PERFORMANCE SPECIFICATIONS
SCOPE OF WORK/SUPPLEMENTARY CONDITIONS

Pursuant to the provisions of O.S. 61 and Title 580 Department of Central Services, Chapter 20 Construction and Properties Division Rules, et seq.,:

All installed pavement systems must meet the Code and Regulatory Requirements and Recommendations of the most current edition of:

1. **The Oklahoma Department of Transportation Standard Specifications 2009**
2. **All adopted Codes of the Oklahoma State Fire Marshall**

Due to market volatility in asphalt material, contracted parties may request a price adjustment when the Oklahoma Department of Transportation Monthly Asphalt Binder Price Index fluctuates by three percent (3%) or more. Refer to ODOT subsection 709.12 – Price Adjustment for Asphalt Price Binder.

Response Times: Normal: (72 clock hours); Emergency: (12 clock hours).

Section 1 Soils

1.01 Clearing and Grubbing

1.01 10 100 Clearing and Grubbing

This work consists of clearing, grubbing, removing, and disposing of vegetation and debris. This work includes protecting vegetation specified to remain. This work excludes items specified for removal in accordance with other sections of the Specifications.

Do not disturb or remove hazardous waste material, archeological or historic material, or human remains or graves without the prior approval of the Agency. Immediately notify the Agency upon encountering evidence of these items in accordance with Subsection 107.15, "Hazardous Material," and Subsection 107.09, "Protection of Archeological and Unmarked Human Burial Sites." of the ODOT 2009 Standard Specifications. During clearing and grubbing operations do not scar, break, or otherwise damage trees and shrubs directed to remain. If the Contractor damages these items, the Agency will assess the value of the damage against the Contractor.

The Department will consider the cost of disposing of debris outside the limits of construction to be included in the contract unit price for Clearing and Grubbing or Selective Clearing.

1.01 10 200 Selective Clearing

This work includes the following activities:

- Trimming selected trees and shrubs (except those directed or shown to remain);
- Removing and disposing of logs, root pods, brush, refuse dumps, and other undesirable debris; and
- Cutting, removing, and disposing of undergrowth, stumps, and standing trees.

Perform selective clearing at locations shown on the Plans and/or as approved by the Agency. Dispose of vegetation and debris in accordance with Section 2.01 10 100A, "Clearing," and Section 2.01 10 100B, "Grubbing." When selecting trees for removal, leave remaining trees from 20 ft to 30 ft [6 m to 9 m] apart.

Sever stumps, trees, and shrubs flush with, or below, the original ground line. Remove the stumps of uprooted trees and fill the holes with material approved by the Agency.

1.02 Earthwork- Excavation and Borrow

This work consists of excavating material and constructing embankments, which includes hauling, stockpiling, placing, disposing, sloping, shaping, compacting, and finishing earth material. There are two categories of earthwork - excavation and borrow, and embankment.

Materials, Equipment, and Construction Methods shall be provided in accordance with 2009 ODOT Standard Specification Section 202 “EARTHWORK.”

Methods of measurement shall comply with ODOT Subsection 202.05

Basis of payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete the work as specified.

1.02 10 100 Unclassified Excavation

Excavation of earth material within the limits of construction with the exception of muck excavation, rock excavation, and structural excavation see Section 501, "Excavation and Backfill for Structures" of the 2009 ODOT Standard Specification for Structured Excavation.

Construction methods shall comply with ODOT Subsection 202.04.A(1)

1.02 10 200 Muck Excavation

Excavation of soil mixed with organic matter or other materials not suitable for foundation material, regardless of moisture content or other characteristic. Construction methods shall comply with ODOT Subsection 202.04.A(2)

1.02 10 300 Rock Excavation

Excavation of sound and solid masses, layers, or ledges of mineral matter classified as rock using either of the following methods:

- Cannot be effectively loosened or broken down by ripping with equipment in accordance with ODOT Subsection 202.03, "Equipment"; or
- Has a seismic velocity of at least 7,900 ft/s [2,400 m/s] (if the seismic velocities are less than 7,900 ft/s [2,400 m/s], use the ripping method to determine material classifications).

Construction methods shall comply with ODOT Subsection 202.04.A(3)

1.02 20 100 Unclassified Borrow

Material obtained outside the limits of construction, and not classified as Select Borrow. Borrow material shall comply with ODOT Subsection 202.02.A

1.03 Test Rolling

This work consists of test rolling embankments and cut sections with heavy pneumatic-tired rollers.

1.03 10 100 Test Rolling

Construction Methods to be in accordance with ODOT Standard Specifications Section 203 “Test Rolling” unless alternative approved in writing by the Department. Basis of payment shall include the following pay items & equipment, labor & incidentals to complete the work as specified.

