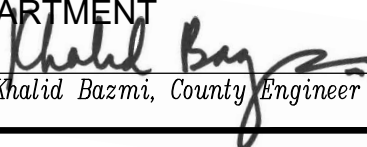


GENERAL NOTES

1. ALL WORK, EXCEPT MIDWEST GUARDRAIL SYSTEMS, BRIDGE AND TRAFFIC SIGNAL WORK, SHALL CONFORM TO THE GREENBOOK, THE STANDARD PLANS OF OCPW AND THE CA MUTCD FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS, AND EACH OF THE MOST RECENT DATE ADOPTED BY THE BOARD OF SUPERVISORS OF THE COUNTY OF ORANGE.
2. ALL WORK PERTAINING TO MIDWEST GUARDRAIL SYSTEMS, BRIDGE, AND TRAFFIC SIGNAL WORK SHALL CONFORM TO THE FOLLOWING PORTIONS OF CALTRANS STANDARD SPECIFICATIONS, LATEST EDITION UNLESS SUPERSEDED BY A NEWER EDITION ADOPTED BY THE BOARD OF SUPERVISORS OF THE COUNTY OF ORANGE.
 - a. SIGNAL, LIGHTING AND ELECTRICAL SYSTEMS: SECTION 86.
 - b. PAVEMENT MARKERS: SECTION 85.
 - c. MIDWEST GUARD RAILING: SECTION 82-2.02
 - d. BRIDGES: SECTION 15-4, 19, 42, 49 THROUGH 52, 55, 57, 58, 67, 72-6, 75, 83, 90, AND 95.
 - e. CA MUTCD: PARTS 5, 6, AND 7
3. DEVELOPER SHALL MEAN THE SUBDIVISION DEVELOPER, PERMITTEE, OR SHALL MEAN CONTRACTOR IN THE CASE OF A PUBLIC WORKS CONTRACT WITH THE COUNTY OF ORANGE.
4. THE DEVELOPER SHALL OBTAIN AN ENCROACHMENT PERMIT FROM OCPW PRIOR TO WORK WITHIN PUBLIC RIGHT-OF-WAY.
5. THE DEVELOPER SHALL TELEPHONE OCPW AT LEAST 48 HOURS PRIOR TO STARTING CONSTRUCTION WORK SUBJECT TO OCPW INSPECTION. THE DEVELOPER SHALL TELEPHONE OCPW AT LEAST 48 HOURS PRIOR TO STARTING GRADING OR BRUSHING WORK SUBJECT TO A GRADING PERMIT.
6. ALL UNDERGROUND UTILITIES SHALL BE INSTALLED PRIOR TO SURFACING OF STREETS. THE INSTALLATION OF ALL UNDERGROUND FACILITIES CROSSING EXISTING ARTERIAL HIGHWAYS REQUIRES BORING OR JACKING, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
7. MAILBOXES SHALL BE INSTALLED IN LOCATIONS APPROVED BY THE LOCAL POSTMASTER AND PER THE LATEST EDITION OF THE OCPW STANDARD PLANS.
8. CORRESPONDING STATE OF CALIFORNIA TEST METHODS MAY BE SUBSTITUTED FOR DESIGNATED ASTM TEST METHODS FOR WORK SUBJECT TO OCPW INSPECTION, EXCEPT AS NOTED IN NOTE 9 HEREIN.
9. RELATIVE COMPACTION: FOR WORK SUBJECT TO OCPW INSPECTION, IN-PLACE DENSITY SHALL BE DETERMINED BY CALIFORNIA TEST METHOD 231, PART I. LABORATORY MAXIMUM DENSITY SHALL BE DETERMINED BY CALIFORNIA TEST METHOD 216, PART II. PRIVATE LABORATORIES PERFORMING RELATIVE COMPACTION TESTING FOR OCPW SHALL PROVIDE A CALTRANS LABORATORY CERTIFICATION AND CERTIFICATION(S) FOR EACH TECHNICIAN PERFORMING THESE COMPACTION TEST PRIOR TO THE START OF WORK.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

Revision: August 2018

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SPECIAL PROVISIONS - GENERAL NOTES

GENERAL NOTES (continued)

10. STRUCTURAL SECTION REQUIREMENTS FOR PRIVATE AND PUBLIC ROADS CREATED BY A TRACT MAP OR PARCEL MAP SHALL BE DETERMINED BY THE ENGINEER. SUBGRADE COMPACTION REQUIREMENTS RECOMMENDED BY THE PROJECT GEOTECHNICAL ENGINEER MAY BE MODIFIED BY THE ENGINEER WHEN NECESSARY FOR STRUCTURAL SECTION DESIGN. STRUCTURAL SECTION REQUIREMENTS FOR COMMERCIAL OR INDUSTRIAL DRIVEWAYS AND PARKING AREAS SUBJECT TO THE INSPECTION OF OCPW, SHALL BE APPROVED IN ACCORDANCE WITH THE REQUIREMENTS OF THE ORANGE COUNTY GRADING AND EXCAVATION CODE.
11. IF DRIVEWAY DEPRESSIONS ARE MADE IN ANY CURB, DRIVEWAY APPROACHES ARE THEN CONSIDERED TO BE PART OF THE IMPROVEMENT PLAN AND SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE OCPW STANDARD PLANS.
12. MONUMENTS ARE TO BE SET PER THE REQUIREMENTS OF THE SUBDIVISION MAP ACT, THE LAND SURVEYORS' ACT, THE COUNTY OF ORANGE SUBDIVISION CODE AND IN ACCORDANCE WITH THE RULES AND PROCEDURES APPROVED BY THE COUNTY SURVEYOR. ALL LOT CORNERS AND TRACT BOUNDARIES SHALL BE LOCATED AND MONUMENTED IN ACCORDANCE WITH THE RECORDED TRACT MAP AND A WRITTEN CONFIRMATION TO THAT EFFECT SHALL BE SUBMITTED TO THE COUNTY SURVEYOR'S OFFICE BY THE PROJECT CIVIL ENGINEER. IN CASES WHERE BUILDINGS ARE BUILT ON PROPERTY LINES, THE CIVIL ENGINEER MUST CERTIFY THAT THE BUILDINGS ARE LOCATED IN COMPLIANCE WITH THE APPROVED PLOT PLAN. IN CASES WHERE STRUCTURES (I.E. WALLS, FENCES) ARE BUILT UPON PROPERTY CORNERS AND MONUMENTS CANNOT BE SET AS INDICATED ON THE TRACT MAP, A CERTIFICATE OF CORRECTION SHALL BE FILED WITH THE COUNTY SURVEYOR'S OFFICE AND UPON APPROVAL BY THE COUNTY SURVEYOR, RECORDED WITH THE COUNTY RECORDER'S OFFICE.
13. TREES SHALL NOT BE PLANTED IN ORANGE COUNTY RIGHT-OF-WAY UNLESS A PERMIT HAS BEEN OBTAINED FROM OCPW. SEE OCPW STANDARD PLAN 1117 FOR LOCATION RESTRICTIONS AT INTERSECTIONS, AND OCPW STANDARD PLAN 1700 FOR GUIDELINES AND CRITERIA.
14. ADVERTISING SIGNS WILL NOT BE PERMITTED WITHIN STREET RIGHT-OF-WAY PER ORANGE COUNTY CODIFIED ORDINANCE 6-1-69.
15. JOINS BETWEEN NEW PAVEMENT AND EXISTING PAVEMENT SHALL BE MADE BY SAWCUTTING OR COLD PLANING (MINIMUM 1½ INCHES) EXISTING PAVEMENT TO EFFECT A NEAT JOIN, OR AS DIRECTED BY THE ENGINEER. TRANSVERSE JOINTS ON ARTERIAL HIGHWAYS SHALL BE AT 20 DEGREES TO PERPENDICULAR.
16. NEW APPLICATIONS OF PAINT SHALL BE APPLIED IN TWO EQUAL THICKNESSES AND SHALL INCLUDE 50 PERCENT OF THE REQUIRED BEADS WITH EACH APPLICATION. WHEN APPLIED TO NEW ASPHALT PAVEMENT, PAINT SHALL HAVE A MINIMUM SEVEN DAY PERIOD BETWEEN APPLICATIONS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
17. APPROVED TRAFFIC HANDLING/TRAFFIC CONTROL PLANS ARE REQUIRED AS DETERMINED BY THE ENGINEER OR OCPW. PLANS SHALL BE PREPARED PER THE LATEST CA MUTCD.
18. CONCRETE REMOVAL AND REPLACEMENT (R&R) FOR CURB, GUTTER, CROSS GUTTER, AND SIDEWALK SHALL BE FROM JOINT TO JOINT.
19. INLET STRUCTURE DECKS AND LOCAL DEPRESSIONS SHALL NOT BE CONSTRUCTED WITHOUT ADJACENT CURB AND GUTTER IN PLACE.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

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Khalid Bazmi, County Engineer

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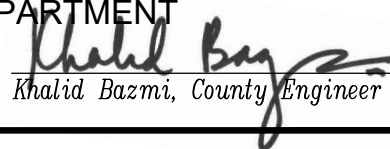
SPECIAL PROVISIONS - GENERAL NOTES

GENERAL NOTES (continued)

20. MODEL SITE TRAP FENCES WILL NOT BE ALLOWED TO OBSTRUCT THE FLOW OF PEDESTRIAN OR VEHICULAR TRAFFIC UNLESS OTHERWISE APPROVED BY THE ENGINEER. ALL FENCING SHALL BE BEHIND THE SIDEWALK.
21. WITH CONTRACTOR'S REQUEST FOR USE OF MATERIALS, CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MATERIALS TESTING VERIFYING COMPLIANCE WITH SPECIFICATIONS AND SHALL SUBMIT TEST RESULTS. COUNTY WILL PERFORM QUALITY ACCEPTANCE TESTING AS DETERMINED NECESSARY. ACCEPTANCE OF MATERIALS WILL BE BASED ON GRADE SAMPLES.
22. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH RETESTING OF FAILED MATERIALS TESTS OR COMPACTION TESTS. CONTRACTOR SHALL REIMBURSE COUNTY PRIOR TO ACCEPTANCE OF WORK.
23. FOR COUNTY PROJECTS, CONTRACTOR SHALL ENDEAVOR AND DEMONSTRATE GOOD FAITH EFFORTS TO UTILIZE REGIONAL MATERIALS, LABOR AND BUSINESSES.
24. FOR COUNTY PROJECTS, CONTRACTOR SHALL USE RECYCLED WATER, SUBJECT TO AVAILABILITY AND IN COMPLIANCE WITH COUNTY AND STATE PUBLIC HEALTH REGULATIONS; UNLESS OTHERWISE APPROVED BY THE ENGINEER.
25. FOR COUNTY PROJECTS, CONTRACTOR SHALL MAKE USE OF RECYCLED MATERIALS AND MATERIALS WITH RECYCLED CONTENT AS FIRST OPTION AND SUBJECT TO ENGINEER'S APPROVAL OF MATERIALS.
26. ALL WATER QUALITY LOW IMPACT DEVELOPMENT (LID) BMP DESIGNS SHALL REFERENCE THE LATEST CASQA MANUAL FOR DESIGN CRITERIA.
27. ALL STORM DRAIN SIGNAGE SHALL FOLLOW THE LATEST EDITION OF THE CASQA STORM WATER BMP HANDBOOK FOR SD-13.
 - STORM DRAIN MARKERS SHALL BE INSTALLED PER ALMETER INDUSTRIES, INC. 9005 SERIES.
 - CONTRACTOR SHALL COORDINATE WITH OCPW OPERATION & MAINTENANCE FOR CB ID NUMBERS.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

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LIME TREATED SOIL

TRADITIONAL LIME TREATMENT IS NOT APPLICABLE FOR EXPANSIVE SOILS WITH PLASTICITY INDEX (PI) GREATER THAN 15 AND WITH THE ELEVATED SULFATE LEVEL OF 3,000 PPM OR GREATER.

LIME TREATMENT SHALL MEET THE REQUIREMENTS OF SECTION 301-5, "LIME-TREATED SOIL", OF THE GREENBOOK AND THESE SPECIAL PROVISIONS. LIME SHALL BE QUICKLIME.

CONTRACTOR'S ENGINEER (WHO SHALL BE A REGISTERED CIVIL ENGINEER CURRENTLY LICENSED BY THE STATE OF CALIFORNIA) SHALL PERFORM A MIX DESIGN AND PROPOSE THE OPTIMUM LIME CONTENT FOR APPROVAL BY THE ENGINEER.

THE LIME SPREAD RATE SHALL NOT VARY MORE THAN 20 PERCENT FROM THE DESIGNATED SPREAD RATE IN LIEU OF THE 10 PERCENT REQUIREMENT AS STATED IN SECTION 301-5.6, "SPREADING LIME," OF THE GREENBOOK.

A MINIMUM OF 2 PASSES WITH THE MIXER WILL BE REQUIRED. NOT LESS THAN 16 HOURS SHALL ELAPSE FOLLOWING THE FIRST MIXING PASS BEFORE STARTING THE SECOND MIXING PASS.

LIME TREATED MATERIAL SHALL BE COMPACTED WITHIN 54 HOURS AFTER START OF MIXING AND SHALL BE COMPACTED TO NOT LESS THAN 95 PERCENT RELATIVE COMPACTION UNDER AC OR 90 PERCENT RELATIVE COMPACTION UNDER AB UNLESS OTHERWISE ALLOWED FOR BY THE ENGINEER.

CEMENT TREATED PULVERIZED MATERIAL

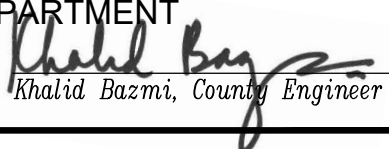
CEMENT TREATED PULVERIZED MATERIAL SHALL MEET THE REQUIREMENT OF SECTION 301-3, "PORTLAND CEMENT TREATED MIXTURES", OF THE GREENBOOK AND THESE SPECIAL PROVISIONS:

THE AC SURFACE AND UNDERLYING BASE MATERIALS SHALL BE PULVERIZED SUCH THAT 100 PERCENT OF THE MATERIAL WILL PASS A 2-INCH SIEVE AND A MINIMUM OF 90 PERCENT WILL PASS A 1½ INCH SIEVE. THE FINE MATERIAL SHALL NOT BE LESS THAN 55 PERCENT PASSING NO. 4 SIEVE. THE MATERIAL SHALL NOT BE DELETERIOUS IN ITS REACTION WITH CEMENT.

TRIMMING AND DISPOSAL OF EXCESS MATERIALS, IF REQUIRED, WILL BE PERFORMED ON THE INTIMATE MIXTURE OF PULVERIZED ASPHALT CONCRETE, BASE MATERIALS AND SUBGRADE SOIL PRIOR TO CEMENT TREATMENT. A STANDARD SOIL-CEMENT MIX DESIGN PROCEDURE SHOULD BE FOLLOWED TO DETERMINE THE PROPER AMOUNT OF CEMENT FOR THE PULVERIZED MATERIAL, AS WELL AS THE DETERMINATION OF MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT. CEMENT TYPE MAY BE BASED ON LABORATORY SOIL-SULFATE STUDY. CONTRACTOR'S ENGINEER SHALL SUBMIT THE PERCENTAGE (%) OF CEMENT ANALYSIS TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION ACTIVITY. CONTRACTOR'S ENGINEER (WHO SHALL BE A REGISTERED CIVIL ENGINEER CURRENTLY LICENSED BY THE STATE OF CALIFORNIA) SHALL PERFORM A MIX DESIGN AND PROPOSE THE OPTIMUM CEMENT CONTENT FOR THE APPROVAL BY THE ENGINEER.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

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SPECIAL PROVISIONS - SOIL AND BASE TREATMENT

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SECTION 1. MATERIALS

CONCRETE STRENGTH AND CORRESPONDING CONCRETE CLASS FOR ALL CONCRETE STRUCTURES AND OTHER MISCELLANEOUS CONCRETE WORK SHALL CONFORM TO THE REQUIREMENTS OF SECTION 201-1.1.2 (REFER TO TABLE 201-1.1.2) AND SECTION 201-1.1.3 (REFER TO TABLE 201-1.1.3) OF THE GREENBOOK. IN ADDITION, PORTLAND CEMENT CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 201-1, "PORTLAND CEMENT CONCRETE", OF THE GREENBOOK AND THESE SPECIAL PROVISIONS.

