

**I-69 SECTION 5 PROJECT**  
**PUBLIC-PRIVATE AGREEMENT**  
**TECHNICAL PROVISIONS**  
**ATTACHMENT 1-1**  
**PROJECT MANAGEMENT PLAN**

Project Management Plan contents and schedule for provision of the component parts.

Legend:

- A = Approved by IFA prior to Commencement of Design
- B = Approved by IFA prior to Commencement of Construction
- C = Approved by IFA 180 days prior to Substantial Completion

Part	Section	Contents
<b>1. Project Administration</b>		
	<b>Organization</b>	Organizational diagram
	<b>Personnel</b>	Names and contact details, titles, and job roles
	<b>Contractors</b>	Contracting Plan
	<b>Schedule</b>	Design Submittal portion of the Baseline Project Schedule in accordance with <u>Section 1</u>
		Balance of Baseline Project Schedule in accordance with <u>Section 1</u>
	<b>Quality Control</b>	Procedures to establish and encourage continuous improvement
	<b>Audit</b>	Procedures to facilitate review and audit by IFA
		Auditing and management review of Developer's own activities under the PMP
		Auditing and management review of Contractor's activities and management procedures
	<b>PMP Update</b>	Procedures for preparation of amendments and submission of amendments to any of the PMP
<b>Document Management</b>	The manner in which records will be maintained in compliance with the Technical Program Documents including any specific systems Developer will use	
	Document management procedures in compliance with <u>Section 1</u>	
<b>2. Quality Management Plan</b>		
	<b>Organization</b>	Developer's main contractual arrangements
		Organizational structure covering the activities to be performed in accordance with the Technical Program Documents
	<b>Personnel</b>	Resource plan for the Developer and its Contractors
		Arrangements for coordinating and managing staff interaction with IFA and its consultants

<b>Part</b>	<b>Section</b>	<b>Contents</b>
		including collocation of Key Personnel and description of approach to coordinating off-site personnel
		Names and contact details, titles, job roles and specific experience required for the Personnel and for other principal personnel during design
		Names and contact details, titles, job roles of principal personnel for Contractors and third party with which Developer will coordinate activities
<b>2A. Design Quality Management Plan</b>		
	<b>Organization</b>	Developer's main contractual arrangements
		Organizational structure covering the activities to be performed in accordance with Documents
	<b>Personnel</b>	Resource plan for the Developer and its Contractors
		Arrangements for coordinating and managing staff interaction with IFA and its contractors including collocation of Key Personnel and description of approach to coordinating off-site personnel
		Names and contact details, titles, job roles and specific experience required for the Personnel and for other principal personnel during design
		Names and contact details, titles, job roles of principal personnel for Contractors and third party with which Developer will coordinate activities
	<b>Offices and equipment</b>	Description of the necessary offices and office equipment to be provided by Developer during design
	<b>Contractors</b>	Overall control procedures for Contractors, including consultants and subconsultants
		Responsibility of Contractors and affiliates
		Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts
	<b>Interfaces</b>	Interfacing between the Developer, Contractors and independent certifiers during design including interfaces between the structural design auditor, the safety auditor, and an independent reviewer
		Coordination with Utility Owners
	<b>Environmental</b>	Control of the interface between environmental requirements (including landscaping) and the design of the I-69 Section 5 Project.

Part	Section	Contents
	<b>Procedures</b>	Procedures describing how the principal activities will be performed during the design to include geotechnical site investigation, surveys and mapping, environmental management, safety audit, structural audit, and checking
	<b>Quality Control/Quality Assurance</b>	Quality control and quality assurance procedures including a resource table for monitoring and auditing all design services, design review and certification, verification of plans
		Procedures for environmental compliance
		Procedures to establish Developer's hold points in design process where checking and review will take place
		Procedures to ensure accuracy, completion, and quality in submittals to IFA and Governmental Entities
		Procedures to establish and encourage continuous improvement
	<b>Audit</b>	Name of Developer's representative(s) with defined authority for establishing, maintaining, auditing and reporting on the PMP
		Name, title, roles and responsibilities of supporting quality management staff reporting to person with defined authority
	<b>Document Management</b>	The manner in which records will be maintained in compliance with the Technical Program including any specific systems Developer will use
		Document management procedures in compliance with <u>Section 3</u>
Identify environmental documentation and reporting requirements for the Environmental Compliance Plan		
<b>2B. Construction Quality Management Plan</b>		
	<b>Organization</b>	Developer's main contractual arrangements
		Organizational structure covering the activities to be performed in accordance with Documents
	<b>Personnel</b>	Resource plan for the Developer and its Contractors
		Arrangements for coordinating and managing staff interaction with IFA and its contractors including collocation of Key Personnel and description of approach to coordinating off-site personnel
Names and contact details, titles, job roles and specific experience required for the Personnel as related to construction		

Part	Section	Contents
		<p>Names and contact details, titles, job roles of principal personnel for Contractors and third party with which Developer will coordinate his activities</p> <p>Procedures for implementation of Environmental Compliance and Mitigation Training Program for all employees in accordance with <u>Section 7</u></p>
	<b>Offices and equipment</b>	Description of the necessary offices and office equipment to be provided by Developer during construction
	<b>Contractors</b>	<p>Overall control procedures for Contractors, including consultants and subconsultants</p> <p>Responsibility of Contractors and affiliates</p> <p>Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts</p> <p>Procedures for implementation of Environmental Compliance and Mitigation Training Program for employees of subcontractors in accordance with <u>Section 7</u></p>
	<b>Interfaces</b>	Interfacing between the Developer, Contractors and independent certifiers during construction, including any testing contractor
	<b>Procedures</b>	<p>List of Project specific construction procedures</p> <p>Construction detailed procedure for each major activity whether directly undertaken or subcontracted to include pavement, structures, drainage, communications</p> <p>Construction Transportation Management Plan</p>
	<b>Quality Control/Quality Assurance</b>	Construction Monitoring Plan
		<p>Construction Monitoring Program (Environmental)</p> <p>Procedures for environmental compliance</p> <p>Control, identification and traceability of materials, including any material or sample temporarily or otherwise removed from site for testing or other reasons.</p> <p>Examinations and audit of Construction Work, review of examination and audit, issuance of certificates</p> <p>Observation and reporting of all tests in compliance with <u>Section 4</u></p> <p>Procedures for tests and inspections for the purpose of the Contractor certifying that burying, each part of the Works is complete and conforms to the PPA Documents.</p>

