DRAINAGE STUDY
For:

Towne Centre View

PTS#: 624751

APN 343-121-35, 36, 37, 42, 43
9855, 9865, 9875, 9885 Towne Centre Drive
San Diego, CA 92121

Prepared By:

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Prepared for:
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VICINITY MAP
NOT TO SCALE

1. INTRODUCTION

1.1 Project Description

The project site is located at the north end of Towne Centre Drive in San Diego, California. The site is located east of the I-5, west of I-805, south of the merge of I-5 and I-805 and north of La Jolla Village Drive.

The Project involves redevelopment of the Project with a five-building campus (Buildings A through E), which would include scientific R&D, laboratories, technology, and office uses, with supporting parking structures and surface parking areas, recreational facilities, amenities, and landscaping. Offsite improvements consist of three driveway entrances and a non-contiguous sidewalk along the project frontage at Towne Centre Drive.

1.2 Existing Conditions

The total property area consists of 33.52 acres. The property is located on a ridge surrounded by steep canyons and Towne Centre Drive to the south. The western portion of the project site is currently rough graded for a previous project, Summit Point Plaza, PTS#6109. Full build out of Summit Pointe Plaza was not completed and the project ended to include only rough grading of the site and drainage infrastructure. The eastern portion of the site consists of an existing office complex.

In the existing condition the western portion of the site, per approved Summit Pointe Plaza plans PTS#6109, is rough graded with building pad sites, retaining walls, large sedimentation basins and drainage infrastructure. Refer to Appendix 4 for the approved Summit Pointe Plaza grading plans. Drainage infrastructure was installed for each of the five drainage areas of the previously approved project. For the locations of the existing drainage basins and discharge points refer to the Existing Conditions Hydrology Exhibit located in Appendix 1. Drainage areas were listed as areas A1, B1, B3, C1 and C3. The existing drainage infrastructure includes sedimentation basins, outlet structures from the sedimentation basins including perforated riser pipes or stand pipes, brow ditch conveyance channels and level spreaders to dissipate concentrated flow and minimize the erosion potential at discharge locations.

The hydrology report associated with the approved grading plans was requested from the City of San Diego and previous engineer, however, the report is not available. The approved plans have a table of previously approved hydrology characteristics for the five drainage basins, including 100-year flow rates. Table 1 below summarizes the hydrologic information of the previously approved plans.

Table 1 - EXISTING CONDITION HYDROLOGY SUMMARY (WEST)

Control Point	Basin	Area (ac)	Q100 (cfs)
1	(A1)	2.80	12.10
2	(B1)	1.95	10.10
3	(B3)	1.04	5.40
4	(C1)	1.21	6.30
5	(C3)	2.51	12.60

The eastern portion of the site is developed and consists of office buildings, parking areas and landscape. Hydrologic calculations were performed for the eastern portion of the site. Refer to Appendix 2 for the calculations. Table 2 below summarizes the hydrologic calculations for the eastern portion of the site.

Table 2 - EXISTING CONDITION HYDROLOGY SUMMARY (EAST)			
Control Point	Basin	Area (ac)	Q100 (cfs)
1	(A2)	1.16	3.54
6	(D2)	6.75	19.72
7	(D1)	1.29	4.60

1.3 Proposed Conditions

The proposed project consists of the construction of new science, research and development, laboratory, technology and office buildings, including an underground parking garage, an above ground parking garage, a surface parking area, drive aisles, sports fields, and landscaped areas. Offsite improvements consist of three driveway entrances and a non-contiguous sidewalk along the project frontage at Towne Centre Drive.

In the proposed condition, the site consists of 7 drainage basins:

Drainage Basin 1 is located in the southwest portion of the site and includes DMA A1, A2 and A3. Storm water runoff in DMA A1 and A2 will be collected in proposed storm drain and conveyed to underground storage vaults and subsequent Modular Wetland Systems. Runoff from impervious areas in DMA A3 will be directed to landscape areas for dispersion.

Drainage Basin 2 is located along the western boundary of the site and includes DMA B1. Storm water runoff from impervious areas in DMA B1 will be directed to landscape areas for dispersion.

Drainage Basin 3 is located along the western boundary of the site and includes DMA B2. Storm water runoff from impervious areas in DMA B2 will be directed to landscape areas for dispersion.

Drainage Basin 4 is located in the northwest corner of the site and includes DMA C1. Storm water runoff from impervious areas in DMA C1 will be directed to landscape areas for dispersion.

Drainage Basin 5 is located in the northwest portion of the site and includes DMA C2. Storm water runoff in DMA C2 will be collected in proposed storm drain and conveyed to an underground storage vault and subsequent biofiltration basin.

Drainage Basin 6 is located in the central portion of the site and includes DMA D1 and D2. Storm water runoff in DMA D1 will be collected in proposed storm drain and conveyed to an underground storage vault and subsequent Modular Wetland System. Runoff in DMA D2 will be collected in proposed storm drain and conveyed to an underground storage vault and subsequent biofiltration basin.

Drainage Basin 7 is located in the eastern portion of the site and includes DMA D3 and D4. Storm water runoff from impervious areas in DMA D3 will be directed to landscape areas for dispersion. Storm water runoff in DMA D4 will be collected in proposed storm drain and conveyed to underground storage vaults and subsequent Modular Wetland Systems.

The proposed underground storage vaults provide mitigation of the 100-year storm event peak discharge. For the locations of the proposed drainage basins and discharge points refer to the Proposed Condition Hydrology Exhibit located in Appendix 1.

The table below provides a summary of the hydrologic information for the proposed conditions.

Table 3 – PROPOSED CONDITION HYDROLOGY SUMMARY			
Control Point	Basin	Area (ac)	Q100 (cfs)
1	A1	2.42	7.99
	A2	1.35	3.16
	A3	1.88	4.30
2	B1	0.85	1.87
3	B2	0.59	1.30
4	C1	1.31	2.88
5	C2	4.13	9.99
6	D1	3.38	7.58
	D2	3.40	9.42
7	D3	0.51	1.12
	D4a	1.14	2.86
	D4b	0.45	1.35

2. METHODOLOGY

Pursuant to the 2017 City of San Diego Drainage Design Manual, the Rational Method is recommended for analyzing the runoff response from drainage areas less than 0.5 square mile, therefore the Rational Method was used to analyze this project's hydrologic characteristics.

2.1 Rational Method

Runoff was calculated for the 100-year, 6-hour storm event using the Rational Method which is calculated using the following equation:

$Q = C \times I \times A$ Equation A-1 of 2017 City of SD Drainage Design Manual

Where:

Q = Flow rate in cubic feet per second (cfs)
C = Runoff coefficient (Table A-1 of City of SD Drainage Design Manual)
I = Rainfall Intensity in inches per hour (in/hr)
A = Drainage basin area in acres (ac)

2.2 Runoff Coefficient

The runoff coefficients for the project are based on Table A-1 and Footnote 2 from the 2017 City of San Diego Drainage Design Manual.

2.3 Rainfall Intensity

Rainfall intensity was determined using the Rainfall Intensity-Duration-Frequency Curves shown in Section A.1.3 of the 2017 City of San Diego Drainage Design Manual. Based on Figure A-1 and a 5-minute time of concentration, the 100-year intensity is 4.4 inches per hour.

2.4 Detention

The underground storage vaults provide mitigation of the 100-year storm event peak flow rate. The 100-year storm event detention analysis was performed using HydroCAD Stormwater Modeling software. The inflow runoff hydrographs to the vaults were modeled using RatHydro which is a Rational Method Design Storm Hydrograph software that creates a hydrograph using the results of the Rational Method calculations. HydroCAD has the ability to route the 100-year 6-hour storm event inflow hydrograph through the facilities considering dynamic tailwater effects. Based on the facility cross sectional geometry, stage storage and outlet structure data, HydroCAD calculates the detained peak flow rate and detained time to peak. Refer to the plans for details of each facility.

Based on the results of the HydroCAD analysis, mitigation for the 100-year storm event peak flow rate is provided, detaining the peak flow rate in the proposed condition to below the existing condition. Refer to Appendix 3 for the HydroCAD detention detailed output.

2.5 Section 401/404 Water Quality Certification

This project does not have any waters of the United States (e.g., creek, drainage, wetland) on the property and does not require Federal permitting or approval.

3. CALCULATIONS/RESULTS

3.1 Existing and Proposed Peak Flow Comparison

The table below summarizes the 100-year 6-hour peak flow rate calculations for the project.

SUMMARY OF 100-YR STORM EVENT HYDROLOGIC ANALYSIS							
	Existing Condition			Proposed Condition			Proposed Detained Condition
Control Point	Basin	Area (ac)	Q100 (cfs)	Basin	Area (ac)	Q100 (cfs)	Q100 (cfs)
1	A1	2.80	12.10	A1	2.42	7.99	6.19
				A2	1.35	3.16	3.06
	A2	1.16	3.54	A3	1.88	4.30	4.30
2	B1	1.95	10.10	B1	0.85	1.87	1.87
3	B3	1.04	5.40	B2	0.59	1.30	1.30
4	C1	1.21	6.30	C1	1.31	2.88	2.88
5	C3	2.51	12.60	C2	4.13	9.99	0.77
6	D2	6.75	19.72	D1	3.38	7.58	3.64
				D2	3.40	9.42	8.81
7	D1	1.29	4.60	D3	0.51	1.12	1.12
				D4a	1.14	2.86	0.26
				D4b	0.45	1.35	0.10

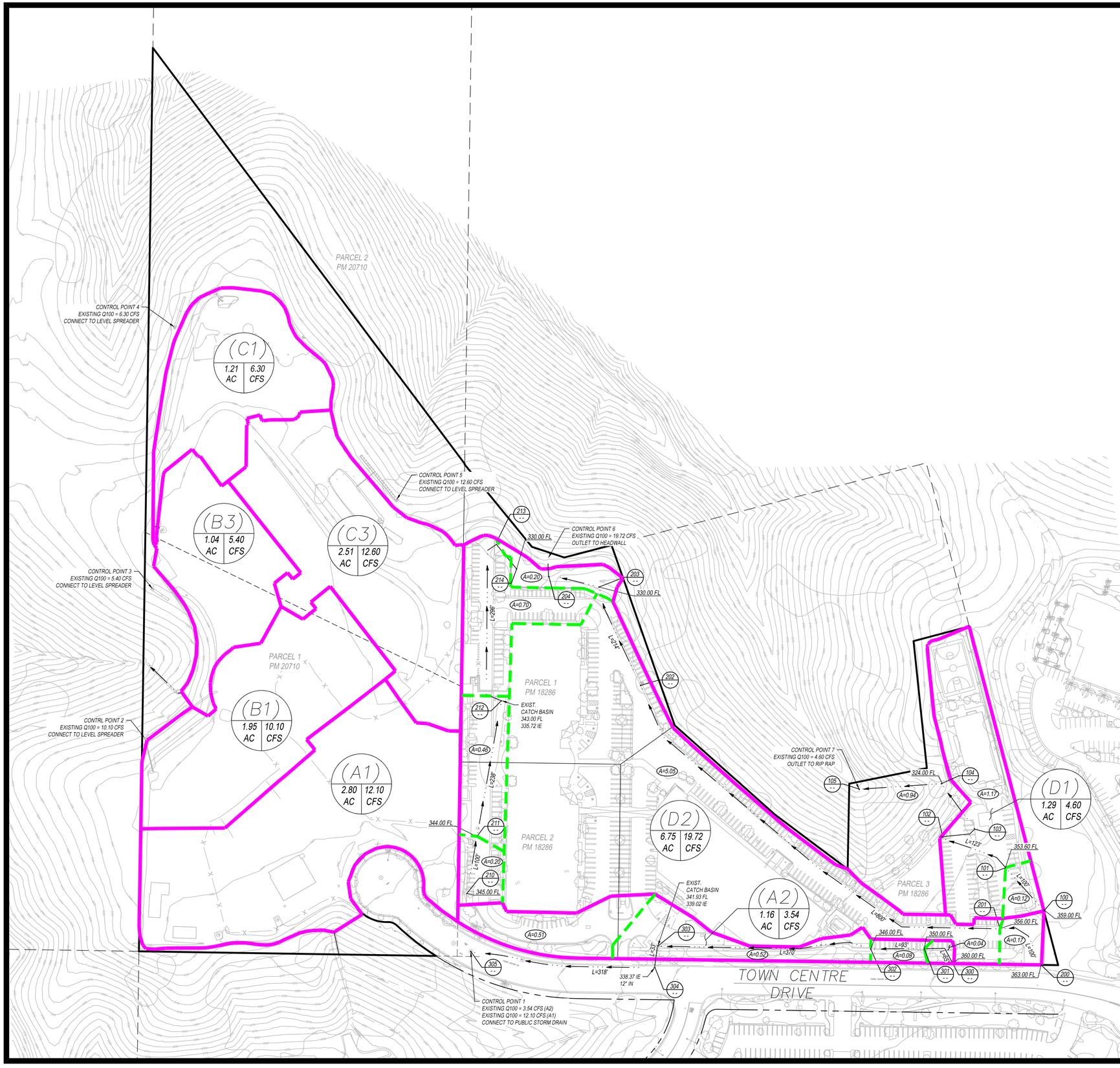
In the proposed detained condition, the 100-year storm event peak discharge rates are lower than the existing flow rates. The project will not have adverse impacts to downstream drainage facilities.

4. CONCLUSION

The proposed project was designed to honor previously approved drainage infrastructure and flow rates and minimize the effects of the development to downstream drainage facilities. Storm water runoff rates will be decreased from existing conditions.

Appendix 1

Existing and Proposed Hydrology Exhibits



LEGEND

DESCRIPTION	SYMBOL
RIGHT-OF-WAY	
PROPERTY LINE	
BASIN BOUNDARY	
BASIN SUBAREA	

BASIN SUMMARY Q100 EXISTING (PRE MITIGATION)

(XX) | X.XX AC | X.XX CFS

HYDROLOGIC SOIL GROUP

HYDROLOGIC SOIL TYPE: C & D*
*FOR THE PURPOSE OF DRAINAGE CALCS, THE ENTIRE SITE WILL BE MODELED WITH TYPE D SOILS

DEPTH TO GROUNDWATER

DEPTH TO GROUNDWATER > 20 FT

PROJECT CHARACTERISTICS

PARCEL AREA:	25.45 AC
EXISTING IMPERVIOUS AREA:	8.12 AC
EXISTING LANDSCAPE AREA:	12.83 AC

SUMMARY OF EXISTING CONDITIONS (WEST)

EXIST. DRAINAGE BASIN	EXIST. DRAINAGE AREA (AC)*	RUNOFF COEFFICIENT, C*	Q100 (CFS)*
(A1)	2.80	0.85	12.10
(B1)	1.95	0.85	10.10
(B3)	1.04	0.85	5.40
(C1)	1.21	0.85	6.30
(C3)	2.51	0.85	12.60

*TABULATED VALUES FROM SUMMIT POINT PLAZA GRADING PLANS, PTS#6109, 32375-6-D, DETENTION FACILITES AND DETAILS

SUMMARY OF EXISTING CONDITIONS (EAST)

EXIST. DRAINAGE BASIN	EXIST. DRAINAGE AREA (AC)	RUNOFF COEFFICIENT, C	Q100 (CFS)
(A2)	1.16	0.85	3.54
(D1)	1.29	0.85	4.60
(D2)	6.75	0.85	19.72

N

80' 40' 0 80' 160' 240'

GRAPHIC SCALE: 1" = 80'

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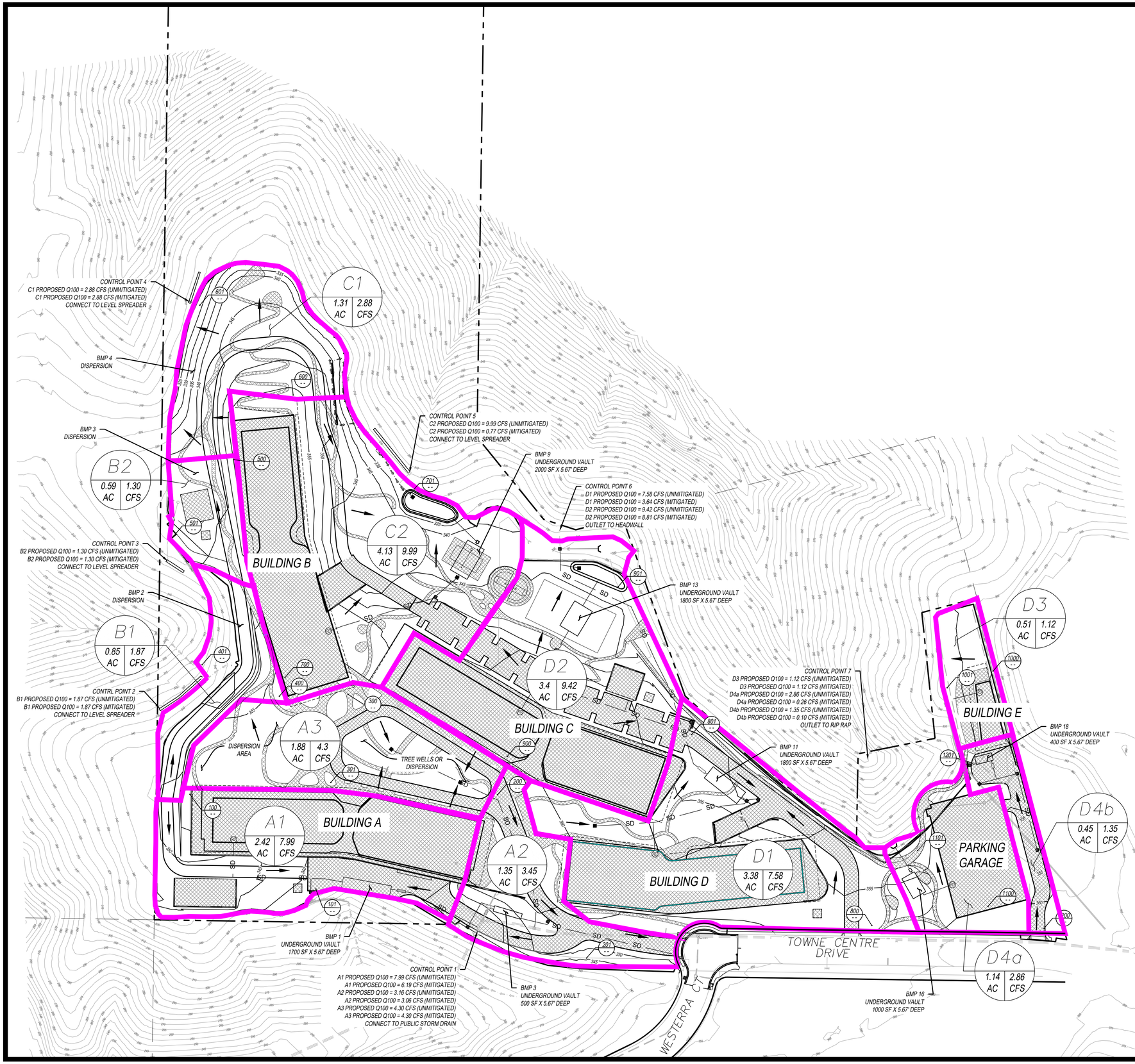
San Diego | Solana Beach | Orange County
Phone 858.259.8212 | www.plsaengineering.com

