

# **APPENDIX E**

## **NOISE RELATED**

### **SPECIFICATIONS AND**

### **SPECIAL PROVISIONS**

## **NOISE RELATED SPECIFICATIONS AND SPECIAL PROVISIONS**

NCDOT develops designs for and constructs noise walls that meet the requirements contained in its *Standard Specifications for Roads and Bridges*:

- Section 12-15 of the NCDOT Structures Design Manual
- Relative NCDOT Structures Standard Provisions
- NCDOT Project Special Provision PSP031\_Sound Barrier Wall
- NCDOT Standard Drawings SBW1 through SBW5
- Other project-specific special provisions

NCDOT also develops designs for and constructs noise walls on bridges that must meet the requirements contained in the *AASHTO LRFD Bridge Design Specifications*.

During the performance and documentation of traffic noise analyses, NCDOT may include reference to these specifications and special provisions at various times during project development. The earliest reference is likely to be contained in the Traffic Noise Report that precedes the final design and construction of a project utilizing a Design Build process. The federal regulation 23 CFR 772 requires that “Final design of design-build noise abatement measures shall be based on the preliminary noise abatement design developed in the technical noise analysis”. The request for proposal provided to potential design-build teams should contain a detailed special provision that assures that the design build team’s recommended design adheres to any required performance specifications based on the Design Noise Report provided by NCDOT.

## NOISE-RELATED INFORMATION REQUIRED FOR A PS&E SUBMITTAL

Should the project be constructed using standard NCDOT processes, following the completion of the Design Noise Report, NCDOT or its design consultant will prepare a Plans, Specifications, and Estimate (PS&E) submission. This PS&E submission will include all elements of the highway project, including the noise walls recommended in the approved Design Noise Report. Noise wall designs included in the PS&E submittal will meet all NCDOT structural design and engineering design requirements. The approved noise wall(s) envelope drawing(s) will be the basis for the engineering and structural design of the noise wall(s) in the PS&E submission. It is assumed that the NCDOT will determine the type, color, and texture of all components of the noise wall system prior to preparation of the PS&E submission. This information should be available to NCDOT following its public involvement process, the results (if available) of which are recommended to be incorporated into the Design Noise Report.

While the engineering and structural requirements associated with the design of any noise wall system are established by NCDOT design criteria, it is essential that the PS&E submission also be based on additional requirements associated with the acoustical and aesthetic elements of a noise wall system, as well as other factors. The term “noise wall system” refers to the combination of all components of the recommended noise wall design, including (but not limited to) noise wall panels; noise wall posts; noise wall caps; noise wall foundations; noise wall textures, colors, and coatings; and other wall-related features not incorporated elsewhere in the PS&E submission. Note that the design of any noise berm is assumed to be incorporated into the general grading plan for the overall project.

It is recommended that, to the extent available, the following information be included in an appendix to the Design Noise Report and passed on to those preparing the PS&E submission:

- Wall System Information

Location: *Ground-mounted, on berm or bridge-mounted*

Type: *Post and panel, cast-in-place, free-standing, proprietary (specify), other (specify)*

Height Restrictions for Ground-Mounted Wall: *Generally 25 feet above finished grade unless otherwise directed by NCDOT*

Restrictions for Ground-Mounted Noise Wall behind Retaining Wall: *Noise walls may not be mounted on or connected to retaining walls. Noise walls above and behind existing retaining walls are discouraged because existing walls are not designed for lateral loads from noise walls. For noise walls above and behind proposed retaining walls, shallow foundations are preferred to minimize conflicts with retaining wall reinforcement, nails, anchors or possibly even wall thickness. A minimum 6-foot horizontal clearance shall be provided between the exposed face of the retaining wall and the closest face of the noise wall. However, as little as 1-foot may be used depending on retaining wall type provided the retaining wall can be designed for it.*

Height Restrictions for Bridge-Mounted Wall: *To be determined on a case-by-case basis (applies to new and existing bridges).*

Noise Wall Foundations: *Maximum deflection at the top of the shaft (post) for standard and*

*non-standard foundations shall be determined based on the applicable sections of the AASHTO and / or NCDOT Design Manual.*

*Other Restrictions: Indicate locations where wall system type may be limited due to constructability or safety issues (such as requirement to slide in panels rather than lifting panels where overhead utility lines exist, need to use shallow foundations where underground utilities exist)*

