PROJECT MANUAL

for

Waterford High School
Parking Lot Upgrades

Located at

121 South Reinway Ave.
Waterford, CA 95386

for

Waterford Unified School District
219 North Reinway Ave, Bldg. 2
Waterford, CA 95386

Date: March 4, 2019

Waterford High School
Parking Lot Upgrades

TABLE OF CONTENTS

END TABLE OF CONTENTS

SECTION 02 41 00

SITE DEMOLITION

PART 1 – GENERAL

1.01 INCLUSION OF OTHER CONTRACT DOCUMENTS

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Not Applicable.

1.03 REGULATORY REQUIREMENTS

A. Conform to applicable jurisdictional authority regulations and codes for disposal of debris.

B. Coordinate clearing Work with utility companies.

C. Maintain emergency access ways at all times.

D. Contractor shall comply with all applicable laws and ordinances regarding hazardous materials, including contaminated soils, hazardous material transformers, and similar materials or components.

1.04 SUBMITTALS

A. Schedule: Submit a detailed sequence of demolition and removal work, including dates for shutoff, capping, and continuance of utility services.

B. Procedures: Submit written procedures documenting the proposed methods to be used to control dust and noise.

1.05 EXISTING CONDITIONS

A. Contractor shall acquaint himself with all site conditions. If unknown active utilities are encountered during work, notify Architect promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.

B. Conduct demolition to minimize interference with adjacent structures or items to remain. Maintain protected egress and access at all times.

1.06 PROTECTION

A. Adequate protection measures shall be provided to protect workmen and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations.

B. In accordance with generally accepted construction practices, the Contractor shall be

solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.

C. Safety Precautions Prevent damage to existing elements identified to remain or to be salvaged, and prevent injury to the public and workmen engaged on site. Demolish roofs, walls and other building elements in such manner that demolished materials fall within foundation lines of building. Do not allow demolition debris to accumulate on site. Pull down hazardous work at end of each day; do not leave standing or hanging overnight, or over weekends.

D. Protect existing items which are not indicated to be altered.

a. Protect utilities designated to remain from damage.

b. Protect trees, plant growth, and features designated to remain as final landscaping as shown on drawings.

c. Protect bench marks from damage or displacement.

E. Trees: Carefully protect existing trees that are to remain. Provide temporary irrigation as necessary to maintain health of trees.

F. Fire Safety: The contractor shall conform to chapter 33 of the California Fire Code (CFC), "Fire Safety During Construction and Demolition", at all times during the construction process. A copy of this chapter can be provided.

G. Any construction review of the Contractor's performance conducted by the Geotechnical Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

H. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. The contractor shall make a reasonable effort on a daily basis to keep all excavations and the site free from water during entire progress of work, regardless of cause, source, or nature of water.

I. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.

J. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance. Dust control measures shall be in accordance with the local jurisdiction.

PART 2 - PRODUCTS

Not Used

PART 3 – EXECUTION

3.01 EXAMINATION

A. Examine conditions of work in place before beginning work; report defects.

B. Report existence of hazardous materials or unsafe structural conditions.

3.02 PREPARATION

A. Scheduling:

1. General: Coordinate and schedule demolition work as required by the Owner and as necessary to facilitate construction progress.

B. Hazardous Materials:

1. General: Identify chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations, and notify such jurisdictional agencies as may be required. Collect and legally dispose of such materials at official disposal locations away from the site.

2. Asbestos: If asbestos or materials containing asbestos are encountered, stop work immediately and contact the Owner. Do not proceed with demolition until directed by Owner.

C. Utility and Service Termination

1. Locate and identify existing utility, service and irrigation system components affected by work of this contract. Review existing record drawings, conduct site investigations, contact Underground Service Alert and other qualified cable/pipe/line locator services, and implement all other means necessary to define the location of underground systems.

2. Prior to beginning any demolition, properly disconnect all water, gas and electrical power supply at appropriate disconnect locations. Obtain all necessary releases and approvals from serving utility companies.

3. Prior to demolition or disconnect, obtain Owners approval that such system does not impact facilities or systems beyond the extent of this contract.

4. Mark location of disconnected systems. Identify and indicate stub-out locations on Project Record Documents.

D. Verify that existing plant life and features designated to remain are tagged or identified.

1. The Architect will mark the features, trees, and shrubs to remain within the construction area. Contractor shall not commence clearing and grubbing operations until authorized by the Owner and all protective measures are in place.

