

CITY OF CORONA
Public Works Department

INDEX TO SPECIAL PROVISIONS

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INTRODUCTION

The latest edition of Standard Specifications for Public Works Construction (commonly known as the “Green Book” is applicable except as herein amended by these Special Provisions. In case of any conflict, the Special Provisions shall govern. Copies of the Standard Specifications for Public works Construction may be obtained from BNI Books, Division of Building News, Inc., 3055 Overland Avenue, Los Angeles, CA 90034, telephone number (213) 202-7775.

DEFINITIONS

Definitions shall meet the requirements of Section 1 and these Special Provisions.

Add to Subsection 1-2, “Definitions,” the following:

Whenever in these specifications, or in any instruments where these specifications govern, the following terms are used, the intent and meaning shall be interpreted as follows:

CITY	The City of Corona, State of California
CITY COUNCIL	The City Council of the City of Corona
DEPARTMENT OF PUBLIC WORKS	The Public Works Department of the City of Corona
ENGINEER	The City Engineer of the City of Corona, acting directly or through properly authorized agents, such agents acting within the scope of the particular duties delegated to them.
LABORATORY	The designated laboratory authorized by the Engineer to test materials and work involved in the contract.
NOTICE	Notice shall be deemed to have been given if served personally on the contractor or his authorized agent, or mailed to the contractor, postage prepaid.
RELATIVE COMPACTION	The dry density of soil divided by the maximum dry density of soil as determined by standard compaction test; generally expressed as a percentage.
SPECIAL PROVISIONS	Specific modifications to the Standard Specifications, setting forth conditions or requirements as hereafter stated.

STANDARD SPECIFICATIONS

All work and materials shall be in accordance with the latest edition of the Standard Specifications for Public Works Construction, including all its subsequent supplemental amendments, except as otherwise called for on the plans and/or in the following Special Provisions.

Any reference to “section” or “subsection” in the following Special Provisions shall refer to said Standard Specifications for Public Works Construction unless noted otherwise.

STATE STANDARD PLANS

The latest edition of the Standard Plans of the State of California, Department of Transportation.

STATE STANDARD SPECIFICATIONS

The latest edition of the Standard Specifications of the State of California, Department of Transportation.

RIP-RAP

Rough stone of various sizes placed compactly or irregularly to prevent scour by water or debris.

UTILITIES DEPARTMENT

The Utilities (sewer & water) Department of the City of Corona.

UTILITIES DIRECTOR

The Director of the Utilities Department, City of Corona.

SURVEYING

Surveying shall meet the requirements of Section 2 and these Special Provisions.

Revise Subsection 2-9.5, "Line and Grade," as follows:

Delete Paragraph 2 and add the following:

All distances and measurements are given and will be made in a horizontal plane. Grades are given from the top of stakes or nails, unless otherwise noted on the plans.

Three consecutive points shown on the same rate of slope must be used in common, in order to detect any variations from a straight grade, and in case any such discrepancy is not reported to the Engineer, the Contractor shall be responsible for any error in the finished work.

All public improvements are to be constructed with benefit of construction stakes unless otherwise directed by the City Engineer. Improvements on a curved alignment shall be taken at 25-foot intervals and at all control points such as grade breaks, B.C., E.C., etc.

Improvements on tangent alignment may generally be staked at 50-foot intervals except that where flat grades or other special circumstances are involved, the Engineer may direct that lesser intervals be staked.

The Contractor shall preserve all stakes and points set for lanes, grades, or measurements of the work in their proper places until authorized to remove them by the Engineer.

CONTROL OF MATERIALS

Control of materials shall meet the requirements of Section 4 and these Special Provisions.

Revise Subsection 4-1.3.3, "Inspection by the Agency," as follows:

The City will provide all inspection and testing laboratory services within 50 miles (80 Km) of the City Limits unless stated differently in the contract. For private contracts, the permittee shall obtain the services of a professional testing laboratory for plant or source inspection such as, but not limited to, asphalt concrete, base rock, Portland Cement Concrete, pipe and reinforcing steel.

Revise Subsection 4-1.4, "Test of Materials," as follows:

Delete the last sentence in Paragraph 1 and add the following:

For private contracts, the permittee shall retain the services of a professional testing laboratory and furnish the engineer with a minimum of three copies of test results. The engineer shall have the right to observe all tests and obtain the services of an independent professional testing laboratory for verification of the results. Tests, as required by the engineer, shall be taken on all materials incorporated in the work such as, but not limited to, testing of Portland Cement Concrete used in structures, sidewalk, driveway approaches, curb, gutter, and compaction of soil, aggregate base and asphalt concrete.

Add to Subsection 4-1.5, "Trade Names or Equals," the following:

The Contractor shall assume all responsibilities arising from the use of patented materials, equipment devices, or processes used on, or incorporated in the work.

PROSECUTION, PROGRESS & ACCEPTANCE OF THE WORK

Prosecution, progress and acceptance of the work shall meet the requirements of Section 6 and these Special Provisions.

Add to Subsection 6-8, "Completion and Acceptance," the following:

The Contractor shall protect, maintain and repair all work during the course of construction. Prior to requesting a final inspection for acceptance, the Contractor shall clean all work areas and request the City inspector to prepare an itemized list of repairs and deficiencies ("punch list") and complete all items listed.

RESPONSIBILITIES OF THE CONTRACTOR

Responsibilities of the Contractor shall meet the requirements of Section 7 and these Special Provisions.

Delete the first sentence of Subsection 7-5 "Permits", and add to Subsection 7-5, "Permits," the following:

No work shall be started within the street right of way or on City property until the Contractor has obtained the necessary permits. The Contractor shall obtain and pay for all permits and fees and give all notices necessary and incident to the due and lawful prosecution of the work and to the preservation of the public health and safety. Fees will not be collected on those permits obtained from the City for City-owned projects except that fees will be charged on permits obtained from the Utility Service Department (Water).

For City contract work on private property, where shown on the plans, the City will provide rights of entry at no cost to the Contractor. Such rights of entry do not relieve the Contractor of the need to provide, at his cost, permits and insurance required of the Contractor by other agencies and organizations.

The Contractor shall obtain and pay for all costs incurred for licenses necessitated by his operations. Prior to starting any work the Contractor shall be required to have a City of Corona business license valid for the life of the contract; his subcontractors shall also have business licenses valid for the time they are engaged in work.

Contractors shall be licensed in accordance with the provisions of Chapter 9 of Division III of the Business and Professions Code.

The Contractor shall obtain a permit for excavation from the Division of Industrial Safety as provided for in the Labor Code, Section 6424.

Add to Subsection 7-6, "The Contractor's Representative," as follows

The Contractor shall employ only such foremen, mechanics and laborers as are competent and skilled in their respective lines of work, and whenever the Engineer shall notify the Contractor that any man on the Work is, in his opinion, incompetent, unfaithful, intemperate, or disorderly or refuses to carry out the provisions of this Contract, or uses threatening or abusive language to any person on the Work representing the Owner, or is otherwise unsatisfactory, such men shall be discharged immediately from the Work and shall not be re-employed upon it except with the consent of the Engineer. Such discharge shall not be the basis of any claim for damages against the City or its agents.

The Engineer shall not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

RESPONSIBILITIES OF THE CONTRACTOR (Continued)

Any plan or method of work suggested by the Engineer, but not specified or required, if adopted or followed by the Contractor in whole or in part, shall be used at the risk and responsibility of the Contractor, and the Engineer shall assume no responsibility therefor.

Prior to beginning of work, the Contractor shall have a preconstruction meeting with the Engineer.

Add to the second paragraph of Subsection 7-8. 1, "Cleanup and Dust Control," the following:

The contractor shall provide street sweeping at a minimum of once every two weeks or as directed by the Engineer for all streets open to traffic. The contractor shall provide the City Engineer with a street sweeping schedule before approval prior to occupancy of any structure.

RESPONSIBILITIES OF THE CONTRACTOR (Continued)

Add to Subsection 7-10.1, "Traffic and Access," the following:

It is the policy of the City of Corona that full street closures shall not be allowed unless necessary for public health and safety. In the event that the Public Works Director determines that a full street closure is necessary for public health and safety, the Contractor shall be responsible for the following items:

- (1) A request for full street closure shall be submitted in writing.
- (2) A detour plan, showing alternate traffic routing, all traffic control signs, barricades, and required all-weather surfacing.
- (3) A construction schedule specifying the date of re-opening of the closed street.
- (4) Provide the City a minimum of 10 working days to allow the publication of the approved closure schedule in the local newspaper and proper notification of police, fire, traffic department, as well as the Corona-Norco School District.

The Contractor shall perform all work necessary to re-open any partially or full street closure in a satisfactory manner, providing sufficient labor, equipment and material to meet the construction schedule as approved by the Public Works Director.

Revise Subsection 7-10.2, "Storage of Equipment and Materials in Public Streets," as follows:

Delete the first paragraph and replace with the following:

Construction materials shall not be stored within any public right-of-way.

Revise the second paragraph to include materials.

Add to Subsection 7-10.3, "Street Closures, Detours, Barricades," the following:

Traffic controls, including but not limited to vehicular and pedestrian traffic controls, maintenance of vehicular and pedestrian access, detours, and street closures, shall be in accordance with Subsection 7-10 of the latest edition of the "Standard Specifications for Public Works Construction" including all its subsequent amendments, the latest edition of the Manual of Traffic Controls for Construction and Maintenance Work Zones as published by the Department of Transportation of the State of California, and the following Special Provisions. In the event of conflict, the "Special Provisions" shall take precedence over the "Manual of Traffic controls" and the "Manual of Traffic Controls" shall take precedence over the "Standard Specifications."

