AGREEMENT FOR PROJECT SERVICES
BETWEEN THE CITY OF REDONDO BEACH
AND WGJ ENTERPRISES, INC. DBA PCI CORPORATION

THIS AGREEMENT FOR PROJECT SERVICES (this "Agreement") is made between the City of Redondo Beach, a chartered municipal corporation ("City") and WGJ Enterprises, Inc., a California corporation dba PCI Corporation ("Contractor" or "Consultant").

The parties hereby agree as follows:

A. Description of Project or Scope of Services. The project description or scope of services to be provided by Contractor, and any corresponding responsibilities of City or services required to be performed by City are set forth in Exhibit "A".

B. Term and Time of Completion. Contractor shall commence and complete the project or services described in Exhibit "A" in accordance with the schedule set forth in Exhibit "B".

C. Compensation. City agrees to pay Contractor for work performed in accordance with Exhibit "C".

* * * * *

GENERAL PROVISIONS

1. Independent Contractor. Contractor acknowledges, represents and warrants that Contractor is not a regular or temporary employee, officer, agent, joint venturer or partner of the City, but rather an independent contractor. This Agreement shall not be construed as a contract of employment. Contractor shall have no rights to any benefits which accrue to City employees unless otherwise expressly provided in this Agreement. Due to the independent contractor relationship created by this Agreement, the City shall not withhold state or federal income taxes, the reporting of which shall be Contractor's sole responsibility.

2. Brokers. Contractor acknowledges, represents and warrants that Contractor has not hired, retained or agreed to pay any entity or person any fee, commission, percentage, gift, or any other consideration, contingent upon or resulting from the award or making of this Agreement.

3. City Property. All plans, drawings, reports, calculations, data, specifications, videos, graphics or other materials prepared for or obtained pursuant to this Agreement shall upon request be delivered to the City within a reasonable time, and the rights thereto shall be deemed assigned to the City. If applicable, Contractor shall prepare check prints upon request. Said plans, drawings, reports, calculations, data, specifications, videos, graphics or other materials

shall be specific for the project herein and shall not be used by the City for any other project without Contractor's consent. Notwithstanding the foregoing, Contractor shall not be obligated to assign any proprietary software or data developed by or at the direction of Contractor for Contractor's own use; provided, however, that Contractor shall, pursuant to Paragraph 14 below, indemnify, defend and hold the City harmless from and against any discovery or Public Records Act request seeking the disclosure of any such proprietary software or data.

4. Inspection. If the services set forth in Exhibit "A" shall be performed on City or other public property, the City shall have the right to inspect such work without notice. If such services shall not be performed on City or other public property, the City shall have the right to inspect such work upon reasonable notice. Inspections by the City shall not relieve or minimize the responsibility of Contractor to conduct any inspections Contractor has agreed to perform pursuant to the terms of this Agreement. Contractor shall be solely liable for said inspections performed by Contractor. Contractor shall certify in writing to the City as to the completeness and accuracy of each inspection required to be conducted by Contractor hereunder.

5. Services. The project or services set forth in Exhibit "A" shall be performed to the full satisfaction and approval of the City. In the event that the project or services set forth in Exhibit "A" are itemized by price in Exhibit "C", the City in its sole discretion may, upon notice to Contractor, delete certain items or services set forth in Exhibit "A", in which case there shall be a corresponding reduction in the amount of compensation paid to Contractor. City shall furnish Contractor, to the extent available, with any City standards, details, specifications and regulations applicable to the Project and necessary for the performance of Contractor's services hereunder. Notwithstanding the foregoing, any and all additional data necessary for design shall be the responsibility of Contractor.

6. Records. Contractor, including any of its subcontractors, shall maintain full and complete documents and records, including accounting records, employee time sheets, work papers, and correspondence pertaining to the project or services set forth in Exhibit "A". Contractor, including any of its subcontractors, shall make such documents and records available for City review or audit upon request and reasonable notice, and shall keep such documents and records, for at least four (4) years after Contractor's completion of performance of this Agreement. Copies of all pertinent reports and correspondence shall be furnished to the City for its files.

7. Changes and Extra Work. All changes and/or extra work under this Agreement shall be performed and paid for in accordance with the following:

Only the City Council, City Manager, or the Department Head responsible for the administration of, or supervision of the scope of work under, this Agreement may

authorize extra and/or changed work. Contractor expressly recognizes that other City personnel are without authorization to either order extra and/or changed work or waive contract requirements. Failure of Contractor to secure the written authorization for such extra and/or changed work shall constitute a waiver of any and all right to adjustment in contract price due to such unauthorized work and Contractor thereafter shall be entitled to no compensation whatsoever for performance of such work.

If Contractor is of the opinion that any work which Contractor has been directed to perform is beyond the scope of this Agreement and constitutes extra work, Contractor shall promptly notify the City of the fact. The City shall make a determination as to whether or not such work is, in fact, beyond the scope of this Agreement and constitutes extra work. In the event that the City determines that such work does constitute extra work, City shall provide extra compensation to Contractor on a fair and equitable basis. A written amendment providing for such compensation for extra work shall be executed by Contractor and the City.

8. Additional Assistance. If this Agreement requires Contractor to prepare plans and specifications, Contractor shall provide assistance as necessary to resolve any questions regarding such plans and specifications that may arise during the period of advertising for bids, and Contractor shall issue any necessary addenda to the plans and specifications as requested. In the event Contractor is of the opinion that City's requests for addenda and assistance is outside the scope of normal services, the parties shall proceed in accordance with the changes and extra work provisions of this Agreement.

9. Professional Ability. Contractor acknowledges, represents and warrants that Contractor is skilled and able to competently provide the services hereunder, and possesses all professional licenses, certifications, and approvals necessary to engage in its occupation. City has relied upon the professional ability and training of Contractor as a material inducement to enter into this Agreement. Contractor shall perform in accordance with generally accepted professional practices and standards of Contractor's profession.

10. Business License. Contractor shall obtain a Redondo Beach Business License before performing any services required under this Agreement. The failure to so obtain such license shall be a material breach of this Agreement and grounds for immediate termination by City; provided, however, that City may waive the business license requirement in writing under unusual circumstances without necessitating any modification of this Agreement to reflect such waiver.

11. Termination Without Default. Notwithstanding any provision herein to the contrary, the City may, in its sole and absolute discretion and without cause, terminate this Agreement at any time prior to completion by Contractor of the project or services hereunder, immediately upon written notice to Contractor. In the event of any such termination, Contractor shall be compensated for: (1) all

authorized work satisfactorily performed prior to the effective date of termination; and (2) necessary materials or services of others ordered by Contractor for this Agreement prior to Contractor's receipt of notice of termination, irrespective of whether such materials or services of others have actually been delivered, and further provided that Contractor is not able to cancel such orders. Compensation for Contractor in such event shall be determined by the City in accordance with the percentage of the project or services completed by Contractor; and all of Contractor's finished or unfinished work product through the time of the City's last payment shall be transferred and assigned to the City. In conjunction with any termination of this Agreement, the City may, at its own expense, make copies or extract information from any notes, sketches, computations, drawings, and specifications or other data, whether complete or not.

12. Termination in the Event of Default. Should Contractor fail to perform any of its obligations hereunder, within the time and in the manner provided or otherwise violate any of the terms of this Agreement, the City may immediately terminate this Agreement by giving written notice of such termination, stating the reasons for such termination. Contractor shall be compensated as provided immediately above, provided, however, there shall be deducted from such amount the amount of damages, if any, sustained by the City by virtue of Contractor's breach of this Agreement.

13. Conflict of Interest. Contractor acknowledges, represents and warrants that Contractor shall avoid all conflicts of interest (as defined under any federal, state or local statute, rule or regulation, or at common law) with respect to this Agreement. Contractor further acknowledges, represents and warrants that Contractor has no business relationship or arrangement of any kind with any City official or employee with respect to this Agreement. Contractor acknowledges that in the event that Contractor shall be found by any judicial or administrative body to have any conflict of interest (as defined above) with respect to this Agreement, all consideration received under this Agreement shall be forfeited and returned to City forthwith. This provision shall survive the termination of this Agreement for one (1) year.

14. Indemnity. To the maximum extent permitted by law, Contractor hereby agrees, at its sole cost and expense, to defend protect, indemnify, and hold harmless the City, its elected and appointed officials, officers, employees, volunteers, attorneys, and agents (collectively "Indemnitees") from and against any and all claims, including, without limitation, claims for bodily injury, death or damage to property, demands, charges, obligations, damages, causes of action, proceedings, suits, losses, stop payment notices, judgments, fines, liens, penalties, liabilities, costs and expenses of every kind and nature whatsoever, in any manner arising out of, incident to, related to, in connection with or arising from any act, failure to act, error or omission of Contractor's performance or work hereunder (including any of its officers, agents, employees, Subcontractors) or its failure to comply with any of its obligations contained in the Agreement, or its

failure to comply with any current or prospective law, except for such loss or damage which was caused by the sole negligence or willful misconduct of the City. Notwithstanding the foregoing, nothing in this Section 14 shall be construed to encompass Indemnitees' active negligence to the limited extent that this Agreement is subject to Civil Code Section 2782(b). Contractor's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by Contractor or Indemnitees. This indemnification obligation shall survive this Agreement and shall not be limited by any term of any insurance policy required under this Agreement.

a. Nonwaiver of Rights. Indemnitees do not and shall not waive any rights that they may possess against Contractor because the acceptance by City, or the deposit with City, of any insurance policy or certificate required pursuant to this Agreement.

b. Waiver of Right of Subrogation. Contractor, on behalf of itself and all parties claiming under or through it, hereby waives all rights of subrogation and contribution against the Indemnitees.

15. Insurance. Contractor shall comply with the requirements set forth in Exhibit "D." Insurance requirements that are waived by the City's Risk Manager do not require amendments or revisions to this Agreement.

16. Non-Liability of Officials and Employees of the City. No official or employee of the City shall be personally liable for any default or liability under this Agreement.

