

**ATTACHMENT D**

**MISSION BAY NORTH**  
**INFRASTRUCTURE PLAN**

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## ATTACHMENT D

### MISSION BAY NORTH INFRASTRUCTURE PLAN

This Infrastructure Plan will govern the construction and development of Infrastructure in the North Plan Area and is consistent with the Redevelopment Requirements. Except as is consistent with the Interagency Cooperation Agreement and as agreed to by the Agency and Owner, no Infrastructure beyond what is described herein, and such other Infrastructure as may be mutually agreed to by the Agency and Owner, will be required for development of the North Plan Area or will be constructed by the Owner in the North Plan Area.

Initially capitalized terms unless separately defined in this Infrastructure Plan have the meanings and content set forth in the North OPA. "Mission Bay Datum" is defined as City Datum plus one hundred feet.

This Infrastructure Plan describes all Infrastructure Improvements to be provided by Owner in accordance herewith for the North Plan Area. While some Infrastructure Improvements to be provided by City Agencies and other governmental agencies, such as the San Francisco Municipal Railway ("MUNI"), are described, their inclusion herein is not intended to be all inclusive of all Improvements to be provided by City Agencies or other governmental agencies. A condition precedent to Owner's performance under this Infrastructure Plan is the obtaining of all requisite approvals.

This Infrastructure Plan and the Mission Bay Subdivision Regulations establish the design standards, construction standards, criteria and specifications of Infrastructure in the North Plan Area, including, without limitation, streets, blocks, lots, and Infrastructure within the street right of way, including for the combined sewer system, and Open Space Parcels and all other Infrastructure. In subdivision processing, including the review and approval of subdivision improvement plans, the precise location and final design of Infrastructure Improvements consistent with this Infrastructure Plan including intersection Improvements, street segment Improvements, wet and dry utilities Improvements, open space Improvements, and other Infrastructure Improvements will be determined.

The dedication, acquisition and acceptance of streets and other Infrastructure Improvements will occur through the subdivision map process in accordance with the Mission Bay Subdivision Code, Mission Bay Subdivision Regulations and as provided in the Financing Plan and Acquisition Agreement. Other than as provided in the Land Transfer Agreements, no real property is required to be acquired to construct the Infrastructure described in this Infrastructure Plan.

## I. INFRASTRUCTURE DESCRIPTION

### A. PUBLIC INFRASTRUCTURE WITHIN THE STREET RIGHT OF WAYS

#### 1. Street Improvements.

For the North Plan Area, substantial Infrastructure has already been constructed and dedicated which will serve the development. Third Street, Fourth Street, Seventh Street, Berry Street, and Townsend Street have been dedicated and improved. The existing and proposed street systems for the North Plan Area are shown in Exhibit 2 and in Exhibit 3, respectively. Basic geometrics in the right of way such as numbers of lanes, their uses, and their widths are also shown in Exhibit 2 and are further shown in Exhibit 3 and accompanying Exhibits 3a, 3b and 3c. The following Infrastructure Improvement descriptions apply generally to streets in the North Plan Area, but may vary slightly from street to street based on particular requirements, which shall be determined during the review of the applicable subdivision improvement plans, in accordance with the procedure for granting exceptions as set forth in the Subdivision Code and the North OPA.

a. **Street Surface Improvements.** Street surface improvements consist of roadway reconstruction, preparation, excavation, fine grade, rock base, concrete pavement, asphalt pavement, combined concrete curbs and gutters, concrete sidewalk, traffic control signs and striping, street trees, and appurtenant improvements. Existing street elevations are, for the most part, at approximate finish grade. Some minor modification will be made by cutting or importing fill in order to provide sufficient gradient to accommodate 100 year overland flow requirements. Consideration will be given to future settlement of new Improvements installed by the Owner pursuant to this Infrastructure Plan. Street surface Improvements are not required except as specifically set forth in this Infrastructure Plan.

The street structural sections consist of three typical types: asphaltic concrete over aggregate base, asphaltic concrete over concrete; and a combination thereof to meet and match existing streets. All street structural sections shall meet City standards in effect from time to time. However, the City may allow flexible pavement modifications to Sections 208 and 209 of Standard Specifications and Section XII of the Mission Bay Subdivision Regulations. Such modifications may be reviewed and may be approved during the review of the applicable subdivision improvement plans.

At the time of street construction, all anticipated Infrastructure crossings will be installed prior to final street pavement. For major utilities such as water lines, the facilities are to be installed "dry" until such time as the interconnections are available. For minor conduits, such as for future traffic signal wires, sleeves (or individual conduits if detailed data is available at the time) will be installed to minimize future street cuts. Space will be provided in areas where new joint trench is being installed for future installation of twelve (12) conductor cables to synchronize intersections. Underground utilities shall not be required to be built on piles. No surcharging of street rights of way or Open Space Parcels shall be required.

King Street, a recently constructed Waterfront Transportation Project component, was completed to Fifth Street with the Owner contributing a portion of project costs. As part of the MUNI Third Street Light Rail Project, any modifications to King Street at Fourth Street will be constructed by and be the responsibility of MUNI. The Owner has no further obligation in relation to King Street Improvements or drainage facilities except as provided in subsections b. and c. below.

Owner shall generally relocate existing hydrants and other existing facilities as necessary to the extent required by sidewalk and street widening.

As used in this Infrastructure Plan,

- (i) Shared right-through lane means a traffic lane from which a vehicle can either make a right turn, or travel straight through the intersection.
- (ii) Shared left-through lane means a traffic lane from which a vehicle can either make a left turn, or travel straight through the intersection.
- (iii) Exclusive through lane means a traffic lane from which a vehicle can only travel straight through the intersection.
- (iv) Exclusive left-turn lane means a traffic lane from which a vehicle can only make a left turn.
- (v) Exclusive right-turn lane means a traffic lane from which a vehicle can only make a right turn.

**b. Intersections Improvements.**

The following specific intersection Improvements, shown in Exhibit 2 and Exhibit 3 (and accompanying Sections) shall, except as otherwise indicated, be provided by Owner in connection with the development of the North Plan Area in accordance with this Infrastructure Plan:

- (i) Third Street/King Street
  - A. Widen the west side of Third Street between Berry and King Streets by approximately twelve feet to provide an additional northbound through lane,

resulting in a northbound lane configuration of an exclusive right turn lane, three through lanes, and a shared left-through lane.

- B. Relocate the signal pole within the right of way in the southwest corner of the intersection to facilitate the widening of the west side of Third Street.
- C. Install “Don’t Block the Box” signs on the northbound, eastbound, and westbound approaches to the intersection.

(ii) Third Street/Berry Street

- A. Restripe the northbound approach to provide an additional through lane for a total of three through lanes and an exclusive left turn lane.
- B. Narrow north side of Berry Street right of way between seventeen and one-half (17.5) feet and twenty-five and one-half (25.5) feet between Fourth and Third Streets to accommodate one lane in each direction with parking on the south side. Provide one exclusive left turn lane and one exclusive right turn lane on the eastbound Berry Street approach to Third Street.
- C. Remove island from center of intersection. Relocate the traffic signal poles in the center island and northeast corner of the intersection to accommodate the narrowing of Berry Street, and adapt signal head to implement a protected left turn phase for the northbound approach.
- D. Install “Don’t Block the Box” signs for the northbound, southbound, and eastbound approaches to the intersection.

(iii) Fourth Street/King Street

- A. Widen the south side of King Street by tapering to a width of approximately eleven (11) feet from Fifth Street to Fourth Street to provide a shared right-through lane between Fifth and Fourth Streets, for a total of one (1) exclusive left turn lane, two (2)

through lanes, and one (1) shared right-through lane.

- B. Widen the south side of King Street by tapering from a width of approximately eleven (11) feet from Fourth Street to approximately three hundred (300) feet to the west of Fourth Street to provide continuity to the through lanes across the intersection.
- C. Widen the west side of Fourth Street north of King Street by narrowing the sidewalk by approximately twelve (12) feet from the end of the Caltrain drop-off zone, to provide an additional through lane, for a total of one (1) shared left-through lane, two (2) through lanes, and an exclusive right turn pocket. Owner will make a good faith effort to maintain the existing crosswalk width between the northwest and southwest quadrants of the intersection.
- D. Provide approximately fifteen (15) feet of additional right-of-way on both sides of Fourth Street between King and Berry Streets to accommodate MUNI and bicycle traffic, and provide one (1) eleven (11) foot lane adjacent to the MUNI tracks and one (1) fifteen (15) foot curb lane. Except as otherwise provided herein, Owner and MUNI will each be responsible for one-half (1/2) the cost of widening and improving the existing Fourth Street to the dimension shown in Section BB, in accordance with Section I.C.4 hereof.
- E. Relocate the signal poles at the four corners of the intersection to facilitate the widening of the south side of King Street and both sides of Fourth Street. Except as otherwise provided herein, Owner and MUNI will each be responsible for one-half (1/2) the cost of relocating the signal poles on the southeast and southwest corners of the intersection, in accordance with Section I.C.4 hereof.
- F. Install "Don't Block the Box" signs for the northbound, southbound, eastbound, and westbound approaches to the intersection.



(iv) Fourth Street/Townsend Street

- A. Widen the east side of Fourth Street by approximately six (6) feet to provide an additional through lane for a total of one (1) mixed traffic lane and one (1) MUNI only lane, and widen the east sidewalk by approximately one (1) foot.
- B. Relocate traffic signal pole and existing trolleybus poles in the right-of-way at the southeast corner of the intersection to accommodate the widening of the east side of Fourth Street.

(v) Fourth Street/Berry Street

- A. Narrow north side of Berry Street right of way between seventeen and one-half (17.5) and twenty-five and one-half (25.5) feet between Third and Fourth Streets to accommodate one lane in each direction with parking on the south side. Provide one (1) shared left-through lane and one (1) exclusive right turn lane on the westbound Berry Street approach to Fourth Street.
- B. Relocate (or replace if needed) traffic signal poles in the right of way at all corners of the intersection to accommodate the widening of Fourth Street and the narrowing of Berry Street. Except as otherwise provided herein, Owner and MUNI will each be responsible for one-half (1/2) of the cost of relocating signal poles at the intersection, in accordance with Section I.C.4 hereof.
- C. Install "Don't Block the Box" signs for the northbound, southbound, eastbound, and westbound approaches to the intersection.

(vi) Fifth Street/King Street

- A. Narrow the northern side of the median of King Street on the westbound approach for approximately two hundred fifty (250) feet to provide an exclusive left turn lane. Restripe the westbound approach to provide an additional through lane, for a total of three through lanes and a left turn lane. This

Improvement requires Owner to obtain Caltrans approval.

- B. Remove "NO LEFT TURN" pavement markings on westbound approach, and add signal heads to implement a protected left turn phase for the westbound approach.
- C. Relocate MUNI power transmission support poles within the right of way for approximately two hundred fifty (250) feet east of Fifth Street from the median of King Street to the center of the street, between the MUNI tracks.
- D. Restripe the I-280 off-ramp touchdown to provide an additional through lane, for a total of two through lanes, and a shared right-through lane. Narrow the southern side of the median of King Street eastward for approximately three hundred (300) feet beyond the intersection of Fifth and King Streets to align with the existing three through lanes. This Improvement requires Owner to obtain Caltrans approval.
- E. Agency to cause City to take all necessary actions to eliminate on-street parking on both sides of Fifth Street. Agency to cause City to review design of intersection improvements plans to prevent vehicular traffic from driving onto MUNI's exclusive right-of-way.

(vii) Seventh Street/Townsend Street

- A. Restripe the southbound, eastbound, and westbound approaches to provide a left-turn lane, a through lane, and a right-turn lane for the commute period.
- B. Restripe the northbound approach to provide a left turn lane, a through lane, and a shared right-through lane.

(viii) Eighth Street/ Townsend Street

- A. Eliminate traffic circle and reconfigure intersection as a five (5) approach intersection with the lane configuration shown in Exhibit 2a.

- B. Install new traffic signal poles, mats and heads in each corner of the intersection. Install a new traffic signal controller.

(ix) Third Street/Townsend Street

- A. Agency to cause City to take all necessary actions to prohibit on-street parking on the north side of Townsend Street between Second and Third Streets during the p.m. (evening) peak commute period in order to provide an additional westbound through lane during the p.m. peak commute period, for a total of two through lanes and a shared right-through lane during the p.m. (evening) peak hour.

(x) Seventh Street/Berry Street

- A. Restripe the eastbound approach to provide one (1) left-turn lane and one (1) right-turn lane.
- B. Restripe the northbound and southbound approaches on Seventh Street to provide two (2) through lanes.

c. Street Segments.

The following specific street segment Improvements shall, except as otherwise indicated, be provided by Owner in connection with the development of the North Plan Area.

