



Date: December 21, 2017
To: Patrick H. West, City Manager *T.M.L.*
From: *CB* Craig A. Beck, Director of Public Works
For: Mayor and Members of the City Council
Subject: **Roadway Infrastructure Policy Updates**

The Public Works Department (PW) manages activity occurring in the City's rights-of-way (ROW). This includes approximately:

- 177 miles of arterial streets
- 609 miles of residential streets
- 220 miles of alleys
- 1,600 (estimated) miles of sidewalks

This year, PW actively managed hundreds of projects, both public (City) and private (private development and utility companies). The scope of ROW oversight varies based upon project type, but may include: capital improvement programs, underground service alert requests, reviewing/approving plans, reviewing traffic control, issuing permits, and inspecting work quality.

Policy Updates

All work that happens within the ROW must be constructed according to the City's Standard Plans document. The document was last reviewed in 2003 and can be found at www.longbeach.gov/pw/resources/engineering/standard-plans.

Efforts are underway to update this document and associated work processes to provide for more efficient coordination and oversight. These updates will improve the cleanliness and overall quality of the work product, while ensuring Long Beach Gas and Oil, Long Beach Water, Southern California Edison, Frontier Communications, and other utility agencies are meeting the City's expectations. PW anticipates the updated Standard Plans will be complete in Q3 of 2018.

In advance of the updated Standard Plans document, PW staff is making a number of key changes, which are detailed below:

- **Trenching:** The trenching standard dictates how utility companies repair city streets. Standard plan - drawing No. 127 - applies to trenching, potholing, backfill, and pavement restoration for City streets. A few other critical improvements to the standard are as follows (Exhibit A):

- **Asphalt Streets:** In many cases during construction, trenches are resurfaced with temporary pavement (cold mix) before the finished product is placed. The new standard will require temporary pavement meet the same quality as final paving. The backfill material will be resistant to compressing and be comprised of one sack slurry mix. A T-cut resurfacing will increase the repair area and if the distance to the edge of the roadway is less than five-feet, it will be included within the resurfacing.
- **Concrete Streets:** Currently, when trenching through concrete streets, the trench is allowed to be filled along the trench surface. The updated policy requires concrete surface repairs to include entire concrete slabs (generally 10' x 20' segments). This will protect the structural integrity of the concrete and the aesthetics of those streets.
- **Asphalt Street Repaving:** When Public Works repaving projects occur in the City, decisions regarding where to end projects have been focused on fiscal limits. A new standard is being added that will define how those limits are determined. Standard Plan – Drawing number 139 – requires a uniform finish to City streets; specifically, all asphalt repairs need to be extended to the nearest intersection and the full width of the street. If a block is partially paved, the remainder will be slurry sealed for consistency (Exhibit B). This will ensure that partial blocks are not left unpaved.

Efforts will be made to link neighboring pavement projects to eliminate unpaved blocks. The pavement management program aims to coordinate projects in a fashion that prevents unimproved blocks between newly-paved sections. Those remaining sections will be given priority for future resource allocation.

- **Underground Service Alert (USA) Markings:** Pavement markings for underground utilities within a proposed construction project site are required by California law. It is the responsibility of the permit holder to remove markings after the work has been completed, or as determined unnecessary by the City Inspector. The updated policy provides City Inspectors new authority to issue citations to any permit holder that does not comply with the required removal timeline. The fee will be equal to the costs of removing the markings and making repairs and/or replacements.
- **Construction and Traffic Signs:** Temporary construction or traffic signage deemed unnecessary by Public Works, must be removed within 15 days of written notice by the City Engineer. The owner, agent, or person having the beneficial use of the land upon which the sign is located is responsible for the removal. Upon failure to comply, the new policy allows City Inspectors to remove the signage at the expense of the owner.
- **Pavement Cut Moratorium:** In 2004, the City Council adopted an Ordinance amending the Long Beach Municipal Code (Section 14.08.060) to establish a 60-month excavation/pavement cut moratorium for any street that has been constructed, reconstructed, or resurfaced, and 24-month for any slurry sealed street. The moratorium has helped protect recently repaired streets from damage, but it did

not address the need for better coordination between City departments and outside agencies who typically perform street work.