- **Post Information**

*Material: Concrete, steel*

*Reflective Properties: Reflective, absorptive (specify minimum NRC)*

*Type: Separate, integral with panel, cast-in-place, other*

*Highway Side Color: Specify Federal Standard 595 color number*

*Community Side Color: Specify Federal Standard 595 color number*

*Highway Side Texture: Plain, raked finish, exposed aggregate, form liner (specify manufacturer and style number), other*

*Community Side Texture: Plain, raked finish, exposed aggregate, form liner (specify manufacturer and style number), other*

*Highway Side Coating: Uncoated, penetrating stain (specify color), anti-graffiti coating (provide specification and color)*

*Community Side Coating: Uncoated, penetrating stain (specify color), anti-graffiti coating (provide specification and color)*

*Color, Texture, and Coating of Top and Exposed Side of End Posts: Same as highway side, same as community side, other (specify)*

- **Panel Information**

*Material: Concrete, metal, composite, other*

*Sound Transmission Properties: Specify minimum noise reduction coefficient (NRC) value of \_\_\_ dB (should be at least 10 dB greater than the maximum noise reduction provided by the wall for any receptor)*

*Reflective Properties: Reflective, absorptive (specify minimum NRC)*

*Type: Full height, stacked, cast-in-place*

*Highway Side Color: Specify Federal Standard 595 color number*

*Community Side Color: Specify Federal Standard 595 color number*

*Highway Side Texture: Plain, raked finish, exposed aggregate, form liner (specify manufacturer and style number), other*

*Community Side Texture: Plain, raked finish, exposed aggregate, form liner (specify manufacturer and style number), other*

Highway Side Coating: *Uncoated, penetrating stain (specify color), anti-graffiti coating (provide specification and color)*

Community Side Coating: *Uncoated, penetrating stain (specify color), anti-graffiti coating (provide specification and color)*

Color, Texture, and Coating of Top: *Same as highway side, same as community side, other (specify)*

- Cap Information

Material: *Concrete, metal, composite, other*

Type: *Separate, integral with panel, cast-in-place*

Highway Side Color: *Specify Federal Standard 595 color number*

Community Side Color: *Specify Federal Standard 595 color number*

Highway Side Texture: *Plain, raked finish, exposed aggregate, form liner (specify manufacturer and style number), other*

Community Side Texture: *Plain, raked finish, exposed aggregate, form liner (specify manufacturer and style number), other*

Highway Side Coating: *Uncoated, penetrating stain (specify color), anti-graffiti coating (provide specification and color)*

Community Side Coating: *Uncoated, penetrating stain (specify color), anti-graffiti coating (provide specification and color)*

Texture and Color of Top and Exposed Ends: *Same as highway side, same as community side, other (specify)*

- Other Features

Emergency Service Equipment Access: *Access doors (specify locations, type, size, and color); wall overlaps (specify locations, minimum overlap distance, and minimum separation)*

Maintenance Openings: *Doors (specify locations, type, and color); wall overlaps (specify locations, minimum overlap distance, and minimum separation)*

Through-Wall Fire Fighting Access: *Specify locations, size, and type (sealable openings in wall, through-wall hose couplings)*

Drainage-Related Features Not Included in Overall Project Plans: *Drainage openings in wall panels (specify type, location, and size); resettable kick-out wall panels (specify locations, type, and size)*

Upon completion of the PS&E submission, NCDOT or its design consultant will compile all of the above information (as applicable) and incorporate it in the material made available to those who will be bidding on the construction of the project.

NCDOT will indicate if an alternate type noise wall meeting all acoustical and aesthetic

requirements specified above may be designed.

Designers of the noise wall system(s) will consider the appropriate guidance provided in the NCDOT Traffic Noise Analysis and Abatement Manual plus the following direction and guidance regarding the geometrics of the noise walls system(s):