(i) Third Street

- A. Widen the west side of Third Street between Berry and King Streets by approximately twelve (12) feet to provide an additional northbound through lane, resulting in a northbound lane configuration of an exclusive right turn lane, three through lanes, and a shared left-through lane. A twelve (12) foot sidewalk will be included on Third Street between Berry and King Streets. See Intersection Improvement, Section I.A.1.b.(i).

(ii) Fourth Street

- A. Widen the west side of Fourth Street from the end of the CalTrain terminal drop-off zone to King Street to provide the additional southbound lane

noted in Section I.A.1.b.(iii)C above, including providing additional right-of-way, if necessary.

- B. Widen the east side of Fourth Street between King and Townsend Streets to accommodate the lane configurations for the Fourth Street/Townsend Street intersection in Section I.A.1.b(iv)(A).

City shall take all necessary actions to eliminate the MUNI-only restriction on the northbound approach of Fourth Street between King and Townsend Streets so that it can be used by all vehicular traffic, as noted in Section I.A.1.b(iv)(A).

- C. Provide approximately one hundred thirteen (113) feet right-of-way between King and Berry Streets, with approximately eighty-nine (89) feet of roadway including approximately thirty-seven (37) feet for MUNI and two (2) twelve (12) foot sidewalks, as noted in Section I.C.4 below. Two (2) fifteen (15) foot curb lanes will be provided to accommodate both bicycle and motor traffic. (Class III bike route.) Except as otherwise provided herein, Owner and MUNI will each be responsible for one-half (1/2) the cost of widening and improving the existing Fourth Street to the dimension shown in Section BB, in accordance with Section I.C.4 hereof.

(iii) King Street

- A. Widen south side of King Street between Fifth and Fourth Streets to accommodate the lane configurations for the Fourth Street/King Street intersection in Section I.A.1.b(iii)A, above.
- B. Construct a one-way one-lane westbound frontage road from Fifth Street to Berry Street as described in Section Exhibit 3c and as described in the Waterfront Transportation Project, Phase 2, as approved as of the Effective Date of the North OPA.

No eastbound frontage road will be constructed. Rather, Berry Street will remain open to traffic from Sixth to Fifth Street. The frontage road alignment has not been finalized. The area that was to have

been the eastbound frontage road shall be reconveyed to Owner.

(iv) Seventh Street

- A. Restripe Seventh Street between Townsend and Hooper Streets to accommodate the lane configuration changes described in Sections I.A.1.b.(vii)A, (vii)B, and (x)B. The northbound and southbound curb lanes will be restriped as fourteen (14) foot wide lanes to accommodate both bicycles and motor vehicles.
- B. Provide traffic signal interconnection on Seventh Street for the 16th Street, The Common, and Townsend Street intersections.

City shall take all necessary actions to eliminate on-street parking on both sides of Seventh Street between Townsend and Hooper Streets during the morning and evening peak commute periods.

(v) Berry Street Connector (See Exhibit 9 and Section I.C.6 below)

- A. Extend Berry Street around the west end of China Basin Channel, on the east side of the railroad to intersect The Common (the “Berry Street Connector Road”).
- B. Construct one (1) fourteen (14) foot lane in each direction, with the southbound lane widening to two (2) lanes at the intersection with The Common, as described in the South Infrastructure Plan attached to the South OPA.

This Improvement requires relocation of JPB easement and other City Agencies and other governmental agencies’ approvals as described in Section I.C.6 below. See Exhibit 9.

- C. The Berry Street Connector Road described in subsection A above will provide no on-street parking and will have no sidewalks.

- D. Pedestrian and bicycle access will be provided on a combined pathway parallel but separate from the connector road.

## 2. Wet Utilities.

The following section describes Infrastructure for sanitary sewer, combined sewer and storm drain facilities which shall, except as otherwise indicated, be provided by Owner in connection with the development of the North Plan Area:

a. **Sanitary Sewer, Storm Drain And Combined Sewer System.** The sanitary sewer, storm drain and combined sewer system and the Infrastructure Improvements to be constructed by Owner in connection therewith are identified on Exhibit 4. The facilities consist mostly of existing combined sanitary sewer and storm drain. With the exception of the new combined line parallel and adjacent to the north side of China Basin Channel (the "Channel") between Fourth Street and Sixth Street, only minor modifications are required to adequately sewer and storm drain the North Plan Area. However, separate storm and sewer lines will be constructed and connected to the existing combined sewer. In the subdivision process precise tie-in locations to the existing sewers in relationship to the outfall/diversion structures will be determined.

In Berry Street, construction will be done in a manner acceptable to the Owner and the City and designed to protect the integrity of the existing combined sewer box and utilities. In those portions of Berry Street being vacated the City shall reserve non-exclusive public utility easements for the area in which such utilities are located or are to be relocated.

The collection systems described above are designed for a five year storm consistent with existing City design criteria. For flows over the five year storm, adequate overland flows for the 100 year storm will be maintained in the street areas or in other designated areas, with flows directed to China Basin Channel (the "Channel"). At or prior to the approval of the first Major Phase Owner shall submit to the Department of Public Works an overland flow study demonstrating how the 100 year storm flows will be accommodated through the North Plan Area to the Channel.

b. **Auxiliary Water Supply System (AWSS).** The AWSS system and the Infrastructure Improvements to be constructed by Owner in connection therewith are identified on Exhibit 5. This system is also known as a high pressure water supply system dedicated for fire protection. Most of this system is existing. The City wide system serves as a source of fire protection in industrial, commercial and many residential districts. The system consists of cast iron or ductile iron pipe (DIP), high pressure hydrants, valves and fittings, and appurtenant improvements. It is contemplated that the North Plan Area system will be connected to the South Plan Area system via an interconnection between Berry Street and North and South Common Streets via the proposed connector road (as described in Section I.A.1.b(vii) above) when appropriate. In addition, the AWSS line will be connected to the existing Seventh Street line at Berry Street. Additionally, the line will interconnect to the South of Channel via the Connector road between Berry and North Commons. DPW will design the proposed

Improvements shown in Exhibit 5. Owner shall pay for the costs of designing the AWSS System. Owner may monitor the design process and cost parameters during design development and contribute to the design specifications by reviewing and commenting on conceptual design and cost analyses and proposed final construction plans and estimates prior to bidding for cost and to ensure consistency with the other utility Infrastructure Improvements, including pipe, hydrant and valve locations.

c. **Low Pressure Water System.** The low pressure water system is identified schematically on Exhibit 6. Most of this system is existing. This domestic water supply and fire protection system consists of DIP mains, low pressure fire hydrants, valves and fittings, and appurtenant Improvements. It is contemplated that the North Plan Area system will be connected to the South Plan Area System when appropriate. A connection to the South Plan Area low pressure system may, subject to approval of other regulatory agencies with jurisdiction (such as BCDC, Corps of Engineers, RWQCB and others), be installed in the Fourth Street alignment beneath the Channel when appropriate. Engineering design and analysis provided by Owner shall verify whether this interconnect is required for adequate fire flows and it shall not be constructed if not so required. Final pipe sizes, locations, connections and interconnections, flows, pressures, and location and number of fire hydrants will be determined with a new "Hardy Cross" hydraulic model analysis using appropriate design criteria reasonably established by the City.

d. **Channel Suction Inlets.** Channel Suction Inlet Infrastructure Improvements shown on Exhibit 5 will be provided by Owner subject to approval of other regulatory agencies with jurisdiction (such as BCDC, Corps of Engineers, RWQCB and others). No cisterns are required.

e. **Reclaimed Water System.** The Reclaimed Water System Infrastructure Improvements identified on Exhibit 7 will be installed by Owner to the extent required by applicable City Regulations. This system consists of DIP bagged for corrosion protection and cross-connection prevention, valves and fittings, and appurtenant improvements. The pipes will be installed in each of the streets (one (1) side only) as the streets are constructed. Supply for the reclaimed water has not yet been determined. Lines will therefore be installed dry. Actual supply point connections will be determined when supply is available.

### 3. **Dry Utilities.**

a. **Joint Utility Trench.** Work necessary to provide the joint trench for dry utilities (that lie in public streets and in the sidewalk area if at all possible) consists of trench excavation and installation of conduit ducts for telephone, cable, fiber optic, electrical, gas (direct burial), fire and police alarm and MUNI. Additionally, utility vaults, splice boxes, street lights and bases, wire and transformer allowance, and backfill are included. The utility owner/franchisee (such as MUNI and fiber optic companies) will be responsible for installing facilities such as transformers and wire.

All necessary and properly authorized public utility Improvements for which franchises are authorized by the City shall be designed and installed in the public right-of-way in

accordance with City Regulations in effect from time to time, and permits approved by DPW. Joint trenches or utility corridors will be utilized wherever feasible. The location and design of joint trenches/utility corridors in the right-of way must be approved by DPW during the subdivision review process. All subsurface vaults serving one building shall be placed behind the property line. If a subsurface vault serves the distribution system, it may be placed in the right of way. Other facilities (e.g., traffic signal controllers) shall be located above ground as necessary for operational reasons. The precise location of the joint trench in the right of way will be determined prior to recording the applicable final map and identified in the subdivision improvement plans. Nothing in this Infrastructure Plan shall be deemed to preclude Owner from seeking reimbursement for or causing others to obtain consent for the utilization of such joint trench facilities where such reimbursement or consent requirement is otherwise permitted by law.

b. ***Street Lights.*** Secondary power for street lighting shall be installed in a separate trench in accordance with the City Regulations in effect from time to time. Sections 937 through 943 of the San Francisco Public Works Code contain specific requirements for street lighting and is hereby incorporated by reference.

## B. PUBLIC OPEN SPACE

### 1. ***Open Space Parcels.***

The Open Space Parcels are shown in Exhibit 8 as shaded zones and denoted as parcels beginning with "NP." The Owner shall construct all of the Improvements in the Open Space Parcels in accordance herewith and as described in the Design for Development.

Parcels NP1 to NP5 are on the northerly and westerly border of the Channel and will provide a variety of open space uses including a pedestrian promenade along the entire length of the Channel, a plaza/square at the foot of Fifth Street, a view platform at the foot of Sixth Street axis, and areas for courts and other active use. These Open Space Improvements are further described below and in the Design for Development.

The pedestrian promenade (North Channel Esplanade-NP1 & NP3)) is an urban walkway generally at grade and wide enough for emergency vehicles. Site furnishings may include pedestrian-scale light poles, benches (wood, stone or metal), and trash receptacles. Guidelines for the treatment of the Channel edge below the top of bank are included in the Design for Development and are subject to approval of regulatory agencies (such as BCDC, Corps of Engineers and RWQCB). Westerly of the Fourth Street Bridge, the promenade will include, subject to approval of other regulatory agencies with jurisdiction (such as BCDC, the Corps of Engineers and RWQCB) construction of a pile-supported deck over the eroded portions of the Channel edge.

The plaza/square at the Fifth Street axis (Fifth Street Square-NP2) is envisioned as a neighborhood square. A central water element or other character giving design feature (pavilion, artwork, etc.) will be a prominent feature in this space, and will be supplemented by benches and lighting. This open space area and the area at the Sixth Street axis may accommodate future



improvements to the existing venting system, including a vent for the nearby Combined Sewer Overflow box.

At the plaza and also at the Sixth Street axis (NP4), a structural deck, pile supported and/or cantilevered, will, subject to approval of regulatory agencies with jurisdiction (such as BCDC, the Corps of Engineers and RWQCB) cover the existing storm drain outfalls at the Channel edge.

The more active areas of open space are located on the west end of the promenade near the overhead freeways. This area, (Pumphouse Park-NP5)) between freeway support columns, can accommodate several courts including basketball and tennis, as well as paths for rollerblading, jogging, bicycling and walking. Site furnishings will include light poles, drinking fountains, benches, and trash receptacles.

2. **Mid-Block Lanes.** Mid Block Lanes on parcels N3, N3a, N4 and N4a. may include paving, street furnishings, lighting, landscaping and irrigation system.

### C. OTHER INFRASTRUCTURE

The following additional Infrastructure Improvements shall, except as otherwise indicated, be provided by Owner in connection with the development of the North Plan Area.

1. **Pedestrian Bridge.** A neighborhood linking pedestrian bridge across the Channel at Fifth Street will connect the neighborhood open space system north and south of Channel in the Channel Park area along Fifth Street. The obligation to construct a neighborhood linking pedestrian bridge is subject to obtaining authorization and approvals acceptable to Owner from all regulatory agencies with jurisdiction (such as BCDC and Coast Guard). The bridge as shown in Exhibit 10 will be a center swing bridge 11 feet wide, with a steel approach span of approximately 115 feet long, a steel center swing span of approximately 70 feet, an approach span of approximately 65 feet long, and steel deck supports, turntable systems, wall abutments (not higher than five feet above adjacent finish grades at the north and south channel banks) and a control building (or equivalent type of bridge structure which achieves the same pedestrian connection between the north and south sides of Channel).