17. Compliance with Laws. Contractor shall comply with all federal, state and local laws, statutes, ordinances, rules and regulations, and the orders and decrees of any courts or administrative bodies or tribunals, with respect to this Agreement, including without limitation all environmental laws, employment laws, and non-discrimination laws.

a. Acknowledgement. Contractor acknowledges that eight (8) hours labor constitutes a legal day's work. Contractor shall comply with and be bound by Labor Code Section 1810. Contractor shall comply with and be bound by the provisions of Labor Code Section 1813 concerning penalties for workers who work excess hours. Contractor shall, as a penalty to the City, forfeit twenty-five dollars ($25) for each worker employed in the performance of this Agreement by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one calendar week. Pursuant to Labor Code section 1815, work performed by employees of Contractor in excess of 8 hours per day, and 40 hours during any one week shall be permitted upon public work upon compensation for all hours worked in excess of 8 hours per day at not less than 11/2 times the basic rate of pay. For every subcontractor who will perform work on the project, Contractor shall be

responsible for such subcontractor's compliance with Labor Code Sections 1810, 1813 and 1815, and Contractor shall include in the written contract between it and each subcontractor copies of Labor Code Sections 1810, 1813 and 1815 and a requirement that each subcontractor shall comply with these aforementioned sections. Contractor shall be required to take all actions necessary to enforce such contractual provisions and ensure subcontractor's compliance, including without limitation, conducting a periodic review of the certified payroll records of the subcontractor and upon becoming aware of the failure of the subcontractor comply with Labor Code Sections 1810, 1813 and 1815, Contractor shall diligently take corrective action to halt or rectify the failure.

b. Prevailing Wages. City and Contractor acknowledge that this project is a public work to which prevailing wages apply. Contractor shall comply with the Agreement to Comply with California Labor Law Requirements set forth in Exhibit "E", which is attached hereto and incorporated by reference.

18. Limitations upon Subcontracting and Assignment. Contractor acknowledges that the services which Contractor shall provide under this Agreement are unique, personal services which, except as otherwise provided herein, Contractor shall not assign or sublet to any other party without the prior written approval of City, which approval may be withheld in the City's sole and absolute discretion. In the event that the City, in writing, approves any assignment or subletting of this Agreement or the retention of subcontractors by Contractor, Contractor shall provide to the City upon request copies of each and every subcontract prior to the execution thereof by Contractor and subcontractor. Any attempt by Contractor to assign any or all of its rights under this Agreement without first obtaining the City's prior written consent shall constitute a material default under this Agreement.

The sale, assignment, transfer or other disposition, on a cumulative basis, of twenty-five percent (25%) or more of the ownership interest in Contractor or twenty-five percent (25%) or more the voting control of Contractor (whether Contractor is a corporation, limited liability company, partnership, joint venture or otherwise) shall constitute an assignment for purposes of this Agreement. Further, the involvement of Contractor or its assets in any transaction or series of transactions (by way of merger, sale, acquisition, financing, transfer, leveraged buyout or otherwise), whether or not a formal assignment or hypothecation of this Agreement or Contractor's assets occurs, which reduces Contractor's assets or net worth by twenty-five percent (25%) or more shall also constitute an assignment for purposes of this Agreement.

19. Subcontractors. Contractor shall provide properly skilled professional and technical personnel to perform any approved subcontracting duties. Contractor shall not engage the services of any person or persons now employed by the City without the prior written approval of City, which approval may be withheld in the City's sole and absolute discretion.

20. Integration. This Agreement constitutes the entire agreement between the parties concerning the subject matter hereof and supersedes any previous oral or written agreement; provided, however, that correspondence or documents exchanged between Contractor and City may be used to assist in the interpretation of the exhibits to this Agreement.

21. Amendment. This Agreement may be amended or modified only by a subsequent written amendment executed by both parties.

22. Conflicting Provisions. In the event of a conflict between the terms and conditions of this Agreement and those of any exhibit or attachment hereto, this Agreement proper shall prevail. In the event of a conflict between the terms and conditions of any two or more exhibits or attachments hereto, those prepared by the City shall prevail over those prepared by Contractor.

23. Non-Exclusivity. Notwithstanding any provision herein to the contrary, the services provided by Contractor hereunder shall be non-exclusive, and City reserves the right to employ other contractors in connection with the project.

24. Exhibits. All exhibits hereto are made a part hereof and incorporated herein by reference; provided, however, that any language in Exhibit "A" which does not pertain to the project description, proposal, or scope of services (as applicable) to be provided by Contractor, or any corresponding responsibilities of City, shall be deemed extraneous to, and not a part of, this Agreement.

25. Time of Essence. Time is of the essence of this Agreement.

26. Confidentiality. To the extent permissible under law, Contractor shall keep confidential its obligations hereunder and the information acquired during the performance of the project or services hereunder.

27. Third Parties. Nothing herein shall be interpreted as creating any rights or benefits in any third parties. For purposes hereof, transferees or assignees as permitted under this Agreement shall not be considered "third parties."

28. Governing Law and Venue. This Agreement shall be construed in accordance with the laws of the State of California without regard to principles of conflicts of law. Venue for any litigation or other action arising hereunder shall reside exclusively in the Superior Court of the County of Los Angeles, Southwest Judicial District.

29. Attorneys' Fees. In the event either party to this Agreement brings any action to enforce or interpret this Agreement, the prevailing party in such action shall be entitled to reasonable attorneys' fees (including expert witness fees) and costs. This provision shall survive the termination of this Agreement.

30. Claims. Any claim by Contractor against City hereunder shall be subject to Government Code §§ 800 *et seq*. The claims presentation provisions of said Act are hereby modified such that the presentation of all claims hereunder to the City shall be waived if not made within six (6) months after accrual of the cause of action.

31. Interpretation. Contractor acknowledges that it has had ample opportunity to seek legal advice with respect to the negotiation of this Agreement. This Agreement shall be interpreted as if drafted by both parties.

32. Warranty. In the event that any product shall be provided to the City as part of this Agreement, Contractor warrants as follows: Contractor possesses good title to the product and the right to transfer the product to City; the product shall be delivered to the City free from any security interest or other lien; the product meets all specifications contained herein; the product shall be free from material defects in materials and workmanship under normal use for a period of one (1) year from the date of delivery; and the product shall be fit for its intended purpose(s). Notwithstanding the foregoing, consumable and maintenance items (such as light bulbs and batteries) shall be warranted for a period of thirty (30) days from the date of delivery. All repairs during the warranty period shall be promptly performed by Contractor, at Contractor's expense, including shipping. Contractor shall not be liable under this warranty for an amount greater than the amount set forth in Exhibit "C" hereto.

33. Severance. Any provision of this Agreement that is found invalid or unenforceable shall be deemed severed and all remaining provisions of this Agreement shall remain enforceable to the fullest extent permitted by law.

34. Authority. City warrants and represents that upon City Council approval, the Mayor of the City of Redondo Beach is duly authorized to enter into and execute this Agreement on behalf of City. The party signing on behalf of Contractor warrants and represents that he or she is duly authorized to enter into and execute this Agreement on behalf of Contractor, and shall be personally liable to City if he or she is not duly authorized to enter into and execute this Agreement on behalf of Contractor.

35. Waiver. The waiver by the City of any breach of any term or provision of this Agreement shall not be construed as a waiver of any subsequent breach.

SIGNATURES FOLLOW ON NEXT PAGE

IN WITNESS WHEREOF, the parties have executed this Agreement in Redondo Beach, California, as of this 3rd day of May, 2022.

CITY OF REDONDO BEACH,
a chartered municipal corporation

_____
William C. Brand, Mayor

WGJ ENTERPRISES, INC.,
a California corporation dba PCI Corporation

By: _____
Name: _____
Title: _____

ATTEST:

_____
Eleanor Manzano, City Clerk

APPROVED:

_____
Diane Strickfaden, Risk Manager

APPROVED AS TO FORM:

_____
Michael W. Webb, City Attorney

EXHIBIT "A"

SCOPE OF SERVICES/CONTRACT SPECIFICATIONS

I. CONTRACTOR'S DUTIES

Contractor shall perform street striping and signage services described herein, which includes all labor, equipment, materials, tools, and transportation.

Under Redondo Beach Municipal Code ("RBMC") section 7-2.01, the City has adopted the latest editions of the *Standard Specifications for Public Works Construction* ("Greenbook") and the Standard Plans and Standard Specifications of the State of California Department of Transportation ("Caltrans Standard P&S"). Contractor shall perform the scope of work in compliance with said editions subject to any modifications as set forth below.

A. Standard Provisions

1. Markings (per latest Caltrans Standard Plan A24A to A24E)

Description	Quantity	Color	Unit	Material
Stop	1,820	White	Ea	Thermoplastic
Ped Crossing	50	White	Ea	Thermoplastic
Stop Ahead	20	White	Ea	Thermoplastic
Right Lane Must Turn Right	5	White	Ea	Thermoplastic
Slow School Crossing	5	Yellow	Ea	Thermoplastic
Railroad Crossing	10	White	Ea	Thermoplastic
No Left Turn	5	White	Ea	Thermoplastic
Arrow (Straight)	20	White	Ea	Thermoplastic
Arrow (Multi-Directional)	35	White	Ea	Thermoplastic
Arrow (Left-Right)	320	White	Ea	Thermoplastic
Arrow (Bike)	95	White	Ea	Thermoplastic
Bike Lane Symbol	95	White	Ea	Thermoplastic
Parking T	245	White	Ea	Thermoplastic
ISA (wheelchair symbol)	80	Blue/White	Ea	Plastic
Only	25	White	Ea	Thermoplastic
25 MPH	25	White	Ea	Thermoplastic
30 MPH	25	White	Ea	Thermoplastic
35 MPH	25	White	Ea	Thermoplastic
Wait Here	15	White	Ea	Thermoplastic
OK	5	White	Ea	Thermoplastic
Slow	1	White	Ea	Thermoplastic
Keep Clear	15	White	Ea	Thermoplastic
Sandblast/Removal	25000		L.F.	

2. Crosswalks (per latest Caltrans Standard Plan A24F)

Description	Quantity	Color	Unit	Material
12” Continental Crosswalk	27,100	Yellow	L.F.	Thermoplastic
12” Continental Crosswalk	52,300	White	L.F.	Thermoplastic

3. Striping (per latest Caltrans Standard Plan A20A to A20D)

Description	Quantity	Color	Unit	Material
Caltrans Det 1 (4” Single Broken)	269,550	Yellow	L.F.	Paint
Caltrans Det 8 (4” Single Broken)	223,400	White	L.F.	Paint
Caltrans Det 21 (4” Double Solid)	131,650	Yellow	L.F.	Paint
Caltrans Det 24 (4” Single Solid)	16,900	Yellow	L.F.	Paint
Caltrans Det 38B (8” Single Solid)	95,100	White	L.F.	Paint
4” Solid (Parking Stall)	8,750	White	L.F.	Paint
4” Solid	3,550	Blue	L.F.	Paint
12” Solid	300	Blue	L.F.	Paint
12” Solid Limit Line (Caltrans SP A24E)	27,240	White	L.F.	Paint
Two-Way Left Turn	59,700	Yellow	L.F.	Paint

B. SPECIAL PROVISIONS

Provisions of the Greenbook and the Caltrans Standard P&S shall be amended as follows.