1. Design a noise wall system(s) with a top of wall profile as smooth and consistent as possible, using the following guidance:
  - a) When using stepped rectangular noise wall panels, step panels in a uniform manner. For rectangular noise wall panels, use uniform steps of 1 foot or less unless deemed impractical due to topography.
  - b) Do not design noise walls less than five (5) feet in height above the finished ground elevation
2. As part of the PS&E submission for each noise wall system design, develop a design that assures an aesthetic design which is compatible with the each wall system's structural and engineering aspects and include a specification or special provision that requires the following:
  - a) Any stacking of panels shall insure that the joint(s) between stacked panels is consistent with the specific aesthetic design pattern of the noise wall. This consistency applies not just to the panels between two posts but between all panel sections within the noise wall system. Do not intersperse full height and stacked panels on a continuous section of a noise wall system. If such consistency cannot be assured, use full height panels.
  - b) No form liner joint seams shall be visible in the constructed noise wall system unless they are an integral part of the noise wall system's aesthetic design. This applies to all components of the noise wall system (panels, posts, caps, etc.) and applies to both full height and stacked panel designs.
  - c) Keep post spacing consistent. Vary only if dictated by engineering design requirements such as drainage features, utilities, etc.
  - d) Posts shall be compatible with the panel design in terms of texture, color, acoustical profile, and scale. Noise wall panels and posts are integral parts of the aesthetic design of the noise wall system. Indicate if a particular post type is required.
  - e) Incidental items such as access doors, fire hose connections, etc. shall be incorporated in a manner consistent as possible with the aesthetic aspects of the noise wall systems
  - f) Caulking and coating materials shall be compatible with the aesthetic aspects and acoustical requirements of the noise wall system
  - g) Provide light-tight joints between panels and posts and between panels and caps to preclude acoustical leakage

- h) On stacked panel systems, provide light-tight horizontal joints that preclude visible warping and acoustical leakage

The anticipated appearance of the completed wall system, in place, must meet the criteria for acceptability of the proposed design.

NCDOT or its design consultant will develop an estimate of the cost to construct each noise wall system. The cost items shall include:

1. Wall material production costs, including shipment to project site
  - a) Posts (cost per linear foot above finished grade)
  - b) Panels (cost per square foot above finished grade). Costs for architectural treatments (textures and colors) shall be provided as a separate pay item.
  - c) Caps (cost per linear foot)
2. Wall erection costs
  - a) Foundation costs, including excavation, drilling, concrete, rebar, etc.
  - b) Costs to attach wall to structure (in lieu of foundation costs)
  - c) Placement of posts
  - d) Placement of panels
  - e) Placement of caps
  - f) Total cost per square foot (above ground) of cast-in-place noise wall, including all materials and erection costs
3. Costs of other features listed above
4. Additional substantial costs associated with the construction of the noise wall system
  - a) Additional right-of-way
  - b) Major utility relocation costs
  - c) Major drainage facility costs
  - d) Additional added bridge construction costs to accommodate noise wall, assuming that bridge and wall are integrally designed

Depending upon the manner in which wall items are tabulated and/or estimated, some items above may be combined. For instance, a wall cost may be better estimated using available data that is based on the total in place cost of a wall. The above information will be utilized to develop an overall cost per square foot for the constructed noise wall.

## **CONTRACT NOISE SPECIFICATION RELATED TO CONSTRUCTING THE HIGHWAY PROJECT**

In addition to controlling highway construction noise by use of techniques similar to those used to control noise from the operation of a facility (alternative design options, abatement at the source, abatement along the path, and abatement at the receptor), another effective technique is the inclusion of operational conditions within highway construction contracts via noise-related specifications and special provisions.

The level of detail of any construction noise abatement specification or special provision is dependent on the complexity of the project, the amount and type of work required, and the sensitivity of the area beyond the project limits. While 23 CFR 772 requires the consideration of construction noise, for most projects a relatively simple narrative addressing the general techniques that NCDOT will consider to control construction noise is sufficient. Such narratives usually include a generalized discussion of time of day restrictions on construction activities, use of the quietest equipment possible, and proper maintenance of equipment. An example of such a narrative is included in the NCDOT Traffic Noise Analysis and Abatement Manual. On occasion, a more detailed analysis of construction noise may be necessary, possibly requiring the application of the FHWA Roadway Construction Noise Model (RCNM), conducting construction noise measurements, and/or inclusion of a more detailed and specific construction noise specification in the construction contract. The framework of such a more detailed specification is illustrated on the following page and includes items that could be considered for inclusion in a project's contract document. The levels, sites, and conditions presented in the following specification are meant only to present an example of what might be included in an NCDOT specification. Different noise levels, time restrictions, measurement and analysis sites, etc. may be inserted in the specification based on project specifics and construction noise analyses performed on a project-by-project basis.



**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
CONSTRUCTION PROJECT  
EXAMPLE NOISE SPECIFICATION**

**CONSTRUCTION NOISE REQUIREMENTS**

**GENERAL**

Comply with all Federal, NCDOT, and local noise control regulations that apply to contract work.

