



CITY OF OMAHA
MATERIALS & TESTING
MANUAL
FOR PUBLIC WORKS
CONSTRUCTION
2003 EDITION

Developed for the City of Omaha by:





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ABBREVIATIONS

AAN.....	American Association of Nurserymen
AAR.....	Association of American Railroads
AASHTO.....	American Association of State Highway and Transportation Officials
ABS.....	Acrylonitrile Butadiene Styrene
AC.....	Asphalt Cement
ACP.....	Asphaltic Cement Pavement
ACI.....	American Concrete Association
AGC.....	Association of General Contractors
AIA.....	American Institute of Architects
AISC.....	American Institute of Steel Construction
AISI.....	American Iron and Steel Institute
ALSC.....	Board of Review of American Lumber Standards Committee
ANSI.....	American National Standards Institute
ARA.....	American Railroad Association
AREMA.....	American Railway Engineering and Maintenance Association
ARTBA.....	American Road and Transportation Builders Association
ASA.....	American Standards Institute
ASCE.....	American Society of Civil Engineers
ASLA.....	American Society of Landscape Architects
ASTM.....	American Society for Testing and Materials
AWG.....	American Wire Gauge
AWPA.....	American Wood Preservers' Association
AWS.....	American Welding Society
AWWA.....	American Water Works Association
BST.....	Bituminous Surface Treatment
BSTS.....	Bell System Transmission Specifications for Voice Grade Private Line Data Channels, March 1969 Edition
CFR.....	Code of Federal Regulations
CMP.....	Corrugated Metal Pipe
CPM.....	Critical Path Method
CSP.....	Corrugated Steel Pipe
EI.....	Edison Electric Institute
EPA.....	Environmental Protection Agency
FHWA.....	Federal Highway Administration
FR.....	Federal Register
FSS.....	Federal Specifications and Standards
GSA.....	General Services Administration
HDPE.....	High Density Polyethylene
ID.....	Identification
IDOT.....	State of Iowa Department of Transportation
IEEE.....	Institute of Electrical and Electronic Engineers
IES.....	Illuminating Engineering Society

Abbreviations

IMSA.....	International Municipal Signal Association
IPCEA.....	Insulated Power Cable Engineers Association
ISMA.....	International Municipal Sign Association
ISO.....	International Standards Organization
ITE.....	Institute of Transportation Engineers
LDPE.....	Low Density polyethylene
LRFD.....	Load Resistance Factor Design
LSC.....	Low Strength Concrete
MIL.....	Military Specifications
MUTCD.....	Manual on Uniform Traffic Control Devices
NCAT.....	National Center for Asphalt Technology
NCMA.....	National Concrete Masonry Association
NDEQ.....	Nebraska Department of Environmental Quality
NDOR.....	Nebraska Department of Roads
NEC.....	National Electric Code
NEMA.....	National Electrical Manufacturer's Association
NESC.....	National Electric Safety Code
NFPA.....	National Fire Protection Association
NICET.....	National Institute for Certification in Engineering Technologies
NNRD.....	Nebraska Natural Resources Department
NRMCA.....	National Ready Mixed Concrete Association
OSHA.....	Occupational Safety and Health Act
PC.....	Portland Cement
PCC.....	Portland Cement Concrete
PG Binder.....	Performance Graded Binder
psi.....	Pounds per Square Inch
PVC.....	Polyvinyl Chloride
RCP.....	Reinforced Concrete Pipe
REA.....	Rural Electrification Administration
RRS.....	Reissue Revised Statues of Nebraska
SAE.....	Society of Automotive Engineers
SHRP.....	Strategic Highway Research Program
SSPC.....	Steel Structures Painting Council Specifications, latest Edition
SSPWC.....	City of Omaha Standard Specifications for Public Works Construction
STP.....	Special Testing Procedure identified by the Contract Documents
TTF.....	Time-Temperature Factor
UL.....	Underwriters Laboratories
US.....	United States
USASI.....	USA Standards Institute
USBM.....	United States Bureau of Mines
USC.....	United States Code
VCP.....	Vitrified Clay Pipe
VDOT.....	State of Virginia Department of Transportation

10 LABORATORY QUALIFICATION REQUIREMENTS

The primary objective in requiring laboratory accreditation is to assure that the laboratory facilities, procedures, and equipment will accurately perform and document the required sampling and testing of materials. The ultimate objective is to assure that the testing laboratory accurately verifies compliance of the materials specified for use in each element of the construction project.

11 Laboratory/Equipment Qualifications and Responsibility for Qualification

All firms performing construction materials testing for the City of Omaha Public Works Department shall be accredited in accordance with ASTM E329, Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction. The accrediting agency shall conform to the requirements of ASTM E994, Standard Guide for Calibration and Testing Laboratory Accreditation Systems General Requirements for Operation and Recognition. Firms actively pursuing accreditation may provide proof, acceptable to the Engineer, demonstrating the firm's commitment to obtaining accreditation in a timely manner. Proof of accreditation or documentation that the firm is actively pursuing accreditation shall be submitted to the City of Omaha Public Works Department annually. Additionally, the firm shall submit a statement, signed by a principal of the firm, agreeing to conform to this manual.

12 Laboratory Equipment – Calibration Procedures and Frequencies

Sampling and testing equipment used for material acceptance and/or material verification shall be calibrated at regular intervals. Specialized equipment (i.e. air meters, nuclear density gauges, etc.) shall be identified with a unique inventory number and calibration records shall designate the unique inventory number of the equipment. Non-specialized sampling and testing equipment is considered as a part of the laboratory although the equipment may not be physically housed in the laboratory. The frequency and methods for calibrating or verifying testing equipment shall be as required by the applicable test procedure. The calibration procedure and frequency of calibration are applicable to equipment used for quality control testing, verification testing, and quality assurance testing. The City of Omaha Public Works Department has the right to require calibration/ verification of equipment at intervals more frequent than discussed herein.

13 Frequency for Laboratory Qualification

Main laboratories shall be qualified at intervals as required by the accreditation agency. Field (temporary or mobile) laboratories shall meet the requirements for accreditation but need not be accredited by an independent accreditation agency.

14 Requirements

The laboratory will:

- Maintain and follow a quality control system that reasonably ensures that the testing equipment and materials, and technical staff utilized on the project is capable of verifying conformance of the materials tested as to compliance with the contract and project requirements.
- Provide qualified sampling and testing personnel to perform quality control inspection, sampling and testing required by the project

10 Laboratory Qualification Requirements

- Submit test reports to the City of Omaha Public Works Department containing the following information: the project number, name, location, and City of Omaha Public Works Department Project Manager, the name of the technician(s) that performed the required duties, including certification identification number(s), the reference test procedure(s) followed, the test result(s) including the acceptance limits/specification requirements (if known), and the signature of the Manager that reviewed the result(s) for accuracy.

15 Staffing

The laboratory shall have the following staffing levels.

- Professional Civil Engineer currently licensed in the State of Nebraska responsible for oversight of all services provided to the City of Omaha.
- Field and Laboratory Managers (optional) responsible for oversight/scheduling of testing personnel. Field and Laboratory Managers shall possess a minimum of 5 years experience in construction materials testing acceptable to the City of Omaha Public Works Department. Additionally, the field and laboratory manager shall be able to demonstrate by written examination their ability to perform the required tests and shall be capable of evaluating such test results in terms of specification compliance. The field and laboratory manager for soils and concrete testing shall be certified by the American Concrete Institute (ACI) as a Concrete Transportation Construction Inspector, or by the National Institute for Certification in Engineering Technologies (NICET) as a Level III Engineering Technician in one or more of the following fields Construction Materials Testing (Both Soils and Concrete Sub-fields), Highway Materials, or Highway Construction. The field and laboratory manager for asphalt testing shall be certified by NICET Level III in Construction Materials Testing (Asphalt Sub-field), Highway Materials, or Highway Construction or shall be a certified asphalt mix designer by a state or nationally recognized agency.
- Certified Field and Laboratory Technicians that will perform the requested testing services. Technicians must be certified in accordance with the Technician Qualification Requirements contained in this manual. Areas of Laboratory Certification, levels of technician certification, and identification numbers (or reproduction of certificate) must be provided to the City of Omaha Public Works Department.

16 Non-Compliance

Laboratories not fulfilling the above requirements shall be subject to review and possible disqualification. Additionally, repeated occurrences of neglect or abuse by technicians (as defined in the technician qualification requirements) shall be grounds for disqualifying a laboratory.

10 Laboratory Qualification Requirements

Laboratories not meeting the accreditation requirements contained herein may be eligible to perform testing on select projects at the discretion of the City of Omaha Public Works Department. To be considered for testing on select projects, documentation of the requirements outlined in this Materials Testing Manual met by the laboratory must be submitted.

20 TECHNICIAN QUALIFICATION REQUIREMENTS

Qualified sampling and testing personnel, referred to herein as technicians, shall perform all sampling and testing services to determine acceptance of construction materials. Technicians shall have sufficient education and training to properly perform the required inspection or testing. The technician shall demonstrate competence in performing the inspection or testing required by obtaining certification from an accepted and recognized certification agency. Whenever possible, certification shall be determined by oral or written examination as well as a performance examination. Technicians shall work under the direct supervision of a Professional Engineer or qualified field or laboratory manager.

The primary objective in requiring qualified technicians is to assure that personnel are capable of correctly performing the required materials inspection, sampling, and testing as defined in this manual and verify the quality of construction materials and practices.

21 Technician Qualification Programs

Technician qualification programs can vary in format while achieving the primary objective of verifying the qualifications of technicians. Currently, several national agencies and State departments of transportation (DOT) have combined to develop qualification programs that both train and certify technicians in specific areas. A Professional Engineer License, Engineering Intern certificate, providing similar past services, or other grandfather clauses does not fulfill the certification requirement. Professional Engineers or Engineering Interns previously certified in the appropriate areas may be acceptable pending approval of the Engineer. Additionally, in-house training programs are not acceptable as the sole basis for certifying technicians. Personnel seeking certification must successfully perform the specific test and accurately complete any calculations associated with determining specification compliance, while in the presence of an independent evaluator. Successful performance is defined as demonstrating the ability to properly perform essential elements for each test method. An acceptable certification program should contain the following items:

- Independent oversight and approval of a technician's ability,
- A written examination and a performance examination of the various sampling and testing methods,
- Formal training of personnel including all sampling and testing procedures with instructions on the importance of proper procedures and the significance of test results,
- Hands-on training to demonstrate proficiency of all sampling and testing to be performed,
- A period of on-the-job training with a qualified individual to assure familiarity with the required procedures,
- Recertification process at regular intervals (not to exceed 5 years), and
- The qualification program should have a documented process for removing personnel that “incorrectly” perform the sampling and testing procedures.

22 New and Temporary Employees

Newly hired and temporary/seasonal employees may obtain provisional qualification through on the job training by a certified technician. The provisional qualification will permit the employee to perform material testing, for the City of Omaha Public Works Department, while within sight and sound of a certified field or qualified laboratory technician. An employee will be able to perform testing under the provisional qualification for a maximum of one construction season.

20 Technician Qualification Requirements

23 Documentation

Documentation to be maintained by the testing laboratory and furnished to the City of Omaha Public Works Department upon request shall include:

- Sampling and Testing Personnel Qualification Record – A record for each individual listing all tests the individual has been qualified to perform shall be provided to the City of Omaha Public Works Department prior to the technician performing testing for the City of Omaha Public Works Department.
- Certificate of Qualification – The qualification certificate issued to an individual shall show the test procedures covered by the certification or a title, such as "Field Tester I", that can be demonstrated as encompassing a series of test procedures, and the date the qualification will expire.
- Copies of written examinations test results.

24 Disqualification

Notice of abuse or neglect related to the procedures or responsibilities identified in this manual shall be made to the Engineer. The City shall notify the individual(s) being investigated of the allegation and that the charges are being reviewed. The difference between neglect and abuse is perceived intent and shall be determined by a panel comprised of three (3) or five (5) members appointed by the City. Suspensions of the individual from performing testing services for the City of Omaha Public Works Department may be imposed as recommended by the panel. Suspensions shall range from a minimum of ten (10) days suspension to a maximum of banning the individual from performing testing for the City.

- Neglect The first instance of neglect shall result in a ten (10) day suspension of the individual from performing testing services for the City of Omaha Public Works Department. The second instance of neglect shall result in a thirty (30) day suspension of the individual from performing testing services for the City of Omaha Public Works Department. A third instance of neglect shall be considered and treated the same as abuse. An example of neglect would be failing to post or properly record a test result.
- Abuse The first instance of abuse shall result in a ninety (90) day suspension of the individual from performing testing services for the City of Omaha Public Works Department. The second instance of abuse shall result in a one (1) to two (2) year ban from performing testing services for the City of Omaha Public Works Department. An example of abuse would be falsification of test results.

The policies and procedures described above are applicable to all technicians or field and laboratory managers involved in materials testing for acceptance, verification, or quality control for the City of Omaha Public Works Department. Any reference made above to "suspension" applies only to suspension of an individual from providing testing services to

the City of Omaha Public Works Department and is not intended to imply that an individual will or should be suspended from work by his or her employer. While suspension from work or termination of employment may be a consideration depending on the level of neglect or abuse exhibited, such action would be taken through a firm's normal procedures for disciplinary action separate of any actions by the City of Omaha.

30 SUBMITTAL REQUIREMENTS

All submittals/shop drawings provided to demonstrate compliance of construction materials, practices, and products with the Contract Documents shall conform to the requirements outlined within this section unless otherwise specified by the Engineer.

31 Material Acceptance/Shop Drawing Requirements

All material to be incorporated into the project shall be designed, tested, inspected, and approved before or during construction unless otherwise indicated in the Contract Documents or directed by the Engineer. Testing and approval may include, but is not limited to, acceptance of a certificate of compliance (shop drawing) or visual approval.

32 Certificate of Compliance (Shop Drawing)

The certification may be submitted in a variety of forms including the following:

- Stamped or preprinted on truck tickets;
- Stamped or preprinted on invoices;
- Stamped or printed on the mill analysis;
- Furnished as a separate document with each shipment;
- Stamped or printed on a list of materials for each shipment; or
- Compliance test reports.

Before use of a material, an authorized representative of the City shall verify that a certificate of compliance relating to said proposed material has been received and approved for use on the project. All submittals for materials proposed for use shall identify the product, the producer, location of the production facility, and the lot number. Certifications submitted by the Contractor shall be Type A, Type B, Type C, or other type as required by the Engineer for specific products. A copy of the approved certificate verifying compliance with the applicable specifications shall accompany all materials supplied to a project by a contractor unless acceptance is by brand name identified in the Contract Documents or as a pre-qualified source. Owner certifications shall be provided as indicated in the Contract Documents during the construction process. Other types of certification, other than those addressed herein, may be submitted to the City of Omaha Public Works Department for consideration of compliance with the appropriate specification. Certificates may be used by the authorized City representative as the basis for acceptance and incorporation of materials into the projects as allowed by the Engineer.

Products or production facilities pre-qualified by the State of Nebraska are not required to submit a certificate of compliance unless otherwise required by the Contract Documents or by the Engineer. In lieu of a certificate of compliance, the Contractor shall submit a document stating the proposed products or production facilities are pre-qualified. The City reserves the right to accept such documentation or require the Contractor demonstrate compliance with the Contract Documents.

30 Submittal Requirements

Design submittals shall include all dimensions, design calculations, and material specifications and shall be stamped by a Licensed Professional Engineer or Professional Architect where required.

33 Certification of Compliance Types

Type A The Contractor or producer shall prepare a Type A certification. For coring or sampling activities, a Type A certification consists of the Contractor obtaining the cores or samples and submitting such samples to the City or City's designated representative for testing. For all other activities, a Type A certification shall consist of a certified copy of a laboratory report, which lists results of specified tests and shall certify that the materials furnished comply with the specifications, or for, construction activities, a statement indicating intent to comply with the required techniques/procedures. The certificate shall specifically identify the portions of Contract Documents addressed by the certificate. The tests may be conducted in the manufacturer's laboratory or in another qualified laboratory. Such tests shall have been conducted on samples obtained from the lot or lots of material identifiable in the shipment.

Type B The Contractor or producer shall prepare a Type B certification. It shall include the maximum, minimum, and average test results obtained for the specified tests and shall certify that the lot of materials furnished complies with the Contract Documents. The certificate shall specifically identify the portions of Contract Documents addressed by the certificate. Compliance testing may be conducted in the manufacturer's laboratory or in another qualified laboratory.

Type C An accredited, qualified agency shall prepare a Type C certification. A Type C certification shall include the results of the testing performed on representative samples of the actual materials proposed for use. Agencies shall be accredited in the appropriate areas in accordance with ASTM E329, Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction, or accreditation acceptable to the Engineer. Suppliers furnishing material from stored stock shall include a statement identifying the independent, qualified agency, indicating compliance with the specific sections of the Contract Documents, and referencing the applicable test results with each shipment.

Owner Owner provided certification shall consist of testing or inspection provided by the City of Omaha Public Works Department, at the discretion of the City of Omaha Public Works Department, to verify compliance.

Pre-qualified At the discretion of the City of Omaha Public Works Department, products pre-qualified by the Nebraska Department of Roads may or may

not be acceptable. The Contractor shall submit sufficient information to the Engineer for consideration of such products or production facilities.

34 Visual Approval by Project Engineer

An authorized representative of the City may visually inspect proposed materials to determine satisfactory compliance with the specifications. Visual approval may be acceptable for non-critical items, where satisfactory compliance can be readily determined by visual means. The City's authorized representative shall document relevant information about any proposed materials accepted on a visual basis. Relevant information may include product name, source, producer, lot number, and date produced. The City's authorized representative shall document that the material meets the requirements established by the Contract Documents, the Engineer, and/or the manufacturer before incorporation of the material. If there are questions regarding compliance with the Contract Documents, the City reserves the right to obtain representative samples of the material to verify for such compliance. Visual approval shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the Contract Documents.

40 SPECIAL TESTING PROCEDURES

This section contains special procedures for determining compliance with the Contract Documents. Such procedures shall be followed to determine compliance when referenced by this manual, the Contract Documents, or the Project Engineer.

41 Calculation of Asphalt Film Thickness (NCAT Method)

Calculate film thickness for asphalt materials using the formulas defined by the National Center for Asphalt Technologies (NCAT). The NCAT formula for film thickness is as follows:

$$\text{Film Thickness} = \frac{(\text{Effective Volume of Asphalt})}{(\text{Surface Area of Aggregate}) \times (\text{Weight of Aggregate})}$$

NOTE: USE ALL METRIC VALUES

Abbreviations

Gsb	Bulk Dry Specific Gravity of Aggregate
Gmb	Laboratory Compacted Specific Gravity of Asphalt
MTD	Maximum Theoretical Specific Gravity of Asphalt (Rice)
Pb	Percent Asphalt Content by Weight of Total Mix
Pba	Percent Asphalt Absorbed by Weight of Aggregate
Gb	Specific Gravity of Asphalt Binder
Gse	Calculated Effective Specific Gravity of Aggregate
Wa	Weight of Aggregate @ Gmb
Vbt	Total Volume of Asphalt Binder @ Gmb
Vbe	Effective Volume of Asphalt Binder
Vba	Volume of Asphalt Binder Absorbed
SA	Surface Area of Aggregate

Procedure

1. Calculate the Effective Specific Gravity of Aggregate

$$Gse = \frac{(100 - Pb)}{\left(\frac{100}{MTD}\right) - \left(\frac{Pb}{Gac}\right)}$$

2. Calculate the Total Volume of Asphalt Binder

$$Vat = \frac{Pb \times Gmb \times 1000}{Gac \times 100}$$

3. Calculate the Percent of Asphalt Absorbed by Weight of Aggregate

$$Pba = \frac{100 \times Gb \times (Gse - Gsb)}{(Gsb \times Gse)}$$

4. Calculate the Weight of Aggregate @ Gmb

$$Wa = \frac{(100 - Pb) \times Gmb \times 1000}{100}$$

40 Special Testing Procedures

5. Calculate the Volume of Asphalt Binder Absorbed

$$V_{ba} = \frac{P_{ba} \times W_a}{G_{ac} \times 100}$$

6. Calculate the Effective Volume of Asphalt Binder

$$V_{be} = V_{bt} - V_{ba}$$

7. Calculate the Surface Area of the Aggregate

Sieve	Surface Area Value
3/8" or greater	0.41*
#4	% Passing x 0.0041
#8	% Passing x 0.0082
#16	% Passing x 0.0164
#30	% Passing x 0.0287
#50	% Passing x 0.0614
#100	% Passing x 0.1229
#200	% Passing x 0.3277

* This value represents all material retained on the 3/8" sieve, if the % Passing #4 =100 then this value = 0

$$SA = \sum_{\#200}^{3/8"} (\text{Surface Area Value})$$

8. Calculate the Film Thickness

$$\text{Film Thickness} = \frac{V_{be} \times 1000}{SA \times W_a}$$

42 Maturity Method for Determining Strength of Portland Cement Concrete Pavement

In lieu of standard compressive or flexural strength testing, the City may require the use of the Maturity Method, as determined in accordance with ASTM C1074, Standard Practice for Estimating Concrete Strength by the Maturity Method, except as modified herein, for determining the strength of Portland cement concrete pavements. Only use the Time-Temperature Factor (TTF) maturity function. Develop the maturity curve using a minimum of two (2) strength measurements performed before and two (2) strength measurements performed after the required TTF.

The Contractor or PCC producer shall develop maturity curves for each production facility, mix type, and mix design proportioning of Portland cement concrete. At the discretion of the Engineer, two (2) or more production facilities using the same materials, material sources, and mix design proportioning may utilize the same maturity curve provided each facility validates the maturity curve submitted.

The Contractor shall provide the City the applicable maturity curves expected for use on the project as part of the shop drawing for Portland cement concrete when directed by the Engineer. Maturity curves shall indicate slump and air content of the PCC used to develop the curves and shall be submitted before placement of the concrete. The curves shall be considered acceptable for concrete placed that has slump and air content values within ± 1.0 inches and $\pm 1.0\%$, respectively. Concrete not in compliance with the approved mix design proportions, slump, or air content for the current maturity curve may be rejected at the discretion of the City.

The Contractor or PCC producer shall validate the maturity curves every thirty (30) days to verify that the concrete produced is represented by the current maturity curve. Accomplish the validation procedure by casting three (3) cylinders in the manner used to develop the current maturity curve. All three (3) cylinders shall be tested for compressive strength as close as possible to the TTF determined to represent the opening strength of the pavement. If the average strength of these tests is within $\pm 10.0\%$ of the required strength for that project, the current curve shall be considered validated. If the average strength of these tests is more than 10.0% below the required strength, a new maturity curve shall be developed. If the average strength of these tests is more than 10.0% above the required strength, a new maturity curve may be developed at the discretion of the City.

Regardless of the results, copies of all maturity curve validations shall be provided to the City no later than three (3) days after the completing the validation process. The validation process is an assurance procedure and shall not be used as an acceptance test. If a new curve must be developed, it shall be accomplished in a timely fashion. The current maturity curve shall be used until a new maturity curve has been developed.