E. Coordinate the time and duration of all system disconnects with Owner.

3.03 DEMOLITION

A. General Requirements

1. Clear areas required for access to site and execution of Work, including pavements, structures, foundations, vegetation, trash and debris.

2. Coordinate with Owner the time of day and route to remove demolished materials from premises.

3. Remove demolished materials from site as work progresses. Upon completion of work, leave areas of work in clean condition.

4. Remove all buried debris, rubble, trash, or other material not deemed suitable by the Geotechnical Engineer.

5. Fill all voids or excavations resulting from clearing, demolition, or removal of vegetation with specified fill material.

B. Fixture and Equipment Removal:

1. Remove existing fixtures and equipment as identified and shown on drawings and required by Architect.

2. Verify all service connections to fixtures and equipment designated for removal have been properly disconnected.

3. Remove all conductors from conduit at all abandoned circuits.

3.04 UTILITY AND BUILDING SERVICES REMOVAL AND RE-INSTALLATION

A. Where crossing paths and potential points of interference with existing utility services are shown or can be reasonably inferred from surface conditions or evidence of subsurface systems, such as meter boxes, vaults, relief vents, cleanouts and similar components.

1. Review all contract documents showing crossing paths and potential points of interference.

2. Pot-hole or determine by other means the accurate depth and location of such utilities.

3. Incorporate all costs required to complete work under this contract, including additional trenching, re-routing of existing and new utilities, and all means necessary to construct work under this contract.

4. No additional cost to the Owner will be allowed for work necessary to accommodate utility conflicts where such crossing paths are shown on contract drawings or can be reasonably inferred from surface conditions or components.

B. Remove all conductors from conduit at all abandoned electrical circuits.

C. Seal off ends of all piping, drains and other components as directed by Architect and serving utility.

D. Where necessary to maintain service to existing utility and building systems, relocate or redirect all conduit and conductors, piping, drains, and associated system components.

1. Re-circuit all electrical as required.

2. Re-circuit all landscape irrigation valving and control systems as required.

3. Temporarily terminate landscape system components in approved boxes or with approved caps, suitable for re-connection or extension.

4. Extend or otherwise modify all site drainage systems, including catch basins, drain inlets and piping. Fine grade to maintain proper drainage flow pattern to drains.

E. Demolish structure in an orderly and careful manner.

1. Use of explosives prohibited.

3.05 SITE PAVEMENT REMOVAL

A. Remove sidewalk and curb where required for new construction as specified and as indicated on the Drawings.

1. Remove all paving by saw-cutting.

2. Remove concrete paving and curbing at locations shown on drawings. Locate closest adjacent expansion or weakened plane joint to define start of removal or saw-cutting.

B. Remove asphalt concrete paving areas where required for new construction as specified and as indicated on the Drawings.

1. Remove all paving by saw-cutting.

2. Remove paving assembly as required to expose subgrade.

3.06 LANDSCAPE AND IRRIGATION SYSTEMS DEMOLITION AND RENOVATION

A. Clearing, grubbing, and planting demolition.

1. Remove grass and grass roots to a minimum depth of two inches below existing grade.

2. Remove all shrubs, plants and other vegetation within the area of the work unless designated to remain. Grub and remove all roots of all vegetation to a depth of 24 inches below existing grade.

3. Remove only those trees which are specifically designated for removal, or as shown on the drawings, within the construction area. Remove all stumps. Remove root ball and root systems larger than 1 inch in diameter to a depth of two feet below existing or finished grades, whichever is lower and a minimum of five feet beyond the edge of paving, structure, wall or walkway.

4. Hand cut existing tree roots over 1 inch in diameter as necessary for trenching or other new construction, apply multiple coats of emulsified asphalt sealant especially made for horticultural use on cut or damaged plant tissues to cut faces and adjacent surfaces. Cover exposed roots with wet burlap to prevent roots from dying out until backfilling is complete.

5. Discing and mixing of vegetation, trash, debris, and other deleterious materials with surface soils prior to grading is not permitted.

6. Remove all buried debris, organic material, rubble, trash, or other material not deemed suitable by the Geotechnical Engineer.

7. Fill all voids or excavations resulting from clearing, demolition, or removal of vegetation with fill material in compliance with Section 310000.

8. Selected equipment of such sizes and capacities that the existing environment is disturbed as little as possible, and to afford ease of mobility within limited and relatively confined work areas. Make every effort to preserve the topography in its natural state.

