



**Town of Indian Trail**  
Engineering Department

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**Memo**

**TO:** Mayor and Town Council  
**FROM:** Scott J. Kaufhold, P.E., Town Engineer  
**DATE:** September 21, 2010  
**COUNCIL DATE:** September 28, 2010  
**SUBJECT:** Crossing Paths Park Contract

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**General Information:**

Staff held an informal bid for the construction of the Town of Indian Trail's Crossing Paths Park.

Bid opening is scheduled for Tuesday, September 28, 2010. Bid tab information will be provided to Council following review by staff. The Engineer's estimate is confidential in order to remain neutral and objective for all bidders.

**Required Actions:**

Council Award of Contract

**Attachments:**

1. Crossing Paths Park Contract

BID SET NO. \_\_\_\_\_

BIDDER \_\_\_\_\_



**PROJECT MANUAL  
FOR  
CROSSING PATHS PARK**

**PROJECT NUMBER:**

**520-2010-001**

**TOWN OF INDIAN TRAIL, NORTH CAROLINA**



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I. ADVERTISEMENT FOR BIDS

## CROSSING PATHS PARK

Sealed bids will be received until 2:00 p.m., on September 27, 2010 in the Engineering Conference Room, for CROSSING PATHS PARK, 520-2010-001, at which time all placed bids will be opened and read aloud.

This project consists of an events park with items such as concrete sidewalk, water quality device, storm drain systems, fences, amphitheatre, the installation of park amenities, and roadway improvements.

Contract Documents can be obtained from:

Town of Indian Trail  
Engineering Department  
130 Blythe Drive  
Indian Trail, NC, 28079

Phone: 704-821-1314

The Town of Indian Trail reserves the right to reject any and all proposals.

For more project information, call Joe Tolan at 704-821-1314 or [jrt@engineering.indiantrail.org](mailto:jrt@engineering.indiantrail.org).

II. INSTRUCTIONS TO BIDDERS

The Town of Indian Trail (hereafter, the "Town") will receive sealed bids for the following Project:

**PROJECT NAME:**

**CROSSING PATHS PARK**

**PROJECT NUMBER:**

**520-2010-001**

**SCOPE OF WORK:**

This project consists of an events park with items such as concrete sidewalk, water quality device, storm drain systems, fences, amphitheatre, the installation of park amenities, and roadway improvements.

Park amenities includes flag pole, picnic tables, park benches, bike racks, trash receptacles, park grill, playground set, and a water fountain.

Roadway improvements include storm drain, curb, sidewalk, asphalt, and a parking area.

**CONTRACT DOCUMENTS:**

The Contract Documents are this Project Manual (which contains the Advertisement, Instructions to Bidders, Bid Documents, Agreement, Supplementary General Conditions, Specifications, Project Special Provisions), the Plans & Drawings, and any addenda. The Plans & Drawings will be available at 1 pm on Monday, September 20, 2010 at the Town of Indian Trail Engineering Department. Contract documents will be mailed upon request. A \$5.00 fee is required for first class postage and handling. A current e-mail address must be provided at the time of contract purchase.

**BID DEADLINE:**

Bids must be received by the Town at 130 Blythe Drive, Indian Trail, NC 28079, no later than **September 27, 2010, at 2:00 p.m.**, when the bids will be opened and publicly read after the Bid Deadline.

**CONTENT OF BID:**

Each Bid must contain the following fully-completed forms.

- a) Acknowledgement of Addenda (page 11 of this Project Manual)
- b) Itemized Bid Form (page 12 of this Project Manual)
- c) Representative Projects Form (page 14 of this Project Manual)
- d) Execution of Bid Form (page 15 of this Project Manual)
- e) Bid Bond (page 16 of this Project Manual)

All Bids shall be placed in a sealed envelope with the following information printed on the outside of the envelope:

<b>BID FOR:</b>	_____
	<i>Project Name &amp; Number</i>
<b>BIDDER'S NAME:</b>	_____
	<i>Contractor's Name</i>
<b>DO NOT OPEN UNTIL:</b>	_____
	<i>Bid Opening Date &amp; Time</i>

**BID BOND:**

Each Bid that equals or exceeds five hundred thousand dollars (\$500,000) shall be accompanied by a bid bond or a certified or cashier's check in the amount of at least 5% of the total amount of the Bid. When the bid security is in the

form of a bid bond, that bid bond shall be executed by a corporate surety licensed in North Carolina to execute such bonds.

**BIDS ARE FIRM OFFERS:**

All Bids shall be firm offers to contract for 180 days from the Bid Deadline. Unless forfeited, Bid Bonds shall be returned to Bidders upon the earlier of Contract Award or 180 days from the Bid Deadline.

**BID PHASE CONTACT:**

For questions regarding the Project or Instructions to Bidders, contact: **Joe Tolan**. The Town will attempt to answer all questions in writing by addenda. **THE TOWN WILL NOT MAKE AND BIDDERS MAY NOT RELY ON ORAL REPRESENTATIONS.**

**ADDENDA:**

Addenda will be filed in the Town Engineer's office and delivered by fax or email to all persons who have requested Contract Documents. The Bidder shall be responsible for inquiring if Addenda have been issued.

**SELECTION CRITERIA:**

The Town shall select as the contractor ("Selected Bidder") the lowest responsive and responsible Bidder based on the combination of base bid plus additive alternates (or in some cases, deductive alternates) that most closely matches the available funding for the project, or any other Town's final determination of project scope. Consideration will be given only to Bids from contractors who are properly licensed, bonded, experienced in the class of work proposed and who can refer to projects of similar magnitude and character that have been completed by them. The Town also reserves the right to reject any and all Bids and to waive informalities and technicalities as it may deem to be in its best interest.

All bidders must place a cost on all bid items.

The awarded lowest bidder agrees to hold all bid alternate prices for 60 days from date of bid opening.

**ONLY ONE BID PER ENTITY:**

No entity or person may submit or participate in the submission of more than one Bid.

**CONTRACT AWARD:**

The Town will inform the Selected Bidder of its selection and request that the Selected Bidder submit the executed Agreement plus insurance certificates and payment and performance bonds. The Selected Bidder shall submit the requested documents so that they are received by Town within 10 calendar days (or such other time as designated by Town) from the date of notice of selection. The Selected Bidder's failure to do so will result in forfeiture of its bid bond and this contract. The contract shall not be deemed awarded and this Agreement shall not be binding on the Town unless and until both the Selected Bidder and Town have both executed the Agreement.

III. BID DOCUMENTS

ACKNOWLEDGEMENT OF ADDENDA

PROJECT NAME: CROSSING PATHS PARK

PROJECT NUMBER: 520-2010-001

ACKNOWLEDGMENT OF ADDENDA

The Bidder hereby acknowledges receipt of any addenda

NUMBER: \_\_\_\_\_ DATE: \_\_\_\_\_ INITIAL: \_\_\_\_\_

Contractor Name:

\_\_\_\_\_

**ITEMIZED BID FORM**



**TOWN OF INDIAN TRAIL  
CROSSING PATHS PARK**

Sect. No.	Item Description	Quantity	Unit	Unit Price	Amount
SP1	Mobilization	1	LS		
SP2	Grading	1	LS		
610	Asphalt Concrete Surface Course, S 9.5B (2" depth)	90	TN		
610	Asphalt Concrete Base Course, 25.0B (4" depth)	180	TN		
SP3	4" Concrete Sidewalk (Six feet wide)	185	SY		
SP3	4" Concrete Sidewalk (Ten feet wide)	175	SY		
SP3	4" Concrete Sidewalk (Variable width)	945	SY		
SP3	6" Concrete Wheelchair Ramps	9	EA		
SP3	6" Concrete Vertical Curb (ITLDS 1.13)	710	LF		
SP4	Truncated Dome Mats and Installation	10	EA		
SP5	Drainage	1	LS		
SP6	Brick Pavement	240	SF		
SP7	Electrical	1	LS		
SP8	3/4" Water Line (Water Fountain)	1	LS		
SP9	Striping and Signage	1	LS		
SP10	Park Amenities Installation	1	LS		
SP11	Street & Bollard Lights	1	LS		
SP12	Amphitheatre	1	LS		
SP13	Brick Columns & Decorative Fencing	1	LS		
SP14	Black Vinyl Fencing	330	LF		
SP15	Borrow Material	300	CY		
SP16	Seeding and Mulching	1.5	AC		
		<b>SUBTOTAL</b>			
		Contingency (10%)			
		<b>TOTAL BASE BID</b>			

**Alternate Bid Item #1**

A1	Asphalt Overlay (Blythe Drive)	125	TNS		
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**Alternate Bid Item #2**

A2	Vertical Concrete Curb (south side of Blythe Drive)	610	LF		
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**Alternate Bid Item #3**

A3	4" Concrete Sidewalk (Change SP3 increase sidewalk width by 2.0' sta 6+15 to sta 9+00)	70	SY		
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**REPRESENTATIVE PROJECTS FORM**

1. Project: \_\_\_\_\_  
Owner: \_\_\_\_\_  
Contract Price: \_\_\_\_\_  
Date Completed: \_\_\_\_\_  
Owner Contact: \_\_\_\_\_

2. Project: \_\_\_\_\_  
Owner: \_\_\_\_\_  
Contract Price: \_\_\_\_\_  
Date Completed: \_\_\_\_\_  
Owner Contact: \_\_\_\_\_

3. Project: \_\_\_\_\_  
Owner: \_\_\_\_\_  
Contract Price: \_\_\_\_\_  
Date Completed: \_\_\_\_\_  
Owner Contact: \_\_\_\_\_

Contractor Name: \_\_\_\_\_

**EXECUTION OF BID FORM**

**PROJECT NAME:**                    **CROSSING PATHS PARK**

**PROJECT NUMBER:**                **520-2010-001**

The person executing the Bid, on behalf of the Bidder, being first duly sworn, deposes and says that:

- (1) It is the intent of the Bidder to enter into this Contract to furnish materials, labor, and equipment required to perform all work specified in accordance with the instructions, terms, conditions, provisions, specifications, plans and all other Contract Documents incorporated into this Invitation to Bid;
- (2) He/she is fully informed regarding the preparation and contents of the attached Bid and of all pertinent circumstances regarding such Bid;
- (3) Neither he/she, nor any official, agent or employee of the Bidder has entered into any agreement, participated in any collusion, or otherwise taken any action which is a restraint of free competitive bidding in connection with its Bid;
- (4) He/she will not discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, disability, or veteran's status; and

**Type of Bidder:**    Sole Proprietor    Partnership    Limited Liability Company    Corporation    Joint Venture  
(Check appropriate box)

**BIDDER #1**

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

Printed Name \_\_\_\_\_

**SIGNATURE** \_\_\_\_\_

Title \_\_\_\_\_

NC General Contractor's License Number \_\_\_\_\_

Classification \_\_\_\_\_

Limits \_\_\_\_\_

Subscribed and sworn before me  
this \_\_\_\_ day of \_\_\_\_\_, 201\_\_

\_\_\_\_\_  
*Signature*  
My commission expires \_\_\_\_\_

**BID BOND**

(Attach Bond and Power of Attorney to this sheet)

IV. AGREEMENT

## AGREEMENT FOR CONSTRUCTION

THIS AGREEMENT ("Agreement"), made and entered into on or about \_\_\_\_\_, 2010, by and between the Town of Indian Trail, North Carolina, hereinafter called "Owner" and \_\_\_\_\_, hereinafter called "Contractor" (collectively, "Parties"),

### *WITNESSETH*

In consideration of the mutual promises set forth herein, the parties hereto mutually promise and agree as follows:

1. **PROJECT:** CROSSING PATHS PARK
2. **COMPLETION OF WORK:** For the Contract Price, Contractor shall furnish all materials, labor, tools, equipment, and supervision for the construction of the Project and all expense, direct or indirect, connected with the proper execution of the same and of maintaining the same, until it is accepted by the Owner (the "Work"). All Work shall be performed and completed in an efficient and workmanlike manner, in accordance with the Contract Documents and in compliance with all applicable federal, local and state regulatory agencies.
3. **CONTRACT DOCUMENTS**
  - a. Advertisement for Bids
  - b. Instructions to Bidders
  - c. Bid Documents (Acknowledgment of Addenda, Itemized Bid Form, Representative Projects, Execution of Bid Form and Bid Bond)
  - d. Agreement For Construction
  - e. Supplementary General Conditions
  - f. Specifications
  - g. Project Special Provisions
  - h. Appendix A
  - i. Appendix B
  - j. Addenda

The Contract Documents listed above are all essential parts of the contractual requirements. The terms "Contract Documents" and "Contract" shall have the same meaning. A requirement occurring in one Contract Document is as binding as though occurring in all. They are intended to be complementary. In case of discrepancy, detailed provisions shall have precedence over general conditions. Should any addenda, change orders or supplemental agreements be issued at a later date, they will become part of the Contract Documents, and their terms shall take precedence over conflicting terms in earlier Contract Documents.

The Contractor shall not take advantage of any apparent error or omission in the Contract Documents. In the event the Contractor discovers an error or discrepancy, it shall immediately inform the Owner.

4. **CONTRACT PRICE:** This is a unit price contract. The Contract Price shall be the unit price for each pay item multiplied by the actual units of each pay item certified by Contractor on a pay request as described below and approved by the Owner as satisfactorily completed in accordance with the Contract. The pay items and their unit prices are set forth in the Itemized Bid Form. As of the date hereof, the estimated Contract Price is \$ \_\_\_\_\_. The final Contract Price shall not be determined until the completion and acceptance by the Owner of the Work and shall be the sum of the approved amounts of all pay items.
5. **CONTRACT TIME:** The Contractor shall achieve Substantial Completion of the Work no later than December 17, 2010. "Substantial Completion" shall mean all Work has been completed, inspection has occurred and a final punch list has been agreed upon.

Weather, temperature, and seasonal limitations for producing and placing asphalt mixtures are according to the Standard Specifications, latest edition.

No work will take place on the following dates: Town designated holidays and Family Fun Day on October 16, 2010.

6. **LIQUIDATED DAMAGES:** Contractor has obligated itself to complete the Work within the Contract Time. Contractor acknowledges that Owner will be damaged should Contractor not complete the Work within the Contract Time. In lieu of proceedings to ascertain the amount of such damages, Contractor and Owner agree that such damages shall be equal to and Contractor shall be obligated to Owner in the amount of \$100.00 (one hundred dollars) for each calendar day the Work is not completed after the Contract Time.
7. **PAYMENTS:** Partial payments will be made at least once each month as the Work progresses. Said payments will be based upon estimates, prepared by the Contractor and approved by Owner, of the value of the Work performed and materials complete in place in accordance with the Contract Documents.

No partial payment will be made when the amount due the Contractor since the last estimate amounts to less than ten thousand dollars (\$10,000).

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the subsection titled ACCEPTANCE AND FINAL PAYMENT of this section.

8. **INDIAN TRAIL PRIVILEGE LICENCE:** An Indian Trail privilege license must be maintained throughout the life of the contract.
9. **GUARANTEE:** The Contractor shall guarantee all materials and workmanship for a period of twelve (12) months from the date of acceptance by the Town and shall replace any portions that fail because of faulty materials or workmanship at no additional cost to the Town. A six (6) month and eleven (11) month inspection will be held during the warranty period. The Contractor shall immediately repair all defective items upon notification. Items repaired under the provisions shall have an extended warranty period of twelve (12) months from the date of repair of the item.

The performance bond will be held as the guarantee for the twelve (12) month period.

10. **BONDS AND INSURANCE:** Owner's obligations under this Agreement are subject to the condition precedent that the Contractor provides a Payment Bond, Performance Bond and Certificate of Insurance as required by the Contract Documents.

The successful bidder at the preconstruction meeting shall provide the Town with a contract payment bond in an amount equal to 100 percent of the amount of the contract and a contract performance bond in an amount equal to 100 percent of the amount of the contract. All bonds shall be in conformance with G.S. 44A-33. The corporate surety furnishing the bonds shall be authorized to do business in the State.

The successful bidder's failure to file acceptable bonds at the preconstruction meeting shall be just cause for the forfeiture of the bid bond or bid deposit and rescinding the award of the contract. Award may then be made to the next lowest responsible bidder or the work may be re-advertised and constructed under contract or otherwise, as the Town may decide.

**SIGNATURE SHEET**

**CONTRACTOR FIRM NAME:** \_\_\_\_\_

**By:** \_\_\_\_\_

**Printed Name:** \_\_\_\_\_

**Title:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**ADDRESS:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**FEDERAL TAX ID NUMBER:** \_\_\_\_\_

**TOWN OF INDIAN TRAIL**

**By:** \_\_\_\_\_ **Date** \_\_\_\_\_  
Joseph A. Fivas  
Town Manager

This Agreement has been pre-audited in the manner required by the "Local Government Budget and Fiscal Control Act."

**By:** \_\_\_\_\_ **Date** \_\_\_\_\_  
Finance Officer

**SURETY COMPANY CONTACTS**

**PAYMENT BOND NO.:**

\_\_\_\_\_

Surety Name:

\_\_\_\_\_

Address:

\_\_\_\_\_

\_\_\_\_\_

Contact Person:

\_\_\_\_\_

Title:

\_\_\_\_\_

Phone No.:

\_\_\_\_\_

**PERFORMANCE BOND NO.:**

\_\_\_\_\_

Surety Name:

\_\_\_\_\_

Address:

\_\_\_\_\_

\_\_\_\_\_

Contact Person:

\_\_\_\_\_

Title:

\_\_\_\_\_

Phone No.:

\_\_\_\_\_

**SURETY AGENCY/AGENT:**

\_\_\_\_\_

Agency Name:

\_\_\_\_\_

Address:

\_\_\_\_\_

\_\_\_\_\_

Contact Person:

\_\_\_\_\_

Title:

\_\_\_\_\_

Phone No.:

\_\_\_\_\_

**Attach Performance Bond to this sheet.**

**Attach Payment Bond to this sheet.**

Attach Certificate of Insurance to this sheet.

V. SUPPLEMENTARY GENERAL CONDITIONS

## I. CONTROL OF WORK

### 1.1 ALTERATION OF WORK AND QUANTITIES

The Owner reserves and shall have the right to make such alterations in the Work as may be necessary or desirable to complete the Work in the manner acceptable to Owner. Unless otherwise specified herein, the Owner may make such alterations in the Work as may increase or decrease the originally awarded Contract quantities, and the Contractor agrees to value the increase or decrease in quantities using the unit prices set forth in the Itemized Bid Form, or if there are none, as agreed to by the parties. These alterations shall be covered by Change Orders. Change Orders for altered Work may include extensions of Contract Time if, in the Owner's opinion, such extensions are warranted by the amount and difficulty of added work.

### 1.2 MAINTENANCE OF TRAFFIC

When the Contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of Work that is otherwise provided for in the Contract Documents, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall furnish, erect, and maintain barricades, warning signs, flagmen, and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office), unless otherwise specified herein.

The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

### 1.3 FINAL CLEANING UP

Upon completion of the Work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees on all ground occupied during the project. The contractor shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of such property owner.

### 1.4 ACCESS TO THE WORK

The Contractor shall identify access routes with suitable signs, barricades and similar equipment. The entire access route and construction site shall be kept free and clean of all debris at all times and maintained in good repair by the Contractor. All damage to the access route caused by the actions of the Contractor or his agents shall be immediately repaired to the satisfaction of the Owner.

### 1.5 MAINTENANCE DURING CONSTRUCTION

The Contractor shall maintain the Work during construction and until the Work is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the Work is maintained in satisfactory condition at all times. In the case of a contract for the placing of a course upon a course or subgrade previously constructed, the Contractor shall maintain the previous course or subgrade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit price bid on a specified contract item and the Contractor will not be paid an additional amount for such work.

## 1.6 CONFORMITY WITH PLANS AND SPECIFICATIONS

The current edition including revisions of the North Carolina Department of Transportation, Standard Specifications for Roads and Structures, hereinafter referred to as the "Standard Specifications" shall apply on all portions of the project unless otherwise specified herein.

All Work and all materials furnished shall be within the specified tolerances of the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified in the contract, plans and specifications.

If the Owner finds the materials furnished, Work performed, or the finished product not within the specified tolerances of the plans and specifications but that the portion of the Work affected will, in its opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the Owner, that the affected Work be accepted and remain in place. In this event, the Owner determines an adjustment in the Contract Price for the affected portion of the Work.

If the Owner finds the materials furnished, Work performed, or the finished product are not within the specified tolerances of the plans and specifications and have resulted in an unacceptable finished product, the affected Work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Owner's written orders.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the Work in accordance with the Contract Documents. The term shall not be construed as waiving the Owner's right to insist on strict compliance with the requirements of the Contract Documents.