Part	Section	Contents
		Quality control and quality acceptance procedures including a resource table for materials and auditing during construction any work and testing undertaken by Contractors and Suppliers both on and off Site
		Procedures to establish Developer's hold points in construction
		Procedures to ensure accuracy, completion, and quality in submittals to IFA and Governmental Entities
		Procedures to establish and encourage continuous improvement
	<b>Audit</b>	Inspection and test plans that identify the proforma and/or databases to be used for recording the inspection and test results and methodology for transmitting acceptance testing and inspection reports to IFA
		Name of Developer's representative with defined authority for establishing, maintaining, auditing and reporting on the PMP
		Name, title, roles and responsibilities of supporting quality management staff reporting to person with defined authority
	<b>Document Management</b>	The manner in which records will be maintained in compliance with the Technical Program including any specific systems Developer will use
		Document management procedures in compliance with <u>Section 4</u>
	<b>3. Environmental Management</b>	
	<b>Organization</b>	Developer's main contractual arrangements
		Organizational structure covering the activities to be performed in accordance with Documents
		Environmental Contact Tree
	<b>Personnel</b>	Resource plan for the Developer and its Contractors
		Arrangements for coordinating and managing staff interaction with IFA and its consultants including collocation of Key Personnel and description of approach to coordinating off-site personnel
		Names and contact details, titles, job roles and specific experience required for Key Personnel and for other environmental personnel
		Implement Environmental Compliance and Mitigation Training Program for all employees in accordance with <u>Section 7</u>

<b>Part</b>	<b>Section</b>	<b>Contents</b>
	<b>Contractors</b>	Overall control procedures for Contractors, including consultants and subconsultants
		Responsibility of Contractors and affiliates
	<b>Environmental</b>	Environmental Compliance and Mitigation Plan
		Sustainability Management Plan
		Spill Prevention Plan
		Hazardous Materials Management Plan
	<b>Quality Control and Quality Acceptance</b>	Procedures to ensure accuracy, completion, and quality in submittals to IFA and Governmental Entities
		Procedures to establish and encourage continuous improvement
		Procedures for environmental compliance
	<b>Audit</b>	Name, title, roles and responsibilities of supporting quality management staff reporting to a designated person with defined authority
	<b>Document Management</b>	The manner in which records will be maintained in compliance with the Technical Program Requirements, including any specific systems Developer will use
		Identify environmental documentation and reporting requirements
<b>4. Public Involvement Plan</b>		
	<b>Organization</b>	Developer's main contractual arrangements
		Organizational structure covering the activities to be performed in accordance with the Technical Program Documents
	<b>Personnel</b>	Resource plan for the Developer and its Contractors
		Arrangements for coordinating and managing staff interaction with IFA and its consultants, including collocation of Key Personnel and description of approach to coordinating off-site personnel
		Names and contact details, titles, job roles and specific experience required for Key Personnel and for other principal personnel
		Names and contact details, titles, job roles of principal personnel for Contractors and other third party with which Developer will coordinate his activities
	<b>Offices and equipment</b>	Description of the necessary offices and office equipment to be provided by Developer during design

Part	Section	Contents
	<b>Contractors</b>	Overall control procedures for Contractors, including consultants and subconsultants
		Responsibility of Contractors and affiliates
		Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts
		Procedures for implementation of Environmental Compliance and Mitigation Training Program for employees of Contractors
	<b>Interfaces</b>	Community Outreach Plan in accordance with <u>Section 6</u>
		Procedures for liaison with the public, the media and other Customer Groups in accordance with <u>Section 6</u> and the press media policy of IFA
		Procedures to coordinate with I-69 Section 5 stakeholders.
	<b>Procedures</b>	Procedures describing how the principal activities will be performed
	<b>Quality Control</b>	Quality control procedures including a resource table for monitoring and auditing all information and communication services
		Procedures to ensure accuracy, completion, and quality in submittals to IFA, Government Entities and Customer Groups
		Procedures to establish and encourage continuous improvement
	<b>Audit</b>	Name of Developer's representative with defined authority for establishing, maintaining, auditing and reporting on the PMP
		Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority
	<b>Document Management</b>	The manner in which records will be maintained in compliance with the Technical Provisions including any specific systems Developer will use
		Document management procedures in compliance with the Technical Provisions <u>Section 6</u>
Identify environmental documentation and reporting requirements		
<b>5. Safety Plan</b>		
	<b>Organization</b>	Policies, plans, training programs, Work Site controls, and Incident response plans to ensure the health and safety of personnel involved in the Project and the general public affected by the Project

Part	Section	Contents
		Procedures for immediately notifying IFA of all incidents arising out of or in connection with the performance of the Work
	<b>Personnel</b>	Resource plan for the Developer and its Contractors
		Arrangements for coordinating and managing staff interaction with IFA and its contractors including collocation of Key Personnel and description of approach to coordinating off-site personnel
		Names and contact details, titles, job roles and specific experience required for Key Personnel and for other principal personnel
		Names and contact details, titles, job roles of principal personnel for Contractors and third party with which Developer will coordinate his activities
	<b>Incident Management Plan</b>	Incident Management Plan in compliance with the Technical Provisions <u>Section 6</u>
<b>6. Communications Plan</b>		
	The manner in which the Developer's organization will respond to unexpected requests for information, changes or revisions to necessary Developer personnel, and notify affected stakeholders before and after they are made	
	Processes and procedures for communication of I-69 Section 5 Project information between the Developer's organization and IFA.	
<b>7. Operations and Maintenance Plan</b>		
	<b>Organization</b>	Developer's main contractual arrangements
		Organizational structure covering the activities to be performed in accordance with the Documents
	<b>Personnel</b>	Resource plan for the Developer and its Contractors
		Arrangements for coordinating and managing staff interaction with IFA and its contractors including collocation of Key Personnel and description of approach to coordinating off-site personnel
		Names and contact details, titles, job roles and specific experience required for the Personnel as related to Operations and Maintenance (O&M) activities.
		Names and contact details, titles, job roles of principal personnel for Contractors and third party with which Developer will coordinate activities

