

SECTION 01 55 26 (Rev. 2)

TRAFFIC CONTROL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section sets forth the minimum requirements for traffic routing and traffic control during construction.
- B. Related Sections:
 - 1. Section 01 41 00 – Regulatory Requirements
 - 2. Section 01 50 00 – Temporary Facilities and Controls
- C. All Traffic Control devices, procedures, use of Flaggers, traffic signs, barricades, barriers, delineators, flashing arrow signs, and other Traffic Control devices, means and methods used for this Project (collectively referenced here as “Traffic Control”) shall conform to the requirements of the latest edition of California Department of Transportation’s Manual on Uniform Traffic Control Devices (MUTCD) and the requirements of the Caltrans Standard Specifications (CTSS), except as expressly otherwise specified herein.

1.2 SCOPE OF WORK

- A. Contractor shall prepare Traffic Control Plans (including any traffic detour plans), and install, operate, maintain and remove Traffic Control devices in conformance with the requirements in this Section. The Traffic Control Plans shall clearly depict the exact sequence of the construction operation(s), the Work to be performed and the traveled way that will be utilized by all movement of traffic and pedestrians during each phase of the Project for both working and non-working hours. If the Project will be constructed in multiple phases, Contractor shall prepare a separate Traffic Control Plan for each different construction phase or operation for working and non-working hours. The Traffic Control Plans must be specific to this Project; generic (“boiler plate”) Traffic Control Plans will not be accepted. Traffic Control Plans included in the Contract are for illustrative purposes and Contractor shall not use them to depict the full extent of Traffic Control required. Contractor shall submit their own Traffic Control Plans.
- B. Traffic Control Work required by a Traffic Control Plan shall be in place prior to the start of the construction Work of the General Contractor and/or any of the subcontractors.
- C. Contractor shall hire a Subcontractor with a valid California C-31 Construction Zone Traffic Control contractor’s license (C-31 License). The Traffic Supervisors shall be employees of the Subcontractor, not directly employed by the Contractor. All Traffic Control operations shall be supervised by the C-31 License holder.
- D. Contractor may use its own forces or the personnel of subcontractor’s to perform general labor required to place traffic control devices, remove existing road striping and other markings, and install new striping and road markings, but those personnel must at all times be supervised by a Traffic Control Supervisor employed by a C-31 License holder.
- E. Contractor shall provide sufficient Flaggers and Traffic Crews as described in the approved Traffic Control Plans(s) and as the City Representative may require Contractor to provide to control vehicular traffic and to guide pedestrians through the Construction Area. Flaggers shall not perform non-traffic related duties. There shall be at least two (2)

or more flaggers as required by the Traffic Engineer. The Traffic Crew shall be comprised of at least two (2) dedicated persons.

1. Traffic Crew Duties

- a. Traffic Crews, under the direction of a Traffic Supervisor, shall perform all activities that require the active direction, or determination of routing or control of a vehicular or pedestrian.
- b. Traffic Crews may perform activities such as roadway striping and installing road markers, setting up and correcting traffic signs and other Traffic Control devices, in accordance with the approved Traffic Control Plans. The required traffic control work shall be in place prior to the start of the construction work of the General Contractor and/or any of the subcontractors. (Other personnel may also perform these duties, but only under the direction of a Traffic Control Supervisor.)
- c. A Traffic Crew must be present at the Site whenever Contractor is performing Work that impacts vehicular and pedestrian traffic or otherwise touches on the roadway, and as the Traffic Engineer may otherwise require.

2. Traffic Control Supervisors

- a. At least one Traffic Control Supervisor shall be present at the Site during performance of Traffic Control operations and whenever the Contractor's activities touch the public roadway or impact vehicular or pedestrian traffic.
- b. Traffic Control Supervisor(s) shall direct the Traffic Crew(s) and the performance of Traffic Control whenever Contractor performs Work in the street, sidewalk, path or any other public right of way.
- c. When Contractor performs Work at multiple Sites, a separate supervisor shall be assigned to each Site. Separate supervisors shall also be assigned for each shift when Contractor uses multiple shifts to perform the work.

F. Contractor shall perform the Work in a manner that will cause the least traffic congestion, delay, obstruction, and inconvenience to the public and area merchants and residents as practical. Contractor shall at all times ensure that all streets and intersections remain open to traffic, and shall maintain access to public and private properties to the greatest extent practicable. Contractor shall apportion and sequence the Work so as not to close to public access any street, sidewalk or other portion of the Construction Area larger than necessary to efficiently perform the Work, which it shall perform in accordance with the Contract, the approved Project Schedule, and established best practices and construction means and methods.

G. Contractor shall at all times provide for the protection of the vehicular traffic, cyclists, pedestrians, and workers at and adjacent to the Site and within Construction Area in accordance with the approved Traffic Control Plan(s) and as directed by the City Representative. Contractor shall store and secure all materials and equipment in accordance with the Traffic Control Plan (and any approved equipment and materials staging plans) to ensure the safety of and to avoid delay and inconvenience to pedestrians and vehicular traffic to the greatest extent practicable.

- H. As required by the Traffic Control Plan and as necessary to safeguard the Work and the public, Contractor shall furnish, install, relocate to provide for lane shifting, remove, store, maintain (including covering and uncovering as required), move to new locations, replace when damaged or missing, correct placement of, and remove upon completion of the Work of all temporary traffic signs and Traffic Control Devices. Contractor shall use only authorized and appropriate Traffic Control devices, including but not limited to the following:
1. Traffic signs and parking prohibition signs
 2. Barricades with flashers
 3. Delineators
 4. High level warning devices
 5. Solar Powered Flashing arrow signs
 6. Pedestrian barricades
 7. Removal of conflicting existing striping and pavement markings in traffic lanes and in parking areas and re-installation of the original striping and pavement markings after construction is completed.
 8. Temporary striping and reflective markers, overlay markers, for both construction and interim re-alignments of traffic lanes, cross-walks prior to final striping
 9. Excavation plating/bridging, including any temporary plating and bridging required by the Contractor's operations.
 10. Temporary paving
 11. Providing flag persons
 12. Changeable Message Signs (CMS)
- I. Contractor shall provide traffic lanes and routing of vehicles, bicycles, and pedestrian traffic, as specified in the approved Traffic Control Plan(s) and in this Section, in a manner that will be safe and will minimize traffic congestion and delays.
- J. Temporary Pavement Markings
1. Temporary traffic delineation and pavement markings (lane lines, STOP Bars, etc.) shall be furnished, installed, maintained, and removed by the Contractor. Contractor shall furnish and install temporary pavement markings according to striping drawing(s) prior to opening the roadway to public traffic and/or instructed by the City Representative through the Traffic Engineer. The location of the temporary pavement lane lines shall be within 3 inches of the lines shown on the existing striping drawings.
 2. Whenever the Work causes obliteration of pavement markings (i.e., after removing the existing markings, grinding, paving, or excavating in the roadway), Contractor shall install temporary pavement markings delineation prior to opening the roadway to public traffic.

3. Contractor shall perform all Work necessary, including any required lines or marks, to establish the alignment of temporary pavement markings. When temporary pavement markings are required to be removed, all lines and marks used to establish the alignment of the temporary pavement markings shall be removed.
4. Surfaces to receive temporary pavement markings shall be dry and free of dirt and loose material. Temporary pavement markings shall not be applied over existing pavement markings or other temporary markings.
5. Contractor shall maintain temporary pavement markings for the duration of the Project until superseded or replaced with permanent pavement markings. Temporary pavement markings shall be removed when, as determined by the Traffic Engineer through the City Representative, the temporary pavement markings conflict with the permanent pavement markings or with a new traffic pattern for the area and is no longer required for the direction of public traffic.
6. Contractor shall remove conflicting existing striping and pavement markings in traffic lanes and in parking areas prior to installing temporary striping and pavement markings, and re-install the original striping and pavement markings after the Work is completed

1.3 APPLICABLE CODES AND STANDARDS

- A. In addition to compliance with this Specification, Contractor shall comply with all applicable requirements of the latest editions of the following:

1. California Vehicle Code
2. California Manual on Uniform Traffic Control Devices (MUTCD)
3. Caltrans Standard Specifications (CTSS) and Plans, Department of Transportation, State of California
4. City & County of San Francisco Municipal Transportation Code
5. Regulations for Working in San Francisco Streets ("Blue Book"), San Francisco Municipal Transportation Agency (SFMTA), City and County of San Francisco

Free copies of the "Blue Book" can be obtained from the SFMTA at 1 South Van Ness Avenue, 7th Floor, San Francisco, California 94103 or online at:
<http://www.sfmta.com/services/streets-sidewalks/construction-regulations>
6. Regulations for Excavating and Restoring Streets in San Francisco, Department of Public Works, City and County of San Francisco
7. Standard Specifications and Plans, Department of Public Works (DPW), City and County of San Francisco
8. All other applicable Codes

1.4 SUBMITTALS

- A. Contractor shall prepare and submit the following to the Traffic Engineer through the City Representative for review and approval before Contractor performs Work that impacts vehicle or pedestrian traffic at the Site or in the Construction Area.

1. Traffic Control Plans
2. Parking and Storage Plans
3. Material Specifications
4. Resume and Certification of all Flag Persons.
5. Resume and Certification of the Traffic Control Supervisor(s)
6. Sign Inventory Form(s)
7. Approved Baseline Schedule (for Traffic Engineer's information only)

B. Traffic Control Plans

1. Contractor shall submit complete Traffic Control and Detour Plans to the Traffic Engineer through the City Representative for approval no later than what is within the timeframe listed in table below. In addition, all Traffic Control and Detour Plan submittals must be submitted 42 Days before embarking on any scope of work if work is to be performed prior to the timeframe listed below:

Scope of Work	TCP Submittal Timeline (Days from NTP)
Sewer	30
Water	30-60
AWSS	60-90
Electrical	90-120
Curb Ramps/Bulb-outs	120-150
Bus Pads	150-180
Base Repair	180-210
Grinding & Paving	210-240

Contractor shall not perform any Work on a roadway or sidewalk or that will otherwise impact traffic without approved Traffic Control Plans. The City shall have not less than 42 Days to review and respond to proposed Traffic Control Plans. The Traffic Control Plans shall be prepared, signed and stamped by a Civil Engineer or a Traffic Engineer (Registered in the State of California) with the assistance and input of the Traffic Supervisor and the Contractor's Superintendent.

2. A submittal shall consist of six (6) copies on white paper of each drawing. Contractor shall use the existing striping plan(s) (labeled as PD-1 through 6) as a base to prepare the Traffic Control Plans. Drawing size shall be 36" X 24". The Traffic Control Plans shall be drawn to a scale of 1 inch = 50 feet (1:600). No half scale drawings will be accepted.
3. Contractor shall confer with the Traffic Engineer before preparing Traffic Control Plans to confirm the number of plans required for the Work. Contractor shall prepare separate Traffic Control Plans for working and non-working hours. Prior to preparing the Traffic Control Plans, The Professional Engineer shall personally inspect actual traffic conditions at the Site and in the Construction Area. The Professional Engineer shall understand the impacts the Work will have on vehicular, pedestrian, and other modes of transportation, and shall ensure that the Traffic Control Plans comply fully with Americans with Disabilities Act (ADA)

requirements and all City requirements concerning public path of travel through construction zones.

4. If the alignment of the main changes after pot holing and the Contractor cannot follow the approved Traffic Control Plans, the Contractor shall submit four (4) copies of the proposed new alignment and Traffic Plan to the Traffic Engineer through the City Representative for review and approval. The Contractor shall prepare the Traffic Control Plans for grinding and paving, based on the Excavation Permit issued by the Bureau of Streets and Mapping (BSM) of the Department of Public Works (DPW) for each street.
5. The Contractor shall submit Traffic Control Plans for the following work as applicable:
 - a. Sewer Main Work
 - b. Sewer Lateral Work
 - c. AWSS, and Water Main Work
 - d. Water Lateral Work
 - e. Any Connection Work by the San Francisco Water Department
 - f. Traffic Signal Work
 - g. Bulb Outs, Curb, Curb Ramps, and Sidewalk Work
 - h. Concrete Islands
 - i. Concrete Parking Strip
 - j. Concrete Base Repair Work
 - k. Bus Pads
 - l. Grinding
 - m. Paving
6. At a minimum, each Traffic Control Plan shall show the following information, as required by the Traffic Engineer through the City Representative:
 - a. Location and dimensions of roadway and traffic lane layout (width of sidewalk, street and lanes, transitions, parking and other relevant markings); outline and dimensions of the Work under construction (i.e., limits of excavation), location of construction barricades and barriers, location of trench protection devices, location of major construction equipment, and the ingress and egress routes of trucks hauling materials to and from the Site.
 - b. Sequence of construction and traffic lane transitions.
 - c. Taper lengths shall be called out and dimensioned.
 - d. Crosswalk and sidewalk closures.
 - e. Existing striping, pavement markings and traffic signs, and description of what is to be removed prior to installation of temporary striping and signage, and what will be restored after the construction is completed.
 - f. Location and spacing of "Tow-Away, No Stopping" signs.
 - g. Location and description of temporary striping, pavement markings, signs, and other Traffic Control devices necessary to provide and maintain the adequate number and width of traffic lanes specified herein, and to provide and maintain passage and protection for pedestrians.

- h. Location and description of Traffic Control devices proposed for the protection of the Site and Construction Area.
- i. Other proposed changes and provisions for removal, relocation, or temporary installation of:
 - (1) Traffic signs
 - (2) Transit stops
 - (3) Barricades and barriers
 - (4) Solar operated flashing arrow signs
 - (5) Traffic Signals
 - (6) Cones and other delineators
- j. Safe path of travel for passengers using public transit, from/to loading platform to/from the sidewalk.
- k. Location of detour signs for vehicular, truck, bicycle and pedestrian traffic.
- l. Truck Routes
- m. Location of above-ground flexible hoses used during the diversion of sewer mains as well as temporary pedestrian and bicycle ramps to eliminate tripping hazards.

C. Parking and Storage Plans

- 1. With each Traffic Control Plan, Contractor shall submit a proposed plan for materials storage and equipment parking, for the area covered by the Traffic Control Plan (i.e., the Site and the Construction Area). The City may in its discretion reject or direct amendments to proposed storage and equipment parking plans. Contractor shall not store, stockpile or place any equipment, materials or supplies on any public street or alley, including the sidewalks thereof, except as provided in a storage and parking plan approved by the Traffic Engineer through the City Representative.
- 2. Contractor shall not park any equipment or store any materials, including but not limited to pipes, pipe-fittings, steel bars, shoring, backfill, asphalt mix etc. shall be allowed on any sidewalk, street or property, except as shown on the approved Traffic Control Plans (and where applicable, on any approved plan for the storage or staging of materials and equipment) for the current phase of construction. Contractor shall not use more than 100 linear feet of street or sidewalk space in any block for parking and storage or staging. Except as expressly authorized in an approved storage/staging, and parking plan, Contractor's stockpiling, or placement of equipment or materials shall not in any way obstruct any lane or passageway intended for vehicular or pedestrian traffic
- 3. Office/storage trailers shall be located at least 100 feet from any intersection. It shall not block traffic control devices (STOP signs, signals, etc.), hydrants, bus stops, or driveways.