**NOISE LEVEL CRITERIA**

Conduct all operations in compliance with the following noise criteria:

<b>Time Period</b>	<b>Maximum (Peak) Allowable Exterior Noise Level Generated by Construction Activities</b>
7:30 AM to 7:30 PM	80 dB(A)
7:30 PM to 10:00 PM	60 dB(A)

The noise level criteria apply to construction activities conducted on Mondays through Saturdays. Perform no construction on Sundays or Legal Holidays or on any day between the hours of 10:00 PM and 7:30 AM without written authorization from NCDOT.

The noise level criteria apply to noise levels measured at the nearest building facade adjacent to the construction noise in areas of residential and institutional land use. On the lands of *North Carolina Park* on the east side of the project, the noise level criteria apply to noise levels measured at the following locations:

<b>From Station</b>	<b>To Station</b>	<b>Measurement Location</b>
100+00	200+00	Pitcher's mound at ball field (Station 100+50)
300+00	350+00	Center of picnic grove (Station 300+30)
450+00	600+00	Point on trail closest to highway (Station 500+00)

*Add other specific land uses and locations as necessary.*

Construction operations exempt from these noise level criteria are:

1. Construction activities associated with noise wall erection, including related clearing and grubbing, earthwork, erection of structures supporting the noise walls. and construction of erosion and sedimentation control devices,
2. Activities associated with the construction of cul-de-sacs or other community roadways.
3. Blasting and pile driving operations. These operations plus rock drilling are permitted only between the hours of 9:00 AM and 5:00 PM on Mondays through Fridays.
4. Noise generated by devices required by other regulations, such as back-up alarms and other safety or warning devices.
5. Operations of an emergency nature.
6. Construction associated with the roll-in railroad structure at Station 800+00. For this construction the following maximum noise level criteria apply:

<b>Time Period</b>	<b>Maximum (peak) Allowable Exterior Noise Level Generated by Construction Equipment in dB(A)</b>
7:30 AM to 7:30 PM, Monday through Saturday	80 dB(A)
Holidays and All Other Times	Conduct no construction activities on Sundays or legal holidays or on any day between the hours of 7:30 PM and 7:30 AM without prior written notification and written authorization from the NCDOT

These noise levels apply to the measurement points referred to in this specification.

*A noise specification may also include criteria that address both absolute and relative noise levels, as illustrated below:*

**Example of Absolute and Relative Construction Noise Criteria Limits**

Lot-Line Construction Noise Criteria Limits A-weighted in dB, Root Mean Square (RMS) slow						
Noise Receptor Locations and Land-Uses	Daytime (7 AM - 6 PM)		Evening (6 PM - 10 PM)		Nighttime (10 PM - 7 AM)	
	L <sub>10</sub>	L <sub>max</sub>	L <sub>10</sub>	L <sub>max</sub>	L <sub>10</sub>	L <sub>max</sub>
Noise Sensitive Locations: Residences, Institutions, Hotels, etc.	75 or Baseline + 5 (whichever is louder)	90 (impact)	Baseline + 5	85	Baseline +5 (if Baseline <70) Baseline +3 (if Baseline >70)	80
Commercial Areas: Businesses, Offices, Stores, etc.	80 or Baseline + 5 (whichever is louder)	None	None	None	None	None
Industrial Areas: Factories, Plants, etc.	85 or Baseline + 5 (whichever is louder)	None	None	None	None	None
L <sub>10</sub> noise compliance readings are averaged over 20 minute intervals. L <sub>max</sub> noise compliance readings can occur instantaneously. Baseline noise conditions must be measured and established prior to construction work, commencing in accordance with the noise specification, which requires baseline noise readings over three 24-hour periods at each receptor lot-line location.						
Source: Table 7.2 from FHWA Highway Construction Noise Handbook (Adapted from Central Artery/Tunnel Noise Specification and Table 2 of FHWA RCNM Users Guide)						

## EQUIPMENT REGULATIONS

Maintain construction equipment in good operating condition in order to minimize noise. Equip each internal combustion engine used for any purpose with a properly operating muffler that meets or exceeds the equipment manufacturer's recommendation. Operate no internal combustion engine without such a muffler.

