48</b>	53
Percent Passing No. 16 Sieve	33	<b>38</b>	43
Percent Passing No. 30 Sieve	24	<b>28</b>	32
Percent Passing No. 50 Sieve	14	<b>18</b>	22
Percent Passing No. 100 Sieve	7	<b>11</b>	15
Percent Passing No. 200 Sieve (Including 1% Lime)	4	<b>6.0</b>	8.0
Asphaltic Cement Content (%)	4.6	<b>4.9</b>	5.2
Maximum Unit Weight (pcf)		<b>157.4</b>	
Aggregate Bulk Specific Gravity		<b>2.707</b>	
Maximum Specific Gravity, AASHTO T 209		<b>2.523</b>	
Total Air Voids In Mix	<b>3.0</b>	<b>3.8</b>	<b>5.0</b>
Voids In Mineral Aggregate (VMA)	13.5	<b>14.7</b>	15.9
Hveem Stability	28	<b>43</b>	OK
Voids Filled With Asphalt (%)	65	<b>74</b>	78
Lottman Test (AASHTO T 283)	OK	<b>91</b>	
Dry Tensile Strength (psi)	OK	<b>90</b>	
Fine Aggregate Angularity	OK	<b>47</b>	
Two Fractured Faces	80	<b>100</b>	
L. A. Abrasion	OK	<b>30</b>	
Flat And Elongated (Ratio 5:1)%, AASHTO M 283	OK	<b>1</b>	
Adherent Coating (Dry Sieving) ASTM D 5711	OK	<b>0.2</b>	
Additives	OK	<b>64</b>	
Sodium Sulfate Soundness	OK	<b>3</b>	
Asphalt Cement Type		<b>PG 64-22</b>	<b>Suncor</b>
Additives	<b>Lime</b>	<b>1%</b>	Pete Lien



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**MATERIAL PRE-QUALIFICATION FOR  
TYPE S75 w/20%RAP  
APPROVED** For use until June 1, 2019

<b>Company Name:</b>	<b>Brannan Sand &amp; Gravel Co.</b>
<b>Contact Person:</b>	<b>Doug Wingo (dwingo@brannan1.com)</b>
<b>Mailing Address:</b>	<b>2500 East Brannan Way Denver, Colorado 80229</b>
<b>Telephone No.:</b>	<b>303-853-5346</b>
<b>PLANT NAME:</b>	<b>I-76 PLANT ONLY</b>
<b>PLANT LOCATION:</b>	<b>7291 Colorado Blvd.</b>

**JOB MIX SPECIFICATION**

<b>Product Identification Code: (AS FOUND ON DELIVERY TICKET)</b>	<b>LOWER LIMIT</b>	<b>40014-18</b>	<b>UPPER LIMIT</b>
Percentage of RAP	OK	<b>20</b>	20% Max
Percent Passing 1" Sieve	100	<b>100</b>	100
Percent Passing 3/4" Sieve	90	<b>96</b>	100
Percent Passing 1/2" Sieve	72	<b>78</b>	84
Percent Passing 3/8" Sieve	68	<b>74</b>	80
Percent Passing No. 4 Sieve	58	<b>63</b>	68
Percent Passing No. 8 Sieve	44	<b>49</b>	54
Percent Passing No. 16 Sieve	34	<b>39</b>	44
Percent Passing No. 30 Sieve	24	<b>28</b>	32
Percent Passing No. 50 Sieve	14	<b>18</b>	22
Percent Passing No. 100 Sieve	7	<b>11</b>	15
Percent Passing No. 200 Sieve (Including 1% Lime)	4.3	<b>6.3</b>	8.3
Asphaltic Cement Content (%)	4.6	<b>4.9</b>	5.2
Maximum Unit Weight (pcf)		<b>157.5</b>	
Aggregate Bulk Specific Gravity		<b>2.694</b>	
Maximum Specific Gravity, AASHTO T 209		<b>2.524</b>	
Total Air Voids In Mix	<b>3.0</b>	<b>3.8</b>	<b>5.0</b>
Voids In Mineral Aggregate (VMA)	13.1	<b>14.3</b>	15.5
Hveem Stability	28	<b>41</b>	OK
Voids Filled With Asphalt (%)	65	<b>73</b>	78
Lottman Test (AASHTO T 283)	OK	<b>90</b>	
Dry Tensile Strength (psi)	OK	<b>91</b>	
Fine Aggregate Angularity	OK	<b>47</b>	
Two Fractured Faces	80	<b>100</b>	
L. A. Abrasion	OK	<b>30</b>	
Flat And Elongated (Ratio 5:1)%, AASHTO M 283	OK	<b>1</b>	
Adherent Coating (Dry Sieving) ASTM D 5711	OK	<b>0.2</b>	
Additives	OK	<b>64</b>	
Sodium Sulfate Soundness	OK	<b>3</b>	
Asphalt Cement Type	<b>PG58-28 Required</b>	<b>PG 58-28</b>	<b>Suncor</b>
Additives	<b>Lime</b>	<b>1%</b>	Pete Lien