4. The Contractor is not allowed to store construction equipment or materials on the sidewalk and roadway of the following streets:
 - a. 19th Avenue
 - b. Lincoln Way
 - c. Judah Street
 - d. Taraval Street
 - e. Sloat Boulevard
 - f. Winston Drive
5. If metered parking spaces are to be occupied for equipment/material storage in the vicinity of the active construction area, the Contractor shall apply for a Special Traffic Permit and pay for all applicable fees. See Article 3.5 Special Traffic Permit for more information.
6. If the Traffic Engineer through the City Representative determines that such storage, stockpiling, or placement causes a violation of any Code or order of any regulatory body having jurisdiction, and/or public complaint, Contractor shall cease or modify the storage, stockpiling, or placement as necessary to comply with the Contract, Codes, and orders. Any Work performed to remove, relocate or modify the storage, stockpiling or placement of any equipment, materials or supplies shall be Incidental Work for which Contractor shall receive no additional compensation.
7. Contractor shall provide its own yard for the storage of pipes, pipe fittings, steel bars, shoring, and other large materials.
8. Contractor shall ensure that only Contractor's vehicles (clearly identified with the Contractor's name on each side of each vehicle), are being parked in the Construction Area. Personal vehicles may be ticketed or towed.
9. Employees of the Contractor, subcontractors, and suppliers shall not park or place their personal vehicles or company vehicles not actively loading or unloading at the Site or in the Construction Area. Contractor shall provide parking for its employees at a site that will not impact local public parking, and Contractor shall transport employees between the parking area and the Site.

D. Material Specifications

1. Within 30 Days of NTP, Contractor shall submit for SFMTA review and approval the manufacturer's specification and data for the Traffic Control devices and materials (e.g., solar operated flashing arrow boards, temporary traffic detour tape, and traffic water-filled barriers) or approved equal to be used in the Work.

E. Certification of Flag Persons

1. The flag persons shall have a minimum of one year experience utilizing manual Traffic Controls on similar construction projects. The flag persons shall have passed "The Flagger Training Course" offered by the American Traffic Safety Services Association (herein after called ATSSA) or other institutions acceptable by the Traffic Engineer through the City Representative. Refer to web page www.atssa.com for training classes for Flaggers. The Contractor shall submit certificates of all Flag persons for review and approval of the Traffic Engineer. The certificates of the Flag persons shall show the expiration date which shall be valid up to the end of the contract.

F. Sign Inventory Form(s)

1. Sign Inventory Form(s) is/are to be submitted to the Traffic Engineer through the City Representative as part of the Traffic Control Plan prior to the start of any contract field work. This form is included at the end of this Section. Sign Inventory Forms are required for each intersection corner or other location that includes any sign relocation, sign removal, curb ramp work, pole or traffic signal work. Sign Inventory Forms shall accurately reflect all existing traffic control, street name, and other City signs at the required location(s)

G. Certification of Traffic Control Supervisor

1. The Traffic Control Supervisor shall have a minimum of five (5) years experience in utilizing manual Traffic Controls on similar construction projects and shall have passed a course in "Traffic Safety Through Construction Zones" given by ATSSA or other institution acceptable by the Traffic Engineer through the City Representative. The class shall have been taken within the past five (5) years and the Traffic Control Supervisor(s) certification must be valid up to the end of the contract.

1.5 QUALIFICATIONS

- A. The Contractor performing traffic control shall have a minimum of 5 years experience in traffic control. The Contractor performing the traffic control work shall possess a current Class A and C-31 Construction Zone Traffic Control license issued by the California Contractor State License Board.
- B. Each crewmember shall have a minimum of one year experience in Traffic Control on similar scale projects, and shall have passed a Flagger Training Course given by ATSSA or another institution acceptable to the Traffic Engineer.
- C. If the Contractor's subcontract with the C-31 licensed Subcontractor does not meet the requirement for listing at the time of bid (see Section 00 43 36 – Proposed Subcontractors Form), then Contractor shall identify such Subcontractor using the Experience Statement form (Section 00 49 12) and submit that form after bid opening in conformance with the bidding instructions. Please refer to Section 00 21 13 – Instructions to Bidders for requirements in meeting the qualifications specified herein.
- D. The traffic control supervisor shall have a minimum of 5 years experience in traffic control. The traffic control supervisor shall be certified as a Traffic Control Supervisor by ATSSA or another institution acceptable to the City Representative.

PART 2 – PRODUCTS

2.1 GENERAL

- A. All traffic signs, barricades, delineators, flashing arrow signs, and other Traffic Control devices shall conform to the requirements of the latest edition of the California MUTCD. The California MUTCD is available online at:

<http://www.dot.ca.gov/hq/traffops/engineering/mutcd/>
- B. All special construction traffic signs shall be reflectorized with black messages/symbols having 6" and/or 8" high series D letters on orange colored aluminum plate. The

message and size of the letters shall be determined by the City Representative through the Traffic Engineer. Any changes on any signs shall be made with appropriate decals.

- C. All barricades shall have flashers. For night time work when lanes are closed, the flashers shall be maintained in good operating condition at all times by the Contractor.
- D. Any equipment that does not operate properly or any device that is not in good operating condition shall be removed from the job site immediately at the Contractor's expense.
- E. The Contractor shall use Caltrans, CAMUTCD, or FHWA approved Traffic Control devices to separate traffic lanes and construction areas.
- F. Contractor shall provide ADA compliant safe paths of travel for pedestrians.
- G. When circumstances require use of a barrier system, refer to Section 2.6 – BARRIERS.

2.2 DELINEATORS

- A. Delineators for lane taper areas for the separation of traffic from other work shall be either reflectorized traffic cones minimum 28 inches high or reflectorized portable tubular delineators minimum 36 inches high, with orange posts and yellow/white reflectors. Reflector units shall be 3"x 12" minimum.

2.3 NON-SKID METAL PLATING

- A. Metal plating and any metal bridging shall be with non-skid and rust-inhibitive product and shall be Intergard 750HS (formerly 7300 Magna-Prime) Epoxy or equal, manufactured by Courtaulds Coatings (Division of International), 400 South 13th Street, Louisville, KY 40201-1439; Tel: (800) 332-6270; Fax: (800) 283-0508. This material shall be applied as directed by the manufacturer. Plating shall be installed and maintained in such a manner as to provide a non-skid surface with no edges or corners sticking up and with no bouncing or shifting. All non-skid plates shall have a friction factor of 0.35 or greater as measured by the California Department of Transportation Test 342. Plating shall be installed and maintained in such a manner as to provide a non-skid surface with no edges or corners sticking up and no bouncing or shifting of plates. In addition, Contractor shall comply with the requirements of 2018 Caltrans Encroachment Permits Manual Section 602.5C – Temporary Steel Plate Bridging – With a Non-Skid Surface (Rev 04/18) and Caltrans Encroachment Permit Steel Plate Bridging Utility Provisions, TR-0157 (Rev. 04/2018).

2.4 CHANGEABLE MESSAGE SIGNS

- A. The Contractor shall furnish and maintain six portable Changeable Message Signs (CMS) for the duration of the contract. Contractor shall be responsible for programming the messages and towing to the assigned locations at the direction of the Traffic Engineer. All costs of programming, moving and maintaining the CMS is part of the contract bid price and no other payment for this is allowed. The signs shall use light emitting diodes (LED). A photocell shall control the brightness of LED display panel. Message panel size shall be approximately 61" high x 83" wide and able to display three text lines with up to 8 characters per line. The CMS will be able to operate by both solar panel and batteries. ADDCO Model DH500-FM, manufactured by ADDCO Manufacturing Co. Inc., St. Paul, MINN, (651) 488-8600, meets these requirements. The Contractor may supply any other model of any other manufacturer meeting these requirements.

2.5 BARRICADES

- A. Contractor shall furnish, install and maintain barricades to separate pedestrian areas and traffic areas as shown on the approved Traffic Control Plans.
- B. Devices meeting CA-MUTCD, Caltrans, and FHWA requirements for barricades and designed specifically to be used as barricades may be used as barricades. Barrier systems shall not be used as barricades in the San Francisco public right-of-way. Barricades used in the public right-of-way shall be deployed in conjunction with traffic control devices as established by CA-MUTCD.
- C. Under no circumstances may barrier devices be used in the public right of way as barricades.

2.6 BARRIERS

- A. All plastic barrier systems including, but not limited to Triton barrier systems, that are deployed as barriers shall be filled, connected/inter-locked and arrayed in unit quantities that comply with manufacturer's standards for use of these devices as barrier systems. Only devices meeting CAMUTCD, Caltrans, and FHWA requirements for use as barrier systems may be used as barrier systems. Minimum requirements for plastic barrier systems are:
 - (1) Filling units with water or sand in accordance with manufacturer's requirements.
 - (2) Physical connection systems and correct alignment in accordance with manufacturer requirements.
 - (3) Meet or exceed manufacturer's established number of devices for posted speed limit where deployed.
 - (4) Installation of end treatments (array) as required by manufacturer.
- B. The installation layout of water filled barriers (or approved equal) shall be in accordance with the manufacturer's specifications. The water filled barriers (or approved equal) shall be filled with water or sand in accordance with the manufacturer's specifications. The water filled barriers (or approved equal) shall be inter-locked per manufacturers specifications.
- C. The Contractor shall not substitute K-rails for water filled barriers (or approved equal). The use of water filled barriers (or approved equal) used in conjunction with K-rails is not permitted under any circumstance.
- D. Requirements regarding installation of Type K temporary railing for excavations where the near edge of the excavation is within 15 feet from the edge of an open traffic lane per Section 7-1.04 PUBLIC SAFETY of 2018 Caltrans Standard Specifications is not applicable.

2.7 TAPE AND MARKERS FOR TEMPORARY STRIPING

- A. Temporary Retroreflective Painted Pavement Striping and Markings

Contractor shall use painted traffic striping and pavement markings on concrete base as instructed by the City Representative through the Traffic Engineer. Painted traffic striping and pavement markings shall be installed immediately after grinding and before fully opening the required lanes to traffic at the end of the work day. The materials and

application shall comply with Section 84-3 of Caltrans Standard Specifications. The Traffic Engineer, through the City Representative, may request samples of materials.

B. Temporary Removable Pavement Tape

Contractor shall use pavement tape after paving as instructed by the City Representative through the Traffic Engineer. The Contractor shall use any one of the following removable tapes furnished with a foil backing:

1. Swarco Visa-Line
2. Brite-Line Series 100
3. ATM Series 200

C. Temporary Reflective Overlay Pavement Markers

Contractor shall use overlay pavement markers on finished concrete streets and micro-surfaced streets as instructed by the City Representative through the Traffic Engineer. The Contractor shall use any one of the following:

1. Davidson Plastic Model TOM (Standard) with Reflexite PC-1000 or WZ with Reflexite AC-1,000 sheeting
2. Stimsonite Model 300 "Temporary Overlay Markers"
3. Hi-way Safety Inc. Model 1280 / 1281 with Reflexite PC 1,000

2.8 TRAFFIC SIGNAL LOOPS

- A. Performance characteristic, materials and inductive loop detectors shall conform to Section 86-5 "Detectors" of CTSS and this specification.
- B. Detector cables shall be labeled per plans and as required by Article 3.19 INSTALLATION OF CONDUCTORS of this Section.
- C. For installation details, see Subsection 3.22 TRAFFIC SIGNAL LOOPS INSTALLATION.
- D. Installation of Loop detectors shall be paid on per loop basis including all materials and labor to furnish and install. The loop detector bid item shall include payment for hand hole and cable back to the controller cabinet. The loop detector bid item shall not include equipment in the controller cabinet such as detector amplifiers or BIUs.

2.9 CONDUCTORS

A. General

1. Conductors for all traffic signals running between the traffic signal controller and the termination point shall be Type UF. The termination point is either a terminal block inside the terminal compartment of a traffic signal assembly or the signal head itself if no terminal compartment is used. Conductors within traffic signal framework shall be Type UF or THW and may be either solid or stranded provided that such framework contains a terminal compartment (otherwise Type UF wire shall terminate at the signal head). Conductors for street lighting shall

be Type THW. Traffic signal service wire shall be THW; #8 and larger shall be stranded; #10 through # 14 shall be solid.

PART 3 - EXECUTION

3.1 VEHICULAR AND PEDESTRIAN TRAFFIC

A. Traffic Lane and Parking Requirements

1. In addition to specified through-traffic lanes, Contractor shall provide an additional left/right turn lane of 11 foot width at the intersection where there is an existing separate right/left turn lane.
2. Contractor shall maintain the required travel way for vehicles in any public street or way and a minimum width of 5 feet (unless a minimum width of 4 feet is approved by the Traffic Engineer) of clear sidewalk for pedestrians at all times.
3. Contractor shall not reduce an open traffic lane width to less than 10 feet. If traffic cones or delineators are used for temporary edge delineation, the side of the base of the cones or delineators nearest to traffic is considered the edge of the travel way.
4. Contractor may be allowed to store materials and/or equipment for a limited time in the parking strip and/or portion of the sidewalk with written permission of the City Representative and SFMTA for use of the public right of way. Contractor shall delineate the storage area using barricades, signs, and lighting so that storage area is readily visible to vehicular traffic during the day and at night. Authorized storage of materials or equipment anywhere in the parking strip or sidewalk shall be limited to materials to be incorporated in the Work within the next 7 Days. Refer to 1.4C Parking and Storage Plans for more requirements.
5. Contractor's performance of the Work shall not interfere with access of emergency vehicles (police, fire, and ambulances) to Site and to the Construction Area. Contractor shall maintain access to the roadways adjacent to the Site at all times, by providing a 12 foot wide lane on all roadways.
6. All existing traffic movements at the intersections shall be maintained by bridging and/or phasing.
7. Full Roadway is defined as the street from property line to property line, including sidewalks, parking strip and travel lanes EXCEPT when performing the following work.
 - a. Curb Ramps – Contractor may barricade off this area per approved traffic control plan for up to 4 days to allow for necessary demolition, pouring, and curing time and to provide safe pedestrian paths of travel;
 - b. Concrete Parking Strip – Contractor may barricade off this area per approved traffic plan for up to 11 days to allow for necessary demolition, pouring, and curing time.
 - c. Bus Pads – Contractor may barricade off this area per approved traffic control plan for up to 15 days to allow for necessary demolition, pouring, and curing time for the concrete bus pad;
 - d. Bulb-outs – Contractor may barricade off this area per approved traffic control plan for up to 4 days to allow for necessary demolition, pouring, and curing time for the concrete bulb-out.

- e. Concrete Sidewalk – Contractor may barricade off this area per approved traffic control plan for up to 7 days to allow for necessary demolition, pouring, and curing time for concrete sidewalk.
8. Contractor shall provide the lanes listed in the table below to accommodate vehicular and bicycle traffic. Vehicular/pedestrian access to properties along the project site shall be maintained at all times.
9. CMS shall be required for the duration of the project at the following locations or as direct by the Traffic Engineer:

NB I-280 in advance of Exit 47 Hwy 1 Pacifica, one CMS
 NB J. Serra Blvd. south of Brotherhood Way, one CMS
 NB J. Serra Blvd. south of 19th Ave., one CMS
 SB Park Presidio Blvd north of Geary Blvd, one CMS
 SB Cross Over Drive north of Lincoln Way, one CMS
 WB Sloat Blvd east of 19th Avenue, one CMS

All CMS messages shall be as follows **and as directed otherwise by the Traffic Engineer** during different phases of construction: "ROADWORK 19TH AVE", "EXPECT DELAY", "USE ALT ROUTES".
10. Tow-Away signs can have the posted hours shown as 0.5 (half) hour prior to the start of work with the exception that it shall not be earlier than 7:00 a.m.