1.04 Temporary Sediment Control

This work consists of constructing, maintaining, and removing the following items in accordance with ODOT Standard Specification Section 221 “Temporary Sediment Control.” Methods of measurement shall comply with ODOT standard specifications 221.05. Contractor shall file proper Notice of Intent (NOI) & Notice of Termination (NOT) permits for Stormwater Discharges when site construction activity is one (1) acre or more. The contractor shall be responsible for the repair or replacement of all erosion control devices damaged during construction. Basis of payment to include one or more of the following pay items & all materials, labor & incidentals to complete work as specified.

1.04 10 100 Temporary Silt Fence

Provide material for temporary silt fence in accordance with Subsection 712.06 "Filter Fabric for Silt Fence" of ODOT Standard Specification.
For temporary silt fence, use woven, polypropylene, polyester, or polyamide material that is resistant to ultraviolet degradation, mildew, and rot.
Seal or selvage the edges of woven fabrics to prevent unraveling.
Use fabric at least 3 ft [0.9 m] wide.
Use posts with length of at least 4 ft [1 .1 m], and the ability to resist damage during installation and to support applied loads. Construction methods shall comply with ODOT Subsection 221.04.C.

1.04 10 200 Temporary Sediment Basin

For both the inlet and outlet flows of the sediment basins, use the following:
- Loose rock capable of withstanding anticipated water velocity displacement, or
- Other non-erodible materials approved by the Resident Engineer.

For Type I sediment basins, provide an outflow pipe with a diameter of at least 12 in [300 mm].
Construction methods shall comply with ODOT Subsection 221.04.E.

1.04 10 300 Temporary Silt Dike

Provide materials for temporary silt dikes in accordance with Subsection 735.07, "Temporary Silt Dike Materials" of ODOT Standard Specification.
Provide No. 11 gauge wire staples, at least 6 in [150 mm] long.
Construction methods shall comply with ODOT Subsection 221.04.F.

1.05 Nylon Erosion Control Mat

This work consists of providing and installing nylon erosion control mat for lining
ditches and protecting slopes in accordance with ODOT Standard Specification Section 228 “Nylon Erosion Control Mat.” Methods of Measurement shall comply with ODOT Subsection 228.05. Construction methods shall comply with ODOT Subsection 228.04. Basis of payment to include one or more of the following pay items & all equipment, labor & incidentals to complete work as specified.

1.05 10 100 Nylon Erosion Control Mat

Provide materials in accordance with the following ODOT subsection of:

Material	Subsection
Nylon Erosion Control Mat	735.04.G
Seed	735.03
Material Fasteners	735.05.B

1.06 Sodding and Seeding

This work consists of providing and planting Bermuda grass sod or seeding in accordance with ODOT Standard Specification Section 230 "Sodding and Sprigging" and Section 232 "Seeding." Methods of Measurement shall comply with ODOT Subsection 230.05 and 232.05. Basis of payment to include one or more of the following pay items & all equipment, labor & incidentals to complete work as specified.

1.06 10 100 Solid Slab Sodding

Construction methods shall comply with ODOT Standard Specification Section 230.04.A

1.06 10 200 Mulch Sodding

Construction methods shall comply with ODOT Standard Specification Section 230.04.B

Section 2 Subgrade

2.01 Subgrade

This work consists of preparing the existing materials for the immediate construction of subbase, base, pavement, or surface. Basis of payment shall include one or more of the following pay items and furnishing all materials, equipment, labor & incidentals to complete the work as specified. Refer to ODOT Subsection 310.06 for additional payment notes.

2.01 10 100 Subgrade Preparation Method B

Prepare the subgrade in accordance with ODOT Subsection 310.04B "Subgrade Method B for all other Subbases, Bases, Pavements, or Surface."

2.02 Subgrade Treatment

This work consists of providing, placing, and compacting one or more layers of a mixture of soil, chemical additives, and water to achieve a stable subgrade. Chemical additives used to stabilize or modify are defined as cementitious additives (portland cement, fly ash, or cement kiln dust) or lime additives.

On projects where sulfate soils may be present, determine soluble sulfate content of the soil in accordance with the Department's Materials Division test method OHD L-49. Determine the applicability of subgrade treatment in accordance with OHD L-50 and OHD L-51 . Do not perform subgrade treatment if sulfate content exceeds the threshold value specified in OHD L-49, OHD L-50, and OHD L-51.

Basis of payment to include one or more of the following pay items & all equipment, labor & incidentals to complete work as specified. Refer to ODOT Subsection 307.06 for additional payment notes.

2.02 10 100 Subgrade Stabilization

Incorporate chemical additives into the subgrade to increase the strength of the subgrade soils and to provide structural value for the pavement structure. Construction methods shall comply with ODOT Subsection 307.04.

2.02 10 200 Subgrade Modification

Incorporate chemical additives into the subgrade to change the PI of the subgrade soils and improve its workability as a platform to support construction equipment. Construction methods shall comply with ODOT Subsection 307.04.

