ALLEYS & BULB-OUTS

General Information

Alleys: Alleys within the City of Sacramento are typically located midblock and oriented in an east-west direction. These alleys provide the adjacent parcels an area for utility connections, emergency access, delivery access, parking access, and solid waste pickup. Current City standards require alleys to be 20 feet in width and constructed with a concrete surface. Several of the alleys have a significant low point at the center of the block due to the raising of the streets in the Downtown Area between 1864 to 1876. The midpoint of these alleys is at the lower elevation of the old streets.

Bulb-Outs: Pedestrian enhanced intersections have been increasingly used throughout the Downtown and suburban areas in the City of Sacramento. Sidewalk bulbing returns (bulb-outs) are used as a way to provide a more pedestrian friendly intersection. Bulb-outs are generally used on street corners at intersections with vehicular traffic in both directions (two-way streets). Bulb-outs are typically not used on intersections with vehicle traffic in a single direction (one-way streets) to allow for full traffic turning movements. At intersections where each of the intersecting roadways is a one-way street, bulb-outs are not typically used. Bulb-outs can be classified as a Full Bulb-out where the sidewalk corner on each street is extended into the intersection, or a Half Bulb-out where the sidewalk is extended on only one of the streets of the intersection. Half Bulb-outs are used at intersections with a one-way street and a two-way street. Typical examples of each type of bulb-out (full & half) are depicted in Figure III-3.

Existing Conditions

For this study, only the alleys adjacent to parcels identified as Proposed Projects or Opportunity Sites were evaluated within the Infrastructure Study Ares (see Figure III-1). While other existing alleys within the Study Area may be in need of repair/replacement, the focus of this study is to identify the improvements related to support development of the Proposed Projects or Opportunity Sites.

Each alley was evaluated for type of surfacing and condition of that surface. The visual inspection of each alley was completed in January 2011 and pictures have been provided in Appendix A. Conditions vary greatly as some alleys are constructed according to the City's latest standards and in excellent condition, while others are constructed of asphalt and have significant structural damage. Table III-1 below provides a summary of the evaluated alleys including their location, surfacing type and condition.

Proposed Conditions

Alleys: With development of the Proposed Projects and Opportunity Sites within the Study Area, limited access will be provided to the developing parcels along the street frontage. The primary vehicular access will be provided at the rear of the frontage lots by utilizing the existing alleys. The alley must be fully improved if it is used as the main vehicular access to a project. The development of a single parcel in the middle of a block could trigger the need to improve the pavement of the full length of the alley access to the main connecting side street. These alley improvements can be cost prohibitive to a single developing parcel in the middle of a block that would need improvements to the entire alley length out to the main street.

The City's standard for alley improvements is 6-inch concrete paving (per Design and Procedures Manual, Section 15, Plate 15-14). The concrete paving is a requirement because the typical standard 20 foot alley does not meet the minimum requirements for street width for Federal roadway maintenance funds. The concrete paving provides a longer lasting surface; however, the initial construction costs are considerably more expensive.

However, the City has allowed the use of asphalt pavement on alleys in selected areas within the City. The use of asphalt paving in the Study area may be allowed for a project on a case by case basis with approval from the City's Department of Transportation. For the purposes of this study, concrete paving has been used to provide a conservative estimate for the cost of alley pavement reconstruction.