Traffic Lane Requirements
Number and Width of Lanes for Through Traffic

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
<u>DURING SEWER WORK</u>					
19TH AVENUE					
~sta 17+00 to Holloway Ave. *(MC), ☐	7AM – 5PM (M-F)	2@11'	2@12'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Holloway Ave. to Denslowe Dr. *(MC), ☐	7AM – 5PM (M-F)	2@11'	2@11'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Denslowe Dr. to Winston *(MC), ★, ☐, ☐	7AM – 3PM (M-F)	2@11'	2@11'	-	-
	3PM – 5PM (M-F)	Full Roadway	2@11'	-	-
	At Other Times	Full Roadway	Full Roadway		
Winston Dr. to Eucalyptus Dr. *(MC), #, ☐	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Eucalyptus to Sloat Blvd. *(MC)	7AM – 5PM (M-F)	2 @ 10'	2 @ 10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Sloat Ave. to Wawona St.	9AM – 3PM(M-F)	2@10'	2@10'	-	-
	Continuous during	2@10'	2@10'	-	-

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
*(MC), ★, Ω, ▢	Sewer Lining Work				
	At Other Times	Full Roadway	Full Roadway	-	-
Wawona St. to Vicente St. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Vicente St. to Ulloa St. *(MC)	7AM – 5PM (M-F) Sewer Main	2@10'	2@10'	-	-
	9AM – 3PM (M-F) Sewer Crossing 19 th Avenue @ Ulloa	1@14'	1@14'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ulloa St. to Taraval St. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	9AM – 3PM (M-F) Sewer Crossing @ Ulloa	1@14'	1@14'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Taraval St. to Quintara St. *(MC), ▢	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Quintara St. to Pacheco St. *(MC), ▢	7AM – 9AM (M-F)	Full Roadway	2@10'		
	9AM – 3PM (M-F)		1@14'	-	-
	3PM – 5PM (M-F)		2@10'	-	-
	At Other Times		Full Roadway	-	-
Pacheco St. to Ortega St. *(MC), ▢	7AM – 5PM (M-F)	Full Roadway	2@10'	-	-
	At Other Times		Full Roadway	-	-
Ortega St. to Noriega St. *(MC) ★	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	9AM – 3PM (M-F) Sewer Crossing 19 th Ave. @ Noriega St.	1@14'	1@14'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Noriega St. to Moraga St. *(MC) ★	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	9AM – 3PM (M-F) Sewer Crossing 19 th Ave. @ Noriega St.	1@14'	1@14'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Moraga St. to Lawton St. *(MC)	7AM – 5PM (M-F)	Full Roadway	2@10'	-	-
	At Other Times		Full Roadway	-	-

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Lawton St. to Kirkham St. *(MC), ★, ▢	7AM – 5PM (M-F) 9AM – 3PM (M-F) Sewer Crossing 19 th Ave. @ Kirkham At Other Times	2@10' 1@14' Full Roadway	2@10' 1@14' Full Roadway	- - -	- - -
Kirkham St. to Judah St. *(MC) ★	7AM – 5PM (M-F) 9AM – 3PM (M-F) Sewer Crossing 19 th Ave. @ Kirkham St. & 9AM – 3PM (M-F) Sewer Crossing 19 th Ave. @ Judah St. & At Other Times	3@10' 1@14' 1@14' Full Roadway	2@10' 1@14' 2@10' Full Roadway	- - - -	- - - -
Judah St. to Irving St. *(MC), ▢	7AM – 5PM (M-F) 9AM – 3PM (M-F) Sewer Crossing 19 th Ave. @ Judah St. & At Other Times	2@10' 1@14' Full Roadway	2@10' 2@10' Full Roadway	- - -	- - -
Irving St. to Lincoln Way *(MC), ★, ▢	7AM – 5PM (M-F) At Other Times	2@10' Full Roadway	2@10' Full Roadway	- -	- -
CROSSOVER DRIVE					
Lincoln Way to Martin Luther King Jr Dr. *(MC) ★	7AM – 5PM (M-F) At Other Times	2@10' Full Roadway	2@10' 1 @ 10' RT Full Roadway	- -	- -
CROSS STREETS for 19TH AVENUE					
Crespi Dr. *(MC)	At All Times	-	-	Full Roadway	Full Roadway
Holloway Ave. *(MC), β	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Denslowe Dr.	7AM – 5PM (M-F) At Other Times	- -	- -	- -	1@10' Full Roadway
Buckingham Way β	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Winston Dr. (West of 19 th)	7AM – 5PM (M-F)	-	-	1@10' 1 @10' LT	1@12'

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Avenue) β	At Other Times	-	-	Full Roadway	Full Roadway
Winston Dr. (East of 19 th Avenue) β	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1 @10' Full Roadway
Eucalyptus Dr. (West of 19 th Avenue) *(MC), ★, ➡/➡, ⬆ ^M	9AM – 3PM (M-F) At Other Times	- -	- -	1@11' ➡/➡ Except Muni Full Roadway	Full Roadway
Eucalyptus Dr. (East of 19 th Avenue) *(MC), ★, ➡/➡	9AM – 3PM (M-F) At Other Times	- -	- -	1@11' ➡/➡ Except Muni Full Roadway	Full Roadway
Ocean Ave. β	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1 @10' Full Roadway
Sloat Blvd. *(MC), β	7AM – 5PM (M-F) At Other Times	- -	- -	2@11' Full Roadway	3@10' Full Roadway
Wawona St β,	7AM – 5PM (M-F) At Other Times	- -	- -	1 @ 10' Full Roadway	1@10' Full Roadway
Vicente St β	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Ulloa St β, ★	7AM – 5PM (M-F) At Other Times	- -	- -	Closed © Full Roadway	Closed © Full Roadway
Taraval St. *(MC, MM)	7AM – 5PM (M-F) At Other Times	- -	- -	Full Roadway Full Roadway	Closed © (Except Muni) Full Roadway
Santiago St	7AM – 5PM (M-F) At Other Times	- -	- -	1@12' Full Roadway	Closed © Full Roadway
Rivera St	7AM – 5PM (M-F) At Other Times	- -	- -	1@12' Full Roadway	Closed © Full Roadway
Quintara *(MC)	7AM – 5PM (M-F) At Other Times	- -	- -	1@12' ➡/➡ Except Muni Full Roadway	Full Roadway
Pacheco St ★	7AM – 5PM (M-F) At Other Times	- -	- -	Closed © Full Roadway	Closed © Full Roadway

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Ortega St, ➡/➡	7AM – 5PM (M-F)	-	-	1@12' ➡/➡	
	At Other Times	-	-	Full Roadway	Full Roadway
Noriega St. ★	7AM – 3PM (M-F)	-	-	Closed ©	Closed ©
	At Other Times	-	-	Full Roadway	Full Roadway
Moraga St β	7AM – 5PM (M-F)	-	-	1@12'	Closed ©
	At Other Times	-	-	Full Roadway	Full Roadway
Lawton St β	7AM – 5PM (M-F)	-	-	1@12'	Closed ©
	At Other Times	-	-	Full Roadway	Full Roadway
Kirkham St β ★, ➡/➡	7AM – 3PM (M-F)	-	-	1@12' ➡/➡	
	At Other Times	-	-	Full Roadway	Full Roadway
Judah St. *(MM)	7AM – 3PM (M-F)	-	-	Closed © (Except Muni)	Closed © (Except Muni)
	At Other Times	-	-	Full Roadway	Full Roadway
Irving St. ★	7AM – 3PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
Lincoln Way *(MC), ★, ➡	9AM – 3PM (M-F)	-	-	1@14'	2@11'
	During Sewer Lining	-	-	2@10'	2@10'
	At Other Times	-	-	Full Roadway	Full Roadway
<u>DURING WATER WORK (Except 36" DIP, and 16" DIP)</u>					
19TH AVENUE					
Banbury Dr. to Holloway Ave. *(MC)	7AM – 5PM (M-F)	2@11'	Full Roadway	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Holloway Ave. to Eucalyptus Dr. *(MC)	At All Times	Full Roadway	Full Roadway	-	-
Eucalyptus Dr. to Sloat Blvd *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Sloat Blvd to Vicente St. *(MC)	At All Times	Full Roadway	Full Roadway	-	-
Vicente St. to Quintara St. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At All Times	Full Roadway	Full Roadway	-	-
Quintara St. to	7AM – 5PM (M-F)	2@10'	Full Roadway	-	-

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Irving St. *(MC)	At All Times	Full Roadway	Full Roadway	-	-
Irving St. to Lincoln Way *(MC)	At All Times	Full Roadway	Full Roadway	-	-
CROSS STREETS for 19TH AVENUE					
Holloway Ave. *(MC), β	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'
	At Other Times	-	-	Full Roadway	Full Roadway
Eucalyptus Dr. *(MC)	At All Times	-	-	Full Roadway	Full Roadway
Ocean Ave. β	7AM – 5PM (M-F)	-	-	1 @ 11'	1 @ 11'
	At Other Times	-	-	Full Roadway	Full Roadway
Sloat Blvd. *(MC), β	7AM – 5PM (M-F)	-	-	2 @ 11'	2 @ 11'
	At Other Times	-	-	Full Roadway	Full Roadway
Wawona St.	At All Times	-	-	Full Roadway	Full Roadway
Vicente St. β	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'
	At Other Times	-	-	Full Roadway	Full Roadway
Ulloa St	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'
	At Other Times	-	-	Full Roadway	Full Roadway
Taraval St. (south crossing) *(MC, MM) ★	9AM – 3PM (M-F)	-	-	Closed © (Except Muni)	Full Roadway
	At Other Times	-	-	Full Roadway	Full Roadway
Taraval St. (north crossing) *(MC, MM) ★	9AM – 3PM (M-F)	-	-	Full Roadway	Closed © (Except Muni)
	At Other Times	-	-	Full Roadway	Full Roadway
Santiago St Rivera St	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'
	At Other Times	-	-	Full Roadway	Full Roadway
Quintara St *(MC)	7AM – 5PM (M-F)	-	-	1 @ 11'	1 @ 11'
	At Other Times	-	-	Full Roadway	Full Roadway
Pacheco St. Ortega St.	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'
	At Other Times	-	-	Full Roadway	Full Roadway
Noriega St.	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'
	At Other Times	-	-	Full Roadway	Full Roadway
Moraga St.	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Lawton St.	At Other Times	-	-	Full Roadway	Full Roadway
Kirkham St. β	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Judah St. *(MC, MM)	At All Times	-	-	Full Roadway	Full Roadway
Irving St.	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Lincoln Way *(MC)	At All Times	-	-	Full Roadway	Full Roadway
19th AVENUE 16" DIP (Sloat to Vicente)**					
Ocean Ave. to Sloat Ave. *(MC) ★	7AM – 5PM (M-F) At Other Times	2 @ 10' Full Roadway	3 @ 10' Full Roadway	- -	- -
Sloat Ave. to Wawona St. *(MC), ★, α	7AM – 5PM (M-F) At Other Times	2@10' Full Roadway	2@ 10' Full Roadway	- -	- -
Wawona St to Vicente St. *(MC) α	7AM – 5PM (M-F) At Other Times	2 @ 10 Full Roadway	2@10' Full Roadway	- -	- -
Vicente St. to Ulloa St. *(MC)	At All Times	Full Roadway	Full Roadway	-	-
CROSS STREETS for 19TH AVENUE					
Sloat Blvd. *(MC), β	7AM – 5PM (M-F) At Other Times	- -	- -	1@12' Full Roadway	2@10' Full Roadway
Wawona St.	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Vicente St.	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
19th AVENUE 36" DIP (Sloat to Vicente)					
Ocean Ave. to Sloat Ave. *(MC) ★	7AM – 9AM (M-F) 9AM – 3PM (M-F) 3AM – 5PM (M-F) At Other Times	2 @ 10' 1 @ 14' 2 @ 10' Full Roadway	2 @ 10' 1 @ 14' 2 @ 10' Full Roadway	- - - -	- - - -
Sloat Blvd to Wawona St. *(MC), ★, α	7AM – 5PM (M-F) At Other Times	Full Roadway Full Roadway	2 @ 10' Full Roadway	- -	- -

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Wawona St. to Vicente St. *(MC)	7AM – 5PM (M-F) At Other Times	Full Roadway Full Roadway	2 @ 10' Full Roadway	- -	- -
Vicente St. to Ulloa St. *(MC)	7AM – 5PM (M-F) At Other Times	Full Roadway Full Roadway	2 @ 10' Full Roadway	- -	- -
CROSS STREETS for 19TH AVENUE					
Sloat Blvd. *(MC), β	7AM – 5PM (M-F) At Other Times	- -	- -	1@12' Full Roadway	2@10' Full Roadway
Wawona St.	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Vicente St.	7AM – 5PM (M-F) At Other Times	- -	- -	1@12' ➡/➡ Full Roadway	Full Roadway
DURING AWSS MONITORING, REMOVAL AND NEW WORK					
19TH AVENUE					
Vicente St. to Ulloa St. *(MC)	7AM – 5PM (M-F) removal and monitoring work 9AM – 3PM (M-F) new work 3PM – 5PM (M-F) new work At Other Times	2 @ 10' 1 @ 14' 2 @ 10' Full Roadway	Full Roadway 3 @ 10' 3 @ 10' Full Roadway	- 	-
Ulloa St. to Taraval St. *(MC)	7AM – 5PM (M-F) removal and monitoring work 9AM – 3PM (M-F) new work 3PM – 5PM (M-F) new work At Other Times	2@10' 3 @ 10' 3 @ 10' Full Roadway	Full Roadway 1 @ 14' 2 @ 10' Full Roadway	- -	- -
Taraval St. to Pacheco St. *(MC)	7AM – 5PM (M-F) At Other Times	2 @ 10' Full Roadway	3 @ 10' Full Roadway	- -	- -
Pacheco St. to Ortega St. *(MC)	7AM – 5PM (M-F) At Other Times	2@10' Full Roadway	3@10' Full Roadway	- -	- -
Ortega St. to Noriega St. *(MC)	7AM – 5PM (M-F) removal work 9AM – 3PM (M-F) new work	2@10' 1@14'	3@10' 3@10'	- -	- -

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
	3PM – 5PM (M-F) new work	2@10'	3@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Noriega St. to Moraga St. *(MC)	7AM – 5PM (M-F) removal and monitoring work	2@10'	3@10'	-	-
	7AM – 3PM (M-F) new work	1@14'	3@10'	-	-
	3PM – 5PM (M-F) new work	2@10'	3@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Moraga St. to Lawton St. *(MC)	7AM – 5PM (M-F) removal work	2@10'	3@10'	-	-
	7AM – 3PM (M-F) new work	1 @ 14'	3 @ 10'		
	3PM – 5PM (M-F) new work	2 @ 10'	3 @ 10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Lawton St. to Kirkham St. *(MC)	7AM – 5PM (M-F) removal and monitoring work	2@10'	3@10'	-	-
	7AM – 3PM (M-F) During new work	1 @ 14'	3 @ 10'	-	-
	3PM – 5PM (M-F) During new work	2 @ 10'	3 @ 10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Kirkham St. to Judah St. *(MC)	7AM – 9AM (M-F)	2@10'	3@10'		
	9AM – 3PM (M-F)	1@14'	3@10'	-	-
	3PM – 5PM (M-F)	2@10'	3@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Judah St. to Irving St. *(MC)	7AM – 9AM (M-F)	2@10'	3@10'	-	-
	9AM – 3PM (M-F)	1@14'	3@10'	-	-
	3PM – 5PM (M-F)	2@10'	3@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
CROSS STREETS for 19TH AVENUE					
Ulloa St. ★	7AM – 5PM (M-F) monitoring work	-	-	1@10'	1@10'
	7AM – 5PM (M-F) removal and new work			Closed © (west leg) 1 @ 10' (east leg)	
	At Other Times	-	-	Full Roadway	Full Roadway
Taraval St. *(MC, MM)	At All Times	-	-	Full Roadway	Full Roadway