Material for Subgrade Treatment

Provide Materials for subgrade treatment in accordance with ODOT Subsection 307.02 & the appropriate subsections therein. Method of Measurement shall comply with ODOT Subsection 307.05. Basis of payment to include one or more of the following pay items & all equipment, labor & incidentals to complete work as specified.

2.02 20 100 Fly Ash
Provide Fly Ash in accordance with ODOT Subsection 702.01.

2.02 20 200 Cement Kiln Dust
Provide Cement Kiln Dust in accordance with ODOT Subsection 702.03.

2.02 20 300 Portland Cement
Provide Portland Cement in accordance with ODOT Subsection 701.02.

2.02 20 400 Lime
Provide Hydrated Lime and/or Quick Lime in accordance with ODOT Subsections 706.01 and 706.02.

Section 3 Bases

3.01 Aggregate Base
This work consists of providing and placing one or more layers of aggregates, and specified additives, on a prepared subgrade or subbase. Method of Measurement shall comply with ODOT Specification 303.05. Materials & Construction methods shall comply with specification 303.02 & 303.04. Basis of Payment to include one or more of the following pay items & all materials, equipment, labor & incidentals to complete work as specified.

NOTE: Rolling & Water as required to obtain a specified density will not be a separate pay item, but the cost shall be included in the price bid.

3.01 10 100 Aggregate Base Type A
Provide Aggregate Base using aggregate material gradation Type A specified in ODOT Standard Specification Section 703.01, "Aggregate for Aggregate Base."

3.02 Open Graded Base
This work consists of constructing a permeable base course, which includes the following:

- Mixing aggregate and bituminous material or aggregate, Portland cement concrete, and water in a central plant, and
- Spreading and compacting the mixture on a prepared surface.

Construction Methods & Methods of Measurement shall comply with ODOT Subsection 319.04 & 319.05. Basis of Payment to include on or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified.

Provide Open Graded Base using construction materials that comply with ODOT Subsection 319.02 & the following table:

Material	Subsection
Aggregate	703.03
Water	701.04
Fly Ash	702.01
Portland Cement	701.02

3.02 10 100 Open Graded Bituminous Base
Construct Open Graded Bituminous Base in accordance to ODOT Standard Specification Subsection 319.04.B, "Open Graded Bituminous Base."

3.03 Separator Fabric for Bases
This work consists of installing a separator fabric for bases. Provide materials in accordance with ODOT Subsection 325.02. Construction Methods shall comply with ODOT Subsection 325.04. Basis of Payment to include the following pay items and all materials, equipment, labor & incidentals to complete the work as specified.

3.03 10 100 Separator Fabric for Bases
Construction Methods shall comply with ODOT Subsection 325.04.

3.04 Geo synthetic Reinforcement
This work consists of installing geo synthetic reinforcement material beneath the aggregate base layer in the pavement structure, or beneath the roadway embankment. This includes the use of geo grids and geotextiles. Geotextile is made of synthetic fibers manufactured in a woven or loose nonwoven manner to form a blanket-like product used to reinforce soil and rock. Geo grid is a continuous sheet of net-shaped synthetic material formed by tensile elements that reinforce soil and rock by interlocking. Construction methods shall comply with ODOT Subsection 326.04. Method of Measurement shall comply with ODOT Subsections 326.05 & 326.06. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified.

3.04 10 100 Geotextile Reinforcement
Provide geotextile reinforcement materials in accordance with AASHTO M 288 for Class I Geotextiles.

3.04 10 200 Geogrid Reinforcement
Provide geotextile reinforcement materials in accordance with ODOT Subsection 712.07 “Geogrid Subgrade Reinforcement of Pavement Structure”.

Section 4 Surfaces

4.00 General requirements
All surfaces to be provided in accordance with ODOT Standard Specification Section 401, “General Requirements for
Surfaces.”

4.01 Traffic Bound Surface Course
This work consists of constructing a surface course of hard and durable particles of sand, gravel, crushed stone, or disintegrated granite and placing the surface course material on a prepared subgrade. Method of Measurement shall comply with ODOT Subsection 402.05

Provide Aggregate materials in accordance with ODOT Standard Subsection 703.05, “Aggregates for Traffic Bound Surface Course.”

4.01 10 100 Traffic Bound Surface Course Type E
Construction methods shall comply with ODOT Specification 402.04. Basis of Payment to include the following pay items and material, equipment, labor & incidentals to complete work as specified.