RESPONSIBILITIES OF THE CONTRACTOR (Continued)

- 1 . A detailed traffic control plan, approved by the City's Engineer, will be required for all construction work within any public right-of-way under the City's jurisdiction whenever, in the opinion of the City's Engineer, the vehicular and/or pedestrian traffic is expected to be subject to a potentially hazardous condition to a condition where the level of safety is expected to be significantly reduced for a period of time, or combination of times, in excess of 24 hours and/or a condition involving a high volume of traffic.
- 2 . All traffic controls, and safety devices, equipment and materials, including but not limited to cones, delineators, flashing warning lights, barricades, high level warning devices (flag trees), flags, signs, markers, portable barriers, flashing arrow signs, markings, and flagging equipment shall be provided and maintained in "like new" condition.
3. The contractor shall furnish and properly install, - construct, erect, use, and continuously inspect and maintain, 24 hours per day, 7 days per week, all said devices, equipment and materials and all temporary and permanent pedestrian and driving surfaces as necessary to provide for the safety and convenience of and to properly warn, guide, control, regulate, channelize and protect the vehicular traffic, pedestrian traffic, project workers, and the public throughout the entire limits of the work activity and beyond said limits as necessary to include areas affecting or affected by the work, from the start of work to the completion of the work.
4. High level warning devices (flag trees) are required at all times for any work being performed within the roadway unless otherwise specifically authorized by the City's Engineer.
5. All barricades shall be equipped with flashing warning lights at a spacing not-to-exceed three (3) feet and all traffic cones shall be no less than 28 inches in height except that shorter cones, 12 inches high or higher, may be used during striping maintenance operations where the only function of the cones is to protect the wet paint from the traffic.
6. Type III barricades, no less than 6 feet in length and equipped with two (2) Type "N" markers each and two (2) flashing warning lights each, shall be used to close streets except as otherwise specifically authorized in advance by the City's Engineer for minor maintenance work of no more than one working day's duration on weekdays other than holidays only and between 8:30 a.m. and 3:30 p.m. only. Said barricades shall be placed across the full roadway at each point of closure with the distance between barricades or between barricades and curbs not exceeding three (3) feet, except that one 11-foot wide gap between barricades shall be provided at the center of the street. Barricades to the right of the street's center, facing the inbound vehicular traffic, shall also be equipped with one Type C2 "Road Closed" sign each or one Type C3A "Road Closed to Thru Traffic" sign each.

A fully signed detour route, approved by the City's Engineer, shall be provided and maintained whenever a street closure is in effect.

RESPONSIBILITIES OF THE CONTRACTOR (Continued)

7. Except as otherwise directed and/or authorized by the City's Engineer, two-way vehicular traffic shall be maintained at all times within two 12-foot wide lanes on streets having an effective roadway width of 44 feet or more with restricted parking and other streets of lesser widths may be reduced to one 12-foot wide lane with work activity being limited to one side at a time and with one-way vehicular traffic being maintained at a time by properly trained and experienced flaggers.

No reduction of the traveled way width shall be permitted on any City street before 8:30 a.m. nor after 3:30 p.m., on weekends or holidays, or when active work is not being done, unless prior authorization to do so is granted by the City's Engineer.

8. Properly trained and experienced flaggers shall be provided to direct traffic when said traffic is to be interrupted, when two-way traffic is to be reduced to one-way traffic, at such other times as is necessary to safely pass the traffic through or around the work area, and when so directed by the City's Engineer.
9. Vehicular access to occupied residential property may be restricted on weekdays other than holidays between the hours of 8:30 a.m. and 3:30 p.m. while essential work activity is taking place with specific prior written approval from the City's Engineer providing the contractor gives the owner and/or resident at least 24-hour advance written and oral notice. Convenient and safe pedestrian access to occupied residential property shall be maintained at all times. Access to vacant and unused property may be restricted at the engineer's discretion. Both vehicular and pedestrian access shall be maintained at all times to all other property except as otherwise specifically authorized in writing by the City's Engineer.
10. Any traffic control and safety devices and equipment being used which becomes damaged, destroyed, defaced, faded, soiled, misplaced, worn out, inoperative, lost, or stolen shall be promptly repaired, refurbished and/or replaced and any traffic control and safety devices and equipment being used which are displaced or not in an upright position from any cause, shall be promptly returned or restored to their proper position.
11. An unobstructed view of all signs and warning devices including, but not limited to, stop signs, stop ahead signs, street name signs, and other regulatory, warning and construction signs, markers, and warning devices shall be maintained at all times. No trucks or other equipment or materials shall be stopped, parked or otherwise placed so as to obscure said signs, markers and devices from the view of vehicular and/or pedestrian traffic to which it applies.
12. When entering or leaving roadways carrying public traffic, the contractor's equipment, whether empty or loaded, shall yield to said public traffic at all times, except where the traffic is being controlled by police officers, fire officers, properly trained and experienced flaggers, or at traffic signalized intersections.

RESPONSIBILITIES OF THE CONTRACTOR (Continued)

13. Stockpiling and/or storage of materials on any public right-of-way or parking areas will not be permitted. Materials spilled along or on said right-of-way or parking areas shall be removed completely and promptly. All stockpile and/or storage areas shall be kept in a safe, neat, clean, and orderly fashion and shall be restored to equal or better than original condition upon completion of the work.
14. On projects involving work on, closure of, or partial closure of existing streets and where vehicular access to the abutting property must be restricted, the work shall be so selected, arranged and scheduled that the persons requiring access to said abutting property and/or residents along said streets affected will be able to park within a reasonable distance of not more than 500 feet from their homes and/or-destination; and, in addition, no two adjoining streets shall be closed at the same time, all except as otherwise authorized by the City's Engineer.
15. When work has been completed on a particular street, or has been suspended or rescheduled, and said street is to be opened to vehicular traffic, all equipment, no parking signs, other obstructions, and unnecessary traffic control devices and equipment shall be promptly removed from that street except as otherwise authorized or directed by the City's Engineer.
16. Should the contractor be neglectful, negligent, or refuse, fail, or otherwise be unavailable to promptly, satisfactorily and fully comply with the provisions specified and referred to herein above, the City reserves the right to correct and/or mitigate any situation, which in the sole opinion of the City's Engineer constitutes a serious deficiency and/or serious case of non-compliance, by any means at its disposal at the contractor's and/or permittee's expense, and in the case of a contracted City project, to deduct the cost therefor from the contractor's progress and/or final payments. Such corrective actions taken by the City shall not reduce or abrogate the contractor's legal obligations and liability for proper traffic and safety measures and not serve to transfer said obligations and liability from the contractor to the City or the City's agents.
17. Violations of any of the above provisions and/or provisions of the referenced publications, unless promptly and completely corrected to the satisfaction of the City's Engineer, shall, at the sole discretion of the City, be grounds for termination of the contract or shut down or partial shut down of the work without compensation to the contractor and/or permittee, or liability to the City, all as prescribed by contractual obligation or State law whichever is applicable.
18. In the case of a contracted City project, full compensation for compliance with the provisions specified and referred to herein above shall be considered as being fully included in the contract bid items, provided therefor or, if no bid items are provided, in the various contract bid items for the project and no additional compensation will be allowed therefor.

NOTIFICATION AND NO PARKING SIGNS (Continued)

Posting of “NO PARKING” signs on trees will not be allowed. The signs shall be immediately removed upon completion of the work that disallows parking.

The Contractor shall document the day, date, and time that the signs are installed because the no parking restriction cannot be enforced until the signs have been in place 24 hours.

The above described printed notices and signs shall be submitted to the Engineer for review and approval at least seven (7) calendar days before the start of any work.

The Contractor shall make every reasonable effort to arrange with the owners of illegally parked vehicles to remove their vehicles from the street before summoning the police for tow away vehicles.

In addition to the above requirements, the Contractor shall notify the post office, Police Department, Fire Department, Water Utility, ambulance service, Dial-A-Ride, school district transportation manager, street sweeping service, trash collection service, Underground Service Alert, and affected utilities, hospitals, schools and governmental agencies a minimum of two full calendar days prior to the start of work.

EARTHWORK, CLEARING, GRUBBING AND REMOVALS

Earthwork, clearing, grubbing and removals shall meet the requirements of Section 300 and these Special Provisions.

Revise, Subsection 300-1.3.2 (C), "Concrete Curb, Walk, Gutters, Cross Gutters, Driveways, and Alley Intersection," with the following:

All Portland Cement Concrete (PCC) removals, including, but not limited to, cross gutters, curbs, driveway approaches, gutters, sidewalks and spandrels shall be made by removing and replacing the entire section between joints. If any utility cuts are made in PCC improvements, the entire section shall be removed and replaced. Sidewalk removal in front of driveway approaches shall be no less than two squares (4' x 8' or 5' x 10').

All PCC removals shall have neatly sawed edges to a minimum depth of 1-1/2 inches (38mm) and the sawcut shall be at right angles to the unit's alignment.

For subdivision and permit work within the City, all existing or new broken, cracked, chipped or damaged PCC within the project limits shall be removed and replaced.