Monitoring of construction noise may be performed by NCDOT or its consultant at any time. If such monitoring indicates any exceedances of the noise level criteria, the construction equipment will be measured for compliance with the following maximum (peak) equipment noise levels:

### Example of Possible Construction Equipment Noise Emission Criteria Limits

Equipment Description	$L_{max}$ Noise Limit at 50 feet, dB, slow response
All other equipment > 5 HP	85
Auger Drill Rig	85
Backhoe	80
Bar Bender	80
Blasting	94
Boring Jack Power Unit	80
Chain Saw	85
Clam Shovel	93
Compactor (ground)	80
Compressor (air)	80
Concrete Batch Plant	83
Concrete Mixer Truck	85
Concrete Pump	82
Concrete Saw	90
Crane (mobile or stationary)	85
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84

Front End Loader	80
Generator (25 KVA or less)	70
Generator (more than 25 KVA)	82
Gradall	85
Grader	85
Horizontal Boring Hydraulic Jack	80
Hydra Break Ram	90
Impact Pile Driver (diesel or drop)	95
In situ Soil Sampling Rig	84
Jackhammer	85
Mounted Impact Hammer (hoe ram)	90
Paver	85
Pickup Truck	55
Chain Saw	85
Pneumatic Tools	85
Pumps	77
Rock Drill	85
Scraper	85
Slurry Plant	77
Slurry Trenching Machine	82
Soil Mix Drill Rig	80
Tractor	84
Vacuum Street Sweeper	80
Vibratory Concrete Mixer	80
Vibratory Pile Driver	95
Welder	73

Source: Table 7.3 from FHWA Highway Construction Noise Handbook (Adapted from Central Artery/Tunnel Noise Specification)

Equipment noise levels will be monitored under full load conditions at a distance of 50 feet in general conformance with the procedures, equipment operations, and measurement sections of the Society of Automotive Engineers, Inc. SAE standard J952B or latest revision. Any equipment not conforming to the equipment regulations is to be removed from the area or modified to assure conformance. The equipment regulations apply to all equipment and operations on the project, even if involved in activities exempt from the noise level criteria. The exempted activities' equipment may be monitored at any time for compliance with the equipment regulations.

## NOISE ABATEMENT MEASURES

Where necessary, implement measures to insure that the noise level criteria and/or equipment regulations are met.

Construct two portable noise walls, each being 25 feet long by 8 feet high. Such walls may be constructed in sections, but when combined to form the 25-foot length, are to be light tight and be of a minimum thickness of 3/4-inch nominal. Construct these walls prior to the initiation of the construction operations to be immediately available for placement at any time as directed by NCDOT. Be responsible for the design and anchorage of the walls to insure safety of personnel in the area of the walls.

*As appropriate, specifications can be developed to incorporate additional abatement measures into a construction contract. These specifications could relate to topics such as:*

1. **The use of quieter equipment:** An effective noise abatement technique involves use of the quietest practical type of equipment. By specifying and/or using less noisy equipment, the impacts produced can be greatly reduced or in some cases, eliminated. Source control requirements may have the added benefits of promoting technological advances in the development of quieter equipment. To avoid confusion and misinterpretations, such types should be specified in the contract specifications and special provisions.
2. **Installation of additional noise dampening or muffler devices:** Most construction noise originates from internal combustion engines. A large part of the noise emitted is due to the air intake and exhaust cycle. Specifying the use of adequate muffler systems can control much of this engine noise.
3. **Alternative Construction Methods:** Alternatives to standard construction techniques may also be available and determined to be more practical and/or cost-effective in dealing with construction noise impacts and perceptions. Examples associated with several operations are discussed below.
4. **Pile Driving:** Pile driving may produce noise levels in excess of acceptable limits, even when feasible noise reduction methods are used. Various dampening and shielding methods discussed in the FHWA Highway Construction Noise Handbook can attain some reduction.

However, such methods rarely reduce the noise level to an acceptable level for the sensitive receptors close to the site. As an alternative to driving piles, it is possible to use vibration or hydraulic insertion techniques. Drilled or augured holes for cast-in-place piles are another alternative that may produce noise levels significantly lower than the traditional driving method.