EXISTING CONDITION DRAINAGE EXHIBIT

TOWNE CENTRE VIEW
TOWN CENTRE DRIVE
SAN DIEGO, CA 92121
PLSA JOB # 3342
SCALE 1"=80'
OCTOBER 2020
SHEET 1 OF 1



LEGEND

DESCRIPTION	SYMBOL
RIGHT-OF-WAY	
PROPERTY LINE	
BASIN BOUNDARY	
PROPOSED IMPERVIOS AREA	
DRAINAGE ARROW	
BASIN SUMMARY Q100 PROPOSED (PRE MITIGATION)	XX / X.XX AC / X.XX CFS

HYDROLOGIC SOIL GROUP

HYDROLOGIC SOIL TYPE: C & D*
*FOR THE PURPOSE OF DRAINAGE CALCS, THE ENTIRE SITE WILL BE MODELED WITH TYPE D SOILS

DEPTH TO GROUNDWATER

DEPTH TO GROUNDWATER > 20 FT

PROJECT CHARACTERISTICS

TOTAL SITE AREA:	33.52 AC
PROPOSED DISTURBED AREA:	20.64 AC
PROPOSED IMPERVIOUS AREA:	10.62 AC
PROPOSED LANDSCAPE AREA:	10.02 AC

SUMMARY OF PROPOSED CONDITIONS

PROP. DRAINAGE BASIN	PROP. DRAINAGE AREA (AC)	Q100 (CFS)	Q100 DETAINED (CFS)
A1	2.42	7.99	6.19
A2	1.35	3.45	3.34
A3	1.88	4.30	4.30
B1	0.85	1.87	1.87
B2	0.59	1.30	1.30
C1	1.31	2.88	2.88
C2	4.13	9.99	0.77
D1	3.38	7.58	3.64
D2	3.40	9.42	8.81
D3	0.51	1.12	1.12
D4a	1.14	2.86	0.26
D4b	0.45	1.35	0.10

80' 40' 0 80' 160' 240'
GRAPHIC SCALE: 1" = 80'

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PROPOSED CONDITION DRAINAGE EXHIBIT

TOWNE CENTRE VIEW
TOWN CENTRE DRIVE
SAN DIEGO, CA 92121
PLSA JOB # 3342
SCALE 1"=80'
JULY, 2022
SHEET 1 OF 1

Appendix 2

Hydrology Support Material and Calculations

Table A-1. Runoff Coefficients for Rational Method

Land Use	Runoff Coefficient (C)
	Soil Type [1]
Residential:	
Single Family	0.55
Multi-Units	0.70
Mobile Homes	0.65
Rural (lots greater than ½ acre)	0.45
Commercial [2]	
80% Impervious	0.85
Industrial [2]	
90% Impervious	0.95

Note:
[1] Type D soil to be used for all areas.
[2] Where actual conditions deviate significantly from the tabulated imperviousness values of 80% or 90%, the values given for coefficient C, may be revised by multiplying 80% or 90% by the ratio of actual imperviousness to the tabulated imperviousness. However, in case shall the final coefficient be less than 0.50. For example: Consider commercial property on D soil.

Actual imperviousness = 50%
Tabulated imperviousness = 80%
Revised C = (50/80) x 0.85 = 0.53

The values in Table A–1 are typical for urban areas. However, if the basin contains rural or agricultural land use, parks, golf courses, or other types of nonurban land use that are expected to be permanent, the appropriate value should be selected based upon the soil and cover and approved by the City.

A.1.3. Rainfall Intensity

The rainfall intensity (I) is the rainfall in inches per hour (in/hr.) for a duration equal to the T_C for a selected storm frequency. Once a particular storm frequency has been selected for design and a T_C calculated for the drainage area, the rainfall intensity can be determined from the Intensity-Duration-Frequency Design Chart (Figure A-1).

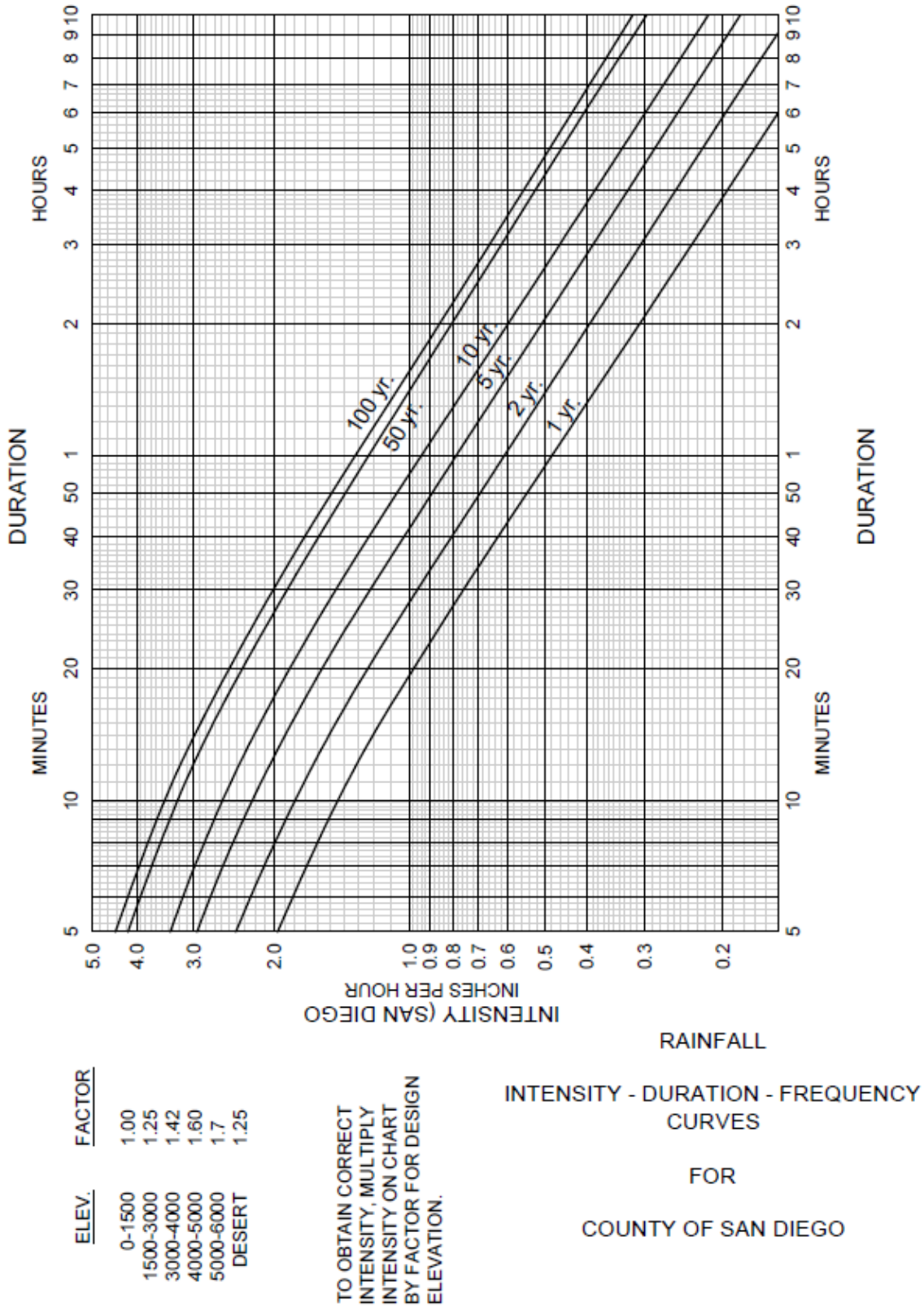

Figure A-1. Intensity-Duration-Frequency Design Chart

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 ************************************************************************

           RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
           Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                        2003,1985,1981 HYDROLOGY MANUAL
         (c) Copyright 1982-2016 Advanced Engineering Software (aes)
             Ver. 23.0 Release Date: 07/01/2016  License ID 1452

                          Analysis prepared by:

                      PASCO LARET SUITER & ASSOCIATES
                        535 NORTH HIGHWAY 101, STE A
                           SOLANA BEACH, CA 92075
                                858-259-8212

 ************************* DESCRIPTION OF STUDY *************************
* 3342   TOWNE CENTRE VIEW                                               *
* EASTERN SITE EXISTING CONDITION                                        *
* 100-YR                                                                 *
 ************************************************************************

  FILE NAME: 3342E100.DAT
  TIME/DATE OF STUDY: 17:12 09/17/2020
------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  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
  SPECIFIED CONSTANT RUNOFF COEFFICIENT = 0.850
  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

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 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 =  22
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
```



```
  S.C.S. CURVE NUMBER (AMC II) =  72
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      0.45
  TOTAL AREA(ACRES) =      0.12   TOTAL RUNOFF(CFS) =      0.45

************************************************************************
  FLOW PROCESS FROM NODE    101.00 TO NODE    102.00 IS CODE =  51
------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    353.60  DOWNSTREAM(FEET) =    347.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   123.00   CHANNEL SLOPE =  0.0537
  CHANNEL BASE(FEET) =   50.00   "Z" FACTOR =  50.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.197
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       2.54
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.92
  AVERAGE FLOW DEPTH(FEET) =   0.03   TRAVEL TIME(MIN.) =   1.07
  Tc(MIN.) =    6.07
  SUBAREA AREA(ACRES) =     1.17       SUBAREA RUNOFF(CFS) =    4.17
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.850
  TOTAL AREA(ACRES) =        1.3         PEAK FLOW RATE(CFS) =       4.60

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.04   FLOW VELOCITY(FEET/SEC.) =   2.52
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    102.00 =     393.00 FEET.

************************************************************************
  FLOW PROCESS FROM NODE    102.00 TO NODE    103.00 IS CODE =  41
------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   339.66  DOWNSTREAM(FEET) =   338.41
  FLOW LENGTH(FEET) =    60.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   9.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.06
  GIVEN PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.60
  PIPE TRAVEL TIME(MIN.) =   0.14    Tc(MIN.) =    6.21
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    103.00 =     453.00 FEET.

************************************************************************
  FLOW PROCESS FROM NODE    103.00 TO NODE    104.00 IS CODE =  41
------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
========================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   338.11  DOWNSTREAM(FEET) =   324.00
  FLOW LENGTH(FEET) =    95.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS   3.8 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  14.15
  GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       4.60
  PIPE TRAVEL TIME(MIN.) =   0.11    Tc(MIN.) =    6.32
  LONGEST FLOWPATH FROM NODE    100.00 TO NODE    104.00 =     548.00 FEET.

************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  22
------------------------------------------------------------------------
```

```
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      0.64
  TOTAL AREA(ACRES) =      0.17   TOTAL RUNOFF(CFS) =      0.64

********************************************************************************
  FLOW PROCESS FROM NODE    201.00 TO NODE    202.00 IS CODE =  51
--------------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    356.00  DOWNSTREAM(FEET) =    340.86
  CHANNEL LENGTH THRU SUBAREA(FEET) =   800.00   CHANNEL SLOPE =  0.0189
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  50.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.564
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       8.37
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.03
  AVERAGE FLOW DEPTH(FEET) =   0.16   TRAVEL TIME(MIN.) =   4.40
  Tc(MIN.) =    9.40
  SUBAREA AREA(ACRES) =     5.05       SUBAREA RUNOFF(CFS) =   15.30
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.850
  TOTAL AREA(ACRES) =        5.2         PEAK FLOW RATE(CFS) =      15.81

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.21   FLOW VELOCITY(FEET/SEC.) =   3.65
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    202.00 =     895.00 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) =   331.83  DOWNSTREAM(FEET) =   330.00
  FLOW LENGTH(FEET) =   214.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  16.2 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   7.01
  GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =      15.81
  PIPE TRAVEL TIME(MIN.) =   0.51    Tc(MIN.) =    9.91
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    203.00 =    1109.00 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE    203.00 TO NODE    204.00 IS CODE =  81
--------------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
================================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.467
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8500
  SUBAREA AREA(ACRES) =    0.20   SUBAREA RUNOFF(CFS) =    0.59
  TOTAL AREA(ACRES) =        5.4   TOTAL RUNOFF(CFS) =      15.97
  TC(MIN.) =    9.91
```



```
********************************************************************************
  FLOW PROCESS FROM NODE    204.00 TO NODE    204.00 IS CODE =  10
--------------------------------------------------------------------------------
  >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
================================================================================

********************************************************************************
  FLOW PROCESS FROM NODE    210.00 TO NODE    211.00 IS CODE =  22
--------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
================================================================================
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      0.75
  TOTAL AREA(ACRES) =      0.20   TOTAL RUNOFF(CFS) =      0.75

********************************************************************************
  FLOW PROCESS FROM NODE    211.00 TO NODE    212.00 IS CODE =  51
--------------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    344.00  DOWNSTREAM(FEET) =    343.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =   238.00   CHANNEL SLOPE =  0.0042
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  50.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.691
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       1.48
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.06
  AVERAGE FLOW DEPTH(FEET) =   0.09   TRAVEL TIME(MIN.) =   3.73
  Tc(MIN.) =    8.73
  SUBAREA AREA(ACRES) =     0.46       SUBAREA RUNOFF(CFS) =    1.44
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.850
  TOTAL AREA(ACRES) =        0.7         PEAK FLOW RATE(CFS) =       2.07

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.11   FLOW VELOCITY(FEET/SEC.) =   1.22
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    212.00 =     452.00 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE    212.00 TO NODE    213.00 IS CODE =  41
--------------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
================================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   335.72  DOWNSTREAM(FEET) =   332.60
  FLOW LENGTH(FEET) =   296.00   MANNING'S N =  0.013
  ASSUME FULL-FLOWING PIPELINE
  PIPE-FLOW VELOCITY(FEET/SEC.) =   3.07
  (PIPE FLOW VELOCITY CORRESPONDING TO NORMAL-DEPTH FLOW
   AT DEPTH = 0.94 * DIAMETER)
  GIVEN PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.07
  PIPE TRAVEL TIME(MIN.) =   1.61    Tc(MIN.) =   10.34
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    213.00 =     748.00 FEET.

********************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    213.00 IS CODE =  81
--------------------------------------------------------------------------------
```

```
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
================================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.413
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8500
  SUBAREA AREA(ACRES) =    0.70   SUBAREA RUNOFF(CFS) =    2.03
  TOTAL AREA(ACRES) =        1.4   TOTAL RUNOFF(CFS) =       3.94
  TC(MIN.) =   10.34

****************************************************************************
  FLOW PROCESS FROM NODE    213.00 TO NODE    214.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   332.60  DOWNSTREAM(FEET) =   330.00
  FLOW LENGTH(FEET) =    55.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   6.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   9.52
  GIVEN PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       3.94
  PIPE TRAVEL TIME(MIN.) =   0.10    Tc(MIN.) =   10.44
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    214.00 =     803.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    214.00 TO NODE    204.00 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        3.94    10.44       3.402        1.36
  LONGEST FLOWPATH FROM NODE    210.00 TO NODE    204.00 =     803.00 FEET.

  ** MEMORY BANK #  1 CONFLUENCE DATA **
  STREAM     RUNOFF      Tc      INTENSITY     AREA
  NUMBER       (CFS)     (MIN.)    (INCH/HOUR)    (ACRE)
     1       15.97     9.91       3.467        5.42
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    204.00 =    1109.00 FEET.