GEOTEXTILE FABRICS

All geotextile fabrics shall consist of rot-proof polymeric filaments, oriented multi-directionally into a stable network such that the filaments retain their relative positions with respect to each other. The fabric shall be mildew, insect, and rodent resistant and shall be non-reactive to chemicals and minerals commonly found in soil. Fabric shall have no flaws or defect which could significantly alter its physical properties.

Fabric shall be furnished in a protective wrapping which shall protect the fabric from ultraviolet radiation, and from abrasion due to shipping and handling. Unless otherwise stated, if the fabric is to be exposed to sunlight more than one week, the fabric shall be ultraviolet stabilized. Fabrics shall satisfy the physical property requirements listed in Table 1, except as noted.

The work involved shall consist of placing fabric of the type specified at locations and grades shown on the plans or as staked in the field, in accordance with these Special Provisions. Any fabric damaged during its installation or during its use shall be replaced. Torn or punctured areas may be repaired with an additional piece of fabric large enough both to cover the damaged area and satisfy overlap requirements. A certificate of compliance, mill certificate or affidavit that the fabric to be installed meets minimum requirements in each principal direction, signed by a company officer authorized to sign such documents, shall be furnished to the engineer before installation. The Engineer shall determine the adequacy of submitted documentation.

Filter Fabric (Embankment and/or Rip-Rap Stabilization)

Fabric shall be placed on surfaces free of obstructions, depressions and debris. Fabric shall be loosely placed and not placed in a stretched condition. Fabric shall be placed in direct contact with soil, with no bridging allowed. Overlaps shall vary, from 18 to 36 inches wide, depending on stone size and subgrade stability, and shall be approved by the Engineer. Overlaps should be oriented perpendicular to stream flow, with open ends facing away from flow. If overlaps are placed parallel to stream flow, the open ends of overlaps shall face up. Securing pins at least 12 inches long with 1-1/2" diameter washers or 8" x 1" x 8" U-shaped staples, and shall be inserted through all overlap layers, at intervals not exceeding 6 feet, along a line set at the mid-point of overlaps. Additional pins shall be installed as necessary to prevent bridging and fabric slippage, regardless of the fabric's location.

Fabric shall be used with a layer of granular bedding material placed on it prior to rip-rap placement. Fabric with physical properties less than those listed in Table 1 for embankment or rip-rap stabilization shall not be used. The thickness of bedding material shall be designed to ensure that the fabric has total intimate contact with the soil and shall be compatible with rip-rap size. In no case shall the fabric's physical properties be less than those listed for drainage textiles. Final determination of filter fabric's adequacy, considering bedding material used, and size, thickness, gradation and method of placement of rip-rap shall be made by the Engineer. In no case shall bedding material or rip-rap be dropped on fabric from a height of more than three feet. Special care shall be taken to ensure that methods of rip-rap and material placement such as end-dumping do not tear or otherwise damage the fabric.

GEOTEXTILE FABRICS – (Continued)

Drainage Textiles (Subsurface)

Fabric shall be free of any chemical treatment or coating which might significantly reduce permeability. Within 72 hours after fabric’s placement, it shall be covered with the permeable material. Abutting fabric borders shall be overlapped at least 12 inches. The first roll shall overlap the second roll in the same direction the fabric is being placed.

Sedimentation Fabric (Silt Fences)

Fabric must be ultraviolet stabilized and fully operational during its use as a silt fence.

Protective Liner Fabric for Impermeable Membranes

The fabric shall, as a minimum, satisfy the physical property requirements listed in Table 1 of these Special Provisions for 8 oz./sq. yd. fabric. If a greater safety factor is necessary, a heavier grade of fabric shall be specified which meets the requirements listed for 10, 12, or 16 oz./sq. yd. fabric.

PAVEMENT REINFORCING FABRIC

The pavement reinforcing fabric shall be Phillips Petroleum Company’s “Petromat” and Amoco Fabrics Company “Amopave” or an approved equivalent, non-woven, needle punched, 100% polypropylene fabric or non-woven, continuous filament, 100% polyester fabric which meet or exceed the following specifications, using test method ASTM D-1682-64, or ASTM D-1117-77:

Fabric Weight	3.6 Oz./Sq. Yd.
Tensile Strength in Each Direction	90 Lbs.
Elongation at Break	55%
Asphalt Retention	0.20 Gal./Sq. Yd.

The fabric shall retain the physical properties listed herein after being in contact with asphalt concrete at temperatures of up to 325°F for five minutes.

Prior to construction, the Contractor shall submit a sample of the fabric to the City Engineer, together with the manufacturer’s name, the manufacturer’s product specifications, and the manufacturer’s recommended method of fabric placement, and a Certificate of compliance.

EXISTING SURFACE PREPARATION

The existing street surface on which the fabric is to be placed shall be free of dust, moisture, and vegetation. Cracks in the surface shall be filled with a suitable filler as directed in the field by the Engineer.

PAVEMENT REINFORCING FABRIC (Continued)

FABRIC INSTALLATION

After the existing street surface has been prepared in accordance with the above section, the fabric installation process may proceed only when the temperature of the existing pavement is 55°F and rising, and the wind velocity is slow enough to permit satisfactory application of the asphalt binder and fabric.

Asphalt binder for pavement reinforcing fabric shall be uncut, Grade AR 4000, in accordance with Subsection 203-1, "Paving Asphalt," and shall be uniformly spray applied at a temperature of at least 285°F and not more than 325°F.

The Contractor shall submit written certification for all said asphalt binder used as required by Subsection 203-1.3 "Test Reports and Certifications."

Asphalt binder shall be applied at a rate of approximately 0.25 gallons per square yard with the exact rate of application being determined in the field based on surface conditions and subject to approval by the Engineer. Within street intersections, within 40 feet of the intersections for the outbound traffic lanes, within 80 feet of the intersections for the inbound traffic lanes, and within other areas where vehicular braking will occur the application rate should be reduced by approximately 20 percent. Asphalt binder spills and drools shall be removed from the road surface prior to placement of the pavement reinforcing fabric.

The asphalt binder shall be applied by means of a metered distributor tank truck in accordance with Subsection 203-2.5 "Distributing Equipment" of the Standard Specifications. Hand spray application of the asphalt binder will be allowed by the Engineer for small and/or irregular areas which are not practical to do by mechanical means.

Application of asphalt binder across street intersections shall be applied in the direction of traffic continuously from 50 feet behind the BCR to 25 feet beyond the ECR without stopping. Care shall be exercised by the Contractor so as not to develop pools of asphalt binder on the existing street surface. If such pools of asphalt binder do develop, the methods and means to remove same shall be subject to approval by the Engineer in the field.

The width of the asphalt binder spread shall be the width of the fabric mat plus three inches on each side. The asphalt binder shall be applied as close to the fabric laying process as possible so as to maintain sufficient asphalt binder temperature for fabric adherence to the binder.

The area to which asphalt binder has been applied shall be closed to public traffic. Care should be taken to avoid tracking the asphalt binder onto existing pavement surfaces beyond the limits of construction.

FABRIC INSTALLATION (Continued)

The fabric shall be furnished in protective covers and must be kept clean and protected from moisture and sunlight until placed. Installation of dirty, wet, damp, damaged, or light damaged fabric will not be allowed.

The fabric shall be installed by means of mechanical laydown equipment specifically designed for this purpose, capable of handling full rolls of fabric, and capable of laying the fabric smoothly without excessive wrinkles and/or folds. Manual laydown will be allowed by the Engineer for small and/or irregular areas which are not practical to do by mechanical means. When manual laydown is authorized, a length of standard one-inch pipe, or equivalent, together with suitable roll tension devices, are acceptable for proper roll handling.

The fabric installation process may proceed only when the air temperature is above 63°F and rising, the temperature of the existing pavement is above 55°F and rising, the pavement surface is clean and dry, and the wind velocity is slow enough to permit satisfactory application of the asphalt binder and placement of the fabric. The Contractor shall clean the existing paving prior to the fabric installation process.

The pavement reinforcing fabric shall be placed with the bearded (fuzzy) side down in contact with the asphalt binder, with no wrinkles severe enough to cause “folds”, and prior to the time that the asphalt binder has cooled and lost its tackiness.

Where manual laydown methods are authorized, the fabric shall be unrolled, stretched, aligned, and placed in increments of approximately 30 feet.

The fabric shall be overlapped a minimum of 6 inches for transverse (cross-ways) joints and a minimum of 3 inches for longitudinal (length-ways) joints. Overlapped joints at the ends of rolls, or at any break, shall be “shingled” in the direction of the paving operation to prevent edge pick-up by the paver. Additional asphalt binder shall be applied to all fabric joints at a rate of approximately 0.20 gallon per square yard.

The fabric shall be broomed and/or squeegeed to remove air bubbles and to make complete contact with the asphalt binder.

The Contractor shall make every effort to lay the fabric as smoothly as possible and to avoid wrinkles. Small wrinkles, which will flatten under rolling and which cannot reasonably be reduced or removed by stretching, brooming, and squeegeeing will not be considered to be unacceptable. However, wrinkles large enough to cause “folds” in the fabric will not be permitted. Such wrinkles shall be cut and laid out flat with a 12-inch wide patch of fabric placed over the cut.

Additional asphalt binder, at a rate of 0.20 gallons per square yard, shall be applied to the fabric receiving the patch.