The temperature monitoring process shall be the responsibility of the City or its designated representative. Utilizing the appropriate maturity curve and measured temperatures, the City shall calculate the TTF and resulting concrete strength. The City reserves the right to observe the development of the maturity curve or validation of the maturity curve. When the

40 Special Testing Procedures

concrete strength is determined in accordance with the Maturity Method, the pavement may be opened when the minimum compressive strength required, regardless of age, has been reached.

No additional compensation shall be made for use of the Maturity Method. Any additional costs associated with the development of Maturity curves or use of the Maturity Method shall be included with the unit price for the item requiring Portland cement concrete to be evaluated using the Maturity Method.

43 Manhole Hydrostatic Exfiltration Testing

Insert pneumatic plugs in all lines entering and leaving the manhole. Extend air lines to the top of the manhole, and make sure all personnel are out of the manhole. Carefully pressurize each plug to 25 psig (172 kPa) to seal each line.

Fill the manhole to a level at least 5 feet (1.5 m) above the groundwater surrounding the manhole, or to an 8 foot (2.4 m) depth, whichever is higher. Allow the water to stand until maximum absorption has been reached, then refill the manhole if necessary to its original depth. If the required test head would be higher than the bottom of the frame for the manhole cover, either the exfiltration test head shall be decreased or the test waived, at the discretion of the Engineer.

After the manhole has been refilled, the manhole exfiltration test shall begin and shall last for a period of at least four (4) hours. The manhole shall be considered “acceptable” if the equivalent rate of exfiltration (leakage) does not exceed 0.0016 gallons (0.8 ml) per hour per vertical foot (m) of test head per inch (mm) diameter of the manhole. For convenience, SSPWC Table 703.04 provides leakage rates for the cylindrical portion of the manhole only. For other structure shapes, adjust the maximum leakage rate and head drop on the basis of equivalent diameter for the same perimeter.

44 Manhole Vacuum Testing

All lift holes shall be plugged with an approved non-shrink grout.

All pipes entering the manholes or structure shall be plugged, taking care to securely brace the plugs from being drawn into the manhole or structure.

The test head shall be placed at the top of the manhole or structure in accordance with the manufacturer's recommendation. Top of the manhole or structure is considered to be the top of the casting forming the manhole/structure lid.

A vacuum of 10 inches (250 mm) of mercury shall be drawn and the vacuum pump shut off. With the valves closed, the time shall be measured for the vacuum to drop to 9 inches (225 mm) of mercury. The circular manhole or structure shall pass if the time is greater than the time listed in Table SSPWC 703.05 for the depth and diameter of the manhole or structure being tested.

If the manhole or structure fails the initial test, necessary repairs shall be made with a non-shrink grout while the vacuum is still being drawn. Retesting shall proceed until a satisfactory test is obtained.

45 Portland Cement Concrete Testing Frequencies

This section is intended to clarify the testing frequencies used for testing of Portland cement concrete (PCC) during construction. The Engineer reserves the right to alter the testing frequencies for any reason. Questions regarding the required testing frequency should be directed to the Engineer in a timely fashion.

Unless otherwise directed by the Engineer, cast a minimum of three (3) cylinders for all pavement construction and a minimum of two (2) cylinders for all other PCC construction. Test one (1) cylinder at an age of seven (7) days, one (1) at an age of twenty-eight (28) days, and other cylinders as directed by the Engineer. Discard extra cylinders cast but not tested after reaching an age of fifty-six (56) days.

The frequency of testing may be adjusted depending on the results obtained. Consistent test results should result in a lower frequency of testing. Inconsistent or failing test results may result in a higher frequency of testing. Check with the Engineer for clarification regarding adjustment of testing frequencies.

- (A) Pavement (Roadway, Bridge Deck, etc.)

Perform all PCC pavement testing in accordance with Tables 45.01 and 45.02 unless otherwise indicated in the Contract Documents or directed by the Engineer.

**Table 45.01
Field Testing During PCC Construction**

Daily Estimated PCC Quantity (yd³)	Recommended Minimum Testing Frequency
0 yd ³ – 300 yd ³	<ul style="list-style-type: none"> • One sample per each 150 yd³, per source/material type, per type of construction (i.e. pavement, bridge, etc.)
≥ 300 yd ³	<ul style="list-style-type: none"> • 0 yd³ to 300 yd³ – One sample per each 150 yd³ per source/material type, per type of construction (i.e. pavement, bridge, etc.) • 300 yd³ to 1,200 yd³ – One sample per each 300 yd³ per source/material type, per type of construction (i.e. pavement, bridge, etc.) unless test results indicate non-compliance with the requirements indicated in the Contract Documents then one sample per each 150 yd³

**Table 45.02
PCC Thickness Testing**

Daily PCC Placement Quantity	Recommended Minimum Testing Frequency
0 yd ³ – 300 yd ³	One sample per lane per each 1,200 yd ²
≥ 300 yd ³	One sample per each 1,200 yd ² alternate lanes

(B) Curb and Gutter, Drainage Structures, Signal Bases, and Stairs

Perform all PCC curb, curb and gutter, drainage structures (flumes, manholes, inlets, etc.), signal bases, and stairs field testing at a minimum frequency of one sample per each 150 yd³ per source/material type of PCC placed unless otherwise indicated in the Contract Documents or directed by the Engineer. Perform coring of such PCC construction as directed by the Engineer.

(C) All other PCC Construction

Perform all other PCC construction field testing and coring as directed by the Engineer.

50 TESTING OVERVIEW

The user of this manual is responsible for addressing any safety concerns associated with the contents of this manual. The City reserves the right to alter testing frequencies and interpret test data for determining compliance with the Contract Documents. The cost of testing is subsidiary to items for which the Contract provides direct payment. This section further defines these responsibilities and rights.

51 SAFETY STATEMENT

Referenced test procedures and specifications contained herein may require potentially hazardous exposure to materials, operations, and equipment. This manual does not provide any guarantee, expressed or implied, to address any or all of the safety concerns associated with the specifications or test procedures contained or outlined herein. The user is solely responsible for establishing any appropriate safety and health practices and determining the applicability of regulatory limitations before use of this manual.

52 TESTING FREQUENCY

Testing frequencies for determining compliance with the Contract Documents shall be as stated unless altered by the Engineer or an authorized representative of the City. The Engineer shall resolve any conflicts between this manual and other Contract Documents. The City reserves the right to perform any testing the City deems necessary to confirm that the work or materials comply with the Contract Documents.

The intent of this manual is to establish procedures for verifying that all materials comply with the Contract Documents. If, in the opinion of the Engineer, the quantity of materials or non-critical items does not justify the costs of testing or inspection, modifications of the normal sampling, testing, or inspection frequencies or procedures stated herein may occur. Such items may be accepted based on manufacturer's certificate, delivery or load ticket, or other means acceptable to the Engineer. The Engineer shall be responsible for approving such items separate of the testing or inspection procedures outlined in this manual. Exceptions shall not be permitted for materials or items used to construct mainline pavements, major structures, ramp pavements, or other items where substandard materials may negatively impact public safety or the satisfactory life, performance, or strength of such items. The Engineer shall document, in writing, any instance where such exceptions are made. Exceptions shall not be made to allow the use of non-compliant materials or procedures, nor shall they be utilized as a mechanism for decreasing testing and inspections due to an adjustment of daily quantities or production.

The Contractor has the right to perform any quality control testing the Contractor deems necessary at no additional cost to the City. Such testing shall be for Contractor use only and shall not be construed as acceptance of the work or materials tested. The results of any inspection or testing performed or accepted by the City shall be the basis used for confirming that the work or materials is in compliance with the project plans and specifications.

53 TEST RESULTS INTERPRETATION

After reviewing all applicable test results, the Engineer shall determine if the work or materials tested comply with the Contract Documents. The Engineer reserves the right to reject any work or materials if compliance testing indicates part or all of the work or materials fails to fulfill the requirements of the project plans and specifications.

50 Testing Overview

54 COSTS OF TESTING

The cost of sampling and testing will not be paid for directly, but shall be considered subsidiary to items for which the contract provides direct payment. Testing performed by the City of Omaha Public Works Department or its representative (Certification or Responsibility: Owner) shall be paid for by the City of Omaha.

100 SITE PREPARATION

This section addresses the items contained in Section 100 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

101 Clearing and Grubbing

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
101.02	Backfill Material	SSPWC 101.02	A or B	1 per Source / Material Type as Required by the Engineer
101.03 (A)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
101.03 (A)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
101.03 (A)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

100 Site Preparation

102 Removal of Structures and Obstructions

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
102.02	Backfill Material	SSPWC 102.02	A or B	1 per Source / Material Type as Required by the Engineer
102.03	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
102.03	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
102.03	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

103 Sewer Abandonment

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
103.02 (A)	Brick	ASTM C62 or ASTM C32	A or B	1 per Source / Material Type
103.02 (B)	Concrete Block	ASTM C139	A or B	1 per Source / Material Type
103.02 (C)	Mortar (Type M or S)	ASTM C270	A or B	1 per Source / Material Type
103.02 (E)	Portland Cement (Type I or II)	ASTM C150	A or B	1 per Source / Material Type
103.02 (F)	Coarse Aggregate	SSPWC 103.02 (F)	A or B	1 per Source / Material Type
103.02 (F)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
103.02 (G)	Fly Ash (Type C)	ASTM C618	A or B	1 per Source / Material Type
103.02 (H)	Water	AASHTO T26	A or B	1 per Source / Material Type
103.02 (I)	Admixtures	ASTM C494, ASTM C1017, or ASTM C260	A or B	1 per Source / Material Type
103.02 (I)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
103.02 (J)	Flowable Fill Mix Design	SSPWC 103.02 (J)	A	1 per Source / Material Type
103.02 (J)	Flowable Fill Production Testing	SSPWC 103.02 (J)	Owner	As Required by the Engineer
103.02 (K)	Fly Ash (Type C)	ASTM C618	A or B	1 per Source / Material Type
103.02 (K)	Water	AASHTO T26	A or B	1 per Source / Material Type
103.02 (K)	Fly Ash Slurry Mix Design	SSPWC 103.02 (K)	A	1 per Source / Material Type
103.02 (K)	Fly Ash Slurry Production Testing	SSPWC 103.02 (K)	Owner	As Required by the Engineer
103.02 (L)	LSC Mix Design	SSPWC 103.02 (L)	A	1 per Source / Material Type
103.02 (L)	LSC Production Testing	SSPWC 103.02 (L)	Owner	1 per Source / Material Type
103.02 (M)	PCC Mix Design	SSPWC 103.02 (M)	A	1 per Source / Material Type
103.02 (M)	PCC Production Testing	SSPWC 103.02 (M)	Owner	See STP 45
103.03 (D)	Flowable Fill Production Facility	SSPWC 103.03 (D)	A	1 per Source / Material Type

100 Site Preparation

103 Sewer Abandonment (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
103.03 (D)	Flowable Fill Production Mixing Time	ASTM C94	A	As Required by the Engineer
103.03 (D)	Adding Water On-Site	ACI 305	A	As Required by the Engineer
103.03 (E)	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
103.03 (E)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
103.03 (E)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

104 Pavement Milling/Removal

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
104.03 (B)	Self Contained Reference System	SSPWC 104.03 (B)	Owner	As Required by the Engineer
104.03 (B)	Planed Surface Smoothness	SSPWC 104.03 (B)	Owner	As Required by the Engineer

100 Site Preparation

105 Brick Pavement Removal

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
<None>	<None>	<None>	<None>	<None>

106 Traffic Signal Removal

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
106.03	Backfill Material	SSPWC 106.03	A or B	As Required by the Engineer
106.03	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
106.03	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
106.03	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

100 Site Preparation

107 Crack and Joint Repair

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
107.02 (A)	Joint Filler	ASTM D3405	A or B	1 per Source / Material Type
107.02 (B)	Crack Repair Fabric	AASHTO M288	A or B	1 per Source / Material Type
107.02 (C)	Emulsion/Aggregate Slurry Mix Design	ASTM D3910	A	1 per Source / Material Type
107.02 (C)	Emulsion/Aggregate Slurry Production Testing	ASTM D3910	Owner	As Required by the Engineer
107.02 (D)	Bituminous Tack Coat (Type CSS-1 or CSS-1h)	ASTM D2397	A or B	1 per Source / Material Type
107.02 (E)	Asphalt Binder (Type PG 58-28 or PG 64-22)	AASHTO MP-1	A or B	1 per Source / Material Type
107.02 (F)	Coarse Aggregate	ASTM D692 and ASTM C33	A or B	1 per Source / Material Type
107.02 (F)	Fine Aggregate	ASTM C33 and ASTM D1073	A or B	1 per Source / Material Type
107.02 (G)	Mineral Filler	ASTM D242	A or B	1 per Source / Material Type
107.02 (H)	ACP Mix Design	SSPWC 107.02 (H)	A	1 per Source / Material Type
107.02 (H)	ACP Production Testing	SSPWC 107.02 (H)	Owner	As Required by the Engineer
107.03 (B)	Asphalt Mixing Plant	ASTM D995	A	As Required by the Engineer
107.03 (B)	Asphalt Compaction	ASTM D2726	Owner	As Required by the Engineer
107.03 (B)	Asphalt Surface Smoothness	SSPWC 107.03 (B)	Owner	As Required by the Engineer
107.03 (C)	Emulsion/Aggregate Slurry Surface Smoothness	SSPWC 107.03 (C)	Owner	As Required by the Engineer

200 EARTHWORK

This section addresses the items contained in Section 200 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

201 Excavation and Embankment

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
201.02 (A)	Borrow Material	SSPWC 201.02 (A)	A or B	1 per Source / Material Type as Required by the Engineer
201.02 (C)	Granular Foundation Course	SSPWC 201.02 (C)	A or B	1 per Source / Material Type
201.03 (B)	Excavation Grades	SSPWC 201.03 (B)	Owner	As Required by the Engineer
201.03 (D)	Hazardous Waste Site Assessment	SSPWC 201.03 (D)	Owner	As Required by the Engineer
201.03 (D)	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
201.03 (D)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
201.03 (D)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
201.03 (D)	Excavation Grades	SSPWC 201.03 (D)	Owner	As Required by the Engineer

200 Earthwork

202 Subgrade Preparation

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
202.03	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
202.03	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
202.03	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
202.03	Excavation Grades	SSPWC 202.03	Owner	As Required by the Engineer

203 Fly Ash Stabilization

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
203.02	Fly Ash (Type C)	ASTM C618	A or B	1 per Source / Material Type
203.03	Fly Ash Application Rate	SSPWC 203.03	Owner	As Required by the Engineer
203.03	Moisture-Density Relations of Soil-Cement Mixtures	ASTM D558	Owner	1 per Source / Material Type
203.03	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
203.03	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
203.03	Surface Grades	SSPWC 203.03	Owner	As Required by the Engineer

200 Earthwork

204 Flowable Fill

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
204.02 (A)	Portland Cement (Type I or II)	ASTM C150	A or B	1 per Source / Material Type
204.02 (B)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
204.02 (C)	Fly Ash (Type C)	ASTM C618	A or B	1 per Source / Material Type
204.02 (D)	Water	AASHTO T26	A or B	1 per Source / Material Type
204.02 (E)	Admixtures	ASTM C494, ASTM C1017, or ASTM C260	A or B	1 per Source / Material Type
204.02 (F)	Flowable Fill Mix Design	SSPWC 204.02 (F)	A	As Required by the Engineer
204.02 (F)	Flowable Fill Production Testing	SSPWC 204.02 (F)	Owner	As Required by the Engineer
204.03	Flowable Fill Production Facility	SSPWC 204.03	A	1 per Source / Material Type
204.03	Mixing Times	ASTM C94	A	As Required by the Engineer
204.03	Adding Water On-Site	ACI 305	A	As Required by the Engineer

300 AGGREGATE SURFACES AND BASES

This section addresses the items contained in Section 300 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

301 Aggregate Subbase/Base Course

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
301.02 (A)	Aggregate for Subbase	SSPWC 301.02 (A) and ASTM D2940	A	1 per Source / Material Type
301.02 (B)	Biaxial Geotextile Grid	SSPWC 301.02 (B)	A	1 per Source / Material Type
301.02 (C)	Geotextile Fabric	AASHTO M288	A	1 per Source / Material Type
301.03 (A)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
301.03 (A)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	1 per 100 cubic yards of prepared material
301.03 (A)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	1 per 100 cubic yards of prepared material
301.03 (A)	Layer Thickness	SSPWC 301.03 (A)	Owner	As Required by the Engineer
301.03 (B)	Overlap Measurements	SSPWC 301.03 (B)	Owner	As Required by the Engineer
301.03 (C)	Geosynthetic Geotextile Fabric Installation	SSPWC 301.03 (C)	Owner	As Required by the Engineer

300 Aggregate Surfaces and Bases

302 Aggregate Surface Course

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
302.02	Aggregate Surface Material	SSPWC 302.02	A or B	1 per Source / Material Type
302.03	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
302.03	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	1 per 100 cubic yards of prepared material
302.03	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	1 per 100 cubic yards of prepared material
302.03	Layer Thickness	SSPWC 302.03	Owner	As Required by the Engineer

303 Recycled ACP Surface/Base Course

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
303.02 (A)	Recycled ACP	SSPWC 303.02(A)	A or B	1 per Source / Material Type
303.02 (B)	Emulsified Asphalt (Type CSS-1 or CSS-1h)	ASTM D2397	A	1 per Source / Material Type
303.03 (A)	Pulverized In-place Material	SSPWC 303.03(A)	Owner	As Required by the Engineer
303.03 (B)	Pulverized In-place Material	SSPWC 303.03(B)	Owner	As Required by the Engineer
303.02 (B)	Emulsified Asphalt Application Rate	SSPWC 303.03(C)	Owner	As Required by the Engineer
303.03 (D)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
303.03 (D)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	1 per 100 cubic yards of prepared material
303.03 (D)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	1 per 100 cubic yards of prepared material
303.03 (D)	Layer Thickness	SSPWC 303.03 (D)	Owner	As Required by the Engineer

300 Aggregate Surfaces and Bases

304 Recycled PCC Surface/Base Course

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
304.02 (A)	Recycled PCC Base	SSPWC 304.02 (A)	A or B	1 per Source / Material Type
304.02 (A)	Recycled PCC Surface	SSPWC 304.02 (A)	A or B	1 per Source / Material Type
304.02 (B)	Biaxial Geotextile Grid	SSPWC 304.02 (B)	A or B	1 per Source / Material Type
304.02 (C)	Geotextile Fabric	AASHTO M288	A or B	1 per Source / Material Type
304.03 (A)	Crushed Material	SSPWC 304.03 (A)	Owner	1 per Source / Material Type
304.03 (A)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
304.03 (A)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	1 per 100 cubic yards of prepared material
304.03 (A)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	1 per 100 cubic yards of prepared material
304.03 (A)	Layer Thickness	SSPWC 304.03 (A)	Owner	As Required by the Engineer
304.03 (B)	Pulverized Material	SSPWC 304.03 (B)	Owner	As Required by the Engineer
304.03 (B)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
304.03 (B)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	1 per 100 cubic yards of prepared material
304.03 (B)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	1 per 100 cubic yards of prepared material
304.03 (B)	Layer Thickness	SSPWC 304.03 (B)	Owner	As Required by the Engineer
304.03 (C)	Geotextile Geogrid Installation	AASHTO M288	Owner	As Required by the Engineer
304.03 (C)	Overlap Measurements	SSPWC 304.03 (C)	Owner	As Required by the Engineer
304.03 (D)	Geosynthetic Geotextile Fabric Installation	AASHTO M288	Owner	As Required by the Engineer

400 FLEXIBLE PAVEMENTS

This section addresses the items contained in Section 400 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

401 Asphaltic Concrete Pavement

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
401.02 (A)	Bituminous Tack Coat	SSPWC 401.02 (A)	A or B	1 per Source / Material Type
401.02 (B)	Asphalt Release Agent	SSPWC 401.02 (B)	A	As Required by the Engineer
401.02 (C)	Asphalt Binder	AASHTO MP-1	A or B	1 per Source / Material Type
401.02 (D)	Coarse Aggregate	ASTM D692 and ASTM C33	A or B	1 per Source / Material Type
401.02 (E)	Fine Aggregate	ASTM D1073 and ASTM C33	A or B	1 per Source / Material Type
401.02 (F)	Mineral Filler	ASTM D242	A or B	1 per Source / Material Type
401.02 (G)	Anti-Stripping Agents	SSPWC 401.02 (G)	A	1 per Source / Material Type
401.02 (H)	Reclaimed Asphalt Pavement (RAP)	SSPWC 401.02 (H)	A or B	1 per Source / Material Type
401.02 (I)	Recycling Agents	ASTM D4552	A or B	1 per Source / Material Type
401.02 (J)	ACP Mix Design	SSPWC 401.02 (J)	C	1 per Source / Material Type
401.02 (J)	ACP Production Testing	SSPWC 401.02 (J)	Owner	1 per each 500 tons, minimum 1 per day
401.03 (A)	Asphalt Mixing Plant	ASTM D995	A	1 per Source / Material Type
401.03 (E)	Atmospheric Temperature	SSPWC 401.03 (E)	Owner	As Required by the Engineer
401.03 (E)	Base Temperature	SSPWC 401.03 (E)	Owner	As Required by the Engineer
401.03 (F)	Tack Coat Application Rate	SSPWC 401.03 (F)	Owner	As Required by the Engineer
401.03 (G)	Particle Coating	ASTM D2489	Owner	As Required by the Engineer
401.03 (H)	Self Contained Grade Reference System	SSPWC 401.03 (H)	A	As Required by the Engineer
401.03 (I)	ACP Coring	ASTM D5361	A	1 per each 500 tons, minimum 1 per day
401.03 (I)	Mat Density	ASTM D2726	Owner	1 per each 500 tons, minimum 1 per day
401.03 (I)	Joint Density	ASTM D2726	Owner	1 per each 500 tons, minimum 1 per day
401.03 (I)	Surface Grades	SSPWC 401.03 (I)	Owner	As Required by the Engineer
401.03 (I)	Surface Finish	SSPWC 401.03 (I)	Owner	As Required by the Engineer

400 Flexible Pavements

402 Asphaltic Concrete Curb

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
402.02 (A)	Bituminous Tack Coat	SSPWC 402.02 (A)	A or B	1 per Source / Material Type
402.02 (B)	Asphalt Release Agent	SSPWC 402.02 (B)	A	As Required by the Engineer
402.02 (C)	Asphalt Binder	AASHTO MP-1	A or B	1 per Source / Material Type
402.02 (D)	Coarse Aggregate	ASTM D692 and ASTM C33	A or B	1 per Source / Material Type
402.02 (E)	Fine Aggregate	ASTM D1073 and ASTM C33	A or B	1 per Source / Material Type
402.02 (F)	Mineral Filler	ASTM D242	A or B	1 per Source / Material Type
402.02 (G)	Anti-Stripping Agents	SSPWC 402.02 (G)	A	1 per Source / Material Type
402.02 (H)	Reclaimed Asphalt Pavement (RAP)	SSPWC 402.02 (H)	A or B	1 per Source / Material Type
402.02 (I)	ACP Mix Design	SSPWC 402.02 (J)	C	1 per Source / Material Type
402.02 (I)	ACP Production Testing	SSPWC 402.02 (J)	Owner	As Required by the Engineer
402.03 (A)	Asphalt Mixing Plant	ASTM D995	A	1 per Source / Material Type
402.03 (D)	Atmospheric Temperature	SSPWC 402.03 (D)	Owner	As Required by the Engineer
402.03 (D)	Base Temperature	SSPWC 402.03 (D)	Owner	As Required by the Engineer
402.03 (E)	Tack Coat Application Rate	SSPWC 402.03 (E)	Owner	As Required by the Engineer
402.03 (F)	Particle Coating	ASTM D2489	Owner	As Required by the Engineer
402.03 (G)	Surface Grades	SSPWC 402.03 (G)	Owner	As Required by the Engineer
402.03 (G)	Surface Finish	SSPWC 402.03 (G)	Owner	As Required by the Engineer

