

**APPENDIX I**

**CITY OF TORRANCE PERMIT AND BUSINESS LICENSE**





City of Torrance, Community Development Department

# Permit Application Form

3031 TORRANCE BLVD. • TORRANCE, CA 90503

## OWNER/APPLICANT INFORMATION

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

Zip: \_\_\_\_\_

Phone: \_\_\_\_\_

Evacuation permits will not be issued without USA I.D. number.

Underground Service Alert  
Call 1-800/227-2600

USA I.D. #: \_\_\_\_\_

## CONTRACTOR INFORMATION ON FILE

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

State License #: \_\_\_\_\_

Class: \_\_\_\_\_ Exp. Date: \_\_\_\_\_

City Business #: \_\_\_\_\_

Workers Comp. #: \_\_\_\_\_

Exp. Date: \_\_\_\_\_

## JOB LOCATION/ADDRESS

(or closest street address)

Please list cross streets: \_\_\_\_\_

\_\_\_\_\_

## DESCRIPTION OF WORK

\_\_\_\_\_

\_\_\_\_\_

Lin/Ft Trench \_\_\_\_\_

Width of Trench \_\_\_\_\_

Lin/Ft Curb & Gutter \_\_\_\_\_

Lin/Ft Bore \_\_\_\_\_

Sewer Connection \_\_\_\_\_

Number of Curb Drains \_\_\_\_\_

Sq/Ft Asphalt \_\_\_\_\_

Sq/Ft Concrete \_\_\_\_\_

Sq/Ft Dirt \_\_\_\_\_

Work Order Number (for utility companies): \_\_\_\_\_

Applicant or Authorized Signature: \_\_\_\_\_

For further permit information, please call 310/618-5898 or Fax 310/618-2846.



## Contractor Qualification List

CurlyGutter .....	A(General Engineering) C8(Concrete Contractor)	Sewer Mainline .....	A(General Engineering) C34(Pipeline Contractor) C42(Sanitation Contractor)
Driveways .....	A(General Engineering) C8(Concrete Contractor)	Storm Drains .....	A(General Engineering) C34(Pipeline Contractor) C42(Sanitation Contractor)
Sidewalks .....	A(General Engineering) B(General Building) C8(Concrete Contractor)	U/G Utilities .....	A (General Engineering) (Water, Gas or Oil) C34 (Pipeline Contractor)
Street/Alley .....	A(General Engineering) C8(Concrete Contractor) C12(Earth and Paving Contractor)	U/G Electrical .....	A (General Engineering) C8 (Concrete Contractor) C12 (Earth and Paving Contractors)
Sewer Lateral .....	A (General Engineering) C34(Pipeline Contractor) C42(Sanitation Contractor)		

## Contractor Qualification List

- 1) FOR INSPECTIONS 24 hour notice is required, before, during, and after construction. Call 310-618-5898, 7:30 AM - 5:30 PM, to SCHEDULE AN INSEPCION.
- 2) Provide TRAFFIC CONTROL per the "CITY OF TORRANCE CONSTRUCTION TRAFFIC CONTROL PROCBDURES." Street closures shall be per City of Torrance Standard T603. Major street lane closures between 8:30 AM - 3:30 PM only. ONE STANDARD ARROWBOARD REQUIRED FOR EACH LANE CLOSURE.
- 3) Permitt is not valid until two working days after notifying DIG-ALERT of project. USA # \_\_\_\_\_
- 4) Do not remove any trees or shrubs without approval of Torrance Tree Supervisor (310-781-6900).
- 5) Contractor will be billed for overtime inspection services. OVERTIME REQUESTS must be submitted for approval 24 hrs in advance.
- 6) Construction site CLEANUP and GRAFFITI removal must be completed prior to finaling of this permit. The work site shall be kept in a well maintained condition. Signage shall be free of graffiti, replaced if bent, vandalized or displays loss of reflectivity. Any graffiti on construction signs must be removed or replaced within 24 hours of notification.
- 7) Any street striping, crosswalk, raised reflective pavement marker or pavement markings damaged by this construction shall be replaced to the satisfaction of the Torrance Public Works Department (310-781-6900).
- 8) THIS PERMIT WILL BE REVOKED if any pollutant is released into or allowed to remain in any component of the city drainage system.
- 9) Trench backfill and pavement repairs shall be per City of Torrance Standard T116.
- 10) Any irrigation system components damaged by this construction shall be replaced to the satisfaction of Park Services (310-618-2930).
- 11) All survey monuments in the project area MUST be located and tied out and a Corner Record filed prior to the start of construction. Also, all destroyed monuments must be replaced prior to receiving final inspection.
- 12) It is the responsibility of the contractor to REPLACE any PAVEMENT removed by this construction.
- 13) The City of Torrance is held harmless from the results of any action or accidents caused by the permittee, his employees, or equipment in the performance of the work described or covered in this permit. Validation of this permit SHALL NOT be held to permit or to be an approval of the violation of any applicable provision of the City Code covering this work, or any other provisions of the City of Torrance Code. In the granting of a Construction & Excavation permit, the Community Development Director may impose such conditions thereon, in addition to those otherwise provided herein, as are reasonably necessary to prevent the proposed operations from being conducted in such a manner as to constitute or create a HAZARD TO LIFE or property or be detrimental to property.



**NOTICE  
CITY OF TORRANCE  
COMMUNITY DEVELOPMENT DEPARTMENT/  
ENGINEERING DIVISION  
NEW INSURANCE REGULATIONS**

The City of Torrance Community Development Department/Engineering Division will be requiring proof of liability insurance from each contractor applying for a Construction & Excavation permit to work in the public right-of-way or in a public easement beginning October 1, 2001. Insurance shall cover contractor and vehicles used in the construction. The attached requirements dated September 20, 2001 will detail the insurance limits.

**All insurance certificates shall have an additional clause that states:** *"The City of Torrance, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer"* as additional insured.

Contractors should bring in proof of insurance at the time of application for permit. For major companies that are self-insured, a letter stating this fact and signed by an officer of the firm will be acceptable. Annual insurance may also be kept on file for contractors working periodically within the City of Torrance.

If you have any questions, please contact the Engineering Division Permit Counter at 310-618-5898.

JEFFERY W. GIBSON  
Community Development Director  
City of Torrance

**EFFECTIVE 8/11/03**



8/11/03

**CITY OF TORRANCE  
COMMUNITY DEVELOPMENT DEPARTMENT/  
ENGINEERING DIVISION**

**PERMIT APPLICATION FORM  
INSURANCE REQUIREMENTS**

Any entity performing work on City streets, right-of-way, and property must comply with the following requirements.

**1. TYPE OF INSURANCE**

Any entity performing work must maintain at their sole expense the following insurance, which shall be full coverage not subject to self-insurance provisions.

- General Liability including coverage for premises, products and completed operations, underground hazards, independent contractors, personal injury and contractual obligations with combined single limits of at least \$1,000,000 per occurrence.
- Automobile Liability including owned, non-owned and hired vehicles, with at least the following limits of liability:
  - Primary Bodily Injury with limits of at least \$500,000 per person, \$1,000,000 per occurrence AND; Primary Property Damage with limits of at least \$500,000 per occurrence, OR
  - Combined single limits of at least \$1,000,000 per occurrence.
- Workers' Compensation with limits as required by the State of California and Employer's Liability with limits of at least \$1,000,000.

**2. CERTIFICATES**

- Certificates or an attached endorsement must be provided that contains the following provisions:
  - The City of Torrance, the City Council and each member thereof, members of boards and commissions, every officer, agent, official, employee and volunteer must be named as additional insured under the automobile and general liability policies.
  - The insurance policies required by this clause shall contain a provision that no termination, cancellation or change of coverage can be made without 30 days written notice to the City.

**3. FILING REQUIREMENTS**

- Certificates of insurance and/or endorsements must be provided to the Community Development Department, Permits and Records Section, 3031 Torrance Blvd., Torrance, CA 90503, prior to the issuance of the permit.

**4. ADDITIONAL REQUIREMENT**

- Insurance required of any entity performing work will be satisfactory only if issued by companies rated "B+" or better in the most recent edition of Best's Key Rating Guide, and only if they are of a financial category of a VII or better, unless these requirements are modified or waived by the City's Risk Manager.





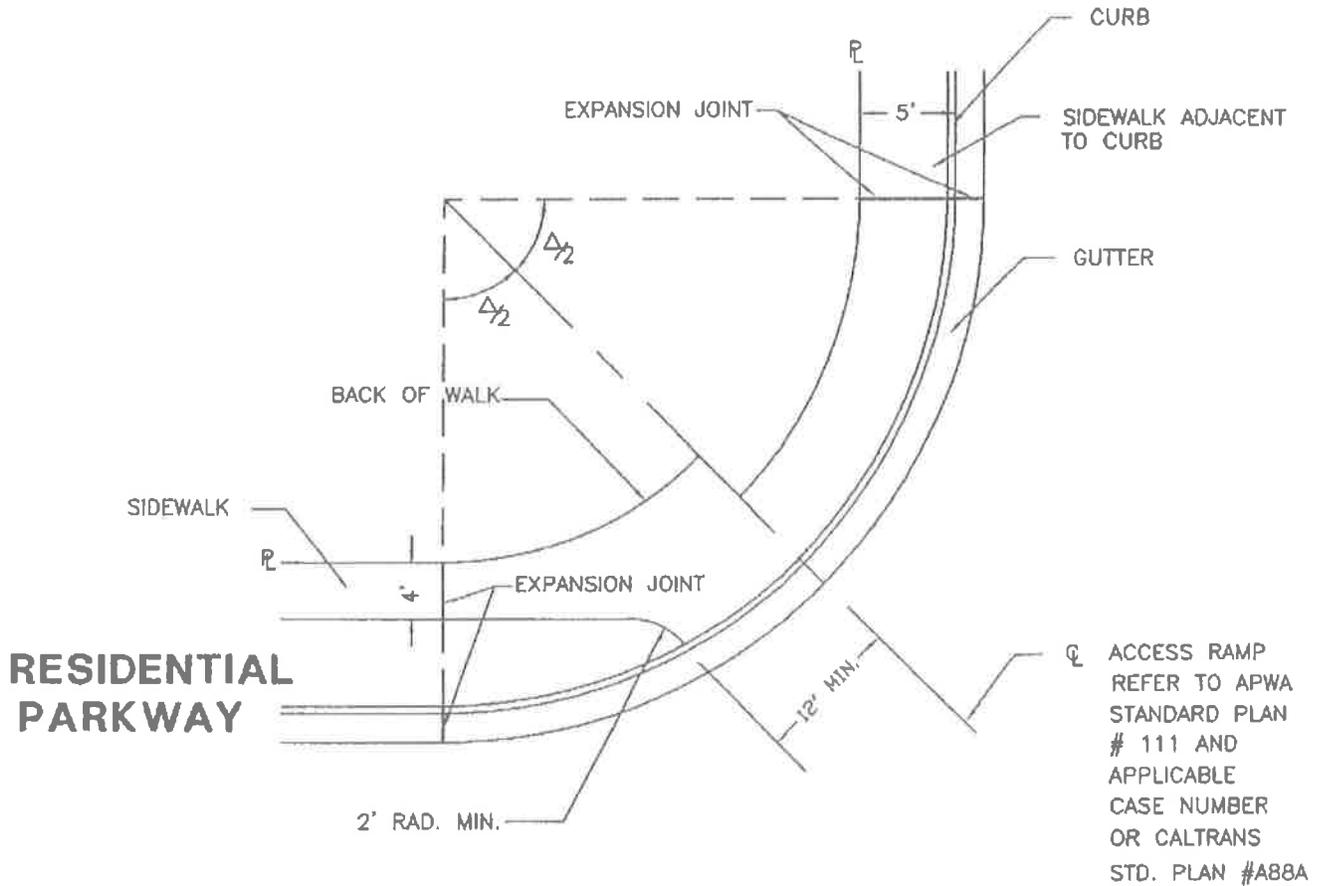


**APPENDIX II**

**CITY OF TORRANCE  
AND  
CITY OF REDONDO BEACH  
STANDARD PLANS**



# INDUSTRIAL PARKWAY



	CURB RETURN	PROPERTY LINE
RESIDENTIAL STREET	25'R	15'R
INDUSTRIAL STREET	35'R	30'R
COLLECTOR STREET	35'R	25'R
MINOR ARTERIAL	35'R	25'R
MAJOR ARTERIAL	35'R	25'R

## CITY OF TORRANCE

### SIDEWALK RETURN

DATE ISSUED

FEB 15, 2007

STANDARD NO.

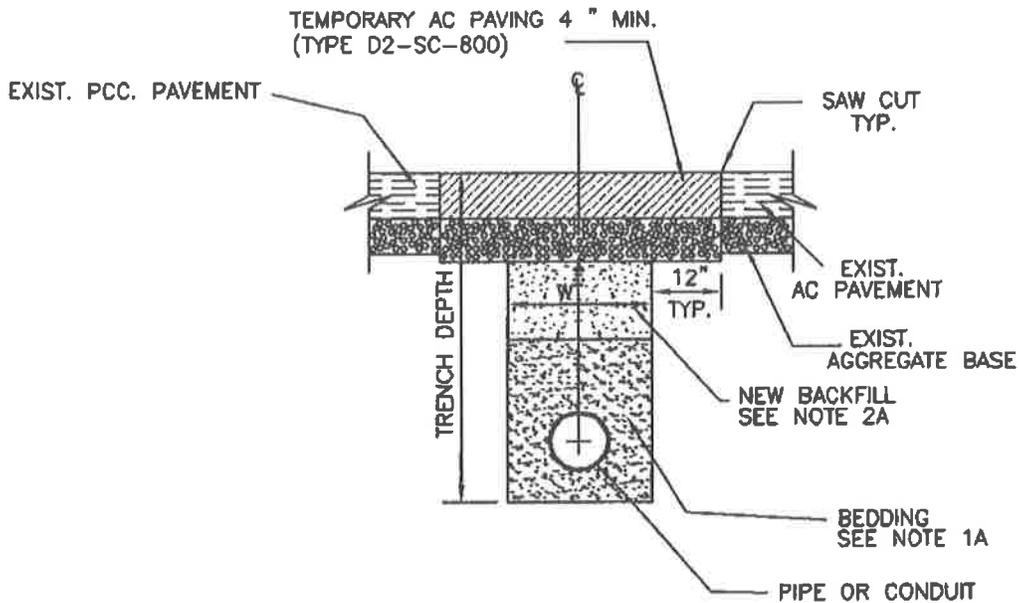
**T114**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

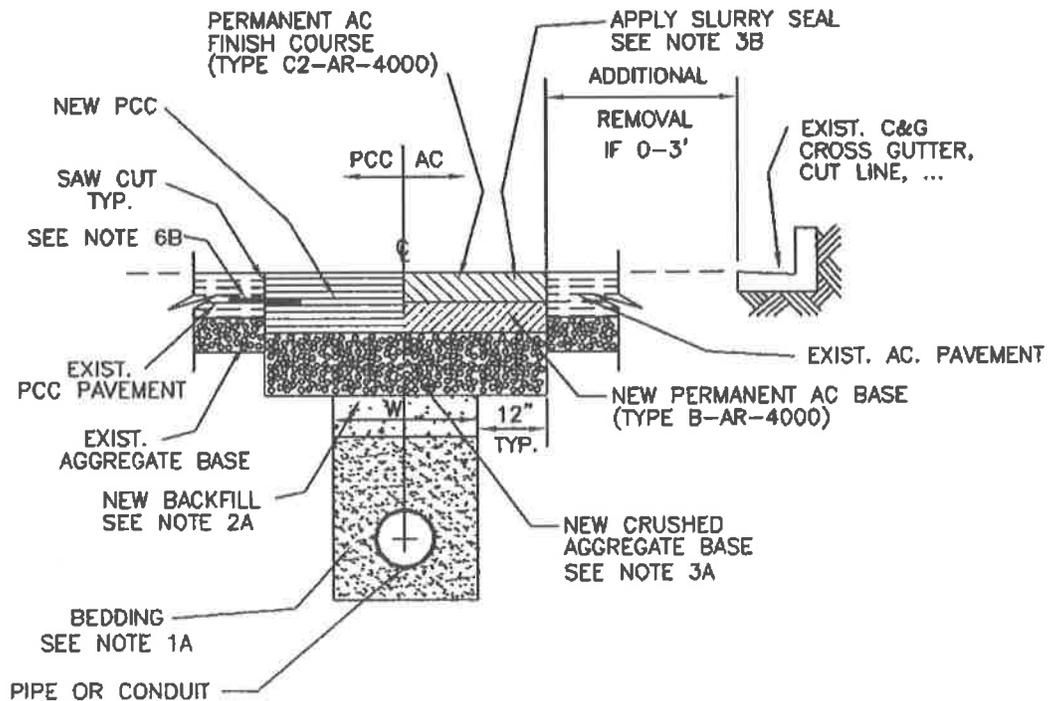
SHEET 1 OF 1

TI/T114





**TEMPORARY ASPHALT REPAIR**



**PERMANENT TRENCH REPAIR**

**TYPICAL TRENCH SECTION WITHIN ROADWAY  
(SEE NOTE 8C FOR EXCEPTION)**

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

DATE ISSUED  
10 SEP 2002

**TRENCH BACKFILL & PAVEMENT REPAIRS**

STANDARD NO.

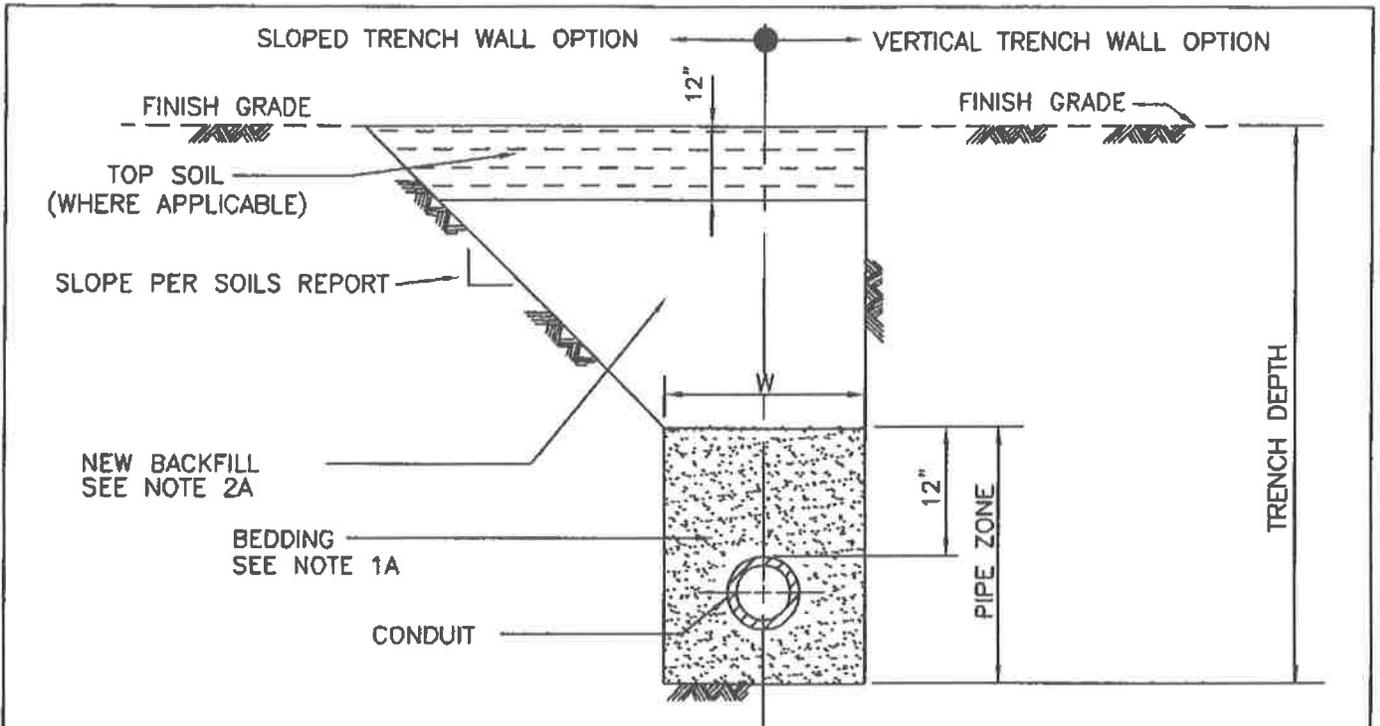
**T116-2**

RICHARD W. BURTT  
ENGINEERING DIRECTOR  
R.C.E. NO. 32862  
R.T.E. NO. 1538

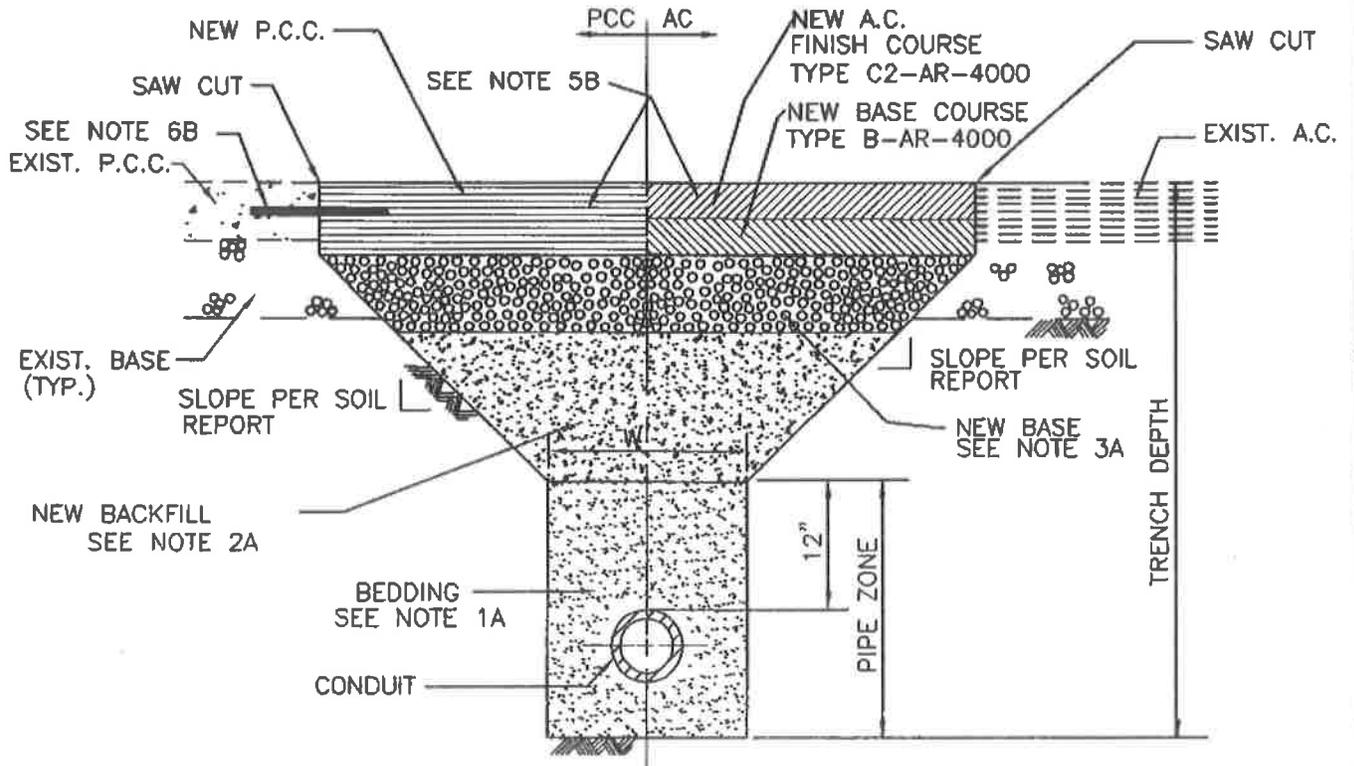
SHEET 1 OF 4

T116-2





**TYPICAL TRENCH SECTION OUTSIDE ROADWAY**



**TYPICAL TRENCH SECTION WITHIN ROADWAY  
SLOPED TRENCH WALL OPTION**

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

T116-2

DATE ISSUED  
10 SEP 2002

**TRENCH BACKFILL & PAVEMENT REPAIRS**

RICHARD W. BURTT  
ENGINEERING DIRECTOR  
R.C.E. NO. 32862  
R.T.E. NO. 1538

STANDARD NO.

**T116-2**

SHEET 2 OF 4



**NOTES:**

**BELOW GROUND:**

1A. SEE STD. PLAN NO'S T204, T302, AND T701 FOR BEDDING REQUIREMENTS.

2A. FOR TRENCHES WITH "W" GREATER THAN 2' OR IF TRENCH WALLS ARE SLOPED, BACKFILL SHALL BE CRUSHED AGGREGATE BASE, OR NATIVE OR OTHER EXCAVATION MATERIAL WITH AN SE VALUE OF 30 OR GREATER. BACKFILL MATERIAL SHALL BE DENSIFIED TO A RELATIVE COMPACTION OF 95% IN THE UPPER 3 FEET AND TO 90% BELOW THE UPPER 3 FEET. FOR TRENCHES LONGER THAN 200' OR LARGER THAN 1,000 SQUARE FEET A LICENSED SOILS ENGINEER SHALL BE PRESENT TO MONITOR THE NATIVE OR IMPORTED BACKFILL OPERATION AND TEST FOR COMPACTION AT 100' OR 200 SQUARE FOOT MAXIMUM INTERVALS

FOR TRENCHES WITH "W" LESS THAN OR EQUAL TO 2' IN THE ROADWAY, A SAND-CEMENT SLURRY (100-E-100) BACKFILL SHALL BE USED. SLURRY SHALL CURE 16 HOURS MINIMUM PRIOR TO BASE PLACEMENT. RAPID SET CEMENT SLURRY SHALL CURE 1 HOUR MINIMUM PRIOR TO BASE PLACEMENT.

IN AREAS NOT IN EXISTING ROADWAY, BACKFILL SHALL BE COMPACTED TO A RELATIVE COMPACTION OF 90%.

3A. NEW CRUSHED AGGREGATE BASE SHALL BE 2" THICKER THAN EXISTING BASE, BUT NOT LESS THAN 8" THICK.

4A. EXCAVATED MATERIAL NOT APPROVED FOR USE IN TRENCH BACKFILL SHALL BE REMOVED FROM JOB SITE UNLESS OTHERWISE USED IN THE WORK.

5A. WHERE WET, UNSTABLE OR RUNNING SOIL IS ENCOUNTERED, SOLID SHEATHING IS REQUIRED FOR ALL VERTICAL TRENCH WALLS.

6A. ANY SHORING REQUIRED SHALL BE DESIGNED BY A REGISTERED CIVIL OR STRUCTURAL ENGINEER.

7A. "W" SHALL BE MEASURED AT TOP OF BEDDING.

**VISIBLE SURFACE:**

1B. IF REMAINING AC PAVEMENT BETWEEN EDGE OF TRENCH AND EXISTING GUTTER, CURB, CROSS GUTTER, OR CUT LINE IS LESS THAN 3 FEET IN WIDTH, THEN THIS AC SHALL BE REMOVED AND REPLACED WITH NEW AC PAVEMENT.

2B. THE ENGINEER MAY REQUIRE WIDER REMOVAL AREA THAN THAT SHOWN ABOVE TO SUIT FIELD CONDITIONS.

3B. CRACKS SHALL BE SEALED AND A TYPE 2 SLURRY SEAL COATING WITH 2% LATEX SHALL BE APPLIED FROM LANE LINE TO LANE LINE FOR LONGITUDINAL TRENCHES GREATER THAN 200' IN LENGTH FOR ANY LANE AFFECTED.

4B. THE THICKNESS OF REPLACEMENT ASPHALT SHALL BE A MINIMUM OF 1" GREATER THAN EXISTING AC (2" GREATER IF EXISTING STREET IS PAVED WITH RUBBERIZED AC) BUT NOT LESS THAN 4" (5" FOR RUBBERIZED AC). IF EXISTING PAVEMENT IS PCC, REPLACEMENT CONCRETE SHALL BE AS PER SECTION 201.1 OF THE STANDARD SPECS AND 1" THICKER THAN EXISTING.

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

DATE ISSUED

10 SEP 2002

**TRENCH BACKFILL & PAVEMENT REPAIRS**

RICHARD W. BURTT  
ENGINEERING DIRECTOR  
R.C.E. NO. 32862  
R.T.E. NO. 1538



STANDARD NO.

**T116-2**

SHEET 3 OF 4

TT\T116-2



5B. THE NEW FINISH COURSE SHALL BE PLACED FLUSH WITH THE EXISTING ADJACENT PAVING SURFACE - MAXIMUM VARIANCE FROM FLUSH IS 1/8". NEW AC PAVEMENT ADJACENT TO EXISTING EDGE OF PCC GUTTER SHALL BE 3/8" HIGHER THAN EDGE OF GUTTER.

6B. FOR PCC ROADWAY PAVEMENT, DOWEL AT 24" O.C., #4 DEFORMED BAR, 6" EMBEDMENT, AND CENTERED IN EXISTING SLAB WITH 1-1/2" MINIMUM CONCRETE COVER. DOWEL SHALL BE EPOXIED IN EXISTING SLAB AND CAST IN NEW SLAB.

**METHODOLOGY:**

1C. AT THE END OF EACH WORK DAY, ANY TRENCH IN AN ARTERIAL OR IN ROLLING HILLS ROAD, MAPLE/235TH ST. OR ARLINGTON AVE. SHALL BE COVERED BY NON-SKID STEEL PLATES OR BE PAVED WITH TEMPORARY OR PERMANENT PAVEMENT FLUSH WITH ADJACENT PAVEMENT SURFACES. WHEN NON-SKID STEEL PLATES ARE USED, THEY SHALL BE WELDED, SECURED IN PLACE, RAMPED WITH AC, AND NOT USED FOR MORE THAN 48 CONSECUTIVE HOURS ON THE SAME SEGMENT OF TRENCH. "PLATE AHEAD" SIGN SHALL BE PROPERLY INSTALLED WHEN PLATES ARE IN USE. OTHER CITY STREETS MAY HAVE LESSER REQUIREMENTS AND WILL BE CONSIDERED ON A CASE BY CASE BASIS.

2C. ALL TRAFFIC LANES SHALL BE CLEANED AND RESTORED FOR USE IMMEDIATELY UPON PLACEMENT OF TEMPORARY AC PAVEMENT, TRENCH PLATES AND/OR FINAL AC PAVEMENT.

3C. ALL TRAFFIC STRIPING AND/OR MARKINGS REMOVED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED IN KIND AS DIRECTED BY THE ENGINEER.

4C. TRAFFIC CONTROL SHALL BE PER CITY OF TORRANCE "CONSTRUCTION TRAFFIC CONTROL PROCEDURES ON CITY STREETS" AVAILABLE FROM THE ENGINEERING DEPARTMENT PERMIT COUNTER.

5C. MORATORIUM FOR CUTTING NEW OR RECONSTRUCTED STREETS IS 5 YEARS WITHOUT SPECIAL APPROVAL FROM THE ENGINEERING DIRECTOR. NEW UTILITY SERVICE CONNECTIONS AND SERVICE LINE REPAIRS ARE EXCEPTED IF NOT ABLE TO BE FORSEEN AT THE TIME THE ROADWAY WAS RECONSTRUCTED. APPROVED LONGITUDINAL EXCAVATIONS IN NEW STREETS SHALL REQUIRE THE FULL LANE TO BE GROUND AND OVERLAID.

6C. SLURRY SEALING OF TRENCH AREA MAY BE OMITTED IF PROJECT IS COORDINATED WITHIN ONE YEAR OF A CITY STREET REHABILITATION OR SLURRY SEAL PROJECT.

7C. A COLLECTION DEVICE SHALL BE USED TO COLLECT SEDIMENTS GENERATED DURING SAWCUTTING OPERATION.

8C. TRENCHES WITH "W" LESS THAN 8" WIDE AND LESS THAN OR EQUAL TO 24" DEEP ARE NOT REQUIRED TO USE T-SECTION PAVEMENT CONSTRUCTION, OR APPLY SLURRY SEAL.

9C. ALL PAVEMENT REMOVALS SHALL USE STRAIGHT LINE SAW CUTS A MINIMUM OF 1.5" DEEP.

10C. BORING SHALL BE CONSIDERED AS A CONTINUOUS TRENCH AS FAR AS EXCAVATION REPAIR. POTHOLES LOCATED INTERMITTENTLY WILL NOT BE TREATED AS SEPARATE EXCAVATIONS BUT AS A CONTINUOUS EXCAVATION. THE CITY SHALL RESERVE THE RIGHT TO REQUIRE BORING OR OPEN TRENCH AS THE SITUATION MAY ARISE.

**CITY OF TORRANCE - ENGINEERING DEPARTMENT**

DATE ISSUED  
27 SEP 2002

**TRENCH BACKFILL & PAVEMENT REPAIRS**

STANDARD NO.

**T116-2**

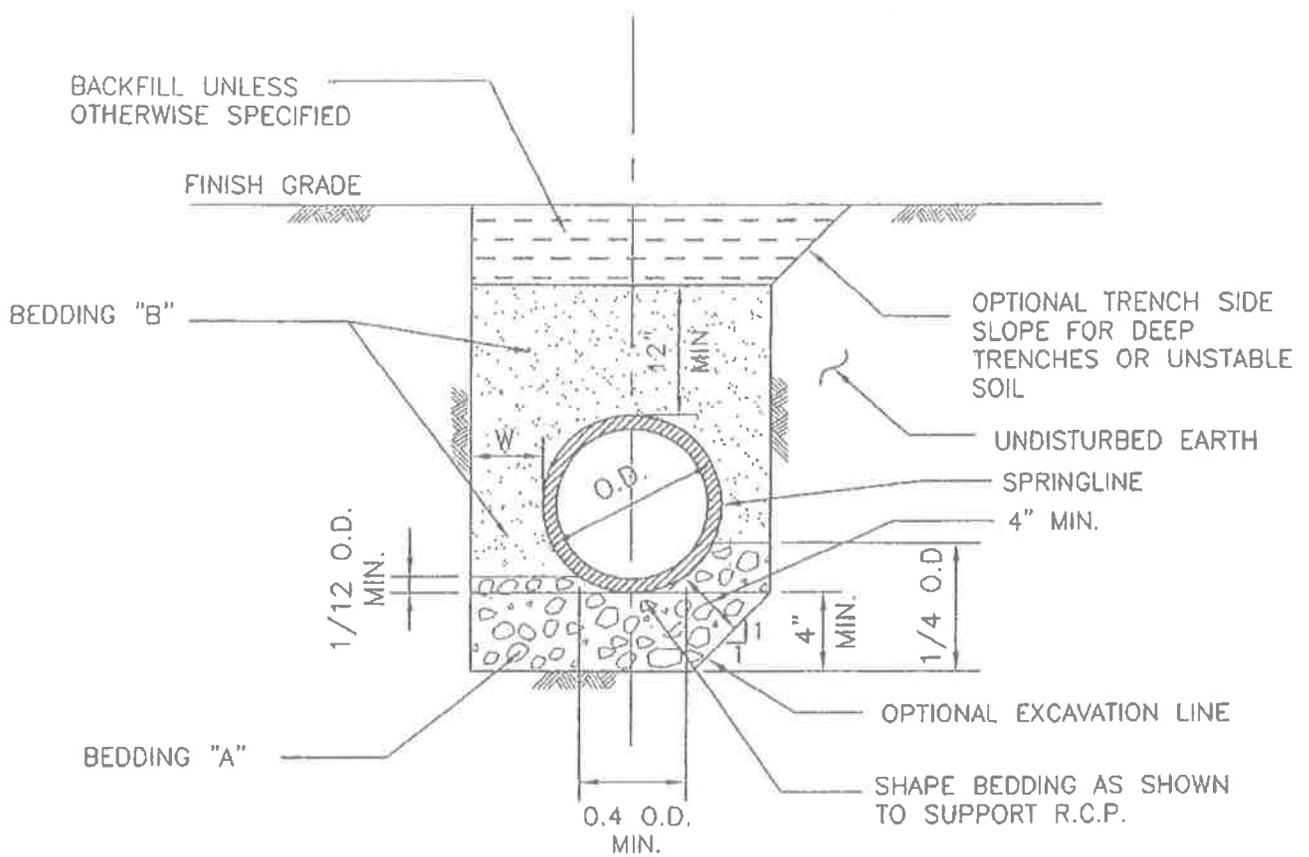
RICHARD W. BURTT  
ENGINEERING DIRECTOR  
R.C.E. NO. 32862  
R.T.E. NO. 1538



SHEET 4 OF 4

TT/T116-2





1. BEDDING "A" SHALL BE COMPOSED OF EITHER SAND, NO. 3 OR NO. 4 CRUSHED ROCK OR GRAVEL PER STANDARD SPECIFICATIONS. OTHER GRANULAR MATERIAL WITH A SAND EQUIVALENT OF 30 OR GREATER MAY BE USED WHEN APPROVED BY THE COMMUNITY DEVELOPMENT/PUBLIC WORKS DIRECTOR.
2. BEDDING "B" SHALL BE COMPOSED OF SAND OR OTHER GRANULAR MATERIAL WITH A SAND EQUIVALENT OF 30 OR GREATER AS APPROVED BY THE COMMUNITY DEVELOPMENT/PUBLIC WORKS DIRECTOR AND SHALL CONFORM TO SECTION 306-1.2.1 OF THE STANDARD SPECIFICATIONS, EXCEPT BEDDING FOR PLASTIC PIPE SHOULD CONFORM TO SECTION 306-1.2.13.
3. BEDDING "B" SHALL BE COMPACTED TO A RELATIVE COMPACTION OF NOT LESS THAN 90 PERCENT UNLESS OTHERWISE SPECIFIED.
4. BEDDING "B" SHALL BE PLACED IN TWO OR MORE LIFTS FOR PIPES WITH AN O.D. GREATER THAN 60 INCHES.

CITY OF TORRANCE

DATE ISSUED

02 JUL 2008

BEDDING FOR STORM DRAIN

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

STANDARD NO.

T302

SHEET 1 OF 2

TT\T302



5. BACKFILL SHALL BE PER SECTION 306-1.3 OF THE STANDARD SPECIFICATIONS.
6. WHERE THE COVER IS 8 FEET OR LESS, "W" MUST BE A MINIMUM OF 6 INCHES. WHERE THE COVER IS GREATER THAN 8 FEET, "W" MUST BE BETWEEN 6 AND 10 INCHES INCLUSIVE FOR PIPES UP TO AND INCLUDING 96 INCHES IN DIAMETER. FOR PIPES OVER 96 INCHES IN DIAMETER, "W" MUST BE BETWEEN 6 AND 12 INCHES INCLUSIVE.
7. "W" SHALL INCLUDE THE THICKNESS OF ANY SHORING.
8. SHORING SHALL BE A MINIMUM OF 6 INCHES FROM THE PIPE AT SPRINGLINE.

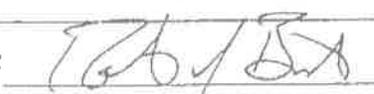
**CITY OF TORRANCE**

DATE ISSUED

02 JUL 2008

**BEDDING FOR STORM DRAIN**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737



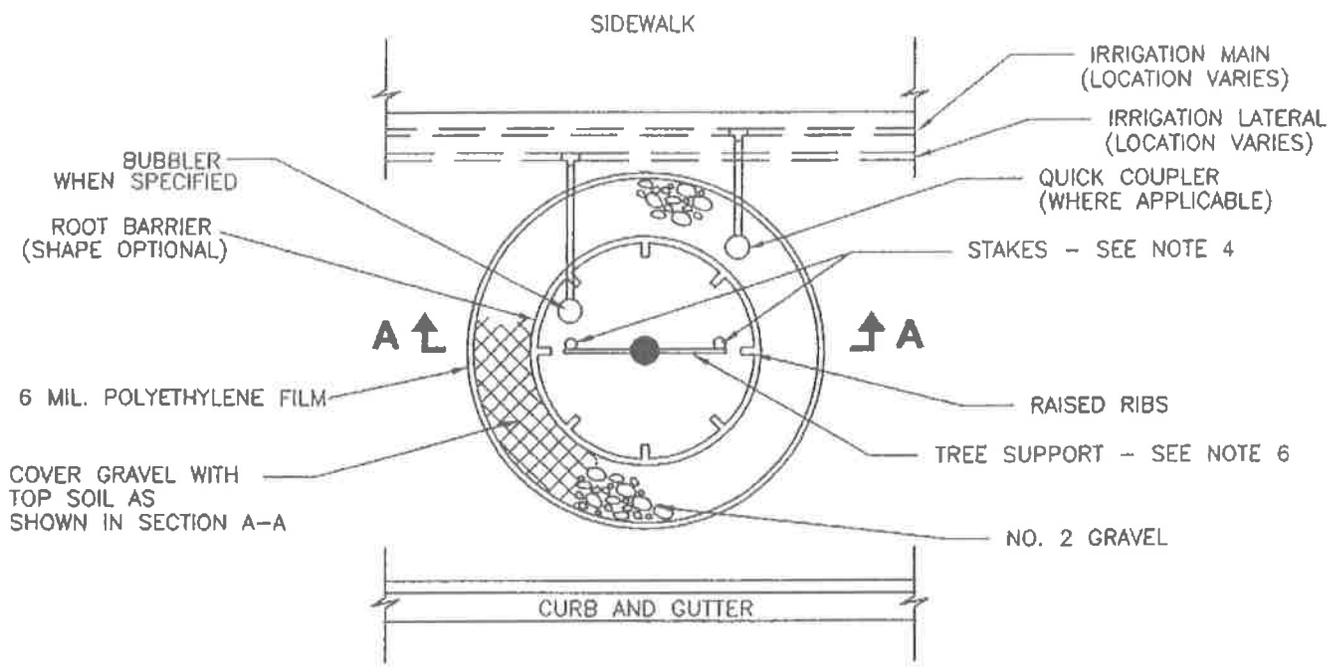
STANDARD NO.

**T302**

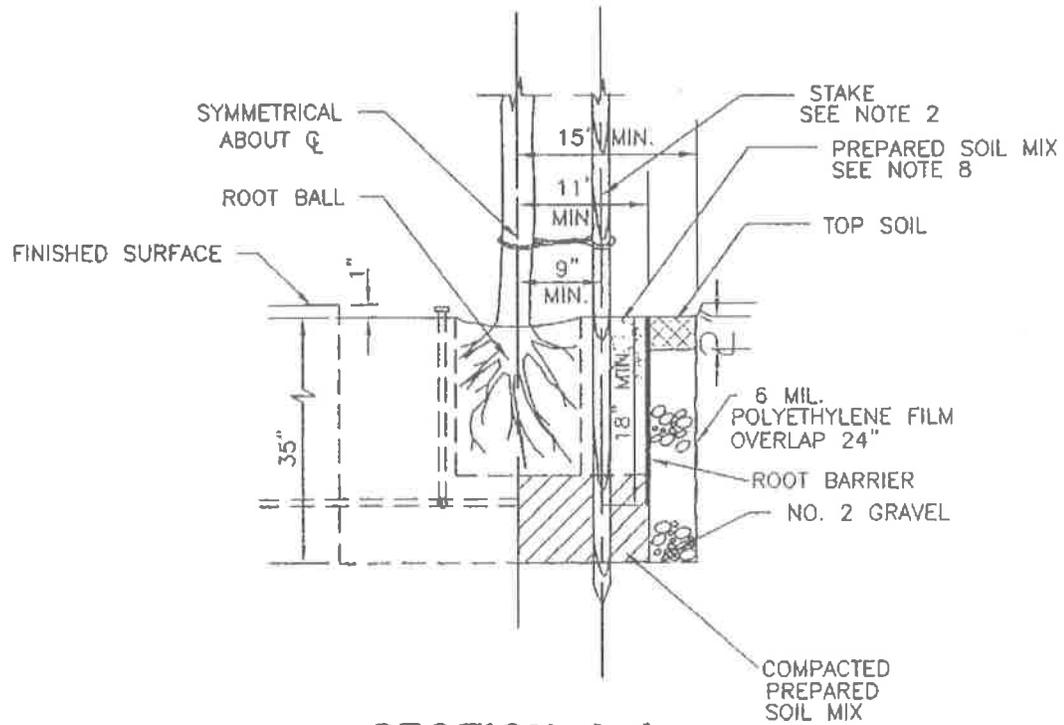
SHEET 2 OF 2

TT\T302





**TREE - DIRT PARKWAY**



**SECTION A-A**

**CITY OF TORRANCE**

**TREE PLANTING**

STANDARD NO.