<b>Part</b>	<b>Section</b>	<b>Contents</b>
	<b>Contractors</b>	Overall control procedures for Contractors, including consultants and subconsultants
		Responsibility of Contractors and affiliates
		Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts
		Procedures for implementation of Environmental Compliance and Mitigation Training Program for employees of Contractors in accordance with <u>Section 7</u>
	<b>Environmental</b>	Control of the interface between environmental requirements (including Hazardous Materials and demolition) and Operations and Maintenance activities
		Applicable procedures for the Hazardous Materials Management Plan in accordance with <u>Section 7</u>
	<b>Health and Safety</b>	O&M Safety Plan in accordance with <u>Section 18</u>
	<b>Quality Control</b>	O&M Quality Plan in accordance with <u>Section 18</u>
		Procedures to ensure accuracy, completion, and quality in submittals to IFA and Governmental Entities
		Procedures to establish and encourage continuous improvement
		Quality control procedures and quality review standards in accordance with <u>Section 18</u>
		Procedures for environmental compliance
	<b>Audit</b>	Name, title, roles and responsibilities of supporting quality management staff reporting to a person with defined authority
	<b>Document Management</b>	The manner in which records will be maintained in compliance with the Technical Program including any specific systems Developer will use
		Document management procedures in compliance with <u>Section 18</u>
Identify environmental documentation and reporting requirements		
<b>8. Durability Plan</b>		
	<b>Organization</b>	Developer's main contractual arrangements
		Organizational structure covering the activities to be performed in accordance with the Documents
	<b>Personnel</b>	Resource plan for the Developer and its Contractors

Part	Section	Contents
		Arrangements for coordinating and managing staff interaction with IFA and its consultants including collocation of Key Personnel and description of approach to coordinating off-site personnel
		Names and contact details, titles, job roles and specific experience required for the Personnel as related to durability
		Names and contact details, titles, job roles of principal personnel for Contractors and third party with which Developer will coordinate activities
	<b>Contractors</b>	Overall control procedures for Contractors, including consultants and subconsultants
		Responsibility of Contractors and affiliates
		Steps taken to ensure Contractors and Suppliers meet the obligations imposed by their respective Contracts
		Procedures for implementation of Environmental Compliance and Mitigation Training Program for employees of Contractors in accordance with <u>Section 7</u>
	<b>Environmental</b>	Control of the interface between environmental requirements (including Hazardous Materials and demolition) and durability activities
		Applicable procedures for the Hazardous Materials Management Plan in accordance with <u>Section 7</u>
	<b>Quality Control</b>	Procedures to ensure accuracy, completion, and quality in submittals to IFA and O&M
		Procedures to establish and encourage continuous improvement
		Quality control procedures and quality review standards in accordance with <u>Section 7</u>
		Procedures for environmental compliance
	<b>Audit</b>	Name, title, roles and responsibilities of supporting quality management staff reporting to the person with defined authority
	<b>Document Management</b>	The manner in which records will be maintained in compliance with the Technical Provisions including any specific systems Developer will use
		Document management procedures in compliance with the Technical Provisions <u>Section 7</u>
		Identify environmental documentation and reporting requirements

Note – in this PMP Contents the term “Contractor” shall be taken to mean “Subcontractor”

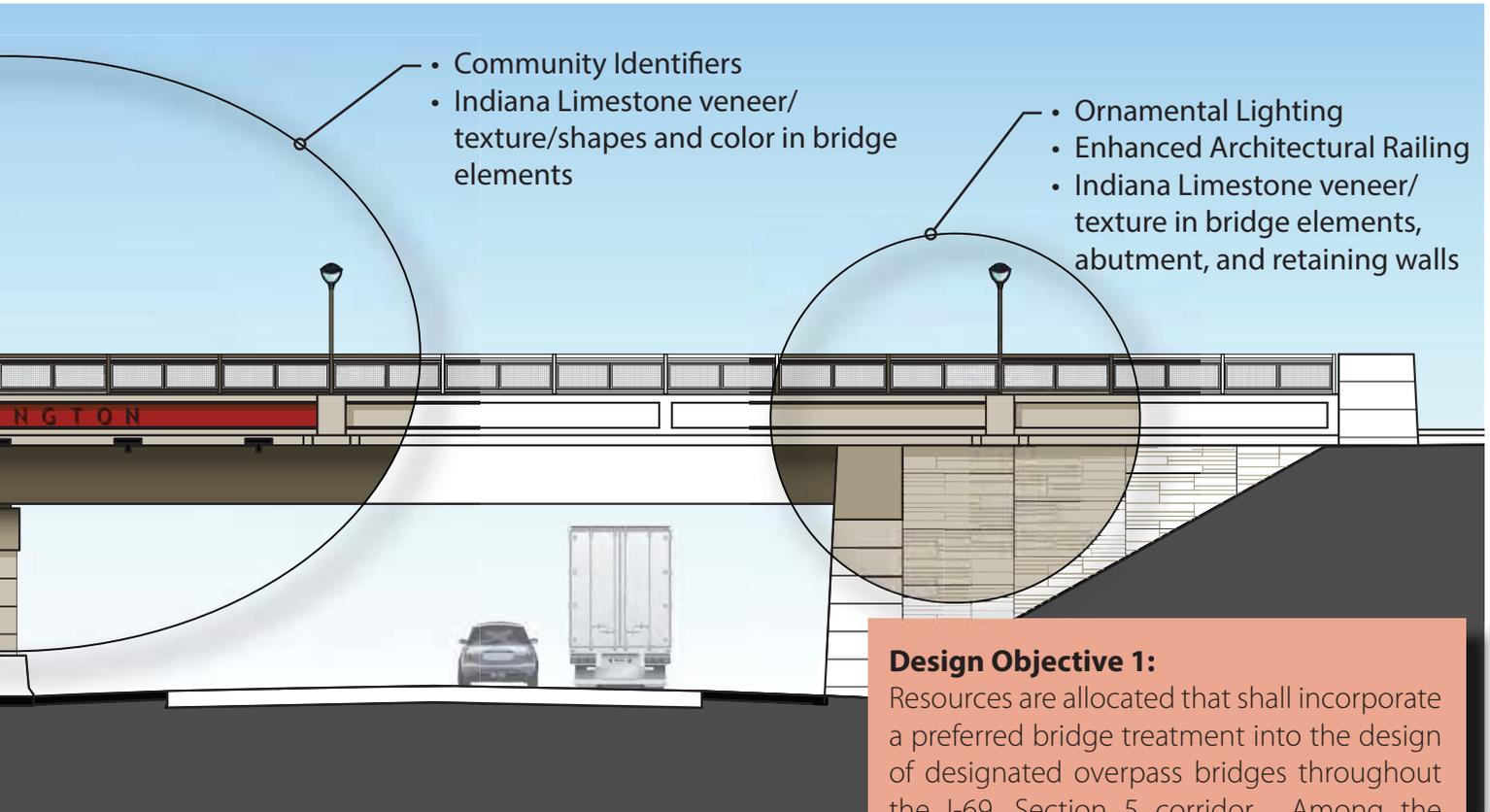
\*The OMP items marked with an asterisk will need to be completed initially for O&M During Construction by B. They will be updated for O&M After Construction and will need to be completed by C.