2. **Freeway and Pump Station Demolition.** The abandoned section of I-280 in the North Plan Area between Sixth Street and Third Street has been or is being demolished in anticipation of adoption of the Mission Bay North Redevelopment Plan and related Plan Documents. The Fourth Street off ramp and the abandoned Fourth Street Pump Station are also being or will be demolished.

3. **Interim Operational Requirements.** These Improvements include temporary Improvements to be constructed by Owner such as interim roadways or utility Improvements which may be necessary to adequately serve a Major Phase or Project therein, until such time as final Improvements are constructed. These Improvements may be removed and /or abandoned by Owner, as determined by the Department of Public Works, when the

balance of development occurs. An example is a traffic turn-around area at the interim terminus of a street which will be extended in future phases.

4. MUNI. The MUNI Light Rail Transit Project is anticipated to run down the center of portions of King Street and Fourth Street in the North Plan Area. MUNI will construct the street section and traffic signals in Fourth Street between King Street and the Channel in order to accommodate the track and platform system in accordance with this Infrastructure Plan. If, however, the Owner proceeds with Fourth Street Improvements pursuant to the phasing program (See Section II) prior to MUNI's construction of its Fourth Street facilities, the Owner will construct the street section and traffic signals and provide the necessary right of way in Fourth Street between King and the Channel, as described in Exhibit 3b, necessary for MUNI facilities.

The Owner is not responsible for MUNI related Improvements in the North Plan Area, except as specifically provided herein. The relocation of utilities necessitated by the Third Street Light Rail Project shall not be the responsibility of Owner except as described in this Infrastructure Plan.

Except as otherwise provided herein, Owner and MUNI will each contribute only to Fourth Street Widening Costs (as defined below) incurred by Owner or MUNI in the total amount for each of one-half (1/2) the cost of widening and improving the existing Fourth Street between King Street and the Channel in accordance with this Infrastructure Plan (the "Fourth Street Contribution"). As used herein, the widening and improving of the existing Fourth Street between King Street and the Channel in accordance with this Infrastructure Plan, hereinafter the "Fourth Street Widening," consists only of the following:

- (1) Demolition of existing pavement, curb and gutter;
- (2) Preparation of street subsurface and street base;
- (3) Installation and resurfacing of street;
- (4) Construction or reconstruction of gutters, catch basins and sidewalks;
- (5) Utility lateral extensions;
- (6) Installation or relocation of street lights and strain poles;
- (7) Installation or relocation of traffic signal poles, masts, heads and controllers.

MUNI's or Owner's, as applicable, obligation for any Fourth Street Contribution is conditioned upon: (a) A construction contract having been executed for the Fourth Street Widening, or a portion thereof; and (b) The Owner or MUNI, as applicable, having secured a funding commitment for the balance of the cost of constructing the Fourth Street Widening or the segment which is covered by the construction contract described in clause (a) above.

Provided the foregoing conditions to Owner's and MUNI's obligation for any Fourth Street Contribution have been satisfied, the Owner or MUNI, as applicable, shall pay the Fourth Street Contribution upon the occurrence of all of the following: (i) Owner and MUNI, as applicable, having certified that construction of the Fourth Street Widening, or portion thereof covered by the applicable construction contract, is ready to proceed; and (ii) Owner or MUNI, as applicable, having provided reasonably detailed documentation, including, without limitation, from the construction bid documents for the Fourth Street Widening Costs (as defined below) to be paid.

As used herein, "Fourth Street Widening Costs" means the substantiated, reasonable costs of construction of the Fourth Street Widening, which costs shall consist of the following, without duplication: (i) the "hard" costs to be incurred by Owner or MUNI, as applicable, under the contract, for the construction of the Fourth Street Widening (the "Hard Costs"); (ii) out of pocket costs incurred by Owner or MUNI, as applicable, in preparing construction documents, specifications, schedules and related construction contracts in the amount of two percent (2%) of the Hard Costs; (iii) a construction and project management fee to be retained by Owner or MUNI, as applicable, in the amount of four percent (4%) of the Hard Costs; (iv) pro-rata professional costs in the amount of eleven percent (11%) of the Hard Costs, such as design, engineering, architectural, legal accounting, inspection, construction staking, materials testing, consulting and similar professional services (excluding cost of any such services provided directly by Owner or MUNI); and (v) out of pocket costs directly related to the construction of the Fourth Street Widening, such as costs of security, safety signage, payment, performance and/or maintenance bonds, and insurance costs. City Agencies' administrative costs in connection with the Fourth Street Widening project shall only be included to the extent allowed as a Fourth Street Widening Costs and shall not be included in Agency Costs.

In conjunction with the Waterfront Transportation Projects, MUNI is not precluding the possibility of extending the existing King Street MMX tracks to a future station at Sixth Street, which extension and facilities, including a minimum three hundred sixty (360) foot long platform, shall be constructed by and be the responsibility of MUNI. Owner will provide poles and/or the legal permission to connect via eyebolts to the structural components on adjacent buildings with sufficient structural capacity to support trolleybus wires on both sides of Fourth Street between Townsend and King Streets and on Fourth Street between King and Channel Streets prior to the initiation of trolley bus service into Mission Bay. Where possible combined streetlight/trolley bus poles may be provided as determined by MUNI.

The final timing for MUNI Improvements, as described herein has not been established by MUNI. It is possible, for example, that portions of the Third Street Light Rail Project may commence in advance of adjacent development along related street frontage. The first construction phase is scheduled to begin in January 2000 with revenue service to begin in 2003. In order to accommodate the Third Street light rail tracks, a MUNI station platform and bicycle traffic between Berry and King Streets, the Owner will provide approximately fifteen (15) feet of Fourth Street on each side of the street between King and Berry Streets and approximately eleven (11) feet on the west side of the street between Berry and China Basin Channel tapering to the existing lane configuration over a length of approximately ninety (90) feet.

City shall install and maintain transit shelters, including transit related furniture, adjacent to MUNI selected transit zones on land owned by the City (unless otherwise agreed by Owner). Owner should work with MUNI to accommodate, in land owned by the City (unless otherwise agreed by Owner), MUNI operation, staging and support facilities, including, but not limited to, operator restroom, street supervisor call boxes, oversized terminus/trailer shelters, transmit patron access, and special vehicular and MUNI personnel access and staging areas to support maintenance and security functions. The precise location shall be determined in consultation with Owner.

If Owner modifies lot entrances and/or exits that affect MUNI facilities, such as bus terminal areas, Owner will work with MUNI to develop acceptable mitigation. Owner will bear the reasonable costs of relocation of MUNI facilities if needed.

5. **Waterfront Transportation Projects.** Phase One of the Waterfront Transportation Project within the North Plan Area, which included the touchdown ramps at Fifth Street and King Street along with MUNI Light Rail Improvements, has been completed with contributions from the Owner in anticipation of adoption of the Mission Bay North Redevelopment Plan and related Plan Documents. A portion of Phase Two of the City's Waterfront Transportation Project related to westbound King Street frontage road between Fifth Street and Sixth Street is included in this Infrastructure Plan. (See Section I.A.1.c. above)

6. **Access to Seventh Street.** Access to Seventh Street will be provided via the Berry Street Connector Road to the North and South Common Streets, which in turn will connect Seventh Street by means of an at-grade railroad crossing as described in more detail in the South Infrastructure Plan attached to the South OPA. See Exhibit 9.

7. **Odor Control Improvements.**

Owner shall, subject to the terms and conditions of this Section I.C.7, pay to the City a total of Five Million Dollars (\$5,000,000) in cash (inclusive of amounts payable pursuant to this Section I.C.7 and pursuant to Section I.C.10 of the South Infrastructure Plan) to be used, together with any interest earned thereon, exclusively for capital costs (i.e., out-of-pocket costs of design and construction) of physical improvements at the Southeast Water Pollution Control Plant designed to reduce odors ("Odor Control Improvements"), such as, without limitation, covering, venting and treating foul air from various solids handling facilities.

a. Owner shall pay said amount in two (2) equal installments (each, an "Installment") of Two Million Five Hundred Thousand Dollars (\$2,500,000) each. The first Installment shall be due and payable on the date ten (10) days after the date of Final Approval (as defined below) of the first Building Permit for new construction by Owner of a Project in either the North or the South Plan Area other than a Project to be constructed by the Agency, City or for the UCSF Campus. The date of "Final Approval" of a Building Permit is the date upon which (i) any and all applicable appeal periods for the filing of any administrative appeal challenging the issuance or effectiveness of such Building Permit shall have expired and no such appeal shall have been filed, or (ii) if such an administrative appeal is filed, the issuance and effectiveness of such Building Permit shall have been upheld by a final decision in each such

administrative appeal without any adverse effect on the validity of such Building Permit. The second Installment shall be payable on the date one (1) year after the date of Final Approval of such Building Permit. Installments paid pursuant to Section I.C.10 of the South Infrastructure Plan shall be credited against any Installments due under this Section I.C.7.

b. Owner's obligation to pay each Installment shall be conditioned only on (i) the continuing effectiveness on the date the Installment is due of the Owner Participation Agreement for either or both the North Plan Area and the South Plan Area and (ii) such Building Permit is not as of the date the Installment is due suspended or revoked by the City at its own initiative. Following contribution by Owner, the City shall diligently proceed to design and construct Odor Control Improvements to the extent of the funds contributed by Owner.

c. The City has publicly stated its intent to spend an additional Five Million Dollars (\$5,000,000) to correct sewer flooding problems in the Bay View/Hunters Point neighborhoods. Annually, following the contribution of funds by the Owner pursuant to the foregoing paragraph and until all such funds have been expended, the City will provide to Owner a summary of the status of the Odor Control Improvements and sewer flooding improvements undertaken with the funds contributed by the Owner and the City's own funds.

## II. INFRASTRUCTURE PHASING METHODOLOGY

### A. Infrastructure Phasing.

Construction of Infrastructure Improvements described herein, including public Open Space Parcels, will be phased and included in the applicable tentative maps and related improvement plans and improvement agreement approved prior to filing a final map to serve the incremental build-out of the North Plan Area in accordance with the Mission Bay North Redevelopment Plan and Plan Documents. In order to maintain flexibility in determining Infrastructure requirements, an Infrastructure phase is defined as the access, utility and open space Improvements necessary to accommodate development of a Major Phase or Project therein.

#### 1. Adjacency.

The primary underlying principle of the Mission Bay North Plan Area Infrastructure phasing plan is "adjacency", and unless provided below, Infrastructure will be constructed based on this principle. When development occurs in a Major Phase or for a Project adjacent Infrastructure necessary for access and utilities such as streets (and Improvements therein, if any), curbs, gutters, sidewalks and open space will be constructed. This includes, in general, Open Space Parcels (or portions thereof) that are adjacent to the Project to be developed. Similarly, the construction of storm and sewer facilities using the City's existing combined sewer system will generally follow the adjacency principle. Adjacent Infrastructure refers to Infrastructure which is near to and may share a common border or end point with a Major Phase or Project but which may not be adjoining or contiguous with a Major Phase or Project.

## **2. Cumulative Development Requirements.**

The second principle of Infrastructure phasing is “cumulative development requirements.” Due to the effect of cumulative traffic growth, some key intersections and street segments may reach congested conditions before development occurs on sites adjacent to those intersections or street segments out of the typical adjacency phase. A specific Improvement might be, for example, a new or reconstructed intersection or street segment, such as the widening of an existing street.

Therefore, thresholds have been established for each applicable traffic infrastructure Improvement, based on the number of p.m. (evening) peak hour vehicle trips that are likely to cause one or more intersections in the North Plan area to deteriorate to unacceptable levels of service. As part of the review process for each Project, the number of p.m. (evening) peak hour vehicle trips generated will be estimated using the trip rates shown in Table 1, and added to the total calculated number of p.m. (evening) peak hour vehicle trips already generated by the developed portions of the Mission Bay project, using the same trip rates. This number will determine which Infrastructure Improvement has to be built beyond that already required by the adjacency principle.

Tables 2 and 3 identify the street intersections and street segments Improvements, respectively, that are subject to cumulative development requirements and show the approximate number of p.m. (evening) peak hour vehicle trips that establish the need for each such Improvement. The number of p.m. peak hour vehicle trips shown in Tables 2 and 3 could result from a variety of project development schemes and land use combinations. The trip rates shown in Table 1 will be used to establish if a given mix of land use development requires Improvements to the street intersections and street segments listed in Tables 2 and 3.

### **B. Specific Additional Factors and Criteria Influencing Infrastructure Phasing.**

Several other factors or specific criteria will affect the timing and nature of Infrastructure construction. Except as provided below, the general phasing principles in Section II.B shall control the construction of Infrastructure Improvements.