403 Pavement Fabric Reinforcement

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
403.02	Pavement Fabric Reinforcement	AASHTO M288 Section 9	A or B	1 per Source / Material Type
403.03	Pavement Fabric	AASHTO M288 Appendix A Section A6	A	As Required by the Engineer

400 Flexible Pavements

404 Bituminous Surface Treatment

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
404.02 (A)	Cover Aggregate	ASTM D448 and ASTM D1139	A or B	1 per Source / Material Type
404.02 (B)	Emulsified Asphalt	SSPWC 404.02 (B)	A or B	1 per Source / Material Type
404.02 (C)	Cutback Asphalt	SSPWC 404.02 (C)	A or B	1 per Source / Material Type
404.03 (B)	Emulsified or Cutback Asphalt Application	ASTM D1369	Owner	As Required by the Engineer
404.03 (B)	Bituminous Pressure Distributor Calibration	ASTM D2995	A	1 per Source / Material Type
404.03 (B)	Atmospheric Temperature	SSPWC 404.03 (B)	Owner	As Required by the Engineer
404.03 (C)	Cover Aggregate Application	ASTM D1369	Owner	As Required by the Engineer
404.03 (C)	Aggregate Spreading Device Calibration	ASTM D5624	A	1 per Source / Material Type

405 Fog Seal

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
405.02	Emulsified Asphalt	SSPWC 405.02	A or B	1 per Source / Material Type
405.03 (B)	Bituminous Pressure Distributor Calibration	ASTM D2995	A or B	1 per Source / Material Type
405.03 (B)	Emulsified Asphalt Application	ASTM D1369	Owner	As Required by the Engineer
405.03 (B)	Atmospheric Temperature	SSPWC 405.03 (B)	Owner	As Required by the Engineer

400 Flexible Pavements

406 Slurry Seal

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
406.02	Slurry Seal Mix Design	SSPWC 406.02	A	1 per Source / Material Type
406.02	Fine Aggregate	ASTM C33 and ASTM D1073	A or B	1 per Source / Material Type
406.03 (B)	Fog Seal Application	ASTM D3910	A	1 per Source / Material Type

500 RIGID PAVEMENTS

This section addresses the items contained in Section 500 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

501 PCC Pavement

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
501.02 (A)	Portland Cement	SSPWC 501.02 (A)	A or B	1 per Source / Material Type
501.02 (B)	Coarse Aggregate	SSPWC 501.02 (B)	A or B	1 per Source / Material Type
501.02 (B)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
501.02 (C)	Water	AASHTO T26	A or B	1 per Source / Material Type
501.02 (D)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
501.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
501.02 (E)	Coloring Agents	ASTM C979	A	1 per Source / Material Type
501.02 (E)	Coloring Agent Dosage	ASTM C979	A	1 per Source / Material Type
501.02 (F)	PCC Stain	SSPWC 501.02 (F)	A	1 per Source / Material Type
501.02 (G)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
501.02 (H)	Pressure Relief Joint Filler	ASTM D3204	A	1 per Source / Material Type
501.02 (I)	Joint Sealant	ASTM C920, ASTM D5893, or ASTM D6690	A	1 per Source / Material Type
501.02 (I)	Joint Sealant Color Match	SSPWC 501.02 (I)	A	As Required by the Engineer
501.02 (J)	Welded Wire Fabric	ASTM A185	A	1 per Source / Material Type
501.02 (J)	Welded Bar Mats	ASTM A704	A	1 per Source / Material Type
501.02 (J)	Steel Tie Bars	ASTM A615 or ASTM D996	A	1 per Source / Material Type
501.02 (J)	Bent Bars	ASTM A615 Grade 40	A	1 per Source / Material Type
501.02 (K)	Liquid, Membrane-Forming Curing Compounds	SSPWC 501.02 (K)	A	1 per Source / Material Type
501.02 (K)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
501.02 (K)	Asphalt Emulsion	SSPWC 501.02 (K)	A	1 per Source / Material Type
501.02 (L)	PCC Production	ASTM C94	A	1 per Source / Material Type
501.02 (L)	PCC Mix Design	SSPWC 501.02 (L)	A	1 per Source / Material Type

500 Rigid Pavements

501 PCC Pavement (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
501.02 (L)	PCC Production Testing	SSPWC 501.02 (L)	Owner	See STP 45
501.03 (A)	PCC Production Facility	SSPWC 501.03 (A)	A	1 per Source / Material Type
501.03 (A)	Batch Information	SSPWC 501.03 (A)	A	1 per load delivered to site
501.03 (A)	Vibrators	SSPWC 501.03 (A)	A	As Required by the Engineer
501.03 (A)	Vibration Measurement	SSPWC 501.03 (A)	A	As Required by the Engineer
501.03 (B)	Forms	SSPWC 501.03 (B)	A	As Required by the Engineer
501.03 (D)	Reinforcing Steel Overlap	SSPWC 501.03 (D)	Owner	As Required by the Engineer
501.03 (D)	Dowel Bar Lubrication	SSPWC 501.03 (D)	Owner	As Required by the Engineer
501.03 (E)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
501.03 (E)	Ambient Air Temperature	SSPWC 501.03 (E)	Owner	As Required by the Engineer
501.03 (E)	Adding Water On-Site	SSPWC 501.03 (E)	Owner	As Required by the Engineer
501.03 (E)	Consolidation	SSPWC 501.03 (E)	Owner	As Required by the Engineer
501.03 (F)	Vibrating Screeds	SSPWC 501.03 (F)	A	As Required by the Engineer
501.03 (F)	Imprint Stamp Dimensions	SSPWC 501.03 (F)	Owner	As Required by the Engineer
501.03 (F)	PCC Protection Monitoring	SSPWC 501.03 (F)	Owner	As Required by the Engineer
501.03 (F)	Curing Compound Application Rate	SSPWC 501.03 (F)	Owner	As Required by the Engineer
501.03 (F)	PCC Stain Application Rate	SSPWC 501.03 (F)	Owner	As Required by the Engineer
501.03 (I)	Surface Finish	SSPWC 501.03 (I)	Owner	As Required by the Engineer
501.03 (I)	Surface Grade	SSPWC 501.03 (I)	Owner	As Required by the Engineer
501.03 (I)	Horizontal Alignment	SSPWC 501.03 (I)	Owner	As Required by the Engineer
501.03 (J)	Compressive Strength	ASTM C39 or STP 42	Owner	See STP 45

501 PCC Pavement (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
501.03 (K)	PCC Coring	ASTM C42	A	See STP 45
501.03 (K)	Pavement Thickness	ASTM C174	Owner	See STP 45

502 PCC Curb, Combination Curb and Gutter, and Integral Curb

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
502.02 (A)	Portland Cement	SSPWC 502.02 (A)	A or B	1 per Source / Material Type
502.02 (B)	Coarse Aggregate	SSPWC 503.02 (B)	A or B	1 per Source / Material Type
502.02 (B)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
502.02 (C)	Water	AASHTO T26	A or B	1 per Source / Material Type
502.02 (D)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
502.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
502.02 (E)	Coloring Agents	ASTM C979	A	1 per Source / Material Type
502.02 (E)	Coloring Agent Dosage	ASTM C979	A	1 per Source / Material Type
502.02 (F)	PCC Stain	SSPWC 502.02 (F)	A	1 per Source / Material Type
502.02 (G)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
502.02 (H)	Pressure Relief Joint Filler	ASTM D3204	A	1 per Source / Material Type
502.02 (I)	Joint Sealant	ASTM C920, ASTM D5893, or ASTM D6690	A	1 per Source / Material Type
502.02 (I)	Joint Sealant Color Match	SSPWC 502.02 (I)	A	As Required by the Engineer
502.02 (J)	Welded Wire Fabric	ASTM A185	A	1 per Source / Material Type
502.02 (J)	Steel Tie Bars	ASTM A615 or ASTM D996	A	1 per Source / Material Type
502.02 (J)	Bent Bars	ASTM A615 Grade 40	A	1 per Source / Material Type
502.02 (K)	Liquid, Membrane-Forming Curing Compounds	SSPWC 502.02 (K)	A	1 per Source / Material Type
502.02 (K)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
502.02 (L)	PCC Production	ASTM C94	A	As Required by the Engineer
502.02 (L)	PCC Mix Design	SSPWC 502.02 (L)	A	1 per Source / Material Type
502.02 (L)	PCC Production Testing	SSPWC 502.02 (L)	Owner	See STP 45
502.03 (A)	PCC Production Facility	SSPWC 502.03 (A)	A	1 per Source / Material Type

500 Rigid Pavements

502 PCC Curb, Combination Curb and Gutter, and Integral Curb (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
502.03 (A)	Batch Information	SSPWC 502.03 (A)	A	1 per load delivered to site
502.03 (A)	Vibrators	SSPWC 502.03 (A)	A	As Required by the Engineer
502.03 (A)	Vibration Measurement	SSPWC 502.03 (A)	A	As Required by the Engineer
502.03 (B)	Forms	SSPWC 502.03 (B)	A	As Required by the Engineer
502.03 (D)	Pressure Relief Joint Dimensions	SSPWC 502.03 (D)	Owner	As Required by the Engineer
502.03 (E)	Reinforcing Steel Overlap	SSPWC 502.03 (E)	Owner	As Required by the Engineer
502.03 (E)	Dowel Bar Lubrication	SSPWC 502.03 (E)	Owner	As Required by the Engineer
502.03 (F)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
502.03 (F)	Ambient Air Temperature	SSPWC 502.03 (F)	Owner	As Required by the Engineer
502.03 (F)	Adding Water On-Site	SSPWC 502.03 (F)	Owner	As Required by the Engineer
502.03 (F)	Consolidation	SSPWC 502.03 (F)	Owner	As Required by the Engineer
502.03 (G)	PCC Protection Monitoring	SSPWC 502.03 (G)	Owner	As Required by the Engineer
502.03 (G)	Curing Compound Application Rate	SSPWC 502.03 (G)	Owner	As Required by the Engineer
502.03 (G)	PCC Stain Application Rate	SSPWC 502.03 (G)	Owner	As Required by the Engineer
502.03 (J)	Surface Finish	SSPWC 502.03 (J)	Owner	As Required by the Engineer
502.03 (J)	Surface Grade	SSPWC 502.03 (J)	Owner	As Required by the Engineer
502.03 (J)	Horizontal Alignment	SSPWC 502.03 (J)	Owner	As Required by the Engineer
502.03 (K)	Compressive Strength	ASTM C39 or STP 42	Owner	See STP 45
502.03 (L)	PCC Coring	ASTM C42	A	See STP 45
502.03 (L)	Pavement Thickness	ASTM C174	Owner	See STP 45

503 PCC Sidewalk, Median Surfacing, and Mow Strip

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
503.02 (A)	Portland Cement	SSPWC 503.02 (A)	A or B	1 per Source / Material Type
503.02 (B)	Coarse Aggregate	SSPWC 503.02 (B)	A or B	1 per Source / Material Type
503.02 (B)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
503.02 (C)	Water	AASHTO T26	A or B	1 per Source / Material Type
503.02 (D)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
503.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
503.02 (E)	Coloring Agents	ASTM C979	A	1 per Source / Material Type
503.02 (E)	Coloring Agent Dosage	ASTM C979	A	1 per Source / Material Type
503.02 (F)	PCC Stain	SSPWC 503.02 (F)	A	1 per Source / Material Type
503.02 (G)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
503.02 (H)	Joint Sealant	ASTM C920, ASTM D5893, or ASTM D6690	A	1 per Source / Material Type
503.02 (H)	Joint Sealant Color Match	SSPWC 503.02 (H)	A	As Required by the Engineer
503.02 (I)	Welded Wire Fabric	ASTM A185	A	1 per Source / Material Type
503.02 (I)	Welded Bar Mats	ASTM A704	A	1 per Source / Material Type
503.02 (I)	Steel Tie Bars	ASTM A615 or ASTM D996	A	1 per Source / Material Type
503.02 (I)	Bent Bars	ASTM A615	A	1 per Source / Material Type
503.02 (J)	Liquid, Membrane-Forming Curing Compounds	SSPWC 503.02 (J)	A	1 per Source / Material Type
503.02 (J)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
503.02 (L)	PCC Production	ASTM C94	A	1 per Source / Material Type
503.02 (L)	PCC Mix Design	SSPWC 503.02 (L)	A	1 per Source / Material Type
503.02 (L)	PCC Production Testing	SSPWC 503.02 (L)	Owner	See STP 45
503.03 (A)	PCC Production Facility	SSPWC 503.03 (A)	A	1 per Source / Material Type

500 Rigid Pavements

503 PCC Sidewalk, Median Surfacing, and Mow Strip (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
503.03 (A)	Batch Information	SSPWC 503.03 (A)	A	1 per load delivered to site
503.03 (A)	Vibrators	SSPWC 503.03 (A)	A	As Required by the Engineer
503.03 (A)	Vibration Measurement	SSPWC 503.03 (A)	A	As Required by the Engineer
503.03 (B)	Curb Grinding Dimensions	SSPWC 503.03 (B)	Owner	As Required by the Engineer
503.03 (C)	Forms	SSPWC 503.03 (C)	A	As Required by the Engineer
503.03 (F)	Reinforcing Steel Overlap	SSPWC 503.03 (F)	Owner	As Required by the Engineer
503.03 (F)	Dowel Bar Lubrication	SSPWC 503.03 (F)	Owner	As Required by the Engineer
503.03 (G)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
503.03 (G)	Ambient Air Temperature	SSPWC 503.03 (G)	Owner	As Required by the Engineer
503.03 (G)	Adding Water On-Site	SSPWC 503.03 (G)	Owner	As Required by the Engineer
503.03 (G)	Consolidation	SSPWC 503.03 (G)	Owner	As Required by the Engineer
503.03 (H)	Vibrating Screeds	SSPWC 503.03 (H)	A	As Required by the Engineer
503.03 (H)	Imprint Stamp Dimensions	SSPWC 503.03 (H)	Owner	As Required by the Engineer
503.03 (H)	PCC Protection Monitoring	SSPWC 503.03 (H)	Owner	As Required by the Engineer
503.03 (H)	Curing Compound Application Rate	SSPWC 503.03 (H)	Owner	As Required by the Engineer
503.03 (H)	PCC Stain Application Rate	SSPWC 503.03 (H)	Owner	As Required by the Engineer
503.03 (K)	Surface Finish	SSPWC 503.03 (I)	Owner	As Required by the Engineer
503.03 (K)	Surface Grade	SSPWC 503.03 (I)	Owner	As Required by the Engineer
503.03 (K)	Horizontal Alignment	SSPWC 503.03 (I)	Owner	As Required by the Engineer
503.03 (L)	Compressive Strength	ASTM C39 or STP 42	Owner	See STP 45
503.03 (M)	PCC Coring	ASTM C42	A	See STP 45

503 PCC Sidewalk, Median Surfacing, and Mow Strip (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
503.03 (M)	Pavement Thickness	ASTM C174	Owner	See STP 45

500 Rigid Pavements

504 Low Strength Concrete

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
504.02 (A)	Portland Cement	SSPWC 504.02 (A)	A or B	1 per Source / Material Type
504.02 (B)	Coarse Aggregate	SSPWC 504.02 (B)	A or B	1 per Source / Material Type
504.02 (B)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
504.02 (C)	Class C Fly Ash	ASTM C618	A or B	1 per Source / Material Type
504.02 (D)	Water	AASHTO T26	A or B	1 per Source / Material Type
504.02 (E)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
504.02 (E)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
504.02 (F)	Liquid, Membrane-Forming Curing Compounds	SSPWC 504.02 (F)	A	1 per Source / Material Type
504.02 (F)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
504.02 (F)	Emulsified Asphalt	SSPWC 504.02 (F)	A	1 per Source / Material Type
504.02 (G)	LSC Mix Design	SSPWC 504.02 (G)	A	1 per Source / Material Type
504.02 (G)	LSC Production Testing	SSPWC 504.02 (G)	Owner	As Required by the Engineer
504.03 (A)	LSC Production Facility	ASTM C94	A	1 per Source / Material Type
504.03 (A)	Batch Information	SSPWC 504.03 (A)	A	1 per load delivered to site
504.03 (A)	Vibrators	SSPWC 504.03 (A)	A	As Required by the Engineer
504.03 (A)	Vibration Measurement	SSPWC 504.03 (A)	A	As Required by the Engineer
504.03 (B)	Forms	SSPWC 504.03 (B)	A	As Required by the Engineer
504.03 (C)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
504.03 (C)	Ambient Air Temperature	SSPWC 504.03 (C)	Owner	As Required by the Engineer
504.03 (C)	Adding Water On-Site	SSPWC 504.03 (C)	Owner	As Required by the Engineer
504.03 (C)	Consolidation	SSPWC 504.03 (C)	Owner	As Required by the Engineer

504 Low Strength Concrete (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
504.03 (D)	Vibrating Screeds Requirements	SSPWC 504.03 (D)	A	As Required by the Engineer
504.03 (D)	PCC Protection Monitoring	SSPWC 504.03 (D)	Owner	As Required by the Engineer
504.03 (D)	Curing Compound Application Rate	SSPWC 504.03 (D)	Owner	As Required by the Engineer
504.03 (G)	Surface Finish	SSPWC 504.03 (G)	Owner	As Required by the Engineer
504.03 (G)	Surface Grade	SSPWC 504.03 (G)	Owner	As Required by the Engineer
504.03 (G)	Horizontal Alignment	SSPWC 504.03 (G)	Owner	As Required by the Engineer
504.03 (H)	Compressive Strength	ASTM C39 or STP 42	Owner	As Required by the Engineer
504.03 (I)	PCC Coring	ASTM C42	A	As Required by the Engineer
504.03 (I)	Pavement Thickness	ASTM C174	Owner	As Required by the Engineer

600 STRUCTURES

This section addresses the items contained in Section 600 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

601 Barrier Curb

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
601.02 (A)	Portland Cement	SSPWC 601.02 (A)	A or B	1 per Source / Material Type
601.02 (B)	Water	AASHTO T26	A or B	1 per Source / Material Type
601.02 (C)	Coarse Aggregate	SSPWC 601.02 (C)	A or B	1 per Source / Material Type
601.02 (C)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
601.02 (D)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
601.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
601.02 (E)	Coloring Agents	ASTM C979	A	1 per Source / Material Type
601.02 (E)	Coloring Agent Dosage	ASTM C979	A	1 per Source / Material Type
601.02 (F)	PCC Stain	SSPWC 601.02 (F)	A	1 per Source / Material Type
601.02 (G)	PCC Production	ASTM C94	A	1 per Source / Material Type
601.02 (G)	PCC Mix Design	SSPWC 601.02 (L)	A	1 per Source / Material Type
601.02 (G)	PCC Production Testing	SSPWC 601.02 (L)	Owner	See STP 45
601.02 (H)	Reinforcing Steel	ASTM A615 or ASTM D996	A	1 per Source / Material Type
601.02 (H)	Bent Bars	ASTM A615	A	1 per Source / Material Type
601.02 (I)	Liquid, Membrane-Forming Curing Compounds	SSPWC 601.02 (I)	A	1 per Source / Material Type
601.02 (I)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
601.02 (J)	Precast Barrier Curb	ASTM C825	A or B	1 per Source / Material Type
601.03 (A)	PCC Production Facility	SSPWC 601.03 (A)	A	1 per Source / Material Type
601.03 (A)	Batch Information	SSPWC 601.03 (A)	A	1 per load delivered to site
601.03 (A)	Vibrators	SSPWC 601.03 (A)	A	As Required by the Engineer
601.03 (A)	Vibration Measurement	SSPWC 601.03 (A)	A	As Required by the Engineer
601.03 (B)	Forms	SSPWC 601.03 (B)	A	As Required by the Engineer

600 Structures**601 Barrier Curb (continued)**

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
601.03 (D)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
601.03 (D)	Ambient Air Temperature	SSPWC 601.03 (D)	Owner	As Required by the Engineer
601.03 (D)	Adding Water On-Site	SSPWC 601.03 (D)	Owner	As Required by the Engineer
601.03 (D)	Consolidation	SSPWC 601.03 (D)	Owner	As Required by the Engineer
601.03 (D)	PCC Protection Monitoring	SSPWC 601.03 (D)	Owner	As Required by the Engineer
601.03 (D)	Curing Compound Application Rate	SSPWC 601.03 (D)	Owner	As Required by the Engineer
601.03 (D)	PCC Stain Application Rate	SSPWC 601.03 (D)	Owner	As Required by the Engineer
601.03 (G)	Surface Finish	SSPWC 601.03 (G)	Owner	As Required by the Engineer
601.03 (G)	Surface Grade	SSPWC 601.03 (G)	Owner	As Required by the Engineer
601.03 (G)	Horizontal Alignment	SSPWC 601.03 (G)	Owner	As Required by the Engineer

602 Sheet Piling

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
602.02	Sheet Pile	ASTM A328	A	1 per Source / Material Type

600 Structures

603 Box Culverts

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
603.02 (A)	Aluminum Box Culverts	ASTM B864	A	1 per Source / Material Type
603.02 (B)	Steel Box Culverts	ASTM A964	A	1 per Source / Material Type
603.02 (C)	Precast Reinforced Box Sections	ASTM C1433	A	1 per Source / Material Type
603.02 (C)	Three Sided Precast PCC Structures	ASTM C1504	A	1 per Source / Material Type
603.02 (D)	Aggregate Bedding Material	SSPWC 603.02 (D)	A or B	1 per Source / Material Type
603.02 (E)	Portland Cement	SSPWC 603.02 (E)	A or B	1 per Source / Material Type
603.02 (F)	Coarse Aggregate	SSPWC 603.02 (F)	A or B	1 per Source / Material Type
603.02 (F)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
603.02 (G)	Class C Fly Ash	ASTM C618	A or B	1 per Source / Material Type
603.02 (H)	Water	AASHTO T26	A or B	1 per Source / Material Type
603.02 (I)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
603.02 (I)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
603.02 (J)	Flowable Fill Mix Design	SSPWC 603.02 (J)	A	1 per Source / Material Type
603.02 (J)	Flowable Fill Production Testing	SSPWC 603.02 (J)	Owner	As Required by the Engineer
603.02 (K)	PCC Production	ASTM C94	A	1 per Source / Material Type
603.02 (K)	PCC Mix Design	SSPWC 603.02 (K)	A	1 per Source / Material Type
603.02 (K)	PCC Production Testing	SSPWC 603.02 (K)	Owner	See STP 45
603.02 (L)	Welded Wire Fabric	ASTM A185	A	1 per Source / Material Type
603.02 (L)	Steel Tie Bars	ASTM A615 or ASTM D996	A	1 per Source / Material Type
603.02 (L)	Bent Bars	ASTM A615	A	1 per Source / Material Type
603.02 (M)	Liquid, Membrane-Forming Curing Compounds	SSPWC 603.02 (M)	A	1 per Source / Material Type