To reduce instances of work happening within the moratorium period, and based on a request from the City Council, PW is implementing a “dig once” policy to improve City coordination. The policy calls for:

- Coordination of street construction projects, including the installation of fiber optic structures that enable high-speed data communications;
- Monthly meetings between the departments of Public Works, Technology and Innovation, Gas and Oil, and Water to discuss upcoming projects; and,
- Inclusion of outside utility companies in future paving projects so they may update their facilities as City projects move forward.

Additionally, work continues on the implementation of new Project Performance Management (PPM) software system. The PPM will improve oversight and coordination between construction projects citywide. The PPM should be operation in Q4 of 2018.

If utility work occurs on a street that is in the moratorium, then the trenching standard will be followed before the repaving occurs.

Impacts

The above policies will help protect the City’s investment in its streets. They are a prudent approach to ensuring uniform standards for all construction activity. While PW staff believe this is an important step forward, it must also be said these changes will increase project costs.

Example one provides a comparison of costs for a recent Water Department concrete trench project for a concrete trench. The current standard allows for open trenches to have an asphalt patch first and then a concrete ribbon in the trench. The new standard requires a full-slab replacement (typically center line to curb).

The increases reflect the new paving standards for a project that was for a water main line requiring trenching work through a mix of asphalt and concrete streets. The large differential is primarily due to full-slab replacements on the concrete streets as opposed to only trenching fill.

Example One

4th and Molino Waterline Project		
Work Type	Cost	Increase
Old Standard	\$100,000	
New Standard (Full slab)	\$732,000	632%

Example two provides a comparison of costs for a typical utility replacement project in a non-moratorium asphalt street. The current standard allows for temporary first, then permanent patching. The new standard of asphalt matching the quality of final paving, a T trench, and repairing any floater sections less than 5-feet of the curb increases costs 300 percent.

Example Two

4 th and Molino Waterline Project		
Work Type	Cost	Increase
Old Standard	\$55,000	
New Standard (T-trench, floater, etc)	\$165,000	300%

Complete Streets

The City has implemented a Complete Street Assessment policy when paving streets. Historically, street paving projects focused solely on repairing the pavement. Under Complete Streets, projects also include pedestrian and bike infrastructure, Americans with Disabilities Act improvements (sidewalks and path of travel), transit facilities, urban forestry, and green storm water infrastructure. While the City’s approach provides for a more holistic view at improving the ROW, it increases the overall cost. Example three provides a comparison of cost for street repaving pre-and-post adoption of the Complete Streets Policy:

Example Three

Typical Arterial Project Cost			
Work Type	Old Standard Cost (\$/SF)	New Standard Cost (\$/SF)	Increase
Asphalt Surfacing	\$4.25	\$4.25	
ADA/Concrete	\$0	\$2.83	67%
Livability	\$0	\$2.12	50%
Total	\$4.25	\$9.20	116%

Summary

Implementation of these new policies increase the cost of replacing streets, but has a lasting positive impact to the City’s infrastructure. Additionally, the update to the City’s Standard Plans document will provide for further improved results and longer lasting streets. Staff is implementing the new standards discussed in this memo in advance of the full updated document.

City staff believe the new standards will dramatically improve the quality and visual appearance of trenching repair, while balancing both cost and potential for litigation.

Finally, there have been requests to require all trench work to pave the entire street curb to curb. The City currently requires this for streets within the moratorium period, as that work has a dramatic impact on the structural integrity of the newly paved street. However, requiring this for all street trenching is cost prohibitive. In a recent example of an actual street project, it would have increased repair work from \$55,000 to \$570,000, a 936% increase. It would also not likely meet the nexus requirements for Enterprise funds and invite potential litigation, therefore it is not recommended.

If you have any questions regarding this matter, please call Sean Crumby, City Engineer, at (562) 570-6695.

