APPENDIX J

Preliminary Drainage Study

DRAINAGE STUDY
FOR
BALBOA PARK PLAZA

(SITE DEVELOPMENT PERMIT)

Job Number 16325
April 18, 2011
Revised: October 5, 2011
Revised: December 21, 2011

PTS # 233958

RICK
ENGINEERING COMPANY

DRAINAGE STUDY
FOR
BALBOA PARK PLAZA

(SITE DEVELOPMENT PERMIT)

Job Number 16325

PTS # 233958

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April 18, 2011
Revised: October 5, 2011
Revised: December 21, 2011

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DRAINAGE STUDY
FOR
BALBOA PARK PLAZA

REVISION PAGE
December 21, 2011

This water quality technical report presents a revision to the October 5, 2011 report pursuant to the City of San Diego Cycle 21 EIR Screen Check comments (LDR-Engineering (Env)).

12. The preliminary drainage study and the WQTR need to include a section of the landfill where the 140,000 cubic yard of soil will be exported to. The technical reports should address and discuss the drainage and BMPs for the landfill site. Additionally, the drainage at all fill areas at the landfill needs to be shown on the plans including the discharge points of all site drains. (New Issue)

The preliminary drainage study and the WQTR have been updated to discuss the drainage characteristics and water quality requirements for the fill disposal site. The post-project drainage characteristics of the fill disposal site such as tributary area, flow paths, impervious area, and time of concentration to each outlet point will mimic the pre-project condition drainage characteristics. Furthermore, the project does not propose impervious surfaces within the fill disposal site. The following sections of the preliminary drainage study have been updated:

- Page 2 (Section 1.1 Project Description) – a new bullet point has been added to describe the fill disposal site.
- Page 3 (Section 1.3 Drainage Characteristics) – a new paragraph has been added to discuss the drainage characteristics of the fill disposal site and identifies that there are no proposed impervious surfaces.
- Page 9 (Section 2.3 Hydrologic Results) – a new paragraph has been added to summarize the results of the hydrologic analysis for the fill disposal site. In

conclusion, it is anticipated that this project will not adversely impact the hydraulics of existing drainage systems located downstream of the project.

- Map Pocket 3 – a new workmap for the fill disposal site has been included to show drainage basin boundaries, areas, and flow paths.

DRAINAGE STUDY
FOR
BALBOA PARK PLAZA

REVISION PAGE
October 5, 2011

This drainage study presents a revision to the April 18, 2011 report pursuant to additional information pertaining to existing storm drain alignments and a revised site plan layout. There were no outstanding plan check comments related to the drainage study as a result of the previous review cycle. The revisions to the drainage study consist of the following:

- The pre-project drainage boundaries have been updated based on additional information pertaining to existing storm drain alignments from as-built plans and field observations.
- The post-project drainage boundaries have been updated based on the revised site plan layout.
- The pre-project and post-project weighted runoff coefficients have been updated to reflect more detail related to impervious and pervious areas.
- The pre-project and post-project hydrologic analyses (AES Rational Method) have been updated accordingly to reflect the above revisions.

1.0 INTRODUCTION

1.1 Project Description

This drainage study presents hydrologic and hydraulic analyses for the proposed Balboa Park Plaza project (herein referred to as "the project"). The project is bounded by State Route (SR) 163 to the west, Interstate 5 to the south, and Park Blvd to the east. See Figure 1, Vicinity Map, located at the end of Section 1.0.

The proposed project is intended to restore pedestrian use and remove vehicular traffic and parking from the Plaza de California, West Prado, the Plaza de Panama, and Pan American Road, consistent with the original vision for the Central Mesa. This would be accomplished through the construction of a new bypass road and bridge, which would divert eastbound vehicular traffic from the Park's western entrance on Cabrillo Bridge south to a new 265,242-square-foot underground parking structure with 785 parking spaces (net gain of 261 spaces) located in the area of an existing surface parking lot behind the Organ Pavilion. An additional 97,000 square feet of park space would be created on top of the parking structure.

The Balboa Park Plaza de Panama, Circulation and Parking Structure Project consists of several interrelated components, all intended to achieve the following goals and benefits:

- Remove cars from the Plaza de Panama, West El Prado, Plaza de California, Esplanade and Pan American Road while still providing easy public access to the institutions which are vital to the park's success and longevity.
- Restore pedestrian and park uses to El Prado, Plaza de Panama, Plaza de California, Esplanade and California Gardens behind the Organ Pavilion, reclaiming 6.31 acres in the Central Mesa.
- Improve access to the Central Mesa through additional parking, improved drop-off, disabled access, valet, and a new tram system.
- Improve the link between Balboa Park's two National Historic Landmark Districts; El Prado and the Palisades.

- Complete all work by January 2015 for the 1915 Exposition's centennial celebration.
- Export approximately 142,000 cubic yard of soil from the project to a fill disposal site at the Arizona Street Landfill on the East Mesa.

1.2 Drainage Characteristics and Final Hydromodification Management Criteria

The project is defined by six (6) major drainage basins. Of these major drainage basins, three (3) of them are located in the western portions of the project (i.e. Basins 100, 150 and 200) and drain in westerly directions to canyons and eventually to an existing storm drain system along State Route (SR) 163. The remaining three (3) major drainage basins (i.e. Basins 300, 400 and 500) convey runoff southeasterly towards an existing storm drain system that eventually connects with the existing storm drain system along SR 163. The existing storm drain system extends all the way to the San Diego Bay Shoreline in the vicinity of B Street.

The overall drainage area as well as the drainage characteristics in the post-project condition will remain similar as compared to the pre-project conditions. It is currently anticipated that the project will result in an overall decrease to impervious surfaces; however, a slight increase will occur within one drainage basin. As a result, the project as a whole will not result in an increase in storm water runoff, including the one drainage basin that resulted in an increase to impervious area primarily due to a longer flow path in the post-project condition. Therefore, it is anticipated that the project will not adversely impact the hydraulics of existing drainage systems located downstream of the project. Furthermore, use of Low Impact Development (LID) Integrated Management Practices (IMPs) will be utilized to collect, retain, treat, and discharge runoff contributing further reducing the impact of minor increases in runoff. Drainage Characteristics for each of the major drainage basins are described below.

<u>Western Drainage Basins (Drainage Basins 100, 150 and 200)</u>

The western drainage basins would include on-site flood control conveyance for the 100-year storm event. On-site storm conveyance systems would be used to collect runoff from the existing portions of project and from the proposed on-site development area. A network of storm drains, open

channels, and water quality (WQ) features will be used to collect, convey, and treat storm water runoff throughout the development area prior to discharging into the proposed integrated management practice (IMP) and best management practice (BMP) locations (i.e. proposed bioretention locations and high-rate media filters). The tributary area to each existing outfall location would remain similar to its current drainage patterns.

Southeast Drainage Basin (Drainage Basins 300, 400 and 500)

The drainage basin would include on-site flood control conveyance for the 100-year storm event. On-site storm conveyance systems would be used to collect runoff from the existing portions of the project and from the proposed on-site development area. A network of storm drains, open channels, and water quality (WQ) features will be used to collect, convey, treat storm water runoff throughout the development area prior to discharging to the IMP locations (i.e. proposed bioretention locations) at the southwest corner of the project. The tributary area to each existing outfall would remain similar to its current drainage patterns.

Fill Disposal Site at the Arizona Street Landfill on the East Mesa

The project also consists of a fill disposal site located at the Arizona Street Landfill on the East Mesa. This consists of placing the fill and grade contouring in three (3) areas of the Arizona Street Landfill. Site 1, southwest of the Park and Recreation Operations Yard, is anticipated to take approximately 116,000 cubic yards of export, with fills ranging from 2 feet to 11 feet in height. In Site 2, the existing East Mesa archery range is anticipated to take approximately 11,000 cubic yards of export with fills ranging from 2 to 4 feet in height. In Site 3, the former "casting ponds" is anticipated to take approximately 15,000 cubic yards of export with fills ranging from 2 to 8 feet.

The post-project drainage characteristics of the fill disposal site such as tributary area, flow paths, impervious area, and time of concentration to each outlet point will mimic the pre-project condition drainage characteristics. Furthermore, the project does not propose impervious surfaces within the fill disposal site. For water quality purposes, fill areas will be landscaped with non-irrigated plantings that are consistent with "passive" park uses and Park and Recreation land use goals for the

Arizona Street Landfill. Since there are no proposed impervious surfaces there are no additional permanent BMPs required for the fill disposal site related to water quality or hydromodification management. Therefore, there will be no change to the runoff coefficient and peak flow rates for the fill disposal site.

1.3 Hydrology and Hydraulics

Hydrology and hydraulics are discussed in detail in Section 2.0 and 3.0 of this report.

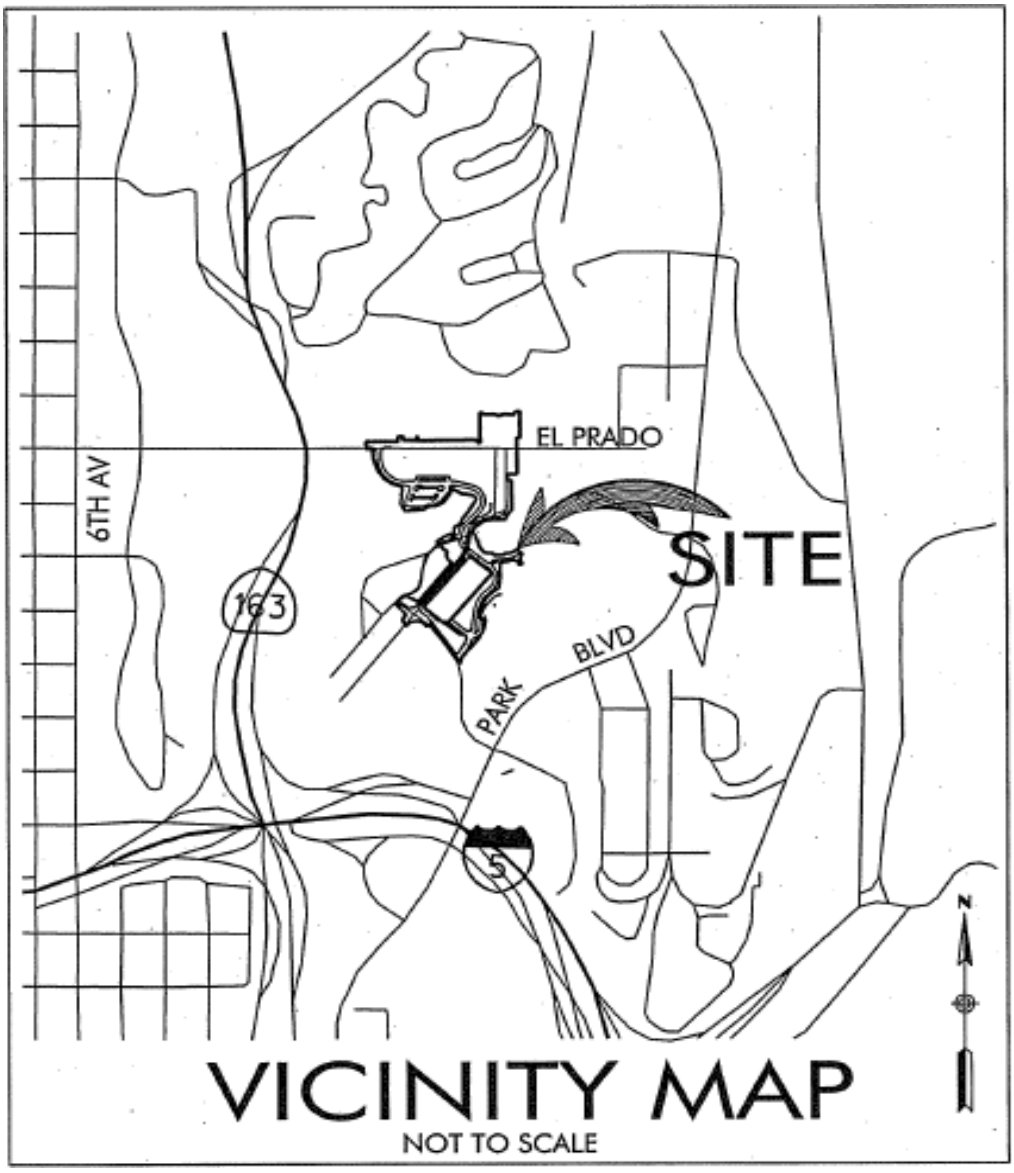
1.4 Water Quality

Post-project storm water runoff will be treated per the City of San Diego's Storm Water Standards, dated January 14, 2011, and will be discussed in the report titled, "Water Quality Technical Report for Balboa Park Plaza," dated December 21, 2011, prepared by Rick Engineering Company (Job No. 16325). In order to meet the Final Hydromodification Criteria, a preliminary hydromodification management plan (HMP) is also addressed within the Water Quality Technical Report (WQTR) for the project.

1.5 Hydromodification Management Requirements

According to the Storm Water Standards, Priority Development Projects must be designed so that runoff rates and durations are controlled to maintain or reduce pre-project downstream erosion conditions and protect stream habitat. In order to comply with the Storm Water Standards and the Final Hydromodification Management Plan, dated March 2011, a preliminary hydromodification management plan is discussed within the Water Quality Technical Report (WQTR) for the project.

Figure 1: Vicinity Map



2.0 HYDROLOGY

2.1 Methodology

The City of San Diego Drainage Design Manual April 1984 requires that the Modified Rational Method be used for hydrologic analysis of a watershed up to but not exceeding 1.0 square-mile (640 acres). The Rational Method computer program developed by Advanced Engineering Software (AES 2003) was used for this study because it satisfies the City of San Diego's design criteria.

2.1.1 Modified Rational Method

The AES hydrologic model is developed by creating independent node-link models of each interior drainage basin and linking these sub-models together at confluence points. The program has the capability to perform calculations for 15 hydrologic processes. These processes are assigned code numbers that appear in the results. The code numbers and their significance are as follows:

Code 1: Confluence analysis at a node
Code 2: Initial subarea analysis
Code 3: Pipe flow travel time (computer-estimated pipe sizes)
Code 4: Pipe flow travel time (user-specified pipe size)
Code 5: Trapezoidal channel travel time
Code 6: Street flow analysis through a subarea
Code 7: User-specified information at a node
Code 8: Addition of the subarea runoff to mainline
Code 9: V-Gutter flow thru subarea
Code 10: Copy main-stream data onto a memory bank
Code 11: Confluence a memory bank with the main-stream memory
Code 12: Clear a memory bank
Code 13: Clear the main-stream memory

Code 14: Copy a memory bank onto the main-stream memory

Code 15: Hydrologic data bank storage functions

In order to perform the hydrologic analysis; base information for the study area is required. This information includes the existing drainage facility locations and sizes, existing land uses, flow patterns, drainage basin boundaries, and topographic elevations. Drainage basin boundaries, flow patterns, and topographic elevations are shown on the drainage exhibits located in the map pockets.

2.2 Criteria

The hydrologic conditions were analyzed in accordance with the City of San Diego's design criteria as follows:

Design Storm: 100-year

Runoff Coefficients*:

0% Impervious	C = 0.45
100% Impervious	C = 0.95

Soil Type: D

Rainfall Intensity: Based on time-intensity criteria per City of San Diego

* Weighted runoff coefficients were used where appropriate based on a percentage of 0.95 and 0.45. Refer to Appendix C for calculations.

2.3 Hydrologic Results

Rational Method computer outputs for the pre- and post-project conditions can be found in Appendices A and B, respectively. Watershed boundaries, Rational Method node numbers, flow patterns, and areas can be found on the workmaps titled, "Drainage Study Map for Balboa Park Plaza [Pre-project]," and "Drainage Study Map for Balboa Park Plaza [Post-project]," located in Map Pockets 1 and 2, respectively. A summary of the hydrologic results for the pre- and post-project conditions at points of interest can be found in Appendix E of this report. Based on the summary, the post-project condition would maintain similar drainage patterns for each drainage basin compared to pre-project conditions and result in similar post-project peak flow rates towards Basin 100, Basin 150, Basin 200, the combination of Basins 300 and 400 (since they confluence within the same storm drain system), and Basin 500.

For Basin 100, while drainage patterns will remain similar; there is a slight increase to impervious cover. Despite the increase in the impervious surface, the post-project condition will result in a slight reduction to the peak flow rate. The primary reason for the reduction in the peak flow rate is a result of a longer flow path based on the proposed routing for storm water runoff through Basin 100 to the existing canyon. Therefore, for flood control purposes, there are no significant impacts anticipated for the existing downstream pipe (i.e. – the existing pipe connecting to the SR 163 storm drain system). If proposed routing is determined to cause an increase in peak flow rates during final engineering, then the downstream pipe will be checked for adequate capacity to handle the increase to the 100-year storm event. If found to be inadequate, detention will be provided to reduce the 100-year post-project flow rate back to pre-project conditions prior to discharging into the existing storm drain in SR 163.

As a result of the increase to impervious surface within Basin 100, the project includes a hydromodification management plan (HMP) to manage, detain, and attenuate post-project runoff rates and duration to maintain or reduce pre-project downstream erosion conditions and protect stream habitat (pursuant to the Hydromodification Management Requirements outlined in Section 4.5 of the City of San Diego Storm Water Standards Manual, January 2011).

The post-project drainage characteristics of the fill disposal site such as tributary area, flow paths, impervious area, and time of concentration to each outlet point will mimic the pre-project condition drainage characteristics. Furthermore, the project does not propose impervious surfaces within the fill disposal site. Therefore, there will be no change to the runoff coefficient and peak flow rates for the fill disposal site. As a result, it is anticipated that this project will not adversely impact the hydraulics of existing drainage systems located downstream of the project. Major drainage basin boundary, flow patterns, and areas for three (3) areas of the fill disposal site can be found on the workmap titled, "Drainage Study Map for Fill Disposal Site [Pre-project & Post-project]," located in Map Pocket 3 of this report.

3.0 HYDRAULICS

3.1 Hydraulic Methodology and Criteria

The 100-year post-project peak flow rates determined using the Modified Rational Method were used to preliminarily size the on-site storm drain system. Additional hydraulic analyses such as open channel sizing for brow ditches and vegetated swales, proposed inlet sizing, dry lane calculations, and energy dissipaters will be prepared during final engineering. The AES Pipe Flow Hydraulics computer program will be used during final engineering to analyze hydraulic losses that occur within the proposed storm drain system to determine the hydraulic grade lines (HGLs) within the mainline systems.

3.1.1 Storm Drain Sizing

Proposed storm drain pipes were designed using Manning's equation. The anticipated 100-year flow rate to each storm drain pipe was estimated by the Modified Rational Method. The anticipated 100-year flow rate with a 30% bump-up factor was used in calculations to provide recommended storm drain sizes. The 30% bump-up helps account for hydraulic losses within the system. A preliminary (general) storm drain sizing table was created to size proposed storm drain pipes.

Storm Drain Results

The preliminary storm drain sizing table is provided in Appendix D of this report.

3.1.2 Open Channel Design

Vegetated swales and brow ditches will be designed using Manning's equation (normal depth). The anticipated runoff to each swale and brow ditch will be estimated by the Modified Rational Method.

Vegetated Swale Results

The channel sizing calculations including vegetated swales and brow ditches will take place during final engineering of this project.

3.1.3 Inlet Design

Inlet design calculations will be completed using a computer program based on the following equations for inlets on a grade and inlets in a sump:

Type B Inlets on a Grade

$$Q = 0.7\ L\ (a + y)^{3/2}$$

Where:
- y = depth of flow approaching the curb inlet, in feet (ft)
- a = depth of depression of curb at inlet, in feet (ft)
- L = length of clear opening of inlet for total interception, in feet (ft)
- Q = interception capacity of the curb inlet, in cubic feet per second (cfs)

Type B Inlets in a Sump

$$Q/L = 1.5\ cfs/ft$$

Where:
- Q = inlet capacity, in cubic feet per second (cfs)
- L = length of clear opening of inlet for total interception, in feet (ft)

Inlet Results

Preliminary inlet locations have been identified for the project and reflect on the site development plan. The inlet design calculations along with back up information will be presented during final engineering for the project and are not included in this report. Inlets will be sized for the 100-year, 6-hour storm event. Inlets will be sized to provide 100% capture of the flow.

4.0 CONCLUSION

This drainage study presents the hydrologic and hydraulic analyses for the Balboa Park Plaza project. The pre-project and post-project condition peak discharge rates were determined using the Modified Rational Method based on the hydrologic methodology and criteria described in the City of San Diego Drainage Design Manual April 1984.

The overall drainage area as well as the drainage characteristics in the post-project condition will remain similar as compared to the pre-project conditions. It is currently anticipated that the project will result in an overall decrease to impervious surfaces; however, a slight increase will occur within one drainage basin. As a result, the project as a whole will not result in an increase in storm water runoff, including the one drainage basin that resulted in an increase to impervious area primarily due to a longer flow path in the post-project condition. Therefore, it is anticipated that the project will not adversely impact the hydraulics of existing drainage systems located downstream of the project. The project will also include LID/IMPs and Treatment Control BMPs that will further reduce/slow runoff for post-project conditions.

Preliminary storm drain sizes have been determined based on the 100-year peak flow rates. Detailed hydraulic calculations for the proposed storm drain system will take place during final engineering of this project, and are not included in this report. The 100-year, 6-hour peak flow rates will be utilized to size open channels and the proposed inlets. Inlets will be sized to provide 100% capture of the flow.

Post-project runoff will be treated per the Storm Water Standards Manual. Please refer to the report titled, "Water Quality Technical Report for Balboa Park Plaza," dated December 21, 2011, prepared by Rick Engineering Company (Job No. 16325), for more information on water quality. In order to meet the Final Hydromodification Criteria and to address downstream conditions of concern, a preliminary hydromodification management approach is also discussed within the Water Quality Technical Report (WQTR) for the project.

APPENDIX A

Modified Rational Method Output
[Pre-project]

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          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                         Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR PRE-PROJECT                                            *
* BASIN 100                                                               *
 **************************************************************************

  FILE NAME: BP100E00.RAT
  TIME/DATE OF STUDY: 11:41 10/07/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ==================  ======  ======  ====  =====  ======
  1   30.0     20.0    0.018/0.018/0.020    0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020    0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020    0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020    0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5500
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    268.50
 DOWNSTREAM ELEVATION(FEET) =    265.00
 ELEVATION DIFFERENCE(FEET) =      3.50
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    6.521
 *CAUTION: SUBAREA SLOPE EXCEEDS COUNTY NOMOGRAPH
  DEFINITION. EXTRAPOLATION OF NOMOGRAPH USED.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.111
 SUBAREA RUNOFF(CFS) =      0.45
 TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.45

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    114.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    265.00  DOWNSTREAM(FEET) =    195.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   273.00   CHANNEL SLOPE =  0.2564
 CHANNEL BASE(FEET) =   20.00   "Z" FACTOR =   5.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =   5.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.692
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      1.71
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.06
 AVERAGE FLOW DEPTH(FEET) =   0.04   TRAVEL TIME(MIN.) =   2.20
 Tc(MIN.) =   8.73
 SUBAREA AREA(ACRES) =     1.30       SUBAREA RUNOFF(CFS) =    2.50
 TOTAL AREA(ACRES) =      1.50        PEAK FLOW RATE(CFS) =       2.95

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.06   FLOW VELOCITY(FEET/SEC.) =   2.58
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =   373.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    114.00 TO NODE    120.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    195.00  DOWNSTREAM(FEET) =    150.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   526.00   CHANNEL SLOPE =  0.0856
 CHANNEL BASE(FEET) =    4.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.378
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4800
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      7.50
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.54
 AVERAGE FLOW DEPTH(FEET) =   0.33   TRAVEL TIME(MIN.) =   1.93
```

```
 Tc(MIN.) =  10.66
 SUBAREA AREA(ACRES) =     5.60       SUBAREA RUNOFF(CFS) =     9.08
 TOTAL AREA(ACRES) =      7.10        PEAK FLOW RATE(CFS) =      12.03

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.43   FLOW VELOCITY(FEET/SEC.) =   5.29
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    120.00 =   899.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =      7.10  TC(MIN.) =     10.66
 PEAK FLOW RATE(CFS)    =     12.03
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR PRE-PROJECT                                            *
* BASIN 150                                                               *
 **************************************************************************

  FILE NAME: BP150E00.RAT
  TIME/DATE OF STUDY: 16:19 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)   (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ======  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE     150.00 TO NODE     151.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
 UPSTREAM ELEVATION(FEET) =  267.50
 DOWNSTREAM ELEVATION(FEET) =  267.00
 ELEVATION DIFFERENCE(FEET) =  0.50
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =  4.989
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =  0.74
 TOTAL AREA(ACRES) =  0.20  TOTAL RUNOFF(CFS) =  0.74

****************************************************************************
 FLOW PROCESS FROM NODE     151.00 TO NODE     152.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  267.00  DOWNSTREAM ELEVATION(FEET) =  262.00
 STREET LENGTH(FEET) =  300.00  CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =  0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  5.61
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.31
   HALFSTREET FLOOD WIDTH(FEET) =  10.33
   AVERAGE FLOW VELOCITY(FEET/SEC.) =  2.43
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  0.76
 STREET FLOW TRAVEL TIME(MIN.) =  2.06  Tc(MIN.) =  8.06
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.819
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7700
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =  3.30  SUBAREA RUNOFF(CFS) =  9.71
 TOTAL AREA(ACRES) =  3.50  PEAK FLOW RATE(CFS) =  10.45

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.37  HALFSTREET FLOOD WIDTH(FEET) =  13.00
 FLOW VELOCITY(FEET/SEC.) =  2.83  DEPTH*VELOCITY(FT*FT/SEC.) =  1.05
 LONGEST FLOWPATH FROM NODE  150.00 TO NODE  152.00 =  400.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE     152.00 TO NODE     155.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
```

```
==========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   260.00  DOWNSTREAM(FEET) =   251.00
  FLOW LENGTH(FEET) =   435.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.4 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   8.88
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     10.45
  PIPE TRAVEL TIME(MIN.) =   0.82    Tc(MIN.) =   8.87
  LONGEST FLOWPATH FROM NODE    150.00 TO NODE    155.00 =   835.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    155.00 TO NODE    155.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==========================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.664
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .9500
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     1.50   SUBAREA RUNOFF(CFS) =     5.22
  TOTAL AREA(ACRES) =      5.00   TOTAL RUNOFF(CFS) =   15.67
  TC(MIN.) =   8.87
==========================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      5.00  TC(MIN.) =      8.87
  PEAK FLOW RATE(CFS)    =     15.67
==========================================================================
==========================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR PRE-PROJECT                                            *
* BASIN 200                                                               *
 **************************************************************************

  FILE NAME: BP200E00.RAT
  TIME/DATE OF STUDY: 16:24 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)     SIDE / SIDE/ WAY    (FT)    (FT)   (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ======  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    280.00
 DOWNSTREAM ELEVATION(FEET) =    278.00
 ELEVATION DIFFERENCE(FEET) =      2.00
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.143
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =      0.74
 TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.74

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  1 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  278.00  DOWNSTREAM ELEVATION(FEET) =  271.00
 STREET LENGTH(FEET) =   600.00   CURB HEIGHT(INCHES) =  8.0
 STREET HALFWIDTH(FEET) = 30.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
 INSIDE STREET CROSSFALL(DECIMAL) =  0.018
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.018

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      9.52
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.40
   HALFSTREET FLOOD WIDTH(FEET) =   13.16
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.73
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.09
 STREET FLOW TRAVEL TIME(MIN.) =   3.66   Tc(MIN.) =   9.66
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.515
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8400
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =    5.90      SUBAREA RUNOFF(CFS) =   17.42
 TOTAL AREA(ACRES) =      6.10        PEAK FLOW RATE(CFS) =      18.16

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.47   HALFSTREET FLOOD WIDTH(FEET) =  17.30
 FLOW VELOCITY(FEET/SEC.) =  3.17   DEPTH*VELOCITY(FT*FT/SEC.) =   1.49
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =   700.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
```

```
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   268.00  DOWNSTREAM(FEET) =   266.00
  FLOW LENGTH(FEET) =   264.00   MANNING'S N =  0.013
  ASSUME FULL-FLOWING PIPELINE
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.28
  PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     18.16
  PIPE TRAVEL TIME(MIN.) =   0.43    Tc(MIN.) =  10.09
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =   964.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    203.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.440
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .9200
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     1.30   SUBAREA RUNOFF(CFS) =     4.11
  TOTAL AREA(ACRES) =       7.40   TOTAL RUNOFF(CFS) =    22.28
  TC(MIN.) =  10.09

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    203.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.440
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8800
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     1.30   SUBAREA RUNOFF(CFS) =     3.94
  TOTAL AREA(ACRES) =       8.70   TOTAL RUNOFF(CFS) =    26.21
  TC(MIN.) =  10.09

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    205.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   266.00  DOWNSTREAM(FEET) =   250.80
  FLOW LENGTH(FEET) =   200.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  14.0 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  17.75
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     26.21
  PIPE TRAVEL TIME(MIN.) =   0.19    Tc(MIN.) =  10.27
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    205.00 =  1164.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    205.00 TO NODE    205.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.420
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .7400
  S.C.S. CURVE NUMBER (AMC II) =   0
```

```
 SUBAREA AREA(ACRES) =     0.70   SUBAREA RUNOFF(CFS) =     1.77
 TOTAL AREA(ACRES) =       9.40   TOTAL RUNOFF(CFS) =    27.98
 TC(MIN.) =  10.27

****************************************************************************
 FLOW PROCESS FROM NODE    205.00 TO NODE    205.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.420
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7400
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =     0.40   SUBAREA RUNOFF(CFS) =     1.01
 TOTAL AREA(ACRES) =       9.80   TOTAL RUNOFF(CFS) =    29.00
 TC(MIN.) =  10.27

****************************************************************************
 FLOW PROCESS FROM NODE    205.00 TO NODE    206.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   242.30  DOWNSTREAM(FEET) =   228.50
 FLOW LENGTH(FEET) =   100.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  12.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  23.25
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     29.00
 PIPE TRAVEL TIME(MIN.) =   0.07    Tc(MIN.) =  10.35
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    206.00 =  1264.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    206.00 TO NODE    207.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   228.10  DOWNSTREAM(FEET) =   225.10
 FLOW LENGTH(FEET) =    19.70   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS   9.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  24.29
 GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     29.00
 PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =  10.36
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    207.00 =  1283.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    207.00 TO NODE    208.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   224.80  DOWNSTREAM(FEET) =   216.70
 FLOW LENGTH(FEET) =   119.90   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  12.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  17.98
 GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     29.00
 PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =  10.47
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    208.00 =  1403.60 FEET.
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    208.00 TO NODE    208.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =  10.47
 RAINFALL INTENSITY(INCH/HR) =   3.40
 TOTAL STREAM AREA(ACRES) =     9.80
 PEAK FLOW RATE(CFS) AT CONFLUENCE =     29.00

****************************************************************************
 FLOW PROCESS FROM NODE    209.00 TO NODE    210.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7900
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    269.60
 DOWNSTREAM ELEVATION(FEET) =    269.20
 ELEVATION DIFFERENCE(FEET) =      0.40
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    7.573
 *CAUTION: SUBAREA SLOPE EXCEEDS COUNTY NOMOGRAPH
  DEFINITION. EXTRAPOLATION OF NOMOGRAPH USED.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.911
 SUBAREA RUNOFF(CFS) =      0.31
 TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.31

****************************************************************************
 FLOW PROCESS FROM NODE    210.00 TO NODE    211.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  269.20  DOWNSTREAM ELEVATION(FEET) =  250.70
 STREET LENGTH(FEET) =   439.90   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.64
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.24
   HALFSTREET FLOOD WIDTH(FEET) =    6.73
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.05
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.73
 STREET FLOW TRAVEL TIME(MIN.) =   2.40   Tc(MIN.) =   9.98
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.455
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7700
```

```
 S.C.S. CURVE NUMBER (AMC II) =    0
 SUBAREA AREA(ACRES) =     1.00      SUBAREA RUNOFF(CFS) =     2.66
 TOTAL AREA(ACRES) =      1.10       PEAK FLOW RATE(CFS) =       2.97

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.28   HALFSTREET FLOOD WIDTH(FEET) =   8.71
 FLOW VELOCITY(FEET/SEC.) =  3.51   DEPTH*VELOCITY(FT*FT/SEC.) =   0.98
 LONGEST FLOWPATH FROM NODE    209.00 TO NODE    211.00 =   539.90 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    211.00 TO NODE    211.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.455
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) =    0
 SUBAREA AREA(ACRES) =     1.30   SUBAREA RUNOFF(CFS) =     3.95
 TOTAL AREA(ACRES) =      2.40   TOTAL RUNOFF(CFS) =     6.92
 TC(MIN.) =   9.98

****************************************************************************
 FLOW PROCESS FROM NODE    211.00 TO NODE    212.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   250.40  DOWNSTREAM(FEET) =   219.60
 FLOW LENGTH(FEET) =   143.40   MANNING'S N =  0.013
 DEPTH OF FLOW IN  10.0 INCH PIPE IS   6.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  19.27
 GIVEN PIPE DIAMETER(INCH) =  10.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      6.92
 PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =  10.10
 LONGEST FLOWPATH FROM NODE    209.00 TO NODE    212.00 =   683.30 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    212.00 TO NODE    208.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   219.20  DOWNSTREAM(FEET) =   216.50
 FLOW LENGTH(FEET) =    36.30   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS   6.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  12.89
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      6.92
 PIPE TRAVEL TIME(MIN.) =   0.05    Tc(MIN.) =  10.15
 LONGEST FLOWPATH FROM NODE    209.00 TO NODE    208.00 =   719.60 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    208.00 TO NODE    208.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =  10.15
```

```
 RAINFALL INTENSITY(INCH/HR) =   3.43
 TOTAL STREAM AREA(ACRES) =      2.40
 PEAK FLOW RATE(CFS) AT CONFLUENCE =       6.92

 ** CONFLUENCE DATA **
 STREAM      RUNOFF       Tc       INTENSITY       AREA
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)     (ACRE)
     1        29.00     10.47         3.398          9.80
     2         6.92     10.15         3.434          2.40

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM      RUNOFF       Tc       INTENSITY
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)
     1        35.62     10.15         3.434
     2        35.84     10.47         3.398

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      35.84   Tc(MIN.) =   10.47
 TOTAL AREA(ACRES) =      12.20
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    208.00 =  1403.60 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    208.00 TO NODE    213.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   216.50  DOWNSTREAM(FEET) =   211.00
 FLOW LENGTH(FEET) =    80.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  13.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  19.03
 GIVEN PIPE DIAMETER(INCH) =  24.00   NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      35.84
 PIPE TRAVEL TIME(MIN.) =   0.07    Tc(MIN.) =  10.54
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    213.00 =  1483.60 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    213.00 TO NODE    220.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    211.00  DOWNSTREAM(FEET) =    142.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   889.80   CHANNEL SLOPE =  0.0775
 CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   5.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.156
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5400
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     44.73
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.96
 AVERAGE FLOW DEPTH(FEET) =   0.95   TRAVEL TIME(MIN.) =   2.13
 Tc(MIN.) =  12.67
 SUBAREA AREA(ACRES) =    10.40       SUBAREA RUNOFF(CFS) =   17.73
 TOTAL AREA(ACRES) =     22.60        PEAK FLOW RATE(CFS) =      53.57

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
```

```
 DEPTH(FEET) =  1.03   FLOW VELOCITY(FEET/SEC.) =   7.24
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    220.00 =  2373.40 FEET.
====================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =     22.60  TC(MIN.) =     12.67
 PEAK FLOW RATE(CFS)    =     53.57
====================================================================
====================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
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                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR PRE-PROJECT                                            *
* BASIN 300                                                               *
 **************************************************************************

  FILE NAME: BP300E00.RAT
  TIME/DATE OF STUDY: 16:47 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)      (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  =================  ======  =====  ======  =====  =======
  1   30.0      20.0   0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0       6.5   0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0      54.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0      46.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
 UPSTREAM ELEVATION(FEET) =  259.10
 DOWNSTREAM ELEVATION(FEET) =  257.80
 ELEVATION DIFFERENCE(FEET) =  1.30
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =  2.474
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =  0.40
 TOTAL AREA(ACRES) =  0.10  TOTAL RUNOFF(CFS) =  0.40

****************************************************************************
 FLOW PROCESS FROM NODE    301.00 TO NODE    340.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  257.80  DOWNSTREAM ELEVATION(FEET) =  215.00
 STREET LENGTH(FEET) =  1260.00  CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =  0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  4.12
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.31
   HALFSTREET FLOOD WIDTH(FEET) =  10.49
   AVERAGE FLOW VELOCITY(FEET/SEC.) =  3.47
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  1.09
 STREET FLOW TRAVEL TIME(MIN.) =  6.05  Tc(MIN.) =  12.05
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.225
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7800
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =  2.90  SUBAREA RUNOFF(CFS) =  7.29
 TOTAL AREA(ACRES) =  3.00  PEAK FLOW RATE(CFS) =  7.69

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.37  HALFSTREET FLOOD WIDTH(FEET) =  13.00
 FLOW VELOCITY(FEET/SEC.) =  3.96  DEPTH*VELOCITY(FT*FT/SEC.) =  1.44
 LONGEST FLOWPATH FROM NODE  300.00 TO NODE  340.00 =  1360.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)  =  3.00  TC(MIN.) =  12.05
 PEAK FLOW RATE(CFS)  =  7.69
============================================================================
============================================================================
```

END OF RATIONAL METHOD ANALYSIS

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
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            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR PRE-PROJECT                                            *
* BASIN 400                                                               *
 **************************************************************************

  FILE NAME: BP400E00.RAT
  TIME/DATE OF STUDY: 17:31 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)   (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ======  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6000
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    259.90
 DOWNSTREAM ELEVATION(FEET) =    259.00
 ELEVATION DIFFERENCE(FEET) =      0.90
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    9.322
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.579
 SUBAREA RUNOFF(CFS) =      0.21
 TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.21

****************************************************************************
 FLOW PROCESS FROM NODE    401.00 TO NODE    402.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    259.00  DOWNSTREAM(FEET) =    250.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   105.00   CHANNEL SLOPE =  0.0857
 CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =   2.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.448
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      0.48
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.53
 AVERAGE FLOW DEPTH(FEET) =   0.15   TRAVEL TIME(MIN.) =   0.69
 Tc(MIN.) =  10.01
 SUBAREA AREA(ACRES) =     0.30       SUBAREA RUNOFF(CFS) =    0.54
 TOTAL AREA(ACRES) =      0.40        PEAK FLOW RATE(CFS) =       0.75

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.19   FLOW VELOCITY(FEET/SEC.) =   2.91
 LONGEST FLOWPATH FROM NODE    400.00 TO NODE    402.00 =   205.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    402.00 TO NODE    403.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    251.00  DOWNSTREAM(FEET) =    249.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   205.00   CHANNEL SLOPE =  0.0098
 CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =  50.000
 MANNING'S FACTOR = 0.018   MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.229
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9100
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      3.54
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.71
 AVERAGE FLOW DEPTH(FEET) =   0.19   TRAVEL TIME(MIN.) =   2.00
 Tc(MIN.) =  12.01
 SUBAREA AREA(ACRES) =     1.90       SUBAREA RUNOFF(CFS) =    5.58
```

```
 TOTAL AREA(ACRES) =      2.30          PEAK FLOW RATE(CFS) =       6.34

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.24   FLOW VELOCITY(FEET/SEC.) =   2.04
 LONGEST FLOWPATH FROM NODE    400.00 TO NODE    403.00 =   410.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    403.00 TO NODE    410.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   246.00  DOWNSTREAM(FEET) =   216.00
 FLOW LENGTH(FEET) =    84.40   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS   4.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  21.95
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      6.34
 PIPE TRAVEL TIME(MIN.) =   0.06    Tc(MIN.) =  12.07
 LONGEST FLOWPATH FROM NODE    400.00 TO NODE    410.00 =   494.40 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    410.00 TO NODE    410.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =  12.07
 RAINFALL INTENSITY(INCH/HR) =   3.22
 TOTAL STREAM AREA(ACRES) =     2.30
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      6.34

****************************************************************************
 FLOW PROCESS FROM NODE    405.00 TO NODE    406.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    249.80
 DOWNSTREAM ELEVATION(FEET) =    249.30
 ELEVATION DIFFERENCE(FEET) =      0.50
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.402
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =      0.40
 TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.40

****************************************************************************
 FLOW PROCESS FROM NODE    406.00 TO NODE    407.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    249.30  DOWNSTREAM(FEET) =    246.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   154.00   CHANNEL SLOPE =  0.0214
 CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =  25.000
 MANNING'S FACTOR = 0.018   MAXIMUM DEPTH(FEET) =  10.00
```

```
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.971
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9500
S.C.S. CURVE NUMBER (AMC II) =  0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      0.97
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.04
AVERAGE FLOW DEPTH(FEET) =   0.12   TRAVEL TIME(MIN.) =   1.26
Tc(MIN.) =   7.26
SUBAREA AREA(ACRES) =     0.30      SUBAREA RUNOFF(CFS) =    1.13
TOTAL AREA(ACRES) =      0.40       PEAK FLOW RATE(CFS) =       1.53

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.15   FLOW VELOCITY(FEET/SEC.) =   2.21
LONGEST FLOWPATH FROM NODE    405.00 TO NODE    407.00 =   254.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    407.00 TO NODE    410.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  246.00  DOWNSTREAM ELEVATION(FEET) =  214.00
 STREET LENGTH(FEET) =   327.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.14
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.23
   HALFSTREET FLOOD WIDTH(FEET) =    6.23
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.52
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.04
 STREET FLOW TRAVEL TIME(MIN.) =   1.21   Tc(MIN.) =   8.47
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.741
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6500
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =     0.50      SUBAREA RUNOFF(CFS) =    1.22
 TOTAL AREA(ACRES) =      0.90       PEAK FLOW RATE(CFS) =       2.75

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.24   HALFSTREET FLOOD WIDTH(FEET) =   6.98
 FLOW VELOCITY(FEET/SEC.) =  4.79   DEPTH*VELOCITY(FT*FT/SEC.) =   1.17
 LONGEST FLOWPATH FROM NODE    405.00 TO NODE    410.00 =   581.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    410.00 TO NODE    410.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
```

```
 TIME OF CONCENTRATION(MIN.) =    8.47
 RAINFALL INTENSITY(INCH/HR) =    3.74
 TOTAL STREAM AREA(ACRES) =      0.90
 PEAK FLOW RATE(CFS) AT CONFLUENCE =       2.75

 ** CONFLUENCE DATA **
 STREAM      RUNOFF       Tc       INTENSITY       AREA
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)     (ACRE)
     1         6.34     12.07         3.222          2.30
     2         2.75      8.47         3.741          0.90

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM      RUNOFF       Tc       INTENSITY
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)
     1         8.20      8.47         3.741
     2         8.70     12.07         3.222

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =       8.70   Tc(MIN.) =   12.07
 TOTAL AREA(ACRES) =       3.20
 LONGEST FLOWPATH FROM NODE    405.00 TO NODE    410.00 =   581.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    410.00 TO NODE    450.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  214.00  DOWNSTREAM ELEVATION(FEET) =  180.00
 STREET LENGTH(FEET) =   320.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       9.00
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.33
   HALFSTREET FLOOD WIDTH(FEET) =   11.40
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    6.49
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    2.16
 STREET FLOW TRAVEL TIME(MIN.) =   0.82   Tc(MIN.) =  12.90
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.131
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =     0.20      SUBAREA RUNOFF(CFS) =     0.59
 TOTAL AREA(ACRES) =       3.40        PEAK FLOW RATE(CFS) =       9.30

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.34   HALFSTREET FLOOD WIDTH(FEET) =  11.55
 FLOW VELOCITY(FEET/SEC.) =  6.54   DEPTH*VELOCITY(FT*FT/SEC.) =   2.20
```

```
 LONGEST FLOWPATH FROM NODE    405.00 TO NODE    450.00 =    901.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE    408.00 TO NODE    409.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7900
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
 UPSTREAM ELEVATION(FEET) =  260.00
 DOWNSTREAM ELEVATION(FEET) =  256.00
 ELEVATION DIFFERENCE(FEET) =  4.00
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =  3.515
 *CAUTION: SUBAREA SLOPE EXCEEDS COUNTY NOMOGRAPH
  DEFINITION. EXTRAPOLATION OF NOMOGRAPH USED.
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =  0.33
 TOTAL AREA(ACRES) =  0.10   TOTAL RUNOFF(CFS) =  0.33

****************************************************************************
 FLOW PROCESS FROM NODE    409.00 TO NODE    410.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  256.00  DOWNSTREAM ELEVATION(FEET) =  248.90
 STREET LENGTH(FEET) =  96.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =  0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  0.94
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.15
   HALFSTREET FLOOD WIDTH(FEET) =  2.40
   AVERAGE FLOW VELOCITY(FEET/SEC.) =  3.28
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  0.50
 STREET FLOW TRAVEL TIME(MIN.) =  0.49  Tc(MIN.) =  6.49
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.117
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7400
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =  0.40   SUBAREA RUNOFF(CFS) =  1.22
 TOTAL AREA(ACRES) =  0.50   PEAK FLOW RATE(CFS) =  1.55
```

```
  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.18   HALFSTREET FLOOD WIDTH(FEET) =   3.80
  FLOW VELOCITY(FEET/SEC.) =  3.36   DEPTH*VELOCITY(FT*FT/SEC.) =   0.61
  LONGEST FLOWPATH FROM NODE    408.00 TO NODE    410.00 =   196.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    410.00 TO NODE    415.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   248.90  DOWNSTREAM(FEET) =   211.50
  FLOW LENGTH(FEET) =   178.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS   2.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  12.05
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      1.55
  PIPE TRAVEL TIME(MIN.) =   0.25    Tc(MIN.) =   6.73
  LONGEST FLOWPATH FROM NODE    408.00 TO NODE    415.00 =   374.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    415.00 TO NODE    450.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    211.50  DOWNSTREAM(FEET) =    180.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   325.00   CHANNEL SLOPE =  0.0969
  CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  10.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.829
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4800
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      3.12
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   4.26
  AVERAGE FLOW DEPTH(FEET) =   0.29   TRAVEL TIME(MIN.) =   1.27
  Tc(MIN.) =   8.01
  SUBAREA AREA(ACRES) =     1.70       SUBAREA RUNOFF(CFS) =    3.12
  TOTAL AREA(ACRES) =      2.20        PEAK FLOW RATE(CFS) =       4.68

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.36   FLOW VELOCITY(FEET/SEC.) =   4.85
  LONGEST FLOWPATH FROM NODE    408.00 TO NODE    450.00 =   699.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.829
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .5500
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     2.80   SUBAREA RUNOFF(CFS) =    5.90
  TOTAL AREA(ACRES) =      5.00   TOTAL RUNOFF(CFS) =   10.57
  TC(MIN.) =   8.01

****************************************************************************
  FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  11
----------------------------------------------------------------------------
```

```
  >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
================================================================================

  ** MAIN STREAM CONFLUENCE DATA **
  STREAM      RUNOFF      Tc       INTENSITY      AREA
  NUMBER       (CFS)    (MIN.)    (INCH/HOUR)    (ACRE)
      1        10.57      8.01        3.829         5.00
  LONGEST FLOWPATH FROM NODE    408.00 TO NODE    450.00 =    699.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM      RUNOFF      Tc       INTENSITY      AREA
  NUMBER       (CFS)    (MIN.)    (INCH/HOUR)    (ACRE)
      1         9.30     12.90        3.131         3.40
  LONGEST FLOWPATH FROM NODE    405.00 TO NODE    450.00 =    901.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM     RUNOFF       Tc       INTENSITY
  NUMBER      (CFS)      (MIN.)    (INCH/HOUR)
      1       18.18        8.01         3.829
      2       17.94       12.90         3.131

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =     18.18   Tc(MIN.) =     8.01
  TOTAL AREA(ACRES) =      8.40

********************************************************************************
  FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  12
--------------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
================================================================================
================================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =       8.40  TC(MIN.) =       8.01
  PEAK FLOW RATE(CFS)    =      18.18
================================================================================
================================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************* DESCRIPTION OF STUDY *************************
* J-16325; BALBOA PARK PLAZA                                            *
* 100-YEAR, 6-HOUR PRE-PROJECT                                          *
* BASIN 500                                                             *
 ************************************************************************

  FILE NAME: BP500E00.RAT
  TIME/DATE OF STUDY: 16:45 09/29/2011
------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:    CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)      (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ====  =====  =======
  1   30.0      20.0   0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0       6.5   0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0      54.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0      46.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    258.80
 DOWNSTREAM ELEVATION(FEET) =    258.40
 ELEVATION DIFFERENCE(FEET) =      0.40
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =   14.169
 *CAUTION: SUBAREA SLOPE EXCEEDS COUNTY NOMOGRAPH
  DEFINITION. EXTRAPOLATION OF NOMOGRAPH USED.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.991
 SUBAREA RUNOFF(CFS) =      0.16
 TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.16

****************************************************************************
 FLOW PROCESS FROM NODE    501.00 TO NODE    510.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    258.40  DOWNSTREAM(FEET) =    240.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   645.00   CHANNEL SLOPE =  0.0285
 CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =  50.000
 MANNING'S FACTOR = 0.018   MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.620
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6800
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      2.91
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.48
 AVERAGE FLOW DEPTH(FEET) =   0.13   TRAVEL TIME(MIN.) =   4.34
 Tc(MIN.) =  18.50
 SUBAREA AREA(ACRES) =     3.10       SUBAREA RUNOFF(CFS) =    5.52
 TOTAL AREA(ACRES) =      3.20        PEAK FLOW RATE(CFS) =       5.68

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.18   FLOW VELOCITY(FEET/SEC.) =   2.92
 LONGEST FLOWPATH FROM NODE    500.00 TO NODE    510.00 =   745.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =      3.20  TC(MIN.) =     18.50
 PEAK FLOW RATE(CFS)    =      5.68
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

APPENDIX B

Modified Rational Method Output
[Post-project]

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                        2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                        Rick Engineering Company
                      1223 University Ave., Suite 240
                        Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR POST-PROJECT                                           *
* BASIN 100                                                               *
 **************************************************************************

  FILE NAME: BP100P00.RAT
  TIME/DATE OF STUDY: 16:21 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)      (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ====  =====  ======
  1   30.0      20.0   0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0       6.5   0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0      54.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0      46.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    100.00 TO NODE    101.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
 UPSTREAM ELEVATION(FEET) =  266.00
 DOWNSTREAM ELEVATION(FEET) =  263.50
 ELEVATION DIFFERENCE(FEET) =  2.50
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =  1.989
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =  0.40
 TOTAL AREA(ACRES) =  0.10  TOTAL RUNOFF(CFS) =  0.40

****************************************************************************
 FLOW PROCESS FROM NODE    101.00 TO NODE    105.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  263.50  DOWNSTREAM ELEVATION(FEET) =  255.00
 STREET LENGTH(FEET) =  450.00  CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =  0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  1.05
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.20
   HALFSTREET FLOOD WIDTH(FEET) =  4.59
   AVERAGE FLOW VELOCITY(FEET/SEC.) =  1.77
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  0.35
 STREET FLOW TRAVEL TIME(MIN.) =  4.23  Tc(MIN.) =  10.23
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.425
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =  0.40  SUBAREA RUNOFF(CFS) =  1.30
 TOTAL AREA(ACRES) =  0.50  PEAK FLOW RATE(CFS) =  1.70

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.22  HALFSTREET FLOOD WIDTH(FEET) =  5.91
 FLOW VELOCITY(FEET/SEC.) =  1.95  DEPTH*VELOCITY(FT*FT/SEC.) =  0.44
 LONGEST FLOWPATH FROM NODE  100.00 TO NODE  105.00 =  550.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    105.00 TO NODE    110.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
```

```
==========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   244.00  DOWNSTREAM(FEET) =   218.00
 FLOW LENGTH(FEET) =    90.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS   2.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  13.79
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      1.70
 PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =  10.34
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    110.00 =   640.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    110.00 TO NODE    112.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    218.00  DOWNSTREAM(FEET) =    217.50
 CHANNEL LENGTH THRU SUBAREA(FEET) =    50.00   CHANNEL SLOPE =  0.0100
 CHANNEL BASE(FEET) =   25.00   "Z" FACTOR =   3.000
 MANNING'S FACTOR = 0.035   MAXIMUM DEPTH(FEET) =   3.50
 CHANNEL FLOW THRU SUBAREA(CFS) =      1.70
 FLOW VELOCITY(FEET/SEC.) =   0.83   FLOW DEPTH(FEET) =   0.08
 TRAVEL TIME(MIN.) =   1.00   Tc(MIN.) =  11.34
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    112.00 =   690.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    112.00 TO NODE    114.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
==========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   214.00  DOWNSTREAM(FEET) =   195.00
 FLOW LENGTH(FEET) =   100.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS   2.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  11.91
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      1.70
 PIPE TRAVEL TIME(MIN.) =   0.14    Tc(MIN.) =  11.48
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    114.00 =   790.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    114.00 TO NODE    114.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==========================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.287
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4700
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =    1.00   SUBAREA RUNOFF(CFS) =    1.54
 TOTAL AREA(ACRES) =      1.50   TOTAL RUNOFF(CFS) =    3.25
 TC(MIN.) =  11.48

****************************************************************************
 FLOW PROCESS FROM NODE    114.00 TO NODE    120.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
==========================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    195.00  DOWNSTREAM(FEET) =    150.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   495.00   CHANNEL SLOPE =  0.0909
```

```
 CHANNEL BASE(FEET) =    4.00    "Z" FACTOR =    3.000
 MANNING'S FACTOR = 0.040    MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.089
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4700
 S.C.S. CURVE NUMBER (AMC II) =    0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       7.18
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =    4.57
 AVERAGE FLOW DEPTH(FEET) =    0.32    TRAVEL TIME(MIN.) =    1.81
 Tc(MIN.) =  13.29
 SUBAREA AREA(ACRES) =      5.40        SUBAREA RUNOFF(CFS) =     7.84
 TOTAL AREA(ACRES) =       6.90          PEAK FLOW RATE(CFS) =       11.08

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.41    FLOW VELOCITY(FEET/SEC.) =    5.21
 LONGEST FLOWPATH FROM NODE    100.00 TO NODE    120.00 =  1285.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =       6.90  TC(MIN.) =      13.29
 PEAK FLOW RATE(CFS)    =      11.08
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**********************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR POST-PROJECT                                           *
* BASIN 150                                                               *
 **************************************************************************

  FILE NAME: BP150P00.RAT
  TIME/DATE OF STUDY: 16:19 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)   (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ======  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    150.00 TO NODE    151.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    267.50
 DOWNSTREAM ELEVATION(FEET) =    267.00
 ELEVATION DIFFERENCE(FEET) =      0.50
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.989
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =      0.74
 TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.74

****************************************************************************
 FLOW PROCESS FROM NODE    151.00 TO NODE    152.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  267.00  DOWNSTREAM ELEVATION(FEET) =  262.00
 STREET LENGTH(FEET) =   300.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       5.61
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.31
   HALFSTREET FLOOD WIDTH(FEET) =   10.33
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.43
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.76
 STREET FLOW TRAVEL TIME(MIN.) =   2.06   Tc(MIN.) =   8.06
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.819
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7700
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =    3.30      SUBAREA RUNOFF(CFS) =    9.71
 TOTAL AREA(ACRES) =      3.50        PEAK FLOW RATE(CFS) =      10.45

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.37   HALFSTREET FLOOD WIDTH(FEET) =  13.00
 FLOW VELOCITY(FEET/SEC.) =  2.83   DEPTH*VELOCITY(FT*FT/SEC.) =   1.05
 LONGEST FLOWPATH FROM NODE    150.00 TO NODE    152.00 =   400.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    152.00 TO NODE    155.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
```

```
==============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   260.00  DOWNSTREAM(FEET) =   251.00
 FLOW LENGTH(FEET) =   435.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =   8.88
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     10.45
 PIPE TRAVEL TIME(MIN.) =   0.82    Tc(MIN.) =   8.87
 LONGEST FLOWPATH FROM NODE    150.00 TO NODE    155.00 =   835.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    155.00 TO NODE    155.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
==============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.664
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =     1.50   SUBAREA RUNOFF(CFS) =     5.22
 TOTAL AREA(ACRES) =      5.00   TOTAL RUNOFF(CFS) =   15.67
 TC(MIN.) =   8.87
==============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =       5.00  TC(MIN.) =       8.87
 PEAK FLOW RATE(CFS)    =      15.67
==============================================================================
==============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**********************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
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            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR POST-PROJECT                                           *
* BASIN 200                                                               *
 **************************************************************************

  FILE NAME: BP200P00.RAT
  TIME/DATE OF STUDY: 16:25 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ====  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    280.00
 DOWNSTREAM ELEVATION(FEET) =    278.00
 ELEVATION DIFFERENCE(FEET) =      2.00
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.143
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =      0.74
 TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.74

****************************************************************************
 FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  278.00  DOWNSTREAM ELEVATION(FEET) =  271.00
 STREET LENGTH(FEET) =   600.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       9.19
   ***STREET FLOWING FULL***
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.37
   HALFSTREET FLOOD WIDTH(FEET) =   13.00
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.43
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.91
 STREET FLOW TRAVEL TIME(MIN.) =   4.12   Tc(MIN.) =  10.12
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.437
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8200
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =    5.90      SUBAREA RUNOFF(CFS) =   16.63
 TOTAL AREA(ACRES) =      6.10        PEAK FLOW RATE(CFS) =      17.37

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.44   HALFSTREET FLOOD WIDTH(FEET) =  13.00
 FLOW VELOCITY(FEET/SEC.) =  3.12   DEPTH*VELOCITY(FT*FT/SEC.) =   1.38
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =   700.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    202.00 TO NODE    203.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   268.00  DOWNSTREAM(FEET) =   266.00
  FLOW LENGTH(FEET) =   264.00   MANNING'S N =  0.018
  ASSUME FULL-FLOWING PIPELINE
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.83
  PIPE FLOW VELOCITY = (TOTAL FLOW)/(PIPE CROSS SECTION AREA)
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     17.37
  PIPE TRAVEL TIME(MIN.) =   0.45    Tc(MIN.) =  10.57
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =   964.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    203.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.387
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .9200
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     1.30   SUBAREA RUNOFF(CFS) =     4.05
  TOTAL AREA(ACRES) =       7.40   TOTAL RUNOFF(CFS) =    21.42
  TC(MIN.) =  10.57

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    203.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.387
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8800
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     1.30   SUBAREA RUNOFF(CFS) =     3.88
  TOTAL AREA(ACRES) =       8.70   TOTAL RUNOFF(CFS) =    25.29
  TC(MIN.) =  10.57

****************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    205.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   266.00  DOWNSTREAM(FEET) =   250.80
  FLOW LENGTH(FEET) =   200.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS  13.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  17.64
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =     25.29
  PIPE TRAVEL TIME(MIN.) =   0.19    Tc(MIN.) =  10.76
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    205.00 =  1164.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    205.00 TO NODE    205.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.366
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .7400
```

```
 S.C.S. CURVE NUMBER (AMC II) =    0
 SUBAREA AREA(ACRES) =     0.70   SUBAREA RUNOFF(CFS) =     1.74
 TOTAL AREA(ACRES) =       9.40   TOTAL RUNOFF(CFS) =    27.04
 TC(MIN.) =  10.76

****************************************************************************
 FLOW PROCESS FROM NODE     205.00 TO NODE     205.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =  10.76
 RAINFALL INTENSITY(INCH/HR) =   3.37
 TOTAL STREAM AREA(ACRES) =      9.40
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      27.04

****************************************************************************
 FLOW PROCESS FROM NODE     206.00 TO NODE     207.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    267.00
 DOWNSTREAM ELEVATION(FEET) =    266.50
 ELEVATION DIFFERENCE(FEET) =      0.50
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.402
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =      0.40
 TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.40

****************************************************************************
 FLOW PROCESS FROM NODE     207.00 TO NODE     208.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  266.50  DOWNSTREAM ELEVATION(FEET) =  260.50
 STREET LENGTH(FEET) =   154.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.73
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.16
   HALFSTREET FLOOD WIDTH(FEET) =    2.63
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.35
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.37
 STREET FLOW TRAVEL TIME(MIN.) =   1.09   Tc(MIN.) =   7.09
```

```
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.003
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8300
S.C.S. CURVE NUMBER (AMC II) =  0
SUBAREA AREA(ACRES) =     0.20     SUBAREA RUNOFF(CFS) =     0.66
TOTAL AREA(ACRES) =       0.30     PEAK FLOW RATE(CFS) =       1.06

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.18   HALFSTREET FLOOD WIDTH(FEET) =   3.65
FLOW VELOCITY(FEET/SEC.) =  2.43   DEPTH*VELOCITY(FT*FT/SEC.) =   0.43
LONGEST FLOWPATH FROM NODE    206.00 TO NODE    208.00 =   254.00 FEET.

****************************************************************************
FLOW PROCESS FROM NODE    208.00 TO NODE    205.00 IS CODE =  41
----------------------------------------------------------------------------
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
ELEVATION DATA: UPSTREAM(FEET) =   260.50  DOWNSTREAM(FEET) =   242.20
FLOW LENGTH(FEET) =    12.70   MANNING'S N =  0.013
DEPTH OF FLOW IN  18.0 INCH PIPE IS   1.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =  21.09
GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
PIPE-FLOW(CFS) =      1.06
PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =   7.10
LONGEST FLOWPATH FROM NODE    206.00 TO NODE    205.00 =   266.70 FEET.

****************************************************************************
FLOW PROCESS FROM NODE    205.00 TO NODE    205.00 IS CODE =   1
----------------------------------------------------------------------------
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
TOTAL NUMBER OF STREAMS =  2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
TIME OF CONCENTRATION(MIN.) =   7.10
RAINFALL INTENSITY(INCH/HR) =   4.00
TOTAL STREAM AREA(ACRES) =     0.30
PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.06

** CONFLUENCE DATA **
STREAM      RUNOFF       Tc       INTENSITY       AREA
NUMBER       (CFS)     (MIN.)    (INCH/HOUR)     (ACRE)
    1        27.04     10.76         3.366          9.40
    2         1.06      7.10         4.001          0.30

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR  2 STREAMS.

** PEAK FLOW RATE TABLE **
STREAM      RUNOFF       Tc       INTENSITY
NUMBER       (CFS)     (MIN.)    (INCH/HOUR)
    1        23.81      7.10         4.001
    2        27.93     10.76         3.366

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) =     27.93   Tc(MIN.) =   10.76
TOTAL AREA(ACRES) =      9.70
LONGEST FLOWPATH FROM NODE    200.00 TO NODE    205.00 =  1164.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    205.00 TO NODE    209.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   242.30  DOWNSTREAM(FEET) =   228.50
 FLOW LENGTH(FEET) =   100.00   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS  11.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  23.09
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     27.93
 PIPE TRAVEL TIME(MIN.) =   0.07    Tc(MIN.) =  10.83
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    209.00 =  1264.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    209.00 TO NODE    210.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   228.10  DOWNSTREAM(FEET) =   225.10
 FLOW LENGTH(FEET) =    19.70   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS   9.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  24.05
 GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     27.93
 PIPE TRAVEL TIME(MIN.) =   0.01    Tc(MIN.) =  10.85
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    210.00 =  1283.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    210.00 TO NODE    211.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   224.80  DOWNSTREAM(FEET) =   216.50
 FLOW LENGTH(FEET) =   119.90   MANNING'S N =  0.013
 DEPTH OF FLOW IN  24.0 INCH PIPE IS  11.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  17.97
 GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =     27.93
 PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =  10.96
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    211.00 =  1403.60 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    211.00 TO NODE    211.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE    213.00 TO NODE    214.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6800
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    269.60
 DOWNSTREAM ELEVATION(FEET) =    268.80
```

```
 ELEVATION DIFFERENCE(FEET) =       0.80
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =     8.144
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.803
 SUBAREA RUNOFF(CFS) =       0.78
 TOTAL AREA(ACRES) =       0.30   TOTAL RUNOFF(CFS) =       0.78

****************************************************************************
 FLOW PROCESS FROM NODE    214.00 TO NODE    215.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  268.80  DOWNSTREAM ELEVATION(FEET) =  260.10
 STREET LENGTH(FEET) =   392.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.17
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.28
   HALFSTREET FLOOD WIDTH(FEET) =    8.76
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.54
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.71
 STREET FLOW TRAVEL TIME(MIN.) =   2.57   Tc(MIN.) =  10.72
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.371
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7500
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =     1.10      SUBAREA RUNOFF(CFS) =    2.78
 TOTAL AREA(ACRES) =       1.40        PEAK FLOW RATE(CFS) =       3.56

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32   HALFSTREET FLOOD WIDTH(FEET) =  10.74
 FLOW VELOCITY(FEET/SEC.) =  2.87   DEPTH*VELOCITY(FT*FT/SEC.) =   0.92
 LONGEST FLOWPATH FROM NODE    213.00 TO NODE    215.00 =   492.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    215.00 TO NODE    215.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.371
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8700
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =     1.30   SUBAREA RUNOFF(CFS) =    3.81
 TOTAL AREA(ACRES) =       2.70   TOTAL RUNOFF(CFS) =    7.37
 TC(MIN.) =  10.72

****************************************************************************
 FLOW PROCESS FROM NODE    215.00 TO NODE    212.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