603 Box Culverts (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
603.02 (M)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
603.03 (A)	Excavation Protection	29CFR Part 1926	A	Each location
603.03 (A)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
603.03 (A)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
603.03 (A)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
603.03 (B)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
603.03 (B)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
603.03 (B)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
603.03 (C)	Aluminum Culvert Installation	ASTM B788, or ASTM B789	Owner	As Required by the Engineer
603.03 (C)	Precast PCC Culvert Installation	ASTM C1479	Owner	As Required by the Engineer
603.03 (C)	Steel Culvert Installation	ASTM A798 or A807	Owner	As Required by the Engineer
603.03 (D)	PCC Production Facility	SSPWC 603.03 (D)	A	1 per Source / Material Type
603.03 (D)	Batch Information	SSPWC 603.03 (D)	A	1 per load delivered to site
603.03 (D)	Forms	SSPWC 603.03 (D)	A	As Required by the Engineer
603.03 (D)	Vibrators	SSPWC 603.03 (D)	A	As Required by the Engineer
603.03 (D)	Vibration Measurement	SSPWC 603.03 (D)	A	As Required by the Engineer
603.03 (D)	Reinforcing Steel Overlap	SSPWC 603.03 (D)	Owner	As Required by the Engineer
603.03 (D)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
603.03 (D)	Ambient Air Temperature	SSPWC 603.03 (D)	Owner	As Required by the Engineer
603.03 (D)	Adding Water On-Site	SSPWC 603.03 (D)	Owner	As Required by the Engineer
603.03 (D)	Consolidation	SSPWC 603.03 (D)	Owner	As Required by the Engineer

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603 Box Culverts (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
603.03 (D)	PCC Protection Monitoring	SSPWC 603.03 (D)	Owner	As Required by the Engineer
603.03 (D)	Curing Compound Application Rate	SSPWC 603.03 (D)	Owner	As Required by the Engineer
603.03 (F)	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
603.03 (F)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	1 per 100 cubic yards of prepared material
603.03 (F)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	1 per 100 cubic yards of prepared material
603.03 (G)	Flowable Fill Production Facility	SSPWC 603.03 (G)	A	1 per Source / Material Type
603.03 (G)	Flowable Fill Mixing Times	ASTM C94	A	As Required by the Engineer
603.03 (G)	Adding Water On-Site	ACI 305	Owner	As Required by the Engineer

604 Guardrail

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
604.02 (A)	Wood Posts	ASTM D25 and ANSI 05.1	A	1 per Source / Material Type
604.02 (A)	Wood Treatment	AASHTO M133	A	1 per Source / Material Type
604.02 (B)	Steel Guardrail Posts	ASTM A36	A	1 per Source / Material Type
604.02 (B)	Welding	AWS D2.0	A	1 per Source / Material Type
604.02 (B)	Galvanizing	ASTM A123	A	1 per Source / Material Type
604.02 (B)	Bolts	ASTM A307 or ASTM A325	A	1 per Source / Material Type
604.02 (C)	Guardrail Element Fittings	AASHTO M180	A	1 per Source / Material Type
604.02 (C)	Steel Beam Elements	SSPWC 604.02 (C)	A	1 per Source / Material Type
604.02 (C)	Aluminum Beam Elements Fabrication	ASTM B209 and AASHTO M180	A	1 per Source / Material Type
604.02 (C)	Galvanized Plates	ASTM A36	A	1 per Source / Material Type
604.02 (C)	Galvanized Bolts	ASTM A307	A	1 per Source / Material Type
604.02 (C)	Turnbuckles and Clevises	SSPWC 604.02 (C)	A	1 per Source / Material Type
604.02 (C)	Special End Shoes	SSPWC 604.02 (C)	A	1 per Source / Material Type
604.02 (D)	Guardrail Cable, Joints, Splices, and Fittings	SSPWC 604.02 (D)	A	1 per Source / Material Type
604.02 (E)	Miscellaneous Items and Materials	SSPWC 604.02 (E)	A	1 per Source / Material Type
604.02 (F)	Portland Cement	SSPWC 604.02 (E)	A or B	1 per Source / Material Type
604.02 (G)	Class C Fly Ash	ASTM C618	A or B	1 per Source / Material Type
604.02 (H)	Water	AASHTO T26	A or B	1 per Source / Material Type
604.02 (I)	Coarse Aggregate	SSPWC 604.02 (F)	A or B	1 per Source / Material Type
604.02 (I)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
604.02 (J)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type

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604 Guardrail (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
604.02 (J)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
604.02 (K)	PCC Mix Design	SSPWC 604.02 (K)	A	1 per Source / Material Type
604.02 (K)	PCC Production Testing	SSPWC 604.02 (K)	Owner	See STP 45
604.02 (L)	Flowable Fill Mix Design	SSPWC 604.02 (L)	A	1 per Source / Material Type
604.02 (L)	Flowable Fill Production Testing	SSPWC 604.02 (L)	Owner	As Required by the Engineer
604.02 (M)	Liquid, Membrane-Forming Curing Compounds	SSPWC 604.02 (M)	A	1 per Source / Material Type
604.02 (M)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
604.02 (N)	Aluminum-filled, Resilient Sealing Compound	SSPWC 604.02 (N)	A	1 per Source / Material Type
604.03	Pre-bored Hole Diameter	SSPWC 604.03	Owner	As Required by the Engineer

605 Segmental Retaining Wall

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
605.02 (A)	Segmental Retaining Wall Units	SSPWC 605.02 (A)	A or B	1 per Source / Material Type
605.02 (B)	Geosynthetic Reinforcement	SSPWC 605.02 (B)	A	1 per Source / Material Type
605.02 (C)	Drainage Collection Pipe	ASTM D3034 or AASHTO M252	A	1 per Source / Material Type
605.02 (D)	Drainable Fill Material	SSPWC 605.02 (D)	A or B	1 per Source / Material Type
605.02 (E)	Reinforced Backfill Material	SSPWC 605.02 (E)	A or B	1 per Source / Material Type as Required by the Engineer
605.02 (F)	Geotextile Filter	SSPWC 605.02 (F)	A or B	1 per Source / Material Type
605.02 (G)	Cap Adhesive	SSPWC 605.02 (G)	A or B	1 per Source / Material Type
605.03 (A)	SRW Design	SSPWC 605.03 (A)	A	1 per location
605.03 (B)	Foundation Soils Bearing Strength	SSPWC 605.03 (B)	Owner	As Required by the Engineer
605.03 (C)	Relative Density Relationship	ASTM D4254	Owner	1 per Source / Material Type as Required by the Engineer
605.03 (C)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
605.03 (C)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
605.03 (C)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
605.03 (D)	SRW and Geosynthetic Reinforcement Installation	SSPWC 605.03 (D)	A	1 per Source / Material Type
605.03 (D)	Finished Wall Batter (Verticality)	SSPWC 605.03 (D)	Owner	As Required by the Engineer
605.03 (E)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
605.03 (E)	Relative Density Relationship	ASTM D4254	Owner	1 per Source / Material Type as Required by the Engineer
605.03 (E)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
605.03 (E)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

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606 Reinforced PCC Retaining Walls

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
606.02 (A)	Portland Cement	SSPWC 606.02 (A)	A or B	1 per Source / Material Type
606.02 (B)	Water	AASHTO T26	A or B	1 per Source / Material Type
606.02 (C)	Coarse Aggregate	SSPWC 606.02 (C)	A or B	1 per Source / Material Type
606.02 (C)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
606.02 (D)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
606.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
606.02 (E)	Coloring Agents	ASTM C979	A	1 per Source / Material Type
606.02 (E)	Coloring Agent Dosage	ASTM C979	A	1 per Source / Material Type
606.02 (F)	PCC Stain	SSPWC 606.02 (F)	A	1 per Source / Material Type
606.02 (G)	PCC Mix Design	SSPWC 606.02 (L)	A	1 per Source / Material Type
606.02 (G)	PCC Production Testing	SSPWC 606.02 (L)	Owner	See STP 45
606.02 (H)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
606.02 (I)	Steel Tie Bars	ASTM A615 or ASTM D996	A	1 per Source / Material Type
606.02 (I)	Bent Bars	ASTM A615	A	1 per Source / Material Type
606.02 (J)	Liquid, Membrane-Forming Curing Compounds	SSPWC 606.02 (J)	A	1 per Source / Material Type
606.02 (J)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
606.03 (A)	Excavation Protection	29CFR Part 1926	A	As Required by the Engineer
606.03 (A)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
606.03 (A)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
606.03 (A)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
606.03 (B)	PCC Production Facility	SSPWC 606.03 (B)	A	1 per Source / Material Type

606 Reinforced PCC Retaining Walls (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
606.03 (B)	Batch Information	SSPWC 606.03 (B)	A	1 per load delivered to site
606.03 (B)	Vibrators	SSPWC 606.03 (B)	A	As Required by the Engineer
606.03 (B)	Vibration Measurement	SSPWC 606.03 (B)	A	As Required by the Engineer
606.03 (C)	Reinforcement Placement	SSPWC 606.03 (C)	Owner	As Required by the Engineer
606.03 (D)	Forms	SSPWC 606.03 (D)	A	As Required by the Engineer
606.03 (E)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
606.03 (E)	Ambient Air Temperature	SSPWC 606.03 (E)	Owner	As Required by the Engineer
606.03 (E)	Adding Water On-Site	SSPWC 606.03 (E)	Owner	As Required by the Engineer
606.03 (E)	Consolidation	SSPWC 606.03 (E)	Owner	As Required by the Engineer
606.03 (F)	PCC Protection Monitoring	SSPWC 606.03 (F)	Owner	As Required by the Engineer
606.03 (F)	Curing Compound Application Rate	SSPWC 606.03 (F)	Owner	As Required by the Engineer
606.03 (F)	PCC Stain Application Rate	SSPWC 606.03 (F)	Owner	As Required by the Engineer
606.03 (G)	Damp-proofing Materials and Primer Application	SSPWC 606.03 (I)	Owner	As Required by the Engineer
606.03 (I)	Surface Finish	SSPWC 606.03 (I)	Owner	As Required by the Engineer
606.03 (I)	Surface Grade	SSPWC 606.03 (I)	Owner	As Required by the Engineer
606.03 (I)	Horizontal Alignment	SSPWC 606.03 (I)	Owner	As Required by the Engineer
606.03 (J)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
606.03 (J)	Relative Density	ASTM D4254	Owner	As Required by the Engineer
606.03 (J)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
606.03 (J)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

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607 Noise Walls

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
607.02 (B)	Portland Cement	SSPWC 607.02 (B)	A or B	1 per Source / Material Type
607.02 (C)	Water	AASHTO T26	A or B	1 per Source / Material Type
607.02 (D)	Coarse Aggregate	SSPWC 607.02 (C)	A or B	1 per Source / Material Type
607.02 (D)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
607.02 (E)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
607.02 (E)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
607.02 (F)	Coloring Agents	ASTM C979	A	1 per Source / Material Type
607.02 (F)	Coloring Agent Dosage	ASTM C979	A	1 per Source / Material Type
607.02 (G)	PCC Stain	SSPWC 607.02 (G)	A	1 per Source / Material Type
607.02 (H)	PCC Mix Design	SSPWC 607.02 (H)	A	1 per Source / Material Type
607.02 (I)	PCC Production Testing	SSPWC 607.02 (I)	Owner	See STP 45
607.02 (I)	Steel Tie Bars	ASTM A615 or ASTM D996	A	1 per Source / Material Type
607.02 (I)	Bent Bars	ASTM A615	A	1 per Source / Material Type
607.02 (J)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
607.02 (K)	Liquid, Membrane-Forming Curing Compounds	SSPWC 607.02 (K)	A	1 per Source / Material Type
607.02 (K)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
607.02 (L)	Prefabricated Panels	SSPWC 607.02 (L)	A	1 per Source / Material Type
607.02 (M)	Prefabricated Columns	SSPWC 607.02 (M)	A	1 per Source / Material Type
607.03 (A)	PCC Production Facility	SSPWC 607.03 (A)	A	1 per Source / Material Type
607.03 (A)	Batch Information	SSPWC 607.03 (A)	A	1 per load delivered to site
607.03 (A)	Vibrators	SSPWC 607.03 (A)	A	As Required by the Engineer

607 Noise Walls (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
607.03 (A)	Vibration Measurement	SSPWC 607.03 (A)	A	As Required by the Engineer
607.03 (C)	Forms	SSPWC 607.03 (C)	A	As Required by the Engineer
607.03 (D)	Reinforcement Placement	SSPWC 607.03 (D)	Owner	As Required by the Engineer
607.03 (E)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
607.03 (E)	Ambient Air Temperature	SSPWC 607.03 (E)	Owner	As Required by the Engineer
607.03 (E)	Adding Water On-Site	SSPWC 607.03 (E)	Owner	As Required by the Engineer
607.03 (E)	Consolidation	SSPWC 607.03 (E)	Owner	As Required by the Engineer
607.03 (F)	PCC Protection Monitoring	SSPWC 607.03 (F)	Owner	As Required by the Engineer
607.03 (F)	Curing Compound Application Rate	SSPWC 607.03 (F)	Owner	As Required by the Engineer
607.03 (F)	PCC Stain Application Rate	SSPWC 607.03 (F)	Owner	As Required by the Engineer
607.03 (G)	Surface Finish	SSPWC 607.03 (G)	Owner	As Required by the Engineer
607.03 (G)	Surface Grade	SSPWC 607.03 (G)	Owner	As Required by the Engineer
607.03 (G)	Horizontal Alignment	SSPWC 607.03 (G)	Owner	As Required by the Engineer
607.03 (H)	Prefabricated Panel and Column Installation	SSPWC 607.03 (H)	A	As Required by the Engineer

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608 PCC Stairs

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
608.02 (A)	Portland Cement	SSPWC 608.02 (A)	A or B	1 per Source / Material Type
608.02 (B)	Water	AASHTO T26	A or B	1 per Source / Material Type
608.02 (C)	Coarse Aggregate	SSPWC 608.02 (C)	A or B	1 per Source / Material Type
608.02 (C)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
608.02 (D)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
608.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
608.02 (E)	Coloring Agents	ASTM C979	A	1 per Source / Material Type
608.02 (E)	Coloring Agent Dosage	ASTM C979	A	1 per Source / Material Type
608.02 (F)	PCC Stain	SSPWC 608.02 (F)	A	1 per Source / Material Type
608.02 (G)	PCC Mix Design	SSPWC 608.02 (L)	A	1 per Source / Material Type
608.02 (G)	PCC Production Testing	SSPWC 608.02 (L)	Owner	See STP 45
608.02 (H)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
608.02 (I)	Steel Tie Bars	ASTM A615 or ASTM D996	A	1 per Source / Material Type
608.02 (I)	Bent Bars	ASTM A615	A	1 per Source / Material Type
608.02 (J)	Liquid, Membrane-Forming Curing Compounds (Type 1, 1-D, or 2, Class B)	ASTM C309	A	1 per Source / Material Type
608.02 (J)	Polyethylene Sheeting	ASTM C171	A	1 per Source / Material Type
608.03 (A)	Excavation Protection	29CFR Part 1926	A	1 per Source / Material Type
608.03 (A)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
608.03 (A)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
608.03 (A)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
608.03 (B)	PCC Production Facility	SSPWC 608.03 (B)	A	1 per Source / Material Type

608 PCC Stairs (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
608.03 (B)	Batch Information	SSPWC 608.03 (B)	A	1 per load delivered to site
608.03 (B)	Vibrators	SSPWC 608.03 (B)	A	As Required by the Engineer
608.03 (B)	Vibration Measurement	SSPWC 608.03 (B)	A	As Required by the Engineer
608.03 (C)	Reinforcement Placement	SSPWC 608.03 (C)	Owner	As Required by the Engineer
608.03 (D)	Forms	SSPWC 608.03 (D)	A	As Required by the Engineer
608.03 (F)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
608.03 (F)	Ambient Air Temperature	SSPWC 608.03 (F)	Owner	As Required by the Engineer
608.03 (F)	Adding Water On-Site	SSPWC 608.03 (F)	Owner	As Required by the Engineer
608.03 (F)	Consolidation	SSPWC 608.03 (F)	Owner	As Required by the Engineer
608.03 (G)	PCC Protection Monitoring	SSPWC 608.03 (G)	Owner	As Required by the Engineer
608.03 (G)	Curing Compound Application Rate	SSPWC 608.03 (G)	Owner	As Required by the Engineer
608.03 (G)	Damp-proofing Material and Primer Application	SSPWC 608.03 (G)	Owner	As Required by the Engineer
608.03 (G)	PCC Stain Application Rate	SSPWC 608.03 (G)	Owner	As Required by the Engineer
608.03 (J)	Surface Finish	SSPWC 608.03 (J)	Owner	As Required by the Engineer
608.03 (J)	Surface Grade	SSPWC 608.03 (J)	Owner	As Required by the Engineer
608.03 (J)	Horizontal Alignment	SSPWC 608.03 (J)	Owner	As Required by the Engineer
608.03 (K)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
608.03 (K)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
608.03 (K)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

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609 Railings

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
609.02 (A)	Structural Steel	SSPWC 609.02 (A)	A	1 per Source / Material Type
609.02 (A)	Eyebar Steel	SSPWC 609.02 (A)	A	1 per Source / Material Type
609.02 (A)	High Strength, Low-Alloy Steel	SSPWC 609.02 (A)	A	1 per Source / Material Type
609.02 (A)	Carbon Bolts	ASTM A307	A	1 per Source / Material Type
609.02 (B)	Malleable Iron Castings (Grade 35018)	ASTM A47	A	1 per Source / Material Type
609.02 (C)	Steel Pipe	ASTM A53	A	1 per Source / Material Type
609.02 (D)	Aluminum Castings (Alloy S7A)	ASTM B108	A	1 per Source / Material Type
609.02 (D)	Aluminum Tubing (Alloy 6061-T6)	SSPWC 609.02 (D)	A	1 per Source / Material Type
609.02 (E)	Cast Iron Capacity Plates	SSPWC 609.02 (E)	A	1 per Source / Material Type
609.02 (F)	Cast Aluminum Alloy Capacity Plates	SSPWC 609.02 (F)	A	1 per Source / Material Type
609.02 (G)	Aluminum-filled, Resilient, Sealing Compound	SSPWC 609.02 (G)	A	1 per Source / Material Type
609.02 (H)	Aluminum Ornamental Handrail	SSPWC 609.02 (H)	A	1 per Source / Material Type
609.02 (I)	Steel Ornamental Handrail	SSPWC 609.02 (I)	A	1 per Source / Material Type
609.02 (I)	Cast Post Surface Roughness	ASTM A802	A	1 per Source / Material Type
609.02 (I)	Shim Materials	SSPWC 609.02 (I)	A	1 per Source / Material Type
609.02 (J)	Bolt, Nut, and Washer Material	SSPWC 609.02 (J)	A	1 per Source / Material Type

700 SEWER AND SUBSURFACE CONSTRUCTION

This section addresses the items contained in Section 700 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

701 Sewer Construction

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
701.02 (A)	General Materials Classification	SSPWC 701.02 (A)	Owner	As Required by the Engineer
701.02 (E)	Non-Reinforced Concrete Circular Pipe, Fittings, and Outlet Structures	ASTM C985 or ASTM C14	A	1 per Source / Material Type
701.02 (E)	Reinforced PCC Circular Pipe	SSPWC 701.02 (E)	A	1 per Source / Material Type
701.02 (E)	Reinforced PCC Arch Pipe	SSPWC 701.02 (E)	A	1 per Source / Material Type
701.02 (E)	Reinforced PCC Elliptical Pipe	SSPWC 701.02 (E)	A	1 per Source / Material Type
701.02 (E)	Reinforced PCC Box Sections	ASTM C1433	A	1 per Source / Material Type
701.02 (E)	PCC Pipe, Fittings, and Joints – Jacking or Bore and Jack Applications	ASTM C361	A	1 per Source / Material Type
701.02 (E)	Spliced PCC Pipe	SSPWC 701.02 (E)	A	1 per Source / Material Type
701.02 (E)	Portland Cement	SSPWC 701.02 (E)	A	1 per Source / Material Type
701.02 (E)	Fabricated Pipe Joint Gaskets	ASTM C443 or ASTM C990	A	1 per Source / Material Type
701.02 (E)	Resilient Connectors	ASTM C923 or ASTM C1478	A	1 per Source / Material Type
701.02 (F)	Pre-Coated Corrugated Steel Pipe	ASTM A762 or AASHTO M274	A	1 per Source / Material Type
701.02 (F)	Pre-Coated Steel Structural Plate Pipe	ASTM A761	A	1 per Source / Material Type
701.02 (F)	Post-Coated, Bituminous-, or PCC-lined Corrugated Steel Pipe	ASTM A849	A	1 per Source / Material Type
701.02 (F)	Coating Application	ASTM A862	A	1 per Source / Material Type
701.02 (F)	Precoated Polyethylene-lined Steel Pipe	ASTM A978	A	1 per Source / Material Type
701.02 (F)	Miscellaneous Hardware	ASTM A449	A	1 per Source / Material Type
701.02 (F)	Pipe Gaskets	SSPWC 701.02 (F)	A	1 per Source / Material Type
701.02 (G)	Corrugated Aluminum Pipe, Fittings, and Outlet Structures	ASTM B745 or ASTM B746	A	1 per Source / Material Type
701.02 (G)	Bituminous Coatings	AASHTO M190	A	1 per Source / Material Type
701.02 (G)	Pipe Gaskets	SSPWC 701.02 (G)	A	1 per Source / Material Type
701.02 (H)	Ductile Iron Pipe, Fittings, and Outlet Structures	SSPWC 701.02 (H)	A	1 per Source / Material Type