**T401**

SHEET 1 OF 2

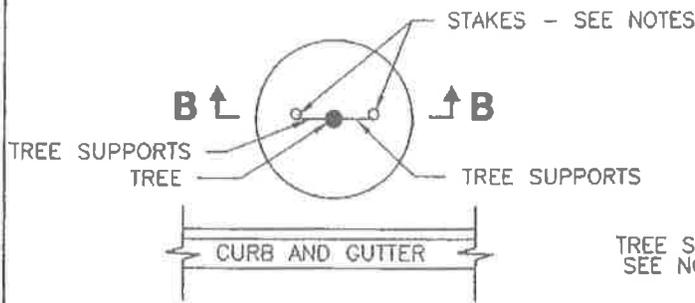
DATE ISSUED  
23 SEP 2009

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

*RB*

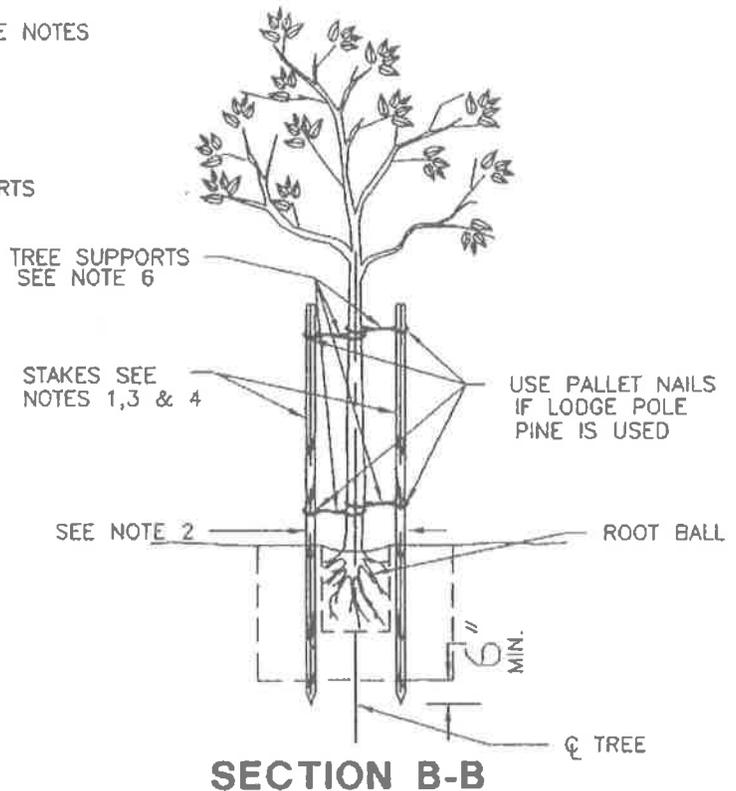
TT/T401





**PLAN**

LENGTH OF STAKES	
TREE SIZE	LENGTH
15 GAL.	10'
24" BOX	12'
30" BOX	12'
36"-48" BOX	SEE NOTE 5



**SECTION B-B**

**NOTES:**

1. STAKES SHALL BE EITHER 2" DIAMETER LODGE POLE PINE, TREATED WITH COPPER NANTHANATE OR PRESSURE TREATED WITH CHROMATED COPPER ARSENATE, OR GALVANIZED STEEL PIPE, PER SUBSECTION 308-4.6.1 (METHOD A) OF THE STD. SPEC'S
2. PLACE STAKES 18" APART FOR 15 GAL. TREE. PLACE STAKES AT OUTER EDGE OF ROOT BALL FOR LARGER SIZE (BOX) TREES.
3. HEIGHT OF STAKES SHALL NOT BE HIGHER THAN THE TOP OF THE TREE.
4. ALL STAKES SHALL BE ALIGNED IN THE EAST-WEST DIRECTION REGARDLESS OF CURB ORIENTATION.
5. FOR 36" OR LARGER BOX TREES - STAKE OR GUY AT THE DIRECTION OF THE STREETScape ADMINISTRATOR.
6. TREE TIES SHALL BE PER SUBSECTION 308-4.6.2 OF THE STANDARD SPECIFICATIONS.
7. THE STREETScape ADMINISTRATOR WILL DESIGNATE THE GROUND LOCATION OF ALL TREES BY PLACING OF STAKES OR OTHER SUITABLE MARKERS.
8. UNLESS OTHERWISE APPROVED BY STREETScape ADMINISTRATOR PREPARED SOIL MIX SHALL BE:
  - 4 PARTS BY VOLUME NITROGEN-STABILIZED ORGANIC AMENDMENT.
  - 6 PARTS BY VOLUME ON-SITE SOIL FROM AN AREA APPROVED BY THE STREETScape ADMINISTRATOR.
  - 2 LBS. IRON SULFATE PER CUBIC YARD OF MIX.
9. ROOT BARRIERS WHEN SPECIFIED ON PROJECT DRAWINGS OR IN PROJECT SPECIFICATIONS, SHALL BE FABRICATED FROM A HIGH DENSITY AND HIGH IMPACT PLASTIC SUCH AS POLYVINYL CHLORIDE, ABS OR POLYETHYLENE AND HAVE A MINIMUM THICKNESS OF 0.06". THE PLASTIC SHALL HAVE 1/2" TO 3/4" HIGH RAISED VERTICAL RIBS ON THE INNER SURFACE SPACED AT LEAST 6" BUT NOT MORE THAN 8" APART.

**CITY OF TORRANCE**

DATE ISSUED

23 SEP 2009

**TREE PLANTING**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

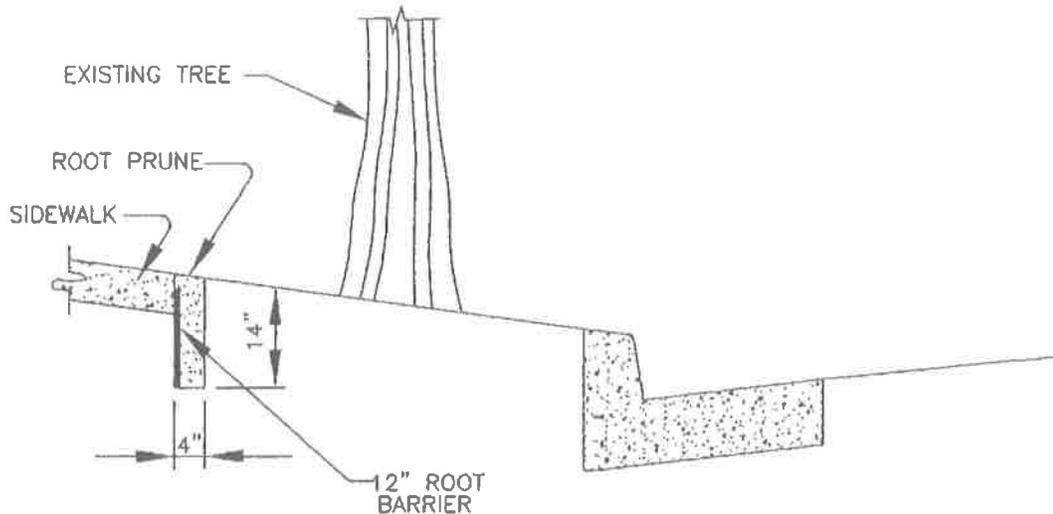
STANDARD NO.

**T401**

SHEET 2 OF 2

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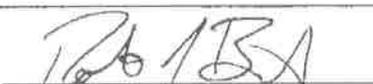




**NOTES:**

1. ROOT PRUNE ADJACENT TO SIDEWALK TO BE REPLACED DUE TO ROOT INTRUSION, 12' LONG MINIMUM. INSTALL 12' LONG ROOT BARRIER ADJACENT TO SIDEWALK AND BACKFILL WITH CLASS "C" TOPSOIL. ROOT PRUNING SHALL BE CENTERED ON EXISTING TREE OR AT ADDITIONAL LOCATIONS WHERE DIRECTED BY THE ENGINEER.
2. ROOT PRUNING SHALL BE ACCOMPLISHED BY A ROOT CUTTING METHOD THAT IS NOT DETRIMENTAL TO THE TREE. THE METHOD USED SHALL BE APPROVED BY THE ENGINEER.
3. WHEN REQUIRED, TREES SHALL BE PRUNED TO BALANCE ROOT PRUNING AND ROOT REMOVAL. TREE PRUNING SHALL BE DONE PRIOR TO ROOT PRUNING AND ROOT REMOVAL. (SEE PROJECT PLANS AND/OR SPECIFICATIONS).
4. ROOT BARRIER WHEN SPECIFIED SHALL BE FABRICATED FROM A HIGH DENSITY, HIGH IMPACT PLASTIC SUCH AS POLYVINYL CHLORIDE, ABS OR POLYETHYLENE AND SHALL HAVE A MINIMUM THICKNESS OF 0.06". THE PLASTIC SHALL HAVE 1/2" - 3/4" HIGH RAISED VERTICAL RIBS ON THE INNER SURFACE SPACED NOT MORE THAN 6" - 8" APART. ROOT BARRIER SHALL BE INSTALLED WITH RAISED RIBS PLACED TOWARDS THE TREE.
5. PROTECT EXISTING SPRINKLER SYSTEMS, WATER METERS, AND SERVICE LATERALS, AND ALL OTHER UNDERGROUND UTILITIES IF POSSIBLE. IF THESE FACILITIES ARE DAMAGED BY THE CONTRACTOR, THEY SHALL BE REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.
6. RESEED TO MATCH EXISTING LAWNS IN EXCAVATED AREAS.

**CITY OF TORRANCE**

DATE ISSUED	<b>ROOT BARRIER AND PRUNING AT EXISTING TREE LOCATIONS</b>	STANDARD NO.
23 SEP 2009	ROBERT J. BESTE PUBLIC WORKS DIRECTOR R.C.E. NO. 50737	<b>T402</b>
		SHEET 1 OF 1

TT\T402



TT/T1011

DATE ISSUED  
1 SEP 2009

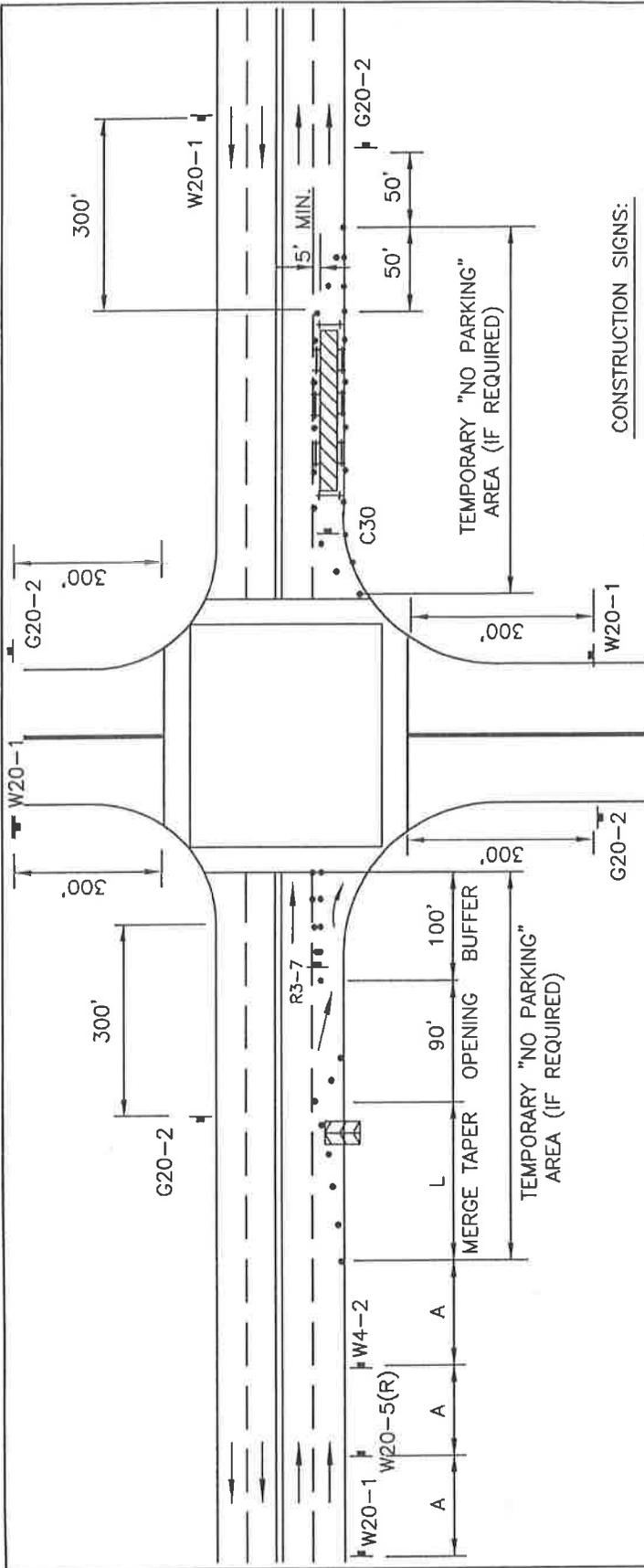
**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

**RIGHT LANE CLOSURE  
FOR WORK BEYOND INTERSECTION**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

*RA / RA*

STANDARD NO.  
**T1011**  
SHEET 1 OF 1



**MINIMUM RECOMMENDED DELINEATOR AND SIGN PLACEMENT**

DESIGN SPEED	MERGE TAPER LENGTH (L)	DELINEATOR SPACING		DISTANCE BETWEEN SIGNS (A)
		(TAPER)	(TANGENT)	
30 MPH	180 FT.	30 FT.	60 FT.	100 FT.
35 MPH	245 FT.	35 FT.	70 FT.	100 FT.
40 MPH	320 FT.	40 FT.	80 FT.	100 FT.
45 MPH	540 FT.	45 FT.	90 FT.	350 FT.
50 MPH	600 FT.	50 FT.	100 FT.	350 FT.

NOTE: MERGE TAPER LENGTH WAS CALCULATED BASED ON 12-FOOT WIDE LANES.

**LEGEND:**

- TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
- ⊣ SIGN WITH FLAG TREE
- TRAFFIC DIRECTION
- ⊠ FLASHING LEFT ARROW
- ▨ WORK AREA
- ⊕ BARRICADE (FOR EXCAVATION ONLY)

**CONSTRUCTION SIGNS:**

- W20-1 ROAD WORK AHEAD
- W20-5(R): RIGHT LANE CLOSED AHEAD
- W4-2 : LANE END (SYMBOL)
- G20-2 : END ROAD WORK (OPTIONAL)
- R3-7: RIGHT LANE MUST TURN RIGHT
- C30: LAND CLOSED



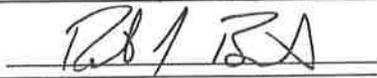
TT/T1013

**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

DATE ISSUED  
1 SEP 2009

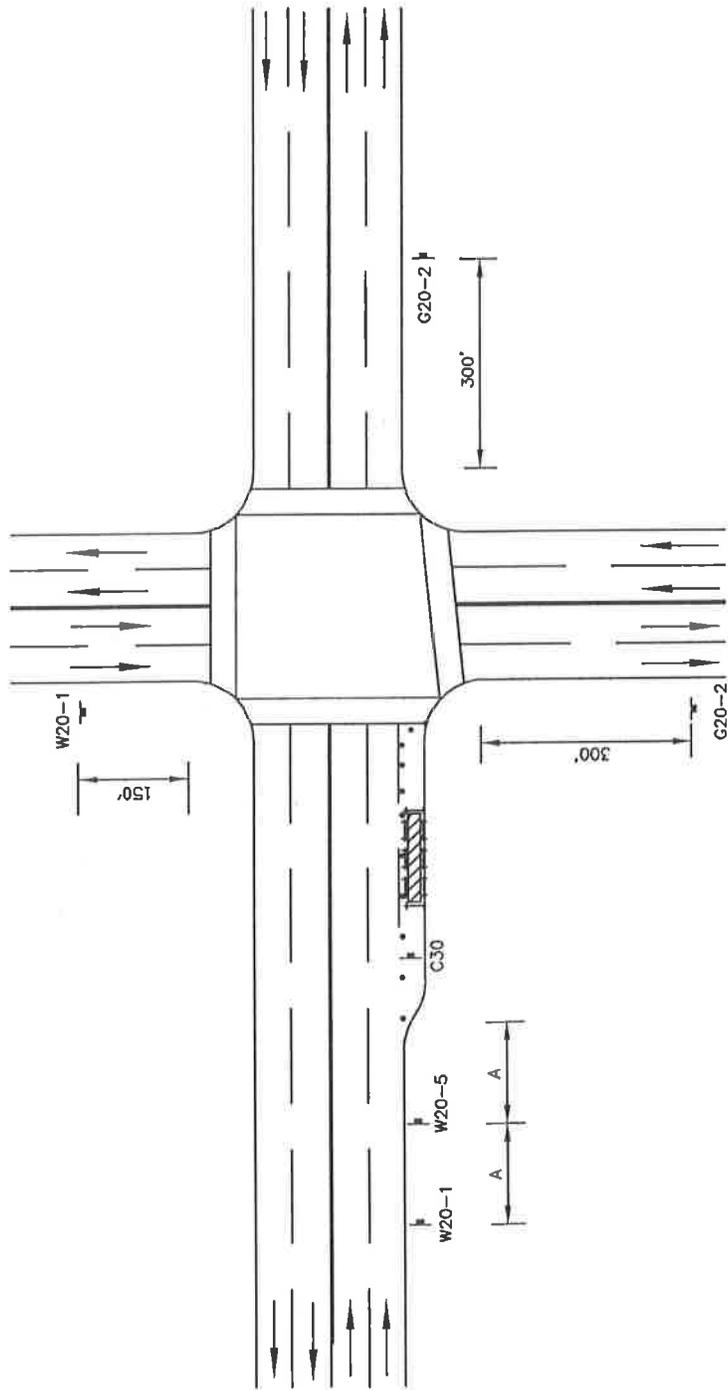
**ARTERIAL & COLLECTOR STREET  
RIGHT TURN LANE CLOSURE**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737



STANDARD NO.  
**T1013**

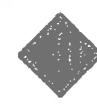
SHEET 1 OF 1



**MINIMUM RECOMMENDED DELINEATOR AND SIGN PLACEMENT**

DESIGN SPEED	MERGE TAPER LENGTH (L)	DELINEATOR SPACING		DISTANCE BETWEEN SIGNS (A)
		(TAPER)	(TANGENT)	
30 MPH	180 FT.	30 FT.	60 FT.	100 FT.
35 MPH	245 FT.	35 FT.	70 FT.	100 FT.
40 MPH	320 FT.	40 FT.	80 FT.	100 FT.
45 MPH	540 FT.	45 FT.	90 FT.	350 FT.
50 MPH	600 FT.	50 FT.	100 FT.	350 FT.

CONSTRUCTION SIGNS:

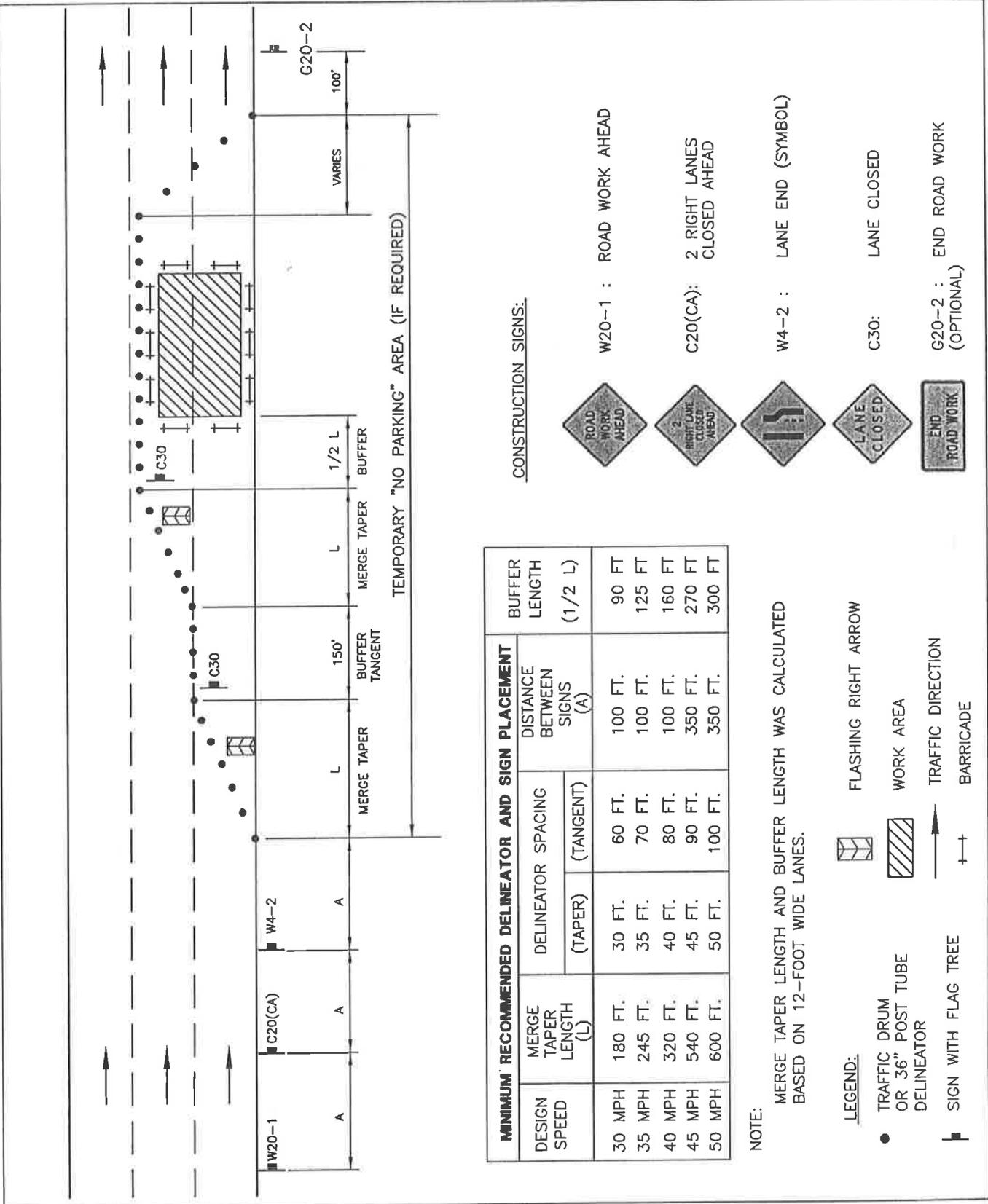
-  W20-1 ROAD WORK AHEAD
-  W20-5(R): RIGHT LANE CLOSED AHEAD
-  G20-2 : END ROAD WORK (OPTIONAL)
-  C30: LAND CLOSED

LEGEND:

-  TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
-  SIGN WITH FLAG TREE
-  WORK AREA
-  TRAFFIC DIRECTION
-  BARRICADE (FOR EXCAVATION ONLY)



TT/T1008



CONSTRUCTION SIGNS:

- W20-1 : ROAD WORK AHEAD
- C20(CA): 2 RIGHT LANES CLOSED AHEAD
- W4-2 : LANE END (SYMBOL)
- C30: LANE CLOSED
- G20-2 : END ROAD WORK (OPTIONAL)

DESIGN SPEED	MERGE TAPER LENGTH (L)	DELINEATOR SPACING		DISTANCE BETWEEN SIGNS (A)	BUFFER LENGTH (1/2 L)
		(TAPER)	(TANGENT)		
30 MPH	180 FT.	30 FT.	60 FT.	100 FT.	90 FT.
35 MPH	245 FT.	35 FT.	70 FT.	100 FT.	125 FT.
40 MPH	320 FT.	40 FT.	80 FT.	100 FT.	160 FT.
45 MPH	540 FT.	45 FT.	90 FT.	350 FT.	270 FT.
50 MPH	600 FT.	50 FT.	100 FT.	350 FT.	300 FT.

NOTE: MERGE TAPER LENGTH AND BUFFER LENGTH WAS CALCULATED BASED ON 12-FOOT WIDE LANES.

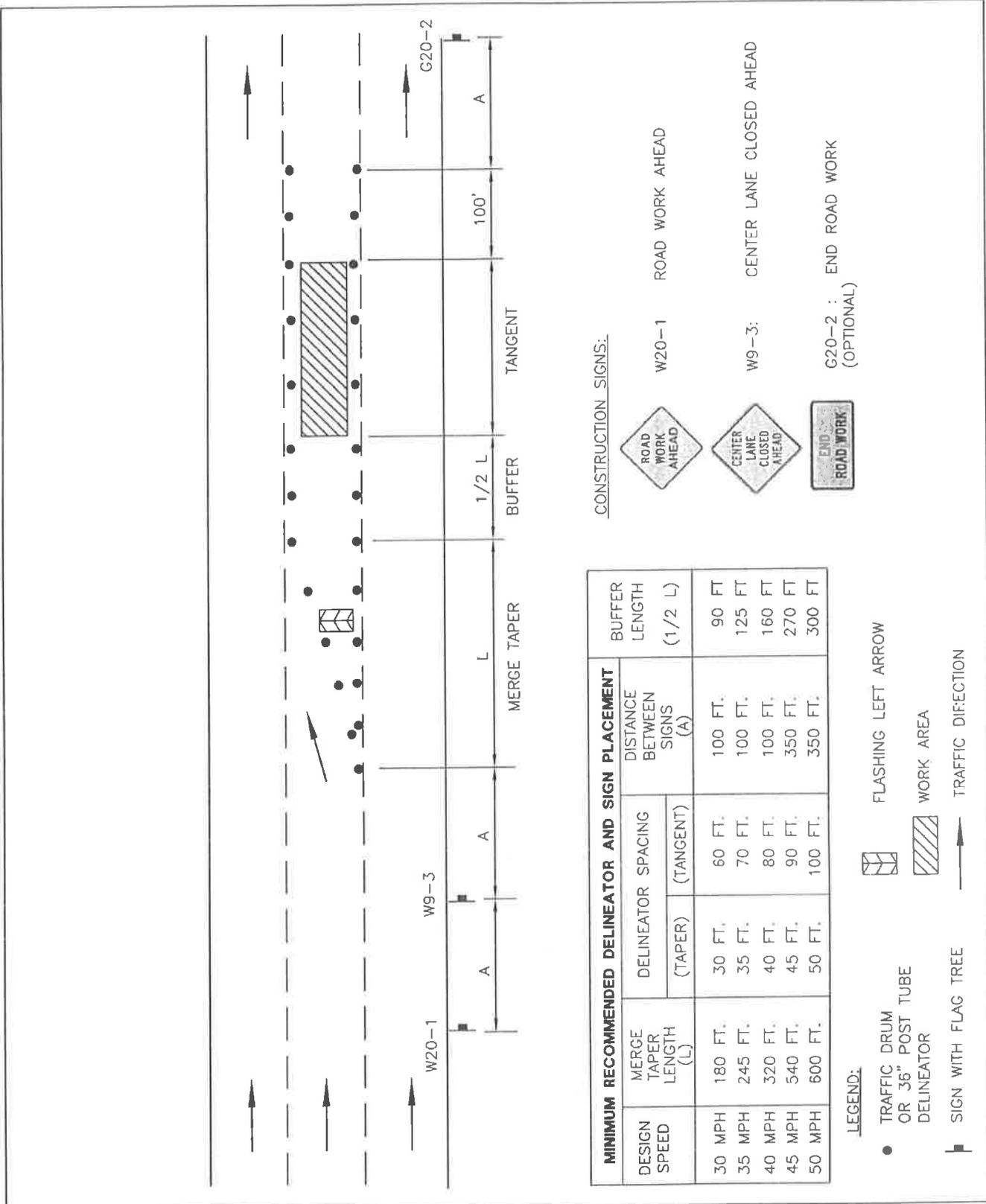
- LEGEND:
- TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
  - SIGN WITH FLAG TREE
  - FLASHING RIGHT ARROW
  - WORK AREA
  - TRAFFIC DIRECTION
  - BARRICADE

**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

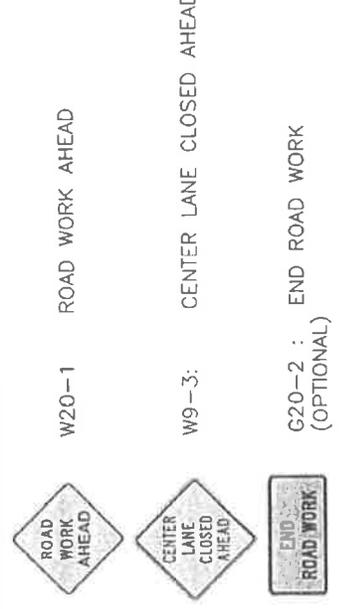
DATE ISSUED	<b>ARTERIAL MULTI-LANE CLOSURE</b>	STANDARD NO.
23 JUL 2009	ROBERT J. BESTE PUBLIC WORKS DIRECTOR R.C.E. NO. 50737 	<b>T1008</b>
		SHEET 1 OF 1



TT/T1006



CONSTRUCTION SIGNS:



DESIGN SPEED	MERGE TAPER LENGTH (L)		DISTANCE BETWEEN SIGNS (A)	BUFFER LENGTH (1/2 L)
	(TAPER)	(TANGENT)		
30 MPH	180 FT.	30 FT.	100 FT.	90 FT
35 MPH	245 FT.	35 FT.	100 FT.	125 FT
40 MPH	320 FT.	40 FT.	100 FT.	160 FT
45 MPH	540 FT.	45 FT.	350 FT.	270 FT
50 MPH	600 FT.	50 FT.	350 FT.	300 FT

- LEGEND:
- TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
  - ▬ SIGN WITH FLAG TREE
  - ▭ FLASHING LEFT ARROW
  - ▨ WORK AREA
  - TRAFFIC DIRECTION

CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL

DATE ISSUED  
19 FEB 2008

ARTERIAL & COLLECTOR  
CENTER LANE CLOSURE

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

STANDARD NO.  
**T1006**

SHEET 1 OF 1



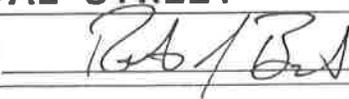
TT\T1002

DATE ISSUED  
19 FEB 2008

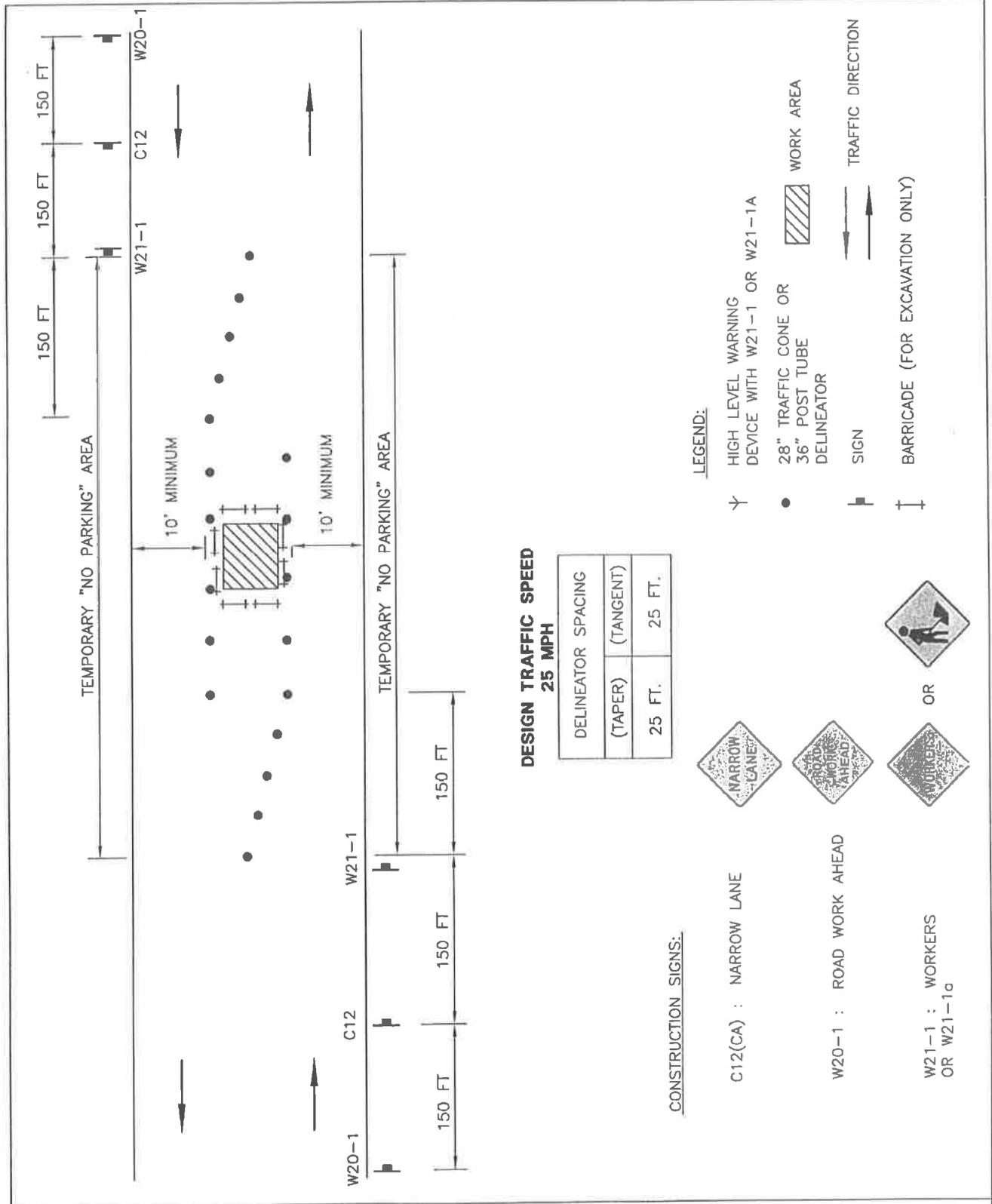
**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

**TYPICAL CENTER STREET CLOSURE  
FOR LOCAL STREET**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737



STANDARD NO.  
**T1002**  
SHEET 1 OF 1





TT/T1004

DATE ISSUED  
19 FEB 2008

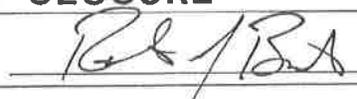
**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

**ARTERIAL & COLLECTOR  
RIGHT LANE CLOSURE**

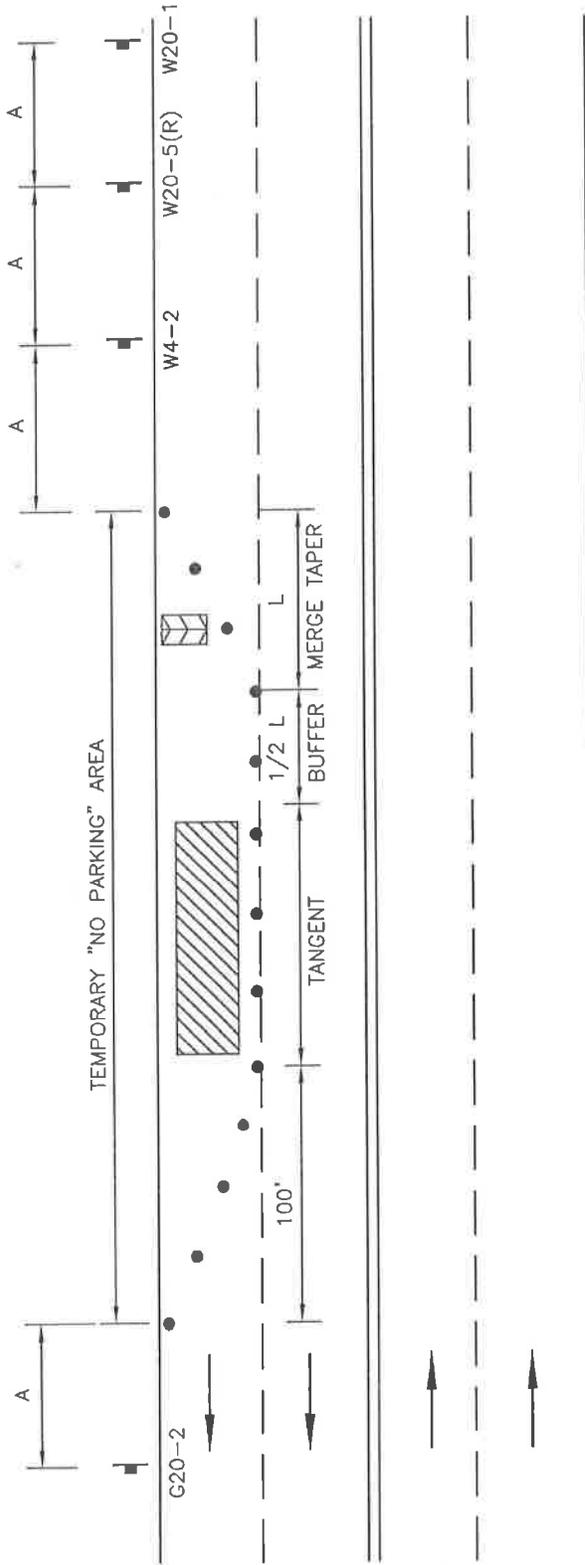
STANDARD NO.

**T1004**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737



SHEET 1 OF 1



CONSTRUCTION SIGNS:

 W20-1 ROAD WORK AHEAD  
 W20-5(R): RIGHT LANE CLOSED AHEAD  
 W4-2 : LANE END (SYMBOL)  
 G20-2 : END ROAD WORK (OPTIONAL)

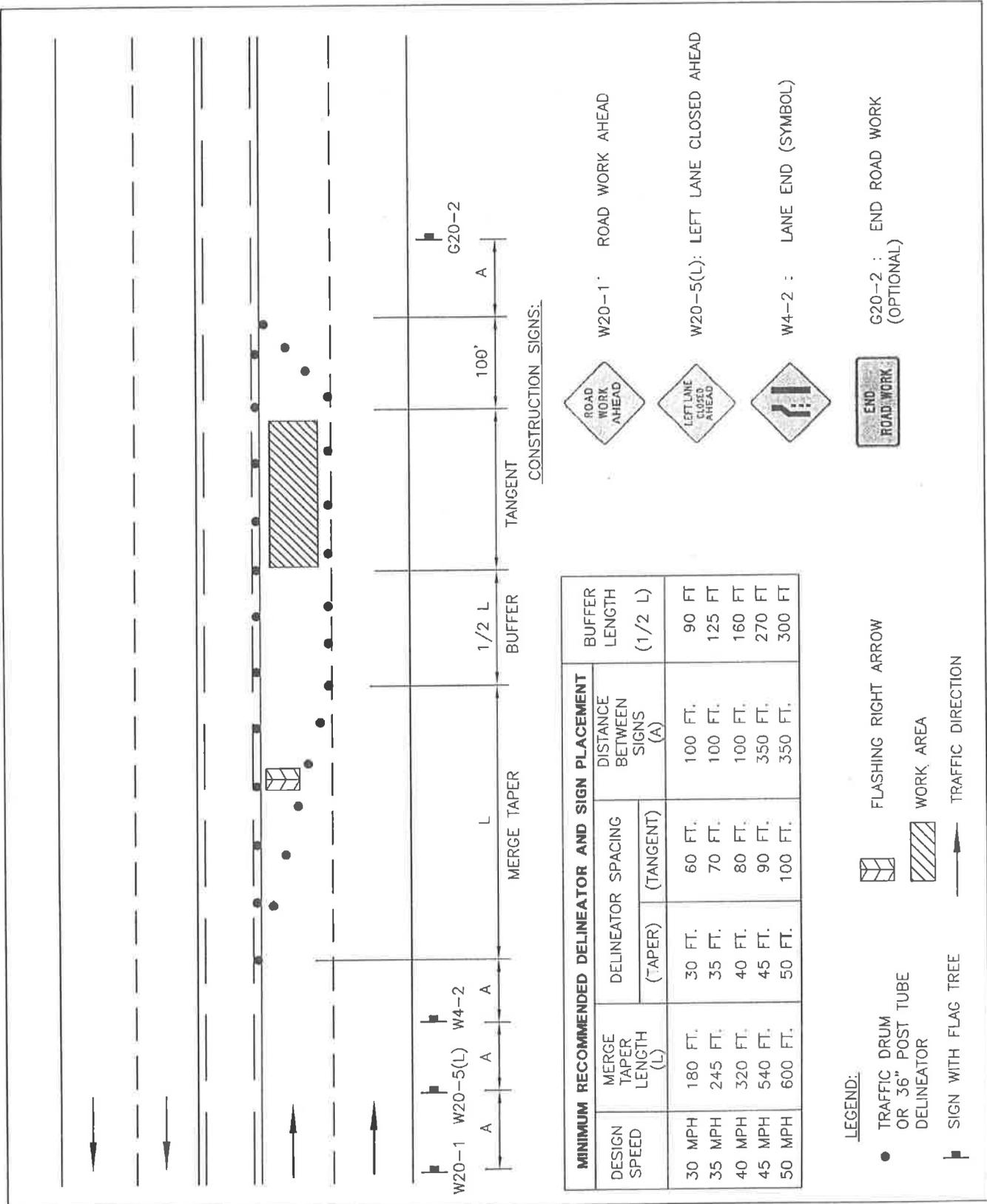
DESIGN SPEED	MINIMUM RECOMMENDED DELINEATOR AND SIGN PLACEMENT		DISTANCE BETWEEN SIGNS (A)	BUFFER LENGTH (1/2 L)
	MERGE TAPER LENGTH (L)	DELINEATOR SPACING (TANGENT)		
30 MPH	180 FT.	30 FT.	60 FT.	90 FT.
35 MPH	245 FT.	35 FT.	70 FT.	125 FT.
40 MPH	320 FT.	40 FT.	80 FT.	160 FT.
45 MPH	540 FT.	45 FT.	90 FT.	270 FT.
50 MPH	600 FT.	50 FT.	100 FT.	300 FT.