CB:SC:mj

ATTACHMENTS: EXHIBIT A – NEW TRENCH STANDARDS
EXHIBIT B – NEW ASPHALT REPAVING STANDARDS

CC: CHARLES PARKIN, CITY ATTORNEY
LAURA L. DOUD, CITY AUDITOR
TOM MODICA, ASSISTANT CITY MANAGER
KEVIN JACKSON, DEPUTY CITY MANAGER
REBECCA GARNER, ASSISTANT TO THE CITY MANAGER
MONIQUE DE LA GARZA, CITY CLERK

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Sawcut existing pavement to clean straight lines (leaving no broken edges) after trench has been backfilled and before placing base course unless approved by the City Engineer

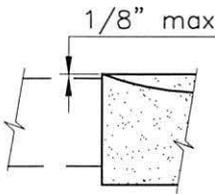
Existing Pavement

Type B PG64-10 A.C. base course to be placed within 48 hrs. after consolidation of backfill. (sooner when required by City Engineer)

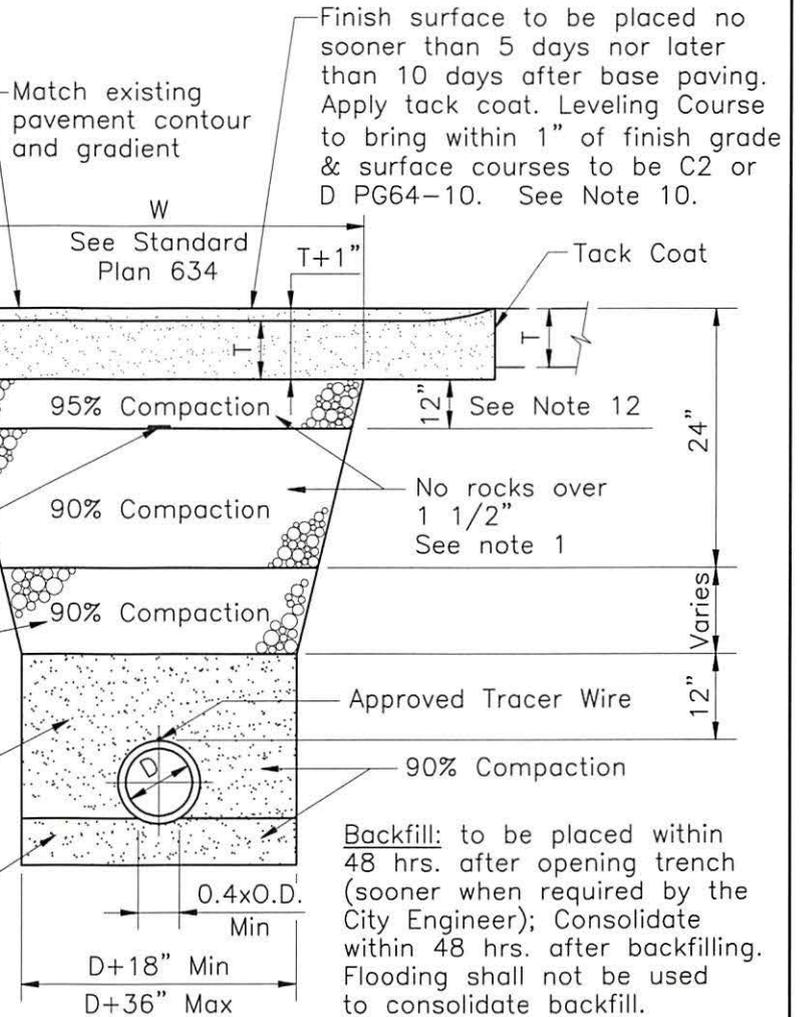
Approved Warning Tape

No rocks over 12" See note 1

Bedding: Sand, gravel, crushed aggregate with a sand equivalent of 30. See note 1



6" Sand Base or 3/4" Crushed Rock



Finish surface to be placed no sooner than 5 days nor later than 10 days after base paving. Apply tack coat. Leveling Course to bring within 1" of finish grade & surface courses to be C2 or D PG64-10. See Note 10.