AGGREGATE USED IN CONCRETE SHALL NOT CONTAIN ANY DELETERIOUS AMOUNTS OF GYPSUM, PYRITE, ZEOLITES, OR ANY UNSTABLE OR AMORPHOUS SILICA INCLUDING AMOUNTS EXCEEDING 5 PERCENT OPTICALLY STRAINED, HIGHLY METAMORPHIC, MICROFRACTURED, MICROCRYSTALLINE OR CRYPTOCRYSTALLINE QUARTZ; 1 PERCENT TRIDYMITITE OR CRISTOBALITE; 3 PERCENT CHERT, CHALCEDONY, VOLCANIC GLASS OR SYNTHETIC GLASS; OR 0.5 PERCENT OPAL.

THE CEMENT TYPE REQUIREMENT, SECTION 201-1.2.1, "CEMENT", SHALL BE TYPE II, III, V OR IP (MS) AS DETERMINED BY THE ENGINEER. TYPE II, III, V OR IP (MS) CEMENTS SHALL CONFORM TO ASTM C150 AND THE LOW ALKALI REQUIREMENTS OF TABLE 1A THEREIN. TYPE IP (MS) CEMENT SHALL ALSO CONFORM TO THE REQUIREMENTS FOR TYPE IP (MS) CEMENT OF ASTM C595, AND SHALL BE COMPRISED OF AN INTIMATE MIXTURE OF TYPE II CEMENT AND NOT MORE THAN 20 PERCENT BY MASS OF A POZZOLANIC MATERIAL.

FOR THE MITIGATION OF ALKALI-SILICA REACTION POTENTIAL, 20 PERCENT BY MASS OF THE REQUIRED PORTLAND CEMENT IN CONCRETE SHALL BE REPLACED WITH FLY ASH: UP TO A TOTAL OF 30 PERCENT FLY ASH OF THE REQUIRED PORTLAND CEMENT MAY BE USED IN A PREQUALIFIED MIX DESIGN PER SECTION 201-1.1.4, "CONCRETE SPECIFIED BY COMPRESSIVE STRENGTH", OF THE GREENBOOK. THE TOTAL MASS OF PORTLAND CEMENT MAY BE REDUCED BY 5 PERCENT IF AN APPROVED WATER REDUCER IS ADDED. FLY ASH SHALL CONFORM TO SECTION 201-1.2.5.3, "FLY ASH". (NOTE: THE CEMENT TOTAL MASS OF PORTLAND CEMENT AND 20 PERCENT FLY ASH AND APPROVED WATER REDUCER SHALL BE THE SAME AS FOUND IN THE "CONCRETE CLASS" PORTION OF TABLE 201-1.1.2 IN SECTION 201-1.1.2, "CONCRETE SPECIFIED BY CLASS AND ALTERNATE CLASS".

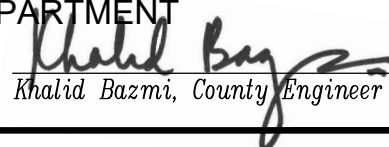
CONCRETE SPECIFIED BY ALTERNATE CLASS SHALL BE PER SECTION 201-1 AND TABLE 201-1.1.2 EXCEPT THAT WHERE FLY ASH IS USED OR REQUIRED AND ADDITIONAL FLY ASH EQUAL TO 5 PERCENT OF THE REQUIRED PORTLAND CEMENT MASS SHALL BE ADDED TO AMOUNTS LISTED IN THE TABLE FOR ALTERNATE CLASS. ALTERNATE CLASS CONCRETE WHICH WILL BE USED FOR NON-STRUCTURAL APPLICATIONS-I.E. PAVEMENT, CURB, GUTTER, SIDEWALKS PIPE BEDDING, BACKFILL, CLSM, ETC.-MAY ALSO INCLUDE RECLAIMED CONCRETE MATERIAL IN ACCORDANCE WITH SECTION V. RECLAIMED HYDRAULIC CONCRETE OF THESE SPECIAL PROVISIONS.

POZZOLAN SHALL CONFORM TO ASTM C618, CLASS F. CLASS C FLY ASH MAY BE USED IF APPROVED BY THE OCPW ENGINEER OR GEOTECHNICAL ENGINEER, IN ACCORDANCE WITH SECTION 201-1.2.5, "SUPPLEMENTARY CEMENTITIOUS MATERIALS".

IN DETERMINING THE MAXIMUM AMOUNT OF FREE WATER THAT MAY BE USED IN CONCRETE, POZZOLAN SHALL BE CONSIDERED TO BE CEMENT. IN DETERMINING THE AMOUNT OF TOTAL CEMENT, CEMENT SHALL BE THE TOTAL MASS OF FLY ASH AND PORTLAND CEMENT.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

Revision: August 2018

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

THE TOTAL AMOUNT OF PORTLAND CEMENT IN THE TOTAL MASS SHALL NOT EXCEED 700 LBS. PER CUBIC YARD. THE CLEANNESS VALUE REQUIREMENT OF SECTION 200-1.4, "COARSE AGGREGATE FOR PORTLAND CEMENT CONCRETE", SHALL BE REPLACED WITH THE FOLLOWING:

<u>TESTS</u>	<u>TEST METHOD</u>	<u>REQUIREMENTS</u>
CLEANNESS VALUE	CALIF. 227	
INDIVIDUAL TEST		70 MIN.
MOVING AVERAGE		75 MIN.

THE SAND EQUIVALENT REQUIREMENT OF SECTION 200-1.5.3, "SAND FOR PORTLAND CEMENT CONCRETE", SHALL BE REPLACED WITH THE FOLLOWING:

<u>TESTS</u>	<u>TEST METHOD</u>	<u>REQUIREMENTS</u>
SAND EQUIVALENT	CALIF. 217	
INDIVIDUAL TEST		70 MIN.
MOVING AVERAGE		75 MIN.

EVALUATION OF MOVING AVERAGE FOR SAND EQUIVALENT AND CLEANNESS VALUE RESULTS SHALL CONFORM TO THE PROVISIONS OF SECTION 200-1.1.2, "STATISTICAL TESTING".

IN LIEU OF THE PROVISIONS OF SECTION 300-11.3.1, "CONCRETE" FOR CONCRETED (GROUTED) STONE SLOPE PROTECTION (RIPRAP) SHALL BE 650-EFW-3250P.

SECTION II. GENERAL PROVISIONS

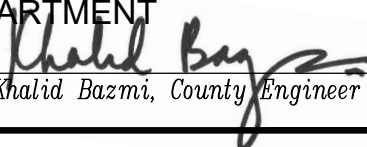
ADD TO SECTION 303-1.2, "SUBGRADE FOR CONCRETE STRUCTURES", OF THE GREENBOOK, THE FOLLOWING: IF THE PLANS AND SPECIFICATIONS FOR THE PROJECT PROVIDE FOR THE CONSTRUCTION OF GRAVEL (DRAIN) MATERIAL, WHICH WILL BE THE SUBGRADE FOR THE CONCRETE, CONTRACTOR SHALL FURNISH NON-WOVEN FILTER FABRIC TYPE I PER OCPW STANDARD PLAN 1808 ON TOP OF THE GRAVEL (DRAIN) MATERIAL AS A SEPARATOR. THE PLACEMENT OF STEEL REINFORCEMENT AND OF CONCRETE SHALL FOLLOW THE INSTALLATION OF THE GEOTEXTILE FABRIC AS CLOSELY AS POSSIBLE. THE GRAVEL (DRAIN) MATERIAL SHALL BE KEPT FREE FROM WATER TO PREVENT ANY PORTION OF CONCRETE MATERIAL BEING DEPOSITED IN WATER.

A RANGE OF LOCALLY AVAILABLE GRADATIONS, D1 THROUGH D5, IS GIVEN IN THE TABLE BELOW FOR SELECTION BY THE DESIGN ENGINEER FOR COMPATIBILITY WITH THE SUBGRADE. IF NO GRADATION OR THICKNESS IS SPECIFIED, THE GRAVEL (DRAIN) SHALL BE 1.0 FOOT THICK AND D3 GRADING.

THE CONTRACTOR SHALL PLACE GRAVEL (DRAIN) MATERIAL UNDER CONCRETE CHANNEL CULVERT INVERTS, PIER EXTENSION AND RETAINING WALL FOOTINGS, AND OTHER LOCATIONS AS SHOWN ON THE PLANS, IN ORDER TO PROVIDE A STABLE SUBGRADE AND TO PERMIT THE FLOW OF GROUNDWATER.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

Revision: August 2018

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

THE COMPOSITION OF GRAVEL (DRAIN) MATERIAL SHALL CONFORM TO THE FOLLOWING GRADING REQUIREMENTS WHEN DETERMINED BY CALIFORNIA TEST METHOD 202:

SCREEN OR SIEVE SIZE	D1	D2	D3	D4	D5
3"		100	100	100	100
1 1/2"	100	95-100	90-100	90-100	85-100
1"			65-100		5-60
3/4"	90-100	50-100	50-90	20-60	0-30
3/8"	60-100	15-55	0-50	0-20	0-5
No. 4	5-50	0-25	0-10	0-5	
No. 8	0-10		0-5		
No. 16	0-5				
No. 200		0-3			
APPROXIMATE	(No. 4 ROCK)	(No. 3 & No. 4 1:1)	(No. 3 ROCK)	(No. 2 & No. 3 1:1)	(No. 2 ROCK)

THE APPROXIMATE COMPOSITIONS ARE GIVEN FOR INFORMATION PURPOSES ONLY; THE GRADING LIMITS SPECIFIED ABOVE SHALL CONTROL.

THE CONTRACTOR SHALL EXCAVATE TO THE SUBGRADE DIMENSIONS AND GRADES SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. WHERE POOR SOIL CONDITIONS ARE ENCOUNTERED DUE TO SOFT, SPONGY OR OTHER UNSTABLE MATERIAL OR BY GROUNDWATER, ALL SUCH UNSTABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH GRAVEL (DRAIN) MATERIAL, COMPACTED BACKFILL, AND CONTRACTOR SHALL PLACE A NON-WOVEN FILTER FABRIC TYPE II PER OCPW STANDARD PLAN 1808 BELOW THE GRAVEL (DRAIN) MATERIAL AS A SEPARATOR, AT THE DIRECTION OF THE ENGINEER.

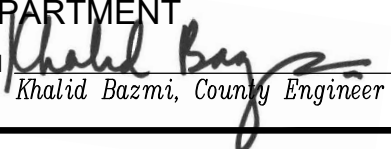
ADD TO SECTION 303-1.3, "FORMS", THE FOLLOWING: TANGENT SECTIONS FOR FORMED WALL SURFACE SHALL RESULT IN CONCRETE SURFACE 1 FREE OF ANY UNEVENNESS GREATER THAN 1/4 INCH WHEN CHECKED WITH A TEN FOOT STRAIGHTEDGE.

FORMS FOR COVERED CONDUIT OR OPEN CHANNEL CURVED SECTIONS SHALL BE CONSTRUCTED ALONG THE ARC OF THE CURVE. THE FINISHED SURFACE SHALL FOLLOW THE ARC OF THE CURVE.

IF PERMITTED BY THE ENGINEER, COVERED CONDUIT CURVED SECTIONS MAY USE CHORD PANEL. ENDS OF THE CHORD PANEL SHALL BE ON THE ARC OF THE CURVE.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

ADD TO SECTION 303-1.7.1, "GENERAL", OF THE GREENBOOK, THE FOLLOWING:

REINFORCING STEEL SHALL BE GRADE 60, NEW BILLET STEEL, CONFORMING TO ASTM A615, AND SHALL BE OF THE SAME GRADE THROUGHOUT THE STRUCTURE. ALUMINUM AND PLASTIC SUPPORTS FOR REINFORCEMENT SHALL NOT BE USED. ONLY CONCRETE (DOBIES) STEEL REINFORCEMENT SUPPORTS SHALL BE USED UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.

BARS SHALL BE ACCURATELY SPACED AS SHOWN ON THE PLANS, AND SPACING OF THE FIRST BAR IMMEDIATELY ADJACENT TO A TRANSVERSE CONSTRUCTION JOINT SHALL BE ONE-HALF THE REQUIRED SPACING SHOWN ON THE PLANS. IN NO CASE SHALL THE CLEAR DISTANCE BETWEEN PARALLEL BARS BE LESS THAN 2.5 DIAMETERS OF THE BAR OR A MINIMUM OF TWO INCHES.

UNLESS OTHERWISE SHOWN ON THE PLANS, EMBEDMENT OF REINFORCING STEEL (OTHER THAN STIRRUPS) SHALL BE 1½ INCHES CLEAR FOR #8 BARS AND SMALLER, AND SHALL BE TWO INCHES CLEAR FOR #9 BARS OR LARGER. WHERE PLACEMENT OF REINFORCING STEEL REQUIRES ALTERNATE BARS OF DIFFERENT SIZE, EMBEDMENT REQUIREMENTS SHALL BE GOVERNED BY THE LARGER BAR. STIRRUPS AND SPACERS SHALL BE EMBEDDED NOT LESS THAN ONE INCH CLEAR DEPTH. MEASUREMENT OF EMBEDMENT SHALL BE FROM THE OUTSIDE OF THE BAR TO THE NEAREST CONCRETE FACE.

TACK WELDING OR BUTT WELDING IN REINFORCING BARS WILL NOT BE PERMITTED. HOWEVER, MECHANICAL BUTT SPLICING PER SECTION 52-6.03C(2), "MECHANICAL SPLICES", OF THE CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATION MAY BE ALLOWED AT THE DISCRETION OF THE ENGINEER.

ADD TO SECTION 303-1.7.2, "SPLICING", THE FOLLOWING: REINFORCING BARS MAY BE CONTINUOUS AT LOCATIONS WHERE SPLICES ARE SHOWN ON THE PLANS, AT THE OPTION OF THE CONTRACTOR. THE LOCATION OF SPLICES, EXCEPT WHERE SHOWN ON THE PLANS, SHALL BE DETERMINED BY THE CONTRACTOR AS APPROVED BY THE ENGINEER BASED UPON USING AVAILABLE COMMERCIAL LENGTHS WHERE PRACTICABLE.

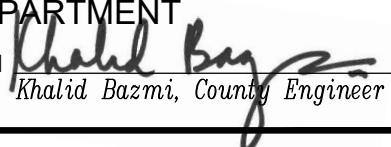
UNLESS OTHERWISE SHOWN ON THE PLANS OR APPROVED BY THE ENGINEER, SPLICES IN ADJACENT REINFORCING BARS SHALL BE STAGGERED. THE MINIMUM DISTANCE BETWEEN STAGGERED SPLICES FOR REINFORCING BARS #11 OR SMALLER SHALL BE THE LENGTH REQUIRED FOR A LAPPED SPlice IN THE BAR.

SPLICES SHALL CONSIST OF PLACING THE REINFORCING BARS IN CONTACT AND WIRING THEM TOGETHER IN SUCH A MANNER AS TO MAINTAIN THE ALIGNMENT OF THE BARS AND TO PROVIDE MINIMUM CLEARANCES. THICKNESS GREATER THAN SIX (6) INCHES SHALL BE KEYED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

NO LAPPED SPLICES WILL BE PERMITTED AT LOCATIONS WHERE THE CONCRETE SECTION IS NOT SUFFICIENT TO PROVIDE MINIMUM CLEAR DISTANCE OF TWO INCHES BETWEEN THE SPlice AND THE NEAREST ADJACENT BAR. THE CLEARANCE TO THE SURFACE OF THE CONCRETE SHALL NOT BE REDUCED.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

THE LENGTH OF LAPPED SPLICES SHALL BE AS FOLLOWS: REINFORCING BARS #8 OR SMALLER, SHALL BE LAPPED AT LEAST 45 DIAMETERS OF THE SMALLER BAR JOINED, AND REINFORCING BARS #9, #10, AND #11 SHALL BE LAPPED AT LEAST 60 DIAMETERS OF THE SMALLER BAR JOINED, EXCEPT WHEN OTHERWISE SHOWN ON THE PLANS.