  ** PEAK FLOW RATE TABLE **
  STREAM    RUNOFF       Tc      INTENSITY
  NUMBER      (CFS)      (MIN.)    (INCH/HOUR)
      1      19.72       9.91        3.467
      2      19.62      10.44        3.402

  COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
  PEAK FLOW RATE(CFS) =      19.72   Tc(MIN.) =    9.91
  TOTAL AREA(ACRES) =        6.8

****************************************************************************
  FLOW PROCESS FROM NODE    204.00 TO NODE    205.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   328.50  DOWNSTREAM(FEET) =   328.00
  FLOW LENGTH(FEET) =    26.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  24.0 INCH PIPE IS  14.3 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =  10.13
  GIVEN PIPE DIAMETER(INCH) =  24.00    NUMBER OF PIPES =   1
```



```
  PIPE-FLOW(CFS) =      19.72
  PIPE TRAVEL TIME(MIN.) =   0.04    Tc(MIN.) =    9.95
  LONGEST FLOWPATH FROM NODE    200.00 TO NODE    205.00 =    1135.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      0.15
  TOTAL AREA(ACRES) =      0.04   TOTAL RUNOFF(CFS) =      0.15

****************************************************************************
  FLOW PROCESS FROM NODE    301.00 TO NODE    302.00 IS CODE =  51
----------------------------------------------------------------------------
  >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
  >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =    350.00  DOWNSTREAM(FEET) =    346.00
  CHANNEL LENGTH THRU SUBAREA(FEET) =    93.00   CHANNEL SLOPE =  0.0430
  CHANNEL BASE(FEET) =   10.00   "Z" FACTOR =  50.000
  MANNING'S FACTOR = 0.015   MAXIMUM DEPTH(FEET) =   1.00
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.191
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       0.31
  TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.41
  AVERAGE FLOW DEPTH(FEET) =   0.02   TRAVEL TIME(MIN.) =   1.10
  Tc(MIN.) =    6.10
  SUBAREA AREA(ACRES) =     0.09       SUBAREA RUNOFF(CFS) =    0.32
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.850
  TOTAL AREA(ACRES) =        0.1         PEAK FLOW RATE(CFS) =       0.46

  END OF SUBAREA CHANNEL FLOW HYDRAULICS:
  DEPTH(FEET) =  0.03   FLOW VELOCITY(FEET/SEC.) =   1.59
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    302.00 =     119.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    302.00 TO NODE    303.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   342.00  DOWNSTREAM(FEET) =   339.02
  FLOW LENGTH(FEET) =   370.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN   6.0 INCH PIPE IS   4.7 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   2.78
  GIVEN PIPE DIAMETER(INCH) =   6.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       0.46
  PIPE TRAVEL TIME(MIN.) =   2.22    Tc(MIN.) =    8.32
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    303.00 =     489.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    303.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.769
  *USER SPECIFIED(GLOBAL):
```

```
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8500
  SUBAREA AREA(ACRES) =     0.52   SUBAREA RUNOFF(CFS) =     1.67
  TOTAL AREA(ACRES) =         0.6   TOTAL RUNOFF(CFS) =       2.08
  TC(MIN.) =     8.32

****************************************************************************
  FLOW PROCESS FROM NODE    303.00 TO NODE    304.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   339.02  DOWNSTREAM(FEET) =   338.37
  FLOW LENGTH(FEET) =    33.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  12.0 INCH PIPE IS   5.6 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   5.83
  GIVEN PIPE DIAMETER(INCH) =  12.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.08
  PIPE TRAVEL TIME(MIN.) =   0.09    Tc(MIN.) =     8.42
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    304.00 =     522.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    304.00 TO NODE    305.00 IS CODE =  41
----------------------------------------------------------------------------
  >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
  >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
============================================================================
  ELEVATION DATA: UPSTREAM(FEET) =   338.37  DOWNSTREAM(FEET) =   326.10
  FLOW LENGTH(FEET) =   318.00   MANNING'S N =  0.013
  DEPTH OF FLOW IN  42.0 INCH PIPE IS   3.1 INCHES
  PIPE-FLOW VELOCITY(FEET/SEC.) =   6.45
  GIVEN PIPE DIAMETER(INCH) =  42.00    NUMBER OF PIPES =   1
  PIPE-FLOW(CFS) =       2.08
  PIPE TRAVEL TIME(MIN.) =   0.82    Tc(MIN.) =     9.24
  LONGEST FLOWPATH FROM NODE    300.00 TO NODE    305.00 =     840.00 FEET.

****************************************************************************
  FLOW PROCESS FROM NODE    305.00 TO NODE    305.00 IS CODE =  81
----------------------------------------------------------------------------
  >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
============================================================================
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.595
  *USER SPECIFIED(GLOBAL):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .8500
  S.C.S. CURVE NUMBER (AMC II) =  72
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.8500
  SUBAREA AREA(ACRES) =     0.51   SUBAREA RUNOFF(CFS) =     1.56
  TOTAL AREA(ACRES) =         1.2   TOTAL RUNOFF(CFS) =       3.54
  TC(MIN.) =     9.24
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =         1.2  TC(MIN.) =      9.24
  PEAK FLOW RATE(CFS)   =        3.54
============================================================================
============================================================================
  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 1982-2016 Advanced Engineering Software (aes)
              Ver. 23.0 Release Date: 07/01/2016  License ID 1452

                            Analysis prepared by:

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 ************************** DESCRIPTION OF STUDY **************************
* 3342   TOWNE CENTRE VIEW                                                 *
* PROPOSED CONDITION                                                       *
* 100-YR                                                                   *
 ****************************************************************************

  FILE NAME: 3342P00.DAT
  TIME/DATE OF STUDY: 11:19 07/09/2021
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  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

  GLOBAL STREET FLOW-DEPTH CONSTRAINTS:
    1. Relative Flow-Depth =  0.00 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 =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .7500
```



```
  S.C.S. CURVE NUMBER (AMC II) =   0
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      7.99
  TOTAL AREA(ACRES) =      2.42   TOTAL RUNOFF(CFS) =      7.99

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5800
  S.C.S. CURVE NUMBER (AMC II) =   0
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      3.45
  TOTAL AREA(ACRES) =      1.35   TOTAL RUNOFF(CFS) =      3.45

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5200
  S.C.S. CURVE NUMBER (AMC II) =   0
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      4.30
  TOTAL AREA(ACRES) =      1.88   TOTAL RUNOFF(CFS) =      4.30

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5000
  S.C.S. CURVE NUMBER (AMC II) =   0
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      1.87
  TOTAL AREA(ACRES) =      0.85   TOTAL RUNOFF(CFS) =      1.87

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5000
  S.C.S. CURVE NUMBER (AMC II) =   0
  USER SPECIFIED Tc(MIN.) =    5.000
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
  SUBAREA RUNOFF(CFS) =      1.30
  TOTAL AREA(ACRES) =      0.59   TOTAL RUNOFF(CFS) =      1.30

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    601.00 IS CODE =  22
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  *USER SPECIFIED(SUBAREA):
  NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5000
```

```
 S.C.S. CURVE NUMBER (AMC II) =   0
 USER SPECIFIED Tc(MIN.) =    5.000
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
 SUBAREA RUNOFF(CFS) =      2.88
 TOTAL AREA(ACRES) =      1.31   TOTAL RUNOFF(CFS) =      2.88

****************************************************************************
 FLOW PROCESS FROM NODE    700.00 TO NODE    701.00 IS CODE =  22
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5500
 S.C.S. CURVE NUMBER (AMC II) =   0
 USER SPECIFIED Tc(MIN.) =    5.000
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
 SUBAREA RUNOFF(CFS) =      9.99
 TOTAL AREA(ACRES) =      4.13   TOTAL RUNOFF(CFS) =      9.99

****************************************************************************
 FLOW PROCESS FROM NODE    800.00 TO NODE    801.00 IS CODE =  22
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) =   0
 USER SPECIFIED Tc(MIN.) =    5.000
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
 SUBAREA RUNOFF(CFS) =      7.58
 TOTAL AREA(ACRES) =      3.38   TOTAL RUNOFF(CFS) =      7.58

****************************************************************************
 FLOW PROCESS FROM NODE    900.00 TO NODE    901.00 IS CODE =  22
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .6300
 S.C.S. CURVE NUMBER (AMC II) =   0
 USER SPECIFIED Tc(MIN.) =    5.000
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
 SUBAREA RUNOFF(CFS) =      9.42
 TOTAL AREA(ACRES) =      3.40   TOTAL RUNOFF(CFS) =      9.42

****************************************************************************
 FLOW PROCESS FROM NODE   1000.00 TO NODE   1001.00 IS CODE =  22
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5000
 S.C.S. CURVE NUMBER (AMC II) =   0
 USER SPECIFIED Tc(MIN.) =    5.000
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
 SUBAREA RUNOFF(CFS) =      1.12
 TOTAL AREA(ACRES) =      0.51   TOTAL RUNOFF(CFS) =      1.12

****************************************************************************
 FLOW PROCESS FROM NODE   1100.00 TO NODE   1101.00 IS CODE =  22
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .5700
```

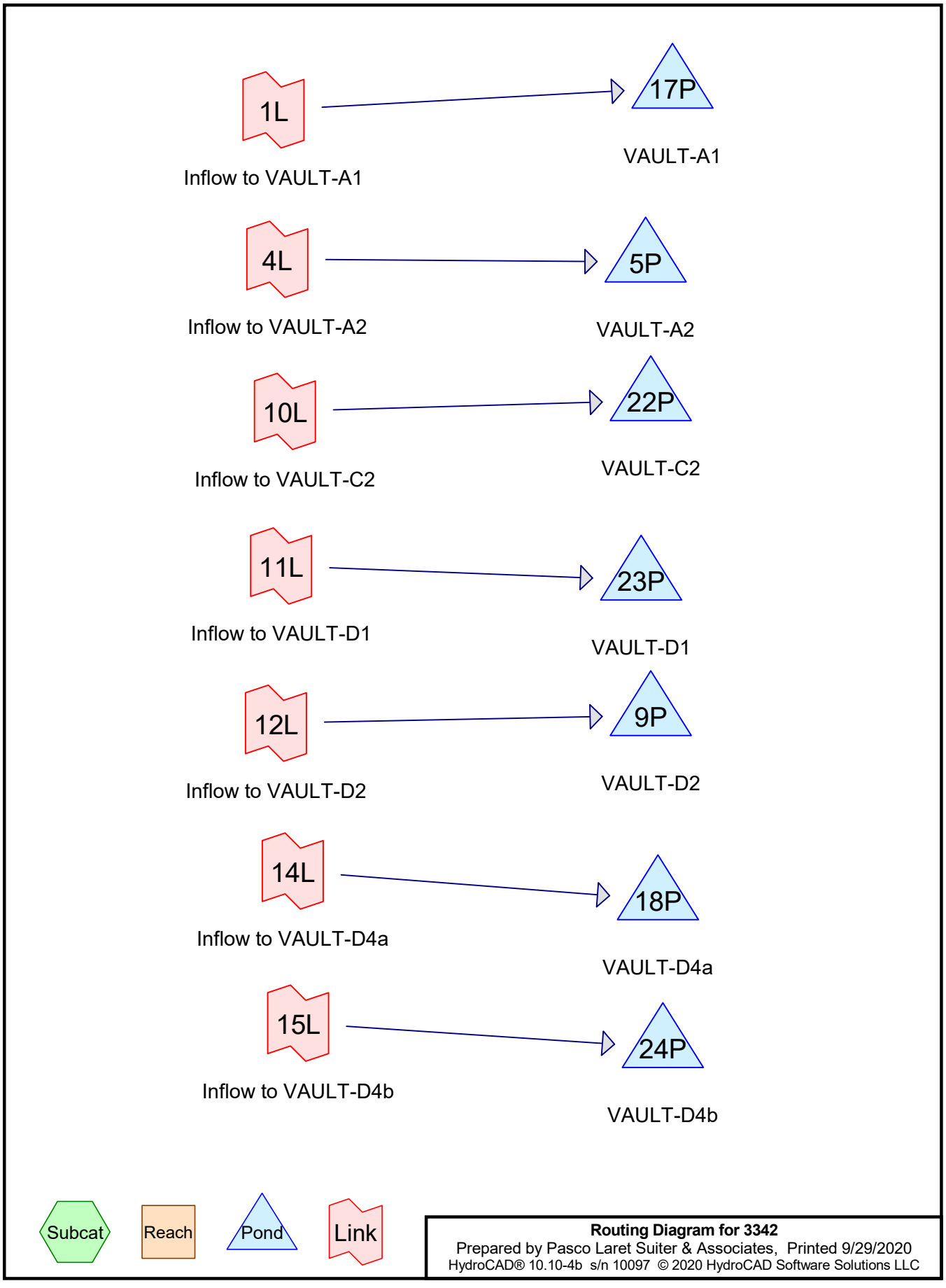


```
 S.C.S. CURVE NUMBER (AMC II) =   0
 USER SPECIFIED Tc(MIN.) =    5.000
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
 SUBAREA RUNOFF(CFS) =      2.86
 TOTAL AREA(ACRES) =      1.14   TOTAL RUNOFF(CFS) =      2.86

****************************************************************************
 FLOW PROCESS FROM NODE   1200.00 TO NODE   1201.00 IS CODE =  22
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 *USER SPECIFIED(SUBAREA):
 NEIGHBORHOOD COMMERCIAL RUNOFF COEFFICIENT = .6800
 S.C.S. CURVE NUMBER (AMC II) =   0
 USER SPECIFIED Tc(MIN.) =    5.000
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.400
 SUBAREA RUNOFF(CFS) =      1.35
 TOTAL AREA(ACRES) =      0.45   TOTAL RUNOFF(CFS) =      1.35
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =        0.4  TC(MIN.) =      5.00
 PEAK FLOW RATE(CFS)   =       1.35
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

Appendix 3

Detention Output



Routing Diagram for 3342

Prepared by Pasco Laret Suiter & Associates, Printed 9/29/2020

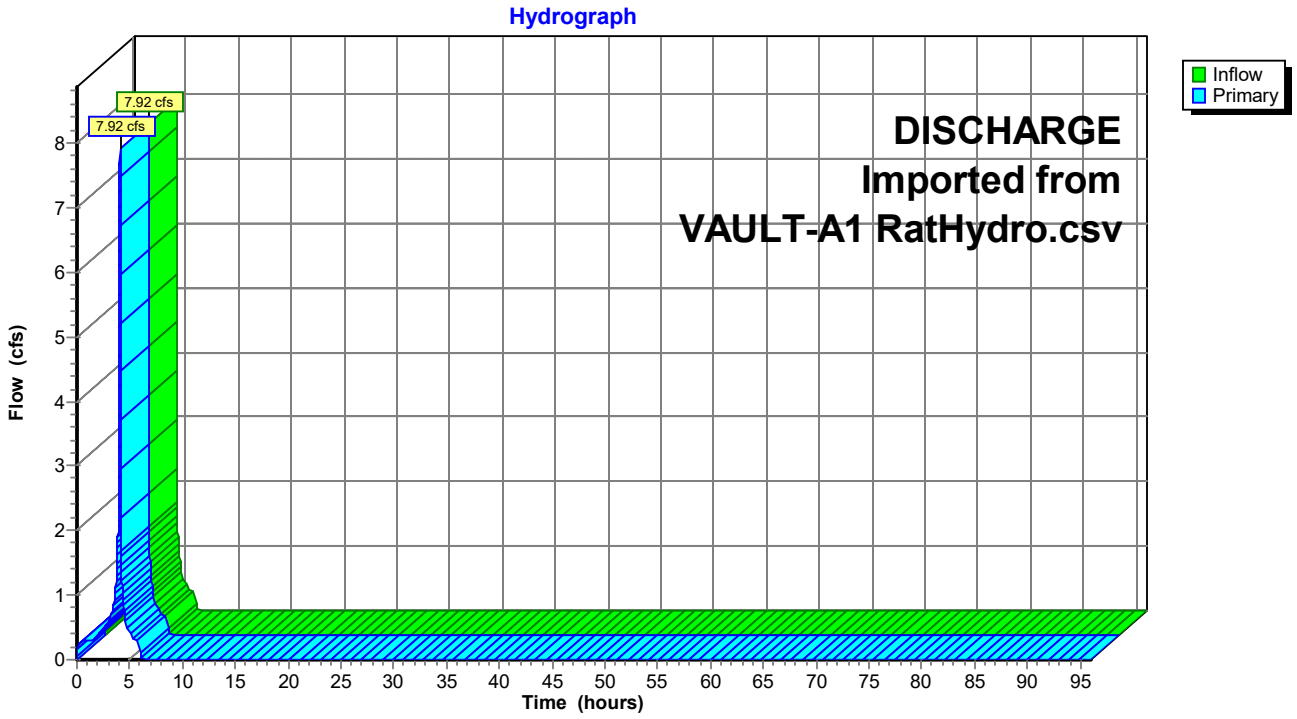
Summary for Link 1L: Inflow to VAULT-A1

Inflow = 7.92 cfs @ 4.08 hrs, Volume= 0.349 af
Primary = 7.92 cfs @ 4.08 hrs, Volume= 0.349 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

DISCHARGE Imported from VAULT-A1 RatHydro.csv

Link 1L: Inflow to VAULT-A1



Summary for Pond 17P: VAULT-A1

Inflow = 7.92 cfs @ 4.08 hrs, Volume= 0.349 af
Outflow = 6.19 cfs @ 4.11 hrs, Volume= 0.349 af, Atten= 22%, Lag= 1.8 min
Primary = 6.19 cfs @ 4.11 hrs, Volume= 0.349 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 105.55' @ 4.11 hrs Surf.Area= 1,700 sf Storage= 9,428 cf

Plug-Flow detention time= 539.6 min calculated for 0.349 af (100% of inflow)
Center-of-Mass det. time= 539.6 min (751.1 - 211.5)

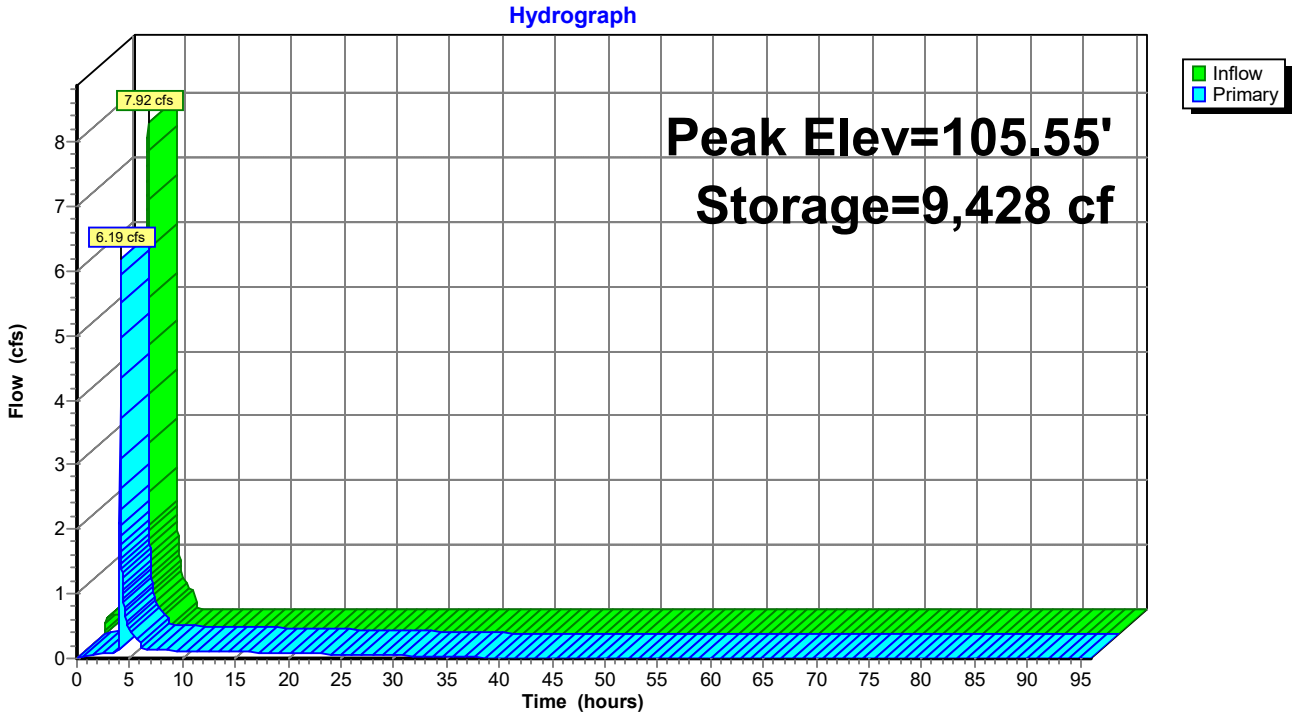
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	9,639 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	1,700	0	0	1,700
101.00	1,700	1,700	1,700	1,846
102.00	1,700	1,700	3,400	1,992
103.00	1,700	1,700	5,100	2,138
104.00	1,700	1,700	6,800	2,285
105.17	1,700	1,989	8,789	2,456
105.67	1,700	850	9,639	2,529

