1. Covering and Cleaning: Cover and protect surfaces of rooms and spaces turned over for the Work, including the District's property remaining therein, as required to prevent soiling or damage by dust, dirt, water, fumes, or otherwise, and protect other areas where Work is performed in same manner, as deemed adequate by the District. Prior to District's re-occupancy of any such room or space, clean all surfaces including District's property in accordance with General Conditions and other cleaning instructions as may be specified in other Sections.

J. Use of District's Telephones: Do not use nor allow anyone other than District employees to use telephone in rooms and spaces turned over to Contractor for the Work except in the case of a bona fide emergency. Install temporary dial locks on telephone instruments to prevent all unauthorized use, or arrange and pay for temporary removal and reinstallation of instruments. Reimburse to the District all telephone toll charges originating from the telephones in such rooms and spaces except those arising from emergencies or use by District employees.

K. Welding: Conform to following requirements where welding is performed in or on existing facilities.

1. Protection During Welding: Conform to Title 8, CAC. Further protect occupants and the public with portable solid vision barricades around locations where welding is performed plus signs warning against looking at welding without proper eye protection, or equivalent.

2. Fire Extinguishers: Maintain a fully charged UL-labeled minimum 6 pound 40B:C dry chemical fire extinguisher at every location where welding is performed within or on the facilities.

3. Welding Smoke Control: Verify locations of existing smoke detectors. Perform welding operations by methods that produce the minimum feasible smoke and fumes. Furnish portable type smoke collection and ventilating equipment as required to prevent smoke and fume nuisances. Notify District at least 48 hours in advance if temporary deactivation of any smoke detector is required to prevent false alarms from the welding operations. The District's personnel will deactivate detectors only for the time welding is actually in progress.

4. Fire Prevention: Before welding, examine existing construction and backing for all combustible materials and finishes and for conditions where heat conduction in metals may bring adjoining materials to ignition temperature. Use positive fire prevention measures including temporary removal and reinstallation of combustible materials, installation of temporary shields and/or heat sinks, and other necessary means. When actual field conditions are such that positive fire prevention measures cannot be achieved, notify Architect and do not proceed with the involved work until receipt of Architect's instructions.

L. Protection of Floors: Use care to protect all floor surfaces and coverings from damage. Equip mobile equipment with pneumatic tires.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. General: When patching existing work in place, use materials that match existing materials in performance, thickness and finish.

PART 3 - EXECUTION

3.01 PROTECTION:

A. Glass: Provide such protection as may be required to prevent glass breakage for all glass to be reused or to remain. At no additional cost, replace in kind all broken glass.
B. Existing Work to Remain: Provide such forms of protection as may be necessary to prevent damage to and dust or dirt contamination of existing work and equipment to remain.
C. Items to be Reused: Exercise the greatest possible care when removing items scheduled for reuse. Use only mechanics skilled in the appropriate trades. Identify point of reuse, store and protect at locations directed.

D. If required due to damage, replace with new materials to match existing in same manner and technique originally utilized.

3.02 REMOVALS, ALTERATIONS, AND REPAIRS:

A. Basic Requirement: Restore and refinish all new and existing construction and improvements that are cut into, altered, damaged, relocated, reinstalled, or left unfinished by removals to original condition or to match adjoining work and finishes unless otherwise shown, specified, directed, or required. Workmanship and materials shall conform to applicable provisions of other Sections. Provide new fasteners, connectors, adhesives, and other accessory materials as required to fully complete approved reinstallations and restorations. Where restorations and refinishing are defective or are otherwise not acceptable to Architect, remove all the defective or rejected materials and provide new acceptable materials and finish at no extra cost to District.

B. Extent: Perform removals to extent required plus such additional removals as are necessary for completion even though not indicated or specified. More or less of the existing construction may be removed if such variation will expedite the work and reduce cost to the District, subject to prior approval in each case.

C. Removals: Carefully remove work to be salvaged or reinstall and store under cover.

3.03 MECHANICAL AND ELECTRICAL:

A. Demolish existing mechanical, plumbing and electrical items as indicated in the Drawings and Specifications.

3.04 REMOVED MATERIAL AND DEBRIS:

A. All removed material, not otherwise designated, and all debris becomes the property of the Contractor who shall remove it from the site and dispose of it in a legal manner.

B. Do not allow materials and debris generated by demolition activities to accumulate. Remove daily.

C. Leave all spaces broom clean with all ledges and corners properly cleaned.

END OF SECTION

SECTION 32 12 16 - ASPHALT PAVING

PART 1 - GENERAL

1.1 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.

B. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.2 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:

1. Prime Coat: Minimum surface temperature of 60 deg F (15.6 deg C).

2. Tack Coat: Minimum surface temperature of 60 deg F (15.6 deg C).
3. Slurry Coat: Comply with weather limitations in ASTM D 3910.
4. Asphalt Base Course: Minimum surface temperature of 40 deg F (4.4 deg C) and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 60 deg F (15.6 deg C) at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F (4.4 deg C) for oil-based materials or 55 deg F (12.8 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

PART 2 - PRODUCTS

2.1 ASPHALT MATERIALS

A. Provide materials of the class, grade, or type indicated on the Drawings, conforming to relevant provisions of Section 203 – Bituminous Materials of the Standard Specifications for Public Works Construction.

2.2 HEADERS AND STAKES

A. Concrete: Per Specification Section 321313.

B. Redwood

1. Headers: Redwood, Construction Heart Grade, size 2 x 6, unless otherwise indicated.
2. Stakes: 2 x 4 redwood or 2 x 3 Douglas Fir, Construction Grade.
3. Nails: Common, galvanized, 12d minimum.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to begin paving.

B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction**,** repeating proof-rolling in direction perpendicular to first direction. Limit vehicle speed to 3 mph (5 km/h).
2. Proof roll with a loaded 10-wheel, tandem-axle dump truck weighing not less than 15 tons (13.6 tonnes).
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by Architect, and replace with compacted backfill or fill as directed.

C. Proceed with paving only after unsatisfactory conditions have been corrected.

D. Verify that utilities, traffic loop detectors, and other items requiring a cut and installation beneath the asphalt surface have been completed and that asphalt surface has been repaired flush with adjacent asphalt prior to beginning installation of imprinted asphalt.

3.2 PATCHING

A. Hot-Mix Asphalt Pavement: 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. Recompact existing unbound-aggregate base course to form new subgrade.

B. Portland Cement Concrete Pavement: Break cracked slabs and roll as required to reseat concrete pieces firmly.

1. Pump hot undersealing asphalt under rocking slab until slab is stabilized or, if necessary, crack slab into pieces and roll to reseat pieces firmly.

2. Remove disintegrated or badly cracked pavement. Excavate rectangular or trapezoidal patches, extending into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Recompact existing unbound-aggregate base course to form new subgrade.

C. Tack Coat: Apply uniformly to vertical surfaces abutting or projecting into new, hot-mix asphalt paving at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

D. Patching: Fill excavated pavements with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.

E. Patching: Partially fill excavated pavements with hot-mix asphalt base mix and, while still hot, compact. Cover asphalt base course with compacted, hot-mix surface layer finished flush with adjacent surfaces.

3.3 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch (25 mm) in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches (75 mm) thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch (6 mm).

1. Clean cracks and joints in existing hot-mix asphalt pavement.
2. Use emulsified-asphalt slurry to seal cracks and joints less than 1/4 inch (6 mm) wide. Fill flush with surface of existing pavement and remove excess.
3. Use hot-applied joint sealant to seal cracks and joints more than 1/4 inch (6 mm) wide. Fill flush with surface of existing pavement and remove excess.

3.4 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd. (0.7 to 2.3 L/sq. m). Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

D. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd. (0.2 to 0.7 L/sq. m).

1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.5 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at minimum temperature of 250 deg F (121 deg C).
4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes unless otherwise indicated.
5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet (3 m) wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.6 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches (150 mm).
3. Offset transverse joints, in successive courses, a minimum of 24 inches (600 mm).
4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.7 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F (85 deg C).

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 96 percent of reference laboratory density according to ASTM D 6927 or AASHTO T 245, but not less than 94 percent nor greater than 100 percent.
2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.8 INSTALLATION TOLERANCES

A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:

1. Base Course: Plus or minus 1/2 inch (13 mm).
2. Surface Course: Plus 1/4 inch (6 mm), no minus.

B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot (3-m) straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch (6 mm).
2. Surface Course: 1/8 inch (3 mm).
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch (6 mm).