## 1.7 COOPERATION OF CONTRACTOR

The Contractor will be supplied with two copies each of the plans and specifications. He shall have available on the Site at all times one copy each of the plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the Work to facilitate the progress thereof, and he shall cooperate with the Owner and his/her inspectors, the Engineer and with other contractors in every way possible. The Contractor shall have a competent superintendent on the Work at all times who is fully authorized as his/her agent on the Work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Owner or his/her authorized representative.

## 1.8 COOPERATION BETWEEN CONTRACTORS

The Owner reserves the right to contract for and perform other or additional work on or near the Work covered by this contract.

When separate contracts are let within the limits of any one project, each contractor shall conduct his/her Work so as not to interfere with or hinder the progress of completion of the Work being performed by other contractors. Contractors working on the same project shall cooperate with each other as directed.

Each contractor involved shall assume all liability, financial or otherwise, in connection with his/her contract and shall protect and save harmless the Owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced by him because of the presence and operations of other contractors working within the limits of the same project.

The Contractor shall arrange his/her work and shall place and dispose of the materials being used so as not to interfere with the operations of the other contractors within the limits of the same project. He shall join his/her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

## 1.9 AUTHORITY AND DUTIES OF INSPECTORS

Inspectors employed by the Owner shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the Work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the contract. Inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

#### 1.10 INSPECTION OF THE WORK

All materials and each part or detail of the Work shall be subject to inspection by the Owner or Owner's inspectors. The Owner and Owner's inspectors shall be allowed access to all parts of the Work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the Owner or Owner's inspector requests it, the Contractor, at any time before acceptance of the Work, shall remove or uncover such portions of the finished Work as may be directed. After examination, the Contractor shall restore said portions of the Work to the standard required by the specifications. Should the Work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as Extra Work; but should the Work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Any Work done or materials used without supervision or inspection by the Owner may be ordered removed and replaced at the Contractor's expense unless the Owner failed to inspect after having been given reasonable notice in writing that the Work was to be performed.

#### 1.11 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK

All Work which does not conform to the requirements of the Contract Documents will be considered unacceptable, unless otherwise determined acceptable as provided in the subsection titled CONFORMITY WITH PLANS AND SPECIFICATIONS.

Unacceptable Work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the Work, shall be removed immediately and replaced in an acceptable manner at the Contractor's expense.

Upon failure on the part of the Contractor to comply forthwith with any order of the Owner made under the provisions of this subsection, the Owner will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the Owner) from any monies due or to become due the Contractor.

#### 1.12 LOAD RESTRICTIONS

The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the Work. A special permit will not relieve the Contractor of liability for damage which may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his/her hauling equipment and shall correct such damage at its own expense.

#### 1.13 RETEST OF WORK

When as provided for in the Contract Documents, the Owner performs sampling and tests of the Work and if the tests show a failure to meet the requirements of the Contract Documents, the expense of retesting, after reworking or substitution by the Contractor will be at the expense of the Contractor and such costs will be deducted from the payments otherwise due to the Contractor.

#### 1.14 CHARACTER OF WORKERS, METHODS AND EQUIPMENT

The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the Work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

All equipment which is proposed to be used on the Work shall be of sufficient size and in such mechanical condition as to meet requirements of the Work and to produce a satisfactory quality of work. Equipment used on any portion of the Work shall be such that no injury to previously completed work, or adjacent property.

When the methods and equipment to be used by the Contractor in accomplishing the Work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the Work in conformity with the requirements of the contract, plans, and specifications.

Any person employed by the Contractor or by a subcontractor who, in the opinion of the Owner does not perform its work in a proper and skillful manner or is intemperate or disorderly shall, at the written request of the Owner, be removed forthwith by the Contractor or subcontractor employing such person, and shall not be employed again in any portion of the Work without the approval of the Engineer.

Should the Contractor fail to remove such person or persons or fail to furnish suitable and sufficient personnel for the proper prosecution of the Work, the Owner may suspend the Work by written notice until compliance with such orders.

The failure to provide adequate labor and equipment may be considered cause for terminating the Contract.

#### 1.15 FIRE PREVENTION

Contractor shall conform to all Federal, State, and local laws and regulations pertaining to burning, fire prevention and control within or adjacent to the project. Necessary precautions to avoid and eliminate fire hazards shall be the responsibility of the Contractor. This includes keeping the Contract Work area clear of all trash at all times.

All tarpaulins used for any purpose during construction of any work shall be made of material resistant to fire, water and weather and shall bear UL labels. Lighting of any fires on premises is strictly forbidden.

Contractor shall provide portable fire extinguishers compatible with the hazard of each work area and shall instruct its personnel in their location and use. Wherever welding and burning are conducted, no inflammable materials shall be allowed, and welding activities shall be shielded. The Contractor shall post a Hot Work Permit whenever an open flame shall be utilized for work.

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#### 1.16 PUMPING AND DRAINAGE

Surface or sub-surface water or other fluid shall not be permitted to accumulate in excavations or under any structure. Should such conditions develop or be encountered, the water or other fluid shall be controlled and suitably disposed of by means of temporary pumps, piping, drainage lines and ditches, dams or other methods approved by the Owner and other public agencies having jurisdiction.

#### 1.17 DUST CONTROL

The Contractor, for the duration of the Contract, shall maintain all excavations, embankments, haul roads, access roads, plant sites, waste disposal areas, borrow areas, and all other work areas free from dust. Industry-accepted methods of dust control suitable for the area involved and approved by Owner will be permitted.

#### 1.18 WATER POLLUTION

Contractor shall, at its expense, provide suitable facilities to prevent the introduction of any substances or materials into any stream, river, lake or other body of water, which may pollute the water or constitute substances or materials deleterious to fish and wild life.

#### 1.19 ILLUMINATION

When any work is performed at night or where daylight is shut off or obscured, Contractor shall, at its expense, provide artificial light sufficient to permit work to be carried on efficiently, satisfactorily and safely, and to permit thorough inspection. During such time periods the access to the place of work shall also be clearly illuminated. All wiring for electric light and power shall be installed and maintained in compliance with local code, securely fastened in place at all points, and shall be kept as far as possible from telephone wires, signal wires, and wires used for firing blasts.

#### 1.20 HAZARDOUS MATERIAL

The Contractor shall immediately notify Owner of any hazardous materials subsequently found on the site and shall not remove same without the permission of Owner.

If the contractor caused the hazardous material and subsequent contamination, Contractor shall remove said hazardous material and contaminated soils or materials from the site and shall dispose of same in accordance with all Federal, State or Local laws or regulations. Removal of such materials and contamination shall be monitored by a licensed hazardous materials laboratory, and said laboratory shall prepare a written report attesting to the complete removal of the contaminating material and resulting contamination, all to the satisfaction of, and at no cost to, the Owner.

The Contractor shall immediately notify Owner of any hazardous materials subsequently found on the site and shall not remove same without the permission of Owner.

If the contractor caused the hazardous material and subsequent contamination, Contractor shall remove said hazardous material and contaminated soils or materials from the site and shall dispose of same in accordance with all Federal, State or Local laws or regulations. Removal of such materials and contamination shall be monitored by a licensed hazardous materials laboratory, and said laboratory shall prepare a written report attesting to the complete removal of the contaminating material and resulting contamination, all to the satisfaction of, and at no cost to, the Owner.

#### 1.21 EROSION CONTROL

Contractor shall also follow all erosion control measures on construction drawings and or plans and specifications. Contractor shall conform to all Federal, State, and local laws and regulations pertaining to erosion control within or adjacent to the project.

#### 1.22 ADDITIONAL WORK

Additional work is that which results from a change or alteration in the contract and for which there are existing contract unit prices.

**END OF CONTROL OF WORK**

## II. PROSECUTION AND PROGRESS

### 2.1 PRE-CONSTRUCTION MEETING

A pre-construction conference will be scheduled as soon as practical after the award of the Contract. The Contractor shall attend the conference along with the prospective job superintendent, any anticipated major subcontractors and major material suppliers. A proposed progress schedule in a form satisfactory to the Engineer and a statement of the anticipated monthly progress payments showing the percent of progress each month shall be submitted.

The Contractor shall also provide at least two (2) local telephone numbers that may be used to contact the Contractor or his authorized representative in the event of an emergency after normal business hours. Upon receipt of the required documentation, a Notice to Proceed will be issued by the Engineer.

Town will provide two (2) copies of the contract to the contractor at the pre-construction conference. Additional copies may be obtained subject to the cost of printing.

### 2.2 NOTICE TO PROCEED

A Notice to Proceed will be issued to the Contractor upon receipt of a fully executed contract, bonds, insurance certificates, receipt of approval by other governmental agencies (if required) and any other documentation required by the Engineer.

### 2.3 PROSECUTION AND PROGRESS

Unless otherwise specified, the Contractor shall submit his/her progress schedule for the Owner's approval at the pre-construction meeting. The Contractor's progress schedule, when approved by the Owner, may be used to establish major construction operations and to check on the progress of the Work.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the Owner's request, submit a revised schedule for completion of the Work within the Contract Time and modify his/her operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the prosecution of the Work be discontinued for any reason, the Contractor shall notify the Owner in writing at least 24 hours in advance of resuming operations.

The Contractor shall not commence any actual construction prior to the date set forth in the Notice to Proceed.

### 2.4 TEMPORARY SUSPENSION OF THE WORK

The Owner shall have the authority by written notice to the Contractor, to suspend the Work wholly, or in part, for such period or periods as the Owner may deem necessary, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or to perform any or all of the Contractor's other duties under this Contract.

- A. If the Contractor is ordered by the Owner to suspend the Work under this Section due to an unforeseen cause not otherwise provided for in the other provisions of this Contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the Work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the Owner's order to suspend the Work to the effective date of the Owner's order to resume the Work. Claims for such compensation shall be filed with the Owner within the time period stated in the Owner's order to resume work. The Contractor shall submit with its claim information substantiating the amount shown on the claim.
- B. If the Work is suspended under this Section for an indefinite period, the Contractor shall perform the following duties:

1. Suitably store all materials.
2. Implement measures to protect existing work from damage or deterioration.
3. Erect such temporary structures and barricades as necessary to provide for traffic on, to or from the Project.
4. Periodically inspect and maintain the Work and temporary measures during the suspension period, and repair any damage to the Work during the suspension period.
5. Maintain all insurance and bond coverage.
6. Perform such other work as required by the Contract Documents with respect to the Project.
7. Remobilize when ordered to resume the Work by the Engineer.

The Contractor shall notify the Owner in writing fourteen (14) calendar days prior to demobilizing. At the time that the written notice is given to the Owner, the Contractor shall submit a written estimate of any costs of remobilization except in those cases in which the Contractor will bear the costs of remobilization under Paragraph C hereof. Compliance by the Contractor with such notice requirement, and with the requirement for submitting such written estimate, shall be a prerequisite to the Contractor's right to recover any costs incurred by the Contractor to comply with this Paragraph B, to the extent the Contractor would otherwise have a claim for such costs hereunder.

- C. If the Contractor requests a suspension of the Work in whole or in part, or if the Contractor is ordered by the Owner to suspend the Work under this Section due to inclement weather, due to the Contractor's failure to carry out orders given or due to the Contractor's failure to perform any of the Contractor's other duties under this Contract, then:
1. The Contractor shall not be entitled to any additional compensation for fulfilling the duties that the Contractor is required to perform by reason of such suspension, regardless of whether any additional compensation would otherwise be allowed hereunder, including, without limitation, any additional compensation for fulfilling any of the duties that are imposed upon the Contractor under Paragraph B hereof or for fulfilling the Contractor's duty to remobilize at the end of such suspension; and
  2. The Contractor shall pay the Owner all of the costs that are incurred by the Owner by reason of such suspension, including, but not limited to, the Engineer's fees and the costs of any necessary inspections or testing during the period of such suspension.

## 2.5 ADJUSTMENT OF CONTRACT TIME

The Contract Time may be adjusted only by change order, when requested by the Contractor in writing and approved by the Owner, for reasons outside of the Contractor's control, as follows:

- A. Natural disasters affecting the site; or
- B. Excessive rainfall during the entire calendar month, defined as total monthly rainfall in excess of the normal rainfall for that calendar month and total number of days with more than 0.10 inches of rainfall in excess of the normal number of such days for that calendar month. Normal values shall be taken as published in "Climatography of the United States No. 20 for North Carolina"; or
- C. Suspension of the Work as order by the Owner; or
- D. Delays in critical work by others that is not part of this Contract; or
- E. Significant additions to the scope of the Work.

The Contractor shall bear the burden of proof that a delay has been caused by factors outside his control, shall clearly demonstrate how the delay impacts the critical path of the Work as shown on his work schedule as last revised, and shall demonstrate that he has made reasonable and prudent efforts to overcome the impact of the delay on the critical path. With respect to item (b) above, a condition precedent to meeting its burden of proof will be the monthly submission to the owner of a statement of the number of days, if any, the Contractor was prevented from prosecuting the Work during the immediately preceding month due to excessive rainfall.

## 2.6 FAILURE TO COMPLETE PUNCH LIST ON TIME

The Contractor shall complete all punch list items determined by the Owner within thirty (30) calendar days. Should the Contractor fail or refuse to complete all punch list items to the satisfaction of the Owner within the said 30-day period, the Owner shall have the right to complete all said punch list items. In such event, Owner shall be entitled to recover from Contractor the Owner's actual costs incurred in completing such punch list items, plus any and all consequential damages and costs incurred by Owner as a result of Contractor's failure to complete such punch list items. Failure to complete all punch list items within sixty (60) calendar days, shall be considered Default of Contract and shall result in loss of any remaining retainage otherwise due to the Contractor.

## 2.7 DEFAULT AND TERMINATION OF CONTRACT

The Contractor shall be considered in default and such default will be considered as cause for the Owner to terminate the Contract for any of the following reasons if the Contractor:

- A. Fails to begin the Work under the Contract within ten (10) calendar days of the date of commencement specified in the "Notice to Proceed"; or
- B. Fails to perform the Work or fails to provide sufficient workers, equipment or materials to assure completion of the Work in accordance with the terms of the Contract; or
- C. Performs the Work unsuitably or neglects or refuses to remove materials or to perform anew such Work as may be rejected as unacceptable and unsuitable; or
- D. Discontinues the prosecution of the Work; or
- E. Fails to resume Work which has been suspended within a reasonable time after notice to do so; or
- F. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency; or
- G. Allows any final judgment related to the Project to stand against him unsatisfied for a period of 10 days; or
- H. Makes an assignment for the benefit of creditors; or
- I. Fails to perform any covenant of this Contract, or
- J. For any other cause whatsoever, fails to carry on the Work in an acceptable manner.

Should the Owner consider the Contractor in default of the Contract for any reason hereinbefore, the Owner shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the Owner's intentions to terminate the contract.

If Contractor or Surety shall fail to cure such default within 10 calendar days after such written notice from the Owner of the existence of such default or, if such default cannot with reasonable diligence be cured within a period of 10 calendar days, then upon the failure of the Contractor to commence to cure such default within said 10-day period and to proceed with due diligence to complete the remedying of said default; then the Owner will, have full power and authority, without violating the Contract, to terminate the Contract and/or to take control of the Work.

All costs and charges incurred by the Owner, together with the cost of completing the Work, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the Owner the amount of such excess.

## 2.8 TERMINATION FOR CONVENIENCE

At any time after the acceptance of this Contract, the Owner shall have the absolute right to terminate the entire Contract or any part thereof for any reason whatsoever.

## 2.9 ACTIONS UPON TERMINATION OR TERMINATION FOR CONVENIENCE

Upon receipt of such notice of termination, the Contractor shall:

- A. Stop the performance of the Work.
- B. Take any other action toward termination of the Work which the Owner directs, including but not limited to:
  - 1. Stabilization of the unfinished site to meet the conditions of the erosion and sediment control permit and at the direction of the Department of Environment and Natural Resources.
  - 2. Maintain the necessary traffic control devices until all potential hazards due to unfinished construction activities have been removed and/or to the satisfaction of the Owner. Traffic control devices that are determined by the Owner to remain shall become the property of the Owner.
  - 3. Complete any pay item as directed by the Owner that if left uncompleted may result in a safety hazard.
  - 4. Deliver all paid stored materials stored off site and material stored on site to a location directed by the Owner.
  - 5. Remove all temporary facilities.
  - 6. Provide any necessary items of Work to secure the Site from public access as directed by the Engineer.

## 2.10 PAYMENT UPON TERMINATION

When the Contract, or any portion thereof, is terminated before completion of all pay items, payment will be made for the actual number of units or items of Work completed at the Contract price or as mutually agreed for items of Work partially completed.

Reimbursement for organization of the Work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the Work and that are not incorporated in the Work shall, at the option of the Owner, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Owner.

If the sum of all previous payment and credits made by the Owner exceeds the sum payable due to the Contractor, such excess shall be refunded by the Contractor to the Owner immediately upon the determination of such excess by the owner.

If the Contract is terminated for convenience, the Contractor shall be paid a sum as profit determined taking the amount of profit the Contractor would have received upon completing this Contract, multiplied by a fraction, the numerator of which is

the value of the Work completed as of the date of receipt of the notice of termination and the denominator of which is the Contract Price.

Termination of the Contract or a portion thereof shall neither relieve the Contractor of his/her responsibilities for the completed Work nor shall it relieve his/her surety of its obligation for and concerning any just claim arising out of the Work performed.

The Owner shall be given full access to all books, cost records, correspondence and papers of the Contractor relating to the Contract in order to determine amounts to be paid the Contractor due to any termination of the Contract.

#### 2.11 PARTIAL ACCEPTANCE

If at any time during the prosecution of the Work the Contractor substantially completes a usable unit or portion of the Work, the occupancy of which will benefit the Owner, he may request the Owner to make final inspection of that unit. If the Owner finds upon inspection that the unit has been satisfactorily completed in compliance with the Contract, he may accept it as being completed, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the Owner shall not void or alter any provision of the Contract.

#### 2.12 FINAL ACCEPTANCE

Upon due notice from the Contractor of presumptive completion of the entire Work, the Owner will make an inspection. If all construction provided for and contemplated by the Contract is found to be completed in accordance with the Contract Documents, such inspection shall constitute the final inspection. The Owner shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any Work, in whole or in part, as being unsatisfactory, the Owner will give the Contractor the necessary instructions for correction of same and the Contractor shall immediately comply with and execute such instructions. Upon correction of the Work, another inspection will be made which shall constitute the final inspection, provided the Work has been satisfactorily completed. In such event, the Owner will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

### END OF PROSECUTION AND PROGRESS

### III. MEASUREMENT AND PAYMENT

#### 3.1 MEASUREMENT OF QUANTITIES

All Work completed under the Contract will be measured by the Owner, or his/her authorized representatives, using United States Customary Units of Measurement.

The method of measurement and computations to be used in determination of quantities of material furnished and of Work performed under the Contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the Engineer.

Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

Unless otherwise specified, all pay items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, underdrains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

In computing volumes of excavation the average end area method or other acceptable methods will be used.

The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inches.

The term "ton" will mean the short ton consisting of 2,000 pounds avoirdupois. All materials which are measured or proportioned by weights shall be weighed on accurate, approved scales by competent, qualified personnel at locations designated by the Engineer. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material is paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

When requested by the Contractor and approved by the Engineer in writing, material specified to be measured by the cubic yard may be weighed, and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon or ton. When measured by volume, such volumes will be measured at 60°F or will be corrected to the volume at 60°F using ASTM D 4311 for asphalts or ASTM D 633 for tars.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

When bituminous materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.

Cement will be measured by the ton or hundredweight.

Unless otherwise specified, timber will be measured by the thousand feet board measure (M.F.B.M.) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

The term "lump sum" when used as an item of payment will mean complete payment for the Work described in the contract.

When a complete structure or structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit will be construed to include all necessary fittings and accessories.

Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered by the Engineer in connection with force account work will be measured as agreed in the change order or supplemental agreement authorizing such force account Work as provided in the subsection titled PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK of this section.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales.

Scales shall be accurate within one-half percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the inspector before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of 1 percent of the nominal rated capacity of the scale, but not less than 1 pound. The use of spring balances will not be permitted.

Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the inspector can safely and conveniently view them.

Scale installations shall have available ten standard 50-pound weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.

Scales "over weighing" (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighing-accuracy test will be reduced by the percentage of error in excess of one-half of 1 percent.

In the event inspection reveals the scales have been "under weighing" (indicating less than correct weight), they shall be adjusted, and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit Contract prices for the various items of the project.

When the estimated quantities for a specific portion of the Work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the Work will be made, unless the dimensions of said portions of the Work shown on the plans are revised by the Engineer. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

### 3.2 COMPENSATION FOR ACTUAL QUANTITIES

When the actual quantities of work vary from the estimated quantities, the Contractor shall accept as payment in full, so far as pay items are concerned, payment at the unit price for the quantities of work actually completed and accepted. No allowance will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly or indirectly from its unbalanced allocation of overhead and profit among the pay items, or from any other cause.