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**MATERIAL PRE-QUALIFICATION FOR  
TYPE SX75 – PRIVATE USE ONLY  
APPROVED** For use until June 1, 2019

<b>Company Name:</b>	<b>Brannan Sand &amp; Gravel Co.</b>
<b>Contact Person:</b>	<b>Doug Wingo (dwingo@brannan1.com)</b>
<b>Mailing Address:</b>	<b>2500 East Brannan Way Denver, Colorado 80229</b>
<b>Telephone No.:</b>	<b>303-853-5346</b>
<b>PLANT NAME:</b>	<b>I-76 PLANT ONLY</b>
<b>PLANT LOCATION:</b>	<b>7291 Colorado Blvd.</b>

**JOB MIX SPECIFICATION**

<b>Product Identification Code: (AS FOUND ON DELIVERY TICKET)</b>	<b>LOWER LIMIT</b>	<b>40049-18</b>	<b>UPPER LIMIT</b>
Percentage of RAP	OK	<b>0</b>	0% RAP
Percent Passing 1" Sieve	100	<b>100</b>	100
Percent Passing 3/4" Sieve	100	<b>100</b>	100
Percent Passing 1/2" Sieve	91	<b>97</b>	100
Percent Passing 3/8" Sieve	82	<b>88</b>	94
Percent Passing No. 4 Sieve	62	<b>67</b>	72
Percent Passing No. 8 Sieve	47	<b>52</b>	57
Percent Passing No. 16 Sieve	36	<b>41</b>	46
Percent Passing No. 30 Sieve	26	<b>30</b>	34
Percent Passing No. 50 Sieve	15	<b>19</b>	23
Percent Passing No. 100 Sieve	7	<b>11</b>	15
Percent Passing No. 200 Sieve (Including 1% Lime)	4.1	<b>6.1</b>	8.1
Asphaltic Cement Content (%)	5.0	<b>5.3</b>	5.6
Maximum Unit Weight (pcf)		<b>156.6</b>	
Aggregate Bulk Specific Gravity		<b>2.7</b>	
Maximum Specific Gravity, AASHTO T 209		<b>2.51</b>	
Total Air Voids In Mix	<b>3.0</b>	<b>3.8</b>	<b>5.0</b>
Voids In Mineral Aggregate (VMA)	14.1	<b>15.3</b>	16.5
Hveem Stability	28	<b>43</b>	OK
Voids Filled With Asphalt (%)	65	<b>75</b>	78
Lottman Test (AASHTO T 283)	OK	<b>92</b>	
Dry Tensile Strength (psi)	OK	<b>97</b>	
Fine Aggregate Angularity	OK	<b>46</b>	
Two Fractured Faces	80	<b>100</b>	
L. A. Abrasion	OK	<b>31</b>	
Flat And Elongated (Ratio 5:1)%, AASHTO M 283	OK	<b>1</b>	
Adherent Coating (Dry Sieving) ASTM D 5711	OK	<b>0.2</b>	
Additives	OK	<b>64</b>	
Sodium Sulfate Soundness	OK	<b>3</b>	
Asphalt Cement Type		<b>PG 64-22</b>	<b>Suncor</b>
Additives	<b>Lime</b>	<b>1%</b>	Pete Lien