WHERE BUNDLED BARS ARE SPECIFIED, SPLICES SHALL CONFORM TO THE FOLLOWING:

1. IN BUNDLES OF TWO BARS, THE LENGTH OF LAPPED SPLICE SHALL BE 1.2 TIMES THE LENGTH OF SINGLE BAR LAPPED SPLICE.
2. IN BUNDLES OF THREE BARS, THE LENGTH OF LAPPED SPLICE SHALL BE 1.33 TIMES THE LENGTH OF SINGLE BAR LAPPED SPLICE.

SPIRAL REINFORCEMENT SHALL BE LAPPED AT LEAST 80 DIAMETERS. SPIRAL REINFORCEMENTS AT SPLICES AND AT ENDS SHALL BE TERMINATED BY A 135 DEGREE HOOK WITH A 10 INCH HOOK AROUND AN INTERSECTING BAR.

SPLICES OF TENSILE REINFORCEMENT AT POINTS OF MAXIMUM STRESS SHALL BE AVOIDED; HOWEVER, ANY PROPOSED DEVIATION FROM SPLICES SHOWN ON THE PLANS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

ADD TO SECTION 303-1.8, "PLACING CONCRETE", THE FOLLOWING:

1. CONCRETE FOR GIRDER SPANS SHALL BE PLACED IN NOT LESS THAN TWO OPERATIONS.
2. THE LAST OPERATION SHALL CONSIST OF PLACING THE TOP DECK SLAB.
3. AT LEAST FIVE DAYS SHALL ELAPSE BETWEEN EACH OPERATION, UNLESS OTHERWISE PERMITTED BY THE ENGINEER.

WHEN CONCRETE IS TO BE DEPOSITED IN A MEMBER LESS THAN 16 INCHES IN WIDTH, THE USE OF DOUBLE BELTING TO PREVENT SEGREGATION OF THE CONCRETE SHALL BE PERMITTED. IN LIEU OF PIPES OR TREMIES, EACH BELT SHALL EXTEND EQUIDISTANT INTO THE FORMS TO A POINT WHERE CONCRETE SHALL NOT FALL MORE THAN SIX FEET. WHEN PLACED IN THE FORMS, THE BELTS SHALL BE ALIGNED DIRECTLY OPPOSITE EACH OTHER.

ADD TO SECTION 303-1.8.6, "JOINTS", THE FOLLOWING:

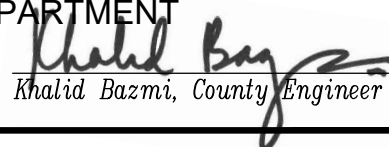
UNLESS OTHERWISE SPECIFIED, TRANSVERSE CONSTRUCTION JOINTS SHALL BE PLACED IN ALL REINFORCED SECTIONS AT INTERVALS OF NOT LESS THAN 10 FEET OR MORE THAN 50 FEET. THE JOINTS SHALL BE IN THE SAME PLANE FOR THE ENTIRE STRUCTURE, AND FOR CONCRETE THICKNESS GREATER THAN 6 INCHES SHALL BE KEYED AS DIRECTED BY THE ENGINEER.

CONSTRUCTION OF ALL REINFORCED CONCRETE SECTIONS (INCLUDING INVERTS) SHALL BE BY THE ALTERNATE PANEL METHOD, AND NO CONTINUOUS PLACEMENT THROUGH JOINTS WILL BE PERMITTED. AFTER PLACEMENT OF ALL CONCRETE IN A PANEL OR A SECTION ON ONE SIDE OF THE JOINT HAS BEEN COMPLETED, PLACEMENT OF CONCRETE ON THE OTHER SIDE OF THE JOINT SHALL BE DELAYED AS DIRECTED BY THE ENGINEER; BUT IN NO EVENT SHALL THE DELAY BE LESS THAN EIGHT HOURS.

IN LIEU OF SAW CUTTING, AS SPECIFIED IN SECTION 201-3 "EXPANSION JOINT FILLER AND JOINT SEALANTS", JOINT SEALANT GROOVES SHALL BE FORMED AS SHOWN ON THE PLANS AND AS DIRECTED BY THE ENGINEER.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

ADD TO SECTION 303-1.9, "SURFACE FINISHES", THE FOLLOWING:

THE LONGITUDINAL AND TRANSVERSE CHANNEL INVERT ELEVATION SHALL NOT VARY FROM TRUE LINE AND GRADE MORE THAN $\frac{1}{2}$ INCH. THE UNEVENNESS SHALL NOT BE MORE THAN $\frac{1}{4}$ INCH WHEN CHECKED WITH A 10-FOOT STRAIGHTEDGE. TOP OF CHANNEL WALL AND CHANNEL SIDE SLOPE ELEVATION SHALL NOT VARY FROM TRUE LINE AND GRADE MORE THAN $\frac{1}{2}$ INCH. UNEVENNESS SHALL NOT BE MORE THAN $\frac{1}{2}$ INCH WHEN CHECKED WITH A 10-FOOT STRAIGHTEDGE.

ANY SURFACES WHICH FAIL TO CONFORM TO THE ABOVE TOLERANCES SHALL BE GROUND IN ACCORDANCE WITH THE BEST STANDARD PRACTICE UNTIL TOLERANCES ARE MET. GRINDING SHALL NOT REDUCE THE CONCRETE COVER ON REINFORCING STEEL TO LESS THAN $1\frac{1}{2}$ INCHES. PORTIONS OF INVERTS WHICH CANNOT BE CORRECTED SATISFACTORILY BY GRINDING SHALL BE REMOVED AND REPLACED.

EXCEPT AS SPECIFIED ABOVE, VERTICAL OR HORIZONTAL POSITION OF STRUCTURES AS SHOWN ON THE PLANS OR AS SPECIFIED IN THESE SPECIFICATIONS, SHALL NOT VARY MORE THAN $\frac{1}{2}$ INCH FROM TRUE POSITION. ELEVATION AT INLET LIPS SHALL NOT VARY MORE THAN $\frac{1}{4}$ INCH FROM ELEVATIONS SHOWN ON THE PLANS WHEN CHECKED WITH A 10-FOOT STRAIGHTEDGE.

THE 10-FOOT STRAIGHTEDGE OR TEMPLATE SHALL BE FURNISHED BY THE CONTRACTOR AND SHALL BE READILY AVAILABLE PRIOR TO PLACING CONCRETE.

ADD TO SECTION 303-1.9.2, "ORDINARY SURFACE FINISH", THE FOLLOWING:

ORDINARY SURFACE FINISH SHALL NOT APPLY TO ROCK POCKETS WHICH, IN THE OPINION OF THE ENGINEER, ARE OF SUCH AN EXTENT OR CHARACTER AS TO AFFECT THE STRENGTH OF THE STRUCTURE MATERIALLY OR TO ENDANGER THE LIFE OF THE STEEL REINFORCEMENT. IN SUCH CASES, THE ENGINEER MAY DECLARE THE CONCRETE DEFECTIVE AND REQUIRE THE REMOVAL AND REPLACEMENT OF THE PORTION OF THE STRUCTURE AFFECTED.

ADD TO SECTION 303-5.5.1, "GENERAL", THE FOLLOWING:

THE TOP AND FACE OF THE FINISHED CURB SHALL BE TRUE AND STRAIGHT, AND THE TOP SURFACE SHALL BE OF UNIFORM WIDTH, FREE FROM HUMPS, SAGS, OR OTHER IRREGULARITIES. WHEN A 10-FOOT STRAIGHTEDGE IS LED ON THE TOP OR FACE OF THE CURB, OR ON THE SURFACE OF THE GUTTERS, THE SURFACE SHALL NOT VARY MORE THAN 0.01-FOOT FROM THE EDGE OF THE STRAIGHTEDGE, EXCEPT AT GRADE CHANGES OR CURVES.

SECTION III. REQUIREMENTS FOR SEA WATER OR SULFATE SOILS CONTACT

UNLESS OTHERWISE SHOWN ON THE PLANS OR AS REQUIRED IN THE SPECIAL PROVISIONS, THE MANUFACTURE AND CURING OF PORTLAND CEMENT CONCRETE UNDER THE FOLLOWING CONDITIONS SHALL APPLY:

A PROPOSED MIX DESIGN SHALL BE SUBMITTED TO THE OCPW ENGINEER OR GEOTECHNICAL ENGINEER FOR APPROVAL. THIS MIX DESIGN SHALL HAVE THE FOLLOWING CHARACTERISTICS:

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Approved


Khalid Bazmi, County Engineer

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

A. GENERAL:

1. THE THICKNESS OF CONCRETE OVER THE REINFORCEMENT SHALL BE 3 INCHES WHERE THE CONCRETE IS DEPOSITED AGAINST THE EARTH WITHOUT FORMS, AND 2 INCHES IF FORMED.
2. FORMS SHALL NOT BE REMOVED PRIOR TO 24 HOURS AFTER CONCRETE PLACEMENT AND IN NO EVENT SOONER THAN AS SPECIFIED IN SECTIONS 303-1.4.5, "CHANNELS AND ARCH SECTIONS" AND SECTION 303-1.5, "REMOVAL OF FORMS FOR CAST-IN-PLACE REINFORCED CONCRETE BOX (CIPRCB) SECTIONS".
3. SOIL SULFATE CONTENT SHALL BE DETERMINED BY CALIFORNIA TEST METHOD 417 (1978) MODIFIED TO A 10:1 DILUTION.

B. SEA WATER OR BRACKISH WATER CONTACT:

1. CONCRETE SHALL BE 800-CSE-5000, TYPE V CEMENT.
2. THE CEMENT CONTENT SHALL INCLUDE 20 PERCENT CLASS F FLY ASH.
3. THE WATER:CEMENT RATIO SHALL BE 0.40.
4. THE MIX SHALL CONTAIN REINFORCING FIBERS IN ACCORDANCE WITH MANUFACTURER INSTRUCTIONS.

C. MODERATE EXPOSURE SULFATE SOILS CONTACT:

SOLUBLE SO₄ CONTENT OF SOIL FROM 1,500 TO 10,000 PPM :

1. CONCRETE SHALL BE 658-CME-4500P, TYPE V CEMENT
2. A SUBSTITUTION OF 20 PERCENT CLASS F FLY ASH OF THE REQUIRED CEMENT CONTENT SHALL BE MADE
3. THE WATER:CEMENT RATIO SHALL BE 0.45
4. CONCRETE SPECIFIED BY SPECIAL EXPOSURE, TABLE 201-1.1.3, MODERATE EXPOSURE.

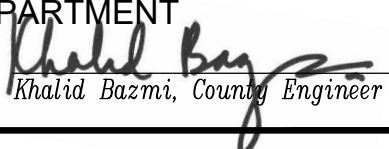
D. SEVERE EXPOSURE SULFATE SOILS CONTACT:

SOLUBLE SO₄ CONTENT OF SOIL THAT EXCEEDS 10,000 PPM:

1. CONCRETE SHALL BE 750-CSE-5000P, TYPE V CEMENT
2. A SUBSTITUTION OF 20 PERCENT CLASS F FLY ASH OF THE REQUIRED CEMENT CONTENT SHALL BE MADE
3. THE WATER:CEMENT RATIO SHALL BE 0.40
4. CONCRETE SPECIFIED BY SPECIAL EXPOSURE, TABLE 201-1.1.3, SEVERE EXPOSURE.

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

SECTION IV. AIR PLACED CONCRETE

AIR-PLACED CONCRETE SHALL COMPLY WITH SECTION 303-2, "AIR-PLACED CONCRETE", AND THESE SPECIAL PROVISIONS. CONCRETE SPECIFIED BY CLASS AND ALTERNATE CLASS, TABLE 201-1.1.2, AIR PLACED CONCRETE, METHOD B. THE CONCRETE CLASS SHALL BE 650-EFW-3250P.

THE STRENGTH OF AIR-PLACED CONCRETE SHALL BE DETERMINED FROM CORES CUT FROM TEST PANELS IN ACCORDANCE WITH THE FOURTH PARAGRAPH OF SECTION 303-2.4, "TESTS."

SECTION V. RECLAIMED HYDRAULIC CONCRETE

RECLAIMED CONCRETE MATERIAL MAY BE USED IN CONCRETE MIXTURES IN ACCORDANCE WITH THIS SECTION WHEN APPROVED BY THE OCPW ENGINEER OR GEOTECHNICAL ENGINEER. RECLAIMED CONCRETE MATERIAL MAY BE EITHER:

1. RECLAIMED PLASTIC PORTLAND CEMENT CONCRETE (RPPCC)
OR
2. RECLAIMED NON-PLASTIC PORTLAND CEMENT CONCRETE MATERIALS

THE CONTRACTOR IS REQUIRED TO MAINTAIN SUITABLE EQUIPMENT TO CLASSIFY, DOCUMENT, AND PROPORTION RECLAIMED CONCRETE MATERIAL USED IN CONCRETE MIXTURES. THE ADDITION AND CHARACTERISTICS OF RECLAIMED CONCRETE MATERIAL WILL BE MONITORED IN SUCH A MANNER SO TO ENSURE THAT THE FINAL PORTLAND CEMENT CONCRETE COMPOSITE CONFORMS TO THE SPECIFICATIONS FOR ITS CLASS AND USE. THE OCPW ENGINEER OR GEOTECHNICAL ENGINEER WILL APPROVE ALL NEW OR NEWLY IMPLEMENTED PROCESSES.

THE CONTRACTOR SHALL EVALUATE ALL MIX DESIGNS BY LABORATORY OR FIELD TRIAL BATCHES. EACH TRIAL BATCH SHALL CONFORM TO THE MATERIALS, PROPORTIONS, AND SLUMP AS PROPOSED BY THE MIX DESIGN. WHEN APPROVED BY THE ENGINEER, TRIAL BATCHES MAY BE PLACED IN THE WORK AT DESIGNATED LOCATIONS WHERE CONCRETE OF LOWER QUALITY IS SPECIFIED. CONCRETE SO PLACED WILL BE CONSIDERED FOR THE PURPOSE OF PAYMENT TO BE THE TYPE OF CONCRETE SPECIFIED AT THAT LOCATION. A MINIMUM OF TEN TEST CYLINDERS SHALL BE MOLDED FROM THE TRIAL BATCH AT THE MAXIMUM WATER CONTENT INDICATED BY THE MIX DESIGN. FIVE OF THE CYLINDERS SHALL BE TESTED AT 7 DAYS SO TO ESTABLISH 7-DAY AVERAGE COMPRESSIVE STRENGTH INFORMATION. THE REMAINING FIVE CYLINDERS SHALL BE TESTED AT NO MORE THAN 28 DAYS AFTER MOLDING AND THE AVERAGE COMPRESSIVE STRENGTH OF THE FIVE CYLINDERS FOR FIELD TEST BATCHES SHALL BE AT LEAST 600 PSI GREATER THAN THE SPECIFIED STRENGTH. FOR LABORATORY PREPARED TEST BATCHES THE COMPRESSIVE STRENGTH OF THE FIVE CYLINDERS SHALL BE 1,000 PSI GREATER THAN THE SPECIFIED STRENGTH. THE MINIMUM STRENGTH OF ANY ONE CYLINDER SHALL NOT BE LESS THAN THE SPECIFIED STRENGTH. CHANGES IN SOURCE OF MATERIALS OR ESTABLISHED PROCEDURES MAY REQUIRE NEW TRIAL BATCHES.

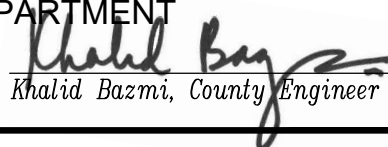
RECLAIMED CONCRETE MATERIAL SHALL NOT BE USED FOR SEA WATER OR SULFATE SOILS CONTACT. MIXTURES ARE NOT NORMALLY RECOMMENDED FOR USE IN PORTLAND CEMENT CONCRETE WHERE ARCHITECTURAL AESTHETICS ARE A CONCERN.