### 3.3 PARTIAL PAYMENT/RETAINAGE

Partial payments will be made at least once each month as the Work progresses. Said payments will be based upon estimates, prepared by the Contractor and approved by Owner, of the value of the Work performed and materials complete in place in accordance with the Contract Documents.

No partial payment will be made when the amount due the Contractor since the last estimate amounts to less than ten thousand dollars (\$10,000).

No partial payment shall bind the Owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the subsection titled ACCEPTANCE AND FINAL PAYMENT of this section.

### 3.4 ACCEPTANCE AND FINAL PAYMENT

When the Work has been accepted in accordance with the requirements of the subsection titled FINAL ACCEPTANCE, the Owner shall determine the actual quantities of the items of work actually performed. The Contractor shall approve the Owner's statement of actual quantities or advise the Owner of his/her objections which are based on disputes in measurements or computations of the final quantities. The Contractor and the Owner shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the Owner's final statement of actual quantities. If, after such 30-day period, a dispute still exists, the Contractor may approve the Owner's statement of actual quantities under protest of the quantities in dispute, and such disputed quantities shall be considered by the Owner as a claim in accordance with the subsection titled CLAIMS FOR ADJUSTMENT AND DISPUTES.

After the Contractor has approved, or approved under protest, the Owner's statement of actual quantities, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

### 3.5 LIENS

Neither the final payment nor any part of the retained percentage shall become due until the Contractor delivers to the Owner: (a) an affidavit stating, if that be in fact, that all subcontractors and suppliers have been paid in full, or if the fact be otherwise, showing the name of each subcontractor and supplier who has not been paid in full and the amount due or to become due each for labor, service or material furnished; (b) consent of surety, if any, to final payment; and (c) if required by Owner, other data establishing payment for satisfaction of all obligations, such as receipt, releases, and waivers of lien arising out of the Contract to the extent and in such form as designated by the Owner.

### 3.6 CLAIMS FOR ADJUSTMENT AND DISPUTES

If for any reason the Contractor deems that additional compensation is due him for work or materials not clearly provided for in the Contract Documents or previously authorized as Extra Work, he shall notify the Owner in writing of his/her intention to claim such additional compensation before he begins the work on which he bases the claim. If such notification is not given or the Owner is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the Owner has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit his/her written claim to the Owner and the Engineer. Failure to do so within the time specified will constitute a waiver by Contractor of the claim.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

The following documentation and information must be presented in order to properly evaluate such claim:

- A. Definition of the basis of the claim, including a detailed identification of which materials and what work is considered to represent a change to the original contract, an explanation of why the work or material is different than what was called for by the original Contract, and an identification of the contract provisions and anything else which the Contract relied upon;
- B. An explanation of how and why the work which is considered a change will result in any additional cost or performance time for the Contractor;
- C. An identification of the categories of additional costs which may be incurred, an estimate of the dollar magnitude of each, and a statement of the impact this work will have on the construction schedule, including the contract completion dates;
- D. An indication of how the additional costs which is believed that may be incurred can be, and are to be, quantified;
- E. Documentation of any actual additional costs and any actual impact to the construction schedule due to this work;
- F. Documentation of the cost of performing all similar "unchanged" work, to provide the Engineer a basis for comparison;
- G. All backup and other documentation which are believed to support or relate to the claim;
- H. Documentation quantifying the amount of work which is believed to constitute this "changed" Work, and the time period and the areas where such work was or is to be performed.

### 3.7 CORRECTION OF WORK AFTER FINAL PAYMENT

Neither the final certificate nor payment, nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship and, unless otherwise specified, he shall remedy any defect due thereto and pay for any damage to other Work resulting therefrom, which shall appear within a period of one year from date of final acceptance. Wherever the word "acceptance" occurs, it shall be understood to mean final acceptance.

The Owner shall give notice of observed defects with reasonable promptness. If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after the receipt of notice, the Owner shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage at the Contractor's expense. With respect to all warranties, expressed or implied, from subcontractors, manufacturer, or suppliers for Work performed and materials furnished under this Contract, the Contractor shall:

- A. Obtain all warranties that would be given in normal commercial practice.
- B. Require all warranties to be executed, in writing, for the benefit of the Owner.

### 3.8 SUBSURFACE INVESTIGATION

The Contractor shall make his own subsurface investigations. Any information obtained by the Town as a result of its own subsurface investigations will be made available upon request. This information (when available) is provided for informational purposes only and shall not relieve the Contractor from making his own investigations. The Contractor shall obtain all necessary permits prior to making any pavement cuts on existing streets.

**END OF MEASUREMENT AND PAYMENT**

## IV. MISCELLANEOUS

### 4.1 VENUE

This Contract has been executed by, delivered to and accepted by the Owner in North Carolina, and the provisions hereof shall be governed by the laws of North Carolina. Any disputes arising out of or related to this Contract shall be resolved in accordance with said laws.

The parties agree that any action or legal proceeding arising out of or related to this Contract shall be brought in the state courts of Union County, NC or in the U.S. District Court for the Western District of North Carolina; and the parties hereby consent to and waive any objection to jurisdiction or venue in said courts.

### 4.2 INDEPENDENT CONTRACTOR

Contractor represents that it is fully experienced and properly qualified to perform the class of work provided for herein, and that it is properly licensed, equipped, organized and financed to perform such work. Contractor shall act as an independent contractor and not as the agent of Owner in performing the Contract, maintaining complete control over its employees and all of its suppliers and subcontractors. Nothing contained in this Contract or any subcontract awarded by Contractor shall create any contractual relationship between any such supplier or subcontractor and Owner.

### 4.3 LAWS AND REGULATIONS

Contractor and its employees and representatives shall at all times comply with all applicable laws, ordinances, statutes, rules or regulations in effect at the time Work is performed under this Contract.

### 4.4 INDEMNITY

Contractor agrees to defend, indemnify and hold harmless the Owner, its officers, employees and agents from any and all claims, suits, actions, damages, expenses, costs (including attorneys' fees if applicable) or fines, arising from Contractor's performance of this Contract; provided that Contractor shall not be liable for any injury, damage or loss occasioned by the sole negligence of Owner, its officers, employees or agents. Contractor shall purchase insurance, as described in this Section, which insurance shall provide coverage for this contractual liability. In any case in which Contractor provides a defense to the Owner, its officers, employees or agents, pursuant to his indemnity, the defense will be provided by attorneys reasonably acceptable to the Owner. The provisions of this Section shall survive the expiration or early termination of this Agreement.

### 4.5 INSURANCE

- 4.5.1 Commercial General Liability Insurance. Contractor shall maintain in force during the term of this Contract commercial general liability insurance, in an amount acceptable to Owner but no less than One Million Dollars (\$1,000,000) per occurrence. This insurance shall include coverage for products/completed operations, bodily injury, personal injury, property damage and the contractual liability assumed under the indemnity provision of the Contract. The policy shall be occurrence-based and name the Owner as an additional insured.
- 4.5.2 Vehicle Liability Insurance. Contractor shall maintain in force during the term of this Contract liability insurance covering the operations of Contractors' owned, non-owned and hired automobiles and other ground vehicles, for limits satisfactory to Owner but not less than One Million Dollars (\$1,000,000) bodily injury and property damage each occurrence. The policy shall be occurrence-based and name the Owner as an additional insured.
- 4.5.3 Worker's Compensation and Employer's Liability Insurance. Contractor shall maintain worker's compensation and employer's liability insurance in the amounts and form required by the laws of the State of North Carolina.

- 4.5.4 A certificate evidencing all insurance coverage required of Contractor shall be filed with the Owner at the execution of this Contract, and such certificate shall provide that such insurance coverage will not be canceled or reduced without at least thirty (30) day's prior written notice to the Owner. At least ten (10) days prior to the expiration of any such policy, a certificate showing that such coverage has been renewed shall be filed with the Owner. If such insurance coverage is canceled or reduced, the Contractor shall within fifteen (15) days after receipt of written notice from the Owner of such cancellation or reduction in coverage, file with the Owner a certificate showing the required insurance has been reinstated or provided through another insurance company or companies. The company or companies furnishing insurance shall be qualified to issue insurance effective in the State of North Carolina.

#### 4.6 CONTRACT MEETINGS

The Contractor shall, as requested by Owner, attend any and all meetings called by Owner to discuss the Work. Such meetings shall be conducted and recorded by the Contractor with minutes of each meeting distributed to Owner and Contractor.

#### 4.7 SUCCESSORS, ASSIGNEES AND ASSIGNMENT

Contractor shall not assign, transfer, convey or otherwise dispose of the Contract or its right, title or interest in or to the same or any part thereof, without previous written consent of the Owner and concurred to by the sureties.

#### 4.8 AUDIT RIGHTS

The Owner shall have the right to inspect, examine and make copies of any and all books, accounts, records, and other writings of contractors relating to the performance of the Work under the Contract, including change orders. Such audit rights shall be extended to any duly authorized representatives designated by the Owner. Audits shall take place at times and locations mutually agreed upon by both parties, but not later than one week following the date of a request for an audit.

#### 4.9 ALTERNATES

The Owner shall have the right to include certain bid alternates into the Work.

#### 4.10 OSHA REQUIREMENTS

The Contractor shall comply with OSHA and all other applicable regulations.

#### 4.11 TAX STATEMENT SUBMITTAL

1. All tax statement bodies and all signatures must be original. Photocopies of blank forms may be used, provided the document containing the information is original.
2. All tax statements must be signed by the Contractor/Subcontractor's company officer submitting the statement and certified by a Notary Public. All tax statements must list in detail taxes paid by individual invoice. No lump sum, running total, or copies of previously reported statements will be accepted. Tax statements shall show North Carolina tax and County tax paid.
3. A tax statement showing detailed amounts with "amounts previously reported" noted on the face will be accepted if they are original. This is the equivalent of a statement indicating "no taxes paid this period." All subcontractors for whom tax statements are included must be certified as such on the face of the Contractor's tax statement.
4. Tax statements (the State/County Sales/Use Tax Statement form) must always accompany a payment request for the related project. All final construction payment requests must have a final tax statement regardless of whether any taxes have been paid during the period in question. If no taxes have been paid, the detail page should simply state "0", "None", or "No taxes paid this period."

4.12 PROJECT CLOSEOUT DOCUMENTS

The Contractor shall provide the following documents with the final pay request:

1. Contractor's Affidavit Release and Waiver of Claim
2. State/County Sales/Use Tax Statement
3. W-9
4. Consent of Surety to Final Payment (contracts equal to or exceeding \$100,000) (AIA Document G707)

No final payment will be authorized until these documents have been properly completed and submitted by the Contractor.

**END OF MISCELLANEOUS**

**CONTRACTOR'S AFFIDAVIT RELEASE AND WAIVER OF CLAIM**

STATE OF \_\_\_\_\_ COUNTY OF \_\_\_\_\_

\_\_\_\_\_, of  
(Name) (Title)

\_\_\_\_\_, being first duly sworn, deposes and says that:  
(Contractor)

The undersigned is authorized to execute this Affidavit, Release and Waiver of Claim on behalf of the Contractor and that he has personal knowledge of all facts set forth herein;

This Affidavit, Release and Waiver of Claim are made concerning the construction of the following:

Project: \_\_\_\_\_ Project No.: \_\_\_\_\_

All payrolls, material bills, sales tax, social security tax, state and federal unemployment insurance, and all other liabilities and taxes owed by the Contractor and arising in any manner from the above-described project have been paid in full;

No claim or lien exists in favor of any supplier of materials or labor or in favor of any subcontractor furnishing materials or labor on the above-described project;

Notwithstanding the foregoing, if the Town of Indian Trail, or property of the Town of Indian Trail, is subject to any claim or lien that arises in any manner from the failure of the Contractor to pay any liability described above, the Contractor will indemnify and hold the Town of Indian Trail harmless for any amount that the Town of Indian Trail is required to pay to discharge such lien or settle such claim and, further, will pay the Town of Indian Trail's expenses, costs, and attorney fees incurred in connection therewith;

All claims, suits, and proceedings of every name, description, or nature arising out of the above project against the Town of Indian Trail, its officers, employees, and agents have been settled;

The Contractor releases and waives any and all claims of every type and description that the Contractor may have against the Town of Indian Trail arising in any manner from the construction of the above-described project.

By: \_\_\_\_\_ Date: \_\_\_\_\_

Title: \_\_\_\_\_

Sworn to and subscribed before me this \_\_\_\_\_ day of

\_\_\_\_\_, 2010

\_\_\_\_\_  
Notary Public

My commission expires \_\_\_\_\_



## V. SPECIFICATIONS

5.1 ASPHALT:

All asphalt used in the construction of this project shall consist of all elements covered by Section 610 of the Standard Specifications.

All cost associated in raising utilities (sewer manholes, water valve boxes, etc.) during asphalt paving operations shall be included in the unit price bid for Asphalt.

5.2 CONCRETE:

A. Compressive Strength

All concrete used in the construction of this project shall be 3600 PSI strength at twenty-eight (28) days, unless otherwise specified. No adjustment will be allowed for the required use of high-early strength concrete. When the Contractor is requested to use high-early strength concrete in certain areas, he must furnish a copy of the delivery ticket to the project inspector prior to allowing traffic to proceed across the item in question before the required seven-day curing period.

Concrete cylinders shall be prepared by the Contractor's designated materials testing firm. It shall be the responsibility of the Contractor to protect the cylinders until such time as they are taken to the designated materials testing laboratory. All cost associated with hiring a Certified AASHTO independent testing laboratory shall be included in the proper concrete line items. Not less than five (5) cylinders (six (6) for structures) shall be made for each day's pour.

B. Slump

The maximum slump of the concrete used on the project shall be as defined in Section 1000 of the Standard Specifications. The Contractor's designated testing firm shall provide all equipment necessary to test the slump of the concrete and at a frequency established by the Engineer and in accordance with ASTM C 143. The sample taken for determination of slump will be obtained immediately prior to the concrete being discharged onto the project. Concrete failing to meet requirements for slump will be subject to rejection.

C. Air Content

The air content of the concrete used on this project shall be as defined in Section 1000 of the Standard Specifications. The Contractor's designated testing firm shall provide all equipment necessary to test the air content of the concrete and shall test the air content at a frequency established by the Engineer. The sample taken for the determination of air content will be obtained immediately prior to the concrete being discharged onto the project. Concrete failing to meet specification requirements for air content will be subject to rejection.

D. Acceptance and Testing Standards

Concrete batching, sampling, testing and evaluation shall be done in accordance with the standards listed below:

ASTM C94	Standard Specifications for Ready Mixed Concrete
ASTM C172	Standard Method of Concrete Sampling
ASTM C470	Tentative Specification for Molds for Forming Concrete Test Cylinders Vertically
ASTM C31	Standard Method of Making and Curing Concrete
ASTM C143	Standard Method of Test for Slump of Portland Cement Concrete
ASTM C42	Obtaining and Testing Drilled Cores and Sawed Beams of Concrete
AASHTO T199-72	Air Content of Freshly Mixed Concrete by the Chace Indicator
ASTM C231-82	Standard Test for Air Content of Freshly Mixed Concrete by the Pressure Method

All tests shall be performed by the Contractor's designated testing firm using qualified personnel fully trained in the procedures of the above testing standards.

E. Concrete Finishes

The type of finish will be that required by the section of specifications directly applicable to the work being constructed. All exposed surfaces of retaining walls, structures, and etc. shall be given a Class 2 finish as described by Section 420-18 (f) of the Standard Specifications unless indicated otherwise in the plans.

F. Compressive Strength Quality Assurance for Incidental Concrete

The following Quality Assurance Specifications shall apply only to incidental concrete used in the construction of this project. Incidental concrete shall be defined as any concrete not used in the construction of rigid pavement or any concrete that is not an integral part of a structure. The acceptability of any questionable structural concrete used in the construction of this project will be evaluated on a case by case basis.

It is the intent of these specifications to provide an equitable means of accepting materials that may vary slightly from the specification range stated in the Standards Specifications in lieu of total rejection, removal, repair or non-payment. The Engineer will determine acceptability of materials in accordance with the applicable sections of these specifications. When materials are not within specification limits, an adjusted payment may be allowed as delineated in these specifications, except where the level and variability of test results indicate a degree of noncompliance with requirements so great as to make the material unacceptable. Unacceptable material shall be either re-worked or replaced at no additional cost to the Town. The Engineer reserves the right to reject questionable material at any time in lieu of making reduced payment.

Concrete will be tested and accepted with respect to compressive strength on the basis of the average test results of concrete test cylinders. It shall be the responsibility of the Contractor to prepare test cylinders in accordance with ASTM C31 and to adequately protect the cylinders until such time as they are taken by Town personnel to the Town Materials Laboratory for curing and testing. If the average strength of concrete cylinder test results fail to attain the specified minimum compressive strength at twenty-eight (28) days but meets or exceeds 70% of the minimum compressive strength, the Engineer will have the option of instructing the Contractor to replace all concrete represented by those cylinders with concrete meeting specifications or of allowing the concrete to remain in place at a reduced contract price. The contract unit price for such concrete left in place shall be reduced by the following formula:

$$\text{Reduced Unit Price} = \text{Contract Unit Price} \times \frac{\text{Avg. Strength of Test Cylinders at 28 Days}}{\text{Specified min. Compressive Strength}}$$

In the event that concrete cylinder tests fail to meet minimum compressive strengths at twenty-eight (28) days, the Contractor will have the option of taking cores from the concrete in question at the Contractor's expense. Cores must be taken and tested in accordance with ASTM C42. The average compressive strength of cores which are correctly tested shall then be used as the basis for acceptance of concrete in lieu of concrete test cylinder results discussed above. The above criteria for acceptance of concrete with respect to compressive strength shall then be applied to core test results. Cores must be taken thirty-one (31) days after placement of concrete.

Cores must be taken and tested by a qualified independent testing laboratory approved by the Engineer. A minimum of three (3) cores shall be taken from questionable concrete, unless otherwise specified by the Engineer. Cores shall be taken from locations selected by the Engineer.

If the average strength of the concrete test results (cylinders and cores) fail to attain seventy percent (70%) of the specified minimum compressive strength at twenty-eight (28) days, all applicable concrete shall be rejected. The Contractor, at no additional cost to the Town, shall remove the rejected concrete and replace it with concrete meeting specifications.

### 5.3 EROSION AND SEDIMENTATION CONTROL MEASURES:

The Contractor shall install and maintain all erosion and sedimentation control measures and devices necessary to comply with the Erosion and Sedimentation Control Plan and applicable local and state ordinances and laws. All erosion and sedimentation control measures and devices shall be installed prior to beginning clearing or grading operations. Such devices shall be maintained in proper working condition from installation throughout the duration of the Project.

The Contractor shall indemnify and hold harmless the Town for any penalties imposed against the Town by any local or state agency for the Contractor's failure to install and properly maintain erosion and sedimentation control devices. The Contractor shall immediately correct any deficiencies in erosion and sedimentation measures identified by the Town or local or state agency. If the Contractor fails to correct the deficiencies within 24 hours after notification, the Town will have such corrections performed and assess the cost of these corrections plus a 100% surcharge against the Contractor.

Before any work that involves asphalt surface treatments or the rehabilitation of the existing subgrades; the Contractor will install silt bags in all catch basins that are located in the construction area. These devices will be monitored on a per week basis.

The Contractor shall include the cost of installing and maintaining erosion and sedimentation control devices in the price bid for Grading unless otherwise specified.

If any borrow or waste areas are to be utilized, it shall be the responsibility of the Contractor to notify the property owner that the property owner is responsible for any damage occurring from the site, either as part of the agreement with the Contractor, or on his own. All work, sediment control structures, and seeding will be at the cost of the property owner or Contractor.

The Town will not participate in the cost of this work on the waste or borrow areas. Prior to final payment being made, the Contractor shall obtain a release from the property owner of the borrow or waste site utilized for the Project.

### 5.4 PAVEMENT REPAIRS:

Where asphalt is to be removed, the Contractor shall provide a neat edge and a uniform line along the pavement. Before asphalt is placed and compacted, the exposed edges shall be tack coat in a uniform manner.

Unless otherwise stated by the Engineer, all full depth street repairs will consist of removing a four-inch depth specified area and replacing it with a 2.5" intermediate base course (I 19.0 B) and a 1.5" surface course (S 9.5 B). If the repaired area is not sealed with asphalt surface mix within (2) working days or before the next rain event, the area in question will be reinspected and if found to be unsuitable the Contractor will replace the area at no cost to the Town.

If the existing asphalt pavement structure has a depth greater than four inches; the Contractor will replace in kind with the same depth plus one inch.

### 5.5 SAWING EXISTING PAVEMENT:

Where asphalt or concrete (curb, sidewalk, roadway, driveways, parking lots, etc.) is to be removed, the Contractor shall provide a neat edge along the pavement being retained by sawing the pavement a minimum of 2" deep and 6" wide before breaking and removing adjacent pavement.