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Santiago St. Rivera St.	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Ortega St. ★	7AM – 5PM (M-F) monitoring work 7AM – 5PM (M-F) removal and new work At Other Times	- - -	- - -	1@10' Closed © (east leg) 1 @ 10' west leg Full Roadway	1@10' 1 @ 10' west leg Full Roadway
Noriega St.	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Lawton St	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
Kirkham St. ★	7AM – 5PM (M-F) At Other Times	 -	 -	Closed © (west leg) 1 @ 10' east leg Full Roadway	1 @ 10' east leg Full Roadway
Judah St. *(MC, MM) ★	7AM – 5PM (M-F) At Other Times	- -	- -	Closed © (Except Muni) Full Roadway	Closed © (Except Muni) Full Roadway
Irving St. ★	7AM – 5PM (M-F) At Other Times	- -	- -	1@10' Full Roadway	1@10' Full Roadway
<u>DURING BULBOUT, CURB & GUTTER, CURB RAMP, ISLANDS, SIDEWALK, PARKING STRIP, AND ELECTRICAL WORK</u>					
19th Avenue and Holloway Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F) At Other Times	2@10' Full Roadway	2@10' Full Roadway	- -	- -
Holloway Ave. *(MC), β	7AM – 5PM (M-F) At Other Times	- -	- -	1@11' Full Roadway	1@11' Full Roadway
19th Avenue and Winston Drive Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F) At Other Times	2@10' Full Roadway	2@10' Full Roadway	- -	- -
Winston Dr. β	7AM – 5PM (M-F) At Other Times	- -	- -	1@11' Full Roadway	1@11' Full Roadway
19th Avenue and Eucalyptus Drive Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F) At Other Times	2@10' Full Roadway	2@10' Full Roadway	- -	- -
Eucalyptus Dr. *(MC)	7AM – 5PM (M-F)	-	-	1@11'	1@11'

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Ocean Avenue Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ocean Ave. β	7AM – 5PM (M-F)	-	-	1@11'	1@11'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Sloat Boulevard Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Sloat Blvd. *(MC), β	7AM – 5PM (M-F)	-	-	1@11' 1@11' Thru/LT	2@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Wawona Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	3@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Wawona St.	7AM – 5PM (M-F)	-	-	1@10'	Full Roadway
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Vicente Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Vicente St. B	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Ulloa Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ulloa St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Taraval Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Taraval St. *(MC, MM)	7AM – 5PM (M-F)	-	-	1@12'	1@12'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Santiago Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Santiago St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Rivera Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Rivera St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Quintara Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Quintara St. *(MC)	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Pacheco Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Pacheco St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Ortega Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ortega St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Noriega Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Noriega St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Moraga Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Moraga St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Lawton Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Lawton St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Kirkham Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Kirkham St. β	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Judah Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Judah St. *(MC, MM)	7AM – 5PM (M-F)	-	-	1@12'	1@12'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Irving Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Irving St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Lincoln Way Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	3@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Lincoln Way *(MC)	7AM – 4PM (M-F)	-	-	1@10'	2@10'
	4PM – 5PM (M-F)	-	-	1@11'	3@10'
	At Other Times	-	-	1@11' (Muni) Full Roadway	Full Roadway
DURING CONCRETE BUS PAD AND BASE REPAIR WORK					
19th Avenue and Holloway Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	Full Roadway	-	-
	During concrete bus pad curing	2@10'	Full Roadway		
	At Other Times	Full Roadway	Full Roadway	-	-
Holloway Ave. *(MC), β	7AM – 5PM (M-F)	-	-	1@11'	1@11'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Winston Drive Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	Full Roadway	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Winston Dr. west of 19 th Ave. β	7AM – 5PM (M-F)	-	-	1@11'	2@10'
	At Other Times	-	-	Full Roadway	Full Roadway

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Winston Dr. east of 19 th Ave. β	At All Times	-	-	Full Roadway	Full Roadway
19th Avenue and Eucalyptus Drive Avenue Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	During concrete bus pad curing	2@10'	2@10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Eucalyptus Dr. *(MC)	7AM – 5PM (M-F)	-	-	1@11'	Closed © Except Muni
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Ocean Avenue Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ocean Ave. β	7AM – 5PM (M-F)	-	-	1@11'	1@11'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Sloat Boulevard Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	1@10'	-	-
	During concrete bus pad curing	2@10'	2 @10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Sloat Blvd. *(MC), β	7AM – 5PM (M-F)	-	-	1@11'	2@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Wawona Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	3@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Wawona St.	7AM – 5PM (M-F)	-	-	1@10'	Full Roadway
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Vicente Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	During concrete bus pad curing	2@10'	2@10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Vicente St. β	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Ulloa Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Ulloa St.	7AM – 5PM (M-F)	-	-	1 @ 12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19 th Avenue and Taraval Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2 @ 10'	2 @ 10'	-	-
	During concrete bus pad curing	2 @ 10'	2 @ 10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Taraval St. *(MC, MM)	9AM – 3PM (M-F)	-	-	Closed © (Except Muni)	Closed © (Except Muni)
	At Other Times	-	-	Full Roadway	Full Roadway
19 th Avenue and Santiago Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2 @ 10'	2 @ 10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Santiago St.	7AM – 5PM (M-F)	-	-	1 @ 12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19 th Avenue and Rivera Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2 @ 10'	2 @ 10'	-	-
	During concrete bus pad curing	2 @ 10'	2 @ 10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Rivera St.	7AM – 5PM (M-F)	-	-	1 @ 12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19 th Avenue and Quintara Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2 @ 10'	2 @ 10'	-	-
	During concrete bus pad curing	2 @ 10'	2 @ 10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Quintara St. *(MC)	7AM – 5PM (M-F)	-	-	1 @ 10'	1 @ 10'
	At Other Times	-	-	Full Roadway	Full Roadway
19 th Avenue and Pacheco Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2 @ 10'	2 @ 10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Pacheco St.	7AM – 5PM (M-F)	-	-	1 @ 12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19 th Avenue and Ortega Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2 @ 10'	2 @ 10'	-	-
	During concrete bus pad curing	2 @ 10'	2 @ 10'		

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
	At Other Times	Full Roadway	Full Roadway	-	-
Ortega St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Noriega Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	During concrete bus pad curing	2@10'	2@10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Noriega St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Moraga Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Moraga St.	7AM – 5PM (M-F)	-	-	1@10'	Closed ©
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Lawton Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	During concrete bus pad curing	2@10'	2@10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Lawton St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Kirkham Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Kirkham St. β	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Judah Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	During concrete bus pad curing	2@10'	2@10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Judah St. *(MC, MM)	9AM – 3PM (M-F)	-	-	Closed © (Except Muni)	Closed © (Except Muni)
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Irving Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
Irving St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Lincoln Way Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	3@10'	2@10'	-	-
	During Concrete bus pad curing	Full Roadway	2@10'		
	At Other Times	Full Roadway	Full Roadway	-	-
Lincoln Way *(MC)	7AM – 4PM (M-F)	-	-	1@10'	2@10'
	4PM – 5PM (M-F)	-	-	1@11'	3@10'
	At Other Times	-	-	1@11' (Muni) Full Roadway	Full Roadway
DURING GRINDING AND PAVING WORK					
19th Avenue and Holloway Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	3@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Holloway Ave. *(MC), β	7AM – 5PM (M-F)	-	-	1@11'	1@11'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Eucalyptus Drive Avenue Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Eucalyptus Dr. West of 19 th Ave. *(MC)	7AM – 5PM (M-F)	-	-	1@11'	1@11'
	At Other Times	-	-	Full Roadway	Full Roadway
Eucalyptus Dr. East of 19 th Ave. *(MC)	7AM – 5PM (M-F)	-	-	Closed © (Except Muni)	Closed © (Except Muni)
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Ocean Avenue Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ocean Ave. β	7AM – 5PM (M-F)	-	-	1@11'	1@11'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Sloat Boulevard Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Sloat Blvd. *(MC), β	7AM – 5PM (M-F)	-	-	1@11'	2@10'
	At Other Times	-	-	1@11' Thru/LT Full Roadway	Full Roadway
19th Avenue and Wawona Street Intersection					

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Wawona St.	7AM – 5PM (M-F)	-	-	1@10'	Full Roadway
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Vicente Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Vicente St. β	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Ulloa Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ulloa St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Taraval Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Taraval St. *(MC, MM)	9AM – 3PM (M-F)	-	-	Closed © (Except Muni)	Closed © (Except Muni)
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Santiago Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Santiago St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Rivera Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Rivera St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Quintara Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Quintara St. *(MC)	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Pacheco Street Intersection					

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Pacheco St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Ortega Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Ortega St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Noriega Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Noriega St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Moraga Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Moraga St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Lawton Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Lawton St.	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Kirkham Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Kirkham St. β	7AM – 5PM (M-F)	-	-	1@12' ➡/⬅	
	At Other Times	-	-	Full Roadway	
19th Avenue and Judah Street Intersection					
19 th Ave. *(MC)	7AM – 5PM (M-F)	2@10'	2@10'	-	-
	At Other Times	Full Roadway	Full Roadway	-	-
Judah St. *(MC, MM)	9AM – 3PM (M-F)	-	-	Closed @ (Except Muni)	Closed @ (Except Muni)
	At Other Times	-	-	Full Roadway	Full Roadway

STREET	TIME	NORTHBOUND	SOUTHBOUND	EASTBOUND	WESTBOUND
19th Avenue and Irving Street Intersection					
19 th Ave.	7AM – 5PM (M-F)	2@10'	2@10'	-	-
*(MC)	At Other Times	Full Roadway	Full Roadway	-	-
Irving St.	7AM – 5PM (M-F)	-	-	1@10'	1@10'
	At Other Times	-	-	Full Roadway	Full Roadway
19th Avenue and Lincoln Way Intersection					
19 th Ave.	7AM – 5PM (M-F)	3@10'	2@10'	-	-
*(MC)	At Other Times	Full Roadway	Full Roadway	-	-
Lincoln Way	7AM – 4PM (M-F)	-	-	1@10'	2@10'
*(MC)	4PM – 5PM (M-F)	-	-	1@11'	3@10'
				1@11' (Muni)	
	At Other Times	-	-	Full Roadway	Full Roadway

* The Contractor shall not prevent or delay the operation of mass transit vehicles at any time. TC = Trolley Coach, MC = Motor Coach, MM = SFMTA Metro, CC = Cable Car, SM = SamTrans, GG = GG Transit, AC = AC Transit. See Subsection 3.3 MASS TRANSIT VEHICLES for more information.

** Constructed from both sides of median to maintain traffic lane requirements

β The Contractor shall perform the appropriate measures to ensure the safety of bicyclists on ALL streets on which there is construction. Contractors shall pay special attention to streets that are on the Bicycle Route Network. See Blue Book Section 9: Bicycle Routes or on the internet at:

<http://www.sfmta.com/services/streets-sidewalks/construction-regulations>

The Contractor shall install “Bicyclists Allowed Use of Full Lane” signs, or other approved equal, on streets with bicycle lanes during construction.

© The Contractor may close this road to through traffic only during work hours. “Road Closed” signs shall be removed or covered during non-working hours. The Contractor shall set up detour signs in accordance with the approved traffic detour plans as deemed necessary. Local access must be maintained at all times.

↑ The Contractor shall designate the lane for two-way traffic with a flag person at each end of the two-way road segment to control the flow of traffic. This operation shall be restricted to one intersection at a time.

↑^M The Contractor shall designate the lane for two-way Muni and one direction of traffic depending on the side of the street the work is being performed with a flag person at each end of the two-way road segment to control the traffic. This operation shall be restricted to one intersection at a time.

⌚ For sewer lining work, the Contractor is permitted to **continuously close one traffic lane for 24 hours**. Contractor must complete a minimum of two segments per 24 hour continuous lane closure except. For 3ftx5ft sewer pipe lining work, Contractor is permitted 72 hours of continuous one lane traffic closure per segment. A segment for this purpose is defined from manhole to manhole along the mainline sewer. Local access must be maintained at all times.

- ★ The Contractor will need to post San Francisco Police Officers (SFPD) at the indicated locations.
- # Coordinate lining with Mercy High School from manhole in parking lot
- Ω During Sewer Work on southbound 19th Avenue approaching Sloat Blvd, Contractor shall restrict left turn movement and provide two through lanes. Contractor shall request PCO's to manage traffic congestion at this intersection for the duration of the left turn lane closure. Contractor shall detour vehicles wanting to make a left turn at Sloat to use Ocean Avenue westbound, to 20th Avenue northbound, back to Sloat Blvd.
- α Contractor shall maintain 2 southbound lanes by working from both sides of the median when installing sewer in number 1 northbound lane. Maintain 2 northbound lanes at 10' each.
- ➡/⬅ The Contractor shall designate the lane for one way traffic as specified during construction hours only. The direction of one-way traffic shall depend on the side of the street in which work will be performed. For example, if there is work on the south side of the street, then the north side of the street shall be open to one-way traffic westbound. The Contractor shall set up construction signs according to the approved traffic detour plans as deemed necessary and shall install/remove or cover/uncover the signs on a daily basis. Local access must be maintained at all times and Muni shall be kept operating in both directions with flaggers when Muni route exists on a particular street. This operation shall be restricted to one intersection at a time.

3.2 SPECIAL INSTRUCTIONS

A. General

1. Contractor shall not commence Work at the Site prior to receiving the City Representative's approval of the Project Schedule and the Traffic Control Plan(s), Parking and Storage Plan(s), sign inventory, and Flagger Certificates.
2. The Traffic Engineer may require that Contractor make changes to any of these plans and may clarify the requirements of this Specification and other Contract Documents as to control of traffic at the Site and in the Construction Area. Contractor's changes to these plans, if required by the Traffic Engineer, shall be Incidental Work.
3. **Contractor shall keep a copy of the latest, approved Traffic Control and Detour Plans at the Site, available for review by a City Representative at all times.** Contractor will be levied damages, as specified in Section 00 73 03 – Additional Liquidated Damages for non-compliance.
4. Whenever the difference in the grade of the pavement and the concrete base, manhole, etc. exceeds 3/4 inch, Contractor shall use hot asphalt concrete to provide longitudinal and/or transverse transitions between the newly constructed concrete base, manhole, etc. and existing pavement. This shall be completed by the end of the work day or before opening the lanes to traffic. Refer to the SFPW Excavation Code for roadway construction and surface requirements.
5. Contractor shall coordinate with SFMTA to maintain open lanes for trolley and coach buses to operate at all times during Project construction. See Subsection 3.3 MASS TRANSIT VEHICLES for more information.