DETAIL FOR TRENCHING, POTHOLING, BACKFILL & PAVEMENT RESTORATION

NOTES:

1. Backfill for trenches with $W=36"$ or less shall be cement slurry, Class 100-E-100 unless otherwise approved by the City Engineer.
2. Unless otherwise instructed by the City Engineer, trench patch shall not be crowned at center.
3. Temporary asphalt concrete shall be 4" minimum thickness. Compaction and surface finish shall equal to that required for permanent asphalt concrete pavement.
4. Restore in-kind obliterated striping within 7 days of permanent paving (unless approved by the City Engineer).
5. Protect backfilled not-yet-paved trenches as instructed by the City Engineer.
6. Asphalt Concrete trench resurfacing shall have no pieces less than 5' wide between patch and nearest joint or curb and gutter. All floating sections shall be replaced.
7. Potholing utilizing coring method is exempt from Note 6 if the diameter of the pothole is less than 13 inches.

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08/4/17 - UPDATED

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4		CITY OF LONG BEACH, DEPARTMENT OF PUBLIC WORKS 2017 STANDARD PLANS	STANDARD PLAN NO.	
3				
2			TRENCH REQUIREMENTS	127
1				
NO.	DATE	APPROVED BY: _____ DATE: _____	SHEET	
REVISIONS		CITY ENGINEER R.E. No. 65081	1 OF 2	

NOTES: Continued

8. Asphalt Concrete trench cut shall be at angles of 90 degrees.
9. Portland Cement Concrete pavement shall be Class 560-C-3250 and restoration shall be full slab replacement.
10. Base paving may be allowed to remain in place longer than 10 days with approval from the City Engineer.
11. Utilize 24 inches long dowels with 6 inches embedment on all concrete pavement restoration projects.
12. For all permanent street resurfacing, place 12 inches base material compacted to 95 percent over 90 percent compacted subgrade surface, or increase the existing AC base or concrete pavement by 20 percent.
13. For field repairs on concrete streets, remove and replace 10-foot wide strip of concrete from the nearest joint or centerline to gutter out or curb face.
14. Remove all construction related paint marking on pavement within 7 days of permanent paving.