When the Contractor proposes to saw pavement more than one foot from the proposed pavement (curb, sidewalk, structure, etc.), the Contractor shall obtain approval from the Engineer prior to saw cutting and removing pavement.

The cost of sawing asphalt or concrete shall be considered incidental to the removal operation and shall be included in the unit price bid for Asphalt.

## 5.6 SEEDING AND MULCHING:

The work covered by this provision includes preparing seedbeds; furnishing, placing, and covering limestone, fertilizer, and seed; compacting seedbeds; furnishing, placing, and securing mulch; mowing; and other operations necessary for the permanent establishment of grasses from seed on shoulders, slopes, ditches, and on all earth areas disturbed by construction and on portions of areas seeded under previous contracts where, in the opinion of the Engineer, there is unsatisfactory vegetative cover.

All work covered in this specification shall be in accordance with, and all materials shall conform to, the requirements of the Charlotte Mecklenburg's "Landscape Construction Standards", Landscape Planting and Seeding, Section 0400.

There will be no separate measurement or payment for seeding and mulching. The costs associated with seeding and mulching the Project shall be included in the unit price for Grading.

**VI. PROJECT SPECIAL PROVISIONS**

6.1 SP1 - MOBILIZATION

Description: Work covered by this special provision consists of preparatory work and operations which must be preformed or for costs incurred prior to beginning work on the Contract.

Payment: Payment for the entire lump sum price for the item of "Mobilization" will be made with the first pay request paid on the Contract. The bid price shall not exceed 3% of the total amount bid for the various items in this Contract.

Payment will be made under:

MOBILIZATION.....LS

6.2 SP2 – GRADING:

Description: Work covered by this special provision consists of but not limited to surveying, grading, erosion control, removal/disposal, tree and under growth removal, traffic control and general clean up.

All cost associated with completion and acceptance to the following item descriptions shall be included in this special provision:

- A. Any and all survey work performed to establish lines and grades.
- B. Road widening (All aspects for roadway widening shall conform to the requirements set forth in Section 245 "Roadway Excavation", Section 250 "Removal of Existing Pavement", and Section 500 "Fine Grading Subgrade, Shoulders, and Ditches" of the Standard Specifications.) All work shall correspond with the approved plans and any deviation shall have prior approval from the Engineer.
- C. Fine grading shall be performed as such that the maximum difference between the established grade and the graded subgrade within any 25-foot section is a half inch (1/2").
- D. General grading along other areas shall be in close conformity to the contour elevations established on the approved plans.
- E. These designated areas (Playground and Memorial) shall be fine graded and seeded/mulched.
- F. The removal of three (3) Leland Cyprus trees and roots to a depth of two (2) feet below existing grade on north side of site where proposed sidewalk connection to existing parking area shall occur. Also, clearing of undergrowth along east side of property line towards the southeast corner of the site. This shrubbery shall be cut at a minimum height of 15.0 feet.
- G. All traffic control associated in maintaining the flow of traffic along Blythe Drive during construction activities for the site and roadway improvements. All traffic control shall conform to the requirements set forth in Section I "Control of Work", subarticle 1.2 "Maintenance of Traffic" in this Contract. At least one 10 foot lane must be open to traffic along Blythe Drive at all times.
- H. All erosion control required during the duration of the project. Possible items needed may be silt bags in catch basins, rock check dams, erosion control matting, or silt fence. The Contractor shall be responsible for proving, installing, maintaining, and removing any required erosion control that is specified on the approved plans or as directed by the Engineer.
- I. Reestablishing all disturbed areas with fertilizer, limestone, and seed sown with 100% biodegradable matting used to cover the entire repaired area. Any existing plantings in the immediate area of the work shall be mulched with a minimum of four (4) loosely placed inches of new, clean, pine straw.

- J. Repairing any insufficiencies that are present in all existing catch basins during construction (no steps, open joints, etc.). All catch basins shall be free of any debris that may have collected due to construction.
- K. Removal and proper disposal of asphalt, concrete, existing drain pipes, trees, shrubbery, structures, saw cutting pavement, traffic control, or any other foreign materials not associated with the overall appeal of the site.

Payment: Payment will be paid at the lump sum price for "Grading". This payment will be full compensation for all elements of work required to complete the Work as specified.

Payment will be made under:

GRADING.....LS

6.3 SP3 – 4" CONCRETE SIDEWALK, 6" CONCRETE WHEELCHAIR RAMPS, AND VERTICAL CONCRETE CURB

Description: The work covered by this special provision consists of all elements of work covered by Section 846 "Concrete Curb" and Section 848 "Concrete Sidewalk, Driveways, and Wheelchair Ramps" of the Standard Specifications. This item includes sawcutting, excavation, backfill, removal and disposal of existing concrete and the installation of new 4" Concrete Sidewalk, 6" Concrete Wheelchair Ramps, and Vertical Concrete Curb. Indian Trail Land Development Standards 1.12A, 1.12B, 1.17, and NCDOT Std. 848.05 shall be followed in the installation, construction and materials used for concrete work.

Work also includes providing and installing 4" PVC conduit underneath sidewalk at locations determined by the Engineer. The Contractor will install #4 rebar inside the conduit and seal both ends of pipe sections with manufactured recommended caps.

Work areas shall be clearly marked with construction barrels or caution tape at all times. All debris shall be removed from the work area daily. Installation of the new concrete must occur within 24 hours of the excavation and removal of the existing concrete; otherwise the Contractor must secure the work area with temporary methods at the Contractor's expense. Temporary methods of securing the work area must meet the approval of the Engineer. Backfilling along with seeding and mulching shall occur no later than 3 days following the pouring of the concrete.

Methods and Materials: The concrete mix design shall conform to the requirements of the "Concrete" section in the Specification portion of this Contract.

Contractor shall obtain approval from the Engineer for all graded and formed work prior to concrete being poured.

The Contractor shall incorporate existing castings encountered within the limits of the project to match the adjacent finished work. No direct payment will be made for this work. Any costs anticipated should be included in other contract quantities bid price.

The quantity of PVC, rebar, and caps is as follows:

- A. 65 linear feet of 4" PVC
- B. 65 linear feet of #4 rebar
- C. 16 seal caps

Measurement: The quantity of 4" Concrete Sidewalk to be paid for will be the actual number of square yards of 4" Concrete Sidewalk measured along the surface of work which has been completed and accepted. The quantity of 6" Concrete Wheelchair Ramps to be paid for will be the actual number of 6" Concrete Wheelchair Ramps installed and has been completed and accepted. The quantity of Vertical Concrete Curb to be paid for will be the actual number of lineal feet of Vertical Concrete Curb measured along the surface of work which has been completed and accepted.

Payment: Payment for 4" Concrete Sidewalk will be the number of square yards (SY) of 4" sidewalk measured in place.

Payment for 6" Concrete Wheelchair Ramps will be each (EA) for the number installed and accepted.

Payment for Vertical Concrete Curb will be the number of linear feet (LF) measured in place of curb and gutter installed and accepted.

All cost associated with the installation of the PVC conduits shall be included in the unit price bid for 4" Concrete Sidewalk (Variable Width).

Payment will be made under:

4" CONCRETE SIDEWALK .....	SY
6" CONCRETE WHEELCHAIR RAMPS.....	EA
VERTICAL CONCRETE CURB.....	LF

#### 6.4 SP4 – TRUNCATED DOME MATS:

Description: The work covered by this special provision consists of the attaching of black truncated dome mats to new and existing concrete wheelchair ramps in accordance with ADA compliance.

Methods and Materials: All truncated domes must be installed in accordance with ADA methods and materials.

Measurement: The quantity of truncated dome mats will be counted as each. Truncated dome mats will be placed on all wheelchair ramps in the project area.

Payment: Payment for truncated dome mat will be each. Truncated dome mats will be counted in the field and paid by the number of truncated dome mats installed.

Payment will be made under:

TRUNCATED DOME MATS .....	EA
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#### 6.5 SP5 – DRAINAGE

Description: The work covered by this special provision consists of all storm drain systems, water quality facilities, drainage structures, permanent drainage ditches, and all rip rap aprons.

All work shall conform to the requirements set forth in Section 245 "Roadway Excavation", Section 300 "Pipe Installation", Section 840 "Minor Drainage Structures", and Section 654 "Asphalt Plant Mix, Pavement Repair" of the Standard Specifications.

All work and materials associated with the construction of the water quality facility (grassed bioretention cell) shall be in accordance with the requirements of NCDWQ's Stormwater Best Management Practices Manual, July 2007.

Quantities: The following is a list of quantities that should be included into the lump sum bid price for this special provision:

- |                 |   |         |
|-----------------|---|---------|
| A. 8-inch PVC   | – | 98.0 LF |
| B. 10-inch PVC  | – | 24.0 LF |
| C. 15-inch RCP  | – | 4.0 LF  |
| D. 18-inch RCP  | – | 20.0 LF |
| E. Catch Basins | – | 2.0 EA  |

F. Yard Inlets	–	3.0 EA
G. Grassed Bioretention Cell	–	1.0 EA
H. Rip Rap Aprons (5’x5’x1’)	–	5.0 EA

All work shall conform to the approved plans and any deviation shall have prior approval from the Engineer.

Payment: Payment will be paid at the lump sum price for “Drainage”. This payment will be full compensation for all elements of work required to complete the Project as specified.

Payment will be made under:

DRAINAGE ..... LS

### 6.6 SP6 – BRICK PAVEMENT

Description: The work covered by this special provision consists of installing brick pavers at the location specified on the approved plans. Any deviation in the location of the paths shall have prior approval from the Engineer.

All work shall conform to ASTM C902 – 09 Standard Specification for Pedestrian and Light Traffic Paving Brick. (See Appendix A) Any deviation from this specification shall have prior approval from the Engineer.

Quality Assurance: The paving installer shall have at least one (1) year experience in placing pavers on projects with similar scope and budget.

Contractor shall submit the following prior to any work being performed:

- A. Shop or product drawings and product data.
- B. Samples of brick paving units to indicate color, pattern, and size selections. Color, pattern, and size will be selected by the Town from manufacturer’s available colors.
- C. Sieve analysis for grading of bedding and joint sand.
- D. Test results for compliance of paving unit requirements to ASTM C 902 from an independent testing laboratory.
- E. Installer qualifications (shall provide satisfactory evidence that the installer is qualified to do the work).

Measurement: The quantity for brick pavers to be paid for will be the actual number of square feet measured along the surface of work which has been completed and accepted.

Payment: Payment for the brick pavers will be the number of square feet (SF) measured in place.

No direct payment will be made for testing costs associated with this special provision as such work will be considered to be incidental to the installation of the brick pavement.

Payment will be made under:

BRICK PAVEMENT ..... SF

### 6.7 SP7 – ELECTRICAL

Description: The work covered by this special provision consists of but not limited to the installation of electrical lines and boxes at the locations specified in the field or on the approved plans.

Any deviation from the approved plans shall have prior approval from the Engineer.

Payment: The entire lump sum price for the item of “Electrical” will be made when the work has been completed and accepted.

All cost associated with furnishing the proper materials to perform the work shall be included in this lump sum special provision.

Payment will be made under:

ELECTRICAL ..... LS

6.8 SP8 – 3/4” WATER LINE (WATER FOUNTAIN)

Description: The work covered by this special provision consists of but not limited to installing a 3/4” water line connection from existing service to a location specified in the field or on the approved plans.

Any deviation from the plans shall have prior approval from the Engineer.

Payment: The entire lump sum price for the item of “3/4” Water Line (Water Fountain)” will be made when the work has been completed and accepted.

All cost associated with furnishing the proper materials (fittings, couplings, strainers, etc.) to perform the work in a satisfactory manner shall be included in the lump sum price of this special provision.

Payment will be made under:

3/4” WATER LINE (WATER FOUNTAIN) ..... LS

6.9 SP9 – STRIPING AND SIGNAGE

Description: The work covered by this special provision consists of but not limited to the striping of the parking area and the installation of signage at the locations specified either in the field or on the approved plans.

The striping shall conform to specifications set forth in Section 1087 and 1205 of NCDOT’s “Standard Specifications for Roads and Structures” manual.

The signage shall conform to guidelines set forth in the latest version of the MUTCD for Streets and Highways Manual.

All work shall conform to the approved plans and any deviation shall have prior approval from the Engineer.

Payment: The entire lump sum price for the item of “Striping and Signage” will be made when the work has been completed and accepted

Payment will be made under:

STRIPING AND SIGNAGE ..... LS

6.10 SP10 – PARK AMENITIES INSTALLATION

Description: The work covered by this special provision consists of but not limited to assembling and installing the following list of park amenities. These items have already been purchased by the Town.

- A. Aluminum Flag pole (30’x 5” x 0.156”)
- B. 6.0 ft Recycled Plastic park benches (10 ea.)
- C. 320 inch Covered Park Grill with utility shelf
- D. Coil Surface Mount Bike Rack (Capacity: 8)
- E. Coil Surface Mount Bike Rack (Capacity: 6)

- F. 6.0 ft. Recycled Plastic Picnic Tables (3 ea.)
- G. Lexington Vertical Slant Pattern Receptacles (6 ea.)
- H. Water Fountain

All product details are listed in Appendix B of this Contract.

The Contractor is responsible for obtaining sealed drawings of the proposed foundation for the flagpole by a Professional Structural Engineer licensed to practice in the state of North Carolina prior to any work being performed.

If not provided by the Town, the Contractor will be responsible for obtaining anchoring foundation details that's required by the manufacturer for the installation of the other amenities. The Contractor will submit these details to the Engineer for approval before any work is performed.

All bike racks shall be anchored on a 6'x4'x0.5' concrete pad with reinforced wire mesh.

All concrete used for the anchoring of park amenities shall conform to the requirements of the "Concrete" section in the Specification portion of this Contract. Reinforced wire mesh shall be included in all concrete pads.

Minimum O.D. for water fountain waste line shall be 1.5-inches. The PVC pipe shall be extended with the proper fittings so that the outlet end is three (3) feet from outside edge of the concrete pad. A 1.5-inch perforated PVC pipe shall be connected to the outlet end with appropriate fittings and lengthen to approximately thirty (30) linear feet. Both buried pipes shall be encased with #57 stone and outer layer of filter fabric. Encasement assures that pipes will not become clogged by soil or foreign materials. All pipes shall be laid at a depth of 18-inches. The Engineer will determine the direction of flow in the field.

All work shall conform to manufacturer's recommendations and the approved plans. Any deviations shall have prior approval from the Engineer.

Payment: The entire lump sum price for the item of "Park Amenities Installation" will be made when the work has been completed and accepted.

No direct payment will be made for any extra hardware that may be needed for assembly or anchoring as such work will be considered incidental to the assembly and installation of the amenities.

Payment will be made under:

PARK AMENITIES INSTALLATION ..... LS

#### 6.11 SP11 – STREET & BOLLARD LIGHTS

Description: The work covered by this special provision consists of but not limited to installing street lights at the entrance to the park and along Blythe Drive. The following list of items have already been purchased by the Town.

- A. Bollard (BLC1 BNY20L AB3/15 70M MED ACS LBR5 120 ANBK) (3 ea.)
- B. Fixture (DS7 K 150M MED ARF SR3 TB1 ANBK) (3 ea.)
- C. Pole (PX NY17 14 S4 AB3/12 3T3 ANBK) (3 ea.)

All work shall conform to manufacturer's recommendations and the approved plans. Any deviations shall have prior approval from the Engineer.

Payment: The entire lump sum price for the item of "Street & Bollard Lights" will be made when the work has been completed and accepted.

No direct payment will be made for the purchasing and installing the required lamp bulbs for as such work will be considered incidental to the installation of the street and bollard lights.

No direct payment will be made for the installation of the concrete pads for as such work will be considered incidental to the installation of the street and bollard lights. All concrete used shall conform to the requirements of the "Concrete" section in the Specification portion of this Contract.

Payment will be made under:

STREET & BOLLARD LIGHTS ..... LS

6.12 SP12 – AMPHITHEATRE

Description: The work covered by this special provision consists of but not limited to installing the structure, electrical components, decorative brick wall, concrete base, footings, brick base facing and brick facing around columns.

All work shall conform to manufacturer’s recommendations and the approved plans. Any deviations shall have prior approval from the Engineer.

Concrete mix design shall conform to the requirements of the approved plans or the Concrete section in the Specification portion of this Contract whichever is more stringent.

Payment: The entire lump sum price for the item of "Amphitheatre" will be made when the work has been completed and accepted.

Payment will be made under:

AMPHITHEATRE ..... LS

6.13 SP13 – BRICK COLUMNS & DECORATIVE ALUMINUM FENCING

Description: The work covered by this special provision consists of but not limited to installing brick columns with column caps and decorative fencing at the location designated on the plans.

Materials:

- A. Length of Fence – 238 feet
- B. 16" x 16" x 7' Columns – 16 Columns
- C. 24" x 24" x 9' Columns – 4 Columns

All work shall conform to manufacturer’s recommendations and the approved plans. Any deviations shall have prior approval from the Engineer.

Payment: The entire lump sum price for the item of "Brick Columns & Decorative Aluminum Fencing" will be made when the work has been completed and accepted.

Payment will be made under:

BRICK COLUMNS & DECORATIVE ALUMINUM FENCING ..... LS

6.14 SP14 – BLACK VINYL FENCING

Description: The work covered by this special provision consists of but not limited to installing black vinyl chain link fencing (5' in height) with top rail at locations designated on the approved plans.

All work shall conform to manufacturer's recommendations and the approved plans. Any deviations shall have prior approval from the Engineer.

Payment: The quantity of Black Vinyl Fencing to be paid for will be the actual number of lineal feet measured in place.

No direct payment will be made for the purchasing and assembling the required parts and accessories for as such work will be considered incidental to the installation of the chain link fence.

Payment will be made under:

BLACK VINYL FENCING ..... LF

6.15 SP15 – BORROW MATERIAL

Description: The work covered by this special provision shall conform to the requirements set forth in Section 230 "Borrow Excavation" of the Standard Specifications.

The placement of the material shall conform to the contour elevations established on the approved plans. Any deviations shall have prior approval from the Engineer.

Payment: The quantity of approved borrow material to be paid for will be the actual number of cubic yards measured in trucks that have been excavated from the borrow source and incorporated into the completed and accepted work. Each truck will be measured and shall have a legible identification mark indicating its capacity. Load each truck to at least its measured capacity at the time it arrives at the point of delivery. The recorded capacity will be adjusted by making a 25 percent deduction to allow for shrinkage, and the adjusted capacity will be the quantity to be paid.

Payment will be made under:

BORROW MATERIAL ..... CY

6.16 SP16 – SEEDING AND MULCHING

Description: The work covered by this special provision shall conform to the requirements set forth in City of Charlotte's Landscape Construction Standards.

Website:

<http://charmeck.org/city/charlotte/epm/Services/LandDevelopment/StandardsManual/Pages/Landscape%20Construction%20Standards.aspx>

The work covered by this special provision includes preparing seedbeds; furnishing, placing, and covering limestone, fertilizer, and seed; compacting seedbeds; furnishing, placing, and securing mulch; mowing; and other operations necessary for the permanent establishment of grasses from seed on shoulders, slopes, ditches, and on all earth areas disturbed by construction and on portions of areas seeded under previous contracts where, in the opinion of the Engineer, there is unsatisfactory vegetative cover.

There will be no separate measurement or payment for seeding and mulching.

Any deviation from these standards shall have prior approval from the Engineer.

Payment: Seeding and mulching will be measured and paid for in acres measured along the surface of the ground that has been completed and accepted. No direct payment will be made for furnishing and applying the limestone and fertilizer as such work and materials will be considered to be incidental to the work covered by Seeding and Mulching.

Payment will be made under:

SEEDING AND MULCHING ..... AC

## VII. ALTERNATES

7.1 A1 – ASPHALT OVERLAY (BLYTHE DRIVE)

Description: The work covered by this special provision consists of but not limited to resurfacing Blythe Drive from Indian Trail Road to the project limits and all on-street parking areas designated on the plans.

Contractor shall submit asphalt mix design for Superpave Mix Type SF 9.5 A.

Depth of overlay shall be 1.0-inch.

All work shall conform to the Specifications section of this Contract labeled “Asphalt” and the approved plans. Any deviations to the work shall have prior approval from the Engineer.

Measurement and Payment: The asphalt pavement will be paid for at the Contract unit price per ton that will be the actual number of tons of hot mix asphalt pavement that has been incorporated into the completed and accepted work.

Payment will be made under:

ASPHALT OVERLAY (BLYTHE DRIVE) ..... TON

7.2 A2 – VERTICAL CONCRETE CURB (SOUTH SIDE OF BLYTHE DRIVE)

Description: The work covered by this special provision consists of but not limited to the installation of new 4” Vertical Concrete Curb. This item also includes grading, excavation, backfill, shoulder construction and the removal of any unsuitable material.

All work shall conform to the requirements set forth in Section 846 “Concrete Curb” and Section 560 “Shoulder Construction” of the Standards Specifications.