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**MATERIAL PRE-QUALIFICATION FOR  
TYPE SX75 W/RAP – PRIVATE USE ONLY  
APPROVED For use until June 1, 2019**

<b>Company Name:</b>	<b>Brannan Sand &amp; Gravel Co.</b>
<b>Contact Person:</b>	<b>Doug Wingo (dwingo@brannan1.com)</b>
<b>Mailing Address:</b>	<b>2500 East Brannan Way Denver, Colorado 80229</b>
<b>Telephone No.:</b>	<b>303-853-5346</b>
<b>PLANT NAME:</b>	<b>I-76 PLANT ONLY</b>
<b>PLANT LOCATION:</b>	<b>7291 Colorado Blvd.</b>

**JOB MIX SPECIFICATION**

<b>Product Identification Code: (AS FOUND ON DELIVERY TICKET)</b>	<b>LOWER LIMIT</b>	<b>40054-18</b>	<b>UPPER LIMIT</b>
Percentage of RAP	<b>OK</b>	<b>20</b>	<b>20% Max</b>
Percent Passing 1" Sieve	100	<b>100</b>	100
Percent Passing 3/4" Sieve	94	<b>100</b>	100
Percent Passing 1/2" Sieve	91	<b>97</b>	100
Percent Passing 3/8" Sieve	81	<b>87</b>	93
Percent Passing No. 4 Sieve	61	<b>66</b>	71
Percent Passing No. 8 Sieve	47	<b>52</b>	57
Percent Passing No. 16 Sieve	35	<b>40</b>	45
Percent Passing No. 30 Sieve	26	<b>30</b>	34
Percent Passing No. 50 Sieve	15	<b>19</b>	23
Percent Passing No. 100 Sieve	7	<b>11</b>	15
Percent Passing No. 200 Sieve (Including 1% Lime)	4.6	<b>6.6</b>	8.6
Asphaltic Cement Content (%)	5.0	<b>5.3</b>	5.6
Maximum Unit Weight (pcf)		<b>156.5</b>	
Aggregate Bulk Specific Gravity		<b>2.691</b>	
Maximum Specific Gravity, AASHTO T 209		<b>2.508</b>	
Total Air Voids In Mix	<b>3.0</b>	<b>3.8</b>	<b>5.0</b>
Voids In Mineral Aggregate (VMA)	13.9	<b>15.1</b>	16.3
Hveem Stability	28	<b>40</b>	OK
Voids Filled With Asphalt (%)	65	<b>75</b>	78
Lottman Test (AASHTO T 283)	OK	<b>87</b>	
Dry Tensile Strength (psi)	OK	<b>91</b>	
Fine Aggregate Angularity	OK	<b>46</b>	
Two Fractured Faces	80	<b>100</b>	
L. A. Abrasion	OK	<b>31</b>	
Flat And Elongated (Ratio 5:1)%, AASHTO M 283	OK	<b>1</b>	
Adherent Coating (Dry Sieving) ASTM D 5711	OK	<b>0.2</b>	
Additives	OK	<b>64</b>	
Sodium Sulfate Soundness	OK	<b>3</b>	
Asphalt Cement Type	<b>PG58-28 Required</b>	<b>PG 58-28</b>	<b>Suncor</b>
Additives	<b>Lime</b>	<b>1%</b>	Pete Lien



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**MATERIAL PRE-QUALIFICATION FOR  
TYPE SG75 W/RAP**

**APPROVED** For use until June 1, 2019

<b>Company Name:</b>	<b>Brannan Sand &amp; Gravel Co.</b>
<b>Contact Person:</b>	<b>Doug Wingo (dwingo@brannan1.com)</b>
<b>Mailing Address:</b>	<b>2500 East Brannan Way Denver, Colorado 80229</b>
<b>Telephone No.:</b>	<b>303-853-5346</b>
<b>PLANT NAME:</b>	<b>I-76 PLANT ONLY</b>
<b>PLANT LOCATION:</b>	<b>7291 Colorado Blvd.</b>