RECLAIMED PLASTIC PORTLAND CEMENT CONCRETE (RPPCC)

A MAXIMUM OF 15 PERCENT BY VOLUME OF RECLAIMED PLASTIC PORTLAND CEMENT CONCRETE CONFORMING TO THIS SECTION MAY BE INCORPORATED INTO FRESH PORTLAND CEMENT CONCRETE. EACH WEIGHMASTER CERTIFICATE SHALL SHOW THE EXACT VOLUME OF RPPCC IN ADDITION TO THE WEIGHMASTER CERTIFICATE REQUIREMENTS OF SECTION 201-1.4.3, "TRANSIT MIXERS".

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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

RPPCC MAY BE ANY UN-HARDENED PORTLAND CEMENT CONCRETE PROVIDED ITS DESIGN STRENGTH IS 2,000 PSI OR GREATER, ITS CONSTITUENT MATERIAL CONFORMS TO SECTION 201-1.2, "MATERIALS", AND IT HAS NOT ATTAINED OR HAS BEEN DELAYED FROM ATTAINING INITIAL SET EITHER BY TIME OR BY THE INCORPORATION OF SET-DELAYING CHEMICAL ADMIXTURES. WHEN SET-DELAYING CHEMICAL ADMIXTURES ARE USED, THEY WILL BE USED AT THE MANUFACTURERS RECOMMENDED DOSAGE RATES AND HAVE A PROVEN HISTORY OF SPECIFICALLY MAINTAINING AND EXTENDING BOTH PLASTICITY AND SET. THE CONTRACTOR WILL MAINTAIN PROCESS DOCUMENTATION, MIX DESIGNS, AND SUPPORTIVE CONCRETE TEST DATA AND SHALL PROVIDE THE INFORMATION TO THE ENGINEER UPON REQUEST.

RPPCC WILL BE PROPORTIONED BY VOLUME IN ACCORDANCE WITH SECTION 201-1.3, "PROPORTIONING", RPPCC MAY BE ADDED AT ANY POINT DURING THE PROPORTIONING PROCESS THAT RESULTS IN A CONSISTENT, UNIFORM, AND HOMOGENEOUS FINAL PRODUCT. FOR DESIGN AND PROPORTIONING PURPOSES, ALL RPPCC WILL BE CONSIDERED AS A 2,000 PSI MIXTURE, CONSISTING OF 470 POUNDS OF CEMENTITIOUS MATERIAL. ADDITIONAL PORTLAND CEMENT WILL BE ADDED TO ACHIEVE THE MINIMUM PORTLAND CEMENT CONTENT AND/OR STRENGTH AS REQUIRED FOR A MIXTURE'S CLASS AND USE. THE QUANTITY AND/OR CONSTITUENT MATERIALS OF THE RPPCC SHALL BE MONITORED AND PROPORTIONED SUCH THAT THE FINAL PORTLAND CEMENT CONCRETE GRADATION CONFORMS TO THE REQUIREMENTS OF SECTION 201-1.3.2, "COMBINED AGGREGATE GRADINGS".

RECLAIMED NON-PLASTIC PORTLAND CEMENT CONCRETE MATERIALS

NON-PLASTIC PORTLAND CEMENT CONCRETE MATERIALS SHALL CONSIST OF AN INDIVIDUAL AMOUNT OF OR A COMBINATION OF MATERIALS RESULTING FROM THE RECLAIMING OF PORTLAND CEMENT CONCRETE. BEFORE RECLAMATION, THESE MATERIALS SHALL CONFORM TO SECTION 201-1.2, "MATERIALS". THE RECLAIMED MATERIALS SHALL BE DESIGNATED AS EITHER RECLAIMED AGGREGATES (RA) OR RECLAIMED WATER (RW).

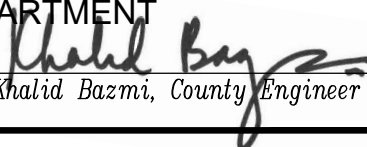
A MAXIMUM OF 30 PERCENT RA BY WEIGHT OF TOTAL AGGREGATE MAY BE INCORPORATED GRADED PORTLAND CEMENT CONCRETE AND/OR RECLAIMED, NATURALLY OCCURRING MINERAL AGGREGATES. RECLAIMED NATURALLY OCCURRING MINERAL AGGREGATES MAY CONTAIN MINOR RESIDUAL AMOUNTS OF PORTLAND CEMENT CONCRETE COMPONENTS AS A RESULT OF RECLAMATION. WHEN CRUSHED PORTLAND CEMENT CONCRETE IS USED AS RA, IT SHALL, WHEN COMBINED WITH NON-RECLAIMED AGGREGATES AT THE PROPOSED PERCENTAGE OF USE CONFORM TO SECTION 201-1.2.2, "AGGREGATES", AND THESE SPECIAL PROVISIONS. WHEN LESS THAN 15 PERCENT RA BY WEIGHT OF TOTAL AGGREGATE IS USED, THE REQUIREMENTS OF SECTION 201-1.2.2, "AGGREGATES", MAY BE WAIVED PROVIDED THE FINAL PORTLAND CEMENT CONCRETE GRADATION CONFORMS TO THE REQUIREMENTS OF SECTION 201-1.3.2, "COMBINED AGGREGATE GRADINGS".

A MAXIMUM OF 35 PERCENT RW BY WEIGHT OF BATCH WATER MAY BE INCORPORATED INTO FRESH PORTLAND CEMENT CONCRETE. RW MAY CONSIST OF NON-DELETERIOUS AMOUNTS OF HYDRATED AND UN-HYDRATED PORTLAND CEMENT, ADMIXTURES, MINOR AMOUNTS OF FLY ASH AND FINE AGGREGATE. THE RECLAMATION PROCESS FOR RW SHALL INCLUDE A MECHANISM TO ENSURE UNIFORMITY AND HOMOGENEITY OF THE RW.

RA AND RW WILL BE PROPORTIONED BY WEIGHT IN ACCORDANCE WITH SECTION 201-1.3, "PROPORTIONING". RA AND RW MAY BE ADDED AT ANY POINT DURING THE PROPORTIONING PROCESS THAT RESULTS IN A CONSISTENT, UNIFORM, AND HOMOGENEOUS FINAL PRODUCT.

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Approved


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SPECIAL PROVISION - PORTLAND CEMENT CONCRETE

SECTION I. MATERIALS

UNTREATED BASE MATERIALS SHALL MEET THE REQUIREMENTS OF SECTION 200-2, "UNTREATED BASE MATERIALS", AND THESE SPECIAL PROVISIONS.

IN LIEU OF THE SECOND SENTENCE OF SECTION 200-2.5.1, "GENERAL", AT LEAST 65 PERCENT, BY WEIGHT, OF THE MATERIAL RETAINED ON THE NO. 4 SIEVE SHALL BE CRUSHED PARTICLES AS DETERMINED BY CALIFORNIA TEST METHOD 205.

EVALUATION OF GRADATION AND SAND EQUIVALENT TEST RESULTS SHALL CONFORM TO THE PROVISIONS OF SECTION 200-2.1, "GENERAL". THE GRADATION AND SAND EQUIVALENT REQUIREMENTS OF SECTIONS 200-2.2, "CRUSHED AGGREGATE BASE", 200-2.4, "CRUSHED MISCELLANEOUS BASE", 200-2.5, "PROCESSED MISCELLANEOUS BASE", AND 200-2.6, "SELECT SUBBASE", SHALL BE THE MOVING AVERAGE REQUIREMENTS. INDIVIDUAL TEST REQUIREMENTS FOR GRADATION AND SAND EQUIVALENT SHALL BE AS DETERMINED BY THE OCPW MATERIALS LABORATORY.

SECTION II. GENERAL PROVISIONS

ADD TO SECTION 301-2.1, "GENERAL", THE FOLLOWING: UNTREATED BASE MATERIAL FOR PAVEMENT, CROSS GUTTERS, SPANDRELS AND SIMILAR TYPES OF IMPROVEMENTS, SHALL BE CONSTRUCTED OF MATERIAL AS SPECIFIED HEREIN.

THE MATERIAL GRADING SHALL BE EITHER COARSE OR FINE AS SPECIFIED IN SECTION 200-2.5.2, "GRADING", OF THE GREENBOOK, AT THE OPTION OF THE CONTRACTOR. CHANGES FROM ONE GRADING TO ANOTHER SHALL NOT BE MADE DURING THE PROGRESS OF THE WORK, UNLESS PERMITTED BY THE ENGINEER.

REVISE SECTION 301-2.2, "SPREADING", AS FOLLOWS:

DELETE THE LAST TWO SENTENCES IN PARAGRAPH 2 AND ADD THE FOLLOWING:

1. AT THE TIME UNTREATED BASE MATERIAL IS SPREAD, IT MAY HAVE A MOISTURE CONTENT SUFFICIENT TO OBTAIN THE REQUIRED COMPACTION. SUCH MOISTURE SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT THE MATERIAL.
2. TAILGATE SPREADING BY DUMP TRUCKS WILL NOT BE PERMITTED EXCEPT FOR SPOT DUMPING AND IN AREAS NOT READILY ACCESSIBLE TO SPREADING EQUIPMENT.

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SPECIAL PROVISIONS-UNTREATED BASE MATERIALS

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SECTION I. MATERIALS

ASPHALT CONCRETE (AC) SHALL MEET THE REQUIREMENTS OF SECTION 203-6, "ASPHALT CONCRETE", OF THE GREENBOOK AND THESE SPECIAL PROVISIONS. COARSE AGGREGATE SHALL CONSIST OF MATERIAL OF WHICH AT LEAST 75 PERCENT BY WEIGHT SHALL BE CRUSHED PARTICLES IN LIEU OF THE REQUIREMENTS OF SECTION 203-6.2, "MATERIALS".

THE PERFORMANCE GRADE OF PAVING ASPHALT SHALL BE PG 64-10 OR PG 70-10 AS DETERMINED BY THE ENGINEER. COPIES OF TEST REPORTS ON PAVING GRADE ASPHALT, AS DEFINED BY SECTION 203-1.3, "TEST REPORTS AND CERTIFICATION", SHALL BE AVAILABLE FOR EACH SHIPMENT.

PROPOSED ASPHALT CONCRETE JOB MIX FORMULA(S) SHALL BE DETERMINED BY CALIFORNIA TEST METHOD 367, METHOD OF TEST FOR DETERMINING OPTIMUM BITUMEN CONTENT. JOB MIX FORMULAS AND SUPPORTING CALIFORNIA TEST METHOD 367 TEST DATA SHALL BE SUBMITTED TO THE OCPW ENGINEER OR GEOTECHNICAL ENGINEER FOR APPROVAL ANNUALLY IN JANUARY UNLESS OTHERWISE APPROVED BY THE OCPW MATERIALS LABORATORY. IN NO CASE SHALL THE JOB MIX FORMULA, AND ITS SUPPORTING TEST DATA, BE MORE THAN TWO YEARS OLD. THE AGGREGATES USED FOR DETERMINING THE PROPOSED JOB MIX FORMULAS SHALL BE FROM THE SAME SOURCE AS WILL BE USED IN ACTUAL PRODUCTION. CHANGES IN AGGREGATE SOURCE, PAVING ASPHALT SOURCE OR PERFORMANCE GRADE SHALL NOT BE PERMITTED UNLESS A PRE-APPROVED JOB MIX FORMULA FOR THE CHANGED AGGREGATE OR PAVING ASPHALT SOURCE(S) IS ON FILE WITH THE OCPW. SUBMITTALS OF ALL JOB MIX FORMULAS FOR APPROVAL SHALL BE MADE AT LEAST 20 DAYS PRIOR TO INTENDED USE.

AS A GENERAL GUIDELINE THE REQUIRED GRADATION FOR ORANGE COUNTY ASPHALT CONCRETE MIX DESIGNS WILL BE AS FOLLOWS:

ARTERIAL HIGHWAYS

$\frac{1}{2}$ " (III-C2-PG 64-10) SURFACE COURSE
 $\frac{3}{4}$ " (III-B3-PG 64-10) SURFACE COURSE*
 $\frac{3}{4}$ " (III-B2-PG 64-10) BASE COURSE

BIKE TRAIL (OFF ROAD)

$\frac{3}{8}$ " (III-D-PG 64-10) SURFACE COURSE*
 $\frac{1}{2}$ " (III-C3-PG 64-10) BASE AND SURFACE COURSE

NON-ARTERIAL STREETS

$\frac{1}{2}$ " (III-C2-PG 64-10) SURFACE COURSE
 $\frac{3}{4}$ " (III-B3-PG 64-10) BASE COURSE

ASPHALT CONCRETE DIKES

$\frac{3}{8}$ " (III-D-PG 70-10) SURFACE COURSE MIX WITH
ONE PERCENT ADDITIONAL BINDER IN A MIX
DESIGN APPROVED BY OC PUBLIC WORKS
MATERIALS LABORATORY

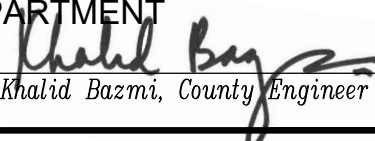
* USE ONLY WHEN REQUIRED BY THE ENGINEER.

ASPHALT CONCRETE LOAD TICKETS SHALL CLEARLY SHOW THE MIX DESIGNATION FOR THE APPROVED JOB MIX FORMULA

THE GRADATION FOR THE PROJECT ASPHALT CONCRETE JOB MIX FORMULA SHALL BE WITHIN THE SPECIFICATION RANGE AS SET FORTH IN SECTION 203-6, "ASPHALT CONCRETE", AND TABLE 203-6.5.4(A). DEVIATIONS FROM THE APPROVED PERCENTAGE PASSING EACH APPLICABLE JOB MIX FORMULA SIEVE SIZE SHALL BE LIMITED TO FOLLOWING AND IN NO CASE SHALL THE SUM OF THE ABSOLUTE VALUES OF THE DEVIATIONS EXCEED 15:

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SPECIAL PROVISIONS - ASPHALT CONCRETE

ACCEPTABLE DEVIATION FROM JOB MIX FORMULA

SIEVE	ACCEPTABLE DEVIATION
1"	±3%
¾"	±5%
⅜"	±6%
No. 4	±6%
No. 8	±5%
No. 30	±5%
No. 200	±3%

DELETE THE THIRD SENTENCE OF SECTION 203-6.11. "ACCEPTANCE". AND ADD THE FOLLOWING:
THE ASPHALT BINDER CONTENT SHALL BE WITHIN 0.4 PERCENT ABOVE OR BELOW THE TARGET BINDER RATIO (OPTIMUM BITUMEN CONTENT) IN THE APPROVED MIX DESIGN.

ASPHALT CONCRETE SUPPLIERS SHALL MAINTAIN RECORDS OF EACH AGGREGATE AND ASPHALT PAVING SHIPMENT RECEIVED. PAVING ASPHALT RECORDS SHALL INCLUDE PERFORMANCE GRADE TEST DATA. THESE RECORDS SHALL BE MAINTAINED CURRENT AND BE READILY ACCESSIBLE TO THE ENGINEER AT THE PLANT SITE UPON REQUEST. THE RECORDS SHALL INCLUDE BUT NOT BE LIMITED TO: AGGREGATE OR PAVING ASPHALT SOURCE OF ORIGIN, LOCATION RECEIVED AND THE DATE SHIPPED.

THE SAND EQUIVALENT AND STABILOMETER-VALUE (S-VALUE) REQUIREMENTS OF SECTION 203-6.5, "TYPE III ASPHALT CONCRETE MIXTURES", SHALL BE THE MOVING AVERAGE REQUIREMENTS. INDIVIDUAL TEST REQUIREMENTS FOR SAND EQUIVALENT AND S-VALUE SHALL BE AS DETERMINED BY THE OCPW MATERIALS LABORATORY.

SECTION II. GENERAL PROVISIONS

ADD TO SECTION 302-5.1, "GENERAL", THE FOLLOWING: THE COMBINED AGGREGATE GRADING FOR ASPHALT CONCRETE PLACED ON MISCELLANEOUS AREAS SHALL CONFORM TO THE GRADATION FOR THE ASPHALT CONCRETE PLACED ON THE TRAVELED WAY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE AMOUNT OF ASPHALT BINDER USED IN THE ASPHALT CONCRETE PLACED IN GUTTER, GUTTER FLARES, OVERSIDE DRAINS, AND APRONS AT THE ENDS OF DRAINAGE STRUCTURES, UNLESS OTHERWISE DIRECTED BY THE ENGINEER, SHALL BE INCREASED ONE PERCENT BY WEIGHT OF THE AGGREGATE OVER THE AMOUNT OF ASPHALT BINDER USED IN THE ASPHALT CONCRETE PLACED ON THE TRAVELED WAY.