Measurement and Payment: Payment for Vertical Concrete Curb will be the number of linear feet (LF) measured in place of curb and gutter installed and accepted.

Payment will be made under:

VERTICAL CONCRETE CURB (SOUTH SIDE OF BLYTHE DRIVE) ..... LF

7.3 A3 – 4” CONCRETE SIDEWALK (CHANGE SP3 FROM 6’ TO 8’)

Description: The work covered by this special provision consists of the same requirements as in “SP3 – 4” Concrete Sidewalk (Six Feet Wide)”.

Measurement and Payment: Payment for 4” Concrete Sidewalk (Change SP3 from 6’ to 8’) will be the number of square yards (SY) measured in place and accepted.

Payment will be made under:

4” CONCRETE SIDEWALK (CHANGE SP3 FROM 6’ TO 8’) ..... SY

**VIII. APPENDIX A**

**ASTM SPECIFICATION**  
**(C 902 – 09 Standard Specification for Pedestrian and Light Traffic Paving Brick)**



Designation: C902 – 09

## Standard Specification for Pedestrian and Light Traffic Paving Brick<sup>1</sup>

This standard is issued under the fixed designation C902; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope\*

1.1 This specification covers brick intended for use as paving material subjected to pedestrian and light vehicular traffic. The units are designed for use in pedestrian applications and vehicular areas that are subjected to low volumes of vehicular traffic, such as residential driveways and streets and commercial driveways (passenger drop-offs). The units are not intended to support heavy vehicular traffic covered by Specification C1272 or for industrial applications covered by Specification C410.

NOTE 1—Heavy vehicular traffic is defined as high volumes of heavy vehicles (trucks having 3 or more axles) in Specification C1272.

1.2 The property requirements of this specification apply at the time of purchase. The use of results from testing of brick extracted from masonry structures for determining conformance or nonconformance to the property requirements (Section 4) of this specification is beyond the scope of this specification.

1.3 Brick are manufactured from clay, shale, or similar naturally occurring earthy substances and subjected to a heat treatment at elevated temperatures (firing). The heat treatment must develop sufficient fired bond between the particulate constituents to provide the strength and durability requirement of this specification (see firing, fired bond, and incipient fusion in Terminology C43).

1.4 The brick are available in a variety of sizes, colors, and shapes. They are available in three classes according to exposure environment and three types according to type of traffic exposure.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

- C43 Terminology of Structural Clay Products<sup>3</sup>
- C67 Test Methods for Sampling and Testing Brick and Structural Clay Tile
- C88 Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
- C410 Specification for Industrial Floor Brick
- C418 Test Method for Abrasion Resistance of Concrete by Sandblasting
- C1272 Specification for Heavy Vehicular Paving Brick

### 3. Classification

3.1 Light traffic paving brick are classified according to the severity of their use-environment. Two types of environment are considered: (1) weather and (2) traffic:

#### 3.1.1 Weather:

Weathering resistance is specified by one of three classes. When the Class is not specified, the requirements for Class SC shall govern.

3.1.1.1 *Class SX*—Brick intended for use where the brick may be frozen while saturated with water.

3.1.1.2 *Class MX*—Brick intended for exterior use where resistance to freezing is not a factor.

3.1.1.3 *Class NX*—Brick not intended for exterior use but which may be acceptable for interior use where protected from freezing when wet.

NOTE 2—A surface coating may be applied to any class of brick of this standard when protected from freezing while wet. The function of the coating is to prevent penetration of dirt or liquids into the pores of the brick. Coatings should be applied only after complete drying of the paving.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee C15 on Manufactured Masonry Units and is the direct responsibility of Subcommittee C15.02 on Brick and Structural Clay Tile.

Current edition approved Jan. 1, 2009. Published January 2009. Originally approved in 1979. Last previous edition approved in 2007 as C902 – 07. DOI: 10.1520/C0902-09.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

<sup>3</sup> Withdrawn. The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).

\*A Summary of Changes section appears at the end of this standard.

**TABLE 1 Freeze Thaw Resistance Property Requirements**

Designation	Compressive Strength, flatwise, gross area, min, psi (MPa)		Cold Water Absorption, max, %		Saturation Coefficient, max <sup>4</sup>	
	Average of 5 Brick	Individual	Average of 5 Brick	Individual	Average of 5 Brick	Individual
Class SX	8000 (55.2)	7000 (48.3)	8.0	11.0	0.78	0.80
Class MX	3000 (20.7)	2500 (17.2)	14.0	17.0	no limit	no limit
Class NX	3000 (20.7)	2500 (17.2)	no limit	no limit	no limit	no limit

<sup>4</sup> The saturation coefficient is the ratio of absorption by 24-h submersion in room temperature water to that after 5-h submersion in boiling water.

### 3.1.2 Traffic:

Abrasion resistance is specified by one of three types. When the Type is not specified, the requirements for Type II govern.

#### 3.1.2.1 Type I—Brick subjected to extensive abrasion.

NOTE 3—Type I pavers would be used in such places as sidewalks and driveways in publicly occupied spaces.

#### 3.1.2.2 Type II—Brick subjected to intermediate abrasion.

NOTE 4—Type II pavers would be used in such places as heavily traveled residential walkways and residential driveways.

#### 3.1.2.3 Type III—Brick subjected to low abrasion.

NOTE 5—Type III pavers would be used in such places as floors or patios in single-family homes.

## 4. Physical Properties

4.1 *Freeze Thaw Resistance*—Use one of the following methods:

4.1.1 *Physical Property Requirements*—The brick shall conform to the physical requirements for the class specified as prescribed in Table 1.

4.1.1.1 *Absorption Alternative*—If the average water absorption is less than 6.0 % after 24-h submersion in room-temperature water, the requirement for saturation coefficient shall be waived.

4.1.2 *Freezing and Thawing Test Alternative*—The requirements for water 24-h cold water absorption and saturation coefficient specified in 4.1.1 do not apply, provided a representative sample of five brick, meeting the strength requirements of Table 1, passes the freezing and thawing test as described in the Rating section of the Freezing and Thawing test procedures of Test Methods C67.

4.1.2.1 *Class SX: Breakage and Weight Loss Requirement*—No individual unit separates or disintegrates resulting in a weight loss greater than 0.5 % of its original dry weight.

NOTE 6—The 50 cycle freezing and thawing test is specified only as an alternative when brick do not conform to either Table 1 requirements for maximum water absorption and saturation coefficient, or to the restrictive absorption requirements in 4.1.1.1.

4.1.2.2 *Class SX: Cracking Requirement*—No individual unit develops a crack that exceeds, in length, the unit's least finished face dimension.

4.1.3 *Sulfate Soundness Test Alternative*—The requirements for water absorption (24-h cold) and saturation coefficient specified in 4.1.1 shall not be required if a sample of five brick survives 15 cycles of the sulfate soundness test in accordance with Sections 4, 5, and 8 of Test Method C88 with no visible damage.

NOTE 7—The sulfate soundness test is an optional substitute test for the

freezing-and-thawing test (4.1.2).

4.1.4 *Performance Alternative*—If information on the performance of the units in a similar application of similar exposure and traffic is furnished by the manufacturer or his agent and is found acceptable by the specifier of the pavement material, or his agent, the physical requirements in 4.1.1 may be waived.

4.1.5 *Molded Brick (Soft Mud, Semi-Dry Pressed, and Dry Pressed Brick)*—The requirements listed in Table 1 shall be changed for molded brick to permit maximum absorption of 16.0 % average and 18.0 % individual, and minimum compressive strengths of 4000 psi (27.6 MPa) average and 3500 psi (24.1 MPa) individual for Class SX, provided that the requirements for saturation coefficient of Table 1 are met.

NOTE 8—The resistance of brick to weathering cannot be predicted with complete assurance at the present state of knowledge. There is no known test that can predict weathering resistance with complete accuracy.

Brick in general is superior in weathering resistance to other building materials. There are innumerable instances of satisfactory performance beyond 200 years and even into the thousands of years. Nevertheless, there are some brick that cannot survive a few winters of a severe freezing and thawing environment.

The durability requirements of the specification attempt to exclude such brick. This specification utilizes the best knowledge available at this time and is based on extensive research by several investigators. The durability requirements have an excellent correlation with in-use performance. Nevertheless, it is known that some brick that meet this specification may not be serviceable in severe climates. Furthermore, other brick that do not meet these specifications may show superior serviceability in the most severe climate. The best indication of brick durability is its service experience record.

4.2 *Abrasion Resistance*—The brick shall meet the requirements of either column (1) or (2) of Table 2 for the applicable traffic use (see 3.1.2).<sup>4</sup>

NOTE 9—Skid/slip resistance should be considered by the purchaser for uses of brick where pedestrian traffic is anticipated. Methods of testing this characteristic are under study and it is hoped that a specification for this property can be added in future revisions of this standard when suitable test methods are developed.

## 5. Efflorescence

5.1 Brick are not required to be tested for efflorescence to comply with this specification unless requested by the specifier or purchaser. When the efflorescence test is requested by the specifier or purchaser, the brick shall be sampled at the place of manufacture, and tested in accordance with Test Methods C67, and a rating for efflorescence shall be "not effloresced." If the

<sup>4</sup> McBurney, J. W., Brink, R. H., Eberle, A. R., "Relation of Water Absorption and Strength of Brick to Abrasive Resistance," *Proceedings, ASTM*, Vol 40, 1940, pp. 1143-1151.

**TABLE 2 Abrasion Resistance Property Requirements<sup>A</sup>**

	(1) Abrasion Index, <sup>B</sup> max	(2) Volume Abrasion Loss, <sup>C</sup> max, cm <sup>3</sup> /cm <sup>2</sup>
Type I	0.11	1.7
Type II	0.25	2.7
Type III	0.50	4.0

<sup>A</sup> Select the sample according to the sampling procedure of Test Methods C67. The brick shall meet the requirements of either column (1) or (2). The values listed shall not be exceeded by any individual unit within the sample.

<sup>B</sup> The abrasion index is calculated from the cold absorption in percent and the compressive strength in pounds per square inch as follows:

$$\text{Abrasion Index} = \frac{100 \times \text{absorption}}{\text{compressive strength}} \quad (1)$$

Compressive strength values are influenced by specimen shape (particularly the height to width ratio of the test specimen). Therefore, a shape is specified which conforms to the data on which the abrasion index is based.<sup>4</sup>

The compressive strength shall be determined on specimens measuring 3/4 by 3/4 by 2 1/4 in. ± 1/4 in. (98 by 98 by 57 mm ± 6 mm) for length, width, and height respectively. The brick shall be without core holes, other perforations or frogs. Other shaped specimens may be used provided that the producer submits evidence acceptable to the purchaser that the change in shape gives equivalent strength results to those of the specified shape.

The abrasion resistance should be determined according to Column 2 in those cases where the procedural requirements for compressive strength cannot be met.

<sup>C</sup> The volume abrasion loss shall be determined in accordance with Test Method C418, with the following changes in procedure:

(1) The sand shall be a natural silica sand from Ottawa, IL, graded to pass a No. 50 (300-µm) sieve and retained on a No. 100 (150-µm) sieve.

(2) The test shall be run on dry brick.

(3) The duration of the test shall be 2 min.

(4) The rate of sand flow shall be 400 g/min.

(5) The volume loss shall be determined by filling the abraded depression with modeling clay, striking off level with the original surface of the brick, and removing and weighing the modeling clay. The volume loss shall be calculated from the bulk density of the modeling clay. The bulk density shall be determined on each lot of modeling clay.

An alternative method of determining the weight of clay used in filling the sand-blast cavity is to determine the weight of the modeling clay sample before and after filling the cavity.

rating for efflorescence is "effloresced," the brick represented by the testing do not meet the efflorescence requirements of this specification.

## 6. Size and Tolerances

6.1 The size of the brick shall be as specified by the purchaser or produced by the manufacturer as a stock item.

6.2 The tolerances on dimension and warpage shall depend on the application specified. When the application is not specified, the requirements for Application PS shall govern.

6.2.1 *Application PS*—Paving brick intended for general use and installed with a mortar joint between individual units, or in an installation without mortar joints between units when they are laid in running or other bonds not requiring extremely close dimensional tolerances.

6.2.2 *Application PX*—Paving brick intended for installation without mortar joints between the units, where exceptionally close dimensional tolerances are required as a result of special bond patterns or unusual construction requirements.

6.2.3 *Application PA*—Paving brick manufactured and selected to produce characteristic architectural effects resulting from nonuniformity in size, color, and texture of individual units. (The textures may exhibit inclusion of nonuniform nodules of mineral substances or purposely introduced cracks that enhance the appearance of the units.) The requirements on warpage and dimensional tolerances as specified in 6.3 and 6.4 do not apply to this application.

**TABLE 3 Tolerances on Distortion**

Specified Dimension in. (mm)	Permissible Distortion, max in. (mm)	
	Application PX	Application PS
8 (203) and under	1/16 (1.6)	3/32 (2.4)
Over 8 (203) to 12 (305)	3/32 (2.4)	1/8 (3.2)
Over 12 (305) to 16 (406)	1/8 (3.2)	5/32 (4.0)

6.3 *Dimensional Tolerance*—Brick shall not depart from the specified size by more than the individual tolerance for the application specified as prescribed in Table 4.

6.4 *Warpage*—The concave and convex warpage (distortion) of any face intended to be the exposed surface or edge of the paving shall not exceed the values of Table 3 when sampled and measured in accordance with Test Methods C67.

## 7. Material and Finish

7.1 If brick having a particular color, color range, or texture are desired, these features shall be specified separately by the purchaser. The texture of the finished face shall conform to an approved sample consisting of not less than four brick, each representing the texture desired. The color range shall be indicated by the approved sample.

7.2 The brick shall be free of cracks or other imperfections detracting from the appearance of a designated sample when viewed from a distance of 15 ft (4.6 m) for Application PX and a distance of 20 ft (6 m) for Application PS.

7.3 The parts of the brick that will be exposed in place shall be free of chips that exceed the limits given in Table 5.

7.4 Unless otherwise agreed upon by the purchaser and the seller, a delivery of brick shall contain not more than 5 % brick that do not meet the combined requirements of Tables 4-5, including broken brick.

7.5 After brick are placed in usage the manufacturer or the manufacturer's agent shall not be held responsible for compliance of brick with the requirements of this specification for chippage and tolerances.

## 8. Sampling and Testing

8.1 The brick shall be sampled and tested in accordance with applicable sections in Test Methods C67.

8.2 The manufacturer or the seller shall furnish specimens for tests. The place or places of selection shall be designated when the purchase order is placed.

NOTE 10—Unless otherwise specified in the purchase order, the cost of the tests is typically borne as follows: If the results of the tests show that the brick do not conform to the requirements of this specification, the cost is typically borne by the seller. If the results of the tests show that the brick do conform to the requirements of the specification, the cost is typically borne by the purchaser.

## 9. Keywords

9.1 brick; fired masonry unit; light traffic; paving; pedestrian traffic

**TABLE 4 Tolerances on Dimensions**

Dimension, in. (mm)	Maximum Permissible Variation from Specified Dimension, plus or minus in. (mm)		
	Application PS	Application PX	Application PA
3 (76) and under	1/8 (3.2)	1/16 (1.6)	no limit
Over 3 to 5 (76 to 127) incl	3/16 (4.7)	3/32 (2.4)	no limit
Over 5 to 8 (127 to 203) incl	1/4 (6.4)	1/8 (3.2)	no limit
Over 8 (203)	5/16 (7.9)	7/32 (5.6)	no limit

**TABLE 5 Maximum Permissible Extent of Chippage from Edges and Corners**

NOTE—The aggregate length of chips on a single unit shall not exceed 10 % of the perimeter of the exposed face of the brick.

Application	Chippage in Inches (Millimetres) in from	
	Edge	Corner
PS	5/16 (7.9)	1/2 (12.7)
PX	1/4 (6.4)	3/8 (9.5)
PA	as specified by purchaser	

### SUMMARY OF CHANGES

Committee C15 has identified the location of selected changes to this standard since the last issue (C902 – 07) that may impact the use of this standard. (Approved Jan. 1, 2009.)

(1) The breakage endpoint for Class SX in 4.1.2 was set at a quantifiable percentage of dry weight. Subsection 4.1.2 was restructured for consistency with other brick unit standards.

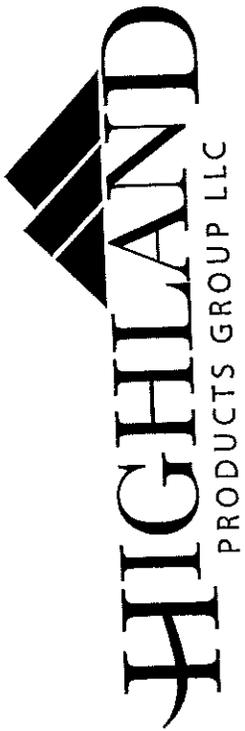
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*This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.*

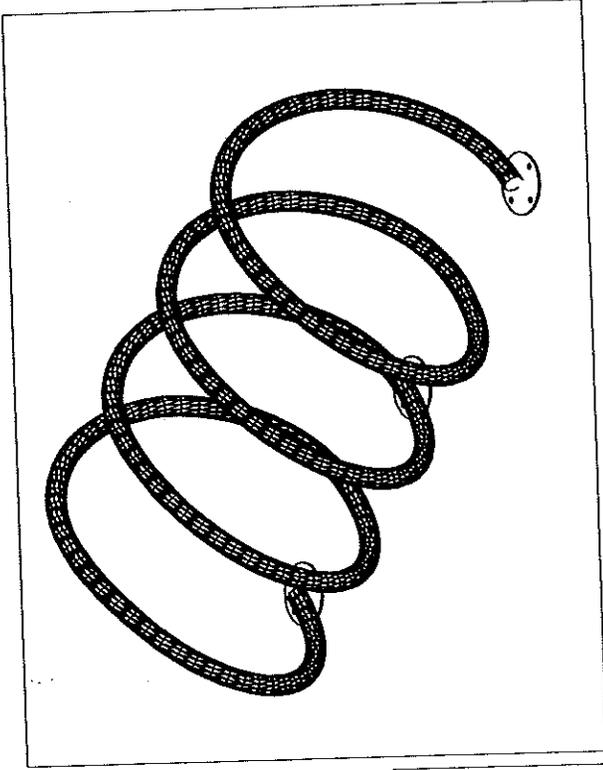
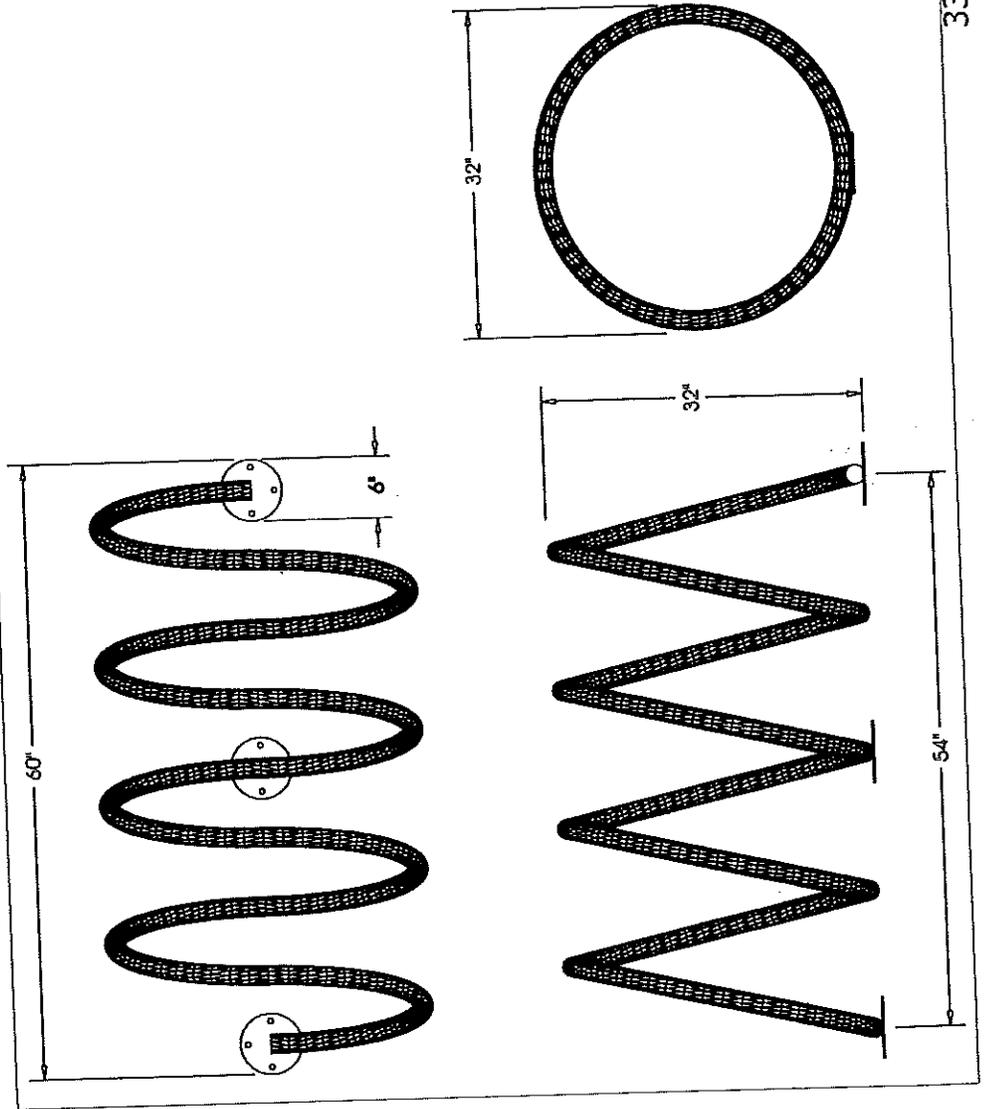
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**IX. APPENDIX B**