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**12.0" Round Culvert** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 100.00' / 99.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	100.00'	**1.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	105.17'	**Custom Weir, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 0.50 Width (feet) 8.00 8.00 0.00

Primary OutFlow Max=6.15 cfs @ 4.11 hrs HW=105.54' (Free Discharge)
└**1=Culvert** (Passes 6.15 cfs of 10.62 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.14 cfs @ 11.27 fps)
  └**3=Custom Weir** (Weir Controls 6.02 cfs @ 2.01 fps)

Pond 17P: VAULT-A1



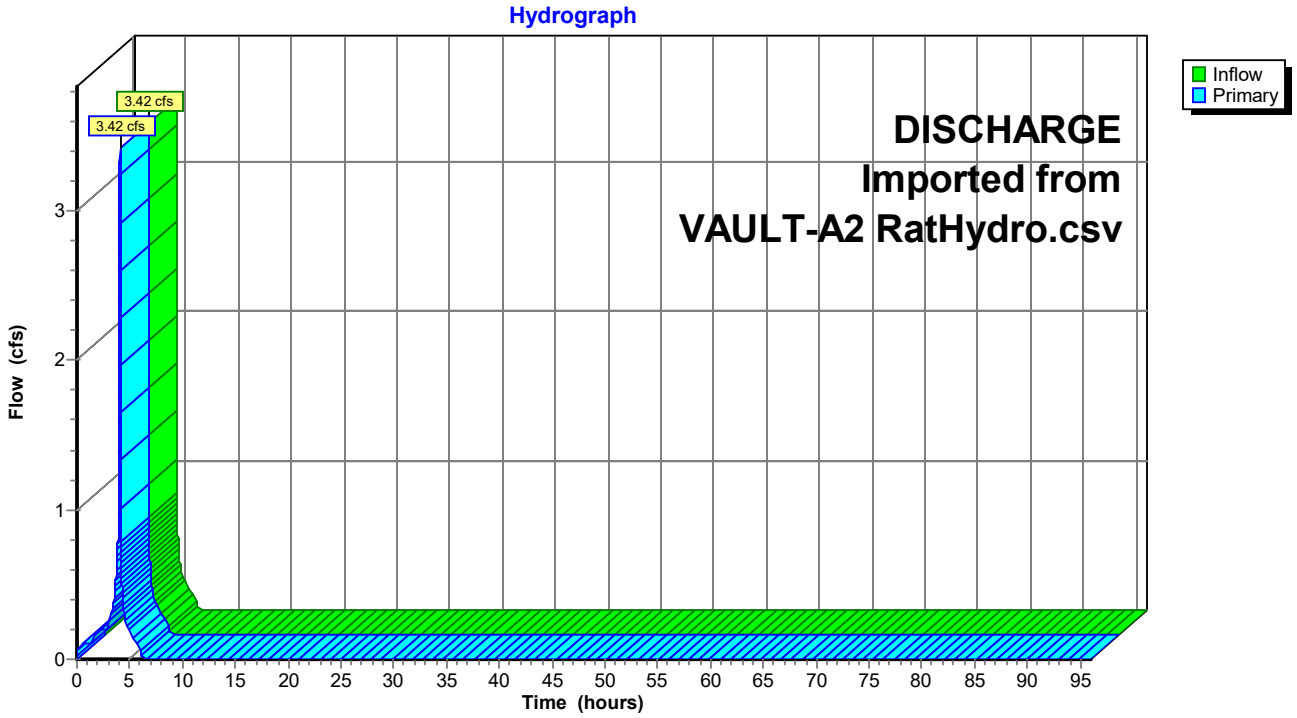
Summary for Link 4L: Inflow to VAULT-A2

Inflow = 3.42 cfs @ 4.08 hrs, Volume= 0.146 af
Primary = 3.42 cfs @ 4.08 hrs, Volume= 0.146 af, Atten= 0%, Lag= 0.0 min
Routed to Pond 5P : VAULT-A2

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

DISCHARGE Imported from VAULT-A2 RatHydro.csv

Link 4L: Inflow to VAULT-A2



Summary for Pond 5P: VAULT-A2

Inflow	=	3.42 cfs @	4.08 hrs,	Volume=	0.146 af
Outflow	=	3.34 cfs @	4.08 hrs,	Volume=	0.146 af, Atten= 2%, Lag= 0.4 min
Primary	=	3.34 cfs @	4.08 hrs,	Volume=	0.146 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 105.47' @ 4.08 hrs Surf.Area= 500 sf Storage= 2,737 cf

Plug-Flow detention time= 327.9 min calculated for 0.146 af (100% of inflow)
Center-of-Mass det. time= 327.7 min (541.6 - 213.8)

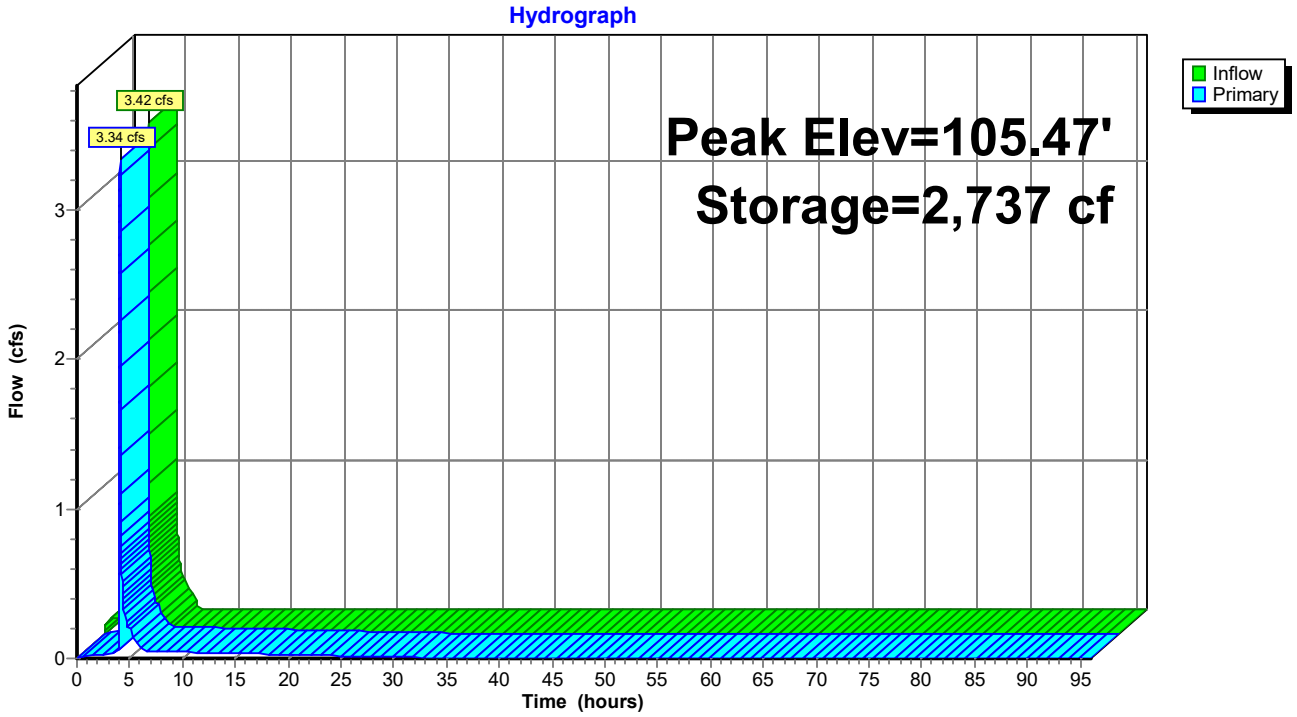
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	2,835 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	500	0	0	500
101.00	500	500	500	579
102.00	500	500	1,000	659
103.00	500	500	1,500	738
104.00	500	500	2,000	817
105.17	500	585	2,585	910
105.67	500	250	2,835	949

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**12.0" Round Culvert** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 100.00' / 99.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	100.00'	**0.9" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	105.17'	**Custom Weir, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 0.50 Width (feet) 6.00 6.00 0.00

Primary OutFlow Max=3.32 cfs @ 4.08 hrs HW=105.47' (Free Discharge)
└**1=Culvert** (Passes 3.32 cfs of 10.54 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.05 cfs @ 11.23 fps)
  └**3=Custom Weir** (Weir Controls 3.27 cfs @ 1.80 fps)

Pond 5P: VAULT-A2



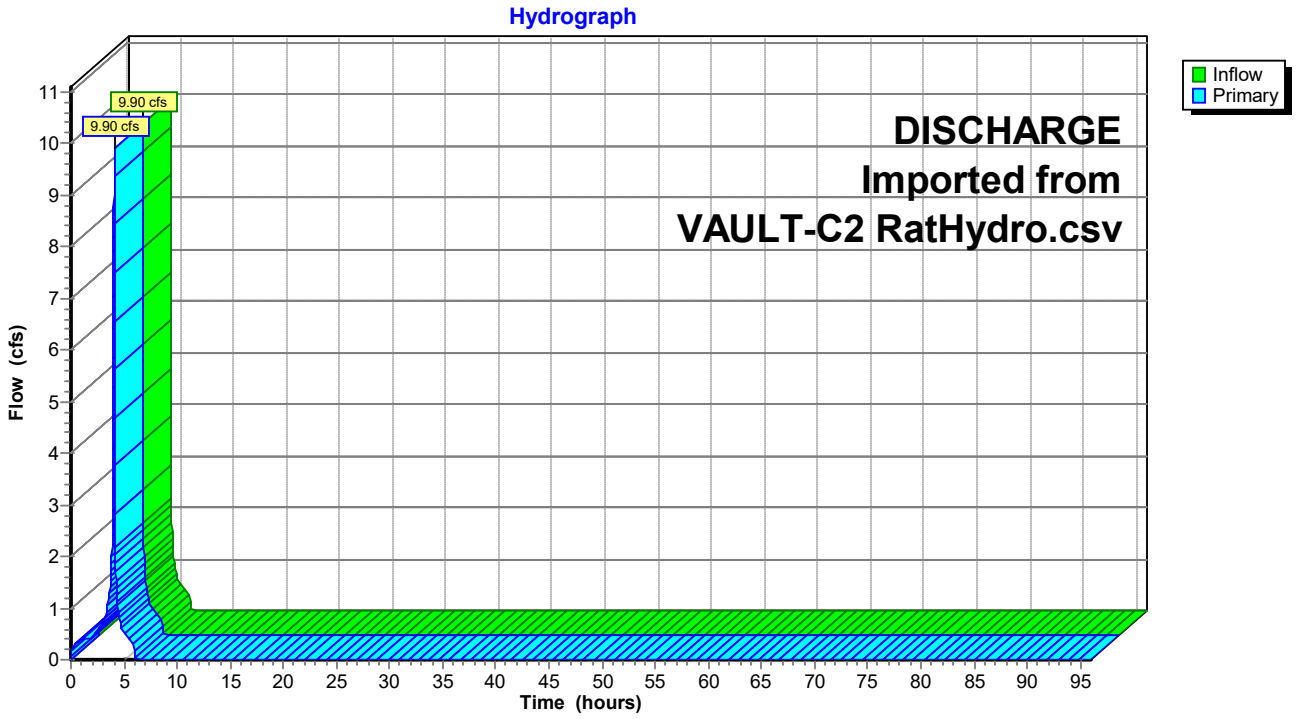
Summary for Link 10L: Inflow to VAULT-C2

Inflow = 9.90 cfs @ 4.08 hrs, Volume= 0.432 af
Primary = 9.90 cfs @ 4.08 hrs, Volume= 0.432 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

DISCHARGE Imported from VAULT-C2 RatHydro.csv

Link 10L: Inflow to VAULT-C2



Summary for Pond 22P: VAULT-C2

Inflow = 9.90 cfs @ 4.08 hrs, Volume= 0.432 af
Outflow = 0.77 cfs @ 4.52 hrs, Volume= 0.432 af, Atten= 92%, Lag= 26.7 min
Primary = 0.77 cfs @ 4.52 hrs, Volume= 0.432 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 107.10' @ 4.52 hrs Surf.Area= 2,000 sf Storage= 14,192 cf

Plug-Flow detention time= 661.1 min calculated for 0.432 af (100% of inflow)
Center-of-Mass det. time= 661.5 min (873.5 - 212.0)

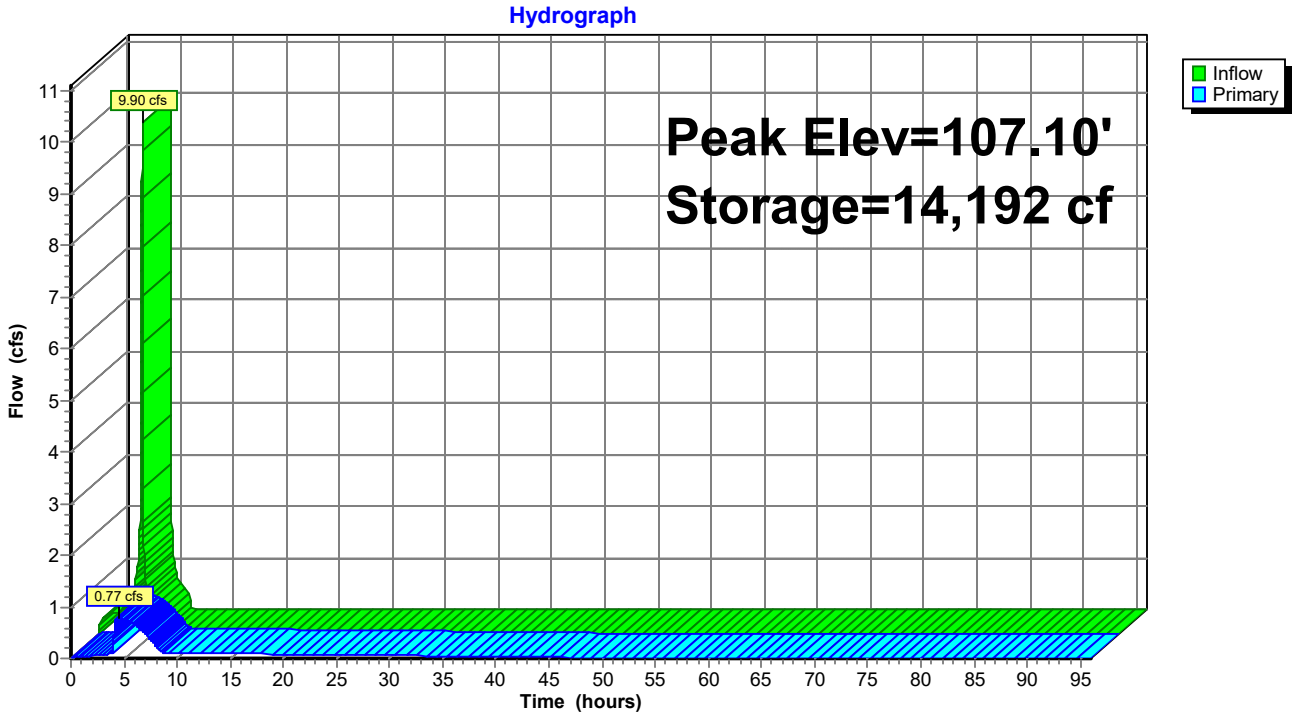
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	20,000 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	2,000	0	0	2,000
101.00	2,000	2,000	2,000	2,159
102.00	2,000	2,000	4,000	2,317
103.00	2,000	2,000	6,000	2,476
104.00	2,000	2,000	8,000	2,634
104.50	2,000	1,000	9,000	2,713
105.00	2,000	1,000	10,000	2,793
106.00	2,000	2,000	12,000	2,951
107.00	2,000	2,000	14,000	3,110
108.00	2,000	2,000	16,000	3,268
109.00	2,000	2,000	18,000	3,427
109.50	2,000	1,000	19,000	3,506
110.00	2,000	1,000	20,000	3,585

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**18.0" Round Culvert** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 100.00' / 99.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 1.77 sf
#2	Device 1	100.00'	**1.4" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	104.50'	**6.0" W x 2.0" H Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	109.50'	**Custom Weir, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 0.50 Width (feet) 12.00 12.00 0.00

Primary OutFlow Max=0.77 cfs @ 4.52 hrs HW=107.10' (Free Discharge)
└**1=Culvert** (Passes 0.77 cfs of 26.79 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.14 cfs @ 12.77 fps)
  ├**3=Orifice** (Orifice Controls 0.64 cfs @ 7.63 fps)
  └**4=Custom Weir** (Controls 0.00 cfs)