```
>>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
================================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   250.40  DOWNSTREAM(FEET) =   219.60
 FLOW LENGTH(FEET) =   143.40   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS   4.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  19.19
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      7.37
 PIPE TRAVEL TIME(MIN.) =   0.12    Tc(MIN.) =  10.84
 LONGEST FLOWPATH FROM NODE    213.00 TO NODE    212.00 =   635.40 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    212.00 TO NODE    212.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
================================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.357
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8200
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =    0.60   SUBAREA RUNOFF(CFS) =    1.65
 TOTAL AREA(ACRES) =      3.30   TOTAL RUNOFF(CFS) =    9.02
 TC(MIN.) =  10.84

****************************************************************************
 FLOW PROCESS FROM NODE    212.00 TO NODE    211.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
================================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   219.20  DOWNSTREAM(FEET) =   216.50
 FLOW LENGTH(FEET) =    36.30   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS   7.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  13.86
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      9.02
 PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =  10.89
 LONGEST FLOWPATH FROM NODE    213.00 TO NODE    211.00 =   671.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    211.00 TO NODE    211.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
================================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM      RUNOFF      Tc       INTENSITY      AREA
 NUMBER       (CFS)    (MIN.)    (INCH/HOUR)    (ACRE)
    1          9.02     10.89        3.353         3.30
 LONGEST FLOWPATH FROM NODE    213.00 TO NODE    211.00 =   671.70 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM      RUNOFF      Tc       INTENSITY      AREA
 NUMBER       (CFS)    (MIN.)    (INCH/HOUR)    (ACRE)
    1         27.93     10.96        3.345         9.70
 LONGEST FLOWPATH FROM NODE    200.00 TO NODE    211.00 =  1403.60 FEET.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF        Tc       INTENSITY
 NUMBER      (CFS)      (MIN.)    (INCH/HOUR)
    1       36.89       10.89         3.353
```

```
     2       36.93       10.96         3.345

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      36.93   Tc(MIN.) =    10.96
  TOTAL AREA(ACRES) =      13.00

****************************************************************************
  FLOW PROCESS FROM NODE     211.00 TO NODE     211.00 IS CODE =  12
----------------------------------------------------------------------------
  >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE     211.00 TO NODE     216.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    216.50  DOWNSTREAM(FEET) =    211.00
  FLOW LENGTH(FEET) =     80.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  14.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  19.16
  GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =    1
  PIPE-FLOW(CFS) =      36.93
  PIPE TRAVEL TIME(MIN.) =    0.07    Tc(MIN.) =  11.03
  LONGEST FLOWPATH FROM NODE     200.00 TO NODE     216.00 =  1483.60 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE     216.00 TO NODE     220.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =     211.00  DOWNSTREAM(FEET) =     142.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   889.80   CHANNEL SLOPE =  0.0775
  CHANNEL BASE(FEET) =     2.00   "Z" FACTOR =   5.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  10.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.101
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .5200
  S.C.S. CURVE NUMBER (AMC II) =    0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      44.85
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   6.91
  AVERAGE FLOW DEPTH(FEET) =   0.96   TRAVEL TIME(MIN.) =   2.15
  Tc(MIN.) =  13.17
  SUBAREA AREA(ACRES) =      9.80        SUBAREA RUNOFF(CFS) =   15.80
  TOTAL AREA(ACRES) =      22.80         PEAK FLOW RATE(CFS) =       52.74

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  1.03   FLOW VELOCITY(FEET/SEC.) =   7.22
  LONGEST FLOWPATH FROM NODE     200.00 TO NODE     220.00 =  2373.40 FEET.
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)      =      22.80  TC(MIN.) =      13.17
  PEAK FLOW RATE(CFS)    =      52.74
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
```

```
**********************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR POST-PROJECT                                           *
* BASIN 300                                                               *
 **************************************************************************

  FILE NAME: BP300P00.RAT
  TIME/DATE OF STUDY: 16:48 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)   (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ======  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    300.00 TO NODE    305.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8000
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
 UPSTREAM ELEVATION(FEET) =  259.30
 DOWNSTREAM ELEVATION(FEET) =  258.20
 ELEVATION DIFFERENCE(FEET) =  1.10
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =  5.231
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =  0.34
 TOTAL AREA(ACRES) =  0.10  TOTAL RUNOFF(CFS) =  0.34

****************************************************************************
 FLOW PROCESS FROM NODE    305.00 TO NODE    310.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  258.20  DOWNSTREAM ELEVATION(FEET) =  245.00
 STREET LENGTH(FEET) =  518.00  CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =  0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  0.83
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.21
   HALFSTREET FLOOD WIDTH(FEET) =  5.45
   AVERAGE FLOW VELOCITY(FEET/SEC.) =  2.17
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  0.46
 STREET FLOW TRAVEL TIME(MIN.) =  3.98  Tc(MIN.) =  9.98
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.454
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =  0.30  SUBAREA RUNOFF(CFS) =  0.98
 TOTAL AREA(ACRES) =  0.40  PEAK FLOW RATE(CFS) =  1.32

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.24  HALFSTREET FLOOD WIDTH(FEET) =  6.83
 FLOW VELOCITY(FEET/SEC.) =  2.39  DEPTH*VELOCITY(FT*FT/SEC.) =  0.58
 LONGEST FLOWPATH FROM NODE  300.00 TO NODE  310.00 =  618.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    310.00 TO NODE    310.00 IS CODE =  1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
```

```
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
 TIME OF CONCENTRATION(MIN.) =    9.98
 RAINFALL INTENSITY(INCH/HR) =    3.45
 TOTAL STREAM AREA(ACRES) =      0.40
 PEAK FLOW RATE(CFS) AT CONFLUENCE =       1.32

****************************************************************************
 FLOW PROCESS FROM NODE    315.00 TO NODE    320.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    258.00
 DOWNSTREAM ELEVATION(FEET) =    256.00
 ELEVATION DIFFERENCE(FEET) =      2.00
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    9.287
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.586
 SUBAREA RUNOFF(CFS) =       0.65
 TOTAL AREA(ACRES) =      0.40   TOTAL RUNOFF(CFS) =       0.65

****************************************************************************
 FLOW PROCESS FROM NODE    320.00 TO NODE    310.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    256.00  DOWNSTREAM(FEET) =    245.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   438.00   CHANNEL SLOPE =  0.0251
 CHANNEL BASE(FEET) =    4.00   "Z" FACTOR =  50.000
 MANNING'S FACTOR = 0.035   MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.898
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4800
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.83
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.27
 AVERAGE FLOW DEPTH(FEET) =   0.13   TRAVEL TIME(MIN.) =   5.74
 Tc(MIN.) =  15.03
 SUBAREA AREA(ACRES) =     1.70       SUBAREA RUNOFF(CFS) =    2.36
 TOTAL AREA(ACRES) =      2.10        PEAK FLOW RATE(CFS) =       3.01

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.16   FLOW VELOCITY(FEET/SEC.) =   1.49
 LONGEST FLOWPATH FROM NODE    315.00 TO NODE    310.00 =   538.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    310.00 TO NODE    310.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =  15.03
 RAINFALL INTENSITY(INCH/HR) =   2.90
 TOTAL STREAM AREA(ACRES) =     2.10
 PEAK FLOW RATE(CFS) AT CONFLUENCE =       3.01
```

```
 ** CONFLUENCE DATA **
 STREAM      RUNOFF       Tc       INTENSITY       AREA
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)     (ACRE)
     1         1.32      9.98         3.454          0.40
     2         3.01     15.03         2.898          2.10

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM      RUNOFF       Tc       INTENSITY
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)
     1         3.85      9.98         3.454
     2         4.12     15.03         2.898

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      4.12   Tc(MIN.) =   15.03
 TOTAL AREA(ACRES) =      2.50
 LONGEST FLOWPATH FROM NODE    300.00 TO NODE    310.00 =   618.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    310.00 TO NODE    325.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  245.00  DOWNSTREAM ELEVATION(FEET) =  232.00
 STREET LENGTH(FEET) =   443.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       5.11
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.34
   HALFSTREET FLOOD WIDTH(FEET) =   11.81
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.45
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.18
 STREET FLOW TRAVEL TIME(MIN.) =   2.14   Tc(MIN.) =  17.16
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.727
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7300
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =     1.00      SUBAREA RUNOFF(CFS) =     1.99
 TOTAL AREA(ACRES) =      3.50        PEAK FLOW RATE(CFS) =       6.11

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.36   HALFSTREET FLOOD WIDTH(FEET) =  12.67
 FLOW VELOCITY(FEET/SEC.) =  3.61   DEPTH*VELOCITY(FT*FT/SEC.) =   1.29
 LONGEST FLOWPATH FROM NODE    300.00 TO NODE    325.00 =  1061.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    325.00 TO NODE    325.00 IS CODE =  81
```

```
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.727
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .5200
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     0.70   SUBAREA RUNOFF(CFS) =     0.99
  TOTAL AREA(ACRES) =       4.20   TOTAL RUNOFF(CFS) =     7.10
  TC(MIN.) =  17.16

****************************************************************************
  FLOW PROCESS FROM NODE    325.00 TO NODE    325.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =  17.16
  RAINFALL INTENSITY(INCH/HR) =   2.73
  TOTAL STREAM AREA(ACRES) =     4.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      7.10

****************************************************************************
  FLOW PROCESS FROM NODE    330.00 TO NODE    335.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .9500
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    241.00
  DOWNSTREAM ELEVATION(FEET) =    240.50
  ELEVATION DIFFERENCE(FEET) =      0.50
  URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.402
  TIME OF CONCENTRATION ASSUMED AS 6-MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
  SUBAREA RUNOFF(CFS) =      0.40
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.40

****************************************************************************
  FLOW PROCESS FROM NODE    335.00 TO NODE    325.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  240.50  DOWNSTREAM ELEVATION(FEET) =  232.00
  STREET LENGTH(FEET) =   439.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 13.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      1.20
```

```
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.24
    HALFSTREET FLOOD WIDTH(FEET) =    6.93
    AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.11
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.51
  STREET FLOW TRAVEL TIME(MIN.) =   3.47   Tc(MIN.) =   9.47
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.551
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .8900
  S.C.S. CURVE NUMBER (AMC II) =   0
  SUBAREA AREA(ACRES) =     0.50      SUBAREA RUNOFF(CFS) =    1.58
  TOTAL AREA(ACRES) =       0.60        PEAK FLOW RATE(CFS) =       1.98

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.28   HALFSTREET FLOOD WIDTH(FEET) =   8.66
  FLOW VELOCITY(FEET/SEC.) =  2.37   DEPTH*VELOCITY(FT*FT/SEC.) =   0.66
  LONGEST FLOWPATH FROM NODE    330.00 TO NODE    325.00 =   539.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    325.00 TO NODE    325.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
  >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
  TIME OF CONCENTRATION(MIN.) =   9.47
  RAINFALL INTENSITY(INCH/HR) =   3.55
  TOTAL STREAM AREA(ACRES) =     0.60
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.98

  ** CONFLUENCE DATA **
  STREAM      RUNOFF       Tc       INTENSITY       AREA
  NUMBER       (CFS)     (MIN.)    (INCH/HOUR)     (ACRE)
      1         7.10     17.16         2.727          4.20
      2         1.98      9.47         3.551          0.60

  RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
  CONFLUENCE FORMULA USED FOR  2 STREAMS.

  ** PEAK FLOW RATE TABLE **
  STREAM      RUNOFF       Tc       INTENSITY
  NUMBER       (CFS)     (MIN.)    (INCH/HOUR)
      1         7.43      9.47         3.551
      2         8.62     17.16         2.727

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =       8.62   Tc(MIN.) =   17.16
  TOTAL AREA(ACRES) =      4.80
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    325.00 =  1061.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    325.00 TO NODE    340.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  232.00  DOWNSTREAM ELEVATION(FEET) =  215.00
  STREET LENGTH(FEET) =   345.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 13.00
```

```
 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       9.12
   ***STREET FLOW SPLITS OVER STREET-CROWN***
   FULL DEPTH(FEET) =    0.37   FLOOD WIDTH(FEET) =   13.00
   FULL HALF-STREET VELOCITY(FEET/SEC.) =    4.77
   SPLIT DEPTH(FEET) =    0.18   SPLIT FLOOD WIDTH(FEET) =    3.88
   SPLIT FLOW(CFS) =    0.66   SPLIT VELOCITY(FEET/SEC.) =    2.77
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.37
   HALFSTREET FLOOD WIDTH(FEET) =   13.00
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    4.77
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.74
 STREET FLOW TRAVEL TIME(MIN.) =   1.21   Tc(MIN.) =  18.37
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.631
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =    0.40      SUBAREA RUNOFF(CFS) =    1.00
 TOTAL AREA(ACRES) =      5.20        PEAK FLOW RATE(CFS) =       9.62

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.37   HALFSTREET FLOOD WIDTH(FEET) =  13.00
 FLOW VELOCITY(FEET/SEC.) =  4.77   DEPTH*VELOCITY(FT*FT/SEC.) =   1.74
 LONGEST FLOWPATH FROM NODE    300.00 TO NODE    340.00 =  1406.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =      5.20  TC(MIN.) =     18.37
 PEAK FLOW RATE(CFS)    =      9.62
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                         Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR POST-PROJECT                                           *
* BASIN 400                                                               *
 **************************************************************************

  FILE NAME: BP400P00.RAT
  TIME/DATE OF STUDY: 17:31 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-  CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)     (FT)    SIDE / SIDE/ WAY    (FT)    (FT)   (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ======  =====  =======
  1   30.0     20.0    0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0      6.5    0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0     54.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0     46.0    0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    400.00 TO NODE    405.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6500
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
 UPSTREAM ELEVATION(FEET) =  249.50
 DOWNSTREAM ELEVATION(FEET) =  243.80
 ELEVATION DIFFERENCE(FEET) =  5.70
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =  4.535
 *CAUTION: SUBAREA SLOPE EXCEEDS COUNTY NOMOGRAPH
  DEFINITION. EXTRAPOLATION OF NOMOGRAPH USED.
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =  0.27
 TOTAL AREA(ACRES) =  0.10  TOTAL RUNOFF(CFS) =  0.27

****************************************************************************
 FLOW PROCESS FROM NODE    405.00 TO NODE    410.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  243.80  DOWNSTREAM ELEVATION(FEET) =  240.10
 STREET LENGTH(FEET) =  297.00  CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =  0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  0.61
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.22
   HALFSTREET FLOOD WIDTH(FEET) =  5.52
   AVERAGE FLOW VELOCITY(FEET/SEC.) =  1.55
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  0.33
 STREET FLOW TRAVEL TIME(MIN.) =  3.19  Tc(MIN.) =  9.19
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.603
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9300
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =  0.20  SUBAREA RUNOFF(CFS) =  0.67
 TOTAL AREA(ACRES) =  0.30  PEAK FLOW RATE(CFS) =  0.94

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.24  HALFSTREET FLOOD WIDTH(FEET) =  6.88
 FLOW VELOCITY(FEET/SEC.) =  1.69  DEPTH*VELOCITY(FT*FT/SEC.) =  0.41
 LONGEST FLOWPATH FROM NODE  400.00 TO NODE  410.00 =  397.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    410.00 TO NODE    415.00 IS CODE =  41
----------------------------------------------------------------------------
```

```
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   236.50  DOWNSTREAM(FEET) =   235.90
  FLOW LENGTH(FEET) =    26.30   MANNING'S N =  0.013
  DEPTH OF FLOW IN  18.0 INCH PIPE IS   3.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   4.75
  GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      0.94
  PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =   9.29
  LONGEST FLOWPATH FROM NODE    400.00 TO NODE    415.00 =   423.30 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    415.00 TO NODE    415.00 IS CODE =  10
----------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
  FLOW PROCESS FROM NODE    420.00 TO NODE    425.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .9000
  S.C.S. CURVE NUMBER (AMC II) =  0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    252.00
  DOWNSTREAM ELEVATION(FEET) =    244.40
  ELEVATION DIFFERENCE(FEET) =      7.60
  URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.831
  *CAUTION: SUBAREA SLOPE EXCEEDS COUNTY NOMOGRAPH
   DEFINITION. EXTRAPOLATION OF NOMOGRAPH USED.
  TIME OF CONCENTRATION ASSUMED AS 6-MIN.
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
  SUBAREA RUNOFF(CFS) =      0.38
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.38

****************************************************************************
  FLOW PROCESS FROM NODE    425.00 TO NODE    430.00 IS CODE =  62
----------------------------------------------------------------------------
  >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
  UPSTREAM ELEVATION(FEET) =  244.40  DOWNSTREAM ELEVATION(FEET) =  242.00
  STREET LENGTH(FEET) =   161.00   CURB HEIGHT(INCHES) =  6.0
  STREET HALFWIDTH(FEET) = 13.00

  DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
  INSIDE STREET CROSSFALL(DECIMAL) =  0.020
  OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

  SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
  STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
  Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
  Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

    **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      0.52
    STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
    STREET FLOW DEPTH(FEET) =  0.20
    HALFSTREET FLOOD WIDTH(FEET) =    4.82
```

```
    AVERAGE FLOW VELOCITY(FEET/SEC.) =     1.62
    PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =     0.33
  STREET FLOW TRAVEL TIME(MIN.) =    1.66    Tc(MIN.) =    7.66
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.895
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .7000
  S.C.S. CURVE NUMBER (AMC II) =    0
  SUBAREA AREA(ACRES) =     0.10      SUBAREA RUNOFF(CFS) =     0.27
  TOTAL AREA(ACRES) =       0.20        PEAK FLOW RATE(CFS) =        0.65

  END OF SUBAREA STREET FLOW HYDRAULICS:
  DEPTH(FEET) = 0.22   HALFSTREET FLOOD WIDTH(FEET) =   5.52
  FLOW VELOCITY(FEET/SEC.) =  1.66   DEPTH*VELOCITY(FT*FT/SEC.) =   0.36
  LONGEST FLOWPATH FROM NODE    420.00 TO NODE    430.00 =   261.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    430.00 TO NODE    430.00 IS CODE =   1
----------------------------------------------------------------------------
  >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
============================================================================
  TOTAL NUMBER OF STREAMS =  2
  CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
  TIME OF CONCENTRATION(MIN.) =   7.66
  RAINFALL INTENSITY(INCH/HR) =   3.89
  TOTAL STREAM AREA(ACRES) =     0.20
  PEAK FLOW RATE(CFS) AT CONFLUENCE =      0.65

****************************************************************************
  FLOW PROCESS FROM NODE    435.00 TO NODE    440.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .6000
  S.C.S. CURVE NUMBER (AMC II) =   0
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
  UPSTREAM ELEVATION(FEET) =    259.90
  DOWNSTREAM ELEVATION(FEET) =    259.20
  ELEVATION DIFFERENCE(FEET) =      0.70
  URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =   10.136
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.435
  SUBAREA RUNOFF(CFS) =      0.21
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.21

****************************************************************************
  FLOW PROCESS FROM NODE    440.00 TO NODE    430.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    259.20  DOWNSTREAM(FEET) =    242.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   148.90   CHANNEL SLOPE =  0.1155
  CHANNEL BASE(FEET) =    1.00   "Z" FACTOR =  10.000
  MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  10.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.306
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .7000
  S.C.S. CURVE NUMBER (AMC II) =   0
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      0.44
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   2.12
  AVERAGE FLOW DEPTH(FEET) =   0.10   TRAVEL TIME(MIN.) =   1.17
```

```
 Tc(MIN.) =  11.31
 SUBAREA AREA(ACRES) =      0.20        SUBAREA RUNOFF(CFS) =     0.46
 TOTAL AREA(ACRES) =       0.30         PEAK FLOW RATE(CFS) =        0.67

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.12   FLOW VELOCITY(FEET/SEC.) =  2.38
 LONGEST FLOWPATH FROM NODE    435.00 TO NODE    430.00 =    248.90 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    430.00 TO NODE    430.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.306
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7000
 S.C.S. CURVE NUMBER (AMC II) =  0
 SUBAREA AREA(ACRES) =     0.30   SUBAREA RUNOFF(CFS) =     0.69
 TOTAL AREA(ACRES) =       0.60   TOTAL RUNOFF(CFS) =     1.36
 TC(MIN.) =  11.31

****************************************************************************
 FLOW PROCESS FROM NODE    430.00 TO NODE    430.00 IS CODE =   1
----------------------------------------------------------------------------
 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
============================================================================
 TOTAL NUMBER OF STREAMS =  2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
 TIME OF CONCENTRATION(MIN.) =  11.31
 RAINFALL INTENSITY(INCH/HR) =   3.31
 TOTAL STREAM AREA(ACRES) =     0.60
 PEAK FLOW RATE(CFS) AT CONFLUENCE =      1.36

 ** CONFLUENCE DATA **
 STREAM      RUNOFF       Tc       INTENSITY       AREA
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)    (ACRE)
     1         0.65      7.66         3.895          0.20
     2         1.36     11.31         3.306          0.60

 RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR  2 STREAMS.

 ** PEAK FLOW RATE TABLE **
 STREAM      RUNOFF       Tc       INTENSITY
 NUMBER       (CFS)     (MIN.)    (INCH/HOUR)
     1         1.81      7.66         3.895
     2         1.92     11.31         3.306

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      1.92   Tc(MIN.) =   11.31
 TOTAL AREA(ACRES) =      0.80
 LONGEST FLOWPATH FROM NODE    420.00 TO NODE    430.00 =    261.00 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    430.00 TO NODE    415.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  242.00  DOWNSTREAM ELEVATION(FEET) =  240.10
```

```
 STREET LENGTH(FEET) =   156.50   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.22
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.31
   HALFSTREET FLOOD WIDTH(FEET) =   10.03
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.03
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.62
 STREET FLOW TRAVEL TIME(MIN.) =   1.28   Tc(MIN.) =  12.59
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.165
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =    0.20      SUBAREA RUNOFF(CFS) =    0.60
 TOTAL AREA(ACRES) =      1.00        PEAK FLOW RATE(CFS) =       2.52

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32   HALFSTREET FLOOD WIDTH(FEET) =  10.59
 FLOW VELOCITY(FEET/SEC.) =  2.09   DEPTH*VELOCITY(FT*FT/SEC.) =   0.66
 LONGEST FLOWPATH FROM NODE    420.00 TO NODE    415.00 =   417.50 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    415.00 TO NODE    415.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM     RUNOFF      Tc       INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)    (INCH/HOUR)   (ACRE)
    1         2.52     12.59        3.165        1.00
 LONGEST FLOWPATH FROM NODE    420.00 TO NODE    415.00 =   417.50 FEET.

 ** MEMORY BANK #  1 CONFLUENCE DATA **
 STREAM     RUNOFF      Tc       INTENSITY     AREA
 NUMBER      (CFS)    (MIN.)    (INCH/HOUR)   (ACRE)
    1         0.94      9.29        3.586        0.30
 LONGEST FLOWPATH FROM NODE    400.00 TO NODE    415.00 =   423.30 FEET.

 ** PEAK FLOW RATE TABLE **
 STREAM    RUNOFF       Tc       INTENSITY
 NUMBER     (CFS)     (MIN.)    (INCH/HOUR)
    1        3.17       9.29        3.586
    2        3.35      12.59        3.165

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =      3.35   Tc(MIN.) =   12.59
 TOTAL AREA(ACRES) =      1.30

****************************************************************************
 FLOW PROCESS FROM NODE    415.00 TO NODE    415.00 IS CODE =  12
```

```
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 1 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE    415.00 TO NODE    445.00 IS CODE =  41
----------------------------------------------------------------------------
 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =   235.90  DOWNSTREAM(FEET) =   216.00
 FLOW LENGTH(FEET) =    84.40   MANNING'S N =  0.013
 DEPTH OF FLOW IN  18.0 INCH PIPE IS   3.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) =  15.76
 GIVEN PIPE DIAMETER(INCH) =  18.00    NUMBER OF PIPES =   1
 PIPE-FLOW(CFS) =      3.35
 PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =  12.68
 LONGEST FLOWPATH FROM NODE    400.00 TO NODE    445.00 =   507.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    445.00 TO NODE    445.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.155
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .7000
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =     0.40   SUBAREA RUNOFF(CFS) =     0.88
 TOTAL AREA(ACRES) =       1.70   TOTAL RUNOFF(CFS) =     4.23
 TC(MIN.) =  12.68

****************************************************************************
 FLOW PROCESS FROM NODE    445.00 TO NODE    450.00 IS CODE =  62
----------------------------------------------------------------------------
 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION #  2 USED)<<<<<
============================================================================
 UPSTREAM ELEVATION(FEET) =  214.00  DOWNSTREAM ELEVATION(FEET) =  180.00
 STREET LENGTH(FEET) =   320.00   CURB HEIGHT(INCHES) =  6.0
 STREET HALFWIDTH(FEET) = 13.00

 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   6.50
 INSIDE STREET CROSSFALL(DECIMAL) =  0.020
 OUTSIDE STREET CROSSFALL(DECIMAL)  =  0.020

 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
 STREET PARKWAY CROSSFALL(DECIMAL)  =  0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =   0.0180
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

   **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       4.52
   STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
   STREET FLOW DEPTH(FEET) =  0.28
   HALFSTREET FLOOD WIDTH(FEET) =    8.56
   AVERAGE FLOW VELOCITY(FEET/SEC.) =    5.53
   PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    1.53
 STREET FLOW TRAVEL TIME(MIN.) =   0.96   Tc(MIN.) =  13.65
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.049
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9500
```

```
 S.C.S. CURVE NUMBER (AMC II) =    0
 SUBAREA AREA(ACRES) =     0.20      SUBAREA RUNOFF(CFS) =     0.58
 TOTAL AREA(ACRES) =      1.90       PEAK FLOW RATE(CFS) =       4.81

 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.28   HALFSTREET FLOOD WIDTH(FEET) =   8.81
 FLOW VELOCITY(FEET/SEC.) =  5.58   DEPTH*VELOCITY(FT*FT/SEC.) =   1.57
 LONGEST FLOWPATH FROM NODE    400.00 TO NODE    450.00 =   827.70 FEET.

****************************************************************************
 FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  10
----------------------------------------------------------------------------
 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
============================================================================

****************************************************************************
 FLOW PROCESS FROM NODE    455.00 TO NODE    460.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5500
 S.C.S. CURVE NUMBER (AMC II) =   0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
 UPSTREAM ELEVATION(FEET) =    255.20
 DOWNSTREAM ELEVATION(FEET) =    235.00
 ELEVATION DIFFERENCE(FEET) =     20.20
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.635
 *CAUTION: SUBAREA SLOPE EXCEEDS COUNTY NOMOGRAPH
  DEFINITION. EXTRAPOLATION OF NOMOGRAPH USED.
 TIME OF CONCENTRATION ASSUMED AS 6-MIN.
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.210
 SUBAREA RUNOFF(CFS) =      0.23
 TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.23

****************************************************************************
 FLOW PROCESS FROM NODE    460.00 TO NODE    450.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =    235.00  DOWNSTREAM(FEET) =    180.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =   460.00   CHANNEL SLOPE =  0.1196
 CHANNEL BASE(FEET) =    2.00   "Z" FACTOR =   2.000
 MANNING'S FACTOR = 0.040   MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.812
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4800
 S.C.S. CURVE NUMBER (AMC II) =   0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      1.61
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.66
 AVERAGE FLOW DEPTH(FEET) =   0.19   TRAVEL TIME(MIN.) =   2.10
 Tc(MIN.) =   8.10
 SUBAREA AREA(ACRES) =     1.50       SUBAREA RUNOFF(CFS) =    2.74
 TOTAL AREA(ACRES) =      1.60        PEAK FLOW RATE(CFS) =       2.98

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.26   FLOW VELOCITY(FEET/SEC.) =   4.49
 LONGEST FLOWPATH FROM NODE    455.00 TO NODE    450.00 =   560.00 FEET.

****************************************************************************
```

```
 FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  81
----------------------------------------------------------------------------
 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.812
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5500
 S.C.S. CURVE NUMBER (AMC II) =   0
 SUBAREA AREA(ACRES) =     2.80   SUBAREA RUNOFF(CFS) =     5.87
 TOTAL AREA(ACRES) =       4.40   TOTAL RUNOFF(CFS) =     8.85
 TC(MIN.) =   8.10

****************************************************************************
 FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  11
----------------------------------------------------------------------------
 >>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
============================================================================

 ** MAIN STREAM CONFLUENCE DATA **
 STREAM      RUNOFF      Tc       INTENSITY      AREA
 NUMBER       (CFS)    (MIN.)    (INCH/HOUR)    (ACRE)
     1         8.85      8.10        3.812         4.40
 LONGEST FLOWPATH FROM NODE    455.00 TO NODE    450.00 =   560.00 FEET.

 ** MEMORY BANK #  2 CONFLUENCE DATA **
 STREAM      RUNOFF      Tc       INTENSITY      AREA
 NUMBER       (CFS)    (MIN.)    (INCH/HOUR)    (ACRE)
     1         4.81     13.65        3.049         1.90
 LONGEST FLOWPATH FROM NODE    400.00 TO NODE    450.00 =   827.70 FEET.

 ** PEAK FLOW RATE TABLE **
 STREAM     RUNOFF        Tc       INTENSITY
 NUMBER      (CFS)      (MIN.)    (INCH/HOUR)
     1       12.70       8.10         3.812
     2       11.89      13.65         3.049

 COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) =     12.70   Tc(MIN.) =     8.10
 TOTAL AREA(ACRES) =      6.30