C. Traffic-Calming Devices: Compact and form asphalt to produce the contour indicated and within a tolerance of plus or minus 1/8 inch (3 mm) of height indicated above pavement surface.

3.9 SURFACE TREATMENTS

A. Fog Seals: Apply fog seal at a rate of 0.10 to 0.15 gal./sq. yd. (0.45 to 0.7 L/sq. m) to existing asphalt pavement and allow to cure. With fine sand, lightly dust areas receiving excess fog seal.
B. Slurry Seals: Apply slurry coat in a uniform thickness according to ASTM D 3910 and allow to cure.
1. Roll slurry seal to remove ridges and provide a uniform, smooth surface.

3.10 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.

B. Allow paving to age for 30 days before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).

1. Broadcast glass beads uniformly into wet pavement markings at a rate of 6 lb/gal. (0.72 kg/L).

3.11 FIELD QUALITY CONTROL

A. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
B. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
E. Replace and compact hot-mix asphalt where core tests were taken.
F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

3.12 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.
1. Do not allow milled materials to accumulate on-site.

END OF SECTION

SECTION 02300

EARTHWORK

PART 6 - GENERAL

1.01 SECTION INCLUDES:

A. Clearing and Grubbing.

B. Over-excavation and Re-compaction.

C. Excavation, Grading, Filling and Compaction of entire site.

D. Excavation, Backfilling, and compacting Backfill for pipe trenches.

E. Export of excess excavated materials.

F. Control of surface and ground water.

G. Clean up.

H. Testing and Inspection of Work of this Section.

1.02 RELATED WORK SPECIFIED ELSEWHERE:

A. Final preparation for asphaltic concrete paving areas.

B. Landscaping including planting and irrigation systems.

C. Storm Drainage, site water, sewer, and other site utilities.

1.03 QUALITY ASSURANCE

A. Codes and Standards: Perform work in this Section in compliance with all applicable requirements of governing authorities having jurisdiction.

1. Refer to Construction Safety Orders, Title 8, California Code of Regulations, Section 1503 and Article 6 (CCR); secure and pay for all required permits.

2. For off-site work, conform to all requirements of City of Glendale and any other agencies having jurisdiction. Coordinate and obtain all required permits and inspections.

3. Provide materials and perform work in compliance with the "Standard Specifications for Public Works Construction", current edition (PWC Specifications).

B. Professional Observation: A soils engineer will be retained by the Owner for purposes of inspection, testing and approval of all work under this section. Perform work of this Section under inspection and approval of the soils engineer. Give soils engineer not less than 48 hours advance notice of readiness for inspection.

C. Source Quality Control: Obtain written approval of the soils engineer of all imported fill material before material is brought to site. Obtain same approval of excavated material for use in fills or backfills prior to placing.

D. Comply with all requirements of permit for export of soil from site. Permit is to be obtained and paid for by Contractor. Furnish copies of all permits and licenses required by the City of Glendale to Owner's representative.

1.04 JOB CONDITIONS

A. Data: Maps, boring logs, geotechnical and foundation investigation reports, and like reference data, not included in Contract Documents but made available to Contractor by Architect or Owner are for information only, and the Architect and Owner assume no responsibility for any conclusions Contractor may draw from such information. Should questions or issues arise, contact Architect or Owner for clarification.

Contractor shall determine existing conditions under which the Contractor will operate in performing the Work.

B. Protection: Refer to CCR, Section 1503 and Article 6. Contractor shall secure permits. District will pay for all required permits. Provide and maintain protection as required by governing agencies to prevent injury to persons or damage to property.

1. Barricade open excavations and post with warning lights as recommended by authorities having jurisdiction.

2. Protect slopes, structures, utilities, sidewalks, pavement, and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

3. Noise and Dust Abatement: Exercise all reasonable and necessary means to abate dust and rising dirt. Perform necessary sprinkling and wetting of construction site to prevent nuisance. Exercise all reasonable and necessary means to abate undue noise.

C. Existing utilities: Locate existing underground utilities in all areas of work prior to excavation or commencement of work. If utilities are to remain in place provide adequate means of protection during earthwork operations.

1. Should uncharted, or incorrectly charted piping or other utilities be encountered during excavation, consult Utility Owner immediately for direction. Cooperate with Owner and Utility companies in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of Utility Company.

2. Do not interrupt existing utilities serving facilities occupied or used by Owner, or others, except when permitted in writing by Owner's Representative, and then only after acceptable temporary services have been provided.

3. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut off of services if lines are active.

D. Water for Grading: Contractor shall obtain and pay for all water required for his grading operation. This may include, but is not limited to, payment of deposits to utility for construction meter, and payment of all monthly service and water charges. Construction meter shall be in place throughout construction period unless alternative arrangements are made with the Water Department to provide construction water for all purposes. Contractor shall be aware of water moratoriums and restrictions, and shall immediately advise Owner of effects on construction schedules.

E. Use of Explosives: The use of explosives is not permitted.

F. Existing Conditions: Prior to commencing work at site, verify agreement of existing conditions with indicated conditions. Notify Owner's Representative in writing of discrepancies found. Start of work without notification constitutes acceptance of conditions, without cause for extra compensation.

PART 2 - PRODUCTS

2.01 MATERIALS: Provide approved imported material, as required, if the quantity of approved site and excavated materials are insufficient to complete the work.

A. Earthwork Materials: The Soil Engineer shall evaluate Excavated soils for re-use during grading. Approved excavated or imported material shall be granular soil such as silty sand of the non-expansive type with a liquid limit of 25 or less, a plastic index of 12 or less and be uniformly graded, containing not more than 30% (by weight) of

material passing the No. 200 sieve. All fill soil whether from on-site or imported shall be free from trash, roots, organic material, clay lumps, and rocks over 3" in size. Materials shall be from a legal export site only, in accordance with City of Glendale requirements. Materials shall be from a legal export site or obtain soils engineer's approval of material before bringing any of it onto project site.

B. Gravel Fill Material: Shall be from an approved source, having the following gradation: 90-100% passing a 3/4" sieve, 0% to 10% passing a No. 4 sieve, and 0% to 3% passing a No. 100 sieve.

C. Oversized Materials: Oversize material defined as rock or other irreducible material with a maximum dimension greater than 3" shall not be buried or placed in fills unless the location, materials and disposal methods are specifically approved by the soils engineer.

D. Topsoil: Friable loam, free of subsoil, roots, grass, weeds, stones larger than 1/2", and foreign matter. Topsoil, excavated or imported to be used in areas receiving planting, shall be of such quality as to support plant life. Refer to Section 01400 for required testing. Approval of topsoil by the Owner's representative will be required prior to placement.

PART 3 -EXECUTION

3.01 SITE CLEARING AND PREPARATION

A. Clearing and Grubbing:

1. Before starting grading/earthwork operations, remove trash including stairways, foundations pavements, underground utilities and strip all vegetation in work area, including roots, and remove all this debris to a legal offsite disposal area. Any buried debris or other contaminated material exposed during subsequent earthwork operations should also be removed.

2. For trees that are to be left standing, carefully and cleanly cut roots and branches that obstruct new construction. Use only hand methods for grubbing inside the drip lines of these trees. Excavations made for removal of any existing tree roots should be cleared of loose materials and backfilled with clean compacted soil.

3. All areas disturbed by clearing and grubbing operations or by surface soil removal shall be scarified to a minimum depth of 10" to 12" inches prior to placing new fill. The material shall be compacted to 90 percent maximum density, unless otherwise specified in accordance with ASTM Standard Test Material D-1557-S1.

4. The stripping work shall include the removal of loose fill that in the judgement of the Geotechnical Engineer, is compressible or contains significant voids. The stripping operation must expose a firm, non-yielding that is free of large voids. The exposed soils should be observed by the Geotechnical Engineer prior to the placement of any fill or sub-ballast.

5. All Oak Bay or Sycamore trees on the subject property and within 20 feet of all adjoining properties shall be identified on the site plans! The trees shall be identified by trunk diameter, 125% drip line and species. Call Parks, Recreation & Community Services at (818) 548-3736 for Tree fence inspection prior to commencing work.

   Prohibit trenching or continuous digging, grading (removing or adding soil) or storage of equipment or building materials within the drip line of the Oak & Bay Sycamore tree(s). Piers and grade beam footings shall not be required within the drip line *plus 25%* of the Oak & Bay Sycamore tree(s). (The 125% Drip line shall be defined as that area where the branches stop or terminate *and* shall be equal to 125% of the distance of the line from the trunk to the farthest leaf drip point.) The leaf drip line for each tree shall be measured and confirmed by the contractor in the four major compass directions. The soil in the 125% drip line area under the trees shall remain fenced off from the construction work and shall remain undisturbed.)