FABRIC INSTALLATION (Continued)

Unless otherwise authorized by the Engineer, “seating” of the fabric with rubber tired rolling equipment shall be required prior to paving when the air temperature is less than 75°F and/or the temperature of existing paving is less than 65°F. This is necessary to work the asphalt thoroughly into the fabric.

Care shall be taken to avoid tracking binder material onto the pavement reinforcing fabric or distorting the fabric during seating of the fabric with rolling equipment. If necessary, exposed binder material shall be covered lightly with sand or asphalt concrete.

Public traffic shall not be allowed on the bare reinforcing fabric, except that public cross traffic shall be allowed to cross the fabric, under traffic control, after the Contractor has placed a small quantity of asphalt concrete over the fabric.

Any fabric that is damaged after it has been placed is the responsibility of the contractor and shall be removed and replaced prior to the resurfacing operation.

The placement of the pavement reinforcing fabric shall closely precede the asphalt paving operation and no more fabric than can be paved over that same working day shall be placed.

The paving operation shall closely follow the fabric placement and no more fabric than can be covered up with the hot mix that working day shall be placed. Turning of the paving machine and other vehicles should be gradual and kept to a minimum to avoid damage to the membrane. If equipment tires tend to stick to the membrane during paving, a small quantity of asphalt concrete shall be broadcast ahead of the tires to prevent sticking. If fabric is picked up by the tires of the asphalt pavement delivery trucks and/or other paving equipment, for any reason, the paving operation shall be halted immediately and the problem corrected before resuming the paving operation.

A small quantity of asphalt concrete, as authorized by the Engineer, may be spread over the fabric immediately in advance of placing asphalt concrete surfacing in order to prevent fabric from being picked up by construction equipment. Full compensation for advance spreading of asphalt concrete over the fabric shall be considered as included in the contract prices paid per ton for asphalt concrete.

The temperature of the asphalt concrete shall not exceed 320°F when placed on the pavement reinforcing fabric.

Payment for pavement reinforcing fabric will be made at the contract unit price per square yard as called for on the Bid Schedule for the actual net area covered, excluding laps and patches. Full compensation for the asphalt binder shall be considered as being included in the contract price paid per square yard for the fabric.

	MINIMUM ACCEPTABLE TEST RESULTS							
	EMBANKMENT OR RIP-RAP	DRAINAGE	SILT FENCE	GEOMEMBRANE UNDERLINER				PAVEMENT REINFORCING
				8 oz.	10 oz.	12 oz.	16 oz.	
PHYSICAL PROPERTY								
TENSILE STRENGTH, WET, LBS (ASTM D-1682) *	200+	90+	100+	200+	350+	400+	500+	90+
ELONGATION, WET, % (ASTM D-1682) *	15-90	40+	N/A	50+	50+	50+	50+	55+
PUNCTURE STRENGTH, LBS ASTM D-3787	100	40+	N/A	100	150	175	200	N/A
MULLEN BURST STRENGTH, LBS ASTM D-3786	350	N/A	200+	400+	450	550	750	N/A
COEFFICIENT OF WATER PERME- ABILITY, CM/SEC (CALTRANS CONSTANT HEAD METHOD)	>.03	>.10	>.10	N/A	N/A	N/A	N/A	N/A
ABRASION RESISTANCE, LBS ASTM D-3884 **	55(min)	N/A	N/A	100	150	175	200	N/A
EOS (CORPS OF ENGINEERS CW 02215 FOR WOVEN FABRICS)	40-200	N/A	N/A	N/A	N/A	N/A	N/A	N/A
SLURRY FLOW RATE GAL./MIN./FT ² (VTM-51-79)	N/A	N/A	0.2+	N/A	N/A	N/A	N/A	N/A
RETENTION EFFICIENCY, % (VTM-51-79)	N/A	N/A	75+	N/A	N/A	N/A	N/A	N/A
UV RESISTANCE, % STRENGTH RETENTION AFTER 250 CYCLES IN XENON-ARC WEATHEROMETER TYPE BH OR C (ASTM G-26)	90+	N/A	90+	N/A	N/A	N/A	N/A	N/A

* IN ANY DIRECTION, OR IN BOTH PRINCIPAL DIRECTIONS FOR WOVEN FABRICS

** ROTARY PLATFORM, DOUBLE-HEAD METHOD; RUBBER BASE AGGREGATE WHEELS EQUAL TO CS-17 "CALIBRASE" BY TABOR INSTRUMENT CO.; ONE (1) KILOGRAM LOAD PER WHEEL, 2000 REVOLUTIONS

TABLE 1 GEOTEXTILES

COLD PLANING ASPHALT CONCRETE

Existing asphalt concrete shall be planed at the locations and to the dimensions shown on the plans and in accordance with these Special Provisions.

Cold milling planer machines which are supported by tracks rather than hard rubber tires are required unless otherwise specifically authorized by the Engineer.

The cold milling planer machine shall have a cutter head at least 60 inches wide and shall be operated so as not to produce fumes or smoke.

The depth, width and shape of the cut shall be as indicated on the typical cross sections or as directed by the Engineer. The final cut shall result in a uniform surface conforming to the typical cross sections. The outside lines of the planed areas shall be neat and uniform. The road surfacing to remain in place shall not be damaged in any way.

Planed widths of pavement shall be continuous except for intersections at cross streets where the planing shall be carried around the corners to the BCR and ECR unless directed to do different by the Engineer.

The material planed from the roadway surface, including material deposited in existing gutters or on the adjacent traveled way, shall be immediately removed from the site of the work and disposed of as provided in Subsection 300-1.3, "Removal and Disposal of Materials" and these Special Provisions. The removal crew shall follow within 50 feet of the planer, unless otherwise directed by the Engineer.

At least three full time flag persons shall be assigned to the cold milling planer for traffic control.

Planing asphalt concrete pavement will be measured by the lineal foot. The quantity to be paid for will be the actual length of surface planed irrespective of the number of passes required.

The contract price paid per lineal foot for cold planing asphalt concrete pavement shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all work involved in planing asphalt concrete surfacing and disposing of material removed, as specified in these Special Provisions and as directed by the Engineer.

UNTREATED BASE MATERIALS

Untreated base materials shall meet the requirements of Section 400 and these special provisions.

In Subsection 400-2.1.2 “Precedence”, delete disintegrated granite.

Delete Subsection 400-2.3 “Disintegrated Granite”.

In the first sentence of Subsection 200-2.5.1, “General”, delete glass.

In lieu of the second sentence of Subsection 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 Test Method No. California 205.

Evaluation of gradation and sand equivalent test results shall conform to the provisions of Subsection 400-1.4. The gradation and sand equivalent requirements of Subsections 200-2.3, 200-2.4, 200-2.5, and 200-2.6 shall be the moving average requirements.

Add to Subsection 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 type of untreated base material gradation (coarse or fine) in Subsection 200-2.4.2 “Grading” will be specified by the Engineer. Changes from one gradation to another shall not be made during the progress of the work, unless permitted by the Engineer.

Revise Subsection 301-2.2, “Spreading”, as follows:

Delete the last two sentences in Paragraph 2 and add the following:

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.

Tailgate spreading by dump trucks will not be permitted except for spot dumping and in areas not readily accessible to spreading equipment.

For subdivision and permit work within the City, the untreated base materials shall not be spread until all underground work is completed, including backfill, compaction, testing and certification of trenches.

ASPHALT CONCRETE

Asphalt concrete shall meet the requirements of Section 400 and these Special Provisions.

The minimum asphalt concrete pavement section shall be 0.20 feet base course with 0.10 feet finished course as herein specified. All streets shall be constructed in the stages as directed by the Engineer in the field.

The minimum asphalt concrete pavement for parking lots shall be 0.25 feet. The asphalt mix shall be as shown on the plans.

Asphalt concrete for streets and alleys shall be Type III-B2-AR4000 with an asphalt content of 4.5% to 5.8% for the base course and Type III-C3-AR4000 with an asphalt content of 4.6% to 6.0% for the finished course. The Engineer may substitute Type III-D-AR4000 in place of Type III-C3-AR4000 for "thin" overlays equal to or less than 0.10 feet in thickness. When joining existing A.C. pavement, mill a straight edge, minimum 1-inch deep along the join line.

The viscosity grade AR8000 paving asphalt may be substituted for AR4000 as determined by the Engineer. AR8000 paving asphalt shall be used for parking lot paving.

Delete Item 3, Crushed slag of Subsection 400-1.2, "Asphalt Concrete Aggregates". The use of "slag" aggregate for asphalt concrete is expressly prohibited.

Coarse aggregate shall consist of material of which at least 75 percent by weight shall be crushed particles in lieu of the requirements of Subsection 400-4.2.3 "Coarse Aggregate".

The individual test result requirements shall be used in Subsection 400-4.3 "Combined Aggregates".

Add to Subsection 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 dikes, gutters, gutter flares, oversize 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 section.

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.

ASPHALT CONCRETE (Continued)

In advance of placing asphalt concrete dike on asphalt surfacing, the surface shall be broomed clean of all loose and extraneous 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 (followed by fog seal coat 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.

Replace the second paragraph of Subsection 302-5.4, "Tack Coat" with the following:

A similar tack coat shall be applied to all surfaces that are to be overlaid unless otherwise directed by the Engineer.

Add to Subsection 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 widening, 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 lanes 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.

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.

All screed extensions for paving machines shall be provided with a tamper, roller or other suitable compacting devices.

Automatic grade and slope control shall be used for overlays.