#### **1. Interim Operational Requirements.**

The interim operational requirements as described in Section I.C.3 shall be provided as necessary to adequately serve a Major Phase or Project therein, until such time as the final or permanent Infrastructure Improvements are constructed. These interim Improvements may be removed and/or abandoned, as determined by the Department of Public Works, when the balance of development occurs.

2. **Intersection and Street Segment Improvements.**

a. **Intersection Improvements.**

- (i) Table 2 identifies the approximate levels of cumulative development that produce the number of vehicle trips to require the implementation of the North Plan Area intersections Improvements at each intersection described in Section I.A.1.b. Even if not indicated by Table 2's land use intensity threshold, adjacent intersection Improvements will be constructed with development of an adjacent Project, regardless of the amount of overall cumulative development.
- (ii) **Third Street/Berry Street.** The Improvement in Section I.a.1.b.(ii)A, will be undertaken after the southbound left turn pocket to Terry Francois Boulevard on the Lefty O'Doul Bridge is eliminated, which would occur after the Owens Street/Third Street intersection in the South Plan Area is built.

b. **Street Segments.** Table 3 identifies the approximate levels of cumulative development that would require the implementation of the North Plan Area street segments Improvements described in Section I.A.1.c. Even if not indicated by Table 3's land use intensity threshold, adjacent street segment Improvements will be constructed with the development of an adjacent Project, regardless of the amount of overall cumulative development.

3. **Open Space.**

Improvements on Open Space Parcels or portions thereof, in the North Plan Area, will be undertaken when the adjacent Project is developed, in accordance with the adjacency principle described in Section II.B.1 and as provided in the applicable final map improvement plans as follows:

a. **Development of Parcels N3a and N4a.**

(i) **Channel Esplanade.** (Parcels NP1 and NP3). Improvement to the Channel Esplanade will be phased and completed in segments within a reasonable period of time of Completion of Construction of the immediately adjacent Project in Parcels N3a and N4a , as determined by the Agency at the time of Completion of Construction.. Such construction segments would generally be contiguous with the immediately adjacent Project, and shall also take into consideration reasonable construction, access and storage requirements for each such Project and subsequent Projects.

The phasing of construction of the Channel edge below the top of bank shall be determined during review by resource agencies with jurisdiction.

(ii) Fifth Street Square. (Parcel NP2). Fifth Street Square may be constructed in two (2) separate phases, provided that the initial phase shall be completed within a reasonable period of time of Completion of Construction of the immediately adjacent Project in Parcels NP3a or NP4a, as applicable, as determined by the Agency at the time of Completion of Construction. Such initial phase shall consist of not less than fifty percent (50%) nor more than seventy-five percent (75%) of the Fifth Street Square area, as reasonably determined by the Agency and Owner, subject to reasonable construction, access and storage requirements for each Project and subsequent Projects.

(iii) Parcel NP4. Parcel NP4 will be constructed within a reasonable period of time of Completion of Construction of the immediately adjacent Project in N4a, as determined by the Agency at the time of Completion of Construction.

b. Development of Parcel N5. Improvement of Parcel NP5 will be completed within a reasonable period of time of Completion of Construction of the last Project in Parcel N5, provided, however, that the portion of Parcel NP5 at the end of China Basin Channel adjacent to the Berry Street Connector Road will be constructed in conjunction with the construction of the Berry Street Connector Road.

c. Development of Parcel N1. No Open Space Improvements required.

d. Development of Parcel N2. No Open Space Improvements required.

e. Development of Parcel N3. No Open Space Improvements required.

f. Development of Parcel N4. No Open Space Improvements required.

A construction phasing schedule for Open Space Parcels shall be identified by Owner at the time of Major Phase approval for each Major Phase which includes Open Space Parcels.

#### 4. Interconnecting Infrastructure.

The following interconnecting Infrastructure systems should be provided based upon cumulative development requirements as following.

a. Pedestrian Bridge. The timing of construction of a north and south neighborhood linking pedestrian bridge as described in Section I.C.1, shall be determined by Owner and in accordance with the standard set forth in the South Infrastructure Plan.

b. Possible Low Pressure Water Line at Fourth Street. The results of a new "Hardy Cross" hydraulic model analysis will be submitted by Owner to the San Francisco Water Department at the time of approval of the first Major Phase in the South Plan



Area. The timing of construction of a low pressure water connection to the south, as described in Section I.a.2.c, if necessary, shall be determined based upon the hydraulic analysis described above, subject to the approval of all regulatory agencies with jurisdiction and the San Francisco Water Department.

c. **High pressure (AWSS) Water System West of the Channel along 7th Street to Berry.** The timing of construction of a high pressure water connection to the south, as described in Section I.A.2.d, if appropriate, shall be determined based on adjacency and as approved by the Department of Public Works and subject to approval of all regulatory agencies with jurisdiction and the San Francisco Water Department.

p:\wd\48\4820\2010Q INFRASTRUCTURE PLAN.doc

**NORTH OF CHANNEL  
PLAN AREA**

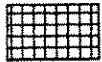
**LEGEND**



RESIDENTIAL



MIXED RESIDENTIAL & COMMERCIAL



OPEN SPACE / PARKS

①

LIMIT OF NORTH OF CHANNEL WORK

②

EMERGENCY ACCESS AND PUBLIC UTILITY EASEMENT AREA

THIRD

STREET

BERRY

STREET

FOURTH

STREET

STREET

KING

FIFTH

STREET

STREET

TOWNSEND

SIXTH

STREET

OWENS

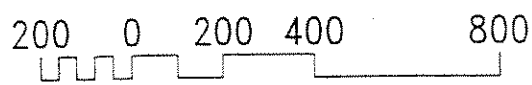
CHINA BASIN CHANNEL

SEVENTH STREET

INF-104D 97-0540/L



GRAPHIC SCALE



A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

①

①

**NORTH OF CHANNEL  
INFRASTRUCTURE  
SIGNALIZATION**

**SYMBOL DESCRIPTION**



TRAFFIC SIGNALIZATION (NEW)



TRAFFIC SIGNALIZATION (UPGRADE)



RE-STRIPING

**NOTE**

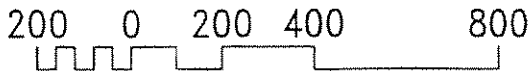
FOR OFF-SITE INFRASTRUCTURE IMPROVEMENTS TO THE INTERSECTION OF 8TH STREET AND TOWNSEND STREET SEE 2a