## PRODUCT DETAILS



**Bike-Coil 6 to 8 Bike Rack  
Surface Mount  
Item 342-1605**



**Capacity:**

8 Bicycles Max. (4 per side)

**Materials:**

1.9" x 0.095" Wall In-Line Galvanized Steel  
Tube

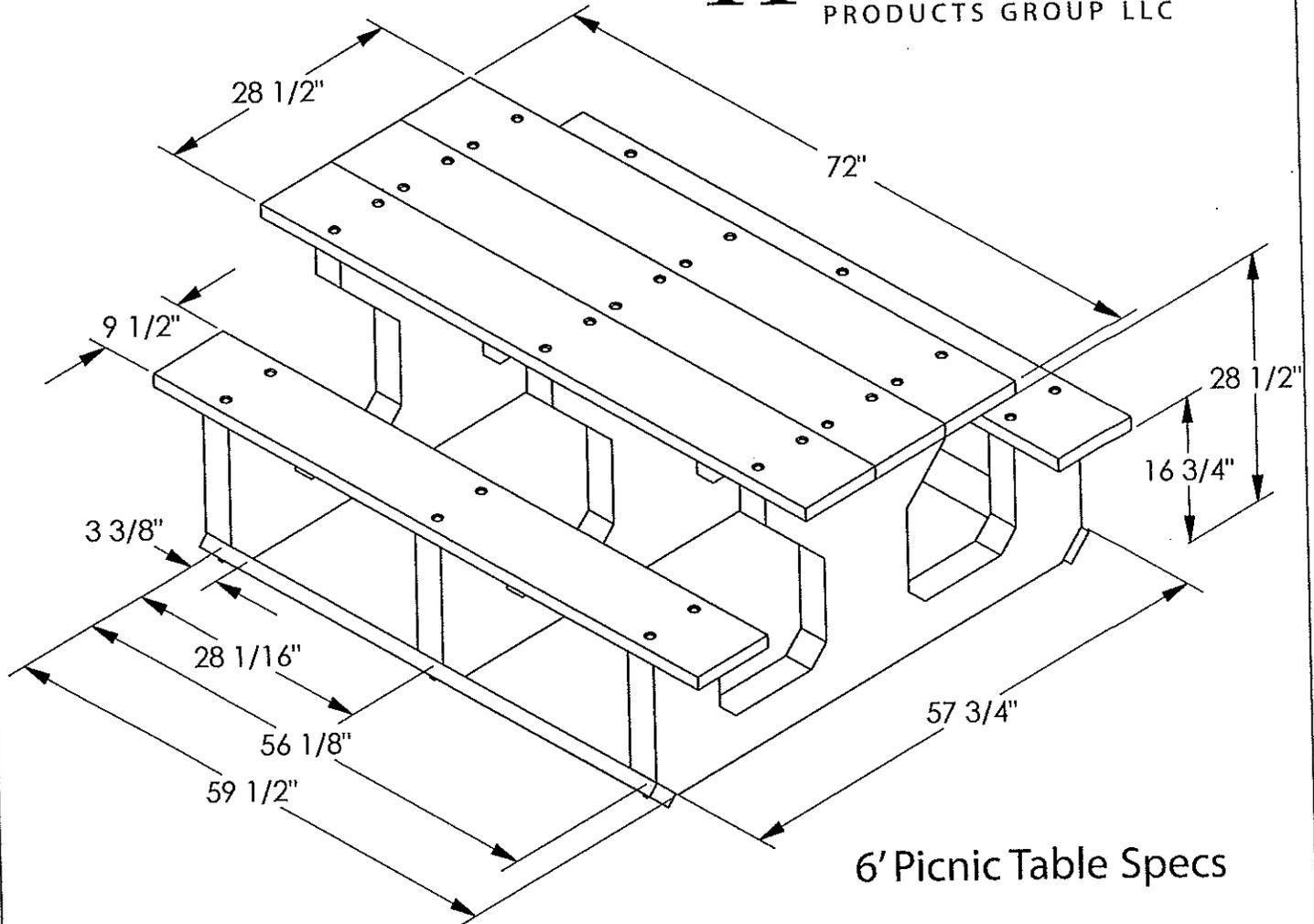
7 Ga. (3/16") Steel Plate

**Finish:**

Polyester Powder Coating Top Coat  
over Epoxy Primer.

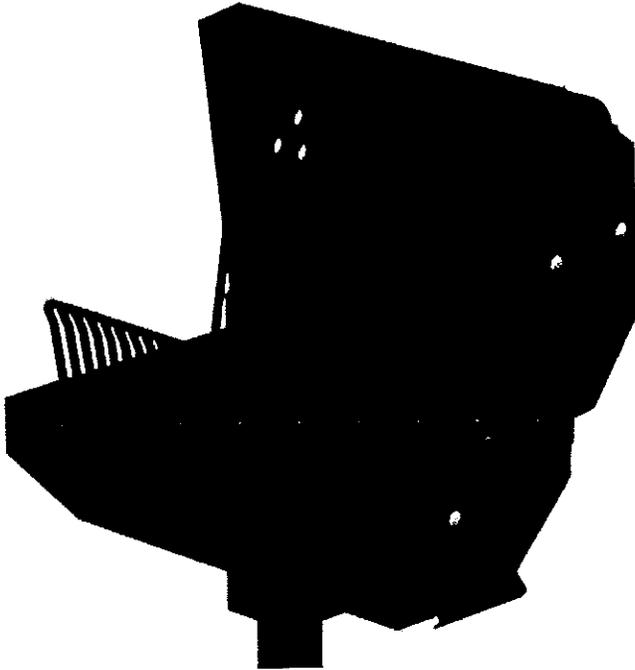
Note: Anchoring Hardware Not Included

## 289-1032 Specifications



### NOTES:

- 2 X 10 SLATS ARE RECYCLED PLASTIC
- BASES ARE RECYCLED PLASTIC
- ALL HOLES ARE PRE-DRILLED AND COUNTERSUNK FOR PLASTIC LUMBER
- BASES ARE HAND DRILLED IN FIELD
- ALL HARDWARE IS ZINC PLATED (1/2 X 4" LAG BOLT & 1/4 X 3 1/2" LAG SCREW)
- STAINLESS STEEL HARDWARE AVAILABLE
- UNIT WEIGHT APPROX. 410 LBS.



### **320" Sq. Covered Park Grill with Utility Shelf**

Covered grills hold in the smoke and heat to give foods that great smoked flavor, and also keep rain and snow out of the firebox to help prevent rusting and prolong the life of the grill.

**Features:** This grill has adjustable vents on the firebox to furnish draft control, and on the cover to control smoke containment and venting. A patented standard base attachment provides further draft control by allowing 360-degree rotation of the grill. Full rotation, combined with the full contact rear edge between cover and firebox, also creates an effective windbreak to control smoke direction when the cover is open. Grill is finished with high-temp non-toxic Black Powder Coated paint.

Exhibiting exceptional design and construction, the firebox, constructed from plate steel, resists heat warpage. Both firebox and cover have a 1" formed flange to provide a flat, stable closing surface around the perimeter and to provide strengthening reinforcement to the grill halves.

The grill cover tips back on sturdy hinges with a heavy handle equipped with a commercial duty, coil spring grip conveniently located for ease of use. The cover is maintained in the tipped back, open position by a bracket with a built-in safety stop to prevent the cover from closing without deliberate action by the user. Another handle equipped with a coil spring grip allows the cooking grate to be tipped back for convenient fire building and ash cleanout.

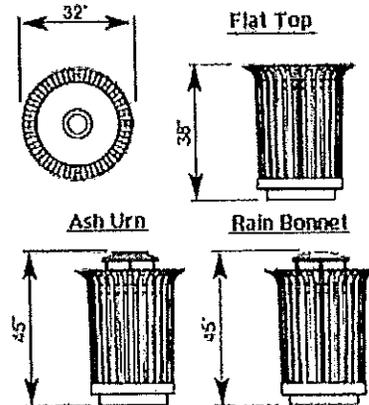
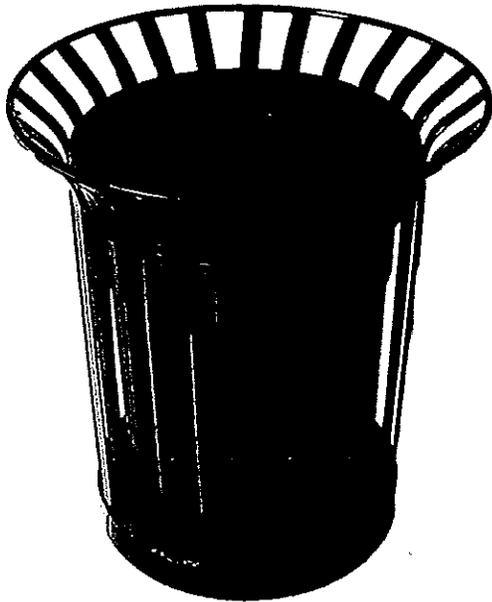
The grate handles are situated so that when the cover is closed, the cover handle above the grate handle acts as a stop to prevent tipping the cooking grate. The fire grate, while permanently attached, can be lifted up for easier cleanout. A handy cleanout hatch for ash removal is provided at the end of the firebox.

**Note:** Grills will need extra maintenance in corrosive environments such as the seashore.

**Item #:** 136-1050

**Weight:** 135.00 LB

**Dimensions:** 19.5"L X 29.25"W X 16.5"H



### 36 Gallon Lexington Vertical Slat Pattern Receptacle with Lid & Plastic Liner

This is one of our most useful and attractive trash receptacles available today. The Lexington trash receptacle is available with a flat top lid and an can liner. The frame is 1/8" x 2" steel flat bar that is completely MIG welded. It is finished with powder coating for added durability.

**Please Note:** Lids and plastic liner included.

**Powder Coating** is an advanced method of applying a decorative and protective finish to a wide range of materials and products that are utilized by both industry and consumers. The charged powder particles adhere to the electrically grounded surfaces until heated and fused into a smooth coating in a curing oven. The result is a uniform, durable, high-quality, and attractive finish.

For complete color options, please see the attached PDF document.

Item #: 398-1024

Weight: 124.00 LB

Dimensions: 32"D X 38"H

# HIGHLAND

PRODUCTS GROUP LLC

DIAGRAM 1: END CASTING AND SUPPORT TUBE ASSEMBLY 251-1005

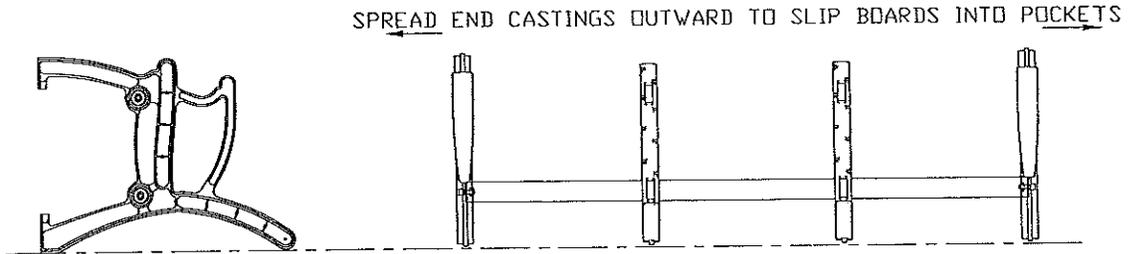


DIAGRAM 2: PLACING AND FASTENING "SEAT" BOARDS IN PLACE 251-1005

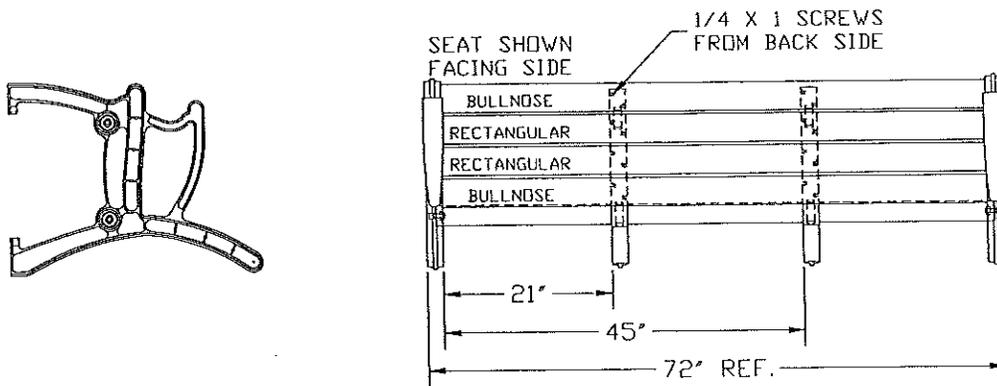


DIAGRAM 3: PLACING AND FASTENING "BACK" BOARDS IN PLACE 251-1005

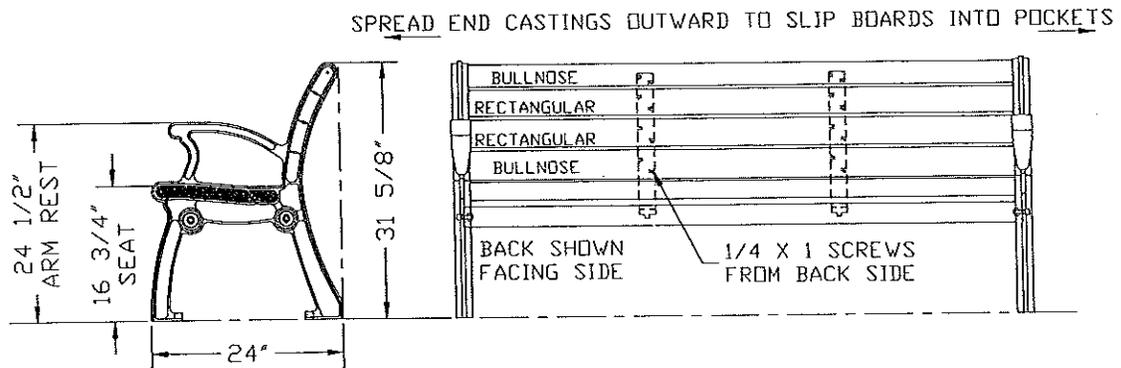
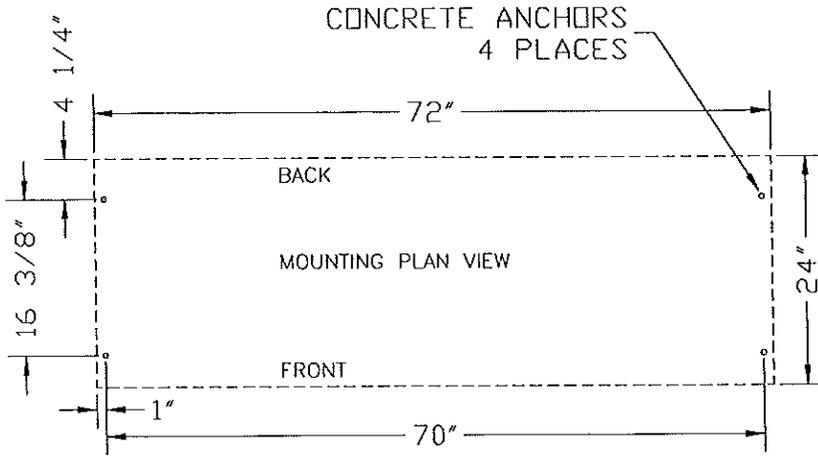


DIAGRAM 4: BENCH 6 FOOT LENGTH 251-1005, SURFACE MOUNTING



# 3511

## Pedestal Mounted Drinking Fountain



### FEATURES & BENEFITS

#### Barrier-Free

Barrier-free capabilities combined with its ease of use allows for a number of installation location possibilities.

#### Construction

Heavy-duty cast aluminum construction supports this elegant old-charm fountain, and it is finished with midnight black powder-coat paint.

#### Bubbler Head

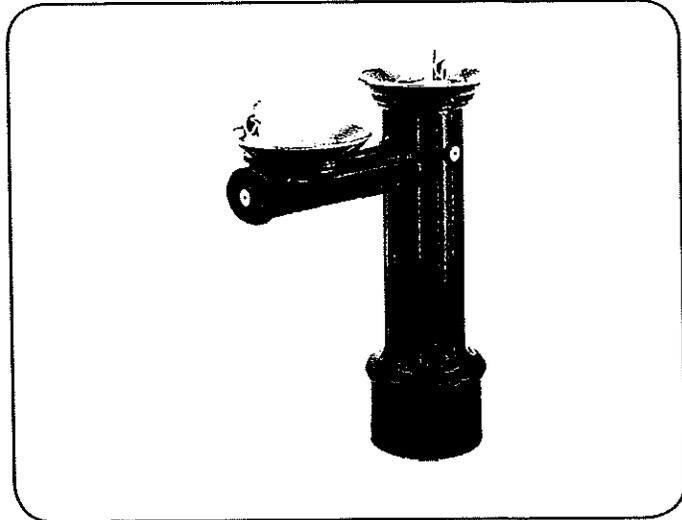
Polished chrome-plated brass bubbler head with integral laminar flow prevents splashing and provides a superior flow pattern. The integral basin shank and inserted roll pin adds vandal resistance strength to the design, and the shielded angled stream orifice produces a steady sanitary source of water.

#### Finish

Beautiful #4 satin stainless steel finish basin can be easily cleaned and maintained while also resisting corrosion.

#### Push Button

With its patented (Pat.# 6,981,692) push-button valve assembly which allows for front access stream adjustment as well as cartridge and strainer access, this fountain offers the ultimate in ease of maintenance.



### OPTIONS

- Bubbler Head: Model 5725 EnviroGard™ bubbler is a polished chrome-plated solid brass bubbler head with stainless steel water activated pop up canopy. (Pat.# 7,025,282)
- Hose Bib: Model 6275, compression hose bib faucet assembly with rough chrome-plated finish.
- Bib Faucet: Model 6250LF, self-closing, plain end, lead-free, brass bib faucet with polished chrome-plated finish.
- Filter: Model 6426, 12" x 2", in-line lead removal element that reduces lead from incoming water supply.

To see all options for this model, visit [www.hawsc.com](http://www.hawsc.com).

### SPECIFICATIONS

Model 3511 "Hi-Lo" barrier-free antique style pedestal drinking fountain shall include a heavy duty cast aluminum pedestal with a black powder-coated finish, dual 18 gauge Type 304 Stainless Steel satin finish basins with integral swirl design, push-button operated valves with front-accessible cartridge and flow adjustment, polished chrome-plated brass vandal-resistant bubbler heads, chrome-plated brass vandal-resistant waste strainer, integral mounting plate, and 1-1/2" O.D. tailpiece.