**IN 5 PROJECT**

**TE AGREEMENT  
PROVISIONS**

**MENT 5-1  
C AND LANDSCAPE PLANS**

REQUEST FOR PROPOSAL  
ADDENDUM #2-DECEMBER 20 , 2013  
TECHNICAL PROVISIONS  
ATTACHMENT 5-1



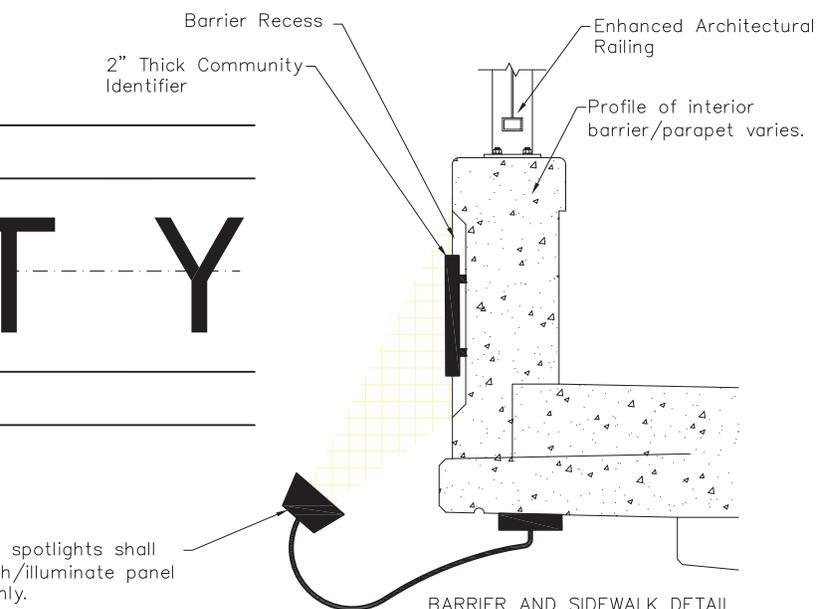
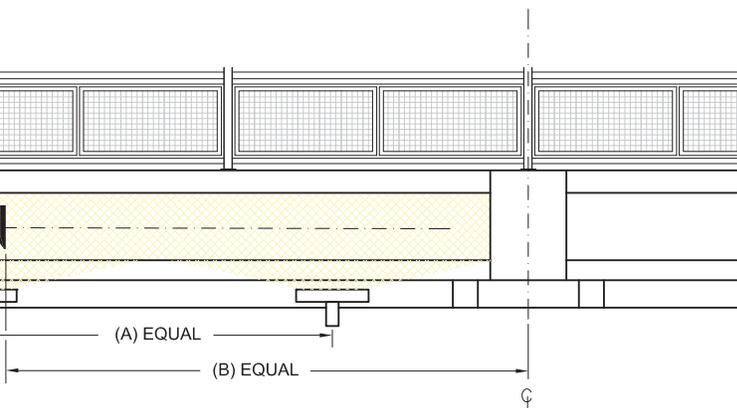
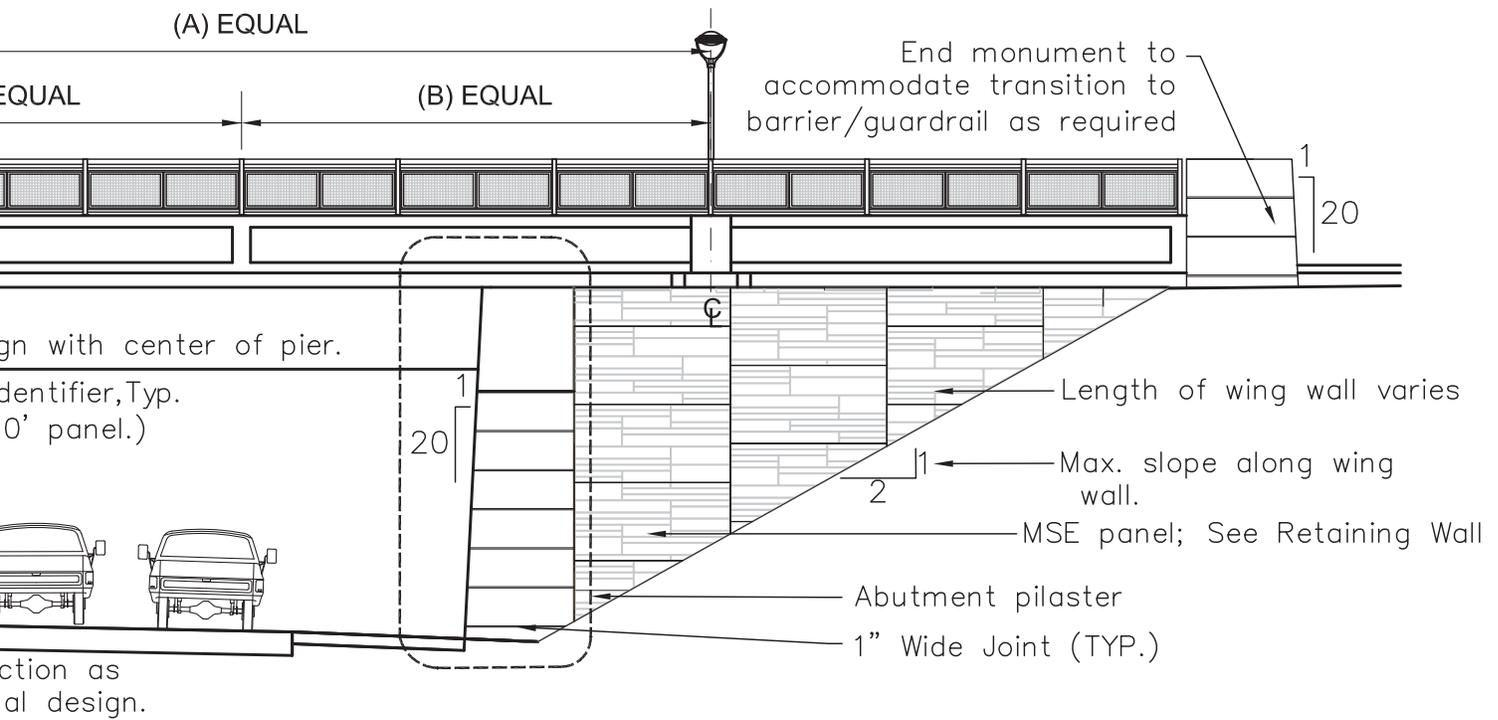
**Design Objective 1:**  
 Resources are allocated that shall incorporate a preferred bridge treatment into the design of designated overpass bridges throughout the I-69, Section 5 corridor. Among the preferred bridge treatments are Community Identifiers (dimensional cut letters); Enhanced Architectural Railings; Ornamental Lighting; and the use of Indiana Limestone veneer/texture/shapes and color for bridge elements, abutment and retaining walls. The Community Identifiers are designated for seven bridges and shall accommodate both new and existing bridge structures within the corridor. It is proposed that both the northern and southern approaches of each bridge receive the preferred design treatment. Actual locations and the Community Identifier specified for each side of the bridge structure are indicated above in the notes on the Prototypical Bridge Elevation above. The seven designated bridge structures shall incorporate the use of a warm or natural color palette on the bridge structure elements (i.e. parapet walls, MSE walls, pilasters, girders, bridge piers, and ornamental lighting). Spotlights shall be used to highlight the Community Identifiers and bridge walkways at night.