****************************************************************************
 FLOW PROCESS FROM NODE    450.00 TO NODE    450.00 IS CODE =  12
----------------------------------------------------------------------------
 >>>>>CLEAR MEMORY BANK # 2 <<<<<
============================================================================
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =      6.30  TC(MIN.) =      8.10
 PEAK FLOW RATE(CFS)    =     12.70
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

```
**************************************************************************

          RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
          Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                       2003,1985,1981 HYDROLOGY MANUAL
        (c) Copyright 1982-2003 Advanced Engineering Software (aes)
            Ver. 1.5A Release Date: 01/01/2003  License ID 1261

                          Analysis prepared by:

                          Rick Engineering Company
                        1223 University Ave., Suite 240
                          Riverside, California 92507


 ************************** DESCRIPTION OF STUDY **************************
* J-16325; BALBOA PARK PLAZA                                              *
* 100-YEAR, 6-HOUR POST-PROJECT                                           *
* BASIN 500                                                               *
 **************************************************************************

  FILE NAME: BP500P00.RAT
  TIME/DATE OF STUDY: 16:45 09/29/2011
--------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
--------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =  18.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
  RAINFALL-INTENSITY ADJUSTMENT FACTOR = 1.000
  *USER SPECIFIED:
  NUMBER OF [TIME,INTENSITY] DATA PAIRS =  9
   1)   5.000;  4.400
   2)  10.000;  3.450
   3)  15.000;  2.900
   4)  20.000;  2.500
   5)  25.000;  2.200
   6)  30.000;  2.000
   7)  40.000;  1.700
   8)  50.000;  1.500
   9)  60.000;  1.300
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: ONLY PEAK CONFLUENCE VALUES CONSIDERED
  *USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL*
     HALF-   CROWN TO   STREET-CROSSFALL:   CURB  GUTTER-GEOMETRIES:  MANNING
     WIDTH  CROSSFALL  IN-  / OUT-/PARK-  HEIGHT  WIDTH  LIP   HIKE  FACTOR
NO.   (FT)      (FT)    SIDE / SIDE/ WAY    (FT)    (FT)  (FT)  (FT)    (n)
===  =====  =========  ================  ======  =====  ====  =====  =======
  1   30.0      20.0   0.018/0.018/0.020   0.67    2.00 0.0313 0.167 0.0150
  2   13.0       6.5   0.020/0.020/0.020   0.50    1.50 0.0100 0.125 0.0180
  3   59.0      54.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.013 0.0180
  4   51.0      46.0   0.020/0.020/0.020   0.50    2.00 0.0100 0.125 0.0180

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth = -0.10 FEET
       as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
    2. (Depth)*(Velocity) Constraint =  6.0 (FT*FT/S)
  *SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
   OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*
```

```
****************************************************************************
 FLOW PROCESS FROM NODE    500.00 TO NODE    505.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) =  0
 INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
 UPSTREAM ELEVATION(FEET) =  256.50
 DOWNSTREAM ELEVATION(FEET) =  256.00
 ELEVATION DIFFERENCE(FEET) =  0.50
 URBAN SUBAREA OVERLAND TIME OF FLOW(MIN.) =  14.741
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.929
 SUBAREA RUNOFF(CFS) =  0.26
 TOTAL AREA(ACRES) =  0.20  TOTAL RUNOFF(CFS) =  0.26

****************************************************************************
 FLOW PROCESS FROM NODE    505.00 TO NODE    510.00 IS CODE =  51
----------------------------------------------------------------------------
 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
 ELEVATION DATA: UPSTREAM(FEET) =  256.00  DOWNSTREAM(FEET) =  240.00
 CHANNEL LENGTH THRU SUBAREA(FEET) =  600.00  CHANNEL SLOPE =  0.0267
 CHANNEL BASE(FEET) =  2.00  "Z" FACTOR =  50.000
 MANNING'S FACTOR = 0.018  MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  2.590
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6900
 S.C.S. CURVE NUMBER (AMC II) =  0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  2.84
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  2.42
 AVERAGE FLOW DEPTH(FEET) =  0.13  TRAVEL TIME(MIN.) =  4.14
 Tc(MIN.) =  18.88
 SUBAREA AREA(ACRES) =  2.90  SUBAREA RUNOFF(CFS) =  5.18
 TOTAL AREA(ACRES) =  3.10  PEAK FLOW RATE(CFS) =  5.45

 END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) =  0.18  FLOW VELOCITY(FEET/SEC.) =  2.80
 LONGEST FLOWPATH FROM NODE  500.00 TO NODE  510.00 =  700.00 FEET.
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)  =  3.10  TC(MIN.) =  18.88
 PEAK FLOW RATE(CFS)  =  5.45
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

APPENDIX C

Backup for Weighted Runoff Coefficients

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Basin 100

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
100	101	D	0.2	0.04	0.16	0.55
101	114	D	1.3	0.17	1.13	0.52
114	120	D	5.6	0.38	5.22	0.48

% Impervious: 8.3%

Total Area (acres): 7.1 Overall Weighted Runoff Coefficient: 0.49

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Basin 150

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
150	151	D	0.2	0.17	0.03	0.88
151	152	D	3.3	2.09	1.21	0.77
153	155	D	1.5	1.50	0.00	0.95

% Impervious: 75.2%

Total Area (acres): 5.0

Overall Weighted Runoff Coefficient: 0.83

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Basin 200

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
200	201	D	0.2	0.17	0.03	0.88
201	202	D	5.9	4.56	1.34	0.84
203	203	D	1.3	1.22	0.08	0.92
203	203	D	1.3	1.13	0.17	0.88
205	205	D	0.7	0.41	0.29	0.74
205	205	D	0.4	0.23	0.17	0.74
209	210	D	0.1	0.07	0.03	0.79
210	211	D	1.0	0.64	0.36	0.77
211	211	D	1.3	1.11	0.19	0.88
213	220	D	10.4	1.80	8.60	0.54

% Impervious: 50.2%

Total Area (acres): 22.6

Overall Weighted Runoff Coefficient: 0.70

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Basin 300

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
300	301	D	0.1	0.10	0.00	0.95
301	340	D	2.9	1.94	0.96	0.78

% Impervious: 68.0%

Total Area (acres): 3.0

Overall Weighted Runoff Coefficient: 0.79

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Basin 400

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
400	401	D	0.1	0.03	0.07	0.60
401	402	D	0.3	0.04	0.26	0.52
402	403	D	1.9	1.75	0.15	0.91
405	406	D	0.1	0.10	0.00	0.95
406	407	D	0.3	0.30	0.00	0.95
407	410	D	0.5	0.20	0.30	0.65
410	450	D	0.2	0.20	0.00	0.95
408	409	D	0.1	0.07	0.03	0.79
409	410	D	0.4	0.23	0.17	0.74
415	450	D	1.7	0.11	1.59	0.48
450	450	D	2.8	0.55	2.25	0.55

% Impervious: 42.6%

Total Area (acres): 8.4

Overall Weighted Runoff Coefficient: 0.66

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Total - Basins 300 & 400

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
Basins 300 & 400	Basins 300 & 400	D	11.4	5.6	5.8	0.70

% Impervious: 49.3%

Total Area (acres): 11.4

Overall Weighted Runoff Coefficient: 0.70

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Basin 500

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
500	501	D	0.1	0.01	0.09	0.52
501	510	D	3.1	1.43	1.67	0.68

% Impervious: 45.1%

Total Area (acres): 3.2

Overall Weighted Runoff Coefficient: 0.68

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Pre-project Condition

Total - All Basins

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
All	All	D	49.3	22.7	26.6	0.68

% Impervious: 46.1%

Total Area (acres): 49.3 Overall Weighted Runoff Coefficient: 0.68

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Basin 100

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
100	101	D	0.1	0.10	0.00	0.95
101	105	D	0.4	0.40	0.00	0.95
114	114	D	1.0	0.03	0.97	0.47
114	120	D	5.4	0.24	5.16	0.47

% Impervious: 11.2%

Total Area (acres): 6.9

Overall Weighted Runoff Coefficient: 0.51

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Basin 150

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
150	151	D	0.2	0.17	0.03	0.88
151	152	D	3.3	2.09	1.21	0.77
153	155	D	1.5	1.50	0.00	0.95

% Impervious: 75.2%

Total Area (acres): 5.0

Overall Weighted Runoff Coefficient: 0.83

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Basin 200

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
200	201	D	0.2	0.17	0.03	0.88
201	202	D	5.9	4.39	1.51	0.82
203	203	D	1.3	1.22	0.08	0.92
203	203	D	1.3	1.13	0.17	0.88
205	205	D	0.7	0.41	0.29	0.74
206	207	D	0.1	0.10	0.00	0.95
207	208	D	0.2	0.15	0.05	0.83
213	214	D	0.3	0.14	0.16	0.68
214	215	D	1.1	0.65	0.45	0.75
215	215	D	1.3	1.10	0.20	0.87
212	212	D	0.6	0.44	0.16	0.82
216	220	D	9.8	1.43	8.37	0.52

% Impervious: 49.7%

Total Area (acres): 22.8 Overall Weighted Runoff Coefficient: 0.70

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Basin 300

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
300	305	D	0.1	0.07	0.03	0.80
305	310	D	0.3	0.30	0.00	0.95
315	320	D	0.4	0.00	0.40	0.45
320	310	D	1.7	0.09	1.61	0.48
310	325	D	1.0	0.55	0.45	0.73
325	325	D	0.7	0.10	0.60	0.52
330	335	D	0.1	0.10	0.00	0.95
335	325	D	0.5	0.44	0.06	0.89
325	340	D	0.4	0.40	0.00	0.95

% Impervious: 39.4%

Total Area (acres): 5.2

Overall Weighted Runoff Coefficient: 0.65

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Basin 400

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
400	405	D	0.1	0.04	0.06	0.65
405	410	D	0.2	0.19	0.01	0.93
420	425	D	0.1	0.09	0.01	0.90
425	430	D	0.1	0.05	0.05	0.70
435	440	D	0.1	0.03	0.07	0.60
440	430	D	0.2	0.10	0.10	0.70
430	430	D	0.3	0.15	0.15	0.70
430	415	D	0.2	0.20	0.00	0.95
445	445	D	0.4	0.20	0.20	0.70
445	450	D	0.2	0.20	0.00	0.95
455	460	D	0.1	0.02	0.08	0.55
460	450	D	1.5	0.10	1.40	0.48
450	450	D	2.8	0.55	2.25	0.55

% Impervious: 30.5%

Total Area (acres): 6.3

Overall Weighted Runoff Coefficient: 0.60

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Total - Basins 300 & 400

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
Basins 300 & 400	Basins 300 & 400	D	11.5	4.0	7.5	0.62

% Impervious: 34.5%

Total Area (acres): 11.5 Overall Weighted Runoff Coefficient: 0.62

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Basin 500

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
500	505	D	0.2	0.00	0.20	0.45
505	510	D	2.9	1.39	1.51	0.69

% Impervious: 44.8%

Total Area (acres): 3.1

Overall Weighted Runoff Coefficient: 0.67

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

J-16325
Balboa Park Plaza
September 29, 2011

Weighted Runoff Coefficient Calculations

Post-project Condition

Total - All Basins

U/S Node #	D/S Node #	Soil Type	Sub Basin Area, A (acres)	Impervious Area, A_i (acres)	Pervious Area, A_p (acres)	Weighted Runoff Coefficient [1], C_w
All	All	D	49.3	21.2	28.1	0.67

% Impervious: 43.0%

Total Area (acres): 49.3

Overall Weighted Runoff Coefficient: 0.67

Note:

1. Based on the 1984 City of San Diego Drainage Design Manual, Ci = 0.95 for 100% impervious area & Cp = 0.45 for 0% impervious area.

APPENDIX D

Preliminary Storm Drain Sizing Calculations

J-16325
Balboa Park Plaza
October 5, 2011

Preliminary Storm Drain Size

The purpose of this table is to provide an estimated pipe size to convey the 100-year flow rates with a sizing factor.

Manning's n: 0.013

Sizing Factor (%): 30

	Slope at:	0.5%		1.0%		2.0%		5.0%	
Q_{100} (cfs[1])	Q_{100} with Sizing Factor (cfs[1])	Minimum Pipe Size[2] (feet)	Recommended Pipe Size (inches)	Minimum Pipe Size[2] (feet)	Recommended Pipe Size (inches)	Minimum Pipe Size[2] (feet)	Recommended Pipe Size (inches)	Minimum Pipe Size[2] (feet)	Recommended Pipe Size (inches)
2.0	2.6	1.01	12"	0.89	12"	0.78	10"	0.66	8"
5.0	6.5	1.43	18"	1.25	18"	1.10	18"	0.93	12"
7.5	9.8	1.66	24"	1.46	18"	1.28	18"	1.08	18"
10.0	13.0	1.85	24"	1.62	24"	1.43	18"	1.20	18"
15.0	19.5	2.15	30"	1.89	24"	1.66	24"	1.40	18"
20.0	26.0	2.40	30"	2.11	30"	1.85	24"	1.56	24"
25.0	32.5	2.61	36"	2.29	30"	2.01	24"	1.69	24"
30.0	39.0	2.79	36"	2.45	30"	2.15	30"	1.81	24"
35.0	45.5	2.96	36"	2.60	36"	2.28	30"	1.92	24"
40.0	52.0	3.11	42"	2.73	36"	2.40	30"	2.02	30"
50.0	65.0	3.38	42"	2.97	36"	2.61	36"	2.19	30"
60.0	78.0	3.62	48"	3.18	42"	2.79	36"	2.35	30"
70.0	91.0	3.83	48"	3.37	42"	2.96	36"	2.49	30"
80.0	104.0	4.03	54"	3.54	48"	3.11	42"	2.62	36"
90.0	117.0	4.21	54"	3.70	48"	3.25	42"	2.74	36"
110.0	143.0	4.54	60"	3.99	48"	3.50	42"	2.95	36"
145.0	188.5	5.04	72"	4.42	54"	3.89	48"	3.27	42"
170.0	221.0	5.35	72"	4.70	60"	4.12	54"	3.47	42"
240.0	312.0	6.09	84"	5.35	72"	4.69	60"	3.95	48"
350.0	455.0	7.01	96"	6.16	84"	5.41	72"	4.55	60"

Note:

1. "cfs" = cubic feet per second.
2. Minimum pipe sizes are calculated using the Manning's equation and are based on the flow rates with 30% factor.

APPENDIX E

Summary of Hydrologic Results

J-16325
Balboa Park Plaza
September 30, 2011

Summary - Hydrologic Results

Drainage Basin #	Drainage Node # at Point of Interest	Project Condition	Tributary Area (acres)	Time of Concentration (minutes)	100-year Flow Rates (cfs [1])
100	120	Pre-project	7.1	10.7	12.0
	120	Post-project	6.9	13.3	11.1
150	155	Pre-project	5.0	8.9	15.7
	155	Post-project	5.0	8.9	15.7
200	220	Pre-project	22.6	12.7	53.6
	220	Post-project	22.8	13.2	52.7
300 + 400	340 + 450	Pre-project	11.4	8.0	23.3
	340 + 450	Post-project	11.5	18.4	18.4
500	510	Pre-project	3.2	18.5	5.7
	510	Post-project	3.1	18.9	5.5

Note:
1. "cfs"= cubic feet per second.

MAP POCKET 1

Drainage Study Map
for
Balboa Park Plaza
[Pre-project]

BASIN 100
5.6 AC.
BASIN 150
3.3 AC.
BASIN 200
10.4 AC.
BASIN 300
2.9 AC.
BASIN 400
1.9 AC.
BASIN 500
3.1 AC.
1.3 AC.
0.2 AC.
0.7 AC.
0.1 AC.
0.4 AC.
1.0 AC.
0.3 AC.
0.5 AC.
1.7 AC.
2.8 AC.
5.9 AC.
100
101
114
120
150
151
152
155
200
201
202
203
205
206
207
208
209
210
211
212
213
214
300
301
340
400
401
402
403
405
406
407
408
409
410
415
450
500
501
510

100 50 0 100 200 300
GRAPHIC SCALE 1"= 100'

LEGEND:
- BASIN BOUNDARY
- SUB BASIN BOUNDARY
- XX.X AC. SUB BASIN AREA
- XXX NODE NUMBER

DRAINAGE STUDY MAP FOR BALBOA PARK PLAZA

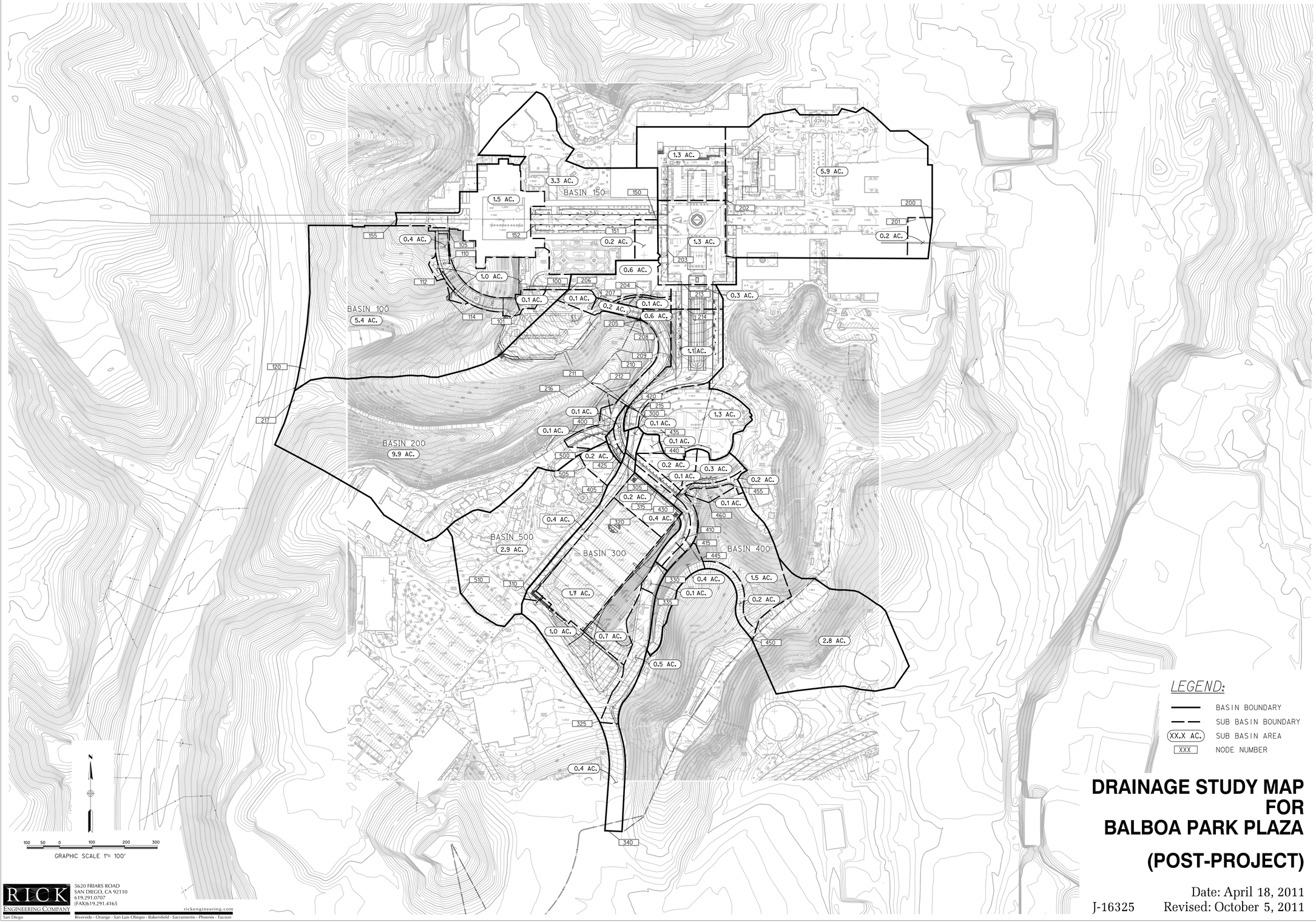
(PRE-PROJECT)

Date: April 18, 2011
J-16325 Revised: October 5, 2011

RICK ENGINEERING COMPANY
San Diego
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX)619.291.4165
rickengineering.com
Riverside - Orange - San Luis Obispo - Bakersfield - Sacramento - Phoenix - Tucson

MAP POCKET 2

Drainage Study Map
for
Balboa Park Plaza
[Post-project]



DRAINAGE STUDY MAP FOR BALBOA PARK PLAZA (POST-PROJECT)

Date: April 18, 2011
J-16325 Revised: October 5, 2011

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NOT FOR CONSTRUCTION - EXHIBIT FOR DRAINAGE STUDY REPORT ONLY

MAP POCKET 3

Drainage Study Map
for
Fill Disposal Site
[Pre-project & Post-project]

GENERAL NOTE:

THE PROJECT DOES NOT PROPOSE ADDING IMPERVIOUS AREA, NOR ALTERING THE DRAINAGE CHARACTERISTICS TO ANY OUTFALL. THEREFORE, THERE WILL BE NO CHANGE TO THE RUNOFF COEFFICIENT AND PEAK FLOW RATES FOR THE FILL DISPOSAL SITE.

DRAINAGE NOTE FOR SITE #1:

THE OPEN CHANNEL SWALE WITHIN FILL DISPOSAL SITE 1 IS THE ONLY PROPOSED DRAINAGE FEATURE FOR THE ENTIRE FILL DISPOSAL SITE. THIS SWALE HAS BEEN DESIGNED WITH A BOTTOM WIDTH OF 6 FEET, SLOPE OF 1.0% (+/-), AND SIDE SLOPES OF 3:1. THE DRAINAGE CHARACTERISTIC ASSUMPTIONS FOR THE AREAS TRIBUTARY TO THE OPEN CHANNEL SWALE ARE AS FOLLOWS:
C VALUE = 0.6 (30% IMPERVIOUS)
Tc = ~ 10 MIN
A = 19.0 AC
Q = 39.3 CFS (~2.1 CFS/ACRE)
NORMAL DEPTH = 1.1 FEET
VELOCITY = 4.1 FPS

OUTFALL LOCATION #1

PROPOSED FILL DISPOSAL SITE #1

4.0 AC.

5.7 AC.

13.0 AC.

13.3 AC.

PROPOSED FILL DISPOSAL SITE #2

1.6 AC.

13.0 AC.

PROPOSED FILL DISPOSAL SITE #3

4.7 AC.

OUTFALL LOCATION #2A

OUTFALL LOCATION #2B

OUTFALL LOCATION #3

LEGEND:

- BASIN BOUNDARY
- SUB BASIN BOUNDARY
- XX.X AC. SUB BASIN AREA
- FLOW PATH
- OUTFALL LOCATION

100 50 0 100 200 300

GRAPHIC SCALE 1"= 100'

DRAINAGE STUDY MAP FOR BALBOA PARK PLAZA FILL DISPOSAL SITE

(PRE- & POST-PROJECT)

J-16325 Date: December 21, 2011

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NOT FOR CONSTRUCTION - EXHIBIT FOR DRAINAGE STUDY REPORT ONLY

APPENDIX K

Noise Technical Report

Noise Technical Report for the Balboa Park Plaza de Panama Project, City of San Diego Project No. 233958

Prepared for

KCM Group
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San Diego, CA 92109

Prepared by

RECON Environmental, Inc.
1927 Fifth Avenue
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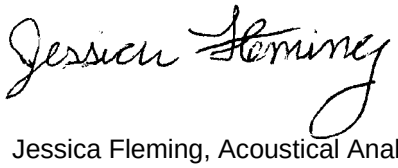
P 619.308.9333 F 619.308.9334
RECON Number 6095
April 25, 2012 (Revised)



Jessica Fleming, Acoustical Analyst

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1.0 Summary

This report evaluates potential noise impacts associated with the proposed Balboa Park Plaza de Panama project (project). The project is located in Balboa Park in the City of San Diego. The Balboa Park Plaza de Panama project proposes to return pedestrian uses at locations throughout the Park, including the Plaza de Panama, El Prado, California Plaza, and the Mall. This will be achieved by making a variety of circulation and parking structural improvements to reclaim these locations in the Park for pedestrians by removing vehicular access.

1.1 Traffic Noise

The noise increase at the south side of the Alcazar Garden due to the traffic on the proposed Centennial Bridge would not be a perceptible change. Because the project would remove traffic from the Plaza de Panama, traffic noise at all other locations adjacent to the Plaza de Panama would decrease as a result of the project. Impacts due to traffic noise would be less than significant.

1.2 Parking Structure Noise

As discussed below, noise resulting from the Organ Pavilion parking structure (also referred to as the parking structure) would not result in a significant increase at the nearest receptors. In addition, noise levels would not exceed noise ordinance limits. Noise impacts due to parking structure activities would be less than significant.

1.3 Construction Noise

As discussed below, construction noise levels at the Park uses are not regulated by the noise ordinance. Although construction noise would be temporary and limited to the duration of the construction, it has the potential to impact Park users, particularly museum visitors or during special events and performances. Exterior construction noise impacts would be less than significant, as they would be below the 75 dB(A) L_{eq} threshold. Because exterior construction noise levels could exceed 60 dB, noise levels within the museums could exceed the 45 dB standard for interior noise levels for sensitive receptors, temporary interior noise impacts would be significant. The additional measures outlined below would reduce noise impacts but not to a level less than significant. Additionally, noise impacts due to truck hauling and deliveries would be less than significant.

1.4 Aircraft Noise

The project lies outside the 65 dB CNEL contour for Lindbergh Field. The Airport Land Use Compatibility Plan (ALUCP) for Lindbergh Field indicates that noise-sensitive uses are compatible when noise levels are less than 65 dB CNEL. Therefore, the project would be compatible with the noise levels defined in the adopted ALUCPs.

1.5 Ground-Borne Vibration/Noise

The project does not propose any uses that would generate ground-borne vibration or noise. Project construction would not require pile driving. Ground-borne vibration impacts would be less than significant.

2.0 Introduction

As discussed above, the Balboa Park Plaza project proposes to return pedestrian uses at locations throughout the Park, including the Plaza de Panama, El Prado, Plaza de California, and the Mall. The main objectives of the project include the following:

1. Remove vehicles from the Plaza de Panama, El Prado, Plaza de California, the Mall, and Pan American Road East while maintaining public and proximate vehicular access to the institutions which are vital to the Park's success and longevity.

2. Restore pedestrian and Park uses to El Prado, Plaza de Panama, Plaza de California, the Mall, and the California Gardens behind the Organ Pavilion.

3. Improve access to the Central Mesa through the provision of additional parking, while maintaining convenient drop-off, disabled access, and valet parking, and a new tram system with the potential for future expansion.

4. Improve the pedestrian link between the Central Mesa's two cultural cores: El Prado and the Palisades.

5. Implement a funding plan including bonds that provides for a self-sustaining parking structure intended to fund the structure's operation and maintenance, the planned tram operations, and the debt service on the structure only.

6. Complete all work prior to January 2015 for the 1915 Panama-California Exposition centennial celebration.

Figure 1 shows the regional location of the project. Figure 2 shows an aerial photograph of the project and vicinity. Figure 3 shows the conceptual master plan. Figure 4 shows the proposed site plan. The specific improvements are detailed below. The numbers below correspond to the numbered areas shown in Figure 4.

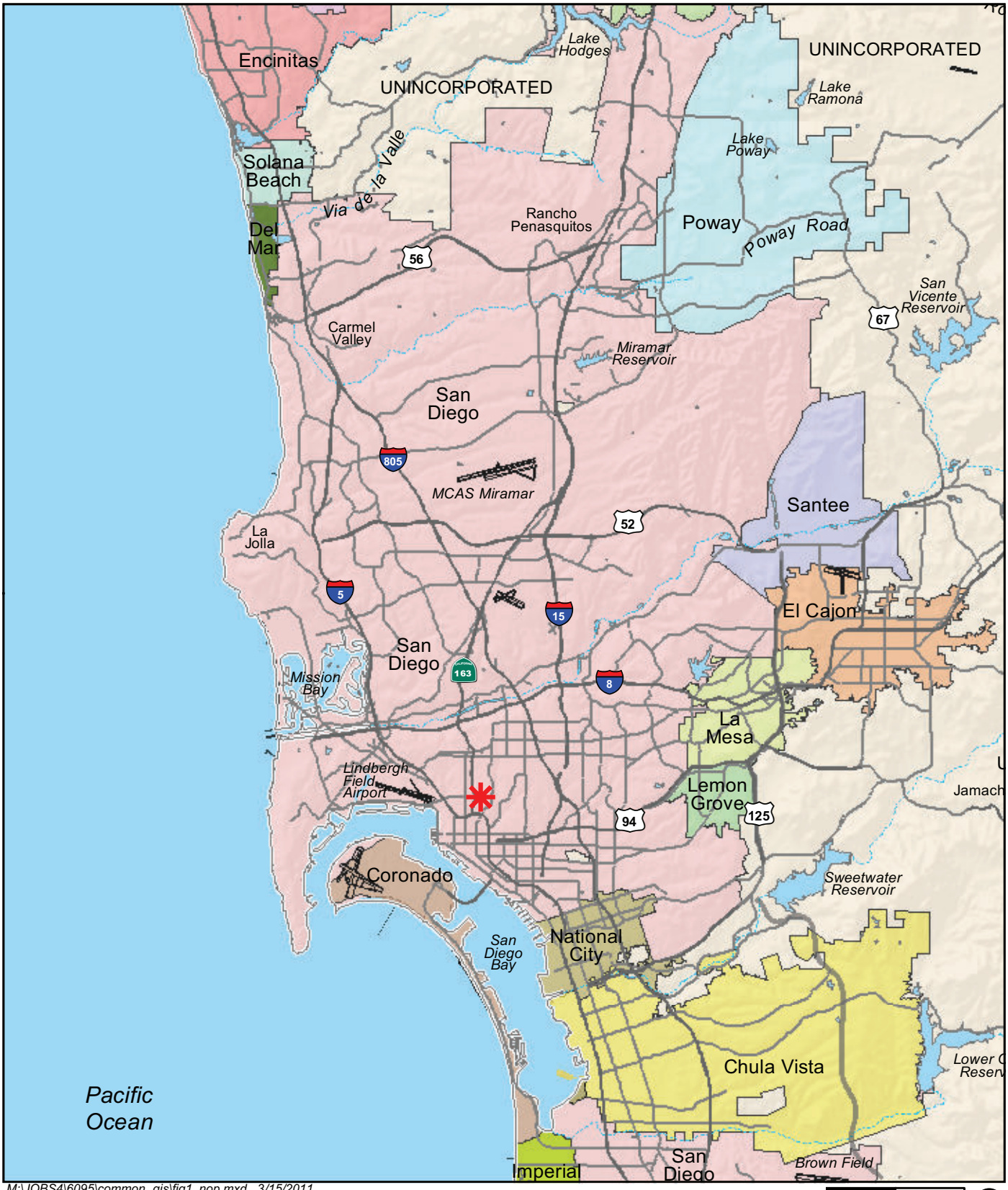
1. **Plaza de Panama:** Consistent with the approved Balboa Park Master Plan and 1992 Central Mesa Precise Plan, parking would be removed from the Plaza de Panama and the Plaza would be rehabilitated for pedestrian use. This project would also eliminate automobile traffic from the adjacent promenades.

2. **El Prado and Plaza de California:** The historic uses of El Prado and Plaza de California were for pedestrian circulation and open space. El Prado is the primary east-west spine that runs the length of the Central Mesa, from the Cabrillo Bridge at the west to the Plaza de Balboa at the east. The Plaza de California is the small plaza encircled by the California Building. The project would remove vehicle traffic from El Prado.

3. **Centennial Bridge and Road:** Centennial Bridge and Road are proposed to divert vehicular traffic from the center of Balboa Park, allowing El Prado to be used by pedestrians. The new two-way bridge and road would provide a connection beginning at the east end of the Cabrillo Bridge and continue through the eucalyptus grove around the southwest corner of the Museum of Man.

4. **Alcazar Parking Lot and Walkway:** The existing Alcazar parking lot would be redesigned to provide additional accessible parking as well as passenger drop-off, museum loading, and valet. The proposed lot includes 32 American with Disabilities Act (ADA) stalls, approximately 16 valet stacking spaces with a small valet booth (36 square feet), and a passenger drop-off area adjacent to the historic Alcazar Garden. Parking for other vehicles would not be permitted in this lot. Most cars would continue east and would park in the Organ Pavilion parking structure that is discussed below.

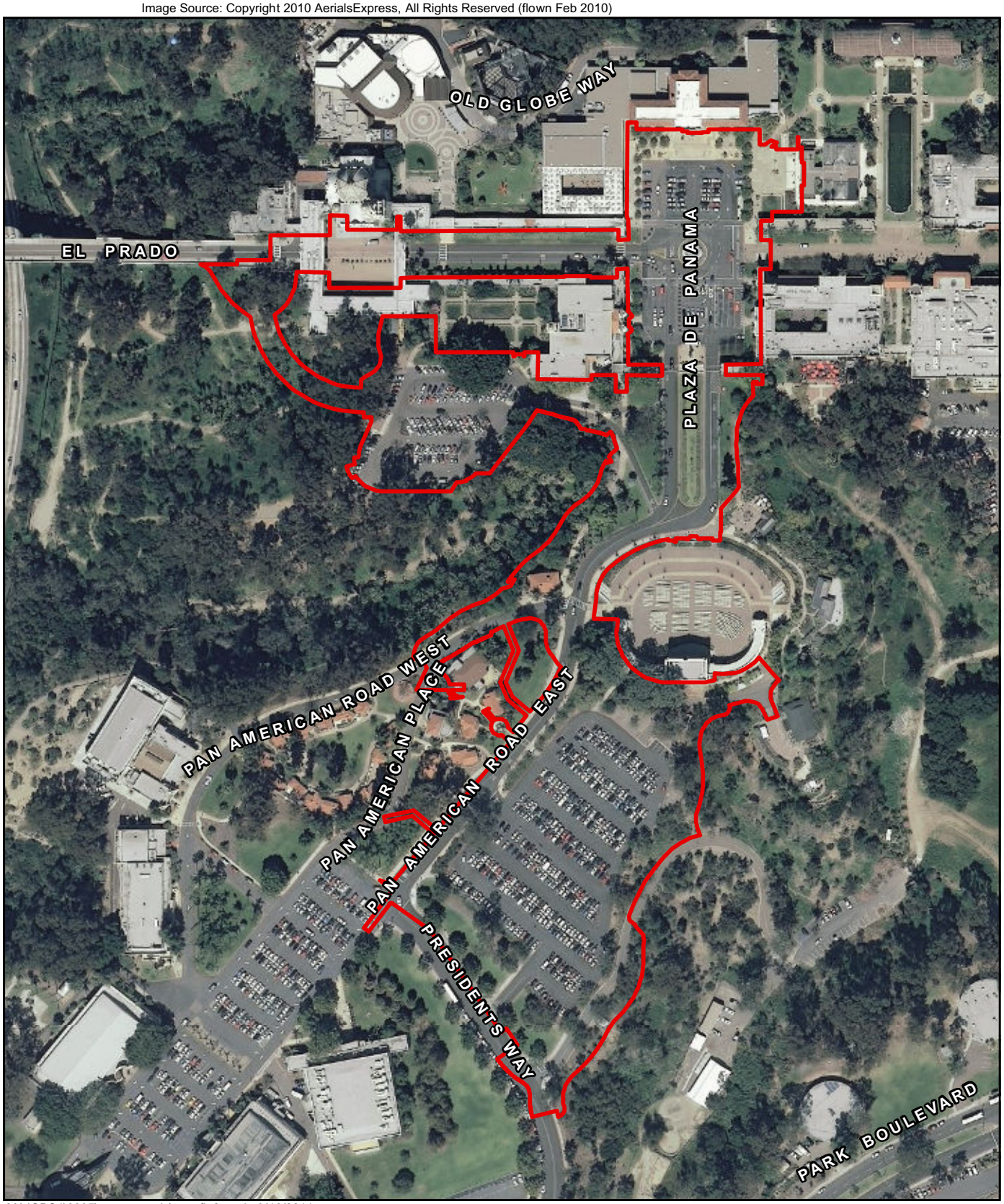
5. **The Mall and Pan American Road:** The Mall is the roadway and landscaped median between the Plaza de Panama and the Spreckels Organ Pavilion. Pan American Road is the segment of street that connects the Mall to Presidents Way. The Mall and Pan American Road are currently used for vehicular circulation. Pedestrian access is limited to sidewalks at both sides of the road. The project would reclaim both the Mall and Pan American Road for pedestrian access by rerouting vehicle traffic west of Pan American Road. The new route would then pass below Pan American Road to access the north side of the new underground parking structure discussed below.



Project Location

FIGURE 1

Regional Location



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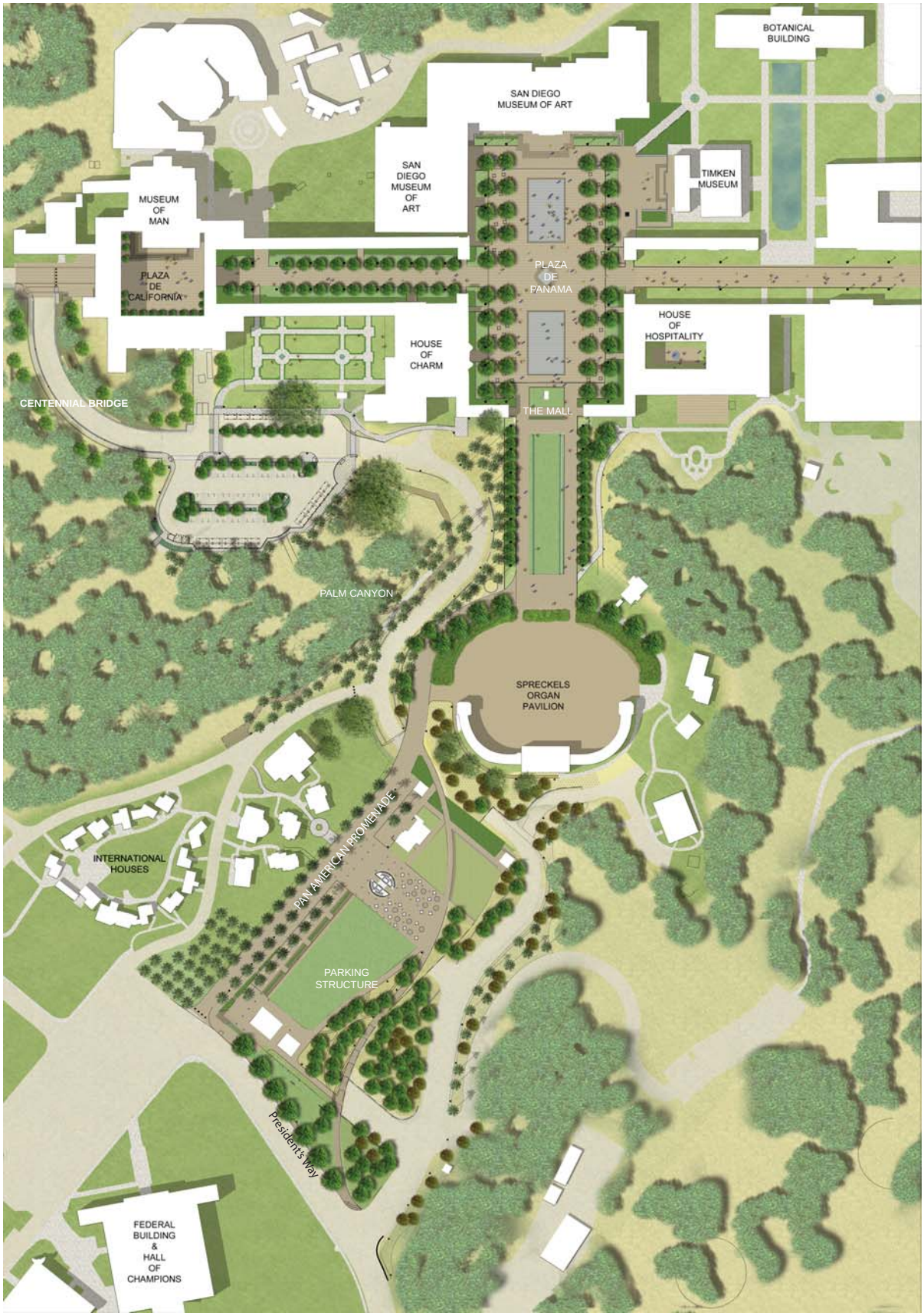
Project Area

FIGURE 2

Aerial Photograph of Project Site and Vicinity

Map Source: Rick Engineering



No Scale

FIGURE 3

Conceptual Master Plan

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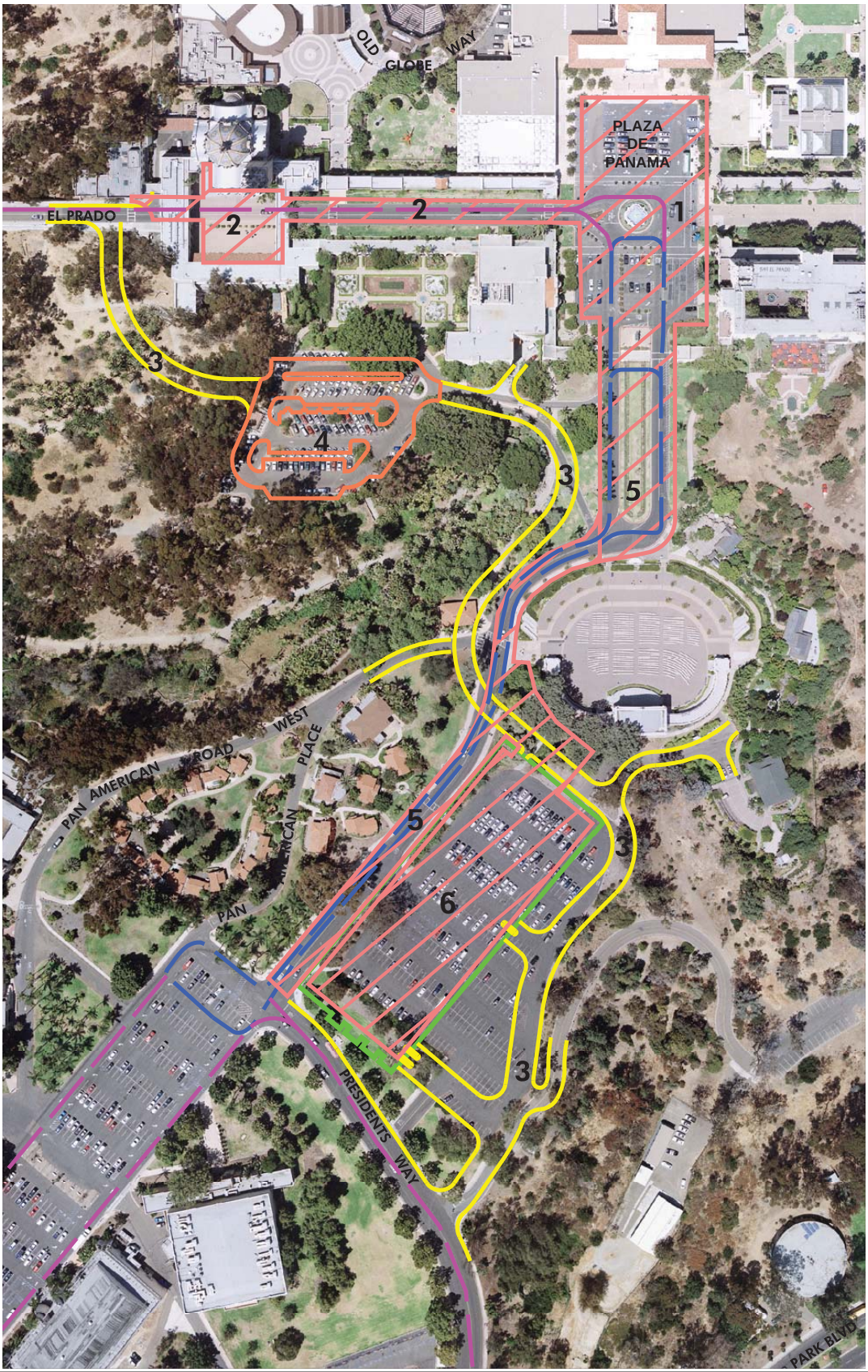
Map Source: Rick Engineering



- Proposed Plaza Tram/Shuttle Route
- Proposed Organ Pavilion Parking Structure
- Proposed Pedestrian Restoration
- Proposed Roadways
- Alcazar Parking Lot
- Existing Park-wide Tram Route

1 Plaza de Panama
2 El Prado and Plaza de California
3 Centennial Bridge and Centennial Road
4 Alcazar Parking Lot
5 The Mall and Pan American Promenade
6 Parking Structure and Rooftop Park

No Scale

FIGURE 4
Site Plan

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1. **Parking Structure and Roof-top Park:** A new parking structure and park top would be constructed at the location of the existing Organ Pavilion surface lot. The new structure would allow pedestrian and vehicular traffic to be safely separated. In addition, the new multi-level underground structure would allow reclamation of open space for landscape and pedestrian/park use on the top of the parking structure. The proposed 265,242-square-foot underground parking structure would provide 798 parking spaces on three levels with a 2.2-acre rooftop park. Vehicle access to and from the new structure would be provided on the north side of the structure from the new Centennial Bridge road. Vehicle access will be grade separated from pedestrian traffic, eliminating the current pedestrian conflicts. The vehicle road would continue along the east side of the structure to a secondary parking entrance/exit, and the road would continue to Presidents Way and Park Boulevard.

The project schedule is based on "typical working hours" with hours of operation between 7:00 A.M. to 7:00 P.M., Monday through Friday.

Impacts are assessed in accordance with the guidelines, policies, and standards established by the City of San Diego. Measures are recommended, as required, to reduce adverse impacts to noise-sensitive areas.

3.0 Analysis Methodology

3.1 Applicable Standards and Definitions of Terms

3.1.1 Fundamentals of Traffic Noise and Noise Descriptors

The actual impact of noise is not a function of loudness alone. The time of day which noise occurs and the duration of the noise are also important. In addition, most noise that lasts for more than a few seconds is variable in its intensity. Consequently, a variety of noise descriptors has been developed. The noise descriptors used for this study are the 1-hour average-equivalent noise level ($L_{eq[1]}$), the 12-hour average-equivalent noise level ($L_{eq[12]}$), and the CNEL.

The 1-hour and 12-hour average-equivalent noise levels ($L_{eq(1)}$ and $L_{eq(12)}$) are the levels of a steady sound which, in the stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound. In other words, the hourly equivalent sound level is the A-weighted sound level over a 1-hour period, and the

12-hourly equivalent sound level is the A-weighted sound level over a 12-hour period. A-weighting is a frequency correction that often correlates well with the subjective response of humans to noise.

The CNEL is a 24-hour A-weighted average sound level [dB(A) L_{eq}] obtained after the addition of 5 decibels (dB) to sound levels occurring between 7:00 P.M. and 10:00 P.M., and 10 dB to sound levels occurring between 10:00 P.M. and 7:00 A.M. Adding 5 dB and 10 dB to the evening and nighttime hours, respectively, accounts for the added sensitivity of humans to noise during these time periods.

Sound from a small, localized source (approximating a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level decreases or drops off at a rate of 6 decibels for each doubling of the distance.

However, roadway traffic noise is not a single, stationary point source of sound. The movement of vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. The drop-off rate for a line source is 3 decibels for each doubling of distance.

Change in noise levels is perceived as follows: 3 dB(A) barely perceptible, 5 dB(A) readily perceptible, and 10 dB(A) perceived as a doubling or halving of noise.

3.1.2 Standards Applicable to Traffic Noise

The City’s Noise Element of the General Plan specifies compatibility standards for different categories of land-use. The land-use compatibility standards are summarized in Table 1. As shown in Table 1, regional parks are compatible up to 65 dB CNEL and conditionally compatible up to 70 dB CNEL. As shown in the legend in Table 1, compatible means that activities associated with the land use may be carried out, and conditionally compatible means that feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable.

The City’s Significance Determination Thresholds also provides noise significance land use compatibility standards. The land use compatibility chart is shown in Table 2. Compatible land uses are shaded. Incompatible land uses are unshaded. As shown, parks are compatible up to 65 dB CNEL.

TABLE 1
GENERAL PLAN LAND USE NOISE COMPATIBILITY GUIDELINES

Land Use Category	Exterior Noise Exposure [CNEL]				
	60	65	70	75	
Open Space, Parks, and Recreational					
Community and Neighborhood Parks; Passive Recreation					
Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Water Recreational Facilities; Horse Stables; Park Maintenance Facilities					
Agricultural					
Crop Raising and Farming; Aquaculture, Dairies; Horticulture Nurseries and Greenhouses; Animal Raising, Maintaining and Keeping; Commercial Stables					
Residential					
Single Units; Mobile Homes; Senior Housing		**45**			
Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations		**45**	**45**		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities		**45**			
Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities)		**45**	**45**		
Cemeteries					
Sales					
Building Supplies/Equipment; Food, Beverage, and Groceries; Pets and Pet Supplies; Sundries, Pharmaceutical, and Convenience Sales; Wearing Apparel and Accessories			**50**	**50**	
Commercial Services					
Building Services; Business Support; Eating and Drinking; Financial Institutions; Assembly and Entertainment; Radio and Television Studios; Golf Course Support			**50**	**50**	
Visitor Accommodations		**45**	**45**	**45**	
Offices					
Business and Professional; Government; Medical, Dental, and Health Practitioner; Regional and Corporate Headquarters			**50**	**50**	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or Personal Vehicle Repair and Maintenance; Commercial or Personal Vehicle Sales and Rentals; Vehicle Equipment and Supplies Sales and Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment and Materials Storage Yards; Moving and Storage Facilities; Warehouse; Wholesale Distribution					
Industrial					
Heavy Manufacturing; Light Manufacturing; Marine Industry; Trucking and Transportation Terminals; Mining and Extractive Industries					
Research and Development				**50**	

	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level.
		Outdoor Uses	Activities associated with the land use may be carried out.
	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas.
		Outdoor Uses	Feasible noise mitigation techniques should be analyzed and incorporated to make the outdoor activities acceptable.
	Incompatible	Indoor Uses	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

SOURCE: City of San Diego 2008.

TABLE 2
CITY OF SAN DIEGO NOISE LAND USE COMPATIBILITY CHART

Land Use		CNEL 50	55	60	65	70	75
1	Outdoor amphitheaters						
2	Schools, libraries						
3	Nature preserves, wildlife preserves						
4	Residential single-family, multi-family, mobile homes, transient housing						
5	Retirement homes, intermediate care facilities, convalescent homes						
6	Hospitals						
7	Parks, playgrounds						
8	Office buildings, business and professional						
9	Auditoriums, concert halls, indoor arenas, churches						
10	Riding stables, water recreation facilities						
11	Outdoor spectator sports, golf courses						
12	Livestock farming, animal breeding						
13	Commercial-retail, shopping centers, restaurants, movie theaters						
14	Commercial-wholesale, industrial manufacturing, utilities						
15	Agriculture (except livestock), extractive industry, farming						
16	Cemeteries						

3.1.3 Standards Applicable to On-Site Stationary Noise

Section 59.5.0401 of the City's Noise Abatement and Control Ordinance states that:

> A. It shall be unlawful for any person to cause noise by any means to the extent that the one-hour average sound level exceeds the applicable limit…
>
> B. The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts…

The applicable noise limits are summarized in Table 3. There is no noise ordinance limit for park uses. Because Balboa Park has museums, businesses, and other daytime uses, the commercial limits were determined to be applicable.

TABLE 3
APPLICABLE NOISE LEVEL LIMITS

Land Use	Time of Day	One-Hour Average Sound Level [dB(A) $L_{eq(1)}$]
Single-Family Residential	7:00 A.M. to 7:00 P.M.	50
	7:00 P.M. to 10:00 P.M.	45
	10:00 P.M. to 7:00 A.M.	40
Multi-Family Residential (Up to a maximum density of 1/2000)	7:00 A.M. to 7:00 P.M.	55
	7:00 P.M. to 10:00 P.M.	50
	10:00 P.M. to 7:00 A.M.	45
All other Residential	7:00 A.M. to 7:00 P.M.	60
	7:00 P.M. to 10:00 P.M.	55
	10:00 P.M. to 7:00 A.M.	50
Commercial	7:00 A.M. to 7:00 P.M.	65
	7:00 P.M. to 10:00 P.M.	60
	10:00 P.M. to 7:00 A.M.	60
Industrial or Agricultural	Anytime	75

3.1.4 Standards Applicable to Construction Noise

Section 59.5.0404 of the City's Noise Abatement and Control Ordinance states that:

> A. It shall be unlawful for any person, between the hours of 7:00 P.M. of any day and 7:00 A.M. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise. . . .

> B. . . . it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 A.M. to 7:00 P.M.

As indicated, the construction noise limit of 75 dB(A) $L_{eq(12)}$ is applied at the property lines of any residential uses for daytime construction activities. The construction noise limit in the noise ordinance applies at residential uses and does not apply at any other land use, including park uses. However, there are many noise-sensitive uses within Balboa Park that would be exposed to construction noise.

The City of San Diego Significance Thresholds indicate that impacts would be significant if temporary construction noise would substantially interfere with normal business communication or affect sensitive receptors. Construction noise levels at these areas were evaluated relative the residential property line 75 dB(A) $L_{eq(12)}$ threshold and, in addition, using the compatibility guidelines (Table 1). As shown in Table 1, the interior noise compatibility level for institutional uses, including museums, is 45 dB when exterior noise is between 60 and 65 dB. While this interior noise limit is not typically applied to construction noise, for the purposes of this analysis 45 dB was used as a guideline for determining temporary interior noise impacts due to construction activities. The City of San Diego considers that standard construction techniques will provide a 15 dB reduction of exterior noise levels to an interior receiver. With these criteria, standard construction is considered to result in interior noise levels of 45 dB or less when exterior sources are 60 dB or less.

3.2 Existing Noise Level Measurements

To determine the existing noise conditions and assess the potential impacts of noise resulting from the project, noise measurements were taken in the project vicinity on Saturday, April 9, 2011 and Saturday, September 24, 2011. Noise levels were measured on Saturdays as opposed to weekdays because weekend days are some of the busiest Park days. Noise measurements were taken with two Larson-Davis Model 720 Type 1 Integrating Sound Level Meter, serial numbers 1824 and 1825. The following parameters were used:

Filter:	A-weighted
Response:	Fast
Time History Period:	5 second

The meters were calibrated prior to the day's measurements. Twelve ground-floor measurements (5 feet above the ground) were taken at 12 locations in the project

vicinity on Saturday, April 9, 2011. Six additional ground-floor measurements were taken on Saturday, September 24, 2011.

3.3 Traffic Noise Analysis

3.3.1 Traffic Parameters

Traffic noise occurs adjacent to every roadway and is directly related to the traffic volume, speed, and mix of vehicles. While the project would not result in an increase in traffic volumes, it would reroute within the Central Mesa to remove vehicular traffic from the Plaza de Panama, El Prado, Plaza de California, the Mall, and Pan American Road East.

Existing and future traffic volumes through the Alcazar parking lot were obtained from the traffic study prepared for the project (Rick Engineering 2011). The greatest traffic volumes occur on weekend days. A traffic mix of 95.1 percent cars, 0.4 percent medium trucks, 0.1 percent heavy trucks, 2.9 percent buses, and 1.5 percent motorcycles was observed. Table 4 summarizes the vehicle traffic parameters.

TABLE 4
VEHICLE TRAFFIC PARAMETERS IN ALCAZAR PARKING LOT

Existing Weekday Volume (ADT)	Existing Weekend Volume (ADT)	Future Weekday Volume (ADT)	Future Weekend Volume (ADT)	Traffic Mix (percent)				
				Autos	Medium Trucks	Heavy Trucks	Buses	Motor-cycles
6,500	7,600	10,300	12,100	95.1	0.4	0.1	2.9	1.5

3.3.2 Analysis of Traffic Noise

Noise generated by existing and future traffic was projected based on noise measurements and extrapolated from existing to future traffic volumes. Noise measurements were taken on a Saturday during peak traffic hours. Measured noise levels were adjusted for existing weekday and future weekday and weekend traffic volumes by the following formula:

$$D\,dB(A) = 10 \times \log (\text{Desired Traffic Volume} / \text{Measured Traffic Volume})$$

As discussed above, the movement of vehicles makes the source of the sound appear to emanate from a line (line source) with a dropoff rate of 3 decibels for each doubling of distance. The inverse square law was used to adjust measured levels for distance. The equation for this calculation is as follows:

$$H = 10 \log (R_o \backslash R)$$

where

H = total noise attenuation due to distance
R = distance from source
R_o = reference distance from source

The analysis of the noise environment is based on flat topography with no intervening terrain between sensitive land uses and roadways. Because no obstructions were taken into consideration, predicted noise levels are higher than what would actually occur. In actuality, buildings and other obstructions along the roadways would shield distant receivers from the traffic noise.

3.4 On-Site Generated Noise Analysis

Although noise from parking lots is primarily associated with traffic, because the noise essentially emanates from a stationary area (the parking lot), it is assessed against the on-site stationary noise standards. The reference noise level for the Organ Pavilion parking structure, discussed below, was adjusted for the distance from the proposed activity area to the modeled receivers.

The inverse square law was used to adjust measured levels for distance, assuming the noise can be treated as a point source. The equation for this calculation is as follows:

$$H = 20 \log (R_o \backslash R)$$

where

H = total noise attenuation due to distance
R = distance from source
R_o = reference distance from source

This calculated attenuation was then subtracted from the measured reference value to determine the noise level at the desired distance.

As discussed above, the noise metric used in this study for on-site generated noise is the average sound level for a 1-hour period [$L_{eq(1)}$]. As indicated, the City Noise Ordinance standards are expressed as the $L_{eq(1)}$ in A-weighted decibels.

3.5 Construction Noise Analysis

Similar to on-site generated noise, the reference noise levels for the construction equipment, discussed below, were adjusted for the distance from the construction activity areas to the adjacent noise sensitive areas.

The inverse square law shown above was used to adjust reference noise levels for distance assuming the noise can be treated as a point source. This calculated attenuation was then subtracted from the reference value to determine the noise level at the desired distance.

As indicated, the City's Noise Ordinance standards for construction are expressed as the $L_{eq(12)}$ in A-weighted decibels.

The project would also require a number of material deliveries and hauling. The sound exposure level (SEL) is the total noise energy produced from a single noise event. The SEL is a metric used to describe the amount of noise from an event such as an individual truck pass-by or and aircraft flyover.

The 12-hour average noise level was calculated from the reference SEL for one truck pass-by discussed below using the following formula:

$$L_{eq(12)} = \text{SEL} + 10 \times \log(\text{number of events per 12-hour period}) - 10 \times \log(\text{number of seconds per 12-hour period})$$

This noise level was then adjusted for distance using the inverse square law discussed above in Section 3.4.

4.0 Existing Conditions

Balboa Park is characterized by a variety of landforms, including natural areas, with steep, vegetated canyons, gardens, and open spaces including the golf course and Morley field; and developed areas such as most of the Central Mesa. The project site is located within the Central Mesa area of Balboa Park. The Central Mesa is located at the heart of the Park and was the site of the 1915 and 1935 Expositions. The Central Mesa is a designated National Historic Landmark and is home to a significant number of the cultural amenities and attractions found within the Park.

El Prado, the Plaza de Panama, Pan American Road, along with the existing Alcazar and Organ Pavilion parking lots were previously graded and are paved. The Alcazar Garden and the Mall, though remaining as green spaces, have both been previously disturbed as well. Palm Canyon is a natural part of the project area.