B. Demolition:

1. Remove all structures indicated on the drawings as "To Be Removed", and dispose of debris in a legal offsite disposal area.

3.02 EXCAVATION

A. General:

1. Adverse Subsurface Conditions: Immediately notify District Inspector should unsuitable bearing soil or other adverse subsurface conditions be found which are not indicated by the Drawings or Specifications.

2. Engineered fill beneath and the upper two feet of sub-grade for pavement structural sections should be compacted to at least 95 percent relative compaction as per ASTM D1557. Engineered fill beneath slab-on-grade, pavements, walkways, and backfill along foundations and behind retaining walls should be compacted to at least 90 percent relative compaction. All fill and backfill, structural or non-structural should be placed in loose lifts less than 8 inches thick and moisture conditioned to 1 to 2 percent above optimum moisture content prior to compaction. Compaction tests should be performed every 2 to 18 vertical inches and/or 500 cubic yards of fill, or as determined necessary by the field engineer to verify adequate compaction and ensure proper soil-water content.

   All fill and backfill in the vicinity of structures and retaining walls should consist of on-site soils, excluding clay fills with high plasticity and/or moderate to high expansion potential. For planning purposes of estimating earthwork quantities, the existing soil will compress an average of approximately 10 percent when water conditioned and placed in as an engineering fill.

3. Unauthorized Excavation: If excavations are carried below the elevations indicated without written authorization, the Contractor shall provide satisfactory construction and compaction if necessary to correct the fault as approved by the Soils Engineer at no extra cost to Owner.

4. Excavations and Cut-slopes: Excavations and Cut-slopes shall be examined during grading by the soils engineer. If required, further excavation, over-excavation and refilling, and/or remedial grading of cut slopes shall be performed as directed by the Soils Engineer. Where fill-over-cut slopes are to be graded, unless otherwise approved, the cut portion of the slopes shall be made and approved by the Soils Engineer prior to placement of materials for construction of the fill portions of the slopes. Care should be taken to avoid spillage of loose material down the face of slopes. All loose material shall be removed from the face and toe of slopes prior to completion.

5. Construct all slopes in a workmanlike manner so that they are positioned at their design orientation and slope ratio. Achieving a uniform slope surface by subsequent thin wedge filling will not be allowed. Any add-on correction to a fill slope shall be conducted under the direction and recommendation of the Soils Engineer. The completed face of all exposed fill slopes shall be either overfilled then cut back to a firm compacted surface or, compacted by track rolling or some other acceptable method.

6. Contractor will take care to avoid erosion or unwanted runoff of slopes or debris due to existing irrigation systems or adverse weather.

B. Structures:

1. Perform excavation to a minimum depth of 60” below the depth of foundations and to the dimensions and elevations indicated on drawings within a tolerance of 0.10 feet. Provide additional space as required for the installation of services, the performance of other construction work as required, the inspection of the various types of work, and the installation and stripping of forms, except where approval may be given by the Owner's Representative to deposit certain miscellaneous concrete directly against earth banks. Avoid loosening of soils in bottoms and sides of excavations.

2. Foundations shall be placed at a minimum depth of 18" below the adjacent grade for both interior and exterior footings (bottom of slab at interior). Continuous footings shall have a minimum width of 18". The foundations shall bear on a minimum of five feet of engineered fill.

C. Retaining Walls:

1. Retaining wall foundations shall be a minimum of 24" into competent material and shall be a minimum of 24" in width.

D. Existing Utilities:

1. Excavations made for the removal of existing underground structures, etc., should be cleared of loose material and backfilled with clean, approved, compacted soil in accordance with these specifications.

E. Protection:

1. Provide adequate cribbing, sheathing and shoring as necessary to safely retain the earth sides of all excavations and trenches from caving and other damage resulting from excavating and/or erosion. Provide suitable forms of protection against property damage and bodily injury to personnel employed on the work and the general public.

   The design, installation and maintenance of required cribbing and shoring shall be entirely that of the Contractor and shall meet the approval of the State Division of Occupational Safety and Health, and the local governing agencies.

2. It shall be the Contractor's full responsibility to furnish and maintain all temporary barricades, warning lights, and other types of protection and prevent accidental injury to the general public and all personnel employed on the project.

3.03 GRADING, GENERAL:

A. Uniformly grade all areas within the limits of this project, including adjacent transition areas. Smooth grade the finished surfaces within the tolerances specified in this Section, and grade with uniform slopes between points where elevations are shown, or between such points and existing grades.

B. Grading Outside Building Lines: Grade areas adjacent to building lines to drain away from structures and to prevent ponding. Where grades are not indicated, grade uniformly level or slope between points for which elevations are given. In absence of more specific grading information, ground shall slope away from building for a minimum distance of 20 feet and a minimum slope of 2 percent. Grade trenches and other drainage flow lines to slope uniformly to avoid standing water.

C. Finished surfaces shall be free from irregular surface changes and shall be constructed to the line, grade and cross section as shown on the plans or as specified herein. Tolerances for these finished surfaces are as follows:

1. Lawn or unpaved areas: 0.10' above or below required elevation; playfields and contour-graded landscape areas may be finished to looser tolerances where required to balance earthwork or blend finished areas, subject to approval by Owner's representative.

2. Walks, Pavements and Building Pads: .05' above or below required sub-grade.

3.04 FILL/BACKFILL, GENERAL

A. The Contractor shall backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including, where applicable, damp proofing, water proofing, and perimeter installation.

2. Inspection, testing, approval, and recording locations of underground utilities.

3. Removal of concrete formwork.

4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structure or utilities, if required.

5. Removal of trash and debris.

6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

B. Placement and Compaction: Place fill or backfill materials in layers not more than 8" in loose depth and compacted to at least 90% of maximum dry density.

1. Before compaction, moisten or aerate each layer as necessary to provide a moisture content above 1 to 2 percent of optimum.

2. The upper 24" of pavement sub-grade shall be compacted to at least 95% of relative compaction per ASTM D1557.

3. Engineered fill beneath foundations shall be compacted to at least 95% relative compaction per ASTM D1557.

4. Place backfill materials evenly, adjacent to structures, piping, or conduit. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately same elevation in each lift.

C. Compaction and Moisture Testing: The soils engineer will perform field tests to check the moisture content and the degree of compaction. The locations and frequency of the test will be taken at the soils engineer's discretion.

3.05 TRENCH EXCAVATION AND BACKFILL: Trenching operations for all underground conduits, and related systems shall be performed under the provisions of this Section. Provide trench shoring, sheeting and bracing in conformance with Title 8 of the California Code of Regulations.

A. Trenches: Excavate trenches to width required for proper installation of underground systems with banks as nearly vertical as practical. Bring bottoms of trenches to required depth, all accurately graded to provide uniform bearing on undisturbed soils for the entire length of each section of piping or conduit, except where necessary to excavate for pipe bells or for pipe bedding indicated or specified in other sections.

B. Remove soft or moving trench bottom soils down to firm native ground, and replace with crushed rock or pea gravel as approved by the soils engineer to provide firm, stable sub-grade. Trench width shall include a minimum clearance on both sides of pipe or conduit of one half the pipe diameter, unless otherwise specified.

C. Where rock is encountered, carry excavation 6" below required elevation and backfill with a 6" layer of crushed rock or pea gravel as approved by the soils engineer prior to installation of pipe.

D. Where utility trenches fall within the zone of influence of footings as defined on the Structural plans, contractor shall deepen footings, relocate piping, or, if approved by the Soils Engineer, modify trench/backfill conditions, materials, or methods, all at no additional cost.

E. The pipe haunches shall be carefully backfilled with bedding material (clean sand, approved granular soil, or other material specified). This bedding material shall be brought to a depth of at least one foot over the top of pipe. The bedding material shall be uniformly tamped and compacted to 90% Maximum Relative Density. Jetting or water flooding will not be allowed unless specifically approved by the Owner's Representative. Refer to specific utility sections for additional or more restrictive bedding requirements.