700 Sewer and Subsurface Construction

701 Sewer Construction (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
701.02 (H)	Joints	A21.11 ANSI	A	1 per Source / Material Type
701.02 (I)	Vitrified Clay Pipe, Fittings, and Outlet Structures	ASTM C700	A	1 per Source / Material Type
701.02 (I)	Vitrified Clay Pipe - Microtunneling, Slip Lining, and Pipe Bursting	ASTM 1208	A	1 per Source / Material Type
701.02 (I)	Compression Joints	ASTM C425	A	1 per Source / Material Type
701.02 (J)	Pipe Stiffness	SSPWC 701.02 (J)	A	1 per Source / Material Type
701.02 (J)	Solid Wall PVC Pipe, Fittings, and Outlet Structures	ASTM D3034 or ASTM F679	A	1 per Source / Material Type
701.02 (J)	PVC Composite Truss Pipe	SSPWC 701.02 (J)	A	1 per Source / Material Type
701.02 (J)	Corrugated PVC Pipe, Fittings and Outlet Structures	ASTM F949	A	1 per Source / Material Type
701.02 (J)	Profile Wall PVC Pipe, Fitting, and Outlet Structures	ASTM F794 or ASTM F1803	A	1 per Source / Material Type
701.02 (J)	Pipe Gaskets	ASTM D3212 and ASTM F477	A	1 per Source / Material Type
701.02 (K)	Fiberglass Pipe, Fittings, and Outlet Structures	ASTM D3262 and ASTM D3840	A	1 per Source / Material Type
701.02 (L)	Wye and Tee Branches	SSPWC 701.02 (L)	A	1 per Source / Material Type
701.02 (M)	Flared End Sections	SSPWC 701.02 (M)	A	1 per Source / Material Type
701.02 (N)	Flexible Transition Couplings	ASTM C1173	A	1 per Source / Material Type
701.02 (N)	Stainless Steel, Shielded Rubber Couplings	SSPWC 701.02 (N)	A	1 per Source / Material Type
701.02 (O)	Pipe Joint Mortar	SSPWC 701.02 (O)	A	1 per Source / Material Type
701.02 (O)	Portland Cement (Type I)	ASTM C150	A or B	1 per Source / Material Type
701.02 (O)	Sand	ASTM C144	A or B	1 per Source / Material Type
701.02 (O)	Poured Filler	ASTM D1190	A	1 per Source / Material Type
701.02 (P)	Aggregate Bedding Material	SSPWC 701.02 (P)	A or B	1 per Source / Material Type
701.02 (Q)	PCC Mix Design	SSPWC 701.02 (Q)	A	1 per Source / Material Type

701 Sewer Construction (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
701.02 (Q)	PCC Production Testing	SSPWC 701.02 (Q)	Owner	See STP 45
701.02 (Q)	Deformed Steel Bars	ASTM A615 or ASTM A996	A	1 per Source / Material Type
701.02 (Q)	Bent Bars	ASTM A615	A	1 per Source / Material Type
701.02 (Q)	Liquid Membrane Curing Compounds (Type 2, Class B)	ASTM C309	A	1 per Source / Material Type
701.02 (Q)	Polyethylene Film Curing	ASTM C171	A	1 per Source / Material Type
701.02 (R)	Bar Grates	ASTM A36	A	1 per Source / Material Type
701.02 (R)	Galvanizing	ASTM A123	A	1 per Source / Material Type
701.02 (S)	Steel Casing - Bore and Jack Applications	ASTM A139	A	1 per Source / Material Type
701.02 (T)	Borrow Material	SSPWC 701.02 (T)	A or B	1 per Source / Material Type as Required by the Engineer
701.02 (U)	Portland Cement (Type I or II)	ASTM C150	A or B	1 per Source / Material Type
701.02 (U)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
701.02 (U)	Class C Fly Ash	ASTM C618	A or B	1 per Source / Material Type
701.02 (U)	Water	AASHTO T26	A or B	1 per Source / Material Type
701.02 (U)	Admixtures	ASTM C494, ASTM C1017, and ASTM C260	A or B	1 per Source / Material Type
701.02 (U)	Flowable Fill Mix Design	SSPWC 701.02 (U)	A	1 per Source / Material Type
701.02 (U)	Flowable Fill Production Testing	SSPWC 701.02 (U)	Owner	As Required by the Engineer
701.03 (B)	PCC Pipe Installation (Type 1 or 2)	SSPWC 701.03 (B)	A	1 per location
701.03 (C)	Steel Pipe Installation	ASTM A798	A	1 per location
701.03 (C)	Steel Structural Plate Pipe Installation	ASTM A807	A	1 per location
701.03 (D)	Aluminum Pipe Installation	ASTM B788	A	1 per location
701.03 (D)	Aluminum Structural Plate Pipe Installation	ASTM B789	A	1 per location

700 Sewer and Subsurface Construction

701 Sewer Construction (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
701.03 (E)	Ductile Iron Pipe Installation	AWWA C600	A	1 per location
701.03 (F)	Vitrified Clay Pipe Installation	ASTM C12	A	1 per location
701.03 (G)	PVC Pipe Installation	ASTM D2321	A	1 per location
701.03 (H)	Fiberglass Pipe Installation	ASTM D3839	A	1 per location
701.03 (I)	Excavation Protection	29CFR Part 1926	A	Each Location
701.03 (I)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
701.03 (I)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	1 per 100 cubic yards of prepared material
701.03 (I)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
701.03 (J)	Welding	AWS D2.0	Owner	As Required by the Engineer
701.03 (K)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
701.03 (K)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
701.03 (K)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
701.03 (L)	Elliptically Reinforced Pipe Installation	SSPWC 701.03 (L)	Owner	As Required by the Engineer
701.03 (L)	Alignment Tolerance	SSPWC 701.03 (L)	Owner	As Required by the Engineer
701.03 (L)	Joint Deflection Tolerance	SSPWC 701.03 (L)	Owner	As Required by the Engineer
701.03 (M)	Pipe Joints	SSPWC 701.03 (M)	A	As Required by the Engineer
701.03 (N)	PVC Pipe Joints	SSPWC 701.03 (N)	A	As Required by the Engineer
701.03 (O)	Wye Branch Installation	SSPWC 701.03 (O)	A	As Required by the Engineer
701.03 (P)	Pipe Connections	SSPWC 701.03 (P)	A	As Required by the Engineer
701.03 (R)	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
701.03 (R)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer

701 Sewer Construction (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
701.03 (R)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
701.03 (S)	Flowable Fill Production Facility	SSPWC 701.03 (S)	A	1 per Source / Material Type
701.03 (S)	Mixing Times	ASTM C94	A	1 per Source / Material Type
701.03 (S)	Adding Water On-Site	ACI 305	Owner	As Required by the Engineer
701.03 (T)	Acceptance Testing	SSPWC 701.03 (T)	A	As Required by the Engineer
701.03 (T)	Hydrostatic Infiltration and/or Exfiltration Testing on PCC Pipe	SSPWC 701.03 (T)	A	As Required by the Engineer
701.03 (T)	Hydrostatic Infiltration and/or Exfiltration Testing on VCP	SSPWC 701.03 (T)	A	As Required by the Engineer
701.03 (T)	Air Testing PCC Pipe with Inside Diameter up to 24"	SSPWC 701.03 (T)	A	As Required by the Engineer
701.03 (T)	Air Testing Vitrified Clay Pipe	SSPWC 701.03 (T)	A	As Required by the Engineer
701.03 (T)	Air Testing Plastic Pipe	SSPWC 701.03 (T)	A	As Required by the Engineer
701.03 (T)	Deflection Testing	SSPWC 701.03 (T)	A	As Required by the Engineer

700 Sewer and Subsurface Construction

702 Manholes, Inlets, Appurtenances, and Special Structures

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
702.02 (A)	Precast PCC manholes	ASTM C478	A	1 per Source / Material Type
702.02 (B)	PCC Masonry Units	ASTM C139	A	1 per Source / Material Type
702.02 (C)	Brick	ASTM C32	A	1 per Source / Material Type
702.02 (D)	Castings, Rings, and Covers	SSPWC 702.02 (D)	A	1 per Source / Material Type
702.02 (D)	Step Castings	SSPWC 702.02 (D)	A	1 per Source / Material Type
702.02 (D)	Copolymer Polypropylene Plastic	SSPWC 702.02 (D)	A	1 per Source / Material Type
702.02 (D)	Deformed Reinforcing Bars	SSPWC 702.02 (D)	A	1 per Source / Material Type
702.02 (E)	Metal Grates	SSPWC 702.02 (E)	A	1 per Source / Material Type
702.02 (F)	Frame Seals and Extensions	SSPWC 702.02 (F)	A	1 per Source / Material Type
702.02 (G)	Flexible Rubber Sleeves	SSPWC 702.02 (G)	A	1 per Source / Material Type
702.02 (G)	Wedge Strips	SSPWC 702.02 (G)	A	1 per Source / Material Type
702.02 (G)	Compression and Expansion Bands	SSPWC 702.02 (G)	A	1 per Source / Material Type
702.02 (G)	Studs and Nuts	SSPWC 702.02 (G)	A	1 per Source / Material Type
702.02 (H)	External Sealing Wraps	SSPWC 702.02 (H)	A	1 per Source / Material Type
702.02 (I)	Rubber Adjustment Risers	SSPWC 702.02 (I)	A	1 per Source / Material Type
702.02 (J)	Pipe Joint Mortar	SSPWC 702.02 (J)	A	1 per Source / Material Type
702.02 (J)	Portland Cement	SSPWC 702.02 (H)	A or B	1 per Source / Material Type
702.02 (J)	Sand	ASTM C144	A or B	1 per Source / Material Type
702.02 (J)	Masonry Cement	SSPWC 702.02 (J)	A or B	1 per Source / Material Type
702.02 (J)	Joint Filler	SSPWC 702.02 (J)	A or B	1 per Source / Material Type
702.02 (K)	Mortar	SSPWC 702.02 (K)	A	1 per Source / Material Type

702 Manholes, Inlets, Appurtenances, and Special Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
702.02 (L)	Grout	SSPWC 702.02 (L)	A	1 per Source / Material Type
702.02 (M)	Aggregate Bedding Material	SSPWC 702.02 (M)	A or B	1 per Source / Material Type
702.02 (N)	Borrow Material	SSPWC 702.02 (N)	A or B	1 per Source / Material Type as Required by the Engineer
702.02 (O)	PCC Mix Design	SSPWC 702.02 (O)	A	1 per Source / Material Type
702.02 (O)	PCC Production Testing	SSPWC 702.02 (O)	Owner	See STP 45
702.02 (O)	Deformed Steel Bars	ASTM A615 or ASTM A996	A	1 per Source / Material Type
702.02 (O)	Bent Bars	ASTM A615	A	1 per Source / Material Type
702.02 (P)	Portland Cement	SSPWC 702.02 (P)	A or B	1 per Source / Material Type
702.02 (Q)	Coarse Aggregate	SSPWC 702.02 (Q)	A or B	1 per Source / Material Type
702.02 (Q)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
702.02 (R)	Class C Fly Ash	ASTM C618	A or B	1 per Source / Material Type
702.02 (S)	Water	AASHTO T26	A or B	1 per Source / Material Type
702.02 (T)	Admixtures	ASTM C494, ASTM 1017, or ASTM C260	A or B	1 per Source / Material Type
702.02 (T)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
702.02 (U)	Flowable Fill Mix Design	SSPWC 702.02 (U)	A	1 per Source / Material Type
702.02 (U)	Flowable Fill Production Testing	SSPWC 702.02 (U)	Owner	As Required by the Engineer
702.02 (V)	PCC Mix Design	SSPWC 702.02 (V)	A	1 per Source / Material Type
702.02 (V)	PCC Production Testing	SSPWC 702.02 (V)	Owner	See STP 45
702.02 (W)	Liquid Membrane-Forming Compounds	ASTM C309	A or B	1 per Source / Material Type
702.02 (W)	Polyethylene Film	ASTM C171	A or B	1 per Source / Material Type
702.03 (A)	Licensed Sewer Layer	Municipal Code Chapter 49, Article XVII, Division 2	A	As Required by the Engineer

700 Sewer and Subsurface Construction

702 Manholes, Inlets, Appurtenances, and Special Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
702.03 (B)	Excavation Protection	29CFR Part 1926	A	Each Location
702.03 (C)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
702.03 (C)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
702.03 (C)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
702.03 (D)	Vertical Joint Opening	SSPWC 702.03 (D)	Owner	As Required by the Engineer
702.03 (E)	PCC Plaster Coating Thickness	SSPWC 702.03 (E)	Owner	As Required by the Engineer
702.03 (E)	Damp-proofing Application Rate	SSPWC 702.03 (E)	Owner	As Required by the Engineer
702.03 (E)	Ambient Temperature	SSPWC 702.03 (E)	Owner	As Required by the Engineer
702.03 (F)	Forms	SSPWC 702.03 (F)	A	1 per Source / Material Type
702.03 (F)	Vibrators	SSPWC 702.03 (F)	A	As Required by the Engineer
702.03 (F)	Vibration Measurement	SSPWC 702.03 (F)	A	As Required by the Engineer
702.03 (F)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
702.03 (F)	Ambient Air Temperature	SSPWC 702.03 (F)	Owner	As Required by the Engineer
702.03 (F)	Adding Water On-Site	SSPWC 702.03 (F)	Owner	As Required by the Engineer
702.03 (F)	Consolidation	SSPWC 702.03 (F)	Owner	As Required by the Engineer
702.03 (F)	PCC Protection Monitoring	SSPWC 702.03 (F)	Owner	As Required by the Engineer
702.03 (F)	Curing Compound Application Rate	SSPWC 702.03 (F)	Owner	As Required by the Engineer
702.03 (G)	Stub-out Installation	SSPWC 702.03 (G)	Owner	As Required by the Engineer
702.03 (H)	Invert Channel Construction	SSPWC 702.03 (H)	Owner	As Required by the Engineer
702.03 (I)	Manhole and Inlet Adjustment	SSPWC 702.03 (I)	Owner	As Required by the Engineer
702.03 (J)	Wye Branch Installation	SSPWC 702.03 (J)	Owner	As Required by the Engineer

702 Manholes, Inlets, Appurtenances, and Special Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
702.03 (K)	Connections	SSPWC 702.03 (K)	Owner	As Required by the Engineer
702.03 (L)	Cradles, Encasements, and Collars Installation	SSPWC 702.03 (L)	Owner	As Required by the Engineer
702.03 (M)	Frame Seal Installation	SSPWC 702.03 (M)	Owner	As Required by the Engineer
702.03 (N)	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
702.03 (N)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
702.03 (N)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
702.03 (O)	Flowable Fill Production Facility	SSPWC 702.03 (O)	A	1 per Source / Material Type
702.03 (O)	Flowable Fill Mixing Time	ASTM C94	A	1 per Source / Material Type
702.03 (O)	Adding Water On-Site	ACI 305	Owner	As Required by the Engineer
702.03 (P)	Acceptance Testing	SSPWC 702.03 (P)	A	As Required by the Engineer
702.03 (P)	Exfiltration Testing	STP 43 and STP 44	A	As Required by the Engineer
702.03 (P)	Vacuum Testing	ASTM C1244	A	As Required by the Engineer

700 Sewer and Subsurface Construction

703 PCC-Lined Channels and Flumes

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
703.02 (A)	Portland Cement	SSPWC 703.02 (A)	A or B	1 per Source / Material Type
703.02 (B)	Water	AASHTO T26	A or B	1 per Source / Material Type
703.02 (C)	Coarse Aggregate	SSPWC 703.02 (C)	A or B	1 per Source / Material Type
703.02 (C)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
703.02 (D)	Admixtures	ASTM C494, ASTM C1017, or ASTM C260	A or B	1 per Source / Material Type
703.02 (D)	Pozzolanic Admixtures	ASTM C618	A or B	1 per Source / Material Type
703.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
703.02 (E)	PCC Mix Design	SSPWC 703.02 (E)	A	1 per Source / Material Type
703.02 (E)	PCC Production Testing	SSPWC 703.02 (E)	Owner	See STP 45
703.02 (F)	Deformed Steel Bars	ASTM A615 or ASTM A996	A	1 per Source / Material Type
703.02 (F)	Bent Bars	ASTM A615	A	1 per Source / Material Type
703.02 (G)	Liquid Membrane-Forming Compounds	SSPWC 703.02 (G)	A	1 per Source / Material Type
703.02 (G)	Polyethylene Film	ASTM C171	A	1 per Source / Material Type
703.03 (A)	PCC Production Facility	SSPWC 703.03 (A)	A	1 per Source / Material Type
703.03 (A)	Vibrators	SSPWC 703.03 (A)	A	As Required by the Engineer
703.03 (A)	Vibration Measurement	SSPWC 703.03 (A)	A	As Required by the Engineer
703.03 (B)	Forms	SSPWC 703.03 (B)	A	As Required by the Engineer
703.03 (C)	Reinforcement Placement	SSPWC 703.03 (C)	Owner	As Required by the Engineer
703.03 (E)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
703.03 (E)	Ambient Air Temperature	SSPWC 703.03 (E)	Owner	As Required by the Engineer
703.03 (E)	Adding Water On-Site	SSPWC 703.03 (E)	Owner	As Required by the Engineer

703 PCC-Lined Channels and Flumes (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
703.03 (E)	Consolidation	SSPWC 703.03 (E)	Owner	As Required by the Engineer
703.03 (E)	PCC Protection Monitoring	SSPWC 703.03 (E)	Owner	As Required by the Engineer
703.03 (E)	Curing Compound Application Rate	SSPWC 703.03 (E)	Owner	As Required by the Engineer
703.03 (H)	PCC Coring	SSPWC 703.03 (H)	A	See STP 45
703.03 (H)	PCC Thickness	SSPWC 703.03 (H)	Owner	See STP 45

700 Sewer and Subsurface Construction

704 Water Service Facilities

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
704.02	Copper Pipe	SSPWC 704.02	A	1 per Source / Material Type
704.03 (A)	Licensed Sewer Layer	Municipal Code Chapter 49, Article XVII, Division 2	A	As Required by the Engineer
704.03 (B)	Excavation Protection	29CFR Part 1926	A	Each Location
704.03 (B)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
704.03 (B)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
704.03 (B)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
704.03 (E)	Replacement Service Pipe	SSPWC 704.03 (E)	A	1 per Source / Material Type
704.03 (H)	Backfill Material	SSPWC 704.03 (H)	Owner	As Required by the Engineer
704.03 (H)	Moisture-Density Relationship (Standard and/or Modified Effort)	ASTM D698 and/or ASTM D1557	Owner	1 per Source / Material Type as Required by the Engineer
704.03 (H)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
704.03 (H)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

705 Video Sewer Inspection

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
705.03	Closed-circuit Television Surveying System	SSPWC 705.03	A	1 per Source / Material Type

800 ROADSIDE IMPROVEMENTS AND EROSION CONTROL

This section addresses the items contained in Section 800 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

801 Topsoil

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
801.02	Imported Topsoil	SSPWC 801.02	A	1 per Source / Material Type
801.03	Topsoil Depth	SSPWC 801.03	Owner	As Required by the Engineer

800 Roadside Improvements and Erosion Control

802 Seeding

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
802.02 (A)	Seed	SSPWC 802.02 (A)	A or B	1 per Source / Material Type
802.02 (B)	Non-irrigated Lawn and Turf Seed	SSPWC 802.02 (B)	A or B	1 per Source / Material Type
802.02 (C)	Irrigated Lawn and Turf Seed	SSPWC 802.02 (C)	A or B	1 per Source / Material Type
802.02 (D)	Type A Seed	SSPWC 802.02 (D)	A or B	1 per Source / Material Type
802.02 (E)	Type B Seed	SSPWC 802.02 (E)	A or B	1 per Source / Material Type
802.02 (F)	Hydraulic Seed	SSPWC 802.02 (F)	A or B	1 per Source / Material Type
802.02 (G)	Fertilizer	SSPWC 802.02 (G)	A or B	1 per Source / Material Type
802.02 (H)	Hay or Straw Mulch	SSPWC 802.02 (H)	A or B	1 per Source / Material Type
802.02 (I)	Emulsified Asphalt	SSPWC 802.02 (I)	A or B	1 per Source / Material Type
802.02 (J)	Hydraulic Mulch	SSPWC 802.02 (J)	A or B	1 per Source / Material Type
802.03 (C)	Fertilizer Application Rate	SSPWC 802.03 (C)	Owner	As Required by the Engineer
802.03 (D)	Seed Application Rate	SSPWC 802.03 (D)	Owner	As Required by the Engineer
802.03 (E)	Mulch Application Rate	SSPWC 802.03 (E)	Owner	As Required by the Engineer
802.03 (F)	Hydraulic Mulch Application Rate	SSPWC 802.03 (F)	Owner	As Required by the Engineer

803 Sodding

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
803.02 (A)	Sod	SSPWC 803.02 (A)	A	1 per Source / Material Type
803.02 (A)	Fertilizer Application Rate	SSPWC 803.02 (A)	A	1 per Source / Material Type
803.02 (B)	Fertilizer	SSPWC 803.02 (B)	A	1 per Source / Material Type
803.02 (C)	Stakes	SSPWC 803.02 (C)	A	As Required by the Engineer

800 Roadside Improvements and Erosion Control

804 Plant Materials

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
804.02 (A)	Plant Materials	SSPWC 804.02 (A)	A	1 per Source / Material Type
804.02 (B)	Nursery-Grown Plant Material	SSPWC 804.02 (B)	A	1 per Source / Material Type
804.02 (C)	Collected Plant Material	SSPWC 804.02 (C)	A	1 per Source / Material Type
804.02 (D)	Fertilizer	SSPWC 804.02 (D)	A	1 per Source / Material Type
804.02 (E)	Peat Moss	SSPWC 804.02 (E)	A	1 per Source / Material Type
804.02 (F)	Wood Chip Mulch	SSPWC 804.02 (F)	A	1 per Source / Material Type
804.02 (G)	Stakes	SSPWC 804.02 (G)	A	As Required by the Engineer
804.02 (G)	Guy Wires	SSPWC 804.02 (G)	A	As Required by the Engineer
804.02 (G)	Hose	SSPWC 804.02 (G)	A	As Required by the Engineer
804.02 (H)	Tree Wrap	SSPWC 804.02 (H)	A	1 per Source / Material Type
804.03 (A)	Nurseries	SSPWC 804.03 (A)	A	As Required by the Engineer
804.03 (D)	Plant Fertilizer Application Rate	SSPWC 804.03 (D)	Owner	As Required by the Engineer
804.03 (D)	Tree Wrap Application Rate	SSPWC 804.03 (D)	Owner	As Required by the Engineer
804.03 (E)	Establishment Period	SSPWC 804.03 (E)	Owner	As Required by the Engineer
804.03 (F)	Fertilizer Application Rate	SSPWC 804.03 (F)	Owner	As Required by the Engineer

805 Mulch

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
805.02 (A)	Lava Rock Mulch	SSPWC 805.02 (A)	A	1 per Source / Material Type
805.02 (B)	Hay or Straw Mulch	SSPWC 805.02 (B)	A	1 per Source / Material Type
805.02 (C)	Wood Chip Mulch	SSPWC 805.02 (C)	A	1 per Source / Material Type
805.02 (D)	Emulsified Asphalt	SSPWC 805.02 (D)	A	1 per Source / Material Type
805.02 (E)	Hydraulic Mulch	SSPWC 805.02 (E)	A	1 per Source / Material Type
805.03 (B)	Lava Rock Application	SSPWC 805.03 (B)	Owner	As Required by the Engineer
805.03 (C)	Hay or Straw Application	SSPWC 805.03 (C)	Owner	As Required by the Engineer
805.03 (D)	Wood Chip Application	SSPWC 805.03 (D)	Owner	As Required by the Engineer
805.03 (E)	Hydraulic Mulching	SSPWC 805.03 (E)	Owner	As Required by the Engineer

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806 Rip Rap

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
806.02 (A)	Stone and Broken PCC Evaluation	ASTM D4992	A	1 per Source / Material Type
806.02 (A)	Stone and Broken PCC	SSPWC 806.02 (A)	A	1 per Source / Material Type
806.02 (B)	Sedum Stoloniferum Plants	SSPWC 806.02 (B)	A	1 per Source / Material Type