4.02 Chip Seal
This work consists of constructing a single or double surface treatment of aggregates and bituminous materials. Construction Methods shall comply with ODOT Specification 403.04. Methods of Measurement & Basis of Payment shall comply with ODOT Specification 403.05 & 403.06. Provide materials in accordance with the following ODOT Subsections:

Material	Subsection
Cover Aggregate	703.04
Bituminous Prime	708.00
Bituminous Binder	708.03

4.02 10 100 Chip Seal – Single Treatment
Provide single treatment Chip Seal in accordance to ODOT Standard Specification Section 403, “Chip Seal”

4.02 10 200 Chip Seal – Double Treatment
Provide Double treatment Chip Seal in accordance to ODOT Standard Specification Section 403, “Chip Seal”

4.02 20 100 Chip Seal – Preparation of Base

Prepare base for Chip Seal treatment in accordance to ODOT Standard Specification Section 403, "Chip Seal"

4.03 Fog Seal and Tack Coat

This work consists of preparing and treating an existing bituminous or concrete surface with bituminous material. Methods of Measurement shall comply with ODOT Subsection 407.05. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified. Materials shall comply with ODOT Subsection 708.03 "Asphalt Materials".

4.03 10 100 Fog Seal

Construction methods for Fog Seal shall comply with ODOT Standard Specification 407.04(A), "Fog Seal."

4.03 10 200 Tack Coat

Construction methods for Chip Seal shall comply with ODOT Standard Specification 407.04(A), "Tack Coat."

4.04 Prime Coat

This work consists of preparing and treating a surface with bituminous and blotter material. Method of Measurement shall comply with ODOT Specification 408.05. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified. Material shall comply with ODOT Subsection 708.03 "Asphalt Materials" for MC-30 & MC-70.

4.04 10 100 Prime Coat

Construction method for Prime Coat shall comply with ODOT Standard Specification Section 408.04.

4.05 Fabric Reinforcement for Hot Mix Asphalt Pavement

This work consists of applying reinforcement fabric for hot mix asphalt (HMA) pavement. Method of Measurement shall comply with ODOT Specification 409.05. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified.

4.05 10 100 Fabric Reinforcement for Hot Mix Asphalt Pavement

Provide Fabric Reinforcement materials for Hot Mix Asphalt Pavement in accordance with ODOT Subsections 712.01 "Reinforcement Fabric" & 708.03 "Asphalt Cement". Construction methods shall comply with ODOT Specification 409.04.

4.06 Hot Mix Asphalt (HMA)

This work consists of constructing one or more courses of bituminous mixture on the prepared foundation (roadbed or base) in accordance with ODOT Standard Specification Section 411, "Hot Mix Asphalt" and the specific requirements of the type under contract, and in reasonably close conformity with the lines, grades, thickness & typical cross sections shown on plans or existing field conditions.

Materials provided shall be in accordance with 2009 ODOT Standard Specification Section 708, "Plant Mix Bituminous Bases and Surfaces."

Select Mix appropriate for expected traffic loads, and Type proven to perform well in project location. Construction methods shall comply with ODOT Specification 411.04. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified. Refer to ODOT Subsection 411.06 for additional Basis of Payment notes.

4.06 10 100 Hot Mix Asphalt – Type "A" PG 62-22 OK, S3, S4, S5

Composition of Asphalt shall comply with 2009 ODOT Standard Specification Subsection 708.04.

4.07 Asphalt Patching

Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches (300 mm) into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Re-compact existing unbound-aggregate base course to form new subgrade.

Apply tack coat uniformly to vertical surfaces abutting or projecting into new, hot mix asphalt paving.

Allow tack coat to cure undisturbed before applying hot mix asphalt.

Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

Select appropriate HMA mix from Section 5.06, “Hot Mix Asphalt” that will provide a similar look and performance to the surrounding surface.

Fill excavated pavements with hot mix asphalt for full thickness of patch, and compact flush with adjacent surfaces while still hot.

Pay line items for “Patching” include relevant labor and material, except HMA, which will be paid in accordance with pay line items in Section 5.06, “Hot Mix Asphalt (HMA)”

4.07 10 100 Asphalt Patching

4.08 Cold-Milling

This work consists of cold-milling and removing pavement surfaces to the specified depth, and removing ridges, ruts, and imperfections in accordance with ODOT Standard Specification Section 412, “Cold-Milling.” Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified.

4.08 10 100 Cold-Milling

Construction method for cold-milling shall comply with ODOT Subsection 412.04.

4.09 Bituminous Crack/Joint Sealant

This work consists of the placement of bituminous crack/joint sealing compound

Application equipment shall, at a minimum, consist of the following:

Type A Sealant (Fiber-Fill Material) IN-PLACE

Fiber-Fill application shall be an indirect fired heater (hot oil medium) with a full sweep spiral agitation and mixing system to maintain thorough dispersion and suspension of fibers prior to and during extrusion application.

A pre-application batching unit to provide a continuous supply of properly blended materials to the application unit is required.

Type “B” Sealant (Modified AASHTO M173) IN-PLACE

Indirect fired, double boiler (oil bath) with a minimum capacity of 200 gallons and a self-contained hydraulic material pump. Boiler will also have automatic heat control with visual thermometers for both oil bath heat medium and that of the sealant material. Contractor shall maintain a minimum of two (2) application machines at each work location.