**AESTHETIC ENHANCEMENTS FOR EACH BRIDGE:**

	Community Identifiers	Indiana Limestone Veneer/texture in bridge elements	Ornamental Lighting	Enhanced Architectural Railing
ge	X			
reet	X			
Bridge	X	X	X	X
Bridge	X	X	X	X
Bridge	X	X	X	X
Pike	X	X	X	X
oad	X	X		



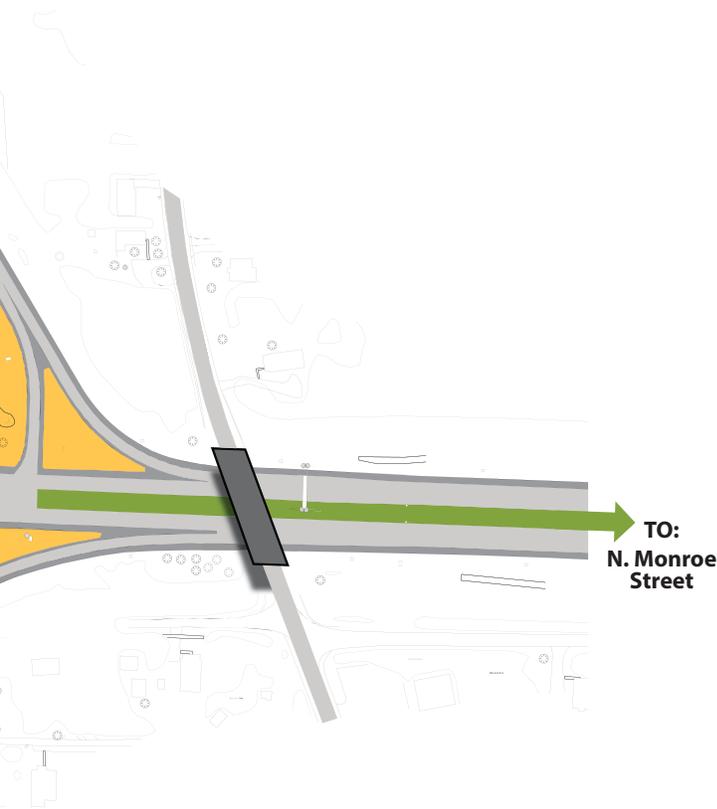
Precedent Image: Limestone MSE and Retaining Wall Pattern



**Design Principle 1:**  
Support roadway ecological functions and driver safety with landscaping.

**Design Principle 2:**  
Aggregate plantings in zones where they will achieve maximum impact.

**Design Principle 3:**  
Retain existing trees within landscaped area to the extent practical and reintroduce reforestation to areas cleared due to construction activity by using native canopy and understory trees.



## Design Objective 1:

Landscape treatments, featuring native grasses, salt tolerant plants, and perennials shall be incorporated into the median along SR 45/46 Bypass from the end of the eastern bridge deck to N. Monroe Street. This treatment will transition visitors from the I-69 corridor into Bloomington/ Indiana University.

## Design Objective 2:

Landscape concepts shall employ natural or informal arrangements such as curved masses, clusters and drifts that slowly transition from one species to another; similar to what is found in nature. As speeds change, so shall the corresponding level of detail within the landscaped areas. Landscaping adjacent to the high speed mainline will have a simple level of detail so that it can be clearly perceived. On entrance and exit ramps, speeds transition, so there is more time for the viewer to perceive a slightly more complex level of detail. The complexity will be increased by using more variety of form, color, texture and scale. The northeast and southeast quadrants of the SR 46 interchange provide the best opportunity to create a significant sculptured area. This sculptured area shall incorporate limestone accents and one or more placeholders for public art. Furthermore, providing a placeholder for public art will allow a local artist to participate in the design, fabrication and/or installation processes. Public Art is not part of this contract.