Pond 22P: VAULT-C2



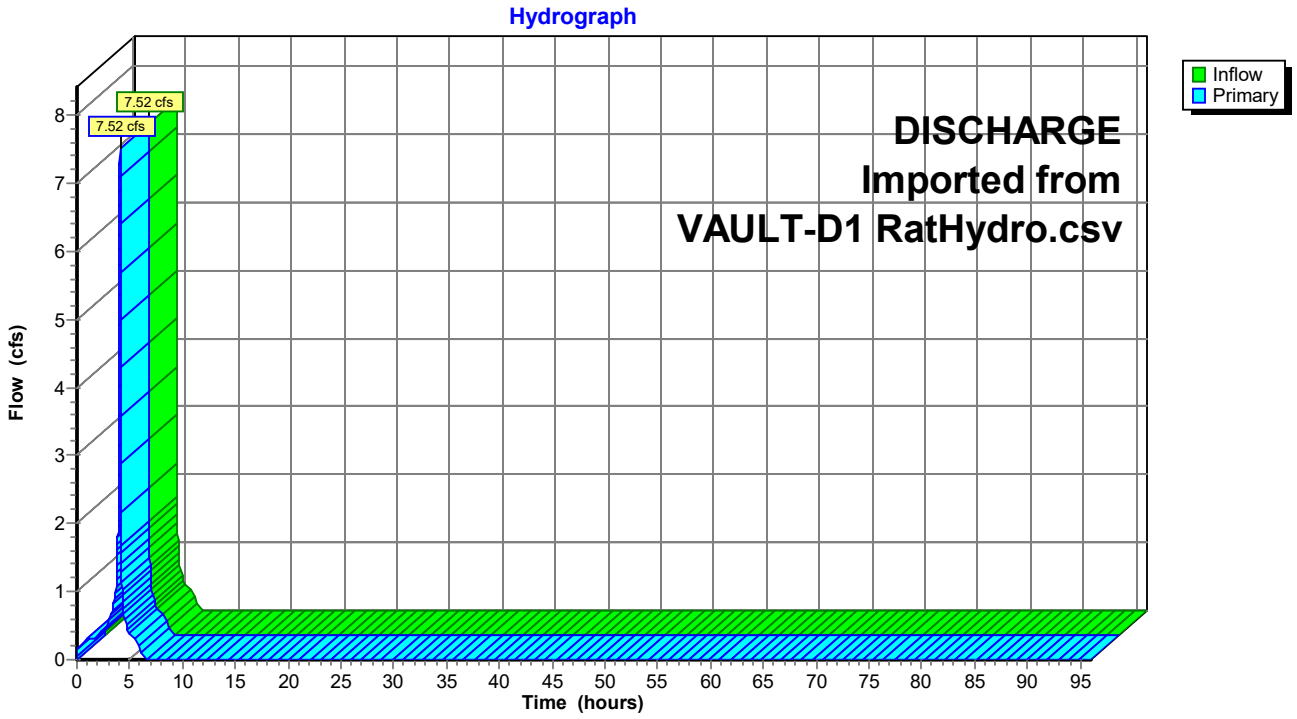
Summary for Link 11L: Inflow to VAULT-D1

Inflow = 7.52 cfs @ 4.08 hrs, Volume= 0.328 af
Primary = 7.52 cfs @ 4.08 hrs, Volume= 0.328 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

DISCHARGE Imported from VAULT-D1 RatHydro.csv

Link 11L: Inflow to VAULT-D1



Summary for Pond 23P: VAULT-D1

Inflow	=	7.52 cfs @	4.08 hrs,	Volume=	0.328 af
Outflow	=	3.64 cfs @	4.14 hrs,	Volume=	0.328 af, Atten= 52%, Lag= 3.7 min
Primary	=	3.64 cfs @	4.14 hrs,	Volume=	0.328 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 105.39' @ 4.14 hrs Surf.Area= 1,800 sf Storage= 9,711 cf

Plug-Flow detention time= 628.4 min calculated for 0.328 af (100% of inflow)
Center-of-Mass det. time= 628.8 min (840.8 - 212.0)

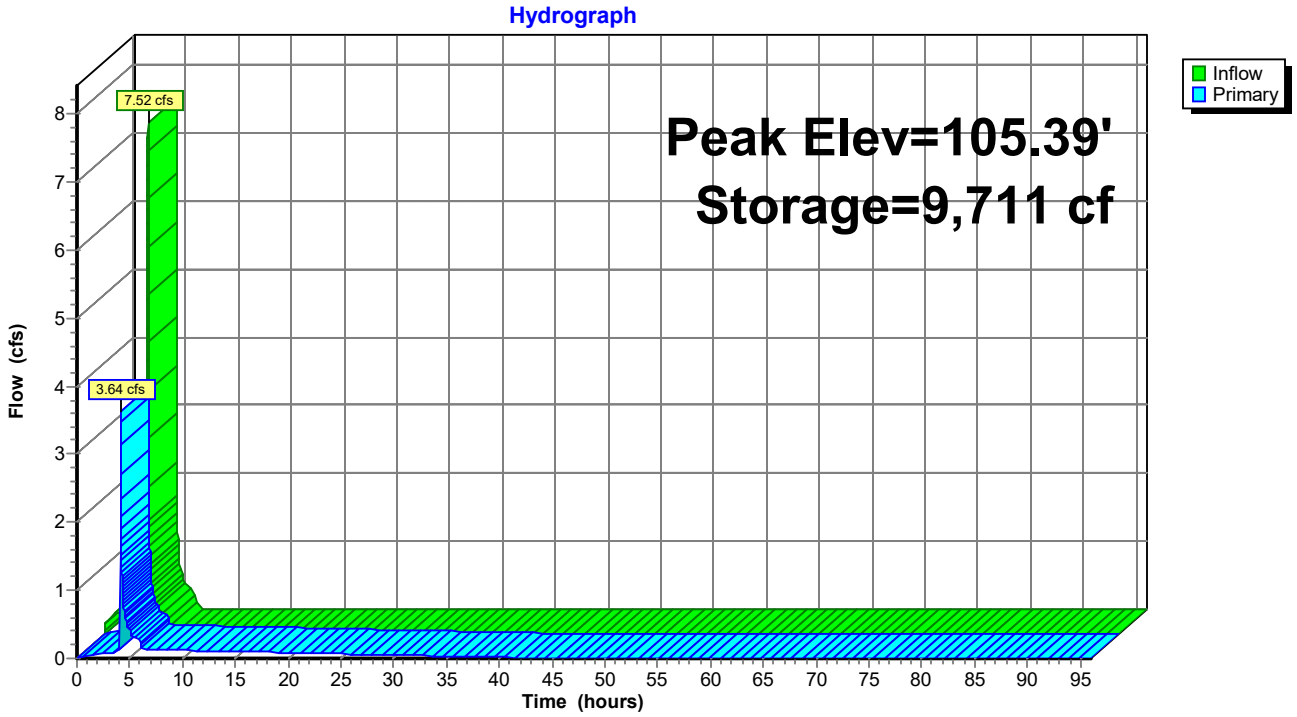
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	10,206 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	1,800	0	0	1,800
101.00	1,800	1,800	1,800	1,950
102.00	1,800	1,800	3,600	2,101
103.00	1,800	1,800	5,400	2,251
104.00	1,800	1,800	7,200	2,402
105.00	1,800	1,800	9,000	2,552
105.17	1,800	306	9,306	2,578
105.67	1,800	900	10,206	2,653

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**12.0" Round Culvert** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 100.00' / 99.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	100.00'	**1.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	105.17'	**Custom Weir, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 0.50 Width (feet) 10.00 10.00 0.00

Primary OutFlow Max=3.62 cfs @ 4.14 hrs HW=105.39' (Free Discharge)
└**1=Culvert** (Passes 3.62 cfs of 10.46 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.14 cfs @ 11.12 fps)
  └**3=Custom Weir** (Weir Controls 3.48 cfs @ 1.55 fps)

Pond 23P: VAULT-D1



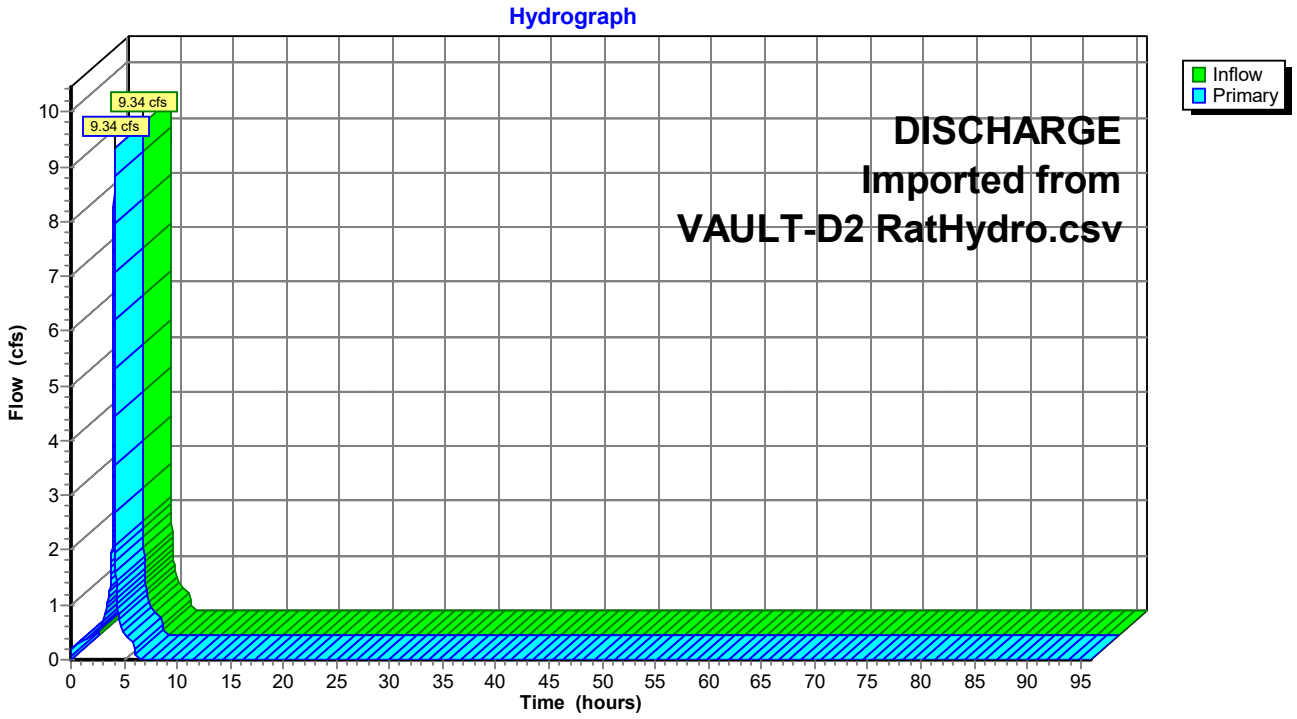
Summary for Link 12L: Inflow to VAULT-D2

Inflow = 9.34 cfs @ 4.08 hrs, Volume= 0.409 af
Primary = 9.34 cfs @ 4.08 hrs, Volume= 0.409 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

DISCHARGE Imported from VAULT-D2 RatHydro.csv

Link 12L: Inflow to VAULT-D2



Summary for Pond 9P: VAULT-D2

Inflow	=	9.34 cfs @	4.08 hrs,	Volume=	0.409 af
Outflow	=	8.81 cfs @	4.09 hrs,	Volume=	0.409 af, Atten= 6%, Lag= 0.7 min
Primary	=	8.81 cfs @	4.09 hrs,	Volume=	0.409 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 105.58' @ 4.09 hrs Surf.Area= 1,800 sf Storage= 10,047 cf

Plug-Flow detention time= 513.3 min calculated for 0.409 af (100% of inflow)
Center-of-Mass det. time= 513.2 min (725.3 - 212.1)

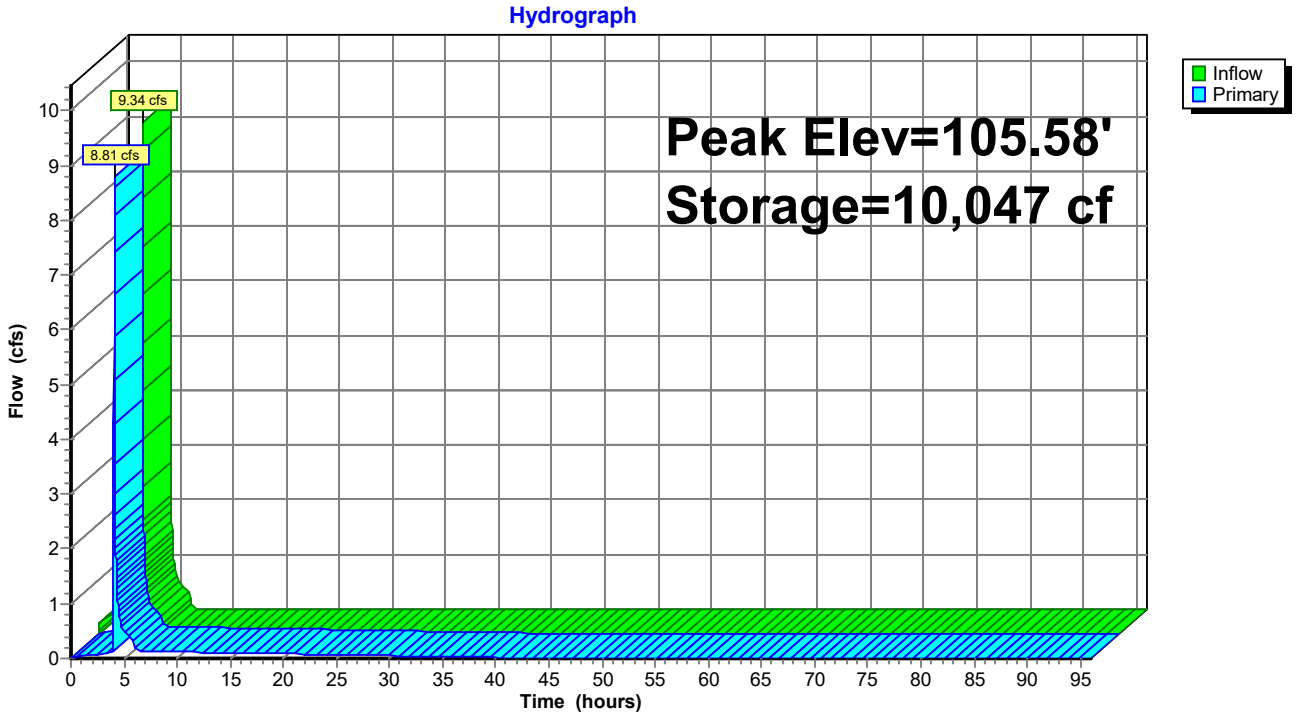
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	10,206 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	1,800	0	0	1,800
101.00	1,800	1,800	1,800	1,950
102.00	1,800	1,800	3,600	2,101
103.00	1,800	1,800	5,400	2,251
104.00	1,800	1,800	7,200	2,402
105.00	1,800	1,800	9,000	2,552
105.17	1,800	306	9,306	2,578
105.67	1,800	900	10,206	2,653

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**12.0" Round Culvert** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 100.00' / 99.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	100.00'	**1.5" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	105.17'	**Custom Weir, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 0.50 Width (feet) 10.00 10.00 0.00

Primary OutFlow Max=8.79 cfs @ 4.09 hrs HW=105.58' (Free Discharge)
└**1=Culvert** (Passes 8.79 cfs of 10.66 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.14 cfs @ 11.31 fps)
  └**3=Custom Weir** (Weir Controls 8.65 cfs @ 2.10 fps)

Pond 9P: VAULT-D2



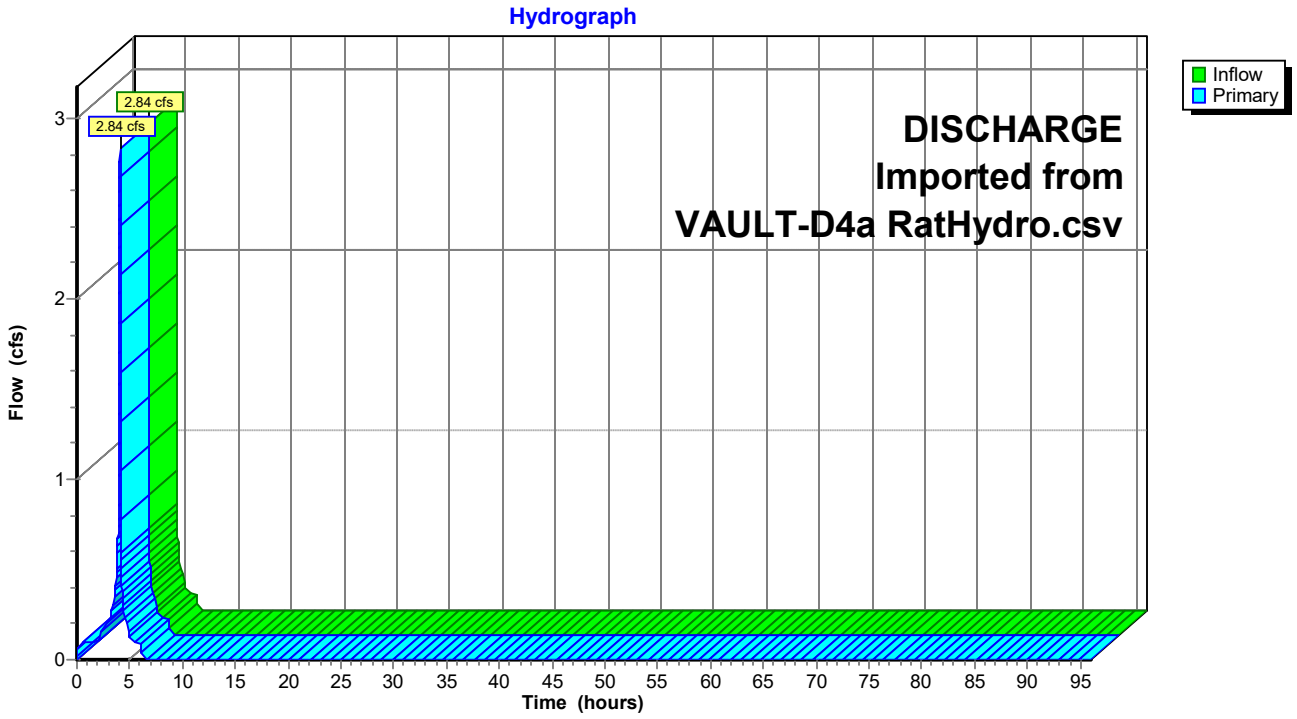
Summary for Link 14L: Inflow to VAULT-D4a

Inflow = 2.84 cfs @ 4.08 hrs, Volume= 0.122 af
Primary = 2.84 cfs @ 4.08 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

DISCHARGE Imported from VAULT-D4a RatHydro.csv

Link 14L: Inflow to VAULT-D4a



Summary for Pond 18P: VAULT-D4a

Inflow	=	2.84 cfs @	4.08 hrs,	Volume=	0.122 af
Outflow	=	0.26 cfs @	4.45 hrs,	Volume=	0.122 af, Atten= 91%, Lag= 22.2 min
Primary	=	0.26 cfs @	4.45 hrs,	Volume=	0.122 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 104.17' @ 4.45 hrs Surf.Area= 1,000 sf Storage= 4,171 cf