1. Greenbook Changes
   a. Section 3-7.2 is hereby deleted in its entirety and replaced with the following:

      3-7.2 Precedence of Contract Documents. Replace the entire subsection with the following:

      If there is a conflict between any of the Contract Documents, the document highest in precedence shall control. The order of precedence shall be as follows:
      a) Permits issued by other agencies
      b) Change Orders and Supplemental Agreements; whichever occurs last
      c) Agreement
      d) Addenda
      e) Special Conditions
      f) General Conditions

g) Notice to Contractors Inviting Bids
h) Instructions to Bidders
i) Plans
j) City Standard Plans
k) Other Standard Plans
l) Standard Specifications for Public Works Construction
m) Reference Specifications

Detail drawings shall take precedence over general drawings.

b. Section 6-1.1 is hereby deleted in its entirety and replaced with the following:

6-1.1 Schedule. The Contractor shall schedule the restriping work to complete the entire City within six (6) months of the Notice to Proceed ("Citywide Restriping Work"). The Citywide Restriping Work shall be completed in phases and the Contractor shall provide the Engineer or authorized representative with a work schedule at least 5 (five) business days prior to commencing work at each phase. Upon coordination of work schedule, contractor shall initiate work phase within 10 business days and complete work phase within 25 business days. Priority shall be given to areas surrounding schools, arterials, collectors, then residential streets and alleys. The Engineer may require ancillary striping and sign work to be prioritized within the scheduled Citywide Restriping Work phases as he deems necessary. Completion of work phase includes cat-tracking inspection, approval by Engineer or authorized representative, and final striping. After the Citywide Restriping Work is completed, the Engineer may require the Contractor to perform additional striping and sign work on an as-needed basis.

The Contractor shall provide safe and continuous passage for pedestrian, bicycle, and vehicular traffic at all times. The Contractor shall obtain a no-fee encroachment permit from the City prior to any lane closures activity within the City right-of-ways. All warning lights, signs, flares, barricades, delineators, detours and other facilities for the sole convenience and direction of public traffic shall be furnished and maintained by the Contractor. All traffic control shall conform to, and be placed in accordance with the latest CA MUTCD. Flashing arrow signs shall be furnished and maintained as directed by the Public Works Director or his authorized representative.

During working hours, a minimum of one ten (10)-foot wide travel lane in each direction, and all existing left-turn pockets whenever feasible, shall be maintained. No lane closures on arterial highways will be permitted between the hours of 7:00 AM and 9:00 AM, or 3:00 PM and 6:00 PM, unless an emergency situation exists and such a closure is necessary to

safeguard the traveling public. Separation between travel lanes, channelization and delineation of the work area shall be accomplished by the use of delineators and/or cones placed at a maximum of 15' on center. Work shall not conflict with afternoon pick-up periods within school zones.

Each vehicle used to place and remove components of a traffic control system on multi-lane highways shall be equipped with a flashing arrow sign which shall be in operation when the vehicle is being used for placing, maintaining or removing said components. The Flashing Arrow Sign shall be in place before lane closure(s) requiring its use is implemented.

When striping installation is complete, all traffic control signs, barricades, delineators, etc., shall be removed from the site.

All conflicting traffic control signs shall be removed or covered as necessary. Upon completion of installation, all existing signs will be restored or uncovered as necessary.

Repainting/painting of centerlines and lane lines may occur between the hours of 9 a.m. to 3 p.m. on the weekdays and/or from 6:00 p.m. (Monday thru Thursday) to 7 a.m. the following morning. All other pavement markings shall be completed during the normal daytime working hours.

c. Section 214 of the Green Book is hereby deleted in its entirety and replaced with Sections 81 and Section 84 of Caltrans Standard P&S as provided in Attachment A, subject to the modifications set forth below.

1. Caltrans Standard P&S Changes

a. Section 81.3.04 is hereby deleted in its entirety and replaced with the following:

81-3.04 Payment. There shall be no separate payment for pavement markers.

b. Section 84-2.01C is hereby deleted in its entirety and replaced with the following:

84-2.01C Submittals. For each lot or batch of thermoplastic, paint, and glass beads, submit:

1. Certificate of compliance, including the product name, lot or batch number, and manufacture date
2. METS notification letter stating that the material is authorized for use, except for thermoplastic
3. SDS
4. Material data sheet for thermoplastic primer

For each lot or batch of thermoplastic, submit a manufacturer's certificate of compliance with test results for the tests specified in section 84-2.01D. The date of test must be within 1 year of use.

For glass beads used in drop-on applications and in thermoplastic formulations, submit a certificate of compliance and test results for each lot of beads specifying the EPA test methods used and tracing the lot to the specific test sample. The testing for lead and arsenic content must be performed by an independent testing laboratory.

Submit retroreflectivity readings for traffic stripes and pavement markings at locations with deficient retroreflectivity determined by the Engineer

Final quantities and the location of all pavement markings, legends and traffic striping within the City limits shall be submitted to the City for their records. This submittal shall be in an acceptable form that provides the City with final quantities and locations throughout the City, and as considered appropriate by the Engineer or authorized representative.

c. Section 84-2.01D is hereby deleted in its entirety and replaced with the following:

84-2.01D Quality Assurance. Before starting permanent application of two-component painted traffic stripes or markings, apply a test stripe of the paint on roofing felt or other suitable material in the presence of the Engineer. The test section must be at least 50 feet in length.

Test each lot of glass beads for arsenic and lead under EPA Test Method 3052 and 6010B or 6010C.

The Engineer will perform a nighttime, drive-through, visual inspection of the retroreflectivity of the traffic stripes and pavement markings and notify you of any locations with deficient retroreflectivity. Measure the retroreflectivity of the deficient areas using a retroreflectometer under ASTM E1710 and the sampling protocol specified in ASTM D7585

The Contractor must use the same exact template for the repainting of all of the pavement markings/legends currently on the street. All templates are to be provided by the Contractor. If the template for the existing pavement marking/legend cannot be used for the repainting, then the existing pavement marking/legend shall be

removed entirely by grinding. The area to be ground will encompass a rectangular/square area about the existing pavement marking/legend.

The Contractor, before repainting any pavement marking/legend, shall grind any existing pavement marking/legend if two or more pavement markings/legends exist as a result of previous 'over-painting' or 'double images'.

The pavement marking/legend shall be repainted on the same exact painted area. Any 'over-painting' or 'double looking' images with the previous pavement marking/legend will not be approved for payment. The City Engineer or his designee shall be the final authority regarding any concerns/questions of 'over-painting' or 'double images'.

The Contractor shall supply the City with the standards of the templates used for this contract. These template standards will be used as the basis for the next repainting contract or future street resurfacing/repairs contracts.

d. Section 84-2.03A is hereby deleted in its entirety and replaced with the following:

84-2.03A General. Establish the alignment for traffic stripes and the layouts for pavement markings with a device or method that will not conflict with other traffic control devices.

Protect existing retroreflective pavement markers during work activities.

Remove existing pavement markers that are coated or damaged by work activities and replace each with an equivalent marker on the Authorized Material List for signing and delineation materials.

A completed traffic stripe must:

1. Have clean, well-defined edges without running or deformation
2. Be uniform
3. Be straight on a tangent alignment and on a true arc on a curved alignment

The width of a completed traffic stripe must not deviate from the width shown by more than 1/4 inch on a tangent alignment and 1/2 inch on a curved alignment.

The length of the gaps and individual stripes that form a broken traffic stripe must not deviate by more than 2 inches from the lengths shown. The gaps and stripes must be uniform throughout the entire length of each section of broken traffic stripe so that a normal striping machine can repeat the pattern and superimpose successive coats on the applied traffic stripe.

A completed pavement marking must have well-defined edges without running or deformation.

A completed thermoplastic traffic stripe or thermoplastic pavement marking must be free from runs, bubbles, craters, drag marks, stretch marks, and debris.

Protect newly placed traffic stripes and pavement markings from traffic and other deleterious activities until the paint is thoroughly dry or the thermoplastic is hard enough to bear traffic.

All striping, pavement markings and legends not in conformance with the latest CA MUTCD standards shall be sandblasted and replaced in conformance.

Any and all new striping, pavement markings and legends shall be cat-tracked and approved by the Engineer prior to final installation. A minimum of three (3) working days' notice must be provided to the Engineer for approval prior to final installation. The Engineer will inspect the cat-tracking within 2 working days and notify the Contractor of any needed corrections or adjustments. Upon approval of the cat-tracking by the Engineer, the Contractor shall then complete the installation of all new striping, pavement markings and legends no later than 5 working days following the approval of cat-tracking.

All lane striping at intersection approaches without crosswalks shall end ten (10) feet from the extension of the intersecting curb line.

All lane lines at intersection approaches shall begin and end with 50 feet of solid line.

All centerline striping at intersection approaches shall be double yellow for a distance of fifty (50) feet minimum; existing double yellow centerline striping which exceeds fifty (50) feet shall be installed as per existing.

New crosswalks shall be continental and conform to latest edition of the Caltrans Standard Plan A24F. Crosswalks shall be 10 feet wide

(2 feet wide per element and 5 feet on-center). Existing standard crosswalks may be sandblasted to allow for installation of continental crosswalks or ladder as determined by the Engineer.

Limit lines shall be installed per latest edition of Caltrans Standard Plan A24E and latest edition of the CA MUTCD Section 3B.16. Limit lines shall be installed in advance of all crosswalks and at a 90-degree angle to the approach lane. Limit lines shall be 12" solid white and be installed with a 4' buffer from edge of crosswalk. If the crosswalk is installed at an angle, the 4' buffer shall be measured from the edge of crosswalk to the limit line at the center of the approach lane. Lane lines and channelizing lines shall terminate at limit line.

e. Section 84-2.03C(1) is hereby deleted in its entirety and replaced with the following:

84-2.03C(1) General

Apply thermoplastic for a pavement marking with a stencil or a preformed marking.

Apply paint for a pavement marking by hand with a stencil and spray equipment.

Immediately remove drips, overspray, improper markings, paint, and thermoplastic tracked by traffic with an authorized method.

Apply a traffic stripe or a pavement marking only to a dry surface during a period of favorable weather when the pavement surface is above 50 degrees F.

The glass beads must be embedded in the coat of paint or thermoplastic to a depth of 1/2 their diameters.

Verify the rate of application of the glass beads by stabbing the glass bead tank with a calibrated rod.

Where a new broken traffic stripe joins an existing broken traffic stripe, allow enough overlap distance between the new and existing striping patterns to ensure continuity at the beginning and end of the transition.

f. Section 84-2.03C(3)(a) is hereby deleted in its entirety and replaced with the following:

84-2.03C(3)(a) General

Do not thin paint for traffic stripes and pavement markings. Mix the paint by mechanical means until it is homogeneous. Thoroughly agitate the paint during its application.

Use mechanical means to paint traffic stripes and pavement markings and to apply glass beads for traffic stripes.

The striping machine must be capable of superimposing successive coats of paint on the 1st coat and on existing stripes at a speed of at least 5 mph.