① LIMIT OF NORTH OF CHANNEL WORK

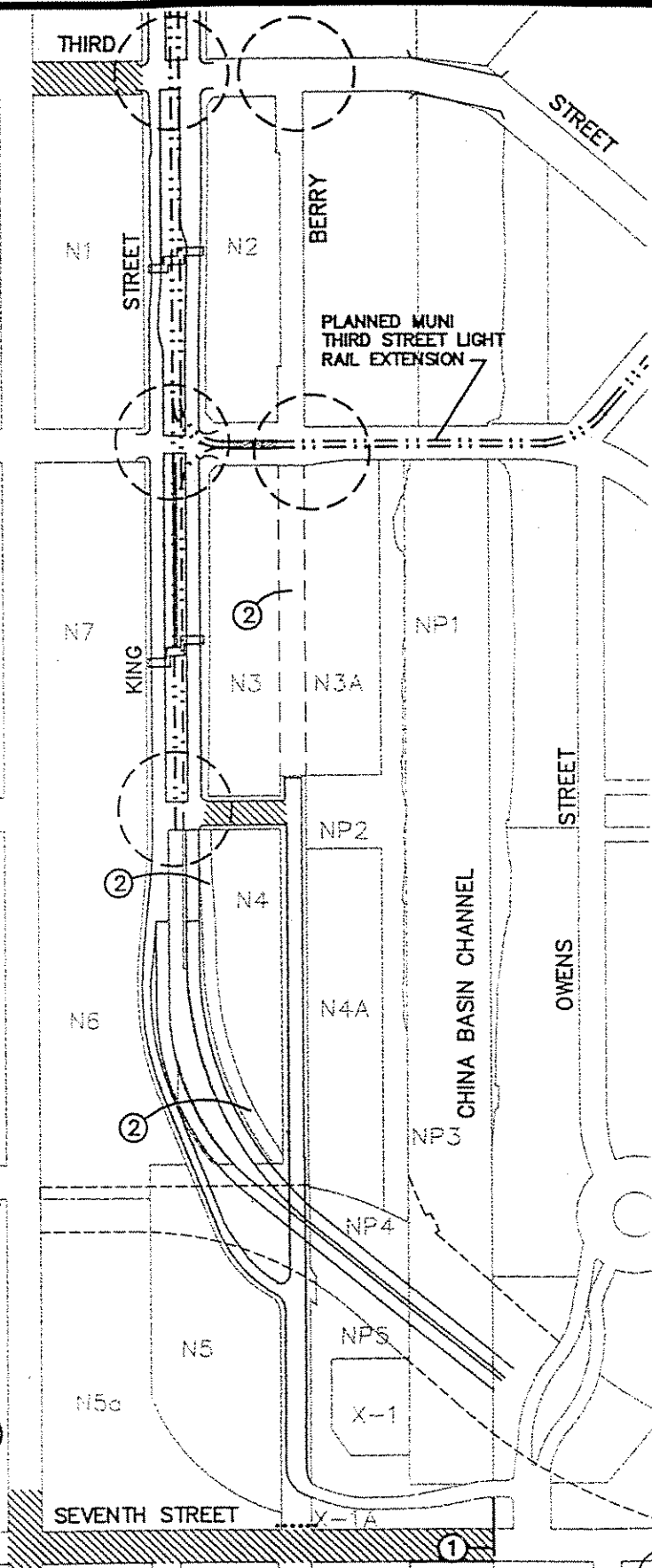
② EMERGENCY ACCESS AND PUBLIC UTILITY EASEMENT AREA



GRAPHIC SCALE

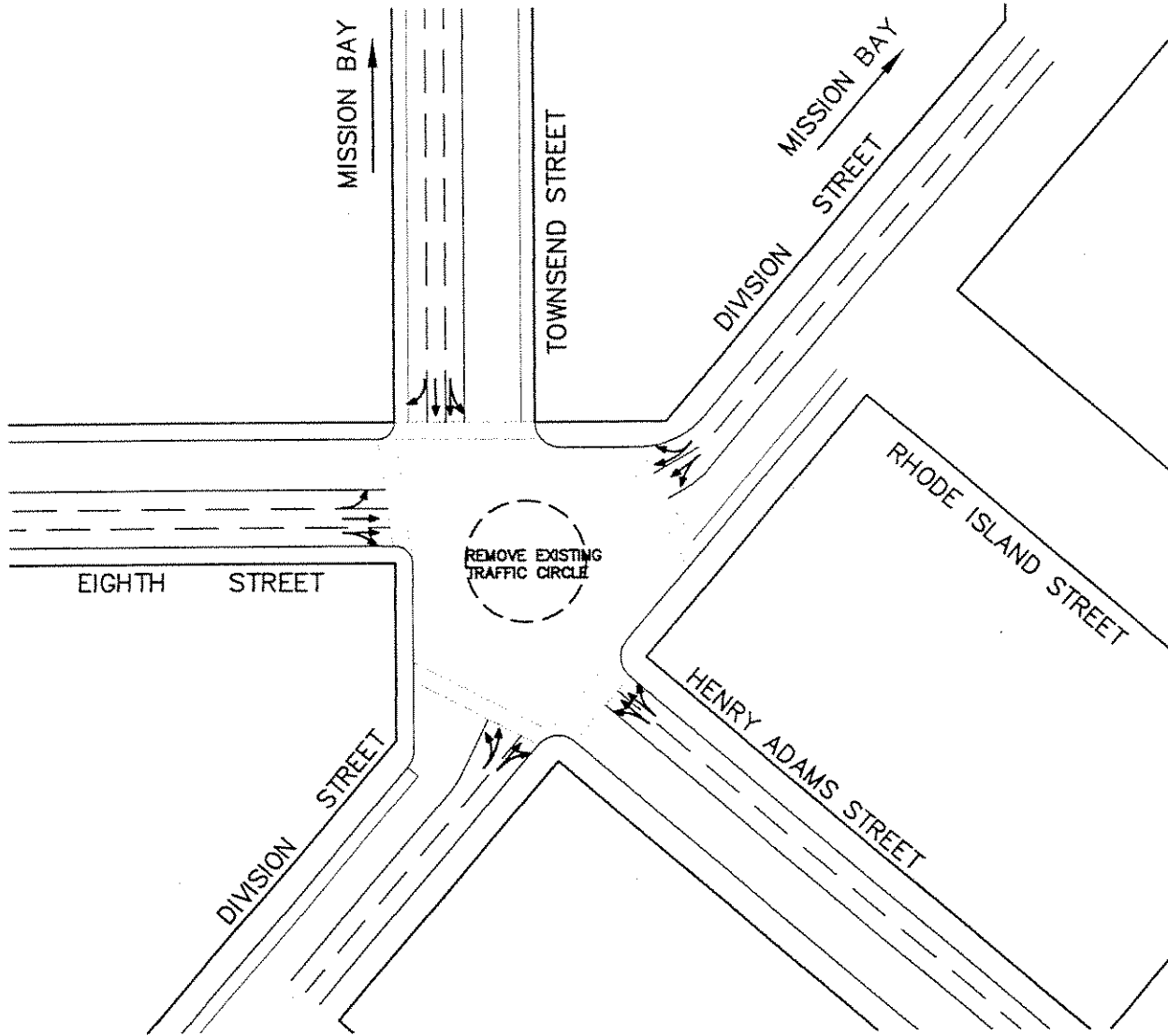


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INF-104D 97-0540/L

**NORTH OF CHANNEL  
INFRASTRUCTURE  
EIGHTH AND TOWNSEND STREET  
TRAFFIC SIGNALIZATION**

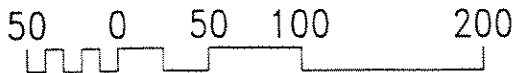


REMOVE EXISTING TRAFFIC CIRCLE

NOTE:  
FULLY SIGNALIZED INTERSECTION



GRAPHIC SCALE



INF-104D 97-0540/L



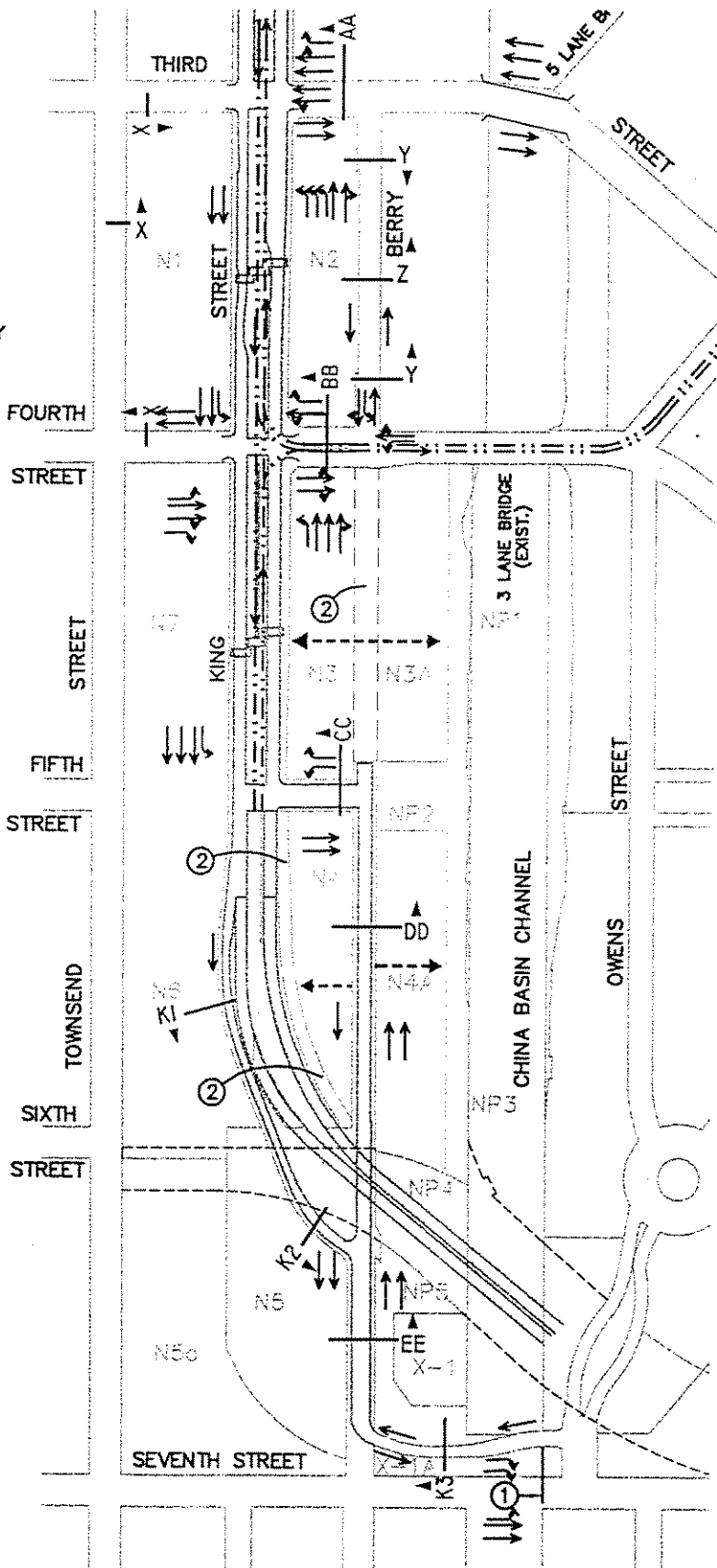
A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

2a

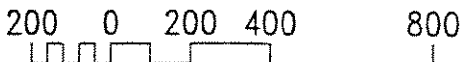
**NORTH OF CHANNEL  
INFRASTRUCTURE  
STREET SECTION KEY MAP**

SYMBOL	DESCRIPTION
	TRAFFIC FLOW
	TURNING MOVEMENT
	SECTIONS
	MID-BLOCK WALKWAY

- ① LIMIT OF NORTH OF CHANNEL WORK
- ② EMERGENCY ACCESS AND PUBLIC UTILITY EASEMENT AREA

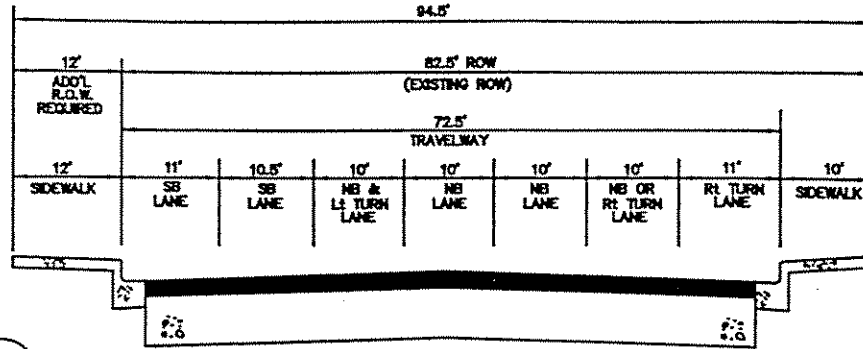


GRAPHIC SCALE



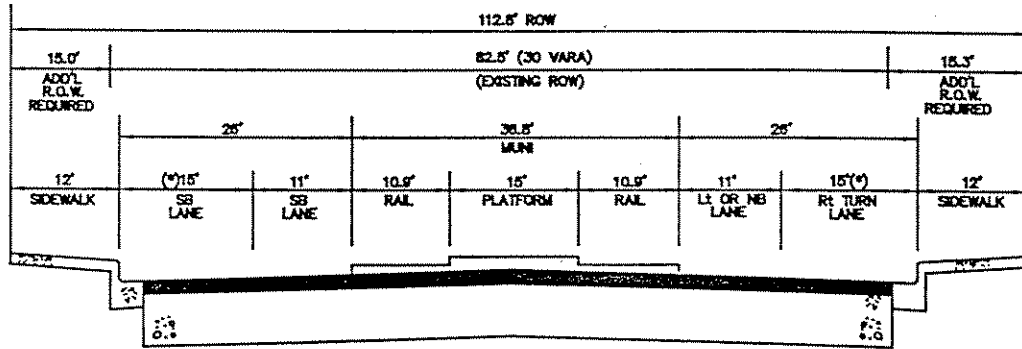
A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

**NORTH OF CHANNEL  
INFRASTRUCTURE  
STREET SECTIONS**



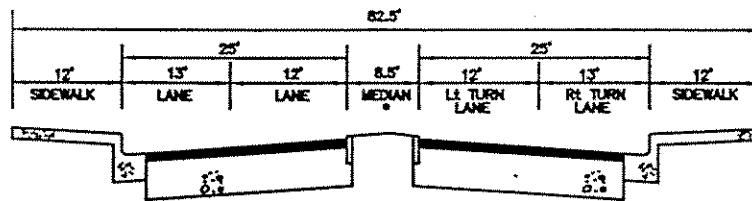
**AA**

PROPOSED THIRD STREET  
BETWEEN KING STREET AND BERRY STREET



**BB**

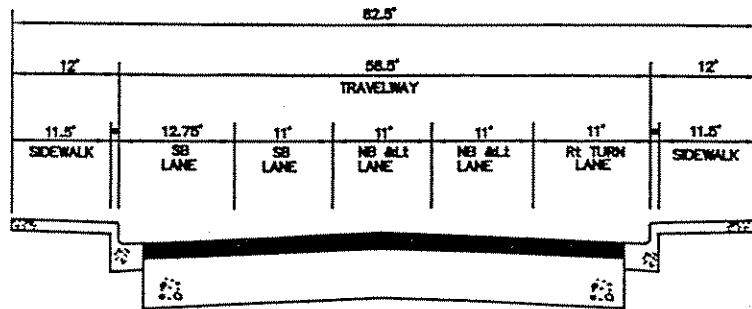
(\*) WIDE CURB LANE TO FACILITATE BIKE TRAFFIC  
PROPOSED FOURTH STREET  
BETWEEN KING STREET AND BERRY STREET



**CC**

PROPOSED FIFTH STREET  
BETWEEN KING STREET AND BERRY STREET

\* MOUNTABLE MEDIAN



**CC**

**ALTERNATE**

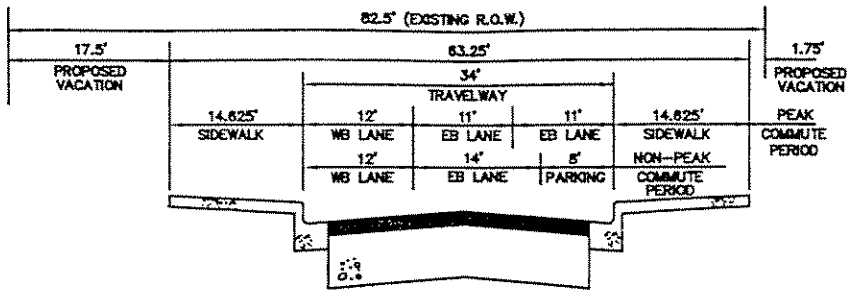
PROPOSED FIFTH STREET  
BETWEEN KING STREET AND BERRY STREET  
A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

\* 0.5 FEET

**3a**

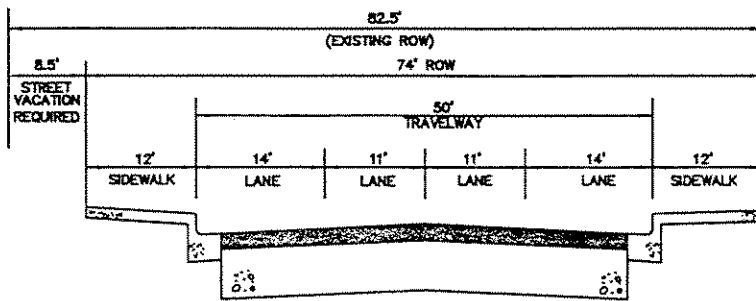
INF-104D 97-0540/L





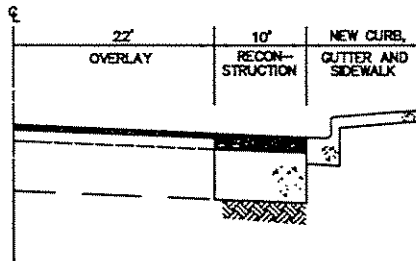
**DD**

PROPOSED BERRY STREET  
BETWEEN FIFTH STREET AND SIXTH STREET



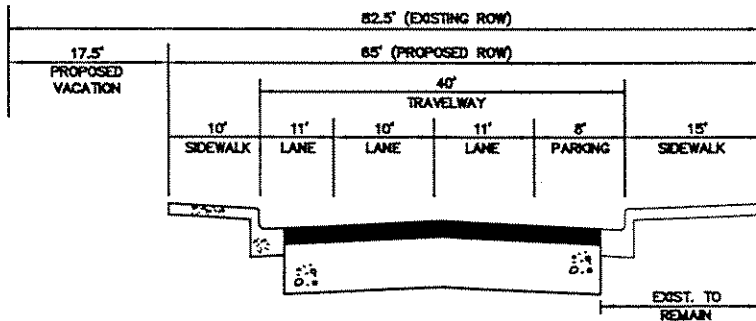
**EE**

PROPOSED BERRY STREET  
BETWEEN SIXTH STREET AND SEVENTH STREET



**X**

ADJACENT BLOCK HI STREET CONFORMS (THIRD STREET, FOURTH STREET, TOWNSEND STREET)