THE ASPHALT CONCRETE TO BE PLACED IN AREAS WHICH ARE DESIGNATED ON THE PLANS AS MISCELLANEOUS AREAS MAY BE SPREAD IN ONE LAYER. THE MATERIAL SHALL BE COMPACTED TO THE REQUIRED LINES, GRADES AND CROSS-SECTIONS.

DIKES SHALL BE SHAPED AND COMPACTED WITH AN EXTRUSION MACHINE OR OTHER EQUIPMENT CAPABLE OF SHAPING AND COMPACTING THE MATERIAL TO THE REQUIRED CROSS-SECTIONS.

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SPECIAL PROVISIONS - ASPHALT CONCRETE

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IN ADVANCE OF PLACING ASPHALT CONCRETE DIKE ON ASPHALT SURFACING, THE SURFACE SHALL BE BROOMED CLEAN OF ALL LOOSE AND EXTRANEIOUS MATERIAL AND A TACK COAT SHALL BE APPLIED.

IF THE FINISHED SURFACE OF THE ASPHALT CONCRETE ON THE TRAFFIC LANES DOES NOT MEET THE SPECIFIED SURFACE TOLERANCES, IT SHALL BE BROUGHT WITHIN TOLERANCES BY EITHER: (1) ABRASIVE GRINDING AND GROOVING (FOLLOWED BY FOG SEAL ON THE AREAS WHICH HAVE BEEN GROUND), (2) PLACING AN OVERLAY OF ASPHALT CONCRETE, OR (3) REMOVAL AND REPLACEMENT. THE METHOD SHALL BE SELECTED BY THE ENGINEER.

DELETE SECTION 302-5.3, "PRIME COAT", AND SUBSTITUTE THE FOLLOWING: WHEN SPECIFIED OR REQUIRED BY THE PROJECT PLANS, SPECIAL PROVISIONS, OR AS DIRECTED BY THE ENGINEER, A PRIME COAT CONSISTING OF GRADE SC-70 OR SC-250 LIQUID ASPHALT SHALL BE APPLIED TO THE SURFACE OF THE PREPARED BASE OR SUBBASE PRIOR TO PLACING ASPHALT CONCRETE AT THE RATE BETWEEN 0.10 AND 0.25 GALLON PER SQUARE YARD.

MODIFY SECTION 302-5.4, "TACK COAT", AS FOLLOWS: A TACK COAT OF SS-1H TYPE EMULSIFIED ASPHALT, WHERE STIPULATED ON THE PLANS AND SPECIFICATIONS OR REQUIRED BY THE ENGINEER, SHALL BE APPLIED IN ACCORDANCE WITH SECTION 302-5.4, "TACK COAT", MAY BE USED ONLY WHEN APPROVED BY THE ENGINEER. PAVING ASPHALT WHEN, APPROVED, SHALL BE SPREAD IN ACCORDANCE WITH PREVISIONS OF SECTION 203-1, "PAVING ASPHALT".

ADD TO SECTION 302-5.5, "DISTRIBUTION AND SPREADING", THE FOLLOWING: TARPAULINS SHALL BE USED TO COVER ALL LOADS, WHEN DIRECTED BY THE ENGINEER.

UNLESS OTHERWISE PERMITTED BY THE ENGINEER, THE TOP LAYER OF ASPHALT CONCRETE FOR SHOULDERS, TAPERS, TRANSITIONS, ROAD CONNECTIONS, PRIVATE DRIVES, CURVE WIDENINGS, TURNOUTS LEFT TURN POCKETS AND OTHER SUCH AREAS, SHALL NOT BE SPREAD BEFORE THE TOP LAYER OF ASPHALT CONCRETE FOR THE ADJOINING THROUGH LANE HAS BEEN SPREAD AND COMPACTED. AT LOCATIONS WHERE THE NUMBER OF LANES ARE CHANGED, THE TOP LAYER FOR THE THROUGH LANE SHALL BE PAVED FIRST. TRACKS OR WHEELS OF SPREADING EQUIPMENT SHALL NOT BE OPERATED ON THE TOP LAYER OF ASPHALT CONCRETE IN ANY AREA UNTIL FINAL COMPACTION HAS BEEN COMPLETED OR UNLESS DIRECTED BY THE ENGINEER.

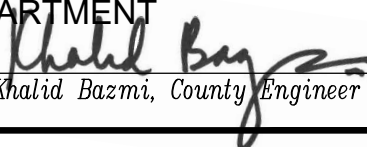
UNLESS OTHERWISE SPECIFIED IN THE APPROVED PAVEMENT DESIGN REPORT, THE TOP LAYER OF ASPHALT CONCRETE SHALL NOT EXCEED 0.20-FOOT IN COMPACTED THICKNESS. EACH LANE OF THE TOP LAYER, ONCE COMMENCED, SHALL BE PLACED WITHOUT INTERRUPTION.

UNLESS SPECIFICALLY PROVIDED FOR IN THE SPECIAL PROVISIONS, BOTTOM DUMPS SHALL NOT BE USED IN THE PAVING OPERATION FOR TOP LAYER PAVING OF ASPHALT CONCRETE ON ARTERIAL HIGHWAYS.

ALL SCREED EXTENSIONS FOR PAVING MACHINES SHALL BE PROVIDED WITH A TAMPER, ROLLER OR OTHER SUITABLE COMPACTING DEVICES.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

Approved


Khalid Bazmi, County Engineer

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SPECIAL PROVISIONS - ASPHALT CONCRETE

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UNLESS OTHERWISE APPROVED BY THE ENGINEER, THE PAVING MACHINES SHALL HAVE A SUITABLE OPERATIONAL JOINT COMPACTING DEVICE IN PLACE AND USE WHEN PLACING THE TOP LAYER OF ASPHALT CONCRETE ON ARTERIAL HIGHWAYS.

ADD TO SECTION 302-5.6, "ROLLING", THE FOLLOWING: THREE-WHEELED ROLLERS AS SPECIFIED IN SECTION 302-5.6.1 "GENERAL", SHALL NOT BE PERMITTED. PNEUMATIC ROLLERS SHALL BE REQUIRED ON LOWER LAYERS ONLY. PNEUMATIC ROLLERS MAY BE USED FOR INTERMEDIATE ROLLING ON FINISH COURSE PAVING FOR ARTERIAL HIGHWAYS WITH THE APPROVAL OF THE ENGINEER.

FOR SUBDIVISION AND PERMIT WORK WITHIN THE COUNTY, THE FINAL OR SURFACE LAYER OF THE ASPHALT CONCRETE SHALL NOT BE PLACED UNTIL ALL ON-SITE IMPROVEMENTS HAVE BEEN COMPLETED, INCLUDING ALL GRADING AND UNTIL ALL UNACCEPTABLE CONCRETE IS REMOVED AND REPLACED AT THE DIRECTION OF THE ENGINEER.

ALL MANHOLE, VALVE AND VAULT COVERS SHALL BE FINISHED $\frac{1}{4}$ INCH BELOW FINISHED GRADE.

WHEN SPECIFIED OR DIRECTED BY THE ENGINEER, A FOG SEAL OF SS-1H OR CSS-1H TYPE EMULSIFIED ASPHALT SHALL BE APPLIED TO THE FINISHED SURFACE OF ASPHALT CONCRETE PAVEMENT AT A RATE OF 0.05 TO 0.10 GALLON PER SQUARE YARD AS DETERMINED BY THE ENGINEER. ADDITIONAL WATER SHALL BE ADDED TO THE MATERIAL AND MIXED THEREWITH IN SUCH A PROPORTION THAT THE RESULTING MIXTURE WILL CONTAIN NOT MORE THAN 50 PERCENT OF THE ADDED WATER, THE EXACT QUANTITY OF ADDED WATER SHALL BE DETERMINED BY THE ENGINEER. THE RATE OF APPLICATION OF THE RESULTING MIXTURE SHALL BE THAT THE UNDILUTED EMULSION WILL BE SPREAD AT THE SPECIFIED RATE. PRIOR TO PLACEMENT OF THE FOG SEAL, ALL DIRT, MUD, TRASH, OR OTHER LOOSE MATERIAL SHALL BE CLEANED FROM THE AREA TO BE COVERED. ALL ASPHALT CONCRETE PAVING IN LOCAL AND PRIVATE STREETS SHALL REQUIRE A FOG SEAL.

SECTION III. DEEP LIFT PAVING

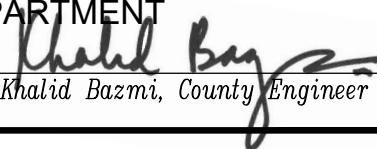
IN ADDITION TO THE PROVISIONS OF SECTIONS I AND II FOR ASPHALT CONCRETE PAVEMENT, THE FOLLOWING PROVISIONS SHALL BE ADHERED TO WHEN CONSTRUCTING ASPHALT CONCRETE PAVEMENT, DEEP LIFT SECTION, WHERE SHOWN ON THE PLANS OR SPECIFIED BY THE ENGINEER.

ASPHALT CONCRETE BASE SHALL BE SPREAD AT A TEMPERATURE OF NOT LESS THAN 230°F NOR MORE THAN 300°F UNLESS A HIGHER TEMPERATURE IS ORDERED BY THE ENGINEER AND SHALL BE SPREAD AND COMPACTED IN LAYERS NOT TO EXCEED 0.50-FOOT IN COMPACTED THICKNESS. WHEN MORE THAN ONE LAYER OF BASE COURSE IS REQUIRED, THE LAYERS SHALL BE OF EQUAL THICKNESS. THE FOLLOWING SHALL APPLY TO SPREADING:

1. EACH LAYER SHALL BE SPREAD WITH AN APPROVED SPREADING DEVICE WHICH WILL DEPOSIT A UNIFORM LAYER FOR MINIMUM OF ONE TRAFFIC LANE WIDTH. A MOTOR GRADER SHALL NOT BE USED AS THE SPREADING DEVICE.
2. THE MINIMUM TEMPERATURE OF ASPHALT CONCRETE FOR COMPLETION OF THE INITIAL BREAKDOWN COMPACTION SHALL BE 225°F.
3. INITIAL OR BREAKDOWN COMPACTION SHALL BE PERFORMED WITH TWO-OR-THREE-AXLE TANDEM ROLLER WITH A MASS OF NO LESS THAN 12 TONS.

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4. FOR COUNTY-FUNDED CONSTRUCTION CONTRACTS, THE INITIAL OR BREAKDOWN ROLLING SHALL BE IMMEDIATELY FOLLOWED BY A MOTOR GRADER WITH ADDITIONAL MATERIAL TO LEVEL IRREGULARITIES AND PROVIDE A UNIFORM SURFACE FOR SUBSEQUENT LAYERS. ADDITIONAL ROLLING SHALL PROCEED DIRECTLY BEHIND THE MOTOR GRADERS WITH A PNEUMATIC-TIRED ROLLER WHILE THE TEMPERATURE OF THE ASPHALT CONCRETE IS ABOVE 180°F.
5. FOR SUBDIVISION AND PERMIT WORK WITHIN THE COUNTY, WHEN THREE OR MORE COURSES ARE REQUIRED, DEPTHS OF THE NEXT COURSE SHALL BE PAINTED FOR THE TOP TWO COURSES AT INTERVALS NOT TO EXCEED 50 FEET AS DIRECTED BY THE ENGINEER.
6. THE SUBSEQUENT LAYERS OF ASPHALT CONCRETE SHALL NOT BE SPREAD WHEN THE UNDERLYING LAYER IS ABOVE 150°F.

SECTION IV. BIKE TRAIL PAVING

THE AMOUNT OF ASPHALT BINDER USED IN THE ASPHALT CONCRETE PLACED FOR OFF ROAD BIKE TRAIL PAVING SHALL BE INCREASED ONE PERCENT BY MASS OF THE AGGREGATE OVER THE AMOUNT OF THE ASPHALT BINDER USED IN THE ASPHALT CONCRETE IF PLACED AS ROADWAY PAVING.

*ASPHALT CONCRETE PAVEMENT FOR THE BIKE TRAIL MAY BE PLACED IN ONE LIFT BY A SELF-PROPELLED MACHINE. ALL OTHER PROVISIONS OF SECTION I AND II SHALL APPLY.

- * S-VALUE REQUIREMENTS WILL BE DETERMINED BY THE OCPW ENGINEER OR GEOTECHNICAL ENGINEER.

SECTION V. RUBBERIZED ASPHALT GAP GRADED MIXES

PROPOSED JOB MIX FORMULAS SHALL BE ESTABLISHED BY CALIFORNIA TEST METHOD 367, METHOD OF TEST FOR DETERMINING OPTIMUM BITUMEN CONTENT AS SET FORTH IN SECTION I HEREIN. AGGREGATE GRADATIONS, BINDER AND RUBBER CONTENT SHALL BE AS GENERALLY SET FORTH IN THE GREENBOOK.

SECTION VI. POROUS ASPHALT CONCRETE

POROUS ASPHALT CONCRETE MATERIAL SHALL MEET THE REQUIREMENT OF SECTION 203, "BITUMINOUS MATERIALS", SECTION 302, "ROADWAY SURFACING", AND THESE SPECIAL PROVISIONS.

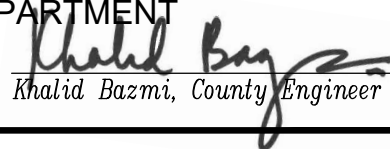
POROUS ASPHALT CONCRETE SHALL BE THE PRODUCT OF MIXING OPEN-GRADED MINERAL AGGREGATE WITH PAVING ASPHALT AT A CENTRAL MIXING PLANT TO YIELD A NON-STRUCTURAL MATERIAL INTENDED FOR AREAS WHICH CAN BE EFFECTIVELY RESTRICTED FROM HEAVY LOADING AND HIGH TRAFFIC VOLUMES.

SECTION VII. WARM MIX ASPHALT CONCRETE

WARM MIX ASPHALT CONCRETE MATERIAL SHALL MEET THE REQUIREMENTS OF THESE SPECIAL PROVISIONS.

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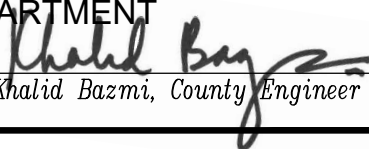
SPECIAL PROVISIONS - ASPHALT CONCRETE

WHEN USING WARM MIX ASPHALT (WMA) TECHNOLOGIES, THE MINIMUM TEMPERATURE OF THE COMPLETE PAVING ASPHALT MIXTURE MAY BE LOWERED TO 121°C (250°F). THE ASPHALT PLANT IS TO BE EQUIPPED WITH THE PROPER EQUIPMENT TO MAKE WARM MIX ASPHALT CONCRETE BY EITHER THE FOAMING, CHEMICAL ADDITIVE, OR ORGANIC ADDITIVE (WAX) METHODS. FOR ALL THE ABOVE WMA METHODS, PAVING ASPHALT CONCRETE MAY BE PRODUCED AT 121°C TO 143°C (250°F TO 290°F) AND THE PRODUCTION TEMPERATURE WILL BE DEPENDENT ON ASPHALT BINDER GRADE. THE TEMPERATURE OF WINDROW WARM MIX ASPHALT SHALL NOT FALL BELOW 118°C (245°F).

IN PLACE COMPACTION OF WARM MIX ASPHALT CONCRETE MAY BE PERFORMED AT TEMPERATURES BELOW THOSE EMPLOYED FOR CONVENTIONAL HOT MIX ASPHALT CONCRETE AND SHOULD BE COMPLETED BEFORE THE IN PLACE WMA TEMPERATURE REACHES 66°C (150°F). WMA SHALL NOT BE PLACED UNLESS THE ATMOSPHERIC TEMPERATURE IS AT LEAST 10°C (50°F) AND RISING OR DURING UNSUITABLE WEATHER.