Plug-Flow detention time= 1,152.6 min calculated for 0.122 af (100% of inflow)
Center-of-Mass det. time= 1,152.6 min (1,364.9 - 212.3)

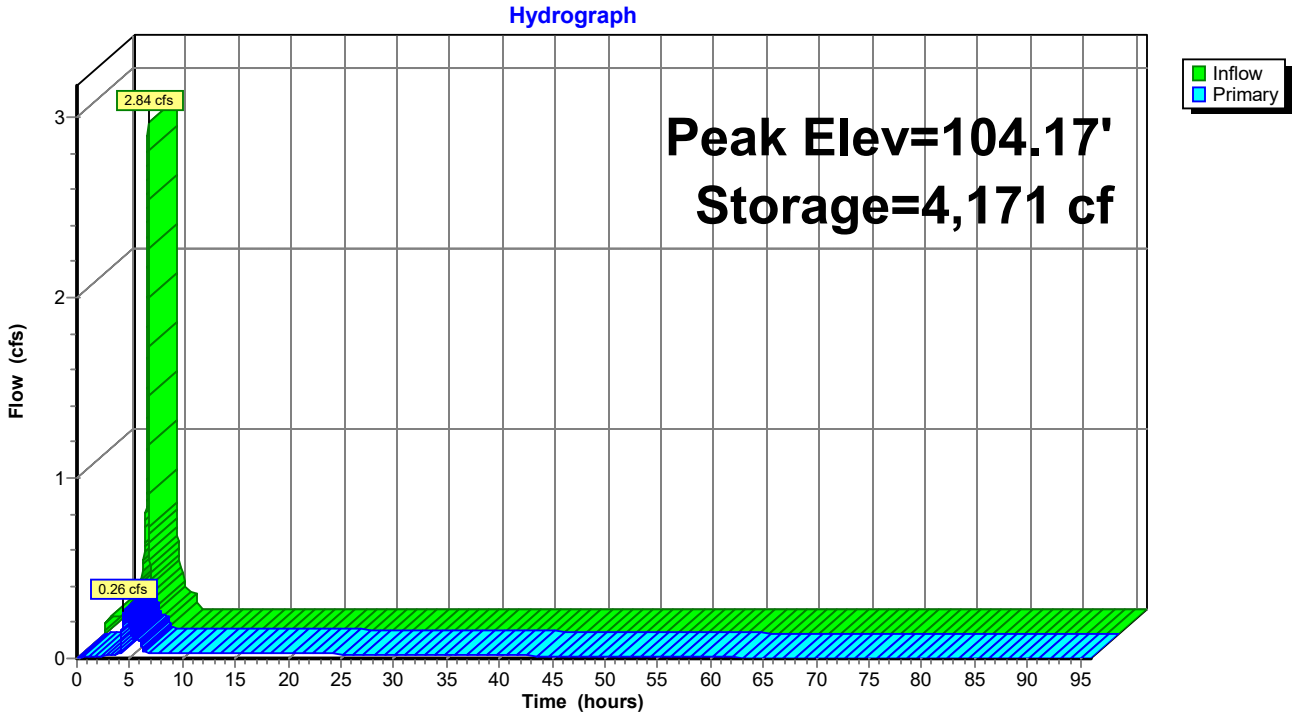
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	5,670 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	1,000	0	0	1,000
101.00	1,000	1,000	1,000	1,112
102.00	1,000	1,000	2,000	1,224
103.00	1,000	1,000	3,000	1,336
104.00	1,000	1,000	4,000	1,448
105.00	1,000	1,000	5,000	1,560
105.17	1,000	170	5,170	1,580
105.67	1,000	500	5,670	1,636

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**12.0" Round Culvert** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 100.00' / 99.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	100.00'	**0.8" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	104.00'	**12.0" W x 3.0" H Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#4	Device 1	105.17'	**Custom Weir, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 0.50 Width (feet) 5.00 5.00 0.00

Primary OutFlow Max=0.26 cfs @ 4.45 hrs HW=104.17' (Free Discharge)
└**1=Culvert** (Passes 0.26 cfs of 9.06 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.03 cfs @ 9.79 fps)
  ├**3=Orifice** (Orifice Controls 0.23 cfs @ 1.33 fps)
  └**4=Custom Weir** (Controls 0.00 cfs)

Pond 18P: VAULT-D4a



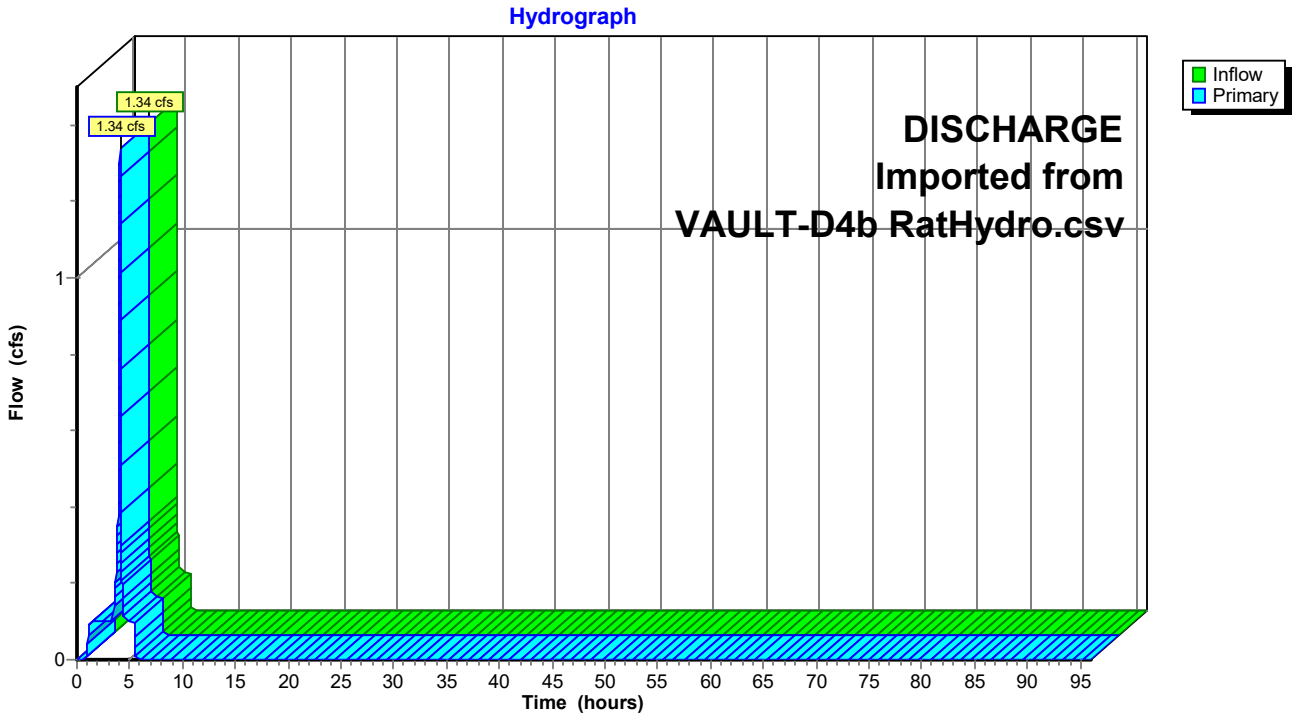
Summary for Link 15L: Inflow to VAULT-D4b

Inflow = 1.34 cfs @ 4.08 hrs, Volume= 0.060 af
Primary = 1.34 cfs @ 4.08 hrs, Volume= 0.060 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs

DISCHARGE Imported from VAULT-D4b RatHydro.csv

Link 15L: Inflow to VAULT-D4b



Summary for Pond 24P: VAULT-D4b

Inflow	=	1.34 cfs @	4.08 hrs,	Volume=	0.060 af
Outflow	=	0.10 cfs @	5.50 hrs,	Volume=	0.060 af, Atten= 93%, Lag= 85.3 min
Primary	=	0.10 cfs @	5.50 hrs,	Volume=	0.060 af

Routing by Stor-Ind method, Time Span= 0.00-96.00 hrs, dt= 0.01 hrs
Peak Elev= 105.20' @ 5.50 hrs Surf.Area= 400 sf Storage= 2,081 cf

Plug-Flow detention time= 731.9 min calculated for 0.060 af (100% of inflow)
Center-of-Mass det. time= 732.1 min (946.1 - 214.0)

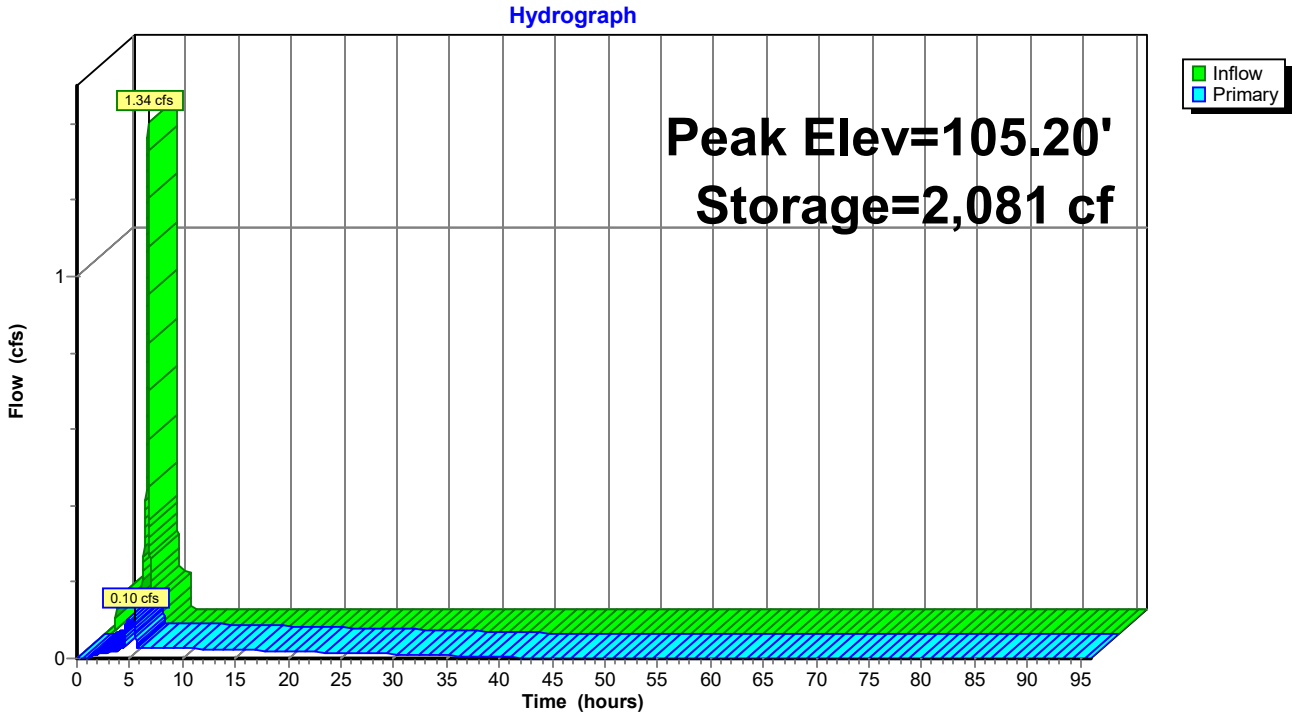
Volume	Invert	Avail.Storage	Storage Description
#1	100.00'	2,268 cf	**Custom Stage Data (Conic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
100.00	400	0	0	400
101.00	400	400	400	471
102.00	400	400	800	542
103.00	400	400	1,200	613
104.00	400	400	1,600	684
105.17	400	468	2,068	767
105.67	400	200	2,268	802

Device	Routing	Invert	Outlet Devices
#1	Primary	100.00'	**12.0" Round Culvert** L= 10.0' RCP, groove end projecting, Ke= 0.200 Inlet / Outlet Invert= 100.00' / 99.90' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf
#2	Device 1	100.00'	**0.7" Vert. Orifice** C= 0.600 Limited to weir flow at low heads
#3	Device 1	105.17'	**Custom Weir, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 0.50 Width (feet) 3.00 3.00 0.00

Primary OutFlow Max=0.09 cfs @ 5.50 hrs HW=105.20' (Free Discharge)
└**1=Culvert** (Passes 0.09 cfs of 10.25 cfs potential flow)
  ├**2=Orifice** (Orifice Controls 0.03 cfs @ 10.95 fps)
  └**3=Custom Weir** (Weir Controls 0.06 cfs @ 0.60 fps)

Pond 24P: VAULT-D4b



Appendix 4

Summit Pointe Plaza Grading Plans, PTS 6109

GRADING AND IMPROVEMENT PLANS FOR:
SUMMIT POINTE PLAZA

GENERAL NOTES

1. APPROVAL OF THESE PLANS BY THE CITY ENGINEER DOES NOT AUTHORIZE ANY WORK TO BE PERFORMED UNTIL A PERMIT HAS BEEN ISSUED.
2. THE APPROVAL OF THIS PLAN OR ISSUANCE OF A PERMIT BY THE CITY OF SAN DIEGO DOES NOT AUTHORIZE THE SUBDIVIDER AND OWNER TO VIOLATE ANY FEDERAL, STATE OR CITY LAWS, ORDINANCES, REGULATIONS, OR POLICIES, INCLUDING, BUT NOT LIMITED TO, THE FEDERAL ENDANGERED SPECIES ACT OF 1973 AND AMENDMENTS THERETO (16 USC SECTION 1531 ET.SEQ.).
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SURVEY MONUMENTS AND/OR VERTICAL CONTROL BENCH MARKS WHICH ARE DISTURBED OR DESTROYED BY CONSTRUCTION. A LAND SURVEYOR MUST FIELD LOCATE, REFERENCE, AND/OR PRESERVE ALL HISTORICAL OR CONTROLLING MONUMENTS PRIOR TO ANY EARTHWORK. IF DESTROYED, SUCH MONUMENTS SHALL BE REPLACED WITH APPROPRIATE MONUMENTS BY A LAND SURVEYOR. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED AS REQUIRED BY THE LAND SURVEYORS ACT. IF ANY VERTICAL CONTROL IS TO BE DISTURBED OR DESTROYED, THE CITY OF SAN DIEGO FIELD SURVEY SECTION MUST BE NOTIFIED, IN WRITING, AT LEAST 3 DAYS PRIOR TO THE CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF REPLACING ANY VERTICAL CONTROL BENCH MARKS DESTROYED BY THE CONSTRUCTION.
4. IMPORTANT NOTICE: SECTION 4216 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIG ALERT I.D. NUMBER, CALL UNDERGROUND SERVICE ALERT, TOLL FREE 1-800-422-4133, TWO DAYS BEFORE YOU DIG.
5. THE CONTRACTOR SHALL IMPLEMENT AN EROSION CONTROL PROGRAM DURING THE PROJECT GRADING AND CONSTRUCTION ACTIVITIES. THE PROGRAM SHALL MEET THE APPLICABLE REQUIREMENTS OF THE STATE WATER RESOURCES CONTROL BOARD AND THE CITY OF SAN DIEGO MUNICIPAL CODE AND STORM WATER STANDARDS MANUAL.
6. "PUBLIC IMPROVEMENT SUBJECT TO DESUETUDE OR DAMAGE." IF REPAIR OR REPLACEMENT OF SUCH PUBLIC IMPROVEMENTS IS REQUIRED, THE OWNER SHALL OBTAIN THE REQUIRED PERMITS FOR WORK IN THE PUBLIC RIGHT-OF-WAY SATISFACTORY TO THE PERMIT-ISSUING AUTHORITY.
7. ALL EXISTING AND/OR PROPOSED PUBLIC UTILITY SYSTEMS AND SERVICE FACILITIES SHALL BE INSTALLED UNDERGROUND IN ACCORDANCE WITH SECTION 144.0240 OF THE MUNICIPAL CODE.
8. PRIOR TO ANY DISTURBANCE TO THE SITE, EXCLUDING UTILITY MARK-OUTS AND SURVEYING, THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR A PRE-CONSTRUCTION MEETING WITH THE CITY OF SAN DIEGO FIELD ENGINEERING DIVISION (858) 627-3200.
9. DEVIATIONS FROM THESE SIGNED PLANS WILL NOT BE ALLOWED UNLESS A CONSTRUCTION CHANGE IS APPROVED BY THE CITY ENGINEER OR THE CHANGE IS REQUIRED BY THE CITY INSPECTOR.
10. AS-BUILT DRAWINGS MUST BE SUBMITTED TO THE RESIDENT ENGINEER PRIOR TO ACCEPTANCE OF THIS PROJECT BY THE CITY OF SAN DIEGO.
11. AN AS-GRADED GEOTECHNICAL REPORT SHALL BE SUBMITTED TO BOOTH 32 ON THE 3RD FLOOR OF DEVELOPMENT SERVICES WITHIN 15 CALENDAR DAYS OF COMPLETION OF GRADING. AN ADDITIONAL SET SHALL BE PROVIDED TO THE FIELD INSPECTION DIVISION.
12. THE AREA WHICH IS DEFINED AS A NONGRADING AREA AND WHICH IS NOT TO BE DISTURBED SHALL BE STAKED PRIOR TO THE START OF WORK. THE PERMIT APPLICANT AND ALL OF THEIR REPRESENTATIVES OR CONTRACTORS SHALL COMPLY WITH THE REQUIREMENTS FOR PROTECTION OF THIS AREA AS REQUIRED BY ANY APPLICABLE AGENCY.
13. ISSUANCE OF THE CITY'S GRADING PERMIT SHALL NOT RELIEVE THE APPLICANT OR ANY OF THEIR REPRESENTATIVES OR CONTRACTORS FROM COMPLYING WITH ANY STATE OR FEDERAL REQUIREMENTS BY AGENCIES INCLUDING BUT NOT LIMITED TO CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD AND CALIFORNIA DEPARTMENT OF FISH AND GAME. COMPLIANCE MAY INCLUDE OBTAINING PERMITS, OTHER AUTHORIZATION, OR COMPLIANCE WITH MANDATES BY ANY APPLICABLE STATE OR FEDERAL AGENCY.