Land uses surrounding the project site generally consist of other Park amenities and some limited open space. Located to the north of the project site are the Old Globe Theater, the Sculpture Garden, and the Museum of Art. The Prado continues through the project site to the east towards Plaza de Balboa, along which several other museums are located. Southeast of the project site, next to the Mall and Organ Pavilion, are the Tea Pavilion, Japanese Friendship Garden, and an undeveloped canyon area. To the southwest of the project area, near the proposed parking structure, the Pan American Plaza and the International Cottages are located. Most of the area to the west of the project site is undeveloped, including Palm Canyon.

4.1 Existing Noise Level Measurements

Noise measurements were taken on Saturday, April 9, 2011, during a time when the weather was sunny and there were many Park activities and visitors. In general, noise sources at Balboa Park included traffic on roadways and parking lots, aircraft approaching for landing at Lindbergh Field, Park visitors, chimes from the California Tower, and dogs and owners attending a dog event in the park. Measured noise levels ranged from 54.7 to 64.9 dB(A) L_{eq}. Noise measurement locations are shown in Figure 5 and summarized in Table 5. Noise measurement data are contained in Attachment 1.

4.2 Existing Aircraft Noise

Lindbergh Field is located approximately one mile west of the project site. During normal weather conditions, aircraft approaching Lindbergh Field fly directly over Balboa Park. Existing noise level contours for aircraft operations at Lindbergh Field are shown in Figure 6. As shown, the project lies outside the 65 dB CNEL contour.

5.0 Acoustical Environment and Impacts

5.1 Traffic Noise

The City's General Plan Noise Element specifies compatibility standards for different categories of land use and the City's Significance Determination Thresholds also specifies noise land use compatibility standards (see Tables 1 and 2). These noise thresholds are used as guidance for determining whether a land use is compatible in the existing or future noise environment. As shown on both tables, park uses are compatible

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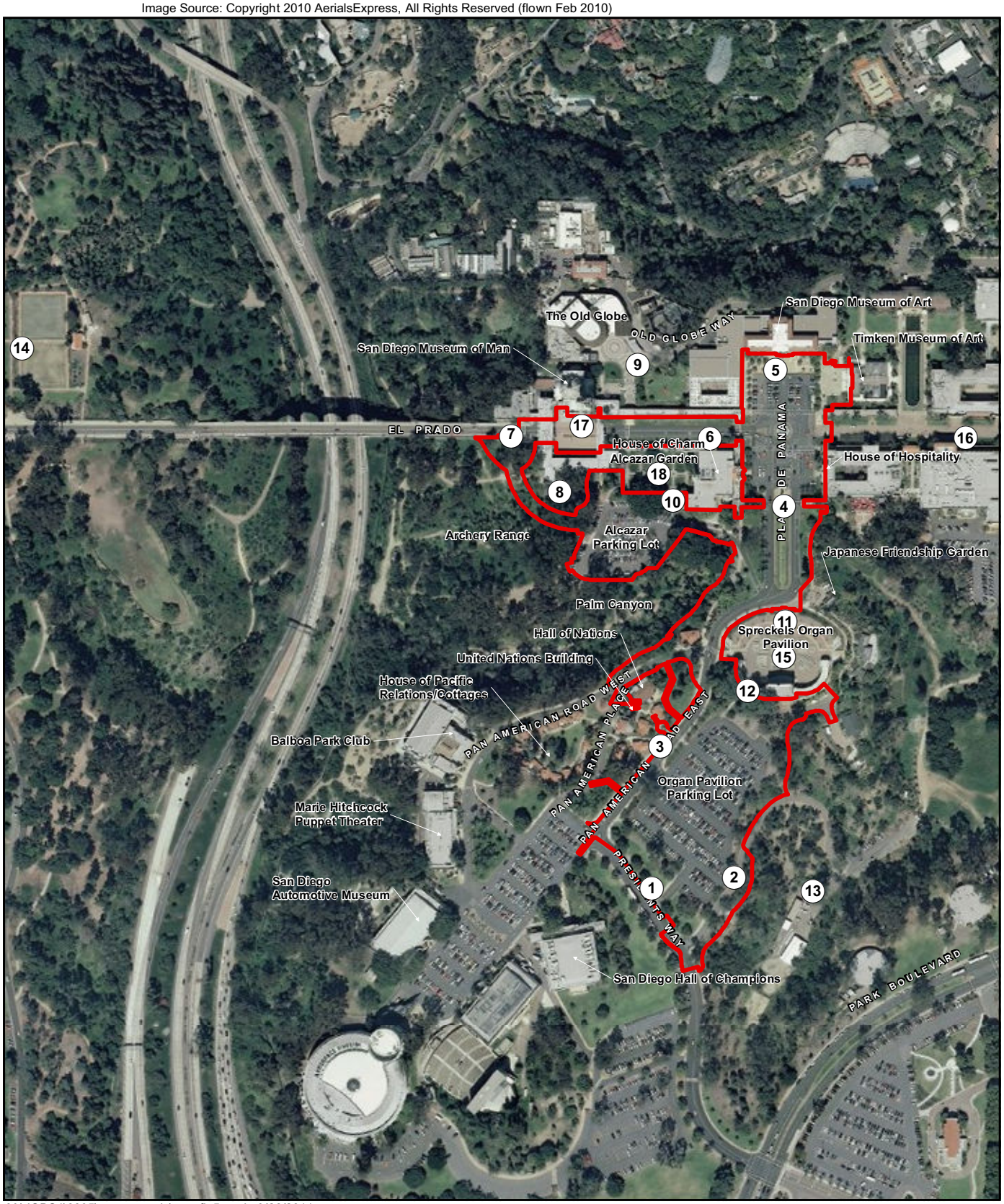

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Project Area

5 Measurement Locations

FIGURE 5

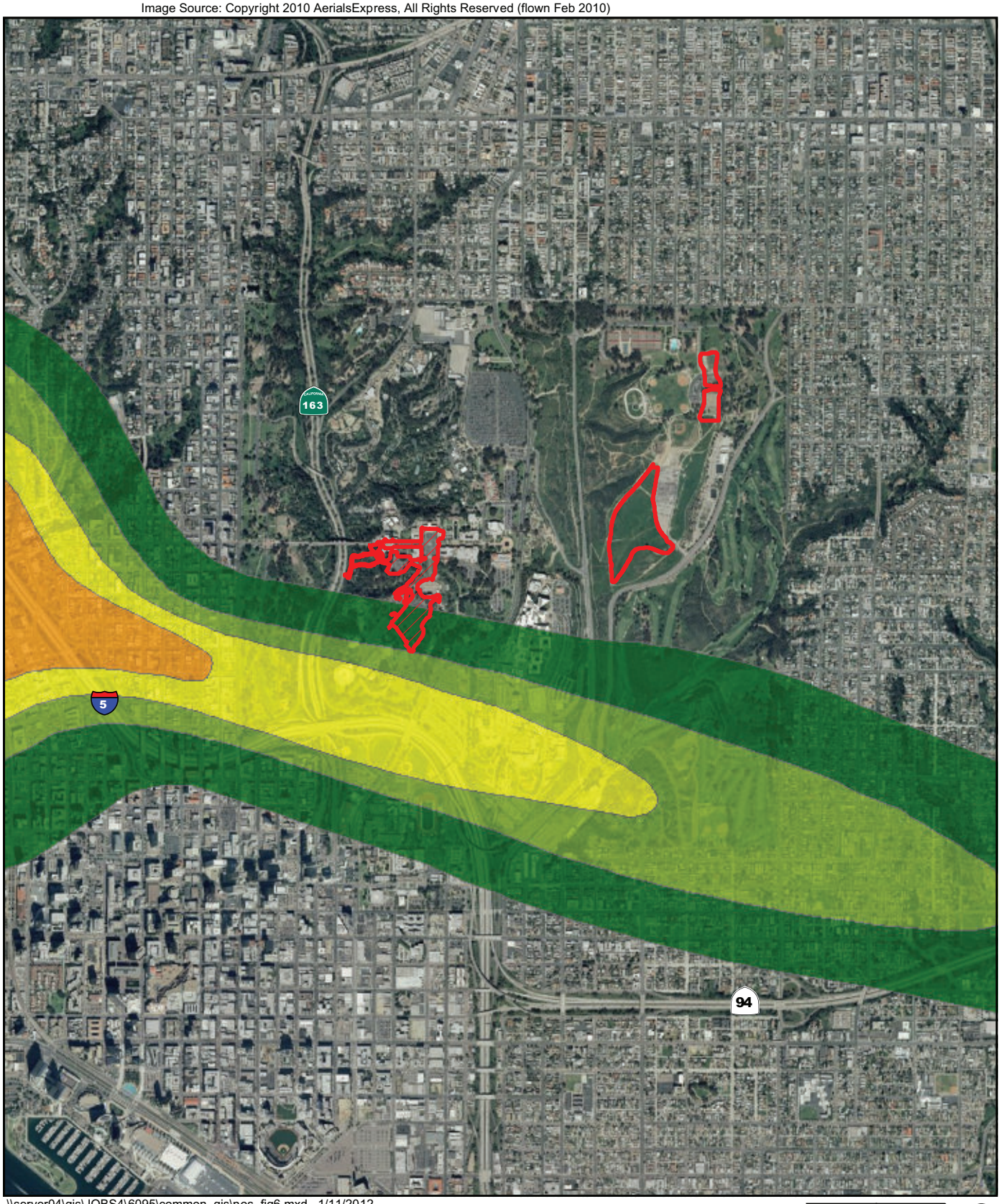
Noise Measurement Locations

TABLE 5
NOISE MEASUREMENT RESULTS

Measurement Number	Location	Description/Noise Sources	Date/Time	Measured Noise Level [dB(A) L_{eq}]
1	Presidents Way south of Organ Pavilion Parking Lot	Noise sources included traffic on Presidents Way; parking lot activity; aircraft; chimes from the California Tower; and dogs, owners, and loud speakers at dog event on Presidents Lawn. The Organ Pavilion Parking Lot was approaching full capacity during the measurement period.	April 9, 2011 10:47 A.M. – 11:02 A.M.	62.6
2	Southeast of Organ Pavilion Parking Lot	Noise sources included traffic on Presidents Way; parking lot activity; aircraft; chimes from the California Tower; and dogs, owners, and loud speakers at dog event on Presidents Lawn. The Organ Pavilion Parking Lot was at full capacity during the measurement period and cars were circling the lot.	April 9, 2011 11:08 A.M. – 11:23 A.M.	63.8
3	Pan American East Road	Noise sources included traffic on Pan American East Road, parking lot activity, aircraft, park visitors, and chimes from the California Tower.	April 9, 2011 11:33 A.M. – 11:48 A.M.	63.5
4	Plaza de Panama adjacent to El Cid Statue	Noise sources included traffic on Plaza de Panama, parking lot activity, aircraft, park visitors, and chimes from the California Tower.	April 9, 2011 11:58 A.M. – 12:13 P.M.	61.3
5	San Diego Museum of Art	Noise sources included parking lot activity, aircraft, park visitors, and chimes from the California Tower. The Museum of Art parking lot was full.	April 9, 2011 12:20 P.M. – 12:25 P.M.	57.1
6	El Prado adjacent to House of Charm	Noise sources included traffic on El Prado, aircraft, park visitors, and chimes from the California Tower. Traffic on El Prado approaching the stop sign to the east was moving slow and/or stopped during the measurement period.	April 9, 2011 12:40 P.M. – 12:55 P.M.	63.2
7	El Prado west of San Diego Museum of Man	Noise sources included traffic on El Prado, aircraft, park visitors, and chimes from the California Tower. Traffic on El Prado approaching the stop sign to the east was moving slow and/or stopped during the measurement period.	April 9, 2011 1:00 P.M. – 1:15 P.M.	64.9
8	Archery range in Palm Canyon south of West Gate	Noise sources included traffic on SR-163, aircraft, and chimes from the California Tower. There was no one on the archery range during the measurement period.	April 9, 2011 1:20 P.M. – 1:35 P.M.	56.4
9	The Old Globe	Noise sources included theater-goers gathering in the vicinity, aircraft, and chimes from the California Tower. Noise levels were measured for the 15-minute period prior to the start time of two performances at The Old Globe and Sheryl and Harvey White Theater.	April 9, 2011 1:43 P.M. – 1:58 P.M.	60.2
10	Alcazar Garden/Parking Lot	Noise sources included parking activities in the Alcazar Parking Lot, aircraft, park visitors, and chimes from the California Tower.	April 9, 2011 2:04 P.M. – 2:19 P.M.	58.4
11	North of Organ Pavilion	Noise sources included aircraft, park visitors, and chimes from the California Tower.	April 9, 2011 2:23 P.M. – 2:38 P.M.	59.7
12	South of Organ Pavilion	Noise sources included aircraft, parking activity in the Organ Pavilion Parking Lot, park visitors, students, and chimes from the California Tower.	April 9, 2011 2:42 P.M. – 2:57 P.M.	64.3
13	Gold Gulch	Noise sources included aircraft, park visitors gathered on President's Lawn, vehicles, and chimes from the California Tower.	September 24, 2011 12:37 P.M. – 12:52 P.M.	59.3

TABLE 5
NOISE MEASUREMENT RESULTS
(continued)

Measurement Number	Location	Description/Noise Sources	Date/Time	Measured Noise Level [dB(A) L_{eq}]
14	West Mesa Lawn Bowling Greens	Noise sources included traffic on El Prado and Sixth Avenue, aircraft, park visitors.	September 24, 2011 1:07 P.M. – 1:22 P.M.	51.5
15	Organ Pavilion	Noise sources included aircraft, park visitors, and chimes from the California Tower.	September 24, 2011 1:37 P.M. – 1:52 P.M.	54.7
16	East Prado Pedestrian Area	Noise sources included park visitors, aircraft, and chimes from the California Tower.	September 24, 2011 1:58 P.M. – 2:13 P.M.	58.7
17	El Prado adjacent to Museum of Man	Noise sources included traffic on El Prado, aircraft, park visitors, and chimes from the California Tower.	September 24, 2011 2:21 P.M. – 2:36 P.M.	61.2
18	Alcazar Garden	Noise sources included traffic on El Prado, parking activities in the Alcazar parking lot, aircraft, park visitors, and chimes from the California Tower.	September 24, 2011 2:39 P.M. – 2:54 P.M.	54.9



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0 Feet 2,000

Project Area

Off-site Project Components

1990 Noise Contours

60 CNEL

65 CNEL

70 CNEL

75 CNEL

FIGURE 6

Lindbergh Field Noise Contours

with a noise level up to 65 dB CNEL, although regional parks are also considered to be conditionally compatible with a noise level of 70 dB CNEL per the General Plan.

As shown in Table 5, existing measured noise levels ranged from 54.7 to 64.9 dB(A) L_{eq}. The project would construct additional pedestrian and park space within an existing park. According to the City's threshold, these would be compatible with existing noise levels.

Traffic noise occurs adjacent to every roadway and is directly related to the traffic volume, speed, and mix of vehicles. While the project would not result in an increase in traffic volumes, it would reroute within the Central Mesa and remove vehicular traffic from the Plaza de Panama, El Prado, Plaza de California, the Mall, and Pan American Road East. As a result, vehicle traffic noise levels within the newly proposed pedestrian use areas would decrease when compared to the existing condition and would be similar to noise levels in other existing pedestrian areas such as the East El Prado. As shown in Table 5, the existing pedestrian noise level in the East El Prado area is 58.7 dB(A) L_{eq} (Measurement Location 16). Additionally, noise levels at the museums and institutions surrounding the Plaza de Panama, El Prado, Plaza de California, the Mall, and Pan American Road East would decrease as well. These museums and institutions include the San Diego Museum of Man, the Old Globe Theatre, the House of Charm, the San Diego Museum of Art, the Timken Museum of Art, the House of Hospitality, and the Japanese Friendship Garden. Vehicle traffic noise levels at the Organ Pavilion would also decrease because the roadway would be moved further away from the Organ Pavilion as a result of the project.

Measurements 4, 5, and 6 were taken within areas that would be reclaimed for pedestrian use. The measured noise levels were 61.3, 57.1, and 63.2 dB(A) L_{eq}, respectively. Without the project, traffic would continue to travel through Plaza de Panama, El Prado, Plaza de California, the Mall, and Pan American Road East and noise levels would be unchanged. However, with the rerouting of traffic as a result of the project, it is expected that noise levels at these locations would be similar to noise levels in the existing pedestrian East Prado area (58.7 dB(A) L_{eq}). This difference would be even more noticeable in 2030 when future traffic volumes (both with and without the project) are projected to result in noise levels of 63.3, 59.1, and 65.2 dB(A) L_{eq} at measurement locations 4, 5, and 6, respectively.

The newly renovated pedestrian use areas would be located within areas subject to noise levels which are compatible with park use in accordance with the City's thresholds. Therefore, the project would not expose people to noise levels in excess of the noise land use compatibility guidelines. Because the project would reroute vehicle traffic further from pedestrian and institutional use areas, vehicle traffic noise levels would decrease when compared to the existing condition.

The noise environment at the Alcazar Garden was assessed to determine the effects of the project. Currently, traffic travels on the north side of the Alcazar Garden; it would be moved to the south side of the Alcazar Garden with the project. As shown in Table 5, the existing measured noise level at the north side of the Alcazar Garden is 63.2 dB(A) L_{eq}. This measurement was taken at 20 feet from the centerline of El Prado during a peak weekend traffic hour. To determine the effect on noise levels at the Alcazar Garden resulting from the project, this measured noise level was adjusted for distance using existing and future weekday and weekend peak hour traffic volumes and the formulas discussed in Section 3.3.2. Calculations assume flat site conditions and do not take into account noise attenuation provided by building shielding. Contour distances for noise levels are shown in Table 6. Because the calculations were based on a peak-hour noise measurement, the contour distances shown in Table 5 would be considered a worst-case result for the existing plus project and future plus project condition. It was assumed that the daily traffic volume during the baseline noise measurement (i.e., measured traffic volume) was equal to the existing weekend volume from the traffic report (7,600 ADT), and the increase in the measured noise level was calculated using the equation in 3.3.2.

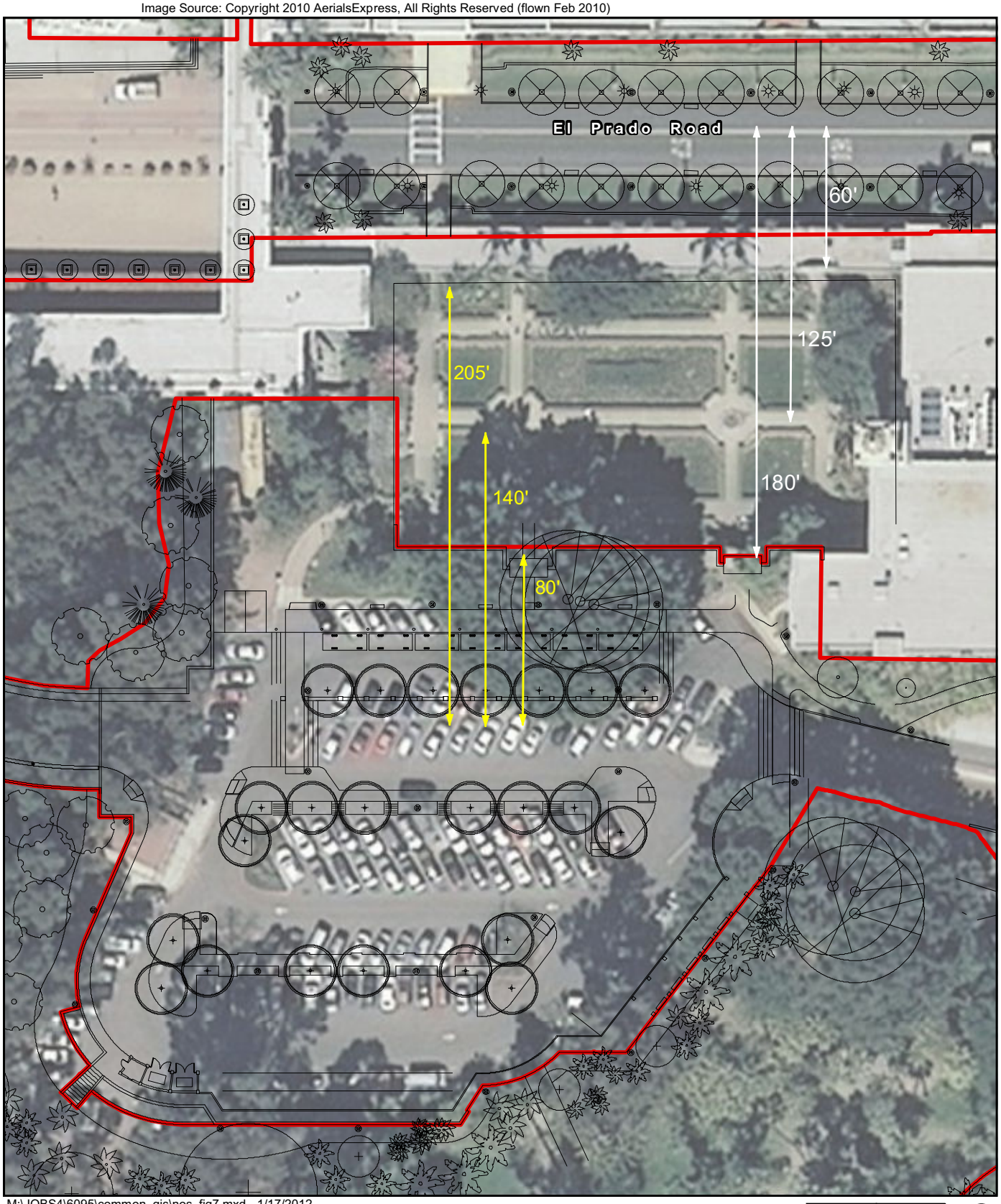
TABLE 6
PROJECTED NOISE CONTOUR DISTANCES

	Distance from Roadway to Contour (feet)			
Noise Level [dB(A) L_{eq}]	Existing Weekday Volume 6,500 ADT	Existing Weekend Volume 7,600 ADT	Future Weekday Volume 10,300 ADT	Future Weekend Volume 12,100 ADT
65	11	13	18	21
60	36	42	57	67
55	113	132	179	210
50	357	418	566	665

ADT = Average Daily Traffic

To determine the effect the project would have on ambient noise levels in the Alcazar Garden in both the existing and future conditions, traffic noise was modeled for four scenarios: (1) the existing configuration with the existing weekend traffic traveling on El Prado north of the Alcazar Garden, (2) the existing configuration with the future weekend traffic traveling on El Prado north of the Alcazar Garden, (3) the proposed configuration with the existing weekend traffic traveling south of the Alcazar Garden, and (4) the proposed configuration with the future weekend traffic traveling south of the Alcazar Garden.

The proposed configuration for the Alcazar parking lot is shown in Figure 7. To determine how the noise environment at the Alcazar Garden would be altered, first the distances between the existing El Prado centerline and the centerline of the new bridge/road alignment to the southern edge, middle, and northern edge of the Alcazar Garden were determined (see Figure 7). Then, using these distances and the noise contour calculations summarized in Table 6, the existing and future noise levels due to



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0 Feet 60

Project Area

Proposed Alcazar Parking Lot Design

FIGURE 7

Alcazar Parking Lot Configuration

TABLE 7
EXISTING AND FUTURE WEEKEND ALCAZAR GARDEN NOISE LEVELS

	Southern Edge of Alcazar Garden			Middle of Alcazar Garden			Northern Edge of Alcazar Garden		
	Distance (feet)	Existing Noise Level [dB(A) L_{eq}] – 7,600 ADT	Future Noise Level [dB(A) L_{eq}] – 12,100 ADT	Distance (feet)	Existing Noise Level [dB(A) L_{eq}] – 7,600 ADT	Future Noise Level [dB(A) L_{eq}] – 12,100 ADT	Distance (feet)	Existing Noise Level [dB(A) L_{eq}] – 7,600 ADT	Future Noise Level [dB(A) L_{eq}] – 12,100 ADT
Existing Configuration[1]	180	53.7	55.7	125	55.3	57.3	60	58.4	60.4
Proposed Alcazar Parking Lot Configuration Alternative 1[2]	80	57.2	59.2	140	54.8	56.8	205	53.1	55.1

[1]Traffic on El Prado north of Alcazar Garden
[2]Traffic through Alcazar Parking Lot south of Alcazar Garden

the existing configuration with traffic on El Prado and the proposed configuration were calculated at the southern edge, middle, and northern edge of the Alcazar Garden. These calculations were done using the worst-case existing and future weekend volume of 7,600 and 12,100 ADT, respectively. The results are summarized in Table 7.

While a low wall is proposed between the Alcazar Garden and the Alcazar parking lot that may slightly decrease traffic noise in the garden, for a worst-case analysis, noise levels in the garden were calculated without this wall. Furthermore, because parking in the Alcazar parking lot would be mainly ADA, it is anticipated that noise levels due to vehicles parking would be less than the existing configuration with vehicles circling the lot searching for general parking. Thus the analysis represents a conservative projection of the difference in noise levels with and without the project.

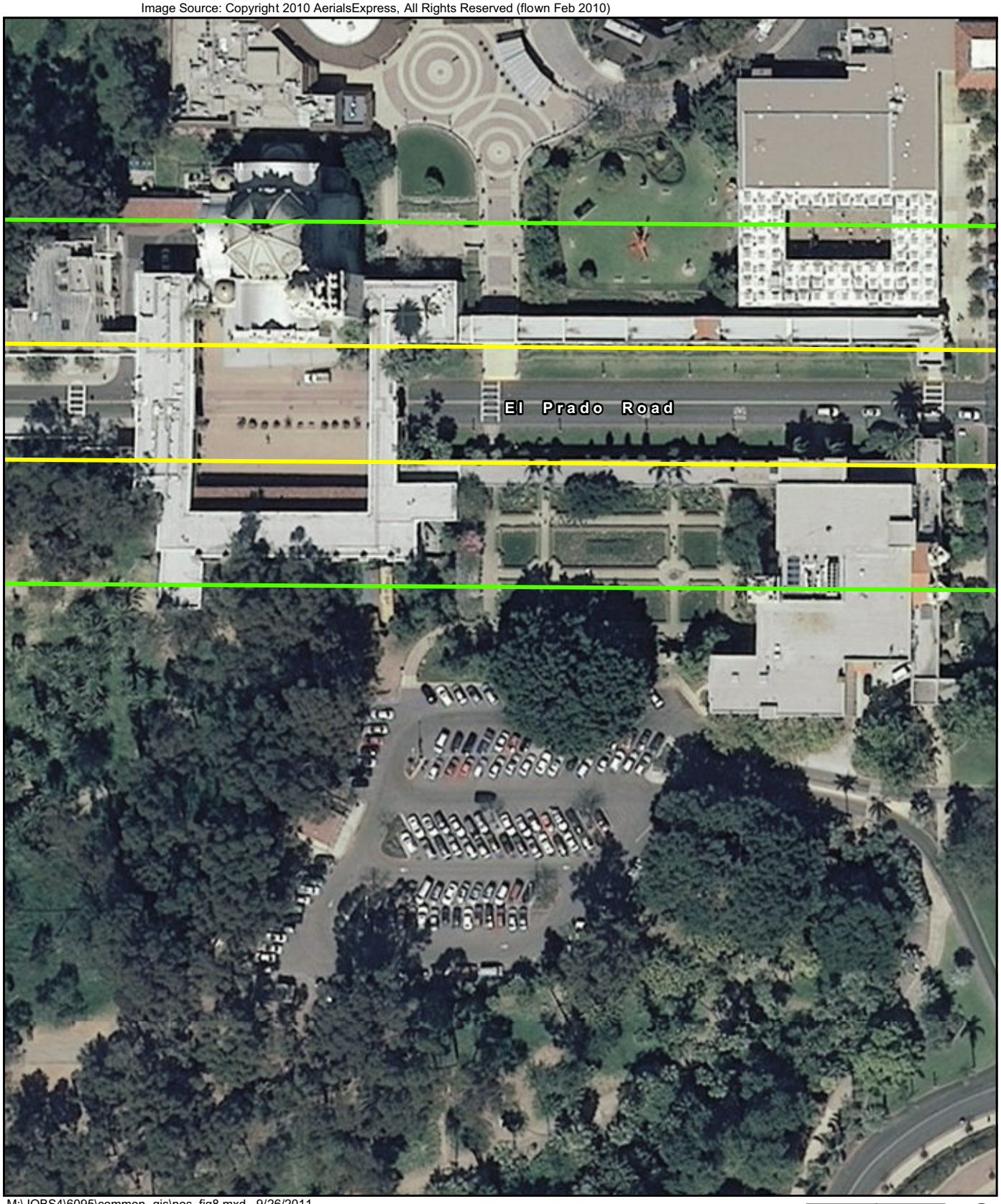
Existing and future hourly noise contours for the existing configuration are shown in Figures 8 and 9, respectively. It should be noted that these hourly noise levels shown in Figures 8 and 9 are due to existing and future traffic on El Prado and do not account for noise levels due to traffic circling the Alcazar parking lot.

As shown in Table 7 and Figure 7, the proposed configuration for the Alcazar parking lot would generally move further from the Alcazar Garden than the existing configuration, resulting in noise levels that would be less than they would be with the existing configuration.

Existing and future hourly noise contours for the proposed configuration are shown in Figures 10 and 11, respectively. Because parking in the Alcazar parking lot would be limited to handicap and valet, it is anticipated that noise levels due to vehicles parking would be less than the existing configuration with vehicles circling the lot searching for general parking.

Noise levels at the northern edge of the Alcazar Garden would decrease as a result of the project. Noise levels at the middle of the Alcazar Garden would also decrease as a result of the project. Noise levels at the southern edge of the Alcazar Garden would increase as a result of the project because the traffic noise source would be closer to the southern edge. The existing measured noise level at this location is 58.4 dB(A) L_{eq} (Measurement Location 10) and was due to existing traffic circling through the Alcazar parking lot. Table 7 shows that the proposed configuration would result in approximately a 1 dB increase at this location. This increase would not be perceptible to the human ear. In addition, noise levels would be less at the southern edge of the Alcazar Garden than the current noise levels at the northern edge of the Alcazar Garden.

In summary, overall noise levels in the Alcazar Garden would decrease as a result of the project because the proposed configuration would increase the distance between the travel lanes and the garden. The increase in noise at the southern edge of the garden would not be perceptible and therefore less than significant.



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0 Feet 100

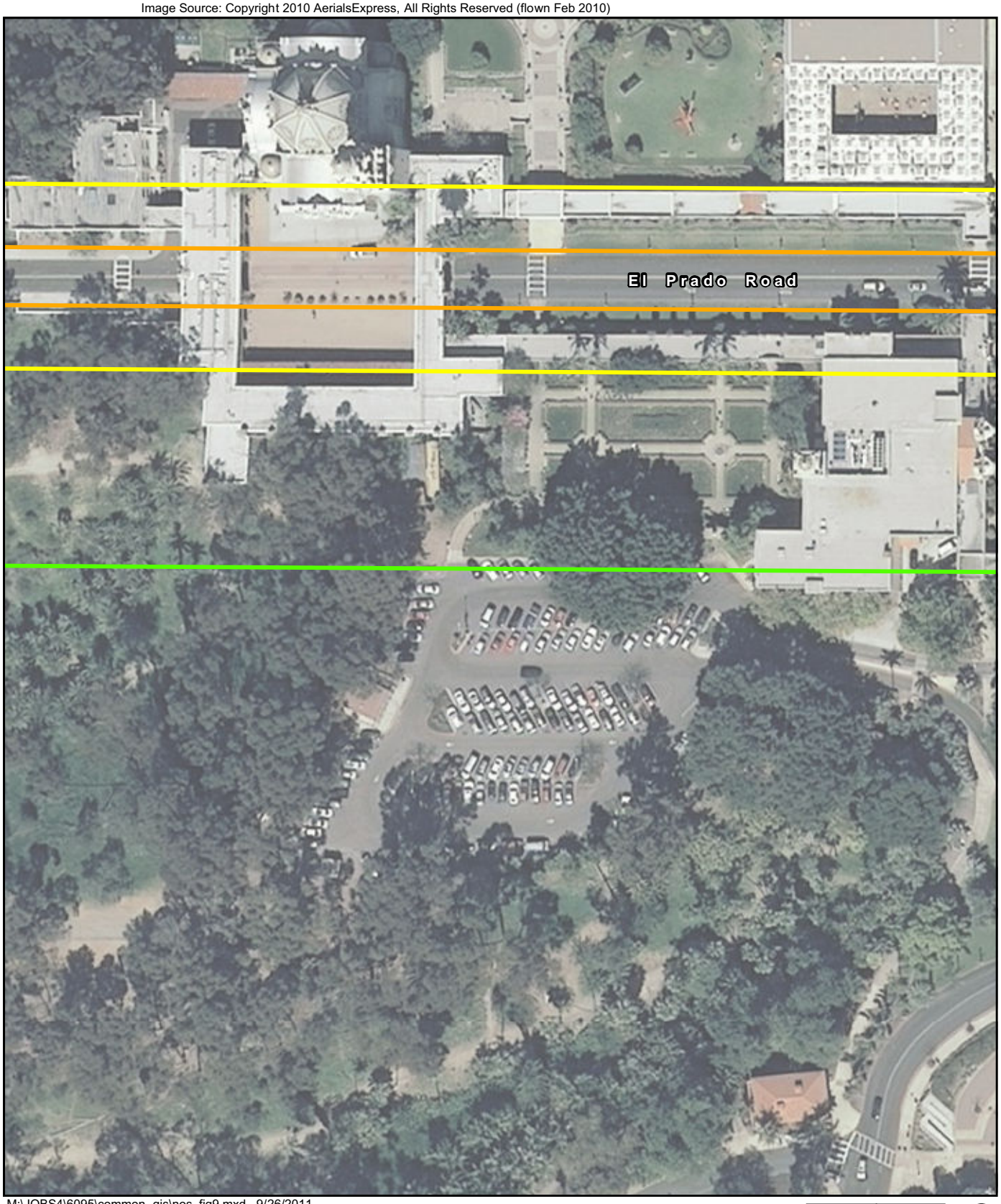
Hourly Noise Level [dB(A) Leq]

55

60

FIGURE 8

No Project Existing Hourly Traffic Contours



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0 Feet 100

Hourly Noise Level [dB(A) Leq]

- 55
- 60
- 65

FIGURE 9

No Project Future Hourly Traffic Contours

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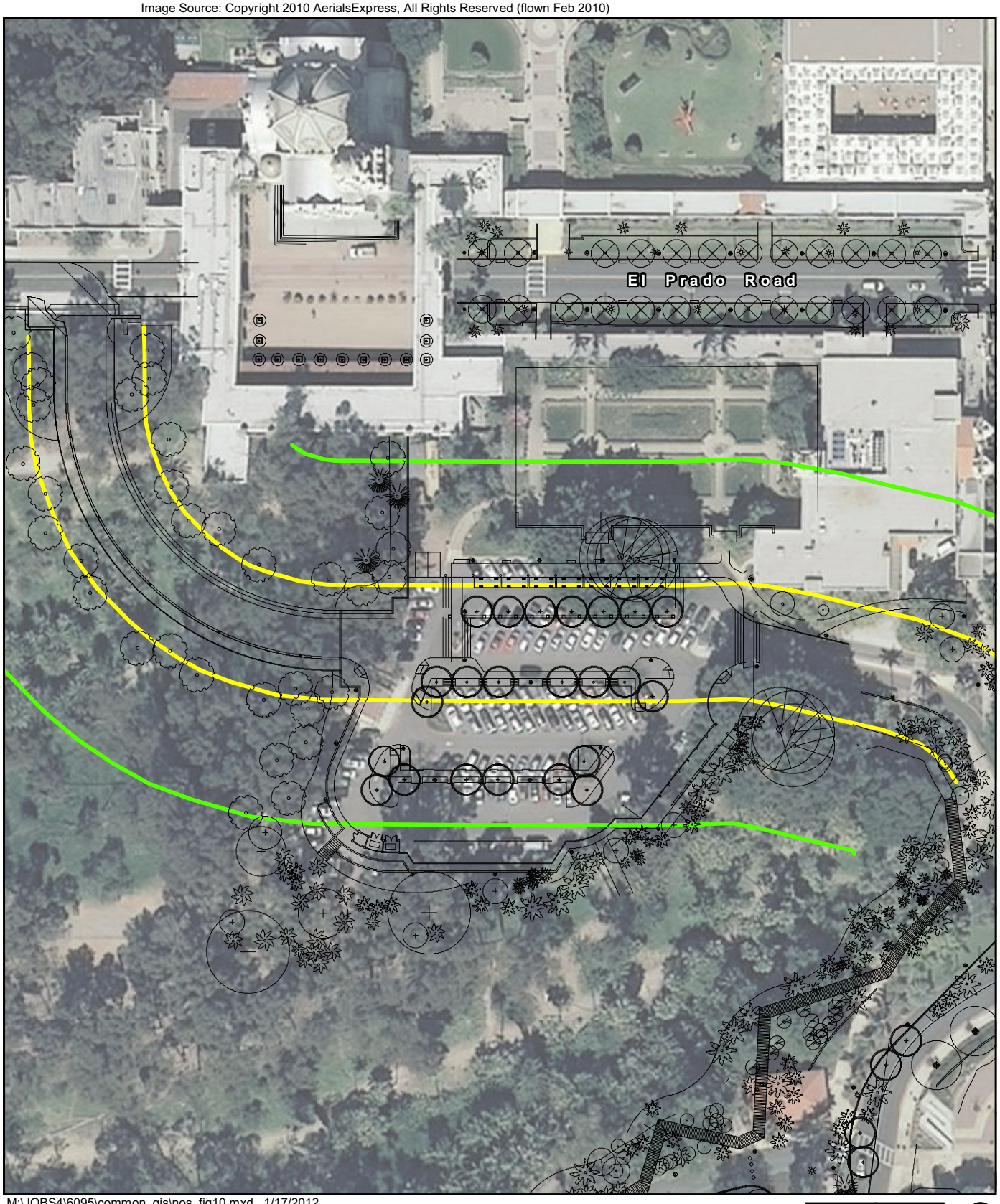

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0 Feet 100

Proposed Alcazar Parking Lot Design

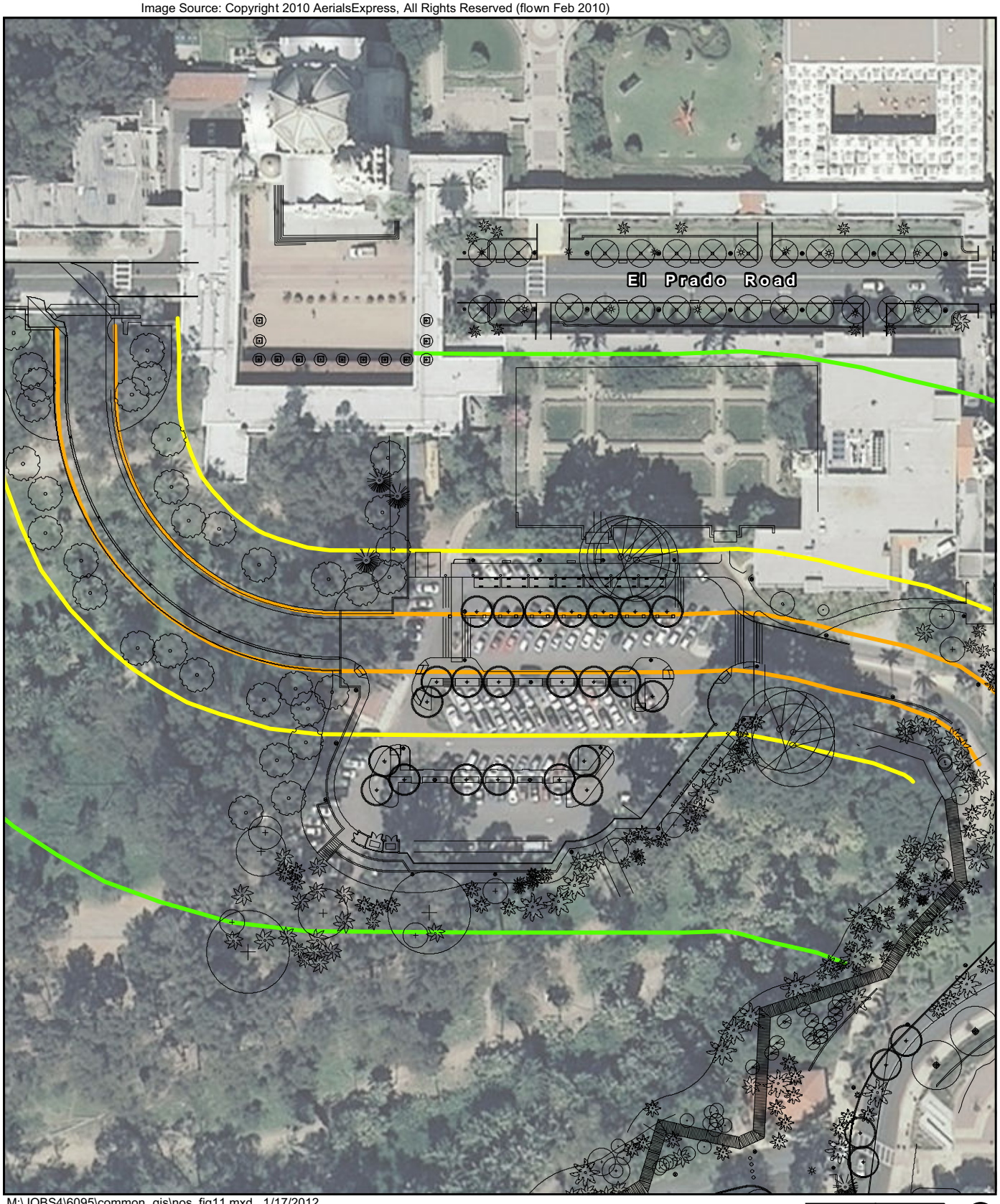
Hourly Noise Level [dB(A) Leq]

55

60

FIGURE 10

Project Existing Hourly Traffic Contours



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Proposed Alcazar Parking Lot Design

0 Feet 100

Hourly Noise Level [dB(A) Leq]

55

60

65

FIGURE 11

Project Future Hourly Traffic Contours

Because the project would remove traffic from the Plaza de Panama, traffic noise at all other locations adjacent to the Plaza de Panama would decrease as a result of the project.

5.2 Parking Structure Noise

The parking structure would be designed so exterior elevations would not be visible from the primary vantage points looking east, south, and north toward the structure. The eastern side of the structure (looking west) would be open, and parking activity noise would emanate from this side. Periodic noise would result from use of the proposed Organ Pavilion parking structure.

Noise measurements taken at an existing parking structure indicate a reference hourly noise level of 33.5 dB(A) at 50 feet from the structure per vehicle (RECON 2006). The proposed structure would have 798 parking spaces. As a worst-case scenario, it was assumed that the entire parking structure could reach capacity in one hour. This results in a worst-case hourly noise level of 62.5 dB(A) $L_{eq(1)}$ at 50 feet. Also, for a worst-case analysis, flat site conditions with no intervening structures were assumed. As detailed below, this would result in less than significant noise impacts. Because the parking structure is designed so that only the eastern side would be open and the other sides would be underground, actual parking structure noise levels would be less than those calculated below. For modeling purposes, it was assumed that the acoustic center of the parking structure activity would be the center of the parking structure.

Source noise levels from vehicles on Centennial Road passing by the Organ Pavilion would be similar to existing noise levels from vehicles on the existing Pan American East Road as the project would not result in an increase in traffic. The edge of the existing Pan American Road is 100 feet from the west most seating at the Organ Pavilion. The newly constructed roadway would be 150 from this area. Therefore, roadway through traffic would be less than the existing condition and noise would thereby be reduced.

The proposed rooftop park would include only passive park uses. Noise levels from the additional park space would be negligible.

The following is an analysis of the worst-case parking structure noise levels at the nearest receptors:

Spreckels Organ Pavilion: The Organ Pavilion is located approximately 325 feet northeast of the center of the proposed parking structure. Worst-case parking structure activity noise levels would attenuate to 46.2 dB(A) $L_{eq(1)}$ at the Organ Pavilion if there is a direct line of sight between the parking activity and the Organ Pavilion. However, the parking structure would be constructed so that the rooftop park would be at the same elevation as the Organ Pavilion, and the parking structure would only be open on the

eastern side. Therefore, parking activity occurring below the rooftop park would be shielded from Organ Pavilion visitors and noise levels would actually be less than 46.2 dB(A) $L_{eq(1)}$.

Additionally, as shown in Table 5, the existing measured noise level south of the Organ Pavilion is 64.3 dB(A) L_{eq}. The noise sources observed during this measurement included aircraft, parking activity at the existing Organ Pavilion parking lot, park visitors, students, and chimes from the California Tower. Adding the worst-case parking structure noise level of 46.2 dB(A) $L_{eq(1)}$ to this measured noise level results in a total noise level 64.4 dB(A) $L_{eq(1)}$, an increase of 0.1 dB. As discussed above, this does not account for any shielding provided by the parking structure's design. Therefore, there would be no perceptible increase in noise over existing measured noise levels. It should also be noted that the measured noise level of 64.3 dB(A) L_{eq} includes noise due to vehicles parking at the existing Organ Pavilion parking lot which would no longer exist as a result of the project.

The center of the Organ Pavilion is located approximately 475 feet from the center of the proposed parking structure. The worst-case parking structure activity noise levels would attenuate to 42.9 dB(A) $L_{eq(1)}$ at the center of the Organ Pavilion. As shown in Table 5, the existing measured noise level at the center of the Organ Pavilion is 54.7 dB(A) L_{eq}. The noise sources observed during this measurement included aircraft, park visitors, students, and chimes from the California Tower. Adding the worst-case parking structure noise level of 42.9 dB(A) $L_{eq(1)}$ to this measured noise level results in a total noise level of 55.0 dB(A) $L_{eq(1)}$, an increase of 0.3 dB. As discussed above, this does not account for any shielding provided by the parking structure's design. Therefore, there would be no perceptible increase in noise over existing measured noise levels.

Hall of Nations/United Nations Building: The Hall of Nations and United Nations Building are located approximately 140 feet northwest of the center of the proposed parking structure. Worst-case parking structure activity noise levels would attenuate to 53.6 dB(A) $L_{eq(1)}$ at the Hall of Nations and United Nations Building.

San Diego Hall of Champions: The San Diego Hall of Champions is located approximately 450 feet southwest of the center of the proposed parking structure. Worst-case parking structure activity noise levels would attenuate to 43.4 dB(A) $L_{eq(1)}$ at the San Diego Hall of Champions.

To assess potential impacts to the new rooftop park, parking activity noise levels were calculated at the edge of the parking structure and compared to the noise standards shown in Table 3. The edge of the proposed parking structure is approximately 95 feet from the center. A worst-case noise level of 62.5 dB(A) $L_{eq(1)}$ at 50 feet would attenuate to 56.9 dB(A) $L_{eq(1)}$ at 95 feet. This is less than both the daytime and evening noise ordinance limits of 65 and 60 dB(A) $L_{eq(1)}$, respectively.

The proposed rooftop park would include only passive park uses. Noise levels from the additional park space would be negligible.

In conclusion, impacts due to parking structure activities would be less than significant.

5.3 Construction Noise

Project construction activities would generate noise through construction equipment, truck hauling, and construction worker vehicle trips. Compared to construction equipment and hauling noise, traffic noise due to construction worker trips would be negligible and result in a less than significant noise impact. As such, detailed construction employee traffic noise analysis is not necessary and is not completed herein. Construction equipment and truck hauling noise impacts are analyzed below.

5.3.1 Construction Equipment Noise

Noise associated with the earthwork, excavation, construction, and surface preparation for the project will result in short-term impacts to sensitive uses. A variety of noise-generating equipment would be used during the construction phase of the project such as scrapers, dump trucks, backhoes, front-end loaders, jackhammers, and concrete mixers, along with others.

The project is scheduled for a 24-month overall construction duration. This schedule is based on "typical working hours" with hours of operation between 7:00 A.M. and 7:00 P.M., Monday through Friday, per the Municipal Code Section 59.5.0404. Specific activities, such as extensive on-road equipment operations, underground utility tie-ins, utility shutdowns, and roadway disruptions, would occur outside "typical working hours" in order to minimize impacts to Park visitors, Park operations, and surrounding operations. Activities scheduled outside the "typical working hours" would occur in coordination and with the authorization of City Development Services Department/Park and Recreation staff. The actual after hours work would be flexible to remain responsive to the schedule of a particular evening's event. The project's construction includes a total of four phases, described as follows:

Phase I – Utility Relocation and ~~Restroom Demolition~~Road Construction: Phase I would entail underground wet and dry utility relocation east of the proposed parking structure and along Presidents Way with emphasis on maintaining required services and access. Also, the north access point to Pan American Road West would be widened for temporary (Phase II) traffic circulation. ~~consist of demolishing the existing restroom facility in the Alcazar parking lot and relocating the existing utilities throughout the project footprint.~~ This stage of the project is expected to begin October 2012, take approximately 2 months for completion, and require between 25 to 30 workers on-site

per day. On-site construction equipment would include 1 Bobcat, 5 backhoes, 1 loader, 5 forklifts, and 1 mobile crane. Temporary construction equipment used for material deliveries would include flatbed trucks (23 total trips), concrete trucks (29 total trips), dump trucks (21 total trips), and pickup trucks (44 total trips). There is estimated to be approximately 117 total truck trips for purposes of material delivery and pickup. On average, construction would occur during "typical working hours."

Phase II – Bridge and Parking Structure Construction: Phase II would consist of constructing the Centennial Bridge and the Organ Pavilion parking structure. ~~off of the existing Cabrillo Bridge, a new three-level 798-stall parking structure at the location of the current Organ Pavilion parking lot, and a rooftop park above the parking structure.~~ Phase II would occur in two stages: Phases IIa and IIb. Phase IIa (approximately six months) would involve the construction of the west portion of the pedestrian promenade that passes over the Centennial Road tunnel, to allow temporary traffic circulation during Phase IIb (approximately eight months), while also starting the site preparation for the parking structure. This stage of the project is expected to begin December 2012, take approximately 14 months for completion, and require between 120 to 135 workers on-site per day at the peak of activity. On-site construction equipment would include 8 Bobcats, 3 backhoes, 8 loaders, 9 forklifts, 1 skytrack forklift, 2 excavators, 1 drill rig, 8 compressors, 3 concrete pumps, 1 paving machine, 18 generators, 31 trucks, 12 scissor lifts, 2 boom lifts, 4 mobile cranes, 1 tower crane, and 1 man lift. Temporary construction equipment used for material delivery/pickup would include flatbed trucks (1,077 total trips), concrete trucks (1,745 total trips), dump trucks (10,400 total trips), and pickup trucks (1,830 total trips). It is currently anticipated that a fleet of 20 to 25 on-road haul trucks would haul 142,000 cubic yards of soil from the project site to the Arizona Street Landfill (driving distance of approximately three miles) over a two-month period.

In an effort to minimize impacts to Park visitors, parking, and general Park operations, work on portions of the parking structure would be accelerated by a two shift operation, with the first shift working from 1:00 A.M. to 9:30 A.M. and second shift working from 9:30 A.M. to 6:00 P.M. Activities intended for dual-shift may include excavation and export, concrete formwork, reinforcing steel placement, and concrete placement and finishing. Soil export hauling would be coordinated to occur outside the peak traffic hours. Activities scheduled outside the "typical working hours" would occur only as coordinated with and granted by the City Park and Recreation staff. On average, construction would occur during "typical working hours."

Phase III – Alcazar Lot and Pedestrian/Tram Promenade Construction: Phase III would begin once the new parking structure is operational. Phase III would involve demolition of the existing restroom structure (with the permanent facilities operational on top of the parking structure), utility realignments at the intersection of Pan American Road and Pan American Road West, demolition, regrading for ADA requirements, and replacement of the existing Alcazar parking lot, including tie-in to the new Centennial

Bridge roadway; realignment of the connector road from the Alcazar lot to Pan American Road; associated retaining walls to allow grade separation between the vehicular roadway and pedestrian/tram promenade; and improvements to Pan American Road East fronting the new parking structure. This stage of the project is expected to begin November 2013, take approximately four months for completion, and require between 30 to 40 workers on-site per day. On-site construction equipment would include 5 Bobcats, 1 loader, 1 concrete pump, 1 paving machine, and 6 trucks. Temporary construction equipment used for material delivery/pickup would include flatbed trucks (25 total trips), concrete trucks (15 total trips), dump trucks (18 total trips), and pickup trucks (53 total trips). There is estimated to be approximately 111 total truck trips for purposes of material delivery/pickup. On average, construction would occur during "typical working hours."

Phase IV – The Pedestrian/Tram Promenade, Mall, and Plaza Improvements: Phase IV would consist of staged demolition of existing pavement, hardscape, landscape, and fixtures; finish grading; site utilities; and site improvements, including hardscape and landscape to complete finishes along the pedestrian/tram promenade and~~to~~ rehabilitate the Plaza de California, El Prado, Plaza de Panama, and the Mall. This stage of the project is expected to begin February 2014, take approximately four months for completion, and require between 40 to 50 workers on-site per day. On-site construction equipment would include 8 Bobcats, 3 backhoes, 5 loaders, 2 forklifts, 2 concrete pumps, 8 trucks, and 1 mobile crane. Temporary construction equipment used for material delivery/pickup would include flatbed trucks (301 total trips), concrete trucks (224 total trips), dump trucks (247 total trips), and pickup trucks (279 total trips). There is estimated to be approximately 1,051 total truck trips for purposes of material delivery/pickup. On average, construction would occur during "typical working hours."

Table 8 summarizes the number and pieces of equipment, the source noise levels and usage factors, and the total noise level for each phase averaged over a 12-hour period. Note: the levels presented in Table 8 assume the use of only the pieces of construction equipment listed that would operate simultaneously for each phase, and in each phase work areas (Horst, personal communication 2011).

As discussed above, unless a permit is granted, "it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 A.M. to 7:00 P.M." The nearest residential property line is approximately 2,000 feet west of the project footprint. The loudest construction noise level of 88.4 dB(A) $L_{eq(12)}$ at 50 feet, which occurs during Phase III, would attenuate to 56.4 dB(A) $L_{eq(12)}$ at the nearest residential property line. Therefore, construction of the project would not exceed the noise ordinance limits.

Specific construction activities would occur outside "typical working hours" in order to minimize noise to Park visitors, Park operations. These after-hours construction activities

TABLE 8
CONSTRUCTION EQUIPMENT AND NOISE LEVELS

Phase	Equipment	Number	Maximum 1-Hour Noise Level at 50 Feet [dB(A) $L_{eq(1)}$][1]	Usage Factor[2]	Total Noise Level at 50 Feet [dB(A) $L_{eq(1)}$]	Total Noise Level at 50 Feet Averaged Over 12-Hour Period [dB(A) $L_{eq(12)}$][3]
Phase I	Bobcat	1	60.7	100%	60.7	58.9
	Backhoe	5	77.6	40%	80.6	78.8
	Loader	1	79.1	40%	75.1	73.4
	Forklift	5	60.7	100%	67.7	65.9
	Crane	1	80.6	16%	72.6	70.9
Phase I Total:					**82.4**	**80.6**
Phase II	Bobcat	8	60.7	100%	69.7	68.0
	Backhoe	3	77.6	40%	78.4	76.6
	Loader	8	79.1	40%	84.2	82.4
	Forklift	5	60.7	100%	67.7	65.9
	Excavator	2	80.7	40%	79.7	78.0
	Drill Rig	1	84.4	20%	77.4	75.6
	Compressor	4	77.7	40%	79.7	78.0
	Concrete Pump	3	81.4	20%	79.2	77.4
	Paving Machine	1	77.2	50%	74.2	72.4
	Generator	4	80.6	50%	83.6	81.8
	Lift	2	74.7	20%	70.7	69.0
	Crane	5	80.6	16%	79.6	77.9
Phase II Total:					**93.0**	**88.4**
Phase III	Bobcat	5	60.7	100%	67.7	65.9
	Loader	1	79.1	40%	75.1	73.4
	Concrete Pump	1	81.4	20%	74.4	72.6
	Paving Machine	1	77.2	50%	74.2	72.4
Phase III Total:					**79.6**	**77.9**
Phase IV	Bobcat	8	60.7	100%	69.7	68.0
	Backhoe	3	77.6	40%	78.4	76.6
	Loader	5	79.1	40%	82.1	80.3
	Forklift	2	60.7	100%	63.7	61.9
	Concrete Pump	2	81.4	20%	77.4	75.7
	Crane	1	80.6	16%	**72.6**	**70.9**
Phase IV Total:					**85.0**	**83.2**

[1]Source for all equipment except Bobcat FHWA 2006.
Source for Bobcat: RECON 2008.
[2]Usage factor is the amount of time the equipment is operating at full power.
[3]It was assumed that all equipment would operate 8 hours per day. The noise level was calculated for a 12-hour period (8 hours operating, 4 hours not operating) for comparison to the Noise Ordinance limits.

would only occur when Park venues, including Old Globe nighttime performances and any special events would be closed. Additionally, in an effort to minimize impacts to Park visitors, parking, and general Park operations, it is possible that the work on portions of the parking structure may be accelerated by a two shift operation, with the first shift working from 1:00 A.M. to 9:30 A.M. and the second shift working from 9:30 A.M. to 6:00 P.M. Since the nearest off-site receptor is 2,000 feet away, noise impacts to off-site receptors during these occurrences would not be significant.

However, there are many noise sensitive uses within Balboa Park that would be exposed to construction noise. Although the noise ordinance does not regulate construction noise levels at these uses, construction noise levels at these areas were analyzed in accordance with the Significance Determination Thresholds (City 2011) that indicate construction noise that interferes with normal business communications or affects sensitive receptors may be considered a significant noise impact.

A list of the nearest on-site sensitive Park uses is shown in Table 9. The worst-case noise levels during each phase of construction were calculated at these locations. Construction noise generally can be treated as a point source and would attenuate at approximately 6 dB(A) for every doubling of distance assuming hard site conditions and no intervening structures or topography. Construction activities would not be situated at any one location for a long period of time. The acoustic centers were assumed to be the centers of the main construction activity locations for each phase. Construction during Phase I would occur in the Alcazar parking lot. Construction during Phase II would occur at the location of the proposed Centennial Bridge and the proposed Organ Pavilion parking structure. Construction during Phase III would occur at the location of the proposed Pan American Promenade and in the Alcazar parking lot. Construction during Phase IV would occur in the Mall/Plaza de Panama.

Note that the noise levels shown in Table 9 are a worst-case scenario. They assume that all equipment on-site would be operating simultaneously for 8 hours a day, and they do not account for shielding provided by existing buildings and terrain.

The main construction areas and the nearest on-site sensitive Park uses are shown in Figure 12. The main construction areas shown in Figure 12 were selected because these are the areas where a majority of the construction activity would take place and where a majority of the construction equipment would be located for each phase. The following is a discussion of each of the on-site sensitive Park uses and the potential construction noise impacts:

The Old Globe: The Old Globe Theater consists of three venues: the Old Globe Theater, the Sheryl and Harvey White Theater, and the outdoor Lowell Davies Festival Theater. There are approximately 675 to 700 performances annually, most occurring during the summer months at the height of Balboa Park's attendance. The normal performance schedule is Tuesday at 7:00 P.M., Wednesday at 7:00 P.M., Thursday at

TABLE 9
CONSTRUCTION NOISE LEVELS AT NEAREST SENSITIVE PARK USES [dB(A) $L_{eq(12)}$]

Location	Phase I		Phase IIa		Phase IIb		Phase IIIa		Phase IIIb		Phase IV	
	Distance (feet)	Noise Level	Distance (feet)	Noise Level	Distance (feet)	Noise Level	Distance (feet)	Noise Level	Distance (feet)	Noise Level	Distance (feet)	Noise Level
Old Globe	500	60.6	415	70.0	1,285	60.2	1,020	51.7	500	57.9	500	63.2
San Diego Museum of Man	350	63.7	250	74.4	1,095	61.6	845	53.3	350	61.0	470	63.8
Alcazar Garden	120	73.0	275	73.6	825	64.0	550	57.1	120	70.3	275	68.4
House of Charm	215	68.0	480	68.7	795	64.3	505	57.8	215	65.2	135	74.6
San Diego Museum of Art	650	58.3	780	64.5	1,250	60.4	965	52.2	650	55.6	210	70.8
Timken Museum of Art	770	56.9	980	62.5	1,200	60.8	920	52.6	770	54.1	210	70.8
Botanical Garden	1,000	54.6	1,150	61.1	1,475	59.0	1,200	50.3	1,000	51.9	440	64.4
House of Hospitality	600	59.0	880	63.5	955	62.7	655	55.5	600	56.3	160	73.1
Spreckels Organ Pavilion	415	62.2	715	65.3	300	72.8	80	73.8	415	59.5	510	63.1
Japanese Friendship Garden	750	57.1	1,050	61.9	405	70.2	340	61.2	750	54.4	450	64.2
Hall of Nations	415	62.2	635	66.3	275	73.6	140	68.9	415	59.5	810	59.1
United Nations Building	530	60.1	700	65.4	235	74.9	250	63.9	530	57.4	950	57.7
House of Pacific Relations/Cottages	510	60.4	625	66.4	300	72.8	340	61.2	510	57.7	985	57.4
San Diego Hall of Champions	1,125	53.6	1,260	60.3	485	68.6	760	54.3	1,125	50.8	1,525	53.6
Balboa Park Club	650	58.3	620	66.5	635	66.3	680	55.2	650	55.6	1,225	55.5
Marie Hitchcock Puppet Theater	870	55.8	865	63.6	685	65.6	800	53.8	870	53.1	1,400	54.3
San Diego Automotive Museum	1,175	53.2	1,180	60.9	805	64.2	1,005	51.8	1,175	50.5	1,690	52.7

NOTES:
Phase I – Center of construction assumed to be center of Alcazar Parking Lot
Phase IIa – Center of construction assumed to be center of proposed Centennial Bridge
Phase IIb – Center of construction assumed to be center of proposed Organ Pavilion parking structure
Phase IIIa – Center of construction assumed to be center of proposed pedestrian bridge
Phase IIIb – Center of construction assumed to be center of Alcazar Parking Lot
Phase IV – Center of construction assumed to be center of the Mall/Plaza de Panama (at existing fountain)

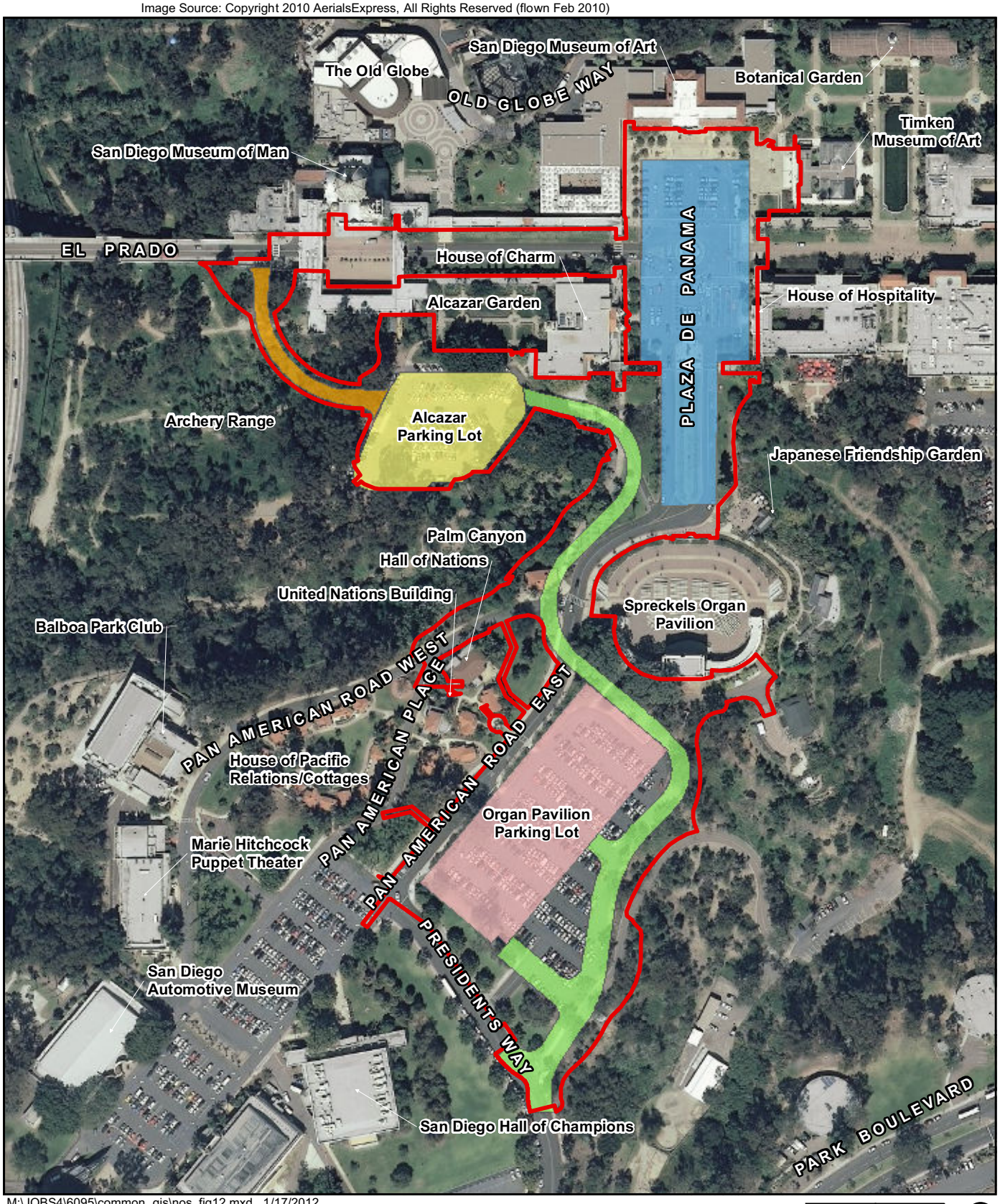

FIGURE 12

Construction Locations and Nearby Sensitive Park Uses

8:00 P.M., Friday at 8:00 P.M., Saturday at 2:00 P.M. and 8:00 P.M., and Sunday at 2:00 P.M. and 7:00 P.M. There are also occasional Monday evening performances and events and Wednesday matinees at 2:00 P.M. In addition to these performance times, there would also be periodic rehearsals.

As discussed above, "typical working hours" for construction would be Monday through Friday from 7:00 A.M. to 7:00 P.M. The only time at which construction may occur at the same time as an event at The Old Globe would be during the occasional Wednesday 2:00 P.M. matinees. The timeframe of "after hours work" would be responsive to the schedule of a particular evening's event, including events at The Old Globe.

As shown in Table 9, the loudest noise level at The Old Globe would be 70.0 dB(A) $L_{eq(12)}$ and would occur during construction of the Centennial Bridge during Phase II. The San Diego Museum of Man blocks the line of sight between The Old Globe and the proposed Centennial Bridge. Therefore, construction noise levels at The Old Globe would be less than those shown in Table 9. Although construction noise at The Old Globe is not regulated by the noise ordinance and noise levels would not exceed the residential noise ordinance limit of 75 dB(A) $L_{eq(12)}$, construction noise may be considered a nuisance during the 2:00 P.M. Wednesday matinees. Nuisance noise may be intrusive. As discussed in Section 3.1.4, the City of San Diego assumes that standard construction techniques will provide a 15 dB reduction of exterior noise levels to an interior receiver. With these criteria, standard construction could be assumed to result in interior noise levels of 45 dB CNEL or less when exterior sources are 60 dB CNEL or less. However, this reduction is typical of a standard structure with exterior windows. Theaters, which are specifically designed to reduce exterior and background noise, would likely have a greater exterior to interior noise reduction. To be conservative, 15 dB was assumed. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