6. Contractor shall not close any cross streets at any time unless specified in this Specification. If cross streets are permitted to close, Contractor shall not close more than one cross street within a 5 block length at the same time unless permitted by the Traffic Engineer.
7. Contractor shall plate over trenches except when Work is actually performed at the excavation or the Work requires that the trench be open. See Subsection 2.3 NON-SKID METAL PLATING for more information.
8. Contractor shall provide flaggers to control the traffic, as specified in the approved Traffic Control Plan and/or directed by the Traffic Engineer through the City Representative. The number of flaggers required shall depend on the phase of Work, traffic conditions, etc. The flaggers shall be provided as an incidental to the Traffic Control bid item.
9. Contractor shall separate the Site and staging areas from the traffic lanes using barricades, delineators, cones and other approved Traffic Control devices. Contractor shall also separate the construction area and staging areas from the walkways in accordance with SFPW barricade regulations.
10. Contractor is responsible for taking inventory of SFMTA markings in the work area prior to working. These markings include yellow "Coach Stop" bars, yellow circular markings, etc. Contractor shall notify the Chuck Silvera at the SFMTA Paint Shop at (415) 401-3164 two weeks prior to paving on each block so that Muni can restore the markings immediately after paving.
11. COORDINATION WITH OTHER CONTRACTORS
 - a. Contractor shall assume that there may be other Contractors working in the Construction Area, and that Contractor shall coordinate the Work with those other Contractors. Contractor shall not reduce the required lanes or otherwise reduce access do to the presence of other contractors, as specified in the Tables of Subsection 3.1 VEHICULAR AND PEDESTRIAN TRAFFIC.
 - b. Contractor shall ensure that the traffic detours for this Project do not conflict with other construction Work and/or other traffic detours.
12. Contractor shall not perform Work in the streets or sidewalks in the area outlined in the "Holiday Season Restrictions" map in the blue book (downtown) or on any "business block" in the City of San Francisco commencing the day after Thanksgiving and continuing through January 1, between the hours of 7 a.m. to 10 p.m. A Business Block is defined as a block in which at least 50% of the linear frontage is devoted to business. Establishments in this category are retail stores, bars, restaurants, banks, service type businesses, non-residence type hotels, wholesale businesses or others as determined by the SFMTA.
13. No plates may be placed in the street or on the sidewalk during the Holiday Moratorium and other special events periods described above. All openings in the street and sidewalk must be closed by backfilling and paving, providing safe and adequate passage for vehicles and pedestrians during the Holiday Moratorium and other special events, as the Engineer may determine. Contractor shall remove all plates at least one day before the Holiday Moratorium commences and before any special events listed above within the Construction Area

14. Before commencing Work at the Site, Contractor shall obtain the most current copy of the list of TEMPORARY STREET CLOSURES FOR SPECIAL EVENTS in the City from the Traffic Engineer. Contractor shall obtain any monthly updates to that document throughout the duration of the Project. Contractor must obtain prior approval from the Traffic Engineer through the City Representative to perform Work on weekends when events and parades are scheduled to occur within the vicinity of Site, including but not limited to Bay to Breakers, Outside Lands, Hardly Strictly Bluegrass, SF Marathon, Fourth of July, Fleet Week, and days in which similar events will take place in Golden Gate Park as determined by the City Representative.

Additionally, the Stern Grove Festival is held in Pine Lake Park each summer on Sundays. Contractor is advised to get a copy of the schedule when it becomes available and coordinate as needed.

- (a) All construction work within Stern Grove shall only be performed from January 1, 2021 to January 31, 2021 or January 1, 2022 to January 31, 2022. Construction work shall include, not be limited to, mobilization and demobilization, installation of 54" X 36" Tee, 36" DI main, 36" gate valve, 8" blow off assembly, 5' diameter manhole within the sidewalk area on Sloat Boulevard, repair and/or reconstruction work to restore sidewalk and roadway, as shown on the contract plans.
- (i) Failure to complete all construction within Stern Grove as described above will result in liquidated damages. Refer to Section 00 73 02 – Contract Time and Liquidated Damages
- (ii) Project-specific Requirements for Shutdowns for the work in Stern Grove are in Section 01 69 50.
15. The Contractor shall register and train to use the Caltrans lane closure system at <https://lcs-new2.dot.ca.gov/> for all lane closure requests on SR 1 and shall adhere to the Caltrans closure restrictions for designated holidays and special days as shown in the tables below.

Holiday			Date Observed
New Year's Day	H		January 1 st
Washington's Birthday	H		3 rd Monday in February
Memorial Day	H		Last Monday in May
Independence Day	H		July 4 th
Labor Day	H		1 st Monday in September
Columbus Day		SD	2 nd Monday in October
Thanksgiving Day	H		4 th Thursday in November
Day after Thanksgiving Day		SD	Day after Thanksgiving Day
Christmas Day	H		December 25 th

If January 1st, July 4th, or December 25th falls on a Sunday, the Monday following is a holiday.

H	Designated holiday
SD	Special day

Lane Closure Restrictions For Designated Holidays And Special Days											
Thu	Fri	Sat	Sun	Mon	Tues	Wed	Thu	Fri	Sat	Sun	Mon
x	H xx	xx	xx								
	SD xx										
x	xx	H xx	xx								
		SD xx									
	x	xx	H xx	xx							
			SD xx								
	x	xx	xx	H xx	xxx						
	x	xx	xx	SD xx	xxx						
				x	H xx						
				x	SD xx						
					x	H xx					
						SD xx					
						x	H xx	xx	xx	xx	
							SD xx				

Legend:

	Refer to lane requirement charts.
x	The full width of the traveled way must be open for use by traffic after 5PM.
xx	The full width of the traveled way must be open for use by traffic.
xxx	The full width of the traveled way must be open for use by traffic until 7AM.
H	Designated holiday
SD	Special day

16. All openings in the street and sidewalk must be closed by backfilling and paving, providing safe and adequate passage for vehicles and pedestrians. All plates shall be removed at least one day before the Holiday Moratorium and any special events mentioned above within the project area. No plates are allowed during the specified periods above.
17. The Contractor shall not perform any operation to relocate, adjust, or otherwise disturb bicycle facilities installed in the work area. The contractor shall be responsible for coordinating with the Traffic Engineer and the SFMTA Bicycle Facility Managers to request the removal of these bicycle facilities that might be

affected by work in the area. See Subsection 3.20 BICYCLE FACILITIES IN THE WORK AREA for more information.

18. For Sewer Main replacement work on northbound 19th Avenue between Denslowe Dr. and Winston Dr., Contractor shall convert one left turn lane to a thorough lane to keep two through lanes open during working hours. Contractor shall post CMS signs on southbound Junipero Serra Blvd in advance of Brotherhood way advising Stonestown traffic to use Junipero Serra Blvd to Winston. In addition, Contractor shall request PCO's to operate the intersection at Winston.
19. When reducing 19th Avenue southbound to one traffic lane between Lincoln Way and Sloat Blvd for any scope of work, Contractor shall detour regional traffic via Lincoln Way westbound, to Sunset Blvd southbound by allowing two right turn lanes from southbound Crossover Drive to westbound Lincoln Way and two left turn lanes from westbound Lincoln Way to southbound Sunset Blvd. SFPD shall be used at both intersection to facilitate traffic detour.
20. When reducing 19th Avenue northbound between Holloway Avenue and Winston drive to one through lane during sewer work, Contractor shall post Changeable Message Sign on Northbound Junipero Serra Blvd approaching 19th Avenue to detour traffic via Junipero Serra Blvd to Sloat Blvd by modifying the approach on northbound 19th Avenue at Junipero Serra Blvd to two left turn lanes onto 19th Avenue northbound and two through lanes onto Junipero Serra Blvd northbound.
21. During the month of July 2020 contractor shall not perform any work that requires lane closures on northbound 19th Avenue and more than one lane closure on southbound 19th Avenue due to the Caltrans 101 Deck Replacement Project which will have regional traffic impacts throughout the highways surrounding San Francisco.
22. Some lining work may need to be done from the parking lot of Mercy High School. Contractor must contact the school administration a minimum of 10 Days in advance of beginning construction to coordinate the work.
23. Access to Stonestown Shopping Center must be maintained and the contractor is advised to contact mall administration to coordinate work.
24. Temple Baptist Church at 3355 19th Avenue has a white zone during posted service hours. The contractor must contact the church administration a minimum of 10 days in advance of beginning construction to coordinate work and facilitate access.
25. San Francisco State University occupies the west side of 19th Avenue between Holloway and Buckingham Way. The project is advised to communicate work schedule with the University that impact parking and transit on this frontage.
26. Contractor shall post "Road Work Speed Limit 25 MPH" C17 (CA) temporary construction speed limit signs at the beginning and end of each work zone.

B. Grinding and Paving Work

The Contractor shall stage grinding and paving operation so that the following minimum requirements are met:

1. Grinding and/or paving work, including any traffic control, will be allowed up to two (2) consecutive blocks and two (2) consecutive intersections maximum at a time and all two (2) consecutive blocks and two (2) consecutive intersections must be paved within 120 hours from the start of grinding work, without exception. Up to three (3) headings per direction of 19th Avenue will be permitted at any given time as long as there are two (2) blocks with no lane closures in between work zones.
2. Grinding is not permitted on Thursday or Friday unless paving will be satisfactorily completed before the end of the Saturday workday of the same week.
3. Cross streets shall not be closed at any time unless as specified in this specification.
4. During intersection grinding and paving work, the cross street may be interrupted for up to a maximum of ten (10) minutes for residential areas and five (5) minutes for commercial areas, arterials, and streets of high importance listed in the Blue Book.
5. The Contractor shall grind or pave the full width of the roadway within a block by the end of a work shift.
6. The parking shall be restored in a particular section, as soon as the grinding/paving/concrete reconstruction work is completed.
7. The Contractor shall finish any water work, sewer work, sidewalks, curb ramps, raised crosswalks, and concrete base repair work in the blocks before proceeding to grinding and paving operations on said blocks.

C. Concrete Base Repair Work

1. The Contractor shall work on (1) block and/or (1) intersection on any one day not to exceed 1,200 linear feet for concrete base repair work.

D. Concrete Bus Pad Work

1. The Contractor shall submit a schedule and a Traffic Control Plan for the construction of each bus pad. The Traffic Control Plan shall show the existing bus zone closed, adjacent lane closed (if necessary) with appropriate detour and location of the new proposed temporary bus zone for the duration of construction of the bus pad (including curing time). The Contractor is required to construct two consecutive bus pads at a time on the same side of the street.
2. The Contractor shall notify Muni at least ten (10) working days in advance about closing any bus stop and finalize with Muni location of new temporary bus stops. Refer to Subsection 3.3 MASS TRANSIT VEHICLES for details.

E. Curb Ramp, Sidewalk, and Bulb-out Work

1. The Contractor shall be allowed to work at a maximum of three (3) intersections at any time if there are multiple curb ramps to be constructed along a street, except as otherwise noted in these specifications.

During the construction of the sidewalk, Contractor shall phase his construction and/or bridging (with railings, non-skid surface, toe board and ramp for wheel

chairs in order to provide pedestrian (minimum of five feet in width) and vehicular access to adjacent businesses and residences at all times.

2. No sidewalk or crosswalk shall be allowed to be closed during curb ramp work except during demolition of curb ramps in which Contractor may close only one crosswalk at a time and provide one flagger to guide pedestrians to the open crosswalk.
3. The Contractor shall separate the safe path of travel for pedestrians from traffic and the construction area of the curb ramps with barriers.
4. If the safe path of travel for pedestrians is provided on the sidewalk, the Contractor shall separate the construction area of the ramps from the safe path of travel with chain link fence or water-filled barriers, and construction area of the ramps from the traffic area with chain link fence and /or plastic orange colored fence with 2 x 4 inch boards to guide visually impaired persons.
5. The Contractor shall not construct the curb ramps on two (2) adjacent corners of the same street unless otherwise instructed by the Traffic Engineer through the City Representative.
6. The Contractor shall not work on curb ramps at diagonally located corners at the same time if there is sidewalk work or unless otherwise instructed by the Traffic Engineer through the City Representative.
7. The Contractor shall provide temporary curb ramps during construction and clearly mark the temporary crosswalks.
8. The Contractor shall submit a "Construction Schedule" showing a proposed sequence of operations, starting date, duration and work limit for each intersection where curb ramps are to be constructed.
9. The Contractor shall be allowed a maximum of fifteen (15) working days to complete all the required curb ramps at any intersection.
10. When working on curb ramps at mid-block/T-intersection, Contractor shall completely finish curb ramps or sidewalk bulb on one side of the street prior to starting work on the other side of the street.
11. The Contractor shall maintain all crosswalks and STOP lines at all times while constructing the curb ramps, using temporary traffic tape if necessary.
12. The Contractor shall maintain pedestrian and vehicle access at all time to adjacent restaurants and businesses by either phasing construction, bridging, or both.
13. No concrete base repair work shall be done at the same time as curb, gutter, curb ramp, and sidewalk work except as approved by the Traffic Engineer through the City Representative.

F. Sewer Work

1. Sewer related work is allowed up to three (3) blocks and two (2) adjacent intersection at any one time not to exceed 1,200 linear feet. Up to three (3) headings per direction of 19th Avenue will be permitted at any given time as long as there are two (2) blocks with no lane closures in between work zones The

Contractor is allowed to close one (1) crosswalk at any one time during the working hours of sewer main replacement work and/or sewer lining work as long as one (1) flagperson is provided to direct pedestrians to the open crosswalks.

2. Sewer lining and mortaring is allowed up to one (1) block and the two (2) adjacent intersections at any one time.
3. If an existing safe path of travel is obstructed by a flexible hose for sewer diversion, the Contractor shall provide temporary pedestrian ramps over the hoses. If the flexible hose is located within a bike path, bike lane or a street designated as an official bike route, the Contractor shall provide longitudinal and/or transverse transitions with a slope of 1:18 between the hose and existing pavement (whenever the difference in the grade of the pavement and the hose exceeds 3/4 inch) before opening the lanes to traffic
4. The Contractor may be allowed to perform manhole castings raising work during the day at the discretion of the City Representative through the Traffic Engineer. The Contractor shall apply for a Special Traffic Permit to perform this work.

G. Water Work

1. Water main related work, including any traffic control, is limited to three (3) blocks and two (2) adjacent intersections and not to exceed 1200 linear feet per heading. Up to three (3) headings per direction of 19th Avenue will be permitted at any given time as long as there are two (2) blocks with no lane closures in between work zones. The Contractor is allowed to close one (1) crosswalk at any one time during the working hours of water main replacement work as long as one (1) flagperson is provided to direct pedestrians to the open crosswalks.
2. The Contractor shall prepare the Traffic Control Plans for water main installation using the alignment shown on the Water Main Plans. The Traffic Control Plans shall show details for intersection work for water main and for shifting from the water main to the new water main.

3.3 MASS TRANSIT VEHICLES

A. General

1. The City has a transit first policy. The Contractor shall not impede the operation of mass transit vehicles at any time.
2. The Contractor shall be familiar with transit routes that operate within the limits of the work.
3. The lanes made available for traffic shall be located so as to include an adequate and allowable travel path for the coach lines. The extreme touring range of the centerline of a trolley coach is 10 feet (3.1 m) from the centerline of the trolley wires. The Contractor shall provide a 45 foot (13.7 m) turning radius for SFMTA Transit vehicles.
4. The Contractor shall notify the SFMTA Superintendent of Special Operations at (415) 701-5376, through the City Representative, at least ten (10) working days in advance of doing any work in existing passenger loading zones for buses on each street, where such work would interfere with passenger loading and unloading operations. The SFMTA may temporarily authorize the relocation of these zones. The Contractor shall provide and continuously maintain at least one

sign at any bus stop that SFMTA has authorized to be closed or relocated. The SFMTA Superintendent will supply the exact wording, size, and location of these signs. Unauthorized bus zone relocations or any other unauthorized use of the temporary bus stop signs will result in liquidated damages per Section 00 73 03.