The striping machine must:

1. Have rubber tires
2. Be maneuverable enough to produce straight lines and normal curves in true arcs
3. Be capable of applying traffic paint and glass beads at the specified rates
4. Be equipped with:
    - 4.1. Pointer or sighting device at least 5 feet long extending from the front of the machine
    - 4.2. Pointer or sighting device extending from the side of the machine to determine the distance from the centerline for painting shoulder stripes
    - 4.3. Positive acting cutoff device to prevent depositing paint in gaps of broken stripes
    - 4.4. Shields or an adjustable air curtain for line control SECTION 84 MARKINGS 1096
    - 4.5. Pressure regulators and gauges that are in full view of the operator for a pneumatically operated machine
    - 4.6. Paint strainer in the paint supply line
    - 4.7. Paint storage tank with a mechanical agitator that operates continuously during painting activities
    - 4.8. Glass bead dispenser located behind the paint applicator nozzle that is controlled simultaneously with the paint applicator nozzle
    - 4.9. Calibrated rods for measuring the volumes of paint and glass beads in the paint and glass bead tanks

Air-atomized spray equipment must:

1. Be equipped with oil and water extractors and pressure regulators
2. Have adequate air volume and compressor recovery capacity
3. Have properly sized orifices and needle assemblies for the spray gun tip

Where the configuration or location of a traffic stripe is such that the use of a striping machine is not practicable, you may apply the traffic paint and glass beads by other methods and equipment if authorized. The Engineer determines if the striping machine is not practicable for a particular use.

For an existing surface, apply traffic stripes and pavement markings in 1 coat.

For a new surface, except for the black stripe between the 2 yellow stripes of a double traffic stripe, apply traffic stripes and pavement markings in 2 coats. The 2nd coat of paint shall be applied seven (7) calendar days following the application of the 1st coat.

Paint a 1-coat, 3-inch-wide black stripe between the two 6-inch-wide yellow stripes of a double traffic stripe.

If the two 6-inch-wide yellow stripes are applied in 2 coats, apply the black stripe concurrently with the 2nd coat of the yellow stripes.

Apply each coat of paint for any traffic stripe in 1 pass of the striping machine, including the glass beads, regardless of the number, width, and pattern of the individual stripes. Do not paint traffic stripes and pavement markings if:

1. Freshly painted surfaces could become damaged by rain, fog, or condensation
2. Atmospheric temperature could drop below 40 degrees F for acetone-based paint and 50 degrees F for waterborne paint during the drying period

On 2-lane highways:

1. If the 1st coat of the centerline stripe is applied in the same direction as increasing post miles, use the right-hand spray gun of the 3 spray guns used to apply the double yellow stripe to apply a single yellow stripe.
2. If the 1st coat of the centerline stripe is applied in the same direction as decreasing post miles, use the left-hand spray gun of the 3 spray guns used to apply the double yellow stripe to apply a single yellow stripe.
3. Apply the 2nd coat of centerline striping in the opposite direction of the 1st coat.

Apply 1-coat paint at an approximate rate of 107 sq ft/gal.

Apply 2-coat paint at the approximate rate shown in the following table:

Two-Coat Paint Application Rates

	Coverage (sq ft/gal)	
Paint type	1st coat	2nd coat
Waterborne paint	215	215
Acetone-based paint	360	150

Apply glass beads at an approximate rate of 5 lb of beads per gallon of paint.

The Engineer determines the exact application rate of the paint and glass beads.

Verify the application rate of paint by stabbing the paint tank with a calibrated rod. If the striping machine has paint gauges, the Engineer may measure the volume of paint using the gauges instead of stabbing the paint tank with a calibrated rod.

g. Section 84-9.01 is hereby deleted in its entirety and replaced with the following:

84-9.01 General. Section 84-9 includes specifications for removing existing markings.

Work performed on existing markings must comply with section 15. The removal of existing traffic stripes and markings shall be done with sandblasting. Sandblasting shall apply to both paint and thermoplastic striping, pavement markings and legends.

C. PUBLIC CONTRACT CODE SECTION 22002

The work described herein shall only include resurfacing of streets and highways at less than one inch and shall meet the definition of maintenance as provided in Public Contract Code Section 22002(d).

ATTACHMENT A

SECTIONS 81 AND 84 OF CALTRANS STANDARD P&S

See attached.

DIVISION IX TRAFFIC CONTROL DEVICES

81 MISCELLANEOUS TRAFFIC CONTROL DEVICES

81-1 GENERAL

81-1.01 GENERAL

Section 81-1 includes general specifications for fabricating, installing, and placing miscellaneous traffic control devices.

Traffic control devices must comply with the *California MUTCD*.

81-1.02 MATERIALS

Not Used

81-1.03 CONSTRUCTION

Not Used

81-1.04 PAYMENT

Not Used

81-2 DELINEATORS

81-2.01 GENERAL

81-2.01A Summary

Section 81-2 includes specifications for fabricating and installing delineators.

81-2.01B Definitions

Reserved

81-2.01C Submittals

Submit a certificate of compliance for:

1. Metal target plates
2. Enamel coating

81-2.01D Quality Assurance

When tested under California Test 671, the enamel coating on a metal target plate must have satisfactory resistance to weathering, humidity, salt spray, and chemicals. The enamel coating must have:

1. Satisfactory adherence and impact resistance.
2. Pencil lead hardness of at least HB.
3. 60-degree specular gloss of at least 80 percent.
4. Excitation purity of no more than 3 percent:
   - 4.1 As received.
   - 4.2 After 1,000 hours in an artificial weathering device when tested under ASTM G155, Table X3.1, Cycle 1.
5. Daylight luminous directional reflectance (Y value) of at least 70.

The Department may sample metal target plates for testing as shown in the following table:

Metal Target Plate Sampling

Production stage	Lot size	Sample size
Finished target plates	Less than 5,000	5 target plates
	5,000–10,000	10 target plates
Flat sheet stock	10,000 sq ft or less[a]	Five 12-by-24-inch specimens
Coil stock	5,000 lb or less	Two 12-by-12-inch specimens or one 12-by-24-inch specimen

[a]Flat sheet stock must be identifiable with parent coil stock.

The Department rejects the entire lot if any sample does not comply with section 81 or zinc-coated steel sheets show any evidence of damage to or removal of the zinc coating.

If the Department chooses to resample, the sample quantity may be twice the number shown in the table titled "Metal Target Plate Sampling."

81-2.02 MATERIALS

81-2.02A General

A delineator must be on the Authorized Material List for signing and delineation materials. A delineator consists of a post and 2 target plates.

81-2.02B Wood Posts

Wood posts must comply with section 82-3.02C.

81-2.02C Metal Posts

The steel for a metal post must comply with ASTM A36/A36M.

A metal post must be galvanized under section 75.

81-2.02D Flexible Posts

A flexible post must be:

1. White except where shown as yellow
2. Free from burns, discoloration, contamination, and other objectionable marks or defects that affect appearance or serviceability

81-2.02E Target Plates

Galvanize steel sheets under section 75. Zinc-coated steel sheets must comply with ASTM A653/A 653M, Commercial Steel, Types A, B, and C.

The nominal thickness of a zinc-coated steel sheet must be at least 0.038 inch.

Prepare zinc-coated surfaces to produce optimum adherence of the enamel coating without damaging or removing the zinc coating.

An aluminum target plate must be aluminum alloy 3003-H14. You may use other alloys having equivalent properties if authorized.

The nominal thickness of an aluminum sheet must be at least 0.050 inch.

Prepare the aluminum sheets for the enamel coating by cleaning to remove contaminants and uniformly applying an acid-chromate-fluoride, acid-chromate-fluoride phosphate, or equivalent chemical anticorrosion conversion coating.

Cut each target plate to size and shape and punch the mounting bolt holes. The surfaces and edges of each target plate must be free from fabrication defects.

Coat the pretreated metal target plate with an opaque white coating on both sides using a 1-coat or 2-coat system. When tested under California Test 671, the dry film for the:

1. 1-coat system must be uniform and have an average thickness of at least 0.75 mil with no individual measurement less than 0.65 mil.
2. 2-coat system must consist of 0.10- to 0.20-mil-thick primer and have an average thickness of at least 0.75 mil, including primer and top coat, with no individual measurement less than 0.65 mil.

For a 1-coat painting system, fabricate the zinc-coated steel target plate, including shearing, cutting, and punching, before starting the enameling process.

The enamel coating on a metal target plate must be the product of a commercial manufacturer. Apply the enamel coating by spray, dip, roller, continuous roller coating, or other authorized method.

The coating must be smooth and substantially free from flow lines, paint washout, streaks, blisters, and other defects that might impair serviceability or detract from the general appearance.

A finished metal target plate must be free from dents and defects. The maximum edge-to-edge surface deviation from a horizontal plane must not exceed 1/8 inch.

81-2.02F Hardware

Attach a target plate with either (1) 1/4-inch galvanized steel or aluminum nuts and bolts or (2) 3/16-inch blind aluminum rivets and washers.

81-2.02G–81-2.02L Reserved

81-2.03 CONSTRUCTION

Drive the post in place where soil conditions allow if the driving method does not damage the post. Drill pilot holes if ground conditions are such that the post cannot be driven without being damaged.

Install the target plates after the post is set in place.

After setting the post, fill any space around it with rock-free earth. Thoroughly tamp and water the fill material such that it holds the post securely in position.

Unless the surplus material is hazardous, uniformly spread it along the adjacent roadway where designated by the Engineer.

Before Contract acceptance, spot paint any exposed areas where the paint is damaged and clean any exposed areas that are soiled.

81-2.04 PAYMENT

Not Used

81-3 PAVEMENT MARKERS

81-3.01 GENERAL

81-3.01A Summary

Section 81-3 includes specifications for placing pavement markers.

81-3.01B Definitions

Reserved

81-3.01C Submittals

Submit a certificate of compliance for each type of pavement marker used.

81-3.01D Quality Assurance

Reserved

81-3.02 MATERIALS

81-3.02A General

A pavement marker must be on the Authorized Material List for signing and delineation materials.

Pavement markers must be packaged in a way that prevents damage.

Each package must be marked with:

1. Manufacturer's name
2. Type
3. Color
4. Quantity
5. Lot number
6. Date of manufacture

Protect pavement markers from moisture during shipment to the job site and when stored at the job site.

81-3.02B Reserved

81-3.02C Retroreflective Pavement Markers

The exterior surface of a retroreflective pavement marker must be smooth and contain 1 or 2 retroreflective faces of the specified color.

The base of the marker must be rough textured and free from gloss and substances that could reduce the adhesive bond. The base must be flat within a 0.05-inch tolerance.