F. On-site materials or other soils approved for backfill by the soils engineer shall be watered and mixed as required to obtain a moisture content within 2% of optimum prior to placement in lifts over the bedding material. All backfill shall be done under the supervision of soils engineer and shall be compacted to at least 90% of the Maximum Relative Density as determined by ASTM D1557. The backfill shall be placed in lifts appropriate to the type of compaction

equipment being utilized. Trench backfill compaction by jetting or flooding is not permitted unless approved in advance by the Owner's Representative and provided that all excess water can be safely and completely removed from the work area.

G. Field density tests and inspection of the backfill procedures shall be made by the soils engineer during backfilling to see that the proper moisture content and uniform compaction is maintained. The Contractor shall provide test holes and exploratory pits as required by the soils engineer to enable sampling and testing.

H. Cracking or settlement of paving and finish materials over utility trench locations shall be conclusive proof of trench failure. The Contractor at no additional cost to the Owner shall complete removal and re-compaction of the trench and replacement of damaged paving as required.

I. Temporary excavations with vertical side slopes within the onsite soils are expected to be generally stable to a maximum height of 5 feet provided they are free of adverse geologic conditions. Excavations deeper than 4 feet should be shored or sloped back to 1 to 1 or flatter if construction workers are to enter such excavations. Excavations below the ground water table will likely require special equipment and/or techniques (i.e. shoring, dewatering, etc.).

3.7 DEWATERING: Prevent surface water, subsurface or ground water from flowing into excavations and from flooding project site and surrounding area. Do not allow water to flow into City storm drains unless designated as approved disposal point for water runoff. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of sub-grades and foundations. Provide and maintain pumps, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.

3.8 CLEAN UP: Clean up and remove all trash, debris, waste, and surplus and rejected earthwork materials from the Owner's property to a legal disposal area. Conform to pertaining laws, codes and regulations, obtain and pay for hauling and dumping permits, pay all dumping charges, and furnish receipts to Owner's Representative upon demand. Remove planks used to protect surfaces subject to public traffic at finish of each day's operations. Maintain public streets and sidewalks in broom clean condition.

A. Comply with all Environmental Agency regulations relating to the spillage of oil-based products and other environmentally hazardous materials.

3.9 MAINTENANCE

A. Install and maintain all erosion control devices, including sandbag and gravel bag dikes, silt fences, de-silting basins, inlet barricades, vehicle wash traps, and other features called for on the storm water pollution prevention plan (SWPPP) required per Section 01055. Maintain a copy of the approved SWPPP on jobsite, and make it available for inspection by authorized individuals at all times.

B. Reconditioning Compacted Areas: Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape to required tolerances, and compact to required density prior to further construction.

3.110 DISPOSAL OF EXCESS AND WASTE MATERIALS

A. Waste Material:

1. Remove waste materials, including unacceptable excavated material, trash and debris, and dispose of it in a legal disposal site away from Owner's property. Advise Owner's representative of dump location, and provide receipts for each load of material leaving site.

B. Excess Material:

1. The contractor shall export all excess materials excavated from project site.

2. Contractor will be responsible for delivering acceptable imported material to the site stockpile and placing it as directed by the Soil Engineer.

END OF SECTION

CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Reinforcing steel for cast-in-place concrete and concrete masonry units. Supports and

B. accessories for steel reinforcement.

1.2 RELATED SECTIONS

A. Section 03 10 00 - Concrete Forms and Accessories. Section 03

B. 30 00 - Cast-in-Place Concrete.

c. Section 03 45 00 - Architectural Precast Concrete: Reinforcement for precast concrete panels. REFERENCES

1.3 ACI 301 - Specifications for Structural Concrete for Buildings; American Concrete Institute International.

A. ACI 318- Building Code Requirements For Reinforced Concrete and Commentary; American Concrete Institute International.

B. ACI SP-66 - ACI Detailing Manual; American Concrete Institute International.

c. ASTM A 82- Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.

D. ASTM A 184/A 184M - Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement.

E. ASTM A 185- Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete. ASTM A 497/A 497M-

F. Standard Specification for Steel Welded Wire Reinforcement, Deformed, for Concrete.

G. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel 1;3ars for Concrete Reinforcement.

H. ASTM A 704/A 704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement.

I. ASTM A 706/A 706M- Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement.

J. ASTM A 996/A 996M -Standard Specification for Rail-Steel and Axle-Steel Deformed Bars for Concrete Reinforcement.

K. AWS D1.4 - Structural Welding Code- Reinforcing Steel; American Welding Society.

L.

M. California Code of Regulations (CCR) Title 24 California Building Code (CBC). 2010 Edition. N. CRSI (DA4)-

Manual of Standard Practice; Concrete Reinforcing Steel Institute.

O. CRSI (P1)- Placing Reinforcing Bars; Concrete Reinforcing Steel Institute.

1.4 SUBMITTALS

A. Shop Drawings: Only when deviations are made from the contract documents, submit shop drawings under provision of Section 01 33 13 with deviations clearly identified.

1. Indicate sizes, spacings, locations and quantities of reinforcing steel, wire fabric, bending and cutting schedules, splicing, stirrup spacing, supporting and spacing devices.

B. Manufacturer's Certificate: Certify that reinforcing steel and accessories supplied for this project meet or exceed specified requirements.

C. Reports: Submit certified copies of mill test report of reinforcement materials analysis, indicate physical and chemical analysis.

D. Welders Certificates: Submit certifications for welders employed on the project, verifying AWS qualifications within the previous 12 months.

1.5 QUALITY ASSURANCE

A. Perform work of this section in accordance with CRSI (DA4), CRSI (P1), ACI 301, and ACI SP-66.

B. Tests of Reinforcing bars shall be in conformance with 2010 CBC Sections 1916A.2 and 1704A.4.1.

PART 2 - PRODUCTS

2.1 REINFORCEMENT

A. Reinforcing Steel: ASTM A 615/A 615M Grade 60.

1. Deformed billet-steel bars.

2. Unfinished.

B. Reinforcing Steel: ASTM A 706/A 706M, deformed low-alloy steel bars.

1. Unfinished.

C. Steel Welded Wire Reinforcement: ASTM A185/A 185M, plain type.

1. Welded Wire Mat Reinforcing: mesh size and gage as indicated on drawings. D. Steel

Welded Wire Reinforcement: ASTM A 497, deformed type.

1. Flat Sheets.

2. Mesh Size and Wire Gage: As indicated on drawings.

E. Reinforcement Accessories:

1. Tie Wire: Annealed, minimum 16 gage acceptable patented system.

2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement, including load bearing pad on bottom to prevent vapor barrier puncture.

3. Provide stainless steel, plastic, or plastic coated steel components for placement within 1 %" of weathering surfaces.

2.2 FABRICATION

A. Fabricate concrete reinforcing in accordance with CRSI (DA4)- Manual of Standard Practice.

B. Welding of reinforcement, in conformance with 2010 CBC Section 1903A.7 with Table 1704A.3, is permitted only with the specific approval of Structural Engineer. Perform welding in accordance with AWS D1.4.

C. Obtain approval from the architect/engineer for additional reinforcing splices not indicated on drawings.

PART 3 - EXECUTION

3.1 PLACEMENT

A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.

B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.

C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

D. Do not displace or damage vapor barrier.

E. Accommodate placement of formed openings.

3.2 FIELD QUALITY CONTROL

A. An independent testing agency, as specified in Section 01 40 00, will inspect installed reinforcement for conformance to contract documents before concrete placement.

END OF SECTION

MASONRY

1.01 SUMMARY

A. Principal Work Items Are:
   1. Masonry Work:
      a. Concrete unit masonry.
   2. Mortar.
   3. Work Installed But Furnished By Another Section:
      a. Setting steel reinforcement for masonry.
      b. Setting rough hardware and other embedded items.

B. Related Work:
   1. Requirements in Addenda, Alternates, Conditions, and Division 1 collectively apply to this work.
   2. Furnishing fabricated rebar for masonry: Section 03 21 00, Steel Reinforcement.
   3. Furnishing and setting rebar dowels in concrete for masonry: Section 03 21 00, Steel Reinforcement.
   4. Cast-In-Place Concrete: Section 03 30 00.
   5. Furnishing rough hardware and other embedded items: Respective Sections.
   6. Filled Cell Concrete Masonry High Lift Grout Method: Section 04 05 16.

1.02 SUBSTITUTIONS

Only written approval of the Architect will permit substitutions for materials specified. Refer to General Conditions and Section 01 25 13 - Product Options and Substitutions for procedure.

1.03 QUALITY ASSURANCE

A. Design Criteria; Formwork, Shoring, Scaffolding, and Protection:
   1. The Contractor shall be solely responsible for items and shall:
      a. Design, construct, and maintain items to safely support loads.
      b. Obtain Governing Agency approval, when such is required.