San Diego Museum of Man: The San Diego Museum of Man is located in the Historic California Building within the project area. The proposed Centennial Bridge would wrap around the southwest corner of the Museum of Man. As shown in Table 9, the loudest noise level at the Museum of Man would be 74.4 dB(A) $L_{eq(12)}$ and would occur during construction of the Centennial Bridge during Phase II. Noise levels during the remaining phases of construction would be less than 65 dB(A) $L_{eq(12)}$. There are no outdoor uses at the San Diego Museum of Man, so an exterior noise limit does not apply. As discussed above, because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

Alcazar Garden: The Alcazar Garden is located adjacent to the San Diego Museum of Man and the House of Charm. The Alcazar parking lot is located directly south of the Alcazar Garden. As shown in Table 9, the loudest noise level at the Alcazar Garden would be 73.6 dB(A) $L_{eq(12)}$ and would occur during construction of the Centennial Bridge during Phase II. Additionally, during construction activities in the Alcazar parking lot,

noise levels would be 73.0 dB(A) $L_{eq(12)}$ (Phase I) and 70.3 dB(A) $L_{eq(12)}$ (Phase III). Exterior noise would be less than significant.

House of Charm: The House of Charm contains the Mingei International Museum and the San Diego Art Institute, and is located north of the Alcazar parking lot and west of the Mall/Plaza de Panama. As shown in Table 9, the loudest noise levels at the House of Charm would be 74.6 dB(A) $L_{eq(12)}$ and would occur during Phase IV construction activities in the Mall/Plaza de Panama. There are no outdoor uses at the House of Charm. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

San Diego Museum of Art: The San Diego Museum of Art is located north of the project adjacent to the Mall/Plaza de Panama. As shown in Table 9, the loudest noise levels at the San Diego Museum of Art would be 70.8 dB(A) $L_{eq(12)}$ and would occur during Phase IV construction activities in the Mall/Plaza de Panama. Noise levels during the remaining phases of construction would be less than 70 dB(A) $L_{eq(12)}$. There is a garden and an outdoor café at the San Diego Museum of Art. However, exterior noise levels would be less than significant due to the distance from construction activities. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

Timken Museum of Art: The Timken Museum of Art is located east of the project adjacent to the Mall/Plaza de Panama. As shown in Table 9, the loudest noise levels at the Timken Museum of Art would be 70.8 dB(A) $L_{eq(12)}$ and would occur during Phase IV construction activities in the Mall/Plaza de Panama. Noise levels during the remaining phases of construction would be less than 70 dB(A) $L_{eq(12)}$. There are no outdoor uses at the Timken Museum of Art. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

Botanical Garden: The Botanical Garden is located northeast of the project area and northeast of the San Diego Museum of Art and Timken Museum of Art. As shown in Table 9, the loudest noise levels at the Botanical Garden would be 64.4 dB(A) $L_{eq(12)}$ and would occur during Phase IV construction activities in the Mall/Plaza de Panama. Noise levels during the remaining phases of construction would be less than 70 dB(A) $L_{eq(12)}$. This does not account for noise reduction provided by intervening structures. Exterior noise impacts at the Botanical Garden would be less than significant.

House of Hospitality: The House of Hospitality contains the Balboa Park visitor center, a police storefront, office of cultural and educational organizations, and The Prado restaurant. The House of Hospitality is located adjacent to the Mall/Plaza de Panama. As shown in Table 9, the loudest noise levels at the House of Hospitality would be 73.1 dB(A) $L_{eq(12)}$ and would occur during Phase IV construction activities in the Mall/Plaza de Panama. Noise levels during the remaining phases of construction would

be less than 70 dB(A) $L_{eq(12)}$. There is a courtyard at the center of the House of Hospitality. The Prado restaurant also has an outdoor dining area at the House of Hospitality. Noise levels in the courtyard and dining area would be less than those discussed above because of intervening structures. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

Spreckels Organ Pavilion: The Spreckels Organ Pavilion houses one of the world's largest outdoor pipe organs. Free concerts are performed every Sunday at 2:00 P.M. However, as discussed above, construction would not occur on Sundays. There are also weekday concerts during the summer months, but they would occur after construction activity stops at 3:30 P.M. As shown in Table 9, the loudest noise levels at the Spreckels Organ Pavilion would be 73.8 dB(A) $L_{eq(12)}$ and would occur during Phase III construction activities at the proposed Pan American Promenade. Additionally, during construction activities at the proposed parking structure during Phase II, noise levels would be 72.8 dB(A) $L_{eq(12)}$. Noise levels during the remaining phases of construction would be less than 70 dB(A) $L_{eq(12)}$. Exterior construction noise impact would be less than significant.

Japanese Friendship Garden: The Japanese Friendship Garden is located adjacent to the Spreckels Organ Pavilion. As shown in Table 9, the loudest noise levels at the Japanese Friendship Garden would be 70.2 dB(A) $L_{eq(12)}$ and would occur during Phase II construction activities at the proposed parking structure. Noise levels during the remaining phases of construction would be less than 65 dB(A) $L_{eq(12)}$. Exterior construction noise impact would be less than significant.

Hall of Nations, United Nations Building, and House of Pacific Relations/Cottages: The Hall of Nations, United Nations Building, and House of Pacific Relations are located west of the project adjacent to the proposed parking structure. Open houses occur every Sunday from 12:00 P.M. to 4:00 P.M. to showcase traditions from other countries and cultures. As discussed above, construction would not occur on Sundays during these events. As shown in Table 9, the loudest noise level at these buildings and cottages would be 74.9 dB(A) $L_{eq(12)}$ and would occur during Phase II construction activities at the proposed parking structure. Noise levels during the remaining phases of construction would be less than 70 dB(A) $L_{eq(12)}$. Noise levels at the exterior use areas at the Cottages would be less than those discussed above because of intervening structures. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

San Diego Hall of Champions: The San Diego Hall of Champions is a sports museum located south of the project. As shown in Table 9, the loudest noise level at the San Diego Hall of Champions would be 68.6 dB(A) $L_{eq(12)}$ and would occur during Phase II construction activities at the proposed parking structure. Noise levels during the remaining phases of construction would be less than 65 dB(A) $L_{eq(12)}$. Because exterior

construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

Balboa Park Club: The Balboa Park Club contains banquet and meeting halls and is located southwest of the project. As shown in Table 9, the loudest noise level at the Balboa Park Club would be 66.5 dB(A) $L_{eq(12)}$ and would occur during Phase II construction activities at the proposed Centennial Bridge. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

Marie Hitchcock Puppet Theater: The Marie Hitchcock Puppet Theater is located southwest of the project. Currently, performances are held Wednesday through Friday at 10:00 A.M. and 11:30 A.M., and Saturday and Sunday at 11:00 A.M., 1:00 P.M., and 2:00 P.M. As shown in Table 9, the loudest noise level at the Marie Hitchcock Puppet Theater would be 65.6 dB(A) $L_{eq(12)}$ and would occur during Phase II construction activities at the proposed Organ Pavilion parking structure. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

San Diego Automotive Museum: The San Diego Automotive Museum is located southwest of the project. As shown in Table 9, the loudest noise level at the San Diego Automotive Museum would be 64.2 dB(A) $L_{eq(12)}$ and would occur during Phase II construction activities at the proposed Organ Pavilion parking structure. Because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

In summary, while construction noise at the Park uses is not regulated by the noise ordinance, it may be considered a nuisance particularly for museum visitors and during special events and performances. The noise ordinance does, however, regulate the time of day during which construction would occur. For the project, “typical working hours” for construction would be from 7:00 A.M. to 7:00 P.M., Monday through Friday. The timeframe of “after hours work” would be responsive to the schedule of a particular evening’s event, and shall be timed to be least impactful on Park operations or that of surrounding operations. These occurrences would only occur when Park venues, including Old Globe nighttime performances and any special events, would be closed. Since the nearest off-site receptor is 2,000 feet away, noise impacts to off-site receptors during these occurrences would be less than significant based on the 75 dB(A) $L_{eq(12)}$ threshold for construction noise at residential properties.

Outdoor use areas would be more subject to the effects of construction noise. There are outdoor uses at The Old Globe, Alcazar Garden, San Diego Museum of Art, Botanical Garden, House of Hospitality, Spreckels Organ Pavilion, Japanese Friendship Garden, and the Cottages. Interior noise levels would be less than exterior noise levels. Because

exterior construction noise levels could exceed 60 dB, interior noise levels could exceed the 45 dB standard. Therefore, temporary interior noise impacts would be significant.

5.3.2 Truck Hauling Noise

The proposed haul route for the parking structure spoils export to the Arizona Street Landfill would be from the current Organ Pavilion parking lot to Presidents Way, east on Presidents Way to Park Boulevard, north on Park Boulevard to Zoo Place, south on Zoo Place to Florida Drive, south on Florida Drive to Pershing Drive, and north on Pershing Drive to the Arizona Street Landfill. The haul route is shown in Figure 13. This route would be the most direct and least impactful route (in terms of traffic, residential noise, and emissions) for the haul operation. In order to minimize impacts to Park operation, visitors, zoo operations, and adjacent operations of the Naval Medical Hospital and City College, a second nighttime shift is proposed for parking structure export only between the hours of 1:00 A.M. to 9:30 A.M., with the first shift operating 9:30 A.M. to 6:00 P.M. The nighttime shift would allow increased efficiency because of the general lack of traffic on area roadways, thus decreasing the overall duration of this activity. The schedule duration for the parking structure excavation and export activity would be approximately 40 consecutive working days using dual shifts. Soil export hauling would be coordinated to occur outside the peak traffic hours (defined as weekdays from 7:00 – 9:00 A.M. and 4:00 – 6:00 P.M.). On average, the operation would require a fleet of 20 to 25 double bottom dump trucks cycling every 45 to 60 minutes between the project site and the Arizona Street Landfill. Based on a worst-case scenario of 25 trucks cycling every 45 minutes, this would result in a total of 400 trips over a 12-hour period.

Measurements of noise levels associated with typical truck pass-bys indicated an average SEL of 90 dB(A) at 10 feet (RECON 1998). This measured SEL of 90 decibels at 10 feet for a truck pass-by can be used to calculate the anticipated average noise level due to the truck traffic. Using the formula discussed in Section 3.6, it was calculated that the average 12-hour noise level due to truck trips would be 69.7 dB(A) $L_{eq(12)}$ at a distance of 10 feet from the center of the truck lane. The nearest sensitive residential uses are located more than 1,000 feet from the haul route. A noise level of 69.7 dB(A) $L_{eq(12)}$ at a distance of 10 feet would attenuate to 29.7 dB(A) $L_{eq(12)}$ at 1,000 feet. Noise levels at residences located adjacent to the haul and delivery route would not exceed the construction noise limit of 75 dB(A) $L_{eq(12)}$. Additionally, noise levels would not exceed the noise ordinance limits shown in Table 3.

The Naval Medical Hospital includes uses that may be sensitive to noise. As shown on Figure 3-31 of the EIR, the Naval Medical Hospital is adjacent to the portion of the haul route along Park Boulevard. Considering the Navy Medical Hospital is located 75 feet from the haul route, noise would be attenuated to 52.2 dB(A) $L_{eq(12)}$. Thus, the haul and delivery route would not exceed the construction noise limit of 75 dB(A) $L_{eq(12)}$ at the

Source: KCM Group

Haul Route to Arizona Street Landfill
Extended Haul Route to Casting Ponds
Proposed Parking Garage
Arizona Street Landfill
Archery Range
Casting Ponds

No Scale

FIGURE 13

Proposed Haul Route to Arizona Street Landfill

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Naval Medical Hospital and, in addition, would not exceed the nighttime noise ordinance limit of 60 dB(A) L_{eq} shown in Table 3.

There is also an extended haul route on Jacaranda Place (see EIR Figure 3-31) that would be used for soil hauling to the "casting pond" and "archery range" areas. Not all of the truck trips analyzed above as part of the primary haul route would utilize this extended route. A maximum of 167 trucks[1] would use this route in a 12-hour period. There are residential uses located as close as 275 feet north of this haul route on Upas Street and as close as 250 feet east of this haul route on 28th Street. Truck hauling on this route would result in maximum noise levels of 37.3 dB(A) $L_{eq(12)}$ at 275 feet and 38.1 dB(A) $L_{eq(12)}$ at 250 feet. Thus, noise levels at residences located adjacent to this extended haul route would not exceed the construction noise limit of 75 dB(A) $L_{eq(12)}$. Additionally, noise levels would not exceed the nighttime noise ordinance limit of 40 dB(A) L_{eq} shown in Table 3. Noise Impacts due to truck hauling would be less than significant. Noise Impacts due to truck hauling would be less than significant.

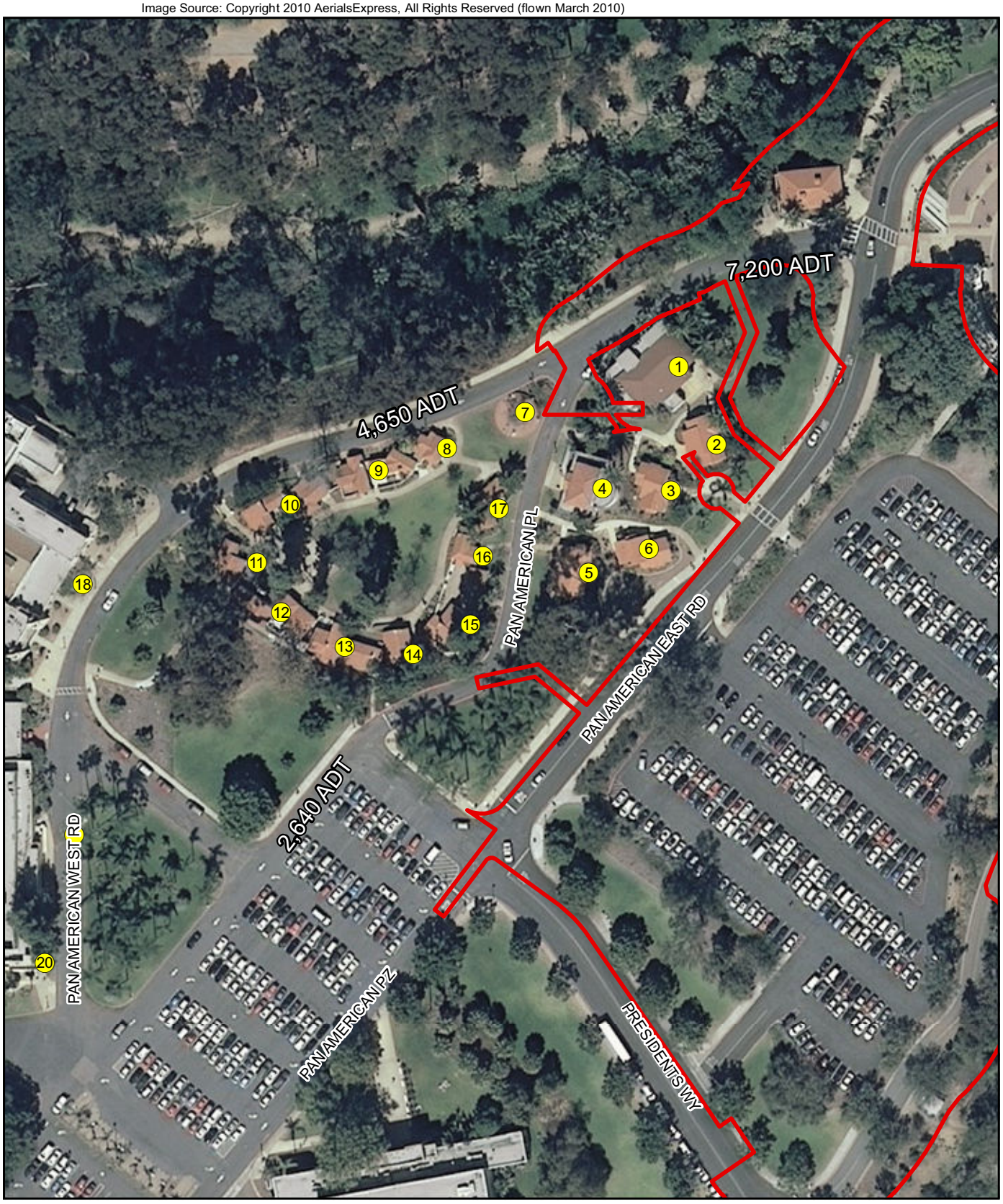
5.3.3 Rerouted Traffic Noise

For an eight-month period of construction, Pan American Road East would be closed to traffic and Balboa Park visitor traffic would be rerouted to the west on Pan American Road West and Pan American Place around the Hall of Nations, United Nations Building, and House of Pacific Relations/Cottages. To determine the potential construction noise impacts to these sensitive park uses, the worst-case hourly noise levels from the rerouted vehicle traffic were calculated at a series of 20 receptors located at the Hall of Nations, United Nations Building, and House of Pacific Relations/Cottages and added to the worst-case construction equipment noise level of 74.9 dB(A) $L_{eq(12)}$ shown in Table 9 to determine the total construction-related noise level.

The Federal Highway Administration (FHWA) Traffic Noise Model (TNM) was used to calculate noise levels from the rerouted traffic. The TNM model takes into account traffic mix, speed, and volume. The analysis assumed that the topography was flat with no intervening terrain or structures between receptors and roadways. Because the model does not account for obstructions and the buildings would act as obstructions, predicted noise levels are higher than would actually occur.

Average daily traffic volumes were provided by the traffic engineer. These are shown in Figure 14. For a worst-case 12-hour traffic noise level, modeling accounted for all the

[1] This is based on the casting pond receiving approximately 15,000 cubic yards (cy) of fill, with approximately 2,000 cy every haul day for 7.5 days; and the archery range receiving 11,000 cy of fill, with approximately 2,000 cy every haul day for 5.5 days.



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0 Feet 120

Project Area

Modeled Receptor

FIGURE 14
Rerouted Traffic Volumes
and Modeled Receptors

traffic shown in Figure 14 occurring over a 12-hour period. In actuality, the daily traffic volumes shown in Figure 14 would occur over the entire operating hours of Balboa Park. The same traffic mix discussed above in Table 4 along with a traffic speed of 15 mph was assumed.

The modeled receptors are shown in Figure 14. Table 10 summarizes the rerouted traffic noise levels, the worst-case construction noise level, and the total construction-related noise levels at these receptors. TNM input/output are contained in Attachment 2.

TABLE 10
REROUTED TRAFFIC AND CONSTRUCTION NOISE LEVELS AT THE HALL OF NATIONS, UNITED NATIONS BUILDING, AND HOUSE OF PACIFIC RELATIONS/COTTAGES
[dB(A) $L_{eq(12)}$]

Receptor	Rerouted Traffic Noise Level	Worst-Case Construction Equipment Noise Level	Total Noise Level
1	56.3	74.9	75.0
2	52.7	74.9	74.9
3	52.7	74.9	74.9
4	54.8	74.9	74.9
5	53.8	74.9	74.9
6	52.2	74.9	74.9
7	59.3	74.9	75.0
8	58.4	74.9	75.0
9	58.3	74.9	75.0
10	57.9	74.9	75.0
11	55.2	74.9	74.9
12	53.8	74.9	74.9
13	53.5	74.9	74.9
14	54.3	74.9	74.9
15	55.2	74.9	74.9
16	55.4	74.9	74.9
17	56.4	74.9	75.0
18	56.5	74.9	75.0
19	52.8	74.9	74.9
20	48.4	74.9	74.9

As shown, worst-case exterior noise levels would range from 74.9 to 75.0 dB(A) $L_{eq(12)}$. These are worst-case noise levels that would occur during construction of the parking structure. Noise levels during the remaining phases of construction would be less than those shown in Table 10. Exterior construction noise would not exceed 75 dB(A) $L_{eq(12)}$ and would be less than significant. However, because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed 45 dB. Temporary interior noise impacts would be significant.

5.4 Aircraft Noise

The ALUCP for Lindbergh Field indicates that noise-sensitive uses are compatible when noise levels are less than 65 dB CNEL. In the case of the project, the noise-sensitive use is the rooftop park. As shown in Figure 6, the project lies outside the 65 dB CNEL contour for Lindbergh Field. Therefore, the project would be compatible with the noise levels defined in the adopted ALUCPs.

5.5 Ground-Borne Vibration/Noise

The project does not propose any uses that would generate ground-borne vibration or ground-borne noise. Project construction would not require pile driving. Ground-borne vibration impacts would be less than significant.

6.0 Noise Abatement Measures

6.1 Traffic Noise

The project would not generate an increase in traffic volumes. The project would remove vehicles from the Plaza de Panama, El Prado, Plaza de California, the Mall, and Pan American Road East and reroute vehicle traffic further from these areas. As a result, vehicle traffic noise levels within the reclaimed pedestrian areas would decrease when compared to the existing condition. Additionally, noise levels at the museums and institutions surrounding the Plaza de Panama, El Prado, Plaza de California, the Mall, and Pan American Road East would decrease as well. These museums and institutions include the San Diego Museum of Man, the Old Globe Theatre, the House of Charm, the San Diego Museum of Art, the Timken Museum of Art, the House of Hospitality, and the Japanese Friendship Garden.

Overall, noise levels in the Alcazar Garden would decrease as a result of the proposed project because both of the proposed configurations would increase the distance between the travel lanes and the garden. The increase in the noise level at the southern edge of the garden would not be perceptible. There are no other sensitive uses that would be affected by noise due to relocating the road. Because the project would remove traffic from the Plaza de Panama, traffic noise at all other locations adjacent to the Plaza de Panama would decrease as a result of the project. Impacts due to traffic noise would be considered less than significant.

6.2 Parking Structure Noise

As discussed above, Organ Pavilion parking structure activity noise at the nearest receptors would not result in a significant increase in noise. In addition, noise levels would not exceed noise ordinance limits. Noise impacts due to parking structure activities would be less than significant.

6.3 Construction Noise

6.3.1 Construction Equipment Noise

As discussed above, construction noise at the Park uses is not regulated by the noise ordinance. However, the City of San Diego Significance Determination Thresholds (2011) indicates that construction noise impacts may be considered significant if it would substantially interfere with normal business communication or affect sensitive receptors. Construction noise may be considered a nuisance particularly during special events and performances. Noise would be temporary and limited to the duration of the construction. The timeframe of "after hours work" would be responsive to the schedule of a particular evening's event and shall be timed to be least impactful on Park operations or that of surrounding operations. These occurrences would only occur when Park venues, including Old Globe nighttime performances, and any special events would be closed. Since the nearest off-site receptor is 2,000 feet away, noise impacts to on- or off-site receptors during these occurrences would not be significant. Exterior noise impacts would be less than significant since it would not exceed 75 dB(A) L_{eq}. However, because exterior construction noise levels could exceed 60 dB, interior noise levels could exceed the 45 dB standard. Therefore, temporary interior noise impacts would be significant. The following measures would reduce interior noise impacts, but not to a level less than significant:

- All noise-producing equipment and vehicles using internal combustion engines shall be equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification.

- Mobile or fixed "package" equipment (e.g., arc-welders, air compressors) shall be equipped with shrouds and noise control features that are readily available for that type of equipment.

- Electrically powered equipment shall be used instead of pneumatic or internal combustion powered equipment, where feasible.

- Material stockpiles and mobile equipment staging, parking, and maintenance areas shall be located as far as practicable from noise-sensitive receptors.

- Construction site and access road speed limits shall be established and enforced during the construction period.
- The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.
- No project-related public address or music system shall be audible at any adjacent receptor.
- The on-site construction supervisor shall have the responsibility and authority to receive and resolve noise complaints. A clear appeal process to the owner shall be established prior to construction commencement that will allow for resolution of noise problems that cannot be immediately solved by the site supervisor.

Implementation of the measures above would reduce temporary interior construction noise impacts, but not to a level less than significant. Short-term, temporary impacts remain significant.

6.3.2 Truck Hauling Noise

Noise levels at residences located adjacent to the haul and delivery route would not exceed the construction noise limit of 75 dB(A) $L_{eq)}$. Additionally, noise levels would not exceed the noise ordinance limits. Noise impacts due to truck hauling and deliveries would be less than significant. No mitigation is required.

6.4 Aircraft Noise

Impacts are less than significant. No mitigation is required.

6.5 Ground-Borne Vibration/Noise

Impacts are less than significant. No mitigation is required.

7.0 References Cited

Federal Highway Administration (FHWA)

2006 Road Construction Noise Model (RCNM). Software Version 1.00. Prepared by U.S. Department of Transportation, Research and Innovative Technology Administration. February 2.

Horst, Kevin

2011 Personal communication via email to Lance Unverzagt, RECON. Project Manager, KCM Group. April 21.

RECON

1998 Noise Technical Report for the Escondido Resource Recovery Recycling and Transfer Station. RECON Number 3054N. November 16.

2006 Preliminary Noise Analysis for Scripps mercy Hospital. Prepared for Scripps Health. RECON Number 4312N. October 12.

2008 Stone Residence Noise Analysis. Prepared for Harold Stevens, Smith Brothers Construction. RECON Number 4540N. February 20.

Rick Engineering

2011 Existing and Future Weekday and Weekend Traffic Volume Figures emailed to Lance Unverzagt, RECON. May 25.

San Diego, City of

2008 City of San Diego General Plan.

ATTACHMENT 1

Noise Measurement Data

KEY TO FILE CODES

ATTACHMENT 1

Meter 1825 Measurement Locations 1 through 12.

Meter 1824 Measurement Locations 13 through 18.

C:\LARDAV\SLMUTIL\09APR_09.bin Time History Data
Sample Period (sec): 5.000

Site	Location	Meas Number	Date	Time	Level	Lmax	SEL
Run	Key						
Measurement 1							
0		0	09Apr 11	10:47:00	56.1	60.7	63.1
0		0	09Apr 11	10:47:05	61.4	64.3	68.4
0		0	09Apr 11	10:47:10	58.9	63.3	65.9
0		0	09Apr 11	10:47:15	56.5	59.0	63.5
0		0	09Apr 11	10:47:20	60.8	62.7	67.7
0		0	09Apr 11	10:47:25	62.5	64.5	69.5
0		0	09Apr 11	10:47:30	63.3	65.7	70.3
0		0	09Apr 11	10:47:35	58.8	63.0	65.8
0		0	09Apr 11	10:47:40	55.7	57.3	62.7
0		0	09Apr 11	10:47:45	57.3	62.4	64.3
0		0	09Apr 11	10:47:50	64.5	67.8	71.5
0		0	09Apr 11	10:47:55	58.0	60.5	65.0
0		0	09Apr 11	10:48:00	55.5	57.8	62.5
0		0	09Apr 11	10:48:05	54.1	62.2	61.1
0		0	09Apr 11	10:48:10	52.0	53.9	59.0
0		0	09Apr 11	10:48:15	52.3	54.5	59.3
0		0	09Apr 11	10:48:20	57.0	67.2	64.0
0		0	09Apr 11	10:48:25	62.3	63.8	69.3
0		0	09Apr 11	10:48:30	63.7	66.7	70.7
0		0	09Apr 11	10:48:35	57.7	59.5	64.7
0		0	09Apr 11	10:48:40	57.5	59.3	64.5
0		0	09Apr 11	10:48:45	56.5	61.2	63.5
0		0	09Apr 11	10:48:50	60.5	64.9	67.5
0		0	09Apr 11	10:48:55	60.5	66.4	67.5
0		0	09Apr 11	10:49:00	57.4	61.2	64.4
0		0	09Apr 11	10:49:05	53.1	56.0	60.1
0		0	09Apr 11	10:49:10	53.9	55.4	60.9
0		0	09Apr 11	10:49:15	63.7	67.8	70.7
0		0	09Apr 11	10:49:20	56.1	61.4	63.1
0		0	09Apr 11	10:49:25	52.3	55.2	59.3
0		0	09Apr 11	10:49:30	56.2	57.9	63.2
0		0	09Apr 11	10:49:35	57.5	58.3	64.5
0		0	09Apr 11	10:49:40	56.4	58.7	63.4
0		0	09Apr 11	10:49:45	58.9	61.2	65.9
0		0	09Apr 11	10:49:50	56.9	58.4	63.9
0		0	09Apr 11	10:49:55	61.3	64.0	68.3
0		0	09Apr 11	10:50:00	66.0	68.0	73.0
0		0	09Apr 11	10:50:05	65.1	67.8	72.1
0		0	09Apr 11	10:50:10	69.2	75.0	76.2
0		0	09Apr 11	10:50:15	77.0	78.5	84.0
0		0	09Apr 11	10:50:20	71.3	75.5	78.3
0		0	09Apr 11	10:50:25	59.5	66.3	66.5
0		0	09Apr 11	10:50:30	55.9	58.4	62.9
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0		0	09Apr 11	10:50:55	54.0	55.9	61.0
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0		0	09Apr 11	10:51:05	52.7	54.2	59.7
0		0	09Apr 11	10:51:10	54.4	57.0	61.3
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0		0	09Apr 11	10:51:20	65.0	68.0	72.0
0		0	09Apr 11	10:51:25	65.5	69.0	72.5
0		0	09Apr 11	10:51:30	65.1	66.4	72.1
0		0	09Apr 11	10:51:35	63.6	65.5	70.6
0		0	09Apr 11	10:51:40	63.4	66.0	70.4
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0		0	09Apr 11	10:52:10	65.8	75.5	72.8
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0		0	09Apr 11	10:52:55	60.7	63.0	67.7
0		0	09Apr 11	10:53:00	61.9	63.9	68.9
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0		0	09Apr 11	10:53:25	65.4	70.1	72.4
0		0	09Apr 11	10:53:30	63.1	64.8	70.1
0		0	09Apr 11	10:53:35	61.4	63.0	68.3
0		0	09Apr 11	10:53:40	64.2	66.9	71.2
0		0	09Apr 11	10:53:45	63.3	66.3	70.3
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0		0	09Apr 11	10:54:00	56.4	60.2	63.4
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0		0	09Apr 11	10:54:35	61.2	68.3	68.2
0		0	09Apr 11	10:54:40	66.0	69.9	73.0
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0		0	09Apr 11	10:59:20	60.7	64.0	67.7
0		0	09Apr 11	10:59:25	61.4	64.0	68.4
0		0	09Apr 11	10:59:30	56.7	61.7	63.7
0		0	09Apr 11	10:59:35	52.9	55.2	59.9
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0		0	09Apr 11	10:59:55	52.5	54.4	59.5
0		0	09Apr 11	11:00:00	56.4	58.6	63.4
0		0	09Apr 11	11:00:05	56.9	59.5	63.9
0		0	09Apr 11	11:00:10	53.1	55.1	60.1
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0		0	09Apr 11	11:00:25	59.5	63.0	66.5
0		0	09Apr 11	11:00:30	61.6	64.9	68.6
0		0	09Apr 11	11:00:35	66.3	73.9	73.2
0		0	09Apr 11	11:00:40	66.1	70.4	73.1
0		0	09Apr 11	11:00:45	70.6	72.8	77.6
0		0	09Apr 11	11:00:50	70.6	72.9	77.6
0		0	09Apr 11	11:00:55	62.9	67.1	69.9
0		0	09Apr 11	11:01:00	56.4	59.8	63.3
0		0	09Apr 11	11:01:05	63.6	68.1	70.6
0		0	09Apr 11	11:01:10	56.7	61.1	63.7
0		0	09Apr 11	11:01:15	53.7	55.9	60.7
0		0	09Apr 11	11:01:20	53.3	56.1	60.3
0		0	09Apr 11	11:01:25	67.9	78.3	74.8
0		0	09Apr 11	11:01:30	63.9	65.9	70.9
0		0	09Apr 11	11:01:35	56.9	59.8	63.8
0		0	09Apr 11	11:01:40	54.2	56.1	61.2
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0		0	09Apr 11	11:01:55	58.1	60.0	65.1
Stop	Key						
Run	Key						
Measurement 2							
0		0	09Apr 11	11:08:00	60.1	63.3	67.1
0		0	09Apr 11	11:08:05	65.3	69.4	72.2
0		0	09Apr 11	11:08:10	54.9	56.3	61.9
0		0	09Apr 11	11:08:15	58.7	64.7	65.7
0		0	09Apr 11	11:08:20	62.2	66.1	69.2
0		0	09Apr 11	11:08:25	55.0	56.6	62.0
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0		0	09Apr 11	11:08:35	66.0	71.5	73.0
0		0	09Apr 11	11:08:40	72.0	74.5	79.0
0		0	09Apr 11	11:08:45	73.6	76.2	80.6
0		0	09Apr 11	11:08:50	68.3	73.7	75.3
0		0	09Apr 11	11:08:55	59.8	62.4	66.8
0		0	09Apr 11	11:09:00	68.4	80.5	75.4
0		0	09Apr 11	11:09:05	67.8	70.1	74.8
0		0	09Apr 11	11:09:10	69.0	71.3	76.0
0		0	09Apr 11	11:09:15	60.9	62.8	67.9
0		0	09Apr 11	11:09:20	58.3	61.0	65.3
0		0	09Apr 11	11:09:25	64.0	68.7	71.0
0		0	09Apr 11	11:09:30	59.3	65.7	66.2
0		0	09Apr 11	11:09:35	58.7	63.1	65.7
0		0	09Apr 11	11:09:40	53.4	55.0	60.4
0		0	09Apr 11	11:09:45	58.6	64.2	65.6
0		0	09Apr 11	11:09:50	55.4	57.5	62.4
0		0	09Apr 11	11:09:55	56.7	59.7	63.7
0		0	09Apr 11	11:10:00	55.6	59.5	62.6
0		0	09Apr 11	11:10:05	51.2	53.0	58.2
0		0	09Apr 11	11:10:10	54.4	58.2	61.4
0		0	09Apr 11	11:10:15	56.4	58.0	63.4
0		0	09Apr 11	11:10:20	53.1	54.9	60.1
0		0	09Apr 11	11:10:25	52.0	54.2	59.0
0		0	09Apr 11	11:10:30	60.7	63.4	67.7
0		0	09Apr 11	11:10:35	63.4	66.0	70.4
0		0	09Apr 11	11:10:40	64.5	69.5	71.5
0		0	09Apr 11	11:10:45	56.2	59.6	63.2
0		0	09Apr 11	11:10:50	60.5	65.2	67.5
0		0	09Apr 11	11:10:55	66.3	73.0	73.2
0		0	09Apr 11	11:11:00	70.8	75.0	77.7
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0		0	09Apr 11	11:11:20	59.8	61.8	66.8
0		0	09Apr 11	11:11:25	58.9	61.9	65.9
0		0	09Apr 11	11:11:30	60.4	64.4	67.4
0		0	09Apr 11	11:11:35	65.7	70.0	72.7
0		0	09Apr 11	11:11:40	74.7	77.9	81.7
0		0	09Apr 11	11:11:45	63.4	67.9	70.4
0		0	09Apr 11	11:11:50	56.3	59.7	63.3
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0		0	09Apr 11	11:12:00	54.0	55.0	61.0
0		0	09Apr 11	11:12:05	59.7	63.0	66.7
0		0	09Apr 11	11:12:10	63.3	66.3	70.3
0		0	09Apr 11	11:12:15	53.0	55.4	60.0
0		0	09Apr 11	11:12:20	52.8	55.8	59.8
0		0	09Apr 11	11:12:25	51.4	52.5	58.4
0		0	09Apr 11	11:12:30	52.6	57.8	59.6
0		0	09Apr 11	11:12:35	51.9	58.3	58.9
0		0	09Apr 11	11:12:40	52.3	55.6	59.3
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0		0	09Apr 11	11:13:00	57.7	60.1	64.7
0		0	09Apr 11	11:13:05	57.9	59.8	64.9
0		0	09Apr 11	11:13:10	56.7	64.8	63.7
0		0	09Apr 11	11:13:15	54.4	61.4	61.4
0		0	09Apr 11	11:13:20	55.3	64.6	62.3
0		0	09Apr 11	11:13:25	56.2	59.4	63.2
0		0	09Apr 11	11:13:30	58.9	61.0	65.9

0		0	09Apr 11 11:13:35	55.0	57.3	62.0	0		0	0	09Apr 11 11:34:05	70.2	73.9	77.2
0		0	09Apr 11 11:13:40	55.7	58.1	62.7	0		0	0	09Apr 11 11:34:10	70.4	72.9	77.4
0		0	09Apr 11 11:13:45	59.1	62.8	66.0	0		0	0	09Apr 11 11:34:15	70.5	72.7	77.5
0		0	09Apr 11 11:13:50	60.1	65.1	67.1	0		0	0	09Apr 11 11:34:20	67.9	73.6	74.9
0		0	09Apr 11 11:13:55	58.4	64.7	65.4	0		0	0	09Apr 11 11:34:25	60.8	67.3	67.8
0		0	09Apr 11 11:14:00	57.2	59.1	64.2	0		0	0	09Apr 11 11:34:30	63.9	67.3	70.9
0		0	09Apr 11 11:14:05	59.4	65.5	66.4	0		0	0	09Apr 11 11:34:35	59.4	61.8	66.4
0		0	09Apr 11 11:14:10	66.8	75.2	73.8	0		0	0	09Apr 11 11:34:40	59.3	60.6	66.2
0		0	09Apr 11 11:14:15	64.7	69.8	71.7	0		0	0	09Apr 11 11:34:45	57.6	61.2	64.6
0		0	09Apr 11 11:14:20	62.5	66.8	69.5	0		0	0	09Apr 11 11:34:50	62.4	63.8	69.3
0		0	09Apr 11 11:14:25	61.9	65.9	68.9	0		0	0	09Apr 11 11:34:55	59.8	60.9	66.7
0		0	09Apr 11 11:14:30	64.8	68.7	71.8	0		0	0	09Apr 11 11:35:00	60.7	62.3	67.7
0		0	09Apr 11 11:14:35	64.2	68.7	71.2	0		0	0	09Apr 11 11:35:05	62.4	65.5	69.4
0		0	09Apr 11 11:14:40	62.5	65.9	69.5	0		0	0	09Apr 11 11:35:10	56.0	61.9	63.0
0		0	09Apr 11 11:14:45	60.5	70.8	67.5	0		0	0	09Apr 11 11:35:15	61.4	65.3	68.4
0		0	09Apr 11 11:14:50	60.0	65.7	67.0	0		0	0	09Apr 11 11:35:20	68.2	72.3	75.2
0		0	09Apr 11 11:14:55	59.8	66.0	66.8	0		0	0	09Apr 11 11:35:25	56.0	57.3	63.0
0		0	09Apr 11 11:15:00	54.2	63.8	61.2	0		0	0	09Apr 11 11:35:30	61.0	72.8	68.0
0		0	09Apr 11 11:15:05	52.7	55.9	59.7	0		0	0	09Apr 11 11:35:35	62.3	63.4	69.3
0		0	09Apr 11 11:15:10	53.2	57.0	60.2	0		0	0	09Apr 11 11:35:40	61.1	64.0	68.1
0		0	09Apr 11 11:15:15	54.4	60.3	61.4	0		0	0	09Apr 11 11:35:45	54.1	60.4	61.1
0		0	09Apr 11 11:15:20	53.5	59.5	60.5	0		0	0	09Apr 11 11:35:50	52.9	55.6	59.9
0		0	09Apr 11 11:15:25	53.4	61.4	60.3	0		0	0	09Apr 11 11:35:55	55.0	57.1	62.0
0		0	09Apr 11 11:15:30	54.1	57.4	61.1	0		0	0	09Apr 11 11:36:00	56.7	61.0	63.7
0		0	09Apr 11 11:15:35	61.1	64.7	68.1	0		0	0	09Apr 11 11:36:05	60.8	62.9	67.7
0		0	09Apr 11 11:15:40	54.7	57.8	61.7	0		0	0	09Apr 11 11:36:10	57.5	59.6	64.5
0		0	09Apr 11 11:15:45	51.8	54.2	58.8	0		0	0	09Apr 11 11:36:15	62.3	64.0	69.3
0		0	09Apr 11 11:15:50	51.6	56.0	58.6	0		0	0	09Apr 11 11:36:20	59.2	62.6	66.2
0		0	09Apr 11 11:15:55	51.8	52.8	58.8	0		0	0	09Apr 11 11:36:25	64.8	69.0	71.8
0		0	09Apr 11 11:16:00	52.5	54.3	59.5	0		0	0	09Apr 11 11:36:30	70.7	74.8	77.7
0		0	09Apr 11 11:16:05	57.2	59.0	64.2	0		0	0	09Apr 11 11:36:35	68.5	69.8	75.5
0		0	09Apr 11 11:16:10	54.9	58.2	61.9	0		0	0	09Apr 11 11:36:40	64.9	70.4	71.8
0		0	09Apr 11 11:16:15	54.1	58.0	61.1	0		0	0	09Apr 11 11:36:45	57.0	60.1	64.0
0		0	09Apr 11 11:16:20	53.6	58.3	60.5	0		0	0	09Apr 11 11:36:50	54.9	56.0	61.9
0		0	09Apr 11 11:16:25	54.3	59.1	61.3	0		0	0	09Apr 11 11:36:55	55.6	58.3	62.6
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0		0	09Apr 11 11:16:40	57.0	59.4	64.0	0		0	0	09Apr 11 11:37:10	62.0	67.8	69.0
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0		0	09Apr 11 11:16:50	63.5	67.8	70.5	0		0	0	09Apr 11 11:37:20	68.9	73.2	75.9
0		0	09Apr 11 11:16:55	70.7	77.2	77.7	0		0	0	09Apr 11 11:37:25	72.1	76.6	79.1
0		0	09Apr 11 11:17:00	70.4	74.3	77.4	0		0	0	09Apr 11 11:37:30	66.3	74.8	73.3
0		0	09Apr 11 11:17:05	63.3	68.2	70.2	0		0	0	09Apr 11 11:37:35	60.5	62.5	67.5
0		0	09Apr 11 11:17:10	57.1	60.8	64.1	0		0	0	09Apr 11 11:37:40	59.7	61.6	66.7
0		0	09Apr 11 11:17:15	58.5	62.3	65.5	0		0	0	09Apr 11 11:37:45	59.1	62.4	66.1
0		0	09Apr 11 11:17:20	60.9	68.9	67.9	0		0	0	09Apr 11 11:37:50	53.5	56.3	60.5
0		0	09Apr 11 11:17:25	64.3	70.8	71.3	0		0	0	09Apr 11 11:37:55	52.0	53.7	59.0
0		0	09Apr 11 11:17:30	56.6	59.9	63.6	0		0	0	09Apr 11 11:38:00	56.4	58.9	63.4
0		0	09Apr 11 11:17:35	53.6	55.4	60.6	0		0	0	09Apr 11 11:38:05	56.9	58.8	63.9
0		0	09Apr 11 11:17:40	54.2	57.6	61.2	0		0	0	09Apr 11 11:38:10	54.2	57.6	61.2
0		0	09Apr 11 11:17:45	53.9	57.9	60.8	0		0	0	09Apr 11 11:38:15	60.0	63.8	67.0
0		0	09Apr 11 11:17:50	52.3	53.4	59.3	0		0	0	09Apr 11 11:38:20	68.0	71.5	75.0
0		0	09Apr 11 11:17:55	52.2	54.1	59.2	0		0	0	09Apr 11 11:38:25	59.4	62.1	66.4
0		0	09Apr 11 11:18:00	56.3	59.3	63.3	0		0	0	09Apr 11 11:38:30	63.4	64.5	70.4
0		0	09Apr 11 11:18:05	57.0	59.3	64.0	0		0	0	09Apr 11 11:38:35	62.9	64.6	69.9
0		0	09Apr 11 11:18:10	66.8	72.1	73.8	0		0	0	09Apr 11 11:38:40	59.1	61.8	66.1
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0		0	09Apr 11 11:18:20	64.7	67.1	71.7	0		0	0	09Apr 11 11:38:50	63.8	65.8	70.7
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0		0	09Apr 11 11:18:35	53.8	56.8	60.8	0		0	0	09Apr 11 11:39:05	67.8	74.3	74.8
0		0	09Apr 11 11:18:40	64.5	78.3	71.5	0		0	0	09Apr 11 11:39:10	75.2	79.9	82.2
0		0	09Apr 11 11:18:45	62.4	63.6	69.4	0		0	0	09Apr 11 11:39:15	66.1	73.0	73.1
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0		0	09Apr 11 11:19:20	53.1	56.2	60.1	0		0	0	09Apr 11 11:39:50	65.4	68.0	72.4
0		0	09Apr 11 11:19:25	55.4	58.0	62.4	0		0	0	09Apr 11 11:39:55	66.8	71.3	73.8
0		0	09Apr 11 11:19:30	51.4	56.3	58.4	0		0	0	09Apr 11 11:40:00	68.9	73.6	75.9
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0		0	09Apr 11 11:19:40	50.2	54.0	57.2	0		0	0	09Apr 11 11:40:10	60.6	69.9	67.6
0		0	09Apr 11 11:19:45	50.9	56.7	57.9	0		0	0	09Apr 11 11:40:15	56.0	61.5	63.0
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0		0	09Apr 11 11:20:00	51.8	56.3	58.8	0		0	0	09Apr 11 11:40:30	58.9	62.9	65.8
0		0	09Apr 11 11:20:05	54.2	56.6	61.2	0		0	0	09Apr 11 11:40:35	57.7	60.4	64.7
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0		0	09Apr 11 11:20:35	54.8	56.6	61.8	0		0	0	09Apr 11 11:41:05	57.8	59.3	64.7
0		0	09Apr 11 11:20:40	57.4	58.3	64.3	0		0	0	09Apr 11 11:41:10	55.6	58.0	62.6
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0		0	09Apr 11 11:20:50	53.4	55.8	60.4	0		0	0	09Apr 11 11:41:20	59.6	62.4	66.5
0		0	09Apr 11 11:20:55	52.1	53.2	59.1	0		0	0	09Apr 11 11:41:25	59.0	61.1	66.0
0		0	09Apr 11 11:21:00	52.5	55.5	59.5	0		0	0	09Apr 11 11:41:30	54.2	56.0	61.5
0		0	09Apr 11 11:21:05	55.7	58.0	62.7	0		0	0	09Apr 11 11:41:35	60.1	61.8	67.1
0		0	09Apr 11 11:21:10	56.9	58.6	63.9	0		0	0	09Apr 11 11:41:40	60.2	61.3	67.2
0		0	09Apr 11 11:21:15	58.8	62.6	65.8	0		0	0	09Apr 11 11:41:45	61.1	63.3	68.1
0		0	09Apr 11 11:21:20	55.7	58.7	62.7	0		0	0	09Apr 11 11:41:50	55.6	57.4	62.6
0		0	09Apr 11 11:21:25	59.3	62.8	66.2	0		0	0	09Apr 11 11:41:55	59.6	63.9	66.6
0		0	09Apr 11 11:21:30	61.2	63.2	68.2	0		0	0	09Apr 11 11:42:00	58.1	63.5	65.1
0		0	09Apr 11 11:21:35	68.0	79.4	75.0	0		0	0	09Apr 11 11:42:05	58.5	63.4	65.5
0		0	09Apr 11 11:21:40	72.6	76.1	79.6	0		0	0	09Apr 11 11:42:10	57.2	59.8	64.2
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0		0	09Apr 11 11:21:50	63.1	67.2	70.1	0		0	0	09Apr 11 11:42:20	61.2	64.3	68.2
0		0	09Apr 11 11:21:55	59.3	61.5	66.3	0		0	0	09Apr 11 11:42:25	59.8	61.8	66.8
0		0	09Apr 11 11:22:00	58.0	61.9	65.0	0		0	0	09Apr 11 11:42:30	54.0	55.8	61.0
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0		0	09Apr 11 11:22:10	61.8	68.2	68.8	0		0	0	09Apr 11 11:42:40	69.5	73.9	76.5
0		0	09Apr 11 11:22:15	63.4	66.0	70.4	0		0	0	09Apr 11 11:42:45	73.8	76.3	80.8
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0		0	09Apr 11 11:22:25	66.0	70.0	73.0	0		0	0	09Apr 11 11:42:55	55.9	59.8	62.9
0		0	09Apr 11 11:22:30	69.4	72.6	76.4	0		0	0	09Apr 11 11:43:00	54.1	58.5	61.1
0		0	09Apr 11 11:22:35	67.7	72.8	74.7	0		0	0	09Apr 11 11:43:05	56.6	58.4	63.6
0		0	09Apr 11 11:22:40	62.9	67.0	69.9	0		0	0	09Apr 11 11:43:10	57.0	62.9	64.0
0		0	09Apr 11 11:22:45	58.3	61.1	65.3	0		0	0	09Apr 11 11:43:15	56.3	61.4	63.3
0		0	09Apr 11 11:22:50	56.4	57.9	63.3	0		0	0	09Apr 11 11:43:20	53.7	55.1	60.7
0		0	09Apr 11 11:22:55	60.4	62.4	67.4	0		0	0	09Apr 11 11:43:25	57.0	58.6	64.0
0		0	09Apr 11 11:23:00	61.4	61.7	68.4	0		0	0	09Apr 11 11:43:30	60.8	64.1	67.7
Stop Key							0		0	0	09Apr 11 11:43:35	59.0	61.8	66.0
Run Key							0		0	0	09Apr 11 11:43:40	57.6	59.5	64.6
Measurement 3							0		0	0	09Apr 11 11:43:45	57.9	58.8	64.9
0		0	09Apr 11 11:33:05	64.8	66.2	71.8	0		0	0	09Apr 11 11:43:50	55.6	56.8	62.6
0		0	09Apr 11 11:33:10	67.6	72.4	74.6	0		0	0	09Apr 11 11:43:55	55.8	60.6	62.8
0		0	09Apr 11 11:33:15	75.2	77.4	82.2	0		0	0	09Apr 11 11:44:00	60.8	63.8	67.7
0		0	09Apr 11 11:33:20	67.5	70.8	74.5	0		0	0	09Apr 11 11:44:05	54.6	59.3	61.6
0		0	09Apr 11 11:33:25	60.3	62.4	67.3	0		0	0	09Apr 11 11:44:10	53.1	54.6	60.1
0		0	09Apr 11 11:33:30	55.8	58.8	62.8	0		0	0	09Apr 11 11:44:15	54.6	60.4	61.6
0		0	09Apr 11 11:33:35	55.5	59.0	62.5	0		0	0	09Apr 11 11:44:20	61.0	65.8	68.0
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0		0	09Apr 11 11:33:45	60.3	64.4	67.3	0		0	0	09Apr 11 11:44:30	63.1	65.4	70.1
0		0	09Apr 11 11:33:50	53.8	54.7	60.8	0		0	0	09Apr 11 11:44:35	60.0	61.8	67.0
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0		0	09Apr 11 11:34:00	65.4	69.3	72.4	0		0	0	09Apr 11 11:44:45	59.5	62.5	66.5

0		0	09Apr 11	11:44:50	55.4	58.4	62.4	0		0	09Apr 11	12:05:15	72.8	75.6	79.8
0		0	09Apr 11	11:44:55	55.6	58.4	62.6	0		0	09Apr 11	12:05:20	68.0	72.6	75.0
0		0	09Apr 11	11:45:00	59.8	62.3	66.8	0		0	09Apr 11	12:05:25	63.3	65.3	70.2
0		0	09Apr 11	11:45:05	63.8	72.1	70.7	0		0	09Apr 11	12:05:30	63.1	64.7	70.1
0		0	09Apr 11	11:45:10	64.0	69.4	71.0	0		0	09Apr 11	12:05:35	62.4	64.4	69.4
0		0	09Apr 11	11:45:15	58.7	60.7	65.7	0		0	09Apr 11	12:05:40	63.4	66.1	70.4
0		0	09Apr 11	11:45:20	56.3	60.4	63.3	0		0	09Apr 11	12:05:45	61.8	64.3	68.8
0		0	09Apr 11	11:45:25	56.3	59.9	63.3	0		0	09Apr 11	12:05:50	59.0	60.8	66.0
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0		0	09Apr 11	11:45:40	64.8	71.5	71.8	0		0	09Apr 11	12:06:05	62.8	66.6	69.8
0		0	09Apr 11	11:45:45	55.9	62.4	62.9	0		0	09Apr 11	12:06:10	61.1	63.4	68.1
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0		0	09Apr 11	11:45:55	68.8	75.3	75.8	0		0	09Apr 11	12:06:20	56.0	61.3	63.0
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0		0	09Apr 11	11:46:10	53.0	54.3	60.0	0		0	09Apr 11	12:06:35	55.9	61.6	62.9
0		0	09Apr 11	11:46:15	54.5	56.9	61.5	0		0	09Apr 11	12:06:40	54.6	55.7	61.6
0		0	09Apr 11	11:46:20	59.0	65.1	66.0	0		0	09Apr 11	12:06:45	56.1	63.2	63.0