5. **Compressors:** While most compressors are powered by diesel or gasoline engines, many are contained or have baffles to help abate noise levels. Electric compressors are significantly quieter than diesel or gasoline engine powered compressors.
6. **Early construction of permanent noise walls:** Ultimately, noise walls that are to be constructed as part of the project for traffic noise abatement can possibly be installed during the initial stages of construction.
7. **Storage Areas:** During the planning and design stages of a project, storage areas may be able to be designated in locations removed from sensitive receptors. Where this is not possible, the storage of waste materials, earth, and other supplies may be able to be positioned in a manner that will function as a noise wall.
8. **Existing Barriers:** As early as possible in the design development process, natural and artificial barriers such as ground elevation changes, existing buildings, noise walls, and other structures can be considered for use as a noise shield during certain operations.
9. **Sequence of Operations:** The sequencing and scheduling of construction operations is equally important in addressing and abating construction-related noise.
10. **Concurrent Operations:** It may be possible to schedule several noisy operations concurrently to take advantage of the fact the combined noise levels produced may not be significantly greater than the level produced if the operations were performed separately.
11. **Noise Related Incentives/Disincentives:** A technique worthy of consideration involves the inclusion of incentives and/or disincentives in the contract specifications to encourage the contractors to participate in the abatement program and to make them more accountable for impacts.
12. **Training Programs for Contractors:** It may be appropriate to require contractors to participate in training programs related to project-specific noise requirements, specifications, and/or equipment operations. Such training may be provided by agency or project management personnel, outside consultants, and/or equipment manufacturers or suppliers. For example, project personnel (or consultants assigned to the project) may train the contractor on the measurement of construction-related noise levels that may be required to meet the contract specifications. The contractor may also receive on-site training related to the noise-specific issues and noise-critical areas and sites adjacent to the project. Equipment manufacturers and/or suppliers may be available to provide training to the contractor concerning the proper use of the noise abatement features of specific pieces of their construction equipment. Any training requirements that are envisioned to be required would typically be described or referenced within the contract's specifications and special provisions.
13. **Shields:** Employing shields that are physically attached to the particular piece of equipment is quite effective, particularly for stationary equipment and where considerable noise reduction is required.

14. **Dampeners:** Equipment modifications such as dampening of metal surfaces, is quite effective in reducing noise due to vibration. Another possibility is the redesign of a particular piece of equipment to achieve quieter noise levels.
15. **Aprons:** Noise aprons generally take the form of noise absorptive mats hung from the equipment or on frames attached to the equipment. The aprons can be constructed of rubber, lead-filled fabric, or PVC layers with possibly noise absorptive material covering the side facing the machine. Noise aprons are useful when the shielding must be frequently removed or if only partial covering is possible.
16. **Enclosures:** Enclosures for stationary work may be constructed of wood or any other suitable material and typically surround the specific operation area and equipment. The walls could be lined with noise absorptive material to prevent an increase of noise levels within the structure. They should be designed for ease of erection and dismantling.
17. **Blasting Mats:** These mats are typically made with layers of used tires cabled together. They are commonly used as blankets for blasting operations to control and confine debris. These mats also provide a degree of noise attenuation from the blast. However, they do not mitigate vibration, which is usually more of a concern than noise.
18. **Relocation of Residents:** In certain instances, it may be appropriate, and possibly more cost-effective, to temporarily relocate a resident or residents from the construction area. By temporarily removing the noise receptor, noisy construction activities may be able to be undertaken unimpeded and completed in far less time than would be required under a noise-restrictive procedure. See FHWA Highway Noise Construction Handbook for several examples.
19. **Other techniques appropriate on a project-by-project basis**

## **WORK SCHEDULING FOR SPECIAL EVENTS**

Schedule work so as not to interfere with graduation exercises at the North Carolina State University. Graduation date for 2015 will be during the third week in May. Specific dates will be provided a minimum of thirty days in advance. Operate no heavy equipment adjacent to the University property until after 2:00 PM on these graduation days. Also restrict activities adjacent to the University property on either October 17 or 24 in 2015. Subsequent dates in June and October for 2016, and 2017 will be provided at least thirty days in advance.

## **NOTIFICATION TO THE PUBLIC**

In order to assist NCDOT in its relations with the public, submit at the beginning of each month a schedule of proposed construction activities for the upcoming month. Include the location of activities, the type of activities, anticipated start dates of each activity, and the duration of each activity in the schedule.

## **VARIANCES**

Submit requests to modify or deviate from any part of this provision in writing. NCDOT will approve or reject in writing.



## **ACCESS TO CONSTRUCTION**

Access to construction is only allowed from the following State highways: *Include list, stations, and local roadway names.*

## **MEASUREMENT AND PAYMENT**

Full compensation for conforming to these construction noise requirements is considered as included in the bid price for the various contract items of work involved, and no additional compensation will be allowed. Be responsible for all costs arising from delay of operations due to noncompliance with these provisions.