B. Testing Agency: District designated Testing Laboratory.

C. Requirements of Regulatory Agencies; Codes: Conform to Part 2, Title 24, CCR; and CBC, 2010 Edition.

D. Tests and Inspection; General: Refer to Section 01 45 00, Quality Control and Testing Services.

E. Allowable Tolerances; Surface Smoothness: 1/8" maximum permissible variation from a true plane measured from a 10' straight edge placed at any point on the surface.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Storage; Mortar and Grout Materials:
   1. Cement: Store in weather tight enclosures and protect against dampness, contamination, and warehouse set.
   2. Aggregates: Stockpile and handle to prevent contamination by other materials.
   3. Admixtures:

a. Store to prevent contamination, evaporation or damage.

b. Protect liquid admixtures from freezing or harmful temperature range.

c. Agitate emulsions prior to use.

B. Masonry Units:

1. Stack on pallets to break contact with earth, and permit air circulation.
2. Protect from weather and wetting prior to use.
3. Handle to prevent chipping and damage.

1.05 JOB CONDITIONS

A. Environmental Requirements; Temperatures: Do not lay masonry units when air temperatures are below 40°F. Protect masonry construction from direct exposure to wind and sun when erected in an ambient air temperature of 90°F (37°C) in the shade with relative humidity less than 50%.

B. Protection:

1. Protect masonry work from rain or snow for 24 hours after erection.
2. Protect masonry work from too rapid drying in hot dry weather.

C. Sequencing, Scheduling: Coordinate work with concrete, foundation dowels, steel, framing, Specifications Sections furnishing embedded items, steel reinforcement, and other related work.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General:

1. Conform to Codes, and additional requirements stated herein.
2. Conform to Title 24, CBC Section 2103A, Masonry Construction Materials.

B. Concrete Unit Masonry:

1. Hollow Load Bearing Units:

a. ASTM C90, Type 1, Grade N, center scored exposed faces, precision units.

b. Nominal face dimension: 8" x 16"; thickness as shown on Drawings.

c. Units shall be medium weight, open end units.

d. Units shall have a compressive strength of not less than 2,000 pounds per square inch when tested in accordance with ASTM C140-10.

e. Units shall have a net ultimate compressive strength of not less than 1,500 pounds per square inch when subjected to a prism test in accordance with ASTM C1314-10 per Section 2105A.1.2.3 of CBC, Title 24.

2. Hollow Non-Load Bearing Units:

a. ASTM C129-10, Type 1, centered scored exposed faces, precision units.

b. Nominal face dimension: 8" x 16"; thickness as shown on Drawings.

c. Medium weight units.

3. Provide all bond beams, pilasters, lintels and other shaped units as indicated on the Drawings.

4. Joint Reinforcement: All masonry is required to be reinforced. Provide required width and place at every other course, continuous around corners and though intersections - 9 gauge Dur-o-Wall in truss design.

C. Mortar and Grout for Concrete Unit Masonry:

1. Portland Cement:

a. Type II, low alkali; per Title 24, CBC 2010 Edition, Section 2103A.8, and shall conform to ASTM C210-10.

b. Use tested cement only. Use same cement brand for all exposed work. Do not use mortar cement or plastic cement.

c. Color: Gray, unless otherwise noted.

2. Aggregates:
    a. *General: Per Title 24, Section 2102A.2, 2010 CBC.*
    b. *Sand for Mortar: Based on ASTM C144.*
    c. *Coarse aggregate grout shall be used in grout spaces 2 inches (51mm) or more in width and in all filled-celled masonry construction per 2103A-12.3 CBC Title 24.*
    d. *Pea Gravel for Grout: Per CBC Section 2103A.4 for Coarse Aggregate (which is based on ASTM C404).*
3. Water: Clean, fresh, potable water, free of injurious amounts of minerals, organic substances, salts, acids, or alkali.
4. Hydrated Lime: Based on ASTM C207-06; Type
5. Admixtures: Must be approved by the Division of the State Architect.
    a. *For High-Lift Grout: Sika Grout Aid, manufactured by Sika Corp; Lyndhurst, NJ; 1-800-933-7452, or approved equivalent.*

D. Wire Wall-Ties for Concrete Unit Masonry.
1. No. 9 wire size; formed into rectangles, 4" wide, with a length which is 2" less than the wall width.
2. No kinks, deformations or water drips permitted.

E. Non-Shrink Grout:
1. Provide non-shrink grout at embeds, dowels and other steel reinforcements in concrete. New concrete shall be cured for a minimum of seven days. Surfaces coming in contact with non-shrink grout shall be completely dry and entirely free of oil, grease, laitance or other foreign substances.
2. General purpose non-shrink grouting shall be performed with Five Star Non-Shrink Grout as manufactured by Five Star Products Inc.; Fairfield, CT; 800-243-2206, or approved equivalent. Submit information verifying that the non-shrink grout submitted exhibits the following properties.
    a. *Working Life: The mixed grout system shall have a minimum working life of 45 minutes at 75°F.*
    b. *Non-shrink: No shrinkage (0.0%) and a maximum 4.0% expansion when tested in accordance with ASTM C-827/C-827M-10.*
    c. *Effective Bearing Area: The grout shall exhibit a minimum EBA of 95%. This test shall consist of filling a 2" diameter x 4" high metal cylinder mold covered with a glass plate treated with a release agent. A weight shall be placed on the glass plate. At 24 hours after casting, the weight and plate shall be removed and the surface of the grout shall be probed with a sharp instrument to locate voids.*
    d. *Peak Exotherm: The peak exotherm of a 2" diameter by 4" cylinder shall not exceed 110 ℉ when tested with 75 ℉ material at laboratory temperature.*
    e. *Compressive Strength: The hardened grout shall attain a minimum compressive strength of 5,500 psi in 24 hours and 7,000 psi in seven days when tested according to ASTM C-579-01 (2006), Method B.*
    f. *Thermal Coefficient: The grout shall exhibit a maximum thermal coefficient of 30 x 10-6 in./in./ ℉ when tested according to ASTM C-531-00 (2005) or ASTM D-696-99 (2005).*
3. Epoxy grout shall be stored in a cool, dry place in accordance with the manufacturer's recommendations. Components shall be conditioned to 70°F to 80°F prior to use.

2.02 MIXES (CONCRETE UNIT MASONRY)

A. Mortar:
1. General: Per Title 24, Section 2103A.8 and 2103A.10, Type S.
2. Strength: 1,800 psi minimum at 28 days.
3. Proportions: By dry loose volume.
    a. *Portland Cement: 1 part*
    b. *Sand: 3 1/2 parts*
    c. *Water: To provide a workable mix.*
    d. *Dry Hydrated Lime: 1/4 part must be added.*

B. Grout:

1. General: Per Title 24, Section 2103A.12.2.
2. Strength: 2,000 psi minimum at 28 days.
3. Proportions: By dry loose volume.

a. Fine Grout

Portland Cement:	1 part
Sand:	3 parts
Water:	To produce consistency for pouring without admixture for high-lift grout
Admixture High-Lift Grout:	Sika Grout Aid Type II/sack cement.

b. Coarse Grout: Composed of fine grout with 2 parts pea gravel added.

c. Hydrated Lime: 0 - 1/10 by volume for masonry construction. CBC Section 2103A.12.

C. Mixing Mortar and Grout:

1. Measuring:
   a. Measure accurately by volume using suitable calibrated devices.
   b. Do not measure by shovel.
   c. Definition: 1 part cement = 94 lbs. = 1 sack.
2. Equipment: Drum-type mechanical batch mixer, at least 1 sack capacity.
3. Mixing:
   a. General: Do not mix partial batches, unless partial sacks of cement are weighed.
   b. First Stage Mixing:
      1) Load sand/aggregate, then cement, then water into mixer.
      2) Mechanically mix 2 minutes minimum.
   c. Second Stage Mixing:
      1) For mortar, add lime.
      2) For grout, add admixture.
      3) Mechanically mix until thoroughly blended into a uniform mass; but not less than 10 minutes.
4. Retempering (Mortar Only):
   a. Retemper only by forming a mortar basin, adding water, and carefully working mortar into water.
   b. Do not retemper by dashing water over mortar.

PART 3 - EXECUTION

3.01 PREPARATIONS

A. Layout: Accurately layout work to properly position all elements to lines, planes, levels, modules, and patterns.
B. Shoring: Erect shoring, bracing, centering as required to support work at openings and spans.
C. Cutting: Use masonry saws to cut and fit masonry units.