Add to Subsection 302-5.6. 1, "General (Rolling) the following:

Pneumatic rollers shall be required on lower layers only.

Initial breakdown compaction shall consist of a minimum of three (3) coverages of a layer of asphalt mixture. A pass shall be a movement of a rolling both directions over the same path. A coverage shall consist of as many passes as are necessary to cover the entire width being paved. Overlap between passes during any coverage, made to insure compaction without displacement of material in accordance with good rolling practice, shall be considered to be part of the coverage being made and not part of a subsequent coverage.

ASPHALT CONCRETE (continued)

Each coverage shall be completed before subsequent coverages are started.

For subdivision and permit work within the City, the final or surface layer of 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.

When specified, 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 proportion that the resulting mixture will contain not more than 50 percent of added water, the exact quantity of added water to be determined by the Engineer. The rate of application of the resulting mixture shall be such 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.

Replace the last sentence of the first paragraph of Subsection 302-5.6-2, "Density and Smoothness," with the following

The transverse slope of the finished surface shall be uniform to a degree such that no depressions greater than 0.02-foot are present when tested with a straightedge 10 feet long laid in a direction transverse to the center line.

Add to Subsection 302-5.7, "Joints," the following:

All feathered joints shall be sealed after rolling.

Replace the third paragraph of Subsection 302-5.8, "Manholes" with the following:

All manholes, frames and covers, shall be adjusted to base asphalt concrete paving grade immediately after paving. Manhole frames and covers shall not be adjusted to grade (1/8 to 1/4 inches below pavement surface) until after the final or surface layer of asphalt concrete is placed.

After the pavement has been completed, the necessary portions of the subgrade, base and pavement shall be neatly removed, the structure built up, and the manhole frame set to be backfilled with Type III-C3-AR4000 asphalt concrete. The asphalt concrete shall be placed and compacted in a workmanlike manner to conform to the appearance of the surrounding pavement.

All new and/or existing valve box covers shall be adjusted to grade during paving. The contractor shall furnish all slip sleeves where none exists. The contractor shall loosen all valve box covers immediately after paving.

PORTLAND CEMENT CONCRETE

Portland Cement Concrete (PCC) shall meet the requirements of Subsection 201-1 and 302-6, Section 303 and these Special Provisions.

Add to Subsection 201-1.1.1 “General”, the following:

The Contractor shall furnish the Engineer in the field with a copy of the mix design to be used and with a legible certified weight-master’s certificate for each load of P.C.C. delivered to the project. Portland Cement Concrete delivered to the project site having a water content and/or slump greater than that specified in the mix design shall be rejected and removed from the project site.

Revise the table in Subsection 201-1.1.2 “Concrete Specified by Class”, as follows:

The concrete class shall be 560-C-3250 with a maximum slump of 4 inches for all P.C.C. except for trench backfill slurry, air placed Concrete-Method B and as specified by the Engineer.

If approved by the engineer in the field, the following alternative concrete class may be used:

- a) 517-C-3250 with Pozz 322 N (5/100) additive at the rate of 26.0 fluid ounce per cubic yard design weight and 2.0 inch slump per Mix No. CHJ-90018 for curb machine.
- b) 536-C-3250 with Pozz 322 N (5/100) additive at the rate of 27.0 fluid ounce per cubic yard design weight and 4.0 inch slump per Mix No. CHJ-90019 for flat work.

	Project: City of Corona, Public Works
	OSA Application No.:
	Owner:
	Architect:
	Engineer:
	Contractor:
	Concrete Subcontractor:
3	Concrete Supplier: Superior Ready Mix
	Aggregate Source: Temescal Canyon

Date: January 24, 1990
Job No.: 89037-4
Mix No.: CHJ-90018
Classification:
Design Strength: 3000 psi @ 28 days
Max Aggregate Size: 1"
Design Slump: 2"
Max W/C Ratio: 6.5 gal/sk

For Curb Machine

Mix Design for One Cubic Yard of Concrete, aggregate saturated surface dry

MATERIAL	WEIGHT, LB	SP GR	ABSOLUTE VOLUME, cu. ft
Cement, Type II 5.5 sks	517	3.15	2.63
Pozzolan, Class			
Aggregate			
1. Washed Concrete Sand	1570	2.61	9.65
2. 3/8" Aggregate	191	2.64	1.16
3. 1" Aggregate	1418	2.68	8.48
4.			
Water 34.0 gallons	283	1.00	4.54
Estimated Entrapped Air (2.0 %)			0.54
Admixtures			
1. Pozz 322N (5 /100)	26.0 fl. oz.		
2. (/100)	fl. oz.		
3. (/100)	fl. oz.		

TOTAL 3979 lbs 27.00 c.f.

Grading Analysis, percent passing U.S. standard sieves

	%	2	1-1/2	1	3/4	1/2	3/8	4	8	16	30	50	100	200	FM
Aggregate 1, Sand	50						100	99	82	56	34	18	7	4	3.0
Aggregate 2, 3/8"	6					100	96	24	1						
Aggregate 3 1"	44		100	94	63	22	6	1							
Combined 1"			100	97	84	66	59	51	41	28	17	9	3	2	
Specification limits	max			100	93	--	70	51	41	32	22	9	3	2	
SSPW, Grading C	min		100	95	77	--	50	93	91	22	12	3	0	0	

Remarks:

Average laboratory tested strength at:

7 days = 2970 psi

14 days = 3780 psi

28 days = 4310 psi

Respectfully Submitted:

Signature and Stamp, RCE #

Project: City of Corona, Public Works
 OSA Application No.:
 Owner:
 Architect:
 Engineer:
 Contractor:
 Concrete Subcontractor:
 3 Concrete Supplier Superior Ready Mix
 Aggregate Source: Temescal Canyon

Date January 24, 1990
 Job No. 89037-4
 Mix No. CHJ-90019
 Classification:
 Design Strength: 3000 psi @ 28 days
 Max Aggregate Size: 1"
 Design Slump: 4"
 Max W/C Ratio: 6.5 gal/sk

For Flatwork

Mix Design for One Cubic Yard of Concrete, aggregate saturated surface dry

MATERIAL	WEIGHT, LB	SP GR	ABSOLUTE VOLUME, cu. ft
Cement, Type II 5.7 sks	536	3.15	2.73
Pozzolan, Class			
Aggregate			
1. Washed Concrete Sand	1396	2.61	8.57
2. 3/8" Aggregate	188	2.64	1.14
3. 1" Aggregate	1562	2.68	9.34
4.			
Water 36.0 gallons	300	1.00	4.31
Estimated Entrapped Air (1.5 %)			0.41
Admixtures			
1. Pozz 322N (5 /100)	27.0 fl. oz.		
2. (/100)	fl. oz.		
3. (/100)	fl. oz.		

TOTAL 3982 27.00 c.f.

Grading Analysis, percent passing U.S. standard sieves

	%	2	1-1/2	1	3/4	1/2	3/8	4	8	16	30	50	100	200	F.M.
Aggregate 1. Sand	45						100	99	82	56	34	18	7	4	3.0
Aggregate 2. 3/8"	6					100	96	24	1						
Aggregate 3. 1"	49		100	94	63	22	6	1							
Combined 1"				97	82	62	54	47	37	25	15	8	3	2	
Specification limits	max			100	93	--	70	51	41	32	22	9	3	2	
SSEW, Grading C	min		100	95	77	--	50	39	31	22	12	3	0	0	

Remarks:

Average laboratory tested strength at:

7 days = 2950 psi
 14 days = 3780 psi
 28 days = 4300 psi

Respectfully Submitted:

Signature and Stamp, RCE #

Replace the first sentence in Paragraph 6 of Subsection 2011.4.3, “Transit Mixers”, with the following:

The total elapsed time between the addition of water at the batch plant and the completion of the discharge of the P.C.C. from the mixer shall not exceed 90 minutes. All P.C.C. remaining in the mixer after said 90-minute time limit shall be rejected and removed from the project site.

Replace the last paragraph of Subsection 303-5.1.1 “General”, with the following:

Where removals of curb and/or sidewalk are located at curb returns, the contractor shall install wheelchair ramps.

No P.C.C. shall be ordered and/or poured until the forms and subgrade have been inspected and approved by the Engineer in the field.

All pull boxes, water meter boxes and water valve covers shall be adjusted to proposed finish grade and approved by the Engineer in the field prior to placement of the P.C.C.

The contractor shall barricade and protect placed Portland Cement Concrete from all damage, marks, mars and/or graffiti. Any Portland Cement Concrete damaged, defaced, discolored or defective shall be replaced at the contractor’s expense.

Add to the first paragraph of Subsection 303-5.1.2 “Drainage Outlets Through Curb”, the following:

Coring shall be required for all drains through existing curbs.

Replace the last paragraph of Subsection 303-5.1.3 “Driveway Entrances” with the following:

Driveway approaches and driveways shall be 6 inches thick for single family residential areas and 8 inches thick for all other areas and will be included in the various sidewalk items.

Add to Subsection 303-5.4.3 “Weakened Plane Joints, (a) General, the following:

All weakened plane joints shall be spaced at a maximum of 10 feet for curbs, gutters and sidewalks, scoring lines shall conform to those prevailing- in the area and be uniform in spacing.