A retroreflective pavement marker must comply with the requirements shown in the following table:

Retroreflective Pavement Marker Requirements

Quality characteristic	Test method	Requirement		
Bond strength (min, psi)[a]	California Test 669	500		
Compressive strength (min, lb)[b]		2,000		
Compressive strength, recessed markers (min, lb)		1,200		
Abrasion resistance, specific intensity minimum requirements after abrasion		Pass		
Water soak resistance		No delamination of the body and lens system or loss of reflectance		
Reflectance		Specific intensity		
		Clear	Yellow	Red
0° incidence angle (min)		3.0	1.5	0.75
20° incidence angle (min)		1.2	0.60	0.30
1 year after placement		0.30	0.15	0.08

[a]The marker body or filler material must not fail before reaching 500 psi under the bond strength test.
[b]The marker must not deform more than 0.125 inch at a load of less than 2,000 lb, and delamination of the shell and filler material must not exceed 0.125 inch regardless of the compressive load required to break the marker.

81-3.02D Hot Melt Bituminous Adhesive

Standard hot melt bituminous adhesive must comply with the requirements shown in the following table:

Quality characteristic	Test method	Requirement
Penetration, 100 g, 5 seconds, 77 °F (dmm)	ASTM D5	10–20
Softening point (min, °F)	ASTM D36	200
Flash point, COC (min, °F)	ASTM D92	550
Filler content (percent by weight) (insoluble in 1,1,1 trichloroethane)	ASTM D2371	65–75
Brookfield thermosel viscosity, no. 27 spindle, 20 rpm, 400 °F (centipoise)	ASTM D4402	3,000–6,000

Flexible hot melt bituminous adhesive must comply with the requirements shown in the following table:

Quality characteristic	Test method	Requirement
Penetration, 100 g, 5 seconds, 77 °F (max, dmm)	ASTM D5	30
Softening point (min, °F)	ASTM D36	200
Ductility, 2 in/min, 77 °F (min, in)	ASTM D113	6
Ductility, 0.4 in/min, 39 °F (min, in)		2
Flexibility	California Test 440	No breaks or cracks
Brookfield thermosel viscosity, no. 27 spindle, 20 rpm, 375 °F (centipoise)	ASTM D4402	2,500–6,000
Bond strength to concrete (min, psi)	California Test 440	100
Bond strength to retroreflective pavement marker (min, psi)	California Test 440	120

The filler material must be Type PC, Grade III, calcium carbonate complying with ASTM D1199. The fineness of the filler material must comply with the gradation requirements shown in the following table:

Sieve size	Percentage passing
No. 100	100
No. 200	95
No. 325	75

81-3.02E Epoxy Adhesive

The epoxy adhesive must be either rapid set or standard set.

81-3.03 CONSTRUCTION

81-3.03A General

Establish the alignment for placing pavement markers.

Do not place pavement markers over longitudinal or transverse joints in the pavement surface.

Place pavement markers when the pavement surface is dry.

Before placing pavement markers, remove undesirable material from the pavement surface, including dirt, curing compound, grease, oil, loose or unsound layers, and paint. Regardless of the pavement's age or type, clean the surface by abrasive blast cleaning except where you apply hot melt bituminous adhesive on clean asphalt concrete or on a new clean seal coat.

Apply pavement markers to the pavement with bituminous adhesive, flexible bituminous adhesive, standard set epoxy, or rapid set epoxy adhesive. Apply markers in pavement recesses with flexible bituminous adhesive.

Comply with the manufacturer's installation instructions for the type of adhesive used.

Completely cover the pavement surface where the pavement marker is to be applied or the bottom of the pavement marker with the adhesive without leaving any voids. Place the marker into position and firmly apply pressure until contact is made with the pavement. Apply enough adhesive such that it protrudes around the marker's edges after pressing it into place.

Place retroreflective pavement markers such that each retroreflective face is perpendicular to a line parallel to the roadway centerline.

The Engineer determines when the adhesive has set long enough for newly installed pavement markers to bear traffic.

81-3.03B Hot Melt Bituminous Adhesive

If using hot melt bituminous adhesive, place pavement markers on asphalt concrete or a new seal coat (1) after the surface or seal coat has been open to traffic for at least 7 days and (2) when the pavement and ambient air temperatures are above 50 degrees F.

Indirectly heat hot melt bituminous adhesive in an applicator with continuous agitation or recirculation. Do not heat hot melt bituminous adhesive above the manufacturer's maximum safe heating temperature.

Place pavement markers immediately after applying hot melt bituminous adhesive. Remove any adhesive from the marker's exposed lenses using a soft rag moistened with the manufacturer's instructed solvent.

81-3.03C Epoxy Adhesive

If using epoxy adhesive, place pavement markers on asphalt concrete or a new seal coat (1) after the surface or seal coat has been open to public traffic for at least 14 days and (2) at the pavement and ambient air temperatures complying with the epoxy adhesive manufacturer's instructions.

Use automatic mixing equipment for the epoxy adhesive. The equipment must:

1. Have positive displacement pumps.
2. Properly meter the 2 components of the epoxy adhesive in the specified ratio of ±5 percent by volume of either component.

The voids in an undisturbed sample of cured, mixed epoxy adhesive obtained from the extrusion nozzle of the mixing equipment must not exceed 4 percent.

At the start of each day, check the ratio of the 2 components in the presence of the Engineer by (1) disconnecting the mixing heads or (2) using suitable bypass valves and filling 2 suitable containers with the unmixed components. The mixing head must properly mix the 2 components until black or white streaks are not visible in the mixed material.

Apply epoxy adhesive and place pavement markers before the epoxy starts to thicken. Apply enough epoxy such that it flows and protrudes around the marker's edges when a slight pressure is applied to the marker.

81-3.03D Pavement Recesses

Locate pavement recesses along the line or lines of new or existing stripes.

Do not construct recesses on existing structures.

The equipment used for recess construction must be power operated, mechanical, and capable of removing pavement to the dimensions shown.

Remove residue with a vacuum before it is blown by traffic or wind. Do not allow the residue to flow across the pavement or into gutters or drainage facilities.

81-3.04 PAYMENT

Not Used

81-4–81-7 RESERVED

81-8 EXISTING PAVEMENT MARKERS AND DELINEATORS

81-8.01 GENERAL

Section 81-8 includes specifications for performing work on existing pavement markers and delineators.

Work performed on existing pavement markers and delineators must comply with section 15.

81-8.02 MATERIALS

Not Used

81-8.03 CONSTRUCTION

81-8.03A General

Not Used

81-8.03B Remove Pavement Markers

Remove pavement markers and the underlying adhesive by methods that cause the least possible damage to the pavement or surfacing.

When removing ceramic-type pavement markers, use screens or other protective devices to contain fragments.

Remove fragments from the removal work before opening the lanes to traffic.

81-8.03C Reserved

81-8.04 PAYMENT

Not Used

81-9–81-10 RESERVED

84 MARKINGS

84-1 GENERAL

84-1.01 GENERAL

Section 84-1 includes general specifications for applying and constructing markings.

Markings must comply with the CA MUTCD.

84-1.02 MATERIALS

Not Used

84-1.03 CONSTRUCTION

Not Used

84-1.04 PAYMENT

Not Used

84-2 TRAFFIC STRIPES AND PAVEMENT MARKINGS

84-2.01 GENERAL

84-2.01A Summary

Section 84-2 includes specifications for applying traffic stripes and pavement markings.

84-2.01B Definitions

pavement marking: Transverse marking such as (1) a limit line, (2) a stop line, or (3) a word, symbol, shoulder, parking stall, or railroad-grade-crossing marking.

traffic stripe: Longitudinal centerline or lane line used for separating traffic lanes in the same direction of travel or in the opposing direction of travel or a longitudinal edge line marking the edge of the traveled way or the edge of a lane at a gore area separating traffic at an exit or entrance ramp. A traffic stripe is shown as a traffic line.

84-2.01C Submittals

For each lot or batch of thermoplastic, paint, and glass beads, submit:

1. Certificate of compliance, including the product name, lot or batch number, and manufacture date
2. METS notification letter stating that the material is authorized for use, except for thermoplastic
3. SDS
4. Material data sheet for thermoplastic primer

For each lot or batch of thermoplastic, submit a manufacturer's certificate of compliance with test results for the tests specified in section 84-2.01D. The date of test must be within 1 year of use.

For glass beads used in drop-on applications and in thermoplastic formulations, submit a certificate of compliance and test results for each lot of beads specifying the EPA test methods used and tracing the lot to the specific test sample. The testing for lead and arsenic content must be performed by an independent testing laboratory.

Submit retroreflectivity readings for traffic stripes and pavement markings at locations with deficient retroreflectivity determined by the Engineer.

84-2.01D Quality Assurance

Before starting permanent application of two-component painted traffic stripes or markings, apply a test stripe of the paint on roofing felt or other suitable material in the presence of the Engineer. The test section must be at least 50 feet in length.

Test each lot of glass beads for arsenic and lead under EPA Test Method 3052 and 6010B or 6010C.

The Engineer will perform a nighttime, drive-through, visual inspection of the retroreflectivity of the traffic stripes and pavement markings and notify you of any locations with deficient retroreflectivity. Measure the retroreflectivity of the deficient areas using a retroreflectometer under ASTM E1710 and the sampling protocol specified in ASTM D7585.

Each lot or batch of thermoplastic must be tested under California Test 423 for:

1. Brookfield Thermosel viscosity
2. Hardness
3. Yellowness index, white only
4. Daytime luminance factor
5. Yellow color, yellow only
6. Glass bead content
7. Binder content

During the installation of thermoplastic traffic stripes or markings at the job site, apply a test stripe of the thermoplastic on suitable material in the presence of the Engineer. The test stripe must be at least 1 foot in length. The test stripe will be tested for yellow color, daytime luminance factor, and yellowness index requirements.

84-2.02 MATERIALS

84-2.02A General

Traffic stripes and pavement markings must be retroreflective. Within 30 days of applying traffic stripes and pavement markings, the retroreflectivity of the stripes and markings must be a minimum of 250 $mcd \cdot m^{-2} \cdot lx^{-1}$ for white and 125 $mcd \cdot m^{-2} \cdot lx^{-1}$ for yellow when measured under ASTM E1710.

84-2.02B Thermoplastic

Thermoplastic must comply with State Specification PTH-02SPRAY, PTH-02HYDRO, or PTH-02ALKYD.

For recessed thermoplastic stripes and pavement markings, mark packages of thermoplastic with the words *For Recessed Application.*

84-2.02C Paint

The paint for traffic stripes and pavement markings must comply with the specifications for the paint type and color shown in following table:

Paint Specifications

Paint type	Color	Specification
Waterborne traffic line	White, yellow, and black	State Specification PTWB-01R2
Acetone-based	White, yellow, and black	State Specification PT-150VOC(A)
Waterborne traffic line for the international symbol of accessibility and other curb markings	Blue, red, and green	Federal Specification TT-P-1952E

The color of painted traffic stripes and pavement markings must comply with ASTM D6628.