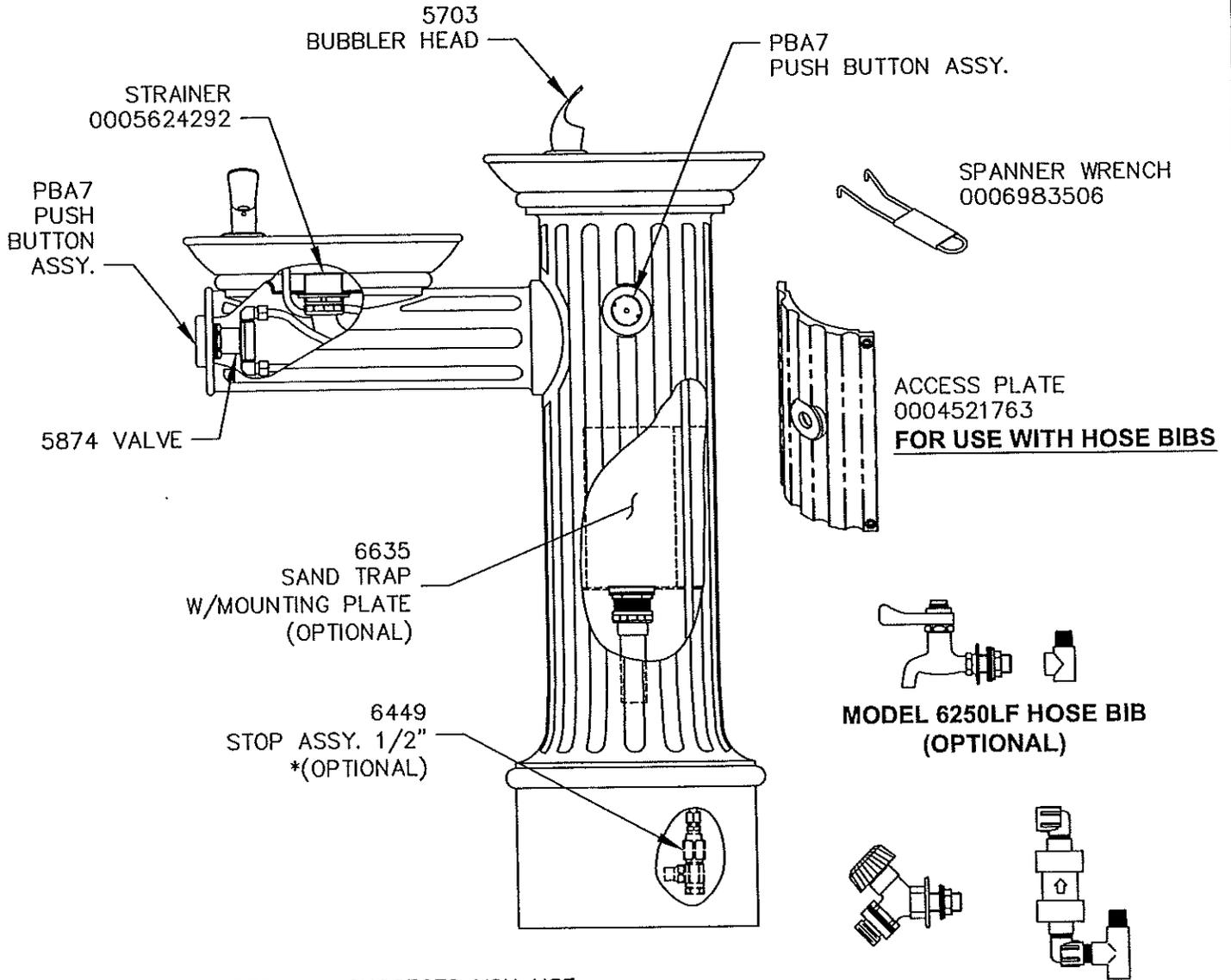
### APPLICATIONS

Indoor or outdoor architectural settings where an "old town" ambiance is present, the 3511 fits perfectly. Historic styled fountain with "up to date" components that provide performance really bring a traditional feel to any area that is historically designed. Powder-coated finish helps maintain the fountains overall appeal so it remains looking as it did when it was newly installed. This type of pedestal drinking fountain may also be placed in a variety of settings such as: parks, schools, and other outdoor environments where the temperature remains above freezing.

Model meets all current Federal Regulations for the disabled including those in the Americans with Disabilities Act. Haws manufactures drinking fountains, electric water coolers and electric drinking fountains to be lead-free by all known definitions including ANSI/NSF Standard 61, Section 9, California Proposition 65, and the Federal Safe Drinking Water Act.



# PARTS BREAKDOWN



\* IF PURCHASED MFG SUGGESTS YOU USE WITH CONNECTOR P/N 0001730150.2

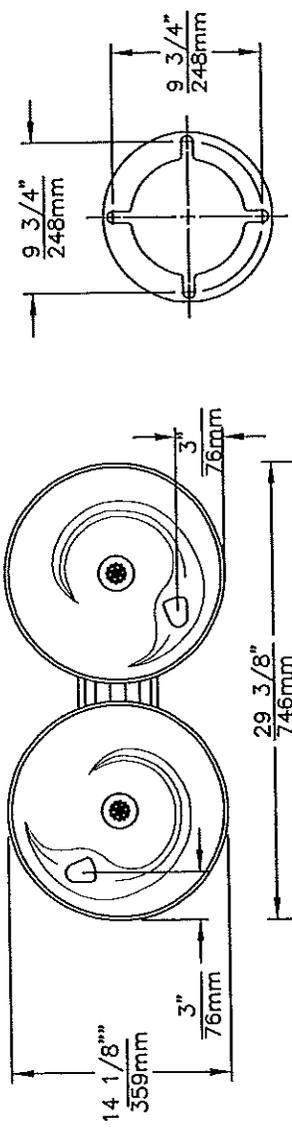
**IMPORTANT: IF EITHER HOSE BIB IS USED IT MUST BE USED WITH SAND TRAP 6611. CANNOT OFFER HOSE BIBS AS AN OPTION WITH SAND TRAP 6635. IF A HOSE BIB IS PURCHASED, ACCESS PLATE 0004521763 MUST BE USED.**

<b>WHEN ORDERING PARTS PLEASE SPECIFY YOUR MODEL NUMBER</b>			1455 KLEPPE LANE SPARKS, NEVADA	BACHWEG 3 CH3401 BURGOORF SWITZERLAND	
	DRAWN BY: PM	DATE: 05/03/00	CHECK BY:	APP'D BY:	SCALE: 1/4
	TITLE: 3511	PART NUMBER: 0002074901		DRAWING NUMBER: 14684C00	
	PARTS BREAKDOWN			REV. 12	12

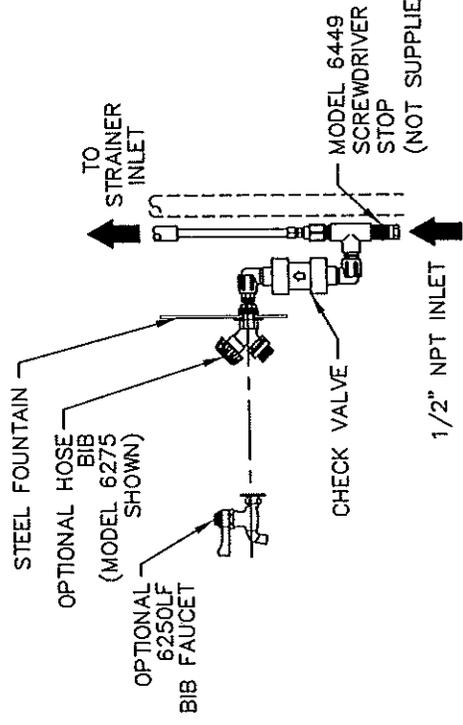
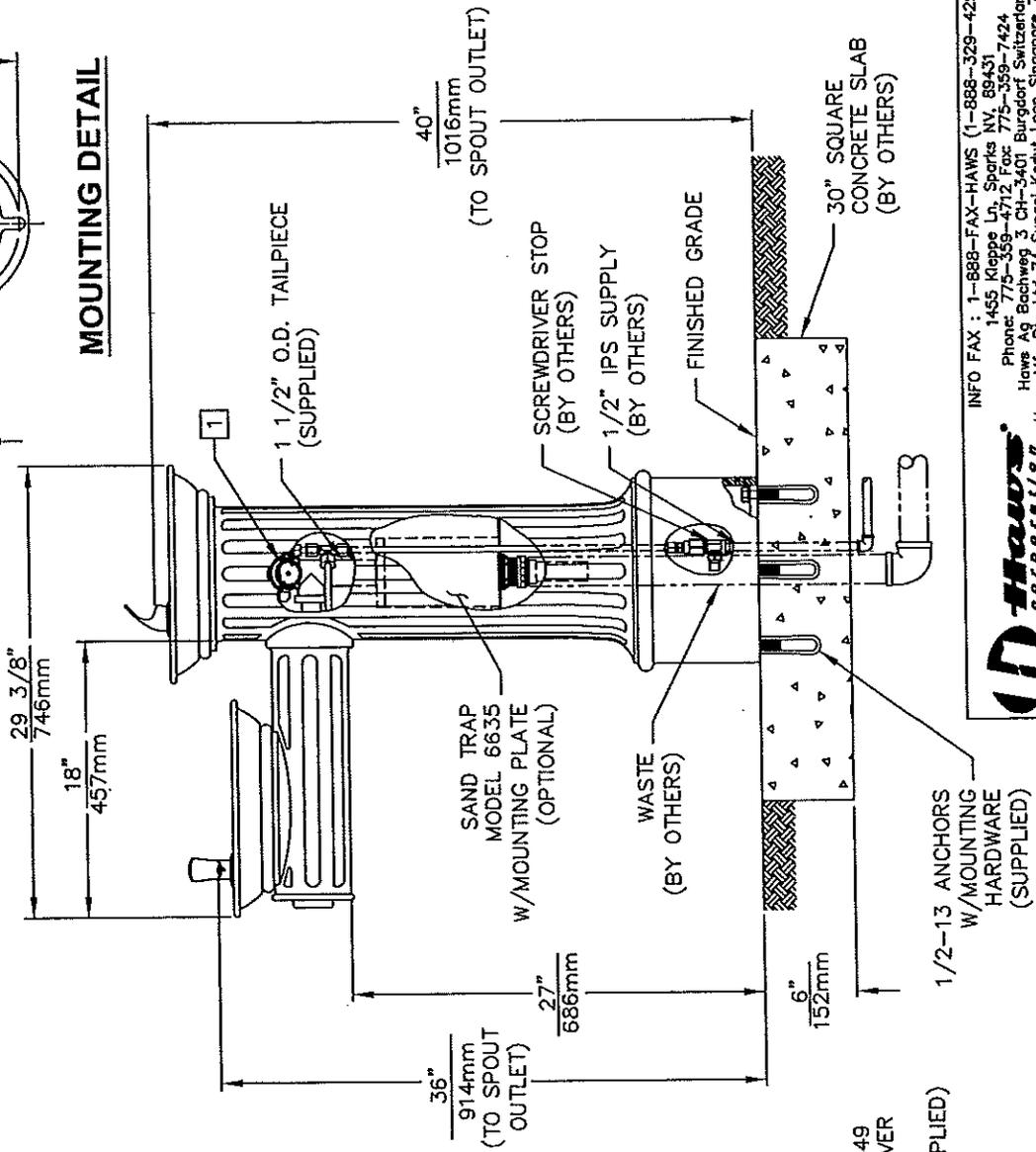
THIS DOCUMENT IS TRUE AND CORRECT AT TIME OF PUBLICATION. CONTINUED PRODUCT IMPROVEMENTS MAKE SPECIFICATIONS AND MEASUREMENTS SUBJECT TO CHANGE WITHOUT NOTICE.

**NOTES:**

- 1. REFER TO 5874/VRK5874 OPERATION AND MAINTENANCE MANUAL FOR PUSH BUTTON AND VALVE INSTALLATION/MAINTENANCE INSTRUCTIONS.



**MOUNTING DETAIL**

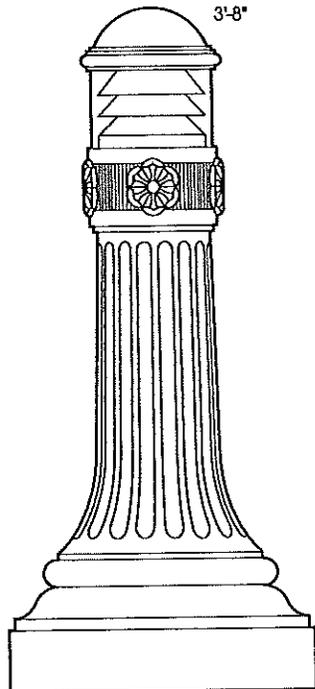


**OPTIONAL HOSE BIB DETAIL**

**Haws Corporation**  
 INFO FAX : 1-888-FAX-HAWS (1-888-329-4297)  
 1455 Kleppe Ln, Sparks, NV, 89431  
 Phone: 775-339-4712 Fax: 775-359-7424  
 Haws AG, Bachweg 3, CH-3401 Burgdorf, Switzerland  
 Haws Mfg Pte Ltd, 71 Sungei Kadut Loop, Singapore 729531  
 e-mail: Haws@hawsco.com website: www.hawsco.com

REV. NO.	REV. DATE	MODEL(S)
000207	06/01/00	3511
ISSUED BY	DATE	INFO FAX DOC # 23511
14681A00	1/02	
REV. A	1	1

# NEW YORK Series Cast Iron Lighted Bollard



BLCI BNY20L

## SPECIFICATIONS

**DESCRIPTION** The bollard shall be cast iron construction with a classic 16-flute, tapered design. The bollard shall be provided with an optical assembly consisting of a lens and reflector assembly providing an I.E.S. Type V distribution, and a cast aluminum dome top.

**MATERIALS** The bollard shall be ASTM-A48 Class 30 cast iron. The optical assembly top shall be heavy-wall cast aluminum produced from certified ASTM 356.1 ingot per ASTM B179-95a or ASTM B26-95. The castings shall be formed true to the pattern with complete detail. The lens shall be acrylic and the reflector shall be anodized aluminum. All exposed hardware shall be tamper resistant stainless steel. Anchor bolts to be completely hot-dip galvanized.

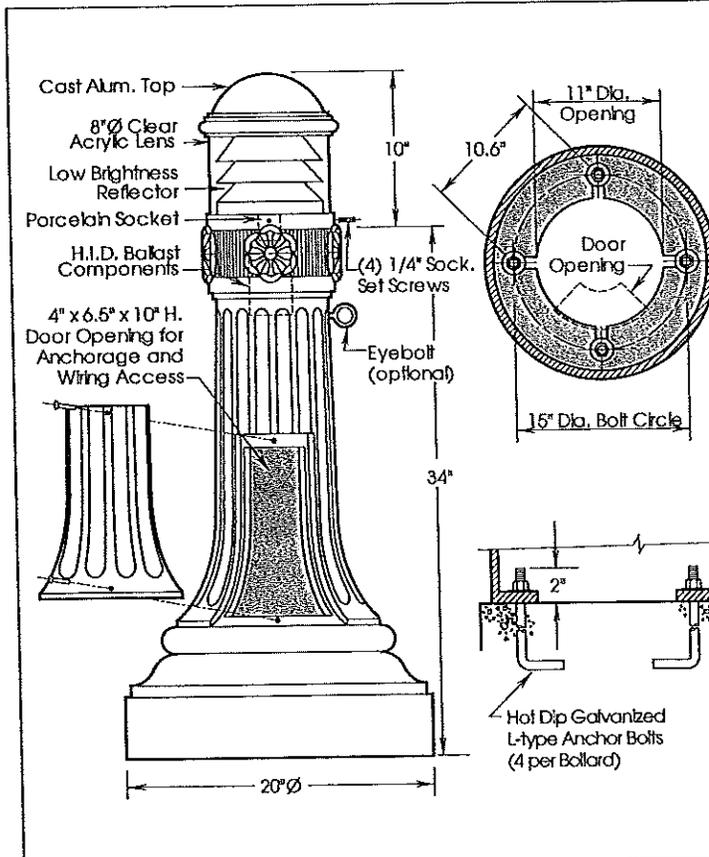
**CONSTRUCTION** The bollard shall be made from a one-piece casting. The optical assembly shall be attached to the bollard with four tamper resistant set screws.

**DIMENSIONS** The bollard shall be 3'- 8" in height with a 20" diameter base, and an 8" diameter lens.

**INSTALLATION** The bollard shall be provided with four L-type anchor bolts to be installed on a 15" diameter bolt circle. A door shall be provided in the base for anchorage and wiring access.

**LIGHT SOURCE** The lighted bollard shall be furnished with an H.I.D. ballast and socket assembly. Sockets shall be glazed porcelain medium base, with a copper alloy nickel plated screw shell and center contact. The ballast shall be a core and coil, high power factor, regulating type. The bollard shall be UL listed and labeled as suitable for wet locations.

For finish specifications and color options, see "Finish" section in catalog.



## ORDERING INFORMATION

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line.

Example: **BLCI BNY20L 70M MED ACS GR5 120 PEB1 ANBK**

Series	Lens Type	Voltage	
<b>BLCI BNY20L</b>	<b>ACS</b> Acrylic, Clear Smooth (std) <b>AWS</b> Acrylic, White Smooth	<b>120</b>	
		<b>208</b>	
		<b>240</b>	
		<b>277</b>	
		<b>347</b>	
<b>Wattage/Lamp<sup>4</sup></b>			
<i>H.I.D. ballast &amp; socket</i>			
<b>50M MED</b>	50 watt Metal Halide		
<b>70M MED</b>	70 watt Metal Halide		
<b>35S MED</b>	35 watt High Pressure Sodium		
<b>50S MED</b>	50 watt High Pressure Sodium		
<b>70S MED</b>	70 watt High Pressure Sodium		
<b>42TRT</b>	42 watt compact fluorescent		
<b>Distribution</b>			
(blank) Std., Low Brightness Reflector, Type V			
<b>GR5</b> Glass Refractor, Type V			
<b>GR3</b> Glass Refractor, Type III			
<b>Options</b>			
<b>EBB<sup>3</sup></b> One eyebolt			
<b>2EBB<sup>3</sup></b> 2 eyebolts			
<b>PEB1</b> Photocell button 120v			
<b>PEB2</b> Photocell button 208,240,277v			
<b>FG-B</b> GFCI Receptacle inside base			
<b>Finish<sup>1</sup></b>			
<b>ANBK</b> Black			
<b>ANDB</b> Dark Bronze			
<b>ANDG</b> Dark Green			
<b>ANVG</b> Verde Green			
<b>ANPP</b> Prime Painted			
<b>CM</b> Custom Match			
<b>CS</b> Custom Select RAL colors			

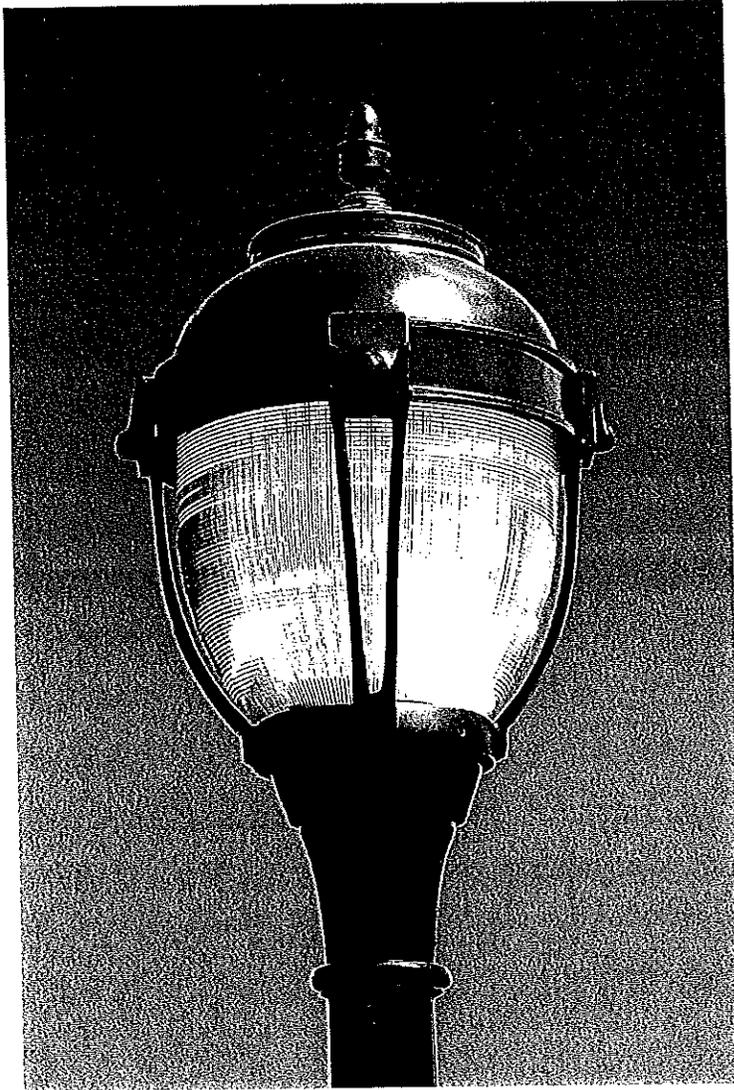
### NOTES:

- For finish and color options, see Finish section in catalog.
- Multi-Tap Ballast (120,208,240,277v). For wattages under 70S, 70M or 100H contact ASL for availability.
- For information on specifying correct orientation, see Orientation Guide in the back of the Accessories section in the catalog.
- For other wattage choices consult factory.

## ANTIQUE Street Lamps™

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## DS7 Semi-Cutoff Luminaire



DS7 K

## SPECIFICATIONS

### CONSTRUCTION

The luminaire has an injection molded, refractive, clear acrylic globe base with spun and cast aluminum top. The top and base are factory joined to provide one-piece construction without exposed fasteners. The luminaire is available with a large variety of base styles from which to select. Base/ballast housing, luminaire globe frame and finial are cast aluminum. The frame and luminaire base are one-piece construction without field assembly. All hardware is stainless steel.