Cracks will be prepared for sealing on the same day that they are to be sealed and the surface of the pavement shall be dry at time of crack preparation and sealing operation.

Remove debris and vegetation from cracks or joints prior to placement of sealant.

Blow cracks or joints clean and dry with a minimum of 90 psi compressed. For Portland Cement Concrete (PCC) pavement joints, sand-blasting the vertical face of the sealant reservoir is required prior to blowing cracks with compressed air.

Place crack sealant material in cracks or joints using a pressurized wand delivery system with such devices as necessary to the cracks and form a maximum 1/8 inch thick by a minimum of 3 inch wide over seal band. The over seal band shall he centered so the center of the three (3) inch wide hand is within one (1) inch of the edge of the crack.

Remove any over spill or over filling- crack sealant material prior to initial set.

Care should be taken to not place sealant on top of pavement markings, manholes and drainage castings.

Ensure only properly proportioned materials are placed on the roadway cracks or joints, i.e. no unblended materials may be added to application machine while applying materials to roadway.

Select sealant type most appropriate for individual project to maximize performance.

Basis of Payment to include one or more of the following pay items as listed in Section 5.09 10-20 and all materials, equipment, labor & incidentals to complete work as specified.

4.09 10 100 Type A Sealant (Fiber-Fill Material)

Composition of Sealant - the crack/joint sealant shall consist of a mixture of no less than 8% by weight of polypropylene fibers (92% Asphalt Cement + 8% fiber = 100% mix).

Asphalt Cement - be PG 64-22, meeting section 708.03 of the ODOT Standard Specification. Additionally, Penetration, 77°F, 100g. 5 sec. should fall between 60 and 85.

Fiber - the fibers shall be the type specified and shall be specifically manufactured for use in bituminous concrete mixes. The fibers shall have a uniform singular shape, a uniform singular color of white to light gray, and shall meet the following requirements.

PHYSICAL PROPERTIES:	VALUE: TEST	PROCEDURE:
Materials:	polypropylene	
Denier	.00189"+/-.0004"	ASTM D – 1577
Length	10+/-2mm	
Crimps	None	ASTM D 3987-82
Tensile Strength	40,000 psi, min.	ASTM D 822-83
Elongation	33% minimum	ASTM D 2256-80
Specific Gravity	0.91	
Alkali Resistance	99% strength retained	40% NaOH solution @70˚Ffor 1000 hrs
Acid Resistance	99% strength retained	95% HCl solution @70˚F for 1000 hrs
Moisture Regain @ 70 degree F and 65% relative humidity		
Humidity	Less than 0.1%	ASTM D 2654- 76
Shrinkage	0% at 300˚F	C.T.L. temperature resistance test

Finish – Fibers are specially treated for use in asphalt, so as to provide maximum speed of dispersion in the Extrudamat process and maximum reinforcement in the seal. As designated in U.S. patent No. 5,441,812.

Certification: Each load of materials must have its own certificate of analysis or certification from the manufacturer proving it meets the required specifications.

4.09 10 200 Type B Sealant (Modified AASHTO M173)

The sealant shall be a single component, hot-applied mixture of paving grade asphalt, rubber (no ground cured scrap), and polymer modifier(s).

Sealant will be supplied in solid form and melted for application within accordance to ASTM D5078. Material shall not require additional heating time after it has reached the manufacturer's recommended application temperature. New material may be added to the material that has already been heated to proper application temperature.
Condition for all specimens as specified in ASTM D5329 for 24 hours (+/- 4hrs prior to testing) shall be as follows

TEST:	SPECIFICATION:
Cone Penetration (ASTM D5329)	30 – 90
Resilience @77˚F (ASTM D5329)	25% min., 60% max.
Softening Point (ASTM D36)	195˚F min.
Ductility @ 77˚F (ASTM D113)	30cm min.
Asphalt Compatibility (ASTM D5329)	PASS
Bitumen Content (ASTM D4)	60% min.

Tensile Adhesion (ASTM D5329)	500% min.

Product must have a warranty provided by both the Manufacturer and the Contractor.

4.09 20 100 Seal Coat (Flood Application)

The application of a seal coating is added after paving to protect the new pavement from the elements. This seal coat will be a polymer modified asphalt emulsion sealer such as Ultraseal Systems Type II or approved equal.