84-2.02D Glass Beads

Glass beads applied to paint must comply with State Specification 8010-004.

Glass beads applied to molten thermoplastic material must be Type 2 beads complying with AASHTO M 247. The glass beads must have a coating that promotes adhesion of the beads to thermoplastic.

At least 75 percent of the beads by count must be true spheres that are colorless and do not exhibit dark spots, air inclusions, or surface scratches when viewed under 20X magnification.

Each lot of glass beads used in pavement markings must contain less than 200 ppm each of arsenic and lead when tested under EPA Test Methods 3052 and 6010B or 6010C.

84-2.02E Thermoplastic Traffic Stripes and Pavement Markings with Enhanced Wet-Night Visibility

A thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility consists of a single uniform layer of thermoplastic and 2 layers of glass beads.

The 1st layer of glass beads must be on the Authorized Material List for high-performance glass beads. The color of the glass beads must match the color of the stripe or marking to which they are being applied.

The 2nd layer of glass beads must comply with AASHTO M 247, Type 2.

The glass beads used in both layers must be surface treated for use with thermoplastic under the bead manufacturer's instructions.

Within 14 days of applying a thermoplastic traffic stripe or pavement marking with enhanced wet-night visibility, the retroreflectivity must be a minimum of 700 $mcd \cdot m^{-2} \cdot lx^{-1}$ for white stripes and markings and 500 $mcd \cdot m^{-2} \cdot lx^{-1}$ for yellow stripes and markings when measured under ASTM E1710.

84-2.02F Two-Component Painted Traffic Stripes and Pavement Markings

A two-component painted traffic stripe or pavement marking consists of 1 coat of paint and 2 applications of retroreflective glass beads of 2 gradations.

The large-gradation glass beads must be on the Authorized Material List for two-component traffic striping paints and large-gradation retroreflective glass beads.

The small-gradation glass beads must comply with AASHTO M 247, Type 1.

The glass beads must have an adhesion-promoting and water-repellant coating complying with the paint manufacturer's instructions.

You may use alternative types of glass beads recommended by the paint manufacturer if authorized.

The daytime and nighttime color of the painted traffic stripes and pavement markings must comply with ASTM D6628.

84-2.02G Recessed Two-Component Painted Traffic Stripes and Pavement Markings

Reserved

84-2.02H Traffic Stripe and Pavement Marking Tape

Reserved

84-2.02I–84-2.02M Reserved

84-2.03 CONSTRUCTION

84-2.03A General

Establish the alignment for traffic stripes and the layouts for pavement markings with a device or method that will not conflict with other traffic control devices.

Protect existing retroreflective pavement markers during work activities.

Remove existing pavement markers that are coated or damaged by work activities and replace each with an equivalent marker on the Authorized Material List for signing and delineation materials.

A completed traffic stripe must:

1. Have clean, well-defined edges without running or deformation
2. Be uniform
3. Be straight on a tangent alignment and on a true arc on a curved alignment

The width of a completed traffic stripe must not deviate from the width shown by more than 1/4 inch on a tangent alignment and 1/2 inch on a curved alignment.

The length of the gaps and individual stripes that form a broken traffic stripe must not deviate by more than 2 inches from the lengths shown. The gaps and stripes must be uniform throughout the entire length of each section of broken traffic stripe so that a normal striping machine can repeat the pattern and superimpose successive coats on the applied traffic stripe.

A completed pavement marking must have well-defined edges without running or deformation.

A completed thermoplastic traffic stripe or thermoplastic pavement marking must be free from runs, bubbles, craters, drag marks, stretch marks, and debris.

Protect newly placed traffic stripes and pavement markings from traffic and other deleterious activities until the paint is thoroughly dry or the thermoplastic is hard enough to bear traffic.

84-2.03B Surface Preparation

Use mechanical wire brushing to remove dirt, contaminants, and loose material from the pavement surface that is to receive the traffic stripe or pavement marking.

Use abrasive blast cleaning to remove laitance and curing compound from the surface of new concrete pavement that is to receive the traffic stripe or pavement marking.

84-2.03C Application of Stripes and Markings

84-2.03C(1) General

Apply thermoplastic for a pavement marking with a stencil or a preformed marking.

Apply paint for a pavement marking by hand with a stencil and spray equipment.

You may use permanent tape for a traffic stripe or a pavement marking instead of paint or thermoplastic. The permanent tape must be on the Authorized Material List for signing and delineation materials. Apply the tape under the manufacturer's instructions.

Immediately remove drips, overspray, improper markings, paint, and thermoplastic tracked by traffic with an authorized method.

Apply a traffic stripe or a pavement marking only to a dry surface during a period of favorable weather when the pavement surface is above 50 degrees F.

The glass beads must be embedded in the coat of paint or thermoplastic to a depth of 1/2 their diameters.

Verify the rate of application of the glass beads by stabbing the glass bead tank with a calibrated rod.

Where a new broken traffic stripe joins an existing broken traffic stripe, allow enough overlap distance between the new and existing striping patterns to ensure continuity at the beginning and end of the transition.

84-2.03C(2) Thermoplastic Traffic Stripes and Pavement Markings

84-2.03C(2)(a) General

Do not thin the primer. Apply the primer under the manufacturer's instructions:

1. To all roadway surfaces except for asphaltic surfaces less than 6 months old
2. At a minimum rate of 1 gallon per 300 square feet
3. To allow time for the thermoplastic primer to dry and become tacky prior to application of the thermoplastic

Use preheaters with mixers having a 360-degree rotation to preheat the thermoplastic material.

Apply the thermoplastic in a single uniform layer by spray or extrusion methods.

Completely coat and fill voids in the pavement surface with the thermoplastic.

84-2.03C(2)(b) Extruded Thermoplastic Traffic Stripes and Pavement Markings

Apply extruded thermoplastic at a temperature from 400 to 425 degrees F unless a different temperature is recommended by the manufacturer.

Apply extruded thermoplastic for a traffic stripe at a rate of at least 0.36 lb of thermoplastic per foot of 6-inch-wide solid stripe. The applied thermoplastic traffic stripe must be at least 0.060 inch thick.

An applied thermoplastic pavement marking must be from 0.100 to 0.150 inch thick.

Apply glass beads to the surface of the molten thermoplastic at a rate of at least 8 lb of beads per 100 sq ft.

84-2.03C(2)(c) Sprayable Thermoplastic Traffic Stripes and Pavement Markings

Apply sprayable thermoplastic under State Specification PTH-02SPRAY at a temperature from 350 to 400 degrees F.

Apply sprayable thermoplastic at a rate of at least 0.24 lb of thermoplastic per foot of 6-inch-wide solid stripe.

The applied sprayable thermoplastic material must be at least 0.040 inch thick.

84-2.03C(2)(d) Recessed Thermoplastic Traffic Stripes and Pavement Markings

Construct recesses for double traffic stripes in a single pass.

Keep the recesses dry and free from debris. Apply primer to the recesses.

After constructing the recesses, apply the thermoplastic traffic stripes and pavement markings before the end of the same work shift.

84-2.03C(2)(e) Thermoplastic Traffic Stripes and Pavement Markings with Enhanced Wet-Night Visibility

Use a ribbon-extrusion or screed-type applicator to apply thermoplastic traffic stripes with enhanced wet-night visibility. Operate the striping machine at a speed of 8 mph or slower during the application of the stripe and glass beads.

Apply the stripe at a rate of at least 0.57 lb of thermoplastic per foot of 6-inch-wide solid stripe. The applied thermoplastic traffic stripe must be at least 0.090 inch thick.

Apply thermoplastic pavement marking at a rate of at least 1.06 lb of thermoplastic per square foot of marking. The applied thermoplastic pavement marking must be at least 0.100 inch thick.

Apply thermoplastic traffic stripe and both types of glass beads in a single pass. First apply the thermoplastic, followed immediately by consecutive applications of high-performance glass beads and then AASHTO M 247, Type 2, glass beads. Use a separate applicator gun for each type of glass bead.

You may apply glass beads by hand on pavement markings.

Uniformly distribute glass beads on traffic stripes and pavement markings. Apply high-performance glass beads at a rate of at least 6 lb of glass beads per 100 sq ft of stripe or marking. Apply AASHTO M 247, Type 2, glass beads at a rate of at least 8 lb of glass beads per 100 sq ft of stripe or marking. The combined weight of the 2 types of glass beads must be greater than 14 lb of glass beads per 100 sq ft of stripe or marking.

84-2.03C(3) Painted Traffic Stripes and Pavement Markings

84-2.03C(3)(a) General

Do not thin paint for traffic stripes and pavement markings. Mix the paint by mechanical means until it is homogeneous. Thoroughly agitate the paint during its application.

Use mechanical means to paint traffic stripes and pavement markings and to apply glass beads for traffic stripes.

The striping machine must be capable of superimposing successive coats of paint on the 1st coat and on existing stripes at a speed of at least 5 mph.

The striping machine must:

1. Have rubber tires
2. Be maneuverable enough to produce straight lines and normal curves in true arcs
3. Be capable of applying traffic paint and glass beads at the specified rates
4. Be equipped with:
   - 4.1. Pointer or sighting device at least 5 feet long extending from the front of the machine
   - 4.2. Pointer or sighting device extending from the side of the machine to determine the distance from the centerline for painting shoulder stripes
   - 4.3. Positive acting cutoff device to prevent depositing paint in gaps of broken stripes
   - 4.4. Shields or an adjustable air curtain for line control

4.5. Pressure regulators and gauges that are in full view of the operator for a pneumatically operated machine
4.6. Paint strainer in the paint supply line
4.7. Paint storage tank with a mechanical agitator that operates continuously during painting activities
4.8. Glass bead dispenser located behind the paint applicator nozzle that is controlled simultaneously with the paint applicator nozzle
4.9. Calibrated rods for measuring the volumes of paint and glass beads in the paint and glass bead tanks

Air-atomized spray equipment must:

1. Be equipped with oil and water extractors and pressure regulators
2. Have adequate air volume and compressor recovery capacity
3. Have properly sized orifices and needle assemblies for the spray gun tip

Where the configuration or location of a traffic stripe is such that the use of a striping machine is not practicable, you may apply the traffic paint and glass beads by other methods and equipment if authorized. The Engineer determines if the striping machine is not practicable for a particular use.

For an existing surface, apply traffic stripes and pavement markings in 1 coat.

For a new surface, except for the black stripe between the 2 yellow stripes of a double traffic stripe, apply traffic stripes and pavement markings in 2 coats. The 1st coat of paint must be dry before applying the 2nd coat.