Treatment



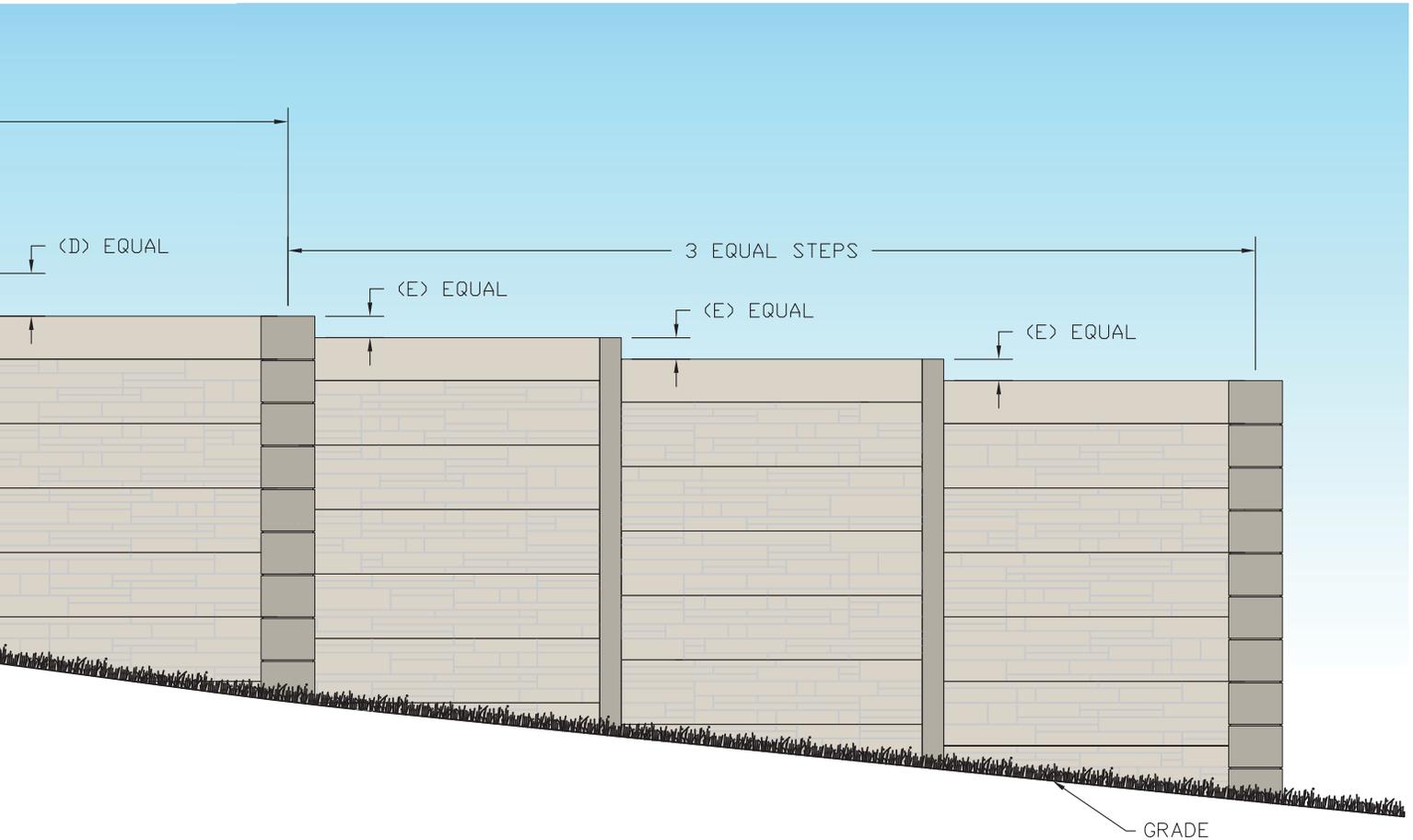
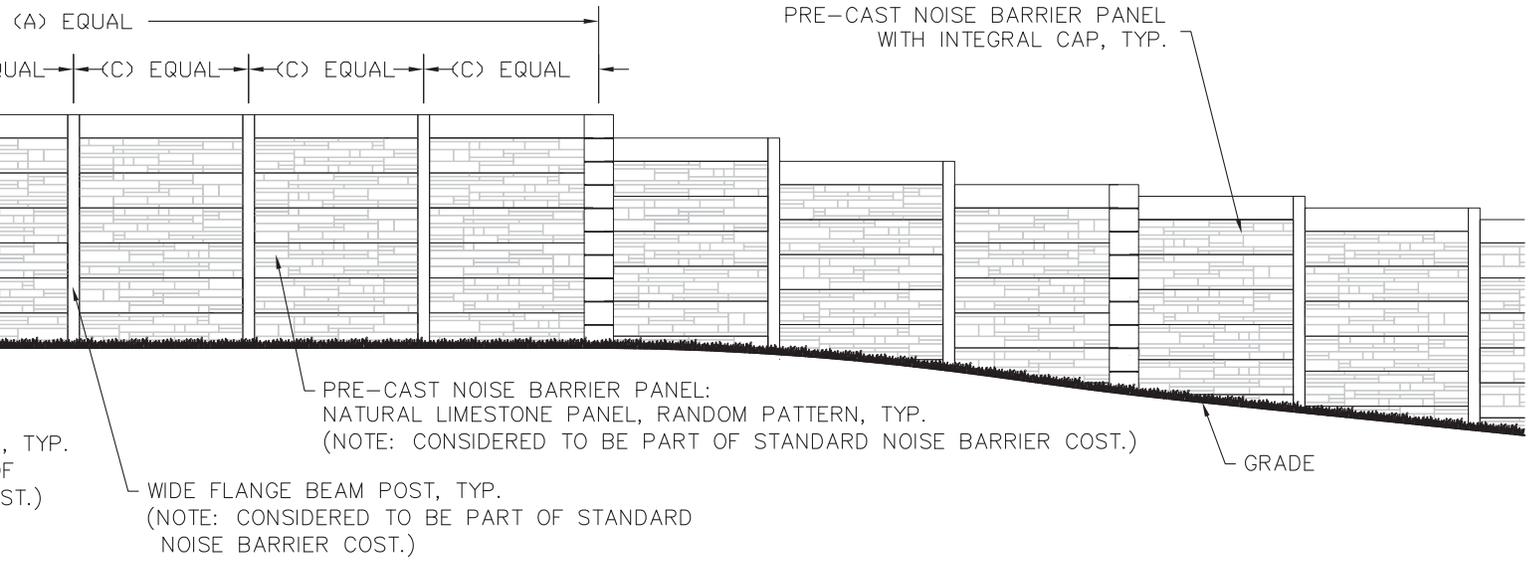
Precedent Image: Landscape Treatment