LEGEND:

- TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
- SIGN WITH FLAG TREE
- ▨ FLASHING LEFT ARROW
- ▨ WORK AREA
- TRAFFIC DIRECTION



TT/T1005



**CITY OF TORRANCE - WORK AREA TRAFFIC CONTROL**

DATE ISSUED  
19 FEB 2008

**ARTERIAL & COLLECTOR  
LEFT LANE CLOSURE**

ROBERT J. BESTE  
PUBLIC WORKS DIRECTOR  
R.C.E. NO. 50737

STANDARD NO.

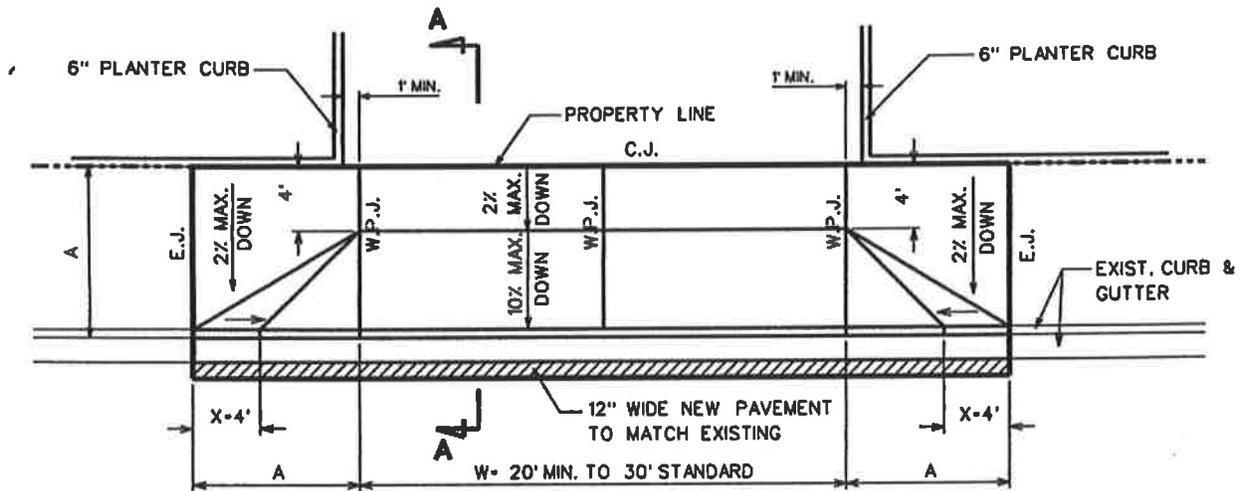
**T1005**

SHEET 1 OF 1

- LEGEND:**
- TRAFFIC DRUM OR 36" POST TUBE DELINEATOR
  - ▬ SIGN WITH FLAG TREE
  - ▬ FLASHING RIGHT ARROW
  - ▨ WORK AREA
  - ▬ TRAFFIC DIRECTION

- CONSTRUCTION SIGNS:**
- W20-1 : ROAD WORK AHEAD
  - W20-5(L) : LEFT LANE CLOSED AHEAD
  - W4-2 : LANE END (SYMBOL)
  - G20-2 : END ROAD WORK (OPTIONAL)



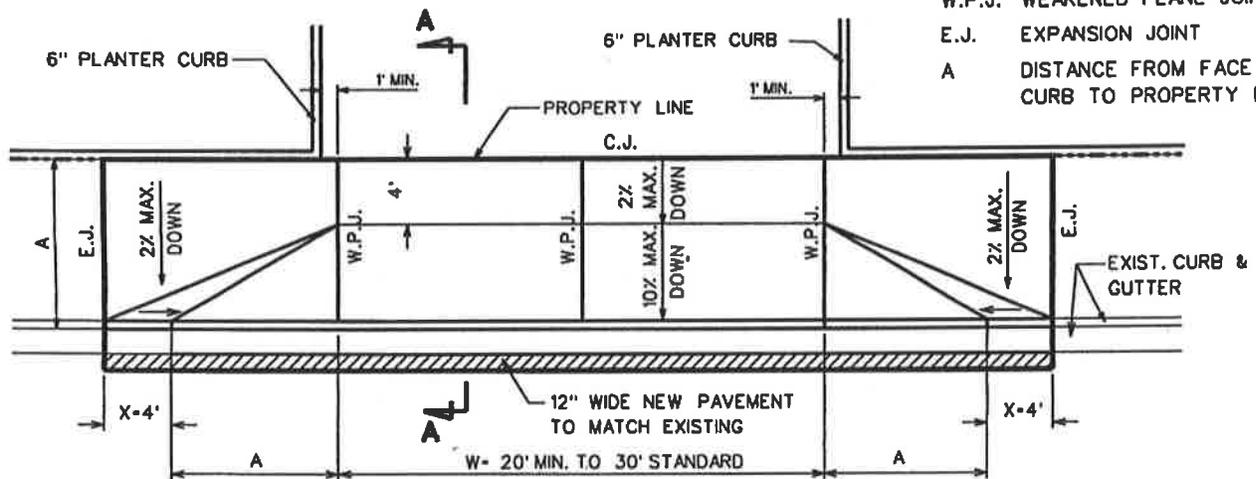


### TYPE D-1

#### PLAN

### LEGEND

- C.J. COLD JOINT
- W.P.J. WEAKENED PLANE JOINT
- E.J. EXPANSION JOINT
- A DISTANCE FROM FACE OF CURB TO PROPERTY LINE

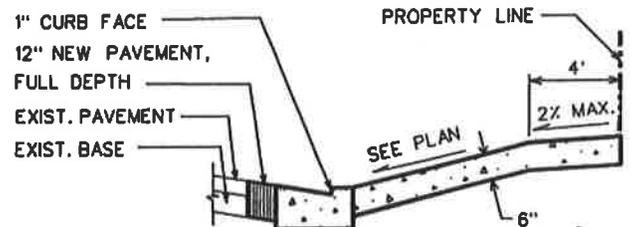


### TYPE D-2

#### PLAN

#### NOTES:

1. ALL WORK SHALL CONFORM WITH THE LATEST EDITION OF APWA STANDARD PLANS AND SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. CONCRETE SHALL BE CLASS 520-C-2500 PORTLAND CEMENT CONCRETE PLACED ON 95% COMPACTED SOIL. CONCRETE FINISH SHALL BE MEDIUM BROOM FINISH, AND BROOMED PERPENDICULAR TO CURB FACE.
3. ASPHALT CONCRETE SHALL BE CLASS D1-PG-84-10.
4. TOP OF X-DISTANCE BETWEEN ADJACENT APPROACHES SHALL BE 4 FEET MINIMUM, OTHERWISE A CONTINUOUS APPROACH IS REQUIRED.
5. DRIVEWAY APPROACHES SHALL NOT ENCROACH INTO CURB RETURNS.
6. A FULL DEPTH COLD JOINT IS REQUIRED BEHIND ALL APPROACHES.



#### SECTION A-A

CITY OF REDONDO BEACH CALIFORNIA PUBLIC WORKS DEPARTMENT-ENGINEERING SERVICES DIVISION			
<b>COMMERCIAL DRIVEWAY APPROACHES</b>			
DRAWN CD	CHECKED MA	SCALE N.T.S.	
APPROVED BY <i>[Signature]</i> CITY ENGINEER - R.C.E. 45787		DATE 4/9/13	
PROJECT NO.	SHEET NO. 1 OF 1 SHEETS	DRAWING NO. STD-2	

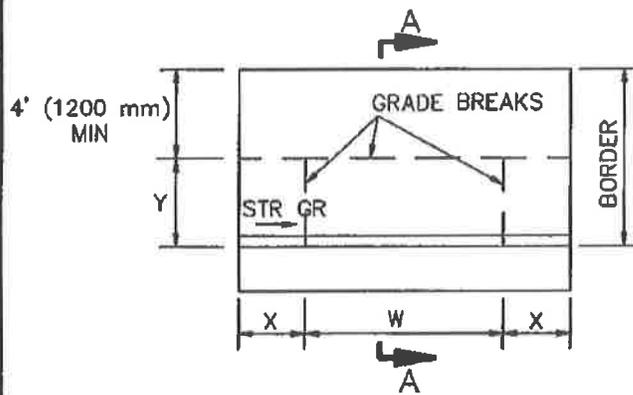
4/9/13  
REVISIONS 8/1/11



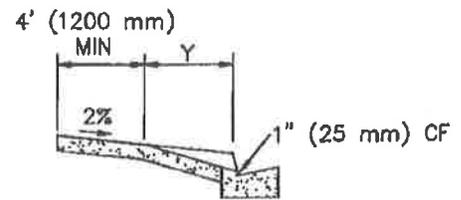
**APPENDIX III**

**STANDARD PLANS  
FOR  
PUBLIC WORKS CONSTRUCTION  
(SPPWC)**



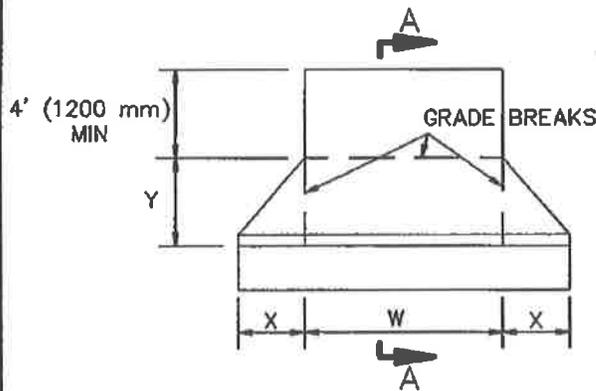


TYPE A

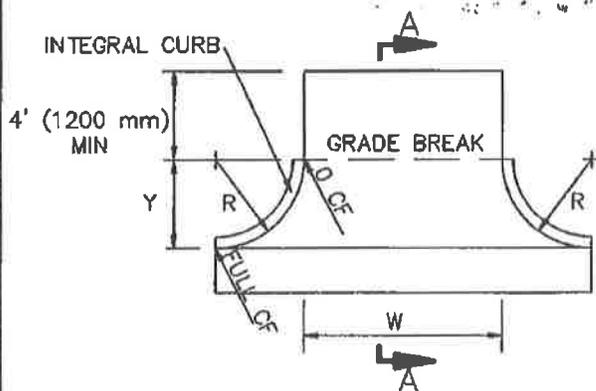


SECTION A-A

CURB FACE, inches (mm)	X, inches (mm)	Y, inches (mm)
6" (150) or less	3'-0" (900)	4'-0" (1200)
7" (175)	3'-6" (1050)	4'-9" (1425)
8" (200)	4'-0" (1200)	5'-8" (1700)
9" (225)	4'-6" (1350)	6'-6" (1950)
10" (250)	5'-0" (1500)	7'-3" (2175)
11" (275)	5'-6" (1650)	8'-0" (2400)
12" (300) or more	6'-0" (1800)	8'-9" (2625)



TYPE B



TYPE C

NOTES:

1. RESIDENTIAL DRIVEWAYS SHALL BE 4" (100 mm) THICK PCC.
2. COMMERCIAL DRIVEWAYS SHALL BE 6" (150 mm) THICK PCC.
3. WEAKENED PLANE JOINTS SHALL BE INSTALLED AT BOTH SIDES OF A DRIVEWAY AND AT 10' (3.0 m) INTERVALS.
4. CURB FOR TYPE C DRIVEWAY SHALL BE INTEGRAL AND MATCH ADJACENT CONSTRUCTION.
5. REFER TO LOCAL DEVELOPMENT REGULATIONS FOR AMERICANS WITH DISABILITIES ACCESS REQUIREMENTS AND MAXIMUM PERMITTED DRIVEWAY WIDTHS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1984  
REV. 1995, 2009

DRIVEWAY APPROACHES

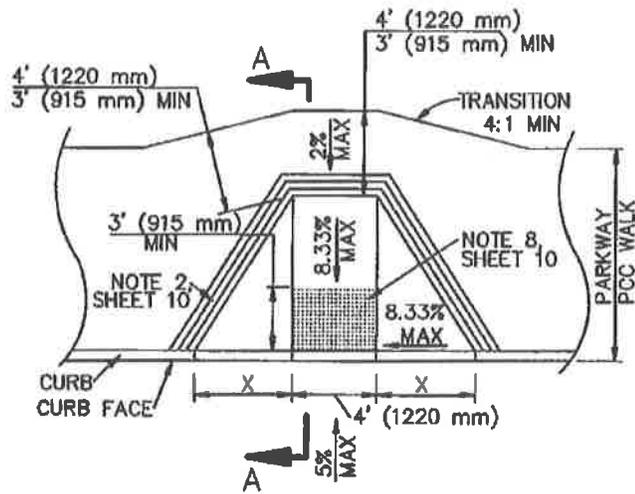
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

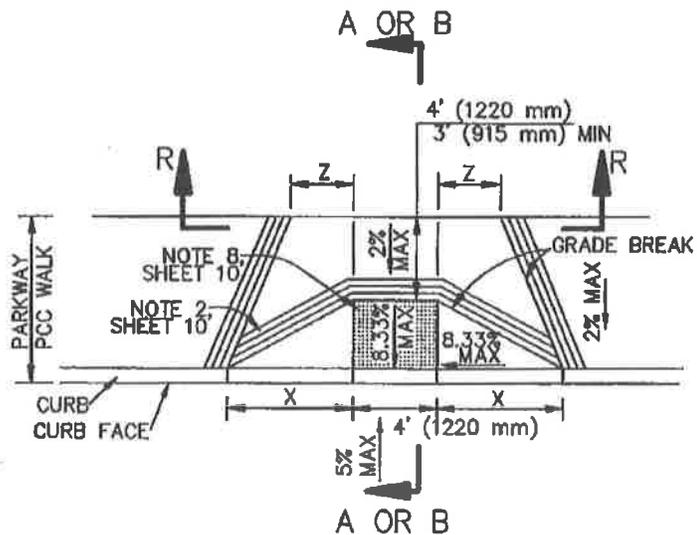
110-2

SHEET 1 OF 1





TYPE 1



SEE SHEET 7, THIS SECTION

TYPE 2  
CASE A

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1982  
REV. 1998, 2000, 2005, 2009

**CURB RAMP**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

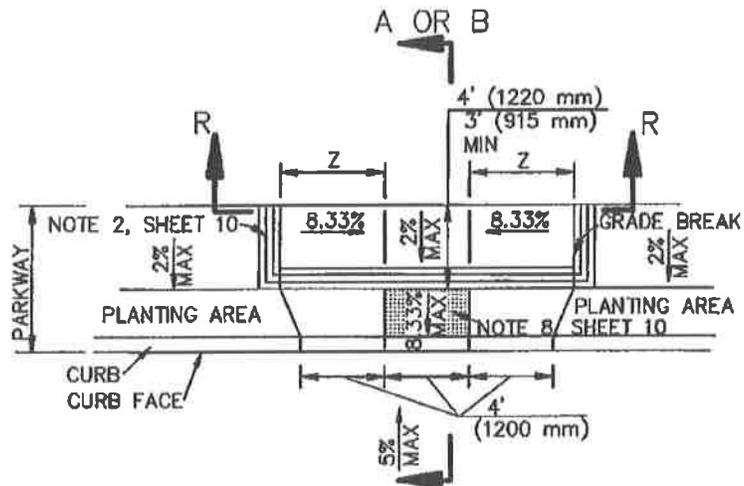
**111-4**

SHEET 1 OF 10



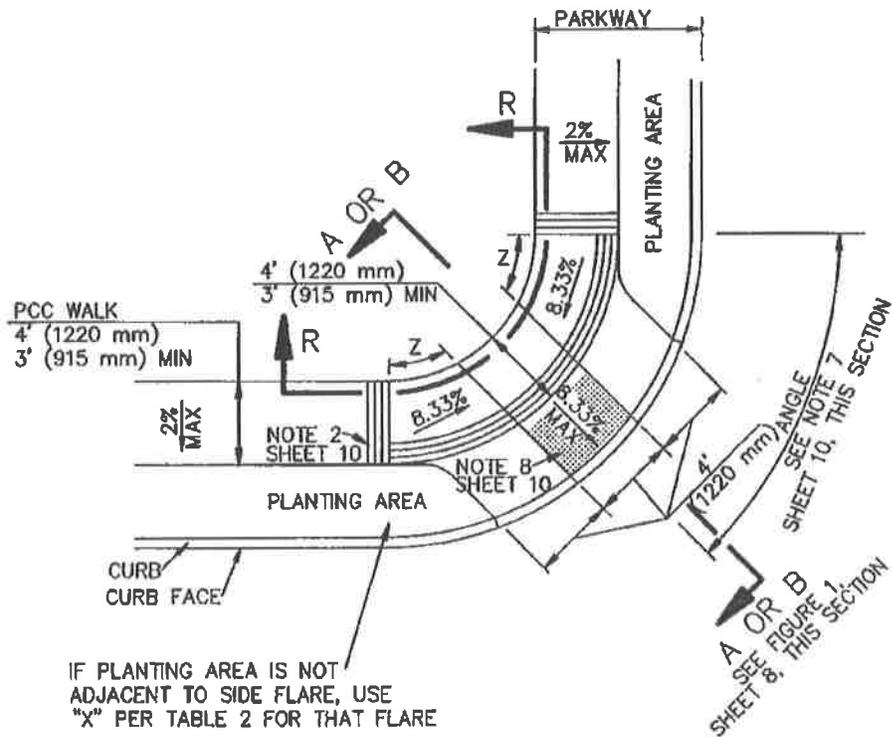






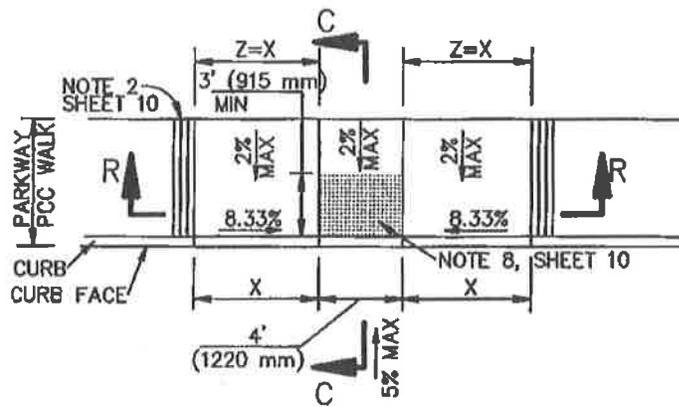
A OR B  
SEE FIGURE 1, SHEET 8, THIS SECTION

TYPE 5

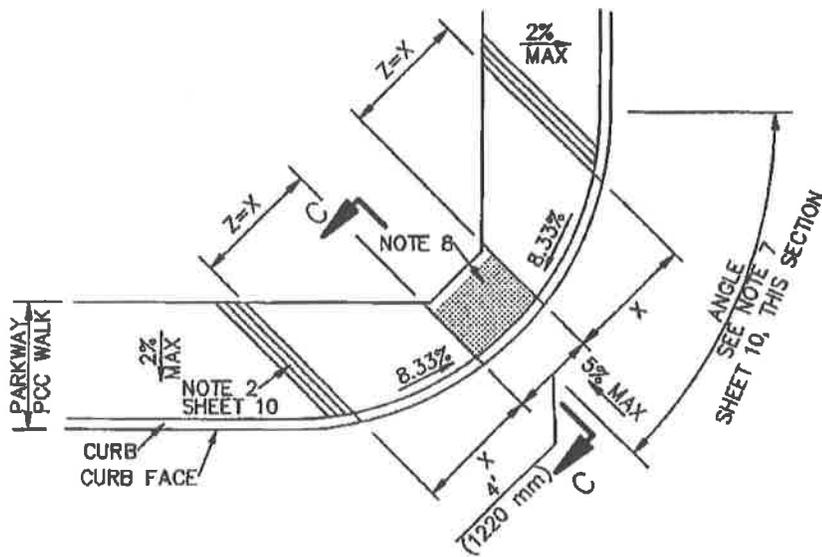


TYPE 6  
CASE A





TYPE 1



TYPE 2  
CASE B

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

**CURB RAMP**

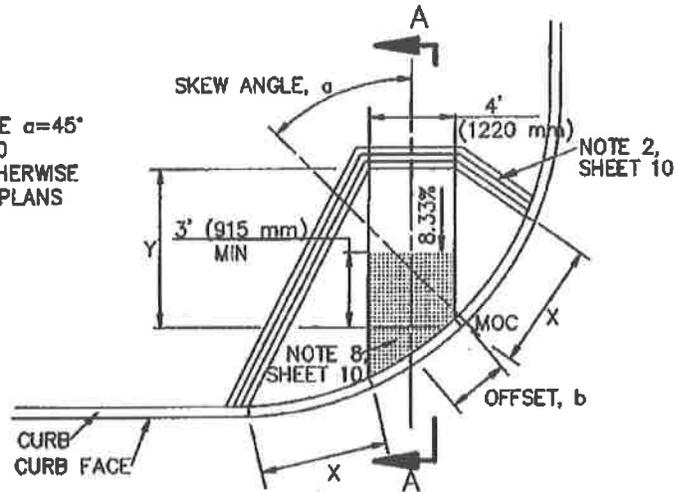
STANDARD PLAN

**111-4**

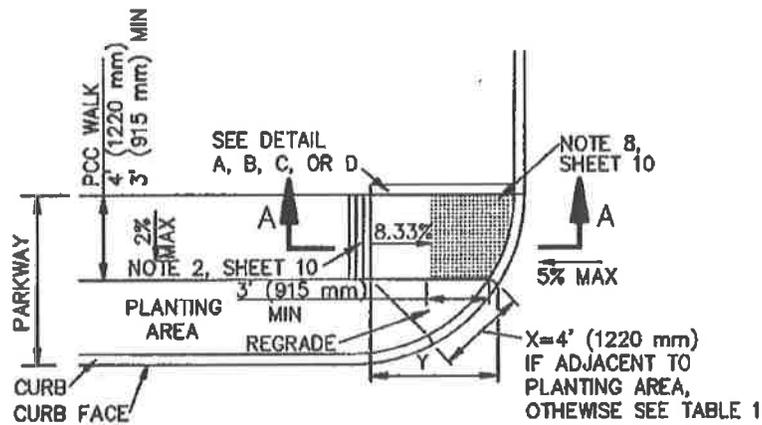
SHEET 4 OF 10



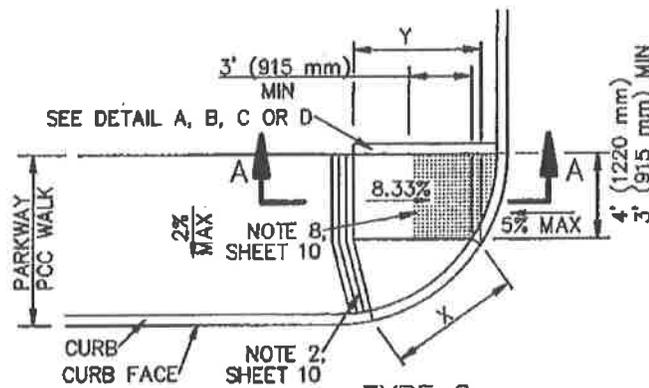
SKEW ANGLE  $\alpha=45^\circ$   
 OFFSET  $b=0$   
 UNLESS OTHERWISE  
 NOTED ON PLANS



CASE C



TYPE 1

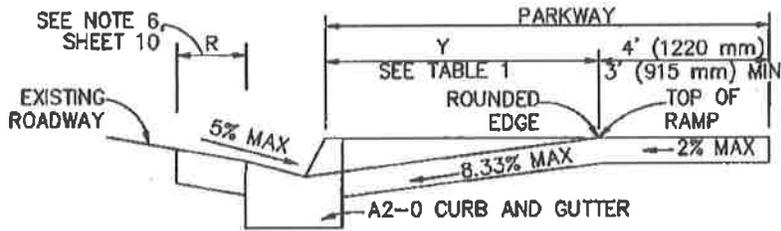


TYPE 2  
CASE D



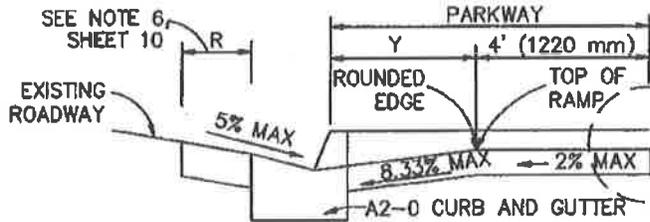




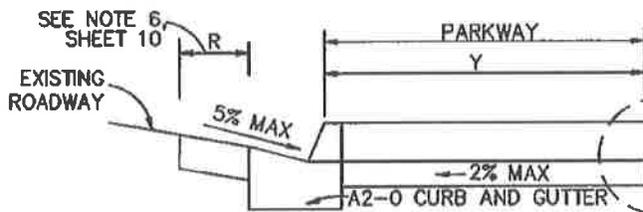


SECTION A-A

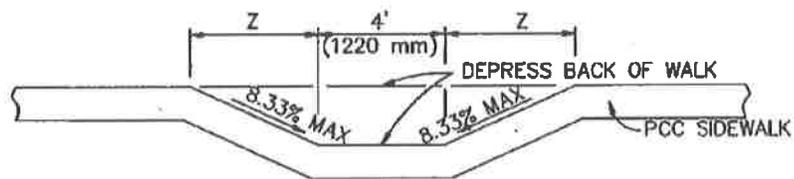
USE FIGURE 1 TO DETERMINE WHICH OF SECTIONS A-A, B-B OR C-C IS APPROPRIATE.



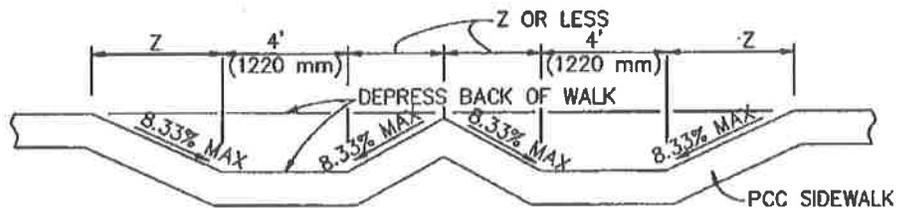
SECTION B-B



SECTION C-C



SECTION R-R



SECTION S-S



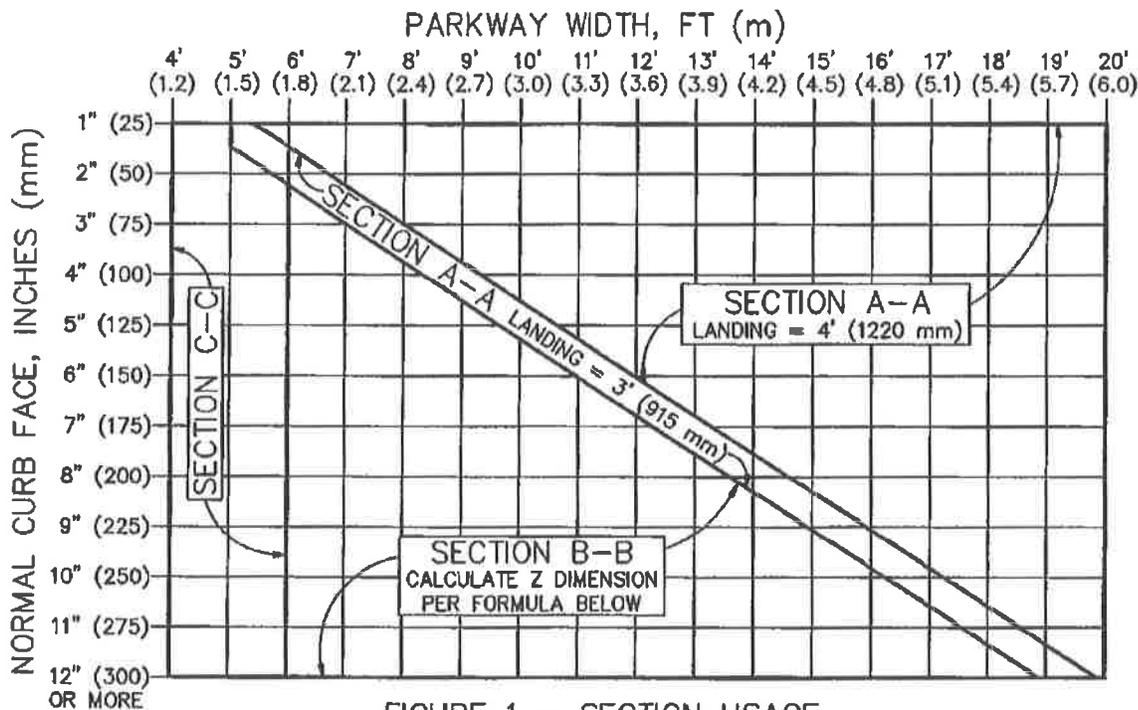


FIGURE 1 - SECTION USAGE

NORMAL CURB FACE, INCHES (mm)	X, FT (mm)	SECTION Y-Y Y, FT (mm)
2" (50)	4.00' (1200) MIN	2.63' (790)
3" (75)	4.00' (1200) MIN	3.95' (1185)
4" (100)	4.00' (1200)	5.26' (1580)
5" (125)	5.00' (1500)	6.58' (1975)
6" (150)	6.00' (1800)	7.90' (2370)
7" (175)	7.00' (2100)	9.21' (2765)
8" (200)	8.00' (2400)	10.53' (3160)
9" (225)	9.00' (2700)	11.84' (3555)
10" (250)	10.00' (3000)	13.16' (3950)
11" (275)	11.00' (3300)	14.47' (4340)
12" (300)	12.00' (3600)	15.79' (4735)

WHERE FIGURE 1 SHOWS USE OF SECTION B-B, FIGURE Z DIMENSION AS FOLLOWS:

W = PARKWAY WIDTH  
L = LANDING WIDTH, 4' (1220 mm) TYP, 3' (915 mm) MIN

$$Z = [(Y+L)-W] \times 0.760$$

IF  $(Y+L) < W$ , THEN  $Z = 0$

TABLE 1 SHOWS X FOR A FLARE SLOPE OF 8.33% AT THE CURB FACE. IF L IS 4' (1220 mm) OR MORE, X MAY BE MULTIPLIED BY 0.833 FOR A MAXIMUM FLARE SLOPE OF 10% AT THE CURB FACE.

SEE SHEET 9 FOR STREET SLOPE ADJUSTMENT FACTORS, ALL STREETS

TABLE 1 - X AND Y VALUES

TABLE 1 REFERENCE FORMULAS:

$$X = CF / 8.333\%$$

$$Y = CF / (8.333\% - 2\% \text{ WALK CROSS SLOPE})$$

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

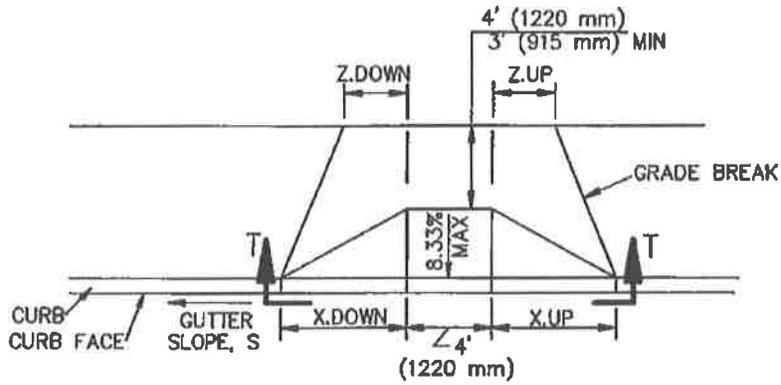
CURB RAMP

STANDARD PLAN

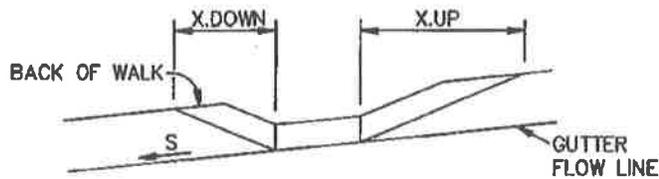
111-4

SHEET 8 OF 10





TYPICAL CURB RAMP



SECTION T-T  
SLOPED STREET

FOR SLOPED STREETS, MULTIPLY THE DIMENSIONS PARALLEL TO THE STREET, X AND Z, UPSTREAM AND DOWNSTREAM OF THE RAMP, BY THE FACTORS IN THE FOLLOWING TABLE.

FOR EXAMPLE,  $X.DOWN = X \times K.DOWN$

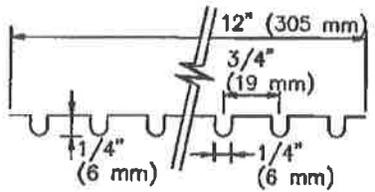
S	K.DOWN	K.UP
0%	1.000	1.000
0.2%	0.977	1.025
0.5%	0.943	1.064
1%	0.893	1.136
2%	0.806	1.316
3%	0.735	1.563
4%	0.676	1.923
5%	0.625	2.500

TABLE 2 - SLOPE ADJUSTMENTS

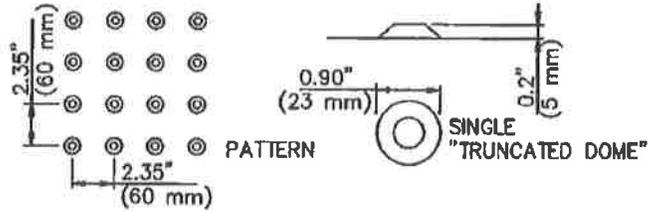
TABLE 2 REFERENCE FORMULAS:  
 $K.DOWN = 8.333\% / (8.333\% + S)$   
 $K.UP = 8.333\% / (8.333\% - S)$

STREET SLOPE ADJUSTMENTS

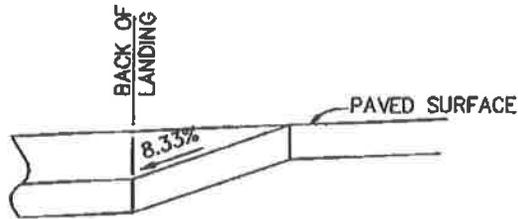




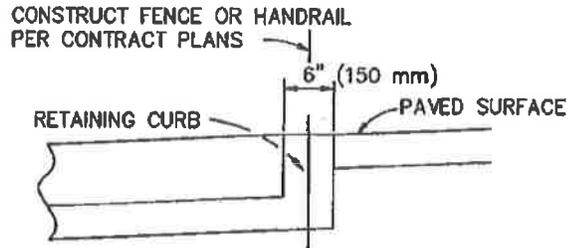
GROOVING DETAIL



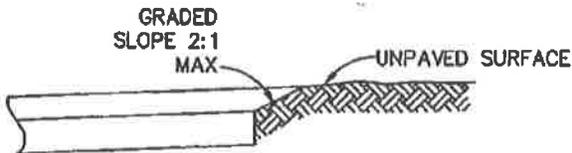
DETECTABLE WARNING DETAIL



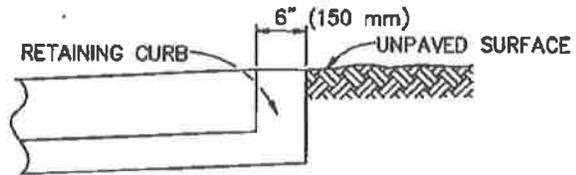
DETAIL A



DETAIL B



DETAIL C



DETAIL D

GENERAL NOTES:

1. CONCRETE SHALL BE CLASS 520-C-2500 (310-C-17) CONFORMING TO SSPWC 201-1.1.2 AND SHALL BE 4" (100 mm) THICK.
2. THE RAMP SHALL HAVE A 12" (305 mm) WIDE BORDER WITH 1/4" (6 mm) GROOVES APPROXIMATELY 3/4" (19 mm) OC. SEE GROOVING DETAIL.
3. THE RAMP SURFACE SHALL HAVE A TRANSVERSE BROOMED SURFACE TEXTURE CONFORMING TO SSPWC 303-1.9.
4. USE DETAIL "A" OR "B" IF EXISTING SURFACE BEHIND LANDING IS PAVED.
5. USE DETAIL "C" OR "D" IF EXISTING SURFACE BEHIND LANDING IS UNPAVED.
6. R = 3' (900 mm) UNLESS OTHERWISE SHOWN ON PLAN.
7. ANGLE =  $\Delta/2$  UNLESS OTHERWISE SHOWN ON PLAN.
8. CONSTRUCT DETECTABLE WARNING SURFACE PER DETAIL THIS SHEET. MATERIALS SHALL BE PER CONTRACT DOCUMENTS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

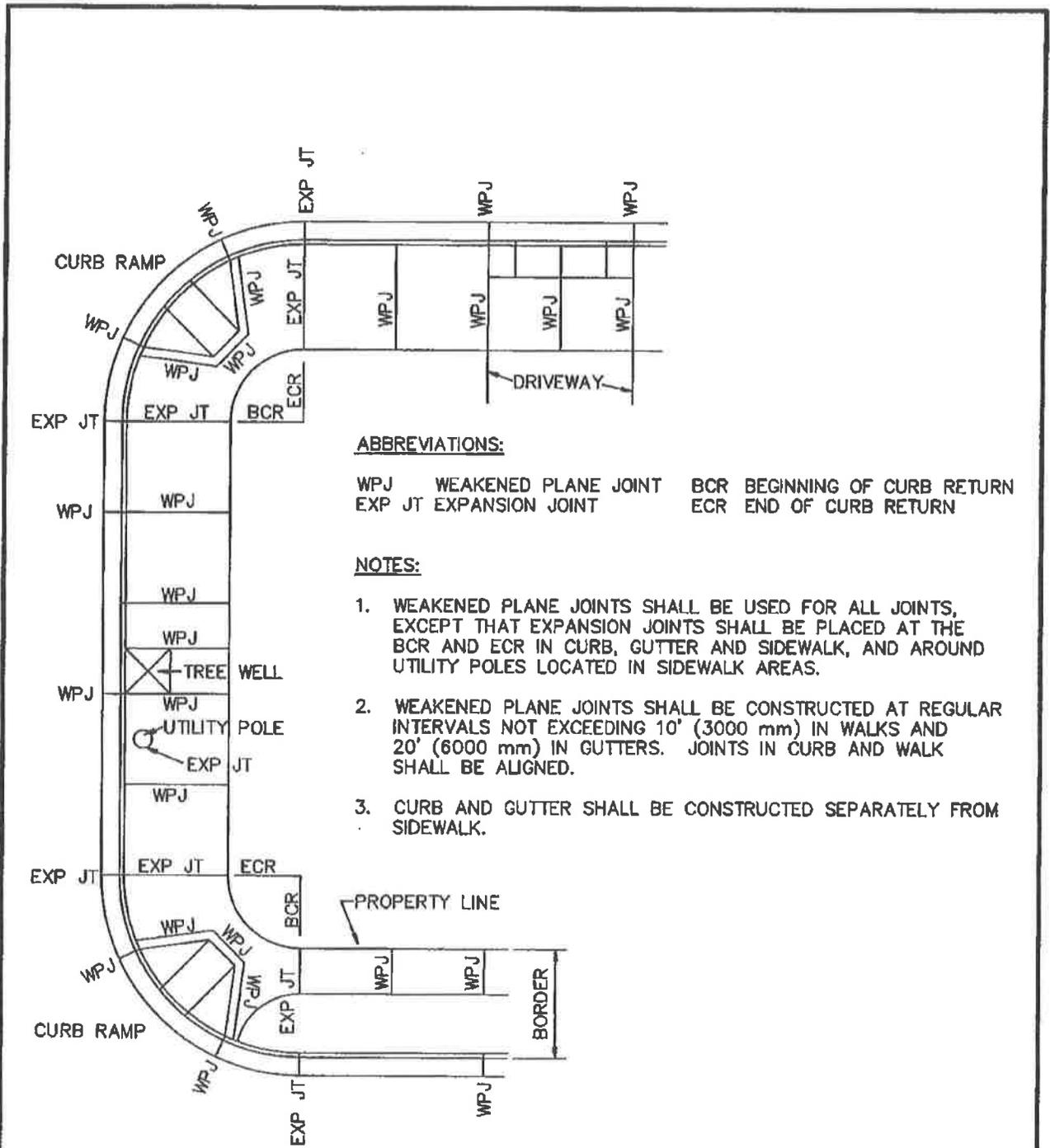
STANDARD PLAN

**CURB RAMP**

**111-4**

SHEET 10 OF 10





**ABBREVIATIONS:**

WPJ WEAKENED PLANE JOINT    BCR BEGINNING OF CURB RETURN  
 EXP JT EXPANSION JOINT        ECR END OF CURB RETURN

**NOTES:**

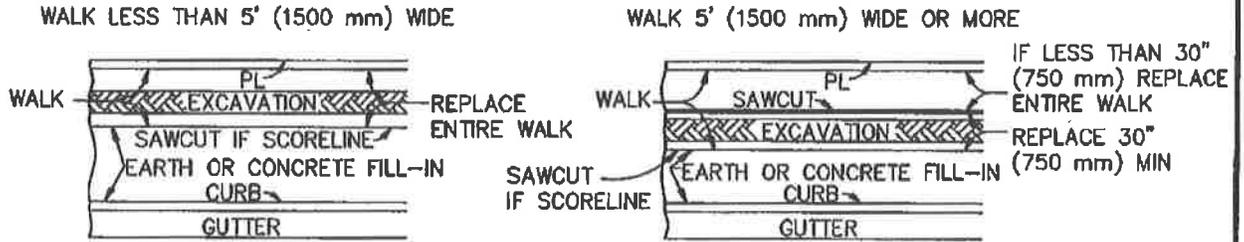
1. WEAKENED PLANE JOINTS SHALL BE USED FOR ALL JOINTS, EXCEPT THAT EXPANSION JOINTS SHALL BE PLACED AT THE BCR AND ECR IN CURB, GUTTER AND SIDEWALK, AND AROUND UTILITY POLES LOCATED IN SIDEWALK AREAS.
2. WEAKENED PLANE JOINTS SHALL BE CONSTRUCTED AT REGULAR INTERVALS NOT EXCEEDING 10' (3000 mm) IN WALKS AND 20' (6000 mm) IN GUTTERS. JOINTS IN CURB AND WALK SHALL BE ALIGNED.
3. CURB AND GUTTER SHALL BE CONSTRUCTED SEPARATELY FROM SIDEWALK.