TABLE III-1
ALLEY CONDITIONS & RECOMMENDATIONS

Alley	Location	Surfacing	Condition	Pictures	Recommendation	Length
1	I-J Alley between 6th Street & 7th Street	Concrete	Good - some patching and minor structural failures	1A-1D	Repair minor structural failures	321
2	I-J Alley between 7th Street & 8th Street	Asphalt	Poor - significant patching and pavement failure	2A-2D	Replace entire length of alley with new concrete pavement	321
3	I-J Alley between 10th Street & 11th Street	Concrete	Good - some patching and minor structural failures	3A-3D	Repair minor structural failures	327
4	I-J Alley between 11th Street & 12th Street	Concrete	Poor	4A-4D	Replace entire length of alley with new concrete pavement	319
5	I-J Alley between 12th Street & 13th Street (partial alley on west half of block only)	Asphalt	Poor	5A-5B	Replace entire length of alley with new concrete pavement	168
6	I-J Alley between 14th Street & 15th Street	Asphalt	Good - some minor structural failures	6A-6D	Repair minor structural failures	320
7	I-J Alley between 16th Street & 17th Street	Concrete	Excellent	7A-7D	No repairs are necessary.	320
8	J-K Alley between 10th Street & 11th Street	Asphalt	Fair - some patching and minor failures	8A-8D	Replace entire length of alley with new concrete pavement	328
9	J-K Alley between 16th Street & 17th Street	Concrete	Poor - some patching and significant pavement failure	9A-9D	Replace entire length of alley with new concrete pavement	322
10	K-L Alley between 16th Street & 17th Street	Concrete	Excellent (east side), Under construction (west side)	10A-10D	No repairs are necessary.	320
11	K-L Alley between 14th Street & 15th Street	Asphalt	Excellent	11A-11D	No repairs are necessary.	355
12	K-L Alley between 11th Street & 12th Street	Concrete	Good - some cracking	12A-12D	Repair minor structural failures	316
13	K-L Alley between 9th Street & 10th Street	Concrete	Fair - significant uneven patching (west side), Excellent (east side)	13A-13D	Replace 3/4 length of alley with new concrete pavement	325
14	K-L Alley between 8th Street & 9th Street	Asphalt	Poor - significant patching and pavement failure	14A-14D	Replace entire length of alley with new concrete pavement	316
15	K-L Alley between 7th Street & 8th Street	Asphalt	Poor - broken pavement (west side), Good - some pavement failure (east side)	15A-15D	Replace entire length of alley with new concrete pavement	320
16	K-L Alley between 6th Street & 7th Street (partial alley off 7th street only)	Concrete	Good	16A-16B	No repairs are necessary.	100
17	L-Capitol Alley between 8th Street & 9th Street	Concrete	Excellent	17A-17D	No repairs are necessary.	318

As noted in the Existing Conditions section above, many of the existing alleys are observed to be in "fair" to "poor" condition. For the purposes of this Study, it is assumed the pavement surface of each of the alleys in "fair" to "poor" condition will be replaced for the entire length of the alley. For the alleys observed to be in "good' condition, it is assumed that repairs of the minor structural failures will be accomplished. For those alleys observed to be in "excellent" condition, no repairs are envisioned as being necessary.

The K/L Alley between 14th & 15th Streets appears to have been newly resurfaced using asphalt pavement. Since the pavement is in "excellent" condition, no repairs are recommended and replacing the pavement with concrete pavement is not recommended. The K/L Alley between 16th & 17th is currently under construction from work associated with development of the 1600 K Street project on the north side of the westerly end of the alley. This project is expected to improve the westerly end of the alley; therefore, no new pavement work is anticipated for this alley. The specific recommendation for each alley section is noted in Table III-1 and depicted on Figure III-1.

Bulb-Outs: Depending on the condition of the existing street frontage improvements (i.e. sidewalks, curb & gutter, and landscape planters), it is envisioned that existing improvements will generally be repaired and/or fully replaced with the development of the Proposed Projects and Opportunity Sites within the Study Area. To encourage a pedestrian friendly environment, bulb-outs will be required for the project street frontage improvements at intersection corners immediately adjacent to the development.

Only the street corners immediately adjacent to the developments are affected. The improvement of the intersection street corners on the opposite sides of the streets are not the responsibility of the project development.

Due to the unique nature of the Downtown Sacramento street grid system currently with numerous one-way streets, only Half Bulb-outs are necessary within the Study Area. Bulb-outs are not proposed along the K Street Mall (K Street from 7th to 13th Streets) area as this area is currently open only to Regional Transit Light Rail and pedestrian traffic. The K Street Mall contains numerous pedestrian friendly enhancements at the intersections.

The City has recently approved the re-opening the K Street Mall to allow vehicular traffic (Cars on K) with limited parking/pedestrian loading areas. This City funded project is expected to have construction completed by January 2012. Pedestrian friendly intersection improvements have been incorporated into the project design. Also, the 6th & L Street and 6th & Capitol Mall intersections already have bulb-outs installed on the easterly corners of 6th Street with recent development of the block.

The locations of the anticipated bulb-outs within the Study Area are depicted on Figure III-2. The bulb-out designs shown in this Report are intended to provide initial guidance/planning level detail only. Final bulb-out design and locations are subject to review and approval of the City Traffic Engineer. Each project specific bulb-out designs will need to consider the following to ensure traffic and pedestrian safety.