TEST	SPECIFICATION
Solids Content, (Non-Volatiles)%	54% - 60%
Ash Content of Solids, %	40% - 60%
Polymer/Asphalt Ratio	3% min
Specific Gravity @77 F	1.0 min
Adhesion	No Loss
Flexibility	No Cracking
Water Resistance	No Solubility
Heat Resistance	No Blistering/Sagging
Impact Resistance	No Chipping
Homogeneity	No Separation
Drying Time	8 Hours

4.10 Portland Cement Concrete Pavement

This work consists of constructing the following types of Portland cement concrete (PCC) pavement on a prepared base:

- Plain jointed (doweled or un doweled),
- Continuously reinforced,
- Bonded overlay (over existing PCC or hot mix asphalt (HMA) pavements), and
- Un bonded overlay (over existing PCC or HMA pavements).

Provide Materials in accordance with the following ODOT section/subsection:

Material	Subsection
Portland Cement Concrete	701
Fly Ash	702.01
Gravel Granulated Blast Furnace Slag	702.02
Steel Reinforcement, Dowel Bars & Tie Bars	723

Provide bent ties in accordance with AASHTO M31, “Deformed Billet Steel Bars for Concrete Reinforcement” Grade 40.

Provide placing & finishing equipment in accordance with ODOT Subsection 414.03(B). Basis of Payment to include pay items in Section 4.10 10-70. Refer to ODOT Subsection 414.06 for additional Basis of Payment notes.

4.10 10 100 P.C. Concrete Pavement Placement

Construction Method shall comply with ODOT Standard Subsection 414.04.

4.10 10 200 Dowel Jointed P.C. Concrete Pavement Placement

Construction Method shall comply with ODOT Standard Subsection 414.04.

4.10 10 300 Full Depth P.C.C. Patch Placement

Construction Method shall comply with ODOT Standard Subsection 414.04.

4.10 10 400 Partial Depth P.C.C. Patch Placement

Construction Method shall comply with ODOT Standard Subsection 414.04.

4.10 20 100 Portland Cement Concrete for Pavement

Construction Method shall comply with ODOT Standard Subsection 414.04.

4.11 Concrete Joint Sealing

This work consists of sawing, cleaning, and sealing joints in existing Portland cement concrete pavement. Provide sealant materials that are in accordance with ODOT Subsection 701.08. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified.

4.11 10 100 Hot Poured Joint Sealant

Construction method shall comply with ODOT Standard Specification 415.04.

4.11 10 200 Low Modulus Silicone Self Leveling Joint Sealant

Construction method shall comply with ODOT Standard Specification 415.04.

4.12 Diamond Grinding Concrete Pavement

This work consists of grinding Portland cement concrete (PCC) pavement to restore drainage and riding characteristics to the pavement. Provide equipment in accordance with ODOT Subsection 425.03. Construction Methods shall comply with ODOT Subsection 425.04. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified.

4.12 10 100 Diamond Grinding Concrete Pavement

Sawing and Sealing Joints will be paid in accordance with Section 5.11, "Concrete Joint Sealing." The cost of feathering to be included in the contract unit price.

Section 5 Incidental Construction

5.01 Integral Curb, Combined Curb and Gutter, Asphalt Curbing, and Header Curbing

This work consists of constructing integral curb, combined curb and gutter, asphalt curbing, and header. Provide materials in accordance with ODOT Subsection 609.02. Equipment shall comply with ODOT Subsection 609.03. Basis of Payment to include one or more of the following pay items and all materials, equipment, labor & incidentals to complete work as specified.

5.01 10 100 Concrete Curb

Construction method shall comply with ODOT Standard Specification 609.04

5.01 10 200 Combined Curb and Gutter

Construction method shall comply with ODOT Standard Specification 609.04.

5.01 10 300 Asphalt Curbing

Construction method shall comply with ODOT Standard Specification 609.04.

5.02 Sidewalks

This work consists of constructing concrete or asphalt sidewalks. Provide materials in accordance with the following ODOT Subsections:

Material	Subsection
Bituminous Mixture	708.04
P.C.C. Class A	701.01

Construction methods shall comply with ODOT Subsection 610.04. Basis of Payment shall include one or more of the following pay items. Refer to ODOT Subsection 610.06 for additional Basis of Payment notes.

5.02 10 100 Concrete Sidewalk

Portland Cement Concrete will be Class A concrete in accordance with ODOT Standard Specification Section 701, "Portland Cement Concrete."

5.02 10 200 Asphalt Sidewalk

Pay line item to include relevant labor and material, except HMA, which will be paid in accordance with pay line items in Section 5.06, "Hot Mix Asphalt (HMA)"

5.03 Drainage

This work consists of installing new or removing and reinstalling existing pipe conduits, including the following:

- Pipe underdrains at least 4 in [100 mm] in diameter; and
- Other pipe with inside diameter of at least 12 in [300 mm], used in storm drains and culverts, or drainage conduits not defined as bridges
- Pipe & End sections will be a cost plus 15% pay item to account for different sizes of pipe. Provide drainage conduit materials in accordance with Section 726 and the following ODOT Subsections:

Material	Subsection
Joint Filler	726.01.B
Standard Bedding Material	703.08
Cover Material for Pipe Underdrains	703.06

Basis of Payment to include one or more pay items as listed in Section 6.05. Refer to ODOT Subsection 613.06 for additional Basis of Payment notes.