9. Keep drains, catch basins, surface drainage courses and related drainage system components clear of debris and construction materials.

3.07 DISPOSAL

Demolished materials become property of the Contractor and shall be removed from premises, except those items specifically listed to be retained by Owner.

A. Dispose of all demolished material, trash, debris, and other materials not used in the work in accordance with the regulations of jurisdictional authority.

B. It is recommended that all materials that are of a recyclable nature, be transported to a suitable legal recycling facility instead of a dump or refuse facility (unless they are one-in-the same).

C. Burning and Burying of Materials: NOT ALLOWED.

D. Haul Routes:

1. Obtain permits as required by jurisdictional agencies. Establish haul routes in advance; post flagmen for the safety of the public and workmen.

2. Keep streets free of mud, rubbish, etc.; assume responsibility for damage resulting from hauling operations; hold Owner free of liability in connection therewith.

E. Remove demolished materials and debris from site on a daily basis.

3.08 CLEANING

A. Upon completion of work of this Section promptly remove from the working area all scraps, debris.

B. Clean excess material from surface of all remaining paved surfaces and utility structures.

C. Power wash all concrete surfaces to remove stains, dried mud, tire marks, and rust spots.

END OF SECTION 02 41 00

SECTION 10 14 00

SIGNAGE

PART 1 – GENERAL

1.01 SECTION INCLUDES

A. Provision and installation of exterior informational signs including signs for accessible features and regulatory signs.

B. Support posts.

1.02 RELATED SECTIONS

A. The requirements of the General Conditions apply to all work of this Section.

1.03 RELATED CODES AND STANDARDS

A. Accessible signs shall conform with the following requirements as indicated:

1. California Building Code (CBC) Title 24, 2016 Edition.

2. ADA Accessibility Guidelines (ADAAG, latest adopted edition).

3. Contracted Grade 2 Braille shall be used whenever Braille symbols are specifically required (CBC Section 11B-703.3 Braille).

4. Means of Egress Identification: CBC 11B-216.1 &11B-703.1.

5. Tactile Exit Signs: CBC 1011.4.

6. Restroom Identification Symbols: CBC 11B-216.8 &11B-703.7.2.6.

7. Signs and Identification: CBC 11B-216.1 &11B-703.1.

8. International Symbol of Accessibility: CBC 11B-703.7.2.1.

9. Identification Signs: CBC 11B-213.2.

10. Direction and Information Signs: CBC 11B-703.1.

11. Symbols of Accessibility: CBC 11B-703.7.

12. Finish and Contrast: CBC 11B-703.5.1.

13. Character Proportions: CBC 11B-703.2.4.

14. Character Height: CBC 11B-703.2.5.

15. Raised Characters and Pictorial Symbol Signs: CBC 11B-703.2 & 11B-703.6.

16. Braille: CBC 11B-703.3.

17. Mounting Height and Location: CBC 11B-703.4.1 & 11B-703.4.2.

18. Symbols of Accessibility: CBC 11B-703.7.2.

19. Color of Symbol: CBC 11B-703.7.2.1.

20. Entrance Signs: CBC 11B-216.6.

21. Geometric Symbol Edges & Vertices: CBC 11B-703.7.2.6.4

1.04 SUBMITTALS

A. Submit electronic copy of all information to Architect.

B. Submit manufacturer's technical data and installation methods for each required sign type.

C. Submit shop drawings listing sign size, font type style and letter heights and construction detail for each required sign type.

D. Submit samples of fonts, background colors and character colors for selection by Architect.

E. Submit proposed sign type and text schedule to comply with scoping requirements on the Drawings and as specified herein.

F. All signage shall be designed and constructed to comply with these signage specifications and the Drawings.

1.05 QUALITY ASSURANCE, MATERIALS AND FABRICATION TECHNIQUES

A. QUALITY ASSURANCE

1. Manufacturers shall have a minimum of five (5) years of documented experience in fabricating and installing both tactile and non-tactile signs and lettering required by this section.

2. Manufacturer's Two-Year Warranties.

3. Contractor shall provide labor and materials to repair or replace defective signs as directed by Owner. Defects shall include:

a. Tactile characters and/or Braille dots which come off or are easily removed

b. Discoloration, wear and scratching off of the surface color.

c. All signs and sign components, except for damage by mishandling by Owner, including installation by Owner, or vandalism.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver to project site in manufacturer's original, unopened and undamaged packaging. Store in original packaging under protective cover and protect from damage. Handle materials in such a manner as to prevent damage to products or finishes.