GRADING NOTES

1. GRADING AS SHOWN ON THESE PLANS SHALL BE IN CONFORMANCE WITH CURRENT STANDARD SPECIFICATIONS AND CHAPTER 14, ARTICLE 2, DIVISION 1, OF THE SAN DIEGO MUNICIPAL CODE, 2000 EDITION.
2. PLANT AND IRRIGATE ALL CUT AND FILL SLOPES AS REQUIRED BY ARTICLE 2, DIVISION 4, SECTION 142.0411 OF THE SAN DIEGO LAND DEVELOPMENT CODE AND ACCORDING TO SECTION IV OR THE LAND DEVELOPMENT MANUAL LANDSCAPE STANDARDS.
3. GRADED PAD AREAS SHALL BE HYDROSEEDED TO PREVENT EROSION IF BUILDING CONSTRUCTION DOES NOT COMMENCE WITHIN 30 DAYS OF GRADING. HYDROSEED SHALL BE IRRIGATED OR REAPPLIED AS NECESSARY TO ESTABLISH GROWTH.
4. ALL GRADED, DISTURBED OR ERODED AREAS THAT WILL NOT BE PERMANENTLY PAVED OR COVERED BY STRUCTURES SHALL BE PERMANENTLY REVEGETATED AND IRRIGATED AS SHOWN IN TABLE 142-04F AND IN ACCORDANCE WITH THE STANDARDS IN THE LAND DEVELOPMENT MANUAL.

STREET DESIGN DATA TABLE

STREET NAME	CLASSIFICATION	DESIGN SPEED	FUTURE ADT	R/W
TOWNE CENTRE DRIVE CUL-DE-SAC TO WESTERRA CT.	TWO-LANE INDUSTRIAL COLLECTOR	30MPH	500	70FT

CONSTRUCTION CHANGE TABLE

CHANGE	DATE	EFFECTED OR ADDED SHEET NUMBERS

SPECIAL NOTES

THE FOLLOWING NOTES ARE PROVIDED TO GIVE DIRECTIONS TO THE CONTRACTOR BY THE ENGINEER OF WORK. THE CITY ENGINEER'S SIGNATURE ON THESE PLANS DOES NOT CONSTITUTE APPROVAL OF ANY OF THESE NOTES AND THE CITY WILL NOT BE RESPONSIBLE FOR THEIR ENFORCEMENT.

1. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO DESIGN, CONSTRUCT AND MAINTAIN ALL SAFETY DEVICES, INCLUDING SHORING, AND SHALL BE SOLELY RESPONSIBLE FOR CONFORMING TO ALL LOCAL, STATE AND FEDERAL SAFETY AND HEALTH STANDARDS, LAWS AND REGULATIONS. NEITHER THE OWNER, NOR THE ENGINEER OF WORK WILL ENFORCE SAFETY MEASURES OR REGULATIONS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE THAT ALL SLOPES, STREETS, UTILITIES AND STORM DRAINS ARE BUILT IN ACCORDANCE WITH THESE PLANS. IF THERE IS ANY QUESTION REGARDING THESE PLANS OR FIELD STAKES, THE CONTRACTOR SHALL REQUEST AN INTERPRETATION BEFORE DOING ANY WORK BY CALLING THE ENGINEER OF WORK AT 619-460-9000. THE CONTRACTOR SHALL ALSO TAKE THE NECESSARY STEPS TO PROTECT THE PROJECT AND ADJACENT PROPERTY FROM ANY EROSION AND SILTATION THAT RESULT FROM HIS OPERATIONS BY APPROPRIATE MEANS (SAND BAGS, HAY BALES, TEMPORARY DESILTING BASINS, DIKES, SHORING, ETC.) UNTIL SUCH TIME THAT THE PROJECT IS COMPLETED AND ACCEPTED FOR MAINTENANCE BY WHATEVER OWNER, AGENCY OR ASSOCIATION IS TO BE ULTIMATELY RESPONSIBLE FOR MAINTENANCE.
3. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN HEREON AND ANY OTHER EXISTING LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS AND SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS/HER FAILURE TO LOCATE AND PRESERVE ANY AND ALL UTILITIES. CALL UNDERGROUND SERVICE ALERT AT 1-800-422-4133 TWO WORKING DAYS BEFORE STARTING CONSTRUCTION.
4. THE CONTRACTOR SHALL REPAIR/REPLACE ALL DESTROYED OR DAMAGED SURFACE IMPROVEMENTS WITH IMPROVEMENTS EQUAL TO THOSE REMOVED.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THAT OF OTHER CONTRACTORS WORKING ON THE SITE INCLUDING, BUT NOT LIMITED TO, GRADING, DRAINAGE, LANDSCAPING AND IRRIGATION.
6. CONSTRUCTION CHANGES MAY BE NECESSARY DUE TO FIELD CONDITIONS. THE CONTRACTOR SHALL GIVE THE ENGINEER OF WORK ADEQUATE TIME TO MAKE ADJUSTMENTS OR CLARIFICATIONS. ALL CONSTRUCTION AND/OR DESIGN CHANGES TO THE APPROVED PLANS SHALL BE PROPOSED BY THE ENGINEER OF WORK. CONSTRUCTION CHANGES SHALL BE INCORPORATED AT THE SITE AFTER APPROVAL BY THE CITY INSPECTOR.
7. IF THE ENGINEER OF WORK IS NOT EMPLOYED TO PROVIDE THE CONSTRUCTION REVIEW, CONSTRUCTION STAKING, AND THE PREPARATION OF THE RECORD PLANS, THE OWNER AGREES TO MAKE ARRANGEMENTS FOR SUCH SERVICES AND TO INDEMNIFY AND HOLD THE ENGINEER OF WORK HARMLESS AND RELEASE THE ENGINEER OF WORK FROM ALL LIABILITY ARISING FROM USE OF THE PLANS INCLUDING ANY COSTS TO MAKE SAID CLARIFICATIONS, ADJUSTMENTS AND CONSTRUCTION MODIFICATIONS. IT IS THE SOLE RESPONSIBILITY OF THE OWNER OR HIS CONSTRUCTION REPRESENTATIVE TO REQUEST AND COORDINATE CLARIFICATIONS OR ADJUSTMENTS FROM THE ENGINEER OF WORK AND TO SEE THAT THE ENGINEER'S RECOMMENDATIONS ARE ACCOMPLISHED DURING CONSTRUCTION.
8. NOTWITHSTANDING THE MINIMUM STANDARDS SET FORTH IN THE GRADING ORDINANCE AND NOTWITHSTANDING THE APPROVAL OF THESE PLANS, THE CONTRACTOR IS RESPONSIBLE FOR THE PREVENTION OF DAMAGE TO THE ADJACENT PROPERTY. NO PERSON SHALL EXCAVATE ON LAND SO CLOSE TO THE PROPERTY LINE AS TO ENDANGER ANY ADJOINING PUBLIC STREET, SIDEWALK, ALLEY OR ANY OTHER PUBLIC OR PRIVATE PROPERTY WITHOUT SUPPORTING OR PROTECTING SUCH PROPERTY FROM SETTLING, CRACKING, EROSION, SILTING, SCOUR OR OTHER DAMAGE WHICH MIGHT RESULT FROM THE GRADING DESCRIBED ON THIS PLAN.
9. THE CONTRACTOR SHALL MAINTAIN AND MAKE AVAILABLE TO THE ENGINEER ONE SET OF PLANS WITH ALL CHANGES SHOWN. A COPY OF THESE DRAWINGS SHALL BE PROVIDED TO THE ENGINEER UPON COMPLETION OF WORK.
10. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND JOB CONDITIONS RELATING TO THE PERFORMANCE OF HIS WORK BEFORE STARTING WORK, AND SHALL NOTIFY THE ENGINEER OF WORK IMMEDIATELY OF ANY DISCREPANCIES FOUND.
11. THE CONTRACTOR SHALL CONFIRM THE LOCATION AND ELEVATION OF IMPROVEMENTS TO BE MET BY WORK TO BE DONE BY FIELD MEASUREMENTS PRIOR TO CONSTRUCTION OF NEW WORK. THE CONTRACTOR WILL MAKE EXPLORATORY EXCAVATIONS (POTHOLE) AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF REVISIONS ARE NECESSARY BECAUSE OF THE ACTUAL LOCATION OF EXISTING FACILITIES.

GRADING QUANTITIES

DISTURBED AREA	12 AC	
GRADED AREA	11.5 AC	
CUT	54,000 CY	MAX. CUT DEPTH=17FT, SLOPE RATIO 2:1
FILL	54,000 CY	MAX. FILL DEPTH=42FT, SLOPE RATIO 2:1
EXPORT	0 CY	

GRADING QUANTITIES ARE GEOMETRIC ESTIMATED FOR PERMIT PURPOSES ONLY AND ARE NOT TO BE USED FOR FINAL PAY QUANTITIES.

GRADING AND GEOTECHNICAL SPECIFICATIONS

1. ALL GRADING SHALL BE DONE UNDER OBSERVATION AND TESTING BY A QUALIFIED CIVIL ENGINEER OR GEOTECHNICAL ENGINEER AND, IF REQUIRED, BOTH A QUALIFIED CIVIL ENGINEER OR GEOTECHNICAL ENGINEER AND AN ENGINEERING GEOLOGIST. ALL GRADING MUST BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY ORDINANCE AND THE RECOMMENDATIONS AND SPECIFICATIONS SET FORTH IN THE SOILS REPORT OR GEOLOGICAL/GEOTECHNICAL INVESTIGATION
   ENTITLED: UPDATE GEOTECHNICAL INVESTIGATION, TOWNE CENTRE CORPORATE PLAZA, SAN DIEGO, CALIFORNIA
   FOR: LAWRENCE M. CUSHMAN
   PREPARED BY: GEOCON, INC.
   DATED: JULY 15, 2005.
   INCLUDING ADDENDA NOS. 1 AND 2, TOWNE CENTRE CORPORATE PLAZA, PREPARED BY GEOCON, INC., PROJECT NO. 06376-22-03 DATED AUGUST 31, 2005, AND MARCH 5, 2007, RESPECTIVELY.
2. ALL FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MOST RECENT VERSION OF A.S.T.M. D-1557 OR AN APPROVED ALTERNATIVE STANDARD.
3. AT THE COMPLETION OF THE GRADING OPERATIONS FOR THE EARTHWORK SHOWN ON THIS PLAN, AN AS-GRADED SOILS REPORT, OR IF REQUIRED, AN AS-GRADED SOILS AND GEOLOGICAL REPORT WILL BE PREPARED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE CITY OF SAN DIEGO TECHNICAL GUIDELINES FOR GEOTECHNICAL REPORTS. THE FINAL "AS GRADED" GEOTECHNICAL REPORT WILL BE SUBMITTED TO THE FIELD ENGINEERING SECTION OF PUBLIC WORKS AND A SECOND COPY TO THE GEOLOGY SECTION OF DEVELOPMENT SERVICES WITHIN 15 DAYS OF THE COMPLETION OF GRADING. WHERE GEOLOGIC INSPECTION IS INDICATED IN THE PERMIT OR PROJECT PLANS, REPORTS OR SPECIFICATIONS, THE FINAL REPORT MUST ALSO BE REVIEWED AND SIGNED BY A CALIFORNIA CERTIFIED ENGINEERING GEOLOGIST.
4. IF THE GEOTECHNICAL CONSULTANT OF RECORD IS CHANGED FOR THE PROJECT, THE WORK SHALL BE STOPPED UNTIL THE REPLACEMENT HAS AGREED IN WRITING TO ACCEPT THE RESPONSIBILITY WITHIN THE AREA OF THEIR TECHNICAL COMPETENCE FOR APPROVAL UPON COMPLETION OF WORK. IT SHALL BE THE DUTY OF THE PERMITTEE TO NOTIFY THE CITY ENGINEER AND THE GEOLOGY SECTION OF DEVELOPMENT SERVICES IN WRITING OF SUCH CHANGE PRIOR TO THE RECOMMENCEMENT OF GRADING.
5. THESE PLANS HAVE BEEN REVIEWED BY THE UNDERSIGNED AND FOUND TO BE IN CONFORMANCE WITH THE RECOMMENDATIONS AND SPECIFICATIONS CONTAINED IN THE REFERENCED GEOTECHNICAL REPORT(S) PREPARED FOR THIS PROJECT.

GE2401 10/8/07
(SIGNATURE) REGISTRATION NO.: DATE

REGISTERED PROFESSIONAL ENGINEER JOSEPH J. VETTEL No. 2401 EXP. 09/30/08 GEOTECHNICAL STATE OF CALIFORNIA

GEG1778 10/8/07
(SIGNATURE) REGISTRATION NO.: DATE

REGISTERED GEOLOGIST ALI SAJJADI NO. 1773 CERTIFIED ENGINEERING GEOLOGIST Exp 9/30/09 STATE OF CALIFORNIA

COMPANY NAME: GEOCON, INC.
PHONE NO.: 858-558-6900

6. FOR SOIL FILE SEE CITY RECORD S-6109

SPECIAL GEOTECHNICAL NOTES

1. THE GEOTECHNICAL CONSULTANT SHALL PROVIDE AN OBSERVATION PROGRAM DURING EXCAVATION TO VERIFY THE LOCATION OF FAULTING ON THE SITE. FAULTS DISCOVERED DURING GRADING OF THE SITE SHALL BE EVALUATED AND ANALYZED FOR ACTIVITY LEVEL BY THE GEOTECHNICAL CONSULTANT WITH DETAILED REPORTS SUBMITTED SUBJECT TO REVIEW AND APPROVAL BY CITY GEOLOGY STAFF PRIOR TO ISSUANCE OF BUILDING PERMITS.
2. A "NOTICE OF GEOLOGIC AND GEOTECHNICAL CONDITIONS" SHALL BE RECORDED PRIOR TO ISSUANCE OF BUILDING PERMITS FOR HABITABLE STRUCTURES SITED OVER ANY POTENTIALLY ACTIVE FAULT(S) DISCOVERED ON SITE UNLESS A SETBACK FROM THE FAULT IS RECOMMENDED BY THE GEOTECHNICAL CONSULTANT. NO STRUCTURE FOR HUMAN OCCUPANCY SHALL BE PERMITTED OVER THE TRACE OF AN ACTIVE FAULT.
3. THE PRECISE AS-GRADED LOCATION OF FAULT(S) SHALL BE SHOWN ON THE FINAL AS-GRADED PLANS SUBJECT TO REVIEW AND APPROVAL BY CITY GEOLOGY STAFF.

TOPOGRAPHY NOTES

1. THE EXISTING TOPOGRAPHY SHOWN ON THIS PLAN IS FROM AERIAL SURVEY PROVIDED BY SAN-LO AERIAL SURVEYS, JOB NO. 7508, FLOWN AT 40 SCALE WITH 2FT CONTOUR INTERVALS ON 11-3-87, AND SUPPLEMENTED BY FIELD SURVEY MEASUREMENTS MADE BY WILLIAM A. STEEN AND ASSOCIATES.
2. THE LOCATIONS OF UNDERGROUND UTILITIES HAVE BEEN ESTIMATED BY PHYSICAL SURFACE FEATURES AND BY RECORD DRAWINGS PROVIDED BY THE UTILITY COMPANIES.
3. ADDITIONAL UNDERGROUND UTILITIES MAY EXIST ON SITE BUT CANNOT BE LOCATED FROM FIELD OBSERVATIONS. ACTUAL LOCATIONS OF ANY UTILITY SERVICES SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL NOTES

THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN (11"x17") FOR APPROVAL PRIOR TO STARTING WORK. THE PLAN SHOULD BE SUBMITTED TO THE TRAFFIC CONTROL PERMIT COUNTER, 3RD FLOOR, BOOTH 22, LAND DEVELOPMENT REVIEW DIVISION, DEVELOPMENT SERVICES CENTER, 1222 FIRST AVENUE, SAN DIEGO (619-446-5150). CONTRACTOR SHALL OBTAIN A TRAFFIC CONTROL PERMIT A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO STARTING WORK, AND A MINIMUM OF FIVE (5) DAYS IF WORK WILL AFFECT A BUS STOP OR AN EXISTING TRAFFIC SIGNAL, OR IF WORK WILL REQUIRE A ROAD OR ALLEY CLOSURE.

OWNER/APPLICANT

TOWNE CENTRE SCIENCE PARK L.P.,
A DELAWARE LIMITED PARTNERSHIP
2901 FIFTH AVENUE
SAN DIEGO, CA 92103

REFERENCE DRAWINGS

PLAN:	DWG. NO.:	W.O. NO.:
SEWER	21075-D	118150
STORM DRAIN	23029-D	118958
IMPVTS.	29333-D	98-0326

BENCH MARK

CITY MONUMENT AT SOUTHERLY END OF CUL-DE-SAC ON ROSELLE STREET. ELEVATION 65.363 M.S.L. DATUM PER CITY OF SAN DIEGO VERTICAL CONTROL RECORD (INDEX 2652 17034).

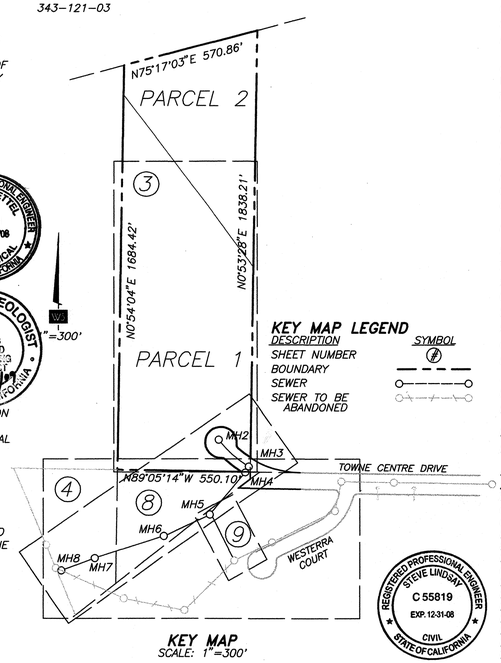
LEGAL DESCRIPTION

EXISTING: LOT "A" OF PUEBLO LOT 1320, OF PUEBLO LANDS OF SAN DIEGO, MISC. MAP NO. 36, IN THE CITY OF SAN DIEGO, AS PER SUPERIOR COURT CASE ACTION NO. 17622.
PROPOSED: PARCELS 1 AND 2 OF PM _____.