**Y**

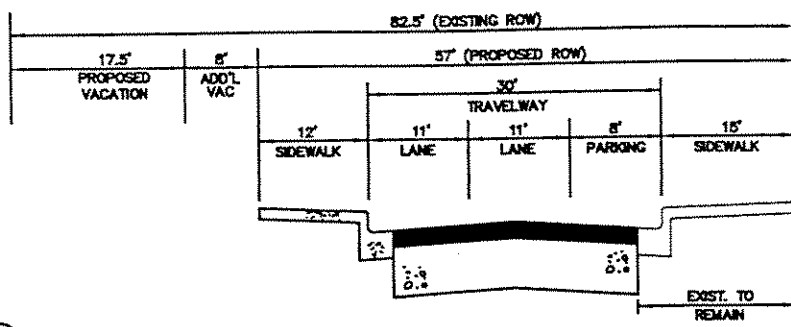
BERRY STREET  
BETWEEN FOURTH STREET AND THIRD STREET, AT THE INTERSECTION APPROACHES

INF-104D 97-0540/L

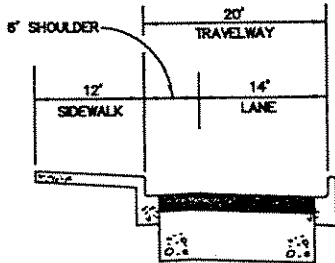


A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

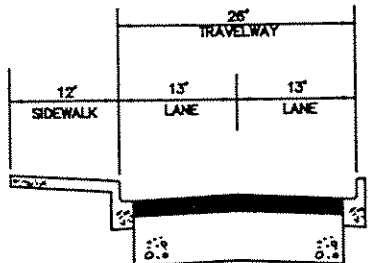
**3b**



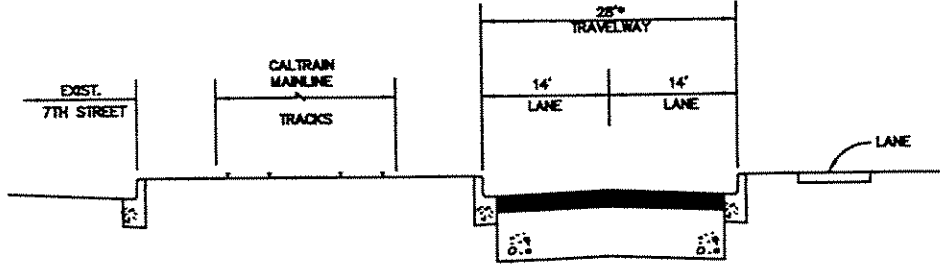
**Z** BERRY STREET BETWEEN THIRD AND FOURTH, MID-BLOCK



**K1** KING STREET FRONTAGE ROAD



**K2** KING STREET FRONTAGE ROAD NEAR BERRY STREET



**K3** CONNECTOR ROAD - BERRY STREET TO NORTH LIMIT OF WORK  
 \*WIDENS TO 3 LANES APPROACHING NEW AT-GRADE RAIL CROSSING  
 (TO BE CONSTRUCTED AS PART OF MISSION BAT SOUTH PLAN)

INF-104D 97-0540/L



A PROJECT OF CATELLUS DEVELOPMENT CORPORATION



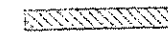
3c



# INFRASTRUCTURE SEWER

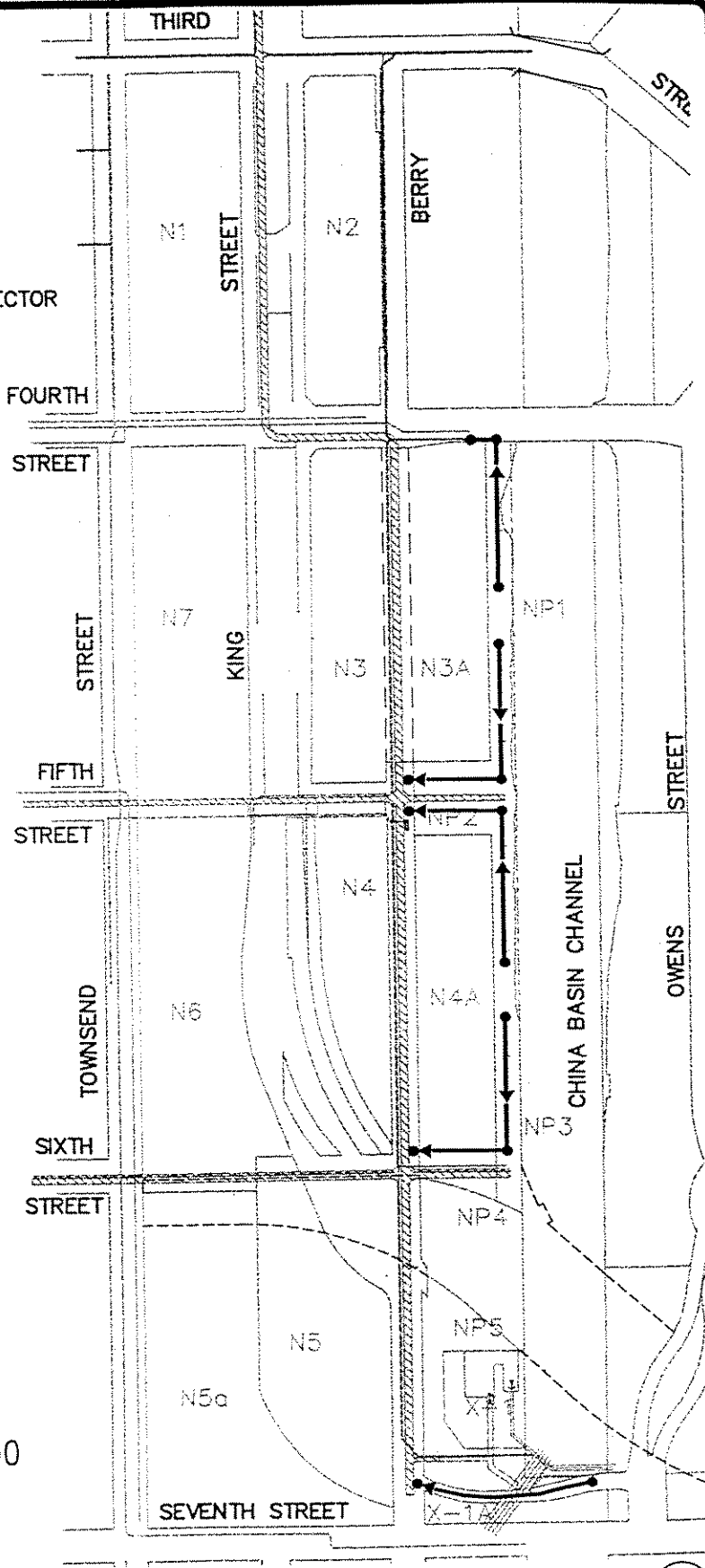
## SYMBOL

## DESCRIPTION

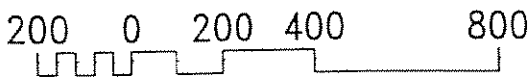
-  STORM DRAIN (NEW)
-  EXISTING SEWER COLLECTOR
-  EXISTING TRANSPORT AND STORAGE BOX

### NOTE:

SANITARY SEWER LATERALS TO SERVE PROPOSED DEVELOPMENTS WILL BE ROUTED TO EXISTING COMBINED SEWER FACILITIES. THESE NEW LATERALS ARE NOT SHOWN ON THIS PLAN.



GRAPHIC SCALE



INF-104D 97-0540/L



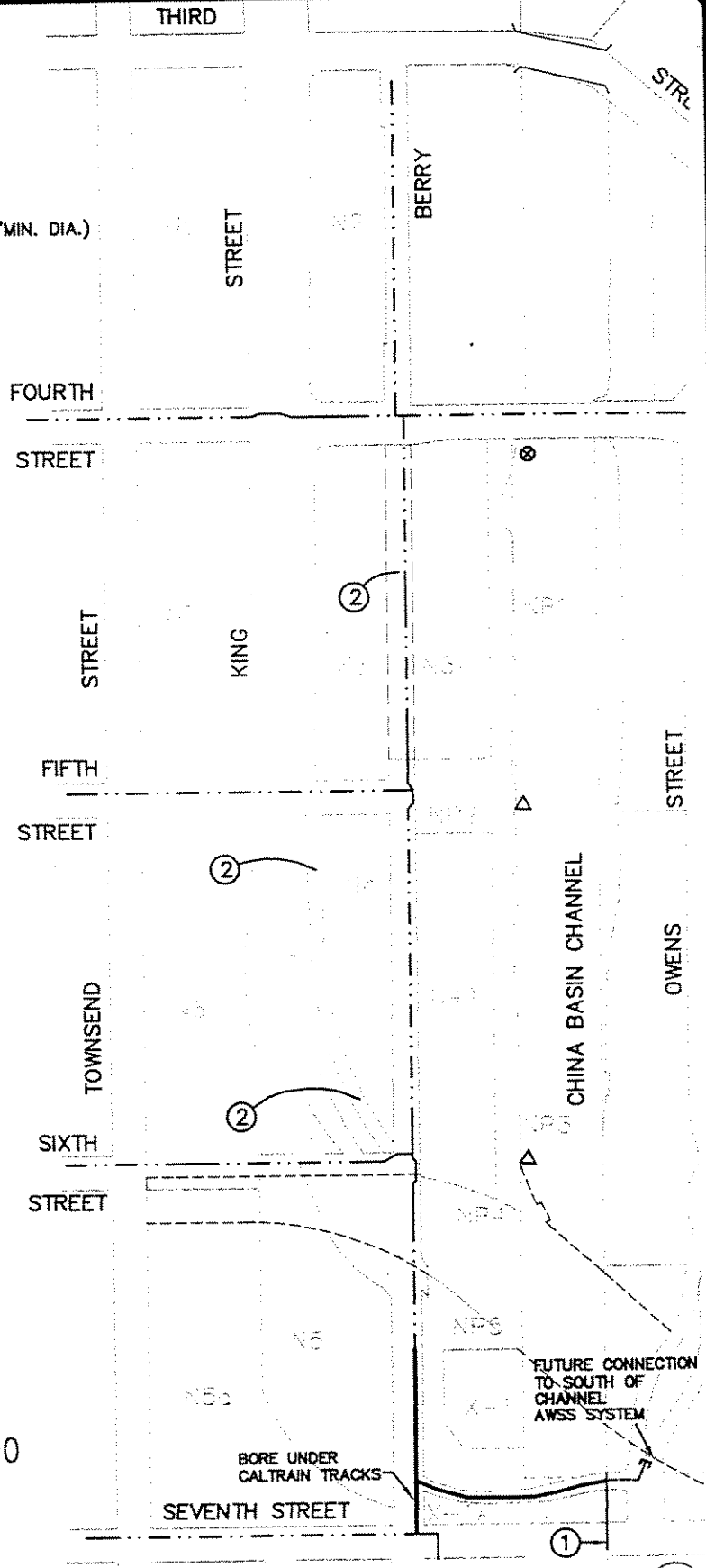
A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

**NORTH OF CHANNEL  
INFRASTRUCTURE  
HIGH PRESSURE WATER  
AND SUCTION INLETS**

**SYMBOL DESCRIPTION**

- PROPOSED HIGH PRESSURE (12" MIN. DIA.)
- - - - - EXISTING HIGH PRESSURE
- △ PROPOSED SUCTION INLET
- ⊕ EXISTING SUCTION INLET

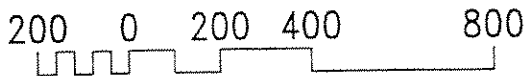
① LIMIT OF NORTH OF CHANNEL WORK



INF-104D 97-0540/L



GRAPHIC SCALE




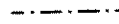
A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