PART 2 – PRODUCTS

2.01 GENERAL SIGN DESIGN CRITERIA

A. Materials and Configuration:

1. All pole or post mounted interior and exterior signs, projecting signs, and aluminum or metal plaques or signs shall be reflective and shall be .080 aluminum material and shall have minimum 0.125 inch rounded corner radius.

2. Non-glare (non-reflective) materials shall be used for all signs which identify, direct to, or give information about facilities and their use.

a. Exception: Parking, traffic signs, and exterior safety signs may use reflective materials. Identification signs for accessible parking spaces shall use reflective materials for graphics.

B. Fonts and Characters:

1. Numerals and upper case letters on metal signs will be minimum 1 inch high (vertical dimension unless otherwise shown on Drawings) embossed text and numerals shall comply with CBC 11B-703.2 & 11B-703.6. Vertical dimension of lower case letters shall be proportional to height of upper case letters.

2. Raised tactile characters shall be raised 1/32 inch minimum and shall be San Serif uppercase and lowercase characters and numerals accompanied by corresponding California Grade 2 Contract Braille. See Section 2.01.C below.

3. Raised tactile characters shall have beveled edges.

4. Characters shall have a minimum of 70 percent contrast with their backgrounds on all signs which identify, direct to, or give information about facilities and their use.

5. Characters on all signs which identify, direct to, or give information about facilities and their use shall comply with CBC 11B-703.2.4 & 11B-703.2.6.

6. Type styles of characters on all signs which identify, direct to, or give information about facilities and their use shall not be italic, oblique, or decorative in style.

7. Non-tactile characters (letters, numbers and symbols) shall be as identified on the Drawings.

    a. Characters shall be a combination of upper and lower case font.

    b. Upper case letters shall be 1 inch high (unless otherwise shown on Drawings, maximum 1 1/4 inch high).

    c. Height of lower case letters shall be proportional to height of upper case letter.

    d. See Drawings for font type or they will be selected at time of submittal from manufacturer's full range of standard san serif font types.

8. Non-Tactile Graphics and Text

a. Non-tactile graphics/pictogram and text shall be screen printed on the surface and complying section.

b. Identifying pictograms shall be located above the tactile text in a clear, six inch high field.

c. Non-tactile text shall be upper case and one inch high (unless otherwise shown on Drawings), and shall comply with CBC 11B-703.2.4, 11B-703.2.6, 11B-703.5.1, 11B-703.5.4, 11B-703.5.5, & 11B-703.6.2.

C. Fasteners:

1. All interior and exterior fasteners shall be one-way tamper resistant screws. Anchor into solid substrate.

2.02 MISCELLANEOUS

A. Furnish all items required for the proper installation of all signage including but not limited to tamper resistant fasteners, adhesives, sealants, metal sleeve spacers, etc.

2.03 SIGN TYPES:

1. **Accessible Parking Stall Sign**:

a. Fabricate with metal panel for each accessible parking stall as indicated on the Drawings. The sign shall display the International Symbol of Accessibility (reflectorized); text shall occur below the symbol and read “MINIMUM FINE $250”. The bottom of the regular accessible stall sign

shall be mounted 80" above the finish grade. Color shall be white text on blue field. See Drawings for additional information.

i. Post mount as detailed on Drawings.

2. **Van Accessible Parking Stall Sign**:

a. Same as “Accessible Parking Stall Sign” described above. Install above new “Van Accessible” sign. Color shall be white text on blue field. See Drawings for additional information.

i. Post mount as detailed on Drawings.

PART 3 – EXECUTION

3.01 GENERAL

A. Signs shall be installed with edges horizontal and vertical and face plumb.

B. Install signs with tamper resistant screws and anchors.

C. Screw length shall be sufficient for minimum 1-inch embedment.

D. The Contractor is solely responsible for the identification of the material onto which signs are to be mounted. The Contractor shall furnish and install all materials necessary for the proper installation of each sign.

E. Permanent identification signs for rooms or spaces shall be installed on the wall adjacent to the latch side of the door. See Drawings for details.

3.02 ADJUST AND CLEAN

A. Clean and Touch-up: Remove all packing and protection blemishes and thoroughly clean and polish all finish surfaces. Restore any marred or abraded surfaces to their original condition by touching up in accordance with the manufacturer's recommendations. Touch-up shall not be obvious.