D. Preparation of Construction Joints: Prior to joining fresh masonry to set or partially set masonry construction, clean existing exposed surfaces and remove loose mortar.

3.03 INSTALLATION

A. General:

1. Lay as Reinforced Hollow Unit Masonry per Title 24, CBC Section 2104A.5.1.2; all cells filled with grout.
2. Units to be sound, clean, free of cracks, chips, defacement, dry when laid. Such imperfections in completed work are cause for rejection.
3. For exposed work, all units to be full-length typically; but in no case less than 1/2 length, unless specifically indicated otherwise.
4. Set units plumb, true to line, level courses, accurately spaced to module and pattern, plumb square corners, uniform joints.
5. Any mortar or grout unused within one hour after initial mixing shall not be used.

B. Laying Units:

1. Bottom Course:
   a. *Lay level, establish module.*
   b. *Lay with full mortar coverage on bottom of unit.*
   c. *Keep grout cell areas free of mortar, so grout will bond to foundation.*
2. Lay with full mortar coverage on horizontal and vertical face shells.
3. Fill head joints solid for a 2" minimum distance in from face of unit, and shove tight.
4. Do not furrow mortar.
5. Adjust masonry unit to final position while mortar is soft and plastic.
6. If units must be reset after mortar has stiffened, remove, clean joints and units of mortar. Relay with fresh mortar.
7. Cells:
   a. *Maintain vertical alignment.*
   b. *Keep free of overhanging mortar and droppings.*
   c. *Maintain clear unobstructed minimum area of 2" x 3" from top to bottom; 3" x 3" for high-lift grout method.*
8. Lay accent units to stacked joint alignment with 1/4" width at cast-on face.
9. Stopping Work:
   a. *If necessary to stop off a horizontal run of masonry, rack back each course.*
   b. *Toothing is not permitted.*
10. Adjust shelf angles to keep masonry level and at proper elevation.
11. Fill jambs and head of hollow metal frames with mortar.
12. Reinforce as shown on Structural Drawings.

C. Pattern and Joining:
   1. Exposed Masonry:
      a. *Pattern: To match existing masonry walls.*
      b. *Module and Joint Dimensions: 8" face x 3/8" nominal joint.*
      c. *Joint Treatment: Rake to depth of score; flat tool smooth.*
   2. Concealed Masonry:
      a. *Pattern: Running bond.*
      b. *Module and Joint Dimensions: Match exposed work.*
      c. *Joint Treatment: Cut flush with trowel.*
   3. Jointing; General:
      a. *Tool when mortar is partially set, but still sufficiently plastic to bond.*
      b. *Use tool which compacts mortar by pressing out excess, not dragging out excess.*
      c. *After tooling, finished joints to have a smooth, hard, dense surface with edges well bonded to block.*

minimum; but not less than 1/2" in any case.

D. Steel Reinforcement:
   1. General:
      a. *Install as work progresses.*
      b. *Install straight bars, except where bends and hooks are indicated.*
      c. *Install horizontal bars in bond beam units.*
      d. *Center bars in grout space typically, unless otherwise detailed.*
      e. *Maintain required clearances and spacings.*
      f. *Embed all bars firmly in grout.*
      g. *Prior to placement and/or grouting, bars to be clean.*
   2. Vertical Rebar: Hold firmly in place with frames or suitable devices; maximum spacing 192 bar diameters.
   3. Laps and Splices:
      a. *Splice only where indicated.*
      b. *Minimum Lap: See Structural Drawings.*
      c. *Wire tie lap splices to prevent displacement.*
4. Clearances between Masonry Unit and Rebar: One bar diameter

E. Embedded Items:
   1. Place accurately; anchor securely to prevent displacement.
   2. Coordinate, notify, and provide access for other Specifications Sections to set their required work.
   3. Solidly grout around items with minimum 1" grout surrounding.

F. Grouting:
   1. Grout Type:
      a. Fine Grout: For grout spaces 2" or less.
      b. Coarse Grout: For grout spaces exceeding 2".
   2. Grouting Method:
      a. High-Lift Method: For lifts exceeding 2'. Refer to Section 04 05 16.
   3. Grouting; General:
      a. Assure that grout cells, and foundation surfaces and/or horizontal construction joints are clean of mortar, drippings, and other deleterious material.
      b. Grout beams over openings in one continuous operation.
      c. Fully embed horizontal steel in one continuous operation.
      d. Mechanically vibrate during and after placement to ensure complete filling of all voids, and grout consolidation.
      e. Stop grout 1" below top of masonry joint when grouting is to be stopped for one hour or more.
      f. Grout all cells solid.
   4. High-Lift Method; Refer to Section 04 05 16:
      a. Conform to CBC, Section 2104A.5.1.2, and DSA IR 21-2.
      b. Provide cleanout openings at bottom of each pour.
      c. Seal cleanouts after inspection, and prior to grouting.
      d. Provide barriers to control horizontal flow of grout.

G. Curing: Keep masonry continuously damp for three days minimum after laying.

H. Bracing and Shoring Removal: Do not remove until masonry has hardened sufficiently to permit safe removal, and support imposed loads including its own weight.

I. Epoxy Grout Installation:
   1. Forms and Control Joints: Make forms liquid tight using putty or caulking compound to seal joints. Areas where bond is not desired must be treated with paste or auto wax, polyethylene, or resin release agent. Control joints should be placed on 3' to 4' centers. For pours deeper than 4" thickness, contact manufacturer.
   2. Mixing: Pour all Component B (Hardener) into pail containing Component A (Resin). Mix thoroughly by hand or low speed mixer. Pour all mixed material into mortar box, mortar mixer or wheelbarrow. Add 100 lbs. (one bag) Five Star Epoxy Grout Aggregate or approved equivalent and mix only until all aggregate is wetted and no dry pockets remain. Follow printed instructions on each package.
   3. Methods of Placing: Non-shrink grout should be placed from one side to avoid air entrapment. Rods and plungers may be used to facilitate placement.
   4. Post-Placement Procedures: Do not wet cure non-shrink grout. It is a self-curing material. Surfaces, equipment, and tools may be cleaned with lacquer thinner, trichloroethylene, ketones, or similar solvent before grout hardens, in-service operation may begin immediately after minimum required grout strengths have been achieved. Final finishing of exposed surfaces is aided by applying a very light mist of solvent just before material becomes unworkable.

3.04 MORTAR BEDS

A. Hollow Units:
   1. Lay with full mortar coverage on horizontal and vertical face shells.
   2. Provide full mortar coverage on horizontal and vertical face shells and webs in all courses of the following.
      a. Piers, columns and pilasters.
      b. Starting course on footings and solid foundation walls.
      c. Where adjacent to cells or cavities to be filled with grout.

B. Solid Units: Lay with full mortar coverage on horizontal and vertical joints.

3.05 PROTECTION OF WORK

A. Protect sills, ledges and offsets from mortar drippings or other damage during construction.

B. Remove misplaced mortar or grout immediately.

C. Cover the top of walls with non-staining waterproof coverings when work is not in progress.

D. Provide minimum 2' overhang of protective covering on each side of wall and securely anchor.

E. Protect face materials against staining.

3.06 BUILT-IN WORK

A. Avoid cutting and patching after laying units.

B. Install bolts, anchors, nailing blocks, inserts, frames, vents, flashings, conduit and other built-in items as masonry work progresses.

C. Solidly grout spaces around built-in items.

D. Provide outside joint around exterior door and windows frames and other framed wall openings:
   1. Width shall be 1/4" (6 mm.) to 3/8" (9 mm.).
   2. Rake and tool smooth to a uniform depth of 1/4".

3.07 CHASES

A. Build chases in, do not cut.
B. The minimum installation distance from jambs of openings shall be one concrete masonry unit length.

3.08 FIELD QUALITY CONTROL

A. General: Refer to Specifications Section 01 45 00, Quality Control and Testing Services, for detailed information on required inspections and tests.
B. Inspections:
    1. Placement of Steel reinforcement.
    2. Laying and grouting units.
C. Tests:
    1. Making compression tests of mortar and grout.
    2. Core tests of finished work.
    3. Masonry prism tests.

3.09 POINTING AND CLEANING

A. Keeping Glaze Clean: Wipe off mortar smears and spatters at once, using clean, soft, damp rags. Do not allow hardening.
B. Cut out and repoint defective joints.
C. Dry brush masonry surface after mortar has set, at the end of each day's work and after final pointing.
D. Leave work and surrounding surfaces clean and free of mortar spots and droppings.