<b>STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION</b>		
<small>PROMULGATED BY THE          PUBLIC WORKS STANDARDS INC.          GREENBOOK COMMITTEE          1994          REV. 1999, 2009</small>	<b>CURB AND SIDEWALK JOINTS</b>	<small>STANDARD PLAN  <b>112-2</b>          SHEET 1 OF 1</small>
<small>USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION</small>		

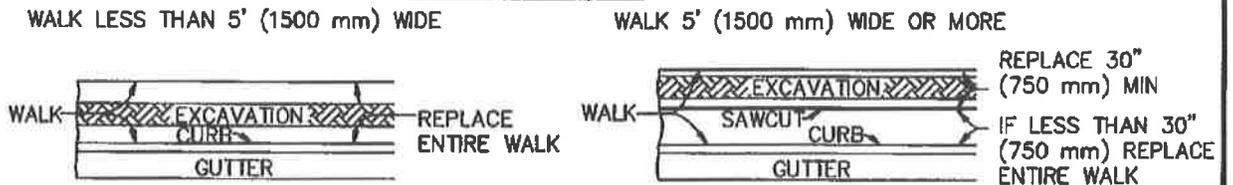


WALK OR FILL-IN REPLACEMENT FOR EXCAVATIONS MADE  
PARALLEL TO CURB OR PROPERTY LINE

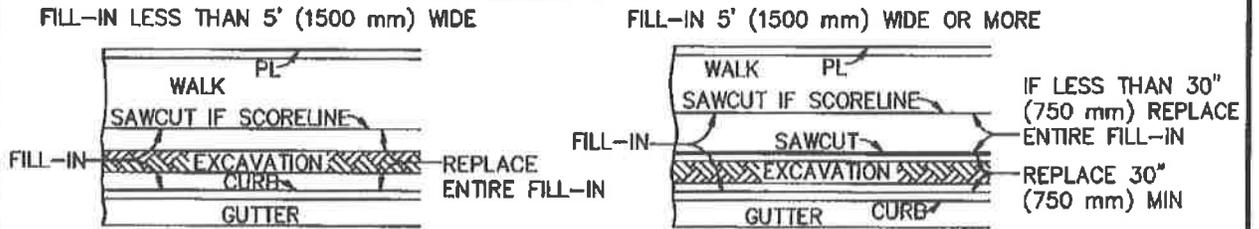
WALK ADJACENT TO PROPERTY LINE



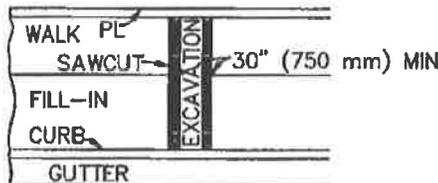
WALK ADJACENT TO CURB



FILL-IN REPLACEMENT



WALK OR FILL-IN REPLACEMENT FOR EXCAVATIONS MADE  
NORMAL TO CURB OR PROPERTY LINE



THESE REQUIREMENTS ALSO APPLY TO ENDS OF PARALLEL EXCAVATIONS.

IF AN EXCAVATION FALLS WITHIN 30" (750 mm) OF AN EXPANSION JOINT, CONSTRUCTION JOINT, WEAKENED PLANE JOINT, OR EDGE, THE CONCRETE SHALL BE REMOVED AND REPLACED TO THE JOINT OR EDGE.

IF AN EXCAVATION FALLS WITHIN 12" (300 mm) OF A SCORELINE, THE CONCRETE SHALL BE REMOVED AND REPLACED TO THE SCORELINE. THE SCORELINE SHALL BE SAWCUT BEFORE CONCRETE REMOVAL. THE MINIMUM LENGTH OF REPLACEMENT IN BOTH CASES SHALL BE 30" (750 mm).

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1993  
REV. 1990, 2009

**SIDEWALK & DRIVEWAY REPLACEMENT**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

**113-2**

SHEET 1 OF 2



NOTES

1. CONCRETE WALK, FILL-IN AND DRIVEWAYS REMOVED IN CONNECTION WITH CONSTRUCTION SHALL BE REPLACED TO NEATLY SAWED EDGES. ALL CUTS SHALL BE PARALLEL TO OR PERPENDICULAR TO THE CURB; ON CURVES, THE CUT SHALL BE RADIAL TO THE CURB.
2. DRIVEWAY APRONS IN WHICH THE "W" DISTANCE IS LESS THAN 11' (3300 mm) SHALL BE REPLACED IN THEIR ENTIRETY IF CUT IN ANY AREA.
3. DRIVEWAY APRONS IN WHICH THE "W" DISTANCE IS 11' (3300 mm) OR MORE MAY BE CUT WITHIN THE "W" SECTION. THE MINIMUM REPLACEMENT SHALL BE 30" (750 mm) IN LENGTH. THE MINIMUM DISTANCE ALLOWED BETWEEN SUCH CUTS SHALL BE 14' (4200 mm).
4. DRIVEWAY APRONS IN WHICH THE "W" DISTANCE IS 11' (3300 mm) OR MORE MAY BE CUT IN THE "X" OR "R" SECTION. REPLACEMENT SHALL BE THE ENTIRE "X" OR "R" SECTION.
5. DRIVEWAY APRONS SHALL BE REPLACED FROM THE BACK OF THE CURB TO THE FRONT EDGE OF THE WALK, EXCEPT, WHERE WALK IS ADJACENT TO CURB, REPLACEMENT SHALL BE FROM BACK OF CURB TO BACK OF WALK.
6. WALK PORTIONS OF DRIVEWAYS SHALL BE REPLACED AS SHOWN ABOVE FOR EXCAVATIONS MADE PARALLEL OR NORMAL TO CURB.
7. REPLACEMENT OF THE "X" OR "R" SECTION SHALL MATCH EXISTING CONSTRUCTION.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

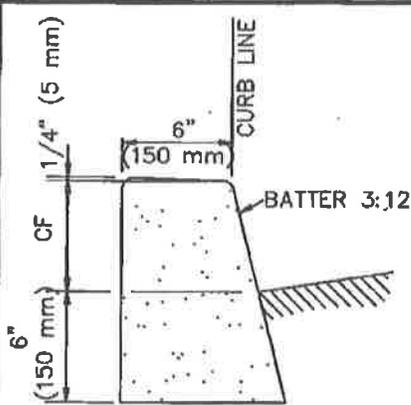
STANDARD PLAN

**SIDEWALK & DRIVEWAY REPLACEMENT**

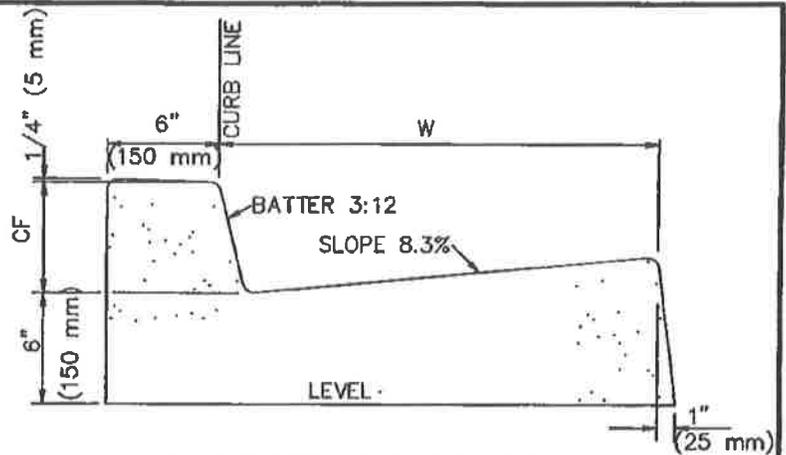
**113-2**

SHEET 2 OF 2

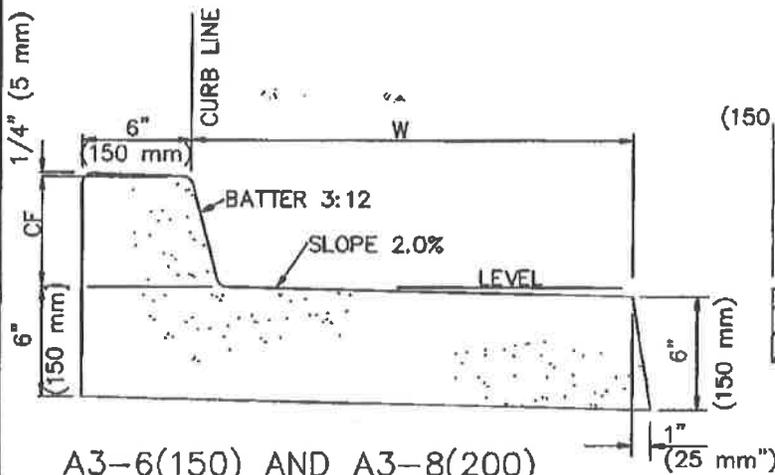




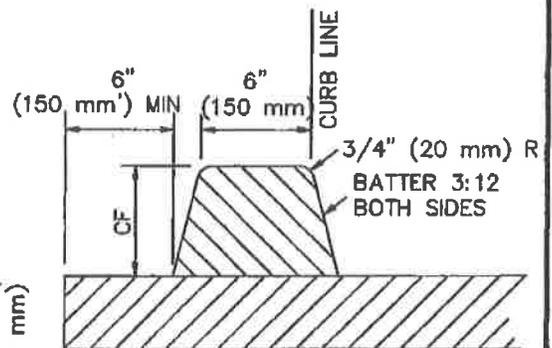
A1-6(150) AND  
A1-8(200)



A2-6(150) AND A2-8(200)



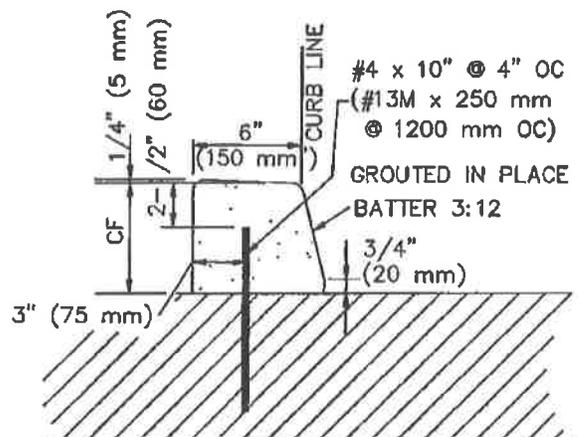
A3-6(150) AND A3-8(200)



D1-6(150) AND  
D1-8(200)

NOTES:

1. THE LAST NUMBER IN THE DESIGNATION IS THE CURB FACE (CF) HEIGHT, INCHES (mm).
2. GUTTER WIDTH, W, IS 24" (600 mm) UNLESS OTHERWISE SPECIFIED.
3. TYPES A1, A2, A3 AND C1 SHALL BE CONSTRUCTED FROM PCC.
4. TYPE D1 CURB SHALL BE CONSTRUCTED FROM ASPHALT CONCRETE.
5. TYPE C1 CURB SHALL BE ANCHORED WITH STEEL DOWELS AS SHOWN OR WITH AN EPOXY APPROVED BY THE ENGINEER.
6. ALL EXPOSED CORNERS ON PCC CURBS AND GUTTERS SHALL BE ROUNDED WITH A 1/2" (15 mm) RADIUS.



C1-6(150) AND C1-8(200)

STANDARD PLAN FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1984  
REV. 1990, 2009

**CURB AND GUTTER - BARRIER**

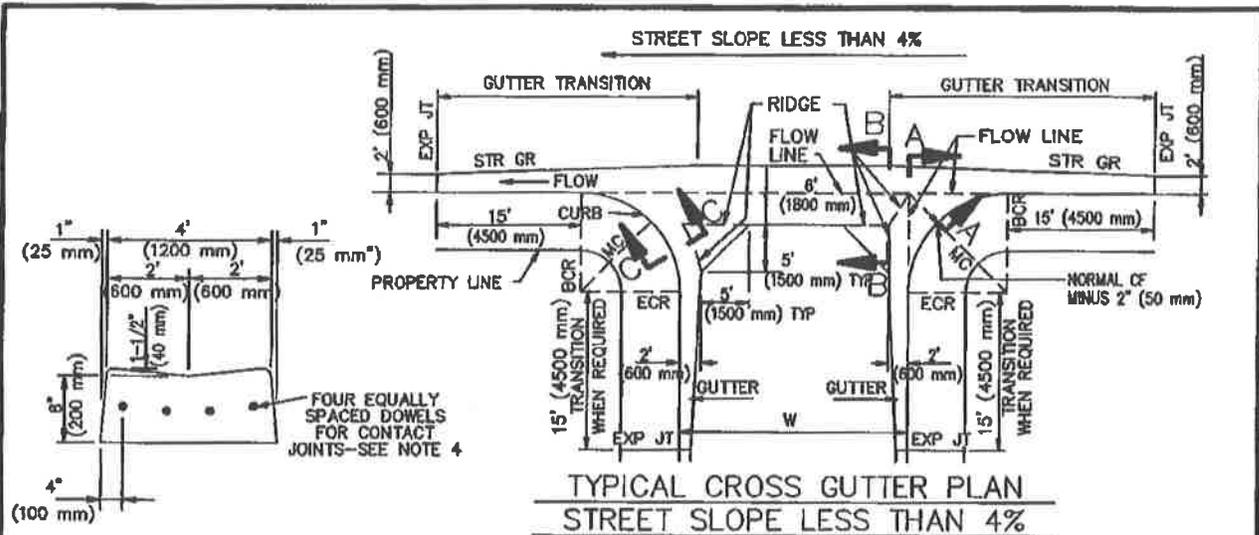
STANDARD PLAN

**120-2**

USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

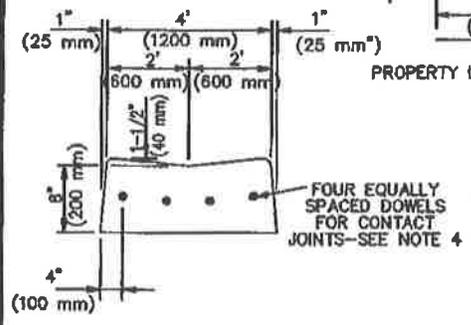
SHEET 1 OF 1



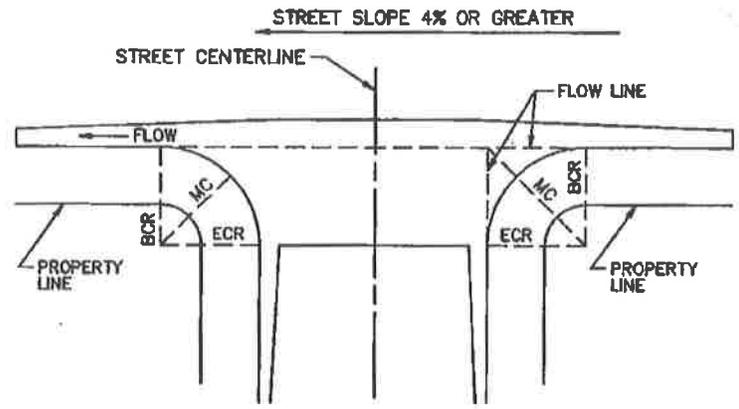


TYPICAL CROSS GUTTER PLAN  
STREET SLOPE LESS THAN 4%

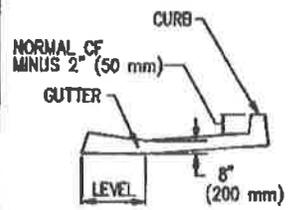
LONGITUDINAL  
GUTTER



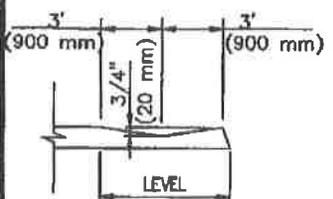
LONGITUDINAL  
GUTTER



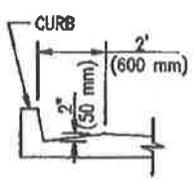
TYPICAL CROSS GUTTER PLAN  
STREET SLOPE MORE THAN 4%



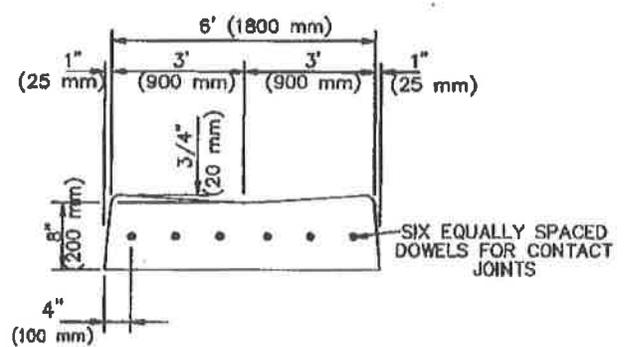
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

PROMULGATED BY THE  
PUBLIC WORKS STANDARDS INC.  
GREENBOOK COMMITTEE  
1954  
REV. 1990, 2009

CROSS AND LONGITUDINAL GUTTERS

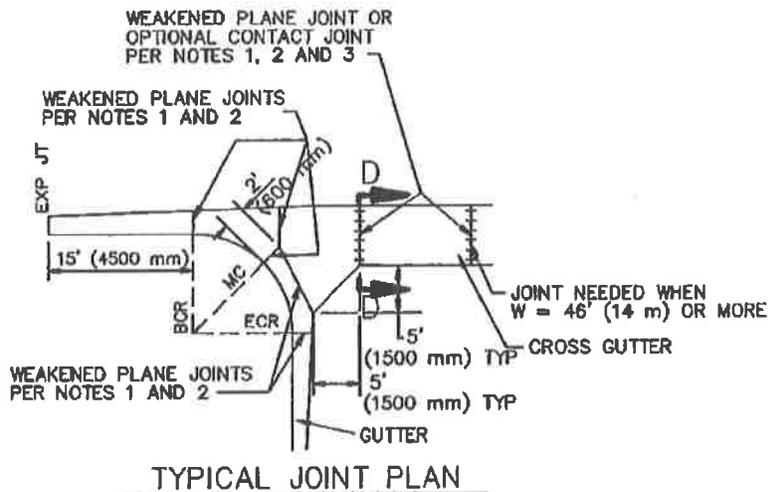
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

STANDARD PLAN

122-2

SHEET 1 OF 2

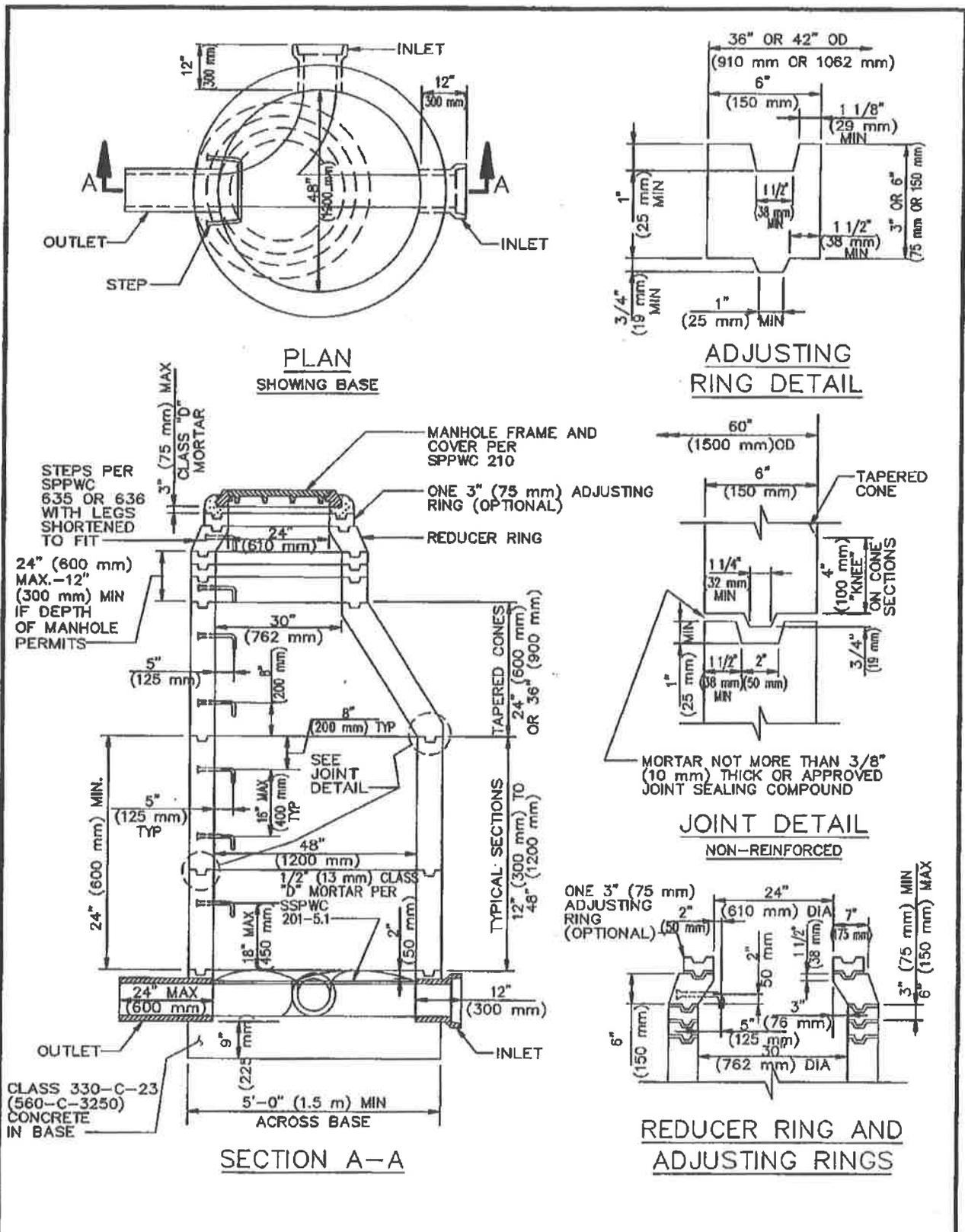




**NOTES:**

1. WEAKENED PLANE AND/OR CONTACT JOINTS SHALL BE PLACED IN CURB AND GUTTER AT LOCATIONS SHOWN ON THE TYPICAL JOINT PLAN HEREON.
2. WEAKENED PLANE JOINTS SHALL BE PLASTIC CONTROL JOINTS OR 1-1/2" (40 mm) DEEP SAW CUTS. CONCRETE SAWING SHALL TAKE PLACE WITHIN 24 HOURS AFTER CONCRETE IS PLACED.
3. DOWELS FOR CONTACT JOINTS SHALL BE #4 BARS 18" LONG (#13M BARS 450 mm LONG).
4. PLACE A WEAKENED PLANE OR CONTACT JOINT WHERE LONGITUDINAL ALLEY GUTTER JOINS CONCRETE ALLEY INTERSECTION.
5. ALL EXPOSED CORNERS ON PCC GUTTERS SHALL BE ROUNDED WITH 1/2" (15 mm) RADIUS.
6. CONCRETE SHALL BE INTEGRAL WITH CURB UNLESS OTHERWISE SPECIFIED.





STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS INC. GREENBOOK COMMITTEE 1984 REV. 1993, 1995, 2009	<h2 style="margin: 0;">PRECAST CONCRETE SEWER MANHOLE</h2>	STANDARD PLAN <h1 style="margin: 0;">200-3</h1>
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION		
		SHEET 1 OF 2



NOTES:

1. EXCEPT AS NOTED HEREON, THE PRECAST UNITS SHALL BE MANUFACTURED AND TESTED IN ACCORDANCE WITH ASTM C 478. AS AN ALTERNATE CURING METHOD, THE UNITS MAY BE CURED USING SATURATED STEAM FOR A MINIMUM OF 12 HOURS FOLLOWED BY 6 DAYS OF WATER CURING OR MEMBRANE CURING. IF THE UNITS ARE CURED BY THE ALTERNATE METHOD, THEY SHALL NOT BE SHIPPED PRIOR TO 8 DAYS AFTER CASTING NOR UNTIL THE CONCRETE HAS ATTAINED A STRENGTH OF 3500 PSI (25 MPa).
2. MANHOLE STEPS SHALL CONFORM TO SPPWC 635 TYPE 1 OR 3 OR SPPWC 636. THE MANHOLE STEPS SHALL BE UNIFORMLY SPACED AT A MAXIMUM OF 16" (400 mm). THE LOWEST STEP SHALL BE PLACED NOT LESS THAN 8" (200 mm) NOR MORE THAN 18" (450 mm) ABOVE THE SHELF. THE STEPS SHALL PROJECT 5" (125 mm) INSIDE THE MANHOLE.
3. RISER SECTIONS MAY BE REINFORCED OR UNREINFORCED. REINFORCED SECTIONS SHALL BE REINFORCED IN ACCORDANCE WITH ASTM C 478 AND SHALL HAVE A MINIMUM WALL THICKNESS OF 5" (125 mm). UNREINFORCED RISER SECTIONS SHALL HAVE A MINIMUM WALL THICKNESS OF 6" (150 mm).
4. THE 24"x48" (600 mm x 1200 mm) ECCENTRIC CONES MAY BE REINFORCED OR UNREINFORCED. IF REINFORCED, THE WALL THICKNESS SHALL BE NOT LESS THAN 5" (125 mm). IF UNREINFORCED, THE WALL THICKNESS SHALL NOT BE LESS THAN 6" (150 mm).
5. JOINTS SHALL BE TONGUE AND GROOVE. JOINTS FOR REINFORCED STRUCTURES SHALL CONFORM WITH ASTM C 478 SECTION 14.
6. PRECAST UNITS SHALL BE ASSEMBLED USING CLASS "B" MORTAR.
7. IF 30" (762 mm) DIAMETER MANHOLE FRAME AND COVER IS REQUIRED, IT SHALL BE INSTALLED WHERE THE REDUCER RING IS SHOWN IN THE SECTION.
8. FOR REINFORCED PRECAST STRUCTURES, ALL REINFORCEMENT SHALL HAVE A MINIMUM OF 2" (50 mm) OF COVER OVER THE STEEL ON THE INSIDE FACE.
9. THE TOP OPENING OF THE MANHOLE AND THE STEPS SHALL BE PLACED DIRECTLY OVER THE OUTLET OF THE STRUCTURE EXCEPT AS OTHERWISE NOTED ON PLANS.
10. CONCRETE BASE AND STUB WALLS SHALL BE POURED IN ONE OPERATION TO A POINT 2" (50 mm) ABOVE THE INLET AND OUTLET PIPES. ALL PIPES SHALL BE RIGIDLY SUPPORTED BY TEMPORARY PIERS OR OTHER METHODS DURING THE OPERATION. CONCRETE SHALL SET FOR 24 HOURS BEFORE PLACING PRECAST UNITS.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

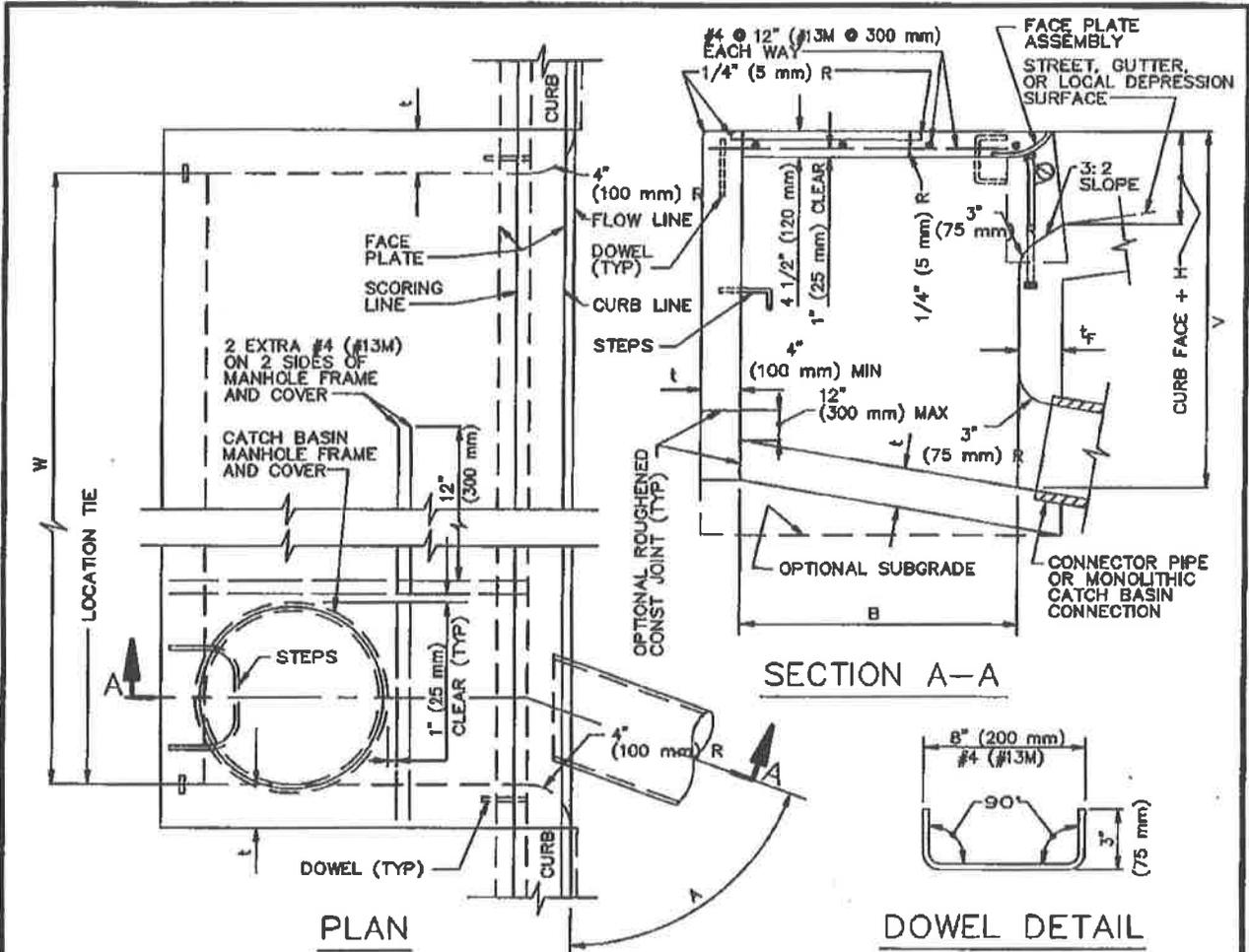
**PRECAST CONCRETE  
SEWER MANHOLE**

STANDARD PLAN

**200-3**

SHEET 2 OF 2





STRUCTURAL DATA							
WALL AND SLAB DIMENSIONS AND REINFORCEMENT REQUIREMENTS							
MAX W	MAX V	t	t <sub>F</sub>	REINFORCEMENT REQUIRED IN			
				FRONT WALL	REAR WALL	BOTTOM SLAB	END WALL
3.5' (1.0 m)	8' (2.4 m)	6" (150 mm)	6" (150 mm)	NO REINFORCEMENT REQUIRED			
3.5' (1.0 m)	12' (3.5 m)	8" (200 mm)	8" (200 mm)				
7' (2.0 m)	6' (1.8 m)	6" (150 mm)	6" (150 mm)				
7' (2.0 m)	12' (3.5 m)	8" (200 mm)	8" (200 mm)				
14' (4.0 m)	4' (1.2 m)	8" (150 mm)	6" (150 mm)				
	8' (2.4 m)	6" (150 mm)	8" (200 mm)				
14' (4.0 m)	12' (3.5 m)	8" (200 mm)	10" (250 mm)				
6 m (21') AND 9 m (28')	4' (1.2 m)	6" (150 mm)	6" (150 mm)				
	6' (1.8 m)	6" (150 mm)	8" (200 mm)				
	8' (2.4 m)	8" (200 mm)	8" (200 mm)				
	10' (3.0 m)	8" (200 mm)	10" (250 mm)				
	12' (3.5 m)	8" (200 mm)	10" (250 mm)				

FOR W > 28' (9 m), V > 12' (3.5 m) OR B > 4' (1.2 m) SEE PLANS

**STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION**

PROMULGATED BY THE PUBLIC WORKS STANDARDS, INC., GREENBOOK COMMITTEE 1984 REV. 1992, 1996, 2009	<b>CURB OPENING CATCH BASIN</b>	<b>STANDARD PLAN 300-3</b>
	USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION	SHEET 1 OF 2



NOTES:

1. WHERE THE BASIN IS TO BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING OR PROPOSED SIDEWALK OR IS CONTIGUOUS TO SUCH SIDEWALK, THE TOP SLAB OF THE BASIN MAY BE POURED EITHER MONOLITHIC WITH THE SIDEWALK OR SEPARATELY, USING THE SAME CLASS OF CONCRETE AS IN THE BASIN. WHEN POURED MONOLITHICALLY, THE SIDEWALK SHALL BE PROVIDED WITH A WEAKENED PLANE OR A 1" (25 mm) DEEP SAWCUT CONTINUOUSLY AROUND THE EXTERNAL PERIMETER OF THE CATCH BASIN WALLS, INCLUDING ACROSS THE FULL WIDTH OF THE SIDEWALK. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE, GRADE, COLOR, FINISH, AND SCORING TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO THE BASIN.
2. ALL CURVED CONCRETE SURFACES SHALL BE FORMED BY CURVED FORMS, AND SHALL NOT BE SHAPED BY PLASTERING.
3. FLOOR OF BASIN SHALL BE GIVEN A STEEL TROWEL FINISH AND SHALL HAVE A LONGITUDINAL AND LATERAL SLOPE OF 1:12 MINIMUM AND 1:3 MAXIMUM, EXCEPT WHERE THE GUTTER GRADE EXCEEDS 8%, IN WHICH CASE THE LONGITUDINAL SLOPE OF THE FLOOR SHALL BE THE SAME AS THE GUTTER GRADE. SLOPE FLOOR FROM ALL DIRECTIONS TO THE OUTLET.
4. DIMENSIONS:
  - B = 3'-2" (970 mm)
  - V = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE CATCH BASIN AT THE OUTLET = 4.5' (1.35 m).
  - V<sub>U</sub> = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT AT THE UPSTREAM END OF THE BASIN, AND SHALL BE DETERMINED BY THE REQUIREMENTS OF NOTE 3, BUT SHALL NOT BE LESS THAN CURB FACE PLUS 12" (300 mm).
  - V<sub>I</sub> = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE INLET, NOTED ON THE PLANS.
  - H = NOTED ON THE PLANS.
  - W = NOTED ON THE PLANS.
  - A = THE ANGLE, IN DEGREES, INTERCEPTED BY THE CENTERLINE OF THE CONNECTOR PIPE AND THE CATCH BASIN WALL TO WHICH THE CONNECTOR PIPE IS ATTACHED.
5. PLACE CONNECTOR PIPES AS INDICATED ON THE PLANS. UNLESS OTHERWISE SPECIFIED, THE CONNECTOR PIPE SHALL BE LOCATED AT THE DOWNSTREAM END OF THE BASIN. WHERE THE CONNECTOR PIPE IS SHOWN AT A CORNER, THE CENTERLINE OF THE PIPE SHALL INTERSECT THE INSIDE CORNER OF THE BASIN. THE PIPE MAY BE CUT AND TRIMMED AT A SKEW NECESSARY TO INSURE MINIMUM 3" (80 mm) PIPE EMBEDMENT, ALL AROUND, WITHIN THE CATCH BASIN WALL, AND 3" (75 mm) RADIUS OF ROUNDING OF STRUCTURE CONCRETE, ALL AROUND, ADJACENT TO PIPE ENDS. A MONOLITHIC CATCH BASIN CONNECTION SHALL BE USED TO JOIN THE CONNECTOR PIPE TO THE CATCH BASIN WHENEVER ANGLE "A" IS LESS THAN 70° OR GREATER THAN 110°, OR WHENEVER THE CONNECTOR PIPE IS LOCATED IN A CORNER. THE OPTIONAL USE OF A MONOLITHIC CATCH BASIN CONNECTION IN ANY CASE IS PERMITTED. MONOLITHIC CATCH BASIN CONNECTIONS MAY BE CONSTRUCTED TO AVOID CUTTING STANDARD LENGTHS OF PIPE.
6. STEPS SHALL BE LOCATED AS SHOWN. IF THE CONNECTOR PIPE INTERFERES WITH THE STEPS, THEY SHALL BE LOCATED AT THE CENTERLINE OF THE DOWNSTREAM END WALL. STEPS SHALL BE SPACED 12" (300 mm) APART. THE TOP STEP SHALL BE 7" (175 mm) BELOW THE TOP OF THE MANHOLE AND PROJECT 2-1/2" (65 mm). ALL OTHER STEPS SHALL PROJECT 5" (130 mm).
7. DOWELS ARE REQUIRED AT EACH CORNER AND AT 7' (2 m) ON CENTER (MAXIMUM) ALONG THE BACKWALL.
8. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
  - 308 MONOLITHIC CATCH BASIN CONNECTION
  - 309 CATCH BASIN REINFORCEMENT
  - 310 CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR
  - 312 CATCH BASIN MANHOLE FRAME AND COVER
  - 635 STEEL STEP
  - 636 POLYPROPYLENE PLASTIC STEP

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION

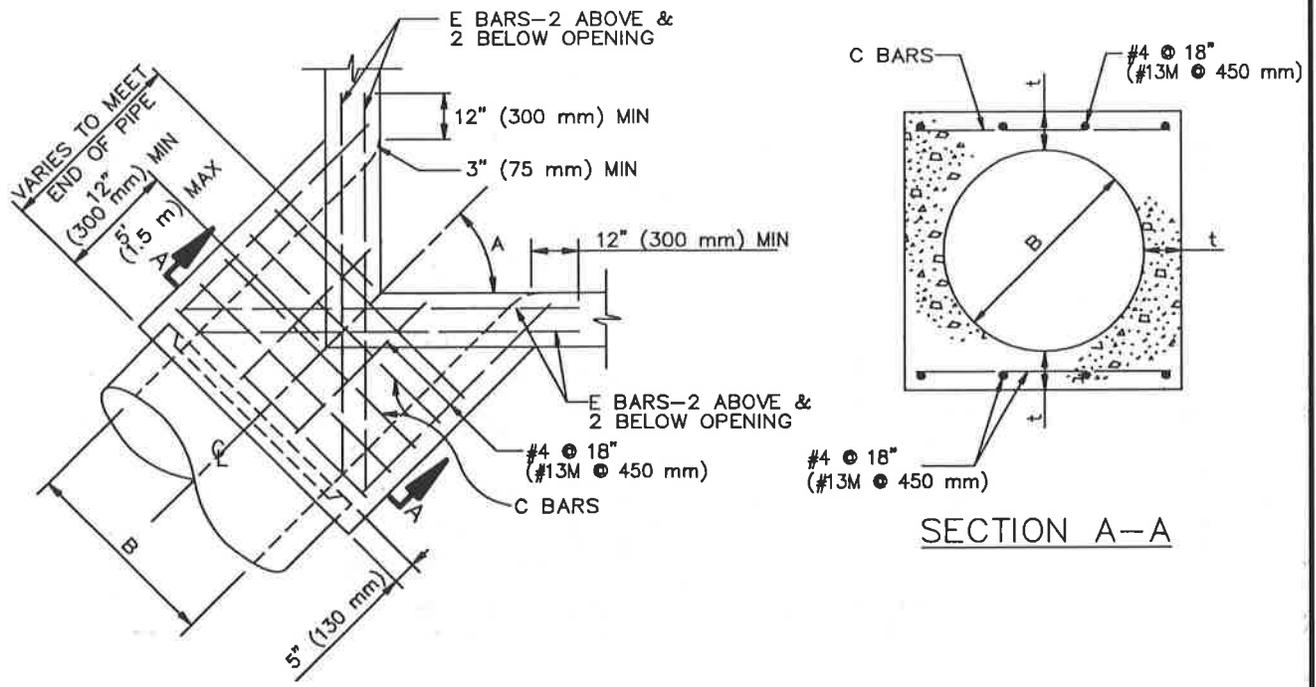
**CURB OPENING CATCH BASIN**

STANDARD PLAN

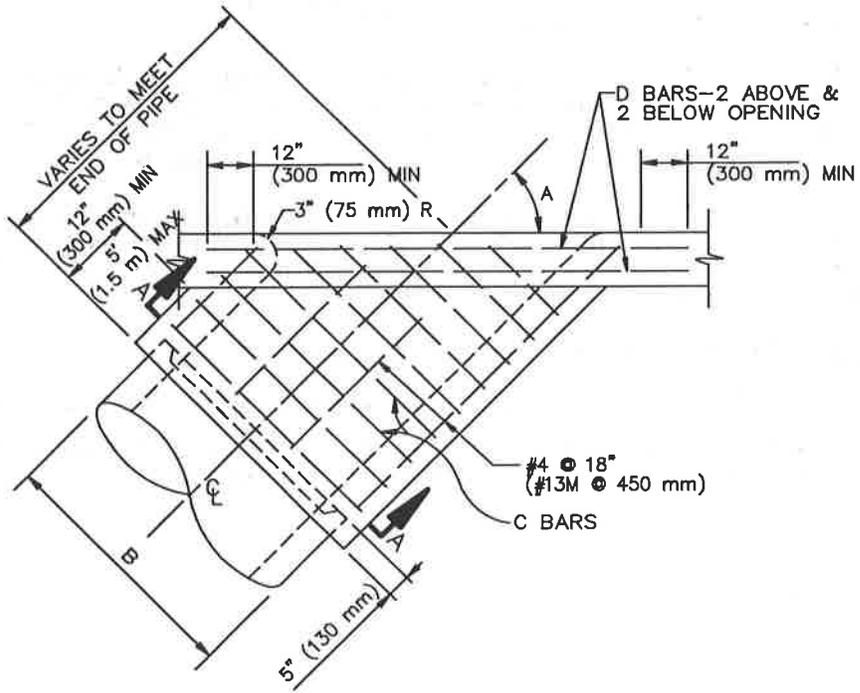
**300-3**

SHEET 2 OF 2





PLAN  
CORNER CONNECTION



PLAN  
SIDE CONNECTION

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION		
PROMULGATED BY THE PUBLIC WORKS STANDARDS, INC., GREENBOOK COMMITTEE 1984 REV. 1996, 2009	<h2 style="margin: 0;">MONOLITHIC CATCH BASIN CONNECTION</h2>	STANDARD PLAN <h1 style="margin: 0;">308-2</h1>
USE WITH STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION		SHEET 1 OF 2

STRUCTURAL DATA							
B	t	C BARS	D&E BARS	B	t	C BARS	D&E BARS
12" (300 mm)	4" (115 mm)	#4 @ 6" (#13M @ 150 mm)	#5 (#16M)	42" (1050 mm)	7 1/2" (190 mm)	#5 @ 6" (#16M @ 150 mm)	#6 (#19M)
15" (375 mm)	4-1/4" (115 mm)			45" (1125 mm)	7 3/4" (190 mm)		
18" (450 mm)	4-1/2" (115 mm)			48" (1200 mm)	8" (215 mm)		
21" (525 mm)	5" (140 mm)			51" (1275 mm)	8 1/2" (215 mm)		
24" (600 mm)	5 1/4" (140 mm)			54" (1350 mm)	9" (240 mm)		
27" (675 mm)	5 1/2" (140 mm)			57" (1425 mm)	9 1/4" (240 mm)		
30" (750 mm)	6" (165 mm)			60" (1500 mm)	9 1/2" (240 mm)		
33" (825 mm)	6 1/4" (165 mm)			63" (1575 mm)	10" (260 mm)		
36" (900 mm)	6 1/2" (165 mm)			66" (1650 mm)	10 1/4" (260 mm)		
39" (975 mm)	7" (190 mm)			69" (1725 mm)	10 3/4" (280 mm)		
				72" (1800 mm)	11" (280 mm)		

FOR B GREATER THAN 72" (1800 mm) SEE PLANS

NOTES

1. REINFORCING STEEL SHALL BE 1-1/2" (40 mm) CLEAR FROM FACE OF CONCRETE UNLESS OTHERWISE SHOWN.
2. REINFORCING STEEL FOR INSIDE FACE OF CATCH BASIN SHALL BE CUT AT CENTER OF OPENING AND BENT INTO WALLS OF MONOLITHIC CATCH BASIN CONNECTION. REINFORCING STEEL FOR OUTSIDE FACE OF CATCH BASIN SHALL BE CUT 2" (50 mm) CLEAR OF OPENING.
3. CONNECTION SHALL BE PLACED MONOLITHIC WITH CATCH BASIN. THE ROUNDED EDGE OF OUTLET SHALL BE CONSTRUCTED BY PLACING CONCRETE WITH THE SAME CLASS OF CONCRETE AS THE CATCH BASIN AGAINST A CURVED FORM WITH A RADIUS OF 3" (75 mm).
4. CONNECTIONS SHALL BE CONSTRUCTED WHEN:
  - (A) PIPES INLET OR OUTLET THROUGH CORNER OF CATCH BASIN
  - (B) ANGLE A FOR PIPES THROUGH 30" (750 mm) IN DIAMETER IS LESS THAN 70° OR GREATER THAN 110°.