B. Defective Work: Remove and replace all defective work which cannot be properly repaired, cleaned or touched-up with no additional cost to the owner.

C. Protect installed work during the construction period to prevent abuse and damage.

3.03 CLEAN-UP

A. Upon completion of the work of this section, remove all surplus materials, rubbish and debris from the premises.

END OF SECTION 10 14 00

SECTION 32 12 00

ASPHALT CONCRETE PAVING

PART 1 - GENERAL

1.01 SECTION INCLUDES

B. Asphalt concrete paving, aggregate base, patching, crack fill, sanded slurry seal coat, striping, and pre-cast concrete wheel stops.

1.04 RELATED WORK SPECIFIED ELSEWHERE

A. The General Conditions, Supplementary Conditions and Division 1 are fully applicable to this Section, as if repeated herein.

1.03 QUALITY ASSURANCE

A. Use only new materials and products, unless existing materials or products are specifically shown otherwise on the Drawings to be salvaged and re-used.

B. All materials, components, assemblies, workmanship and installation are to be observed by the Owner's Inspector of Record. Work not so inspected is subject to uncovering and replacement.

C. The representatives of the Owner’s testing lab will not act as supervisor of construction, nor will they direct construction operations. Neither the presence of the Owner’s testing lab representatives nor the testing by the Owner’s testing lab shall excuse the contractors or subcontractors for defects discovered in their work during or following completion of the project. Correcting inadequate compaction is the sole responsibility of the contractor.

D. Contractor shall provide verification that asphalt mix temperature meets the requirements of this specification at time of application.

E. Contractor shall be solely responsible for all subgrades built or repaired. Any repairs resulting from inadequate compaction is the responsibility of the contractor.

F. Sieve analysis from testing laboratories identifying rock/sand percentages within the asphalt mix shall have a testing date within 90 days of contract signing.

G. Sieve analysis from a testing laboratory identifying rock/sand percentages within the class 2 aggregate base rock shall have a testing date within 90 days of contract signing.

1.04 SUBMITTALS

A. Submit one set of electronic documentation of ALL products specified herein including manufacturer's product information, installation guidelines, certifications and test results to Architect.

B. Manufacturer's Data: Submit list and complete descriptive data of all products proposed for use. Include manufacturer's specifications, published warranty or guarantee, installation instructions, and maintenance instructions.

1.05 WARRANTY

A. Submit per the requirements of the General Conditions.

1.06 REFERENCES AND STANDARDS

A. ANSI/ASTM D698-00 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5 lb. Rammer and 12 inch Drop.

B. ANSI/ASTM D1556-00 - Test Method for Density of Soil in Place by the Sand-Cone Method.

C. ANSI/ASTM D1557-02 - Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10 lb. Rammer and 18 inch Drop.

D. ANSI/ASTM D 3017-05 Test Methods for Moisture Content of Soils and Soil-Aggregate Mixture by Nuclear Methods (Shallow Depth).

E. ANSI/ASTM D 422-63 Test Method for Particle Size Analysis of Soil.

F. ANSI/ASTM D 4318-05 Test Method for Liquid Limit, Plastic Limit, and Plasticity Limit.

G. CALTRANS Standard Specifications.

H. CAL-OSHA, Title 8, Section 1590 (e).

I. Any work within the street, highway or right-of-way shall be performed in accordance with the requirement of the governmental agencies having jurisdiction, and shall not begin until all of those governing authorities have been notified.

1.07 DELIVERY, STORAGE AND HANDLING

A. Transport, store and handle in strict accord with the local jurisdiction.

B. Make delivery to job when notified by Contractor verifying that the job is ready to receive the work of this Section and that arrangements have been made to properly store, handle and protect such materials and work.

1.08 PROJECT CONDITIONS

A. Environmental Requirements:

1. Base Course: Do not lay base course on muddy subgrade, during wet weather, or when atmospheric temperature is below 40 degrees F.

2. Asphalt Surfacing: Do not apply asphaltic surfacing on wet base, during wet weather, or when atmospheric temperature is below 50 degrees F.

1.09 EXISTING SITE CONDITIONS

A. Contractor shall acquaint himself with all site conditions. If unknown active utilities are encountered during work, notify Architect promptly for instructions. Failure to notify will make Contractor liable for damage to these utilities arising from Contractor's operations subsequent to discovery of such unknown active utilities.