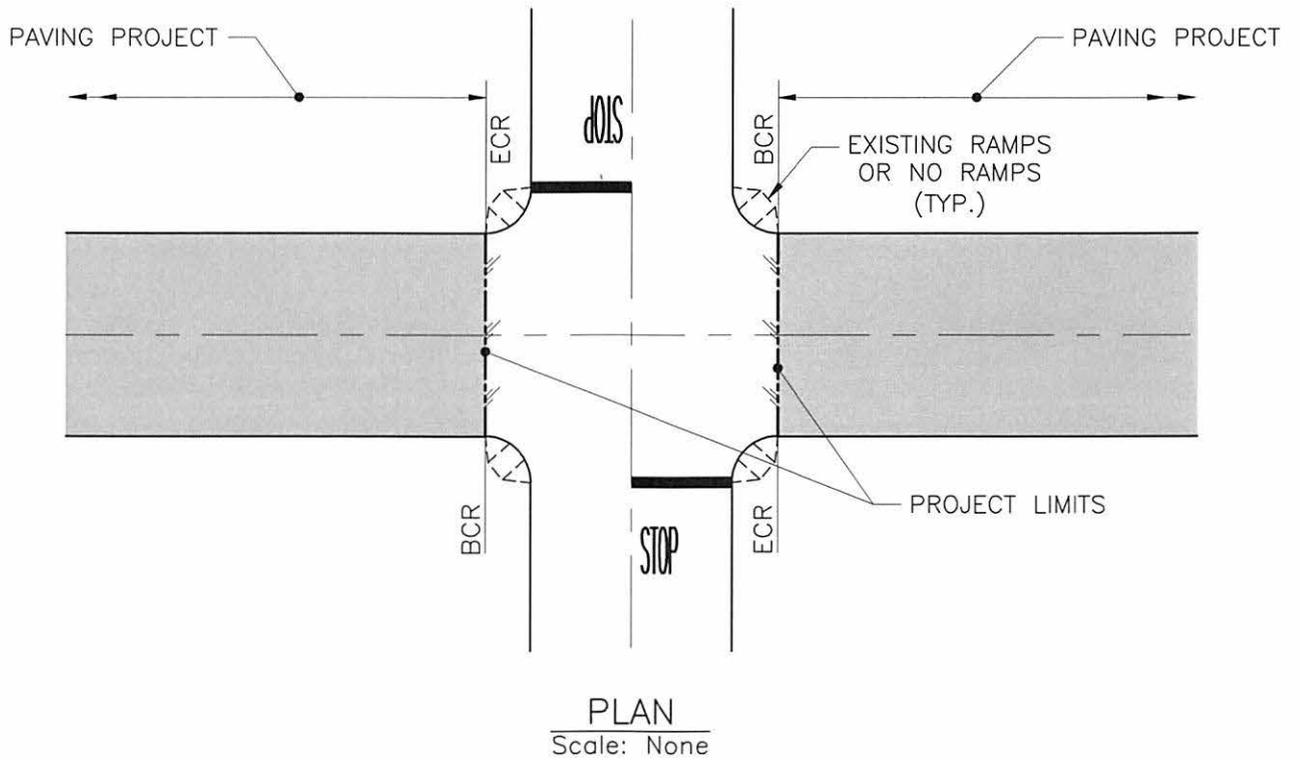
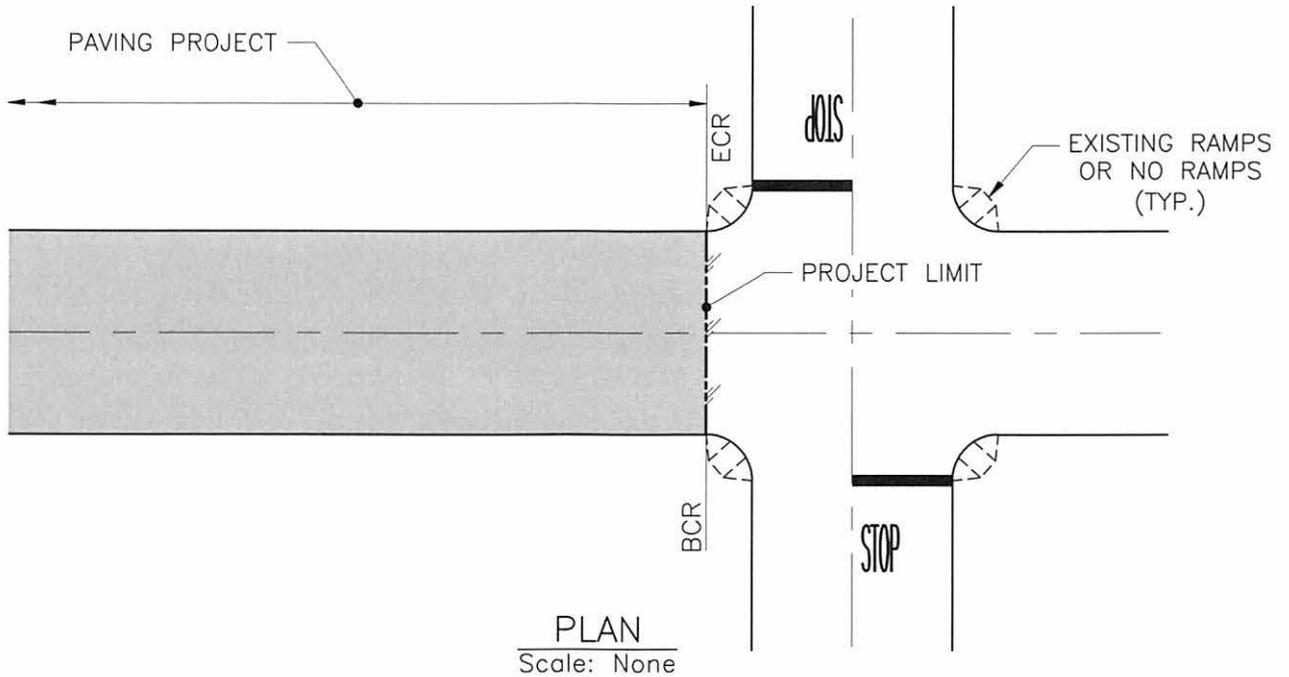
EXHIBIT A, page 2 of 2