**APPENDIX IV**

**CONSTRUCTION AND DEMOLITION DEBRIS RECYCLING SUMMARY**



Building Permit Number: \_\_\_\_\_

**CITY OF TORRANCE**

**Construction & Demolition Waste Management Plan (WMP)**

**THE REQUIREMENT IS TO REUSE OR RECYCLE AT LEAST 50% OF PROJECT WASTE AND 100% OF EXCAVATED SOIL AND LAND-CLEARING DEBRIS**

- 1) As part of your application, you must complete the front and back of this page and the "estimate" or left side of the table on the backside of this page to the best of your ability, indicating that you will recycle at least 50% of the waste from the project and 100% of excavated soil and land-clearing debris.
- 2) As your project proceeds, collect and keep receipts of all waste disposed, recycled, reused or donated. Receipts must show material type, weight of material, how the material was treated and the facility used.
- 3) To final your project, you must then fill out the "actual" or right side of the table on the backside of this sheet, and submit it again with all the receipts to verify that at least 50% of the project's waste and 100% of excavated soil and land-clearing debris was diverted from the landfills.

Please note, if you are contracting with a different company to haul your waste or using a roll off box from another company, that company must have a business license to operate in the City of Torrance.

**A COPY OF THIS WMP AND RECEIPTS (SHOWING MATERIAL TYPE, WEIGHT, TREATMENT AND FACILITY USED) FOR ALL RECYCLING AND DISPOSAL SHALL BE SUBMITTED BEFORE THE PROJECT WILL RECEIVE FINAL BUILDING APPROVAL. (FOR DEMO PERMITS, THE RECEIPTS FOR THE DEMOLITION WASTE SHOULD BE PROVIDED BEFORE THE FIRST FOOTING INSPECTION AFTER THE BUILDING PERMIT HAS BEEN ISSUED.)**

Project Name: \_\_\_\_\_

Location: \_\_\_\_\_

Requesting Infeasibility Exemption:       Yes     No

Contractor Name: \_\_\_\_\_ Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_ Contact Phone: \_\_\_\_\_

Recycler: \_\_\_\_\_ Recycler Contact: \_\_\_\_\_

Recycler Address: \_\_\_\_\_ Recycler Contact Phone: \_\_\_\_\_

<b>CITY USE ONLY</b>	
	Application (Date)      Final (Date)
Approved	
Further explanation needed (see attached)	
Denied	
Infeasibility Exemption Approved	
Reviewed By	

Submit this form and the attached Waste Management Plan Table to: **WMP Compliance Official**

**Alison Sherman, Public Works**

**asherman@TorranceCA.Gov**

Fax: 310-781-6902

For questions or for in-person visit (by appointment only), please call 310-781-6900



**CITY OF TORRANCE**

**Construction & Demolition Waste Management Plan Table**

Project Name: \_\_\_\_\_

Total Estimated Waste Generated by Project: \_\_\_\_\_ (in tons).  
 (Ask your hauler, recycler or site cleanup vendor to assist you. Use receipts from your previous jobs for estimates)

Complete and return with Building Permit Application			Complete and return with receipts prior to final building approval		
Material Type	Estimated Reused/ Recycled	Estimated Disposed/ Landfilled	Actual Reused/ Recycled	Actual Disposed/ Landfilled	Vendor or Facility Used (Destination)
	(In Tons)	(In Tons)	(In Tons)	(In Tons)	
Asphalt & Concrete					
Bricks/Masonry/Tiles					
Building Materials (doors, windows, fixtures, etc.)					
Cardboard					
Excavated dirt and land-clearing debris					
Dirt					
Landscape Debris (Plant & Tree Trimmings)					
Scrap Metal					
Unpainted Wood & Pallets					
Other (painted wood & drywall, roofing, etc.)					
Mixed C&D*					
Trash/Garbage					
<b>TOTAL</b>					

If you are requesting an infeasibility exemption and the estimated amount reused/recycled is less than 50%, please explain why (attach additional sheets if necessary):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Prepared by (print): \_\_\_\_\_ Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Phone Number: \_\_\_\_\_

*Must be signed by Contractor or Owner. Signatory accepts financial responsibility for penalties for non-compliance.*

\* *Mixed C&D* is defined as a mixture of three or more materials (e.g. wood, drywall, roofing, etc.) from construction or demolition sites that will be taken to a facility capable of recycling those commingled materials.



## Conversion Rates

The following conversion rates are estimates to help complete the Waste Management Plan by converting materials into tonnage format. The ranges vary widely, depending on how the materials are handled (compacted, loose, chipped, etc.). Use the conversion factors and receipts from any previous projects to help you estimate the potential amount of materials and diversion. Take into consideration the type and load of vehicles that will be used to haul the materials. Ask your hauler or recycler to assist you in estimating these numbers.

<b>Material</b>	<b>Lbs/cy</b>	<b>Tons/cy</b>
Asphalt	1,400 lbs/cy	0.7 tons/cy
Brick	2,430 lbs/cy	1.21 tons/cy
Cardboard	100 lbs/cy	0.05 tons/cy
Concrete	2,600 lbs/cy (Sources range from 1,000 to 4,000)	1.3 tons/cy
Dirt/Soils	2,660 lbs/cy	1.33 tons/cy
Drywall	700 lbs/cy	0.35 tons/cy
Wood (chipped)	300 - 650 lbs/cy	0.15 – 0.3 tons/cy
Mixed C&D Debris	900 lbs/cy	0.45 tons/cy
Mixed Waste/Trash	100 - 350 lbs/cy	0.5 - 0.175 tons/cy



**APPENDIX V**  
**STREET LIGHT SPECIFICATIONS**

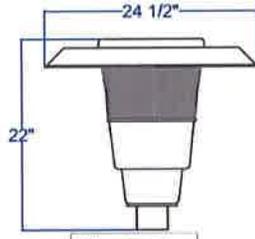


[Return To Index](#)

## LA2731 - TECHNICAL SPECIFICATIONS

 Contact Information: 


View Full Size



View Full Size

Weight: 4

EPA: 1.11

**Max Wattage**

HID: 400w

LED: 40/45w

Induction (IND): 85w

Fluorescent (WPL): 57w


[Application Photos](#)
[Project Drawings](#)
[Photometrics](#)
[Print/Send](#)
[Request a Quote](#)
[Product Order Guide](#)

### Lantern

The modern design of this fixture works in several applications, from walk ways to parking lots to campuses. It is made of a heavy duty, spun aluminum top shade covering a refractive lens which produces Type III or V optics, all attached to a large cast aluminum ballast housing. Stainless steel hardware is used throughout.

### Lens

Lantern Lens material for clear (CL), frosted (FR) and seeded (SE) comes standard in polycarbonate. Acrylic option is available. Prismatic Lens material comes standard in acrylic.

### Light Source

HID Ballast shall be high power factor EISA compliant with a lamp starting temperature down to -20°C. Sockets will be medium/mogul base porcelain. 4Kv rated. Fluorescent Ballast will be electronic with a lamp starting temp of -18°C. Fluorescent sockets will be 4 pin to accept quad or triple tube lamps.

### LED

High Performance LED with patented pixel design for maximum thermal management

- Efficacy over 90 lumens per watt
- Customized lens precisely directs the light Type II, III and V
- Operating temp of -30C to 55C
- Dimmable – 0-100%
- Life: L70 50,000 hours
- Color temp: 3500k, 4000k, and 5000k
- CRI: >70 @ 5,000K
- LED platform built in series – parallel circuits ensuring consistent light output in the event of single LED failure

- Fully compliant with the RoHS Directive
- Certifications: ETL
- Driver Specifications:
  - Rated IP65 rated with an optional IP66 rating
  - Operating at 350mA or 400mA
  - Built in surge protection
  - Current constant output 50/60HZ
  - Driver Efficiency>90% power factor above 99%

### Optics:

The R3 and R5 glass borosilicate refractors are available for Type III and Type V light distribution. Louvers in White (louVW) or polished aluminum (louVP) and the Spun Cone Reflector in White (CR) or Polished (CRP) produce a typical Type V distribution. Segmented reflectors (H2, H3,H4, H5) consist of highly reflective alzak material manufactured to produce high lumen output and a specific light pattern. Spun aluminum reflectors (S5) will be highly polished to produce a typical type V distribution.

### Accessory

House side shields (HSS, HSSX) made from polished aluminum for high reflectivity typical 120 degrees blockage, Optional light elimination reflective light lids available to reduce uplight.(PHSSX, PRX). Button Photo cell (PC) 120/277 and Twist Lock Photo control (TLPC) 120-277V available. Classic Glass Chimney (CH) available.

### Voltage

HID 120-277 volts, LED 120-277 volts, Induction 120 or 277 volts, Fluorescent 120-277 volts.

### Finish

Our products are painted at a TIGER Drylac® approved facility. All ANP luminaires are finished in our polyester powder coat for exceptional durability and color retention. Products undergo an intensive five step process in which they are cleansed, treated with iron phosphate, and sealed to pre-treat the metal surface for maximum paint adhesion. Whether applied as a textured coat or a smooth gloss, our high quality finish is electro-statically applied and baked at 430° for maximum hardness and wear.

Marine grade paint - See marine grade specifications

### Warranty:

See terms and conditions for complete fixture and ballast warranty. LED warranty information

- 5 year limited warranty\*
- Life: L70 -50,000 hours
- Ease of maintenance and future upgrades with our independent heat sink technology

\*5 year limited Warranty: LED platforms will be warranted for a period of 5 years from date of installation. A typical year is defined as 4380 hours of operation. Failure



*defined as more than 8% of the total platform notoperating. The driver will also be covered under the same 5 year warranty*

PLATFORM PERFORMANCE					
Color Temp	System Wattage	Drive Current	Delivered Lumens	Efficacy Lumen/Watt	# of Chips
3500K	40w	300mA	3000lm	75	35
3500K	45w	400mA	3240lm	72	35
3500K	68w	300mA	6100lm	76	60
3500K	77w	400mA	5544lm	72	60
4000K	38w	350mA	3610lm	95	35
4000K	44w	400mA	3960lm	90	35
4000K	65w	350mA	6175lm	95	60
4000K	73w	400mA	6570lm	90	60
4000K	96w	350mA	9120lm	95	90
4000K	108w	400mA	9720lm	90	90
5000K	42w	350mA	4200lm	100	35
5000K	47w	400mA	4465lm	95	35
5000K	72w	350mA	7200lm	100	60
5000K	80w	400mA	7600lm	95	60
6000K	108w	350mA	10800lm	100	90
5000K	120w	400mA	11400lm	95	90

Also available with a Tower LED Module with a Max. wattage of 40w.



**APPENDIX VI**  
**SURVEY MONUMENT TIES**

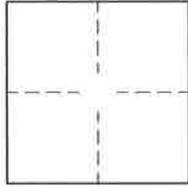


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE CENTERLINE OF PALOS VERES BLVD., THE NORTHERLY MONUMENT BEING A B.C. OF THE CENTERLINE AND THE SOUTHERLY MONUMENT BEING A PROPERTY PROD OF LOT 1 PER TRACT NO. 60807.



### CORNER TYPE

Government corner  Control   
 Meander  Property   
 Rancho  Other   
 Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
 E. \_\_\_\_\_  
 Zone \_\_\_\_\_ NAD27  NAD83   
 NAD83 Epoch \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Vert. Datum: NGVD29  NAVD88   
 Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset:  
MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_  
 and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

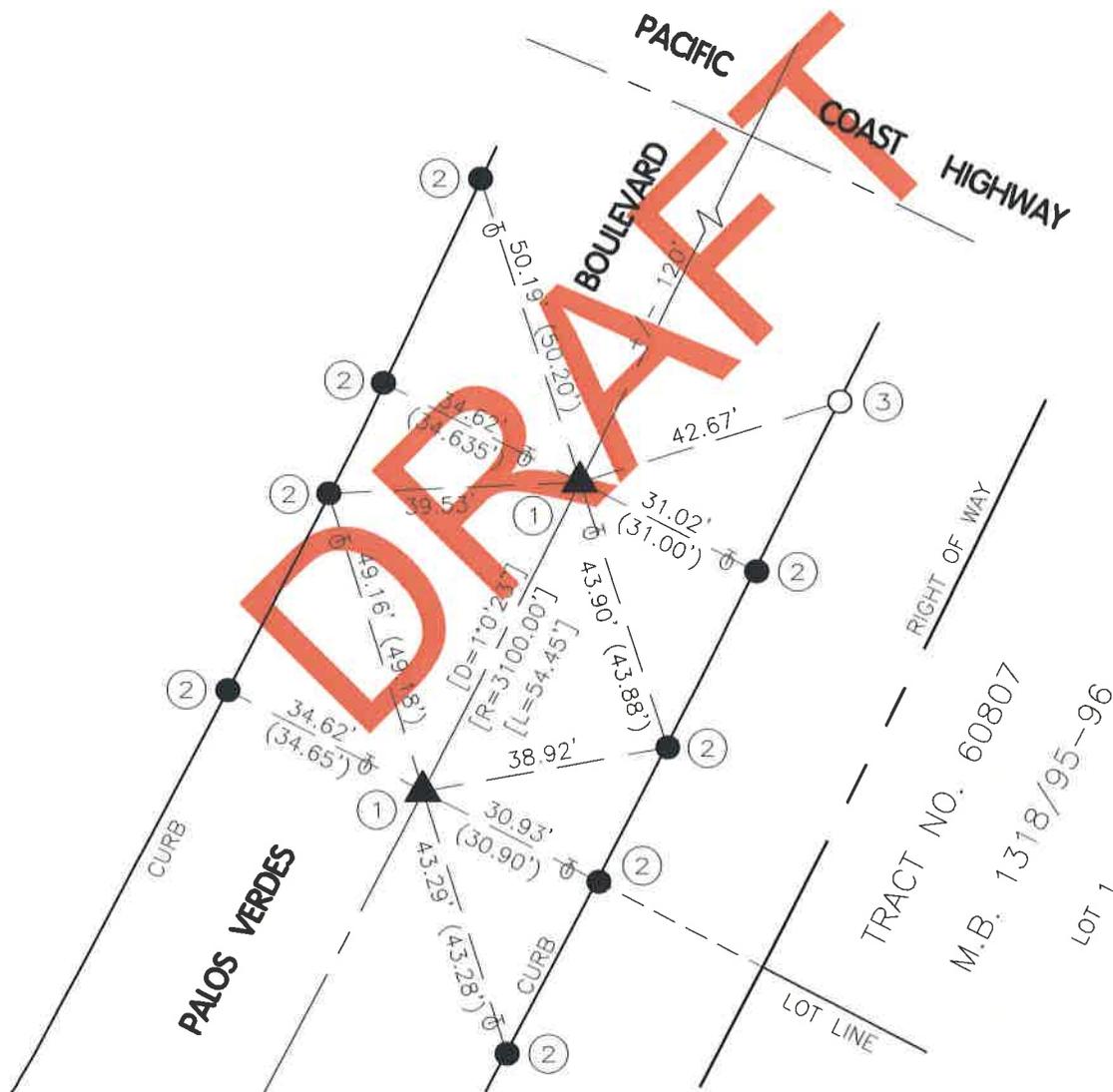


**LEGEND**

- ① FOUND SPIKE AND WASHER STAMPED "RCE 22504" FLUSH IN ASPHALT PER R1
- ② FOUND LEAD AND TACK IN TOP OF CONCRETE CURB PER R1
- ③ SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB
- ( ) RECORD INFORMATION PER R1
- [ ] RECORD INFORMATION PER R2
- R1 CITY OF TORRANCE TIE SHEET T-58-20-4
- R2 TRACT NO. 60807 M.B. 1318/95-96
- ∅ TANGENT-OVER TIES



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

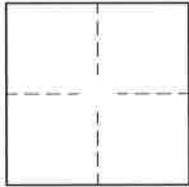


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE P.I. OF PALOS VERDES BOULEVARD APPROXIMATELY 715' SW'LY OF THE INTERSECTION OF CALLE MAYOR



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

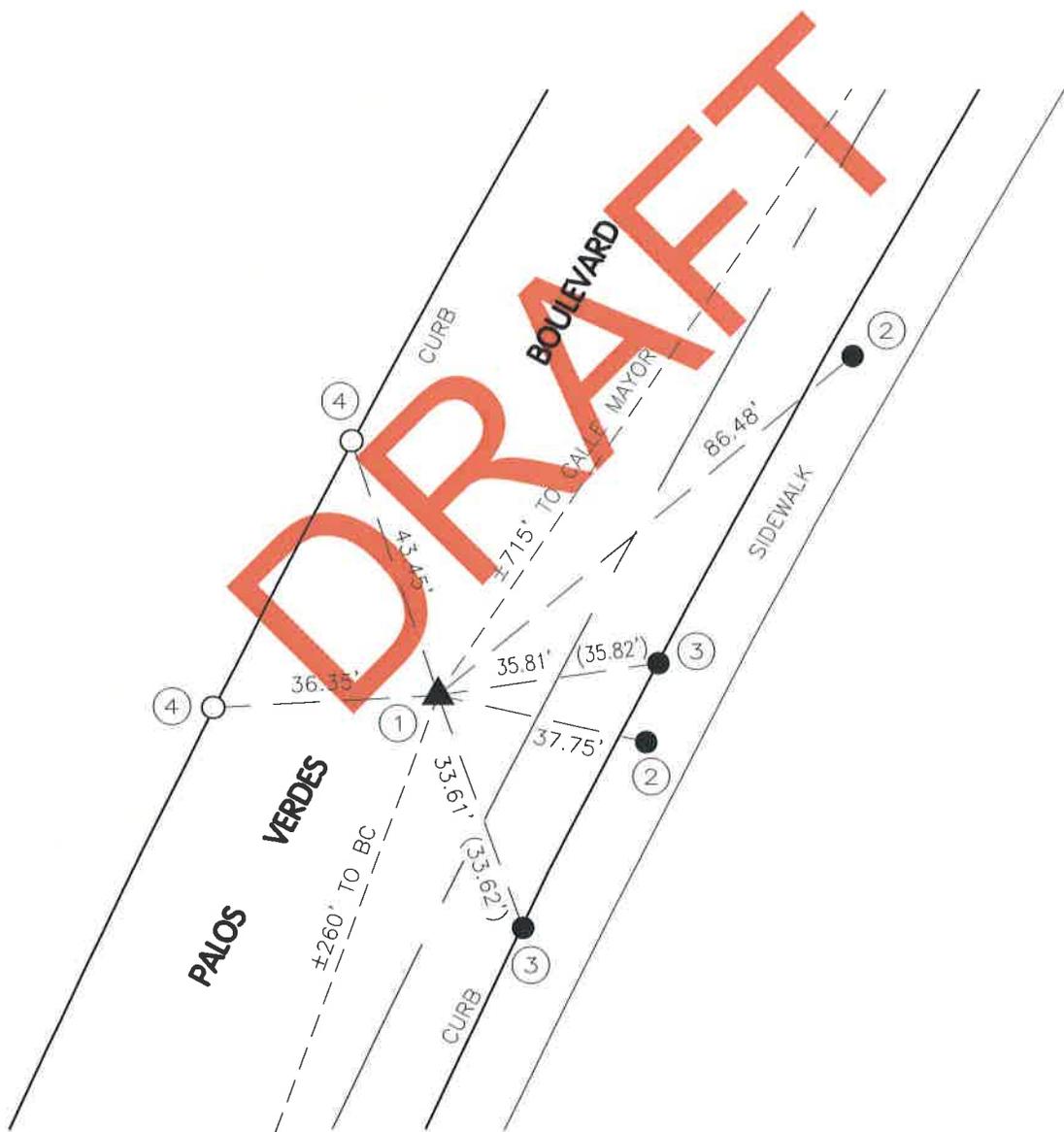


**LEGEND**

- ① FOUND SQUARE SPIKE DOWN 0.2' IN ASPHALT IN LIEU OF SPIKE AND TIN PER TRACT NO. 18379, M.B. 563/9-14
- ② FOUND LEAD AND TAG STAMPED "LS 7129" FLUSH IN CONCRETE SIDEWALK, NO REFERENCE
- ③ FOUND LEAD AND TACK IN TOP OF CONCRETE CURB PER CITY OF TORRANCE TIE SHEET T-48-132
- ④ SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB
- ( ) RECORD INFORMATION PER CITY OF TORRANCE TIE SHEET T-48-132



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

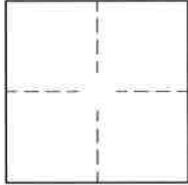


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE TANGENT MONUMENT ON PALOS VERDES BOULEVARD APPROXIMATELY 139' NE'LY OF PASEO DE LA PLAYA



### CORNER TYPE

Government corner  Control   
 Meander  Property   
 Rancho  Other   
 Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
 E. \_\_\_\_\_  
 Zone \_\_\_\_\_ NAD27  NAD83   
 NAD83 Epoch \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Vert. Datum: NGVD29  NAVD88   
 Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found; Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_  
MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

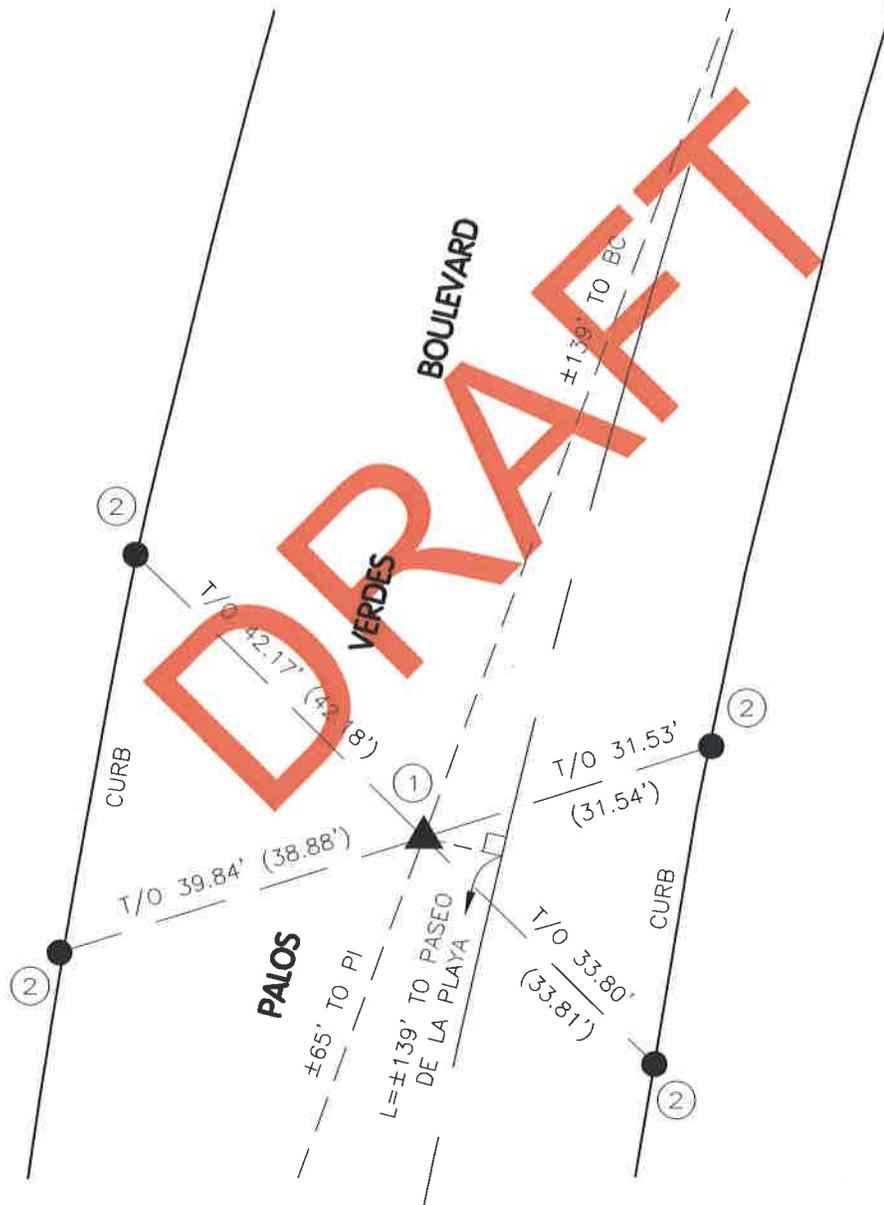


**LEGEND**

- ① FOUND PUNCHED SPIKE AND TIN DOWN 0.15' IN ASPHALT PER CITY OF TORRANCE TIE SHEET T-42-103
- ② FOUND LEAD AND TACK IN TOP OF CONCRETE CURB PER CITY OF TORRANCE TIE SHEET T-42-103
- ( ) RECORD INFORMATION PER CITY OF TORRANCE TIE SHEET T-42-103
- T/O TANGENT-OVER TIES



NOT TO SCALE



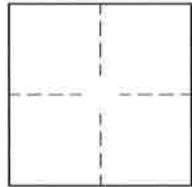


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE CENTERLINE INTERSECTION AT PALOS VERDES BOULEVARD AND PASEO DE LA PLAYA



### CORNER TYPE

Government corner  Control   
 Meander  Property   
 Rancho  Other   
 Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N: \_\_\_\_\_  
 E: \_\_\_\_\_  
 Zone \_\_\_\_\_ NAD27  NAD83   
 NAD83 Epoch \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Vert. Datum: NGVD29  NAVD88   
 Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_

MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

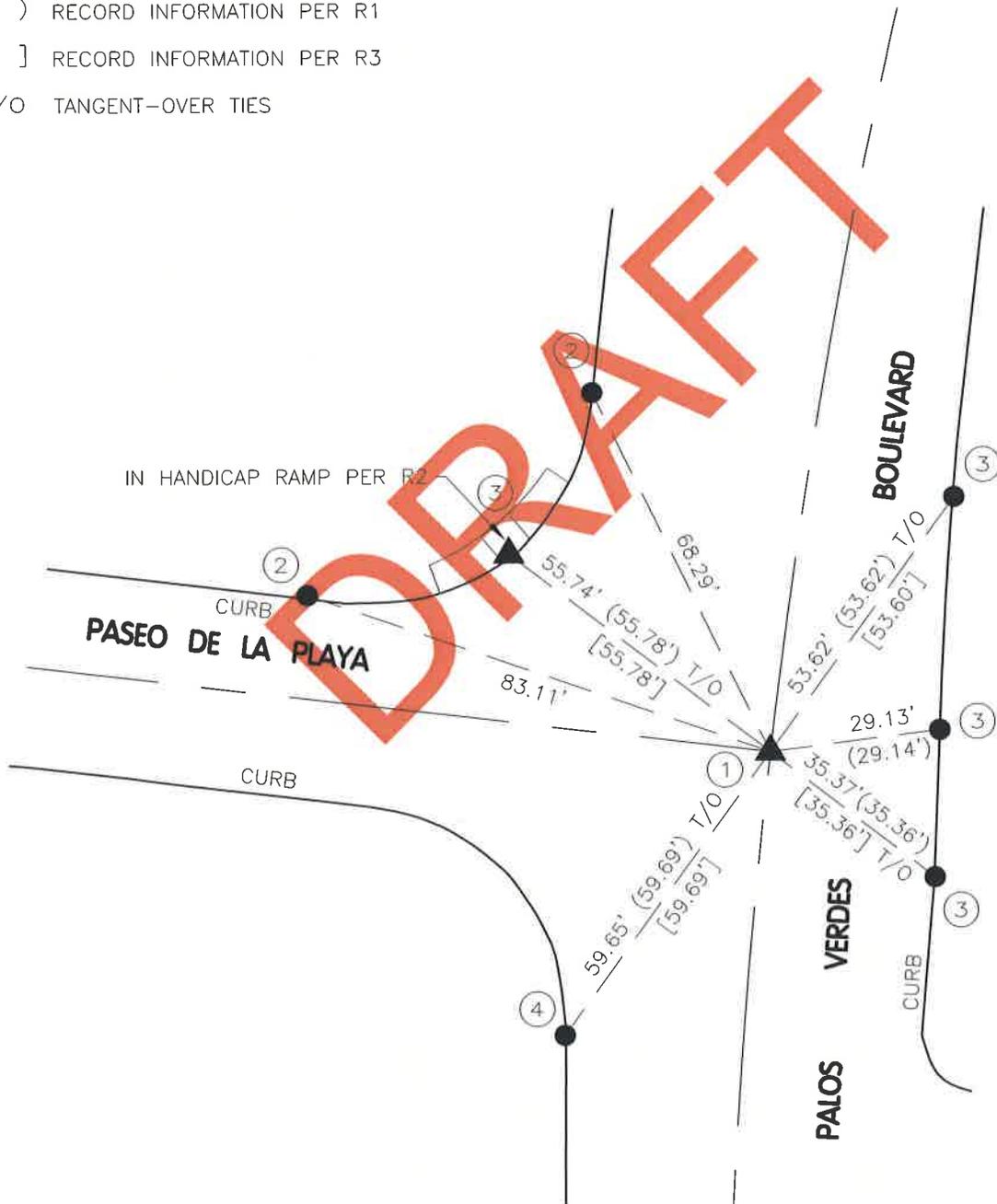


**LEGEND**

- ① FOUND PUNCHED SPIKE WITH TIN DOWN 0.12' IN ASPHALT PER R3
  - ② FOUND CHISELED "X" IN TOP OF CONCRETE CURB PER R2
  - ③ FOUND LEAD AND TACK IN TOP OF CONCRETE CURB UNLESS OTHERWISE NOTED, PER R1 UNLESS OTHERWISE NOTED
  - ④ FOUND PK AND WASHER STAMPED "BM 12142" IN TOP OF CONCRETE CURB PER R3
- R1 RDFB 0416, PAGES 8-9  
 R2 PWFB 0416, PAGES 273-274  
 R3 CITY OF TORRANCE TIE SHEET T-42-103
- ( ) RECORD INFORMATION PER R1  
 [ ] RECORD INFORMATION PER R3  
 T/O TANGENT-OVER TIES



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.



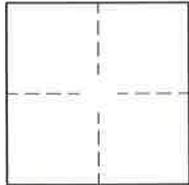
# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE EC OF PALOS VERDES BOULEVARD APPROXIMATELY 128' S'LY OF PASEO DE LA

PLAYA



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_

MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

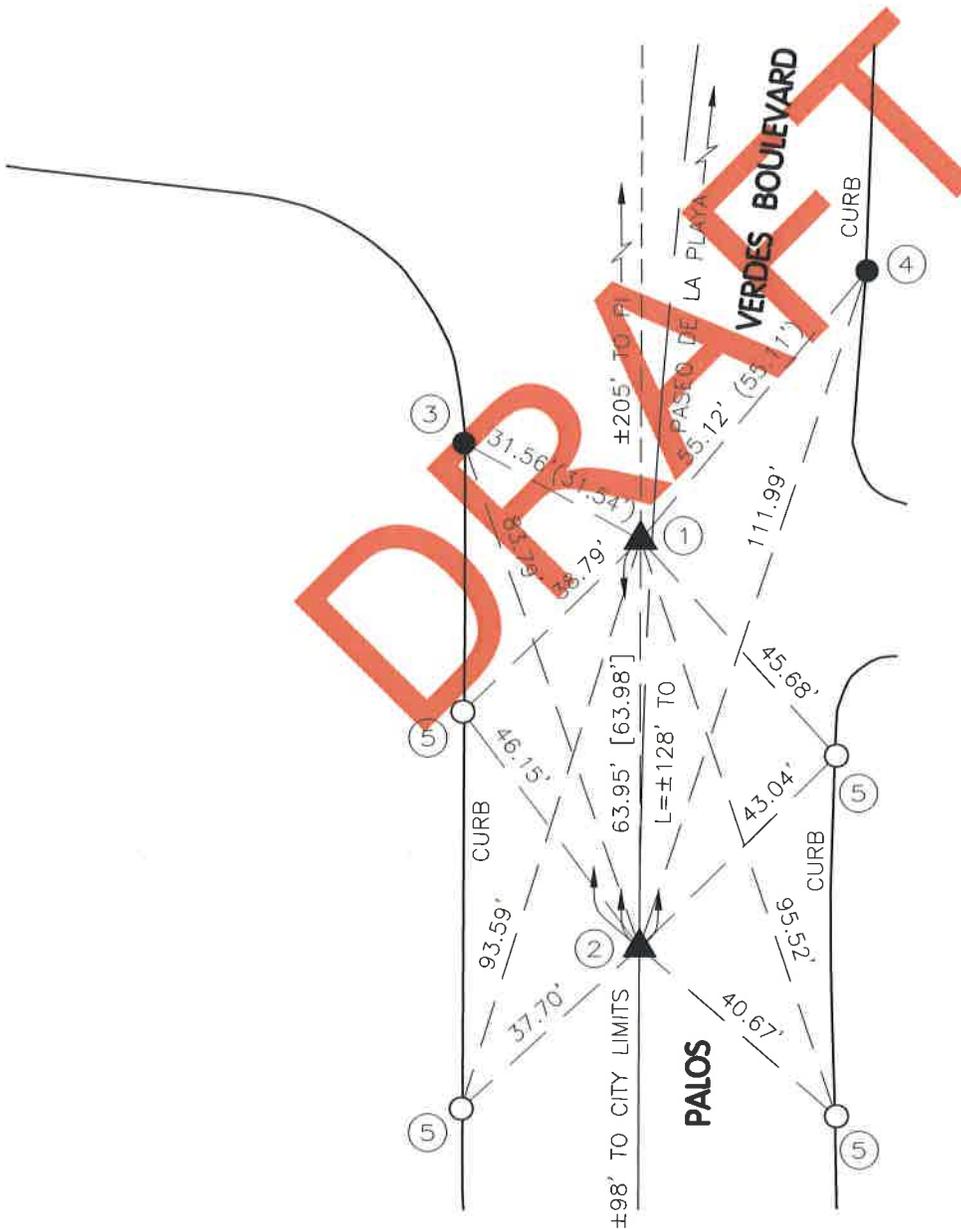
Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_



**LEGEND**

- ① FOUND SPIKE AND TIN DOWN 0.11' IN ASPHALT IN LIEU OF POST PER RDFB 0416, PAGES 8-9
- ② FOUND SPIKE AND TIN DOWN 0.15' IN ASPHALT PER R1
- ③ FOUND PK NAIL AND WASHER STAMPED "BM 12142" IN TOP OF CONCRETE CURB PER R1
- ④ FOUND LEAD AND TACK IN TOP OF CONCRETE CURB PER RDFB 0416, PAGES 8-9
- ⑤ SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB
- ( ) RECORD INFORMATION PER RDFB 0416, PAGES 8-9
- [ ] RECORD INFORMATION PER R1
- R1 CITY OF TORRANCE TIE SHEET T-42-103



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

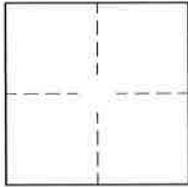


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE PI ON PALOS VERDES BOULEVARD APPROXIMATELY 75' NE'LY OF PASEO DE LA PLAYA



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found; Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

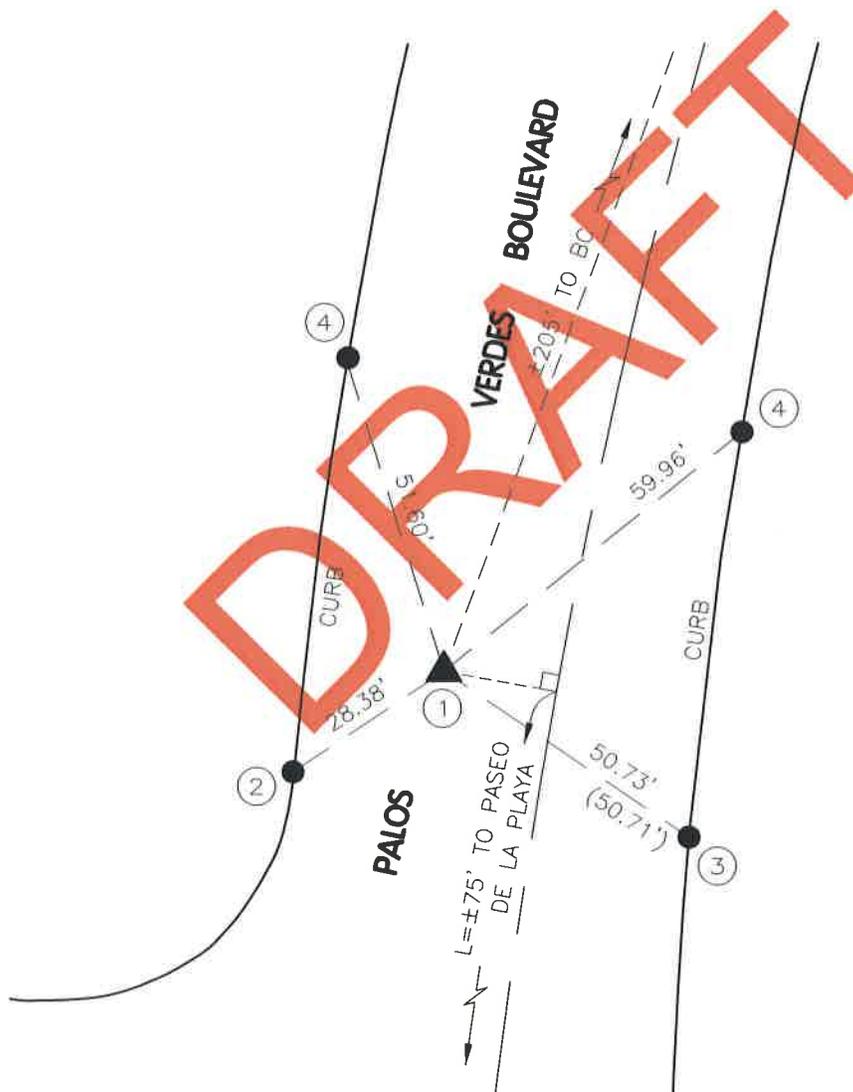


**LEGEND**

- ① FOUND SPIKE AND TIN DOWN 0.1' IN ASPHALT PER TRACT NO. 20504 M.B. 526/7-9
- ② FOUND CHISELED "X" IN TOP OF CONCRETE CURB PER PWFB 0416, PAGES 273-274
- ③ FOUND LEAD AND TACK IN TOP OF CONCRETE CURB, PER RDFB 0416, PAGES 8-9
- ④ FOUND LEAD AND TACK IN TOP OF CONCRETE CURB PER CITY OF TORRANCE TIE SHEET T-42-103
- ( ) RECORD INFORMATION PER RDFB 0416, PAGES 8-9



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

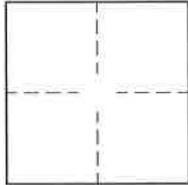


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE CENTERLINE INTERSECTION AT PALOS VERDES BOULEVARD AND THE CITY LIMITS OF THE CITY OF TORRANCE AND THE CITY OF PALOS VERDES ESTATES



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

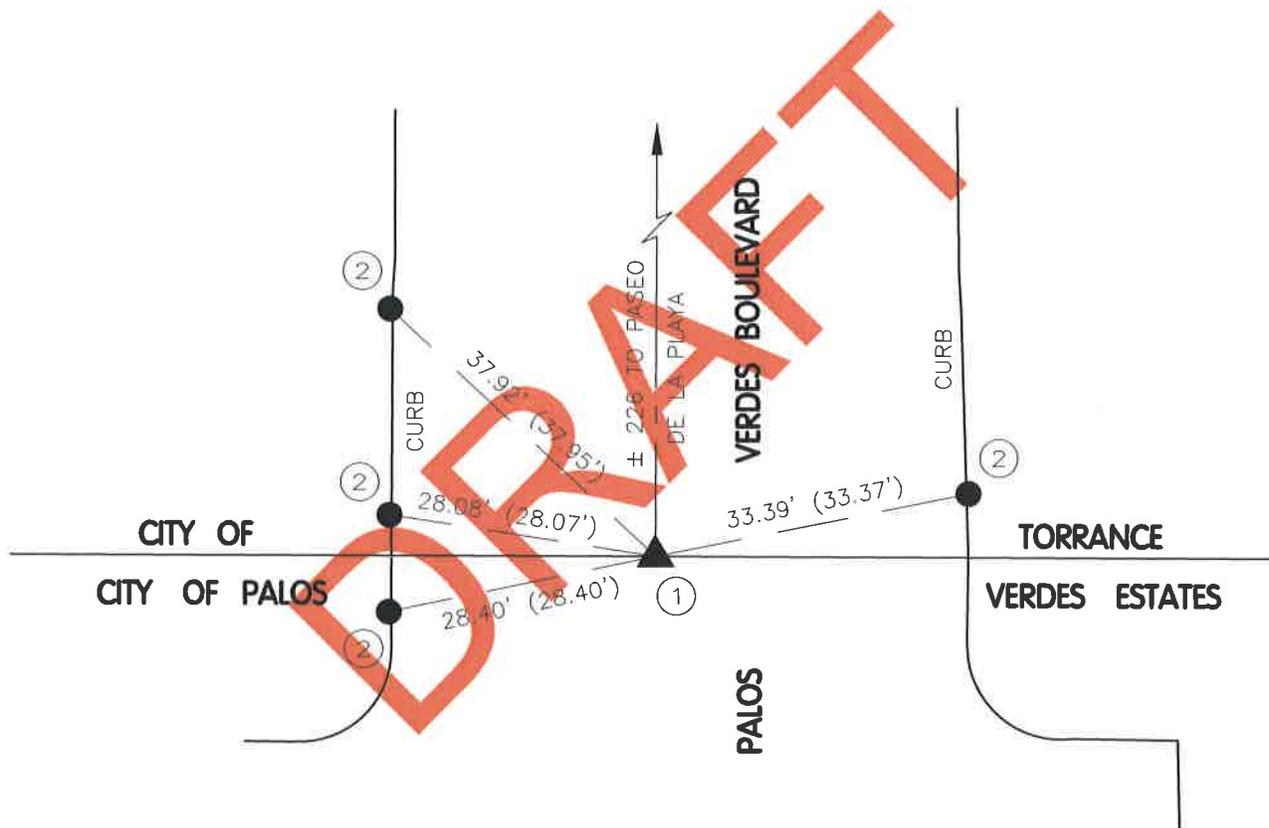


**LEGEND**

- ① FOUND MAG AND WASHER STAMPED "LS 5411" FLUSH IN ASPHALT PER R1
- ② FOUND LEAD AND TAG STAMPED "LS 5411" IN TOP OF CONCRETE CURB PER R1
- R1 PWFB 0416, PAGES 125-126
- ( ) RECORD INFORMATION PER R1



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

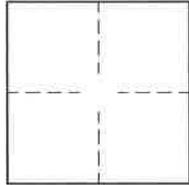


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE APPARENT OFFSETS OF THE BEGINNING AND END OF CURVATURE S'LY OF THE SW'LY CORNER OF THE INT. AT PALOS VERDES BLVD AND PACIFIC COAST HWY



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found; Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_

MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

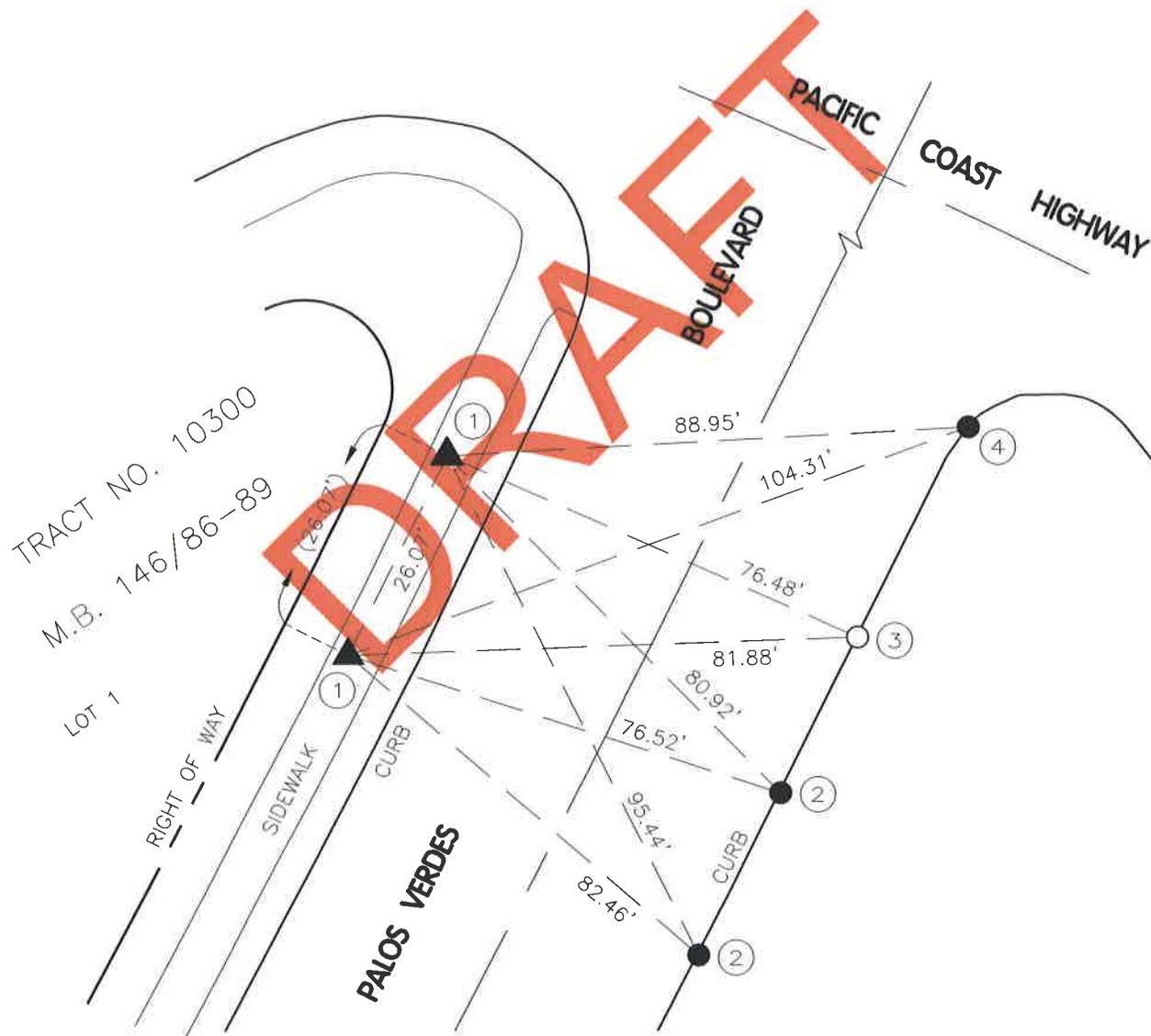


**LEGEND**

- ① FOUND LEAD AND TAG STAMPED "RCE 30826", OFFSET 2' SE'LY PERPENDICULAR TO RIGHT OF WAY, FLUSH IN CONCRETE SIDEWALK, NO REFERENCE
- ② FOUND LEAD AND TACK IN TOP OF CONCRETE CURB PER R1
- ③ SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB
- ④ FOUND RAMSET NAIL IN TOP OF CONCRETE CURB, NO REFERENCE
- R1 CITY OF TORRANCE TIE SHEET T-58-20-4
- R2 TRACT NO. 61655, M.B. 146/86-89
- ( ) RECORD MEASUREMENT PER R2



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

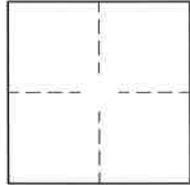


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE P.I. OF PALOS VERDES BOULEVARD APPROXIMATELY 280' NE'LY OF VIA VALENCIA AND ±500' SW'LY OF PACIFIC COAST HIGHWAY



### CORNER TYPE

Government corner  Control   
 Meander  Property   
 Rancho  Other   
 Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
 E. \_\_\_\_\_  
 Zone \_\_\_\_\_ NAD27  NAD83   
 NAD83 Epoch \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Vert. Datum: NGVD29  NAVD88   
 Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

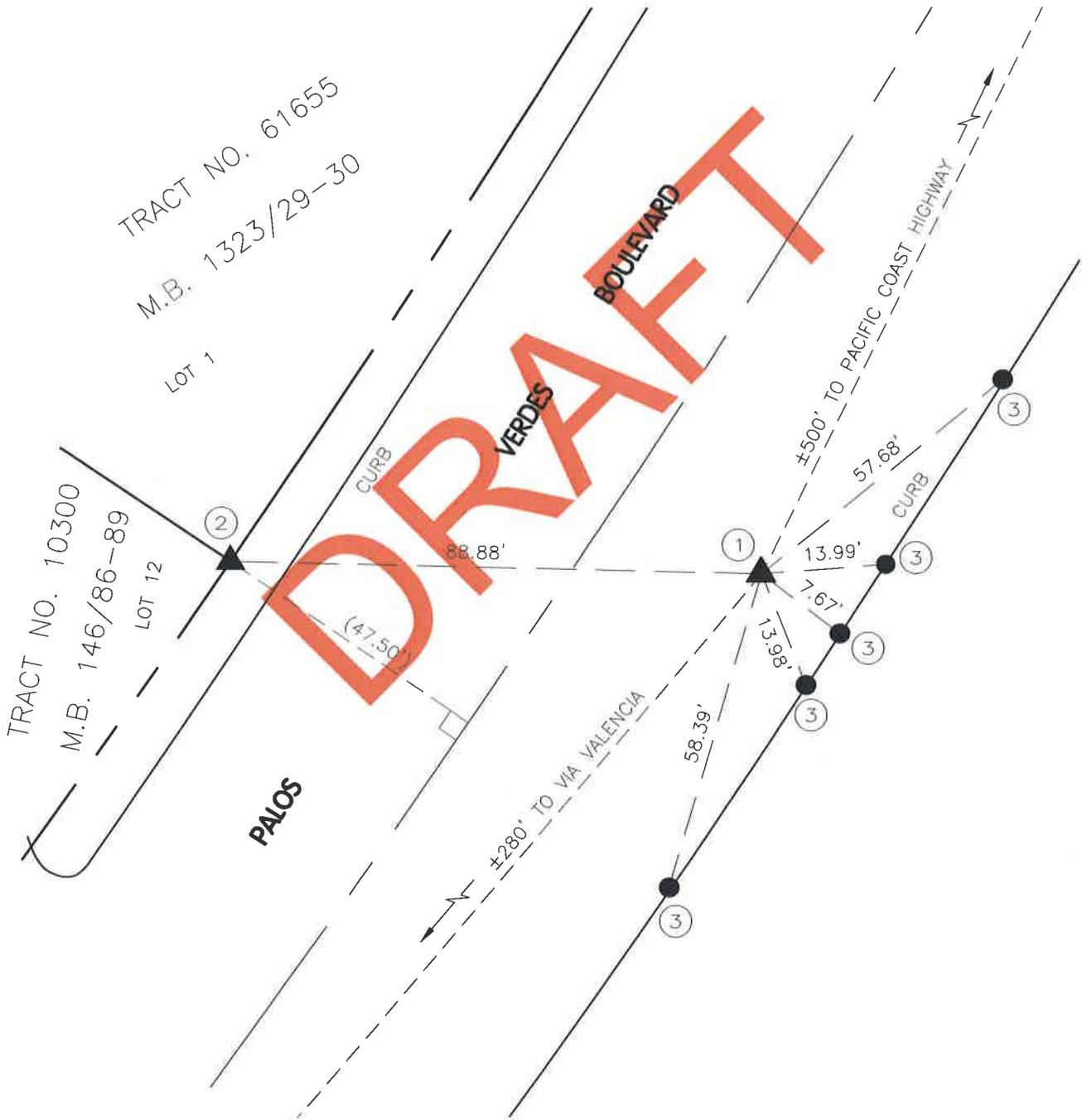


**LEGEND**

- ① FOUND PUNCHED SPIKE, TIN AND WASHER STAMPED "L.S. 4702" FLUSH IN ASPHALT PER R1
- ② FOUND LEAD AND TAG STAMPED "RCE 30567" FLUSH IN CONCRETE SIDEWALK PER R1
- ③ FOUND LEAD AND TACK FLUSH IN TOP OF CONCRETE CURB, NO REFERENCE
- ( ) RECORD INFORMATION PER R1
- R1 TRACT NO. 61655, M.B. 1323/29-30



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

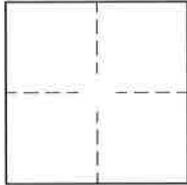


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE CENTERLINE MONUMENT APPROXIMATELY 2' SE'LY FROM THE INTERSECTION OF VIA VALENCIA AND PALOS VERDES BOULEVARD



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

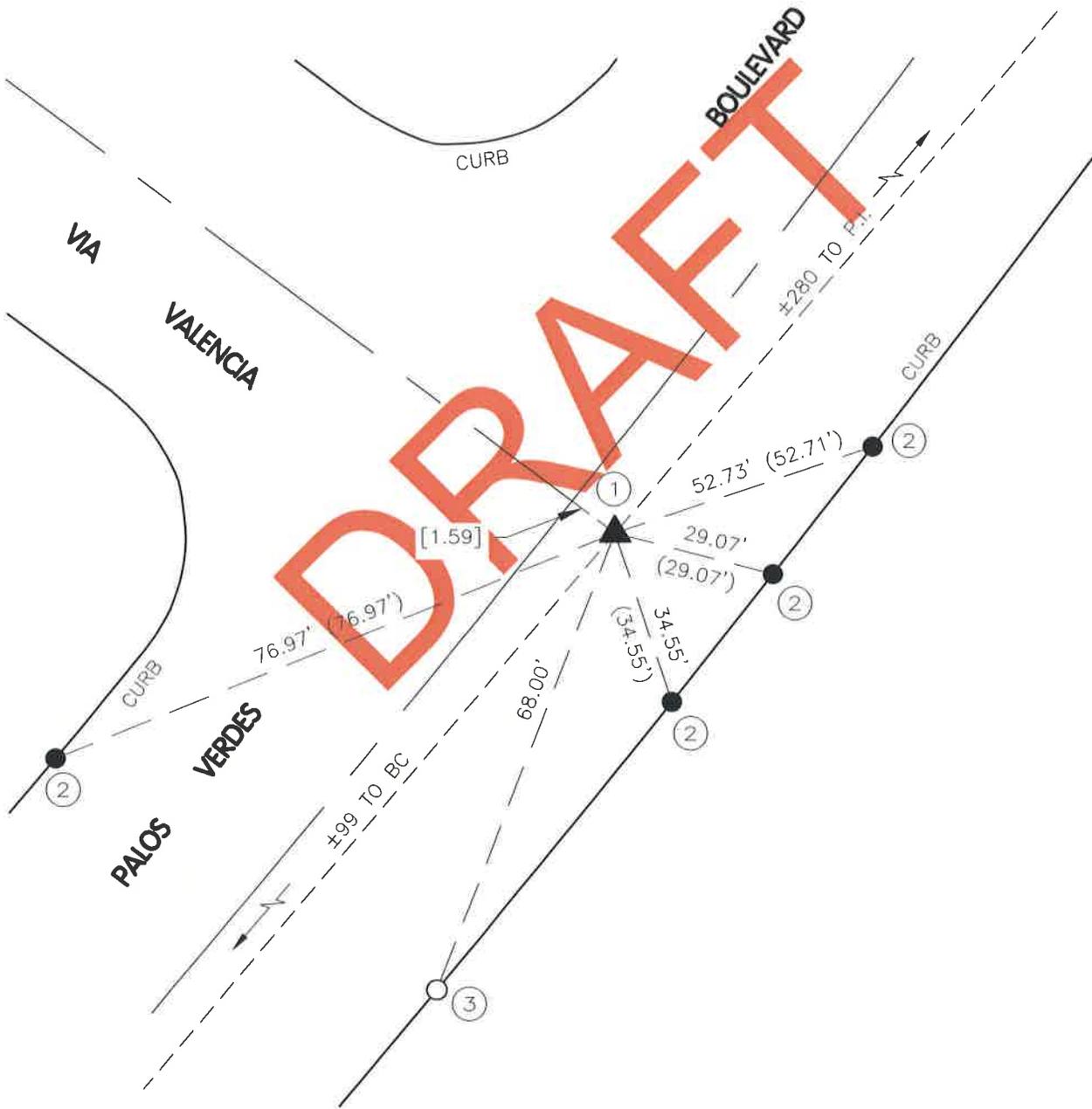


**LEGEND**

- ① FOUND PUNCHED SPIKE, TIN AND WASHER STAMPED "L.S. 4702" FLUSH IN ASPHALT PER R1
- ② FOUND LEAD AND TAG STAMPED "LS 5411" IN TOP OF CONCRETE CURB PER R2
- ③ SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB
- [ ] RECORD INFORMATION PER R1
- ( ) RECORD INFORMATION PER R2
- R1 TRACT NO. 61655, M.B. 1323/29-30
- R2 PWFB 0417, PAGES 1784-1785



NOT TO SCALE



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

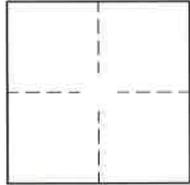


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE CENTERLINE BC APPROXIMATELY 99' SW'LY OF THE INTERSECTION OF VIA VALENCIA



### CORNER TYPE

Government corner  Control   
 Meander  Property   
 Rancho  Other   
 Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
 E. \_\_\_\_\_  
 Zone \_\_\_\_\_ NAD27  NAD83   
 NAD83 Epoch \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Vert. Datum: NGVD29  NAVD88   
 Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_

MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_

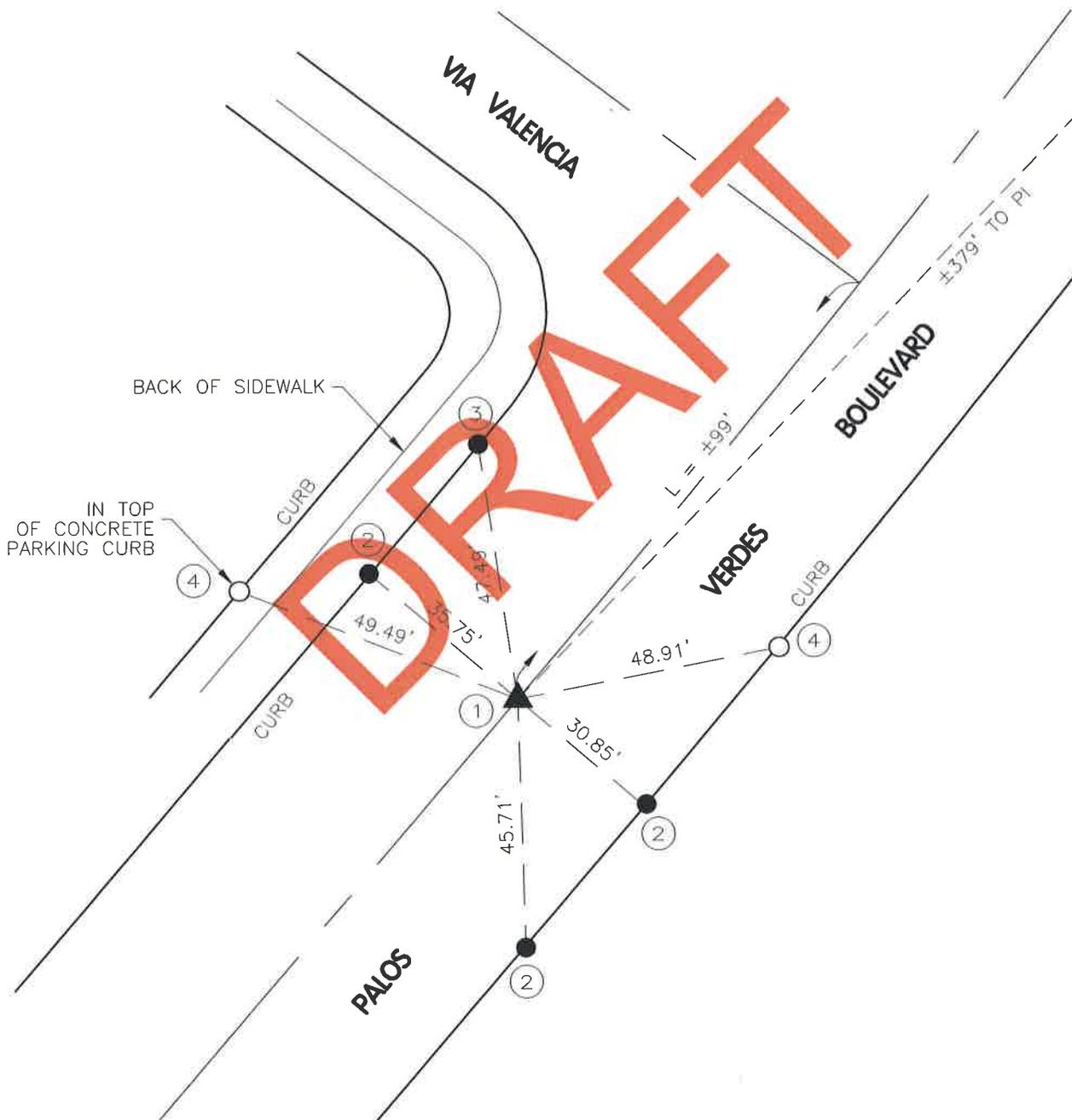
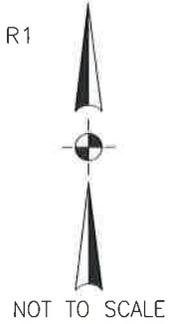


**LEGEND**

- ① FOUND PUNCHED SPIKE AND WASHER STAMPED "L.S. 4702" FLUSH IN ASPHALT PER R1
- ② FOUND LEAD AND TACK IN TOP OF CONCRETE CURB, NO REFERENCE
- ③ FOUND LEAD AND TAG STAMPED "LS 5411" IN TOP OF CONCRETE CURB PER R2
- ④ SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB, UNLESS OTHERWISE NOTED

R1 TRACT NO. 61655, M.B. 1323/29-30

R2 PWFB 0417, PAGES 1784-1785



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

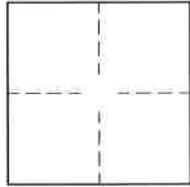


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description CADASTRAL TIE #54 ADJACENT TO BLOCK I OF TRACT NO. 10300, M.B. 146/86-89



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_  
MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_



**LEGEND**

- ① FOUND SPIKE, TIN AND WASHER STAMPED "LA.CO ENGR." IN ASPHALT PER PWFB 0417, PAGE 430
- ② SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB, UNLESS OTHERWISE NOTED



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

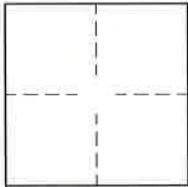


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE CENTERLINE INTERSECTION OF PALOS VERDES BOULEVARD AND CALLE MIRAMAR



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found; Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND BENCHMARK AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_

MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_



**LEGEND**

- ① FOUND RAILROAD SPIKE WITH PUNCHMARK, DOWN 0.1' IN ASPHALT IN LIEU OF LEAD AND TACK PER TRACT NO. 28469, M.B. 845/10-15
- ② FOUND 3" BRASS DISK STAMPED "ARMY CORP. OF ENGRS FDR-10" IN TOP OF CONCRETE CURB IN LIEU OF BRASS DISK STAMPED "RDP-102 1988" PER LOS ANGELES COUNTY'S PALOS VERDES QUAD BENCHMARK MAP 792, BM NO. 10384
- ③ FOUND 2.5" BRASS DISK WITH NIPPLE STAMPED "BM34-39" IN CONCRETE MEDIAN, NO REFERENCE
- ④ SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

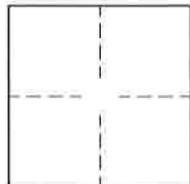


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE SURVEY MONUMENT ON THE SOUTHEASTERLY BCR OF THE INTERSECTION AT PALOS VERDES BOULEVARD AND CALLE MIRAMAR



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

FOUND BENCHMARK AS NOTED (VERTICAL CONTROL)

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_

MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_



**LEGEND**

- ① FOUND PARTIALLY ILLEGIBLE 3" BRASS DISK, STAMPED "CORPS OF ENGINEERS U.S. ARMY SURVEY MARK \$250 FINE OR IMPRISONMENT FOR DISTURBING THIS MARK RDP-102 LAD? STATION DESIGNATION AGENCY YEAR 1988" IN TOP OF CONCRETE CURB PER LOS ANGELES COUNTY'S PALOS VERDES QUAD BENCHMARK MAP 792, BM NO. 10384
- ② FOUND 2.5" BRASS DISK WITH NIPPLE STAMPED "BM34-39" IN CONCRETE MEDIAN, NO REFERENCE

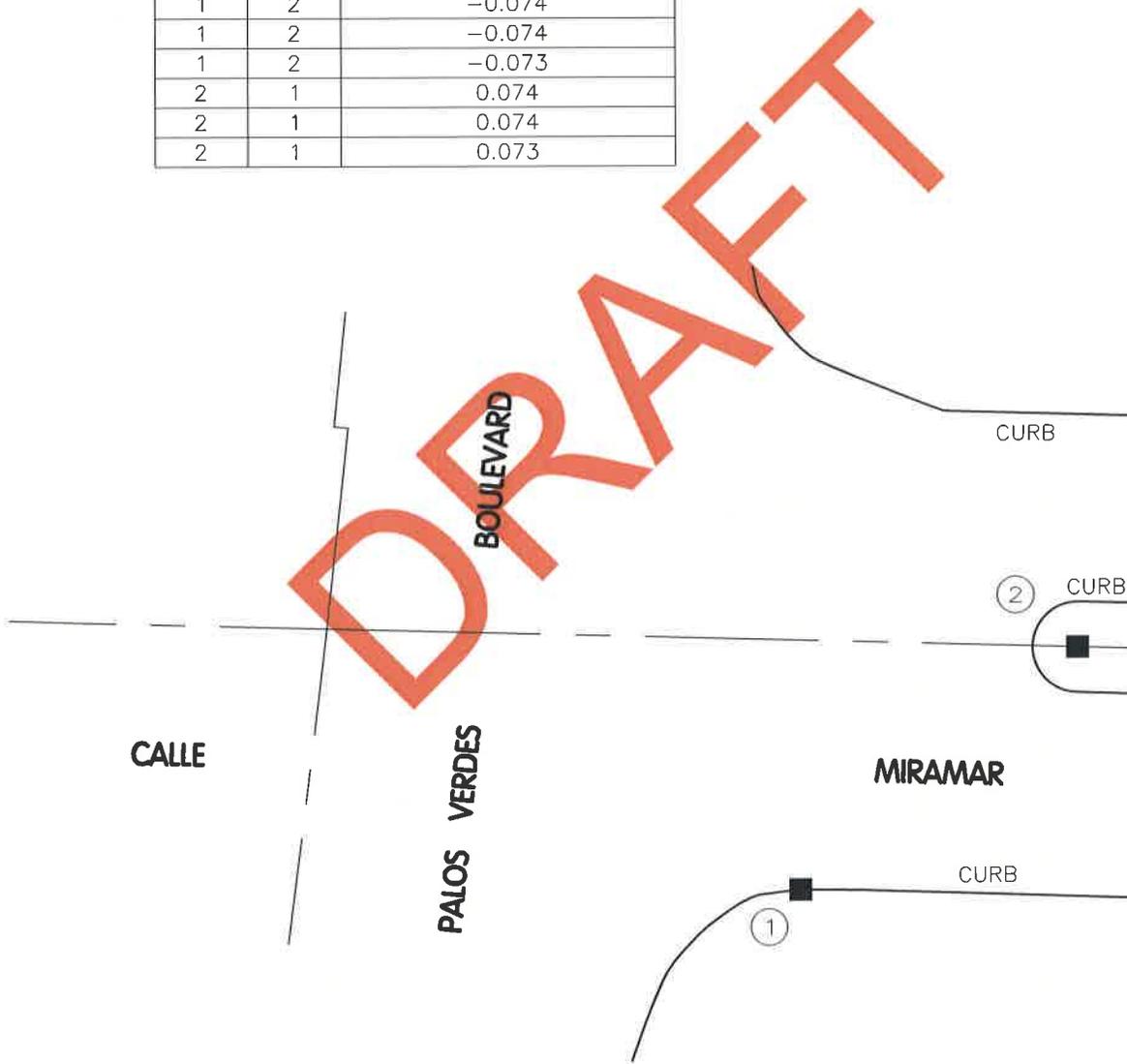


**DIFFERENTIAL LEVELING OBSERVATIONS**

LEVELING WAS PERFORMED WITH A LEICA DNA10 AND DIGITAL BARCODE STAFF.

NOT TO SCALE

FROM	TO	ELEVATION DIFFERENCE
1	2	-0.074
1	2	-0.074
1	2	-0.073
2	1	0.074
2	1	0.074
2	1	0.073



NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.

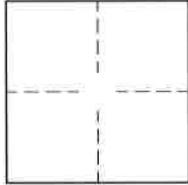


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE BC OF PALOS VERDES BOULEVARD APPROXIMATELY 595' NE'LY OF THE INTERSECTION AT CALLE MAYOR



### CORNER TYPE

Government corner  Control   
 Meander  Property   
 Rancho  Other   
 Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
 E. \_\_\_\_\_  
 Zone \_\_\_\_\_ NAD27  NAD83   
 NAD83 Epoch \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Vert. Datum: NGVD29  NAVD88   
 Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_  
MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_





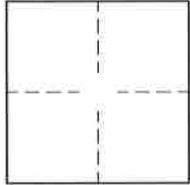


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE CENTERLINE INTERSECTION OF PALOS VERDES BOULEVARD AND CALLE MAYOR



### CORNER TYPE

Government corner  Control   
 Meander  Property   
 Rancho  Other   
 Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
 E. \_\_\_\_\_  
 Zone \_\_\_\_\_ NAD27  NAD83   
 NAD83 Epoch \_\_\_\_\_  
 Elev. \_\_\_\_\_  
 Vert. Datum: NGVD29  NAVD88   
 Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND MONUMENT AS NOTED
- FOUND TIE AS NOTED
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: \_\_\_\_\_

MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_





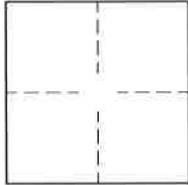


# CORNER RECORD

Document Number \_\_\_\_\_

City of TORRANCE County of LOS ANGELES, California

Brief Legal Description THE SURVEY CONTROL MONUMENT AT THE NW'LY SIDEWALK OF THE INTERSECTION OF PALOS VERDES BOULEVARD AND CALLE MAYOR



### CORNER TYPE

Government corner  Control   
Meander  Property   
Rancho  Other   
Date of Survey 5/14/13

### COORDINATES (OPTIONAL)

N. \_\_\_\_\_  
E. \_\_\_\_\_  
Zone \_\_\_\_\_ NAD27  NAD83   
NAD83 Epoch \_\_\_\_\_  
Elev. \_\_\_\_\_  
Vert. Datum: NGVD29  NAVD88   
Meas. Units: Metric  Imperial

Corner- Left as found  Found and tagged  Established  Reestablished  Rebuilt

Identification and type of corner found: Evidence used to identify or procedure used to establish or reestablish the corner:

### LEGEND

- FOUND BENCHMARK (VERTICAL CONTROL)
- SET TIE AS NOTED

A description of the physical condition of the monument as found and as set or reset: MONUMENT TIED OUT PRIOR TO CONSTRUCTION

THESE TIES ARE FOR THE PURPOSE OF PERPETUATING THE FOUND MONUMENTATION. NO CLAIM IS MADE AS TO THE RELATIONSHIP OF THE POINTS OR LINES SHOWN HEREON TO TRUE BOUNDARY LOCATIONS.

### SURVEYOR'S STATEMENT

This Corner Record was prepared by me or under my direction in conformance with the Land Surveyors' Act on 8/20/13

Signed \_\_\_\_\_ P.L.S. or ~~R.C.E.~~ Number 7564



### COUNTY SURVEYOR'S STATEMENT

This Corner Record was received \_\_\_\_\_

and examined and filed \_\_\_\_\_

Signed \_\_\_\_\_ P.L.S. or R.C.E. Number \_\_\_\_\_

Title \_\_\_\_\_

County Surveyor's Comment \_\_\_\_\_



**LEGEND**

- ① FOUND 2" BRASS DISK WITH NIPPLE, DOWN 0.6' IN WELL PER PALOS VERDES QUAD BENCHMARK MAP 792, NO. 7357
- ② SET LEAD AND TAG STAMPED "P.L.S. 7564" IN TOP OF CONCRETE CURB

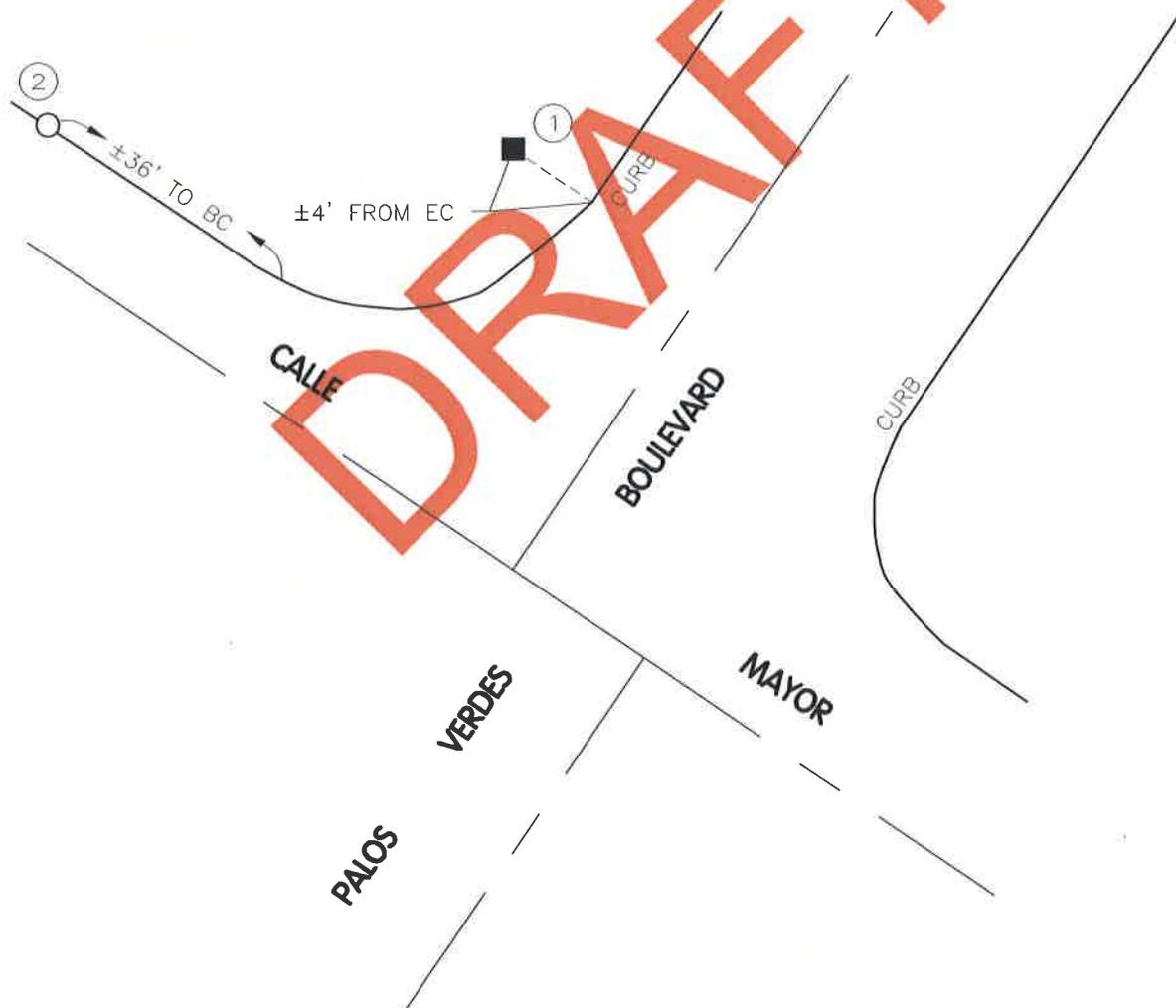


NOT TO SCALE

**DIFFERENTIAL LEVELING OBSERVATIONS**

LEVELING WAS PERFORMED WITH A LEICA DNA10 AND DIGITAL BARCODE STAFF.

FROM	TO	ELEVATION DIFFERENCE
1	2	-4.729
1	2	-4.730
1	2	-4.730
2	1	4.730
2	1	4.730
2	1	4.730



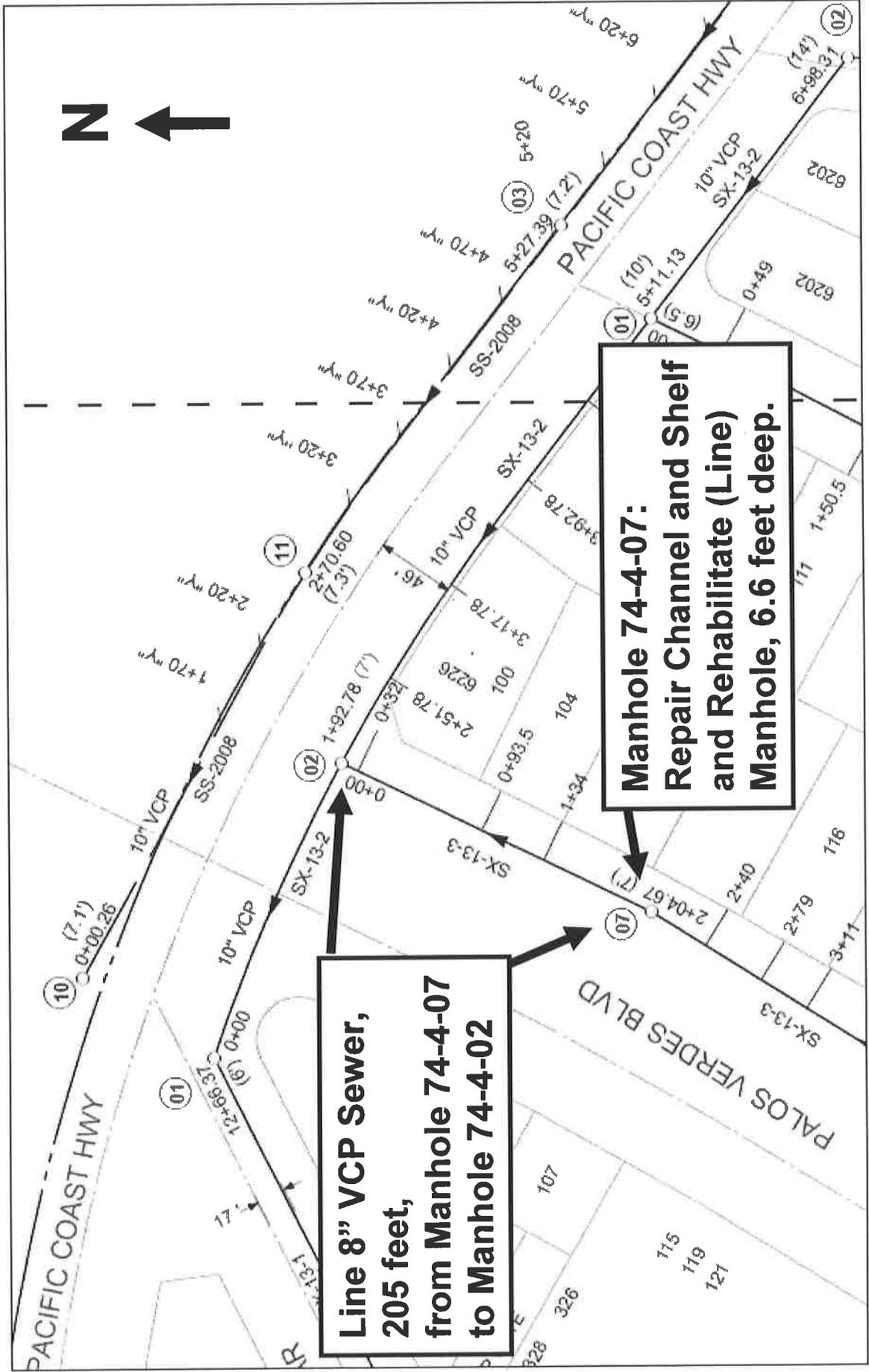
NOTE: TIES ARE NOT TANGENT UNLESS DESIGNATED BY A T/O SYMBOL. ALL TIES NOT SO SHOWN ARE SWING TIES.