5. The Contractor shall provide flag personnel as required to assist SFMTA Transit lines operating around the construction area.
6. The SFMTA overhead electric wires carry a minimum of 600 volts DC and have a 17 feet +/- vertical clearance from the roadway. The Contractor's attention is directed to Article 37 of General Order 95 of the Public Utilities Commission State of California. CAL OSHA regulations require that any equipment that moves vertically must maintain a 10 feet radial clearance, and any other equipment must maintain a 6 feet clearance from Muni overhead electric wires. The Contractor shall observe these regulations during the entire duration of the construction work.
7. The Contractor shall obtain a clearance permit from SFMTA Central Control at (415) 759-4398 before performing any work within 72 inches of the outside edge of SFMTA rail (the "Track Zone"). If workers or equipment are within the Track Zone, the Contractor shall train its workers and comply with the requirements of the SFMTA Roadway Worker Protection Program. In addition to obtaining a clearance permit, a copy shall be provided to the City Representative. Contact SFMTA's Chief Safety Officer at (415) 701-5719 for training requirements. With respect to requesting Railway Worker Protection (RWP) training, contractors should email Charles D. Kesecker of the System Safety staff at Charles.Kesecker@sfmta.com. Additional information regarding training requirements and clearance permits can be found at the following web page: <https://www.sfmta.com/permits/muni-construction-support-and-clearance-permit>
8. The following streets have mass transit operations (MC = Motor Coach, MM = Muni Metro):
 - a. 19th Avenue: #28 – 19th Avenue (MC)
#28R – 19th Avenue Rapid (MC)
#M – Ocean View (MM)
 - b. Lincoln Way: #7 – Haight/Noriega (MC)
#7X – Noriega Express (MC)
#NX – N Express (MC)
#29 – Sunset (MC)
 - c. Judah Street: #N – Judah (MM)
#NX – N Express (MC)
 - d. Quintara Street: #48 – Quintara/24th Street (MC)
#66 – Quintara (MC)
 - e. Taraval Street: #L – Taraval (MM)
 - f. Sloat Boulevard: #23 – Monterey (MC)
 - g. Eucalyptus Street: #57 – Parkmerced (MC)
 - h. Holloway Avenue: #29 – Sunset (MC)

9. It is the Contractor's responsibility to verify SFMTA bus routes and to inform the transit agencies at least ten (10) working days in advance if the work is expected to interfere with their operations.

B. Maintaining Transit Service

1. There are locations along Judah and Taraval where Muni overhead lines intersect or are parallel to the sewer alignment. Limiting the project's operational effect on Muni operations and maintaining adequate clear clearance between all construction equipment and the overhead wires are the sole responsibility of the Contractor. The Contractor shall choose the appropriate construction means and methods to meet all the aforementioned CAL-OSHA rules and regulations while accommodating Muni's operational and facility's requirements. The following are intersections which require special attention:

Location	Muni Action Required	Muni Inspectors Needed
Intersection of 19th Avenue and Holloway	During sewer main work on 19 th Avenue crossing eastbound Holloway Avenue, Contractor shall request a re-route of the 29 Sunset going inbound to use northbound Varela to eastbound Holloway.	None
Intersection of 19th Avenue and Holloway	During traffic signal conduit work within 10 feet of the trackway, Contractor shall obtain clearance permit and obtain RWP Training prior to commencing work.	One (1) for maximum of twelve (12) days.
Intersection of 19th Avenue and Winston Drive	During traffic signal conduit work within 10 feet of the trackway, Contractor shall obtain clearance permit and obtain RWP Training prior to commencing work.	One (1) for maximum of ten (10) days.
Intersection of 19th and Judah	During the AWSS work, side-street traffic will be detoured and contractor shall obtain clearance permit and obtain RWP Training from SFMTA prior to commencing work.	Two (2) for a maximum of four (4) days.
Intersection of 19th and Taraval	During the base repair, grinding and paving operation, Contractor shall coordinate work with the L-Taraval Project bus substitution and obtain clearance permit from SFMTA.	Two (2) for a maximum of four (4) days.
Intersection of 19th and Judah	During the base repair, grinding and paving operation, side-street traffic will be detoured and contractor shall obtain clearance permit and obtain RWP Training from SFMTA prior to commencing work.	Two (2) for a maximum of four (4) days.

2. While reviewing Traffic Control plans, the Traffic Engineer, in consultation with the City Representative and Muni's Chief Transit Control Inspector, will decide if any Muni Inspectors are required at any location. The Contractor shall arrange for Muni Inspectors and pay the actual Invoice to Muni for Muni inspectors.
3. All Muni services as specified above under "Muni Action Required" will be provided by the City at no cost to the Contractor. Any additional services

requested by the Contractor, above and/or beyond the scope of this contract, shall be the responsibility of the Contractor.

4. Payments to Muni for additional services above and/or beyond the scope of this contract shall be as follows and subject to approval by Muni:
 - a. The estimated cost for overhead wire relocation is SEVEN Thousand FIVE HUNDRED Dollars (\$7,500). The estimated cost for overhead wire de-energization is SEVEN Thousand FIVE HUNDRED Dollars (\$7,500) per weekend day. The cost for a Muni inspector is approximately \$130/hr with a minimum of four (4) hours per site. Multiple Muni inspectors may be required when de-energizing any trolley wires. All fee's subject to change.
 - b. Any requests for de-energizing of overhead wires are subject to Muni's approval and availability of resources. De-energization is only permitted on weekends.
 - c. If de-energization is requested, the Contractor shall pay for Muni Inspectors if required by Muni, bus substitution if required by Muni, as well as the cost for de-energization, without reimbursement from the city.
5. The Contractor shall notify the Superintendent of Special Operations at (415) 701-5376, through the Engineer, to schedule the overhead wires relocation / overhead wires de-energization and/or any Muni Inspectors and services, at least ten (10) working days in advance of the work. To arrange Muni Inspectors, use the appropriate link to request support found at:
<https://www.sfmta.com/permits/muni-construction-support-and-clearance-permit>
After submitting a request for support a unique case number will be assigned. The Contractor must have an "Approved" case and/or a valid clearance permit to proceed with any work near Muni operations.
6. Upon notification as required for the work, Muni will relocate/de-energize the affected overhead wires.
7. For cancellation of any scheduled overhead wires relocation/overhead wires de-energization and any other services, the Contractor shall provide Muni with at least five (5) working days notice in advance of the scheduled work. Contractor shall pay Muni all required amounts for cancellations with less than five (5) working days advance notice. This cancellation cost will be borne by the Contractor and the city shall not reimburse the Contractor.
8. If Muni cannot provide the overhead wires relocation/overhead wires de-energization and/or other Muni services when the Contractor has scheduled the work, the City will give time extension only. No monetary compensation shall be made.

3.4 TRAFFIC CONTROL BY UNIFORMED OFF-DUTY SAN FRANCISCO POLICE OFFICERS

- A. The Contractor shall provide Uniformed Off-Duty San Francisco Police Officers (hereinafter referred to as officers) as required by the Traffic Engineer through the City Representative to supplement the Contractor's traffic control work. Traffic control duty by officers is not a substitute for the overall traffic control responsibility of the Contractor.

1. Officers may be required during any approved road closures at each end of the road closure and also at various locations for pedestrian and traffic control, as required by the Traffic Engineer through the City Representative.
2. The Contractor shall provide officers at locations, during different phases of work for the specified time, as requested by the Traffic Engineer through the City Representative.
3. The City Representative through the Traffic Engineer shall make the final determination whether any officers are required and at which locations, in addition to the flag persons provided by the Contractor as part of the traffic routing.
4. The officers may perform the following duties:
 - a. Direct vehicular traffic.
 - b. Direct pedestrian traffic.
 - c. Cite motorists or pedestrians violating traffic regulations.
 - d. Other traffic control duties as directed by the Traffic Engineer through the City Representative.
5. The Contractor shall prepare Instruction Sheet(s) for use by the officers. These Instruction Sheet(s) will be for specific duties the officers will be required to perform, at specific locations. The Contractor shall submit the Instruction Sheet(s) to the City Representative for review and transmittal to the Traffic Engineer, at least five (5) working days in advance of the need for officers. The Contractor shall also give a copy of the Instruction Sheet(s) to each officer and the 10B Coordinator of the SFPD. The Traffic Engineer through the City Representative shall review and make any required changes and transmit the same to the 10B Coordinator of the SFPD. The City Representative will furnish a copy of the revised Instruction Sheet(s) to the Contractor and the 10B Coordinator of the SFPD. The Contractor shall conduct a review of the Instruction Sheet(s) with the officers assigned for traffic control. The format of the Instruction Sheet is given at the end of this Section.
6. The Contractor should contact the 10B Coordinator of the SFPD at (415) 553-7900 to obtain the services of officers. The Contractor shall enter into an agreement with the SFPD to provide officers, within 30 days of the official date for commencement of the work. The Contractor shall make a deposit to the SFPD. The deposit will be a minimum of \$2,000 or equal to the amount required for providing officers for a period of 2 weeks, whichever is more. The Contractor shall pay the SFPD the amount of each invoice within 30 calendar days of the date of the invoice.
7. The Contractor shall notify the 10B Coordinator regarding the schedule and number of officers required at least 4 calendar days in advance of the scheduled date. The minimum time required to cancel the need of the officers is 24 hours prior to the work.
8. The officers shall be paid a minimum of four hours per day. If the number of work hours exceeds four hours, the officers shall be paid for one additional hour for travel time. For a twelve-hour shift, the officers shall be paid thirteen hours per ordinance.

9. The Contractor shall be paid for actual time spent on controlling traffic by San Francisco off-duty Police Officers in accordance with this specification, plus five percent (5%) for administrative overhead.

3.5 SPECIAL TRAFFIC PERMIT

- A. The Contractor shall apply for a Special Traffic Permit from the SFMTA, if any deviation from the traffic lane requirements (time, width, etc.) of this Specification is requested. If SFMTA approves the issue of the Special Traffic Permit, the Contractor shall pay the required fee to SFMTA and obtain the necessary permit. Fees for the Special Traffic Permit are subject to change. The application for the Special Traffic Permit and current fees can be found here:

<http://www.sfmta.com/services/streets-sidewalks/construction-regulations>

SFMTA reserves the right to deny any request.

- B. The Contractor shall apply for a Special Traffic Permit from SFMTA in addition to where it is allowed in the contract specifications if the Contractor wants to occupy parking meter(s) for equipment/materials storage or materials loading at \$9.00 per parking meter per day and is subject to change per section 312 of the San Francisco Transportation Code.
 1. The Contractor shall maintain the cleanliness of the area surrounding the occupied meters for the duration of the permit. Failure to maintain the cleanliness of the area as determined by the City Representative or the Traffic Engineer shall be grounds for revocation of the permit.
- C. In case of an emergency, the Contractor shall declare emergency by contacting the City Representative and other relevant City agencies according to Section 12 "Emergency Procedure". Refer to "Regulations for Working in San Francisco Streets" (Blue Book).
- D. Violation of the Special Traffic Permit Ordinance shall result in fines up to \$5000 in addition to possible liquidated damages. Working on City streets beyond the terms set forth in the specifications, without Special Traffic Permit and without emergency declaration will suffice to consider the Contractor in violation of the SFMTA Transportation Code.
- E. The Contractor shall NOT be compensated for the cost of a Special Traffic Permit and/or any fine levied for any violations and/or shut down due to violations of project specifications and/or violations of the conditions of the Special Traffic Permit.

3.6 TEMPORARY PAVEMENT MARKINGS

- A. After each day's work the Contractor shall furnish and install temporary pavement delineation, which shall be maintained by the Contractor until the permanent markings are installed.
- B. Prior to construction the Contractor shall survey each street and inventory all existing pavement markings including marking type and material used. The pavement markings shall include, but not be limited to traffic striping, crosswalks, stop bars, messages and raised pavement markers.
- C. The temporary pavement markers shall be the same color as the markings they replace.

- D. Surfaces on which temporary pavement delineation is to be applied shall be cleaned of all dirt and loose material and shall be dry when the pavement markers are applied.
- E. Temporary pavement delineation shall be applied in accordance with the manufacturer's instructions.
- F. Dimensions and spacing of tape for temporary striping shall be as follows:
 - 1. Crosswalk and STOP bar: One stripe 4 inches wide to mark 12 inches wide crosswalk or limit lines. Unless specified otherwise on the contract drawings, stop bars shall be aligned with the projections of the near side property lines and shall be extended from the curb to the yellow striping or center of the roadway.
 - 2. Striping across intersections and guide lines for left and/or right turn lanes shall be one stripe of 4 inches wide to mark 8 inches wide guidelines.
 - 3. Double yellow stripe centerline shall be two 4 inch wide lines, 3 inches apart; 2 ft long strips at 24ft center to center.
 - 4. Lane lines shall be one 6 inch stripe of 24-inch segments, spaced 24 feet apart. Per Caltrans Standard.
- G. Dimensions and spacing of temporary overlay markers shall be as follows:
 - 1. Double yellow stripe centerline shall be two markers, 3 inches apart; spaced at 24ft center to center.
 - 2. Lane line markers shall be spaced 24ft center to center.
- H. The Contractor shall install temporary pavement markings, as specified below, after base reconstruction, after grinding, after paving, after water main work, and before opening the street to public traffic. Any existing traffic striping and lane lines that are removed or damaged by the work activity shall be restored with temporary foil backed tapes.
- I. The Contractor shall maintain all temporary pavement markings for 30 calendar days after the acceptance of the paving of any street. The SFMTA Paint Division will maintain the temporary pavement markings or install permanent markings after 30 calendar days of the acceptance of the paving by the City Representative.

3.7 CROSSWALKS AND SIDEWALKS

- A. All crosswalks shall be kept open at all times, unless a substitute temporary crosswalk is provided, or otherwise approved by the Traffic Engineer through the City Representative.
- B. R9-3 and R9-3bP, "NO PED CROSSING" and "USE CROSSWALK (L/R)" signs shall be placed at each end of a temporarily closed crosswalk.
- C. Whenever a temporary crosswalk is provided outside of the existing crosswalk, such temporary crosswalks shall be clearly defined by signs, striping, pedestrian bridges or plates. The minimum width of the temporary crosswalk shall be 10 feet measured between the outside edges of the striping tape. The Contractor shall provide access to mobility and visually impaired persons at all temporary and/or permanent crosswalks at all times by providing accessible temporary curb ramps.
- D. No obstruction or openings of any kind shall be allowed in portions of sidewalks accessible to pedestrians.

- E. Portions of sidewalk closed to pedestrians shall be delineated by a continuous line of pedestrian barriers. Barriers shall not have legs or other parts projecting into pedestrian ways and shall meet the requirements for visually impaired persons.

3.8 PERMANENT THERMOPLASTIC PAVEMENT MARKINGS

- A. The SFMTA Paint Division will furnish and install all the permanent thermoplastic stripes and pavement markings (traffic stripes, crosswalk stripes, stop bars, messages and raised pavement markers) at the locations shown on the traffic plans and in accordance with the latest edition of Caltrans Standard Specifications and Plans.
- B. The Contractor shall notify the Traffic Engineer through the City Representative of the proposed schedule for repaving of each block at least seven (7) calendar days in advance and again once the paving is completed and accepted, so that SFMTA Paint Division can install permanent pavement markings.