08/4/17

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4		CITY OF LONG BEACH, DEPARTMENT OF PUBLIC WORKS 2017 STANDARD PLANS	STANDARD PLAN NO. 127
3			
2			
1			
NO.	DATE	TRENCH REQUIREMENTS	
REVISIONS		APPROVED BY: _____ CITY ENGINEER R.E. No. 65081	DATE: _____ SHEET 2 OF 2

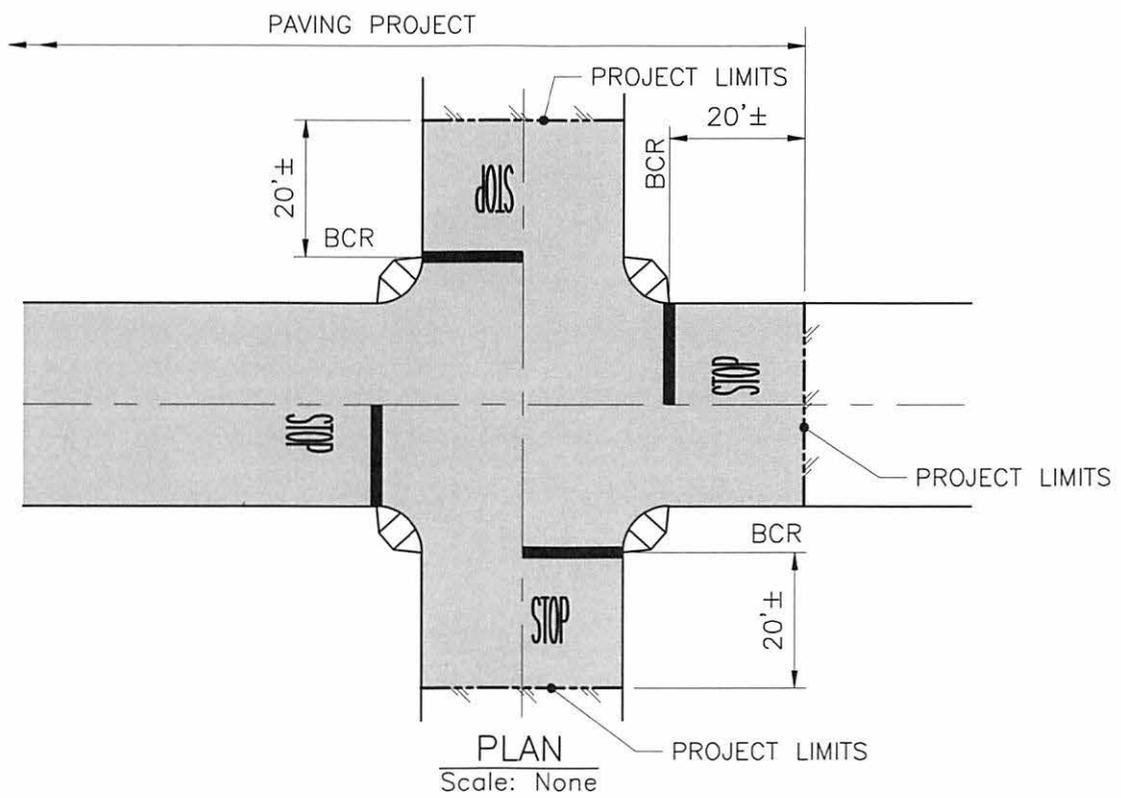