807 PCC Slope Protection

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
807.02 (A)	Portland Cement	SSPWC 807.02 (A)	A or B	1 per Source / Material Type
807.02 (B)	Water	AASHTO T26	A or B	1 per Source / Material Type
807.02 (C)	Coarse Aggregate	ASTM C33	A or B	1 per Source / Material Type
807.02 (C)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
807.02 (D)	Admixtures	ASTM C494, ASTM C1017, or ASTM C260	A or B	1 per Source / Material Type
807.02 (D)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
807.02 (E)	PCC Mix Design	SSPWC 807.02 (E)	A	1 per Source / Material Type
807.02 (E)	PCC Production Testing	SSPWC 807.02 (E)	Owner	See STP 45
807.02 (F)	Deformed Steel Bars	ASTM A615 or ASTM A996	A or B	1 per Source / Material Type
807.02 (F)	Bent Bars	ASTM A615	A or B	1 per Source / Material Type
807.02 (G)	Pre-Molded Joint Filler	ASTM D1751	A or B	1 per Source / Material Type
807.02 (H)	Joint Sealant	ASTM C920, ASTM D5893, or ASTM D6690	A or B	1 per Source / Material Type
807.02 (I)	Liquid Membrane-Forming Compounds	SSPWC 802.02 (I)	A	1 per Source / Material Type
807.02 (I)	Polyethylene Film	ASTM C171	A	1 per Source / Material Type
807.03 (A)	PCC Production Facility	SSPWC 807.03 (A)	A	1 per Source / Material Type
807.03 (A)	Vibrators	SSPWC 807.03 (A)	A	As Required by the Engineer
807.03 (A)	Vibration Measurement	SSPWC 807.03 (A)	A	As Required by the Engineer
807.03 (B)	Forms	SSPWC 807.03 (B)	A	As Required by the Engineer
807.03 (E)	Reinforcement Placement	SSPWC 807.03 (E)	Owner	As Required by the Engineer
807.03 (F)	Evaporation Rate	ACI 305	Owner	As Required by the Engineer
807.03 (F)	Ambient Air Temperature	SSPWC 807.03 (F)	Owner	As Required by the Engineer

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807 PCC Slope Protection (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
807.03 (F)	Adding Water On-Site	SSPWC 807.03 (F)	Owner	As Required by the Engineer
807.03 (F)	Consolidation	SSPWC 807.03 (F)	Owner	As Required by the Engineer
807.03 (G)	PCC Protection Monitoring	SSPWC 807.03 (G)	Owner	As Required by the Engineer
807.03 (G)	Curing Compound Application Rate	SSPWC 807.03 (G)	Owner	As Required by the Engineer
807.03 (J)	PCC Thickness	SSPWC 807.03 (J)	Owner	See STP 45
807.03 (K)	Surface Finish	SSPWC 803.03 (K)	Owner	As Required by the Engineer
807.03 (K)	Surface Grade	SSPWC 803.03 (K)	Owner	As Required by the Engineer
807.03 (K)	Horizontal Alignment	SSPWC 803.03 (K)	Owner	As Required by the Engineer

808 Slope Drains

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
808.02	Temporary Slope Drain Materials	SSPWC 808.02	A	1 per Source / Material Type

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809 Rolled Erosion Control

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
809.02 (A)	Rolled Erosion Control Products	SSPWC 809.02 (A)	A	1 per Source / Material Type
809.02 (B)	Fertilizer	SSPWC 809.02 (B)	A	1 per Source / Material Type
809.02 (C)	Seed	SSPWC 809.02 (C)	A	1 per Source / Material Type
809.02 (D)	Hay or Straw Blankets	SSPWC 809.02 (D)	A	1 per Source / Material Type
809.02 (E)	Burlap Fabric	SSPWC 809.02 (E)	A	1 per Source / Material Type
809.02 (F)	Straw and Coconut Mats	SSPWC 809.02 (F)	A	1 per Source / Material Type
809.02 (G)	Wood Excelsior Blankets	SSPWC 809.02 (G)	A	1 per Source / Material Type
809.02 (H)	Mulch Blankets	SSPWC 809.02 (H)	A	1 per Source / Material Type
809.02 (I)	Coconut Mats	SSPWC 809.02 (I)	A	1 per Source / Material Type
809.02 (J)	Synthetic Mats	SSPWC 809.02 (J)	A	1 per Source / Material Type
809.02 (K)	Synthetic Mesh	SSPWC 809.02 (K)	A	1 per Source / Material Type
809.02 (L)	Turf Reinforcement Mats	SSPWC 809.02 (L)	A	1 per Source / Material Type
809.02 (M)	Wire Staples	SSPWC 809.02 (M)	A	1 per Source / Material Type
809.03 (B)	Fertilizer Application Rate	SSPWC 809.03 (B)	Owner	As Required by the Engineer
809.03 (C)	Seed Application Rate	SSPWC 809.03 (C)	Owner	As Required by the Engineer
809.03 (D)	Rolled Erosion Control Installation	SSPWC 809.03 (D)	Owner	As Required by the Engineer

810 Temporary Erosion and Pollution Controls

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
810.02 (A)	Silt Fence Material	ASTM D6461	A	1 per Source / Material Type
810.02 (B)	Posts	SSPWC 810.02 (B)	A	1 per Source / Material Type
810.02 (C)	Support Fence	SSPWC 810.02 (B)	A	1 per Source / Material Type
810.02 (D)	Hay Bales	SSPWC 810.02 (D)	A	1 per Source / Material Type
810.02 (E)	Temporary Silt Dikes	SSPWC 810.02 (E)	A	1 per Source / Material Type
810.02 (E)	Outer Cover	ASTM D6461	A	1 per Source / Material Type
810.02 (F)	Wire Staples	SSPWC 810.02 (F)	A	1 per Source / Material Type
810.02 (G)	Granular Curb Inlet Filter Fabric	SSPWC 810.02 (G)	A	1 per Source / Material Type
810.02 (H)	Hay or Straw Inlet Filters	SSPWC 810.02 (H)	A	1 per Source / Material Type
810.02 (I)	Pre-fabricated Area Inlet Filters	SSPWC 810.02 (I)	A	1 per Source / Material Type
810.02 (J)	Filter Aggregate	SSPWC 810.02 (J)	A	1 per Source / Material Type
810.02 (K)	Temporary Berm Material	SSPWC 810.02 (K)	A or B	1 per Source / Material Type as Required by the Engineer
810.03 (B)	Silt Fence Installation	ASTM D6462	Owner	As Required by the Engineer
810.03 (D)	Pre-fabricated Temporary Silt Dike Installation	SSPWC 810.03 (D)	A	As Required by the Engineer
810.03 (F)	Height of Accumulated Material	SSPWC 810.03 (FD)	Owner	As Required by the Engineer
810.03 (G)	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
810.03 (G)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
810.03 (G)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
810.03 (G)	Finished Grade	SSPWC 810.03 (G)	Owner	As Required by the Engineer

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811 Articulated Block Erosion Control

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
811.02	Articulated Block Mats and Component Materials	SSPWC 811.02	A or B	1 per Source / Material Type
811.03	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
811.04	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
811.05	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

812 Gabion Baskets and Revet Mattresses

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
812.02 (A)	Fill Material	SSPWC 812.02 (A)	A or B	1 per Source / Material Type
812.02 (B)	Geotextile Fabric	SSPWC 812.02 (B)	A or B	1 per Source / Material Type
812.02 (C)	Wire Mesh Baskets	ASTM A974	A or B	1 per Source / Material Type
812.02 (C)	Double-twist Hexagonal Mesh Baskets	SSPWC 812.02 ©	A or B	1 per Source / Material Type
812.03	Moisture-Density Relationship (Standard Effort)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
812.03	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
812.03	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
812.03	Slope Grading	SSPWC 812.03	Owner	As Required by the Engineer
812.03	Gabion Basket or Revet Mattress Assembly	SSPWC 812.03	Owner	As Required by the Engineer

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813 Fence

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
813.02 (A)	Metal Chain Link Fence Materials	SSPWC 813.02 (A)	A or B	1 per Source / Material Type
813.02 (B)	Wood Fence Materials	ASTM F537	A or B	1 per Source / Material Type
813.02 (C)	PVC Fence Materials	ASTM F964	A or B	1 per Source / Material Type
813.02 (D)	Portland Cement	SSPWC 813.02 (D)	A or B	1 per Source / Material Type
813.02 (E)	Water	AASHTO T26	A or B	1 per Source / Material Type
813.02 (F)	Coarse Aggregate	ASTM C33	A or B	1 per Source / Material Type
813.02 (F)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
813.02 (G)	Admixtures	ASTM C494, ASTM C1017, or ASTM C260	A or B	1 per Source / Material Type
813.02 (G)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
813.02 (H)	PCC Mix Design	SSPWC 813.02 (H)	A	1 per Source / Material Type
813.02 (H)	PCC Production Testing	SSPWC 813.02 (H)	Owner	See STP 45
813.02 (I)	Deformed Steel Bars	ASTM A615 or ASTM A996	A or B	1 per Source / Material Type
813.02 (I)	Bent Bars	ASTM A615	A or B	1 per Source / Material Type
813.02 (J)	Pre-Molded Joint Filler	ASTM C1751	A	1 per Source / Material Type
813.02 (K)	Liquid Membrane-Forming Curing Compound	SSPWC 813.02 (K)	A	1 per Source / Material Type
813.02 (K)	Polyethylene Film	ASTM C171	A	As Required by the Engineer
813.02 (L)	Copper Grounding Wire	ASTM B3	A	1 per Source / Material Type
813.02 (L)	Ground Rod	SSWPC 813.02 (L)	A	1 per Source / Material Type
813.02 (M)	Bollards	SSWPC 813.02 (M)	A	1 per Source / Material Type
813.03 (A)	Fence Grade and Alignment	SSPWC 813.03 (A)	Owner	As Required by the Engineer
813.03 (A)	Post Spacing	SSPWC 813.03 (A)	Owner	As Required by the Engineer

813 Fence (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
813.03 (A)	Ground Clearance	SSPWC 813.03 (A)	Owner	As Required by the Engineer
813.03 (A)	Gate Opening Limits	SSPWC 813.03 (A)	Owner	As Required by the Engineer
813.03 (B)	Ground Rod Installation	SSWPC 813.03 (B)	Owner	As Required by the Engineer
813.03 (C)	Chain Link Fence Installation	SSPWC 813.03 (C)	Owner	As Required by the Engineer
813.03 (D)	Wood Fence Installation	ASTM F537	Owner	As Required by the Engineer
813.03 (E)	PVC Fence Installation	ASTM F1999	Owner	As Required by the Engineer
813.03 (F)	Bollard Installation	SSPWC 813.03 (F)	Owner	As Required by the Engineer

900 TRAFFIC

This section addresses the items contained in Section 900 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

901 Poles, Mast Arms, and Cantilever Structures

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
901.02 (A)	Metal Poles and Structures Design	SSPWC 901.02 (A)	A	1 per Source / Material Type
901.02 (B)	Metal Poles	SSPWC 901.02 (B)	A	1 per Source / Material Type
901.02 (C)	Wood Poles	SSPWC 901.02 (C)	A	1 per Source / Material Type
901.02 (D)	Pedestrian Traffic Signal Poles	ASTM B429	A	1 per Source / Material Type
901.02 (D)	Breakaway Base	ASTM B429	A	1 per Source / Material Type
901.02 (E)	Anchor Bolts	SSPWC 901.02 (E)	A	1 per Source / Material Type
901.02 (F)	Transformer Bases	SSPWC 901.02 (F)	A	1 per Source / Material Type
901.02 (G)	Signal Mast Arms	SSPWC 901.02 (G)	A	1 per Source / Material Type
901.02 (H)	Luminaire Arms and Extensions	SSPWC 901.02 (H)	A	1 per Source / Material Type
901.02 (I)	Sealing Compound	SSPWC 901.02 (I)	A	1 per Source / Material Type
901.02 (J)	Pipe Handrails	SSPWC 901.02 (J)	A	1 per Source / Material Type
901.02 (K)	Copper Grounding Wire	ASTM B3	A	1 per Source / Material Type
901.02 (K)	Grounding Rods	SSPWC 901.02 (K)	A	1 per Source / Material Type
901.02 (L)	Grout (Grade A)	ASTM C1107	A	1 per Source / Material Type
901.02 (M)	Anchors	SSPWC 901.02 (M)	A	1 per Source / Material Type
901.02 (M)	Anchor Rods	SSPWC 901.02 (M)	A	1 per Source / Material Type
901.02 (N)	Guy Wire	SSPWC 901.02 (N)	A	1 per Source / Material Type
901.02 (N)	Guy Guards	SSPWC 901.02 (N)	A	1 per Source / Material Type
901.02 (O)	Bonding Clamps	SSPWC 901.02 (O)	A	1 per Source / Material Type
901.02 (P)	Span Wire Cable	SSPWC 901.02 (P)	A	1 per Source / Material Type
901.02 (Q)	Traffic Signal Tie Wire	SSPWC 901.02 (Q)	A	1 per Source / Material Type
901.02 (R)	Conduit and Conduit Fittings	SSPWC 901.02 (R)	A	1 per Source / Material Type

900 Traffic

901 Poles, Mast Arms, and Cantilever Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
901.02 (S)	Portland Cement	SSPWC 901.02 (S)	A or B	1 per Source / Material Type
901.02 (T)	Water	AASHTO T26	A or B	1 per Source / Material Type
901.02 (U)	Coarse Aggregate	ASTM C33	A or B	1 per Source / Material Type
901.02 (U)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
901.02 (V)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
901.02 (V)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
901.02 (W)	PCC Mix Design	SSPWC 901.02 (W)	A	As Required by the Engineer
901.02 (W)	PCC Production Testing	SSPWC 901.02 (W)	Owner	See STP 45
901.02 (X)	Deformed Steel Bars	ASTM A615 or ASTM A996	A or B	1 per Source / Material Type
901.02 (X)	Bent Bars	ASTM A615	A or B	1 per Source / Material Type
901.02 (W)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
901.02 (X)	Liquid, Membrane-Forming Curing Compounds	SSPWC 901.02 (X)	A or B	1 per Source / Material Type
901.02 (X)	Polyethylene Film	ASTM C171	A	1 per Source / Material Type
901.03 (B)	Foundation Design	SSPWC 901.03 (B)	A	1 per location
901.03 (B)	Ground Rod Installation	SSPWC 901.03 (B)	Owner	As Required by the Engineer
901.03 (B)	Metal Pole Installation	SSPWC 901.03 (B)	Owner	As Required by the Engineer
901.03 (B)	PCC Production Facility	SSPWC 901.03 (B)	A	1 per Source / Material Type
901.03 (B)	Ambient Temperature	SSPWC 901.03 (B)	Owner	As Required by the Engineer
901.03 (B)	Consolidation	SSPWC 901.03 (B)	Owner	As Required by the Engineer
901.03 (B)	PCC Protection Monitoring	SSPWC 901.03 (B)	Owner	As Required by the Engineer
901.03 (B)	Curing Compound Application Rate	SSPWC 901.03 (B)	Owner	As Required by the Engineer

901 Poles, Mast Arms, and Cantilever Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
901.03 (B)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
901.03 (B)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
901.03 (B)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
901.03 (B)	Measurable Resistance	SSPWC 901.03 (B)	Owner	As Required by the Engineer
901.03 (C)	Wood Pole Installation	SSPWC 901.03 (C)	Owner	As Required by the Engineer
901.03 (C)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
901.03 (C)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
901.03 (C)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
901.03 (C)	Measurable Resistance	SSPWC 901.03 (C)	Owner	As Required by the Engineer
901.03 (D)	Mast Arm Installation	SSPWC 901.03 (D)	Owner	As Required by the Engineer
901.03 (E)	Span Wire and Tie Wire Installation	SSPWC 901.03 (E)	Owner	As Required by the Engineer
901.03 (F)	Luminaire Installation	SSPWC 901.03 (F)	Owner	As Required by the Engineer

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902 Truss Structures

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
902.02 (A)	Truss Structures Design	SSPWC 902.02 (A)	A	1 per Source / Material Type
902.02 (B)	Extruded Tubes	SSPWC 902.02 (B)	A	1 per Source / Material Type
902.02 (C)	Extruded Shapes	SSPWC 902.02 (C)	A	1 per Source / Material Type
902.02 (D)	Aluminum Plates	SSPWC 902.02 (D)	A	1 per Source / Material Type
902.02 (E)	Aluminum Castings	SSPWC 902.02 (E)	A	1 per Source / Material Type
902.02 (F)	Material for Grating	SSPWC 902.02 (F)	A	1 per Source / Material Type
902.02 (G)	Pipe Handrails	SSPWC 902.02 (G)	A	1 per Source / Material Type
902.02 (H)	Post and Chord Caps	SSPWC 902.02 (H)	A	1 per Source / Material Type
902.02 (I)	Hardware	SSPWC 902.02 (I)	A	1 per Source / Material Type
902.02 (J)	Welding Materials and Welded Materials	SSPWC 902.02 (J)	A	1 per Source / Material Type
902.02 (K)	Structural Steel (Grade D or E)	SSPWC 902.02 (K)	A	1 per Source / Material Type
902.02 (K)	Plate Weldability	SSPWC 902.02 (K)	A	1 per Source / Material Type
902.02 (L)	Sealing Compound	SSPWC 902.02 (L)	A	1 per Source / Material Type
902.02 (M)	Copper Grounding Wire	SSPWC 902.02 (M)	A	1 per Source / Material Type
902.02 (M)	Grounding Rods	SSPWC 902.02 (M)	A	1 per Source / Material Type
902.02 (N)	Conduit and Conduit Fittings	SSPWC 902.02 (N)	A	1 per Source / Material Type
902.02 (O)	Portland Cement	SSPWC 902.02 (O)	A or B	1 per Source / Material Type
902.02 (P)	Water	AASHTO T26	A or B	1 per Source / Material Type
902.02 (Q)	Coarse Aggregate	ASTM C33	A or B	1 per Source / Material Type
902.02 (Q)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
902.02 (R)	Admixtures	ASTM C494, ASTM C1017, or ASTM C260	A or B	1 per Source / Material Type

902 Truss Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
902.02 (R)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
902.02 (S)	PCC Mix Design	SSPWC 902.02 (S)	A	1 per Source / Material Type
902.02 (S)	PCC Production Testing	SSPWC 902.02 (S)	Owner	See STP 45
902.02 (T)	Deformed Steel Bars	SSPWC 902.02 (T)	A or B	1 per Source / Material Type
902.02 (T)	Bent Bars	SSPWC 902.02 (T)	A or B	1 per Source / Material Type
902.02 (U)	Pre-Molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
902.02 (V)	Liquid, Membrane-Forming Curing Compounds	SSPWC 902.02 (V)	A or B	1 per Source / Material Type
902.02 (V)	Polyethylene Film	ASTM C171	A	1 per Source / Material Type
902.03 (C)	Structure Fabrication	SSPWC 902.03 (C)	Owner	As Required by the Engineer
902.03 (D)	Welder Qualification	SSPWC 902.03 (D)	A	As Required by the Engineer
902.03 (D)	Aluminum Welding	SSPWC 902.03 (D)	Owner	As Required by the Engineer
902.03 (D)	Dye Penetrant Tests	ASTM E165	A	As Required by the Engineer
902.03 (E)	Welder Qualification	SSPWC 902.03 (E)	A	As Required by the Engineer
902.03 (E)	Steel Welding	SSPWC 902.03 (E)	Owner	As Required by the Engineer
902.03 (E)	Dye Penetrant Tests	ASTM E165	A	As Required by the Engineer
902.03 (F)	Ground Rod Installation	SSPWC 903.03 (F)	Owner	As Required by the Engineer
902.03 (F)	PCC Production Facility	SSPWC 903.03 (F)	A	1 per Source / Material Type
902.03 (F)	Ambient Temperature	SSPWC 903.03 (F)	Owner	As Required by the Engineer
902.03 (F)	Consolidation	SSPWC 903.03 (F)	Owner	As Required by the Engineer
902.03 (F)	PCC Protection Monitoring	SSPWC 903.03 (F)	Owner	As Required by the Engineer
902.03 (F)	Curing Compound Application Rate	SSPWC 903.03 (F)	Owner	As Required by the Engineer

900 Traffic**902 Truss Structures (continued)**

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
902.03 (F)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
902.03 (F)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
902.03 (F)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
902.03 (G)	Structure Installation	SSPWC 903.03 (G)	Owner	As Required by the Engineer
902.03 (G)	Measurable Resistance	SSPWC 903.03 (G)	Owner	As Required by the Engineer

903 Signals and Luminaires

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
903.02 (A)	Traffic Signal Heads	SSPWC 903.02 (A)	A	1 per Source / Material Type
903.02 (A)	Incandescent Traffic Signal Indicators	SSPWC 903.02 (A)	A	1 per Source / Material Type
903.02 (A)	LED Traffic Signal Indicators	SSPWC 903.02 (A)	A	1 per Source / Material Type
903.02 (B)	Optically Programmed Traffic Signals	SSPWC 903.02 (B)	A	1 per Source / Material Type
903.02 (C)	Pedestrian Symbols	SSPWC 903.02 (C)	A	1 per Source / Material Type
903.02 (D)	Pedestrian Signal Housing	SSPWC 903.02 (D)	A	1 per Source / Material Type
903.02 (E)	Pedestrian Pushbuttons	SSPWC 903.02 (E)	A	1 per Source / Material Type
903.02 (F)	Mounting Hardware	SSPWC 903.02 (F)	A	1 per Source / Material Type
903.02 (H)	Grounding Wire	SSPWC 903.02 (H)	A	1 per Source / Material Type
903.02 (I)	Bonding Clamps	SSPWC 903.02 (H)	A	1 per Source / Material Type
903.02 (J)	Splice Boxes	SSPWC 903.02 (J)	A	1 per Source / Material Type
903.02 (K)	Conduit and Conduit Fittings	SSPWC 903.02 (K)	A	1 per Source / Material Type
903.02 (L)	Traffic Signal Cable	SSPWC 903.02 (L)	A	1 per Source / Material Type
903.02 (M)	Push Button Lead-In Cable	SSPWC 903.02 (M)	A	1 per Source / Material Type
903.02 (N)	Service Cable	SSPWC 903.02 (N)	A	1 per Source / Material Type
903.02 (O)	Copper-twisted Communication Cable	SSPWC 903.02 (O)	A	1 per Source / Material Type
903.02 (O)	Fiber-optic Communication Cable	SSPWC 903.02 (O)	A	1 per Source / Material Type
903.03 (A)	Allowable Bending Radii	SSWPC 903.03 (A)	A	As Required by the Engineer
903.03 (B)	Traffic Signal Installation	SSPWC 903.03 (B)	Owner	As Required by the Engineer
903.03 (C)	Pedestrian Signal Installation	SSPWC 903.03 (C)	Owner	As Required by the Engineer
903.03 (D)	Luminaire Installation	SSPWC 903.03 (D)	Owner	As Required by the Engineer