- Land use
- Design vehicle to serve land use (WB 50 or other)
- Street type - Is the street on a major roadway or collector?
- Is the street on a truck route?
- Provide appropriate truck turning template diagram for each location / intersection to confirm vehicle doesn't cross over centerline.
- Verify that no unusual design elements are present (power poles, inlets, etc.)

Alleys

1	Alley Identification Number

Condition Status

- Good to Excellent Condition
- Needs Repair
- Needs Replacement
- **Study Area - Proposed Project**
- **Study Area - Opportunity Site**
- **Buffer Area - Proposed Project**
- **Buffer Area - Opportunity Site**
- **Parcels**
- **StudyArea**

0 250 500 1,000 Feet

September 2011

Downtown Infrastructure Study - Alleys Plan

FIGURE III-1

NOLTE BEYOND ENGINEERING

I STREET OFFRAMP

RT 5 SBOFF R

I ST

TERMINAL WY

J ST

JST

6TH ST

4TH ST

MERCHANT ST

K ST

DOWNTOWN PL

3RD ST

5TH ST

7TH ST

8TH ST

9TH ST

10TH ST

11TH ST

12TH ST

13TH ST

14TH ST

2ND ST

FRONT ST

FIREHOUSE AY

L ST

CAPITOL ML

15TH ST

16TH ST

17TH ST

N ST

O ST

CARRIAGE PATH WY

P ST

P ST-Q ST AY

Q ST

Bulb-Out Type

- Existing Bulb-Out
- Half Bulb-Out
- Full Bulb-Out
- Traffic Direction

No Street Traffic Name

- No Street Traffic
- To be re-opened to Street Traffic
- **Study Area - Proposed Project**
- **Study Area - Opportunity Site**
- **Buffer Area - Proposed Project**
- **Buffer Area - Opportunity Site**
- **Parcels**
- **StudyArea**