3.10 FINISH

Site paint per Section 09 90 00.

END OF SECTION

PART 8 - EXECUTION

4.01 USE OF PREMISES

A. CONTRACTOR shall coordinate Work of all trades, Subcontractors, utility service providers, with OWNER and/or Separate Work Contract. CONTRACTOR shall sequence, coordinate, and perform the Work to impose minimum hardship on the operation and use of the existing facilities and/or Project site. CONTRACTOR shall install all necessary protection for existing improvements, Project site, property, and new Work against dust, dirt, weather, damage, vandalism, and maintain and relocate all protection to accommodate progression of the Work.

B. CONTRACTOR shall confine entrance and exiting to the Project site and/or facilities to routes designated by the DISTRICT

C. Within existing facilities, OWNER will remove portable equipment, furniture, and supplies from Work areas prior to the start of Work. CONTRACTOR shall cover and protect remaining items in areas of the Work

D. CONTRACTOR is advised school may be in session during performance of the Work. CONTRACTOR shall utilize all available means to prevent generation of unnecessary noise and maintain noise levels to a minimum. When required by the DISTRICT, CONTRACTOR shall immediately discontinue noise-generating activities and/or provide alternative methods to minimize noise generation. CONTRACTOR shall install and maintain air compressors, tractors, cranes, hoists, vehicles, and other internal combustion engine equipment with mufflers, including unloading cycle of compressors. CONTRACTOR shall discontinue operation of equipment producing objectionable noise as required by the DISTRICT.

E. CONTRACTOR shall furnish, install, and maintain adequate supports, shoring, and bracing to preserve structural integrity and prevent collapse of existing improvements and/or Work modified and/or altered as part of the Work.

F. CONTRACTOR shall secure building entrances, exits, and Work areas with locking devices as required by the DISTRICT.

G. CONTRACTOR assumes custody and control of OWNER property, both fixed and portable, remaining in existing facilities vacated during the Work.

H CONTRACTOR shall cover and protect surfaces of rooms and spaces in existing facilities turned over for the Work, including OWNER property remaining within as required to prevent soiling or damage from dust, dirt, water, and/or fumes. CONTRACTOR shall protect areas adjacent to the Work in a similar manner. Prior to OWNER occupancy, CONTRACTOR shall clean all surfaces including OWNER property.

I. CONTRACTOR shall not use or allow anyone other than OWNER employees to use facility telephones and/or other equipment, except in an emergency. CONTRACTOR shall reimburse OWNER for telephone toll charges originating from the facility except those arising from emergencies or use by OWNER employees.

J. CONTRACTOR shall protect all surfaces, coverings, materials, and finished Work from damage. Mobile equipment shall be provided with pneumatic tires.

K. CONTRACTOR is advised OWNER will award Separate Work Contracts at this Project site.

L. CONTRACTOR shall not permit the use of portable and/or fixed radio's or other types of sound producing devices including walk mans and similar devices.

4.02 PROPERTY INVENTORY

A. Property, OWNER intends to remove; will be removed by OWNER before a room or space is vacated for the Work. Before performing Work in each room or space, DISTRICT and CONTRACTOR shall prepare a detailed initial written inventory of OWNER property remaining within, including equipment and telephone instruments and the condition thereof. DISTRICT and CONTRACTOR shall retain a signed copy of the inventory dated and signed by both parties. Prior to subsequent OWNER occupancy of each such room or space, DISTRICT and CONTRACTOR shall perform a final inventory of OWNER property and all discrepancies between the initial inventory and final inventory shall be the responsibility of CONTRACTOR.

4.03 FURNITURE, FIXTURES AND EQUIPMENT (MATERIALS) OWNER FURNISHED CONTRACTOR INSTALLED (OFCI)

A. Certain materials identified in the Contract Documents as OWNER Furnished CONTRACTOR Installed, OFCI, will be delivered to the Project site by the OWNER.

B. If designated in the Contract Documents to be OWNER furnished CONTRACTOR installed, (OFCI), and CONTRACTOR shall unload, store, uncrate, assemble, install, and connect OWNER supplied materials.

C. Forty Eight (48) hours before the date the CONTRACTOR needs to have the OFCI materials on site, CONTRACTOR shall notify OWNER of the scheduled date for needed OFCI materials. Upon delivery to Project site, CONTRACTOR shall store OFCI materials inside rooms and/or protected spaces and will be responsible for security of OFCI materials until Substantial Completion. DISTRICT will sign receipt or bill of lading as applicable.

D. CONTRACTOR shall, within one (1) day after delivery, uncrate and/or unpack OFCI materials in presence of OWNER who shall inspect delivered items. OWNER shall prepare an inspection report listing damaged or missing parts and accessories. OWNER shall transmit one (1) copy of the report to CONTRACTOR. OWNER will procure and/or replace missing and or damaged OFCI materials, as indicated in inspection report.

E. CONTRACTOR shall install OFCI materials in the locations and orientation as indicated in the Contract Documents. CONTRACTOR shall verify exact locations with DISTRICT before final installation of OFCI materials.

F. If required, DISTRICT will furnish setting and or placement drawings for OFCI materials.

G. CONTRACTOR shall install OFCI materials by proper means and methods to ensure an installation as recommended by the manufacturer. CONTRACTOR shall furnish and install all necessary fasteners and required blocking to properly install OFCI materials.

H. CONTRACTOR shall install OFCI materials with manufacturer recommended fasteners for the type of construction to which the OFCI materials are being fastened and/or anchored.

I. CONTRACTOR shall provide final connections of any electrical, signal, gas, water, waste, venting and/or similar items to OFCI materials. CONTRACTOR shall, prior to final connection, verify the operating characteristics of OFCI materials are consistent with the designated supply.

J. . General: All such work indicated in Contract Documents and/or specified herein.

k. Coordination:

1. Contractor shall schedule and coordinate Owner work with his work; give 5 days min. advance notice of all dates; verify that Owner work has been accomplished prior to beginning his work

L. Owner Furnished Items or Products (IF ANY):

1. Owner Responsibilities:

a. Delivery of items or products to site.

b. Schedule delivery date with supplier in accord with Contractor's schedule.

c. Obtain installation drawings and instructions.

d. Submit claims for transportation damages.

e. Arrange guarantees, warranties.

2. Contractor's Responsibilities:

a. Schedule required delivery date for each product, and inform Owner.

b. Promptly inspect delivered products, report damaged or defective items.

c. Unload; handle at site, including uncrating and storage.

d. Protect from exposure to elements, from damage.

e. Repair or replace items damaged as result of Contractor's operations.

f. Install, connect, finish products.

B. The Contractor shall provide adequate storage within his fenced staging area, to store the equipment. The Contractor is solely responsible for the storage of this equipment within his staging area and all subsequent movement of this equipment. The Contractor shall be solely responsible for the maintenance and protection of all material.

C. Bidders submitting under this Contract shall include the price for all necessary coordination with the District and the equipment manufacturer, as required for proper and complete coordination between all trades and all Contractors, within their bid.

4.04 WORK BY OTHERS

A. The District reserves the right to do other work in connection with the project or adjacent thereto by contract or otherwise, and Contractor shall at all times conduct the work so as to impose no hardship on District or others engaged in District's work nor to cause any unreasonably delay or hindrance thereto.

B. Where two or more Contractors are employed on related or adjacent work, each shall conduct their operation in such a manner as not to cause delay or additional expense to the other.

C. Contractor shall be responsible to others engaged in the related or adjacent work for all damage to work, to persons, or for loss by failure to finish the work within the specified time for completion. Contractor shall coordinate his work with the work of others so that no discrepancies shall result in the project.

PART 9 – GENERAL NOTES

5.01 GENERAL NOTES

A. Work areas and detailed scope of work are shown under PART 2.01.

B. It is the responsibility of the contractor to examine the site of the work and after investigation to decide for himself the character of materials, equipment and utilities to be encountered and all other conditions affecting

the work. It is also his responsibility to provide sufficient costs to cover the provisions of all items of work under the existing conditions referred to herein.

C. CONTRACTOR is responsible to review the AHERA – Inspection reports for any presence of asbestos containing materials (ACM). CONTRACTOR shall immediately notify OWNER of the presence or suspected presence of any ACM found during the course of the work, prior to the disturbance of the subject materials. At the sole direction of the OWNER, contractor may be required to stop all work on all or any portion of the project until ACM materials are properly abated by OWNER.