5.03 10 100 Standard Bedding Material, Class C
Construction Methods & Measurement of Payment shall comply with ODOT Subsection 613.04 & 613.05.

5.03 20 100 Pipe Underdrain Cover Material
Construction Methods & Measurement of Payment shall comply with ODOT Subsection 613.04 & 613.05.

5.03 30 100 Trench Excavation
Construction Methods & Measurement of Payment shall comply with ODOT Subsection 613.04 & 613.05.

5.03 40 100 Perforated Trench Drain
Construction Methods & Measurement of Payment shall comply with ODOT Subsection 613.04 & 613.05.

5.03 40 200 Non-Perforated Trench Drain
Construction Methods & Measurement of Payment shall comply with ODOT Subsection 613.04 & 613.05.

5.04 Removal of Obstructions
This work consists of removing obstructions. Construction methods shall comply with ODOT Subsection 619.04. Basis of Payment to include one or more of the following pay items & materials, equipment, labor & incidentals to complete the work as specified. Refer to ODOT Subsection 619.06 for additional Basis of Payment notes.

Culvert & Sewer Pipe Removal will be a cost plus 15% pay item to account for different sized of conduit.

5.04 10 100 Removal of Asphalt Pavement
Construction methods shall comply with ODOT Subsection 619.04.

5.04 10 200 Removal of Concrete Pavement
Construction methods shall comply with ODOT Subsection 619.04.

5.04 10 300 Removal of Sidewalk
Construction methods shall comply with ODOT Subsection 619.04.

5.04 10 400 Removal of Curb and Gutter
Construction methods shall comply with ODOT Subsection 619.04.

5.04 10 500 Saw Cut Pavement
Construction methods shall comply with ODOT Subsection 619.04.

5.04 10 600 Removal of Fence
Construction methods shall comply with ODOT Subsection 619.04.

5.05 Mobilization

This work consists of the Contractor's preparatory operations, including moving personnel and equipment to the project site, and establishing the Contractor's offices, buildings, and facilities. Refer to ODOT Standard Specification Table 641.1 for maximum amount payable for mobilization pay item and subsection 641.06 for Basis of Payment Notes.

5.05 10 100 Mobilization, Less than 50 miles
To include moving personnel & equipment to the project site, & establishing contractor's offices, buildings & facilities.

5.05 10 200 Mobilization, 50 to 100 miles
To include moving personnel & equipment to the project site, & establishing contractor's offices, buildings & facilities.

5.05 10 300 Mobilization, 100 to 200 miles
To include moving personnel & equipment to the project site, & establishing contractor's offices, buildings & facilities.

5.05 10 400 Mobilization, More than 200 miles
To include moving personnel & equipment to the project site, & establishing contractor's offices, buildings & facilities.

5.05 20 100 Haul Rate
To include moving asphalt material to extended distance work site and maintain integrity of material.

Section 6 Traffic Control

6.01 Signs
This work consists of providing and erecting signs, including sheet aluminum and extended aluminum panel signs with a retro reflective or non-retro reflective sheeting background, and steel or aluminum sign bracket arms, bolts, and fittings. Provide materials in accordance with ODOT Subsection 850.02. Construction method shall comply with ODOT Subsection 850.04.
Signs will be measured by the area of the vertical front face with no deductions for rounded corners. Basis of Payment to include one or more of the following pay items & materials, equipment, labor & incidentals to complete the work as specified.

6.01 10 100 Sheet Aluminum Signs
Construction method shall comply with ODOT Subsection 850.04.

6.01 10 200 Extruded Aluminum Panel Signs
Construction method shall comply with ODOT Subsection 850.04.

6.01 20 100 Mast Arm Mounted Signs
Construction method shall comply with ODOT Subsection 850.04.

6.02 Galvanized Steel Sign Posts
This work consists of providing and constructing galvanized steel sign posts and footings. Provide materials in accordance with ODOT Subsection 851.02. Construction method shall comply with ODOT Subsection 851.04. Basis of Payment to include one or more of the following pay items & materials, equipment, labor & incidentals to complete the work as specified. The cost of sign post fittings shall be included in the unit price bid for pay item.

6.02 10 100 Galvanized Steel Wide Flange Beam Posts
Construction method shall comply with ODOT Subsection 851.04.

6.02 10 200 Galvanized Steel Pipe Posts
Construction method shall comply with ODOT Subsection 851.04.

6.02 20 100 Square Tube Post
Construction method shall comply with ODOT Subsection 851.04.

6.02 20 200 Flange Channel Posts
Construction method shall comply with ODOT Subsection 851.04.

6.02 30 100 Remove & Reset Existing Signs
Construction method shall comply with ODOT Subsection 851.04.