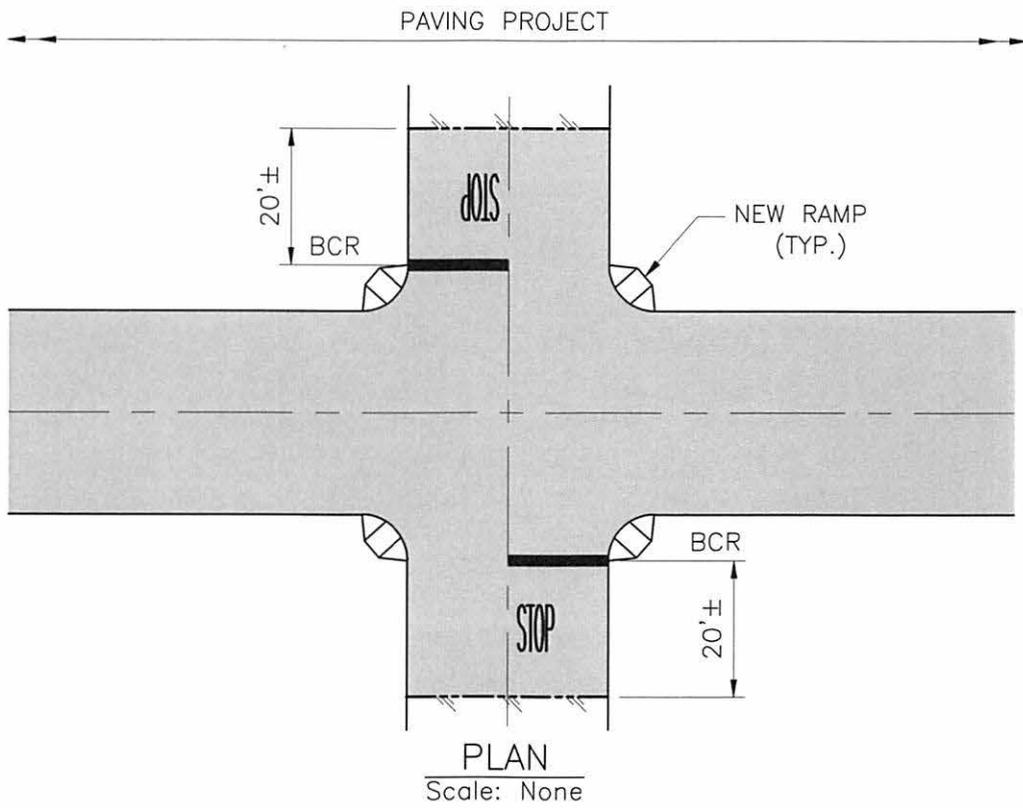
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4		CITY OF LONG BEACH, DEPARTMENT OF PUBLIC WORKS 2017 STANDARD PLANS	STANDARD PLAN NO.
3			139
2			Exhibit B
1			SHEET
NO.	DATE	APPROVED BY: _____ DATE: _____	1 OF 3
REVISIONS		CITY ENGINEER R.E. No. 65081	