1.10 PROTECTION

A. Adequate protection measures shall be provided to protect workmen and passers-by on and off the site. Adjacent property shall be fully protected throughout the operations. Blasting will not be permitted. Prevent damage to adjoining improvements and properties both above and below grade. Restore such improvements to original condition should damage occur. Replace trees and shrubs outside building area disturbed by operations.

B. In accordance with generally accepted construction practices, the Contractor shall be solely and completely responsible for working conditions at the job site, including safety of all persons and property during performance of the work. This requirement shall apply continuously and shall not be limited to normal working hours.

C. Any construction review of the Contractor's performance conducted by the owner’s representative is not intended to include review of the adequacy of the Contractor's safety measures, in, on, or near the construction site.

D. Surface Drainage: Provide for surface drainage during period of construction in manner to avoid creating nuisance to adjacent areas. The contractor shall make a reasonable effort on a daily basis to keep all excavations and the site free from water during entire progress of work, regardless of cause, source, or nature of water.

E. Adjacent streets and sidewalks shall be kept free of mud, dirt or similar nuisances resulting from earthwork operations.

F. The site and adjacent influenced areas shall be watered as required to suppress dust nuisance. Dust control measures shall be in accordance with the local jurisdiction.

1.11 SEASONAL LIMITS

A. No fill material shall be placed, spread or rolled during unfavorable weather conditions. When work is interrupted by rains, fill operations shall not be resumed until field tests indicate that moisture content and density of fill are satisfactory.

1.12 TESTING

A. Per the requirement of the General Conditions.

B. Geotechnical Engineer: Owner may be retaining a Geotechnical Engineer to determine compliance of fill with Specifications, and to direct adjustments in fill operations. Costs of Geotechnical Engineer will be borne by Owner; except those costs incurred for re-tests or re-inspection will be paid by Owner and backcharged to Contractor. In the absence of a Geotechnical Engineer, all testing and certification information shall be provide to the Architect.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Base Course Aggregate: State Specifications, Section 26, Class 2 aggregate base (3/4" max.).

B. Asphalt Binder: Steam-refined paving asphalt conforming to State Specifications, Section 92, viscosity grade PG 64-10. Asphalt binder additives for WMA per Caltrans approved list of manufacturers.

C. Liquid Asphalt Tack Coat: Per CALTRANS section 94.

D. Surface Course Aggregate: Mineral aggregates for Type "B" asphalt concrete, conforming to State Specifications 39-2.02, Type B, ½" maximum, medium grading. 3/8" maximum grading at Playcourt.

E. Seal Coat: shall be a pre-mixed asphalt sanded emulsion blended with select fillers and fibers such as:

1. "Park-Top No. 302", Western Colloid Products.

2. "OverKote", Reed and Gram.

3. "Drivewalk", Conoco Oil.

G. Wood Headers: Pressure treated, 2-inch minimum thickness x height as required to fully contain paving material and any exposed base. Provide steel form stakes, minimum 24 inches long with tapered end and pre-drilled holes for nailing stake to header.

G. Pavement Marking: Colors as indicated on the Drawings or as otherwise directed by the Architect. Colors of painted traffic stripes and pavement markings must comply with ASTM D 6628.

1. Waterborne traffic line - Colors White, Yellow and Red, State specification PTWB-01R3.

2. Waterborne traffic line for the international symbol of accessibility and other curb markings – Blue, Red and Green, Federal specification TT-P-1952E.

H. Precast Concrete Wheel Stops: 3000 psi at 28-day minimum strength; 48" length unless otherwise indicated on the Drawings; Provide with minimum of (2) 36" steel dowel anchors driven through AC paving and set in concrete epoxy.

I. Pavement Epoxy; K-Lite; Ktepx-590; Ennis Epoxy HPS2 or an approved equal.

J. Crack Filler;

1. Cracks up to ½": QPR model CAR08, 10oz asphalt crack filler; Star STA-FLEX Trowel Grade crack filler or approved equal.

2. Cracks ¼" – 1": "Docal 1100 Viscolastic, distributed by Conoco, Inc., Elk Grove, CA, (916) 685-9253, or approved equal.

3. Cracks greater than 1": Hot Mix, Topeka.

K. Reclaimed Asphalt Paugment (RAP). HMA Type A or Type B may be produced using RAP providing it does not exceed 15% of the aggregate blend.