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SPECIAL PROVISIONS - ASPHALT CONCRETE

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SECTION I. STRUCTURAL EXCAVATION AND BACKFILL

DELETE THE THIRD PARAGRAPH IN SECTION 300-3.3, "FOUNDATION MATERIAL TREATMENT" OF THE GREENBOOK, BEGINNING "WHERE THE ORIGINAL..." AND SUBSTITUTE THE FOLLOWING:

RELATIVE COMPACTION OF NOT LESS THAN 95 PERCENT SHALL BE OBTAINED FOR EMBANKMENT UNDER BRIDGE AND RETAINING WALL FOOTINGS WITHOUT PILE FOUNDATIONS WITHIN THE LIMITS ESTABLISHED BY INCLINED PLANES SLOPING 1.5 HORIZONTAL TO 1 VERTICAL OUT AND DOWN FROM LINES ONE FOOT OUTSIDE THE BOTTOM EDGES OF THE FOOTING:

ADD TO SECTION 300-3.5, "STRUCTURE BACKFILL", THE FOLLOWING PARAGRAPHS:

BACKFILL AT BRIDGE ABUTMENTS SHALL HAVE A RELATIVE COMPACTION REQUIREMENT OF NOT LESS THAN 95 PERCENT.

COMPACTION EQUIPMENT OR METHODS WHICH MAY CAUSE EXCESSIVE DISPLACEMENT OR MAY DAMAGE STRUCTURES, SUCH AS SLEEVE TAMPERS (STOMPERS), SHALL NOT BE USED.

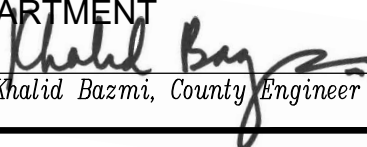
SECTION I. SUBGRADE TOLERANCES

SECTION 301-1.4, "SUBGRADE TOLERANCES", SHALL BE DELETED, AND THE FOLLOWING SHALL BE ADDED:

SUBGRADE FOR PAVEMENT, SIDEWALK, CURB AND GUTTER, DRIVEWAYS, OR OTHER ROADWAY STRUCTURES SHALL NOT VARY MORE THAN 0.05 FOOT FROM THE SPECIFIED GRADE AND CROSS SECTION. SUBGRADE FOR SUBBASE OR BASE MATERIALS SHALL NOT VARY MORE THAN 0.10 FOOT FROM THE SPECIFIED GRADE AND CROSS SECTION. VARIATIONS WITHIN THE ABOVE-SPECIFIED TOLERANCES SHALL BE COMPENSATING SO THAT THE AVERAGE GRADE AND CROSS-SECTION SPECIFIED ARE MET.

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SPECIAL PROVISIONS - EARTHWORK

PATTERN-STAMPED MEDIAN PAVING

CONCRETE MEDIAN PAVEMENT SHALL BE IMPRINTED WITH THE BOMANITE COBBLESTONE PATTERN (WITHOUT GROUT) OR AN APPROVED EQUIVALENT.

IMPRINTING OF THE CONCRETE SHALL BE DONE IN A UNIFORM MANNER WITH DEPTH AND WIDTH OF IMPRINT BEING 1/2-INCH, HAVING NO MORE THAN 1/8-INCH VARIANCE FROM ONE AREA TO ANOTHER. IMPRINT VALLEYS SHALL BE FREE FROM RIDGES.

COLORLED HARDENER SHALL BE TERRA COTTA (A-29) "LITHOCHROME COLOR HARDENER" AS MANUFACTURED BY L.M. SCOFIELD COMPANY, LOS ANGELES, CALIFORNIA OR AN APPROVED EQUIVALENT. THE MINIMUM RATE OF APPLICATION OF THE HARDENER SHALL BE 60 POUNDS PER 100 SQUARE FEET.

COLORWAX CURING AND FINISHING COMPOUND SHALL BE TERRA COTTA "LITHOCHROME COLOR-WAX" AS MANUFACTURED BY L.M. SCOFIELD COMPANY, LOS ANGELES, CALIFORNIA, OR AN APPROVED EQUIVALENT. MINIMUM APPLICATION COVERAGE SHALL BE 600 SQUARE FEET PER GALLON OF UNTHINNED COLORWAX.

FINAL COLOR APPEARANCE SHALL BE UNIFORM THROUGHOUT THE ENTIRE SURFACE AREA. ALL SURFACES THAT ARE NOT UNIFORM IN COLOR AND SURFACE TEXTURE WILL BE REJECTED.

INTERLOCKING CONCRETE PAVERS

GENERALLY THE INSTALLATION SHOULD BE BASED ON THE MANUFACTURER SPECIFICATIONS OR GUIDELINES.

INTERLOCKING CONCRETE PAVERS SHALL CONFORM TO ASTM C1634 AND SHALL BE GRADE N-1. PAVERS SHALL BE NORMAL WEIGHT CLASSIFICATION AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI, AND SHALL BE OF THE SIZE AND SHAPE INDICATED ON THE PLANS. THE COLOR OF THE PAVERS SHALL BE TERRA COTTA OR ENGINEER APPROVED EQUAL. TWO SAMPLES OF EACH KIND AND COLOR OF PAVER TO BE USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL AT LEAST 48 HOURS PRIOR TO PLACEMENT OF PAVERS. ALL PROPOSED STRUCTURAL SECTIONS MUST BE REVIEWED AND APPROVED BY THE OCPW ENGINEER OR GEOTECHNICAL ENGINEER.

MATERIALS SHALL BE DELIVERED, STORED, AND HANDLED IN A MANNER TO PREVENT DAMAGE BY BREAKAGE, WATER OR MOISTURE OR THE INCLUSION OF FOREIGN PARTICLES. NO MATERIALS SHALL BE DUMPED OR STORED ON THE GROUND. MATERIALS SHALL BE STORED ON A CLEAN SURFACE OR PLATFORM AS REQUIRED AND SHALL BE PROTECTED FROM DETERIORATION AND FOREIGN MATTER.

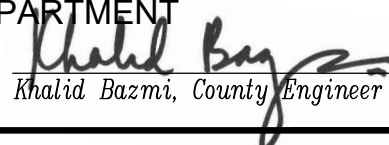
PAVERS SHALL BE CLEAN AND FREE OF DUST, DIRT OR OTHER FOREIGN MATERIALS BEFORE LAYING.

CONCRETE PAVERS SHALL BE LAID IN THE PATTERN INDICATED ON THE PLANS. PATTERNS SHALL NOT BE MIXED.

PAVERS SHALL BE LAID PLUMB, LEVEL, AND TRUE TO LINE. CORNERS AND ANGLES SHALL BE SQUARE UNLESS OTHERWISE INDICATED ON THE PLANS OR DIRECTED BY THE ENGINEER.

COUNTY OF ORANGE, OC PUBLIC WORKS DEPARTMENT

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Khalid Bazmi, County Engineer

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SPECIAL PROVISIONS - CONCRETE MEDIAN PAVING

INTERLOCKING CONCRETE PAVERS (Continued)

PAVERS SHALL BE LAID AND WORKED OUT TO PROPERLY COINCIDE AND ALIGN WITH ADJACENT WORK. NO FRACTIONAL PARTS OF PAVERS WILL BE PERMITTED IN THE WORK WHERE WHOLE PAVERS CAN BE USED.

THE LAYING OF PAVERS SHALL START IN ONE CORNER. PAVERS SHALL BE PLACED ALONG ONE SIDE OF THE WORKING AREA IN THE INDICATED PATTERN. PAVING UNITS SHALL BE PLACED CAREFULLY ON THE SAND BED AND SHALL BE PLACED TIGHT TOGETHER AND LEVEL.

PAVERS SHALL BE USED AS A BASE FROM WHICH TO WORK TO AVOID WALKING IN OR DISTURBING THE SAND BED. PAVING UNIT JOINTS SHALL BE FILLED BY SPREADING DRY, CLEAN, WASHED PLASTER SAND ON TOP OF THE PAVERS AND SWEEPING THE PLASTER SAND INTO THE JOINTS. THE ENTIRE PAVED AREA SHALL BE WET DOWN WITH A WATER HOSE, WASHING EXCESS SAND INTO THE JOINTS. THIS PROCEDURE SHALL BE REPEATED AS NECESSARY TO FILL THE JOINTS FLUSH WITH THE TOP OF THE PAVERS.

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SPECIAL PROVISIONS - CONCRETE MEDIAN PAVING

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GEOTEXTILES SPECIFICATION

DEFINITIONS

GEOTEXTILE. SYNTHETIC FABRIC USED IN CIVIL ENGINEERING APPLICATIONS SERVING THE PRIMARY FUNCTION OF DRAINAGE AND FILTRATION, EROSION CONTROL, SEPARATION, PAVEMENT REINFORCEMENT, AND SHALL BE IN ACCORDANCE WITH SECTION 213-5, "GEOTEXTILES AND GEOGRIDS".

NONWOVEN GEOTEXTILES SHALL CONSIST OF LONG CHAIN, POLYMERIC FILAMENTS OF POLYPROPYLENE, POLYESTER, OR NYLON. THE FABRIC SHALL BE A STABLE NETWORK OF FIBERS WHICH RETAIN THEIR POSITIONS RELATIVE TO EACH OTHER.

WOVEN GEOTEXTILES SHALL CONSIST OF LONG CHAIN POLYMERIC MONOFILAMENTS, SLIT FILM TAPES OR MULTIFILAMENTS OF TAPE AND NONWOVEN YARN OF POLYPROPYLENE, POLYESTER OR NYLON. THE FABRIC SHALL BE WOVEN INTO A STABLE NETWORK AND THE EDGES OF THE FABRIC SHALL BE SELVEDGED OR SURGED IN SUCH A WAY THAT THE FABRIC WILL NOT UNRAVEL OR FRAY DURING INSTALLATION OR USAGE.

GEOSYNTHETICS

PHYSICAL PROPERTIES. GEOTEXTILES SHALL MEET THE REQUIREMENTS FOR THE TYPE INDICATED IN THE TABLE ON PAGE 5. THE TABLES IN SECTION 213-5, "GEOTEXTILES AND GEOGRIDS", SHALL BE USED AS REFERENCE.

IDENTIFICATION. GEOTEXTILES SHALL BE FURNISHED IN ROLLS WRAPPED WITH PROTECTIVE COVERING TO PROTECT THEM AGAINST ULTRAVIOLET RADIATION AND ABRASION. TORN WRAPPERS SHALL BE REPAIRED WITHIN 48-HOURS USING AN APPROVED PROTECTIVE COVERING. EACH ROLL OF FABRIC SHALL BE MARKED OR TAGGED TO IDENTIFY THE MANUFACTURER, TYPE, LENGTH, WIDTH, AND PRODUCTION IDENTIFICATION NUMBER.

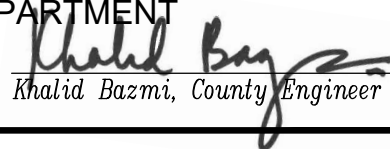
SAMPLING AND TEST COMPLIANCE. A LABORATORY SHALL BE MAINTAINED AT OR NEAR THE POINT OF MANUFACTURE TO ENSURE QUALITY CONTROL IN ACCORDANCE WITH ASTM AND OTHER APPLICABLE TESTING PROCEDURES. THE LABORATORY SHALL BE APPROVED BY THE ENGINEER. THE LABORATORY SHALL MAINTAIN RECORDS OF ITS' QUALITY CONTROL RESULTS.

A MANUFACTURER'S CERTIFICATE SHALL ACCOMPANY THE SHIPMENT AND BE DELIVERED TO THE ENGINEER PRIOR TO INSTALLATION. THE CERTIFICATE SHALL INCLUDE: (A) NAME OF MANUFACTURER; (B) CHEMICAL COMPOSITION; (C) PRODUCT DESCRIPTION; (D) LOT NUMBER AND TEST RESULTS; AND (E) SIGNATURE OF AN AUTHORIZED OFFICIAL. A UNIT IS 600 SQUARE YARDS OR ONE ROLL, WHICHEVER IS LESS. A LOT IS THE UNITS PRODUCED BY A SINGLE MACHINE ON A SINGLE SHIFT WITHOUT INTERRUPTION BUT NOT TO EXCEED 1,000 UNITS. THE NUMBER OF UNITS TESTED WITHIN A LOT SHALL BE EQUAL TO, BUT NOT LESS THAN, THE CUBE FOOT OF THE UNITS IN THAT LOT (FRACTIONS OF A NUMBER TO BE ROUNDED OFF TO THE NEXT HIGHER WHOLE HIGHER NUMBER). UNLESS A GREATER NUMBER OF TESTS ARE REQUIRED BY THESE OR OTHER APPLICABLE SPECIFICATIONS, A MINIMUM OF 8 TESTS SHALL BE PERFORMED IN EACH OF THE PRINCIPAL DIRECTIONS FOR EACH UNIT TESTED. THE AVERAGE OF TEST VALUES MAY NOT BE LESS THAN SPECIFIED. IN THE EVENT OF ANY FAILURE, THE ENTIRE LOT WILL BE REJECTED.

STORAGE AND HANDLING. FABRIC SHALL BE STORED ON CLEAN, DRY SURFACES, FREE OF FOREIGN SUBSTANCES SUCH AS GREASE, OIL, PAINT, EPOXY, CEMENT OR ANY OTHER SUBSTANCES WHICH WOULD HAVE A DELETERIOUS EFFECT ON THE FABRIC. WHEN STORED IN OUTDOOR AREAS, FABRIC SHALL BE KEPT 1 FOOT MINIMUM ABOVE GROUND LEVEL. THE CONTRACTOR SHALL KEEP THE FABRIC IN ITS PROTECTIVE COVERING UNTIL IT IS READY FOR INSTALLATION. OPENED ROLLS SHALL BE COVERED BY A WATERPROOF COVER. NO HOOKS, TONGS, OR OTHER SHARP TOOLS OR INSTRUMENTS SHALL BE USED.

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SPECIAL PROVISIONS - GEOTEXTILES

WHEN HANDLING ANY FABRIC. FABRIC MAY BE UNLOADED OR HANDLED IN ONE OF FOLLOWING WAYS:

- 1) BY PLACING SLINGS UNDER THE ROLLS;
- 2) BY USING A POLE INSERTED THROUGH A HOLLOW CORE, PROVIDED THE POLE EXTENDS 1 FOOT MINIMUM BEYOND EACH END OF THE CORE, AND LIFTING AND HANDLING DEVICES ARE ATTACHED TO ONLY THAT PORTION OF THE POLE LOCATED OUTSIDE THE ENDS OF THE CORE;
- 3) BY HAND.

DRAINAGE AND FILTRATION

DRAINS. GEOTEXTILES FOR TRENCH DRAINS, EDGE DRAINS, INTERCEPTOR DRAINS, ETC., SHALL BE PLACED IN ACCORDANCE WITH THE FOLLOWING PROVISIONS.

PLACEMENT. FABRIC SHALL BE PLACED IN THE TRENCH ACCORDING TO THE PROJECT PLANS. THE FABRIC SHALL BE PLACED LOOSELY AND SEATED FIRMLY INTO THE CORNERS. IF HEAT BONDED FABRIC IS USED, THE BONDED SIDE SHALL BE PLACED TO THE INSIDE OF THE TRENCH AND THE FUZZY SIDE SHALL FACE THE OUTSIDE OF THE TRENCH, AGAINST THE NATIVE SOIL. OVERLAPPING, IF NECESSARY, SHALL BE A MINIMUM OF 12 INCHES. DAMAGED FABRIC SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE BY PLACING NEW FABRIC OVER THE DAMAGED AREA THAT MEETS THE OVERLAP REQUIREMENTS. FABRICS SHALL BE COVERED AS SOON AS POSSIBLE AFTER BEING PLACED, BUT NOT LATER THAN THREE (3) CALENDAR DAYS AFTER PLACEMENT. FABRICS LEFT UNCOVERED FOR MORE THAN THREE (3) CALENDAR DAYS SHALL BE REMOVED AND REJECTED.