**JOB MIX SPECIFICATION**

<b>Product Identification Code: (AS FOUND ON DELIVERY TICKET)</b>	<b>LOWER LIMIT</b>	<b>40086-18</b>	<b>UPPER LIMIT</b>
Percentage of RAP	OK	<b>20</b>	25% Max
Percent Passing 1 1/2" Sieve	100	<b>100</b>	100
Percent Passing 1" Sieve	90	<b>95</b>	100
Percent Passing 3/4" Sieve	79	<b>85</b>	91
Percent Passing 1/2" Sieve	59	<b>65</b>	71
Percent Passing 3/8" Sieve	54	<b>60</b>	66
Percent Passing No. 4 Sieve	48	<b>53</b>	58
Percent Passing No. 8 Sieve	40	<b>45</b>	50
Percent Passing No. 16 Sieve	31	<b>36</b>	41
Percent Passing No. 30 Sieve	22	<b>26</b>	30
Percent Passing No. 50 Sieve	11	<b>15</b>	19
Percent Passing No. 100 Sieve	5	<b>9</b>	13
Percent Passing No. 200 Sieve (Including 1% Lime)	3.8	<b>5.8</b>	7.8
Asphaltic Cement Content (%)	4.1	<b>4.4</b>	4.7
Maximum Unit Weight (pcf)		<b>158.2</b>	
Aggregate Bulk Specific Gravity		<b>2.699</b>	
Maximum Specific Gravity, AASHTO T 209		<b>2.536</b>	
Total Air Voids In Mix	<b>3.0</b>	<b>3.8</b>	<b>5.0</b>
Voids In Mineral Aggregate (VMA)	12.4	<b>13.6</b>	14.8
Hveem Stability	28	<b>41</b>	OK
Voids Filled With Asphalt (%)	65	<b>72</b>	78
Lottman Test (AASHTO T 283)	OK	<b>89</b>	
Dry Tensile Strength (psi)	OK	<b>90</b>	
Fine Aggregate Angularity	OK	<b>47</b>	
Two Fractured Faces	80	<b>100</b>	
L. A. Abrasion	OK	<b>30</b>	
Flat And Elongated (Ratio 5:1)%, AASHTO M 283	OK	<b>1</b>	
Adherent Coating (Dry Sieving) ASTM D 5711	OK	<b>0.2</b>	
Additives	OK	<b>64</b>	
Sodium Sulfate Soundness	OK	<b>3</b>	
Asphalt Cement Type	<b>PG58-28 Required</b>	<b>PG 58-28</b>	<b>Suncor</b>
Additives	<b>Lime</b>	<b>1%</b>	<b>Pete Lien</b>



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**MATERIAL PRE-QUALIFICATION FOR  
TYPE SG75 W/RAP  
APPROVED** For use until June 1, 2019

<b>Company Name:</b>	<b>Brannan Sand &amp; Gravel Co.</b>
<b>Contact Person:</b>	<b>Doug Wingo (dwingo@brannan1.com)</b>
<b>Mailing Address:</b>	<b>2500 East Brannan Way Denver, Colorado 80229</b>
<b>Telephone No.:</b>	<b>303-853-5346</b>
<b>PLANT NAME:</b>	<b>I-76 PLANT ONLY</b>
<b>PLANT LOCATION:</b>	<b>7291 Colorado Blvd.</b>