2.02 MIXES

A. General: Plant mixed conforming to State Specifications, Section 39, Type B, ½" maximum, medium grading. 3-inch ac over 12" Class A aggregate base.

B. Temperature of Hot Mix Asphalt: Not less than 275 degrees F nor more than 325 degrees F when added to aggregate.

C. Temperature of Hot Mix Aggregate: Not less than 250 degrees F nor more than 325 degrees F when asphalt is added.

D. Temperature of Hot Mix Asphalt Concrete: Asphalt shall be not less than 285 degrees at time of application, nor more than 350 degrees. Asphalt not meeting the required temperature shall not be used.

E. Temperature of Warm Mix Asphalt: Mixing and placement; Per the approved manufactures heat range recommendations for mixing and placement.

PART 3 - EXECUTION

3.01 EXAMINATION OF CONDITIONS

A. Conditions of Work in Place: Subsurfaces which are to receive materials specified under this Section shall be carefully examined before beginning work hereunder, and any defects therein shall be reported, in writing, to the Architect. Work shall not be started until such defects have been corrected. Starting of work shall imply acceptance of conditions as they exist.

3.02 PREPARATION

A. Sub-Grade: Clean, shape and compact to hard surface free from elevations or depressions exceeding 0.05’ in 10' from true plan. Compact to 95% density. Compaction and moisture content shall be certified in writing with memo to Architect immediately prior to placement of aggregate base if a project inspector or Geotechnical Engineer is not employeed.

3.03 INSTALLATION

A. Headers:

1. General: Install as edging to asphalt paving, except where adjoining existing pavement, concrete curbs, walks or building.

2. Existing Headers: Remove existing headers where new paving will join existing. Saw cut existing asphalt to provide clean edge.

3. Lines and Levels: Install true to line and grade. Cut off tops of stakes 2-inches below top of header so they will not be visible on completion of job.

B. Asphalt Paving:

1. Base Course: Install in accord with State Specifications, Section 26. Compact to relative compaction of not less than 95%, ASTM D1557. The material shall be deposited on the subgrade in such a manner as to provide a uniform section of material within five percent tolerance of the predetermined required depth. Deposition will be by spreader box or bottom dump truck to prevent segregation of the material. The material so deposited on the subgrade shall have sufficient moisture which, in the opinion of the Architect is adequate to prevent excessive segregation. It shall then be immediately spread to its planned grade and cross section. Undue segregation of material, excessive drifting or spotting of material will not be permitted. If in the opinion of the site geotechnical engineer, the material is unsuitably segregated, it shall be removed or completely reworked to provide the desired uniformity of the material.

   a. Moisture content and compaction of base material shall be tested immediately prior to placement of asphalt paving.

2. Liquid Asphalt Tack Coat: Apply as "tack coat" to all vertical surfaces of existing paving, curbs, walks, and construction joints in surfacing against which paving is to be placed.

3. Asphalt Concrete Surface Course:

   a. Comply with State Specifications, 39-6 except as modified below.

      1) Final gradation shall be smooth, uniform and free of ruts, humps, depressions or irregularities, with a minimum density of 95% of the test maximum density determined by California Test Methods #304 and 375. Maximum variation 1/8 inch in 10' when measured with steel straightedge in any one direction. Test paved areas for proper drainage by applying water to cover area. Correct portions that do not drain properly by patching with plant mix. In no case shall accessible parking spaces or loading and unloading areas exceed 2% slope in any direction.

2) Asphalt material shall be delivered to the project site in a covered condition to maintain acceptable temperature. Onsite inspector shall verify temperature of asphalt upon truck arrival to the site.

4. Placement and adjustment of Frames, Covers, Boxes and Grates: The Contractor shall set and adjust to finish grade all proposed and existing frames, covers, boxes, and grates of all manholes, drop inlets, drain boxes, valves, cleanouts, electrical boxes and other appurtenant structures prior to placement of asphaltic concrete.

5. Water Testing: All paved areas shall be water tested, to check drainage, in the presence of the project inspector prior to placement of seal coat. The surface of asphalt paving shall not vary more than 1/8 inch above or below the grade established on the plans. If variations in grade are present, they will be corrected by overlaying paving and/or pavement removal and replacement as directed by the Architect.