900 Traffic

904 Traffic Signal Controllers

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
904.02 (A)	Traffic Signal Controllers	SSPWC 904.02 (A)	A	1 per Source / Material Type
904.02 (B)	System Memory Prom Modules	SSPWC 904.02 (B)	A	1 per Source / Material Type
904.02 (C)	Controller	SSPWC 904.02 (C)	A	1 per Source / Material Type
904.02 (D)	Controller Cabinet	SSPWC 904.02 (D)	A	1 per Source / Material Type
904.02 (E)	Conflict Monitor (Model 210)	SSPWC 904.02 (E)	A	1 per Source / Material Type
904.02 (F)	Switch Pack (Model 200)	SSPWC 904.02 (F)	A	1 per Source / Material Type
904.02 (F)	Flasher Unit (Model 204)	SSPWC 904.02 (F)	A	1 per Source / Material Type
904.02 (G)	Two Channel Isolator (Model 242 and 252)	SSPWC 904.02 (G)	A	1 per Source / Material Type
904.02 (H)	Modems (Model 404 and Auto-dial)	SSPWC 904.02 (H)	A	1 per Source / Material Type
904.02 (I)	Telephone Lines	SSPWC 904.02 (I)	A	As Required by the Engineer
904.02 (J)	Conduit and Conduit Fittings	SSPWC 904.02 (J)	A	1 per Source / Material Type
904.02 (K)	Copper Grounding Wire	ASTM B3	A	1 per Source / Material Type
904.02 (K)	Grounding Rods	SSPWC 904.02 (K)	A	1 per Source / Material Type
904.02 (L)	Aggregate for Base	ASTM D2940	A or B	1 per Source / Material Type
904.02 (M)	Portland Cement	SSPWC 904.02 (M)	A or B	1 per Source / Material Type
904.02 (N)	Water	AASHTO T26	A or B	1 per Source / Material Type
904.02 (O)	Coarse Aggregate	ASTM C33	A or B	1 per Source / Material Type
904.02 (O)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
904.02 (P)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
904.02 (P)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type
904.02 (Q)	PCC Mix Design	SSPWC 904.02 (Q)	A	1 per Source / Material Type

904 Traffic Signal Controllers (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
904.02 (Q)	PCC Production Testing	SSPWC 904.02 (Q)	Owner	See STP 45
904.02 (R)	Deformed Steel Bars	SSPWC 902.02 (R)	A or B	1 per Source / Material Type
904.02 (R)	Bent Bars	SSPWC 902.02 (R)	A or B	1 per Source / Material Type
904.02 (S)	Liquid, Membrane-Forming Curing Compounds	SSPWC 904.02 (S)	A or B	1 per Source / Material Type
904.02 (S)	Polyethylene Film	ASTM C171	A	1 per Source / Material Type
904.03 (A)	Allowable Bending Radii	SSWPC 904.03 (A)	A	As Required by the Engineer
904.03 (B)	Pole-Mounted Traffic Signal Controller Cabinet Installation	SSPWC 904.03 (B)	Owner	As Required by the Engineer
904.03 (C)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
904.03 (C)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
904.03 (C)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
904.03 (C)	Thickness	SSPWC 904.03 (C)	Owner	As Required by the Engineer
904.03 (C)	Ambient Temperature	SSPWC 904.03 (C)	Owner	As Required by the Engineer
904.03 (C)	Consolidation	SSPWC 904.03 (C)	Owner	As Required by the Engineer
904.03 (C)	PCC Protection Monitoring	SSPWC 904.03 (C)	Owner	As Required by the Engineer
904.03 (C)	Curing Compound Application Rate	SSPWC 904.03 (C)	Owner	As Required by the Engineer
904.03 (D)	Traffic Signal Controller Installation	SSPWC 904.03 (D)	Owner	As Required by the Engineer
904.03 (C)	Telephone Line Installation	SSPWC 904.03 (E)	Owner	As Required by the Engineer

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905 Electrical Cable and Duct

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
905.02 (A)	Conduit and Conduit Fittings	SSPWC 905.02 (A)	A	1 per Source / Material Type
905.02 (B)	Grounding Wires	SSPWC 905.02 (B)	A	1 per Source / Material Type
905.02 (C)	Traffic Signal Cable	SSPWC 905.02 (C)	A	1 per Source / Material Type
905.02 (D)	Push Button Lead-In Cable	SSPWC 905.02 (D)	A	1 per Source / Material Type
905.02 (E)	Service Cables	SSPWC 905.02 (E)	A	1 per Source / Material Type
905.2 (F)	Copper-twisted Communication Cable	SSPWC 905.02 (F)	A	1 per Source / Material Type
905.2 (F)	Fiber Optic Communication Cable	SSPWC 905.02 (F)	A	1 per Source / Material Type
905.02 (G)	Pull Box	SSPWC 905.02 (G)	A	1 per Source / Material Type
905.02 (H)	Cable Pulling Lubricant	SSPWC 905.02 (H)	A	As Required by the Engineer
905.03 (A)	Allowable Bending Radii	SSPWC 905.03 (A)	A	As Required by the Engineer
905.03 (B)	Conduit Depth	SSPWC 905.03 (B)	Owner	As Required by the Engineer
905.03 (E)	Ambient Temperature	SSPWC 905.03 (E)	Owner	As Required by the Engineer
905.03 (E)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
905.03 (E)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
905.03 (E)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
905.03 (E)	Consolidation	SSPWC 905.03 (E)	Owner	As Required by the Engineer
905.03 (E)	PCC Protection Monitoring	SSPWC 905.03 (E)	Owner	As Required by the Engineer
905.03 (E)	Curing Compound Application Rate	SSPWC 905.03 (E)	Owner	As Required by the Engineer
905.03 (E)	Ground Rod Installation	SSPWC 905.03 (E)	Owner	As Required by the Engineer
905.03 (F)	Moisture-Density Relationship (Standard Test Method)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
905.03 (F)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer

905 Electrical Cable and Duct (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
905.03 (F)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

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906 Pavement Markings

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
906.02 (A)	Pavement Marking Paint	SSPWC 906.02 (A)	A	1 per Source / Material Type
906.02 (B)	Glass Beads	SSPWC 906.02 (B)	A	1 per Source / Material Type
906.02 (C)	Nonlane Paint	SSPWC 906.02 (C)	A	1 per Source / Material Type
906.02 (D)	Preformed Pavement Marking Tape Markings	SSPWC 906.02 (D)	A	1 per Source / Material Type
906.03 (B)	Marking Alignment	SSPWC 906.03 (B)	Owner	As Required by the Engineer
906.03 (C)	Surface Temperature	SSPWC 906.03 (C)	Owner	As Required by the Engineer
906.03 (C)	Paint Application Rate	SSPWC 906.03 (C)	Owner	As Required by the Engineer
906.03 (C)	Glass Beads Application Rate	SSPWC 906.03 (C)	Owner	As Required by the Engineer
906.03 (D)	Grooving Dimensions	SSPWC 906.03 (D)	Owner	As Required by the Engineer

907 Barricades and Signage

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
907.02 (A)	Fiber Optic Blank-out Sign	SSPWC 907.02 (A)	A	1 per Source / Material Type
907.02 (B)	LED Blank-out Sign	SSPWC 907.02 (B)	A	1 per Source / Material Type
907.02 (C)	Sign Lighting Equipment	SSPWC 907.02 (C)	A	1 per Source / Material Type
907.02 (D)	Signs	SSPWC 907.02 (D)	A	1 per Source / Material Type
907.02 (D)	Barricades	SSPWC 907.02 (D)	A	1 per Source / Material Type
907.02 (D)	Advance Warning Systems	SSPWC 907.02 (D)	A	1 per Source / Material Type
907.02 (E)	Temporary Sign Drums	SSPWC 907.02 (E)	A	1 per Source / Material Type
907.02 (F)	Square Tubular Posts	SSPWC 907.02 (F)	A	1 per Source / Material Type
907.02 (G)	Steel U-Posts	SSPWC 907.02 (G)	A	1 per Source / Material Type
907.02 (H)	Yielding Post Supports	AASHTO LTS-4 and NCHRP 350	A	1 per Source / Material Type
907.02 (I)	Fasteners and Mounting Hardware	SSPWC 907.02 (I)	A	1 per Source / Material Type
907.02 (J)	Steel Sign Brackets	SSPWC 907.02 (J)	A	1 per Source / Material Type
907.02 (K)	Grounding Wire	ASTM B3	A	1 per Source / Material Type
907.02 (K)	Grounding Rods	SSPWC 907.02 (K)	A	1 per Source / Material Type
907.02 (L)	Conduit and Conduit Fittings	SSPWC 907.02 (L)	A	1 per Source / Material Type
907.02 (M)	Portland Cement (Type I or II)	ASTM C150	A or B	1 per Source / Material Type
907.02 (N)	Water	AASHTO T26	A or B	1 per Source / Material Type
907.02 (O)	Coarse Aggregate	ASTM C33	A or B	1 per Source / Material Type
907.02 (O)	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
907.02 (P)	Admixtures	ASTM C494, ASTM C1017, ASTM C260	A or B	1 per Source / Material Type
907.02 (P)	Calcium Chloride	ASTM D98	A or B	1 per Source / Material Type

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907 Barricades and Signage (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
907.02 (Q)	PCC Mix Design	SSPWC 904.02 (Q)	A	1 per Source / Material Type
907.02 (Q)	PCC Production Testing	SSPWC 904.02 (Q)	Owner	See STP 45
907.02 (R)	Deformed Steel Bars	SSPWC 902.02 (R)	A or B	1 per Source / Material Type
907.02 (R)	Bent Bars	SSPWC 902.02 (R)	A or B	1 per Source / Material Type
907.02 (S)	Liquid, Membrane-Forming Curing Compounds (Type 1, 1-D, or 2, Class B)	ASTM C309	A or B	1 per Source / Material Type
907.02 (S)	Polyethylene Film	ASTM C171	A	1 per Source / Material Type
907.02 (T)	Pre-molded Joint Filler	ASTM D1751	A	1 per Source / Material Type
907.03 (B)	Sign Construction	SSPWC 907.03 (B)	A	1 per Source / Material Type
907.03 (E)	Cantilever Sign Structure Design	SSPWC 907.03 (E)	A	1 per location
907.03 (E)	Ambient Temperature	SSPWC 907.03 (E)	Owner	As Required by the Engineer
907.03 (E)	Consolidation	SSPWC 907.03 (E)	Owner	As Required by the Engineer
907.03 (E)	PCC Protection Monitoring	SSPWC 907.03 (E)	Owner	As Required by the Engineer
907.03 (E)	Curing Compound Application Rate	SSPWC 907.03 (E)	Owner	As Required by the Engineer
907.03 (E)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
907.03 (E)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
907.03 (E)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
907.03 (F)	Temporary Traffic Control Plan	SSPWC 907.03 (F)	A	As Required by the Engineer

908 Service Disconnects

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
908.02 (A)	Service Enclosure	SSPWC 908.02 (A)	A	1 per Source / Material Type
908.02 (B)	Service Disconnect Switch Enclosures	SSPWC 908.02 (B)	A	1 per Source / Material Type
908.02 (C)	Wiring Schematics	SSPWC 908.02 (C)	A	1 per Source / Material Type
908.02 (D)	Service Conductors	NEC 230	A	1 per Source / Material Type
908.02 (E)	Wood Posts	AASHTO Publication LTS-4	A	1 per Source / Material Type
908.03 (B)	Service Disconnect Switch Box Location	SSPWC 908.03 (B)	Owner	As Required by the Engineer
908.03 (B)	Ambient Temperature	SSPWC 908.03 (B)	Owner	As Required by the Engineer
908.03 (B)	Consolidation	SSPWC 908.03 (B)	Owner	As Required by the Engineer
908.03 (B)	PCC Protection Monitoring	SSPWC 908.03 (B)	Owner	As Required by the Engineer
908.03 (B)	Curing Compound Application Rate	SSPWC 908.03 (B)	Owner	As Required by the Engineer
908.03 (B)	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
908.03 (B)	Density Test	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D2937	Owner	As Required by the Engineer
908.03 (B)	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

900 Traffic

909 Vehicle Detectors

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
909.02 (A)	Vehicle Detector Amplifiers (Model 222)	SSPWC 909.02 (A)	A	1 per Source / Material Type
909.02 (B)	Magnetic Vehicle Detectors	SSPWC 909.02 (B)	A	1 per Source / Material Type
909.02 (C)	Magnetic Vehicle Detector Amplifiers (Model 232)	SSPWC 909.02 (C)	A	1 per Source / Material Type
909.02 (D)	Radar/Microwave Detectors	SSPWC 909.02 (D)	A	1 per Source / Material Type
909.02 (E)	Loop Detector Wire	SSPWC 909.02 (E)	A	1 per Source / Material Type
909.02 (F)	Detector Lead-In Cable	SSPWC 909.02 (E)	A	1 per Source / Material Type
909.02 (G)	Loop Detector Sealant	SSPWC 909.02 (G)	A	1 per Source / Material Type
909.02 (H)	Conduit and Conduit Fittings	SSPWC 909.02 (H)	A	1 per Source / Material Type

910 Modular Video Vehicle Detection System

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
910.02 (A)	Modular Video Vehicle Detection System	SSPWC 910.02 (A)	A	1 per Source / Material Type
910.02 (B)	Video Camera	SSPWC 910.02 (B)	A	1 per Source / Material Type
910.02 (C)	Video Detection Processor	SSPWC 910.02 (C)	A	1 per Source / Material Type
910.02 (D)	Extension Module	SSPWC 910.02 (D)	A	1 per Source / Material Type
910.02 (E)	Video Signal Transmission Cable	SSPWC 910.02 (E)	A	1 per Source / Material Type
910.02 (E)	BNC Plug Connector	SSPWC 910.02 (E)	A	1 per Source / Material Type
910.02 (F)	Power Cabling	SSPWC 910.02 (F)	A	1 per Source / Material Type
910.02 (H)	Warranty	SSPWC 910.02 (H)	A	1 per each unit
910.02 (H)	Supplier Support	SSPWC 910.02 (H)	A	1 per each unit
910.03 (B)	Supplier Plan Review	SSPWC 910.03 (B)	Owner	As Required by the Engineer
910.02 (B)	Camera Installation Height	SSPWC 910.03 (B)	Owner	As Required by the Engineer
910.02 (H)	Camera View Distance	SSPWC 910.03 (B)	Owner	As Required by the Engineer

900 Traffic

911 Preemption Control System

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
911.02 (A)	Preemption Control System	SSPWC 911.02 (A)	A	1 per Source / Material Type
911.02 (B)	Detector Cable	SSPWC 911.02 (B)	A	1 per Source / Material Type

912 Wide Area Video Vehicle Detection System

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
912.02 (A)	Wide-Area Video Vehicle Detection System	SSWPC 912.02 (A)	A	1 per Source / Material Type
912.02 (B)	Image Sensors	SSWPC 912.02 (B)	A	1 per Source / Material Type
912.02 (C)	Machine Vision Processor	SSWPC 912.02 (C)	A	1 per Source / Material Type
912.02 (D)	Video Isolation Amplifier	SSWPC 912.02 (D)	A	1 per Source / Material Type
912.02 (E)	System Software	SSWPC 912.02 (E)	A	1 per Source / Material Type
912.02 (F)	Supervisor Computer	SSWPC 912.02 (F)	A	1 per Source / Material Type
912.02 (H)	Warranty	SSPWC 912.02 (H)	A	1 per each unit
912.02 (H)	Supplier Support	SSPWC 912.02 (H)	A	1 per each unit

1000 MISCELLANEOUS ITEMS

This section addresses the items contained in Section 1000 of the City of Omaha Standard Specifications for Public Works Construction. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

1001 Public Information Services

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
1001.03	Contact Person	SSPWC 1001.03	A	As Required by the Engineer
1001.03	Local Telephone Line	SSPWC 1001.03	A	As Required by the Engineer
1001.03	Informational Fliers	SSPWC 1001.03	A	As Required by the Engineer

1000 Miscellaneous Construction

1002 Sprinkler System Relocation/Replacement

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
1002.02	Sprinkler System Materials	SSPWC 1002.02	A	As Required by the Engineer

1003 Mail Boxes

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
1003.02	Mailboxes	SSPWC 1003.02	A	As Required by the Engineer
1003.03	Installation Height	SSPWC 1003.03	Owner	As Required by the Engineer

1000 Miscellaneous Construction

1004 Field Offices

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
1004.02 (A)	Field Laboratories	SSPWC 1004.02 (A)	A	As Required by the Engineer
1004.02 (B)	Type A Field Laboratories	SSPWC 1004.02 (B)	A	As Required by the Engineer
1004.02 (C)	Type B Field Laboratories	SSPWC 1004.02 (C)	A	As Required by the Engineer
1004.02 (D)	Type C Field Laboratories	SSPWC 1004.02 (D)	A	As Required by the Engineer

1005 Brick Pavement

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
1005.02 (A)	Brick Pavers	ASTM C216	A or B	1 per Source / Material Type
1005.02 (B)	Cushion Sand	SSPWC 1005.02 (B)	A or B	1 per Source / Material Type
1005.02 (C)	Mortar Mix Design	SSPWC 1005.02 (C)	Owner	As Required by the Engineer
1005.02 (C)	Portland Cement (Type I)	ASTM C150	A or B	1 per Source / Material Type
1005.02 (C)	Sand	ASTM C144	A or B	1 per Source / Material Type
1005.03	Plate Vibrators	SSPWC 1005.03	A	As Required by the Engineer
1005.03	Thickness	SSPWC 1005.03	Owner	As Required by the Engineer
1005.03	Finished Elevation	SSPWC 1005.03	Owner	As Required by the Engineer

1100 NEBRASKA DEPARTMENT OF ROADS STRUCTURES

This section addresses the items contained in Section 700 of the Nebraska Department of Roads Standard Construction Specifications, 1997 Edition. The requirements contained herein are for use as a guideline and may be modified by Contact Documents or the Engineer at any time.

NDOR 702 Excavation for Structures

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 702.02	Granular Backfill	NDOR 1033 as modified in NDOR 702.02	Owner	1 per Source / Material Type
NDOR 702.03	Moisture-Density Relationship (Standard Proctor)	ASTM D698	Owner	1 per Source / Material Type as Required by the Engineer
NDOR 702.03	Compaction	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D 2937	Owner	As Required by the Engineer
NDOR 702.03	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer
NDOR 702.03	Compressive Strength of Structural Concrete	ASTM C39	Owner	1 per every 100 cubic yards of concrete placed each day

1100 NDOR Structures

NDOR 703 Piles and Pile Driving

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 703.02.1	PCC Mix Design	NDOR 1002	A	1 per Source / Material Type
NDOR 703.02.1	Portland Cement Concrete	NDOR 1002	Owner	See STP 45
NDOR 703.02.1	Reinforcing Steel	NDOR 1020, NDOR 1023, and NDOR 1024	A	1 per Source / Material Type
NDOR 703.02.1	Epoxy-Coated Reinforcing Steel	NDOR 1021	A	1 per Source / Material Type
NDOR 703.02.1	Structural Steel (Bearing Piles)	NDOR 1045	A	1 per Source / Material Type
NDOR 703.02.1	Sheet Zinc	NDOR 1053	A	1 per Source / Material Type
NDOR 703.02.1	Sheet Aluminum	NDOR 1054	A	1 per Source / Material Type
NDOR 703.02.1	Pre-cast Piles	NDOR 705	A	1 per Source / Material Type
NDOR 703.02.2	Pipe Piles	ASTM A252	A	1 per Source / Material Type
NDOR 703.02.2	Sheet Pile and Sheet Pile Corners	ASTM A328	A	1 per Source / Material Type
NDOR 703.02.2	H Pile and Other Pile	ASTM A6	A	1 per Source / Material Type
NDOR 703.02.3	Pre-fabricated Pile Points	ASTM A27	A	1 per Source / Material Type
NDOR 703.02.6	Cast In-Place Concrete Piles	See Plans	A	1 per each half-day of production
NDOR 703.02.6	Pile Shells	See Plans	A	1 per Source / Material Type
NDOR 703.02.6	Reinforcement	NDOR 707	A	1 per Source / Material Type
NDOR 703.02.6	Concrete	NDOR 705	Owner	1 per each half-day of production
NDOR 703.03.1	Hammer System	NDOR Data Sheet	A	1 per proposed hammer system
NDOR 703.03.4	Bearing Capacity	NDOR 703.03.4	Owner	1 per pile As Required
NDOR 703.03.4	Soil Set-up Factors	NDOR 703.03.4.f	Owner	1 per group of piles
NDOR 703.03.5	Static Pile Load Test	ASTM D1143	B	As Required by the Engineer

NDOR 703 Piles and Pile Driving (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 703.03.6	Test Piles	NDOR 703.03.6	Owner	As Required by the Engineer
NDOR 703.03.8	Compressive Strength	ASTM C39	Owner	1 per each half-day of production
NDOR 703.03.11	Painting	NDOR 709	A	1 per Source / Material Type

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NDOR 704 Concrete Construction

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 704.02.3	Anchor Bolts	NDOR 1057 and NDOR 1058	A	1 per Source / Material Type
NDOR 704.02.3	Curing Materials	NDOR 1010, NDOR 1011, and NDOR 1012	A or B	1 per Source / Material Type
NDOR 704.02.3	Deformed Metal Center Joints and Metal Keyway	NDOR 1027	A or B	1 per Source / Material Type
NDOR 704.02.3	Dowel Bars	NDOR 1022	A or B	1 per Source / Material Type
NDOR 704.02.3	Galvanized Hardware	NDOR 1059	A	1 per Source / Material Type
NDOR 704.02.3	Joint Sealing Filler	NDOR 1014	A or B	1 per Source / Material Type
NDOR 704.02.3	Paint and Paint Materials	NDOR 1077	A or B	1 per Source / Material Type
NDOR 704.02.3	PCC Mix Design	NDOR 1002	A	1 per Source / Material Type
NDOR 704.02.3	PCC Production Testing	NDOR 1003	Owner	See STP 45
NDOR 704.02.3	Preformed Joint Filler	NDOR 1015	A or B	1 per Source / Material Type
NDOR 704.02.3	Reinforcing Steel	NDOR 1020, NDOR 1023, and NDOR 1024	A or B	1 per Source / Material Type
NDOR 704.02.3	Epoxy Coated Reinforcing Steel	NDOR 1021	A or B	1 per Source / Material Type
NDOR 704.02.3	Structural Steel	NDOR 708	A	1 per Source / Material Type
NDOR 704.03.2	Compressive Strength	ASTM C39	Owner	1 per 100 cubic yards of concrete placed
NDOR 704.03.7	Falsework	NDOR 704.03.7	A	1 per design
NDOR 704.03.8	Forms	NDOR 704.03.8	A	1 per Source / Material Type
NDOR 704.03.8	Form Metal Hangars	NDOR 704.03.8	A or B	1 per Source / Material Type
NDOR 704.03.12	Vibrators	NDOR 704.03.12	A	1 per vibrator manufacturer/type
NDOR 704.03.14	Ambient Temperature	NDOR 704.03.14	Owner	As Required by the Engineer
NDOR 704.03.16	Curing Materials	NDOR 704.03.16	A or B	1 per Source / Material Type

NDOR 704 Concrete Construction (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 704.03.17	Surface Finish	NDOR 704.03.17	Owner	As Required by the Engineer
NDOR 704.03.20	Paint	NDOR 709	A or B	1 per Source / Material Type

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NDOR 705 Pre-cast/Pre-Stressed Concrete Structural Units