**IN 5 PROJECT**

**TE AGREEMENT  
PROVISIONS**

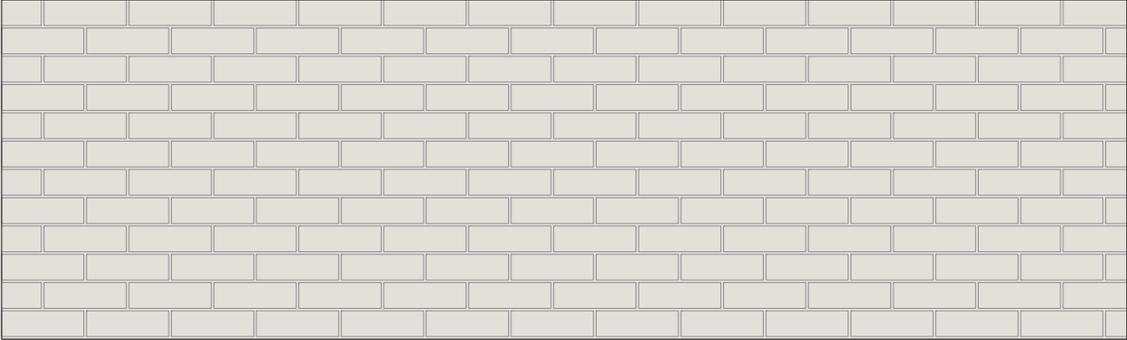
**MENT 5-2  
BARRIERS**

REQUEST FOR PROPOSAL  
ADDENDUM #2-DECEMBER 20, 2013  
TECHNICAL PROVISIONS  
ATTACHMENT 5-2

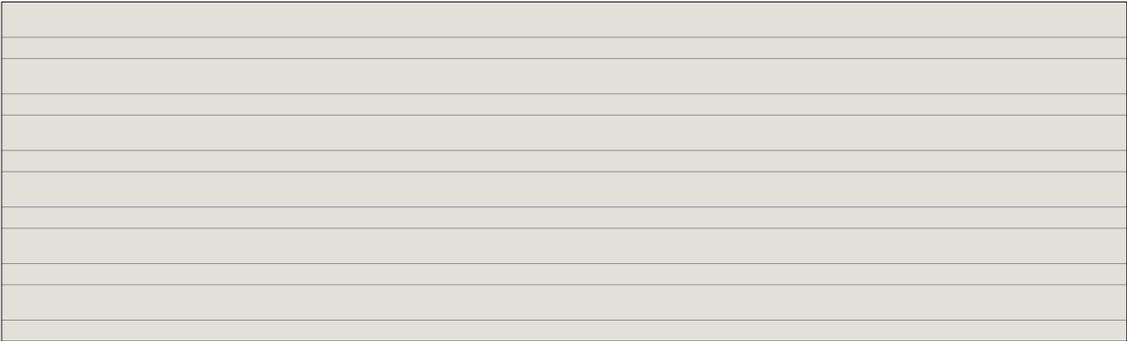


NEIGHBORHOOD SIDE – SAMPLE PATTERN ALTERNATIVES:

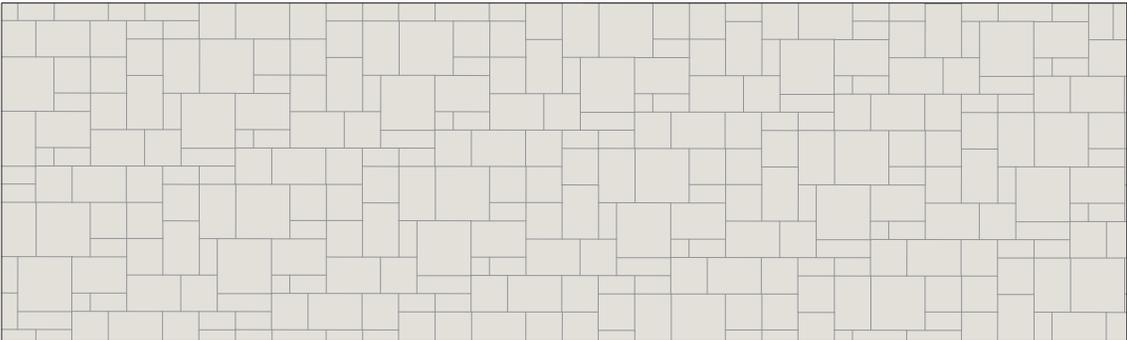
NOTE: NEIGHBORHOOD SIDE PATTERNS CONCEPTUAL ONLY. DEVELOPER SHALL DEVELOP PATTERN AND COLOR ALTERNATIVES TO PRESENT TO RESIDENTS FOR VOTING.



NEIGHBORHOOD SIDE: ALTERNATE 1 – RUNNING BOND BRICK PATTERN



NEIGHBORHOOD SIDE: ALTERNATE 2 – HORIZONTAL GROOVE PATTERN



NEIGHBORHOOD SIDE: ALTERNATE 3 – RANDOM ASHLAR PATTERN

**I-69 SECTION 5  
PUBLIC-PRIVATE  
AGREEMENT  
BOOK 2  
TECHNICAL PROVISIONS  
ATTACHMENT 5-3  
MODIFIED SURFACE SEAL PROVISIONS**

## MODIFIED SURFACE SEAL

### Description

This work shall consist of preparing surfaces and applying a combination concrete stain and sealer as described herein. The modified surface seal shall be applied at the locations specified in the Design Requirements.

### Materials

Modified surface seal shall consist of a material that stains and seals the concrete. The material shall provide an opaque appearance and the Specular gloss in accordance with ASTM D 523 shall range from 8 to 20 at 60 degrees. The material used shall be a water-based all-acrylic stain with VOC less than 150 grams per liter and shall contain no toxic heavy metals.