6. Patching: Cut existing paving square and plumb at all edges to be joined by new paving. In trenches; grind existing asphalt on each side of trench 3" wide x ½ the depth of the section. Apply tact coat to vertical surfaces before installing new work. Warp carefully to flush surface, with seal over joints, and feather edge. Sawcut, remove and patch existing paving where cutting is necessary for installation of piping or conduits.

C. Seal Coat:

1. **Seal coat shall be applied no sooner than 14 days from time of asphalt placement.**

2. Surface Preparation: Surface shall be clean of all dirt, sand, oil or grease. All cracks shall be filled to a level condition after curing. Make multiple fill applications until a level condition is achieved. Asphalt patch areas shall be flush and with tight joints. Failure to do so will be the reason for rejection. Hose down entire area with a strong jet of water to remove all debris. Remove soft, loose, or otherwise damaged areas of asphalt concrete to full depth of damage and replace with compacted hot mix asphalt concrete as specified herein. Minor holes and imperfections may be patched using hot mix asphalt or mastic using sand/SS-1-H. Use wire brush for removal of oil and grease; prime with shellac or synthetic resin as recommended by manufacturer of pavement sealer material.

3. Seal Coat Seal Application: Thoroughly mix materials and apply in the presence of the onsite inspector. Failure to do so will be cause for rejection. Apply in accordance with manufacturer's written instructions.

a. The minimum application rate for each applied coat shall be 30gals per 1000 sq. ft. Two coats of sealcoat will be required.

b. Clean-Up and Precautions: As recommended by pavement sealer material manufacturer.

c. **Cure seal coat minimum 14 days prior to installation of any painted paving markings.**

d. Protect seal coat from foot and vehicle traffic with signage and barricades at all driveway and sidewalk entrances.

D. Pavement Marking: Pavement markings shall be done only after the seal coat has thoroughly dried and cured. Existing surfaces to be striped with traffic paint shall be cleaned of dust, dirt, grime, oil, rust or other contaminants which will impair the quality of work or interfere with proper bond of paint coats. Surfaces shall be thoroughly cleaned by whatever means necessary that will satisfactorily accomplish the purpose without damage to asphalt concrete. Provide measured layouts, temporary markings, templates, and other means necessary to provide required marking. Prepare and apply paint in accordance with manufacturer's instructions; paint shall be applied by spray and shall achieve complete coverage free from voids and thin spots. Where indicated on the Drawings, paint parking stall strips, lettering, arrows, accessible symbols, playfield markings, etc. on asphalt concrete paving. Paint strips shall be 4 inches wide (except otherwise indicated) and applied with two (2) coats of herein specified Traffic Line Paint; white (except as otherwise specified or indicated).

1. Paints shall be delivered to the site in unopened containers.

   a. Paint shall not be diluted, or watered down.

   b. Paint shall be applied in 10-12 wet mil thickness (4-6 mil dried). Each coat thickness shall be verified by the project inspector.

2. International Accessible Symbol: Symbol shall be white figures on a blue background. Blue shall be equal to color No. 15090 in Fed. Std. 595c. Lines and symbols shall be accurately formed and true to line and form; lines shall be straight and uniform in width. Painted edges shall be clean cut and free from raggedness, and corners shall be cut sharp and square. Tolerances: Apply striping within a tolerance 1/2 inch in 50 feet. Apply markings and striping to widths indicated with a tolerance of 1/4 inch on straight sections and 1/2 inch on curved sections.

E. Colors: As indicated on the Drawings or as otherwise directed by Architect.

F. Precast Concrete Bumpers: Install in location where shown on Drawings, using steel rebar dowels, and epoxy.

3.04 DEFECTIVE ASPHALT;

Defective asphalt is as described below.

A. Exposed rock pockets on the finished surface that lack the # 8- #200 fines that is required per the sieve analysis.

B. Asphalt not placed to the design grades.

C. Asphalt that ponds water.

D. Asphalt that was compacted below the minimum required temperature and is cracked.

E. Asphalt that fails to meet the minimum compaction requirements.

F. Asphalt that lacks the minimum thickness required per plan.

G. New asphalt contaminated by a petroleum product, or spilled paint.

H. Asphalt that has depressions, cracks, scored divits from dumpster wheels, heavy equipment use, heavy construction products,

I. Asphalt placed on pumping, unstable sub-grades.

3.05 CLEANING

A. Upon completion of work of this Section promptly remove from the working area all scraps, debris, surplus material and barricades of this Section.

B. Clean excess material from surface of all concrete walks and utility structures.

END OF SECTION 32 12 00