3.9 PROHIBITION OF STOPPING

- A. The Contractor may prohibit stopping in parking lanes where and when necessary to gain access to the work or to provide the required lanes, unless specified otherwise in this Section.
- B. The Contractor shall use "Tow Away" signs in all construction zones as shown in DPW Order No. 183,160. The ordinance can be found at:
<http://sfpublicworks.org/services/permits/temporary-occupancy>
- C. The Contractor shall register Tow-Zone by calling (415) 701-2311 or 311 from San Francisco at least 72 hours in advance of the effective date and time. The Contractor shall post the signs at least 72 hours in advance of the effective date and time. The Tow-Away sign fee is \$4.00 per sign. Fees for the Tow-Away sign are subject to change.
- D. "Tow-Away, No Stopping" signs may be attached to Type II barricades, placed at 20 feet centers. The Contractor shall post the signs only in the area where actual work is being done. Parking shall not be prohibited in the area where there is no construction activity. The information posted on the sign shall be in compliance with DPW Order 183160.
- E. The Contractor shall maintain the signs on a continual basis and shall replace damaged or missing signs daily, and shall remove the signs immediately after they are no longer needed.
- F. When existing posted sign(s) need(s) to be revised (i.e., later start date, duration extension, etc.), the Contractor shall obtain new sign(s) to reflect the change(s) and replace the existing posted sign(s) at least 72 hours in advance of the proposed change(s). Refer to DPW Order 183160.
- G. When a vehicle is removed from a street at the request of the Contractor and a post-storage hearing determines that as a result of the Contractor's improper posting of the required signs, reasonable grounds did not exist for removal, the Contractor shall reimburse the City and County of San Francisco for the cost incurred in storage and towing. The failure of the Contractor to provide reimbursement or to agree to assume all liability for any improper posting shall result in the SFMTA Parking Enforcement Divisions denial of any future requests by that Contractor for removal of vehicles in violation.

3.10 NIGHT TIME WORK

- A. Contractor shall obtain a night noise permit for any work between the hours of 8:00 PM and 7:00 AM, as specified in Section 2908 of the Police Code. Department of Public Works (DPW), 1155 Market St, 3rd Floor at (415) 554-5810 for details of the requirements for obtaining the permit.
- B. Contractor shall provide suitable temporary lighting to illuminate the construction area for safety and security purposes, as required by the City Representative. The Contractor shall submit the details of the temporary lighting to the City Representative for approval.

3.11 TREE TRIMMING

- A. The Contractor shall contact the Bureau of Urban Forestry (BUF) of DPW at (415) 554-6700, sixty (60) calendar days prior to start of work if trees are in the City right-of-way and will be in conflict with the construction work, equipment, and/or with the traveling public during construction. The Contractor shall not detour any traffic onto the parking lane until all the tree branches are properly trimmed or the Contractor has made sure that these branches will not interfere with the traveling public.
- B. The Contractor will not be allowed to trim any trees without the written approval and supervision from BUF. The Contractor will do all necessary tree trimming as directed, at no additional cost to the City.
- C. If the trees are maintained by Property Owners, the Contractor shall send notices to the Property Owners, at least sixty (60) calendar days in advance to trim the trees. If the trees are not trimmed by the Property Owners, the Contractor shall trim the trees, at no cost to the City, as per directions of BUF.

3.12 TEMPORARY CONSTRUCTION AND TRAFFIC SIGNS

- A. The signs and equipment shall conform to the requirements of the latest edition of California Department of Transportation's MUTCD. Unless otherwise shown on the plans or specified in this specification, the color of construction area warning and guide signs shall have black legend and border on orange background, except W10-1 or W47(CA) (Highway-Rail Grade Crossing Advance Warning) sign shall have black legend and border on yellow background.
- B. The Contractor shall be familiar with the California MUTCD.
- C. Before starting any work which will affect the normal flow of traffic, The Contractor shall furnish, install, and maintain temporary signs.
- D. The Contractor shall as a minimum, furnish and make available to the site the following signs and equipment in sufficient quantities to maintain required traffic control, per the approved Traffic Control Plans and/or as directed by the Traffic Engineer through the City Representative:
 - 1. Barricades, as required by Section 21,400 of the State of California Vehicle Code and as specified in the Latest Edition of the State of California's Department of Transportation's MUTCD, in sufficient amount to safeguard the public and the workers.
 - 2. "TOW-AWAY, NO STOPPING" signs as herein specified.

3. Traffic cones and/or delineators and/or temporary reflectorized removable tape to delineate traffic lanes as required to guide and separate traffic movements.
4. High level warning flag units, in advance of traffic approaching the work, each displaying three (3) flags mounted at a height of 7 feet.
5. "ROAD WORK AHEAD" signs, Code W20-1, size 48"x48" placed in conspicuous locations, in advance of the work, facing approaching traffic.
6. "ROAD CLOSED" signs, Code R11-2, size 48"x30".
7. "ROAD CLOSED TO THRU TRAFFIC" signs, Code R11-4, 60"x30".
8. "ROAD CLOSED AHEAD" signs, Code W20-3, 48"x48".
9. "RIGHT/LEFT LANE CLOSED AHEAD" signs Code W20-5 (RT/LT), size 48" x 48".
10. "FLAGGER SYMBOL" signs, code C9A (CA), size 48"x48".
11. "TWO WAY TRAFFIC SYMBOL" signs, Code W6-3, size 48"x48".
12. "ROUGH ROAD" signs, Code W8-8, size 36"x36".
13. "REVERSE TURN SYMBOL", signs, Code W1-3, size standard 36"x36".
14. "DETOUR AHEAD" signs, Code W20-2, size 48"x48".
15. "DETOUR" signs, Code M4-10 (RT/LT) and/or SC3 (CA), size 48" x 18".
16. "Street Name" signs, with 6" Upper Case series "D" black letters on orange plate, size 48" x 18".
17. "NO PED CROSSING SYMBOL" signs, Code R9-3a, size 18" x 18".
18. "USE CROSSWALK (RIGHT OR LEFT ARROW)" signs, R9-3b (RT/LT), size 18" x 12", (used with R9-3a signs).
19. "SIDEWALK CLOSED" signs, R9-9.
20. "SIDEWALK CLOSED / Left or Right Arrow / USE OTHER SIDE" signs, R9-10.
21. "SIDEWALK CLOSED AHEAD / Left or Right Arrow / CROSS HERE" signs, R9-11.
22. "SIDEWALK CLOSED / Left or Right Arrow / CROSS HERE" signs, R9-11a.
23. "MAY USE FULL LANE" signs, R4-11.
24. "SAN FRANCISCO BIKE LOGO ROUTE" signs with bike route number and "BIKE LANE", Code Ca-SG45 (modified), 12" x 24", black and reflective orange.
25. "SAN FRANCISCO BIKE LOGO ROUTE" signs with bike route number and "DETOUR", or "DETOUR", or "DETOUR" Code Ca-SG45 (modified), 12" x 26" black and reflective orange.

26. Flashing arrow signs, Type II conforming to the latest Caltrans Standard Specifications, except as modified herein, placed as shown on the approved Traffic Control Plan. The Contractor shall use solar powered flashing arrow signs.
 27. Miscellaneous signs, size 48" x 48" or larger, with 6" and/or 8" series "D" black letters on orange plate.
 28. Changeable Message Signs (CMS), if specified in the bid schedule, shall be portable. The sign shall be capable of 24-hour operation via solar power to minimize complaints of odor and noise, etc. from local residents and businesses.
 29. SFMTA temporary Bus Stop Signs, 12" x 24", shall be placed as directed by the SFMTA through the City Representative. The SFMTA Superintendent at (415) 701-5376 will determine the exact wording and location of these signs through the City Representative. Unauthorized bus zone relocations or any other unauthorized use of the temporary bus stop signs will result in liquidated damages per Section 00 73 03.
- E. All signs installed by the Contractor shall employ the use of Type III Graffiti proof sheeting on aluminum signs and Type IV for roll-up signs. This sheeting shall meet the latest Caltrans requirements.
- F. The actual number and type of signs to be placed shall be as shown on the approved traffic control plans or as directed by the Traffic Engineer through the City Representative.
- G. All signs and/or temporary striping shall be reflectorized. Signs shall be installed so that the bottom of the sign is at least 7 feet above the sidewalk or pavement or as directed by the Traffic Engineer through the City Representative.

3.13 TRAFFIC CONTROL

A. Traffic Coordination with Others

1. In order to maintain a continuous flow of traffic, the Contractor shall coordinate the traffic routing work with subcontractors and other contractors, working in the same adjacent area. This includes truck traffic hauling materials, equipment, etc.
2. All proposed traffic control changes shall be subject to approval of the Traffic Engineer through the City Representative.

B. Traffic Control Flag Persons

1. Flaggers, flagging procedures, flagger stations, and flagger control, shall conform to latest edition of the MUTCD.
2. The Contractor shall ensure that flaggers are trained in the proper fundamentals of flagging traffic before being assigned as flaggers.
3. The flaggers shall be used in each situation when the Contractor's equipment and/or vehicle backs up into a travel lane, intermittently occupies a traffic lane, enters from the work area into a traffic lane, and/or where required for traffic control, as directed by the City Representative.

3.14 MAINTENANCE OF TRAFFIC

- A. The Contractor shall cause the least possible interference with traffic. The Contractor shall not obstruct or close any roadway to vehicular or pedestrian traffic, except in the immediate vicinity of the work, and then only to the extent allowed.
- B. Those parts of streets, access roads, and sidewalks that are occupied by the Contractor shall be immediately vacated and returned to public use when use thereof is no longer necessary for the prosecution of the work.
- C. The Contractor shall not impede at any time, free access to public and private properties, including those properties fronting or streets allowed or stipulated by this specification and approved traffic control plans. The Contractor shall provide for such local access by phasing operations, bridging, or employing other procedures approved by the City Representative.

Exception: For work that will require impeding access, the Contractor shall coordinate and work with each affected property or business owner, or responsible building or business manager.

- D. Access to fire hydrants shall not be impaired by the Contractor. No debris, materials, or equipment shall be placed within ten (10) feet of any fire hydrant.

3.15 DIVERTING OF VEHICULAR TRAFFIC

- A. When closing one or more lanes to vehicular traffic or diverting such traffic from its normal path, the Contractor shall clearly delineate temporary centerlines separating two-way traffic and dividing lines for other temporary traffic lanes by employing cones, barricades, flags, reflectors, or other approved methods or devices.
- B. Placing of devices shall commence sufficiently in advance of the obstruction or other cause of the diverting of traffic to minimize congestion and shall enable traffic to enter, traverse, and leave the site of the work without abrupt or unwarranted changes in direction. Unless otherwise specified or approved, each temporary traffic lane shall be not less than ten (10) feet clear width.
- C. When a detour is necessary for full or partial roadway closure, all detour signs needed for the required traffic routing must be in place before the roadway can be closed for construction. Failure to comply with this requirement shall result in liquidated damages associated with improper lane closure.
- D. High rise warning flag units, each displaying three flags mounted at the height of (7) feet, to provide advance warning for traffic approaching the work, will be required in all cases where motorists' visibility of the work is limited or obscured.

3.16 RELOCATION AND REMOVAL OF EXISTING PERMANENT TRAFFIC CONTROL AND SIGNS

- A. The Contractor shall be familiar with all existing permanent traffic signs and other traffic control devices within and adjacent to the project limit. The Contractor shall survey the site thoroughly to get all pertinent information of the signs in the construction area, including, but not limited to sign type, message, location, orientation, number of faces (double sided or single sided), and reflectivity. The Contractor shall pay particular attention to the signs that will likely be damaged, removed, or relocated during construction. The Contractor shall submit a Sign Inventory Form for each affected intersection, block, or location. This form is included at the end of this Section.

- B. The Contractor shall temporarily relocate all traffic control, street name, and other City signs, as required for the prosecution of the work and to prevent interference with traffic signal installations, and shall satisfactorily maintain such signs in place at all times. The Contractor shall similarly relocate or remove and salvage as City property, the standards for such signs. The Contractor shall salvage standards in their entirety and shall remove any concrete therefrom.
- C. The temporary relocation of each "STOP" or other traffic regulatory sign shall be done immediately upon its removal and to a location as close as possible to the original position of such sign or where directed by the City Representative.
- D. The Contractor shall remove and salvage as City property existing "STOP" or other signs superseded by installed traffic signals immediately upon being notified by the City Representative that such signals will remain in operation.
- E. The Contractor shall permanently relocate traffic control and other signs and standards to the locations shown on the plan or as directed by the Traffic Engineer through the City Representative. Signs to be removed or salvaged are to be delivered by the Contractor, with a copy of the Sign Inventory Form(s), to the SFMTA Sign Shop at 1508 Bancroft Avenue, San Francisco telephone (415) 554-9785. Each sign shall be tagged and labeled providing such information as location and the direction sign was facing prior to its removal.
- F. The Contractor shall notify the Traffic Engineer through the City Representative at least five (5) working days before the Contractor reinstalls the permanent signs which were temporarily removed due to construction. The reinstalled signs will be inspected by the Sign Shop personnel at no cost to the Contractor. The Contractor shall provide the Sign Shop with a copy of the approved sign inventory form along with a contact name, and phone number.
- G. If new materials (sign, pole, frame, mounting equipment, etc.) and adjustments are needed during the Sign Shop personnel's inspection, the associated cost shall be borne by the Contractor. The Sign Shop shall bill the Contractor to recover all costs incurred.

3.17 WORKING AROUND PARKING METERS

- A. The Contractor shall notify the Traffic Engineer through the City Representative, at least 10 working days before starting any work that may impact parking meters so that arrangements may be made by the City to have the meters removed at no cost to the Contractor. Meter removal shall only be done by the SFMTA Meter Shop, unless otherwise authorized by the Traffic Engineer.
- B. Parking meters and parking meter standards damaged or loosened by the Contractor's operations will be repaired or replaced as necessary by the City; however, all expenses in connection therewith shall be borne by the Contractor.

3.18 WORKING AROUND PARKING STALL OR ROADWAY SENSORS

- A. If parking stall or roadway sensors are located within the work area and could be damaged or affected, the Contractor is responsible for coordinating their removal with Steph Nelson, SF Park 415-701-4331 at least ten (10) working days before starting any work on the block(s) with sensors. SFPark will remove the sensors prior to the Contractor starting work on said block(s). There are currently sensors on the following streets:
- B. In the event the Contractor does not inform SFPark and removes or damages the sensors or associated equipment during construction, the Contractor shall notify Steph

Nelson and pay for removal, purchase, and installation costs associated with the SF Park system within the work area.

- C. Once the work is completed by the Contractor and the final paving has been approved by the City Representative, the Contractor shall notify Steph Nelson and the parking stall sensors will be re-installed.
- D. Wireless detectors shall never be punctured, cut, ground, or removed from solid core. These actions may result in leakage or release of battery contents, explosion, or fire. Additional safety information can be found at <https://www.ultralifecorporation.com>.