0		0	09Apr 11	11:46:25	56.6	62.4	63.6	0		0	09Apr 11	12:06:50	58.4	60.6	65.4
0		0	09Apr 11	11:46:30	56.1	57.0	63.1	0		0	09Apr 11	12:06:55	58.4	60.8	65.4
0		0	09Apr 11	11:46:35	58.9	61.4	65.9	0		0	09Apr 11	12:07:00	60.9	63.5	67.9
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0		0	09Apr 11	11:46:45	65.6	69.2	72.6	0		0	09Apr 11	12:07:10	60.0	62.5	67.0
0		0	09Apr 11	11:46:50	66.3	69.6	73.2	0		0	09Apr 11	12:07:15	60.3	65.8	67.3
0		0	09Apr 11	11:46:55	62.4	67.0	69.4	0		0	09Apr 11	12:07:20	59.2	62.5	66.2
0		0	09Apr 11	11:47:00	55.4	58.7	62.4	0		0	09Apr 11	12:07:25	58.9	63.3	65.9
0		0	09Apr 11	11:47:05	54.4	58.4	61.4	0		0	09Apr 11	12:07:30	60.5	64.6	67.5
0		0	09Apr 11	11:47:10	55.8	61.2	62.8	0		0	09Apr 11	12:07:35	59.5	64.1	66.5
0		0	09Apr 11	11:47:15	63.9	67.2	70.9	0		0	09Apr 11	12:07:40	60.2	64.1	67.2
0		0	09Apr 11	11:47:20	61.8	64.9	68.8	0		0	09Apr 11	12:07:45	58.3	60.3	65.2
0		0	09Apr 11	11:47:25	61.5	64.2	68.5	0		0	09Apr 11	12:07:50	59.1	61.5	66.1
0		0	09Apr 11	11:47:30	55.9	58.7	62.9	0		0	09Apr 11	12:07:55	62.9	65.5	69.9
0		0	09Apr 11	11:47:35	56.8	59.2	63.8	0		0	09Apr 11	12:08:00	66.5	69.9	73.5
0		0	09Apr 11	11:47:40	62.9	67.1	69.9	0		0	09Apr 11	12:08:05	63.6	66.5	70.6
0		0	09Apr 11	11:47:45	59.0	62.0	66.0	0		0	09Apr 11	12:08:10	61.9	64.4	68.9
0		0	09Apr 11	11:47:50	62.2	68.4	69.2	0		0	09Apr 11	12:08:15	59.5	63.5	66.5
0		0	09Apr 11	11:47:55	53.8	59.4	60.8	0		0	09Apr 11	12:08:20	60.0	62.7	67.0
0		0	09Apr 11	11:48:00	53.8	53.7	60.7	0		0	09Apr 11	12:08:25	62.7	67.5	69.7
Stop Key								0		0	09Apr 11	12:08:30	63.8	65.7	70.8
Run Key								0		0	09Apr 11	12:08:35	61.6	63.5	68.6
Measurement 4								0		0	09Apr 11	12:08:40	60.1	63.9	67.1
0		0	09Apr 11	11:58:00	55.4	57.5	62.4	0		0	09Apr 11	12:08:45	58.7	61.5	65.7
0		0	09Apr 11	11:58:05	55.9	57.4	62.9	0		0	09Apr 11	12:08:50	61.0	62.9	68.0
0		0	09Apr 11	11:58:10	59.0	62.6	66.0	0		0	09Apr 11	12:08:55	62.7	65.6	69.7
0		0	09Apr 11	11:58:15	61.0	63.9	68.0	0		0	09Apr 11	12:09:00	63.4	67.1	70.4
0		0	09Apr 11	11:58:20	58.7	60.8	65.7	0		0	09Apr 11	12:09:05	61.0	65.5	68.0
0		0	09Apr 11	11:58:25	59.9	62.8	66.8	0		0	09Apr 11	12:09:10	61.0	63.5	68.0
0		0	09Apr 11	11:58:30	62.4	65.5	69.3	0		0	09Apr 11	12:09:15	60.0	62.5	67.0
0		0	09Apr 11	11:58:35	66.6	71.4	73.6	0		0	09Apr 11	12:09:20	55.6	58.1	62.5
0		0	09Apr 11	11:58:40	57.8	59.6	64.7	0		0	09Apr 11	12:09:25	57.1	60.7	64.1
0		0	09Apr 11	11:58:45	56.0	58.0	63.0	0		0	09Apr 11	12:09:30	57.4	60.4	64.4
0		0	09Apr 11	11:58:50	55.5	57.9	62.5	0		0	09Apr 11	12:09:35	55.3	58.2	62.3
0		0	09Apr 11	11:58:55	58.3	61.5	65.3	0		0	09Apr 11	12:09:40	54.2	55.5	61.2
0		0	09Apr 11	11:59:00	55.1	56.4	62.1	0		0	09Apr 11	12:09:45	55.6	59.1	62.6
0		0	09Apr 11	11:59:05	54.9	58.5	61.9	0		0	09Apr 11	12:09:50	59.5	62.0	66.5
0		0	09Apr 11	11:59:10	66.9	72.3	73.9	0		0	09Apr 11	12:09:55	60.2	62.4	67.2
0		0	09Apr 11	11:59:15	61.5	66.5	68.5	0		0	09Apr 11	12:10:00	59.5	67.4	66.5
0		0	09Apr 11	11:59:20	60.5	68.0	67.5	0		0	09Apr 11	12:10:05	59.9	62.4	66.9
0		0	09Apr 11	11:59:25	63.2	68.1	70.2	0		0	09Apr 11	12:10:10	61.3	69.2	68.3
0		0	09Apr 11	11:59:30	59.6	67.4	66.6	0		0	09Apr 11	12:10:15	62.4	65.2	69.4
0		0	09Apr 11	11:59:35	56.2	59.1	63.2	0		0	09Apr 11	12:10:20	60.4	62.9	67.4
0		0	09Apr 11	11:59:40	56.8	58.6	63.8	0		0	09Apr 11	12:10:25	59.5	64.1	66.5
0		0	09Apr 11	11:59:45	56.9	64.4	63.9	0		0	09Apr 11	12:10:30	61.7	64.4	68.7
0		0	09Apr 11	11:59:50	55.9	62.6	62.9	0		0	09Apr 11	12:10:35	61.3	64.1	68.2
0		0	09Apr 11	11:59:55	61.7	69.3	68.7	0		0	09Apr 11	12:10:40	58.9	61.8	65.9
0		0	09Apr 11	12:00:00	62.2	74.5	69.2	0		0	09Apr 11	12:10:45	60.2	64.6	67.2
0		0	09Apr 11	12:00:05	59.2	70.1	66.2	0		0	09Apr 11	12:10:50	61.5	63.5	68.5
0		0	09Apr 11	12:00:10	55.5	60.1	62.5	0		0	09Apr 11	12:10:55	59.2	61.3	66.2
0		0	09Apr 11	12:00:15	54.0	57.0	61.0	0		0	09Apr 11	12:11:00	61.8	64.0	68.8
0		0	09Apr 11	12:00:20	57.8	61.5	64.8	0		0	09Apr 11	12:11:05	60.8	63.9	67.7
0		0	09Apr 11	12:00:25	58.2	62.0	65.2	0		0	09Apr 11	12:11:10	61.6	64.5	68.6
0		0	09Apr 11	12:00:30	59.1	61.7	66.1	0		0	09Apr 11	12:11:15	65.1	68.4	72.1
0		0	09Apr 11	12:00:35	54.7	58.3	61.7	0		0	09Apr 11	12:11:20	62.1	67.0	69.1
0		0	09Apr 11	12:00:40	55.9	59.9	62.9	0		0	09Apr 11	12:11:25	61.3	63.4	68.3
0		0	09Apr 11	12:00:45	57.3	58.8	64.2	0		0	09Apr 11	12:11:30	63.9	67.1	70.9
0		0	09Apr 11	12:00:50	56.0	57.7	63.0	0		0	09Apr 11	12:11:35	60.9	64.6	67.9
0		0	09Apr 11	12:00:55	55.9	58.5	62.8	0		0	09Apr 11	12:11:40	55.0	56.4	62.0
0		0	09Apr 11	12:01:00	55.5	58.1	62.5	0		0	09Apr 11	12:11:45	56.4	57.5	63.4
0		0	09Apr 11	12:01:05	54.1	55.6	61.1	0		0	09Apr 11	12:11:50	57.2	62.3	64.2
0		0	09Apr 11	12:01:10	56.9	58.1	63.9	0		0	09Apr 11	12:11:55	55.0	60.0	62.0
0		0	09Apr 11	12:01:15	56.0	59.5	63.0	0		0	09Apr 11	12:12:00	53.5	55.9	60.5
0		0	09Apr 11	12:01:20	56.3	59.4	63.3	0		0	09Apr 11	12:12:05	54.7	57.0	61.7
0		0	09Apr 11	12:01:25	56.7	61.5	63.7	0		0	09Apr 11	12:12:10	54.3	58.9	61.3
0		0	09Apr 11	12:01:30	55.7	58.4	62.7	0		0	09Apr 11	12:12:15	55.9	58.6	62.9
0		0	09Apr 11	12:01:35	56.0	59.6	63.0	0		0	09Apr 11	12:12:20	57.6	61.1	64.6
0		0	09Apr 11	12:01:40	56.6	60.6	63.5	0		0	09Apr 11	12:12:25	56.5	58.5	63.5
0		0	09Apr 11	12:01:45	54.5	57.3	61.5	0		0	09Apr 11	12:12:30	61.4	65.0	68.4
0		0	09Apr 11	12:01:50	64.9	75.9	71.9	0		0	09Apr 11	12:12:35	57.6	61.3	64.6
0		0	09Apr 11	12:01:55	61.5	64.8	68.5	0		0	09Apr 11	12:12:40	57.1	58.9	64.1
0		0	09Apr 11	12:02:00	60.7	63.0	67.7	0		0	09Apr 11	12:12:45	57.3	60.9	64.3
0		0	09Apr 11	12:02:05	69.1	77.4	76.1	0		0	09Apr 11	12:12:50	61.3	65.9	68.2
0		0	09Apr 11	12:02:10	62.4	67.3	69.4	0		0	09Apr 11	12:12:55	57.7	59.5	64.7
0		0	09Apr 11	12:02:15	59.5	60.8	66.5	0		0	09Apr 11	12:13:00	56.9	57.4	63.9
0		0	09Apr 11	12:02:20	62.4	64.4	69.4	Stop Key							
0		0	09Apr 11	12:02:25	61.3	64.4	68.2	Run Key							
0		0	09Apr 11	12:02:30	63.4	66.0	70.4	**Measurement 5**							
0		0	09Apr 11	12:02:35	65.9	70.7	72.8	0		0	09Apr 11	12:20:00	54.3	56.9	61.2
0		0	09Apr 11	12:02:40	70.7	76.7	77.7	0		0	09Apr 11	12:20:05	52.3	53.4	59.3
0		0	09Apr 11	12:02:45	66.2	71.2	73.2	0		0	09Apr 11	12:20:10	52.1	58.8	59.1
0		0	09Apr 11	12:02:50	61.3	63.4	68.3	0		0	09Apr 11	12:20:15	51.3	53.5	58.3
0		0	09Apr 11	12:02:55	66.6	75.9	73.6	0		0	09Apr 11	12:20:20	51.5	55.5	58.5
0		0	09Apr 11	12:03:00	56.6	60.2	63.6	0		0	09Apr 11	12:20:25	51.6	53.9	58.6
0		0	09Apr 11	12:03:05	55.9	59.0	62.9	0		0	09Apr 11	12:20:30	52.2	54.8	59.2
0		0	09Apr 11	12:03:10	57.5	58.9	64.5	0		0	09Apr 11	12:20:35	52.5	57.2	59.5
0		0	09Apr 11	12:03:15	59.5	64.2	66.5	0		0	09Apr 11	12:20:40	52.8	57.2	59.8
0		0	09Apr 11	12:03:20	56.8	59.8	63.7	0		0	09Apr 11	12:20:45	52.7	54.5	59.7
0		0	09Apr 11	12:03:25	57.2	62.5	64.2	0		0	09Apr 11	12:20:50	53.6	58.2	60.5
0		0	09Apr 11	12:03:30	57.9	61.5	64.9	0		0	09Apr 11	12:20:55	59.8	66.5	66.8
0		0	09Apr 11	12:03:35	58.1	59.5	65.1	0		0	09Apr 11	12:21:00	58.8	65.7	65.8
0		0	09Apr 11	12:03:40	55.6	56.4	62.6	0		0	09Apr 11	12:21:05	58.7	63.9	65.7
0		0	09Apr 11	12:03:45	55.4	56.4	62.4	0		0	09Apr 11	12:21:10	59.3	64.4	66.3
0		0	09Apr 11	12:03:50	58.4	60.3	65.4	0		0	09Apr 11	12:21:15	57.5	64.0	64.5
0		0	09Apr 11	12:03:55	58.2	59.7	65.2	0		0	09Apr 11	12:21:20	54.0	58.7	61.0
0		0	09Apr 11	12:04:00	58.7	61.8	65.7	0		0	09Apr 11	12:21:25	53.2	57.5	60.2
0		0	09Apr 11	12:04:05	60.6	63.5	67.5	0		0	09Apr 11	12:21:30	53.5	59.7	60.5
0		0	09Apr 11	12:04:10	63.7	70.3	70.7	0		0	09Apr 11	12:21:35	52.9	59.2	59.9
0		0	09Apr 11	12:04:15	66.2	71.0	73.2	0		0	09Apr 11	12:21:40	53.0	56.3	60.0
0		0	09Apr 11	12:04:20	63.0	68.2	70.0	0		0	09Apr 11	12:21:45	52.6	54.0	59.5
0		0	09Apr 11	12:04:25	58.0	60.4	65.0	0		0	09Apr 11	12:21:50	52.0	54.8	59.0
0		0	09Apr 11	12:04:30	58.8	61.3	65.8	0		0	09Apr 11	12:21:55	52.8	59.5	59.8
0		0	09Apr 11	12:04:35	59.3	63.2	66.3	0		0	09Apr 11	12:22:00	53.0	58.4	60.0
0		0	09Apr 11	12:04:40	58.9	60.9	65.9	0		0	09Apr 11	12:22:05	53.2	55.3	60.2
0		0	09Apr 11	12:04:45	56.5	59.7	63.5	0		0	09Apr 11	12:22:10	54.2	57.7	61.2
0		0	09Apr 11	12:04:50	57.9	60.4	64.9	0		0	09Apr 11	12:22:15	55.2	57.8	62.2
0		0	09Apr 11	12:04:55	64.3	75.6	71.3	0		0	09Apr 11	12:22:20	57.4	61.5	64.4
0		0	09Apr 11	12:05:00	60.0	63.4	67.0	0		0	09Apr 11	12:22:25	57.5	60.8	64.5
0		0	09Apr 11	12:05:05	61.9	65.2	68.9	0		0	09Apr 11	12:22:30	58.3	64.4	65.3
0		0	09Apr 11	12:05:10	66.0	69.4	73.0	0		0	09Apr 11	12:22:35	59.5	65.2	66.5

0	0	09Apr 11	12:22:40	56.6	59.4	63.6	0	0	09Apr 11	12:33:25	57.4	58.6	64.4
0	0	09Apr 11	12:22:45	54.9	60.1	61.9	0	0	09Apr 11	12:33:30	57.1	60.6	64.1
0	0	09Apr 11	12:22:50	54.2	58.8	61.2	0	0	09Apr 11	12:33:35	55.1	58.1	62.1
0	0	09Apr 11	12:22:55	55.0	58.0	62.0	0	0	09Apr 11	12:33:40	54.6	58.2	61.6
0	0	09Apr 11	12:23:00	54.6	57.4	61.6	0	0	09Apr 11	12:33:45	55.6	59.1	62.5
0	0	09Apr 11	12:23:05	54.1	56.0	61.1	0	0	09Apr 11	12:33:50	56.9	60.2	63.9
0	0	09Apr 11	12:23:10	54.3	55.1	61.3	0	0	09Apr 11	12:33:55	57.4	62.0	64.4
0	0	09Apr 11	12:23:15	54.9	58.0	61.9	0	0	09Apr 11	12:34:00	55.5	57.6	62.5
0	0	09Apr 11	12:23:20	58.1	59.3	65.1	0	0	09Apr 11	12:34:05	55.2	57.0	62.2
0	0	09Apr 11	12:23:25	56.3	58.4	63.2	0	0	09Apr 11	12:34:10	58.8	71.4	65.8
0	0	09Apr 11	12:23:30	54.5	56.6	61.5	0	0	09Apr 11	12:34:15	56.7	58.2	63.7
0	0	09Apr 11	12:23:35	55.0	58.6	62.0	0	0	09Apr 11	12:34:20	57.2	59.8	64.2
0	0	09Apr 11	12:23:40	56.2	63.0	63.2	0	0	09Apr 11	12:34:25	59.7	61.9	66.7
0	0	09Apr 11	12:23:45	54.9	59.5	61.9	0	0	09Apr 11	12:34:30	59.1	62.0	66.1
0	0	09Apr 11	12:23:50	55.0	57.1	62.0	0	0	09Apr 11	12:34:35	58.3	62.5	65.3
0	0	09Apr 11	12:23:55	59.7	61.5	66.7	0	0	09Apr 11	12:34:40	58.2	65.8	65.2
0	0	09Apr 11	12:24:00	54.9	57.6	61.8	0	0	09Apr 11	12:34:45	54.7	57.8	61.7
0	0	09Apr 11	12:24:05	54.5	60.3	61.5	0	0	09Apr 11	12:34:50	58.3	62.5	65.3
0	0	09Apr 11	12:24:10	52.0	53.5	59.0	0	0	09Apr 11	12:34:55	56.8	62.7	63.8
0	0	09Apr 11	12:24:15	52.7	56.4	59.7	0	0	09Apr 11	12:35:00	57.1	57.1	64.1
0	0	09Apr 11	12:24:20	54.7	67.0	61.7	Stop Key						
0	0	09Apr 11	12:24:25	55.2	63.0	62.2	Run Key						
0	0	09Apr 11	12:24:30	51.6	55.7	58.5	**Measurement 6**						
0	0	09Apr 11	12:24:35	51.3	53.3	58.3	0						
0	0	09Apr 11	12:24:40	51.3	52.6	58.3	0	0	09Apr 11	12:40:00	61.2	62.9	68.2
0	0	09Apr 11	12:24:45	53.7	64.5	60.7	0	0	09Apr 11	12:40:05	60.9	62.8	67.9
0	0	09Apr 11	12:24:50	53.6	56.6	60.6	0	0	09Apr 11	12:40:10	61.8	64.9	68.8
0	0	09Apr 11	12:24:55	54.9	56.8	61.9	0	0	09Apr 11	12:40:15	60.2	61.7	67.2
0	0	09Apr 11	12:25:00	56.9	59.3	63.9	0	0	09Apr 11	12:40:20	56.8	60.8	63.7
0	0	09Apr 11	12:25:05	57.3	62.8	64.3	0	0	09Apr 11	12:40:25	55.7	57.9	62.7
0	0	09Apr 11	12:25:10	54.9	57.6	61.9	0	0	09Apr 11	12:40:30	61.4	64.8	68.4
0	0	09Apr 11	12:25:15	54.4	60.8	61.4	0	0	09Apr 11	12:40:35	60.1	62.7	67.1
0	0	09Apr 11	12:25:20	54.5	57.3	61.5	0	0	09Apr 11	12:40:40	62.6	67.0	69.6
0	0	09Apr 11	12:25:25	57.2	61.9	64.2	0	0	09Apr 11	12:40:45	60.1	65.3	67.1
0	0	09Apr 11	12:25:30	57.2	60.5	64.2	0	0	09Apr 11	12:40:50	59.9	64.4	66.9
0	0	09Apr 11	12:25:35	57.5	60.3	64.5	0	0	09Apr 11	12:40:55	54.3	58.2	61.3
0	0	09Apr 11	12:25:40	56.3	57.9	63.2	0	0	09Apr 11	12:41:00	53.2	57.8	60.2
0	0	09Apr 11	12:25:45	58.7	67.6	65.7	0	0	09Apr 11	12:41:05	64.9	71.9	71.9
0	0	09Apr 11	12:25:50	58.4	62.6	65.4	0	0	09Apr 11	12:41:10	63.9	65.0	70.9
0	0	09Apr 11	12:25:55	59.5	66.4	66.5	0	0	09Apr 11	12:41:15	59.8	62.2	66.8
0	0	09Apr 11	12:26:00	58.2	61.0	65.2	0	0	09Apr 11	12:41:20	53.8	56.2	60.7
0	0	09Apr 11	12:26:05	55.2	56.8	62.2	0	0	09Apr 11	12:41:25	54.8	57.8	61.8
0	0	09Apr 11	12:26:10	55.9	58.9	62.8	0	0	09Apr 11	12:41:30	63.0	66.2	70.0
0	0	09Apr 11	12:26:15	57.1	58.6	64.1	0	0	09Apr 11	12:41:35	62.8	65.2	69.8
0	0	09Apr 11	12:26:20	59.4	62.1	66.4	0	0	09Apr 11	12:41:40	62.5	64.7	69.5
0	0	09Apr 11	12:26:25	63.4	64.5	70.3	0	0	09Apr 11	12:41:45	60.4	63.7	67.4
0	0	09Apr 11	12:26:30	60.8	64.5	67.7	0	0	09Apr 11	12:41:50	57.9	60.5	64.9
0	0	09Apr 11	12:26:35	53.9	55.9	60.9	0	0	09Apr 11	12:41:55	62.1	65.1	69.1
0	0	09Apr 11	12:26:40	53.0	54.6	60.0	0	0	09Apr 11	12:42:00	64.6	67.6	71.6
0	0	09Apr 11	12:26:45	52.4	53.6	59.4	0	0	09Apr 11	12:42:05	58.9	63.0	65.9
0	0	09Apr 11	12:26:50	54.0	57.5	61.0	0	0	09Apr 11	12:42:10	59.4	61.6	66.4
0	0	09Apr 11	12:26:55	54.4	57.1	61.4	0	0	09Apr 11	12:42:15	63.2	66.5	70.2
0	0	09Apr 11	12:27:00	58.0	61.9	65.0	0	0	09Apr 11	12:42:20	60.3	62.6	67.3
0	0	09Apr 11	12:27:05	63.3	67.1	70.3	0	0	09Apr 11	12:42:25	57.5	61.4	64.5
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0	0	09Apr 11	12:27:25	54.7	57.6	61.7	0	0	09Apr 11	12:42:45	64.0	68.1	71.0
0	0	09Apr 11	12:27:30	53.9	58.0	60.9	0	0	09Apr 11	12:42:50	70.0	74.1	77.0
0	0	09Apr 11	12:27:35	51.6	53.2	58.6	0	0	09Apr 11	12:42:55	67.5	72.8	74.5
0	0	09Apr 11	12:27:40	51.9	53.9	58.9	0	0	09Apr 11	12:43:00	57.7	63.4	64.7
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0	0	09Apr 11	12:30:15	60.9	68.6	67.9	0	0	09Apr 11	12:45:35	59.2	60.6	66.2
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0	0	09Apr 11	12:30:35	62.9	66.4	69.9	0	0	09Apr 11	12:45:55	58.8	60.7	65.8
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0	0	09Apr 11	12:31:15	55.8	60.9	62.8	0	0	09Apr 11	12:46:35	57.5	59.2	64.5
0	0	09Apr 11	12:31:20	60.7	71.2	67.7	0	0	09Apr 11	12:46:40	56.4	58.1	63.3
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0	0	09Apr 11	12:31:55	54.8	58.1	61.8	0	0	09Apr 11	12:47:15	64.2	68.2	71.2
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0	0	09Apr 11	12:32:05	54.6	56.3	61.6	0	0	09Apr 11	12:47:25	67.2	69.8	74.2
0	0	09Apr 11	12:32:10	54.6	56.0	61.5	0	0	09Apr 11	12:47:30	66.0	68.8	73.0
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0	0	09Apr 11	12:32:20	65.2	70.0	72.2	0	0	09Apr 11	12:47:40	59.4	61.9	66.3
0	0	09Apr 11	12:32:25	63.2	69.0	70.2	0	0	09Apr 11	12:47:45	58.5	60.2	65.5
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0	0	09Apr 11	12:32:45	57.4	62.8	64.4	0	0	09Apr 11	12:48:05	61.4	65.2	68.4
0	0	09Apr 11	12:32:50	55.3	58.3	62.3	0	0	09Apr 11	12:48:10	60.6	63.2	67.6
0	0	09Apr 11	12:32:55	56.4	58.6	63.4	0	0	09Apr 11	12:48:15	60.9	63.2	67.9
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0	0	09Apr 11	12:33:10	59.2	62.8	66.2	0	0	09Apr 11	12:48:30	67.4	71.9	74.4
0	0	09Apr 11	12:33:15	58.8	62.0	65.8	0	0	09Apr 11	12:48:35	64.5	71.4	71.5
0	0	09Apr 11	12:33:20	57.4	62.7	64.4	0	0	09Apr 11	12:48:40	63.8	68.0	70.8
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0		0	09Apr 11	12:49:05	62.5	65.0	69.5	0		0	09Apr 11	13:04:35	62.8	65.7	69.8
0		0	09Apr 11	12:49:10	72.5	76.4	79.5	0		0	09Apr 11	13:04:40	70.9	80.5	77.9
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0		0	09Apr 11	12:49:30	61.9	63.9	68.9	0		0	09Apr 11	13:05:00	67.7	69.4	74.7
0		0	09Apr 11	12:49:35	60.3	62.2	67.3	0		0	09Apr 11	13:05:05	66.8	69.2	73.8
0		0	09Apr 11	12:49:40	63.0	68.4	70.0	0		0	09Apr 11	13:05:10	67.3	70.8	74.3
0		0	09Apr 11	12:49:45	61.6	65.3	68.6	0		0	09Apr 11	13:05:15	67.1	71.0	74.1
0		0	09Apr 11	12:49:50	60.9	66.5	67.9	0		0	09Apr 11	13:05:20	62.8	66.8	69.8
0		0	09Apr 11	12:49:55	60.7	66.4	67.7	0		0	09Apr 11	13:05:25	61.2	62.8	68.2
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0		0	09Apr 11	12:50:05	61.8	63.4	68.8	0		0	09Apr 11	13:05:35	59.4	61.4	66.4
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0		0	09Apr 11	12:50:20	71.9	74.8	78.9	0		0	09Apr 11	13:05:50	65.8	71.2	72.8
0		0	09Apr 11	12:50:25	66.4	68.0	73.4	0		0	09Apr 11	13:05:55	64.0	65.6	71.0
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0		0	09Apr 11	12:50:45	61.5	63.6	68.5	0		0	09Apr 11	13:06:15	66.4	71.1	73.4
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0		0	09Apr 11	12:50:55	63.9	70.3	70.9	0		0	09Apr 11	13:06:25	59.7	66.7	66.7
0		0	09Apr 11	12:51:00	67.7	77.1	74.7	0		0	09Apr 11	13:06:30	62.8	66.3	69.8
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0		0	09Apr 11	12:54:20	72.7	82.0	79.7	0		0	09Apr 11	13:09:50	63.2	65.0	70.2
0		0	09Apr 11	12:54:25	69.3	79.5	76.3	0		0	09Apr 11	13:09:55	62.1	62.7	69.1
0		0	09Apr 11	12:54:30	65.9	71.3	72.9	0		0	09Apr 11	13:10:00	65.2	70.8	72.2
0		0	09Apr 11	12:54:35	65.1	68.0	72.1	0		0	09Apr 11	13:10:05	65.0	66.9	72.0
0		0	09Apr 11	12:54:40	64.4	67.4	71.4	0		0	09Apr 11	13:10:10	62.3	65.7	69.2
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0		0	09Apr 11	12:54:50	61.9	71.6	68.9	0		0	09Apr 11	13:10:20	61.0	63.2	68.0
0		0	09Apr 11	12:54:55	63.2	64.9	70.2	0		0	09Apr 11	13:10:25	59.6	61.2	66.6
Stop Key								0		0	09Apr 11	13:10:30	61.0	64.4	68.0
Run Key								0		0	09Apr 11	13:10:35	59.6	61.4	66.6
Measurement 7								0		0	09Apr 11	13:10:40	63.3	67.8	70.3
0		0	09Apr 11	13:00:00	64.6	68.4	71.6	0		0	09Apr 11	13:10:45	66.3	68.0	73.3
0		0	09Apr 11	13:00:05	63.1	66.6	70.1	0		0	09Apr 11	13:10:50	64.7	67.6	71.7
0		0	09Apr 11	13:00:10	64.5	67.9	71.5	0		0	09Apr 11	13:10:55	66.1	71.5	73.1
0		0	09Apr 11	13:00:15	67.8	69.8	74.8	0		0	09Apr 11	13:11:00	69.2	72.9	76.2
0		0	09Apr 11	13:00:20	66.4	69.0	73.3	0		0	09Apr 11	13:11:05	64.9	68.3	71.9
0		0	09Apr 11	13:00:25	66.5	71.0	73.5	0		0	09Apr 11	13:11:10	61.0	64.8	68.0
0		0	09Apr 11	13:00:30	63.6	66.0	70.6	0		0	09Apr 11	13:11:15	61.0	64.5	68.0
0		0	09Apr 11	13:00:35	64.1	66.6	71.0	0		0	09Apr 11	13:11:20	63.9	66.7	70.9
0		0	09Apr 11	13:00:40	62.1	63.6	69.1	0		0	09Apr 11	13:11:25	66.0	68.5	73.0
0		0	09Apr 11	13:00:45	63.6	67.8	70.6	0		0	09Apr 11	13:11:30	64.0	66.8	71.0
0		0	09Apr 11	13:00:50	63.4	69.4	70.4	0		0	09Apr 11	13:11:35	59.8	61.4	66.8
0		0	09Apr 11	13:00:55	63.9	66.8	70.9	0		0	09Apr 11	13:11:40	59.9	61.3	66.9
0		0	09Apr 11	13:01:00	65.4	68.0	72.4	0		0	09Apr 11	13:11:45	61.5	62.8	68.5
0		0	09Apr 11	13:01:05	63.0	66.8	70.0	0		0	09Apr 11	13:11:50	62.3	65.3	69.3
0		0	09Apr 11	13:01:10	66.8	70.1	73.8	0		0	09Apr 11	13:11:55	66.5	70.1	73.5
0		0	09Apr 11	13:01:15	69.6	72.0	76.6	0		0	09Apr 11	13:12:00	66.1	70.3	73.1
0		0	09Apr 11	13:01:20	70.1	71.4	77.1	0		0	09Apr 11	13:12:05	65.5	70.9	72.5
0		0	09Apr 11	13:01:25	68.2	70.1	75.2	0		0	09Apr 11	13:12:10	60.9	62.3	67.9
0		0	09Apr 11	13:01:30	64.8	67.6	71.8	0		0	09Apr 11	13:12:15	61.4	63.1	68.4
0		0	09Apr 11	13:01:35	63.0	63.8	70.0	0		0	09Apr 11	13:12:20	60.5	62.8	67.5
0		0	09Apr 11	13:01:40	62.8	64.6	69.8	0		0	09Apr 11	13:12:25	62.7	67.3	69.7
0		0	09Apr 11	13:01:45	63.8	66.1	70.8	0		0	09Apr 11	13:12:30	66.5	73.1	73.5
0		0	09Apr 11	13:01:50	67.4	70.8	74.4	0		0	09Apr 11	13:12:35	61.8	68.0	68.8
0		0	09Apr 11	13:01:55	69.4	72.0	76.4	0		0	09Apr 11	13:12:40	60.2	62.6	67.2
0		0	09Apr 11	13:02:00	69.4	73.4	76.4	0		0	09Apr 11	13:12:45	62.7	63.8	69.7
0		0	09Apr 11	13:02:05	73.1	78.1	80.1	0		0	09Apr 11	13:12:50	63.3	67.9	70.3
0		0	09Apr 11	13:02:10	74.1	77.5	81.1	0		0	09Apr 11	13:12:55	63.8	66.5	70.8
0		0	09Apr 11	13:02:15	69.3	74.6	76.3	0		0	09Apr 11	13:13:00	65.8	68.0	72.8
0		0	09Apr 11	13:02:20	65.8	67.5	72.7	0		0	09Apr 11	13:13:05	63.9	65.4	70.9
0		0	09Apr 11	13:02:25	63.8	64.8	70.8	0		0	09Apr 11	13:13:10	62.0	64.5	69.0
0		0	09Apr 11	13:02:30	65.7	67.3	72.7	0		0	09Apr 11	13:13:15	63.4	65.9	70.4
0		0	09Apr 11	13:02:35	68.7	72.6	75.7	0		0	09Apr 11	13:13:20	62.6	64.5	69.6
0		0	09Apr 11	13:02:40	68.6	73.4	75.5	0		0	09Apr 11	13:13:25	60.5	62.3	67.5
0		0	09Apr 11	13:02:45	65.7	67.4	72.7	0		0	09Apr 11	13:13:30	63.6	69.7	70.6
0		0	09Apr 11	13:02:50	65.5	69.3	72.5	0		0	09Apr 11	13:13:35	62.7	63.6	69.7
0		0	09Apr 11	13:02:55	64.9	66.8	71.9	0		0	09Apr 11	13:13:40	62.1	63.1	69.1
0		0	09Apr 11	13:03:00	62.9	64.3	69.9	0		0	09Apr 11	13:13:45	62.6	65.8	69.6
0		0	09Apr 11	13:03:05	62.5	64.0	69.5	0		0	09Apr 11	13:13:50	62.5	65.9	69.5
0		0	09Apr 11	13:03:10	64.4	67.3	71.3	0		0	09Apr 11	13:13:55	66.8	70.3	73.8
0		0	09Apr 11	13:03:15	64.4	66.5	71.4	0		0	09Apr 11	13:14:00	64.1	66.0	71.1
0		0	09Apr 11	13:03:20	63.2	65.6	70.2	0		0	09Apr 11	13:14:05	64.4	66.5	71.4
0		0	09Apr 11	13:03:25	62.8	64.0	69.8	0		0	09Apr 11	13:14:10	66.7	68.4	73.7
0		0	09Apr 11	13:03:30	65.2	67.3	72.2	0		0	09Apr 11	13:14:15	64.2	68.0	71.2
0		0	09Apr 11	13:03:35	63.9	65.0	70.9	0		0	09Apr 11	13:14:20	61.1	62.9	68.1
0		0	09Apr 11	13:03:40	63.0	64.5	70.0	0		0	09Apr 11	13:14:25	65.0	72.5	72.0
0		0	09Apr 11	13:03:45	62.2	63.3	69.2	0		0	09Apr 11	13:14:30	63.6	69.8	70.6
0		0	09Apr 11	13:03:50	63.5	65.2	70.5	0		0	09Apr 11	13:14:35	62.0	62.9	69.0
0		0	09Apr 11	13:03:55	63.8	66.0	70.8	0		0	09Apr 11	13:14:40	63.5	66.2	70.5
0		0	09Apr 11	13:04:00	62.3	64.0	69.3	0		0	09Apr 11	13:14:45	64.5	66.4	71.5
0		0	09Apr 11	13:04:05	62.4	64.2	69.3	0		0	09Apr 11	13:14:50	62.9	69.3	69.9
0		0	09Apr 11	13:04:10	62.0	63.9	69.0	0		0	09Apr 11	13:14:55	60.9	62.3	67.9
0		0	09Apr 11	13:04:15	62.7	64.7	69.7	0		0	09Apr 11	13:15:00	60.2	60.2	67.2

Stop Run	Key						
Measurement 8							
0		0	09Apr 11 13:20:00	54.8	57.3	61.8	
0		0	09Apr 11 13:20:05	54.2	55.2	61.2	
0		0	09Apr 11 13:20:10	54.6	57.3	61.5	
0		0	09Apr 11 13:20:15	54.4	58.7	61.4	
0		0	09Apr 11 13:20:20	54.4	57.5	61.4	
0		0	09Apr 11 13:20:25	53.5	57.8	60.5	
0		0	09Apr 11 13:20:30	52.2	55.0	59.2	
0		0	09Apr 11 13:20:35	52.5	53.3	59.5	
0		0	09Apr 11 13:20:40	53.6	54.4	60.5	
0		0	09Apr 11 13:20:45	54.3	55.2	61.3	
0		0	09Apr 11 13:20:50	54.2	55.0	61.2	
0		0	09Apr 11 13:20:55	54.1	54.7	61.1	
0		0	09Apr 11 13:21:00	54.6	56.0	61.5	
0		0	09Apr 11 13:21:05	56.7	58.0	63.7	
0		0	09Apr 11 13:21:10	55.7	56.7	62.7	
0		0	09Apr 11 13:21:15	54.5	56.9	61.5	
0		0	09Apr 11 13:21:20	53.6	54.2	60.6	
0		0	09Apr 11 13:21:25	53.5	54.3	60.5	
0		0	09Apr 11 13:21:30	53.2	54.7	60.2	
0		0	09Apr 11 13:21:35	53.6	55.2	60.6	
0		0	09Apr 11 13:21:40	53.8	55.2	60.8	
0		0	09Apr 11 13:21:45	54.1	55.3	61.0	
0		0	09Apr 11 13:21:50	55.1	56.0	62.1	
0		0	09Apr 11 13:21:55	54.9	55.5	61.9	
0		0	09Apr 11 13:22:00	55.1	55.9	62.1	
0		0	09Apr 11 13:22:05	55.2	56.3	62.2	
0		0	09Apr 11 13:22:10	54.5	55.0	61.5	
0		0	09Apr 11 13:22:15	54.9	55.7	61.9	
0		0	09Apr 11 13:22:20	54.2	55.0	61.2	
0		0	09Apr 11 13:22:25	53.9	54.8	60.9	
0		0	09Apr 11 13:22:30	55.2	56.2	62.2	
0		0	09Apr 11 13:22:35	55.4	56.2	62.4	
0		0	09Apr 11 13:22:40	54.6	55.5	61.6	
0		0	09Apr 11 13:22:45	53.6	55.2	60.6	
0		0	09Apr 11 13:22:50	53.4	54.0	60.3	
0		0	09Apr 11 13:22:55	53.7	55.0	60.7	
0		0	09Apr 11 13:23:00	53.9	54.7	60.9	
0		0	09Apr 11 13:23:05	53.5	54.1	60.5	
0		0	09Apr 11 13:23:10	53.2	54.8	60.2	
0		0	09Apr 11 13:23:15	53.4	54.9	60.4	
0		0	09Apr 11 13:23:20	53.5	54.3	60.5	
0		0	09Apr 11 13:23:25	53.4	54.0	60.4	
0		0	09Apr 11 13:23:30	54.0	54.5	61.0	
0		0	09Apr 11 13:23:35	54.5	55.4	61.5	
0		0	09Apr 11 13:23:40	54.3	55.0	61.3	
0		0	09Apr 11 13:23:45	55.5	58.0	62.5	
0		0	09Apr 11 13:23:50	58.3	60.0	65.3	
0		0	09Apr 11 13:23:55	66.0	71.1	73.0	
0		0	09Apr 11 13:24:00	68.2	72.5	75.2	
0		0	09Apr 11 13:24:05	64.8	70.6	71.8	
0		0	09Apr 11 13:24:10	57.3	58.8	64.3	
0		0	09Apr 11 13:24:15	57.2	59.8	64.2	
0		0	09Apr 11 13:24:20	57.3	59.7	64.3	
0		0	09Apr 11 13:24:25	55.9	58.9	62.9	
0		0	09Apr 11 13:24:30	54.0	55.5	61.0	
0		0	09Apr 11 13:24:35	54.1	55.0	61.1	
0		0	09Apr 11 13:24:40	54.0	54.7	61.0	
0		0	09Apr 11 13:24:45	53.7	54.4	60.7	
0		0	09Apr 11 13:24:50	54.7	56.7	61.7	
0		0	09Apr 11 13:24:55	55.9	56.7	62.9	
0		0	09Apr 11 13:25:00	54.9	56.4	61.9	
0		0	09Apr 11 13:25:05	54.5	55.5	61.5	
0		0	09Apr 11 13:25:10	53.6	54.2	60.6	
0		0	09Apr 11 13:25:15	53.1	53.7	60.1	
0		0	09Apr 11 13:25:20	52.5	53.6	59.5	
0		0	09Apr 11 13:25:25	53.3	54.0	60.2	
0		0	09Apr 11 13:25:30	53.3	54.3	60.3	
0		0	09Apr 11 13:25:35	52.6	53.2	59.5	
0		0	09Apr 11 13:25:40	52.4	53.2	59.4	
0		0	09Apr 11 13:25:45	52.8	54.0	59.8	
0		0	09Apr 11 13:25:50	53.8	54.3	60.8	
0		0	09Apr 11 13:25:55	54.4	55.3	61.4	
0		0	09Apr 11 13:26:00	54.6	55.1	61.6	
0		0	09Apr 11 13:26:05	54.1	54.8	61.0	
0		0	09Apr 11 13:26:10	53.8	54.8	60.8	
0		0	09Apr 11 13:26:15	53.0	53.8	60.0	
0		0	09Apr 11 13:26:20	52.4	53.5	59.4	
0		0	09Apr 11 13:26:25	52.7	53.5	59.7	
0		0	09Apr 11 13:26:30	53.4	54.0	60.4	
0		0	09Apr 11 13:26:35	53.5	54.2	60.5	
0		0	09Apr 11 13:26:40	53.2	54.0	60.2	
0		0	09Apr 11 13:26:45	53.1	53.8	60.1	
0		0	09Apr 11 13:26:50	52.5	53.1	59.5	
0		0	09Apr 11 13:26:55	53.0	53.8	60.0	
0		0	09Apr 11 13:27:00	54.0	54.8	61.0	
0		0	09Apr 11 13:27:05	56.6	63.8	63.6	
0		0	09Apr 11 13:27:10	59.4	63.3	62.4	
0		0	09Apr 11 13:27:15	54.0	55.1	61.0	
0		0	09Apr 11 13:27:20	55.1	55.9	62.1	
0		0	09Apr 11 13:27:25	54.6	55.6	61.6	
0		0	09Apr 11 13:27:30	53.8	54.6	60.8	
0		0	09Apr 11 13:27:35	53.9	54.7	60.9	
0		0	09Apr 11 13:27:40	53.8	54.8	60.8	
0		0	09Apr 11 13:27:45	53.9	55.1	60.9	
0		0	09Apr 11 13:27:50	53.7	55.2	60.7	
0		0	09Apr 11 13:27:55	54.6	55.6	61.6	
0		0	09Apr 11 13:28:00	55.3	55.9	62.3	
0		0	09Apr 11 13:28:05	55.3	56.2	62.3	
0		0	09Apr 11 13:28:10	54.7	55.6	61.7	
0		0	09Apr 11 13:28:15	55.4	56.7	62.4	
0		0	09Apr 11 13:28:20	54.8	55.4	61.8	
0		0	09Apr 11 13:28:25	54.7	55.9	61.7	
0		0	09Apr 11 13:28:30	54.2	54.9	61.2	
0		0	09Apr 11 13:28:35	53.5	54.5	60.5	
0		0	09Apr 11 13:28:40	52.4	53.3	59.4	
0		0	09Apr 11 13:28:45	52.6	53.7	59.6	
0		0	09Apr 11 13:28:50	53.2	53.9	60.2	
0		0	09Apr 11 13:28:55	53.6	54.6	60.6	
0		0	09Apr 11 13:29:00	52.8	53.5	59.8	
0		0	09Apr 11 13:29:05	53.6	54.2	60.6	
0		0	09Apr 11 13:29:10	53.4	55.3	60.4	
0		0	09Apr 11 13:29:15	53.7	54.7	60.7	
0		0	09Apr 11 13:29:20	55.9	57.5	62.9	
0		0	09Apr 11 13:29:25	57.3	59.4	64.3	
0		0	09Apr 11 13:29:30	55.9	57.4	62.8	
0		0	09Apr 11 13:29:35	56.2	56.9	63.2	
0		0	09Apr 11 13:29:40	54.9	56.0	61.9	
0		0	09Apr 11 13:29:45	55.1	56.0	62.0	
0		0	09Apr 11 13:29:50	55.4	56.0	62.3	
0		0	09Apr 11 13:29:55	55.5	56.4	62.5	
0		0	09Apr 11 13:30:00	56.0	56.7	63.0	
0		0	09Apr 11 13:30:05	56.4	56.9	63.3	
0		0	09Apr 11 13:30:10	55.6	56.8	62.6	
0		0	09Apr 11 13:30:15	55.0	55.5	62.0	
0		0	09Apr 11 13:30:20	55.9	56.5	62.9	
0		0	09Apr 11 13:30:25	56.3	57.0	63.3	
0		0	09Apr 11 13:30:30	56.0	56.6	63.0	
0		0	09Apr 11 13:30:35	55.8	56.5	62.8	
0		0	09Apr 11 13:30:40	55.9	56.6	62.9	
0		0	09Apr 11 13:30:45	56.2	56.9	63.2	
0		0	09Apr 11 13:30:50	56.5	58.3	63.5	
0		0	09Apr 11 13:30:55	55.6	56.9	62.6	
0		0	09Apr 11 13:31:00	55.3	56.1	62.3	
0		0	09Apr 11 13:31:05	55.4	56.1	62.3	
0		0	09Apr 11 13:31:10	54.9	55.4	61.9	
0		0	09Apr 11 13:31:15	54.4	55.0	61.4	
0		0	09Apr 11 13:31:20	53.9	54.5	60.9	
0		0	09Apr 11 13:31:25	54.1	54.8	61.1	
0		0	09Apr 11 13:31:30	54.4	55.0	61.4	
0		0	09Apr 11 13:31:35	54.6	55.2	61.6	
0		0	09Apr 11 13:31:40	54.8	55.4	61.8	
0		0	09Apr 11 13:31:45	55.1	55.6	62.0	
0		0	09Apr 11 13:31:50	54.5	55.1	61.5	
0		0	09Apr 11 13:31:55	54.9	55.6	61.9	
0		0	09Apr 11 13:32:00	55.0	55.5	62.0	
0		0	09Apr 11 13:32:05	54.9	55.6	61.9	
0		0	09Apr 11 13:32:10	54.2	54.9	61.2	
0		0	09Apr 11 13:32:15	56.7	58.9	63.7	
0		0	09Apr 11 13:32:20	58.0	61.0	65.0	
0		0	09Apr 11 13:32:25	57.0	58.8	64.0	
0		0	09Apr 11 13:32:30	61.1	64.1	68.1	
0		0	09Apr 11 13:32:35	61.7	68.1	68.7	
0		0	09Apr 11 13:32:40	56.1	58.8	63.1	
0		0	09Apr 11 13:32:45	59.6	61.8	66.6	
0		0	09Apr 11 13:32:50	59.2	61.6	66.2	
0		0	09Apr 11 13:32:55	54.7	55.9	61.7	
0		0	09Apr 11 13:33:00	55.5	56.7	62.5	
0		0	09Apr 11 13:33:05	54.9	55.8	61.9	
0		0	09Apr 11 13:33:10	54.6	55.4	61.6	
0		0	09Apr 11 13:33:15	54.9	55.5	61.9	
0		0	09Apr 11 13:33:20	54.9	55.6	61.9	
0		0	09Apr 11 13:33:25	55.1	55.9	62.0	
0		0	09Apr 11 13:33:30	55.3	55.9	62.2	
0		0	09Apr 11 13:33:35	55.5	56.6	62.5	
0		0	09Apr 11 13:33:40	54.8	56.2	61.8	
0		0	09Apr 11 13:33:45	55.3	57.5	62.3	
0		0	09Apr 11 13:33:50	57.9	60.4	64.9	
0		0	09Apr 11 13:33:55	56.5	58.0	63.5	
0		0	09Apr 11 13:34:00	55.9	56.5	62.9	
0		0	09Apr 11 13:34:05	54.9	56.8	61.9	
0		0	09Apr 11 13:34:10	59.1	66.9	66.1	
0		0	09Apr 11 13:34:15	62.9	71.1	69.9	
0		0	09Apr 11 13:34:20	67.9	75.7	74.9	
0		0	09Apr 11 13:34:25	54.0	55.9	61.0	
0		0	09Apr 11 13:34:30	54.7	56.6	61.7	
0		0	09Apr 11 13:34:35	54.0	55.2	61.0	
0		0	09Apr 11 13:34:40	54.6	55.9	61.6	
0		0	09Apr 11 13:34:45	54.2	55.1	61.2	
0		0	09Apr 11 13:34:50	54.1	55.0	61.1	
0		0	09Apr 11 13:34:55	55.7	56.9	62.7	
0		0	09Apr 11 13:35:00	56.1	56.4	63.1	
Stop Run	Key						
Measurement 9							
0		0	09Apr 11 13:43:00	58.4	62.1	65.4	
0		0	09Apr 11 13:43:05	57.3	62.6	64.2	
0		0	09Apr 11 13:43:10	57.4	61.5	64.4	
0		0	09Apr 11 13:43:15	58.4	63.3	65.4	
0		0	09Apr 11 13:43:20	60.4	66.8	67.4	
0		0	09Apr 11 13:43:25	60.4	69.1	67.4	
0		0	09Apr 11 13:43:30	58.7	63.6	65.7	
0		0	09Apr 11 13:43:35	60.6	65.3	67.6	
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0		0	09Apr 11 13:43:45	61.5	66.2	68.5	
0		0	09Apr 11 13:43:50	60.8	65.5	67.6	
0		0	09Apr 11 13:43:55	59.0	62.5	66.0	
0		0	09Apr 11 13:44:00	58.4	60.8	65.4	
0		0	09Apr 11 13:44:05	58.6	61.3	65.6	
0		0	09Apr 11 13:44:10	59.0	63.6	66.0	
0		0	09Apr 11 13:44:15	59.3	64.4	66.3	
0		0	09Apr 11 13:44:20	60.8	66.1	67.8	
0		0	09Apr 11 13:44:25	59.9	64.6	66.9	
0		0	09Apr 11 13:44:30	60.9	65.1	67.9	
0		0	09Apr 11 13:44:35	60.8	65.1	67.8	
0		0	09Apr 11 13:44:40	59.7	63.9	66.7	
0		0	09Apr 11 13:44:45	60.2	64.5	67.2	
0		0	09Apr 11 13:44:50	60.2	64.8	67.2	
0		0	09Apr 11 13:44:55	61.5	67.5	68.5	
0		0	09Apr 11 13:45:00	61.5	66.4	68.5	
0		0	09Apr 11 13:45:05	60.9	66.5	67.9	
0		0	09Apr 11 13:45:10	59.5	62.4	66.5	
0		0	09Apr 11 13:45:15	62.4	66.2	69.4	
0		0	09Apr 11 13:45:20	59.2	61.3	66.2	
0		0	09Apr 11 13:45:25	57.4	59.9	64.3	
0		0	09Apr 11 13:45:30	57.8	61.4	64.8	
0		0	09Apr 11 13:45:35	57.8	62.3	64.8	
0		0	09Apr 11 13:45:40	59.4	63.2	66.4	
0		0	09Apr 11 13:45:45	60.4	66.2	67.4	
0		0	09Apr 11 13:45:50	60.1	64.7	67.1	
0		0	09Apr 11 13:45:55	58.1	60.3	65.1	
0		0	09Apr 11 13:46:00	57.8	60.8	64.8	
0		0	09Apr 11 13:46:05	58.3	62.7	65.2	
0		0	09Apr 11 13:46:10	58.9	62.4	65.9	
0		0	09Apr 11 13:46:15	60.4	64.5	67.4	
0		0	09Apr 11 13:46:20	58.6	60.9	65.6	
0		0	09Apr 11 13:46:25	58.0	61.0	65.0	
0		0	09Apr 11 13:46:30	58.7	61.9	65.7	
0		0	09Apr 11 13:46:35	60.6	66.4	67.6	
0		0	09Apr 11 13:46:40	58.8	62.8	65.8	
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0		0	09Apr 11 13:46:50	57.9	61.4	64.9	
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0		0	09Apr 11 13:47:00	56.8	60.4	63.8	
0		0	09Apr 11 13:47:05	56.4	58.2	63.4	
0		0	09Apr 11 13:47:10	58.2	61.9	65.2	
0		0	09Apr 11 13:47:15	67.3	70.7	74.3	
0		0	09Apr 11 13:47:20	68.2	74.9	74.2	
0		0	09Apr 11 13:47:25	67.5	74.7	74.5	
0		0	09Apr 11 13:47:30	65.4	69.6	72.4	
0		0	09Apr 11 13:47:35	57.5	59.9	64.5	
0		0	09Apr 11 13:47:40	58.7	63.2	65.7	
0		0	09Apr 11 13:47:45	59.1	64.3	66.1	
0		0	09Apr 11 13:47:50	58.5	61.7	65.5	
0		0	09Apr 11 13:47:55	56.4	58.3	63.3	
0		0	09Apr 11 13:48:00	58.1	62.0	65.1	
0		0	09Apr 11 13:48:05	56.0	57.8	63.0	
0		0	09Apr 11 13:48:10	56.7	58.3	63.7	
0		0	09Apr 11 13:48:15	59.5	63.8	66.5	
0		0	09Apr 11 13:48:20	59.0	62.8	66.0	
0		0	09Apr 11 13:48:25	57.8	62.0	64.8	
0		0	09Apr 11 13:48:30	59.1	63.3	66.1	
0		0	09Apr 11 13:48:35	59.5	65.6	66.5	
0		0	09Apr 11 13:48:40	58.1	63.6	65.1	
0		0	09Apr 11 13:48:45	58.7	63.4	65.7	
0		0	09Apr 11 13:48:50	57.1	61.2	64.1	

0		0	09Apr 11 13:48:55	60.3	67.3	67.3	0		0	09Apr 11 14:05:20	60.6	64.6	67.6
0		0	09Apr 11 13:49:00	58.9	64.7	65.9	0		0	09Apr 11 14:05:25	58.8	60.6	65.8
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0		0	09Apr 11 13:49:15	58.5	61.4	65.5	0		0	09Apr 11 14:05:40	55.2	57.1	62.2
0		0	09Apr 11 13:49:20	59.6	63.8	66.6	0		0	09Apr 11 14:05:45	54.5	55.6	61.5
0		0	09Apr 11 13:49:25	58.7	62.5	65.7	0		0	09Apr 11 14:05:50	53.5	54.4	60.5
0		0	09Apr 11 13:49:30	60.0	63.9	67.0	0		0	09Apr 11 14:05:55	53.6	56.1	60.6
0		0	09Apr 11 13:49:35	60.6	63.7	67.6	0		0	09Apr 11 14:06:00	54.4	62.7	61.4
0		0	09Apr 11 13:49:40	59.9	65.9	66.9	0		0	09Apr 11 14:06:05	56.4	60.8	63.4
0		0	09Apr 11 13:49:45	59.7	62.8	66.7	0		0	09Apr 11 14:06:10	54.7	55.8	61.7
0		0	09Apr 11 13:49:50	60.5	64.4	67.5	0		0	09Apr 11 14:06:15	53.1	54.8	60.1
0		0	09Apr 11 13:49:55	61.1	66.7	68.0	0		0	09Apr 11 14:06:20	52.8	53.7	59.8
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0		0	09Apr 11 13:50:10	58.5	60.6	65.5	0		0	09Apr 11 14:06:35	54.9	60.7	61.9
0		0	09Apr 11 13:50:15	59.8	63.0	66.8	0		0	09Apr 11 14:06:40	56.8	60.4	63.8
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0		0	09Apr 11 13:50:30	59.5	61.6	66.5	0		0	09Apr 11 14:06:55	56.9	58.4	63.9
0		0	09Apr 11 13:50:35	60.9	63.8	67.9	0		0	09Apr 11 14:07:00	56.4	57.3	63.3
0		0	09Apr 11 13:50:40	61.4	67.9	68.4	0		0	09Apr 11 14:07:05	56.4	58.0	63.4
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0		0	09Apr 11 13:50:50	57.4	62.0	64.4	0		0	09Apr 11 14:07:15	55.7	57.0	62.7
0		0	09Apr 11 13:50:55	58.0	61.8	65.0	0		0	09Apr 11 14:07:20	56.3	59.0	63.2
0		0	09Apr 11 13:51:00	59.3	64.6	66.3	0		0	09Apr 11 14:07:25	56.4	59.2	63.3
0		0	09Apr 11 13:51:05	58.2	61.8	65.2	0		0	09Apr 11 14:07:30	63.1	72.4	70.1
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0		0	09Apr 11 13:51:20	61.1	74.6	68.1	0		0	09Apr 11 14:07:45	62.7	70.3	69.7
0		0	09Apr 11 13:51:25	69.9	77.2	76.9	0		0	09Apr 11 14:07:50	60.3	72.4	67.3
0		0	09Apr 11 13:51:30	63.5	71.0	70.5	0		0	09Apr 11 14:07:55	52.4	53.0	59.4
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0		0	09Apr 11 13:51:45	59.2	63.0	66.2	0		0	09Apr 11 14:08:10	56.7	58.8	63.7
0		0	09Apr 11 13:51:50	70.3	77.3	77.3	0		0	09Apr 11 14:08:15	56.1	58.6	63.1
0		0	09Apr 11 13:51:55	63.5	71.5	70.5	0		0	09Apr 11 14:08:20	55.5	60.1	62.5
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0		0	09Apr 11 13:52:45	60.0	64.2	67.0	0		0	09Apr 11 14:09:10	55.6	58.4	62.6
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0		0	09Apr 11 13:53:10	60.4	64.8	67.4	0		0	09Apr 11 14:09:35	60.4	65.1	67.4
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0		0	09Apr 11 13:53:30	57.6	59.9	64.6	0		0	09Apr 11 14:09:55	59.3	62.6	66.3
0		0	09Apr 11 13:53:35	56.2	58.7	63.2	0		0	09Apr 11 14:10:00	56.6	63.6	63.6
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0		0	09Apr 11 13:53:45	58.1	63.1	65.1	0		0	09Apr 11 14:10:10	55.2	56.0	62.2
0		0	09Apr 11 13:53:50	62.3	66.8	69.3	0		0	09Apr 11 14:10:15	54.8	56.5	61.8
0		0	09Apr 11 13:53:55	61.0	68.6	68.0	0		0	09Apr 11 14:10:20	55.0	56.6	62.0
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0		0	09Apr 11 13:54:20	58.4	63.9	65.3	0		0	09Apr 11 14:10:45	59.4	66.5	66.4
0		0	09Apr 11 13:54:25	58.6	62.7	65.6	0		0	09Apr 11 14:10:50	54.9	56.9	61.9
0		0	09Apr 11 13:54:30	59.1	65.2	66.1	0		0	09Apr 11 14:10:55	55.2	62.6	62.2
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0		0	09Apr 11 13:54:40	59.0	63.4	66.0	0		0	09Apr 11 14:11:05	53.9	54.7	60.9
0		0	09Apr 11 13:54:45	60.0	64.2	67.0	0		0	09Apr 11 14:11:10	54.6	56.6	61.6
0		0	09Apr 11 13:54:50	59.6	63.9	66.6	0		0	09Apr 11 14:11:15	57.4	63.8	64.4
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0		0	09Apr 11 13:55:10	56.1	60.9	63.1	0		0	09Apr 11 14:11:35	64.1	66.8	71.1
0		0	09Apr 11 13:55:15	57.9	63.8	64.9	0		0	09Apr 11 14:11:40	64.8	68.0	71.8
0		0	09Apr 11 13:55:20	57.0	62.1	64.0	0		0	09Apr 11 14:11:45	59.7	63.5	66.7
0		0	09Apr 11 13:55:25	56.4	62.4	63.4	0		0	09Apr 11 14:11:50	60.1	68.6	67.1
0		0	09Apr 11 13:55:30	55.0	57.9	62.0	0		0	09Apr 11 14:11:55	57.0	60.0	64.0
0		0	09Apr 11 13:55:35	58.7	63.5	65.7	0		0	09Apr 11 14:12:00	53.9	56.3	60.9
0		0	09Apr 11 13:55:40	56.5	60.9	63.5	0		0	09Apr 11 14:12:05	54.9	58.6	61.9
0		0	09Apr 11 13:55:45	54.5	58.3	61.5	0		0	09Apr 11 14:12:10	53.6	54.7	60.6
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0		0	09Apr 11 13:55:55	55.6	61.6	62.5	0		0	09Apr 11 14:12:20	53.8	55.2	60.8
0		0	09Apr 11 13:56:00	57.4	64.4	64.4	0		0	09Apr 11 14:12:25	53.7	55.7	60.7
0		0	09Apr 11 13:56:05	59.5	65.1	66.5	0		0	09Apr 11 14:12:30	54.2	57.1	61.2
0		0	09Apr 11 13:56:10	59.6	66.0	66.6	0		0	09Apr 11 14:12:35	53.9	56.3	60.9
0		0	09Apr 11 13:56:15	58.8	63.6	65.8	0		0	09Apr 11 14:12:40	55.8	58.3	62.8
0		0	09Apr 11 13:56:20	59.1	64.6	66.1	0		0	09Apr 11 14:12:45	52.5	53.3	59.5
0		0	09Apr 11 13:56:25	56.5	61.6	63.5	0		0	09Apr 11 14:12:50	53.5	56.3	60.5
0		0	09Apr 11 13:56:30	55.8	59.6	62.8	0		0	09Apr 11 14:12:55	55.2	57.8	62.2
0		0	09Apr 11 13:56:35	55.6	57.8	62.6	0		0	09Apr 11 14:13:00	58.5	62.7	65.5
0		0	09Apr 11 13:56:40	56.4	60.3	63.4	0		0	09Apr 11 14:13:05	60.6	64.8	67.6
0		0	09Apr 11 13:56:45	58.4	64.3	65.4	0		0	09Apr 11 14:13:10	62.3	66.3	69.3
0		0	09Apr 11 13:56:50	56.7	61.6	63.7	0		0	09Apr 11 14:13:15	59.8	61.6	66.8
0		0	09Apr 11 13:56:55	56.5	60.2	63.5	0		0	09Apr 11 14:13:20	62.1	69.4	69.1
0		0	09Apr 11 13:57:00	53.9	55.8	60.9	0		0	09Apr 11 14:13:25	57.7	59.3	64.7
0		0	09Apr 11 13:57:05	54.7	59.6	61.7	0		0	09Apr 11 14:13:30	60.9	66.1	67.9
0		0	09Apr 11 13:57:10	54.3	58.6	61.3	0		0	09Apr 11 14:13:35	56.2	61.9	63.2
0		0	09Apr 11 13:57:15	55.3	59.8	62.3	0		0	09Apr 11 14:13:40	53.8	55.7	60.8
0		0	09Apr 11 13:57:20	55.8	62.0	62.8	0		0	09Apr 11 14:13:45	54.1	55.4	61.0
0		0	09Apr 11 13:57:25	54.6	58.0	61.6	0		0	09Apr 11 14:13:50	53.9	55.3	60.9
0		0	09Apr 11 13:57:30	55.0	56.8	62.0	0		0	09Apr 11 14:13:55	53.0	54.4	60.0
0		0	09Apr 11 13:57:35	56.6	58.8	63.6	0		0	09Apr 11 14:14:00	53.3	54.3	60.2
0		0	09Apr 11 13:57:40	57.1	63.2	64.1	0		0	09Apr 11 14:14:05	54.2	56.4	61.2
0		0	09Apr 11 13:57:45	54.7	57.7	61.7	0		0	09Apr 11 14:14:10	56.0	59.0	63.0
0		0	09Apr 11 13:57:50	54.4	57.1	61.4	0		0	09Apr 11 14:14:15	55.8	58.2	62.8
0		0	09Apr 11 13:57:55	56.6	63.7	63.6	0		0	09Apr 11 14:14:20	55.1	58.0	62.0
0		0	09Apr 11 13:58:00	55.5	55.5	62.5	0		0	09Apr 11 14:14:25	54.8	56.5	61.7
Stop Key							0		0	09Apr 11 14:14:30	54.4	57.2	61.4
Run Key							0		0	09Apr 11 14:14:35	54.8	57.4	61.7
Measurement 10							0		0	09Apr 11 14:14:40	55.0	56.5	62.0
0		0	09Apr 11 14:04:00	56.5	59.6	63.5	0		0	09Apr 11 14:14:45	55.4	57.9	62.4
0		0	09Apr 11 14:04:05	57.8	66.0	64.8	0		0	09Apr 11 14:14:50	53.5	54.5	60.5
0		0	09Apr 11 14:04:10	57.7	64.0	64.7	0		0	09Apr 11 14:14:55	55.5	60.9	62.5
0		0	09Apr 11 14:04:15	57.0	59.1	64.0	0		0	09Apr 11 14:15:00	57.4	67.4	64.4
0		0	09Apr 11 14:04:20	57.9	62.2	64.9	0		0	09Apr 11 14:15:05	55.4	58.8	62.4
0		0	09Apr 11 14:04:25	60.1	67.7	67.1	0		0	09Apr 11 14:15:10	56.6	59.8	63.6
0		0	09Apr 11 14:04:30	59.0	64.0	66.0	0		0	09Apr 11 14:15:15	60.0	63.4	67.0
0		0	09Apr 11 14:04:35	69.8	78.1	76.8	0		0	09Apr 11 14:15:20	55.8	60.8	62.8
0		0	09Apr 11 14:04:40	67.9	76.3	74.8	0		0	09Apr 11 14:15:25	58.2	64.4	65.2
0		0	09Apr 11 14:04:45	61.5	69.0	68.5	0		0	09Apr 11 14:15:30	55.7	58.6	62.7
0		0	09Apr 11 14:04:50	67.4	77.2	74.4	0		0	09Apr 11 14:15:35	55.3	59.3	62.3
0		0	09Apr 11 14:04:55	58.0	63.2	65.0	0		0	09Apr 11 14:15:40	54.4	55.9	61.4
0		0	09Apr 11 14:05:00	58.5	63.2	65.5	0		0	09Apr 11 14:15:45	55.9	57.1	62.9
0		0	09Apr 11 14:05:05	56.8	59.6	63.8	0		0	09Apr 11 14:15:50	55.6	58.4	62.6
0		0	09Apr 11 14:05:10	56.9	59.1	63.9	0		0	09Apr 11 14:15:55	54.6	56.9	61.6
0		0	09Apr 11 14:05:15	57.2	59.9	64.2	0		0	09Apr 11 14:16:00	54.3	56.6	61.3

0		0	09Apr 11	14:16:05	55.4	58.8	62.4	0		0	09Apr 11	14:30:31	54.7	61.2	61.7
0		0	09Apr 11	14:16:10	55.3	60.8	62.3	0		0	09Apr 11	14:30:36	53.5	56.9	60.5
0		0	09Apr 11	14:16:15	55.0	57.5	62.0	0		0	09Apr 11	14:30:41	52.6	54.7	59.6
0		0	09Apr 11	14:16:20	56.1	58.4	63.1	0		0	09Apr 11	14:30:46	51.6	54.2	58.6
0		0	09Apr 11	14:16:25	53.5	54.9	60.5	0		0	09Apr 11	14:30:51	52.2	53.8	59.2
0		0	09Apr 11	14:16:30	54.1	55.6	61.1	0		0	09Apr 11	14:30:56	51.7	53.2	58.7
0		0	09Apr 11	14:16:35	52.5	53.5	59.5	0		0	09Apr 11	14:31:01	53.9	57.5	60.8
0		0	09Apr 11	14:16:40	53.4	57.0	60.3	0		0	09Apr 11	14:31:06	55.7	59.4	62.7
0		0	09Apr 11	14:16:45	53.5	55.6	60.5	0		0	09Apr 11	14:31:11	55.8	60.2	62.7
0		0	09Apr 11	14:16:50	54.4	57.4	61.4	0		0	09Apr 11	14:31:16	53.0	55.1	60.0
0		0	09Apr 11	14:16:55	60.7	68.8	67.7	0		0	09Apr 11	14:31:21	52.1	53.7	59.1
0		0	09Apr 11	14:17:00	66.8	78.6	73.8	0		0	09Apr 11	14:31:26	52.6	54.3	59.5
0		0	09Apr 11	14:17:05	57.2	60.8	64.2	0		0	09Apr 11	14:31:31	52.8	56.3	59.8
0		0	09Apr 11	14:17:10	56.7	65.8	63.7	0		0	09Apr 11	14:31:36	52.7	58.0	59.7
0		0	09Apr 11	14:17:15	65.2	69.0	72.2	0		0	09Apr 11	14:31:41	55.5	63.9	62.5
0		0	09Apr 11	14:17:20	61.5	64.3	68.5	0		0	09Apr 11	14:31:46	53.7	56.2	60.7
0		0	09Apr 11	14:17:25	63.4	68.1	70.4	0		0	09Apr 11	14:31:51	56.1	59.9	63.1
0		0	09Apr 11	14:17:30	61.0	63.5	68.0	0		0	09Apr 11	14:31:56	57.2	61.2	64.2
0		0	09Apr 11	14:17:35	60.9	63.0	67.9	0		0	09Apr 11	14:32:01	56.8	59.9	63.7
0		0	09Apr 11	14:17:40	57.5	60.0	64.5	0		0	09Apr 11	14:32:06	59.9	65.4	66.8
0		0	09Apr 11	14:17:45	55.4	59.9	62.4	0		0	09Apr 11	14:32:11	63.5	68.7	70.5
0		0	09Apr 11	14:17:50	54.7	57.3	61.7	0		0	09Apr 11	14:32:16	63.2	67.9	70.2
0		0	09Apr 11	14:17:55	53.6	55.5	60.6	0		0	09Apr 11	14:32:21	64.0	66.4	71.0
0		0	09Apr 11	14:18:00	54.1	55.0	61.0	0		0	09Apr 11	14:32:26	63.5	71.7	70.5
0		0	09Apr 11	14:18:05	53.9	55.4	60.9	0		0	09Apr 11	14:32:31	60.0	65.3	67.0
0		0	09Apr 11	14:18:10	54.0	55.6	61.0	0		0	09Apr 11	14:32:36	55.3	56.8	62.3
0		0	09Apr 11	14:18:15	55.8	57.4	62.7	0		0	09Apr 11	14:32:41	56.3	63.6	63.3
0		0	09Apr 11	14:18:20	56.2	57.6	63.2	0		0	09Apr 11	14:32:46	55.0	58.0	62.0
0		0	09Apr 11	14:18:25	57.4	59.5	64.4	0		0	09Apr 11	14:32:51	55.6	57.6	62.6
0		0	09Apr 11	14:18:30	56.1	59.2	63.1	0		0	09Apr 11	14:32:56	56.1	58.6	63.1
0		0	09Apr 11	14:18:35	55.1	56.7	62.1	0		0	09Apr 11	14:33:01	55.7	57.5	62.7
0		0	09Apr 11	14:18:40	56.1	58.2	63.1	0		0	09Apr 11	14:33:06	56.2	61.3	63.2
0		0	09Apr 11	14:18:45	55.2	58.7	62.2	0		0	09Apr 11	14:33:11	54.1	55.8	61.1
0		0	09Apr 11	14:18:50	54.8	57.0	61.8	0		0	09Apr 11	14:33:16	56.3	59.5	63.3
0		0	09Apr 11	14:18:55	54.0	55.2	61.0	0		0	09Apr 11	14:33:21	56.0	60.2	63.0
0		0	09Apr 11	14:19:00	54.3	54.4	61.3	0		0	09Apr 11	14:33:26	55.0	60.8	62.0
Stop Key								0		0	09Apr 11	14:33:31	55.4	61.2	62.4
Run Key								0		0	09Apr 11	14:33:36	53.7	56.6	60.7
Measurement 11								0		0	09Apr 11	14:33:41	53.5	59.1	60.5
0		0	09Apr 11	14:23:01	54.4	56.9	61.4	0		0	09Apr 11	14:33:46	53.3	59.8	60.2
0		0	09Apr 11	14:23:06	54.3	56.8	61.3	0		0	09Apr 11	14:33:51	52.8	55.6	59.8
0		0	09Apr 11	14:23:11	55.9	59.8	62.9	0		0	09Apr 11	14:33:56	53.8	57.8	60.8
0		0	09Apr 11	14:23:16	56.8	60.5	63.7	0		0	09Apr 11	14:34:01	54.6	56.8	61.6
0		0	09Apr 11	14:23:21	55.7	58.9	62.7	0		0	09Apr 11	14:34:06	55.7	64.2	62.7
0		0	09Apr 11	14:23:26	55.3	59.4	62.2	0		0	09Apr 11	14:34:11	55.0	57.6	62.0
0		0	09Apr 11	14:23:31	55.2	57.0	62.2	0		0	09Apr 11	14:34:16	56.4	60.2	63.4
0		0	09Apr 11	14:23:36	55.7	57.8	62.7	0		0	09Apr 11	14:34:21	56.2	57.8	63.2
0		0	09Apr 11	14:23:41	55.2	56.9	62.2	0		0	09Apr 11	14:34:26	55.7	58.2	62.7
0		0	09Apr 11	14:23:46	55.6	57.8	62.6	0		0	09Apr 11	14:34:31	60.4	64.1	67.4
0		0	09Apr 11	14:23:51	55.9	58.8	62.9	0		0	09Apr 11	14:34:36	59.8	64.0	66.8
0		0	09Apr 11	14:23:56	55.4	58.3	62.4	0		0	09Apr 11	14:34:41	64.1	69.5	71.1
0		0	09Apr 11	14:24:01	55.4	57.5	62.4	0		0	09Apr 11	14:34:46	67.8	72.8	74.7
0		0	09Apr 11	14:24:06	54.5	57.4	61.5	0		0	09Apr 11	14:34:51	67.8	74.7	74.8
0		0	09Apr 11	14:24:11	55.0	57.4	62.0	0		0	09Apr 11	14:34:56	70.9	77.3	77.9
0		0	09Apr 11	14:24:16	56.1	58.4	63.1	0		0	09Apr 11	14:35:01	69.2	74.7	76.2
0		0	09Apr 11	14:24:21	64.9	69.0	71.9	0		0	09Apr 11	14:35:06	68.1	73.2	75.1
0		0	09Apr 11	14:24:26	63.6	68.6	70.5	0		0	09Apr 11	14:35:11	68.6	73.0	75.6