6.04 Wheel Stops
This work includes all labor and materials to install wheel stops

Provide wheel stops that are precast, air-entrained concrete, 2,500 psi (17.2-MPa) minimum compressive strength,
4 1/2 inches (115 mm) high by 9 inches (225 mm) wide by 72 inches (1800 mm) long. Provide chamfered corners, drainage slots on underside, and holes for anchoring.

Dowels for Anchoring: Galvanized steel, 3/4 inch (19 mm) diameter, 10 inch (254 mm) minimum length.

Install wheel stops in bed of adhesive as recommended by manufacturer.

Securely attach wheel stops to pavement with not less than two galvanized steel dowels embedded at one-quarter to one-third points. Securely install dowels into pavement and bond to wheel stop. Recess head of dowel beneath top of wheel stop.

6.04 10 100 Wheel Stops

Section 7 Pavement Marking

7.01 Pavement Marking, Paint
This work includes applying pavement marking for traffic control including hash out, arrows, words, and symbols. Provide materials in accordance with ODOT Subsection 854.02. Construction method shall comply with ODOT Subsection 854.04. Traffic stripes will be measured per foot of length using a 4" standard width. Arrows, words & symbols will be measured by each unit. Basis of Payment to include one or more of the following pay items & materials, equipment, labor & incidentals to complete the work as specified.

7.01 10 100 Stripe Paint, White
Construction method shall comply with ODOT Subsection 854.04.

7.01 10 200 Stripe Paint, Yellow
Construction method shall comply with ODOT Subsection 854.04.

7.01 10 300 Stripe Paint, Blue
Provide Blue pigment that meets Manual on Uniform Traffic Control Devices Color Specifications
Construction method shall comply with ODOT Subsection 854.04.

7.01 20 100 Arrow, Words, or Symbols, White
Construction method shall comply with ODOT Subsection 854.04.

7.01 20 200 Arrow, Words, or Symbols, Yellow
Construction method shall comply with ODOT Subsection 854.04.

7.01 20 300 Arrow, Words, or Symbols, Blue
Provide Blue pigment that meets Manual on Uniform Traffic Control Devices Color Specifications
Construction method shall comply with ODOT Subsection 854.04.

7.02 Pavement Marking Removal
Traffic stripes will be measured per foot of length using a 4" standard width. Arrows, words & symbols will be measured by each unit. Basis of Payment to include one or more of the following pay items & materials, equipment, labor & incidentals to complete the work as specified.

7.02 10 100 Pavement Stripe Removal
Construction method shall comply with ODOT Subsection 857.04.

7.02 10 200 Pavement Arrow, Words, or Symbol Removal
Construction method shall comply with ODOT Subsection 857.04.

Section 8 Miscellaneous

8.01 Civil Engineer
Provide plans and specifications sealed by Civil Engineer licensed by the State of Oklahoma for all projects in excess of one hundred and fifty-eight thousand dollars ($158,000.00), or when complexity of work requires. Deliver Sealed Plans and Specifications to the Department of Central Services, Construction and Properties Division prior to execution of Standard Form of Agreement Between Owner and Contractor as required for individual projects.

8.01 10 100 Civil Engineer Plans and Specifications with Professional Seal
Shall include all plans, specifications & documentation necessary to complete the work as required. Sealed Plans & Specifications are to be delivered to Construction and Properties Department.

8.02 Fire Marshall Review
Deliver Review to the Construction and Properties Department prior to execution of Standard Form of Agreement Between Owner and Contractor as required for individual projects.

8.02 10 100 Fire Marshall Review
Includes all plan review, meetings, work & fees necessary for Fire Marshall Approval.

8.03 Storm Water Pollution Prevention Plan
The Contractor is required to develop and implement a Storm Water Pollution Prevention Plan in accordance with the ODOT Storm Water Management Plan, Subsection 220.04.C and in compliance with the requirements of Section 401 and 404 of the Clean Water Act (Title 33 U.S.C. 1251 et seq.) and the Oklahoma Department of Environmental Quality (ODEQ) General Permit for Construction Activities concerning Storm Water Management. Refer to ODOT 2009 Specifications subsection 107.20.

8.03 10 100 Storm water Pollution Prevention Plan

8.04 Construction Staking
This work consists of providing, placing and maintaining construction layout stakes for the proper prosecution and inspection of the work

8.04 10 100 Construction Staking

8.05 Quality Control
Sampling and testing of Aggregates, Bituminous Mixtures and Asphalt materials in accordance with ODOT 2009 specifications listed in subsections 708.4 through 708.06.

8.05 10 100 Asphalt Quality Control

8.05 10 200 Concrete Quality Control

END OF SPECIFICATIONS

The requirements of the 2009 ODOT Specifications referenced in this Project Manual, supersede the requirements of the specifications contained in this Project Manual, should there be any conflict.