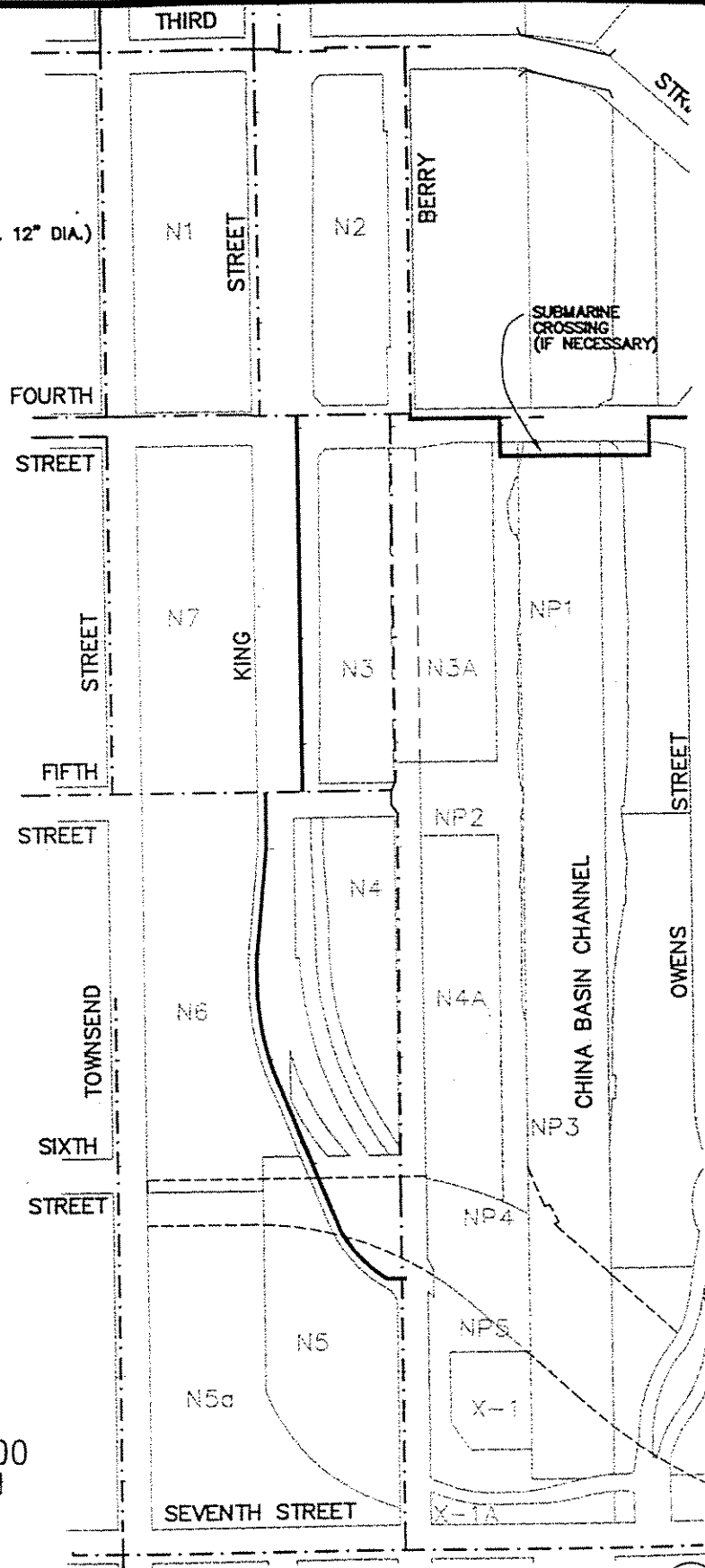
5

**NORTH OF CHANNEL  
INFRASTRUCTURE  
LOW PRESSURE WATER**

**SYMBOL**

**DESCRIPTION**

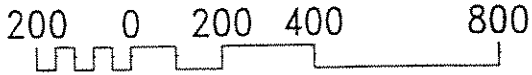
-  PROPOSED LOW PRESSURE (AVE. 12" DIA.)
-  EXISTING LOW PRESSURE



INF-104D 97-0540/L



GRAPHIC SCALE

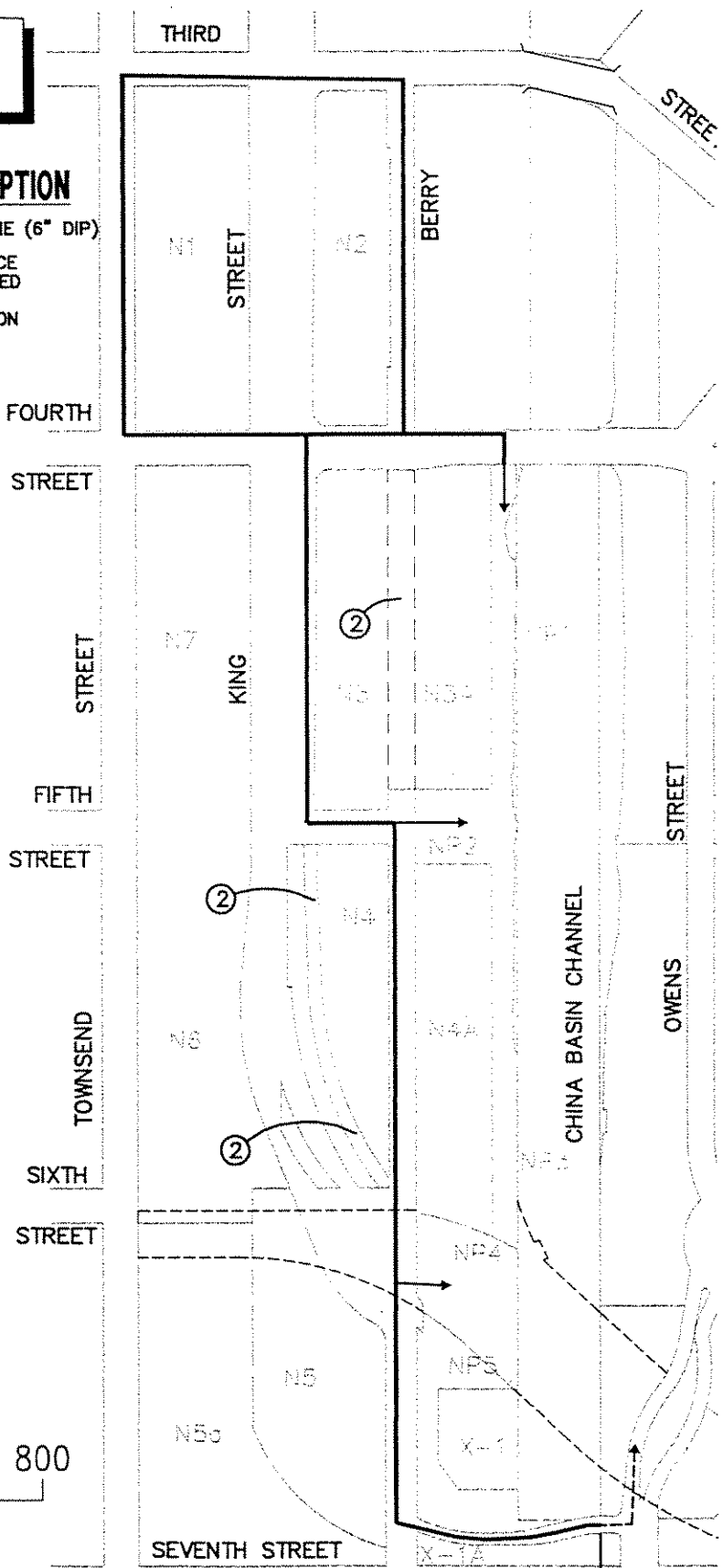


A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

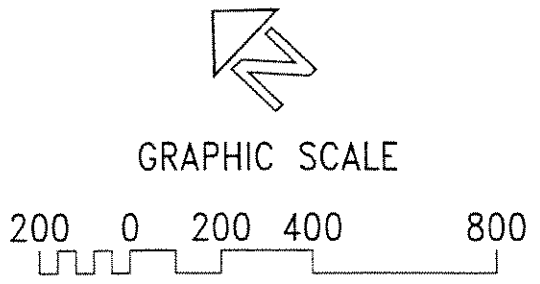
**NORTH OF CHANNEL  
INFRASTRUCTURE  
RECLAIMED WATER**

SYMBOL	DESCRIPTION
	PROPOSED PIPELINE (6" DIP)
	CONNECTION TO FUTURE SOURCE OF SUPPLY NOT YET DETERMINED
	SERVICE CONNECTION

① LIMIT OF NORTH OF CHANNEL WORK



INF-104D 97-0540/L



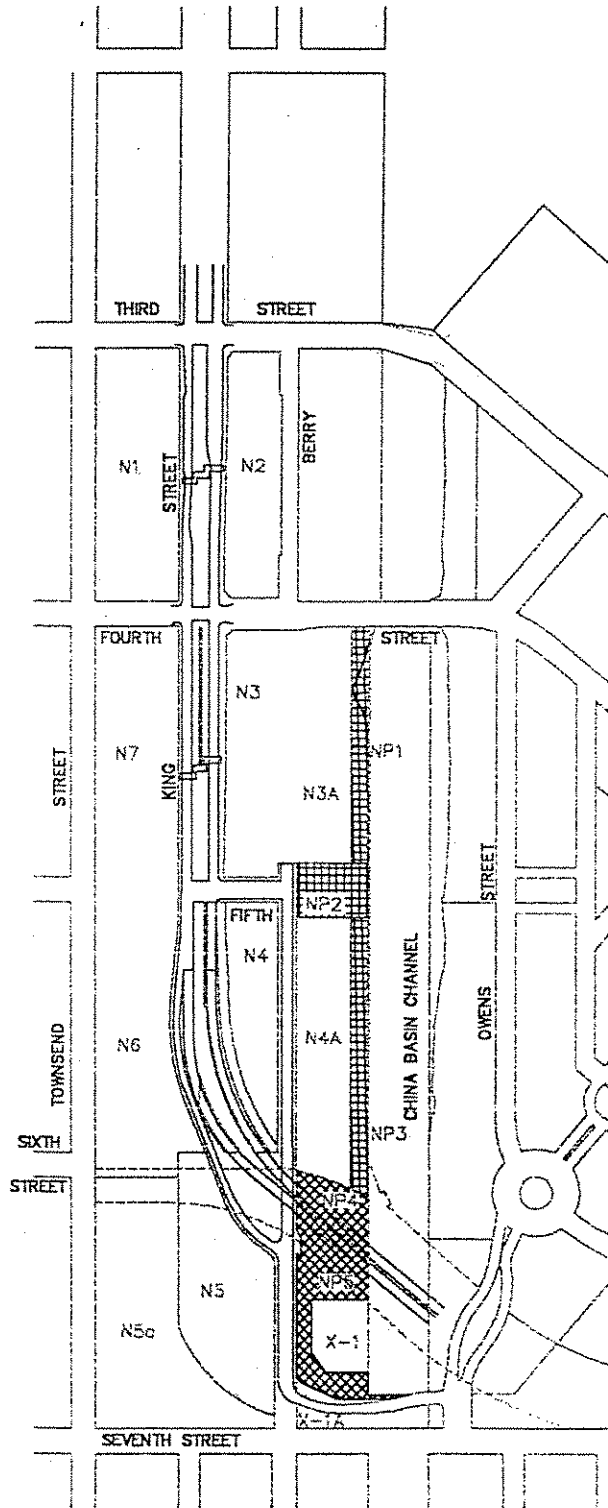
A PROJECT OF CATELLUS DEVELOPMENT CORPORATION

① ⑦

**NORTH OF CHANNEL  
INFRASTRUCTURE  
PARKS & OPEN SPACE**

**LEGEND**

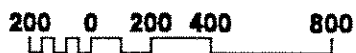
- NP1 CHANNEL PROMENADE
- NP2 FIFTH STREET PLAZA
- NP3 CHANNEL PROMENADE
- NP4 FREEWAY PARK
- NP5 CHANNEL PARK
- P9 CHANNEL PARK