**APPENDIX VII**  
**SEWER DRAWINGS**

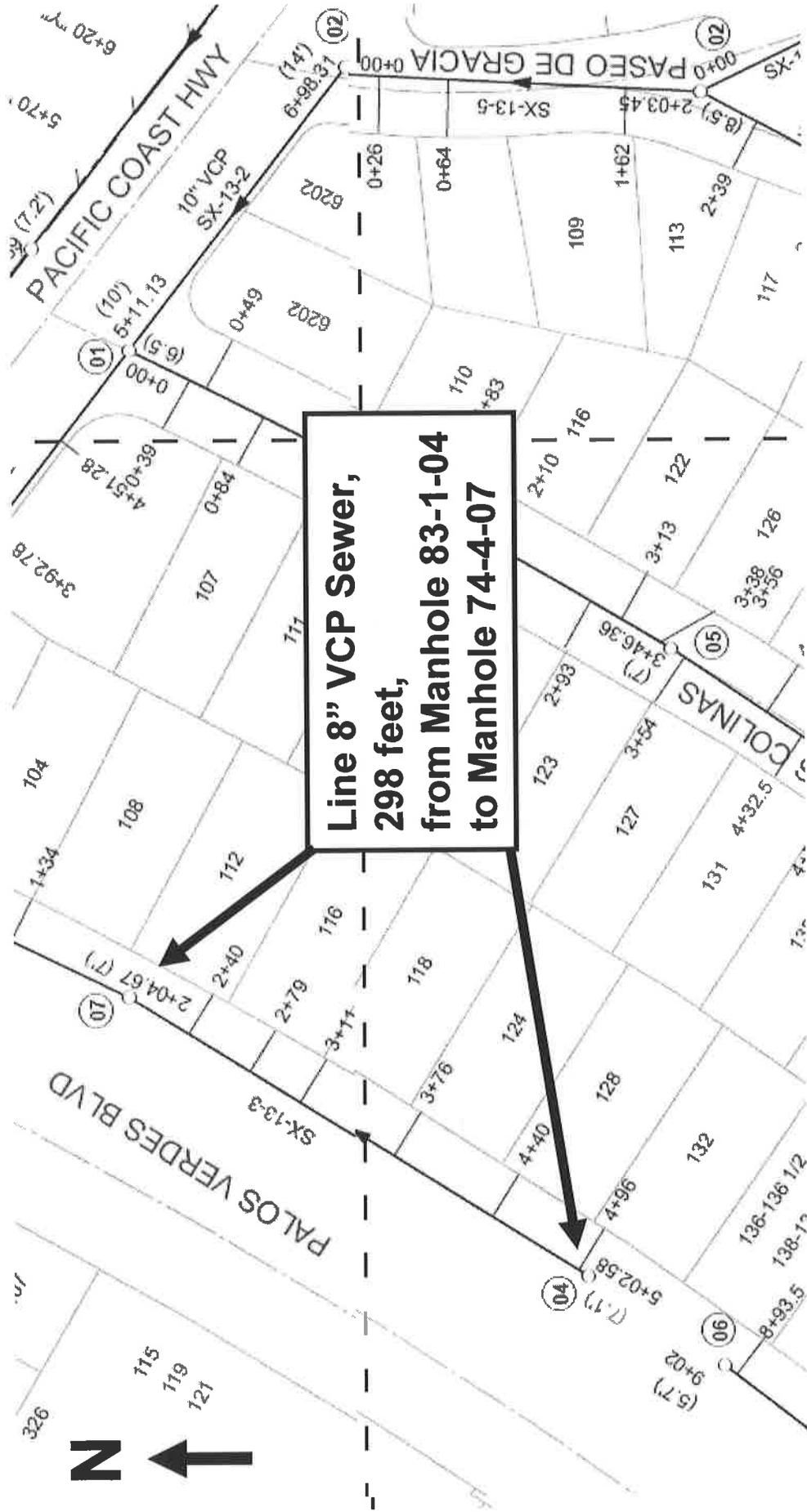


City Sewer Basemap Sheet 74, Grid 4



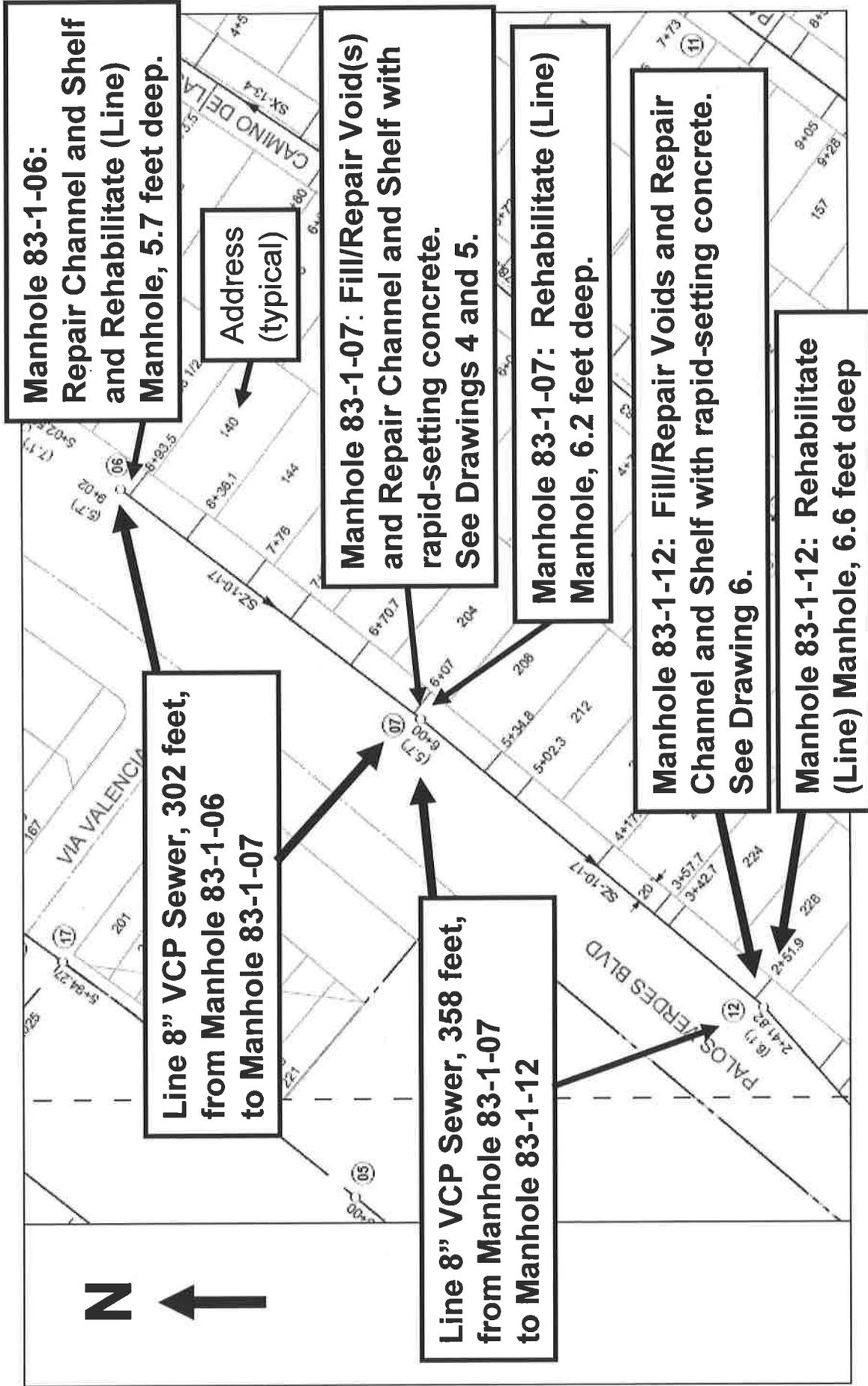


City Sewer Basemap Sheet 83, Grid 1 and Sheet 74, Grid 4

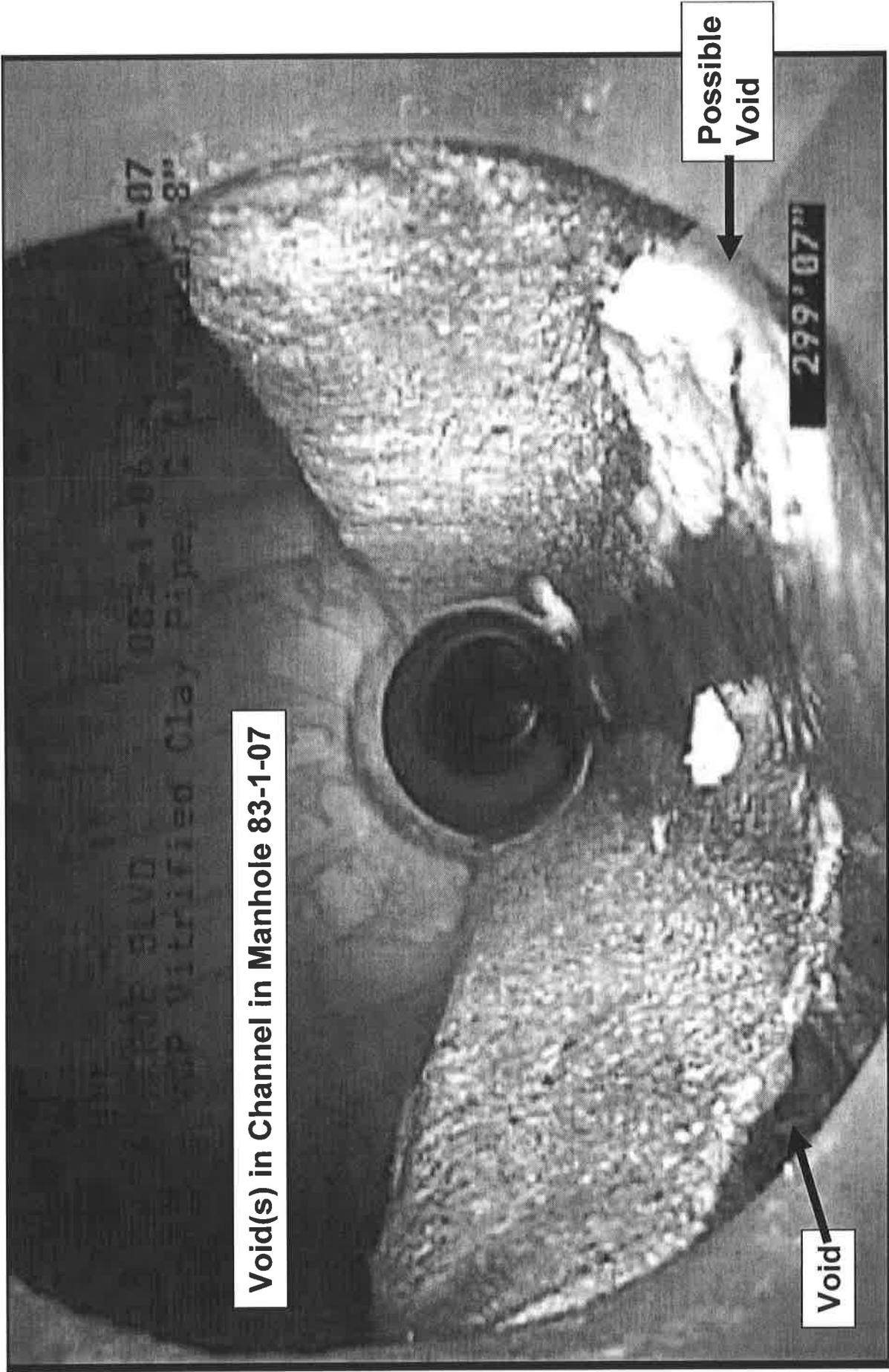




City Sewer Basemap Sheet 83, Grid 1

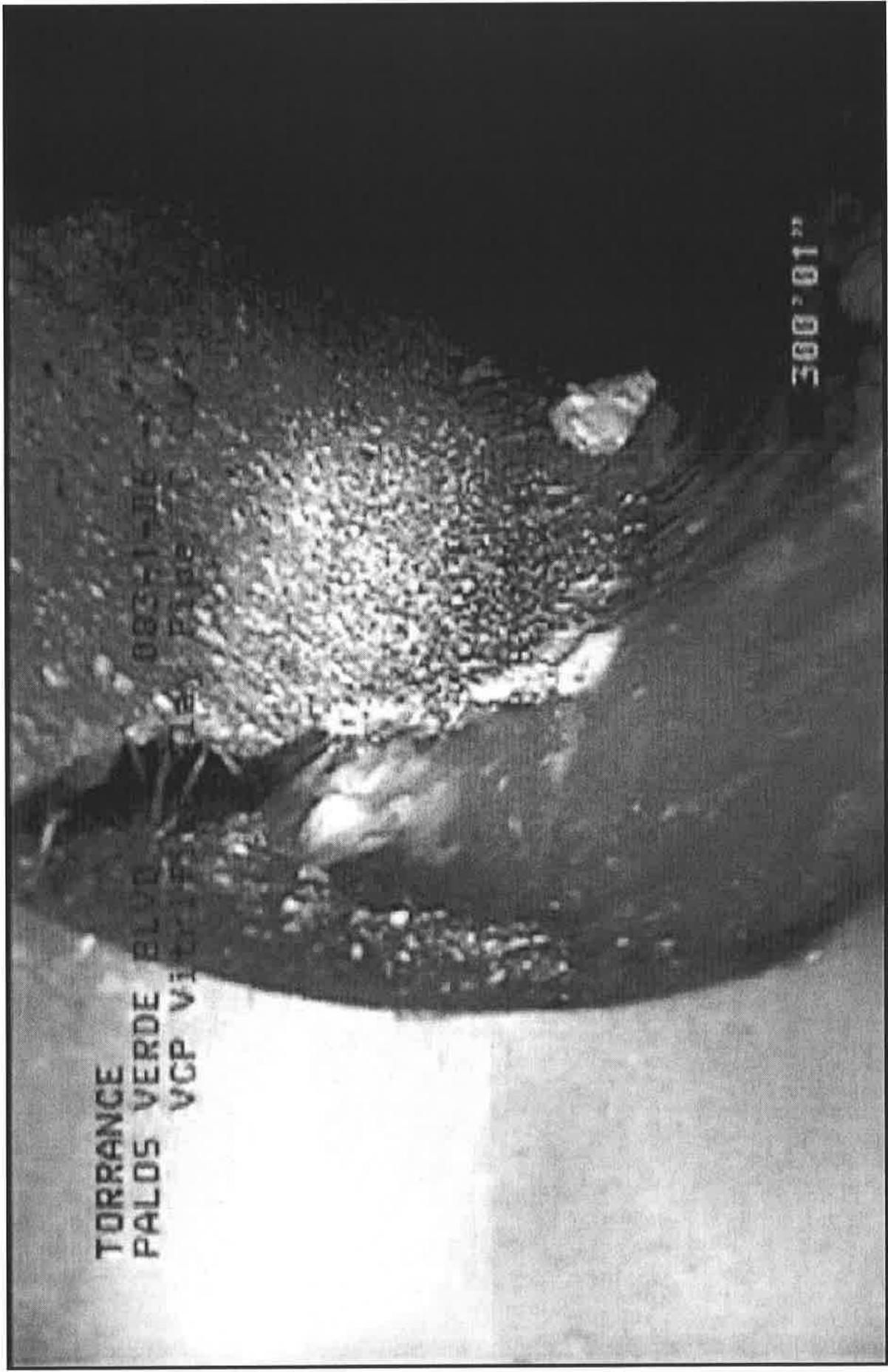






Drawing 4

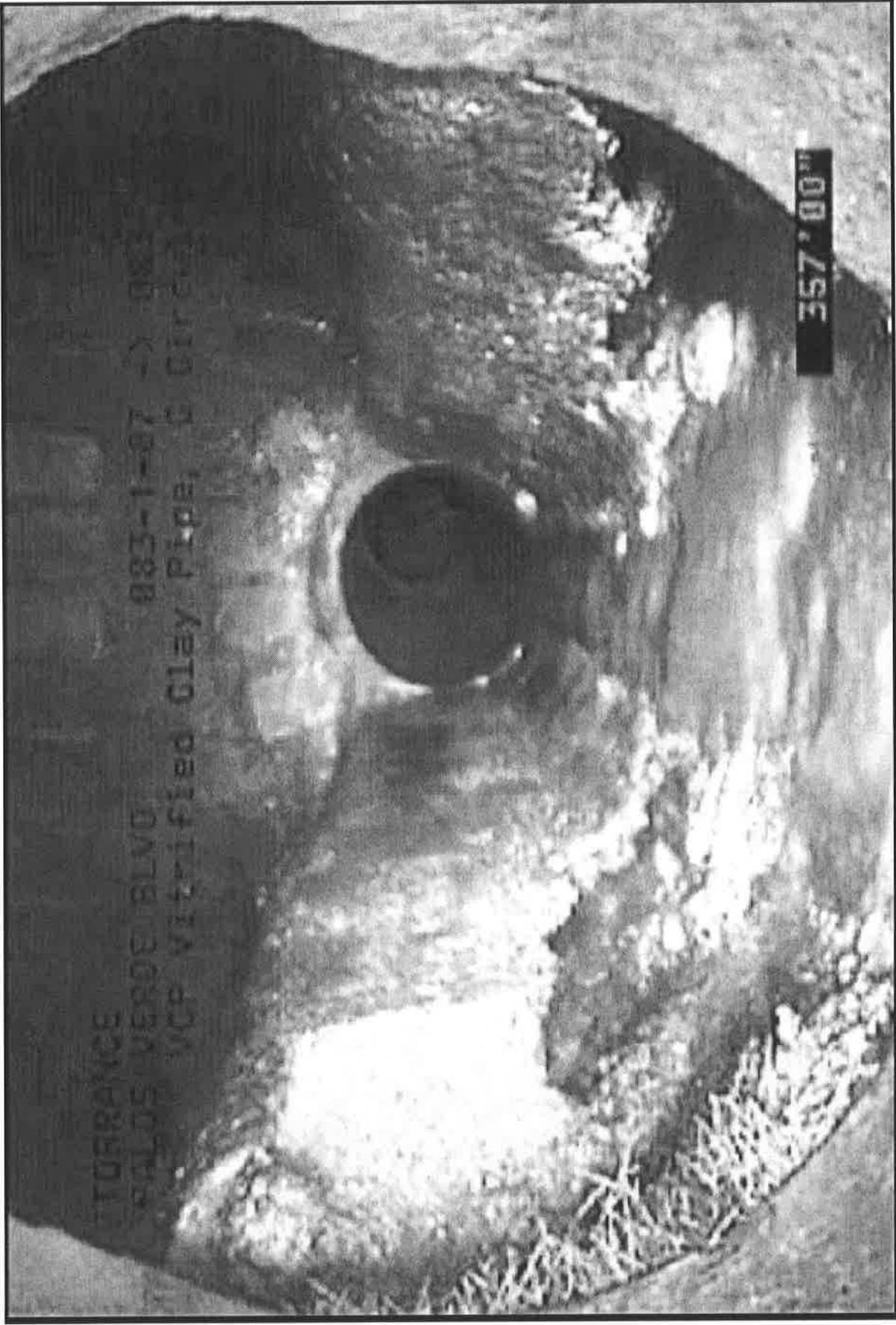




**Void in Channel in Manhole 83-1-07**

**Drawing 5**





TORRANCE  
PALMS VERDES BLVD 833-1-07 -> 0  
VCP Vitrified Clay Pipe, 12 in dia

**Voids in Channel in Manhole 83-1-12**

**Drawing 6**







City Sewer Basemap Sheet 82, Grid 3



PALOS VERDES BLVD

VIA MONTE D'ORO

10-2

03

1749.37  
0+00

0+00  
6'9"

SZ-10-1

SZ-10-1

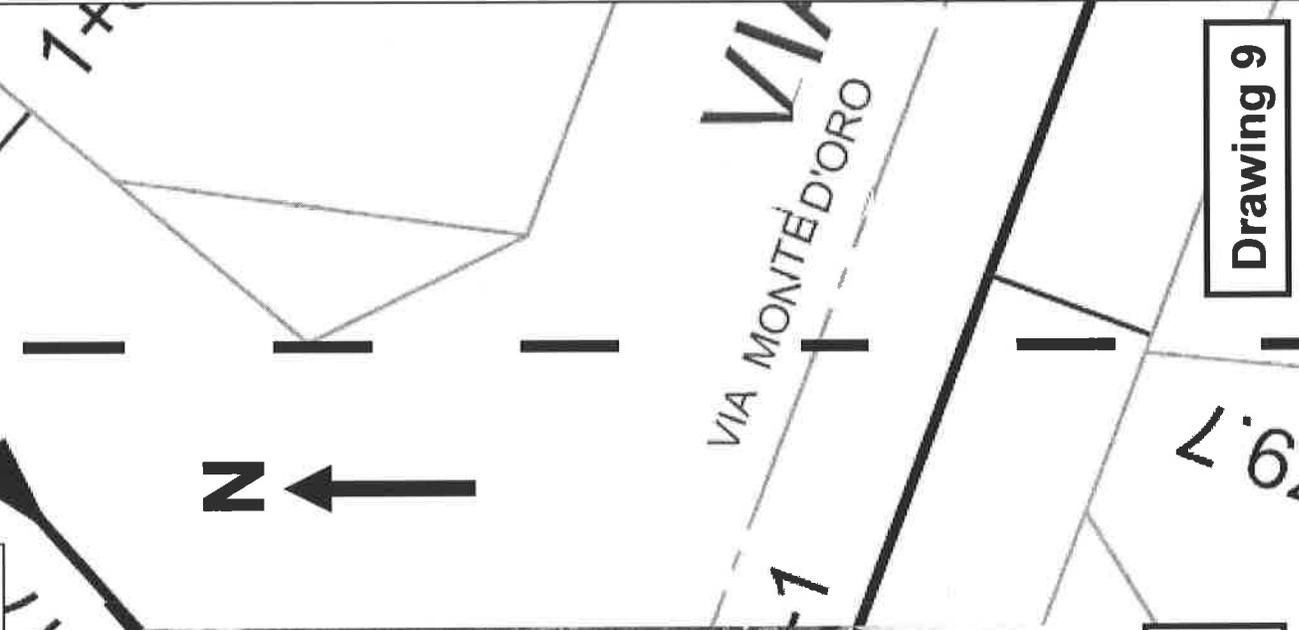
Point Repair on 8" VCP Sewer,  
approximately 3 feet deep.  
Remove and Replace 8 feet  
maximum Length of Pipe.  
Reconnect new pipe to  
existing Manhole 82-3-03.  
Encase new pipe in concrete.

Point Repair on 8" VCP Sewer,  
approximately 3 feet deep.  
Remove and Replace 6 feet  
maximum Length of Pipe.  
Reconnect new pipe to  
existing Manhole 82-3-03.  
Encase new pipe in concrete.

Drawing 8



City Sewer Basemap Sheet 82, Grid 3



Drawing 9

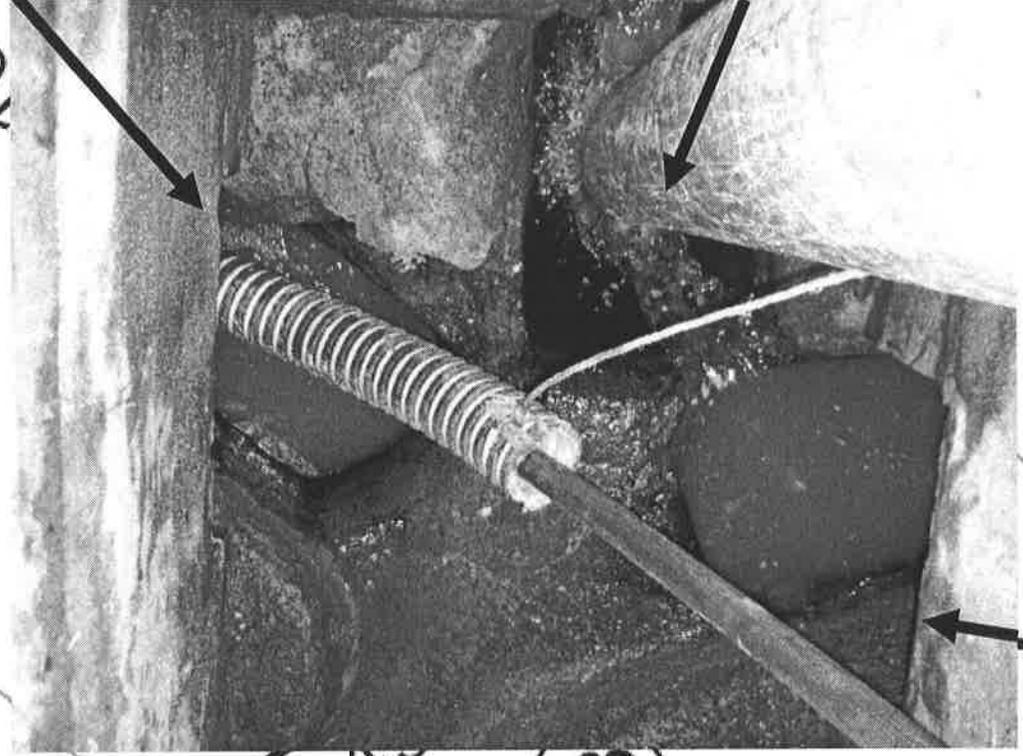
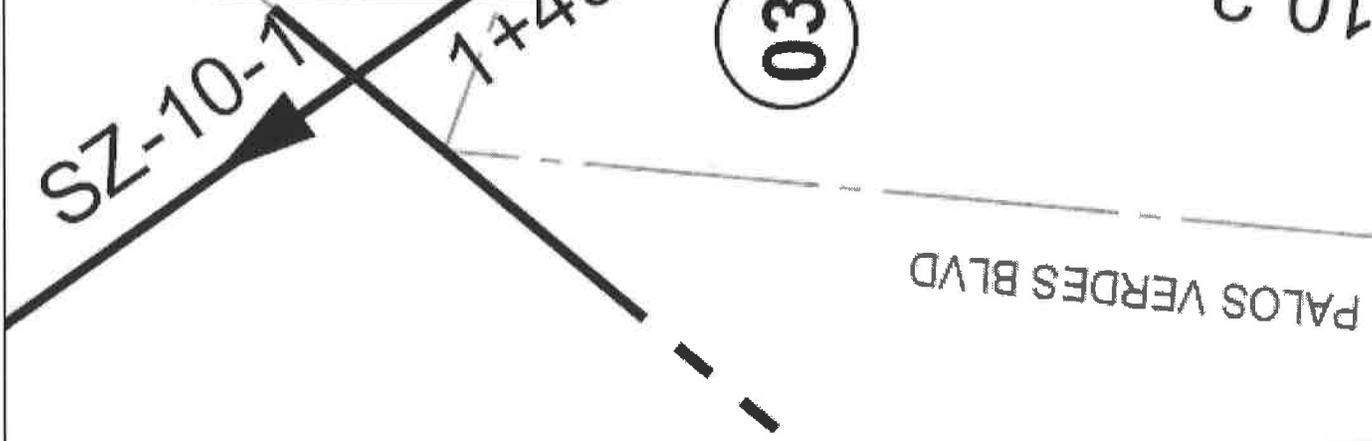


Photo of Manhole 82-3-03  
Showing 3 Inlet Traps





**N** ↑



**Chip-away existing concrete, as necessary, to properly repair channels, flowlines and shelves.**

**Fill-in (3) Trap Holes with rapid-setting Concrete, Repair Manhole Channels, Flowlines and Shelves.**

**Photo of Manhole 82-3-03**





City Sewer Basemap Sheet 82, Grids 3 and 6  
and Sheet 83, Grids 1 and 4

Line 8" VCP Sewer, 242 feet,  
from Manhole 83-1-12  
to Manhole 82-3-03.

Line 8" VCP Sewer, 360 feet,  
from Manhole 83-1-15  
to Manhole 82-3-03.

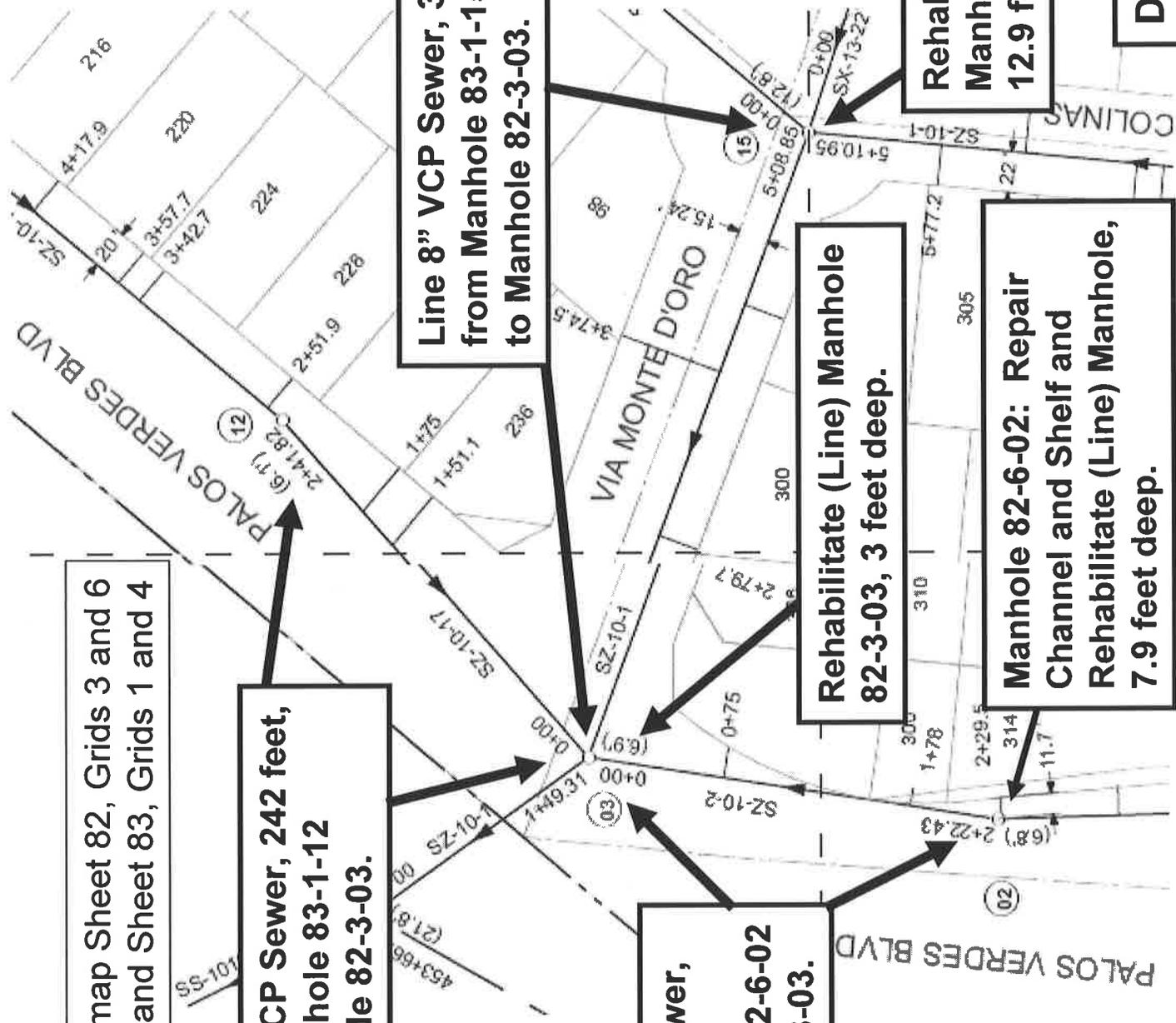
Line 8" VCP Sewer,  
223 feet,  
from Manhole 82-6-02  
to Manhole 82-3-03.

Rehabilitate (Line) Manhole  
82-3-03, 3 feet deep.

Rehabilitate (Line)  
Manhole 83-1-15,  
12.9 feet deep.

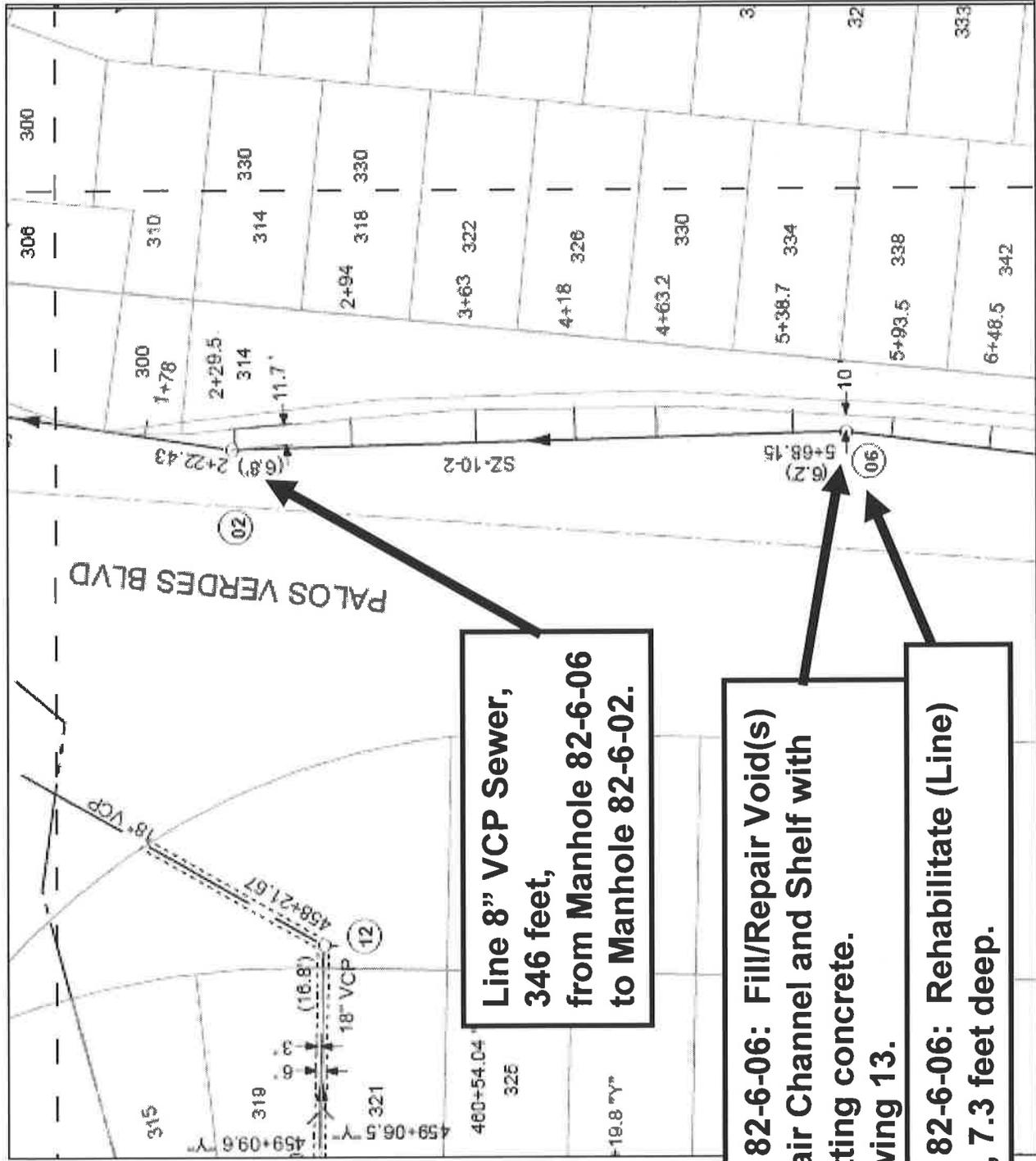
Manhole 82-6-02: Repair  
Channel and Shelf and  
Rehabilitate (Line) Manhole,  
7.9 feet deep.

Drawing 11





City Sewer Basemap Sheet 82, Grid 6

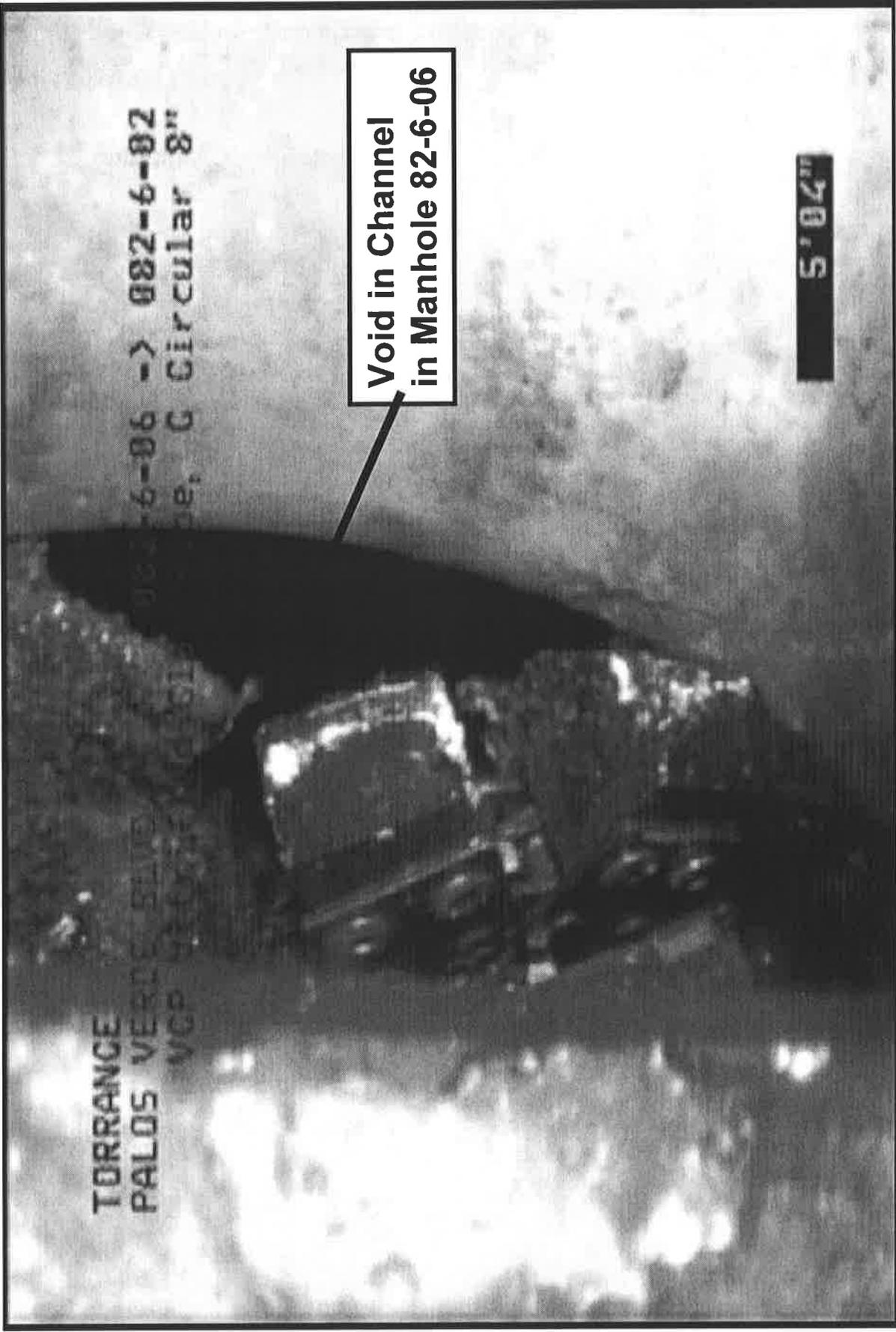


**Line 8" VCP Sewer,  
346 feet,  
from Manhole 82-6-06  
to Manhole 82-6-02.**

**Manhole 82-6-06: Fill/Repair Void(s)  
and Repair Channel and Shelf with  
rapid-setting concrete.  
See Drawing 13.**

**Manhole 82-6-06: Rehabilitate (Line)  
Manhole, 7.3 feet deep.**





Void in Channel  
in Manhole 82-6-06

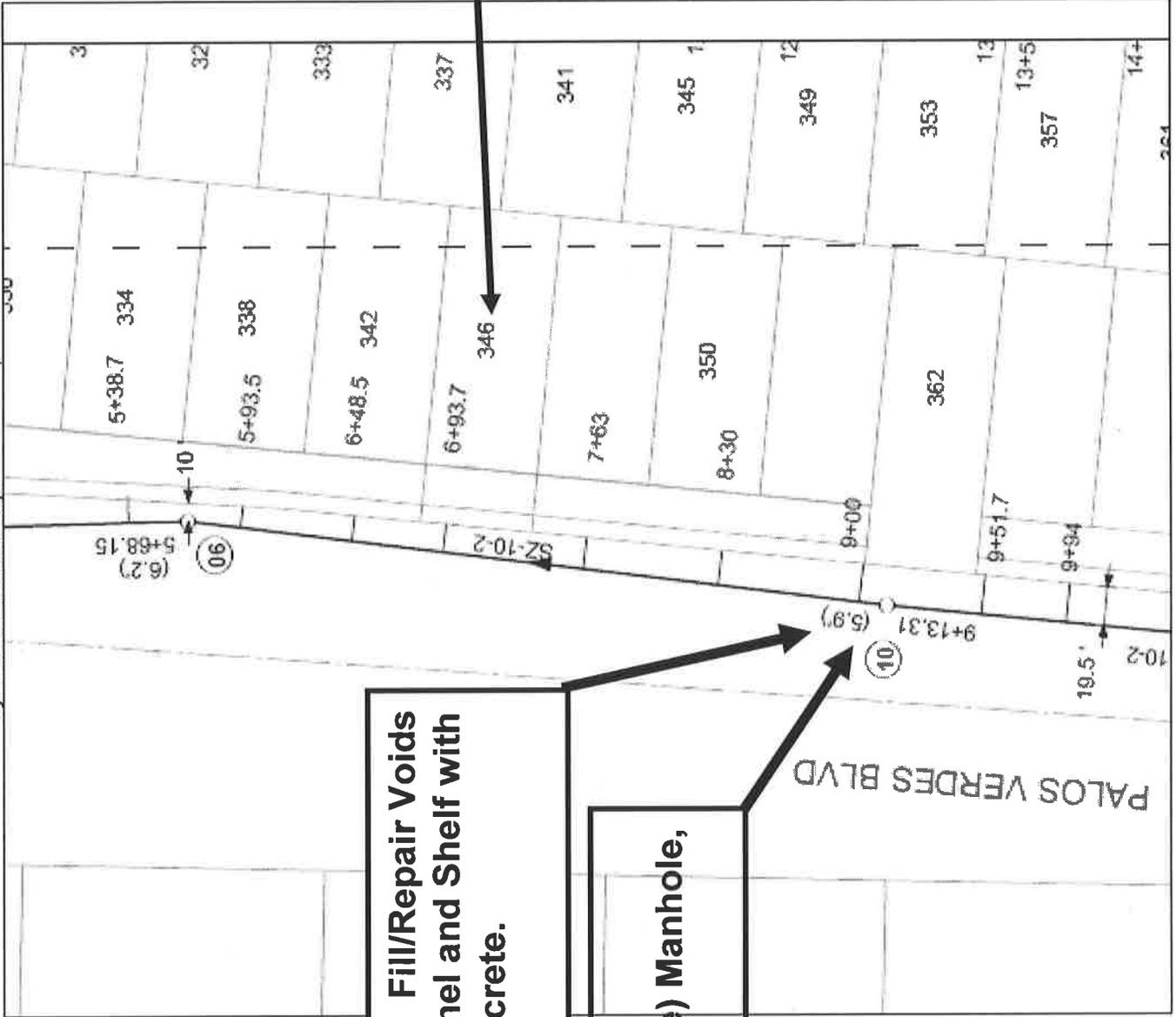
5' 04"

Drawing 13





Address  
(typical)



**Manhole 82-6-10: Fill/Repair Voids and Repair Channel and Shelf with rapid-setting concrete. See Drawing 15.**

**Manhole 82-6-10: Rehabilitate (Line) Manhole, 6.2 feet deep.**

PALOS VERDES BLVD





TORRANCE  
PALOS VERDE BLVD 082-6-10 <- 091-3-03  
VGP Vitrified Clay Pipe, C Circular 8"

Downstream Manhole, Survey Begins

**Voids in Channel in Manhole 82-6-10**

**Drawing 15**



https://maps.torranceca.gov/flexviewer/index.html#

Edit View Favorites Tools Help

### Quick Aerial Photo Viewer for City of Torrance Employees

More... Aerials 2011 Aerials 2008 Aerials 2006 Aerials 2000

N ↑



Remove and dispose three  
New Zealand Christmas trees,  
trunk diameters: 18", 27", 27".