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 705.02.1	PCC Mix Design	NDOR 1002	A	1 per Source / Material Type
NDOR 705.02.1	PCC Production Testing	NDOR 1002	A	See NDOR 705.02.17
NDOR 705.02.1	Admixtures	ASTM C494	A or B	1 per Source / Material Type
NDOR 705.02.1	Water	AASHTO T26	A or B	1 per Source / Material Type
NDOR 705.02.1	Fine Aggregate	ASTM C33	A or B	1 per Source / Material Type
NDOR 705.02.1	Coarse Aggregate	ASTM C33	A or B	1 per Source / Material Type
NDOR 705.02.1	Class C Fly Ash	ASTM C618	A or B	1 per Source / Material Type
NDOR 705.02.1	Spiral Reinforced Wire	NDOR 1023	A	1 per Source / Material Type
NDOR 705.02.1	Pre-stressed Steel Strand	NDOR 1026	A	1 per Source / Material Type
NDOR 705.02.1	Post-Tensioning Assembly Steel	NDOR 1025	A	1 per Source / Material Type
NDOR 705.02.2	Compressive Strength	ASTM C39	A	See NDOR 705.02.17
NDOR 705.02.3	PCC Mix Design	ACI 318 and NDOR 705.02.4	A	1 per Source / Material Type
NDOR 705.02.3	PCC Production Testing	ACI 318 and NDOR 705.02.4	A	See NDOR 705.02.17
NDOR 705.02.7	Reinforcement	NDOR 705.02.7	A	1 per Source / Material Type
NDOR 705.03.10	Broken Wires	NDOR 705.02.10, NDOR 705.02.11, and NDOR 705.02.12	A	1 per each break
NDOR 705.02.13	Bars for Post-tensioning	NDOR 705.03.13	A	1 per Source / Material Type
NDOR 715.02.18	PCC Production Facility	NDOR 715.02.18	A	1 per Source / Material Type
NDOR 705.03.3	Grout Mix Design	NDOR 705.03.3	Owner	As Required by the Engineer
NDOR 705.03.6	PCC for Girders Load Information	NDOR 705.03.6	A	1 per each load
NDOR 705.03.7	Stressing Methods	NDOR 705.03.7	A	As Required by the Engineer

NDOR 705 Pre-cast/Pre-Stressed Concrete Structural Units (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 705.03.7	Pre-stressing Equipment Calibration	NDOR 705.03.7	C	1 per individual equipment
NDOR 705.03.8	Stressing Procedures	NDOR 705.03.8	A	As Required by the Engineer
NDOR 705.03.9	Forms	NDOR 704.03.9	A	1 per Source / Material Type
NDOR 705.03.10	Concrete Temperature	NDOR 705.03.10	A	1 per Source / Material Type
NDOR 705.03.11	Curing Materials	NDOR 705.03.11	A	1 per Source / Material Type
NDOR 705.03.11	Continuous Temperature Record Charts	NDOR 705.03.11	A	As Required by the Engineer
NDOR 705.03.12	Epoxy Resin Binder	NDOR 705.03.12	A	1 per Source / Material Type
NDOR 705.03.13	Surface Finish	NDOR 705.03.13	A	As Required by the Engineer
NDOR 705.03.14	Bonding Grout	NDOR 705.03.14	Owner	As Required by the Engineer
NDOR 705.03.15	Paint	NDOR 705.03.15	A	1 per Source / Material Type
705.03.16	Compressive Strength	NDOR 705.03.16	A	As Required by the Engineer
705.03.17	Inspection Facilities	NDOR 705.03.17	A	As Required by the Engineer

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NDOR 706 Concrete Bridge Floors

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 706.02.1	Reinforcement	NDOR 707	A or B	1 per Source / Material Type
NDOR 706.02.2	White Polyethylene	NDOR 1010	A or B	1 per Source / Material Type
NDOR 706.02.3	Concrete Retardant	NDOR 1002 and NDOR 1007	A or B	1 per Source / Material Type
NDOR 706.02.4	PCC Mix Design	NDOR 1002	A	1 per Source / Material Type
NDOR 706.02.4	PCC Production Testing	NDOR 1002	Owner	See STP 45
NDOR 706.03.1	Reinforcing Steel Placement	NDOR 706.03.1	Owner	As Required by the Engineer
NDOR 706.03.2	Wind Velocity	NDOR 706.03.2	Owner	As Required by the Engineer
NDOR 706.03.3	Concrete Placement Rate	NDOR 706.03.3	Owner	As Required by the Engineer
NDOR 706.03.6	Surface Finishing Procedure and Equipment	NDOR 706.03.6	A	As Required by the Engineer
NDOR 706.03.8	Surface Texture	NDOR 706.03.8	Owner	As Required by the Engineer
NDOR 706.03.9	Curing Process	NDOR 706.03.9	A	1 per Source / Material Type
NDOR 706.03.10	Surface Finish	NDOR 706.03.10	Owner	As Required by the Engineer
NDOR 706.03.11	Ambient Temperature	NDOR 706.03.11	Owner	As Required by the Engineer
NDOR 706.03.12	Test Well Location	NDOR 706.03.12	Owner	As Required by the Engineer
NDOR 706.03.13	Floor Drains and Appurtenances	NDOR 706.03.13	A	1 per Source / Material Type
NDOR 706.03.14	Compressive Strength	NDOR 706.03.14	Owner	As Required by the Engineer

NDOR 707 Reinforcement

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 707.02.1	Reinforcing Steel	NDOR 1020, NDOR 1021, NDOR 1023, and NDOR 1024	A or B	1 per Source / Material Type
NDOR 707.03.2	Fabrication	NDOR 707.03.2	A	1 per Source / Material Type
NDOR 707.03.3	Reinforcement Positioning	NDOR 707.03.3	Owner	As Required by the Engineer
NDOR 707.03.3	Support Locations	NDOR 707.03.3	Owner	As Required by the Engineer
NDOR 707.03.3	Tie Wire	NDOR 707.03.3	A	As Required by the Engineer
NDOR 707.03.3	Bar Support Unit	NDOR 707.03.3	A	1 per Source / Material Type
NDOR 707.03.3	Fiber Reinforced Concrete Support Spacers	NDOR 707.03.3	B	1 per Source / Material Type
NDOR 707.03.4	Splices	NDOR 707.03.4	Owner	As Required by the Engineer

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NDOR 708 Steel Structures

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 708.01.2	Structural Steel Fabricating Plant	NDOR 708.01.2	C	1 per Source / Material Type
NDOR 708.01.3	Welder Certification	AWS Specification	C	1 per individual
NDOR 708.02.1	Structural Steel	NDOR 1045	B	1 per Source / Material Type
NDOR 708.02.1	Low Strength Bolts, Nuts, and Washers	NDOR 1057	A	1 per Source / Material Type
NDOR 708.02.1	Structural Threaded Fasteners	NDOR 1057 and NDOR 1058	A	1 per Source / Material Type
NDOR 708.02.1	Steel Forging	NDOR 1048	A	1 per Source / Material Type
NDOR 708.02.1	Cold-Finished Bars and Shafting	NDOR 1049	A	1 per Source / Material Type
NDOR 708.02.1	Steel Castings	NDOR 1050	A	1 per Source / Material Type
NDOR 708.02.1	Gray Iron Castings	NDOR 1051	A	1 per Source / Material Type
NDOR 708.02.1	Malleable Castings	NDOR 1051	A	1 per Source / Material Type
NDOR 708.02.1	Sheet Lead	NDOR 1055	A	1 per Source / Material Type
NDOR 708.02.1	Sheet Aluminum	NDOR 1054	A	1 per Source / Material Type
NDOR 708.02.1	Iron Pipe	NDOR 1039	A	1 per Source / Material Type
NDOR 708.02.1	Steel Pipe	NDOR 1040	A	1 per Source / Material Type
NDOR 708.02.1	Welding Electrodes	NDOR 1047	A	1 per Source / Material Type
NDOR 708.02.1	End Welded Studs	NDOR 1046	A	1 per Source / Material Type
NDOR 708.02.3	Mill Orders	NDOR 708.02.2	A	1 per order
NDOR 708.02.3	Mill Test Reports	NDOR 708.02.2	A	1 per order
NDOR 708.02.4	Cutting List	NDOR 708.02.4	A	As Required by the Engineer
NDOR 708.02.6	Threads	NDOR 708.02.6	A	1 per Source / Material Type

NDOR 708 Steel Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 708.02.7	Sheared Plates	NDOR 708.02.7	A	1 per Source / Material Type
NDOR 708.02.8	Bolts, Nuts, and Washers	NDOR 708.02.8	A	1 per Source / Material Type
NDOR 708.02.9	Swedge Bolts	NDOR 708.02.9	A	1 per Source / Material Type
NDOR 708.02.12	Steel Diaphragms	NDOR 708.02.12	A	1 per Source / Material Type
NDOR 708.03.1	Structural Steel Assembly and Placement	NDOR 708.03.1	Owner	As Required by the Engineer
NDOR 708.03.3	Bolt Holes	NDOR 708.03.3	Owner	As Required by the Engineer
NDOR 708.03.4	Punched Holes	NDOR 708.03.4	Owner	As Required by the Engineer
NDOR 708.03.5	Hole Group Accuracy	NDOR 708.03.5	Owner	As Required by the Engineer
NDOR 708.03.8	Matchmark Diagram	NDOR 708.03.8	A	As Required by the Engineer
NDOR 708.03.9	Unfinished Turned or Ribbed Bolt Connections	NDOR 708.03.9	A	1 per Source / Material Type
NDOR 708.03.10	Fastener Material, Manufacturing Testing, Documentation, and Shipping Requirements	NDOR 708.03.10	A	1 per Source / Material Type
NDOR 708.03.10	Bolt Tension	NDOR 708.03.10	A	As Required by the Engineer
NDOR 708.03.11	Bearing Surfaces	NDOR 708.03.11	A	1 per Source / Material Type
NDOR 708.03.11	Abutting Ends	NDOR 708.03.11	A	1 per Source / Material Type
NDOR 708.03.12	Pins and Rollers	NDOR 708.03.12	A	1 per Source / Material Type
NDOR 708.03.13	Thermal Cutting	NDOR 708.03.13	A	1 per Source / Material Type
NDOR 708.03.14	Cold-bent Load-carrying Rolled-steel Plates	NDOR 708.03.14	A	1 per Source / Material Type
NDOR 708.03.15	Steel Girders	NDOR 708.03.15	A	1 per Source / Material Type
NDOR 708.03.16	Heat Curved Girders	NDOR 708.03.16	A	1 per Source / Material Type
NDOR 708.03.17	Welding Process	NDOR 708.03.17	A	As Required by the Engineer

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NDOR 708 Steel Structures (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 708.03.18	End Welded Studs	NDOR 708.03.18	A	1 per Source / Material Type
NDOR 708.02.19	Steel Diaphragms	NDOR 708.03.19	A	1 per Source / Material Type
NDOR 708.02.20	Falsework	NDOR 708.03.20	A	1 per Source / Material Type

NDOR 709 Painting

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 709.02.1	Paint	NDOR 709.02.1	A	1 per Source / Material Type
NDOR 709.02.1	Painting Systems	NDOR 709.02.1	A	1 per manufacturer/equipment type
NDOR 709.02.2	Paint Manufacturer's Certification	NDOR 709.02.2	A	1 per manufacturer/equipment type
NDOR 709.03.1	Steel Surface Preparation	NDOR 709.03.1	Owner	As Required by the Engineer
NDOR 709.03.1	Contractor Quality Control Inspection Report	NDOR 709.03.1	A	As Required by the Engineer
NDOR 709.03.1	Dry-Film Thickness	NDOR 709.03.1	Owner	As Required by the Engineer
NDOR 709.03.2	Overcoat Surface Preparation	NDOR 709.03.2	Owner	As Required by the Engineer
NDOR 709.03.2	Contractor Quality Control Inspection Report	NDOR 709.03.2	A	As Required by the Engineer
NDOR 709.03.2	Overcoat Dry-Film Thickness	NDOR 709.03.2	Owner	As Required by the Engineer
NDOR 709.03	Commercial Blast Cleaning	SSPC-SP6	Owner	Prior to Applying Paint

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NDOR 710 Concrete Bridge Deck Repair with Silica Fume Concrete

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 710.02.1	PCC Mix Design	NDOR 1002	A	1 per Source / Material Type
NDOR 710.02.1	PCC Production Testing	NDOR 1002	Owner	See STP 45
NDOR 710.02.1	Curing Materials	NDOR 1010 and NDOR 1011	A or B	1 per Source / Material Type
NDOR 710.02.1	Fine Aggregate for Concrete Bridge Deck Overlays	NDOR 1033	A or B	1 per Source / Material Type
NDOR 710.02.1	Coarse Aggregate for Concrete Bridge Deck Overlays	NDOR 1033	A or B	1 per Source / Material Type
NDOR 710.02.1	Water for Concrete	NDOR 1005	A or B	1 per Source / Material Type
NDOR 710.02.1	Silica Fume	NDOR 1009	A or B	1 per Source / Material Type
NDOR 710.02.2	Grout	NDOR 710.02.2	A or B	1 per Source / Material Type
NDOR 710.03	Equipment	NDOR 710.03	Owner	As Required by the Engineer
NDOR 710.04.3	PCC Production	NDOR 710.04.3	A	1 per Source / Material Type
NDOR 710.04.3	Slump	ASTM C143	Owner	1 per batch
NDOR 710.04.4	Surface Smoothness	NDOR 710.04.4	Owner	As Required by the Engineer
NDOR 710.04.4	PCC Construction Process	NDOR 710.04.4	A	As Required by the Engineer
NDOR 710.04.4	Surface Texture	NDOR 710.04.4	Owner	As Required by the Engineer
NDOR 710.04.4	Polyethylene Film	NDOR 710.04.4	A	1 per Source / Material Type
NDOR 710.04.4	Curing Hours Calculation	NDOR 710.04.4	Owner	As Required by the Engineer
NDOR 710.04.4	Rate of Evaporation	NDOR 710.04.4	Owner	As Required by the Engineer
NDOR 710.04.4	Ambient Temperature	NDOR 710.04.4	Owner	As Required by the Engineer
NDOR 710.04.5	Paint	NDOR 709	A	1 per Source / Material Type
NDOR 710.04.6	Compressive Strength	ASTM C39	Owner	See STP 45

NDOR 710 Concrete Bridge Deck Repair with Silica Fume Concrete (continued)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 710.04.6	Surface Plane	NDOR 710.04.6	Owner	As Required by the Engineer

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NDOR 711 Concrete Bridge Deck Repair with High Density-Low Slump Concrete

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 711.02.1	Portland Cement Concrete	NDOR 1002	A or B	1 per Source / Material Type
NDOR 711.02.1	Curing Materials	NDOR 1010 and NDOR 1011	A or B	1 per Source / Material Type
NDOR 711.02.1	Fine Aggregate for Concrete Bridge Deck Overlays	NDOR 1033	A or B	1 per Source / Material Type
NDOR 711.02.1	Coarse Aggregate for Concrete Bridge Deck Overlays	NDOR 1033	A or B	1 per Source / Material Type
NDOR 711.02.1	Water for Concrete	NDOR 1005	A or B	1 per Source / Material Type
NDOR 711.02.3	Grout Mix Design	NDOR 711.02.3	Owner	As Required by the Engineer
NDOR 711.02.3	Grout Sand Gradation	NDOR 711.02.3	A or B	1 per Source / Material Type
NDOR 711.03	Equipment	NDOR 711.03	Owner	As Required by the Engineer
NDOR 711.04.3	Moisture Content	ASTM C566	A	As Required by the Engineer
NDOR 711.04.3	Slump	ASTM C143	Owner	See STP 45
NDOR 711.04.3	PCC Uniformity	ASTM C685	Owner	As Required by the Engineer
NDOR 711.04.4	Surface Smoothness	NDOR 711.04.4	Owner	As Required by the Engineer
NDOR 711.04.4	PCC Construction Process	NDOR 711.04.4	A	As Required by the Engineer
NDOR 711.04.4	Surface Texture	NDOR 711.04.4	Owner	As Required by the Engineer
NDOR 711.04.4	Polyethylene Film	NDOR 711.04.4	A	1 per Source / Material Type
NDOR 711.04.4	Curing Hours Calculation	NDOR 711.04.4	Owner	As Required by the Engineer
NDOR 711.04.5	Ambient Temperature	NDOR 711.04.5	Owner	As Required by the Engineer
NDOR 711.04.5	Wind Velocity	NDOR 711.04.5	Owner	As Required by the Engineer
NDOR 711.04.6	Paint	NDOR 709	A	1 per Source / Material Type
NDOR 711.04.7	Density	NDOR 711.04.7	Owner	As Required by the Engineer

NDOR 712 Fixed Bearings and Expansion Bearings, TFE Type

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 712.02.1	Fixed Bearing Upper Assembly	NDOR 712.02.1	A	1 per Source / Material Type
NDOR 712.02.1	Fixed Bearing Lower Assembly	NDOR 712.02.1	A	1 per Source / Material Type
NDOR 712.02.2	Expansion Bearing, TFE Type Upper Assembly	NDOR 712.02.2	A	1 per Source / Material Type
NDOR 712.02.2	Welding	NDOR 712.02.2	A	1 per Source / Material Type
NDOR 712.02.2	Expansion Bearing, TFE Type Lower Assembly	NDOR 712.02.2	A	1 per Source / Material Type
NDOR 712.02.2	Peel Test	ASTM D903	A	As Required by the Engineer
NDOR 712.02.2	Bearing Surface Flatness	NDOR 712.02.2	Owner	As Required by the Engineer
NDOR 712.02.3	Manufacturer's Certification	NDOR 712.02.3	A	1 per each item As Required by the Engineer
NDOR 712.02.4	Galvanized Anchor Bolts, Nuts, and Washers	NDOR 712.02.4	A	1 per Source / Material Type
NDOR 712.02.5	Certified Mill Test Reports	NDOR 712.02.5	A	As Required by the Engineer

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NDOR 713 Confined Elastomeric Bearing Devices (Pot Bearings)

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 713.02.1	Pot Bearing Design	NDOR 713.02.1	A	1 per Source / Material Type
NDOR 713.02.3	Fixed Bearings	NDOR 713.02.3	A	1 per Source / Material Type
NDOR 713.02.3	Guided Expansion Bearings	NDOR 713.02.3	A	1 per Source / Material Type
NDOR 713.02.3	Non-guided Expansion Bearings	NDOR 713.02.3	A	1 per Source / Material Type
NDOR 713.02.4	Elastomeric Discs	NDOR 713.02.4	A	1 per Source / Material Type
NDOR 713.02.5	Steel Pot	NDOR 713.02.5	A	1 per Source / Material Type
NDOR 713.02.6	Piston	NDOR 713.02.6	A	1 per Source / Material Type
NDOR 713.02.7	Elastomeric Sealing Rings	NDOR 713.02.7	A	1 per Source / Material Type
NDOR 713.02.8	Polytetrafluorethylene (PTFE) Sliding Surface	NDOR 713.02.8	A	1 per Source / Material Type
NDOR 713.02.9	Stainless Steel Sliding Surface	NDOR 713.02.9	A	1 per Source / Material Type
NDOR 713.02.10	Guide Bars	NDOR 713.02.10	A	1 per Source / Material Type
NDOR 713.02.11	Fabrication Tolerances	NDOR 713.02.11	Owner	As Required by the Engineer
NDOR 713.02.12	Confined Elastomer Bearing Flatness Tolerances	NDOR 713.02.12	Owner	As Required by the Engineer
NDOR 713.02.13	Metallizing	NDOR 713.02.13	A	1 per Source / Material Type
NDOR 713.02.13	Anchor Bolts, Nuts, and Washers	NDOR 713.02.13	A	1 per Source / Material Type
NDOR 713.02.14	Confined Elastomer Bearing Testing	NDOR 713.02.14	A	1 per Source / Material Type
NDOR 713.02.15	Manufacturer's Certification	NDOR 713.02.15	A	1 per Source / Material Type

NDOR 714 MSE Walls with Concrete Facing Panels

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 714.01	MSE Wall Design	NDOR 714.01	A	1 per location
NDOR 714.02.1	Certificate of Compliance	NDOR 714.02.1	A	1 per location
NDOR 714.02.2	Concrete Facing Panels	NDOR 714.02.2	A	1 per location
NDOR 714.02.3	Reinforcing Strips	NDOR 714.02.3	A	1 per location
NDOR 714.02.3	Reinforcing Mesh and Bar Mats	NDOR 714.02.3	A	1 per location
NDOR 714.02.3	Tie Strips	NDOR 714.02.3	A	1 per location
NDOR 714.02.3	Fasteners	NDOR 714.02.3	A	1 per location
NDOR 714.02.3	Connector Bars and Pins	NDOR 714.02.3	A	1 per location
NDOR 714.02.3	Structural Plate Connectors and Fasteners	NDOR 714.02.3	A	1 per location
NDOR 714.02.4	Bearing Pads	NDOR 714.02.4	A	1 per location
NDOR 714.02.4	Granular Backfill	NDOR 714.02.4	A or B	1 per location
NDOR 714.03.2	Leveling Pad Dimensions	NDOR 714.03.2	Owner	As Required by the Engineer
NDOR 714.03.2	Compressive Strength	NDOR 714.03.2	Owner	See STP 45
NDOR 714.03.2	Finished Grade	NDOR 714.03.2	Owner	As Required by the Engineer
NDOR 714.03.3	Vertical Tolerances (Plumbness)	NDOR 714.03.3	Owner	As Required by the Engineer
NDOR 714.03.3	Horizontal Alignment	NDOR 714.03.3	Owner	As Required by the Engineer
NDOR 714.03.5	Moisture-Density Relationship (Standard Proctor)	AASHTO T99	Owner	1 per Source / Material Type as Required by the Engineer
NDOR 714.03.5	Soil Compaction	ASTM D1556, ASTM D2167, ASTM D2922, or ASTM D 2937	Owner	As Required by the Engineer
NDOR 714.03.5	Moisture Content	ASTM D2216, ASTM D3017, or ASTM D4944	Owner	As Required by the Engineer

1100 NDOR Structures

NDOR 729 Deck Joint Seals

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 729.02.1	Structural Steel	NDOR 729.02.1	A	1 per Source / Material Type
NDOR 729.02.2	Stainless Steel Sheets	NDOR 729.02.2	A	1 per Source / Material Type
NDOR 729.02.3	Elastomeric Sealing Element	NDOR 729.02.3 and NDOR 729.02.4	A	1 per Source / Material Type
NDOR 729.02.5	Support Bar Bearings	NDOR 729.02.5	A	1 per Source / Material Type
NDOR 729.02.6	Equilibrium Type Springs	NDOR 729.02.6	A	1 per Source / Material Type
NDOR 729.02.7	Slider Plates	NDOR 729.02.7	A	1 per Source / Material Type

NDOR 730 Strip Seals

Subsection	Product, Test, and/or Inspection	Procedure and/or Specification	Certification or Responsibility	Recommended Frequency*
NDOR 730.02.2	Strip Seals	NDOR 730.02.2	A	1 per Source / Material Type
NDOR 730.02.3	Structural Steel	NDOR 730.02.3	A	1 per Source / Material Type
NDOR 730.02.4	Steel Extrusions	NDOR 730.02.4	A	1 per Source / Material Type
NDOR 730.02.5	Neoprene Seal	NDOR 730.02.5	A	1 per Source / Material Type