0 250 500 1,000 Feet

N W E S

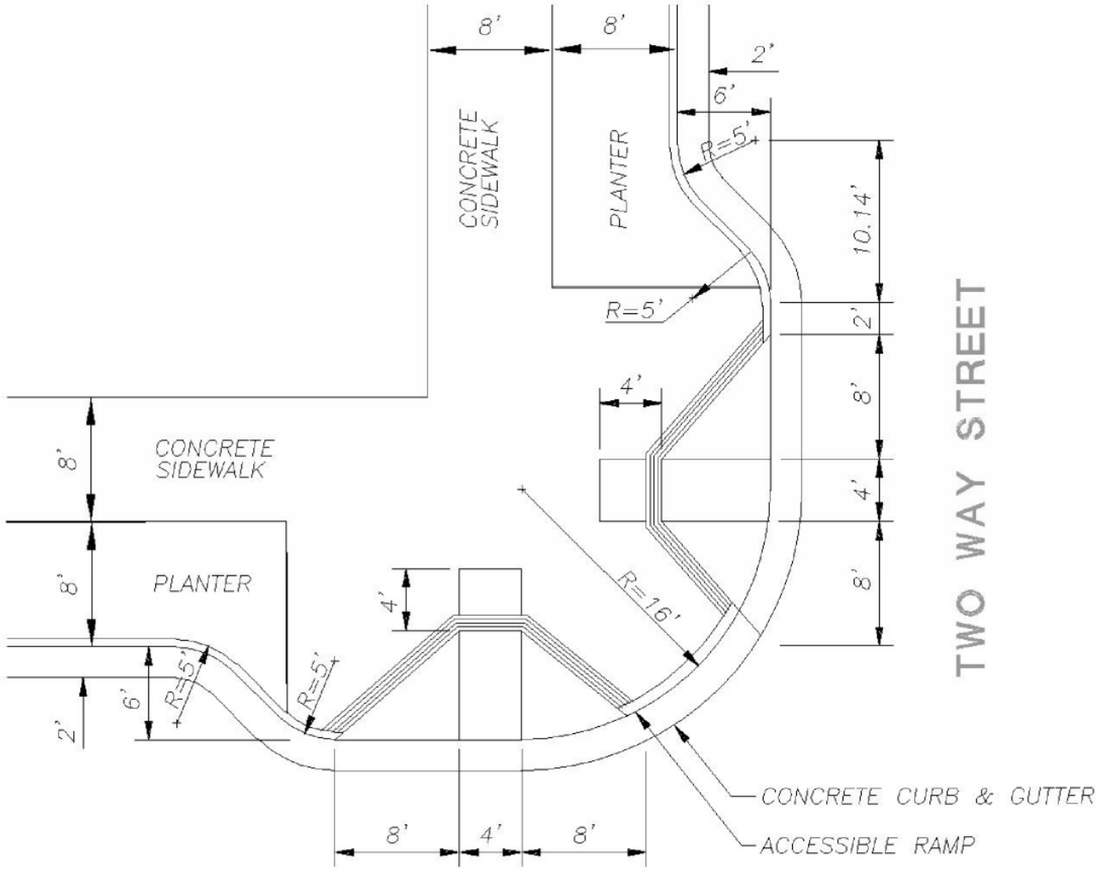
NOLTE BEYOND ENGINEERING

CITY OF SACRAMENTO FOUNDED IN 1849

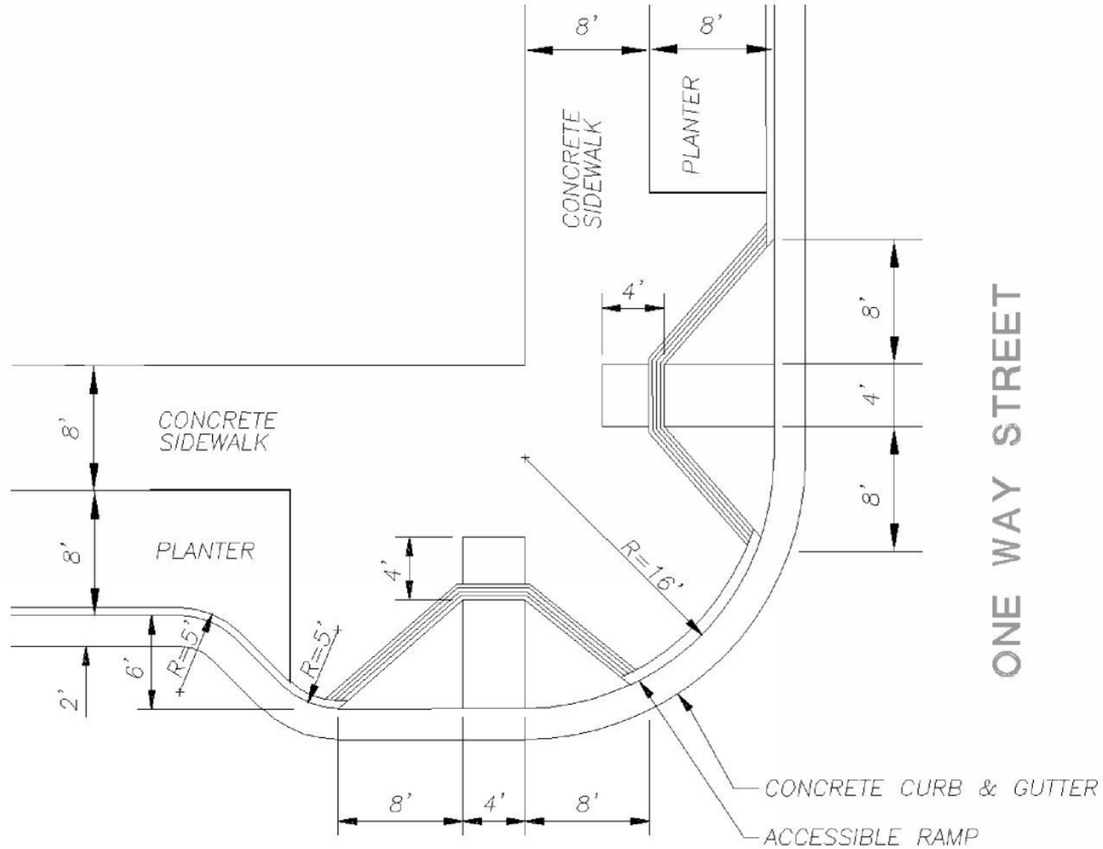
September 2011

Downtown Infrastructure Study - Bulb-Out Plan

FIGURE III-2



TYPICAL FULL BULB-OUT
NOT TO SCALE



TYPICAL HALF BULB-OUT
NOT TO SCALE

ONE WAY STREET

September 2011

Downtown Infrastructure Study - Typical Bulb-Out

FIGURE III-3

NOLTE
BEYOND ENGINEERING