**JOB MIX SPECIFICATION**

<b>Product Identification Code: (AS FOUND ON DELIVERY TICKET)</b>	<b>LOWER LIMIT</b>	<b>40088-18</b>	<b>UPPER LIMIT</b>
Percentage of RAP	OK	<b>30</b>	30% Max
Percent Passing 1 1/2" Sieve	100	<b>100</b>	100
Percent Passing 1" Sieve	90	<b>95</b>	100
Percent Passing 3/4" Sieve	79	<b>85</b>	91
Percent Passing 1/2" Sieve	59	<b>65</b>	71
Percent Passing 3/8" Sieve	54	<b>60</b>	66
Percent Passing No. 4 Sieve	48	<b>53</b>	58
Percent Passing No. 8 Sieve	40	<b>45</b>	50
Percent Passing No. 16 Sieve	31	<b>36</b>	41
Percent Passing No. 30 Sieve	21	<b>25</b>	29
Percent Passing No. 50 Sieve	11	<b>15</b>	19
Percent Passing No. 100 Sieve	5	<b>9</b>	13
Percent Passing No. 200 Sieve (Including 1% Lime)	3.8	<b>5.8</b>	7.8
Asphaltic Cement Content (%)	4.1	<b>4.4</b>	4.7
Maximum Unit Weight (pcf)		<b>157.9</b>	
Aggregate Bulk Specific Gravity		<b>2.690</b>	
Maximum Specific Gravity, AASHTO T 209		<b>2.530</b>	
Total Air Voids In Mix	<b>3.0</b>	<b>3.8</b>	<b>5.0</b>
Voids In Mineral Aggregate (VMA)	12.3	<b>13.5</b>	14.7
Hveem Stability	28	<b>40</b>	OK
Voids Filled With Asphalt (%)	65	<b>72</b>	78
Lottman Test (AASHTO T 283)	OK	<b>83</b>	
Dry Tensile Strength (psi)	OK	<b>90</b>	
Fine Aggregate Angularity	OK	<b>47</b>	
Two Fractured Faces	80	<b>100</b>	
L. A. Abrasion	OK	<b>30</b>	
Flat And Elongated (Ratio 5:1)%, AASHTO M 283	OK	<b>1</b>	
Adherent Coating (Dry Sieving) ASTM D 5711	OK	<b>0.2</b>	
Additives	OK	<b>64</b>	
Sodium Sulfate Soundness	OK	<b>3</b>	
Asphalt Cement Type	<b>PG58-28 Required</b>	<b>PG 58-28</b>	<b>Suncor</b>
Additives	<b>Lime</b>	<b>1%</b>	<b>Pete Lien</b>



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**MATERIAL PRE-QUALIFICATION FOR  
TYPE S75 w/23.5%RAP & 1.5%RAS  
APPROVED** For use until June 1, 2019

Company Name:	<b>Brannan Sand &amp; Gravel Co.</b>
Contact Person:	<b>Doug Wingo (dwingo@brannan1.com)</b>
Mailing Address:	<b>2500 East Brannan Way Denver, Colorado 80229</b>
Telephone No.:	<b>303-853-5346</b>
PLANT NAME:	<b>I-76 PLANT ONLY</b>
PLANT LOCATION:	<b>7291 Colorado Blvd.</b>

**JOB MIX SPECIFICATION**

Product Identification Code: (AS FOUND ON DELIVERY TICKET)	LOWER LIMIT	40120-18	UPPER LIMIT
Percentage of RAP	OK	25	25% Max
Percent Passing 1" Sieve	100	100	100
Percent Passing 3/4" Sieve	90	96	100
Percent Passing 1/2" Sieve	71	77	83
Percent Passing 3/8" Sieve	66	72	78
Percent Passing No. 4 Sieve	57	62	67
Percent Passing No. 8 Sieve	44	49	55
Percent Passing No. 16 Sieve	32	37	42
Percent Passing No. 30 Sieve	22	26	30
Percent Passing No. 50 Sieve	12	16	20
Percent Passing No. 100 Sieve	6	10	14
Percent Passing No. 200 Sieve (Including 1% Lime)	4.1	6.1	8.1
Asphaltic Cement Content (%)	4.6	4.9	5.2
Maximum Unit Weight (pcf)		155.7	
Aggregate Bulk Specific Gravity		2.656	
Maximum Specific Gravity, AASHTO T 209		2.495	
Total Air Voids In Mix	3.0	3.8	5.0
Voids In Mineral Aggregate (VMA)	12.9	14.1	16.4
Hveem Stability	28	42	OK
Voids Filled With Asphalt (%)	65	73	78
Lottman Test (AASHTO T 283)	OK	89	
Dry Tensile Strength (psi)	OK	100	
Fine Aggregate Angularity	OK	46	
Two Fractured Faces	80	94	
L. A. Abrasion	OK	30	
Flat And Elongated (Ratio 5:1)%, AASHTO M 283	OK	1	
Adherent Coating (Dry Sieving) ASTM D 5711	OK	0.2	
Additives	OK	73	
Sodium Sulfate Soundness	OK	3	
Asphalt Cement Type	<b>PG58-28 Required</b>	<b>PG 58-28</b>	<b>Suncor</b>
Additives	Lime	1%	Pete Lien