Paint a 1-coat, 3-inch-wide black stripe between the two 6-inch-wide yellow stripes of a double traffic stripe.

If the two 6-inch-wide yellow stripes are applied in 2 coats, apply the black stripe concurrently with the 2nd coat of the yellow stripes.

Apply each coat of paint for any traffic stripe in 1 pass of the striping machine, including the glass beads, regardless of the number, width, and pattern of the individual stripes. Do not paint traffic stripes and pavement markings if:

1. Freshly painted surfaces could become damaged by rain, fog, or condensation
2. Atmospheric temperature could drop below 40 degrees F for acetone-based paint and 50 degrees F for waterborne paint during the drying period

On 2-lane highways:

1. If the 1st coat of the centerline stripe is applied in the same direction as increasing post miles, use the right-hand spray gun of the 3 spray guns used to apply the double yellow stripe to apply a single yellow stripe.
2. If the 1st coat of the centerline stripe is applied in the same direction as decreasing post miles, use the left-hand spray gun of the 3 spray guns used to apply the double yellow stripe to apply a single yellow stripe.
3. Apply the 2nd coat of centerline striping in the opposite direction of the 1st coat.

Apply 1-coat paint at an approximate rate of 107 sq ft/gal.

Apply 2-coat paint at the approximate rate shown in the following table:

Two-Coat Paint Application Rates

Paint type	Coverage (sq ft/gal)	
	1st coat	2nd coat
Waterborne paint	215	215
Acetone-based paint	360	150

Apply glass beads at an approximate rate of 5 lb of beads per gallon of paint.

The Engineer determines the exact application rate of the paint and glass beads.

Verify the application rate of paint by stabbing the paint tank with a calibrated rod. If the striping machine has paint gauges, the Engineer may measure the volume of paint using the gauges instead of stabbing the paint tank with a calibrated rod.

84-2.03C(3)(b) Two-Component Painted Traffic Stripes and Pavement Markings

Do not apply paint for two-component painted traffic stripes and pavement markings until authorized.

Apply the paint only to clean, completely dry surfaces when the pavement surface temperature is above 39 degrees F and the ambient temperature is above 36 degrees F.

Comply with the paint manufacturer's instructions for the temperature of the paint during its application.

The striping machine must not travel faster than 10 mph when applying the paint and glass beads.

Apply the paint and glass beads in 1 pass in the following order:

1. Paint
2. Large-gradation glass beads
3. Small-gradation glass beads

Apply the glass beads with 2 separate applicator guns.

Uniformly distribute the glass beads on traffic stripes and pavement markings.

You may apply the glass beads by hand methods on pavement markings.

Apply the large-gradation glass beads at a minimum rate of 11.7 lb of beads per gallon of paint.

Apply the small-gradation glass beads at a minimum rate of 8.3 lb of beads per gallon of paint.

84-2.03C(3)(c) Recessed Two-Component Painted Traffic Stripes and Pavement Markings

Reserved

84-2.03C(4) Reserved

Reserved

84-2.03C(5)–84-2.03C(10) Reserved

84-2.04 PAYMENT

The payment quantity for a traffic stripe is the length measured along the line of the traffic stripe without deductions for gaps in the broken traffic stripe.

The payment quantity for a pavement marking is the area covered.

A double extruded thermoplastic traffic stripe consisting of two 6-inch-wide yellow stripes is measured as 2 traffic stripes.

A double sprayable thermoplastic traffic stripe consisting of two 6-inch-wide yellow stripes is measured as 1 traffic stripe.

A double traffic stripe consisting of two 6-inch-wide yellow stripes separated by a 3-inch-wide black stripe is measured as a single traffic stripe.

84-3 CONTRAST TREATMENT

84-3.01–84-3.10 RESERVED

84-4–84-7 RESERVED

84-8 RUMBLE STRIPS

84-8.01 GENERAL

84-8.01A Summary

Section 84-8 includes specifications for constructing rumble strips.

84-8.01B Definitions

rumble strip: Band of raised material or indentations formed or grooved in the traveled way on the centerline or shoulders that is used to alert or warn drivers.

84-8.01C Submittals

Reserved

84-8.01D Quality Assurance

Reserved

84-8.02 MATERIALS

Not Used

84-8.03 CONSTRUCTION

84-8.03A General

Select the method and equipment for constructing ground-in indentations.

Do not construct rumble strips:

1. On structures, approach slabs, or concrete weigh-in-motion slabs
2. At intersections
3. Bordering two-way left turn lanes, driveways, or other high-volume turning areas
4. Within 6 inches of any concrete pavement joint

Modify rumble strip spacing to avoid locating a groove on a concrete pavement joint.

Construct rumble strips within 2 inches of the alignment shown. Rumble strip equipment must be equipped with a sighting device that enables the operator to maintain the rumble strip alignment.

Indentations must comply with the dimensions shown and not vary more than:

1. 10 percent in length
2. 0.06 inch in depth
3. 10 percent in width
4. 1 inch in center-to-center spacing between rumble strips

Grind or remove and replace noncompliant rumble strip indentations at locations determined by the Engineer. Ground surface areas must be neat and uniform in appearance.

Grinding equipment must be equipped with a vacuum attachment to remove residue from the roadbed.

The noise level created by the combined grinding activities must not exceed 86 dBA when measured at a distance of 50 feet at right angles to the direction of travel.

Break rumble strips before and after intersections, driveways, railroad crossings, freeway gore areas, and freeway ramps. Place breaks and break distances as shown. You may adjust breaks and the break distances as needed at low-volume driveways or other locations if authorized.

84-8.03B Rumble Strips in Concrete Pavement

Construct rumble strips by grinding indentations in concrete pavement.

Concrete pavement must be hardened before grinding the indentations. Do not construct indentations until (1) 10 days after concrete placement and (2) the concrete has developed a modulus of rupture of 550 psi when tested under California Test 523.

Remove grinding residue under section 13-4.03E(7).

84-8.03C Rumble Strips in Asphalt Concrete Pavement

Construct rumble strips in the top layer of HMA and asphalt concrete surfacing by the ground-in method.

Dispose of the removed material.

On ground areas, apply a fog seal coat under section 37-4.02.

84-8.04 PAYMENT

The payment quantity for any type of rumble strip is the length measured by the station along the length of the rumble strip without deductions for gaps between indentations.

84-9 EXISTING MARKINGS

84-9.01 GENERAL

Section 84-9 includes specifications for removing existing markings.

Work performed on existing markings must comply with section 15.

84-9.02 MATERIALS

Not Used

84-9.03 CONSTRUCTION

84-9.03A General

Reserved

84-9.03B Remove Traffic Stripes and Pavement Markings

Remove traffic stripes before making any change to the traffic pattern.

Completely remove traffic stripes and pavement markings, including any paint in the gaps, by methods that do not remove pavement to a depth of more than 1/8 inch.

Submit your proposed method for removing traffic stripes and pavement markings at least 7 days before starting the removal work. Allow 2 business days for the review.

Remove pavement marking such that the old message cannot be identified. Make any area removed by grinding rectangular. Water must not puddle in the ground areas. Fog seal ground areas on asphalt concrete pavement.

Sweep up or vacuum any residue before it can (1) be blown by traffic or wind, (2) migrate across lanes or shoulders, or (3) enter a drainage facility.

84-9.03C Remove Traffic Stripes and Pavement Markings Containing Lead

Reserved

84-9.03D Remove Contrast Treatment

If contrast treatment is shown to be removed, remove it by a method that does not damage the pavement.

Sweep up or vacuum any residue before it can (1) be blown by traffic or wind, (2) migrate across lanes or shoulders, or (3) enter a drainage facility.

84-9.03E–84-9.03J Reserved

84-9.04 PAYMENT

The payment quantity for remove traffic stripe is the measured length multiplied by:

1. 1.34 for a single 8-inch-wide traffic stripe
2. 2 for a double traffic stripe
3. 3 for a triple traffic stripe

The payment quantity for remove traffic stripe does not include the gaps in broken traffic stripes. Payment for removal of paint evident in a gap is included in the payment for remove traffic stripe of the type involved.

If no bid item is shown on the Bid Item List for remove pavement marking, remove pavement marking is paid for as remove traffic stripe of the types shown in the Bid Item List and the payment quantity for 1 square foot of pavement marking is 3 linear feet.

EXHIBIT "B"

SCHEDULE OF PERFORMANCE

TERM. The term of this Agreement shall commence on May 3, 2022 and continue through May 2, 2025 (“Term”), unless otherwise terminated as herein provided.

EXHIBIT "C"

COMPENSATION

Provided Contractor is not in default under this Agreement, Contractor shall be compensated as provided below.

I. **AMOUNT**. Contractor shall perform the work for all City approved Task Proposal(s) in accordance with the following hourly rate schedule.

Markings					
Description	**Quantity**	**Color**	**Unit**	**Material**	**Unit Price**
Stop	1,820	White	Ea	Thermoplastic	$207.00
Ped Crossing	50	White	Ea	Thermoplastic	$362.00
Stop Ahead	20	White	Ea	Thermoplastic	$455.00
Right Lane Must Turn Right	5	White	Ea	Thermoplastic	$1,197.00
Slow School Crossing	5	Yellow	Ea	Thermoplastic	$683.00
Railroad Crossing	10	White	Ea	Thermoplastic	$322.00
No Left Turn	5	White	Ea	Thermoplastic	$567.00
Arrow (Straight)	20	White	Ea	Thermoplastic	$90.00
Arrow (Multi-directional)	35	White	Ea	Thermoplastic	$160.00
Arrow (Left-Right)	320	White	Ea	Thermoplastic	$160.00
Arrow (Bike)	95	White	Ea	Thermoplastic	$61.00
Bike Lane Symbols	95	White	Ea	Thermoplastic	$260.00
Parking T's	245	White	Ea	Thermoplastic	$36.00
ISA	80	Blue/ White	Ea	Paint	$155.00
Only	25	White	Ea	Thermoplastic	$157.00
25 MPH	25	White	Ea	Thermoplastic	$161.00
30 MPH	25	White	Ea	Thermoplastic	$161.00
35 MPH	25	White	Ea	Thermoplastic	$161.00
Wait Here	15	White	Ea	Thermoplastic	$313.00
OK	5	White	Ea	Thermoplastic	$161.00
Slow	1	Yellow	Ea	Thermoplastic	$157.00
Keep Clear	15	White	Ea	Thermoplastic	$405.00
Sandblast / Removal	25,000	-	L.F.	-	$2.65

Striping					
Description	**Quantity**	**Color**	**Unit**	**Material**	**Unit Price**
Caltrans Det 1 (4" Single Broken)	269,550	Yellow	L.F.	Paint	$0.20
Caltrans Det 8 (4" Single Broken)	223,400	White	L.F.	Paint	$0.20
Caltrans Det 21 (4" Double Solid)	131,650	Yellow	L.F.	Paint	$0.60
Caltrans Det 24 (4" Single Solid)	16,900	Yellow	L.F.	Paint	$0.30
Caltrans Det 38B (8" Single Solid)	95,100	White	L.F.	Paint	$0.45
4" Solid (Parking Stall)	8,750	White	L.F.	Paint	$0.90
4" Solid	3,550	Blue	L.F.	Paint	$0.90
12" Solid	300	Blue	L.F.	Paint	$2.20
12" Solid Limit Line (Caltrans SP A24E)	27,240	White	L.F.	Paint	$2.20
Two-Way Left Turn	59,700	Yellow	L.F.	Paint	$1.20

Crosswalk					
Description	**Quantity**	**Color**	**Unit**	**Material**	**Unit Price**
12" Continental Crosswalk	27,100	Yellow	L.F.	Thermoplastic	$2.80
12" Continental Crosswalk	52,300	White	L.F.	Thermoplastic	$2.80

II. **NOT TO EXCEED AMOUNT**. In no event shall the total amount paid to Contractor, exceed $54,000 during the term of this Agreement.