Revise Subsection 303-5.5.2 “Curb”, as follows:

Delete the first sentence in Paragraph 1 and add the following:

The curb and gutter surface shall not vary more than 0.01 foot from a 10-foot straightedge except at grade changes. Prior to the removal of the forms, the surface shall be finished true to grade by means of a straightedge float of not less than 10 feet in length, and operated

PORTLAND CEMENT CONCRETE (continued)

longitudinally over the surface of the concrete. Form clamps shall be so constructed as not to interfere with the operation of the float. The form on the front of curbs shall not be removed in less than one hour nor more than 6 hours after the concrete has been placed. In no event shall forms be removed while the concrete is sufficiently plastic to slump. The top and face of the finished curb shall be true and straight and top surface of curbs shall be of uniform width, free from humps, sags, blemishes or other irregularities.

Add to Subsection 303-5.5.3 “Walk”, the following:

The sidewalk surface shall not vary more than 0.02 foot from the 10-foot straightedge except at grade changes and the finished surface shall be free from humps, sags, blemishes or other irregularities. All sidewalks shall be a minimum of 4 inches thick except at driveways where the sidewalks shall be a minimum of 6 inches thick for single family residential areas and 8 inches thick for all other areas.

APPLICATION OF THERMOPLASTIC STRIPING, PAVEMENT MARKINGS TRAFFIC AND CURB MARKINGS

Replace the first sentence of Subsection 210.1.6.2 “Thermoplastic Paint, State Specifications” with the following:

The thermoplastic material shall conform to either State Specification 8010-41G-21 or 8010-41G-19 and the glass beads to be applied to the surface of the molten thermoplastic material shall conform to the requirements of State Specification 8010-51J-22 (Type II) and shall be applied to the road surface in a molten state by mechanical means.

Replace the first sentence of Subsection 210-1.7 “Test Records and Certification” with the following:

Prior to delivery of thermoplastic material, the contractor shall deliver to the engineer certified copies of manufacturer’s test report.

Add to Subsection 310-5.6.1, “General”, the following:

Paint, when approved in lieu of thermoplastic material, for traffic striping and pavement markings shall be manufactured by Bauer Coatings Chemical Division or approved equal. Colors shall be white (1039 A9), yellow (1040 A9), or black (11 A9), as required.

The Contractor shall not proceed with the painting of any pavement markings and/or striping until the Engineer has checked and approved the cat tracking and spotting, and authorized the Contractor to proceed with said painting.

Striping and pavement markings, other than those called for on the plans to be painted, which are damaged or darkened as a result of the construction, including wheel markings by public traffic and the construction equipment, shall be repainted by the Contractor.

Replace the last paragraph of Subsection 310-5.6.4, “Geometry, Stripes, and Traffic Lanes” with the following:

All stencils to be used to paint pavement markings shall conform to the dimensions of the standard details for pavement markings in the State Traffic Manual unless shown different on the plan.

Replace the third paragraph of Subsection 310-5.6.8, “Application of Paint”, with the following:

Traffic striping and marking shall be thermoplastic material applied at locations and to the dimensions and spacing indicated on the approved plans or as provided in the specifications. Where temporary traffic striping and marking is required, it shall not be applied until the layouts, alignments, materials, sequencing, and conditions of the existing surface have been approved.

APPLICATION OF THERMOPLASTIC TRAFFIC STRIPING, PAVEMENT MARKINGS AND CURB MARKINGS (continued)

Existing surfacing which is to receive the thermoplastic material shall be mechanically wire brushed to remove all dirt and contaminants. Surfaces of new portland cement concrete pavement to receive the thermoplastic material shall be mechanically wire brushed or abrasive blast cleaned to remove all laitance and curing compound.

Existing pavement markers, which are damaged by blast cleaning or wire brushing shall be removed and replaced by the Contractor at his expense.

Thermoplastic material shall be applied only to dry pavement surfaces and only when the pavement surface temperature is above 50°F.

A primer, of the type recommended by the manufacturer of the thermoplastic material shall be applied to all asphaltic surfaces over 6 months old and to all portland cement concrete surfaces. The primer shall be applied immediately in advance of, but concurrent with, the application of thermoplastic material. The primer shall be applied at the application rate recommended by the manufacturer and shall not be thinned.

Preheaters with vertical mixers having 360-degree rotation shall be used to preheat granular form material.

The thermoplastic material shall be applied to the pavement at a temperature between 400°F and 425°F, unless a different temperature is recommended by the manufacturer.

The thermoplastic material shall be applied by either spray or extrusion methods in a single uniform layer.

Stencils shall be used when applying thermoplastic material for pavement markings.

The pavement surface to which thermoplastic material is applied shall be completely coated by the material and the voids of the pavement surface shall be filled.

Unless otherwise specified in the special provisions, the thermoplastic material for traffic stripes shall be applied at a minimum thickness of 0.060-inch. Thermoplastic material for pavement markings shall be applied at a thickness of 0.100-to 0.150-inch. Glass beads shall be applied immediately to the surface of the molten thermoplastic material at a rate of not less than 8 pounds per 100 square feet. The amount of glass beads applied shall be measured by stabbing the glass bead tank with a calibrated rod.

APPLICATION OF THERMOPLASTIC TRAFFIC STRIPING, PAVEMENT MARKINGS AND CURB MARKINGS (continued)

Add to Subsection 310-5.6.8, “Application of Paint”, the following:

Except as otherwise called for on the plans or otherwise directed by the Engineer, all angle points, as shown on the striping plans shall be applied as a smooth, tangent curve with a radius as determined in the field by the Engineer.

RAISED PAVEMENT MARKERS

Pavement markers shall consist of furnishing and placing pavement markers at the locations shown on the plans or where directed by the Engineer. Pavement markers will be required on collector streets, secondary streets and major streets.

Pavement markers shall be of the type and color shown on the plans or specified in the specifications and these Special Provisions.

Reflective pavement markers shall be of the prismatic reflector type as specified in Section 85 "Pavement Markers" of the State standard Specifications. The prismatic reflectors shall consist of methyl methacrylate or suitably compounded acrylonitrile butadiene styrene (ABS) shell filled with a mixture of an inert thermosetting compound and filler material. The exterior surface of the shell shall be smooth and contain one or two methyl methacrylate prismatic reflector faces of the color specified. Thin untempered glass shall be bonded to the prismatic reflective faces to provide an extremely hard and durable abrasion resistant surface.

The reflective lens shall not contain any voids or air space, and the back of the lens shall be metallized.

The shell shall be fabricated in a manner that will provide a mechanical interlock between the thermosetting compound and the shell. The thermosetting compound shall bond directly to the backside of the metallized lens surface.

The base of the marker shall be flat (the deviation from a flat surface shall not exceed 0.05-inch), rough textured and free from gloss or substances which may reduce its bond to the adhesive.

The color of the reflectors when illuminated by an automobile headlight shall be an approved clear, blue, yellow or red color as designated. Off-color reflection shall constitute grounds for rejection.

The abrasion resistant surface shall meet the following requirements:

1. Official Performance
 - A. Steel Wool Abrasion Procedure

Form a 2.54cm (1-inch) diameter flat pad using #3 coarse steel wool per Federal Specification FF-W-1825. Place the steel wool pad on the reflector lens. Apply a load of 22kg (50 lbs.) and rub the entire lens surface 100 times. (Note: on two-color units the red lens will not be covered with glass and should not be abraded.)

RAISED PAVEMENT MARKERS (Continued)

B. Specific Intensity

After abrading the lens surface, using the above steel wool abrasion procedure, the specific intensity shall be tested in accordance with California Test 669 and meet the following requirements:

Reflectance Specific Intensity

	<u>Clear</u>	<u>Yellow</u>	<u>Red</u>
0° Incidence Angle, min.	3.0	1.5	0.75
20° Incidence Angle, min.	1.2	0.60	0.30

2. Impact Test

(Note: This test is not applicable to the red lens on a two-color unit.)

A. Sampling

A random sample of markets, to provide 20 lenses for testing, shall be selected from each lot.

B. Testing

Condition the markers in a convection oven at 130°, for one hour. While at the elevated temperature, impact the reflective face by allowing a 90 gram (0.2 lb) dart fitted with a 6.64cm (0.25in) radius spherical head to drop 15.24cm (6 in) perpendicularly onto the center of the reflective surface. Cracks in the impact area shall be generally concentric in appearance. Small radial cracks shall be allowed, none to have a length greater than 0.64 cm (0.25 in).

C. Tolerances

If 90% (18 lenses) of the test samples meet the above requirements the lot shall be considered acceptable. Failure of 4 lenses of the sample will be cause for rejection of the lot. Failure of 3 lenses will necessitate a re-sample of 20 additional lenses. Failure of more than one lens of the re-sample will be cause for rejection of the lot.

Rapid Set Type Adhesive shall be used to cement the markers to the pavement and shall be of the type specified in Section 95 “Epoxy” and Subsection 95-2.04 “Rapid Set Epoxy Adhesive for Pavement Markers” (State Specification 8040-01E-08) of the State Standard Specifications and these Special Provisions.

RAISED PAVEMENT MARKERS (Continued)

Bituminous type hot-melt adhesive may be used in lieu of epoxy adhesives. The adhesive shall be an asphaltic material with a homogeneously-mixed filler and shall comply with the following:

a. Adhesive Properties.