C. All work areas have available access. The Contractor will be issued keys for the sites through the District Facilities and Support Operations Department to allow access at the sites. Contractor will ensure they secure all areas that are accessed by their personnel to ensure the security of the site.

D. Contractor shall provide trash bins and storage facilities for use at the site. The contractor shall not use school facilities for these purposes. It will be the contractor's responsibility to maintain and keep those facilities neat and clean at all times.

E. There may be other contractors or District workers working at the job site. Contractor will be responsible to coordinate his work with their schedules.

F. The Representative will have the right to stop the work immediately in case he sees a discrepancy or work not following the specifications. The contractor will not be let to continue to work until corrections are made and approval and permission given by the District Representative.

5.02 RESTRICTIONS

A. Use of the Site: Limit use of the premises to work in areas indicated. Confine operations to areas within contract limits indicated. Do not disturb portions of the site beyond the work areas in which the work is indicated. Allow for Owner occupancy and use by the public.

B. Use of the Existing Buildings: Repair damages caused by construction operations. Take all precautions necessary to protect the existing buildings and their occupants during the construction period.

C. Driveways and Entrances: Keep driveways and entrances serving the premises clear and available to the Owner, the Owner's employees, other contractors working, and emergency vehicles at all times.

D. Full Owner Occupancy: The Owner may occupy the site and existing buildings during the entire construction period. Cooperate with the owner during construction operations to minimize conflicts and facilitate owner usage. Perform the work so as not to interfere with the Owner's operations.

5.03 PERMISSIBLE WORKING DAYS AND HOURS

A. Work may be conducted as follows:

B. This school is on a traditional school year calendar, August through June. During the period of this contract, school events and educational requirements will limit or prevent access, and will affect Contractor work hours for a portion or all of the school building (s) pertinent to the contract. Contractor shall maintain schedule with full knowledge of these times and dates to be determined. A site-specific calendar will include currently known dates of limited access, or times of the school day that noise will have to be limited, or ceased. These shall include during the time of the project, but not be limited to:

1. No work after 6:00 p.m. on six (6) weekday evenings for back-to-school, open house, and other events per school year at each school site.

2. No work between 8:00 a.m. and 10:00 a.m. on five (5) student attendance weekdays for assembly events per school year.

3. NO NOISE/WORK will be allowed on an Elementary school site between 8:00 a.m. and 12:30 p.m. on twelve (12) student attendance weekdays for testing (four (4) consecutive weekdays, three times) per school year. Second shift work may be accommodated with the request pre-approved by the District Project Manager.

4. NO NOISE/WORK will be allowed on a Middle School or High School site between 8:00 a.m. and 1:30 p.m. on twenty (20) student attendance weekdays for testing (four (4) consecutive weekdays during the first semester; sixteen (16) consecutive weekdays during the second semester) per school year. Second shift work may be accommodated with the request pre-approved by the District Project Manager.

C. It shall be noted that there are students in the Early and Extended Education Learning Program in attendance on the Elementary school sites from 6:00 a.m. through 6:00 p.m. on a daily basis throughout the school year, and on each day that Classified Staff are assigned working hours (see specific EEELP calendar for each site, per each school year).

D. Work hours for the Project shall be from 7:00 a.m. until 10:00 p.m. Monday through Saturday, unless advance permission to deviate from these hours is obtained from the City of Glendale per Glendale Municipal Code, Title 8, Chapter 36, and this request is also approved in writing five working days beforehand by the District Project Manager.

E. Subject to local ordinances, CONTRACTOR may work any hours on Saturdays, Sundays, and any non-school session days, when written notification to the District has been submitted and the anticipated schedule of work has been approved.

SECTION 01 74 10

CLEANING

PART 10 - GENERAL

10.01 SECTION INCLUDES:

A. Maintain premises and adjacent public and private properties free from accumulations of waste, debris, and rubbish, caused by operations during the project.

B. At completion of Work, remove waste materials rubbish, tools, equipment, machinery and surplus materials, and clean all exposed surfaces; leave project clean and ready for occupancy.

PART 10.2 - PRODUCTS

10.2.01 MATERIALS:

A. Use only cleaning materials recommended by the manufacturer of surface to be cleaned.

B. Use cleaning materials only on proper surfaces recommended by the manufacturer.

PART 10.3 - EXECUTION

10.3.01 DURING CONSTRUCTION:

A. Execute daily cleaning plans from each trade to ensure that buildings, grounds, and public and private properties are maintained free from accumulations of waste materials, rubbish and trash on a daily basis.

B. Wet down dry materials and rubbish to prevent blowing dust and debris on and from the construction work.

C. Daily, during progress of work, clean construction site and utilized public properties, and dispose of waste materials, debris and rubbish.

D. Provide on-site steel dump containers and appropriately sized trash containers for collection of waste materials, debris and rubbish. DO NOT USE SITE CONTAINERS.

E. Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off the District's property.

F. Vacuum clean and wet wipe interior building walls, floors, doors, windows, and hardware in preparation for and when ready to receive finish preparation and painting. Continue vacuum cleaning on an as-needed basis until building is ready final inspection by the Architect, Inspector, and Project Manager and determined to be ready for substantial completion and occupancy.

G. Handle materials in a controlled manner to minimize any unnecessary waste or debris emanating from the construction areas. Do not drop or throw materials from heights: rather, a closed chute shall be used, to minimize unnecessary dust, waste or debris from the construction area.

A. Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not migrate into new equipment or furniture, or onto wet, newly painted, or finished surfaces.

10.3.02 FINAL CLEANING:

A. Employ experienced workmen, or professional cleaners, for final cleaning.

B. Exterior: Clean surfaces of the construction and site including, but not limited to, fixtures, walls, soffits, floors, hardware, roofs, window and opening ledges and sills, horizontal projections, steps and platforms, walkways, rails and all like surfaces, and adjoining private and public property to the extent soiled by the Contractor's operations.

C. Interior: Leave all horizontal and vertical surfaces in vacuum cleaned, wet-wiped condition with all dust, dirt, stains, hand marks, paint spots, droppings, and other blemishes and defects completely removed, and conform to the following requirements:

1. Hard Floors: Freshly administer specified product sealants, and Wet mop/wash and dry, concrete, Portland cement flooring, tile, elastomeric, epoxy, refinished and colored concrete, and similar hard floor surfaces free of dust, streaks or stains.

2. Resilient Flooring: Freshly wax and buff as specified in Section 09 65 00.

3. Wood Flooring: Remove defects and blemishes by sanding surface and painting according to Section 09 90 00.

4. Resilient Bases: Clean off adhesive smears and wipe clean with wet-wipe methods.

5. Unpainted and Painted Surfaces: Clean of dust, lint, streaks or stains, utilizing wet-wipe methods as necessary.

6. Tile Walls: Clean and polish per manufacturer's specifications.

7. Hardware and Metal Surfaces: Clean and polish all exposed surfaces using non-corrosive and nonabrasive materials.

8. Glass: Wash and polish both sides, and leave free of dirt, spots, streaks, and labels. Clean and polish mirrors.

9. Ceilings: Clean and free of stains, hand marks, and defacing.

10. Replace air conditioning filters as specified in Mechanical Specifications.

11. Clean ducts, blowers and coils, if air conditioning units are found to have been operated without filters during construction, and after final inspection.

12. Lighting fixtures: Replace lamps and clean fixtures and lenses if fixtures or lamps are dirty or have smudges or dust.

13. Fixtures and Equipment: Clean and polish mechanical and electrical fixtures and like items. Leave lighting fixtures free of dust, dirt, stains or waste material. Clean and service equipment and machinery, leaving ready for use.

14. Surfaces Not Mentioned: Clean according to the intent of this Section and as required for Architect's approval.

E. Contaminated Earth: Final clean-up operation includes the removal and disposal of earth that is contaminated

or unsuitable for support of plant life in planting areas, and filling the resulting excavations with suitable soil as directed and approved by the Architect, Inspector, and/or Project Manager.

Contaminated areas include those used for disposal of waste concrete, mortar, plaster, masonry, paints, and similar materials, and areas in which washing out of concrete and plaster mixers or washing of tools and like cleaning operations have been performed, and all areas and adjacent areas that have been oiled, paved, or chemically treated.

Do not dispose of waste, oil, solvents, paints, solutions, or like penetrating material by depositing or burying on School property; dispose of such material in a lawful manner.

END OF SECTION