Acceptable products shall allow moisture and vapor transmission, be formulated for exterior application with resistance to freeze/thaw, moisture, alkali, acid and mildew, mold or fungus, discoloration or degradation, and meet the following requirements:

Water Vapor Transmission, ASTM D1653, Method B, Wet Cup:

5 Perms (Min.)

Scaling Resistance, ASTM C672 (50 cycles):

No scaling

Chloride Ion Penetration Resistance, AASHTO T259/T260:

1/16" to 1/2" deep, 75% minimum reduction in chloride ion migration as compared to an untreated sample

1/2" to 1" deep, 85% minimum reduction in chloride ion migration as compared to an untreated sample

ASTM G 153, Cycle 1, (2500 hrs):

No cracking, crazing or adhesive loss

Only one material shall be used at an individual location. It shall be delivered to the project site in undamaged sealed containers bearing the manufacturer's original labels. The manufacturer's brand name, date of manufacture, batch number, and color shall be clearly marked on each container. All material shall be from the same lot or batch unless otherwise authorized. A copy of the manufacturer's printed instructions shall be made available.

The material shall be stored in airtight, upright containers. The containers shall be stored in a dry enclosure where the temperature is kept in a temperature range as recommended by the manufacturer. Material which has been subjected to freezing will be rejected.

The stain material shall have a shelf life of not less than 12 months. The color of the applied stain material shall be in accordance with Federal Color Standard No. 595C. Such color shall match the color identification number shown on the Plans.

All materials shall be furnished, prepared, applied, cured, and stored according to the product manufacturer's directions and as specified herein. Special attention shall be given to the recommended temperature range for application.

### (a) Material Testing

The testing shall be performed by a recognized laboratory in accordance with ITM 806.

The applied material shall be subjected to and shall satisfy the requirements of the tests listed above, prior to use.

**(b) Certification**

Before the stain is applied, a type B certification in accordance with 916 shall be furnished attesting that the commercial product furnished is in accordance with the same formula as that previously subject to the tests specified above and approved. Copies of the test reports shall be attached to the certification. Reports for tests made more than four years prior to shipment to the contract will not be accepted.

A service record shall be supplied which shows that the material has a satisfactory service record on concrete surfaces for a period of not less than five years prior to the date of submission of the service record. The coating shall also have shown satisfactory service characteristics without peeling, chipping, flaking, or non-uniform change in texture or color. A specific structure for the specific product shall be named for the service record.

**Construction Requirements**

**Surface Preparation**

The surfaces which are to receive the material shall be given a finish in accordance with 702.21. Air pockets of up to 1/4 in. (6 mm) in width and depth will not require grouting prior to application of the stain. Air pockets larger than 1/4 in. (6 mm) in width and depth shall be filled with a grout mix composed of one part portland cement, two parts screened and washed sand graded to pass the No. 16 (1.18 mm) sieve with not more than 5% retained on the No. 30 (600 µm) sieve, and sufficient water to produce a thick liquid mix. The grout shall be applied to fill the air pockets and voids by using burlap pads, float sponges or other acceptable methods. As soon as the grout has taken its initial set, the surface shall be brushed to remove all loose grout, leaving the surface smooth and free of air pockets and voids. Minor defects shall be finished to blend with the balance of the textured surfaces. Visible vertical or horizontal seams or conspicuous form marks shall be repaired to the satisfaction of the Engineer and at the Contractor's expense. Prior to the application of the material, regardless of whether the concrete surface has been previously sealed, the surface to be coated shall be water-blasted to remove flaking coatings, dirt, oil and other substances which could be deleterious to the application of the material. Sandblasting will not be allowed for cleaning concrete surfaces. Pressure washing with water at a pressure of 3000 pounds per square inch at a rate of 3 to 4 gallons per minute using a fan nozzle held perpendicular to the surface at a distance of 12 inches to 24 inches shall be used. Overblasting, exposing additional air pockets, or disfiguring the surface shall be prevented. Final cleaning shall be done with compressed air. The air compressor shall be equipped with suitable separators, traps, or filters which shall remove water, oil, grease, or other substances from the air line.

Prior to application of the material, the surfaces shall have been prepared in accordance with the manufacturer's recommendations and shall be in a condition consistent with the manufacturer's requirements.

**Surface Color**

The material shall provide an opaque appearance and stain the concrete in colors as shown on the Plans.

**Application**

The application, including equipment used, shall be in accordance with the manufacturer's recommendations. The material shall be applied by qualified personnel experienced in the work.

Enough coats of the material shall be used to attain an opaque appearance. The application of the material shall follow the surface preparation operations and be by air or airless sprayer. Each coat shall be allowed to thoroughly dry before applying additional coats. The final coat shall be applied in a uniform manner, moving in one direction. The application rates used shall be per the manufacturer's recommendations. Use sufficient material to provide color uniformity, but avoid buildups and runs. The material shall be applied only when the ambient air and surface temperatures, humidity and dew point during application are in the ranges recommended by the manufacture. The material shall not be applied onto frozen surfaces or if rain is imminent. If rain occurs on a freshly applied surface, recoating may be required based on the extent of rain damage.

The material shall not be applied if dusty conditions exist in the vicinity of the surfaces to be coated. When dust conditions are beyond the control of the Contractor, or are generated off-site, application shall not take place until more favorable conditions exist. The application of the modified surface seal shall be scheduled as one of the final finishing operations to minimize construction generated dust. A wet edge shall be maintained at all times to prevent lap marks. Stopping and starting in the middle of a section of concrete will not be permitted.

**Finishing**

The material shall be tightly bonded to the structure to present a uniform color appearance accentuating the concrete texture. If necessary, additional coats shall be applied to produce the desired surface color uniformity. However, the additional coating thickness shall not diminish the appearance of the concrete texture.

The material shall be entirely removed from the structure upon their failure to positively adhere without chipping, flaking or peeling, or attaining the desired surface color uniformity and concrete texture appearance. The material shall be reapplied after proper surface preparation until the desired finished product is achieved.

**Appearance**

The Developer shall apply the sealer and finish coat to a minimum 5 ft. by 5 ft. test area at the coverage rate recommended by the manufacturer(s). The test area shall include both horizontal and vertical surfaces and different concrete textures. The test areas shall demonstrate the coatings visual effects, including but not limited to finish sheen, color and coverage rate.

Uniform appearance and the final color shall visually match the test section. Re-coating, removal, and re-application or other methods recommended by the manufacturer shall be performed to correct the final appearance.