<u>Property</u>	<u>Min</u>	<u>Max</u>	<u>Methods</u>
Softening Point, °F	200	–	ASTM D 36
Penetration, 100 g, 5 sec, 77 °F	12	–	ASTM D 5
Flow, inch	–	0.2	ASTM D 3407 as modified in Test Methods
Viscosity, 400 °F, Poises	–	75	ASTM D 2669 as modified in Test Methods
Flash Point, C.O.C., °F	550	–	ASTM D 92

b. Asphalt Properties determined on the filler-free material derived from the extraction and Abson explained in Test Methods.

<u>Property</u>	<u>Min</u>	<u>Max</u>	<u>Methods</u>
Penetration, 100 g, 5 sec, 77 °F	25	–	ASTM D 5
Viscosity, 275 °F, Poises	12	–	ASTM D 2171
Viscosity Ratio, 275 °F	–	2.2	As explained in Test Methods

RAISED PAVEMENT MARKERS (Continued)

- c. Filler properties determined using the filler separation technique described in Test Methods.

<u>Property</u>	<u>Min</u>	<u>Max</u>	<u>Methods</u>
Filler Content, % by weight	50	75	As in Test Methods
Filler Fineness, % passing			ASTM C 430 as modified in Test Methods
No. 325	75	–	
No. 200	95	–	
No. 100	100	–	

- d. Test Methods

Flow shall be determined according to Section 6, Flow, of ASTM D 3407 with the exception that the oven temperature shall be 158 ± 2 °F and sample preparation shall be according to Section 7.1 of ASTM D 5.

That portion of the street surface to which the marker is to be bonded by the adhesive shall be free of dirt, curing compound, grease, oil, moisture, loose or unsound layers, paint and any other material which would adversely affect the bond of the adhesive. Cleaning shall be done by blast cleaning on all surfaces regardless of age or type. The adhesive shall be placed uniformly on the cleaned pavement surface or on the bottom of the marker in a quantity sufficient to result in completed coverage of the area of contact of the marker with no voids present and with a slight excess after the marker has been pressed in place. The marker shall be placed in position and pressure applied until firm contact is made with the pavement. Excess adhesive around the edge of the marker, excess adhesive on the pavement, and adhesive on the exposed surfaces of the markers shall be immediately removed. Soft rags moistened with mineral spirits conforming to Federal Specifications TT-T-291 or kerosene may be used, if necessary, to remove adhesive from exposed faces of pavement markers. No other solvent shall be used. The marker shall be protected against impact until the adhesive has hardened to the degree designated by the Engineer.

Pavement markers shall not be placed under the following conditions:

1. When either the pavement or the air temperature is 32 °F (0 °C) or less.
2. If the relative humidity of the air is greater than 80 percent.

3. If the pavement is not dry.
4. On new asphalt concrete surfacing until the surfacing has been opened to public traffic for a period of not less than 14 days.

TRAFFIC SIGNS

All details and dimensions for traffic signs and the installation thereof shall conform to the California Department of Transportation Traffic Sign Specifications, Traffic Manual, and Standard Specifications. All signs shall be reflectorized. Materials shall be certified as meeting all applicable State specifications.

Signs three (3) feet maximum and street names shall be mounted on street lights where possible. All stop signs and signs not mounted on street lights shall be attached to a unistrut breakaway post with sleeve or approved equal.

All signs, except 12" x 18" parking restrictions, shall be high intensity.

All signs shall have a minimum vertical clearance of 7 feet from the top of curb and 1-foot clearance from curb face to edge of sign or as directed by the engineer.

All signs shall be installed before the roadway is open to traffic and the placement of pavement.

GUIDELINES FOR CONCRETE WORK WITHIN THE PUBLIC RIGHT OF WAY

1. Concrete shall be per City of Corona's Standards 560-C-3250 (6 sack), 600-E-3250 (6.5 sack) may be used for wheelchair ramps only.
2. All forms shall be set to line and grade prior to inspection. "4" walk means 4" thick, not width of 2 x 4.
3. Subgrade shall be compacted to 90% and be firm and unyielding. Compaction test may be required.
4. Concrete tickets will be kept for all jobs - check tickets for all correct information. If cylinders are taken, note on ticket.
5. Instruct superintendent to stay off concrete for seven (7) days. How will he protect it?
6. Instruct superintendent that damaged concrete will be removed and that he should take measures to protect it.
7. Removal standards:
 - a. Drive approach - 12' or 1/2 width (whichever is less)
 - b. Sidewalk - min. 2 squares (in driveway approach).
 - c. Sidewalk - min. 1 square.
 - d. Spandrals/Cross-gutter - min. 64 sq. ft. Spandral may be saw cut from flow line on high side only.
 - e. All drains in curb shall be core drilled.
 - f. All removals shall be to nearest score lines (8' L.F. min.)
 - g. Gutter shall not be cut along-flow line.
 - h. Scarred or broken concrete shall be removed.
8. Listed below are the standards for repair or replacement of damaged sidewalk, curb and gutter, prior to acceptance by the City of Corona.
 - a. SIDEWALK DAMAGE & REPAIRS
(Specifications for each panel between score lines.)
 - I. Scratches & Gouges
 - A. Up to 1/16" deep, 1/8" wide, spaced at less than 3/4" average

(If over 20% of the panel is scratched in this manner, saw cut, remove and replace panel)

II. Cracks

- | | | |
|----|-------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| A. | More than one hairline crack across panel parallel to score lines | Saw cut, remove and replace panel |
| B. | Wedges formed by <u>hairline</u> cracks | If any dimension of the wedge is greater than 6", saw cut, remove and replace the panel. |
| C. | All other cracks, other than score lines. | Saw cut, remove and replace panel |

III. Damaged Edges

- | | | |
|----|------------------------------------------------------------------------------|-----------------------------------|
| A. | One nick per edge, maximum length of 12", maximum width of 3/4". | Patch |
| B. | Four nicks per edge, where no nick exceeds 4" in length, maximum width 3/4". | Patch |
| C. | All other edge nicks & breaks. | Saw cut, remove and replace panel |

IV. Combination of Damage

The panel shall be saw cut, removed and replaced because of poor over all quality even if it meets the minimum level of acceptability for each item under I, II and III.

The damage described above is frequently caused by improper lot grading procedures. Usually the concrete work is performed in a satisfactory manner prior to the completion of grading operations. The grader then will push soil and rock across the new concrete sidewalk and curb. A skiploader is then used in the street to load trucks for disposal of this material. This operation damages the concrete as well as the asphalt road surface.

Acceptable grading procedures are those which do not cause damage to other improvements in the development. It is strongly recommended that all loading of excess material be performed on the lots rather than in the streets, and where material needs to be removed from sidewalk, curb and gutter and

street surfaces the removal should be primarily by hand labor. It is further recommended that work of this nature be fully supervised by the development superintendent.

CITY OF CORONA

CERTIFICATE OF OCCUPANCY REQUIREMENTS
(All items must be completed.)

PUBLIC WORKS

- 1. Certificate of precise grading received and approved. _____
- 2. As-built precise grading plans received and approved. _____
- 3. Final soils report received and approved. _____
- 4. On-site utility trench compaction report received. _____
- 5. Storm drain manholes raised to grade. _____
- 6. Street paved and free of hazards (based paved for tracts). _____
- 7. All concrete removals and replacement completed (except for tracts). _____
- 8. Street light system operational. _____
- 9. Street name signs installed. _____
- 10. Traffic control sign installed. _____
- 11. Street pavement marking painted as required. _____
- 12. Street Sweeping Schedule _____
- 13. Other _____

UTILITY SERVICES

- 1. Water system completed and tested (including fire hydrants). _____
- 2. All water valve caps raised to grade. _____
- 3. Water meter set and adjusted to grade. _____
- 4. Water meter must be in homeowner's name with pre-payment charge paid in full. (NOTE: Models only in developer's name.) _____
- 5. Sewer system completed, tested and cleaned. _____
- 6. Sewer manholes raised to grade. _____
- 7. Other _____

BUILDING

- 1. Building completed and inspected. _____
- 2. House number installed per code. _____
- 3. All utilities connected (Edison, phone, gas, cable T.V.) _____

PARKS

- 1. Street trees planted/root control barriers in place. _____
- 2. Irrigation systems, if required, completed. _____
- 3. Other _____

PLANNING

- 1. Fences in place. _____
- 2. Correct number of parking spaces and wheel stops (Compact, handicapped and loading spaces marked). _____
- 3. Trash enclosures completed. _____
- 4. On-Site irrigation (full sprinkler coverage, heads, valve, backflow preventer and conduits). _____
- 5. On-site landscaping (trees, shrubs and groundcover). _____
- 6. Street tree maintenance form to each homeowner or occupant. _____
- 7. Other. _____

FIRE

- 1. Site accessibility. _____
- 2. Fire hydrants in service (On-site and within public right-of-way.) _____
- 3. Sprinkler or other extinguishing systems approved and tested. _____
- 4. Alarm systems approved and tested. _____
- 5. Hazardous occupancy requirements. _____
- 6. Permits for, but not limited to, flammable liquids, woodworking high storage files (commercial and industrial). _____
- 7. Special occupant permits, or requirements (commercial and industrial). _____
- 8. Other _____

Rough Grading Certification

City Engineer
Public Works Department
City of Corona
815 West Sixth Street
Corona, CA 91720

LOT NOS. _____

TRACT/PARCEL MAP NO. _____ DRAWING NO. _____

A. By Civil Engineer

I certify to the satisfactory completion of rough grading including: grading to approximate final elevations; property lines located and staked; cut and fill slopes correctly graded and located in accordance with the approved design; swales and terraces graded ready for paving; berms installed; and required drainage slopes provided on the building pads. I further certify that where report or reports of an Engineering Geologist and/or Soils Engineer have been prepared relative to this site, the recommendations contained in such reports have been incorporated in the design.