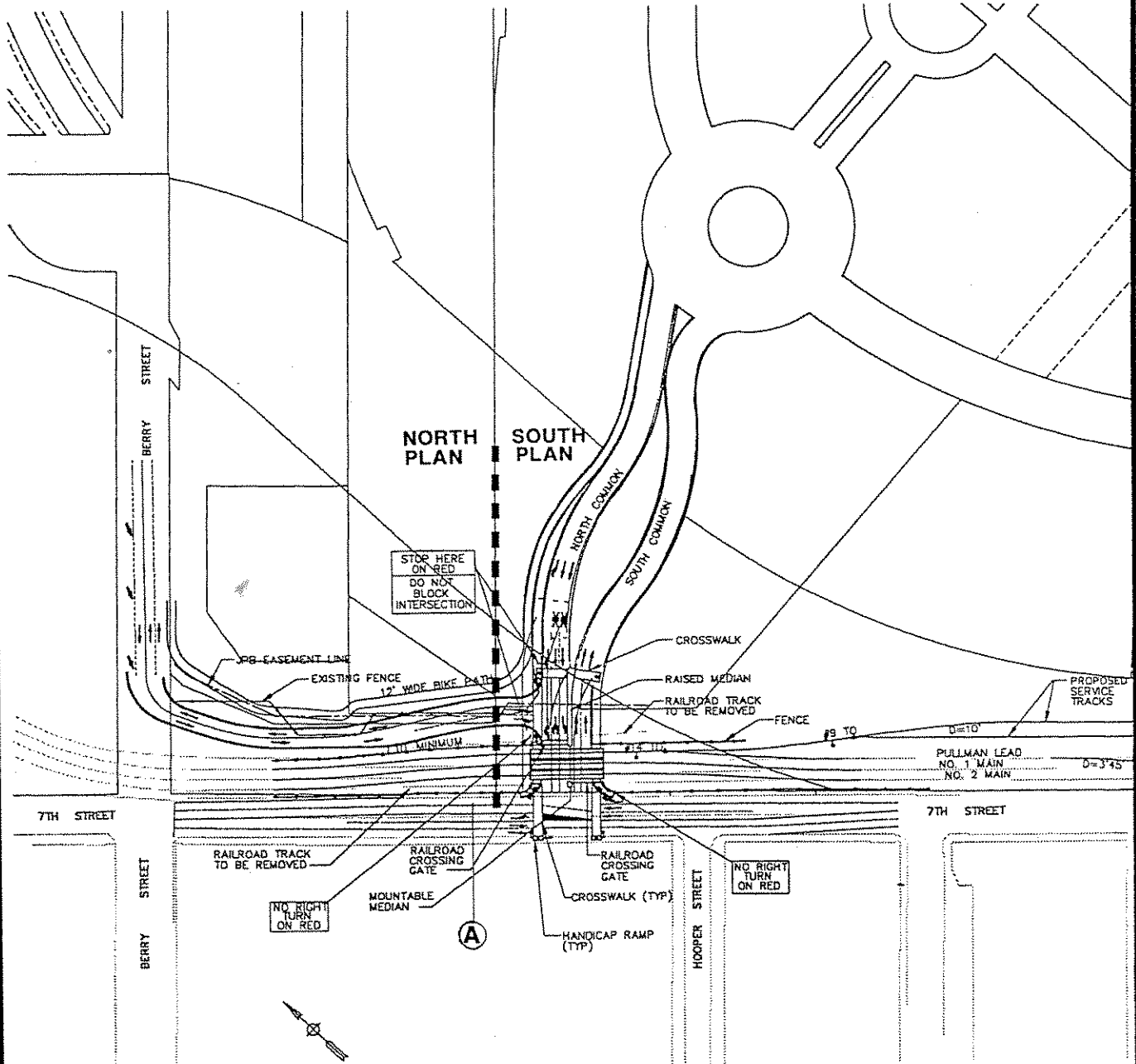
INF-104D 97.0540/L



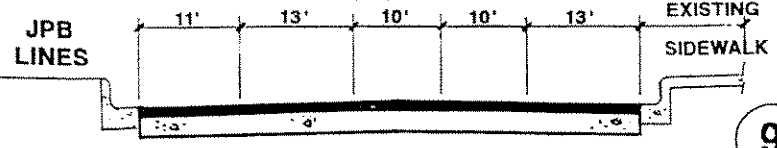
**GRAPHIC SCALE**



**INFRASTRUCTURE  
AT GRADE CROSSING  
AT COMMON**



**NOTE:**  
\* AS AN ALTERNATE, FOUR QUADRANT GATES MAY BE CONSIDERED.



**SANTINA & THOMPSON, INC.**  
Hawk Engineers, Inc.

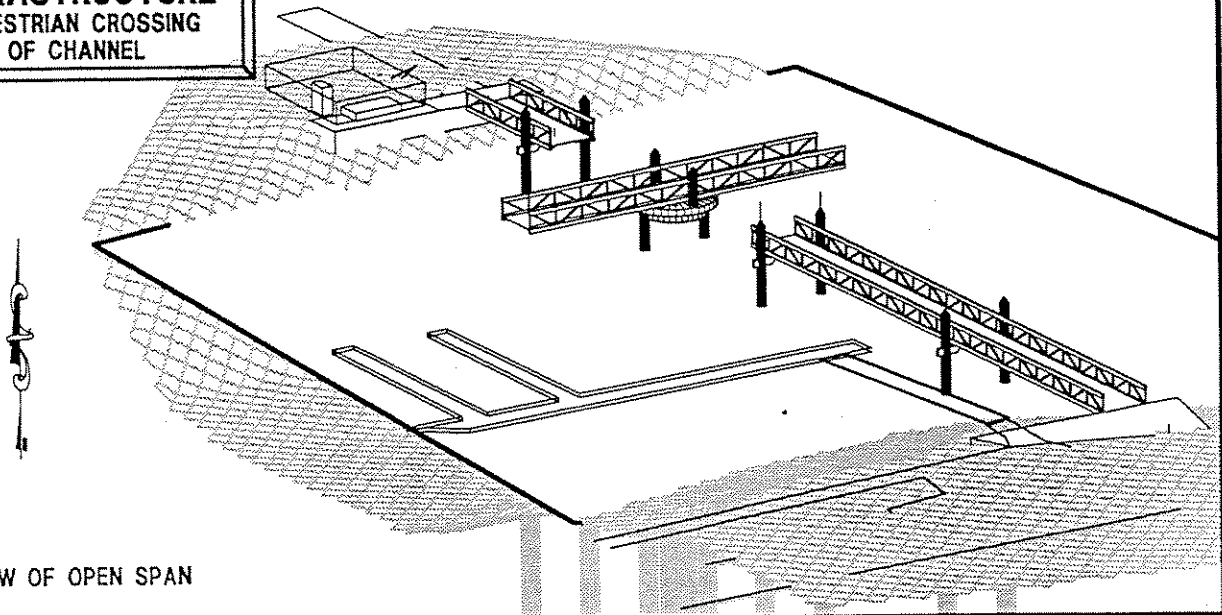
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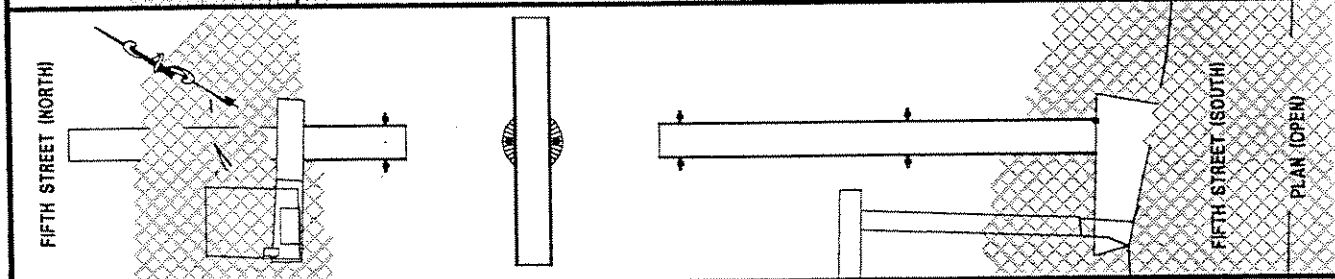
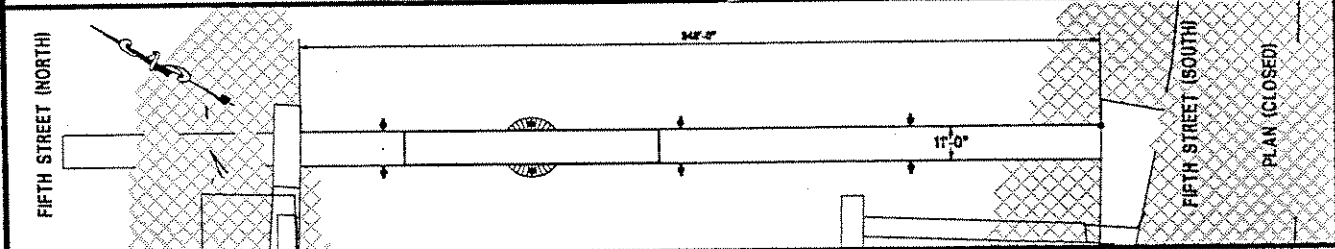
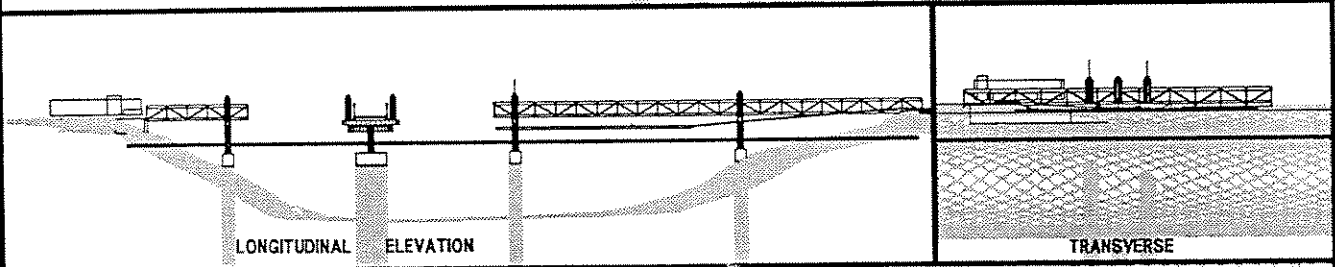
**SECTION A**

9

**NORTH OF CHANNEL  
INFRASTRUCTURE  
PEDESTRIAN CROSSING  
OF CHANNEL**



3-D VIEW OF OPEN SPAN



**SANTINA &  
THOMPSON, INC.**

**Hawk  
Engineers, Inc.**

NOT TO SCALE  
7-30-98

10

**TABLE 1. MISSION BAY PM PEAK HOUR VEHICLE TRIP GENERATION RATES**

Project Areas	Land Use Type	PM Peak Hour Vehicle Trip Rate
Mission Bay North	Retail	1.36 per ksq. ft.
	Restaurant	6.02 per ksq. ft.
	Residential	0.75 per d.u.
	Movie Theater	0.06 per seat
Mission Bay South	Retail	2.00 per ksq. ft.
	Hotel	0.27 per room
	Residential	0.81 per d.u.
	Office	0.95 per ksq. ft.
	Research & Development	0.59 per ksq. ft.
	Large Retail	4.50 per ksq. ft.
UCSF Campus	UCSF	0.61 per ksq. ft.
	School	0.05 per student

Notes:

ksq. ft. = 1,000 square feet

d.u. = dwelling unit

Source: Table VI.1, p. VI.8, Volume II, Draft Mission Bay Subsequent Environmental Impact Report



**TABLE 2. MISSION BAY NORTH: INTERSECTION IMPROVEMENT THRESHOLDS  
BASED ON CUMULATIVE PROJECT PM PEAK HOUR VEHICLE TRIPS\***

Intersection	Measure	Vehicle Trips
Third/King	Reconfigure signal & widen street.	5,500
Fourth/King <sup>1</sup>	Reconfigure signal & widen street.	5,500
Fifth/King	Narrow median & reconfigure signal.	8,200 <sup>2</sup>
Third/Berry	New signal & restripe street.	5,500
Seventh/Berry	Restripe street.	14,200 <sup>3</sup>
Third/Townsend	Restripe street.	10,400 <sup>2</sup>
Seventh/Townsend	Restripe street.	8,200 <sup>2</sup>
Eighth/Townsend	Intersection reconstruction.	8,200 <sup>2</sup>
Fourth/Berry <sup>1</sup>	Reconfigure signal.	14,200 <sup>3</sup>

\* When Mission Bay development reaches a level that produces the number of p.m. peak hour project vehicle trips shown, the intersection would need to include the measures shown in order to maintain an acceptable level of service.

<sup>1</sup> Improvements may be needed before the vehicle threshold indicated because of conformity with MUNI Third Street Light Rail extension construction.

<sup>2</sup> May include development of up to 460,000 square feet of commercial/industrial, 40,000 square feet of city-serving retail and 90 dwelling units which are not part of the Owner Project in the South Plan Area.

<sup>3</sup> May include development of up to 1,064,000 square feet of commercial/industrial, 90,000 square feet of city-serving retail and 90 dwelling units which are not part of the Owner Project in the South Plan Area.

Source: Table VI.2, p. VI.13 and Table VI.4, p. VI.21, Volume II, Draft Mission Bay Subsequent Environmental Impact Report

**TABLE 3. MISSION BAY NORTH: STREET SEGMENT  
IMPROVEMENT THRESHOLDS BASED ON CUMULATIVE PROJECT  
PM PEAK HOUR VEHICLE TRIPS\***

Street Segment	PM Peak Hour Vehicle Trips
King Street (eastbound) between Fourth and Fifth Streets	5,500
King Street (westbound) between Fifth and Berry Streets	5,500
Third Street between Berry and King Streets	5,500
Fourth Street between Townsend Street and Peter Maloney Bridge <sup>1</sup>	5,500
Berry Street extension to The Common	8,200 <sup>2</sup>

\*When Mission Bay development reaches a level that produces the number of p.m. peak hour project vehicle trips shown, the intersection would need to include the measures shown in order to maintain an acceptable level of service.

<sup>1</sup> Improvements may be needed before the time indicated because of conformity with MUNI Third Street Light Rail extension construction.

<sup>2</sup> May include development of up to 460,000 square feet of commercial/industrial, 40,000 square feet of city-serving retail and 90 dwelling units which are not part of the Owner Project in the South Plan Area.

Source: Table VI.3, p. VI.16, Volume II, Draft Mission Bay Subsequent Environmental Impact Report