TRENCH SIDES AND BASE SHALL BE EXCAVATED TO PROVIDE A SMOOTH SURFACE FREE OF OBSTRUCTIONS AND DEBRIS.

AFTER PLACEMENT OF THE GRANULAR FILL, THE TWO EDGES OF THE GEOTEXTILE PROTRUDING AT THE TOP OF THE TRENCH SHALL BE OVERLAPPED ONE FOOT ON TOP OF THE GRANULAR FILL, AND THEN SOIL OR OTHER MATERIALS REQUIRED BY THE PROJECT PLANS, SHALL BE COMPACTED IN THE TRENCH TO THE REQUIRED GRADE.

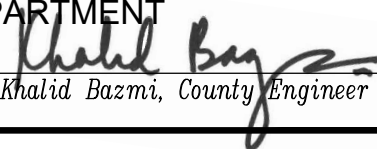
EROSION CONTROL

BANK AND SHORE PROTECTION. GEOTEXTILES FOR SILT CONTROL, BANK AND SHORE PROTECTION SHALL BE PLACED IN ACCORDANCE WITH THE FOLLOWING PROVISIONS.

PLACEMENT. PRIOR TO PLACEMENT OF FABRIC, THE CONTRACTOR SHALL CONSTRUCT A SUBGRADE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. THE FABRIC SHALL BE PLACED LOOSELY, (NOT IN A STRETCHED CONDITION) ALIGNED, AND PLACED IN A MANNER TO MINIMIZE WRINKLING. ADJACENT BORDERS AND ENDS OF FABRIC SHALL BE OVERLAPPED A MINIMUM OF 18 INCHES OR STITCHED WHEN USING NONWOVEN FABRICS WITH A GRAB TENSILE STRENGTH OF 90 LBS. OR WOVEN FABRICS WITH A GRAB TENSILE STRENGTH OF 200 LBS. OR LESS. BORDERS AND ENDS SHALL BE OVERLAPPED 36 INCHES OR STITCHED FOR NONWOVEN FABRICS WITH A GRAB TENSILE STRENGTH GREATER THAN 90 LBS. OR WOVEN FABRICS WITH A GRAB TENSILE STRENGTH GREATER THAN 200 LBS. IF THE FABRIC IS OVERLAPPED, THE UPSTREAM OR HIGHER PANEL SHALL OVERLAP THE DOWNSTREAM OR LOWER PANEL. WHEN STITCHED, THE SEAM SHALL HAVE SEAM BREAKING STRENGTH OF NOT LESS THAN 80 PERCENT OF THE MINIMUM REQUIRED FABRIC STRENGTH. THE SIZE AND COMPOSITION OF THE STITCHING MATERIAL AND STITCHING PATTERN SHALL BE APPROVED BY THE ENGINEER. THE STITCHING YARN SHALL BE OF A CONTRASTING COLOR.

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SPECIAL PROVISIONS - GEOTEXTILES

ANCHORING OF THE FABRIC AT TERMINAL ENDS AND TOP AND BOTTOM OF THE SLOPE SHALL BE ACCOMPLISHED THROUGH THE USE OF KEY TRENCHES OR APRONS AS SHOWN SHOWN ON THE PLANS. IF THE GEOTEXTILE IS PLACED IN A VERTICAL DIRECTION ON THE SLOPE, THERE SHALL BE NO END JOINTS BETWEEN ROLLS.

THE FABRIC SHALL BE SECURED WITH PINS PLACED ON 6 FOOT CENTERS AT THE MIDPOINT OF THE OVERLAPS AND ALONG THE TOP EDGE OF THE SLOPE. SPACING OF PINS SHALL BE REDUCED TO ELIMINATE TEARING OF THE FABRIC. PINS SHALL BE A MINIMUM OF 12 INCHES LONG OR OF SUFFICIENT LENGTH TO PREVENT PIN MOVEMENT.

THE OUTER STONE COVER SHALL BE THICK ENOUGH TO COMPLETELY PREVENT PENETRATION OF SUNLIGHT, UNLESS A BEDDING LAYER OF AGGREGATE PARTICLES GREATER IN SIZE THAN THE OPENINGS IN THE OUTER STONE COVER IS INSTALLED FIRST.

EQUIPMENT OR VEHICLES SHALL NOT BE OPERATED ON THE FABRIC. DAMAGED FABRIC SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE BY PLACING NEW FABRIC OVER THE DAMAGED AREA IN A MANNER THAT MEETS THE OVERLAP REQUIREMENTS.

FABRICS SHALL BE COVERED AS SOON AS POSSIBLE AFTER BEING PLACED, BUT NOT LATER THAN THREE (3) CALENDAR DAYS AFTER PLACEMENT. FABRICS LEFT UNCOVERED FOR MORE THAN THREE (3) CALENDAR DAYS SHALL BE REMOVED AND REJECTED.

MEASUREMENT AND PAYMENT

GEOTEXTILES SHALL BE MEASURED FOR PAYMENT BY THE SQUARE YARD OF FABRIC PLACED, NOT INCLUDING ANY ADDITIONAL FABRIC FOR OVERLAPS OR SPLICES. PAYMENT SHALL INCLUDE COMPENSATION FOR LABOR, MATERIAL, EQUIPMENT, OVERLAPS, AND PERFORMING ALL OPERATIONS NECESSARY TO PLACE THE FABRIC ACCORDING TO THE PLANS AND SPECIFICATIONS.

SEPARATION

SUBGRADE ENHANCEMENT. GEOTEXTILES FOR SUBGRADE ENHANCEMENT SHALL BE PLACED IN ACCORDANCE WITH THE FOLLOWING PROVISIONS.

PLACEMENT. DURING GRADING OPERATIONS, CARE SHOULD BE TAKEN NOT TO DISTURB OR SCARIFY THE SUBGRADE. THIS MAY REQUIRE USE OF LIGHTWEIGHT DOZERS, ETC., FOR LOW STRENGTH SOILS SUCH AS SATURATED COHESIONLESS OR LOW COHESION SOILS.

ONCE THE SUBGRADE ALONG A PARTICULAR SEGMENT OF ALIGNMENT HAS BEEN PREPARED THE GEOTEXTILE SHALL BE UNROLLED IN LINE WITH THE PLACEMENT OF NEW AGGREGATE. THE FABRIC SHOULD NOT BE DRAGGED ACROSS THE SUBGRADE, AND THE ENTIRE FABRIC SHOULD BE PLACED AND ROLLED OUT AS SMOOTHLY AS POSSIBLE.

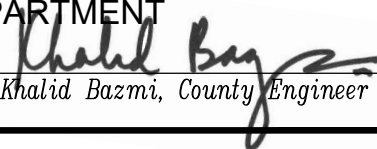
PARALLEL ROLLS OF FABRIC SHALL BE OVERLAPPED 18 INCHES OR SEWN IF REQUIRED BY THE PLANS OR SPECIFICATIONS.

THE FABRIC SHALL BE SECURED WITH PINS PLACED ON 6 FOOT CENTERS AT THE MIDPOINT OF ALL OVERLAPS AND AT THE EDGES TO MAINTAIN THEM DURING CONSTRUCTION ACTIVITIES. SPACING OF PINS SHALL BE REDUCED IF NECESSARY TO ELIMINATE TEARING AND MOVEMENT OF THE FABRIC.

OVERLAPS AT THE ENDS OF ROLLS SHALL BE IN THE DIRECTION OF THE AGGREGATE PLACEMENT WITH THE PREVIOUS ROLL ON TOP.

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SPECIAL PROVISIONS - GEOTEXTILES

WHEN FABRIC INTERSECTS AN EXISTING AREA, THE FABRIC SHALL EXTEND TO THE EDGE OF THE OLD SYSTEM, AND THE END OF THE FABRIC SHALL BE ANCHORED.

ON PAVEMENT SUBGRADE, FABRIC WIDTHS SHALL BE SELECTED SUCH THAT OVERLAPS OF PARALLEL ROLLS OCCUR AT THE CENTERLINE AND AT LANE LINES. OVERLAPS SHALL NOT BE PLACED ALONG ANTICIPATED MAIN WHEEL PATH LOCATIONS. THE BASE AGGREGATE SHALL BE PLACED ON THE FABRIC IN SUCH A MANNER THAT WHEEL RUTTING OF AGGREGATE OVER THE FABRIC IS LIMITED TO $\frac{1}{2}$ INCH. LIGHTWEIGHT DOZERS SHALL BE USED IF NECESSARY. EQUIPMENT SHALL NOT BE ALLOWED DIRECTLY ON THE FABRIC.

BEFORE COVERING, THE CONDITION OF THE FABRIC SHOULD BE OBSERVED BY THE ENGINEER TO DETERMINE THAT NO HOLES OR RIPS EXIST IN THE FABRIC. ALL SUCH OCCURRENCES SHALL BE REPAIRED BY PLACING A NEW LAYER OF FABRIC EXTENDING BEYOND THE DEFECT IN ALL DIRECTIONS A DISTANCE EQUAL TO THE MINIMUM OVERLAP REQUIRED FOR ADJACENT ROLLS.

PAVEMENT REINFORCEMENT

GEOTEXTILES FOR PAVEMENT REINFORCEMENT SHALL BE PLACED AND PAID FOR IN ACCORDANCE WITH SECTIONS 213-4, "PAVING FABRIC", AND 302-7, "PAVEMENT FABRIC".

USAGE

FOLLOWING ARE THE NORMAL USAGES FOR EACH TYPE FABRIC. SPECIAL CONDITIONS MAY REQUIRE A DETERMINATION BY THE DESIGN ENGINEER.

DRAINAGE AND FILTRATION:

- SUBDRAINS — TYPE I NONWOVEN FABRIC
- TRENCH DRAINS,
- EDGE DRAINS,
- INTERCEPTOR
- DRAINS, ETC.

SEPARATION:

- SUBGRADE — FLOOD CONTROL CHANNEL:
 - TYPE I NONWOVEN FABRIC ON TOP OF GRAVEL BLANKET.
 - TYPE II NONWOVEN FABRIC ON TOP OF SOFT NATIVE SOIL.
 - TYPE III NONWOVEN FABRIC ON TOP OF LOOSE, MUCKY NATIVE SOIL.
- ENHANCEMENT — ROADWAY SECTION:
 - TYPE I WOVEN OR NONWOVEN FABRIC ON TOP OF FIRM MATERIAL.
 - TYPE II WOVEN OR NONWOVEN FABRIC ON TOP OF SOFT MATERIAL.
 - TYPE III WOVEN OR NONWOVEN FABRIC ON TOP OF LOOSE, MUCKY MATERIAL.

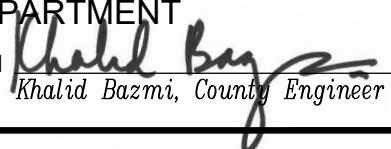
EROSION CONTROL:

- SILT FENCE — TYPE I WOVEN OR NONWOVEN FABRIC.
- BANK PROTECTION — TYPE III NONWOVEN FABRIC BELOW RIPRAP.
- SHORE PROTECTION — TYPE III NONWOVEN FABRIC BELOW ARMOR STONE.

REINFORCEMENT: PAVEMENT

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SPECIAL PROVISIONS - GEOTEXTILES

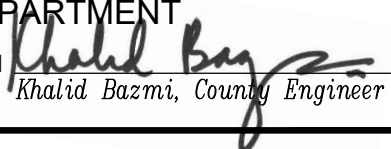
TABLE OF MINIMUM TEST RESULTS

		NON-WOVEN			WOVEN			
TYPE		I	II	III	I	II	III	PAV'T. REINF.
PROPERTY	TEST REFERENCE							
GRAB STRENGTH, * lbs., Min.	ASTM D4632	90	180	280	90	200	270	90
ELONGATION, (at peak load) %, Min.	ASTM D4632	50	50	50	25	25	25	40 to 100
PUNCTURE STRENGTH, lbs., Min.	ASTM D3787	45	80	110	30	70	110	N/A
PERMITTIVITY, Sec-1, Min.	ASTM D4491	0.7	0.7	0.7	0.02	0.02	0.02	N/A
BURST STRENGTH, psi, Min.	ASTM D3786	180	320	400	200	400	500	N/A
ULTRAVIOLET RESISTANCE, % Str. Retained/ Weatherometer Hrs.	ASTM D4355	70/ /500	70/ /500	70/ /500	70/ /500	70/ /500	70/ /500	N/A
WEIGHT, oz/sq. yd.		N/A	N/A	N/A	N/A	N/A	N/A	3.5 to 5.0
FABRIC THICKNESS, mils		N/A	N/A	N/A	N/A	N/A	N/A	30 to 50

* MINIMUM ROLL AVERAGE IN THE WEAKEST PRINCIPAL DIRECTION.

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SPECIAL PROVISIONS - GEOTEXTILES

GENERAL:

STONEWORK SHALL CONFORM TO THESE SPECIAL PROVISIONS IN ADDITION TO THE PROVISIONS OF SECTION 200-1.6, "STONE FOR RIPRAP", OF THE GREENBOOK (EXCEPT AS MODIFIED HEREIN), AND SHALL COVER APPLICATIONS NOT EXCEEDING 200 TONS FOR OUTLETS, INLAND CHANNELS, AND EMERGENCY USE. FOR APPLICATIONS GREATER THAN 200 TONS, A FILTER DESIGN, FOUNDATION, GRADATION, AND SUPPORTING CALCULATIONS FOLLOWING THE PROCEDURES SPECIFIED IN THE EM 1110-2-1601 BY THE U.S. ARMY CORPS OF ENGINEERS, "HYDRAULIC DESIGN OF FLOOD CONTROL CHANNELS," CHAPTER 3 AND SUPPORTING SECTIONS/APPENDICES (LATEST EDITION) SHALL BE SUBMITTED TO THE ENGINEER SIGNED AND STAMPED BY A REGISTERED CIVIL ENGINEER CURRENTLY LICENSED TO PRACTICE IN THE STATE OF CALIFORNIA.

STONE SHALL BE ANGULAR AND THE GREATEST DIMENSION OF EACH PIECE SHALL NOT BE GREATER THAN THREE TIMES THE THICKNESS.

STONE SHALL BE SOUND, DURABLE, HARD, RESISTANT TO ABRASION, AND FREE FROM LAMINATIONS, WEAK CLEAVAGE PLANES, AND THE UNDESIRABLE EFFECTS OF WEATHERING. IT SHALL NOT DISINTEGRATE FROM THE ACTION OF AIR, WATER, OR FROM HANDLING AND PLACING. IT SHALL BE CLEAN AND FREE FROM DELETERIOUS IMPURITIES, SUCH AS ALKALI, SOIL, CLAY, REFUSE AND OTHER COATINGS.

VISUAL EVALUATION OF THE QUARRY, INCLUDING EXAMINATION OF PLANT SAMPLES AND DIAMOND DRILL CORE SAMPLES, SUITABLE TESTS AND SERVICE RECORDS MAY BE USED TO DETERMINE THE ACCEPTABILITY OF THE STONE.

STONE FOR RIPRAP SHALL BE QUARRY STONE OR ON-SITE MATERIAL WHICH HAS BEEN TESTED AND APPROVED TO THE SATISFACTION OF THE ENGINEER.

THE FOLLOWING QUALITY REQUIREMENTS AS DETERMINED BY LABORATORY TESTS SHALL APPLY, IN LIEU OF TABLE 200-1.6.2 OF THE GREENBOOK :

GRADATION:


<u>WEIGHT</u> (Lbs.)	<u>PERCENT LIGHTER THAN</u>
1800	100%
700	90 - 100
500	50 - 90
200	0 - 15

THE FOLLOWING QUALITY REQUIREMENTS SHALL APPLY, IN LIEU OF TABLE 200-1.6.3 OF THE GREENBOOK:

<u>TEST</u>	<u>TEST METHOD</u>	<u>REQUIREMENT</u>
APPARENT SPECIFIC GRAVITY	Calif. 206	2.62 Min.
ABSORPTION	Calif. 206	4.2% Max.
DURABILITY LOS	Calif. 229	52 Min.
ANGELES ABRASIONS	Calif. 211	45% max. LOSS AFTER 500 REVOLUTION, GRADING A

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SPECIAL PROVISIONS - STONEWORK

THICKNESS OF THE STONework LAYER, MEASURED PERPENDICULAR TO THE SLOPE SHALL BE AS FOLLOWS:

DRY, NON-TURBULENT FLOW LOCATIONS:	33"
DRY, TURBULENT FLOW LOCATIONS:	48"
UNDER WATER:	48"

SLOPE PREPARATION:

FOUNDATION PREPARATION: EXISTING STONE ADJACENT TO NEW PLACEMENT SHALL BE RESET AND KEYED A MINIMUM OF 10 FEET OR AS SPECIFIED ON THE PLANS, TO PROVIDE A FIRM INTERLOCKING OF NEW STONE AND EXISTING STONE.