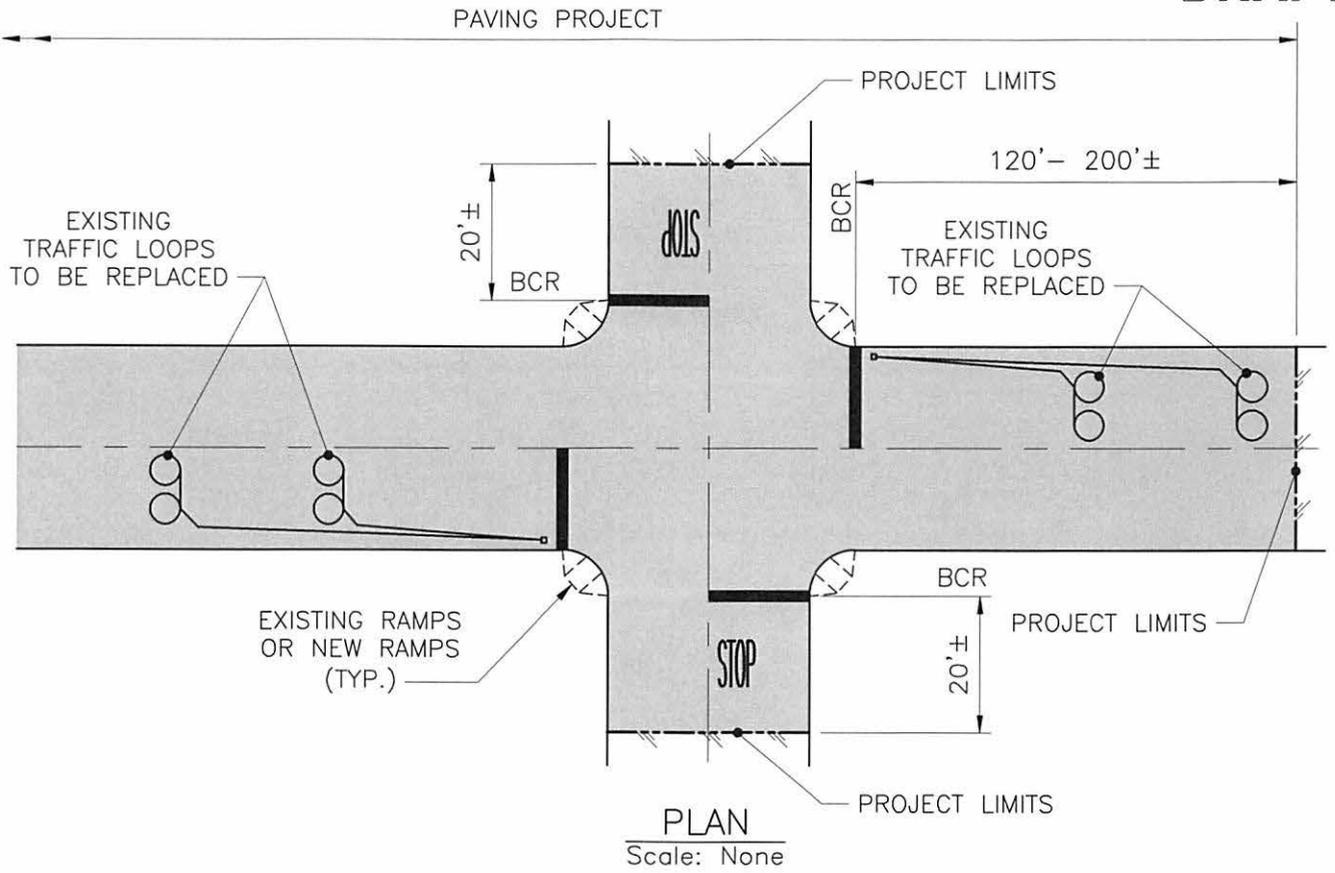


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4		CITY OF LONG BEACH, DEPARTMENT OF PUBLIC WORKS 2017 STANDARD PLANS	STANDARD PLAN NO.
3			
2			
1			
NO.	DATE	PAVING PROJECT TERMINATION WITH RAMPS	139 Exhibit B
REVISIONS		APPROVED BY: _____ DATE: _____	SHEET 2 OF 3
		CITY ENGINEER R.E. No. 65081	

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11/15/17 - UPDATED

4		CITY OF LONG BEACH, DEPARTMENT OF PUBLIC WORKS 2017 STANDARD PLANS PAVING PROJECT TERMINATION WITH TRAFFIC LOOPS	STANDARD PLAN NO.
3			139
2			Exhibit B
1			SHEET
NO.	DATE	APPROVED BY: _____ DATE: _____	3 OF 3
REVISIONS		CITY ENGINEER R.E. No. 65081	