3.19 TRAFFIC SIGNAL WIRELESS OR WIRED LOOP DETECTORS IN THE WORK AREAS

- A. The Contractor is responsible for making sure the vehicle detection systems (wireless or wired loop detectors and their related components) are not damaged. If the vehicle detection systems are within the work area and could be damaged or affected, the Contractor shall obtain a copy of the wireless or wired loop detector plan from the Traffic Engineer and notify the SFMTA Signal Shop through the Traffic Engineer, minimum ten (10) working days before starting work to have them removed or disconnected, as applicable. There are currently vehicle detection systems at the following intersections:
 - 1. Wireless Detector – Lincoln Way, eastbound, at 19th Avenue
 - 2. Loop Detector – Lincoln Way and 19th Avenue
 - 3. Loop Detector – Irving Street and 19th Avenue
 - 4. Loop Detector – Kirkham Street and 19th Avenue
 - 5. Loop Detector – Lawton Street and 19th Avenue
 - 6. Loop Detector – Moraga Street and 19th Avenue
 - 7. Loop Detector – Noriega Street and 19th Avenue
 - 8. Loop Detector – Ortega Street and 19th Avenue
 - 9. Loop Detector – Pacheco Street and 19th Avenue
 - 10. Loop Detector – Quintara Street and 19th Avenue
 - 11. Loop Detector – Rivera Street and 19th Avenue
 - 12. Loop Detector – Santiago Street and 19th Avenue
 - 13. Loop Detector – Ulloa Street and 19th Avenue
 - 14. Loop Detector – Vicente Street and 19th Avenue
 - 15. Loop Detector – Wawona Street and 19th Avenue
 - 16. Loop Detector – Sloat Boulevard and 19th Avenue
 - 17. Loop Detector – Ocean Avenue and 19th Avenue
 - 18. Loop Detector – Eucalyptus Drive and 19th Avenue
 - 19. Loop Detector – Holloway Avenue and 19th Avenue
- B. In the event the Contractor removes or damages the existing vehicle detection system during construction, the Contractor shall immediately contact the Traffic Engineer through the City Representative. The Traffic Engineer will coordinate the installation of the new vehicle detection system to be installed by the SFMTA Signal Shop to current standards at the Contractor's sole expense if damaged.
- C. Once the work has been completed by the Contractor and the final paving has been approved by the City Representative, the Contractor shall notify the SFMTA Signal Shop thru the Traffic Engineer and the detectors will be re-installed.
- D. Wireless detectors shall never be punctured, cut, ground, or removed from solid core. These actions may result in leakage or release of battery contents, explosion, or fire. Additional safety information can be found in the Safe Sensor Handling Instructions datasheet at <https://www.sensysnetworks.com/products/flexmag>.

3.20 BICYCLE FACILITIES IN THE WORK AREA

- A. Bicycle facilities may refer to but is not limited to any of the following:
1. Bicycle Racks – Usually but not always constructed of round or square metal tubing in the shape of a hoop or inverted U.
 2. Bicycle Sharing Stations – Automated electronic bicycle parking facility that dispenses bicycles for public hire. Comprised of multiple components including a group of bicycle docks, a payment kiosk with solar mast, and map panel/display case.
 3. Bicycle Lockers – Enclosed, secure individual bicycle storage lockers accessed by key or cardkey.
 4. Bicycle Counters – Loops or other bicycle detection devices installed in the pavement. “Bicycle barometers” are a type of bicycle counter that is connected to a power source and includes a display which is mounted onto the sidewalk.
- B. If bicycle racks are located within the work area and could be subject to damage by construction, the Contractor is responsible for coordinating its removal with the SFMTA Bicycle Parking Manager at bikeparking@sfmta.com through the City Representative, (10) ten working days before starting work. There are currently bicycle racks on the following streets:
1. There are no bicycle racks, on 19th Avenue or on the side streets of 19th Avenue in the project area
- C. If bicycle sharing stations or bicycle lockers are located within the work area and could be subject to damage by construction, the Contractor is responsible for coordinating its removal with the SFMTA Bicycle Sharing Manager at bikeshare@sfmta.com through the City Representative at least (30) thirty working days before starting work. There are currently bicycle sharing stations or bicycle lockers on the following streets:
1. There are no bicycle sharing stations located on 19th Avenue or on the side streets of 19th Avenue in the project area
- D. If bicycle counters are located within the work area and could be subject to damage by construction, the Contractor is responsible for coordinating its removal with the SFMTA Bicycle Counter Manager at bikecounters@sfmta.com through the City Representative, (30) thirty working days before starting work. There are currently bicycle counters on the following streets:
1. There are no bicycle counters located on 19th Avenue or on the side streets of 19th Avenue in the project area
- E. In the event the Contractor removes or damages the existing bicycle facilities during construction, the Contractor shall immediately contact the Traffic Engineer and the SFMTA Bicycle Facility Managers through the City Representative, to coordinate the re-installation of the bicycle facility at the Contractor's sole expense.
- F. Once the work has been completed by the Contractor and the final paving has been approved by the City Representative, the Contractor shall notify the Traffic Engineer and the SFMTA Bicycle Facility Managers through the City Representative, and the bicycle facility will be re-installed.

3.21 EXISTING TRAFFIC SIGNAL SHUTDOWN AND MAINTENANCE

- A. Where it is necessary to shut down existing traffic signals at any intersection, the Contractor shall notify the Traffic Engineer through the City Representative, SFMTA Signal Shop (Fax # 415-282-7681), and SFPD Traffic Bureau ten (10) working days in advance of the start of each shutdown. It is the responsibility of the Contractor to make arrangements to have police officer(s) on duty to control traffic. Notification shall be written and shall also include a contact name and number to be used in case of emergency. If the Contractor fails to provide notice as detailed above, liquidated damages shall be assessed per Section 00 73 03.
- B. The Contractor shall similarly notify the Bureau of Light, Heat, and Power (BLHP) at (415) 227-8513 a minimum of ten (10) working days in advance of any work on existing street light equipment. Disconnection of any existing or temporary streetlights will not be permitted until the new equipment has been approved, tested, and properly adjusted by BLHP.
- C. The operation and interconnected functioning of existing traffic signals shall not be disturbed before 9:00 a.m. The traffic signals shall be returned to normal working conditions before 3:00 p.m. of the same day.
- D. All work and expenses for maintenance of existing traffic signal and streetlights in operation shall be done as incidental work to this contract.
- E. Many traffic signals are interconnected via 12-conductor cable, twisted wire pairs, or fiber optic cable to provide signal coordination. Coordination of the traffic signals shall be maintained every day between the hours of 7-9 AM and 3-7 PM. During all other times, the Contractor shall make every effort to maintain the existing coordination. Failure to ensure traffic signal interconnect is operational between the peak periods of 7-9 AM or 3-7 PM will result in liquidated damages being assessed per Section 00 73 03.

3.22 TRAFFIC SIGNAL LOOPS INSTALLATION

- A. The Contractors shall lay out the loop installation, with paint, and notify the Traffic Engineer through the City Representative at least two (2) working days in advance, before the scheduled date of slot cutting. The slots for the loops shall be cut only after the approval of the Traffic Engineer.
- B. Residue material resulting from slot cutting operations shall not be allowed to flow across sidewalk or traffic lanes, and shall be removed from the pavement surface.
- C. The depth of the cut shall be 4.0 to 4.5 inches except when noted otherwise on the contract plans and drawings. The width of the saw cut shall be minimum 1/2-inch. Each corner shall be core drilled. The Contractor shall core drill the point where the curb line and road surface meet. The Contractor is advised that City streets are generally 2 inch to 4-inch asphalt concrete wearing surface on an 8 inch to 12-inch concrete base.
- D. The Contractor shall submit for approval a schedule of installation, for all phases of saw cutting. The City Representative shall verify the following:
 - 1. Layout of loops and home runs prior to saw cut.
 - 2. Depth and width of the saw cut for the loop.

- E. Contractor shall notify the City Representative not less than 24 hours prior to cleaning of pavement cuts, installation of loop wires and installation of loop sealant. Failure to notify the City Representative will result in this work being rejected.

3.23 INSTALLATION OF CONDUCTORS

A. General

1. Each conduit that contains traffic signal conductors shall include one bare #6 AWG copper stranded conductor that is bonded at each end. See Section 26 05 00 for more information.
2. The installation of any conductors in conduits shall not take place until the Contractor has demonstrated to the City Representative's satisfaction and approval that the Contractor has employed all means necessary, or required, to clean and prepare the conduits for the installation of conductors therein.
3. If the existing grouping, taping, or lacing of conductors is disturbed in the course of work, the Contractor shall regroup, tape, or lace as applicable.
4. All conductors terminating in a metallic enclosure shall terminate on a terminal board equipped with screw-type or box-type terminals fabricated from copper or copper-alloy material.
5. Conductors terminating in screw type termination shall be equipped with self-insulated self-locking spade-type terminals.
6. Conductors terminating on box-type terminals shall be connected directly without using spade-type pressure terminals attached to the conductor ends.
7. Ends of all unused conductors shall be individually taped prior to intersection turn-on or switchover.

B. Conductor Color Codes, Labels, and Grouping

1. Conductor labeling material shall be Panduit Write-on, Self Laminating Labels (Catalog #PLD-2) or equal. Labeling and grouping requirements apply to all new and all existing conductors to remain at a given intersection. Old nylon tags shall be removed from all existing conductors to remain.
2. Wires shall be sized, color-coded and labeled in accordance with the following schedule:

CIRCUIT	AWG	PHASE	BASE COLOR	STRIPE	LABEL
Spare Signal Wire	#14	N/A	Black	None	None
12-Conductor Cable	#14	N/A	Black (jacket)	None	*see below
Detector Cable	#14	all	Black (jacket)	None	Per plans
Service (AC+)	#8	N/A	Black	None	None
Service (AC neutral)	#8	N/A	White	None	None

* Install labels on 12-Conductor cable near each conduit end. For example, a single cable in a pull box requires two labels – one label near each conduit end. 12-Conductor Cable labels shall identify where cable is headed, i.e. north, south, east, west, controller, etc.

3. In all pull boxes and controller cabinets, all traffic signal conductors shall be grouped by signal head with electrical tape and labeled by signal head number as designated on plan sheets.
 4. In all pull boxes, all conductors running between the same two conduits shall be further grouped and wrapped in at least one location with electrical tape near the center of the slack.
 5. In the controller cabinet, all conductors shall be further grouped and labeled by phase in an orderly manner.
- C. Splicing
1. Not Applicable.
- D. 12 Conductor Interconnect
1. Not Applicable.
- E. Red Light Camera
1. Not Applicable.

3.24 RED LIGHT CAMERA DETECTOR LOOPS AND SENSORS IN THE WORK AREA

- A. The Contractor is responsible for making sure the red light camera detector loops or sensors are not damaged. Prior to construction work (such as grinding or excavation) near or at the intersection of the red light camera loops or sensors, the Contractor shall notify Monica Giese of SFMTA at (415) 701-2461 and Josh Williams of Xerox State & Local Solutions at (415) 486-3339 thru the Traffic Engineer at least five (5) working days in advance. Work at the intersection may require the cameras to be deactivated. Work near the detector may require loops to be disconnected at the hand-hole or sensors to be removed. Xerox State & Local Solutions will perform all work involving the red light camera loops and sensors.
- B. There are inductance loops for red light cameras at the following locations:
1. 19th Avenue, at Sloat Boulevard
- C. In the event that the Contractor removes or damages the existing red light camera detection system hardware or infrastructure, the Contractor shall immediately contact the Traffic Engineer through the City Representative. The Traffic Engineer will provide a construction schedule or estimated date of completion to Xerox State & Local Solutions. The new red light camera detection system will be installed by Xerox State & Local Solutions to current standards at the Contractor's sole expense if damaged.
- D. Once the work has been completed by the Contractor and the final paving has been approved by the City Representative, the Contractor shall notify Monica Giese of SFMTA and Josh Williams of Xerox State & Local Solutions through the Traffic Engineer to have the detector loops or sensors re-installed.

- E. Wireless detectors shall never be punctured, cut, ground, or removed from solid core. These actions may result in leakage or release of battery contents, explosion, or fire.
- F. The Contractor shall be paid for actual time spent on installing the Red Light Camera detector loops and sensors in accordance with this specification, plus five percent (5%) for administrative overhead.

3.25 TRUCK ROUTES

- A. The Contractor shall ensure that all trucks and equipment associated with the project travel only on the truck routes designated by the local agencies. The Contractor shall not permit any trucks, or equipment associated with this project to be driven on non-truck route local streets except to use the shortest route to and from the project sites. In the event truck routes are not designated by a local agency, the Contractors shall use the local arterials to the project sites.
- B. The Contractor is solely responsible for all permits and costs required to operate extralegal size, weight, or load vehicles associated with this project.

3.26 PEDESTRIAN MONITORS

Not Used

3.27 COMMUTER SHUTTLE BUS STOP IN THE WORK AREA

- A. If a Commuter Shuttle Bus Stop space is located within the work area and could be subjected to damage by construction, the Contractor is responsible for coordinating its removal with the Commuter Shuttle Bus Stop Manager at 415-646-2349 through the Traffic Engineer (10) ten working days before starting work. There are currently commuter shuttle bus stops on the following streets:
 - 1. 19th Avenue at Kirkham Street
 - 2. 19th Avenue at Noriega Street
 - 3. 19th Avenue at Wawona Street
- B. In the event the Contractor removes or damages the existing Commuter Shuttle Bus Stop during construction, the Contractor shall immediately contact the Commuter Shuttle Bus Stop Manager at 415-646-2349 through the Traffic Engineer, to coordinate the re-installation of the Commuter Shuttle Bus Stop at the Contractor's sole expense.
- C. Once the work has been completed by the Contractor and the final paving has been approved by the Traffic Engineer, the Contractor shall notify the Commuter Shuttle Bus Stop Manager at 415-646-2349 through the Traffic Engineer, and the Commuter Shuttle Bus Stop will be re-installed.

3.28 CAR SHARE IN THE WORK AREA

- A. If a car share space is located within the work area and could be subjected to damage by construction, the Contractor is responsible for coordinating its removal with the Car Share Manager at 415-701-4213 through the Traffic Engineer (10) ten working days before starting work. There are currently car share spaces on the following streets:
 - 1. There are no car share spaces on 19th Avenue or on the side streets off of 19th Avenue in the project area
- B. In the event the Contractor removes or damages the existing car share space during construction, the Contractor shall immediately contact the Car Share Manager at 415-

701-4213 through the Traffic Engineer, to coordinate the re-installation of the car share space at the Contractor's sole expense.

- C. Once the work has been completed by the Contractor and the final paving has been approved by the Traffic Engineer, the Contractor shall notify the Car Share Manager at 415-701-4213 through the Traffic Engineer, and the car share space will be re-installed.

3.29 TEMPORARY SIDEWALK EXTENSIONS – PARKLETS

- A. If a temporary sidewalk extension, parklet, is located within the work area and could be subject to damage by construction, the Contractor is responsible for coordinating its removal with the San Francisco Planning Department's Parklet Program Manager at parklets@sfdpw.org, through the City Representative at least (30) thirty working days before starting work. There are currently parklets on the following streets:

1. There are no parklets on 19th Avenue or the side streets of 19th Avenue in the project area

- B. In the event the Contractor removes or damages the existing parklet during construction, the Contractor shall immediately contact the Traffic Engineer and the Parklet Program Manager through the City Representative, to coordinate the repair or re-installation of the parklet at the Contractor's sole expense.
- C. Once the work has been completed by the Contractor and the final paving has been approved by the City Representative, the Contractor shall notify the Traffic Engineer and the Parklet Program Manager through the City Representative, and the parklet will be re-installed.

PART 4 - MEASUREMENT, PAYMENT, AND LIQUIDATED DAMAGES

See Section 01 20 00 - Price & Payment Procedures
See Section 00 73 03 - Additional Liquidated Damages

END OF SECTION 01 55 26