Remarks: _____

CIVIL ENGINEER _____ REG. NO. _____

(Signature & Seal)

DATE: _____

B. By Soils Engineer

I certify that the rough grading work incorporates all recommendations contained in the report or reports for which I am responsible and all recommendations that I have made based on field inspection of the work and testing during grading. I further certify that where the reports of an Engineering Geologist, relative to this site, have recommended the installation of buttress fills or other similar stabilization measures such earthwork construction has been completed in accordance with the approved design.

Remarks: _____

CIVIL ENGINEER _____ REG. NO. _____

(Signature & Seal)

DATE: _____

Final (Precise) Grading Certification

City Engineer
Public Works Department
City of Corona
815 West Sixth Street
Corona, CA 91720

LOT NOS. _____

TRACT/PARCEL MAP NO. _____ DRAWING NO. _____

A. By Civil Engineer

I certify to the satisfactory completion of grading in accordance with the approved plans. All drainage devices required by the Grading Permit, grading plans and Grading Ordinance have been installed. Erosion treatment of slopes and irrigation systems (where required) have been installed. Adequate provisions have been made for drainage of surface waters from each building site.

CIVIL ENGINEER _____ REG. NO. _____
(Signature & Seal)

DATE: _____

GRADING CONTRACTOR CERTIFICATION

I certify that the grading was done in accordance with the plans and specifications, the grading ordinance and the recommendations of the Civil Engineer, Soils Engineer and Engineering Geologist. It is understood that this certification includes only those aspects of the work that can be determined by me, as a competent grading contractor, without special equipment or professional skills.

GRADING CONTRACTOR _____ LIC. NO. _____
(Signature & Seal)

DATE: _____

INSTRUCTIONS: The owner may sign if the grading was not done by a licensed Grading Contractor.

**GUIDELINES FOR CONSTRUCTION TRAILERS, TRASH BINS, STORAGE BINS,
KNOCK DOWN GATES AND FENCES, BARRICADES, AND TWO POINTS OF ALL
WEATHER ACCESS INLAND DEVELOPMENT PROJECTS**

Upon obtaining approved plans and permits, permission to encroach upon public rights-of-way to construct the required improvements is granted. (The same guidelines will apply for lanD developments with private streets during construction and inspection.)

Because of the need to maintain traffic to and/or through development projects for purposes of emergency vehicles, inspection services, deliveries, trades, and residents (when applicable) the following guidelines are provided regarding the streets within the development project.

1. **ACCESS PATH ESTABLISHED (During Construction)**

Upon construction of a well defined street section (i.e. curb or pavement) during the construction of the project, long-term temporary facilities, such as construction trailers, sales offices, storage bins, and trash bins must be located outside the “street section.” Short-term temporary materials, such as debris or construction materials may be left in the “street section” provided they are neatly stacked at the side and will remain no longer than 8 working days. Construction trailers will not be placed on the A.C. pavement. They must be placed behind the curbs and gutters.

On a case-by-case basis, a temporary storage bin may be placed within the street section with prior arrangements and approval by the Public Works Inspection Superintendent if no other practical location can be found.

During construction of a project, if the developer elects to construct houses, etc., in groups or phases and desires to close off the streets not needed as a required secondary access at mid-block or at the intersections, the street closures must be per City standards and the Watch Manual. The current type of barricades, signing, knock down type fences with gates must be used. Such items as 2 x 4’s, 2 x 6’s, sawhorses and homemade barricades will not be used. Signs such as “CONSTRUCTION TRAFFIC ONLY,” “CLOSED TO THRU TRAFFIC,” may be used to supplement the above street closure items.

2. **FIRE DEPARTMENT CONSTRUCTION STANDARDS**

The following requirements are minimum standards that shall be followed during construction of projects in the City of Corona. Failure to comply with these requirements may result in the issuance, by the Corona Fire Department, of a Stop Work Order for the project. The Fire Chief or Fire Marshal may determine the need for additional requirements or approve alternate methods of compliance with these standards.

- a. All development shall have two points of access, via all weather surface roads, as approved by the Corona Fire Department, prior to construction.
- b. All locations where structures are to be built shall have approved Fire Department vehicle access roads (all weather surface), for 40,000 lbs. GVW, provided prior to construction.
- c. All fire hydrants shall be tested, accepted and placed in service prior to construction.
- d. All required Fire Department vehicle access roads shall be maintained in a passable condition at all times for emergency Fire Department use. Gates or other obstructions shall be approved by the Fire Department and the Public Works Department, prior to construction.
- e. Fire hydrants shall not be blocked by building materials or equipment, so as to hinder Fire Department operations, at any time.
- f. Building materials shall be stored on site in a manner and location approved by the Fire Department and Public Works Department.
- g. Any work requiring the use of open flame or arc welding shall not be done unless a Fire Department approved fire extinguisher or connected and approved water hose is provided at the site of the work.
- h. There shall be no open burning or salamanders allowed anywhere on the site during framing.
- i. All lumber scraps or other combustible materials shall be picked up daily, or more often, as required by the Fire Department and Public Works Department.
- j. Any person using asphalt kettles shall have at least one 20 B:C rated fire extinguisher within 30 feet of each asphalt kettle during use of the kettle and one additional 20 B:C rated fire extinguisher on the roof being covered.
- k. If water supply for fire hydrants is lost or if pressure is dramatically reduced, contact the Corona Fire Department immediately at 736-2220.

3. OCCUPANCY PERMITS

Prior to occupancy permits being issued, all debris, construction materials, trash bins, storage bins, sales offices and construction trailers must be removed from the vicinity of the units for which occupancy is requested.

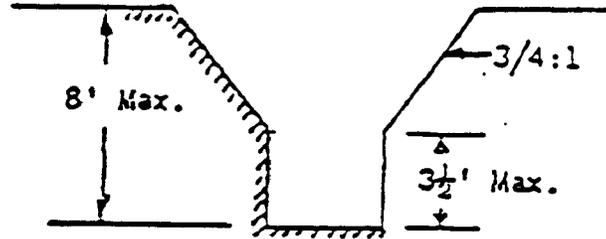
Also, prior to the issuance of Occupancy Permits, the primary street access to City-maintained streets serving the units and all required secondary access routes must be in place. Both the primary and secondary access street pavement sections must be kept clear of all debris, construction material, storage bins, sales offices and construction trailers. These streets shall be washed down and kept clean.

4. ACCEPTANCE OF PUBLIC IMPROVEMENTS

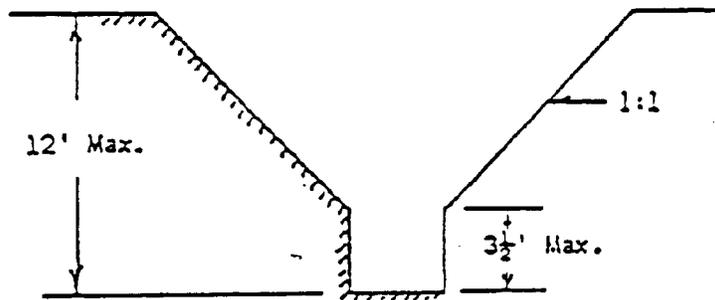
Prior to the public improvements being recommended for acceptance, all debris, construction materials, trash bins, storage bins, sales offices and construction trailers must be removed from the public right-of-way of the entire tract.

The Public Works Inspection Superintendent is responsible for implementation of these guidelines. The Public Works Inspector assigned to the project will assist the developer to insure that the intent of these guidelines are fully complied with in the field. He will make periodic visits to the projects and notify the project construction superintendent of any items not in compliance for his immediate corrective action.

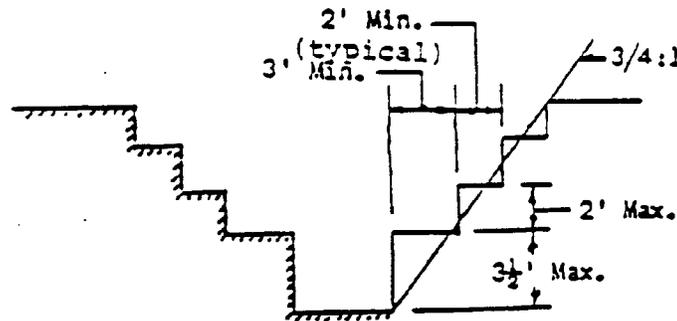
Failure to comply with these requirements may result in the issuance of a Stop Work Order and stop the release of Certificate of Occupancy for the project. The Director of Public Works may determine the need for additional or alternate methods in order to comply with these guidelines. Copies of these guidelines will be available at all project sites.



In hard, compact soil where the depth of the excavation or trench is 12 feet or less, a vertical cut of 3 1/2 feet with sloping of 1 horizontal to 1 vertical is permitted.



(2) Benching in hard, compact soil, is permitted provided that a slope ratio of 3/4 horizontal, or flatter, is used



Note: Authority cited: Section 142.3, labor code. Reference: Section 142.3, Labor code.

History:

1. Repealed and new section filed 8-23-82; effective thirtieth day thereafter (Register 82 No. 35). For prior history, see Registers 75, No. 21; 74, No. 35; and 74 No. 17