### INSTALLATION

The luminaire mounts on a 3" O.D. x 3" tall tenon with six, 1/4-20 socket set screws. Luminaire with the B series luminaire base mounts on a 8.25" O.D. ring. The one-piece globe is removed from the luminaire base and frame by loosening 4 stainless steel set screws, providing complete access to the reflector/lamp assembly and the ballast assembly. Both assemblies have tool-less access and are furnished with quick disconnects. To access ballast assembly, release spring tab, rotate and lift cover off of pin, then lift out ballast tray.

### OPTICS

The luminaire utilizes an internal, anodized and segmented reflector with socket for horizontal lamp. Reflectors are available in four different distributions. Luminaire is furnished with an H.I.D. ballast assembly. The luminaire is UL and CUL listed and labeled as suitable for wet locations. Sockets are glazed porcelain, medium base, with a copper alloy nickel-plated screw shell and center contact. Ballasts are core and coil, high power factor, regulating type.

### FINISH

The luminaire has a powder coat finish utilizing a premium TGIC polyester powder. The finish is a three-stage process which consists of drying, powder application and curing. Before coating, the parts are treated with a five-stage pretreatment process, consisting of a heated alkaline cleaner, rinse, phosphate coating, rinse and sealant.

## ANTIQU<sup>®</sup> Street Lamps

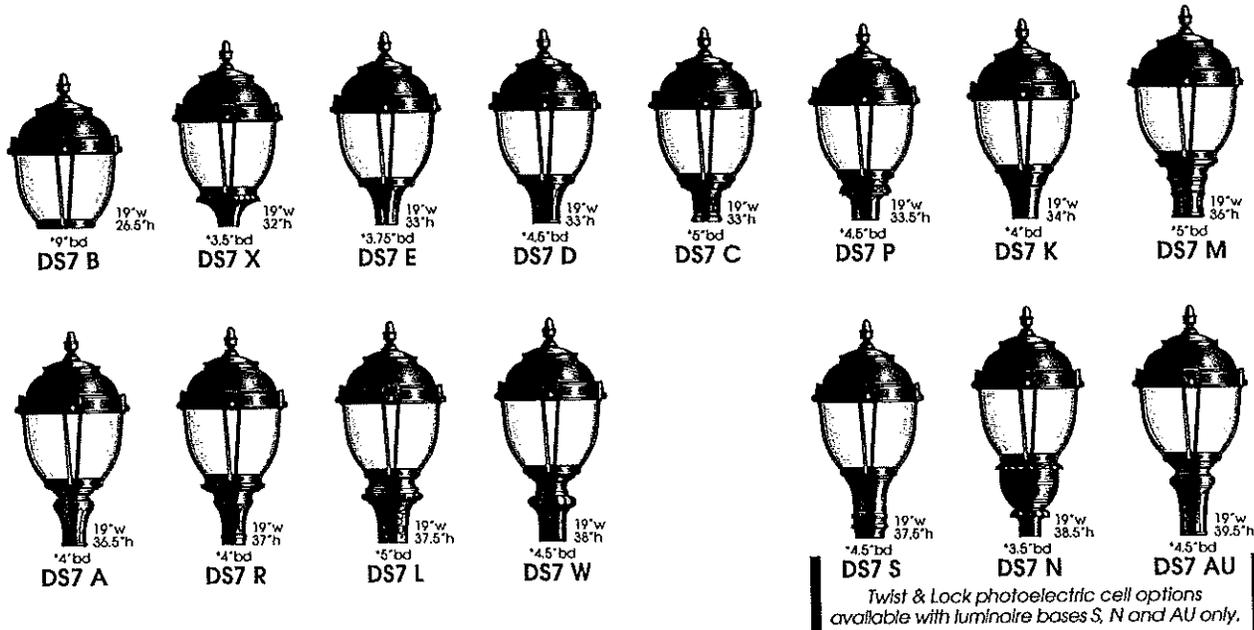
An Acuity Brands Company

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ph. (800)410-8899 • fax (512)977-9622  
[www.antiquestreetlamps.com](http://www.antiquestreetlamps.com)  
Acuity Brands Lighting

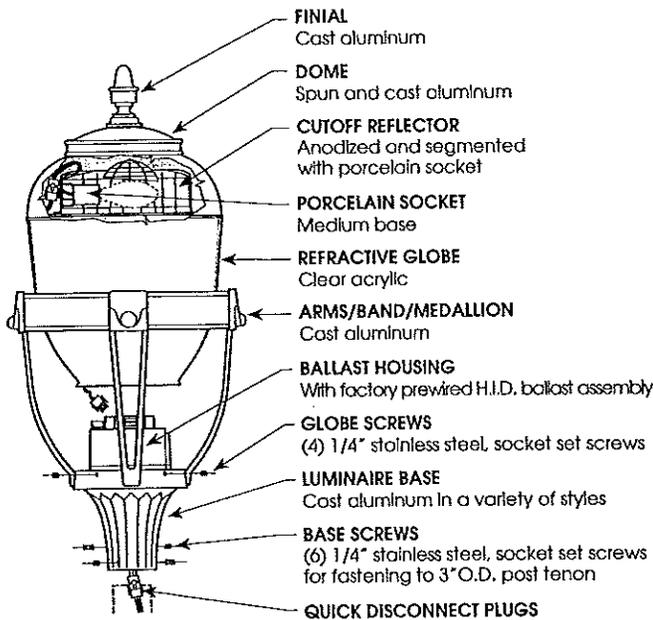
# DS7 Semi-Cutoff Luminaire

\* bd dimensions are the diameter of the base

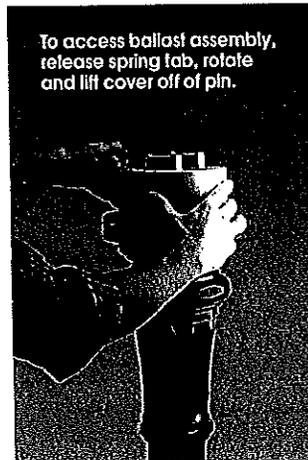
## DS7 WITH LUMINAIRE BASE CHOICE



Twist & Lock photoelectric cell options available with luminaire bases S, N and AU only.



## TOOL-LESS BALLAST HOUSING



LUMINAIRE BASE WITH BALLAST HOUSING



REMOVING BALLAST ASSEMBLY

Note: Lamp is not furnished with the luminaire.

## ORDERING GUIDE

Sample Catalog no: DS7 D 150S MED ARF SR2 TB1 PEB1 ANBK

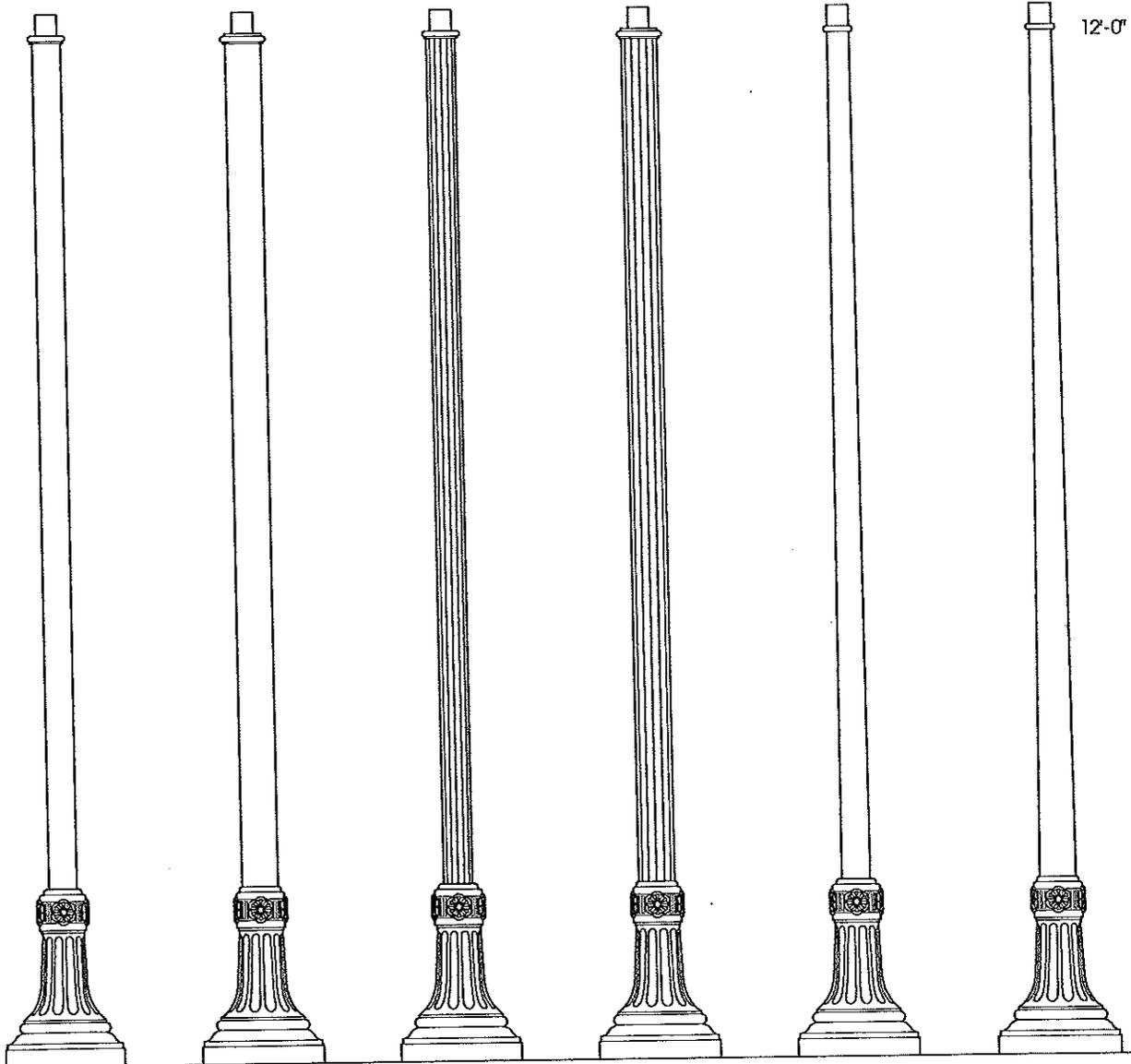
Series	Wattage/Lamp	Lens Material	Distribution	Voltage <sup>1</sup>	Options	Finish <sup>4</sup>
DS7 B <sup>5</sup>	Metal Halide	ARF Acrylic, Refractive	SR2 IES Distribution	TB1 120 volt	HS <sup>2</sup> House Side Shield	ANBK Black
DS7 X	50M MED		SR3 IES Distribution	TB2 208 volt	SF Single Fusing	ANDB Dark Bronze
DS7 E	70M MED		SR4SC IES Distribution	TB3 240 volt	DF Double Fusing	ANDG Dark Green
DS7 D	100M MED		SR5S IES Distribution	TB4 277 volt	PEB1 Photoelectric cell button 120v	ANPP Prime Painted
DS7 C	150M MED			347 347 volt	PEB2 Photoelectric cell button 208, 240, 277v	CM Custom Match
DS7 P				480 480 volt	PER <sup>3</sup> Twist-Lock Photocontrol Receptacle	CS Custom Select RAL colors
DS7 K					PE1 <sup>3</sup> NEMA Twist & Lock PE 120, 208, 240v	
DS7 M					PE2 <sup>3</sup> NEMA Twist & Lock PE 347v	
DS7 R	High Pressure Sodium				PE3 <sup>3</sup> NEMA Twist & Lock PE 480v	
DS7 A	35S MED				PE4 <sup>3</sup> NEMA Twist & Lock PE 277v	
DS7 L	50S MED					
DS7 W	70S MED					
DS7 S	100S MED					
DS7 N	150S MED					
DS7 AU <sup>5</sup>						

NOTES:  
 1. Multi-Tap Ballast (120, 208, 240, 277v), (120, 277, 347v in Canada). For wattages under 70S or 70M contact ASL for voltage availability.  
 2. HS option is not available with distribution option SR5S or SR4SC.  
 3. Twist & Lock Photo Control only available with N. S. and AU bases.  
 4. For finish and color options, see Finish section in catalog or contact ASL.  
 5. Consult factory for wattages for B Series Luminaire Base.

ANTIQUE Street Lamps<sup>®</sup>  
 An Acuity Brands Company

Cast Aluminum Posts  
extruded shafts

NEW YORK Series  
17" dia. base



PX NY18 12 S4 finish  
4" dia. smooth shaft  
8', 10', 12', 14'

PX NY18 12 S5 finish  
5" dia. smooth shaft  
10', 12', 14', 16'

PX NY18 12 F4 finish  
4" dia. fluted shaft  
8', 10', 12', 14'

PX NY18 12 F5 finish  
5" dia. fluted shaft  
10', 12', 14', 16'

PX NY18 12 T4 finish  
4"-3" dia. tapered shaft  
8', 10', 12', 14'

PX NY18 12 T5 finish  
5"-3" dia. tapered shaft  
10', 12', 14', 16'

SPECIFICATIONS

**DESCRIPTION** The lighting post shall be all aluminum, one-piece construction, with a classic tapered and fluted base design. The shaft shall be \_\_\_\_\_ (insert shaft options from back page). The post shall be Antique Street Lamps' catalog number PX NY17 XX XX finish.

**MATERIALS** The base shall be heavy wall, copper free, cast aluminum produced from certified ASTM 356.1 ingot per ASTM B-179-95a or ASTM B26-95. The straight shafts shall be extruded from aluminum, ASTM 6061 alloy, heat treated to a T6 temper. The tapered shaft shall be extruded from aluminum, ASTM 6063 alloy, spun to a tapered shape, then heat treated to a T6 temper. All hardware shall be temper resistant stainless steel. Anchor bolts to be completely hot-dip galvanized.

**CONSTRUCTION** The shaft shall be double welded to the base casting and shipped as one piece for maximum structural integrity. The shaft shall be circumferentially welded inside the base casting at the top of the access door, and externally where the shaft exits the base. All exposed welds below 8' shall be ground smooth. All welding shall be per ANSI/AWS

D1.2-90. All welders shall be certified per Section 5 of ANSI/AWS D1.2-90.

**DIMENSIONS** The post shall be X' - XX" in height with a 17" diameter base. The shaft diameter shall be XX". (see back page) At the top of the post, an integral 3" O.D. x 3" tenon with a transitional donut shall be provided for luminaire mounting.

**INSTALLATION** The post shall be provided with four, hot-dip galvanized L-type anchor bolts to be installed on a 12" diameter bolt circle. A door shall be provided in the base for anchorage and wiring access. A grounding screw shall be provided inside the base opposite the door.

For finish specifications and color options, see "Finish" section in catalog.

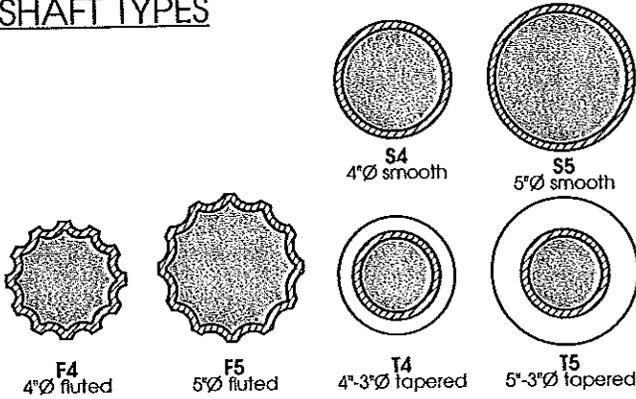
ANTIQUÉ Street Lamps

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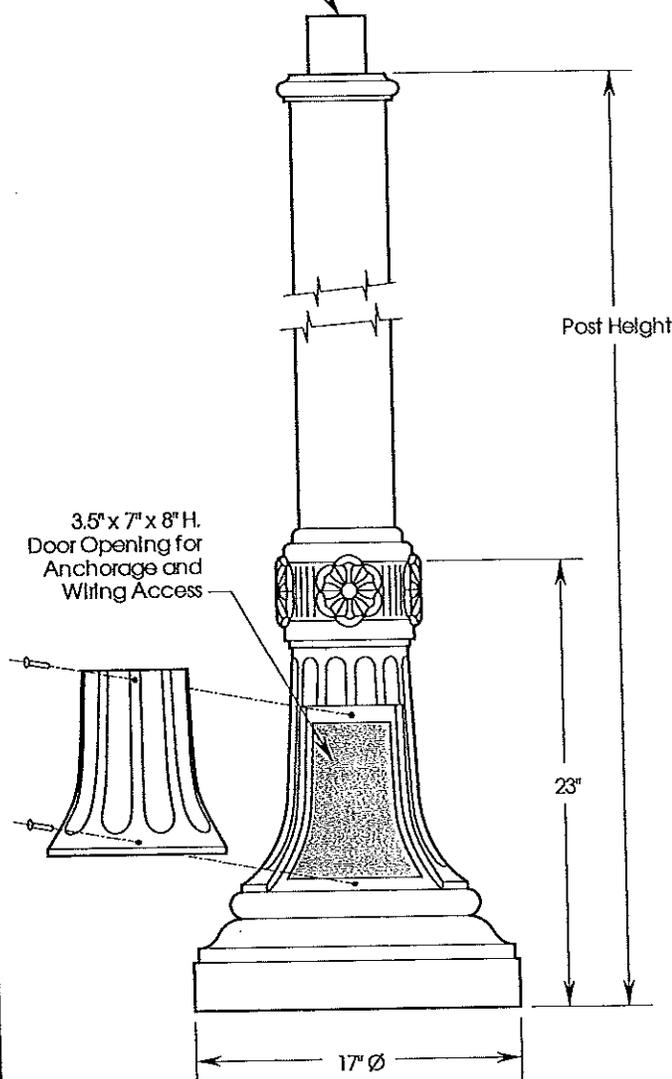
# NEW YORK Series

## Cast Aluminum Posts

### SHAFT TYPES



3" O.D. x 3" High Tenon



### ORDERING INFORMATION

Choose the **boldface** catalog nomenclature that best suits your needs and write it on the appropriate line.

Example: **PX NY17 12 S5 ANBK** Options

Post Series	Height	Finish <sup>1</sup>
<b>PX NY17</b>	8	<b>ANBK</b> Black
Post, Cast Aluminum, Extruded Shaft	10	<b>ANDB</b> Dark Bronze
	12	<b>ANDG</b> Dark Green
	14	<b>ANVG</b> Verde Green
<b>NEW YORK</b>	16 <sup>2</sup>	<b>ANPP</b> Prime Painted
17" base		<b>CM</b> Custom Match
		<b>CS</b> Custom Select RAL colors

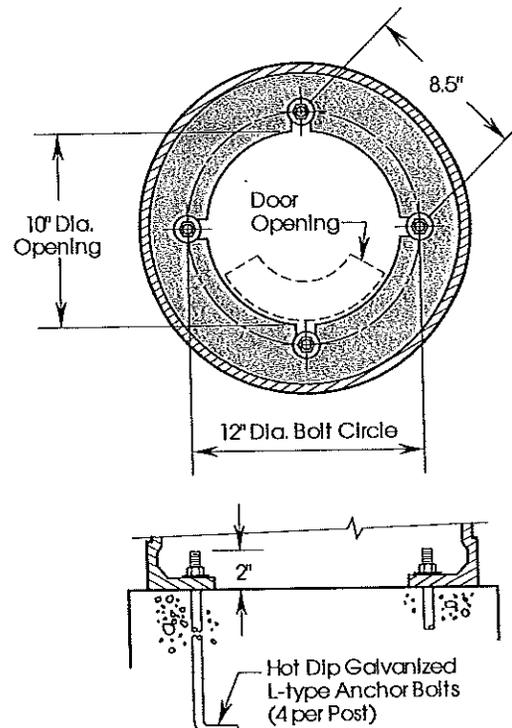
  

Shaft Type	Options
<b>S4</b> Smooth 4"Ø	Receptacles
<b>S5</b> Smooth 5"Ø	Banner Arms
<b>F4</b> Fluted 4"Ø	Flagpole Holders
<b>F5</b> Fluted 5"Ø	Custom Logos
<b>T4</b> Tapered 4"-3"Ø	Signage
<b>T5</b> Tapered 5"-3"Ø	(see Signage & Accessories section in the catalog or contact Antique Street Lamps)

#### NOTES:

- For finish specifications and color options, see Finish section in catalog or contact Antique Street Lamps.
- 16' height not available for S4, F4, or T4 (any 4"Ø) Shaft Type.

### ANCHORAGE GUIDE



## ANTIQUE Street Lamps

2011-B W. Rundberg Ln. • Austin, TX 78758 • ph(512) 977-8444 • fax(512) 977-9622

**CONSTRUCTION PLANS**  
**NTS**  
**(Separate sheets)**