0		0	09Apr 11	14:24:31	65.9	70.5	72.9	0		0	09Apr 11	14:35:16	70.8	76.5	77.8
0		0	09Apr 11	14:24:36	61.8	64.2	68.8	0		0	09Apr 11	14:35:21	65.0	68.0	72.0
0		0	09Apr 11	14:24:41	60.6	65.0	67.6	0		0	09Apr 11	14:35:26	64.3	68.9	71.3
0		0	09Apr 11	14:24:46	56.5	59.9	63.5	0		0	09Apr 11	14:35:31	59.5	65.1	66.5
0		0	09Apr 11	14:24:51	53.9	58.0	60.9	0		0	09Apr 11	14:35:36	58.0	62.5	65.0
0		0	09Apr 11	14:24:56	53.4	55.4	60.4	0		0	09Apr 11	14:35:41	55.3	56.7	62.3
0		0	09Apr 11	14:25:01	54.4	56.8	61.4	0		0	09Apr 11	14:35:46	57.6	66.4	64.6
0		0	09Apr 11	14:25:06	53.7	57.6	60.7	0		0	09Apr 11	14:35:51	56.6	60.9	63.6
0		0	09Apr 11	14:25:11	53.1	55.0	60.1	0		0	09Apr 11	14:35:56	57.2	60.6	64.2
0		0	09Apr 11	14:25:16	53.6	57.9	60.6	0		0	09Apr 11	14:36:01	60.2	66.4	67.2
0		0	09Apr 11	14:25:21	56.5	62.5	63.5	0		0	09Apr 11	14:36:06	57.4	59.5	64.4
0		0	09Apr 11	14:25:26	61.8	68.4	68.8	0		0	09Apr 11	14:36:11	55.8	58.6	62.8
0		0	09Apr 11	14:25:31	56.4	61.8	63.4	0		0	09Apr 11	14:36:16	58.6	69.2	65.6
0		0	09Apr 11	14:25:36	53.8	55.3	60.8	0		0	09Apr 11	14:36:21	57.8	64.2	64.8
0		0	09Apr 11	14:25:41	53.0	56.3	60.0	0		0	09Apr 11	14:36:26	57.1	64.0	64.1
0		0	09Apr 11	14:25:46	52.6	54.9	59.6	0		0	09Apr 11	14:36:31	56.4	59.6	63.4
0		0	09Apr 11	14:25:51	53.0	54.9	60.0	0		0	09Apr 11	14:36:36	55.1	59.0	62.1
0		0	09Apr 11	14:25:56	53.2	55.8	60.2	0		0	09Apr 11	14:36:41	55.6	58.2	62.6
0		0	09Apr 11	14:26:01	53.9	56.6	60.9	0		0	09Apr 11	14:36:46	55.9	60.3	62.9
0		0	09Apr 11	14:26:06	54.1	55.9	61.1	0		0	09Apr 11	14:36:51	58.7	67.9	65.7
0		0	09Apr 11	14:26:11	55.7	60.1	62.7	0		0	09Apr 11	14:36:56	57.8	64.8	64.8
0		0	09Apr 11	14:26:16	56.1	58.5	63.0	0		0	09Apr 11	14:37:01	57.3	59.8	64.3
0		0	09Apr 11	14:26:21	57.8	64.6	64.8	0		0	09Apr 11	14:37:06	57.7	60.6	64.7
0		0	09Apr 11	14:26:26	62.0	69.1	69.0	0		0	09Apr 11	14:37:11	59.8	63.4	66.8
0		0	09Apr 11	14:26:31	62.5	68.5	69.5	0		0	09Apr 11	14:37:16	62.3	68.9	69.3
0		0	09Apr 11	14:26:36	62.5	66.5	69.5	0		0	09Apr 11	14:37:21	61.1	66.3	68.1
0		0	09Apr 11	14:26:41	60.0	62.1	67.0	0		0	09Apr 11	14:37:26	60.5	63.6	67.5
0		0	09Apr 11	14:26:46	57.5	60.5	64.5	0		0	09Apr 11	14:37:31	58.0	62.9	65.0
0		0	09Apr 11	14:26:51	54.8	56.8	61.8	0		0	09Apr 11	14:37:36	55.9	59.6	62.9
0		0	09Apr 11	14:26:56	54.9	58.8	61.9	0		0	09Apr 11	14:37:41	57.6	66.5	64.6
0		0	09Apr 11	14:27:01	53.5	55.0	60.5	0		0	09Apr 11	14:37:46	56.6	64.9	63.6
0		0	09Apr 11	14:27:06	53.7	55.5	60.7	0		0	09Apr 11	14:37:51	57.5	60.6	64.5
0		0	09Apr 11	14:27:11	54.6	56.8	61.6	0		0	09Apr 11	14:37:56	56.7	61.6	63.7
0		0	09Apr 11	14:27:16	56.4	61.8	63.4	Stop Key							
0		0	09Apr 11	14:27:21	52.9	54.6	59.9	Run Key							
0		0	09Apr 11	14:27:26	53.8	56.5	60.8	**Measurement 12**							
0		0	09Apr 11	14:27:31	54.0	56.5	61.0	0		0	09Apr 11	14:42:00	61.9	69.2	68.9
0		0	09Apr 11	14:27:36	57.6	62.3	64.6	0		0	09Apr 11	14:42:05	69.9	76.2	76.9
0		0	09Apr 11	14:27:41	56.1	60.6	63.1	0		0	09Apr 11	14:42:10	78.8	85.5	85.8
0		0	09Apr 11	14:27:46	56.2	59.1	63.2	0		0	09Apr 11	14:42:15	77.0	84.0	84.0
0		0	09Apr 11	14:27:51	56.8	60.1	63.7	0		0	09Apr 11	14:42:20	65.0	73.4	72.0
0		0	09Apr 11	14:27:56	56.2	58.3	63.2	0		0	09Apr 11	14:42:25	62.8	68.0	69.7
0		0	09Apr 11	14:28:01	62.8	68.0	69.8	0		0	09Apr 11	14:42:30	64.4	70.4	71.4
0		0	09Apr 11	14:28:06	63.0	68.9	70.0	0		0	09Apr 11	14:42:35	62.7	69.2	69.7
0		0	09Apr 11	14:28:11	65.7	70.9	72.7	0		0	09Apr 11	14:42:40	61.9	68.0	68.9
0		0	09Apr 11	14:28:16	63.2	66.3	70.2	0		0	09Apr 11	14:42:45	61.1	66.3	68.1
0		0	09Apr 11	14:28:21	60.1	65.4	67.1	0		0	09Apr 11	14:42:50	62.4	67.2	69.4
0		0	09Apr 11	14:28:26	58.0	63.5	65.0	0		0	09Apr 11	14:42:55	62.1	66.3	69.1
0		0	09Apr 11	14:28:31	54.4	57.9	61.3	0		0	09Apr 11	14:43:00	60.8	64.3	67.8
0		0	09Apr 11	14:28:36	52.9	55.4	59.9	0		0	09Apr 11	14:43:05	65.4	74.7	72.4
0		0	09Apr 11	14:28:41	52.1	53.4	59.1	0		0	09Apr 11	14:43:10	66.7	73.5	73.7
0		0	09Apr 11	14:28:46	55.5	63.5	62.5	0		0	09Apr 11	14:43:15	73.6	82.8	80.6
0		0	09Apr 11	14:28:51	54.0	57.5	61.0	0		0	09Apr 11	14:43:20	69.7	76.2	76.7
0		0	09Apr 11	14:28:56	52.6	55.5	59.5	0		0	09Apr 11	14:43:25	69.5	76.4	76.5
0		0	09Apr 11	14:29:01	51.6	53.5	58.5	0		0	09Apr 11	14:43:30	69.9	78.3	76.9
0		0	09Apr 11	14:29:06	51.5	53.8	58.5	0		0	09Apr 11	14:43:35	66.4	75.3	73.4
0		0	09Apr 11	14:29:11	52.0	53.4	59.0	0		0	09Apr 11	14:43:40	64.3	69.0	71.2
0		0	09Apr 11	14:29:16	51.8	54.0	58.8	0		0	09Apr 11	14:43:45	60.7	64.5	67.7
0		0	09Apr 11	14:29:21	52.1	53.2	59.1	0		0	09Apr 11	14:43:50	65.9	72.9	72.9
0		0	09Apr 11	14:29:26	52.8	57.3	59.8	0		0	09Apr 11	14:43:55	74.5	83.1	81.5
0		0	09Apr 11	14:29:31	52.8	54.9	59.8	0		0	09Apr 11	14:44:00	65.6	73.1	72.5
0		0	09Apr 11	14:29:36	52.7	56.0	59.7	0		0	09Apr 11	14:44:05	64.1	68.9	71.1
0		0	09Apr 11	14:29:41	54.5	61.4	61.5	0		0	09Apr 11	14:44:10	62.6	66.6	69.6
0		0	09Apr 11	14:29:46	53.4	54.2	60.4	0		0	09Apr 11	14:44:15	60.5	65.9	67.5
0		0	09Apr 11	14:29:51	56.2	59.0	63.2	0		0	09Apr 11	14:44:20	60.2	66.5	67.2
0		0	09Apr 11	14:29:56	58.1	63.7	65.1	0		0	09Apr 11	14:44:25	66.4	73.9	73.4
0		0	09Apr 11	14:30:01	57.4	67.0	64.3	0		0	09Apr 11	14:44:30	64.2	68.1	71.2
0		0	09Apr 11	14:30:06	58.6	64.3	65.6	0		0	09Apr 11	14:44:35	61.1	64.8	68.1
0		0	09Apr 11	14:30:11	55.8	62.8	62.8	0		0	09Apr 11	14:44:40	59.5	61.5	66.5
0		0	09Apr 11	14:30:16	55.0	61.9	62.0	0		0	09Apr 11	14:44:45	60.0	64.3	67.0
0		0	09Apr 11	14:30:21	53.3	54.7	60.3	0		0	09Apr 11	14:44:50	58.0	60.9	65.0
0		0	09Apr 11	14:30:26	54.6	64.4	61.6	0		0	09Apr 11	14:44:55	57.3	59.8	64.2

0		0	09Apr 11	14:45:00	57.6	64.8	64.6		0		0	09Apr 11	14:55:45	62.1	71.1	69.1
0		0	09Apr 11	14:45:05	57.8	62.3	64.8		0		0	09Apr 11	14:55:50	66.0	74.4	73.0
0		0	09Apr 11	14:45:10	57.1	59.8	64.1		0		0	09Apr 11	14:55:55	64.0	74.9	71.0
0		0	09Apr 11	14:45:15	59.3	66.6	66.3		0		0	09Apr 11	14:56:00	59.7	64.8	66.7
0		0	09Apr 11	14:45:20	59.0	63.4	66.0		0		0	09Apr 11	14:56:05	61.6	65.6	68.6
0		0	09Apr 11	14:45:25	57.7	60.9	64.7		0		0	09Apr 11	14:56:10	61.4	66.0	68.4
0		0	09Apr 11	14:45:30	57.1	58.9	64.1		0		0	09Apr 11	14:56:15	62.6	68.3	69.6
0		0	09Apr 11	14:45:35	61.8	70.4	68.8		0		0	09Apr 11	14:56:20	62.4	67.3	69.4
0		0	09Apr 11	14:45:40	64.8	68.1	71.8		0		0	09Apr 11	14:56:25	61.2	65.8	68.2
0		0	09Apr 11	14:45:45	62.4	67.4	69.4		0		0	09Apr 11	14:56:30	61.3	67.5	68.3
0		0	09Apr 11	14:45:50	59.2	63.0	66.2		0		0	09Apr 11	14:56:35	56.9	62.4	63.9
0		0	09Apr 11	14:45:55	59.5	63.0	66.5		0		0	09Apr 11	14:56:40	61.2	65.6	68.2
0		0	09Apr 11	14:46:00	58.7	62.1	65.7		0		0	09Apr 11	14:56:45	70.2	77.1	77.2
0		0	09Apr 11	14:46:05	59.3	61.9	66.3		0		0	09Apr 11	14:56:50	66.6	75.3	73.6
0		0	09Apr 11	14:46:10	57.4	60.5	64.4		0		0	09Apr 11	14:56:55	61.9	68.4	68.9
0		0	09Apr 11	14:46:15	58.0	61.8	65.0		0		0	09Apr 11	14:57:00	73.4	73.4	80.4
0		0	09Apr 11	14:46:20	57.9	61.4	64.9	Stop	Key							
0		0	09Apr 11	14:46:25	58.9	64.5	65.9									
0		0	09Apr 11	14:46:30	58.8	64.6	65.8									
0		0	09Apr 11	14:46:35	58.3	61.0	65.3									
0		0	09Apr 11	14:46:40	58.5	61.6	65.5									
0		0	09Apr 11	14:46:45	59.8	64.1	66.8									
0		0	09Apr 11	14:46:50	63.3	69.4	70.2									
0		0	09Apr 11	14:46:55	60.3	66.4	67.2									
0		0	09Apr 11	14:47:00	63.6	67.7	70.6									
0		0	09Apr 11	14:47:05	64.4	70.7	71.3									
0		0	09Apr 11	14:47:10	58.8	63.0	65.8									
0		0	09Apr 11	14:47:15	62.1	67.5	69.1									
0		0	09Apr 11	14:47:20	63.5	69.7	70.5									
0		0	09Apr 11	14:47:25	60.6	64.2	67.6									
0		0	09Apr 11	14:47:30	64.1	71.2	71.1									
0		0	09Apr 11	14:47:35	61.4	67.2	68.4									
0		0	09Apr 11	14:47:40	61.4	67.9	68.3									
0		0	09Apr 11	14:47:45	60.8	68.7	67.8									
0		0	09Apr 11	14:47:50	58.4	63.6	65.4									
0		0	09Apr 11	14:47:55	59.4	63.3	66.4									
0		0	09Apr 11	14:48:00	66.4	78.2	73.4									
0		0	09Apr 11	14:48:05	60.5	63.2	67.5									
0		0	09Apr 11	14:48:10	59.8	63.5	66.8									
0		0	09Apr 11	14:48:15	57.5	61.5	64.5									
0		0	09Apr 11	14:48:20	56.5	60.2	63.5									
0		0	09Apr 11	14:48:25	60.5	65.6	67.5									
0		0	09Apr 11	14:48:30	58.5	65.5	65.5									
0		0	09Apr 11	14:48:35	59.4	65.3	66.4									
0		0	09Apr 11	14:48:40	57.6	62.0	64.6									
0		0	09Apr 11	14:48:45	58.6	66.5	65.6									
0		0	09Apr 11	14:48:50	55.4	59.2	62.4									
0		0	09Apr 11	14:48:55	55.8	58.6	62.8									
0		0	09Apr 11	14:49:00	55.1	58.1	62.0									
0		0	09Apr 11	14:49:05	59.3	64.6	66.3									
0		0	09Apr 11	14:49:10	60.5	66.5	67.5									
0		0	09Apr 11	14:49:15	57.5	63.7	64.5									
0		0	09Apr 11	14:49:20	59.4	67.3	66.4									
0		0	09Apr 11	14:49:25	62.5	67.8	69.5									
0		0	09Apr 11	14:49:30	62.2	69.3	69.2									
0		0	09Apr 11	14:49:35	58.6	63.6	65.6									
0		0	09Apr 11	14:49:40	58.9	62.8	65.9									
0		0	09Apr 11	14:49:45	63.2	69.3	70.2									
0		0	09Apr 11	14:49:50	63.2	73.8	70.2									
0		0	09Apr 11	14:49:55	59.9	66.4	66.9									
0		0	09Apr 11	14:50:00	58.9	64.5	65.9									
0		0	09Apr 11	14:50:05	58.4	63.7	65.4									
0		0	09Apr 11	14:50:10	58.0	64.1	65.0									
0		0	09Apr 11	14:50:15	55.1	58.7	62.1									
0		0	09Apr 11	14:50:20	58.3	62.8	65.3									
0		0	09Apr 11	14:50:25	59.0	64.1	66.0									
0		0	09Apr 11	14:50:30	58.3	64.4	65.3									
0		0	09Apr 11	14:50:35	61.4	70.9	68.4									
0		0	09Apr 11	14:50:40	58.6	65.8	65.6									
0		0	09Apr 11	14:50:45	58.0	64.6	65.0									
0		0	09Apr 11	14:50:50	62.1	71.3	69.1									
0		0	09Apr 11	14:50:55	62.3	64.3	69.3									
0		0	09Apr 11	14:51:00	61.3	64.2	68.3									
0		0	09Apr 11	14:51:05	61.0	67.3	68.0									
0		0	09Apr 11	14:51:10	60.6	64.7	67.6									
0		0	09Apr 11	14:51:15	61.7	66.2	68.7									
0		0	09Apr 11	14:51:20	61.2	71.0	68.2									
0		0	09Apr 11	14:51:25	62.9	69.6	69.9									
0		0	09Apr 11	14:51:30	61.4	65.4	68.4									
0		0	09Apr 11	14:51:35	63.8	69.1	70.8									
0		0	09Apr 11	14:51:40	61.4	65.7	68.4									
0		0	09Apr 11	14:51:45	65.3	75.6	72.3									
0		0	09Apr 11	14:51:50	61.1	64.9	68.1									
0		0	09Apr 11	14:51:55	60.7	65.5	67.7									
0		0	09Apr 11	14:52:00	62.8	70.7	69.8									
0		0	09Apr 11	14:52:05	62.6	69.7	69.6									
0		0	09Apr 11	14:52:10	60.7	64.5	67.7									
0		0	09Apr 11	14:52:15	60.9	65.6	67.9									
0		0	09Apr 11	14:52:20	58.9	63.4	65.9									
0		0	09Apr 11	14:52:25	57.3	62.9	64.3									
0		0	09Apr 11	14:52:30	57.1	60.5	64.1									
0		0	09Apr 11	14:52:35	57.2	61.5	64.2									
0		0	09Apr 11	14:52:40	58.8	64.0	65.8									
0		0	09Apr 11	14:52:45	60.1	65.0	67.1									
0		0	09Apr 11	14:52:50	57.3	62.3	64.3									
0		0	09Apr 11	14:52:55	59.6	64.2	66.6									
0		0	09Apr 11	14:53:00	58.2	64.0	65.2									
0		0	09Apr 11	14:53:05	57.1	61.8	64.1									
0		0	09Apr 11	14:53:10	57.4	61.5	64.3									
0		0	09Apr 11	14:53:15	56.0	59.9	63.0									
0		0	09Apr 11	14:53:20	59.1	62.2	66.1									
0		0	09Apr 11	14:53:25	59.8	63.3	66.8									
0		0	09Apr 11	14:53:30	62.6	68.9	69.6									
0		0	09Apr 11	14:53:35	60.7	64.3	67.7									
0		0	09Apr 11	14:53:40	61.4	64.4	68.4									
0		0	09Apr 11	14:53:45	60.2	63.5	67.2									
0		0	09Apr 11	14:53:50	59.8	66.3	66.8									
0		0	09Apr 11	14:53:55	64.4	71.2	71.4									
0		0	09Apr 11	14:54:00	63.5	70.0	70.5									
0		0	09Apr 11	14:54:05	62.2	70.6	69.2									
0		0	09Apr 11	14:54:10	59.9	62.8	66.8									
0		0	09Apr 11	14:54:15	60.4	63.9	67.4									
0		0	09Apr 11	14:54:20	60.6	64.8	67.6									
0		0	09Apr 11	14:54:25	61.6	67.7	68.6									
0		0	09Apr 11	14:54:30	59.3	64.5	66.2									
0		0	09Apr 11	14:54:35	58.7	61.8	65.7									
0		0	09Apr 11	14:54:40	61.5	65.9	68.5									
0		0	09Apr 11	14:54:45	62.5	69.8	69.5									
0		0	09Apr 11	14:54:50	58.9	60.9	65.9									
0		0	09Apr 11	14:54:55	58.5	61.6	65.5									
0		0	09Apr 11	14:55:00	60.2	68.6	67.2									
0		0	09Apr 11	14:55:05	60.0	63.0	67.0									
0		0	09Apr 11	14:55:10	59.7	62.8	66.7									
0		0	09Apr 11	14:55:15	60.9	65.3	67.9									
0		0	09Apr 11	14:55:20	59.5	63.5	66.5									
0		0	09Apr 11	14:55:25	63.1	67.3	70.0									
0		0	09Apr 11	14:55:30	63.8	70.4	70.8									
0		0	09Apr 11	14:55:35	62.7	67.7	69.7									
0		0	09Apr 11	14:55:40	59.4	65.3	66.4									

C:\LARDAV\SLMUTIL\09APR_09.bin Interval Data

Site	Location	Meas Number	Date	Time	Duration	Leq	SEL	Lmax	Lmin	Peak	Uwpk
Measurement 1											
0		0	09Apr 11	10:47:00	59.6	60.4	78.2	67.8	52.2	85.7	86.8
0		0	09Apr 11	10:48:00	60.0	58.9	76.7	67.2	50.0	88.3	96.4
0		0	09Apr 11	10:49:00	60.0	58.2	76.0	67.8	51.0	81.7	91.7
0		0	09Apr 11	10:50:00	60.0	68.5	86.3	78.5	51.0	90.0	99.4
0		0	09Apr 11	10:51:00	60.0	62.2	80.0	69.0	50.1	80.6	88.8
0		0	09Apr 11	10:52:00	60.0	62.0	79.8	80.9	50.8	97.4	100.8
0		0	09Apr 11	10:53:00	60.0	63.2	80.9	70.7	53.2	85.3	90.4
0		0	09Apr 11	10:54:00	60.0	64.8	82.6	74.1	50.3	86.9	94.8
0		0	09Apr 11	10:55:00	60.0	59.2	76.9	71.7	48.9	84.4	88.8
0		0	09Apr 11	10:56:00	60.0	61.9	79.7	67.7	54.9	83.5	88.8
0		0	09Apr 11	10:57:00	60.0	61.1	78.9	71.1	50.3	85.7	93.9
0		0	09Apr 11	10:58:00	60.0	57.4	75.2	65.4	50.0	82.8	88.8
0		0	09Apr 11	10:59:00	60.0	58.4	76.2	66.2	50.2	86.6	88.8
0		0	09Apr 11	11:00:00	60.0	65.0	82.8	73.9	51.3	88.9	90.4
0		0	09Apr 11	11:01:00	60.0	60.7	78.5	78.3	50.9	91.4	91.7
0		0	09Apr 11	11:02:00	0.3	59.7	54.6	60.0	59.1	76.7	0.0
Measurement 2											
0		0	09Apr 11	11:08:00	59.7	66.9	84.7	76.2	53.0	89.5	90.4
0		0	09Apr 11	11:09:00	60.0	63.8	81.6	80.5	52.2	94.1	92.9
0		0	09Apr 11	11:10:00	60.0	60.4	78.2	73.0	49.6	90.2	90.4
0		0	09Apr 11	11:11:00	60.0	69.9	87.7	80.2	51.3	91.7	97.1
0		0	09Apr 11	11:12:00	60.0	56.8	74.6	66.3	49.9	81.0	87.9
0		0	09Apr 11	11:13:00	60.0	57.5	75.3	65.2	50.8	88.7	95.6
0		0	09Apr 11	11:14:00	60.0	62.8	80.6	75.2	52.9	88.7	88.8
0		0	09Apr 11	11:15:00	60.0	54.9	72.6	64.7	50.4	85.1	88.8
0		0	09Apr 11	11:16:00	60.0	61.5	79.2	77.2	51.6	88.0	98.3
0		0	09Apr 11	11:17:00	60.0	62.4	80.2	74.3	51.1	86.4	91.7
0		0	09Apr 11	11:18:00	60.0	63.8	81.6	78.3	52.6	95.2	93.9
0		0	09Apr 11	11:19:00	60.0	53.6	71.3	60.2	49.1	83.0	88.8
0		0	09Apr 11	11:20:00	60.0	56.4	74.2	64.8	50.2	76.7	84.3
0		0	09Apr 11	11:21:00	60.0	67.5	85.3	79.4	51.5	92.2	97.1
0		0	09Apr 11	11:22:00	60.0	64.0	81.7	72.8	53.9	87.7	91.7
0		0	09Apr 11	11:23:00	0.6	61.3	58.8	61.7	60.9	75.1	84.3
Measurement 3											
0		0	09Apr 11	11:33:05	54.7	66.9	84.3	77.4	52.4	89.6	96.4
0		0	09Apr 11	11:34:00	60.0	66.3	84.1	73.9	54.8	85.8	96.7
0		0	09Apr 11	11:35:00	60.0	61.4	79.2	72.8	50.7	97.3	97.7
0		0	09Apr 11	11:36:00	60.0	64.1	81.9	74.8	53.7	86.7	92.9
0		0	09Apr 11	11:37:00	60.0	65.0	82.8	76.6	51.0	88.1	91.7
0		0	09Apr 11	11:38:00	60.0	62.2	80.0	71.5	52.9	85.0	93.9
0		0	09Apr 11	11:39:00	60.0	67.1	84.9	79.9	52.9	93.4	94.8
0		0	09Apr 11	11:40:00	60.0	61.1	78.8	73.6	49.3	84.9	88.8
0		0	09Apr 11	11:41:00	60.0	58.3	76.0	63.5	50.6	78.0	90.4
0		0	09Apr 11	11:42:00	60.0	65.7	83.4	76.3	52.3	88.0	98.9
0		0	09Apr 11	11:43:00	60.0	57.2	75.0	64.1	51.9	81.9	91.7
0		0	09Apr 11	11:44:00	60.0	59.1	76.9	65.8	51.4	84.2	93.9
0		0	09Apr 11	11:45:00	60.0	62.6	80.4	75.3	51.3	88.0	94.8
0		0	09Apr 11	11:46:00	60.0	61.3	79.1	69.6	51.8	83.5	93.9
0		0	09Apr 11	11:47:00	60.0	60.0	77.7	68.4	51.4	83.7	88.8
0		0	09Apr 11	11:48:00	0.3	53.8	48.8	54.9	53.0	73.6	0.0
Measurement 4											
0		0	09Apr 11	11:58:00	59.7	60.3	78.1	71.4	53.7	80.5	94.8
0		0	09Apr 11	11:59:00	60.0	60.8	78.6	72.3	52.6	86.1	97.1
0		0	09Apr 11	12:00:00	60.0	57.8	75.5	74.5	52.2	86.4	88.8
0		0	09Apr 11	12:01:00	60.0	58.4	76.2	75.9	52.6	88.0	90.4
0		0	09Apr 11	12:02:00	60.0	65.6	83.3	77.4	55.6	88.6	98.9
0		0	09Apr 11	12:03:00	60.0	57.4	75.2	64.2	53.9	83.3	92.9
0		0	09Apr 11	12:04:00	60.0	61.6	79.3	75.6	54.1	92.6	92.9
0		0	09Apr 11	12:05:00	60.0	65.6	83.4	75.6	55.1	88.2	92.9
0		0	09Apr 11	12:06:00	60.0	59.3	77.1	66.8	53.3	80.8	92.9
0		0	09Apr 11	12:07:00	60.0	60.1	77.9	65.8	55.7	76.8	92.9
0		0	09Apr 11	12:08:00	60.0	62.4	80.2	69.9	56.2	81.0	92.9
0		0	09Apr 11	12:09:00	60.0	59.3	77.0	67.1	53.0	78.8	90.4
0		0	09Apr 11	12:10:00	60.0	60.6	78.4	69.2	53.7	79.9	88.8
0		0	09Apr 11	12:11:00	60.0	61.2	79.0	68.4	52.9	78.3	86.8
0		0	09Apr 11	12:12:00	60.0	57.7	75.5	65.9	52.4	76.8	88.8
0		0	09Apr 11	12:13:00	0.6	56.6	54.1	57.4	55.9	74.3	0.0
Measurement 5											
0		0	09Apr 11	12:20:00	59.7	53.7	71.5	66.5	49.7	84.0	84.3
0		0	09Apr 11	12:21:00	60.0	55.9	73.7	65.9	50.5	80.9	88.8
0		0	09Apr 11	12:22:00	60.0	56.3	74.0	65.2	51.0	82.2	96.4
0		0	09Apr 11	12:23:00	60.0	56.0	73.8	63.0	51.6	80.0	86.8
0		0	09Apr 11	12:24:00	60.0	53.6	71.4	67.0	50.0	85.6	92.9
0		0	09Apr 11	12:25:00	60.0	57.2	75.0	67.6	52.6	80.8	93.9
0		0	09Apr 11	12:26:00	60.0	57.8	75.6	64.5	51.5	78.8	95.6

0	0	09Apr 11 12:27:00	60.0	56.8	74.6	67.1	50.4	79.8	91.7
0	0	09Apr 11 12:28:00	60.0	58.8	76.6	68.5	52.0	84.1	91.7
0	0	09Apr 11 12:29:00	60.0	54.7	72.5	62.9	50.9	84.7	92.9
0	0	09Apr 11 12:30:00	60.0	58.7	76.5	68.6	52.2	81.9	97.7
0	0	09Apr 11 12:31:00	60.0	57.2	74.9	71.2	50.2	82.9	91.7
0	0	09Apr 11 12:32:00	60.0	60.3	78.0	74.1	52.7	84.9	95.6
0	0	09Apr 11 12:33:00	60.0	57.3	75.1	63.5	52.3	76.5	86.8
0	0	09Apr 11 12:34:00	60.0	57.7	75.4	71.4	53.2	89.8	88.8
0	0	09Apr 11 12:35:00	0.3	57.5	52.5	58.5	56.8	69.4	0.0
Measurement 6									
0	0	09Apr 11 12:40:00	59.4	60.2	77.9	67.0	52.3	84.8	94.8
0	0	09Apr 11 12:41:00	60.0	61.3	79.1	71.9	51.2	84.6	91.7
0	0	09Apr 11 12:42:00	60.0	63.9	81.7	74.1	53.9	86.1	93.9
0	0	09Apr 11 12:43:00	60.0	59.2	76.9	68.5	52.5	87.1	89.6
0	0	09Apr 11 12:44:00	60.0	59.4	77.2	68.8	51.7	84.6	95.6
0	0	09Apr 11 12:45:00	60.0	59.5	77.3	67.1	51.8	80.6	92.9
0	0	09Apr 11 12:46:00	60.0	58.7	76.5	65.2	54.4	83.6	88.8
0	0	09Apr 11 12:47:00	60.0	63.4	81.2	69.8	54.3	81.7	89.6
0	0	09Apr 11 12:48:00	60.0	66.7	84.5	79.8	54.7	98.4	106.4
0	0	09Apr 11 12:49:00	60.0	65.1	82.9	76.4	55.1	91.4	99.4
0	0	09Apr 11 12:50:00	60.0	65.4	83.2	74.8	58.4	87.9	93.9
0	0	09Apr 11 12:51:00	60.0	64.6	82.4	77.2	57.4	88.7	94.8
0	0	09Apr 11 12:52:00	60.0	60.8	78.6	74.5	57.7	86.0	91.7
0	0	09Apr 11 12:53:00	60.0	60.6	78.4	73.9	56.4	85.5	92.3
0	0	09Apr 11 12:54:00	60.0	66.7	84.5	82.0	58.0	98.9	99.4
0	0	09Apr 11 12:55:00	0.3	62.5	57.4	62.6	62.4	75.7	86.8
Measurement 7									
0	0	09Apr 11 13:00:00	59.7	64.7	82.5	71.0	60.5	87.3	92.3
0	0	09Apr 11 13:01:00	60.0	67.0	84.8	72.0	60.6	87.1	98.0
0	0	09Apr 11 13:02:00	60.0	69.2	87.0	78.1	62.5	89.4	99.4
0	0	09Apr 11 13:03:00	60.0	63.6	81.4	67.3	61.4	91.4	97.1
0	0	09Apr 11 13:04:00	60.0	64.9	82.7	80.5	60.0	91.4	99.4
0	0	09Apr 11 13:05:00	60.0	65.2	83.0	71.9	58.2	90.8	93.9
0	0	09Apr 11 13:06:00	60.0	63.3	81.1	75.1	58.3	91.2	92.9
0	0	09Apr 11 13:07:00	60.0	63.5	81.3	70.8	57.7	88.6	93.9
0	0	09Apr 11 13:08:00	60.0	64.8	82.6	75.8	58.8	97.0	97.1
0	0	09Apr 11 13:09:00	60.0	63.4	81.2	71.4	59.6	88.7	92.9
0	0	09Apr 11 13:10:00	60.0	63.6	81.4	71.3	58.6	84.6	93.9
0	0	09Apr 11 13:11:00	60.0	64.4	82.2	72.9	58.6	88.1	98.9
0	0	09Apr 11 13:12:00	60.0	63.5	81.3	73.1	58.8	90.7	94.4
0	0	09Apr 11 13:13:00	60.0	63.6	81.4	70.3	59.8	88.7	97.7
0	0	09Apr 11 13:14:00	60.0	63.9	81.7	72.5	59.7	87.5	91.7
0	0	09Apr 11 13:15:00	0.3	60.3	55.2	60.8	60.0	75.4	0.0
Measurement 8									
0	0	09Apr 11 13:20:00	59.7	54.0	71.7	58.7	51.3	86.1	86.8
0	0	09Apr 11 13:21:00	60.0	54.6	72.4	58.1	52.4	79.8	84.3
0	0	09Apr 11 13:22:00	60.0	54.6	72.3	56.3	52.5	72.1	84.3
0	0	09Apr 11 13:23:00	60.0	57.5	75.3	71.1	52.3	82.0	88.8
0	0	09Apr 11 13:24:00	60.0	60.6	78.4	72.5	52.5	85.2	92.9
0	0	09Apr 11 13:25:00	60.0	53.5	71.3	56.4	51.7	68.7	90.4
0	0	09Apr 11 13:26:00	60.0	53.4	71.1	55.2	51.5	66.8	90.4
0	0	09Apr 11 13:27:00	60.0	54.6	72.3	63.8	52.2	72.8	84.3
0	0	09Apr 11 13:28:00	60.0	54.3	72.1	56.7	51.7	68.9	84.3
0	0	09Apr 11 13:29:00	60.0	55.2	72.9	59.4	52.0	69.9	90.4
0	0	09Apr 11 13:30:00	60.0	55.9	73.7	58.3	54.4	69.7	91.7
0	0	09Apr 11 13:31:00	60.0	54.7	72.5	56.1	53.0	71.8	0.0
0	0	09Apr 11 13:32:00	60.0	58.1	75.9	68.1	53.3	79.4	88.8
0	0	09Apr 11 13:33:00	60.0	55.6	73.3	60.4	53.7	80.4	84.3
0	0	09Apr 11 13:34:00	60.0	59.9	77.6	75.7	53.0	91.6	91.1
0	0	09Apr 11 13:35:00	0.6	56.2	53.7	56.6	55.9	69.6	0.0
Measurement 9									
0	0	09Apr 11 13:43:00	59.7	59.8	77.5	69.1	54.1	83.9	91.7
0	0	09Apr 11 13:44:00	60.0	60.1	77.8	67.5	55.1	82.4	88.8
0	0	09Apr 11 13:45:00	60.0	59.9	77.6	66.5	54.2	82.7	88.8
0	0	09Apr 11 13:46:00	60.0	58.8	76.6	66.4	54.4	90.1	86.8
0	0	09Apr 11 13:47:00	60.0	63.4	81.2	74.9	54.1	86.8	89.6
0	0	09Apr 11 13:48:00	60.0	58.5	76.3	67.3	53.0	80.8	86.8
0	0	09Apr 11 13:49:00	60.0	59.7	77.4	66.7	54.8	91.1	88.8
0	0	09Apr 11 13:50:00	60.0	59.2	76.9	67.9	54.5	80.6	86.8
0	0	09Apr 11 13:51:00	60.0	65.6	83.4	77.7	54.2	89.7	92.9
0	0	09Apr 11 13:52:00	60.0	59.1	76.9	67.6	53.8	83.0	91.7
0	0	09Apr 11 13:53:00	60.0	60.1	77.9	70.7	55.1	95.8	97.7
0	0	09Apr 11 13:54:00	60.0	58.7	76.4	65.2	54.2	82.4	84.3
0	0	09Apr 11 13:55:00	60.0	57.2	75.0	65.1	51.2	78.8	86.8
0	0	09Apr 11 13:56:00	60.0	57.8	75.5	66.0	52.8	81.0	87.9
0	0	09Apr 11 13:57:00	60.0	55.4	73.2	63.7	51.8	80.7	92.9
0	0	09Apr 11 13:58:00	0.3	54.1	49.0	55.5	53.6	76.9	0.0
Measurement 10									
0	0	09Apr 11 14:04:00	59.7	63.7	81.4	78.1	54.0	92.5	90.4
0	0	09Apr 11 14:05:00	60.0	57.4	75.2	64.6	52.6	85.0	86.8
0	0	09Apr 11 14:06:00	60.0	55.1	72.9	62.7	52.1	80.3	86.8

0	0	09Apr 11 14:07:00	60.0	59.3	77.1	72.4	51.5	87.6	101.7
0	0	09Apr 11 14:08:00	60.0	54.7	72.4	60.2	51.9	88.2	90.4
0	0	09Apr 11 14:09:00	60.0	59.1	76.9	67.5	51.6	82.5	86.8
0	0	09Apr 11 14:10:00	60.0	56.3	74.1	66.5	53.0	92.3	91.7
0	0	09Apr 11 14:11:00	60.0	60.3	78.1	68.6	52.3	85.4	91.7
0	0	09Apr 11 14:12:00	60.0	54.2	71.9	58.6	51.7	75.7	84.3
0	0	09Apr 11 14:13:00	60.0	58.9	76.7	69.4	52.2	88.3	90.4
0	0	09Apr 11 14:14:00	60.0	54.9	72.6	60.9	52.3	83.2	84.3
0	0	09Apr 11 14:15:00	60.0	56.6	74.3	67.4	52.5	85.3	86.8
0	0	09Apr 11 14:16:00	60.0	55.5	73.3	68.8	51.8	80.3	84.3
0	0	09Apr 11 14:17:00	60.0	61.4	79.2	78.6	52.5	93.4	94.8
0	0	09Apr 11 14:18:00	60.0	55.4	73.1	59.5	52.4	78.3	88.8
0	0	09Apr 11 14:19:00	0.6	54.1	51.6	54.4	53.9	66.7	0.0
Measurement 11									
0	0	09Apr 11 14:23:01	58.4	55.5	73.2	60.5	52.3	83.0	86.8
0	0	09Apr 11 14:24:00	60.0	60.7	78.5	70.5	51.9	81.6	90.4
0	0	09Apr 11 14:25:00	60.0	55.7	73.4	68.4	50.8	83.6	92.9
0	0	09Apr 11 14:26:00	60.0	58.8	76.6	69.1	51.8	81.1	86.8
0	0	09Apr 11 14:27:00	60.0	55.4	73.1	62.3	51.3	76.7	84.3
0	0	09Apr 11 14:28:00	60.0	60.3	78.1	70.9	50.8	82.2	86.8
0	0	09Apr 11 14:29:00	60.0	53.7	71.5	63.7	49.8	81.4	88.8
0	0	09Apr 11 14:30:00	60.0	54.9	72.7	67.0	50.2	91.2	90.4
0	0	09Apr 11 14:31:00	60.0	54.5	72.3	63.9	50.3	75.7	0.0
0	0	09Apr 11 14:32:00	60.0	60.5	78.3	71.7	53.4	84.2	88.8
0	0	09Apr 11 14:33:00	60.0	54.9	72.7	61.3	51.2	82.4	86.8
0	0	09Apr 11 14:34:00	60.0	63.8	81.6	77.3	52.8	89.1	90.4
0	0	09Apr 11 14:35:00	60.0	65.8	83.6	76.5	54.1	92.0	93.9
0	0	09Apr 11 14:36:00	60.0	57.5	75.3	69.2	53.5	88.5	88.8
0	0	09Apr 11 14:37:00	60.0	58.9	76.7	68.9	53.8	84.6	88.8
0	0	09Apr 11 14:38:00	0.6	56.2	53.7	56.9	55.5	76.1	0.0
Measurement 12									
0	0	09Apr 11 14:42:00	59.4	71.1	88.8	85.5	55.8	102.8	102.0
0	0	09Apr 11 14:43:00	60.0	69.3	87.1	83.2	56.9	94.0	94.8
0	0	09Apr 11 14:44:00	60.0	62.6	80.4	73.9	55.4	89.6	92.9
0	0	09Apr 11 14:45:00	60.0	60.1	77.9	70.4	54.6	84.4	91.7
0	0	09Apr 11 14:46:00	60.0	59.4	77.2	69.4	54.1	81.2	84.3
0	0	09Apr 11 14:47:00	60.0	62.0	79.8	71.2	54.0	82.2	87.9
0	0	09Apr 11 14:48:00	60.0	60.1	77.9	78.2	53.0	91.6	90.4
0	0	09Apr 11 14:49:00	60.0	60.7	78.4	73.8	52.6	88.9	90.4
0	0	09Apr 11 14:50:00	60.0	59.4	77.2	71.3	52.7	87.3	92.9
0	0	09Apr 11 14:51:00	60.0	62.2	79.9	75.6	56.4	93.1	91.7
0	0	09Apr 11 14:52:00	60.0	59.9	77.7	70.7	53.4	83.1	88.8
0	0	09Apr 11 14:53:00	60.0	60.3	78.1	71.2	53.5	82.5	88.8
0	0	09Apr 11 14:54:00	60.0	61.0	78.8	70.6	55.0	85.5	88.8
0	0	09Apr 11 14:55:00	60.0	62.3	80.1	74.9	54.4	87.7	90.4
0	0	09Apr 11 14:56:00	60.0	63.7	81.5	77.1	54.6	89.0	88.8
0	0	09Apr 11 14:57:00	0.6	67.2	64.7	73.4	64.5	86.1	84.3

C:\NOISE\LARDAV\SLMUTIL\24SEP_11.bin Time History Data
Sample Period (sec): 5.000

Site	Location	Meas Number	Date	Time	Level	Lmax	SEL
Run	Key						
Measurement 13							
0		0	24Sep 11	12:37:00	46.4	51.4	53.4
0		0	24Sep 11	12:37:05	45.6	50.2	52.6
0		0	24Sep 11	12:37:10	46.4	54.2	53.4
0		0	24Sep 11	12:37:15	45.1	49.7	52.1
0		0	24Sep 11	12:37:20	45.2	46.9	52.2
0		0	24Sep 11	12:37:25	44.6	46.2	51.5
0		0	24Sep 11	12:37:30	44.9	47.4	51.9
0		0	24Sep 11	12:37:35	44.0	44.8	51.0
0		0	24Sep 11	12:37:40	44.7	48.1	51.6
0		0	24Sep 11	12:37:45	45.1	47.1	52.1
0		0	24Sep 11	12:37:50	48.3	50.1	55.3
0		0	24Sep 11	12:37:55	47.0	48.4	54.0
0		0	24Sep 11	12:38:00	47.1	48.7	54.1
0		0	24Sep 11	12:38:05	47.1	48.4	54.1
0		0	24Sep 11	12:38:10	45.5	46.6	52.5
0		0	24Sep 11	12:38:15	45.7	47.0	52.7
0		0	24Sep 11	12:38:20	45.9	48.2	52.9
0		0	24Sep 11	12:38:25	45.9	46.6	52.9
0		0	24Sep 11	12:38:30	45.5	47.4	52.5
0		0	24Sep 11	12:38:35	45.5	48.0	52.5
0		0	24Sep 11	12:38:40	46.0	49.4	53.0
0		0	24Sep 11	12:38:45	46.2	47.5	53.2
0		0	24Sep 11	12:38:50	45.2	46.3	52.2
0		0	24Sep 11	12:38:55	45.3	46.3	52.3
0		0	24Sep 11	12:39:00	45.1	46.0	52.1
0		0	24Sep 11	12:39:05	44.9	46.1	51.9
0		0	24Sep 11	12:39:10	44.5	45.3	51.5
0		0	24Sep 11	12:39:15	45.4	46.5	52.3
0		0	24Sep 11	12:39:20	46.4	47.5	53.4
0		0	24Sep 11	12:39:25	47.5	50.4	54.5
0		0	24Sep 11	12:39:30	45.6	47.1	52.6
0		0	24Sep 11	12:39:35	45.1	46.7	52.1
0		0	24Sep 11	12:39:40	44.5	45.9	51.5
0		0	24Sep 11	12:39:45	44.6	45.4	51.5
0		0	24Sep 11	12:39:50	45.6	47.2	52.6
0		0	24Sep 11	12:39:55	45.3	46.2	52.3
0		0	24Sep 11	12:40:00	44.7	46.2	51.7
0		0	24Sep 11	12:40:05	44.2	45.7	51.2
0		0	24Sep 11	12:40:10	44.5	45.4	51.5
0		0	24Sep 11	12:40:15	45.5	47.2	52.5
0		0	24Sep 11	12:40:20	44.5	46.3	51.5
0		0	24Sep 11	12:40:25	45.0	46.8	52.0
0		0	24Sep 11	12:40:30	45.0	45.8	52.0
0		0	24Sep 11	12:40:35	44.7	45.4	51.7
0		0	24Sep 11	12:40:40	44.5	45.4	51.5
0		0	24Sep 11	12:40:45	44.0	44.9	51.0
0		0	24Sep 11	12:40:50	44.2	44.9	51.1
0		0	24Sep 11	12:40:55	44.0	44.9	51.0
0		0	24Sep 11	12:41:00	44.7	47.0	51.7
0		0	24Sep 11	12:41:05	44.3	45.0	51.3
0		0	24Sep 11	12:41:10	43.8	44.9	50.8
0		0	24Sep 11	12:41:15	43.4	44.9	50.3
0		0	24Sep 11	12:41:20	43.5	44.1	50.5
0		0	24Sep 11	12:41:25	44.4	46.3	51.3
0		0	24Sep 11	12:41:30	45.0	46.2	52.0
0		0	24Sep 11	12:41:35	46.5	47.9	53.5
0		0	24Sep 11	12:41:40	47.4	48.2	54.4
0		0	24Sep 11	12:41:45	51.4	56.3	58.3
0		0	24Sep 11	12:41:50	64.5	68.3	71.5
0		0	24Sep 11	12:41:55	68.8	73.5	75.8
0		0	24Sep 11	12:42:00	62.6	69.8	69.5
0		0	24Sep 11	12:42:05	51.6	54.3	58.6
0		0	24Sep 11	12:42:10	48.4	51.0	55.4
0		0	24Sep 11	12:42:15	47.2	48.8	54.2
0		0	24Sep 11	12:42:20	47.2	48.6	54.2
0		0	24Sep 11	12:42:25	47.6	49.9	54.5
0		0	24Sep 11	12:42:30	47.6	48.8	54.5
0		0	24Sep 11	12:42:35	47.2	48.6	54.2
0		0	24Sep 11	12:42:40	47.1	48.2	54.1
0		0	24Sep 11	12:42:45	49.4	55.7	56.4
0		0	24Sep 11	12:42:50	49.2	50.9	56.2
0		0	24Sep 11	12:42:55	48.2	49.3	55.2
0		0	24Sep 11	12:43:00	51.1	58.7	58.1
0		0	24Sep 11	12:43:05	57.7	64.8	64.7
0		0	24Sep 11	12:43:10	50.2	57.4	57.2
0		0	24Sep 11	12:43:15	65.3	74.7	72.3
0		0	24Sep 11	12:43:20	47.2	50.5	54.2
0		0	24Sep 11	12:43:25	47.0	48.4	54.0
0		0	24Sep 11	12:43:30	46.3	47.6	53.3
0		0	24Sep 11	12:43:35	47.3	49.6	54.3
0		0	24Sep 11	12:43:40	49.9	53.4	56.9
0		0	24Sep 11	12:43:45	48.6	49.9	55.6
0		0	24Sep 11	12:43:50	49.7	51.1	56.6
0		0	24Sep 11	12:43:55	53.1	55.2	60.1
0		0	24Sep 11	12:44:00	64.2	71.1	71.1
0		0	24Sep 11	12:44:05	69.0	73.2	76.0
0		0	24Sep 11	12:44:10	66.7	71.3	73.6
0		0	24Sep 11	12:44:15	61.2	69.1	68.2
0		0	24Sep 11	12:44:20	52.4	55.9	59.4
0		0	24Sep 11	12:44:25	53.0	54.4	60.0
0		0	24Sep 11	12:44:30	52.4	55.4	59.4
0		0	24Sep 11	12:44:35	50.1	50.9	57.1
0		0	24Sep 11	12:44:40	48.2	50.3	55.2
0		0	24Sep 11	12:44:45	47.2	48.8	54.2
0		0	24Sep 11	12:44:50	47.2	48.9	54.2
0		0	24Sep 11	12:44:55	45.6	48.4	52.6
0		0	24Sep 11	12:45:00	45.7	47.0	52.7
0		0	24Sep 11	12:45:05	48.9	59.5	55.9
0		0	24Sep 11	12:45:10	47.4	48.3	54.4
0		0	24Sep 11	12:45:15	48.0	49.1	55.0
0		0	24Sep 11	12:45:20	51.0	53.6	58.0
0		0	24Sep 11	12:45:25	55.9	59.8	62.9
0		0	24Sep 11	12:45:30	70.5	76.5	77.5
0		0	24Sep 11	12:45:35	74.0	78.3	81.0
0		0	24Sep 11	12:45:40	67.5	74.7	74.5
0		0	24Sep 11	12:45:45	57.9	62.5	64.9
0		0	24Sep 11	12:45:50	50.7	52.3	57.7
0		0	24Sep 11	12:45:55	51.3	55.8	58.3
0		0	24Sep 11	12:46:00	47.4	49.7	54.4
0		0	24Sep 11	12:46:05	48.6	53.5	55.5
0		0	24Sep 11	12:46:10	47.2	50.5	54.2
0		0	24Sep 11	12:46:15	47.2	50.6	54.2
0		0	24Sep 11	12:46:20	46.6	47.8	53.5
0		0	24Sep 11	12:46:25	51.6	61.1	58.6
0		0	24Sep 11	12:46:30	51.7	54.2	58.6
0		0	24Sep 11	12:46:35	64.2	72.8	71.2
0		0	24Sep 11	12:46:40	70.7	76.1	77.7
0		0	24Sep 11	12:46:45	69.9	73.8	76.8
0		0	24Sep 11	12:46:50	63.2	69.3	70.1
0		0	24Sep 11	12:46:55	56.0	58.6	63.0
0		0	24Sep 11	12:47:00	51.8	53.1	58.8
0		0	24Sep 11	12:47:05	49.2	50.7	56.2
0		0	24Sep 11	12:47:10	49.1	51.6	56.0
0		0	24Sep 11	12:47:15	47.7	49.2	54.7
0		0	24Sep 11	12:47:20	47.0	48.6	54.0
0		0	24Sep 11	12:47:25	54.2	63.8	61.2
0		0	24Sep 11	12:47:30	51.0	58.7	58.0
0		0	24Sep 11	12:47:35	47.1	47.8	54.0
0		0	24Sep 11	12:47:40	47.0	47.6	54.0
0		0	24Sep 11	12:47:45	47.4	48.2	54.4
0		0	24Sep 11	12:47:50	47.6	53.2	54.5
0		0	24Sep 11	12:47:55	47.7	50.5	54.7
0		0	24Sep 11	12:48:00	47.3	48.2	54.3
0		0	24Sep 11	12:48:05	49.3	51.7	56.3
0		0	24Sep 11	12:48:10	55.6	61.4	62.6
0		0	24Sep 11	12:48:15	63.1	67.2	70.1
0		0	24Sep 11	12:48:20	61.3	67.0	68.3
0		0	24Sep 11	12:48:25	54.7	58.5	61.7
0		0	24Sep 11	12:48:30	49.4	51.9	56.4
0		0	24Sep 11	12:48:35	47.3	48.7	54.3
0		0	24Sep 11	12:48:40	46.6	47.4	53.6
0		0	24Sep 11	12:48:45	47.0	48.0	54.0
0		0	24Sep 11	12:48:50	46.7	48.2	53.7
0		0	24Sep 11	12:48:55	49.0	50.9	56.0
0		0	24Sep 11	12:49:00	47.5	49.2	54.5
0		0	24Sep 11	12:49:05	48.2	52.5	55.2
0		0	24Sep 11	12:49:10	46.9	48.5	53.8
0		0	24Sep 11	12:49:15	46.8	48.7	53.8
0		0	24Sep 11	12:49:20	46.6	47.7	53.6
0		0	24Sep 11	12:49:25	49.3	52.4	56.3
0		0	24Sep 11	12:49:30	52.5	54.6	59.5
0		0	24Sep 11	12:49:35	53.4	56.1	60.4
0		0	24Sep 11	12:49:40	53.6	56.1	60.6
0		0	24Sep 11	12:49:45	51.7	54.7	58.7
0		0	24Sep 11	12:49:50	49.8	51.5	56.8
0		0	24Sep 11	12:49:55	47.8	49.2	54.8
0		0	24Sep 11	12:50:00	51.2	53.7	58.1
0		0	24Sep 11	12:50:05	64.1	71.7	71.0
0		0	24Sep 11	12:50:10	68.3	72.2	75.3
0		0	24Sep 11	12:50:15	71.3	73.9	78.3
0		0	24Sep 11	12:50:20	66.3	72.0	73.3
0		0	24Sep 11	12:50:25	53.2	56.5	60.2
0		0	24Sep 11	12:50:30	48.8	50.2	55.8
0		0	24Sep 11	12:50:35	47.1	48.4	54.1
0		0	24Sep 11	12:50:40	47.2	48.2	54.2
0		0	24Sep 11	12:50:45	47.6	49.9	54.6
0		0	24Sep 11	12:50:50	47.1	48.9	54.1
0		0	24Sep 11	12:50:55	46.8	52.4	53.8
0		0	24Sep 11	12:51:00	47.4	54.9	54.3
0		0	24Sep 11	12:51:05	46.8	49.1	53.8
0		0	24Sep 11	12:51:10	46.7	47.7	53.7
0		0	24Sep 11	12:51:15	47.3	48.7	54.3
0		0	24Sep 11	12:51:20	48.5	49.6	55.5
0		0	24Sep 11	12:51:25	48.8	50.7	55.8
0		0	24Sep 11	12:51:30	52.7	56.1	59.7
0		0	24Sep 11	12:51:35	64.7	70.6	71.7
0		0	24Sep 11	12:51:40	68.7	73.2	75.7
0		0	24Sep 11	12:51:45	61.2	66.0	68.2
0		0	24Sep 11	12:51:50	54.1	61.5	61.1
0		0	24Sep 11	12:51:55	48.5	50.0	55.5
0		0	24Sep 11	12:52:00	48.3	48.5	55.3
Stop	Key						
Run	Key						
Measurement 14							
0		0	24Sep 11	13:07:00	51.7	53.7	58.7
0		0	24Sep 11	13:07:05	51.4	53.3	58.4
0		0	24Sep 11	13:07:10	51.4	53.7	58.4
0		0	24Sep 11	13:07:15	50.5	53.6	57.5
0		0	24Sep 11	13:07:20	50.2	51.2	57.2
0		0	24Sep 11	13:07:25	50.6	51.9	57.6
0		0	24Sep 11	13:07:30	49.8	51.2	56.8
0		0	24Sep 11	13:07:35	49.1	51.4	56.1
0		0	24Sep 11	13:07:40	48.4	49.6	55.4
0		0	24Sep 11	13:07:45	49.1	51.2	56.1
0		0	24Sep 11	13:07:50	48.3	49.8	55.3
0		0	24Sep 11	13:07:55	48.8	50.3	55.8
0		0	24Sep 11	13:08:00	49.3	52.3	56.3
0		0	24Sep 11	13:08:05	48.2	49.6	55.2
0		0	24Sep 11	13:08:10	47.7	48.4	54.7
0		0	24Sep 11	13:08:15	48.9	53.0	55.9
0		0	24Sep 11	13:08:20	48.6	50.2	55.5
0		0	24Sep 11	13:08:25	48.7	50.4	55.7
0		0	24Sep 11	13:08:30	48.3	50.6	55.3
0		0	24Sep 11	13:08:35	47.8	48.6	54.8
0		0	24Sep 11	13:08:40	47.5	48.6	54.5
0		0	24Sep 11	13:08:45	47.7	49.0	54.7
0		0	24Sep 11	13:08:50	48.8	49.9	55.8
0		0	24Sep 11	13:08:55	49.1	50.4	56.1
0		0	24Sep 11	13:09:00	49.2	50.8	56.2
0		0	24Sep 11	13:09:05	48.5	49.6	55.5
0		0	24Sep 11	13:09:10	49.6	52.2	56.5
0		0	24Sep 11	13:09:15	49.7	54.2	56.7
0		0	24Sep 11	13:09:20	47.9	51.9	54.8
0		0	24Sep 11	13:09:25	48.3	53.3	55.3
0		0	24Sep 11	13:09:30	47.8	49.5	54.8
0		0	24Sep 11	13:09:35	48.3	49.2	55.3
0		0	24Sep 11	13:09:40	48.3	51.2	55.3
0		0	24Sep 11	13:09:45	48.2	51.7	55.2
0		0	24Sep 11	13:09:50	48.7	50.4	55.7
0		0	24Sep 11	13:09:55	48.8	52.3	55.8
0		0	24Sep 11	13:10:00	49.8	52.9	56.8
0		0	24Sep 11	13:10:05	48.8	49.8	55.8
0		0	24Sep 11	13:10:10	49.8	51.9	56.8
0		0	24Sep 11	13:10:15	48.6	50.9	55.6
0		0	24Sep 11	13:10:20	48.0	49.9	55.0
0		0	24Sep 11	13:10:25	47.5	49.1	54.5
0		0	24Sep 11	13:10:30	48.1	53.3	55.1
0		0	24Sep 11	13:10:35	47.7	49.4	54.7
0		0	24Sep 11	13:10:40	47.3	49.3	54.3
0		0	24Sep 11	13:10:45	47.4	48.7	54.4
0		0	24Sep 11	13:10:50	47.3	48.9	54.3
0		0	24Sep 11	13:10:55	46.9	48.3	53.9
0		0	24Sep 11	13:11:00	47.7	49.1	54.7
0		0	24Sep 11	13:11:05	48.7	55.7	55.7
0		0	24Sep 11	13:11:10	47.7	50.6	54.7
0		0	24Sep 11	13:11:15	48.0	52.2	55.0
0		0	24Sep 11	13:11:20	48.0	52.4	55.0
0		0	24Sep 11	13:11:25	53.1	62.6	60.1
0		0	24Sep 11	13:11:30	49.6	54.6	56.5
0		0	24Sep 11	13:11:35	50.0	51.4	57.0
0		0	24Sep 11	13:11:40	49.7	50.8	56.6
0		0	24Sep 11	13:11:45	52.4	56.6	59.3
0		0	24Sep 11	13:11:50	59.2	64.6	66.2
0		0	24Sep 11	13:11:55	63.4	67.9	70.3
0		0	24Sep 11	13:12:00	61.4	64.9	68.4
0		0	24Sep 11	13:12:05	61.9	69.6	68.9
0		0	24Sep 11	13:12:10	51.1	53.6	58.0
0		0	24Sep 11	13:12:15	50.5	53.9	57.5
0		0	24Sep 11	13:12:20	48.6	50.1	55.6
0		0	24Sep 11	13:12:25	48.7	52.3	55.7

0		0	24Sep 11 13:12:30	47.3	48.3	54.3	0		0	24Sep 11 13:37:55	54.9	59.3	61.9
0		0	24Sep 11 13:12:35	48.3	49.2	55.3	0		0	24Sep 11 13:38:00	54.4	58.7	61.4
0		0	24Sep 11 13:12:40	49.2	51.2	56.1	0		0	24Sep 11 13:38:05	58.2	65.4	65.2
0		0	24Sep 11 13:12:45	49.1	50.1	56.1	0		0	24Sep 11 13:38:10	54.5	59.7	61.5
0		0	24Sep 11 13:12:50	50.7	53.9	57.7	0		0	24Sep 11 13:38:15	55.6	66.4	62.6
0		0	24Sep 11 13:12:55	50.0	52.1	57.0	0		0	24Sep 11 13:38:20	56.5	66.7	63.5
0		0	24Sep 11 13:13:00	49.4	50.3	56.4	0		0	24Sep 11 13:38:25	52.6	55.4	59.6
0		0	24Sep 11 13:13:05	49.9	50.9	56.9	0		0	24Sep 11 13:38:30	55.3	59.9	62.3
0		0	24Sep 11 13:13:10	49.2	51.0	56.2	0		0	24Sep 11 13:38:35	52.2	56.1	59.2
0		0	24Sep 11 13:13:15	49.5	50.4	56.5	0		0	24Sep 11 13:38:40	52.1	55.7	59.1
0		0	24Sep 11 13:13:20	49.7	51.8	56.7	0		0	24Sep 11 13:38:45	53.1	57.1	60.1
0		0	24Sep 11 13:13:25	49.4	54.0	56.4	0		0	24Sep 11 13:38:50	51.1	52.4	58.1
0		0	24Sep 11 13:13:30	50.5	54.6	57.5	0		0	24Sep 11 13:38:55	50.4	52.6	57.4
0		0	24Sep 11 13:13:35	53.2	56.7	60.2	0		0	24Sep 11 13:39:00	51.0	55.9	58.0
0		0	24Sep 11 13:13:40	51.5	55.6	58.5	0		0	24Sep 11 13:39:05	54.4	61.7	61.4
0		0	24Sep 11 13:13:45	48.8	55.3	55.8	0		0	24Sep 11 13:39:10	51.3	55.6	58.3
0		0	24Sep 11 13:13:50	47.7	48.7	54.7	0		0	24Sep 11 13:39:15	51.4	55.7	58.4
0		0	24Sep 11 13:13:55	47.7	48.6	54.6	0		0	24Sep 11 13:39:20	50.6	52.9	57.6
0		0	24Sep 11 13:14:00	47.6	49.4	54.6	0		0	24Sep 11 13:39:25	51.7	54.3	58.7
0		0	24Sep 11 13:14:05	47.1	48.9	54.1	0		0	24Sep 11 13:39:30	52.2	55.1	59.2
0		0	24Sep 11 13:14:10	47.4	48.9	54.4	0		0	24Sep 11 13:39:35	52.0	54.4	59.0
0		0	24Sep 11 13:14:15	47.6	48.1	54.6	0		0	24Sep 11 13:39:40	51.8	54.6	58.8
0		0	24Sep 11 13:14:20	48.7	50.4	55.7	0		0	24Sep 11 13:39:45	52.6	56.4	59.5
0		0	24Sep 11 13:14:25	49.7	52.9	56.7	0		0	24Sep 11 13:39:50	52.4	57.4	59.4
0		0	24Sep 11 13:14:30	47.8	48.8	54.8	0		0	24Sep 11 13:39:55	51.7	55.2	58.6
0		0	24Sep 11 13:14:35	50.1	57.6	57.1	0		0	24Sep 11 13:40:00	52.4	55.4	59.4
0		0	24Sep 11 13:14:40	47.6	48.9	54.6	0		0	24Sep 11 13:40:05	55.9	63.9	62.9
0		0	24Sep 11 13:14:45	47.4	48.7	54.3	0		0	24Sep 11 13:40:10	54.5	57.2	61.5
0		0	24Sep 11 13:14:50	49.6	52.4	56.5	0		0	24Sep 11 13:40:15	51.8	54.1	58.8
0		0	24Sep 11 13:14:55	49.1	51.4	56.1	0		0	24Sep 11 13:40:20	56.2	65.2	63.2
0		0	24Sep 11 13:15:00	49.3	51.1	56.3	0		0	24Sep 11 13:40:25	52.9	57.6	59.9
0		0	24Sep 11 13:15:05	49.2	50.1	56.1	0		0	24Sep 11 13:40:30	54.0	56.6	61.0
0		0	24Sep 11 13:15:10	50.4	51.2	57.4	0		0	24Sep 11 13:40:35	53.2	57.2	60.2
0		0	24Sep 11 13:15:15	52.4	53.9	59.4	0		0	24Sep 11 13:40:40	53.2	56.7	60.1
0		0	24Sep 11 13:15:20	54.5	58.8	61.5	0		0	24Sep 11 13:40:45	57.5	63.7	64.5
0		0	24Sep 11 13:15:25	61.3	68.1	68.3	0		0	24Sep 11 13:40:50	56.6	61.4	63.6
0		0	24Sep 11 13:15:30	61.0	65.7	68.0	0		0	24Sep 11 13:40:55	53.5	58.8	60.5
0		0	24Sep 11 13:15:35	60.1	63.6	67.1	0		0	24Sep 11 13:41:00	52.4	55.3	59.4
0		0	24Sep 11 13:15:40	60.6	69.2	67.6	0		0	24Sep 11 13:41:05	52.5	55.3	59.5
0		0	24Sep 11 13:15:45	50.0	51.8	57.0	0		0	24Sep 11 13:41:10	55.2	60.1	62.2
0		0	24Sep 11 13:15:50	48.9	49.7	55.9	0		0	24Sep 11 13:41:15	56.0	62.4	63.0
0		0	24Sep 11 13:15:55	48.6	49.6	55.6	0		0	24Sep 11 13:41:20	55.9	59.6	62.9
0		0	24Sep 11 13:16:00	48.9	49.6	55.9	0		0	24Sep 11 13:41:25	54.2	60.5	61.2
0		0	24Sep 11 13:16:05	49.8	51.1	56.8	0		0	24Sep 11 13:41:30	58.7	67.9	65.7
0		0	24Sep 11 13:16:10	55.2	68.2	62.2	0		0	24Sep 11 13:41:35	55.0	62.2	62.0
0		0	24Sep 11 13:16:15	49.9	51.9	56.9	0		0	24Sep 11 13:41:40	52.3	56.9	59.3
0		0	24Sep 11 13:16:20	48.7	50.6	55.7	0		0	24Sep 11 13:41:45	54.6	59.9	61.5
0		0	24Sep 11 13:16:25	50.5	52.6	57.5	0		0	24Sep 11 13:41:50	52.2	56.3	59.2
0		0	24Sep 11 13:16:30	51.5	53.4	58.5	0		0	24Sep 11 13:41:55	53.9	58.6	60.9
0		0	24Sep 11 13:16:35	51.9	55.7	58.9	0		0	24Sep 11 13:42:00	52.2	55.3	59.1
0		0	24Sep 11 13:16:40	51.4	53.6	58.4	0		0	24Sep 11 13:42:05	53.1	56.6	60.1
0		0	24Sep 11 13:16:45	51.3	55.8	58.3	0		0	24Sep 11 13:42:10	52.2	57.7	59.2
0		0	24Sep 11 13:16:50	53.2	58.7	60.2	0		0	24Sep 11 13:42:15	53.1	60.5	60.1
0		0	24Sep 11 13:16:55	53.7	56.6	60.6	0		0	24Sep 11 13:42:20	54.1	61.3	61.0
0		0	24Sep 11 13:17:00	51.0	54.2	58.0	0		0	24Sep 11 13:42:25	52.1	56.0	59.1
0		0	24Sep 11 13:17:05	49.6	52.8	56.6	0		0	24Sep 11 13:42:30	50.9	54.6	57.9
0		0	24Sep 11 13:17:10	49.3	51.9	56.3	0		0	24Sep 11 13:42:35	51.0	53.5	58.0
0		0	24Sep 11 13:17:15	49.9	50.9	56.9	0		0	24Sep 11 13:42:40	51.2	54.1	58.2
0		0	24Sep 11 13:17:20	49.0	49.9	56.0	0		0	24Sep 11 13:42:45	51.4	54.1	58.3
0		0	24Sep 11 13:17:25	49.1	50.2	56.1	0		0	24Sep 11 13:42:50	53.3	58.7	60.3
0		0	24Sep 11 13:17:30	49.0	49.7	56.0	0		0	24Sep 11 13:42:55	50.6	53.1	57.6
0		0	24Sep 11 13:17:35	48.5	50.1	55.5	0		0	24Sep 11 13:43:00	55.6	64.0	62.6
0		0	24Sep 11 13:17:40	48.1	49.6	55.0	0		0	24Sep 11 13:43:05	53.9	59.6	60.9
0		0	24Sep 11 13:17:45	47.9	48.7	54.9	0		0	24Sep 11 13:43:10	52.3	56.1	59.3
0		0	24Sep 11 13:17:50	48.1	49.8	55.1	0		0	24Sep 11 13:43:15	52.7	56.6	59.7
0		0	24Sep 11 13:17:55	47.4	48.3	54.4	0		0	24Sep 11 13:43:20	52.5	55.5	59.5
0		0	24Sep 11 13:18:00	48.3	49.9	55.3	0		0	24Sep 11 13:43:25	55.7	59.6	62.7
0		0	24Sep 11 13:18:05	48.7	49.9	55.7	0		0	24Sep 11 13:43:30	54.1	61.1	61.1
0		0	24Sep 11 13:18:10	48.7	49.8	55.7	0		0	24Sep 11 13:43:35	53.1	58.0	60.1
0		0	24Sep 11 13:18:15	47.6	48.9	54.6	0		0	24Sep 11 13:43:40	65.7	77.0	72.6
0		0	24Sep 11 13:18:20	47.0	47.6	54.0	0		0	24Sep 11 13:43:45	55.7	61.3	62.7
0		0	24Sep 11 13:18:25	47.5	49.4	54.5	0		0	24Sep 11 13:43:50	49.4	51.1	56.4
0		0	24Sep 11 13:18:30	47.6	49.7	54.5	0		0	24Sep 11 13:43:55	52.8	59.3	59.8
0		0	24Sep 11 13:18:35	47.9	49.7	54.9	0		0	24Sep 11 13:44:00	66.2	78.0	73.2
0		0	24Sep 11 13:18:40	48.0	50.3	55.0	0		0	24Sep 11 13:44:05	57.5	66.0	64.5
0		0	24Sep 11 13:18:45	47.7	49.4	54.6	0		0	24Sep 11 13:44:10	52.3	55.1	59.3
0		0	24Sep 11 13:18:50	48.3	50.2	55.3	0		0	24Sep 11 13:44:15	59.7	69.2	66.7
0		0	24Sep 11 13:18:55	47.4	48.8	54.4	0		0	24Sep 11 13:44:20	57.3	65.3	64.3
0		0	24Sep 11 13:19:00	47.1	51.1	54.1	0		0	24Sep 11 13:44:25	56.3	59.1	63.3
0		0	24Sep 11 13:19:05	47.2	49.4	54.2	0		0	24Sep 11 13:44:30	55.4	57.7	62.4
0		0	24Sep 11 13:19:10	48.4	55.3	55.4	0		0	24Sep 11 13:44:35	54.6	59.9	61.6
0		0	24Sep 11 13:19:15	47.8	48.7	54.8	0		0	24Sep 11 13:44:40	55.6	64.6	62.5
0		0	24Sep 11 13:19:20	48.5	51.2	55.5	0		0	24Sep 11 13:44:45	54.7	58.3	61.7
0		0	24Sep 11 13:19:25	48.4	49.9	55.3	0		0	24Sep 11 13:44:50	52.2	54.6	59.2
0		0	24Sep 11 13:19:30	48.3	50.2	55.3	0		0	24Sep 11 13:44:55	52.3	58.3	59.3
0		0	24Sep 11 13:19:35	48.6	50.1	55.6	0		0	24Sep 11 13:45:00	52.2	57.2	59.2
0		0	24Sep 11 13:19:40	48.1	49.3	55.1	0		0	24Sep 11 13:45:05	53.5	59.7	60.5
0		0	24Sep 11 13:19:45	48.0	49.3	55.0	0		0	24Sep 11 13:45:10	51.9	56.1	58.9
0		0	24Sep 11 13:19:50	48.2	49.2	55.2	0		0	24Sep 11 13:45:15	50.9	55.6	57.9
0		0	24Sep 11 13:19:55	48.2	49.1	55.2	0		0	24Sep 11 13:45:20	51.5	55.2	58.5
0		0	24Sep 11 13:20:00	48.2	49.4	55.2	0		0	24Sep 11 13:45:25	50.2	51.8	57.2
0		0	24Sep 11 13:20:05	48.3	53.1	55.3	0		0	24Sep 11 13:45:30	52.5	57.1	59.5
0		0	24Sep 11 13:20:10	48.2	49.7	55.2	0		0	24Sep 11 13:45:35	53.2	57.6	60.2
0		0	24Sep 11 13:20:15	47.8	49.7	54.8	0		0	24Sep 11 13:45:40	51.5	54.3	58.5
0		0	24Sep 11 13:20:20	48.2	50.3	55.2	0		0	24Sep 11 13:45:45	52.7	57.7	59.6
0		0	24Sep 11 13:20:25	48.2	48.9	55.2	0		0	24Sep 11 13:45:50	51.9	55.5	58.9
0		0	24Sep 11 13:20:30	48.2	48.8	55.2	0		0	24Sep 11 13:45:55	52.9	56.8	59.9
0		0	24Sep 11 13:20:35	48.2	48.9	55.2	0		0	24Sep 11 13:46:00	52.8	55.2	59.8
0		0	24Sep 11 13:20:40	48.9	50.2	55.9	0		0	24Sep 11 13:46:05	51.6	55.5	58.6
0		0	24Sep 11 13:20:45	48.7	50.1	55.7	0		0	24Sep 11 13:46:10	50.7	52.2	57.7
0		0	24Sep 11 13:20:50	47.9	49.7	54.9	0		0	24Sep 11 13:46:15	53.9	61.3	60.9
0		0	24Sep 11 13:20:55	46.8	47.9	53.8	0		0	24Sep 11 13:46:20	50.0	52.7	57.0
0		0	24Sep 11 13:21:00	47.3	49.2	54.3	0		0	24Sep 11 13:46:25	50.6	53.5	57.6
0		0	24Sep 11 13:21:05	47.7	49.1	54.7	0		0	24Sep 11 13:46:30	50.7	53.6	57.7
0		0	24Sep 11 13:21:10	49.0	51.8	56.0	0		0	24Sep 11 13:46:35	51.4	54.0	58.4
0		0	24Sep 11 13:21:15	50.4	52.9	57.3	0		0	24Sep 11 13:46:40	53.6	57.8	60.5
0		0	24Sep 11 13:21:20	49.3	50.8	56.3	0		0	24Sep 11 13:46:45	51.1	55.0	58.1
0		0	24Sep 11 13:21:25	48.4	50.6	55.4	0		0	24Sep 11 13:46:50	54.6	58.7	61.6
0		0	24Sep 11 13:21:30	48.8	52.4	55.8	0		0	24Sep 11 13:46:55	58.6	61.8	65.5
0		0	24Sep 11 13:21:35	49.4	52.3	56.3	0		0	24Sep 11 13:47:00	60.3	62.3	67.3
0		0	24Sep 11 13:21:40	48.3	50.3	55.3	0		0	24Sep 11 13:47:05	61.3	65.6	68.3
0		0	24Sep 11 13:21:45	51.3	59.1	58.3	0		0	24Sep 11 13:47:10	56.7	60.7	63.7
0		0	24Sep 11 13:21:50	48.4	49.7	55.4	0		0	24Sep 11 13:47:15	57.7	63.3	64.6
0		0	24Sep 11 13:21:55	49.3	53.1	56.3	0		0	24Sep 11 13:47:20	58.0	64.5	65.0
0		0	24Sep 11 13:22:00	49.8	50.5	56.8	0		0	24Sep 11 13:47:25	54.2	56.7	61.2
Stop Key							0		0	24Sep 11 13:47:30	54.2	59.2	61.2
Run Key							0		0	24Sep 11 13:47:35	57.5	64.3	64.5
Measurement 15							0		0	24Sep 11 13:47:40	53.9	60.8	60.9
0		0	24Sep 11 13:37:00	52.7	57.7	59.7	0		0	24Sep 11 13:47:45	51.9	54.8	58.9
0		0	24Sep 11 13:37:05	54.6	62.7	61.5	0		0	24Sep 11 13:47:50	51.5	53.6	58.5