20 m

50 ft

Drawing 16

100%







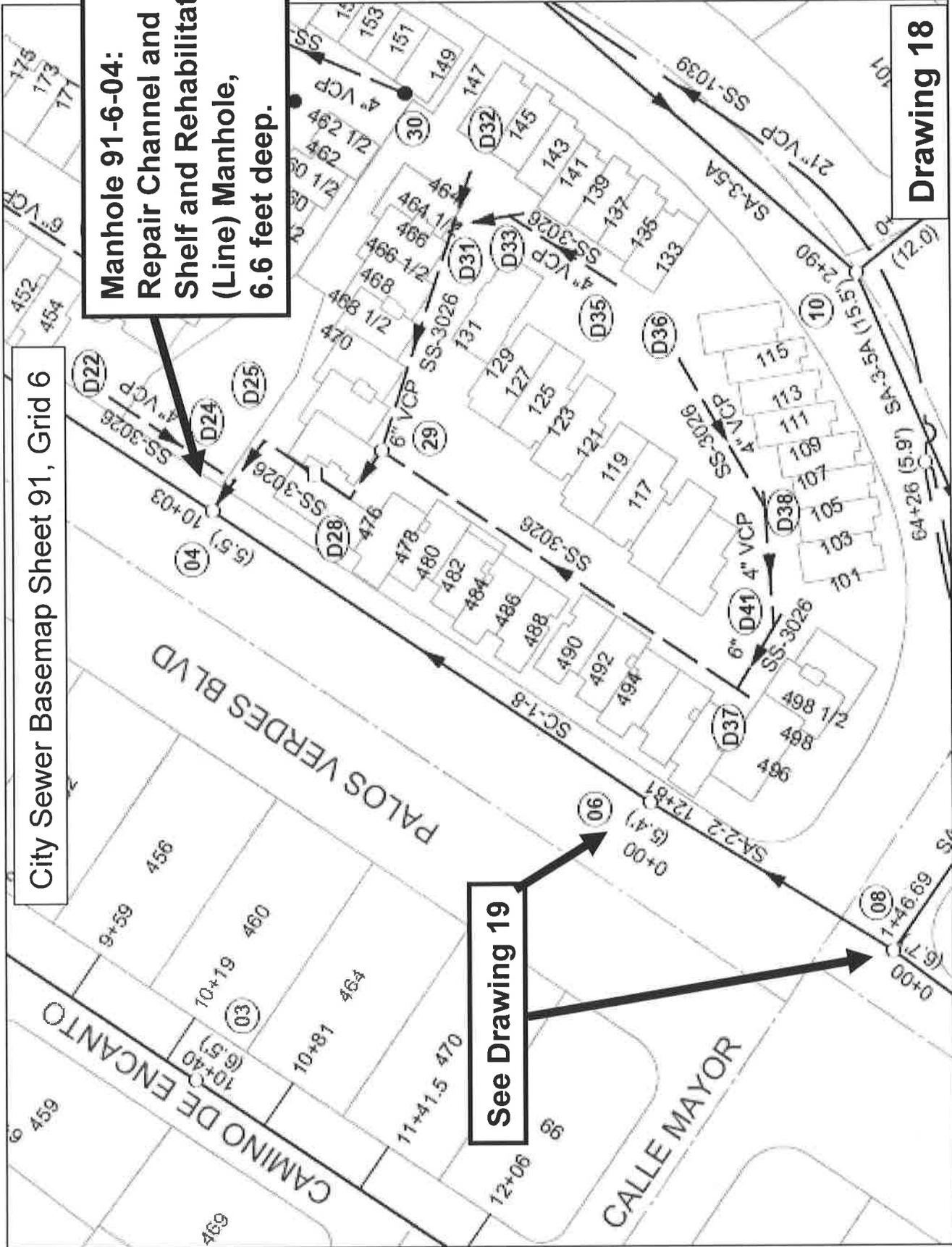


City Sewer Basemap Sheet 91, Grid 6

**Manhole 91-6-04:**  
Repair Channel and  
Shelf and Rehabilitate  
(Line) Manhole,  
6.6 feet deep.

See Drawing 19

Drawing 18







City Sewer Basemap Sheet 91, Grid 6

**Manhole 91-6-06: Fill/Repair Void and Repair Channel and Shelf with rapid-setting concrete. See Drawing 20.**

**Manhole 91-6-06: Rehabilitate (Line) Manhole, 6.4 feet deep.**

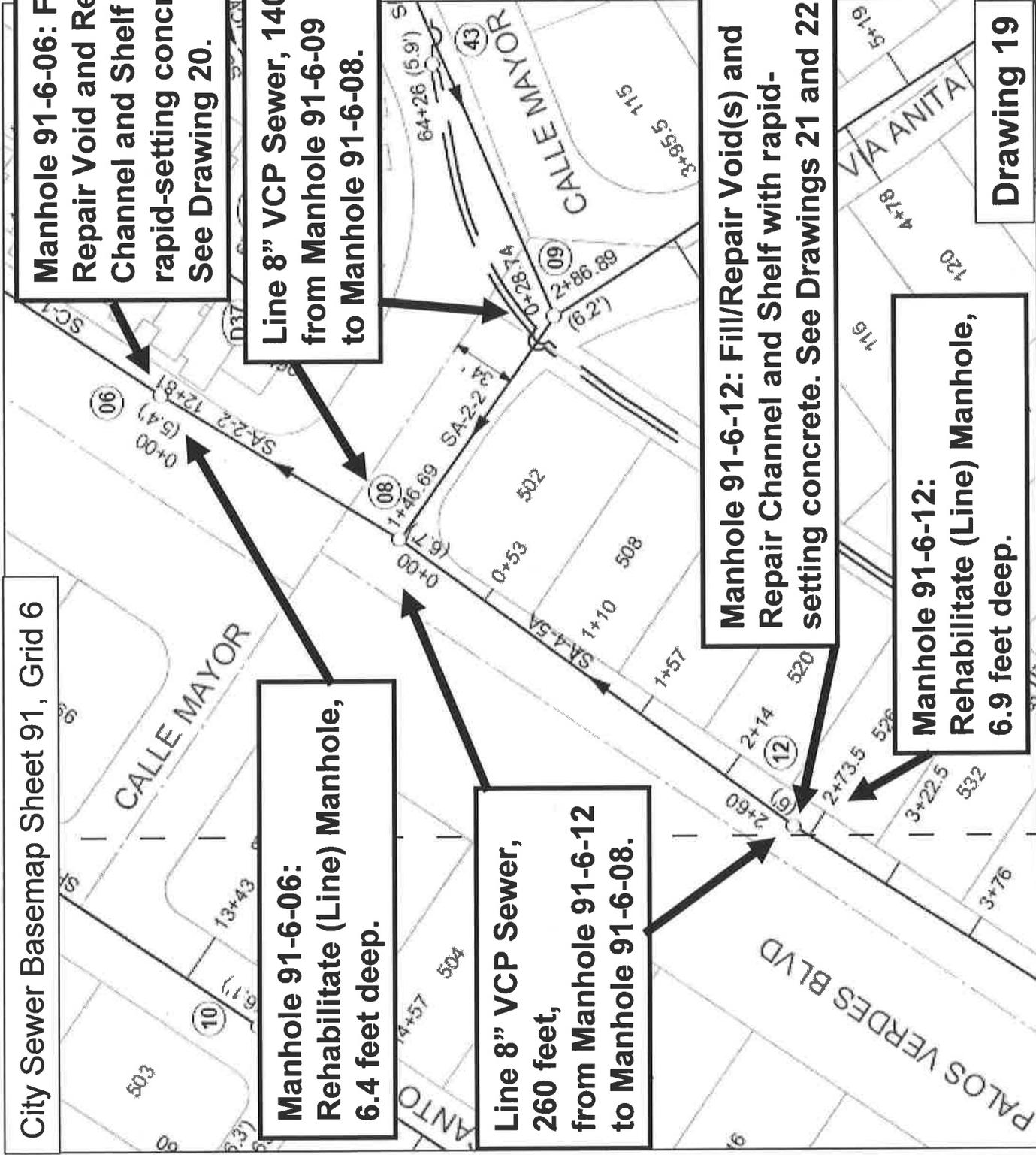
**Line 8" VCP Sewer, 140 feet, from Manhole 91-6-09 to Manhole 91-6-08.**

**Line 8" VCP Sewer, 260 feet, from Manhole 91-6-12 to Manhole 91-6-08.**

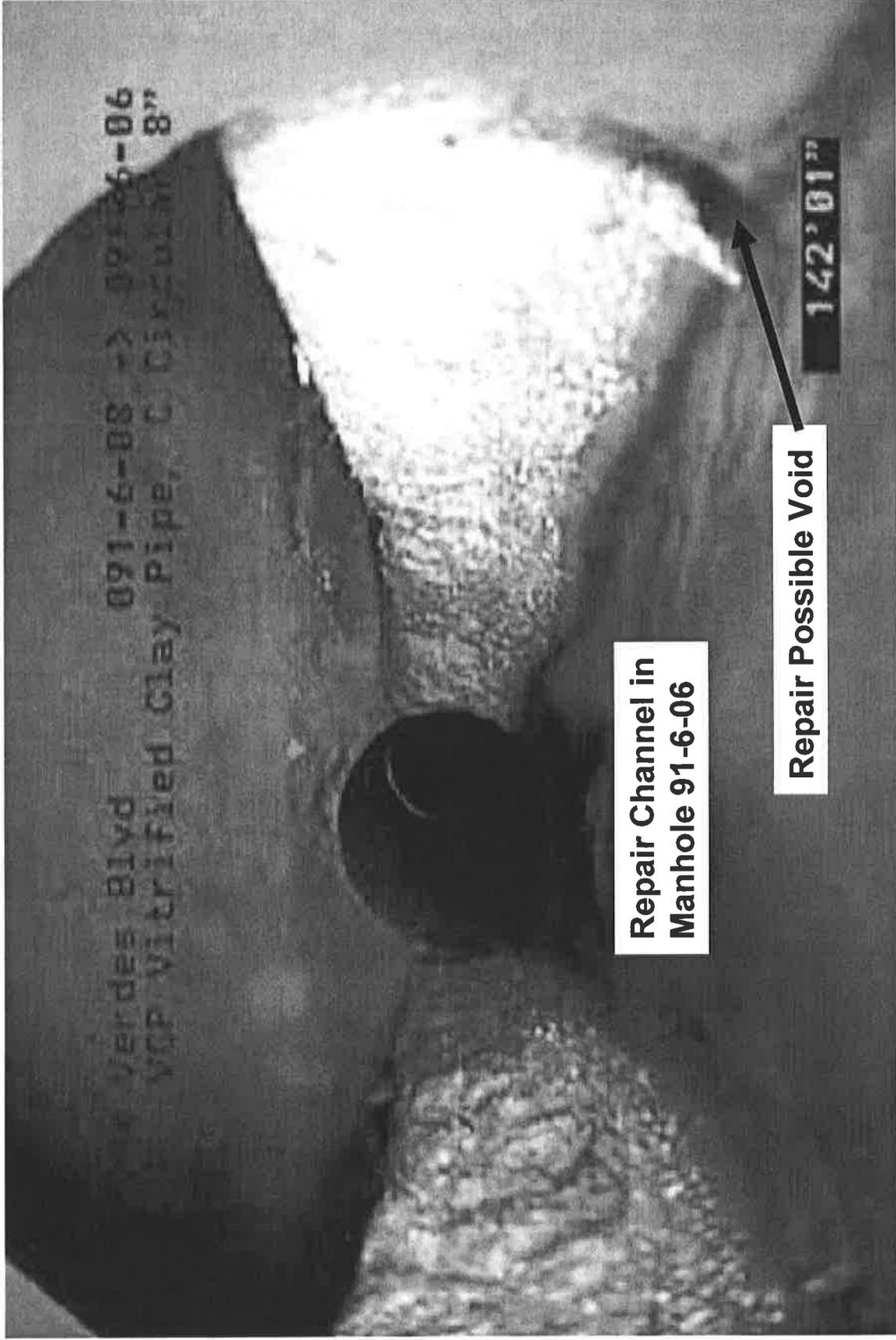
**Manhole 91-6-12: Fill/Repair Void(s) and Repair Channel and Shelf with rapid-setting concrete. See Drawings 21 and 22.**

**Manhole 91-6-12: Rehabilitate (Line) Manhole, 6.9 feet deep.**

**Drawing 19**







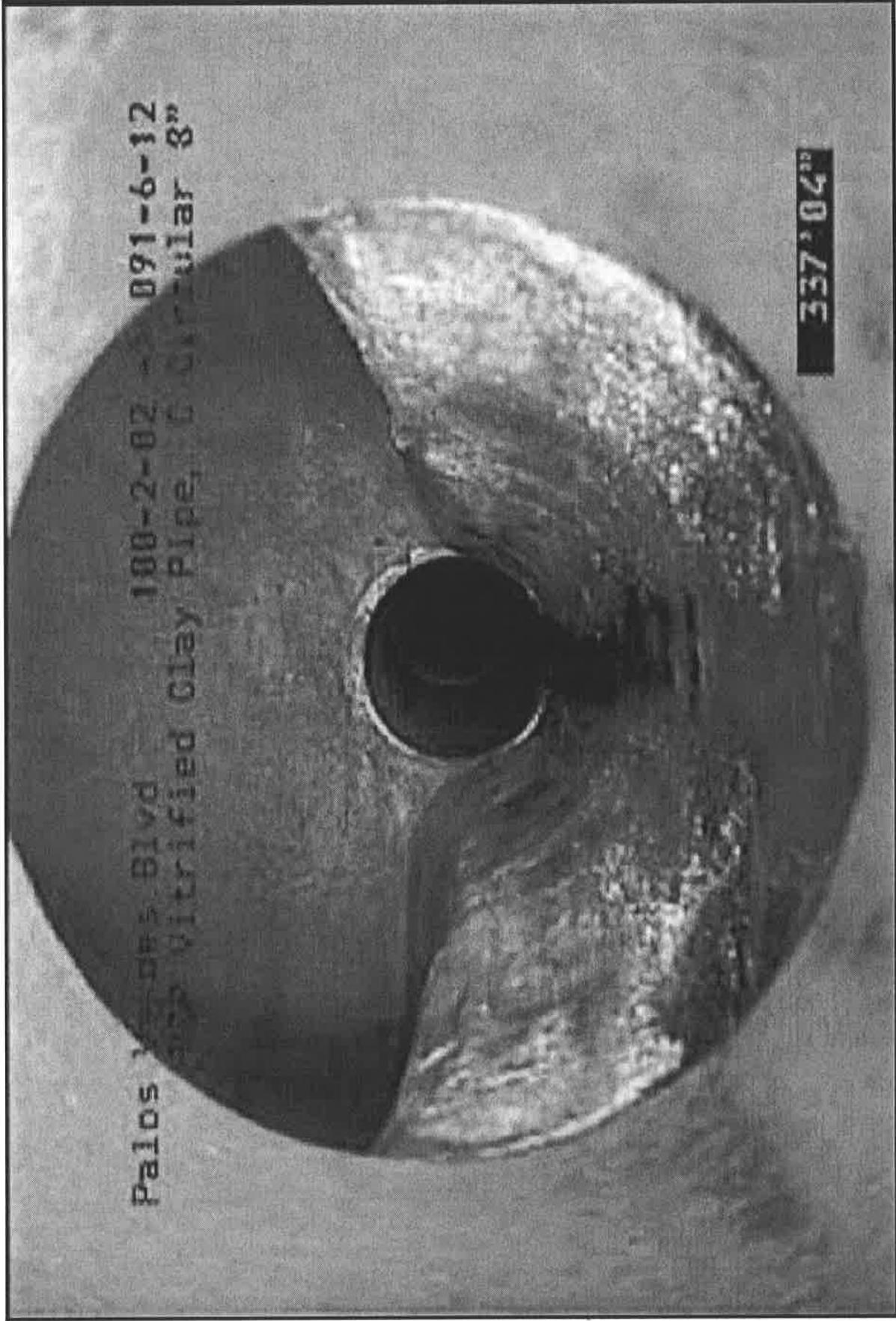
**Repair Channel in  
Manhole 91-6-06**

**Repair Possible Void**

**142' 01"**

**Drawing 20**





337' 04"

**Void(s) in Manhole 91-6-12**

**Drawing 21**

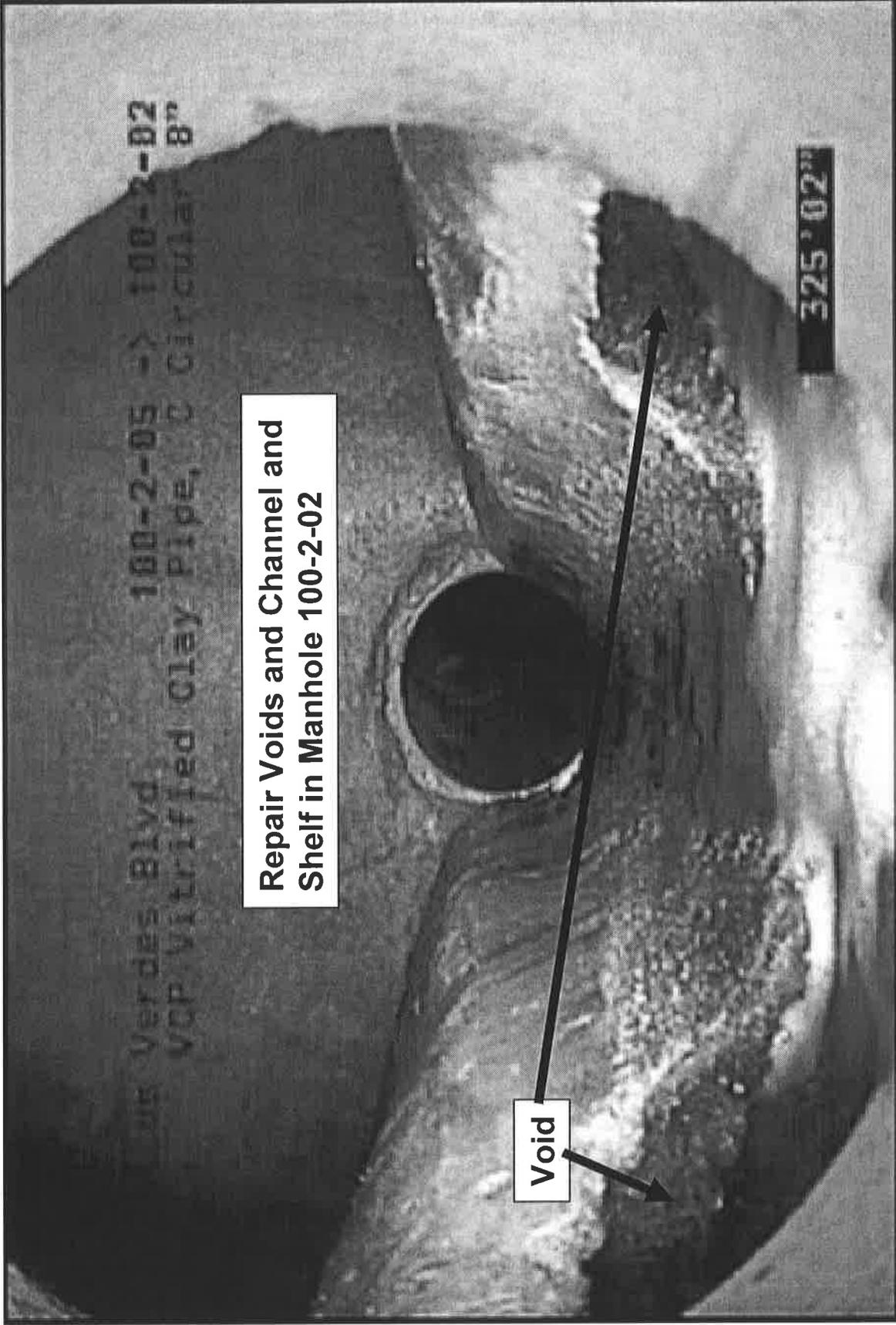










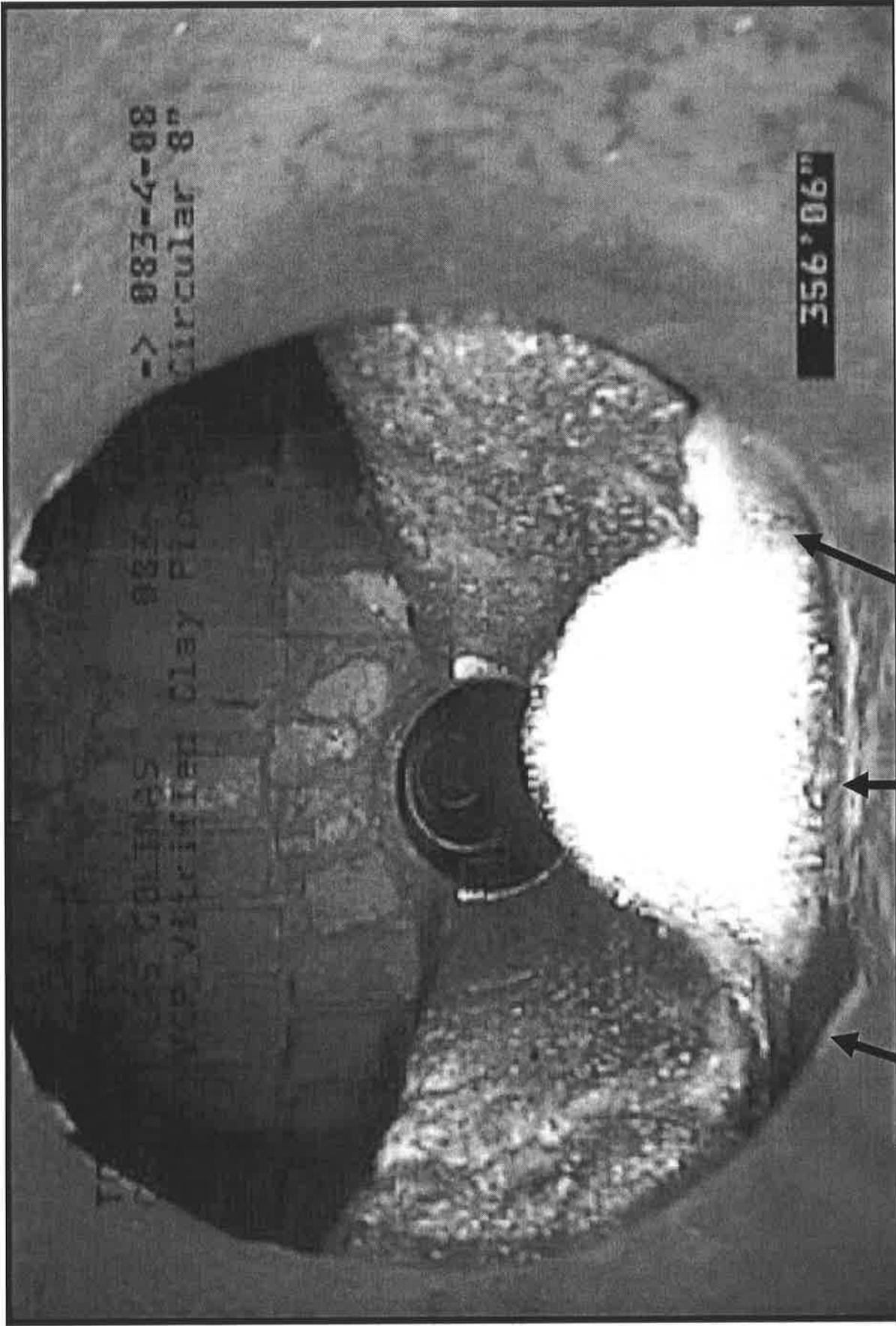


Drawing 24









Voids in Channel in Manhole 83-4-08

Drawing 26





TORRANCE  
COMING CAS COLINAS  
VCP VITRIFIED  
887-4-08 -> 883-1-15  
Circular 8"

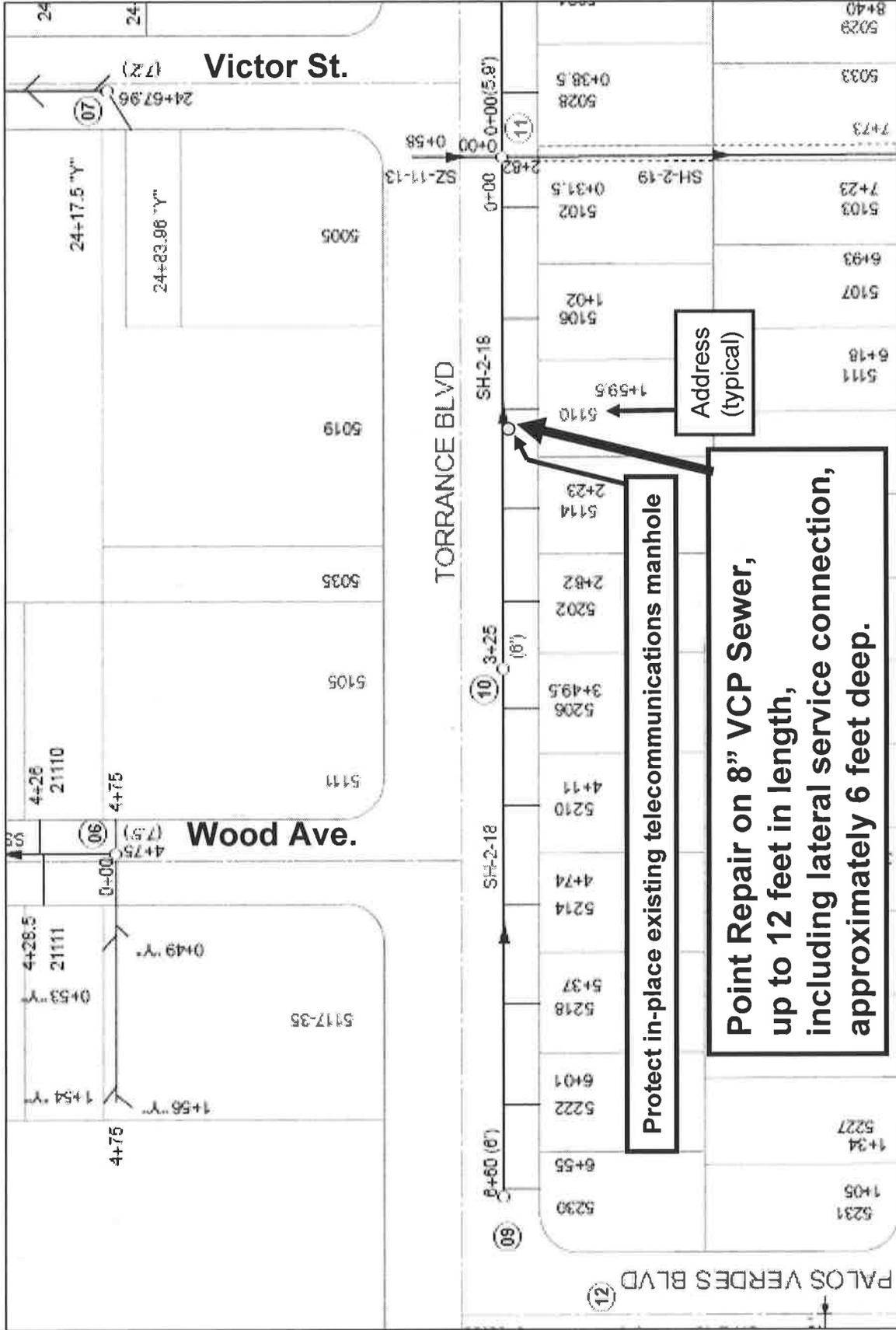
Upstream Manhole

**Voids in Channel in Manhole 83-4-08**

**Drawing 27**



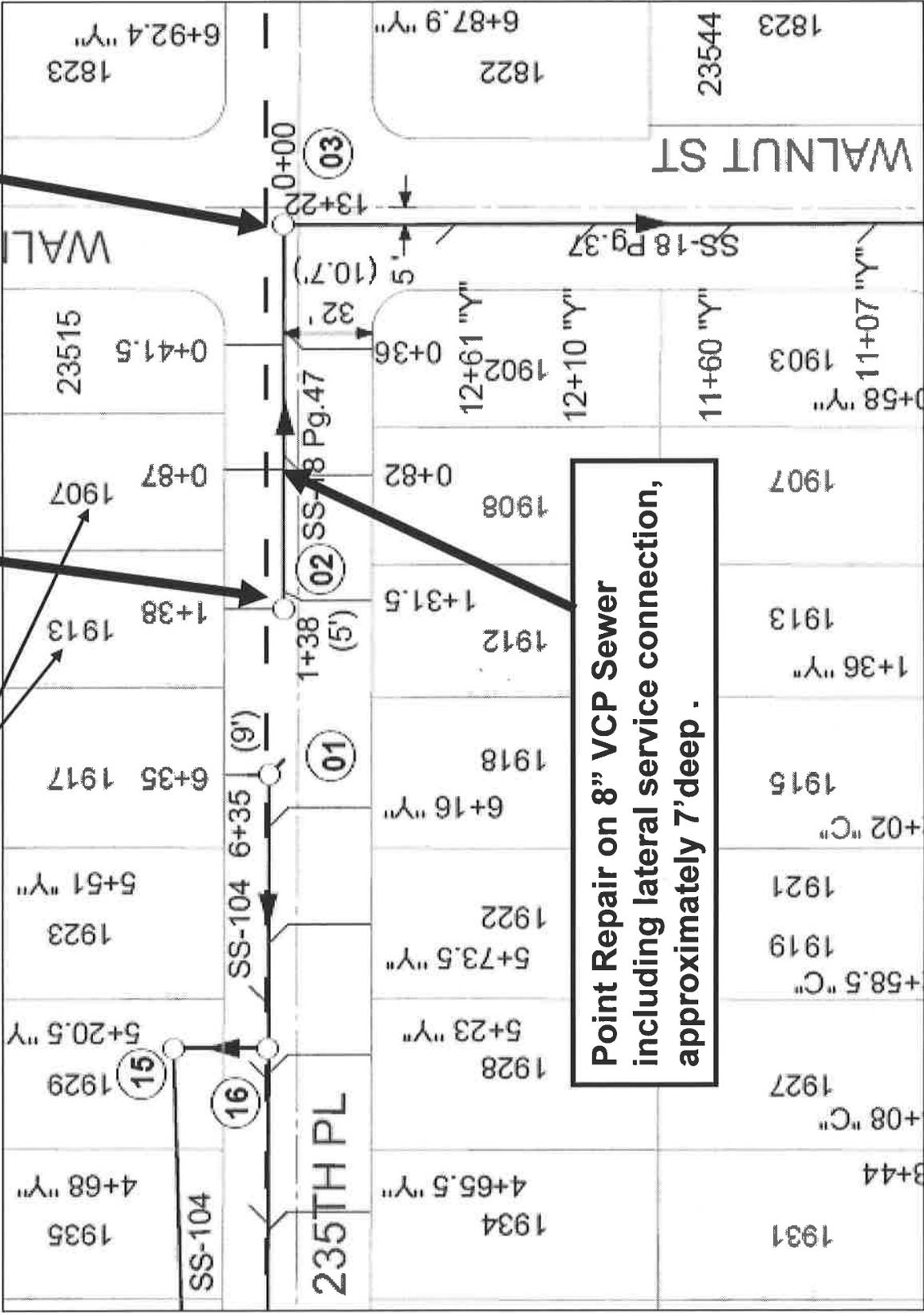
City Sewer Basemap Sheet 53, Grid 3



Protect in-place existing telecommunications manhole

Point Repair on 8" VCP Sewer,  
up to 12 feet in length,  
including lateral service connection,  
approximately 6 feet deep.







**APPENDIX VIII**

**PROJECT CONSTRUCTION SIGN**



ROUND CORNERS IF ALUMINUM  
OPTION USED

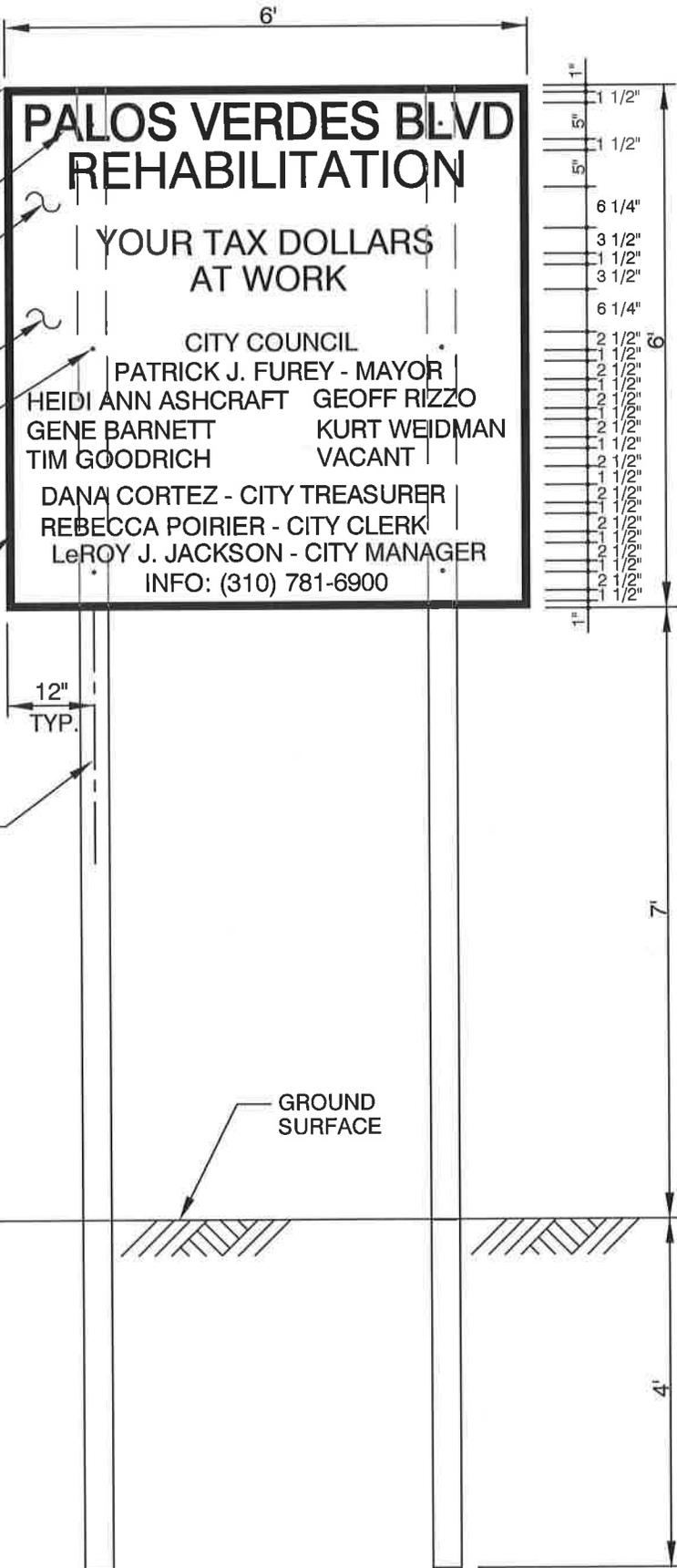
BLACK LETTERS

6'x6'x3/4" PLYWOOD BOARD  
OR  
6'x6'x.08" ALUMINUM SHEET

WHITE BACKGROUND

3 - 3/8" CARRIAGE BOLTS  
(5" LONG)  
TYPICAL EACH POST

1" BLACK LINE



4"x4" WOODEN POST

12"  
TYP.

GROUND  
SURFACE



**APPENDIX IX**

**VIDEO DETECTION SYSTEM (BID ALTERNATE A1)**



## 1. Video Detection - General

This specification sets forth the minimum requirements for a system that monitors vehicles on a roadway via processing of video images. The detection of vehicles passing through the field-of-view of an image sensor shall be made available to a large variety of end user applications as simple contact closure outputs that reflect the current real-time detector or alarm states (on/off) or as summary traffic statistics that are reported locally or remotely. The contact closure outputs shall be provided to a traffic signal controller and comply with the National Electrical Manufacturers Association (NEMA) type C or D detector rack or 170 input file rack standards.

The system architecture shall fully support Ethernet networking of system components through a variety of industry standard and commercially available infrastructures that are used in the traffic industry. The data communications shall support direct connect, [modem,] and multi-drop interconnects. Simple, standard Ethernet wiring shall be supported to minimize overall system cost and improve reliability, utilizing existing infrastructure and ease of system installation and maintenance. Both streaming video and data communications shall optionally be interconnected over long distances through fiber optic, microwave, or other commonly used digital communications transport configurations.

On the software application side of the network, the system shall be integrated through a client-server relationship. A communications server application shall provide the data communications interface between as few as one to as many as hundreds of Machine Vision Processor (MVP) sensors and a number of client applications. The client applications shall either be hosted on the same PC as the communications server or may be distributed over a local area network of PC's using the industry standard TCP/IP network protocol. Multiple client applications shall execute simultaneously on the same host or multiple hosts, depending on the network configuration. Additionally, a web-browser interface shall allow use of industry standard Internet web browsers to connect to MVP sensors for setup, maintenance, and playing digital streaming video.

### 1.1 System Hardware

The machine vision system hardware shall consist of three components: 1) a color, 559 step adjustment, 10x zoom, MVP sensor 2) a modular cabinet interface unit 3) a communication interface panel. Additionally, an optional Personal Computer (PC) shall host the server and client applications that are used to program and monitor the system components. The real-time performance shall be observed by viewing the video output from the sensor with overlaid flashing detectors to indicate the current detection state (on/off). The MVP sensor shall optionally store cumulative traffic statistics internally in non-volatile memory for later retrieval and analysis.

The MVP shall communicate to the modular cabinet interface unit via the communications interface panel and the software applications using the industry standard TCP/IP network protocol. The MVP shall have a built-in, Ethernet-ready, Internet Protocol (IP) address and shall be addressable with no plug in devices or converters required. The MVP shall provide standard MPEG-4 streaming digital video. Achievable frame rates shall vary from 5 to 30 frames/sec as a function of video quality and available bandwidth.

The modular cabinet interface unit shall communicate directly with up to eight (8) MVP sensors and shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack providing up to thirty-two (32) inputs and sixty-four (64) outputs or a 170 input file rack providing up to sixteen (16) contact closure inputs and twenty-four (24) contact closure outputs to a traffic signal controller.

The communication interface panel shall provide four (4) sets of three (3) electrical terminations for three-wire power cables for up to eight (8) MVP sensors that may be mounted on a pole or mast arm with a traffic signal cabinet or junction box. The communication interface panel shall provide high-energy transient protection to electrically protect the modular cabinet interface unit and connected MVP sensors. The communications interface panel shall provide single-point Ethernet connectivity via RJ45 connector for communication to and between the modular cabinet interface module and the MVP sensors.

## *1.2 System Software*

The MVP sensor embedded software shall incorporate multiple applications that perform a variety of diagnostic, installation, fault tolerant operations, data communications, digital video streaming, and vehicle detection processing. The detection shall be reliable, consistent, and perform under all weather, lighting, and traffic congestion levels. An embedded web server shall permit standard internet browsers to connect and perform basic configuration, maintenance, and video streaming services.

There shall be a suite of client applications that reside on the host client / server PC. The applications shall execute under Microsoft Windows XP, Vista or Windows 7. Available client applications shall include:

- **Master network browser:** Learn a network of connected modular cabinet interface units and MVP sensors, display basic information, and launch applications software to perform operations within that system of sensors.
- **Configuration setup:** Create and modify detector configurations to be executed on the MVP sensor and the modular cabinet interface unit.
- **Operation log:** Retrieve, display, and save field hardware run-time operation logs of special events that have occurred.
- **Software install:** Reconfigure one or more MVP sensors with a newer release of embedded system software.
- **Streaming video player:** Play and record streaming video with flashing detector overlay.
- **Data retrieval:** Fetch once or poll for traffic data and alarms and store on PC storage media.
- **Communications server:** Provide fault-tolerant, real-time TCP/IP communications to / from all devices and client applications with full logging capability for systems integration. The communications server shall operate as a Windows® Service.

## 2. Functional Capabilities

### 2.1 MVP Sensor

The MVP sensor shall be an integrated imaging color CCD array with zoom lens optics, high-speed, dual-core image processing hardware bundled into a sealed enclosure. Total weight of the map sensor shall be less than 4 lbs. and not more than 1 square foot equivalent pressure are (EPA) total. The CCD array shall be directly controlled by the dual-core processor, thus providing high-quality video for detection that has virtually no noise to degrade detection performance. It shall be possible to zoom the lens as required for setup and operation. It shall provide JPEG video compression as well as standard MPEG-4 digital streaming video with flashing detector overlay. The MVP shall provide direct real-time iris and shutter speed control. The MVP image sensor shall be equipped with an integrated 559 step adjustment, 10x zoom lens that can be changed using either configuration computer software. The digital streaming video output and all data communications shall be transmitted over the three-wire power cable.

#### 2.1.2 Power

The MVP sensor shall operate on 110/220 VAC, 50/60Hz at a maximum of 15 watts. The camera and processor electronics shall consume a maximum of 5 watts and the remaining 10 watts shall support an enclosure heater.

#### 2.1.3 Detection Zone Programming

Placement of detection zones shall be by means of a PC with a Windows XP, Vista or Windows 7 operating system, a keyboard, and a mouse. The PC monitor shall be able to show the detection zones superimposed on images of traffic scenes.

The detection zones shall be created by using a mouse to draw detection zones on the PC monitor. Using the mouse and keyboard it shall be possible to place, size, and orient detection zones to provide optimal road coverage for vehicle detection. It shall be possible to download detector configurations from the PC to the MVP sensor and cabinet interface module, to retrieve the detector configuration that is currently running in the MVP sensor, and to back up detector configurations by saving them to the PC fixed disks or other removable storage media.

The supervisor computer's mouse and keyboard shall be used to edit previously defined detector configurations to permit adjustment of the detection zone size and placement, to add detectors for additional traffic applications, or to reprogram the MVP sensor for different traffic applications or changes in installation site geometry or traffic rerouting.

#### 2.1.4 Optimal Detection

The video detection system shall optimally detect vehicle passage and presence when the MVP sensor is mounted 30 feet (10 m) or higher above the roadway, when the image sensor is adjacent to the desired coverage area, and when the distance to the farthest detection zone locations are not greater than ten (10)

times the mounting height of the MVP. The recommended deployment geometry for optimal detection also requires that there be an unobstructed view of each traveled lane where detection is required. Although optimal detection may be obtained when the MVP is mounted directly above the traveled lanes, the MVP shall not be required to be directly over the roadway. The MVP shall be able to view either approaching or receding traffic or both in the same field of view. The preferred MVP sensor orientation shall be to view approaching traffic since there are more high contrast features on vehicles as viewed from the front rather than the rear. The MVP sensor placed at a mounting height that minimizes vehicle image occlusion shall be able to simultaneously monitor a maximum of six (6) traffic lanes when mounted at the road-side or up to eight (8) traffic lanes when mounted in the center with four lanes on each side.

#### *2.1.5 Count Detection Performance*

Using an installed camera that meets the optimal viewing specifications described above for count station traffic applications, the system will be able to accurately count vehicles with at least 98% accuracy under normal operating conditions (day and night), and at least 93% accuracy under artifact conditions.

Artifact conditions are combinations of weather and lighting conditions that result from shadows, fog, rain, snow, etc. The volume count will be accumulated for the entire roadway (all traveled lanes), and accumulated over time intervals that contain a minimum of one hundred (100) vehicles to ensure statistical significance.

#### *2.1.6 Demand Presence Detection Performance*

Using an installed camera that meets the optimal viewing specifications described above for intersection control traffic applications, the system will be able to accurately provide demand presence detection.

The demand presence accuracy will be based on the ability to enable a protected turning movement on an intersection stop line, when a demand exists. The probability of not detecting a vehicle for demand presence will be less than 1% error under all operating conditions. In the presence of artifact conditions, the MVP will minimize extraneous (false) protected movement calls to less than 7%.

To ensure statistical significance, the demand presence accuracy and error will be calculated over time intervals that contain a minimum of one hundred, protected turning movements.

These performance specifications will be achieved with a minimum of 2 presence detectors coupled with a single detector function (Type-9) to provide adequate road coverage to sample the random arrival pattern of vehicles at the stop line.

The calculation of the demand presence error will not include turning movements where vehicles do not pass through the presence detectors, or where they stop short or stop beyond the combined detection zones.

#### *2.1.7 Speed Detection Performance*

The MVP will accurately measure average (arithmetic mean) speed of multiple vehicles with more than 97% accuracy under all operating conditions for approaching and receding traffic.

The average speed measurement will include a minimum of 100 vehicles in the sample to ensure statistical significance. Optimal speed detection performance requires the camera location to follow the specifications described above for count station traffic applications with the exception that the camera must be higher than 13 m (40) feet.

The MVP will accurately measure individual vehicle speeds with more than 94% accuracy under all operating conditions for vehicles approaching the camera (viewing the front end of vehicles), and more than 90% accuracy for vehicles receding from the camera (viewing the rear end of vehicles).

These specifications will apply to vehicles that travel through both the count and speed detector pair and will not include partial detection situations created by lane-changing maneuvers.

To ensure statistical significance, the average speed accuracy and error will be calculated over time intervals that contain a minimum of one hundred vehicles.

Using a MVP sensor installed within the optimal viewing specifications described above or count station traffic applications.

### *2.2 Modular Cabinet Interface Unit*

The modular cabinet interface unit shall provide the hardware and software means for up to eight (8) MVP sensors to communicate real-time detection states and alarms to a local traffic signal controller. It shall comply with the electrical and protocol specifications of the detector rack standards. The card shall have 1500 Vrms isolation between rack logic ground and street wiring.

The modular cabinet interface unit shall be a simple interface card that plugs directly into a 170 input file rack or a NEMA type C or D detector rack. The modular cabinet interface unit shall occupy only 2 slots of the detector rack. The modular cabinet interface unit shall accept up to sixteen (16) phase inputs and shall provide up to twenty-four (24) detector outputs.

### *2.3 Communications Interface Panel*

The communications interface panel shall support up to six MVPs. The communications interface panel shall accept 110/220 VAC, 50/60 Hz power and provide predefined wire termination blocks for MVP power connections, a Broadband-over-Power-Line (BPL) transceiver to support up to 10Mb/s inter-device communications, electrical surge protectors to isolate the modular cabinet interface unit and MVP sensors, and an interface connector to cable directly to the modular cabinet interface unit.

The interface panel shall provide power for up to eight (8) MVP sensors, taking local line voltage 110/220 VAC, 50/60 Hz and producing 110/220 VAC, 50/60 Hz, at about 20 watts to each MVP sensor. Two 1.25-amp SLO-BLO fuses or two 625 MA 510 – BLO fuses at 220 VAC. shall protect the communications interface panel.

### 3. System Installation & Training

The supplier of the video detection system may supervise the installation and testing of the video detection system and computer equipment as required by the contracting agency.

Training is available to personnel of the contracting agency in the operation, set up, and maintenance of the video detection system. The MVP sensor and its support hardware / software is a sophisticated leading-edge technology system. Proper instruction from certified instructors is recommended to ensure that the end user has complete competency in system operation. The User's Guide is not an adequate substitute for practical classroom training and formal certification by an approved agency.

### 4. Warranty, Service, & Support

For a minimum of three (3) years, the supplier shall warrant the video detection system. An option for additional year(s) warranty for up to 6 years shall be available. Ongoing software support by the supplier shall include software updates of the MVP sensor, modular cabinet interface unit, and supervisor computer applications. These updates shall be provided free of charge during the warranty period. The supplier shall maintain a program for technical support and software updates following expiration of the warranty period. This program shall be available to the contracting agency in the form of a separate agreement for continuing support.