III. **METHOD OF PAYMENT**. Contractor shall provide monthly invoices to City for approval and payment for those services performed in the month prior to invoice submission. Invoices must include the following information.

A. All personnel who performed work on the Task Proposal.
B. Description of the work performed.
C. Quantity
D. Unit Price
E. Total Amount (Unit x Quantity)

Invoices must be adequately detailed, based on accurate records, and in a form reasonably satisfactory to City, and include the prior written authorization of the City and copies of receipts to substantiate expense requests. Contractor may be required to provide back-up material upon request. If no work is performed in a given month, no invoice is required.

IV. **SCHEDULE FOR PAYMENT**. City agrees to pay Contractor within thirty days of City's receipt of Contractor's monthly invoice; provided that services are completed to the City's reasonable satisfaction and there is no dispute over the amount.

V. **NOTICE.** Written notices to City and Contractor shall be given by registered or certified mail, postage prepaid and addressed to or personally served on the following parties.

Contractor: WGJ Enterprises, Inc. dba PCI Corporation
975 West 1st Street
Azusa, CA 91702
Attention: William Jacob

City: City of Redondo Beach
Public Works Department
531 N Gertruda Ave
Redondo Beach, CA 90277
Attention: Rob Osborne

All notices, including notices of address changes, provided under this Agreement are deemed received on the third day after mailing if sent by registered or certified mail. Changes in the respective address set forth above may be made from time to time by any party upon written notice to the other party.

EXHIBIT "D"

INSURANCE REQUIREMENTS FOR CONTRACTORS

Without limiting Contractor's indemnification obligations under this Agreement, Contractor shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the Contractor, its agents, representatives, or employees.

Minimum Scope of Insurance

Coverage shall be at least as broad as:

Insurance Services Office Commercial General Liability coverage (occurrence form CG 0001).

Insurance Services Office form number CA 0001 (Ed. 1/87) covering Automobile Liability, code 1 (any auto).

Workers' Compensation insurance as required by the State of California.

Employer's Liability Insurance.

Minimum Limits of Insurance

Contractor shall maintain limits no less than:

General Liability: $1,000,000 per occurrence for bodily injury, personal injury and property damage. The general aggregate limit shall apply separately to this project.

Automobile Liability: $1,000,000 per accident for bodily injury and property damage.

Employer's Liability: $1,000,000 per accident for bodily injury or disease.

Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either: (1) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its officers, officials, employees and volunteers or (2) the Contractor shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.

Other Insurance Provisions

The general liability and automobile liability policies are to contain, or be endorsed to contain, the following provisions:

Additional Insured Endorsement:

General Liability: The City, its officers, elected and appointed officials, employees, and volunteers shall be covered as insureds with respect to liability arising out of work performed by or on behalf of the Contractor. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance, or as a separate owner's policy.

Automobile Liability: The City, its officers, elected and appointed officials, employees, and volunteers shall be covered as insureds with respect to liability arising out of automobiles owned, leased, hired or borrowed by or on behalf of the Contractor.

For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the City, its officers, elected and appointed officials, employees, and volunteers. Any insurance or self-insurance maintained by the City, its officers, officials, employees, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be canceled by either party, except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City.

Each insurance policy shall be endorsed to state that the inclusion of more than one insured shall not operate to impair the rights of one insured against another insured, and the coverages afforded shall apply as though separate policies had been issued to each insured.

Each insurance policy shall be in effect prior to awarding the contract and each insurance policy or a successor policy shall be in effect for the duration of the project. The maintenance of proper insurance coverage is a material element of the contract and failure to maintain or renew coverage or to provide evidence of renewal may be treated by the City as a material breach of contract on the Contractor's part.

Acceptability of Insurers

Insurance shall be placed with insurers with a current A.M. Best's rating of no less than A:VII and which are authorized to transact insurance business in the State of California by the Department of Insurance.

Verification of Coverage

Contractor shall furnish the City with original certificates and amendatory endorsements effecting coverage required by this clause. The endorsements should be on the City authorized forms provided with the contract specifications. Standard ISO forms which shall be subject to City approval and amended to conform to the City's requirements may be acceptable in lieu of City authorized forms. All certificates and endorsements shall be received and approved by the City before the contract is awarded. The City reserves the right to require complete, certified copies of all required insurance policies, including endorsements effecting the coverage required by these specifications at any time.

Subcontractors

Contractor shall include all subcontractors as insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.

Risk Management

Contractor acknowledges that insurance underwriting standards and practices are subject to change, and the City reserves the right to make changes to these provisions in the reasonable discretion of its Risk Manager.

EXHIBIT "E"

AGREEMENT TO COMPLY WITH CALIFORNIA LABOR LAW REQUIREMENTS

1. Contractor acknowledges that the project as defined in this Agreement between Contractor and the City, to which this Agreement to Comply with California Labor Law Requirements is attached and incorporated by reference, is a "public work" as defined in Division 2, Part 7, Chapter 1 (commencing with Section 1720) of the California Labor Code ("Chapter 1"), and that this Agreement is subject to (a) Chapter 1, including without limitation Labor Code Section 1771 and (b) the rules and regulations established by the Director of Industrial Relations ("DIR") implementing such statutes. Contractor shall perform all work on the project as a public work. Contractor shall comply with and be bound by all the terms, rules and regulations described in 1(a) and 1(b) as though set forth in full herein.

2. California law requires the inclusion of specific Labor Code provisions in certain contracts. The inclusion of such specific provisions below, whether or not required by California law, does not alter the meaning or scope of Section 1 above.

3. Pursuant to Labor Code Section 1771.4, Contractor shall post job site notices, as prescribed by regulation.

4. Pursuant to Labor Code Section 1773.2, copies of the prevailing rate of per diem wages for each craft, classification, or type of worker needed to perform the Agreement are on file at City Hall and will be made available to any interested party on request. Contractor acknowledges receipt of a copy of the DIR determination of such prevailing rate of per diem wages, and Contractor shall post such rates at each job site covered by this Agreement.

5. Contractor shall comply with and be bound by the provisions of Labor Code Sections 1774 and 1775 concerning the payment of prevailing rates of wages to workers and the penalties for failure to pay prevailing wages. The Contractor shall, as a penalty to the City, forfeit the maximum amount allowable by law for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the DIR for the work or craft in which the worker is employed for any public work done pursuant to this Agreement by Contractor or by any subcontractor.

6. Contractor shall comply with and be bound by the provisions of Labor Code Section 1776, which requires Contractor and each subcontractor to (1) keep accurate payroll records and verify such records in writing under penalty of perjury, as specified in Section 1776, (2) certify and make such payroll records available for inspection as provided by Section 1776, and (3) inform the City of the location of the records.

7. Contractor shall comply with and be bound by the provisions of Labor Code Sections 1777.5, 1777.6 and 1777.7 and California Administrative Code title 8, section 200 *et seq*. concerning the employment of apprentices on public works projects. Contractor shall be responsible for compliance with these aforementioned Sections for all apprenticeable occupations. Prior to commencing work under this Agreement, Contractor shall provide City with a copy of the information submitted to any applicable apprenticeship program. Within sixty (60) days after concluding work pursuant to this

Agreement, Contractor and each of its subcontractors shall submit to the City a verified statement of the journeyman and apprentice hours performed under this Agreement.

8. Contractor acknowledges that eight (8) hours labor constitutes a legal day's work. Contractor shall comply with and be bound by Labor Code Section 1810. Contractor shall comply with and be bound by the provisions of Labor Code Section 1813 concerning penalties for workers who work excess hours. The Contractor shall, as a penalty to the City, forfeit twenty-five dollars ($25) for each worker employed in the performance of this Agreement by the Contractor or by any subcontractor for each calendar day during which such worker is required or permitted to work more than eight (8) hours in any one (1) calendar day and forty (40) hours in any one calendar week in violation of the provisions of Division 2, Part 7, Chapter 1, Article 3 of the Labor Code. Pursuant to Labor Code section 1815, work performed by employees of Contractor in excess of 8 hours per day, and 40 hours during any one week shall be permitted upon public work upon compensation for all hours worked in excess of 8 hours per day at not less than 1 and 1/2 times the basic rate of pay.

9. California Labor Code Sections 1860 and 3700 provide that every employer will be required to secure the payment of compensation to its employees. In accordance with the provisions of California Labor Code Section 1861, Contractor hereby certifies as follows:

> "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

10. For every subcontractor who will perform work on the project, Contractor shall be responsible for such subcontractor's compliance with Chapter 1 and Labor Code Sections 1860 and 3700, and Contractor shall include in the written contract between it and each subcontractor a copy of those statutory provisions and a requirement that each subcontractor shall comply with those statutory provisions. Contractor shall be required to take all actions necessary to enforce such contractual provisions and ensure subcontractor's compliance, including without limitation, conducting a periodic review of the certified payroll records of the subcontractor and upon becoming aware of the failure of the subcontractor to pay his or her workers the specified prevailing rate of wages. Contractor shall diligently take corrective action to halt or rectify any failure.

11. To the maximum extent permitted by law, Contractor shall indemnify, hold harmless and defend (at Contractor's expense with counsel acceptable to the City) the City, its officials, officers, employees, agents, independent contractors, and volunteers from and against any demand or claim for damages, compensation, fines, penalties or other amounts arising out of or incidental to any acts or omissions listed above by any person or entity (including Contractor, its subcontractors, and each of their officials, officers, employees and agents) in connection with any work undertaken or in connection with the Agreement, including without limitation the payment of all consequential damages, attorneys' fees, and other related costs and expenses. All duties of Contractor under this Section shall survive termination of the Agreement.