FILTER FABRIC: A NON-WOVEN FILTER FABRIC TYPE II (BANK PROTECTION) OR TYPE III (SHORE PROTECTION FOR CHANNEL VELOCITIES ABOVE 10 FPS) PER OCPW STANDARD PLAN 1808 SHALL BE PLACED BETWEEN THE EXISTING OR GRADED SOIL LAYER AND THE GRAVEL BEDDING AND ROCK REVETMENT AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. FILTER FABRIC SHALL BE PLACED OVER THE SOIL LAYER AT THE LOCATIONS INDICATED ON THE DRAWINGS. FILTER FABRIC SHALL BE PLACED FROM A POINT BEYOND THE TOE OF THE ROCK BASE AND CONTINUE UP THE SLOPE TO THE TOP, WHERE IT SHALL BE ANCHORED AS INDICATED ON THE PLANS. AT THE TOE, SUFFICIENT FABRIC SHALL BE PROVIDED TO MAKE A 3-FOOT FOLD BACK OVER A LAYER OF STONES OF THE TYPE INDICATED. ROCK REVETMENT SHALL NOT BE DIRECTLY PLACED ON TOP OF THE FILTER FABRIC OR DROPPED ON THE GRAVEL BEDDING FROM A HEIGHT GREATER THAN THREE FEET.

GRAVEL BEDDING: PLACE A MINIMUM OF 6 INCH GRAVEL BASE MATERIAL OVER THE FILTER CLOTH AS INDICATED ON THE PLANS. GRAVEL SHALL BE PLACED SO THAT UNIFORM GRADATION IS MAINTAINED AND THE FILTER FABRIC IS NOT DAMAGED. GRADATION SHALL BE D3 OR NO. 3 ROCK AS SPECIFIED PER OCPW STANDARD PLAN 1803 UNLESS OTHERWISE SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

GRAVEL BASE MATERIAL AND SOIL SHALL BE WITHIN PLUS-OR-MINUS 0.1 FOOT OF PLAN GRADE MEASURED PERPENDICULAR TO THE SLOPE, INDICATED FOR EACH TYPE OF MATERIAL.

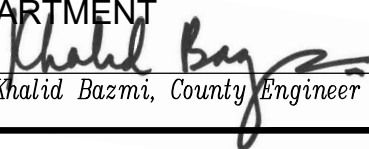
STONE PLACEMENT:

STONE NOT SUITABLE AS TO QUALITY AND/OR SIZE DISTRIBUTION FOR ANY CLASS REQUIRED TO COMPLETE THE WORK SHALL BE PROMPTLY REMOVED FROM THE CONSTRUCTION.

PLACE STONE OF THE SIZE INDICATED BY BUCKET OR INDIVIDUAL STONE TO THE DIMENSIONS AND LOCATIONS INDICATED ON THE DRAWINGS. STONE SHALL BE PLACED WITHIN 0.5 FEET OF PLAN GRADE, MEASURED PERPENDICULAR TO THE SLOPE.

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SPECIAL PROVISIONS - STONework

STONE:

STONE SHALL BE CAREFULLY KEYED AND SET IN A TIGHT AND INTERLOCKING CONFIGURATION TO FORM A STABLE LAYER OF RIPRAP.

PLACEMENT SHALL START AT THE BOTTOM OF THE SLOPE AND WORK UPWARD. STONE SHALL NOT BE DUMPED FROM HEIGHTS GREATER THAN ONE STONE DIAMETER NOR PLACEMENT METHODS EMPLOYED THAT MAY CAUSE MISPLACEMENT OF STONE OR PUNCTURE OF FILTER FABRIC.

EACH LOAD OF STONE SHALL BE REASONABLY WELL GRADED FROM THE SMALLEST TO THE MAXIMUM SIZE SPECIFIED.

STONE FOR RIPRAP SHALL BE PLACED IN A MANNER WHICH WILL PRODUCE A REASONABLY WELL-GRADED MASS OF STONE WITH THE MINIMUM PRACTICABLE PERCENTAGE OF VOIDS. THE ENTIRE MASS OF STONE SHALL BE PLACED IN CONFORMANCE WITH THE LINES, GRADES, AND THICKNESS SHOWN ON THE PLANS. RIPRAP SHALL BE PLACED TO ITS FULL COURSE THICKNESS IN ONE OPERATION AND IN A MANNER TO AVOID DISPLACING THE UNDERLYING MATERIAL. PLACING OF RIPRAP IN LAYERS BY DUMPING INTO CHUTES OR BY SIMILAR METHODS LIKELY TO CAUSE SEGREGATION, WILL NOT BE PERMITTED. SELF-PROPELLED EQUIPMENT SHALL NOT BE USED ON EMBANKMENT SLOPES. IF VELOCITY EXCEEDS 12 FPS, DESIGN RIPRAP PER US ACE PUBLICATION NUMBER EM 1110-2-1601, CHAPTER 3.

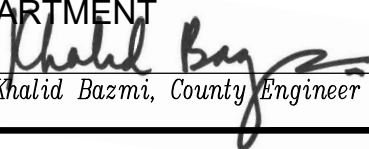
WHEN SPECIAL PLACEMENT METHODS ARE REQUIRED THE CONTRACTOR IS TO ENSURE THAT THE STONE SHALL HAVE A MINIMUM THREE POINTS OF CONTACT WITH OTHER STONE.

GROUT:

IF GROUT IS SPECIFIED FOR FILLING THE INTERSTICES, IT SHALL BE A 610-E-2000G CONCRETE MIX.

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SPECIAL PROVISIONS - STONework

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TO ACCOMMODATE EXCAVATION WORK AND MAINTAIN TRAFFIC SAFETY, STEEL PLATE BRIDGING MAY BE NECESSARY. ALL CONDITIONS FOR USE OF STEEL PLATE BRIDGING SHOULD BE SET FORTH IN THE PROJECT SPECIAL PROVISIONS.

CONSIDERATION OF STEEL PLATE BRIDGING SHOULD TAKE INTO ACCOUNT THE FOLLOWING FACTORS:

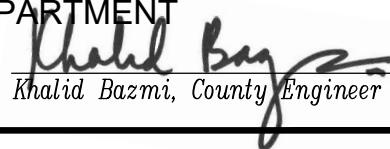
1. TRAFFIC SPEED.
2. TRAFFIC VOLUME AND COMPOSITION.
3. DURATION AND DIMENSIONS (WIDTH AND LENGTH) OF PROPOSED EXCAVATIONS.
4. WEATHER CONDITIONS.

WHEN BACKFILLING OPERATIONS OF AN EXCAVATION IN THE TRAVELED WAY, WHETHER TRANSVERSE OR LONGITUDINAL, CANNOT BE PROPERLY COMPLETED WITHIN A WORK DAY, STEEL PLATE BRIDGING WITH A NON-SKID SURFACE AND SHORING MAY BE REQUIRED TO PRESERVE UNOBSTRUCTED TRAFFIC FLOW. IN SUCH CASES, THE FOLLOWING CONDITIONS SHALL APPLY:

1. STEEL PLATES USED FOR BRIDGING MUST EXTEND A MINIMUM OF 12 INCHES BEYOND THE EDGES OF THE TRENCH.
2. STEEL PLATE BRIDGING SHALL BE INSTALLED TO OPERATE WITH MINIMUM NOISE.
3. THE TRENCH SHALL BE ADEQUATELY SHORED TO SUPPORT THE BRIDGING AND TRAFFIC LOADS. (SEE STATE OF CALIFORNIA DOT TRENCHING AND SHORING MANUAL)
4. TEMPORARY PAVING WITH COLD ASPHALT CONCRETE SHALL BE USED TO FEATHER THE EDGES OF THE PLATES, IF PLATE INSTALLATION BY METHOD 2 DESCRIBED BELOW.
5. BRIDGING SHALL BE SECURED AGAINST DISPLACEMENT BY USING ADJUSTABLE CLEATS, SHIMS, OR OTHER DEVICES.
6. PRE-CONSTRUCTION MEETING PRIOR TO START OF WORK IS REQUIRED.
7. TRENCH STEEL PLATING AND TEMPORARY ASPHALT SHALL BE ON JOBSITE BEFORE TRENCHING BEGINS.
8. REPLACEMENT OF ROADWAY SECTION AND SURFACING WILL BE PER COUNTY OF ORANGE STANDARDS AND TO THE SATISFACTION OF THE INSPECTOR.
9. TRENCHING OR "OPEN-CUT" IN COUNTY OF ORANGE ARTERIAL HIGHWAY IS PROHIBITED BY ARTICLE 3, SECTION 6-3-60 (C) OF CODIFIED ORDINANCES FOR THE COUNTY OF ORANGE, CALIFORNIA. "EXCAVATION OR TRENCHING OF PAVEMENT ON AN ARTERIAL HIGHWAY WILL ONLY BE PERMITTED WHEN PHYSICAL CONDITIONS MAKE BORING OR TUNNELING IMPOSSIBLE..."

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SPECIAL PROVISIONS - STEEL PLATE BRIDGING

STEEL PLATE BRIDGING AND SHORING SHALL BE INSTALLED USING EITHER METHOD 1 OR 2 :

METHOD 1:

FOR POSTED SPEEDS OF 45 MPH OR GREATER:

THE PAVEMENT SHALL BE COLD PLANED TO A DEPTH EQUAL TO THE THICKNESS OF THE PLATE AND TO A WIDTH AND LENGTH EQUAL TO THE DIMENSIONS OF THE PLATE.

APPROACH PLATE(S) AND ENDING PLATE (IF LONGITUDINAL PLACEMENT) SHALL BE ATTACHED TO THE ROADWAY BY A MINIMUM OF 2 DOWELS PRE-DRILLED INTO THE CORNERS OF THE PLATE AND DRILLED 2 INCHES INTO THE PAVEMENT. SUBSEQUENT PLATES ARE TO BE BUTTED TOGETHER AND TACK WELDED TO EACH OTHER.

METHOD 2:

FOR POSTED SPEEDS LESS THAN 45 MPH:

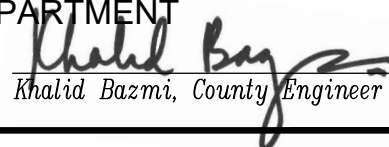
APPROACH PLATE(S) AND ENDING PLATE (IF LONGITUDINAL PLACEMENT) SHALL BE ATTACHED TO THE ROADWAY BY A MINIMUM OF 2 DOWELS PRE-DRILLED INTO THE CORNERS OF THE PLATE AND DRILLED 2 INCHES INTO THE PAVEMENT. SUBSEQUENT PLATES ARE TO BE BUTTED AND TACK WELDED TO EACH OTHER. FINE GRADED ASPHALT CONCRETE SHALL BE COMPACTED TO FORM RAMPS, MAXIMUM SLOPE 8.5 PERCENT WITH A MINIMUM 12 INCHES TAPER TO COVER ALL EDGES OF THE STEEL PLATES. WHEN STEEL PLATES ARE REMOVED, THE DOWEL HOLES IN THE PAVEMENT SHALL BE BACKFILLED WITH EITHER GRADED FINES OF ASPHALT CONCRETE MIX, CONCRETE SLURRY, EPOXY OR AN EQUIVALENT THAT IS SATISFACTORY TO THE COUNTY INSPECTOR.

THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF THE STEEL PLATES, SHORING, ASPHALT CONCRETE RAMPS AND ENSURING THAT THEY MEET MINIMUM SPECIFICATIONS. UNLESS SPECIFICALLY NOTED OR GRANTED IN THE SPECIAL PROVISIONS, OR APPROVED BY THE ENGINEER OR REPRESENTATIVE, STEEL PLATE BRIDGING SHALL NOT EXCEED FOUR (4) CONSECUTIVE WORKING DAYS IN ANY GIVEN WEEK. BACKFILLING OF EXCAVATIONS SHALL BE COVERED WITH A MINIMUM 3 INCHES TEMPORARY LAYER OF COLD ASPHALT CONCRETE. PAVEMENT SHALL BE PLACED PER OCPW STANDARDS.

THE FOLLOWING TABLE SHOWS THE MINIMAL THICKNESS OF STEEL PLATE BRIDGING REQUIRED FOR A GIVEN TRENCH WIDTH (A-36 GRADE STEEL, DESIGNED FOR HL-93 TRUCK LOADING PER AASHTO LRFD BRIDGE DESIGN SPECIFICATION, 4TH EDITION WITH CALIFORNIA AMENDMENTS).

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SPECIAL PROVISIONS - STEEL PLATE BRIDGING

TRENCH WIDTH

MINIMUM PLATE THICKNESS

10"	1/2"
1'-11"	3/4"
2'-7"	7/8"
3'-5"	1"
5'-3"	1 3/4"

NOTE: FOR SPANS GREATER THAN 5 FEET-3 INCHES, A STRUCTURAL DESIGN SHALL BE PREPARED AND STAMPED BY A CALIFORNIA REGISTERED CIVIL ENGINEER.

ALL STEEL PLATES WITHIN THE RIGHT OF WAY WHETHER USED IN OR OUT OF THE TRAVELED WAY SHALL BE WITHOUT DEFORMATION, INSPECTORS CAN DETERMINE THE TRUENESS OF STEEL PLATES BY USING A STRAIGHT EDGE AND SHOULD REJECT ANY PLATE THAT IS PERMANENTLY DEFORMED.

STEEL PLATES USED IN THE TRAVELED PORTION OF THE HIGHWAY SHALL HAVE A SURFACE THAT WAS MANUFACTURED WITH A NOMINAL COEFFICIENT OF FRICTION (COF) OF 0.35 AS DETERMINED BY CALIFORNIA TEST METHOD 342 (SEE APPENDIX H. CALTRANS ENCROACHMENT PERMITS MANUAL). MANUFACTURER SHALL ISSUE A CERTIFICATE OF COMPLIANCE THAT CONFORMS TO CALIFORNIA TEST METHOD 342. IF A DIFFERENT TEST METHOD IS USED, THE CONTRACTOR SHALL DETERMINE WHAT AMOUNT OF SURFACE WEAR IS ACCEPTABLE, AND INDEPENDENTLY ASCERTAIN WHEN TO REMOVE, TEST, OR RESURFACE AN INDIVIDUAL PLATE.

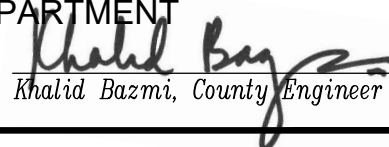
A ROUGH ROAD SIGN (W8-8) WITH BLACK LETTERING ON AN ORANGE BACKGROUND MAY BE USED IN ADVANCE OF STEEL PLATE BRIDGING. THIS SIGN IS USED ALONG WITH ANY OTHER REQUIRED CONSTRUCTION SIGNING.

SURFACING REQUIREMENTS ARE NOT NECESSARY FOR STEEL PLATES USED IN PARKING STRIPS, ON SHOULDERS NOT USED FOR TURNING MOVEMENTS, OR ON CONNECTING DRIVEWAYS, ETC., NOT OPEN TO THE PUBLIC.

OCPW STEEL PLATE BRIDGING PROVISIONS ARE BASED UPON STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION ENCROACHMENT PERMIT STEEL PLATE BRIDGING UTILITY PROVISIONS TR-0157 (REV. 07/2009) AS PREVIOUSLY SPECIFIED BY AUTHORITY OF DEPARTMENTAL POLICY MEMO FOR USE OF STEEL PLATE FOR BRIDGING, 2007.

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SPECIAL PROVISIONS - STEEL PLATE BRIDGING