0		0	24Sep 11 13:37:10	52.9	58.1	59.9	0		0	24Sep 11 13:47:55	50.7	54.6	57.7
0		0	24Sep 11 13:37:15	54.7	61.4	61.6	0		0	24Sep 11 13:48:00	50.5	52.5	57.5
0		0	24Sep 11 13:37:20	53.9	58.9	60.9	0		0	24Sep 11 13:48:05	51.0	54.3	58.0
0		0	24Sep 11 13:37:25	52.8	56.6	59.8	0		0	24Sep 11 13:48:10	50.3	52.2	57.3
0		0	24Sep 11 13:37:30	51.9	56.9	58.9	0		0	24Sep 11 13:48:15	50.5	51.8	57.5
0		0	24Sep 11 13:37:35	57.0	68.7	64.0	0		0	24Sep 11 13:48:20	50.2	51.8	57.2
0		0	24Sep 11 13:37:40	60.8	70.8	67.8	0		0	24Sep 11 13:48:25	50.6	54.2	57.6
0		0	24Sep 11 13:37:45	54.3	60.2	61.3	0		0	24Sep 11 13:48:30	52.7	55.8	59.7
0		0	24Sep 11 13:37:50	52.9	57.8	59.9	0		0	24Sep 11 13:48:35	49.4	53.1	56.4

0		0	24Sep 11 13:48:40	49.1	50.8	56.0	0		0	24Sep 11 14:05:05	55.8	59.1	62.8
0		0	24Sep 11 13:48:45	49.2	51.2	56.2	0		0	24Sep 11 14:05:10	55.9	60.5	62.9
0		0	24Sep 11 13:48:50	48.5	49.8	55.5	0		0	24Sep 11 14:05:15	56.1	59.7	63.0
0		0	24Sep 11 13:48:55	48.8	50.2	55.8	0		0	24Sep 11 14:05:20	56.9	62.7	63.9
0		0	24Sep 11 13:49:00	48.8	50.1	55.8	0		0	24Sep 11 14:05:25	67.0	75.5	74.0
0		0	24Sep 11 13:49:05	49.2	50.7	56.2	0		0	24Sep 11 14:05:30	57.6	63.2	64.6
0		0	24Sep 11 13:49:10	49.7	52.7	56.6	0		0	24Sep 11 14:05:35	56.7	59.5	63.7
0		0	24Sep 11 13:49:15	49.9	53.3	56.9	0		0	24Sep 11 14:05:40	59.6	65.1	66.6
0		0	24Sep 11 13:49:20	52.9	54.7	59.9	0		0	24Sep 11 14:05:45	61.0	64.2	68.0
0		0	24Sep 11 13:49:25	55.6	62.7	62.5	0		0	24Sep 11 14:05:50	55.4	60.5	62.4
0		0	24Sep 11 13:49:30	52.9	57.7	59.9	0		0	24Sep 11 14:05:55	56.2	60.5	63.2
0		0	24Sep 11 13:49:35	52.4	58.6	59.4	0		0	24Sep 11 14:06:00	55.4	59.5	62.3
0		0	24Sep 11 13:49:40	52.9	57.5	59.9	0		0	24Sep 11 14:06:05	56.0	58.9	63.0
0		0	24Sep 11 13:49:45	51.8	53.2	58.8	0		0	24Sep 11 14:06:10	55.8	60.7	62.8
0		0	24Sep 11 13:49:50	52.4	57.9	59.3	0		0	24Sep 11 14:06:15	55.0	60.2	62.0
0		0	24Sep 11 13:49:55	52.8	55.3	59.8	0		0	24Sep 11 14:06:20	54.7	56.3	61.7
0		0	24Sep 11 13:50:00	52.8	55.3	59.8	0		0	24Sep 11 14:06:25	57.8	62.2	64.8
0		0	24Sep 11 13:50:05	51.6	54.7	58.5	0		0	24Sep 11 14:06:30	59.7	62.6	66.6
0		0	24Sep 11 13:50:10	51.3	53.7	58.3	0		0	24Sep 11 14:06:35	60.0	64.7	67.0
0		0	24Sep 11 13:50:15	52.6	54.7	59.6	0		0	24Sep 11 14:06:40	62.0	68.6	69.0
0		0	24Sep 11 13:50:20	52.5	57.9	59.5	0		0	24Sep 11 14:06:45	59.0	62.3	66.0
0		0	24Sep 11 13:50:25	50.2	52.1	57.1	0		0	24Sep 11 14:06:50	56.4	59.8	63.3
0		0	24Sep 11 13:50:30	51.1	52.6	58.0	0		0	24Sep 11 14:06:55	56.5	61.2	63.5
0		0	24Sep 11 13:50:35	50.0	52.0	57.0	0		0	24Sep 11 14:07:00	56.8	60.3	63.8
0		0	24Sep 11 13:50:40	53.4	59.1	60.4	0		0	24Sep 11 14:07:05	57.6	60.1	64.6
0		0	24Sep 11 13:50:45	58.7	65.5	65.7	0		0	24Sep 11 14:07:10	60.6	66.1	67.5
0		0	24Sep 11 13:50:50	52.6	56.6	59.6	0		0	24Sep 11 14:07:15	57.9	63.3	64.9
0		0	24Sep 11 13:50:55	54.6	61.2	61.6	0		0	24Sep 11 14:07:20	58.7	64.9	65.6
0		0	24Sep 11 13:51:00	50.4	54.2	57.4	0		0	24Sep 11 14:07:25	57.1	66.8	64.1
0		0	24Sep 11 13:51:05	56.1	67.7	63.1	0		0	24Sep 11 14:07:30	58.8	61.4	65.8
0		0	24Sep 11 13:51:10	53.8	61.2	60.8	0		0	24Sep 11 14:07:35	58.3	62.3	65.3
0		0	24Sep 11 13:51:15	53.0	57.2	60.0	0		0	24Sep 11 14:07:40	60.2	64.8	67.2
0		0	24Sep 11 13:51:20	52.2	56.7	59.2	0		0	24Sep 11 14:07:45	59.0	63.3	66.0
0		0	24Sep 11 13:51:25	51.8	57.9	58.8	0		0	24Sep 11 14:07:50	57.6	62.1	64.6
0		0	24Sep 11 13:51:30	56.5	63.7	63.5	0		0	24Sep 11 14:07:55	59.4	62.6	66.3
0		0	24Sep 11 13:51:35	50.7	53.0	57.7	0		0	24Sep 11 14:08:00	57.5	60.9	64.5
0		0	24Sep 11 13:51:40	50.3	53.4	57.3	0		0	24Sep 11 14:08:05	56.8	58.3	63.8
0		0	24Sep 11 13:51:45	54.3	64.0	61.3	0		0	24Sep 11 14:08:10	55.4	57.8	62.4
0		0	24Sep 11 13:51:50	60.4	70.7	67.3	0		0	24Sep 11 14:08:15	55.4	58.1	62.4
0		0	24Sep 11 13:51:55	50.9	55.0	57.9	0		0	24Sep 11 14:08:20	56.3	58.1	63.3
0		0	24Sep 11 13:52:00	53.1	56.7	60.1	0		0	24Sep 11 14:08:25	56.3	59.1	63.3
Stop Key							0		0	24Sep 11 14:08:30	57.0	59.8	64.0
Run Key							0		0	24Sep 11 14:08:35	60.1	68.1	67.1
Measurement 16							0		0	24Sep 11 14:08:40	60.0	66.7	67.0
0		0	24Sep 11 13:58:00	57.6	61.2	64.6	0		0	24Sep 11 14:08:45	60.0	66.4	67.0
0		0	24Sep 11 13:58:05	57.6	61.9	64.6	0		0	24Sep 11 14:08:50	58.2	63.1	65.2
0		0	24Sep 11 13:58:10	56.1	60.8	63.1	0		0	24Sep 11 14:08:55	55.1	58.4	62.1
0		0	24Sep 11 13:58:15	55.7	59.7	62.7	0		0	24Sep 11 14:09:00	55.4	59.1	62.4
0		0	24Sep 11 13:58:20	55.9	57.9	62.9	0		0	24Sep 11 14:09:05	55.8	58.6	62.8
0		0	24Sep 11 13:58:25	57.2	60.3	64.2	0		0	24Sep 11 14:09:10	55.3	57.1	62.3
0		0	24Sep 11 13:58:30	58.4	63.4	65.3	0		0	24Sep 11 14:09:15	56.1	58.9	63.1
0		0	24Sep 11 13:58:35	58.3	62.4	65.3	0		0	24Sep 11 14:09:20	54.8	59.2	61.8
0		0	24Sep 11 13:58:40	61.7	70.8	68.7	0		0	24Sep 11 14:09:25	55.2	57.7	62.2
0		0	24Sep 11 13:58:45	59.6	64.9	66.6	0		0	24Sep 11 14:09:30	54.3	56.1	61.3
0		0	24Sep 11 13:58:50	57.1	60.2	64.1	0		0	24Sep 11 14:09:35	55.0	59.1	62.0
0		0	24Sep 11 13:58:55	56.9	59.6	63.9	0		0	24Sep 11 14:09:40	59.8	69.6	66.8
0		0	24Sep 11 13:59:00	55.2	58.0	62.1	0		0	24Sep 11 14:09:45	61.3	69.3	68.3
0		0	24Sep 11 13:59:05	57.6	65.1	64.5	0		0	24Sep 11 14:09:50	54.7	58.3	61.7
0		0	24Sep 11 13:59:10	59.2	62.3	66.1	0		0	24Sep 11 14:09:55	56.7	59.8	63.7
0		0	24Sep 11 13:59:15	56.1	59.1	63.1	0		0	24Sep 11 14:10:00	62.8	74.4	69.8
0		0	24Sep 11 13:59:20	56.3	61.1	63.3	0		0	24Sep 11 14:10:05	55.5	57.8	62.5
0		0	24Sep 11 13:59:25	57.7	61.1	64.7	0		0	24Sep 11 14:10:10	56.1	62.7	63.1
0		0	24Sep 11 13:59:30	60.4	69.2	67.4	0		0	24Sep 11 14:10:15	59.5	70.4	66.5
0		0	24Sep 11 13:59:35	59.9	70.4	66.9	0		0	24Sep 11 14:10:20	58.2	60.9	65.2
0		0	24Sep 11 13:59:40	55.7	58.2	62.7	0		0	24Sep 11 14:10:25	58.2	62.8	65.2
0		0	24Sep 11 13:59:45	62.2	73.4	69.2	0		0	24Sep 11 14:10:30	56.8	59.5	63.8
0		0	24Sep 11 13:59:50	57.4	64.2	64.4	0		0	24Sep 11 14:10:35	62.1	74.2	69.1
0		0	24Sep 11 13:59:55	60.3	70.5	67.3	0		0	24Sep 11 14:10:40	60.0	64.5	67.0
0		0	24Sep 11 14:00:00	59.3	61.9	66.3	0		0	24Sep 11 14:10:45	58.4	61.2	66.4
0		0	24Sep 11 14:00:05	57.2	59.4	64.2	0		0	24Sep 11 14:10:50	59.4	61.9	66.4
0		0	24Sep 11 14:00:10	55.3	57.8	62.3	0		0	24Sep 11 14:10:55	59.3	61.2	66.3
0		0	24Sep 11 14:00:15	56.9	58.4	63.9	0		0	24Sep 11 14:11:00	62.2	72.3	69.1
0		0	24Sep 11 14:00:20	54.4	56.3	61.4	0		0	24Sep 11 14:11:05	57.1	59.8	64.1
0		0	24Sep 11 14:00:25	55.8	60.4	62.8	0		0	24Sep 11 14:11:10	56.4	59.3	63.4
0		0	24Sep 11 14:00:30	56.8	58.5	63.8	0		0	24Sep 11 14:11:15	59.9	70.8	66.9
0		0	24Sep 11 14:00:35	56.6	59.0	63.6	0		0	24Sep 11 14:11:20	55.5	57.3	62.5
0		0	24Sep 11 14:00:40	57.1	60.8	64.1	0		0	24Sep 11 14:11:25	56.5	59.0	63.5
0		0	24Sep 11 14:00:45	55.7	58.4	62.7	0		0	24Sep 11 14:11:30	60.8	67.0	67.8
0		0	24Sep 11 14:00:50	57.6	62.8	64.6	0		0	24Sep 11 14:11:35	59.2	65.7	66.2
0		0	24Sep 11 14:00:55	57.6	62.7	64.6	0		0	24Sep 11 14:11:40	59.9	69.3	66.9
0		0	24Sep 11 14:01:00	57.9	61.2	64.9	0		0	24Sep 11 14:11:45	58.8	63.8	65.8
0		0	24Sep 11 14:01:05	59.0	67.8	66.0	0		0	24Sep 11 14:11:50	59.7	67.2	66.7
0		0	24Sep 11 14:01:10	54.9	58.3	61.9	0		0	24Sep 11 14:11:55	56.5	63.7	63.5
0		0	24Sep 11 14:01:15	55.1	59.5	62.1	0		0	24Sep 11 14:12:00	55.3	57.3	62.3
0		0	24Sep 11 14:01:20	54.0	57.0	61.0	0		0	24Sep 11 14:12:05	55.5	57.9	62.5
0		0	24Sep 11 14:01:25	58.2	65.0	65.2	0		0	24Sep 11 14:12:10	57.0	59.8	64.0
0		0	24Sep 11 14:01:30	65.4	70.3	72.4	0		0	24Sep 11 14:12:15	57.7	63.1	64.7
0		0	24Sep 11 14:01:35	68.9	72.9	75.9	0		0	24Sep 11 14:12:20	57.5	60.8	64.5
0		0	24Sep 11 14:01:40	66.7	71.4	73.7	0		0	24Sep 11 14:12:25	57.7	61.2	64.7
0		0	24Sep 11 14:01:45	61.0	64.6	68.0	0		0	24Sep 11 14:12:30	61.1	65.3	68.1
0		0	24Sep 11 14:01:50	60.7	64.9	67.7	0		0	24Sep 11 14:12:35	59.1	62.2	66.1
0		0	24Sep 11 14:01:55	57.1	60.1	64.1	0		0	24Sep 11 14:12:40	57.8	61.2	64.8
0		0	24Sep 11 14:02:00	55.9	59.0	62.9	0		0	24Sep 11 14:12:45	58.5	60.9	65.5
0		0	24Sep 11 14:02:05	57.7	62.7	64.6	0		0	24Sep 11 14:12:50	57.2	59.3	64.2
0		0	24Sep 11 14:02:10	56.5	60.8	63.5	0		0	24Sep 11 14:12:55	59.2	65.9	66.2
0		0	24Sep 11 14:02:15	55.3	58.1	62.3	0		0	24Sep 11 14:13:00	58.2	58.2	65.2
0		0	24Sep 11 14:02:20	57.8	62.3	64.8	Stop Key						
0		0	24Sep 11 14:02:25	60.8	66.6	67.8	Run Key						
0		0	24Sep 11 14:02:30	63.8	69.1	70.8	**Measurement 17**						
0		0	24Sep 11 14:02:35	56.9	61.1	63.9	0		0	24Sep 11 14:21:00	65.4	71.2	72.4
0		0	24Sep 11 14:02:40	60.4	65.3	67.4	0		0	24Sep 11 14:21:05	64.3	71.2	71.3
0		0	24Sep 11 14:02:45	55.9	60.4	62.9	0		0	24Sep 11 14:21:10	59.6	64.1	66.6
0		0	24Sep 11 14:02:50	60.4	69.8	67.4	0		0	24Sep 11 14:21:15	57.6	61.9	64.6
0		0	24Sep 11 14:02:55	59.3	65.0	66.3	0		0	24Sep 11 14:21:20	55.9	58.8	62.9
0		0	24Sep 11 14:03:00	57.4	63.0	64.4	0		0	24Sep 11 14:21:25	56.4	62.6	63.4
0		0	24Sep 11 14:03:05	56.6	60.6	63.6	0		0	24Sep 11 14:21:30	54.1	56.1	61.1
0		0	24Sep 11 14:03:10	55.7	59.6	62.7	0		0	24Sep 11 14:21:35	55.7	58.4	62.7
0		0	24Sep 11 14:03:15	55.2	58.1	62.2	0		0	24Sep 11 14:21:40	61.1	65.4	68.1
0		0	24Sep 11 14:03:20	57.1	59.6	64.1	0		0	24Sep 11 14:21:45	60.6	62.3	67.5
0		0	24Sep 11 14:03:25	55.9	60.5	62.9	0		0	24Sep 11 14:21:50	62.7	64.1	69.7
0		0	24Sep 11 14:03:30	56.5	60.5	63.5	0		0	24Sep 11 14:21:55	63.2	64.4	70.2
0		0	24Sep 11 14:03:35	55.2	56.9	62.2	0		0	24Sep 11 14:22:00	62.1	64.6	69.1
0		0	24Sep 11 14:03:40	56.4	60.0	63.3	0		0	24Sep 11 14:22:05	61.7	63.4	68.7
0		0	24Sep 11 14:03:45	56.0	59.4	63.0	0		0	24Sep 11 14:22:10	54.2	56.9	61.2
0		0	24Sep 11 14:03:50	58.4	63.2	65.4	0		0	24Sep 11 14:22:15	54.0	56.7	61.0
0		0	24Sep 11 14:03:55	57.9	61.2	64.9	0		0	24Sep 11 14:22:20	54.9	58.4	61.9
0		0	24Sep 11 14:04:00	57.1	59.9	64.1	0		0	24Sep 11 14:22:25	56.3	58.8	63.3
0		0	24Sep 11 14:04:05	54.9	57.4	61.9	0		0	24Sep 11 14:22:30	66.1	69.8	73.1
0		0	24Sep 11 14:04:10	61.0	68.9	68.0	0		0	24Sep 11 14:22:35	66.7	69.7	73.7
0		0	24Sep 11 14:04:15	53.9	57.2	60.9	0		0	24Sep 11 14:22:40	60.2	63.7	67.2
0		0	24Sep 11 14:04:20	53.9	56.0	60.9	0		0	24Sep 11 14:22:45	64.1	65.8	71.1
0		0	24Sep 11 14:04:25	53.9	57.3	60.9	0		0	24Sep 11 14:22:50	62.6	66.6	69.6
0		0	24Sep 11 14:04:30	55.0	59.2	62.0	0		0	24Sep 11 14:22:55	64.4	67.6	71.4
0		0	24Sep 11 14:04:35	55.4	58.6	62.4	0		0	24Sep 11 14:23:00	62.4	67.3	69.4
0		0	24Sep 11 14:04:40	58.2	66.0	65.2	0		0	24Sep 11 14:23:05	60.5	62.6	67.5
0		0	24Sep 11 14:04:45	54.1	57.5	61.1	0		0	24Sep 11 14:23:10	58.4	60.1	65.3
0		0	24Sep 11 14:04:50	54.5	58.7	61.5	0		0	24Sep 11 14:23:15	56.2	59.7	63.2
0		0	24Sep 11 14:04:55	59.8	70.9	66.8	0		0	24Sep 11 14:23:20	64.2	67.9	71.2
0		0	24Sep 11 14:05:00	53.8	55.9	60.8	0		0	24Sep 11 14:23:25	60.3	63.6	67.3

0	0	24Sep 11	14:23:30	62.4	65.2	69.4	0	0	24Sep 11	14:34:15	58.7	63.5	65.7
0	0	24Sep 11	14:23:35	61.1	64.3	68.1	0	0	24Sep 11	14:34:20	62.3	64.8	69.3
0	0	24Sep 11	14:23:40	60.3	61.7	67.3	0	0	24Sep 11	14:34:25	60.0	62.3	67.0
0	0	24Sep 11	14:23:45	58.9	61.1	65.8	0	0	24Sep 11	14:34:30	60.7	61.9	67.7
0	0	24Sep 11	14:23:50	54.4	56.7	61.4	0	0	24Sep 11	14:34:35	61.6	63.4	68.5
0	0	24Sep 11	14:23:55	54.4	58.3	61.4	0	0	24Sep 11	14:34:40	61.1	62.8	68.1
0	0	24Sep 11	14:24:00	61.2	63.2	68.2	0	0	24Sep 11	14:34:45	66.2	76.3	73.2
0	0	24Sep 11	14:24:05	63.5	65.2	70.5	0	0	24Sep 11	14:34:50	61.8	63.8	68.8
0	0	24Sep 11	14:24:10	60.4	63.2	67.4	0	0	24Sep 11	14:34:55	59.4	61.7	66.4
0	0	24Sep 11	14:24:15	57.3	59.7	64.3	0	0	24Sep 11	14:35:00	60.2	65.3	67.2
0	0	24Sep 11	14:24:20	62.3	65.3	69.3	0	0	24Sep 11	14:35:05	64.6	70.7	71.6
0	0	24Sep 11	14:24:25	63.8	66.5	70.8	0	0	24Sep 11	14:35:10	65.4	75.0	72.3
0	0	24Sep 11	14:24:30	64.4	67.8	71.4	0	0	24Sep 11	14:35:15	59.5	66.5	66.5
0	0	24Sep 11	14:24:35	62.6	65.7	69.5	0	0	24Sep 11	14:35:20	56.6	58.2	63.6
0	0	24Sep 11	14:24:40	64.7	66.7	71.7	0	0	24Sep 11	14:35:25	58.8	65.9	65.8
0	0	24Sep 11	14:24:45	62.9	67.0	69.9	0	0	24Sep 11	14:35:30	58.4	66.4	65.4
0	0	24Sep 11	14:24:50	59.4	66.5	66.4	0	0	24Sep 11	14:35:35	61.7	67.4	68.7
0	0	24Sep 11	14:24:55	57.0	62.6	64.0	0	0	24Sep 11	14:35:40	59.6	62.2	66.6
0	0	24Sep 11	14:25:00	58.8	61.0	65.8	0	0	24Sep 11	14:35:45	56.0	61.9	63.0
0	0	24Sep 11	14:25:05	60.7	62.6	67.7	0	0	24Sep 11	14:35:50	58.1	65.1	65.1
0	0	24Sep 11	14:25:10	60.2	64.3	67.1	0	0	24Sep 11	14:35:55	62.1	70.2	69.1
0	0	24Sep 11	14:25:15	63.1	66.2	70.1	Stop Key						
0	0	24Sep 11	14:25:20	59.8	63.2	66.8	Run Key						
0	0	24Sep 11	14:25:25	60.9	63.7	67.9	**Measurement 18**						
0	0	24Sep 11	14:25:30	60.6	63.2	67.6	0	0	24Sep 11	14:39:00	49.2	50.1	56.2
0	0	24Sep 11	14:25:35	57.5	61.8	64.5	0	0	24Sep 11	14:39:05	50.4	53.3	57.3
0	0	24Sep 11	14:25:40	59.0	61.0	66.0	0	0	24Sep 11	14:39:10	49.5	50.9	56.5
0	0	24Sep 11	14:25:45	60.3	61.2	67.3	0	0	24Sep 11	14:39:15	49.9	53.1	56.9
0	0	24Sep 11	14:25:50	64.9	67.5	71.9	0	0	24Sep 11	14:39:20	50.0	53.8	57.0
0	0	24Sep 11	14:25:55	60.6	63.5	67.5	0	0	24Sep 11	14:39:25	49.9	53.0	56.9
0	0	24Sep 11	14:26:00	57.4	60.3	64.4	0	0	24Sep 11	14:39:30	50.2	53.2	57.2
0	0	24Sep 11	14:26:05	57.0	59.5	64.0	0	0	24Sep 11	14:39:35	48.9	49.8	55.8
0	0	24Sep 11	14:26:10	57.3	59.7	64.3	0	0	24Sep 11	14:39:40	49.1	49.7	56.1
0	0	24Sep 11	14:26:15	63.1	64.9	70.1	0	0	24Sep 11	14:39:45	49.8	52.1	56.8
0	0	24Sep 11	14:26:20	58.9	62.9	65.9	0	0	24Sep 11	14:39:50	49.6	51.3	56.6
0	0	24Sep 11	14:26:25	60.8	63.2	67.8	0	0	24Sep 11	14:39:55	48.9	50.1	55.9
0	0	24Sep 11	14:26:30	54.5	58.9	61.5	0	0	24Sep 11	14:40:00	49.3	51.6	56.3
0	0	24Sep 11	14:26:35	54.5	57.6	61.5	0	0	24Sep 11	14:40:05	49.2	51.6	56.2
0	0	24Sep 11	14:26:40	54.5	56.2	61.5	0	0	24Sep 11	14:40:10	49.2	50.1	56.2
0	0	24Sep 11	14:26:45	57.2	58.7	64.2	0	0	24Sep 11	14:40:15	49.7	51.1	56.7
0	0	24Sep 11	14:26:50	58.5	61.4	65.5	0	0	24Sep 11	14:40:20	49.7	50.7	56.7
0	0	24Sep 11	14:26:55	56.5	58.6	63.5	0	0	24Sep 11	14:40:25	49.8	51.6	56.8
0	0	24Sep 11	14:27:00	55.8	57.5	62.8	0	0	24Sep 11	14:40:30	50.8	53.1	57.8
0	0	24Sep 11	14:27:05	54.4	56.7	61.3	0	0	24Sep 11	14:40:35	49.9	50.6	56.8
0	0	24Sep 11	14:27:10	52.8	54.6	59.8	0	0	24Sep 11	14:40:40	50.2	53.1	57.2
0	0	24Sep 11	14:27:15	61.0	65.2	68.0	0	0	24Sep 11	14:40:45	52.0	58.6	59.0
0	0	24Sep 11	14:27:20	65.1	66.7	72.1	0	0	24Sep 11	14:40:50	49.7	50.9	56.7
0	0	24Sep 11	14:27:25	57.7	62.6	64.7	0	0	24Sep 11	14:40:55	50.7	53.1	57.7
0	0	24Sep 11	14:27:30	56.9	60.0	63.9	0	0	24Sep 11	14:41:00	50.8	52.0	57.8
0	0	24Sep 11	14:27:35	58.8	63.2	65.8	0	0	24Sep 11	14:41:05	52.9	58.3	59.9
0	0	24Sep 11	14:27:40	61.1	63.7	68.1	0	0	24Sep 11	14:41:10	54.5	57.1	61.5
0	0	24Sep 11	14:27:45	65.3	73.7	72.3	0	0	24Sep 11	14:41:15	58.4	62.1	65.4
0	0	24Sep 11	14:27:50	60.7	64.2	67.7	0	0	24Sep 11	14:41:20	57.9	60.7	64.9
0	0	24Sep 11	14:27:55	56.4	60.0	63.3	0	0	24Sep 11	14:41:25	59.9	63.5	66.9
0	0	24Sep 11	14:28:00	55.9	59.6	62.9	0	0	24Sep 11	14:41:30	56.3	59.9	63.3
0	0	24Sep 11	14:28:05	63.2	64.9	70.2	0	0	24Sep 11	14:41:35	54.2	57.0	61.2
0	0	24Sep 11	14:28:10	62.6	64.9	69.6	0	0	24Sep 11	14:41:40	51.0	54.5	58.0
0	0	24Sep 11	14:28:15	57.0	59.1	64.0	0	0	24Sep 11	14:41:45	49.8	50.3	56.8
0	0	24Sep 11	14:28:20	59.9	62.0	66.8	0	0	24Sep 11	14:41:50	49.8	54.0	56.8
0	0	24Sep 11	14:28:25	60.4	62.0	67.4	0	0	24Sep 11	14:41:55	49.7	53.0	56.6
0	0	24Sep 11	14:28:30	56.4	60.7	63.4	0	0	24Sep 11	14:42:00	49.3	51.9	56.3
0	0	24Sep 11	14:28:35	55.9	58.5	62.9	0	0	24Sep 11	14:42:05	49.3	53.9	56.3
0	0	24Sep 11	14:28:40	61.1	62.3	68.1	0	0	24Sep 11	14:42:10	48.8	49.5	55.8
0	0	24Sep 11	14:28:45	56.9	59.9	63.9	0	0	24Sep 11	14:42:15	49.7	53.7	56.6
0	0	24Sep 11	14:28:50	58.2	64.0	65.2	0	0	24Sep 11	14:42:20	50.6	52.9	57.5
0	0	24Sep 11	14:28:55	64.3	67.3	71.3	0	0	24Sep 11	14:42:25	51.2	52.0	58.2
0	0	24Sep 11	14:29:00	61.2	65.8	68.2	0	0	24Sep 11	14:42:30	50.9	52.3	57.9
0	0	24Sep 11	14:29:05	58.7	64.8	65.7	0	0	24Sep 11	14:42:35	51.4	54.8	58.4
0	0	24Sep 11	14:29:10	54.1	60.3	61.1	0	0	24Sep 11	14:42:40	51.4	54.9	58.4
0	0	24Sep 11	14:29:15	65.1	74.2	72.1	0	0	24Sep 11	14:42:45	51.7	53.7	58.7
0	0	24Sep 11	14:29:20	65.8	69.3	72.8	0	0	24Sep 11	14:42:50	51.0	54.2	58.0
0	0	24Sep 11	14:29:25	68.2	71.3	75.2	0	0	24Sep 11	14:42:55	50.9	52.8	57.8
0	0	24Sep 11	14:29:30	63.4	65.3	70.4	0	0	24Sep 11	14:43:00	50.8	52.0	57.8
0	0	24Sep 11	14:29:35	61.5	64.0	68.5	0	0	24Sep 11	14:43:05	51.6	55.3	58.5
0	0	24Sep 11	14:29:40	61.1	67.5	68.1	0	0	24Sep 11	14:43:10	58.9	61.3	65.9
0	0	24Sep 11	14:29:45	59.3	61.9	66.3	0	0	24Sep 11	14:43:15	63.6	67.3	70.6
0	0	24Sep 11	14:29:50	58.4	63.0	65.4	0	0	24Sep 11	14:43:20	57.8	62.0	64.8
0	0	24Sep 11	14:29:55	63.6	65.1	70.6	0	0	24Sep 11	14:43:25	51.4	52.3	58.4
0	0	24Sep 11	14:30:00	62.8	64.0	69.8	0	0	24Sep 11	14:43:30	53.4	56.3	60.4
0	0	24Sep 11	14:30:05	63.1	66.6	70.0	0	0	24Sep 11	14:43:35	51.5	53.7	58.5
0	0	24Sep 11	14:30:10	56.0	60.3	63.0	0	0	24Sep 11	14:43:40	50.1	51.2	57.1
0	0	24Sep 11	14:30:15	55.7	58.6	62.6	0	0	24Sep 11	14:43:45	50.7	53.2	57.7
0	0	24Sep 11	14:30:20	61.1	65.0	68.1	0	0	24Sep 11	14:43:50	52.5	59.3	59.5
0	0	24Sep 11	14:30:25	62.8	64.6	69.8	0	0	24Sep 11	14:43:55	50.6	57.5	57.6
0	0	24Sep 11	14:30:30	58.2	60.8	65.2	0	0	24Sep 11	14:44:00	52.7	60.7	59.7
0	0	24Sep 11	14:30:35	61.4	63.4	68.3	0	0	24Sep 11	14:44:05	53.8	58.8	60.8
0	0	24Sep 11	14:30:40	61.5	63.5	68.5	0	0	24Sep 11	14:44:10	53.8	58.7	60.8
0	0	24Sep 11	14:30:45	63.7	66.8	70.7	0	0	24Sep 11	14:44:15	52.1	58.3	59.1
0	0	24Sep 11	14:30:50	59.8	63.1	66.8	0	0	24Sep 11	14:44:20	52.8	57.7	59.8
0	0	24Sep 11	14:30:55	53.5	56.8	60.5	0	0	24Sep 11	14:44:25	51.6	54.3	58.6
0	0	24Sep 11	14:31:00	51.8	53.8	58.8	0	0	24Sep 11	14:44:30	53.2	56.8	60.2
0	0	24Sep 11	14:31:05	51.4	52.0	58.4	0	0	24Sep 11	14:44:35	54.1	59.7	61.0
0	0	24Sep 11	14:31:10	51.2	52.0	58.2	0	0	24Sep 11	14:44:40	55.3	61.5	62.3
0	0	24Sep 11	14:31:15	52.2	56.1	59.2	0	0	24Sep 11	14:44:45	54.4	59.1	61.3
0	0	24Sep 11	14:31:20	55.7	59.8	62.7	0	0	24Sep 11	14:44:50	53.9	57.9	60.9
0	0	24Sep 11	14:31:25	55.8	58.9	62.8	0	0	24Sep 11	14:44:55	55.2	57.8	62.2
0	0	24Sep 11	14:31:30	54.4	58.6	61.4	0	0	24Sep 11	14:45:00	60.9	66.6	67.9
0	0	24Sep 11	14:31:35	54.6	62.0	61.6	0	0	24Sep 11	14:45:05	58.4	60.2	65.4
0	0	24Sep 11	14:31:40	67.1	71.0	74.1	0	0	24Sep 11	14:45:10	56.7	58.5	63.7
0	0	24Sep 11	14:31:45	60.3	64.5	67.3	0	0	24Sep 11	14:45:15	54.6	57.3	61.6
0	0	24Sep 11	14:31:50	69.8	75.7	76.8	0	0	24Sep 11	14:45:20	53.1	55.7	60.1
0	0	24Sep 11	14:31:55	69.1	76.0	76.1	0	0	24Sep 11	14:45:25	51.7	52.8	58.7
0	0	24Sep 11	14:32:00	60.7	64.7	67.7	0	0	24Sep 11	14:45:30	51.1	54.0	58.1
0	0	24Sep 11	14:32:05	55.6	57.0	62.5	0	0	24Sep 11	14:45:35	52.1	58.5	59.1
0	0	24Sep 11	14:32:10	58.1	60.1	65.1	0	0	24Sep 11	14:45:40	51.1	53.2	58.1
0	0	24Sep 11	14:32:15	60.0	61.3	67.0	0	0	24Sep 11	14:45:45	50.9	51.7	57.9
0	0	24Sep 11	14:32:20	60.0	61.0	67.0	0	0	24Sep 11	14:45:50	50.5	51.8	57.5
0	0	24Sep 11	14:32:25	59.5	60.4	66.5	0	0	24Sep 11	14:45:55	50.3	53.5	57.3
0	0	24Sep 11	14:32:30	59.2	61.3	66.2	0	0	24Sep 11	14:46:00	50.8	53.5	57.8
0	0	24Sep 11	14:32:35	57.8	60.4	64.8	0	0	24Sep 11	14:46:05	49.7	51.8	56.7
0	0	24Sep 11	14:32:40	58.7	61.4	65.6	0	0	24Sep 11	14:46:10	50.7	55.0	57.6
0	0	24Sep 11	14:32:45	59.7	61.3	66.7	0	0	24Sep 11	14:46:15	51.1	56.2	58.1
0	0	24Sep 11	14:32:50	59.3	60.5	66.3	0	0	24Sep 11	14:46:20	51.3	54.9	58.3
0	0	24Sep 11	14:32:55	61.4	64.0	68.4	0	0	24Sep 11	14:46:25	50.7	53.4	57.7
0	0	24Sep 11	14:33:00	64.4	66.4	71.3	0	0	24Sep 11	14:46:30	51.4	54.8	58.3
0	0	24Sep 11	14:33:05	62.3	65.8	69.3	0	0	24Sep 11	14:46:35	50.7	52.5	57.7
0	0	24Sep 11	14:33:10	52.2	54.4	59.2	0	0	24Sep 11	14:46:40	51.3	53.3	58.3
0	0	24Sep 11	14:33:15	58.0	62.4	65.0	0	0	24Sep 11	14:46:45	51.1	53.7	58.1
0	0	24Sep 11	14:33:20	62.2	66.3	69.2	0	0	24Sep 11	14:46:50	61.3	68.3	68.3
0	0	24Sep 11	14:33:25	61.2	67.7	68.1	0	0	24Sep 11	14:46:55	65.0	68.4	72.0
0	0	24Sep 11	14:33:30	53.6	55.8	60.5	0	0	24Sep 11	14:47:00	63.7	67.2	70.7
0	0	24Sep 11	14:33:35	51.4	52.5	58.4	0	0	24Sep 11	14:47:05	67.4	71.3	74.4
0	0	24Sep 11	14:33:40	58.7	70.7	65.7	0	0	24Sep 11	14:47:10	57.0	60.9	64.0
0	0	24Sep 11	14:33:45	56.6	62.0	63.6	0	0	24Sep 11	14:47:15	51.0	53.7	58.0
0	0	24Sep 11	14:33:50	61.4	64.0	68.4	0	0	24Sep 11	14:47:20	51.4	53.9	58.4
0	0	24Sep 11	14:33:55	58.1	65.0	65.1	0	0	24Sep 11	14:47:25	50.6	53.7	57.5
0	0	24Sep 11	14:34:00	53.6	56.4	60.5	0	0	24Sep 11	14:47:30	51.6	56.7	58.5
0	0	24Sep 11	14:34:05	59.5	62.4	66.5	0	0	24Sep 11	14:47:35	52.4	57.8	59.4
0	0	24Sep 11	14:34:10	58.4	67.7	65.4	0	0	24Sep 11	14:47:40	50.5	52.6	57.5

0		0	24Sep 11 14:47:45	52.1	55.9	59.0
0		0	24Sep 11 14:47:50	50.3	53.9	57.3
0		0	24Sep 11 14:47:55	50.5	52.7	57.5
0		0	24Sep 11 14:48:00	49.9	52.4	56.9
0		0	24Sep 11 14:48:05	50.0	50.8	57.0
0		0	24Sep 11 14:48:10	51.6	55.7	58.6
0		0	24Sep 11 14:48:15	50.7	53.7	57.7
0		0	24Sep 11 14:48:20	50.7	52.8	57.7
0		0	24Sep 11 14:48:25	49.9	51.4	56.9
0		0	24Sep 11 14:48:30	51.0	55.2	58.0
0		0	24Sep 11 14:48:35	52.8	57.3	59.8
0		0	24Sep 11 14:48:40	55.6	61.4	62.5
0		0	24Sep 11 14:48:45	55.5	62.0	62.5
0		0	24Sep 11 14:48:50	58.4	68.0	65.4
0		0	24Sep 11 14:48:55	54.2	59.5	61.2
0		0	24Sep 11 14:49:00	52.2	56.2	59.2
0		0	24Sep 11 14:49:05	52.2	56.0	59.2
0		0	24Sep 11 14:49:10	51.9	54.1	58.9
0		0	24Sep 11 14:49:15	51.9	56.8	58.9
0		0	24Sep 11 14:49:20	52.5	56.3	59.5
0		0	24Sep 11 14:49:25	52.5	56.0	59.5
0		0	24Sep 11 14:49:30	50.8	53.0	57.8
0		0	24Sep 11 14:49:35	51.7	54.9	58.6
0		0	24Sep 11 14:49:40	50.7	55.8	57.7
0		0	24Sep 11 14:49:45	56.7	62.2	63.7
0		0	24Sep 11 14:49:50	59.7	70.8	66.7
0		0	24Sep 11 14:49:55	61.8	69.5	68.8
0		0	24Sep 11 14:50:00	56.5	63.8	63.5
0		0	24Sep 11 14:50:05	53.5	61.4	60.5
0		0	24Sep 11 14:50:10	54.4	59.7	61.4
0		0	24Sep 11 14:50:15	55.8	58.9	62.8
0		0	24Sep 11 14:50:20	60.0	64.5	67.0
0		0	24Sep 11 14:50:25	58.9	61.8	65.8
0		0	24Sep 11 14:50:30	58.8	61.7	65.8
0		0	24Sep 11 14:50:35	58.8	64.0	65.8
0		0	24Sep 11 14:50:40	58.4	66.4	65.4
0		0	24Sep 11 14:50:45	62.2	68.2	69.2
0		0	24Sep 11 14:50:50	55.3	59.3	62.3
0		0	24Sep 11 14:50:55	56.6	64.2	63.5
0		0	24Sep 11 14:51:00	54.1	56.3	61.1
0		0	24Sep 11 14:51:05	51.3	54.9	58.3
0		0	24Sep 11 14:51:10	53.1	57.4	60.0
0		0	24Sep 11 14:51:15	52.0	54.7	59.0
0		0	24Sep 11 14:51:20	50.8	53.0	57.8
0		0	24Sep 11 14:51:25	51.0	52.4	58.0
0		0	24Sep 11 14:51:30	51.8	53.7	58.8
0		0	24Sep 11 14:51:35	52.2	56.2	59.2
0		0	24Sep 11 14:51:40	51.3	54.3	58.3
0		0	24Sep 11 14:51:45	50.4	52.7	57.4
0		0	24Sep 11 14:51:50	50.7	53.0	57.6
0		0	24Sep 11 14:51:55	54.6	58.7	61.6
0		0	24Sep 11 14:52:00	55.3	58.4	62.3
0		0	24Sep 11 14:52:05	53.1	55.3	60.1
0		0	24Sep 11 14:52:10	52.7	56.3	59.7
0		0	24Sep 11 14:52:15	52.6	55.0	59.5
0		0	24Sep 11 14:52:20	51.4	57.9	58.4
0		0	24Sep 11 14:52:25	49.9	52.2	56.9
0		0	24Sep 11 14:52:30	50.5	53.7	57.5
0		0	24Sep 11 14:52:35	50.9	54.7	57.9
0		0	24Sep 11 14:52:40	51.2	53.2	58.2
0		0	24Sep 11 14:52:45	51.1	53.7	58.1
0		0	24Sep 11 14:52:50	53.1	57.4	60.1
0		0	24Sep 11 14:52:55	53.5	56.6	60.5
0		0	24Sep 11 14:53:00	51.8	54.0	58.8
0		0	24Sep 11 14:53:05	53.3	57.8	60.3
0		0	24Sep 11 14:53:10	52.1	54.9	59.1
0		0	24Sep 11 14:53:15	51.2	52.8	58.2
0		0	24Sep 11 14:53:20	50.7	52.4	57.6
0		0	24Sep 11 14:53:25	51.9	58.4	58.9
0		0	24Sep 11 14:53:30	54.5	58.7	61.5
0		0	24Sep 11 14:53:35	53.3	57.7	60.3
0		0	24Sep 11 14:53:40	51.0	54.7	58.0
0		0	24Sep 11 14:53:45	54.4	59.8	61.3
0		0	24Sep 11 14:53:50	51.4	53.8	58.4
0		0	24Sep 11 14:53:55	51.3	53.4	58.3
0		0	24Sep 11 14:54:00	53.0	54.0	60.0

Stop Key

C:\NOISE\LARDAV\SLMUTIL\24SEP_11.bin Interval Data

Site Location	Meas Number	Date	Time	Duration	Leq	SEL	Lmax	Lmin	Peak	Uwpk
Measurement 13										
0	0	24Sep 11	12:37:00	59.7	45.8	63.5	54.2	43.2	72.8	0.0
0	0	24Sep 11	12:38:00	60.0	46.0	63.8	49.4	43.8	64.2	0.0
0	0	24Sep 11	12:39:00	60.0	45.5	63.3	50.4	43.7	61.9	0.0
0	0	24Sep 11	12:40:00	60.0	44.6	62.4	47.2	43.2	59.0	0.0
0	0	24Sep 11	12:41:00	60.0	59.4	77.2	73.5	42.7	83.8	87.7
0	0	24Sep 11	12:42:00	60.0	53.8	71.6	69.8	45.9	82.3	87.7
0	0	24Sep 11	12:43:00	60.0	56.1	73.9	74.7	45.4	87.8	87.7
0	0	24Sep 11	12:44:00	60.0	61.6	79.4	73.2	44.8	84.8	87.7
0	0	24Sep 11	12:45:00	60.0	65.6	83.4	78.3	44.7	90.0	93.7
0	0	24Sep 11	12:46:00	60.0	63.5	81.3	76.1	45.7	87.6	91.2
0	0	24Sep 11	12:47:00	60.0	49.6	67.4	63.9	46.0	80.4	87.7
0	0	24Sep 11	12:48:00	60.0	55.8	73.6	67.2	45.9	79.6	0.0
0	0	24Sep 11	12:49:00	60.0	50.3	68.1	56.1	45.4	80.7	91.2
0	0	24Sep 11	12:50:00	60.0	63.7	81.4	73.9	45.7	86.1	89.6
0	0	24Sep 11	12:51:00	60.0	60.2	78.0	73.2	45.6	84.3	87.7
0	0	24Sep 11	12:52:00	0.6	48.0	45.5	48.5	47.4	63.1	0.0
Measurement 14										
0	0	24Sep 11	13:07:00	59.7	50.1	67.9	53.7	47.4	73.1	0.0
0	0	24Sep 11	13:08:00	60.0	48.4	66.2	53.0	46.8	75.9	87.7
0	0	24Sep 11	13:09:00	60.0	48.7	66.4	54.2	46.6	68.9	0.0
0	0	24Sep 11	13:10:00	60.0	48.3	66.0	53.3	46.0	74.8	87.7
0	0	24Sep 11	13:11:00	60.0	55.1	72.9	67.9	46.1	83.0	85.2
0	0	24Sep 11	13:12:00	60.0	55.2	73.0	69.6	46.6	81.6	0.0
0	0	24Sep 11	13:13:00	60.0	50.0	67.8	56.7	46.7	67.9	0.0
0	0	24Sep 11	13:14:00	60.0	48.4	66.2	57.6	46.2	75.8	0.0
0	0	24Sep 11	13:15:00	60.0	56.8	74.6	69.2	48.0	80.1	85.2
0	0	24Sep 11	13:16:00	60.0	51.8	69.5	68.2	47.6	80.0	91.2
0	0	24Sep 11	13:17:00	60.0	49.1	66.8	54.2	46.4	73.9	89.6
0	0	24Sep 11	13:18:00	60.0	47.9	65.7	50.3	46.4	67.3	0.0
0	0	24Sep 11	13:19:00	60.0	48.1	65.9	55.3	46.1	75.1	85.2
0	0	24Sep 11	13:20:00	60.0	48.2	66.0	53.1	46.3	79.8	0.0
0	0	24Sep 11	13:21:00	60.0	49.1	66.9	59.1	46.5	71.8	0.0
0	0	24Sep 11	13:22:00	0.6	50.0	47.5	50.5	49.5	64.8	0.0
Measurement 15										
0	0	24Sep 11	13:37:00	59.6	55.3	73.0	70.8	48.7	79.8	0.0
0	0	24Sep 11	13:38:00	60.0	54.5	72.2	66.7	48.7	76.4	0.0
0	0	24Sep 11	13:39:00	60.0	52.0	69.8	61.7	48.6	72.6	0.0
0	0	24Sep 11	13:40:00	60.0	54.7	72.5	65.2	49.3	81.1	0.0
0	0	24Sep 11	13:41:00	60.0	54.8	72.6	68.0	48.5	79.8	0.0
0	0	24Sep 11	13:42:00	60.0	52.3	70.0	61.3	47.7	72.8	0.0
0	0	24Sep 11	13:43:00	60.0	57.2	75.0	77.0	47.8	84.9	0.0
0	0	24Sep 11	13:44:00	60.0	58.5	76.3	78.0	49.3	87.9	85.2
0	0	24Sep 11	13:45:00	60.0	52.2	69.9	59.7	48.2	75.1	0.0
0	0	24Sep 11	13:46:00	60.0	53.2	71.0	61.8	49.0	74.9	0.0
0	0	24Sep 11	13:47:00	60.0	56.9	74.7	65.6	49.0	86.6	89.6
0	0	24Sep 11	13:48:00	60.0	50.2	68.0	55.9	47.7	72.0	0.0
0	0	24Sep 11	13:49:00	60.0	52.2	70.0	62.7	47.4	74.4	0.0
0	0	24Sep 11	13:50:00	60.0	53.4	71.1	65.5	48.1	81.7	0.0
0	0	24Sep 11	13:51:00	60.0	54.6	72.3	70.7	47.6	80.8	0.0
0	0	24Sep 11	13:52:00	1.6	52.6	54.7	56.7	48.9	70.9	0.0
Measurement 16										
0	0	24Sep 11	13:58:00	59.6	58.0	75.8	70.8	51.9	81.3	0.0
0	0	24Sep 11	13:59:00	60.0	58.7	76.5	73.4	52.6	84.6	85.2
0	0	24Sep 11	14:00:00	60.0	56.9	74.6	62.8	52.7	84.9	89.6
0	0	24Sep 11	14:01:00	60.0	62.6	80.4	72.9	51.8	84.8	85.2
0	0	24Sep 11	14:02:00	60.0	59.2	76.9	69.8	52.1	85.1	0.0
0	0	24Sep 11	14:03:00	60.0	56.7	74.4	63.2	51.5	80.9	0.0
0	0	24Sep 11	14:04:00	60.0	56.8	74.6	70.9	51.2	82.4	87.7
0	0	24Sep 11	14:05:00	60.0	59.6	77.4	75.5	51.5	90.1	87.7
0	0	24Sep 11	14:06:00	60.0	58.0	75.8	68.6	52.5	80.7	0.0
0	0	24Sep 11	14:07:00	60.0	58.6	76.4	66.8	52.5	88.9	87.7
0	0	24Sep 11	14:08:00	60.0	57.8	75.6	68.1	52.6	81.2	87.7
0	0	24Sep 11	14:09:00	60.0	56.8	74.6	69.6	52.6	82.0	0.0
0	0	24Sep 11	14:10:00	60.0	59.4	77.2	74.4	53.0	87.0	87.7
0	0	24Sep 11	14:11:00	60.0	59.0	76.8	72.3	53.5	83.6	93.7
0	0	24Sep 11	14:12:00	60.0	58.1	75.9	65.9	53.5	83.4	86.5
0	0	24Sep 11	14:13:00	0.4	58.6	54.4	59.0	58.2	73.5	0.0
Measurement 17										
0	0	24Sep 11	14:21:00	59.3	61.1	78.8	71.2	52.8	83.3	87.7
0	0	24Sep 11	14:22:00	60.0	62.6	80.3	69.8	51.8	84.5	89.6
0	0	24Sep 11	14:23:00	60.0	60.4	78.2	68.0	52.3	83.4	89.6
0	0	24Sep 11	14:24:00	60.0	62.3	80.0	67.8	53.8	83.7	89.6
0	0	24Sep 11	14:25:00	60.0	61.0	78.8	67.5	54.9	93.8	92.5
0	0	24Sep 11	14:26:00	60.0	58.3	76.1	64.9	51.7	84.1	89.6
0	0	24Sep 11	14:27:00	60.0	60.5	78.3	73.7	51.6	99.9	100.8

0	0	24Sep 11 14:28:00	60.0	60.3	78.1	67.3	52.3	85.2	87.7
0	0	24Sep 11 14:29:00	60.0	63.1	80.9	74.2	52.0	90.0	92.5
0	0	24Sep 11 14:30:00	60.0	61.0	78.8	66.8	51.8	81.0	89.6
0	0	24Sep 11 14:31:00	60.0	63.3	81.1	76.0	50.4	92.6	93.7
0	0	24Sep 11 14:32:00	60.0	59.4	77.2	64.7	54.4	81.4	91.2
0	0	24Sep 11 14:33:00	60.0	60.1	77.8	70.7	49.9	82.0	85.2
0	0	24Sep 11 14:34:00	60.0	61.2	78.9	76.3	50.2	88.8	89.6
0	0	24Sep 11 14:35:00	60.0	61.1	78.9	75.0	51.7	87.0	87.7
0	0	24Sep 11 14:36:00	0.4	52.8	48.5	53.1	52.3	67.6	0.0
Measurement 18									
0	0	24Sep 11 14:39:00	59.6	49.6	67.4	53.8	48.2	66.0	0.0
0	0	24Sep 11 14:40:00	60.0	50.1	67.9	58.6	48.2	74.5	0.0
0	0	24Sep 11 14:41:00	60.0	55.3	73.0	63.5	48.9	83.9	0.0
0	0	24Sep 11 14:42:00	60.0	50.6	68.4	54.9	48.2	79.1	0.0
0	0	24Sep 11 14:43:00	60.0	56.2	74.0	67.3	49.2	78.9	87.7
0	0	24Sep 11 14:44:00	60.0	53.7	71.5	61.5	49.0	78.6	85.2
0	0	24Sep 11 14:45:00	60.0	55.1	72.8	66.6	49.0	80.7	0.0
0	0	24Sep 11 14:46:00	60.0	56.5	74.3	68.4	48.8	78.7	0.0
0	0	24Sep 11 14:47:00	60.0	59.2	77.0	71.3	48.5	80.9	87.7
0	0	24Sep 11 14:48:00	60.0	53.4	71.2	68.0	48.9	79.4	87.7
0	0	24Sep 11 14:49:00	60.0	55.6	73.4	70.8	48.9	88.9	89.6
0	0	24Sep 11 14:50:00	60.0	58.1	75.9	68.2	49.2	79.7	0.0
0	0	24Sep 11 14:51:00	60.0	52.1	69.9	58.7	49.3	79.7	0.0
0	0	24Sep 11 14:52:00	60.0	52.4	70.2	58.4	49.1	70.4	0.0
0	0	24Sep 11 14:53:00	60.0	52.4	70.2	59.8	49.3	81.4	0.0
0	0	24Sep 11 14:54:00	0.6	52.6	50.5	54.0	51.4	71.7	0.0

ATTACHMENT 2

TNM Input/Output—International Cottages

RECON
Jessica Fleming

5 April 2012
TNM 2.5

INPUT: ROADWAYS
PROJECT/CONTRACT: 6095
RUN: 6095 Balboa Park - Cottages

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with the approval of FHWA

Roadway		Points										
Name	Width	Name	No.	Coordinates (pavement)			Flow Control			Segment		
				X	Y	Z	Control Device	Speed Constraint	Percent Vehicles Affected	Pvmt Type	On Struct?	
	ft			ft	ft	ft		mph	%			
Pan American Place	18.0	1	1	6,284,347.0	1,846,412.0	0.00				Average		
		2	2	6,284,314.5	1,846,377.9	0.00				Average		
		3	3	6,284,284.0	1,846,332.2	0.00				Average		
		4	4	6,284,257.0	1,846,262.5	0.00				Average		
		5	5	6,284,248.5	1,846,208.1	0.00				Average		
		6	6	6,284,239.0	1,846,143.9	0.00				Average		
		7	7	6,284,219.5	1,846,092.8	0.00				Average		
		8	8	6,284,180.5	1,846,072.1	0.00				Average		
		9	9	6,284,127.5	1,846,046.5	0.00				Average		
		10	10	6,284,079.0	1,846,002.0	0.00				Average		
		11	11	6,284,015.5	1,845,923.9	0.00						
Pan American West Road	18.0	1	12	6,284,559.0	1,846,491.0	0.00				Average		
		2	13	6,284,472.0	1,846,473.8	0.00				Average		
		3	14	6,284,347.0	1,846,412.0	0.00				Average		
		4	15	6,284,328.5	1,846,399.1	0.00				Average		
		5	16	6,284,260.5	1,846,357.4	0.00				Average		
		6	17	6,284,170.0	1,846,315.1	0.00				Average		
		7	18	6,284,065.0	1,846,282.0	0.00				Average		
		8	19	6,283,978.5	1,846,245.2	0.00				Average		
		9	20	6,283,913.5	1,846,189.9	0.00				Average		
		10	21	6,283,873.0	1,846,129.8	0.00				Average		
		11	22	6,283,855.0	1,846,080.9	0.00				Average		
		12	23	6,283,853.0	1,846,061.0	0.00				Average		
		13	24	6,284,015.5	1,845,923.9	0.00						

RECON
Jessica Fleming

18 April 2012
TNM 2.5

INPUT: TRAFFIC FOR LAeq1h Volumes
PROJECT/CONTRACT: 6095
RUN: 6095 Balboa Park - Cottages

Roadway Name	Points Name	No.	Segment Autos V veh/hr	Autos S mph	MTrucks V veh/hr	MTrucks S mph	HTrucks V veh/hr	HTrucks S mph	Buses V veh/hr	Buses S mph	Motorcycles V veh/hr	Motorcycles S mph
Pan American Place	1	1	209	15	1	15			6	15	3	15
	2	2	209	15	1	15			6	15	3	15
	3	3	209	15	1	15			6	15	3	15
	4	4	209	15	1	15			6	15	3	15
	5	5	209	15	1	15			6	15	3	15
	6	6	209	15	1	15			6	15	3	15
	7	7	209	15	1	15			6	15	3	15
	8	8	209	15	1	15			6	15	3	15
	9	9	209	15	1	15			6	15	3	15
	10	10	209	15	1	15			6	15	3	15
	11	11										
Pan American West Road	1	12	571	15	2	15			17	15	9	15
	2	13	571	15	2	15			17	15	9	15
	3	14	361	15	2	15			11	15	6	15
	4	15	361	15	2	15			11	15	6	15
	5	16	361	15	2	15			11	15	6	15
	6	17	361	15	2	15			11	15	6	15
	7	18	361	15	2	15			11	15	6	15
	8	19	361	15	2	15			11	15	6	15
	9	20	361	15	2	15			11	15	6	15
	10	21	361	15	2	15			11	15	6	15
	11	22	361	15	2	15			11	15	6	15

	12	23	361	15	2	15			11	15	6	15
	13	24										

RECON
Jessica Fleming

5 April 2012
TNM 2.5

INPUT: RECEIVERS
PROJECT/CONTRACT: 6095
RUN: 6095 Balboa Park - Cottages

Receiver Name	No.	#DUs	Coordinates (ground) X	Y	Z	Height above Ground	Input Sound Levels and Criteria Existing LAeq1h	Impact Criteria LAeq1h	Sub'l	NR Goal	Active in Calc.
			ft	ft	ft	ft	dBA	dBA	dB	dB	
1	1	1	6,284,378.0	1,846,362.2	0.00	5.00	0.00	66	10.0	8.0	Y
2	2	1	6,284,411.0	1,846,294.5	0.00	5.00	0.00	66	10.0	8.0	Y
3	3	1	6,284,371.0	1,846,254.6	0.00	5.00	0.00	66	10.0	8.0	Y
4	4	1	6,284,312.0	1,846,256.4	0.00	5.00	0.00	66	10.0	8.0	Y
5	5	1	6,284,299.5	1,846,183.5	0.00	5.00	0.00	66	10.0	8.0	Y
6	6	1	6,284,351.5	1,846,204.2	0.00	5.00	0.00	66	10.0	8.0	Y
7	7	1	6,284,244.0	1,846,322.4	0.00	5.00	0.00	66	10.0	8.0	Y
8	8	1	6,284,176.5	1,846,291.1	0.00	5.00	0.00	66	10.0	8.0	Y
9	9	1	6,284,117.5	1,846,272.0	0.00	5.00	0.00	66	10.0	8.0	Y
10	10	1	6,284,041.0	1,846,242.5	0.00	5.00	0.00	66	10.0	8.0	Y
11	11	1	6,284,011.5	1,846,192.1	0.00	5.00	0.00	66	10.0	8.0	Y
12	12	1	6,284,032.5	1,846,148.8	0.00	5.00	0.00	66	10.0	8.0	Y
13	13	1	6,284,088.0	1,846,119.2	0.00	5.00	0.00	66	10.0	8.0	Y
14	14	1	6,284,147.0	1,846,112.2	0.00	5.00	0.00	66	10.0	8.0	Y
15	15	1	6,284,197.0	1,846,138.2	0.00	5.00	0.00	66	10.0	8.0	Y
16	16	1	6,284,207.5	1,846,197.4	0.00	5.00	0.00	66	10.0	8.0	Y
17	17	1	6,284,221.5	1,846,239.0	0.00	5.00	0.00	66	10.0	8.0	Y
18	18	1	6,283,860.5	1,846,173.0	0.00	5.00	0.00	66	10.0	8.0	Y
19	19	1	6,283,853.0	1,845,956.0	0.00	5.00	0.00	66	10.0	8.0	Y
20	20	1	6,283,827.5	1,845,844.9	0.00	5.00	0.00	66	10.0	8.0	Y

RECON
Jessica Fleming

18 April 2012
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 6095
RUN: 6095 Balboa Park - Cottages
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 63 deg F, 69% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
1	1	1	0.0	56.3	66	56.3	10	----	56.3	0.0	8	-8.0
2	2	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
3	3	1	0.0	52.7	66	52.7	10	----	52.7	0.0	8	-8.0
4	4	1	0.0	54.8	66	54.8	10	----	54.8	0.0	8	-8.0
5	5	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
6	6	1	0.0	52.2	66	52.2	10	----	52.2	0.0	8	-8.0
7	7	1	0.0	59.3	66	59.3	10	----	59.3	0.0	8	-8.0
8	8	1	0.0	58.4	66	58.4	10	----	58.4	0.0	8	-8.0
9	9	1	0.0	58.3	66	58.3	10	----	58.3	0.0	8	-8.0
10	10	1	0.0	57.9	66	57.9	10	----	57.9	0.0	8	-8.0
11	11	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
12	12	1	0.0	53.8	66	53.8	10	----	53.8	0.0	8	-8.0
13	13	1	0.0	53.5	66	53.5	10	----	53.5	0.0	8	-8.0
14	14	1	0.0	54.3	66	54.3	10	----	54.3	0.0	8	-8.0
15	15	1	0.0	55.2	66	55.2	10	----	55.2	0.0	8	-8.0
16	16	1	0.0	55.4	66	55.4	10	----	55.4	0.0	8	-8.0
17	17	1	0.0	56.4	66	56.4	10	----	56.4	0.0	8	-8.0
18	18	1	0.0	56.5	66	56.5	10	----	56.5	0.0	8	-8.0
19	19	1	0.0	52.8	66	52.8	10	----	52.8	0.0	8	-8.0
20	20	1	0.0	48.4	66	48.4	10	----	48.4	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB

All Selected	20	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

APPENDIX L

Public Service Letters

THE CITY OF SAN DIEGO

RECON EIR Responses to Balboa Park Plaza de Panama

Plans for new fire facilities in the vicinity of the project site

The proposed fire station 2, Little Italy Bayside located at the SE corner of Cedar St. & Pacific Coast Hwy (CIP overseen by CCDC in coordination with the City) is scheduled to begin construction in the Fall or Winter of this year 2011. This could address the potential impacts to public facilities for this area.

Incidents per year for each of the engines/trucks that respond to incidents at the project site

FY 2009

Engine 01	2744
Engine 03	1879
Engine 05	3073
Engine 201	2341
Truck 01	1083
Truck 11	700

Standards for determining firefighter/resident ration and response time goals

The National Fire Protection Association 1710 Standard for the Organization and Deployment of Fire Suppression Operations is used as the "best practice" for determining appropriate initial response of fire suppression resources. This standard requires the initial response (four firefighters) within five minutes, 90% of the time and a full effective fire force (15 firefighters) within nine minutes, 90% of the time,

Response times into this project location meet the National Standard.

Existing number of firefighters per 1,000 residents

The San Diego Fire-Rescue Department's goal is one firefighter per 1,000 citizens. It is currently at .20 firefighter per 1,000 residents for Station #3 and .54 firefighter per 1,000 residents for Station #1.

DIVERSITY

Fire Prevention Bureau
Fire-Rescue Department • 1010 Second Avenue, Suite 300 • San Diego, CA 92101
Tel (619) 533-4400 Fax (619) 544-6806

Existing average response times (please indicate year for statistics).

Response times to the intersection of Pan American West Rd/Pan American East Rd for the Balboa Park Plaza de Panama Draft EIR were calculated using San Diego Fire-Rescue's 911 Computer Aided Dispatch System (CAD) point to point routing. This application uses the road network generating the closest path from the fire station address to the requested location.

The below times include chute:

Engine
E3 from Fire Station 3 at 725 W. Kalmia = 5.5 minutes
E1 from Fire Station 1 at 1222 1st Av. = 5.6 minutes
E201 from Fire Station 1 at 1222 1st Av. = 5.6 minutes
E5 from Fire Station at 3902 9th Av. = 6.0 minutes
Truck
T1 from Fire Station 1 at 1222 1st Av. = 5.6 minutes
T11 from Fire Station 11 at 945 25th St. = 6.1 minutes
Battalion Chief
B1 from Fire Station 1 1222 1st Av. = 5.6 minutes

The nearest emergency medical unit to the project site and equipment (e.g. ambulance) and response time

All engines and trucks are full Advanced Life Support (ALS) units and are equipped and capable of managing medical emergencies. The response times for the nearest emergency medical units to the project site are the response times.

Would the project result in a need for additional department staffing facilities (stations), or equipment (engines or ambulances)?

None. See answer to question to request #3

Would the changes to circulation, detailed above, result in an increase in response times or present a constraint to fire and/or emergency medical response to the project area?

None

Jose A. Lopez
Assistant Fire Marshal San Diego Fire-Rescue Department
1010 Second Avenue Suite 300 MS 603
(HQ) 619-533-4388 (NC) 619-446-5456 (FAX) 619-5446806
jflopez@sandiego.gov

THE CITY OF SAN DIEGO

IN REPLYING
PLEASE GIVE
OUR REF. NO.

1914131211

May 6, 2011

Ms. Michelle Sokolowski
1222 First Avenue, MS 302
San Diego, CA 92101

Dear Ms. Sokolowski:

Listed below are the Police Department's updated findings for the Balboa Park Plaza de Panama Environmental Impact Report Number 233958

Area Station

Police service for the Balboa Park Plaza de Panama Project will be provided by officers from Central Division, on beat 522, located at 2501 Imperial, San Diego, CA 92101. Central Division provides police services to the following communities: Barrio Logan, Logan Heights, Sherman Heights, Grant Hill, Stockton, Golden Hill, South Park, East Village, Marina, Gaslamp, Core-Columbia, Horton Plaza, Cortez, Harborview, Little Italy, Park West, and Balboa Park.

Current Staffing / Officer Availability

Central Division is currently staffed with 147 sworn personnel and two civilian personnel. The current patrol strength at Central Division is 140 uniformed patrol officers. Officers work ten-hour shifts, four days a week. Staffing is comprised of three shifts which operate from 6:00 a.m. - 4:00 p.m. (First Watch), 2:00 p.m.- Midnight (Second Watch) and from 9:00 p.m.- 7:00 a.m. (Third Watch). Using the department's minimum staffing guidelines, Central Division currently deploys a minimum of 16 patrol officers on First Watch, 19 officers on weekdays and Second Watch and 13 officers on Third Watch.

The San Diego Police Department does not staff individual stations based on ratios of sworn officers per 1,000 population ratio. The goal citywide is to maintain 1.45 officers per 1,000 population ratio.

Current Response Times

The police department currently utilizes a five level priority calls dispatch system, which includes priority E (Emergency), one, two, three and four. The calls are prioritized by the phone dispatcher and routed to the radio operator for dispatch to the field units. The priority system is designed as a guide, allowing the phone dispatcher and the radio dispatcher discretion to raise or lower the call priority as necessary based on the information received. Priority "E" and priority one calls involve serious crimes in progress or those with a potential for injury. Priority Two calls include vandalism, disturbances and property crimes. Priority Three includes calls after a crime has been committed, such as cold burglaries and loud music. Priority Four include calls include parking complaints or lost and found reports.

The Project is currently located in the City of San Diego; within the boundaries of police beat 531. The 2010 average response times for Beat 531 are 5.28 minutes for emergency calls, 10.40 minutes for priority one calls, 25.79 minutes for priority two calls, 59.54 minutes for priority three calls and 62.45 minutes for priority four calls.

The department's response time goals are 7 minutes for emergency calls, 14 minutes for priority one calls, 27 minutes for priority two calls, 70 minutes for priority three calls and 70 minutes for priority four calls. The citywide average response times, for the same period, were 6.3 minutes for emergency calls, 11.1 minutes for priority one calls, 22.8 minutes for priority two calls, 62.0 minutes for priority three calls and 67.8 minutes for priority four calls during that same time period. The department strives to maintain the response time goals as one of various other measures used to assess the level of service to the community.

Potential Mitigation Measures to Response Time

The department is currently reaching its targeted staffing ratio of 1.45 officers per 1,000 residents based on 2010 estimate residential population of 1,376,173. The ratio is calculated using the department's total to take into account the support and investigative positions within the department. This ratio does not include the significant population increase resulting from employees who commute to work in the community or those visiting.

Long-Term (Community Plan Build-Out) Post-Project Response Time

There are no current plans for additional police sub-stations in the immediate area. Police response times in this community will continue to increase with the build-out of community plans and the increase of traffic generated by new growth. A Crime Prevention through Environmental Design Review (CPTED) is recommended by the police department to address general security concerns

KEN HUBBS
Police Lieutenant

KH/dw

cc: Robert Kanaski, Assistant Chief, Special Operations
Mark Jones, Captain, Central Division