

## Construction Calculations

Phase: Demolition

| Equipment                            | Quantity | Reference (dBA) 50 ft<br>Lmax | Usage<br>Factor <sup>1</sup> | Distance to<br>Receptor (ft) | Ground Effects | Noise Level (dBA) |           |
|--------------------------------------|----------|-------------------------------|------------------------------|------------------------------|----------------|-------------------|-----------|
|                                      |          |                               |                              |                              |                | Lmax              | Leq       |
| Front End Loader                     | 2        | 80                            | 40                           | 50                           | 0.5            | 80                | 79        |
| Excavator                            | 4        | 85                            | 40                           | 50                           | 0.5            | 85                | 87        |
| Crane                                | 1        | 85                            | 16                           | 50                           | 0.5            | 85                | 77        |
| Tractor                              | 4        | 84                            | 40                           | 50                           | 0.5            | 84                | 86        |
| <b>Combined at 50 feet</b>           |          |                               |                              |                              |                | <b>90</b>         | <b>90</b> |
| <b>Combined at Receptor 410 feet</b> |          |                               |                              |                              |                | <b>72</b>         | <b>72</b> |

Phase: Site Preparation

| Equipment                            | Quantity | Reference (dBA) 50 ft<br>Lmax | Usage<br>Factor <sup>1</sup> | Distance to<br>Receptor (ft) | Ground Effects | Noise Level (dBA) |           |
|--------------------------------------|----------|-------------------------------|------------------------------|------------------------------|----------------|-------------------|-----------|
|                                      |          |                               |                              |                              |                | Lmax              | Leq       |
| Dozer                                | 3        | 85                            | 40                           | 50                           | 0.5            | 85                | 85        |
| Tractor                              | 4        | 84                            | 40                           | 50                           | 0.5            | 84                | 86        |
| <b>Combined at 50 feet</b>           |          |                               |                              |                              |                | <b>88</b>         | <b>89</b> |
| <b>Combined at Receptor 410 feet</b> |          |                               |                              |                              |                | <b>69</b>         | <b>71</b> |

Phase: Grading

| Equipment                            | Quantity | Reference (dBA) 50 ft<br>Lmax | Usage<br>Factor <sup>1</sup> | Distance to<br>Receptor (ft) | Ground Effects | Noise Level (dBA) |           |
|--------------------------------------|----------|-------------------------------|------------------------------|------------------------------|----------------|-------------------|-----------|
|                                      |          |                               |                              |                              |                | Lmax              | Leq       |
| Grader                               | 1        | 85                            | 40                           | 50                           | 0.5            | 85                | 81        |
| Excavator                            | 2        | 85                            | 40                           | 50                           | 0.5            | 85                | 84        |
| Tractor                              | 2        | 84                            | 40                           | 50                           | 0.5            | 84                | 83        |
| Scraper                              | 2        | 85                            | 40                           | 50                           | 0.5            | 85                | 84        |
| Dozer                                | 1        | 85                            | 40                           | 50                           | 0.5            | 85                | 81        |
| <b>Combined at 50 feet</b>           |          |                               |                              |                              |                | <b>92</b>         | <b>90</b> |
| <b>Combined at Receptor 165 feet</b> |          |                               |                              |                              |                | <b>81</b>         | <b>79</b> |
| <b>Combined at Receptor 410 feet</b> |          |                               |                              |                              |                | <b>74</b>         | <b>72</b> |

Phase: Building Construction

| Equipment                            | Quantity | Reference (dBA) 50 ft<br>Lmax | Usage<br>Factor <sup>1</sup> | Distance to<br>Receptor (ft) | Ground Effects | Noise Level (dBA) |           |
|--------------------------------------|----------|-------------------------------|------------------------------|------------------------------|----------------|-------------------|-----------|
|                                      |          |                               |                              |                              |                | Lmax              | Leq       |
| Man Lift                             | 3        | 85                            | 20                           | 50                           | 0.5            | 85                | 83        |
| Crane                                | 1        | 85                            | 16                           | 50                           | 0.5            | 85                | 77        |
| Tractor                              | 3        | 84                            | 40                           | 50                           | 0.5            | 84                | 85        |
| Generator                            | 1        | 82                            | 50                           | 50                           | 0.5            | 82                | 79        |
| Welder / Torch                       | 1        | 73                            | 40                           | 50                           | 0.5            | 73                | 69        |
| <b>Combined at 50 feet</b>           |          |                               |                              |                              |                | <b>90</b>         | <b>88</b> |
| <b>Combined at Receptor 410 feet</b> |          |                               |                              |                              |                | <b>72</b>         | <b>70</b> |

Phase: Paving

| Equipment                            | Quantity | Reference (dBA) 50 ft<br>Lmax | Usage<br>Factor <sup>1</sup> | Distance to<br>Receptor (ft) | Ground Effects | Noise Level (dBA) |           |
|--------------------------------------|----------|-------------------------------|------------------------------|------------------------------|----------------|-------------------|-----------|
|                                      |          |                               |                              |                              |                | Lmax              | Leq       |
| Paver                                | 2        | 85                            | 50                           | 50                           | 0.5            | 85                | 85        |
| Roller                               | 2        | 85                            | 20                           | 50                           | 0.5            | 85                | 81        |
| All Other Equipment > 5 HP           | 2        | 85                            | 50                           | 50                           | 0.5            | 85                | 85        |
| <b>Combined at 50 feet</b>           |          |                               |                              |                              |                | <b>90</b>         | <b>89</b> |
| <b>Combined at Receptor 410 feet</b> |          |                               |                              |                              |                | <b>71</b>         | <b>71</b> |

Phase: Architectural Coating

| Equipment                            | Quantity | Reference (dBA) 50 ft<br>Lmax | Usage<br>Factor <sup>1</sup> | Distance to<br>Receptor (ft) | Ground Effects | Noise Level (dBA) |           |
|--------------------------------------|----------|-------------------------------|------------------------------|------------------------------|----------------|-------------------|-----------|
|                                      |          |                               |                              |                              |                | Lmax              | Leq       |
| Compressor (air)                     | 1        | 80                            | 40                           | 50                           | 0.5            | 80                | 76        |
| <b>Combined at 50 feet</b>           |          |                               |                              |                              |                | <b>80</b>         | <b>76</b> |
| <b>Combined at Receptor 410 feet</b> |          |                               |                              |                              |                | <b>62</b>         | <b>58</b> |

Sources: RCNM

<sup>1</sup> - Percentage of time that a piece of equipment is operating at full power.  
dBA – A-weighted Decibels  
Lmax- Maximum Level  
Leq- Equivalent Level