SHEET INDEX

APN

343-121-03



KEY MAP
SCALE: 1"=300'

REGISTERED PROFESSIONAL ENGINEER STEVE LINDSAY C 55819 EXP. 12-31-08 CIVIL STATE OF CALIFORNIA

KEY MAP LEGEND

DESCRIPTION	SYMBOL
SHEET NUMBER	(#)
BOUNDARY	
SEWER	
SEWER TO BE ABANDONED	

DECLARATION OF RESPONSIBLE CHARGE

I HEREBY DECLARE THAT I AM THE ENGINEER OF WORK FOR THIS PROJECT, THAT I HAVE EXERCISED RESPONSIBLE CHARGE OVER THE DESIGN OF THE PROJECT AS DEFINED IN SECTION 6703 OF THE BUSINESS AND PROFESSIONS CODE, AND THAT THE DESIGN IS CONSISTENT WITH CURRENT STANDARDS.

I UNDERSTAND THAT THE CHECK OF PROJECT DRAWINGS AND SPECIFICATIONS BY THE CITY OF SAN DIEGO IS CONFINED TO A REVIEW ONLY AND DOES NOT RELIEVE ME, AS ENGINEER OF WORK, OF MY RESPONSIBILITY FOR PROJECT DESIGN.

WILLIAM A. STEEN, R.C.E. 18136 — DATE 10-5-07

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. STEEN EXP. 6-30-09 NO. 18136 CIVIL STATE OF CALIFORNIA

WILLIAM A. STEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
■ (619) 460-9000 ■ FAX (619) 460-9005 ■

ENGINEER OF WORK: WILLIAM A. STEEN R.C.E. 18136 — DATE 10-5-07

JOB NO. 6247-101

WORK TO BE DONE

THE IMPROVEMENTS CONSIST OF THE FOLLOWING WORK TO BE DONE ACCORDING TO THESE PLANS AND THE SPECIFICATIONS AND STANDARD DRAWINGS OF THE CITY OF SAN DIEGO.

STANDARD SPECIFICATIONS

1. STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2006 EDITION (GREENBOOK), DOCUMENT NO. AEC1231061, FILED DECEMBER 31, 2006, INCLUDING THE REGIONAL AND CITY OF SAN DIEGO SUPPLEMENT, DOCUMENT NO. AEC1231062, FILED DECEMBER 31, 2006.
2. 1999 STANDARD SPECIAL PROVISIONS FOR SIGNALS, LIGHTING AND ELECTRICAL SYSTEMS OF THE CITY OF SAN DIEGO, DOCUMENT NO. 769842, FILED OCTOBER 22, 1999.
3. CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (FHWA'S MUTCD, 2003 EDITION, AS AMENDED FOR USE IN CALIFORNIA), DOCUMENT NO. AEC1231064, FILED DECEMBER 31, 2006.
4. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS, DOCUMENT NO. AEC0925062, FILED SEPTEMBER 25, 2006.

STANDARD DRAWINGS

1. CITY OF SAN DIEGO STANDARD DRAWINGS, INCLUDING ALL REGIONAL STANDARD DRAWINGS, DOCUMENT NO. AEC1231063, FILED DECEMBER 31, 2006.
2. STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION, STANDARD PLANS, DOCUMENT NO. AEC0925061, FILED SEPTEMBER 25, 2006.

LEGEND

PROPOSED IMPROVEMENTS

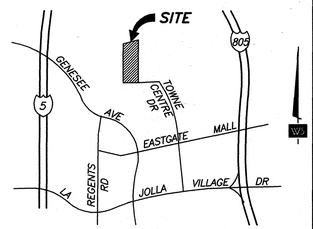
ITEM	STD. DWG.	SYMBOL
SUBDIVISION BOUNDARY		
FINISH SPOT ELEVATION		348.0
FINISH CONTOUR		348
CUT/FILL TRANSITION LINE		C F
DAYLIGHT LINE		
SLOPE		
DIRECTION OF SURFACE RUNOFF		
SUBDRAIN LINE, 6" PVC SCHEDULE 40 (PER GEOTECHNICAL ENGINEER'S RECOMMENDATIONS)		
SEGMENTAL RETAINING WALL SYSTEM	(BY SEPARATE PERMIT)	
PRECAST CONCRETE DRAIN BOX 18"x18" W/ PARKWAY GRATE		
CURB INLET, TYPE-B (PVT.) WITH FILTER INSERT	D-2, D-11, D-12, M-2, SDD-100, SDG-110	
CATCH BASIN, TYPE F (PUBLIC)	D-7, D-11, M-2	
STORM DRAIN CLEANOUT, TYPE A (PVT.)	D-9, D-11, M-3	
HEADWALL, WING TYPE (PVT.)	D-34	
RIPRAP ENERGY DISSIPATER, TYPE 2 (PVT.)	D-40, SDD-100	
STORM DRAIN (PVT.)	D-60	
DRAINAGE DITCH (PVT. UNLESS SHOWN OTHERWISE)	D-75, SDD-100	
CURB AND GUTTER, TYPE G	G-2, G-10, SDG-100	
PAVEMENT, CONCRETE, SCHEDULE "J"	SDG-113, G-18 (W/ 2% CROSSFALL)	
SEWER MAIN (PUBLIC)	SDS-110C, SDS-100, SDS-101	
SEWER MAIN (PVT.)	SDS-110C, SDS-100, SDS-101	
SLOPE PROTECTION INSTALLATION (FOR GRADES 20% TO 50%)	SP-05	
SEWER MANHOLE (PUBLIC)	SDS-107, SM-07, M-3, SDM-113	SMH
SEWER MANHOLE (PVT.)	SDS-107, M-3, SM-07	
CONCRETE BACKFILL	SDS-113	
DRAINAGE DITCH OUTLET STRUCTURE (PVT.)	(SEE DETAIL SHT. 5)	
3' RIBBON GUTTER (PVT.)	(SEE DETAIL SHT. 5)	
DETENTION FACILITY (PVT.)	(SEE DETAIL SHT. 6)	
DG MAINTENANCE ACCESS PATH, 4"		

EXISTING IMPROVEMENTS

EXISTING SURVEY MONUMENT

ABBREVIATIONS

AC	ASPHALT CONCRETE
BW	BOTTOM OF WALL
CONC.	CONCRETE
CL	CENTERLINE
DG	DISINTEGRATED GRANITE
EXIST.	EXISTING
FG	FINISHED GRADE
GR	GRADE
HH	HAND HOLE
HP	HIGH POINT
IE	INVERT ELEVATION
PCC	PORTLAND CEMENT CONCRETE
PVC	POLYVINYL CHLORIDE
PVT.	PRIVATE
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
SMH	SEWER MANHOLE
TW	TOP OF WALL
TYP.	TYPICAL



VICINITY MAP
NO SCALE

WDID NO. 937C349192
TM NO. 2761, REZONE NO. 2759, CDP NO. 117798, SDP NO. 2758
RETAINING WALL PERMIT NO. (SEE NOTE 4 ON SHT. 3)
CONSTRUCTION SITE PRIORITY: HIGH
PRIVATE CONTRACT

GRADING AND IMPROVEMENT PLANS FOR:
SUMMIT POINTE PLAZA
NOTES, LEGEND, KEY MAP

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 1 OF 23 SHEETS

W.O. NO. 421166
P.T.S. NO. 6109

FOR CITY ENGINEER — DATE 10/17/07

T.M. 2761

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			
AS-BUILTS				

1904-6263 NAD 83 COORDINATES
264-1703 LAMBERT COORDINATES

CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

32375-1-D

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

CELSOC CONSULTING ENGINEERS AND LAND SURVEYORS OF CALIFORNIA

DATE/TIME: October 05, 2007 - 3:38pm FILE: G:\Proj\6247\Dwg\Grading_Erosion\Grading Plan.dwg LAYOUT: GP Notes

SWPPP NOTES

1. DISCHARGING SEDIMENT LADEN WATER WHICH WILL CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF THE APPLICABLE RWQCB'S BASIN PLANS FROM A DEWATERING SITE OR SEDIMENT BASIN/TRAP INTO ANY RECEIVING WATER OR STORM DRAIN WITHOUT FILTRATION OR EQUIVALENT TREATMENT IS PROHIBITED.

2. THE DISCHARGER SHALL AMEND THE SWPPP WHENEVER THERE IS A CHANGE IN CONSTRUCTION OR OPERATIONS, WHICH MAY AFFECT THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS, GROUNDWATERS, OR A MUNICIPAL STORM DRAIN SYSTEM. THE SWPPP SHALL ALSO BE AMENDED IF THE DISCHARGER VIOLATES ANY CONDITION OF THE GENERAL PERMIT OR HAS NOT ACHIEVED THE GENERAL OBJECTIVE OF REDUCING OR ELIMINATING POLLUTANTS IN STORMWATER DISCHARGES. ALL AMENDMENTS SHOULD BE DATED AND DIRECTLY ATTACHED TO THE SWPPP.

3. TEMPORARY ON-SITE DRAINAGES TO CARRY CONCENTRATED FLOW SHALL BE SELECTED TO COMPLY WITH CITY REQUIREMENTS TO CONTROL EROSION, TO RETURN FLOWS TO THEIR NATURAL DRAINAGE COURSES, AND TO PREVENT DAMAGE TO DOWNSTREAM PROPERTIES.

4. DISCHARGES ORIGINATING FROM OFF SITE, WHICH FLOW ACROSS OR THROUGH AREAS DISTURBED BY CONSTRUCTION THAT MAY CONTAIN POLLUTANTS, SHOULD BE REPORTED TO THE RWQCB.

5. DISCHARGERS WHO ARE PRESENTLY COVERED UNDER NPDES GENERAL PERMIT NO. CA000002 FOR DISCHARGE OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY MAY SUBMIT A NOTICE OF TERMINATION WHEN THEY MEET THE FOLLOWING CRITERIA:

   A. THE CONSTRUCTION PROJECT HAS BEEN COMPLETED AND THE FOLLOWING CONDITIONS HAVE BEEN MET: ALL ELEMENTS OF THE STORMWATER POLLUTION PREVENTION PLAN HAVE BEEN COMPLETED; CONSTRUCTION MATERIALS AND EQUIPMENT MAINTENANCE WASTE HAVE BEEN DISPOSED OF PROPERLY; THE SITE IS IN COMPLIANCE WITH ALL LOCAL STORMWATER MANAGEMENT REQUIREMENTS INCLUDING EROSION/SEDIMENT CONTROL REQUIREMENTS AND THE APPROPRIATE USE PERMITS HAVE BEEN OBTAINED; AND A POSTCONSTRUCTION STORMWATER OPERATION AND MANAGEMENT PLAN IS IN PLACE.

   B. CONSTRUCTION ACTIVITIES HAVE BEEN SUSPENDED, EITHER TEMPORARILY OR INDEFINITELY AND THE FOLLOWING CONDITIONS HAVE BEEN MET: ALL ELEMENTS OF THE STORMWATER POLLUTION PREVENTION PLAN HAVE BEEN COMPLETED; CONSTRUCTION MATERIALS AND EQUIPMENT MAINTENANCE WASTE HAVE BEEN DISPOSED OF PROPERLY; ALL DENUDED AREAS AND ALL OTHER AREAS OF POTENTIAL EROSION ARE STABILIZED; AN OPERATION AND MAINTENANCE PLAN FOR EROSION AND SEDIMENT CONTROL IS IN PLACE; AND THE SITE IS IN COMPLIANCE WITH ALL LOCAL STORMWATER MANAGEMENT REQUIREMENTS INCLUDING EROSION/SEDIMENT CONTROL REQUIREMENTS. THE DATE CONSTRUCTION ACTIVITIES WERE SUSPENDED, AND THE EXPECTED DATE CONSTRUCTION ACTIVITIES WILL START UP AGAIN SHOULD BE PROVIDED.

   C. CONSTRUCTION SITE CANNOT DISCHARGE STORMWATER TO WATERS OF THE UNITED STATES. PLEASE INDICATE IF ALL STORMWATER IS RETAINED ON SITE OR IF STORMWATER IS COLLECTED OFF SITE.

   D. DISCHARGE OF CONSTRUCTION STORMWATER FROM THE SITE IS NOW SUBJECT TO ANOTHER NPDES GENERAL PERMIT OR AN INDIVIDUAL NPDES PERMIT. THE GENERAL PERMIT OR INDIVIDUAL PERMIT NPDES NUMBER AND DATE COVERAGE BEGAN SHOULD BE PROVIDED.

   E. THERE IS A NEW OWNER OF THE IDENTIFIED SITE. IF OWNERSHIP OR OPERATION OF THE FACILITY HAVE BEEN TRANSFERRED THEN THE PREVIOUS OWNER MUST SUBMIT A NOTICE OF TERMINATION AND THE NEW OWNER MUST SUBMIT A NOTICE OF INTENT FOR COVERAGE UNDER THE GENERAL PERMIT. THE DATE OF TRANSFER AND INFORMATION ON THE NEW OWNER SHOULD BE PROVIDED. NOTE THAT THE PREVIOUS OWNER MAY BE LIABLE FOR DISCHARGE FROM THE SITE UNTIL THE NEW OWNER FILES A NOTICE OF INTENT FOR COVERAGE UNDER THE GENERAL PERMIT.

6. SEDIMENT CONTROL BMP'S ARE REQUIRED AT APPROPRIATE LOCATIONS, ALONG THE SITE PERIMETER AND AT ALL OPERATIONAL INTERNAL INLETS TO THE STORM DRAIN SYSTEM AT ALL TIMES.

7. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ADEQUATE SEDIMENT CONTROL MATERIALS ARE AVAILABLE TO CONTROL SEDIMENT DISCHARGES AT THE DOWNGRADE PERIMETER AND OPERATIONAL INLETS (WEATHER AND STORM PREDICTIONS CAN BE OBTAINED BY CALLING THE NATIONAL WEATHER SERVICE AT (858) 675-8700 OR BY VISITING THE NATIONAL WEATHER SERVICE WEB SITE AT HTTP://WWW.WRH.NOAA.GOV/SANDIEGO/INDEX.SHTML FOR WEATHER INFORMATION AND CURRENT SATELLITE/RADAR FEEDS).

8. THE OUTLETS OF ALL SEDIMENT BASINS, TRAPS, AND LOCATIONS OF ARTIFICIALLY CONCENTRATED FLOW SHALL BE PROVIDED WITH OUTLET PROTECTION TO PREVENT EROSION AND SCOUR.

9. INSPECTIONS SHALL BE PERFORMED BEFORE AND AFTER STORM EVENTS AND ONCE EACH 24-HOUR PERIOD DURING EXTENDED STORM EVENTS TO IDENTIFY BMP EFFECTIVENESS AND IMPLEMENT REPAIRS OR DESIGN CHANGES AS SOON AS FEASIBLE, DEPENDING ON FIELD CONDITIONS. EQUIPMENT, MATERIALS, AND WORKERS MUST BE AVAILABLE FOR RAPID RESPONSE TO FAILURES AND EMERGENCIES. ALL CORRECTIVE MAINTENANCE TO BMP'S SHALL BE PERFORMED AS SOON AS POSSIBLE AFTER THE CONCLUSION OF EACH STORM, DEPENDING UPON WORKER SAFETY.

10. FOR EACH INSPECTION, A QUALIFIED PERSON SHALL COMPLETE AN INSPECTION CHECKLIST CONTAINING THE FOLLOWING MINIMUM INFORMATION: INSPECTION DATE, WEATHER INFORMATION (BEGINNING/END OF STORM EVENT, DURATION, TIME SINCE LAST STORM, APPROXIMATE RAINFALL IN INCHES), DESCRIPTION OF INADEQUATE BMP'S, LIST OF OBSERVATIONS OF ALL BMP'S AND VISIBLE INSPECTION OF OUTFALLS, DISCHARGE POINTS, DOWNSTREAM LOCATIONS, AND PROJECTED REQUIRED MAINTENANCE ACTIVITIES, CORRECTIVE ACTIONS REQUIRED, INCLUDING CHANGES TO THE SWPPP AND IMPLEMENTATION DATES, INSPECTOR'S NAME, TITLE, SIGNATURE, AND QUALIFICATIONS.

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

SWPPP NOTES (CONTINUED)

11. INDIVIDUALS RESPONSIBLE FOR SWPPP, IMPLEMENTATION, AND PERMIT COMPLIANCE SHALL BE APPROPRIATELY TRAINED. THIS INCLUDES THOSE PERSONNEL RESPONSIBLE FOR INSTALLATION, INSPECTION, MAINTENANCE, AND REPAIR OF BMP'S. THOSE RESPONSIBLE FOR OVERSEEING, REVISING, AND AMENDING THE SWPPP SHALL ALSO DOCUMENT THEIR TRAINING. THE QUALIFIED PERSON SHALL ALSO ATTEND THE PRECONSTRUCTION MEETING. THE QUALIFIED PERSON SHALL HAVE KNOWLEDGE AND TRAINING OF THE INTENT AND ENFORCEMENT OF SWPPP'S AND BMP'S AND BE PROPERLY TRAINED TO CONDUCT INSPECTIONS AND PREPARE REPORTS OF THE CONSTRUCTION SITE WITH RESPECT TO THE CITY'S CODE/ORDINANCES AND THE SWPPP.

12. THE CONTRACTOR SHALL MAINTAIN A COPY OF THE SWPPP AT THE CONSTRUCTION SITE WHICH SHALL BE PROVIDED, UPON REQUEST, TO THE RWQCB OR CITY PERSONNEL. THE SWPPP IS CONSIDERED A REPORT THAT SHALL BE AVAILABLE TO THE PUBLIC BY THE RWQCB UNDER SECTION 308(B) OF THE CLEAN WATER ACT.

13. RECORDS OF ALL INSPECTIONS, COMPLIANCE CERTIFICATIONS, NONCOMPLIANCE REPORTING, AND ANY OTHER DOCUMENTS GENERATED AS PART OF THE SWPPP, MUST BE RETAINED FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE GENERATED.

14. A CONCRETE WASHOUT SHALL BE INSTALLED FOR ALL PROJECTS THAT PROPOSE CONCRETE TO BE MIXED ON SITE OR DELIVERED FROM A BATCH PLANT. THE CONCRETE WASHOUT SHALL BE LOCATED A MINIMUM OF 50' FROM ANY DRAINAGE INFRASTRUCTURE OR NATURAL DRAINAGE FEATURES OR WATER BODIES AND INCORPORATE AN IMPERMEABLE LINER (6 MIL MIN.) TO CONTAIN THE REQUIRED VOLUME. ALL DRIED CONCRETE WASTE SHALL BE BROKEN INTO MANAGEABLE PIECES AND DISPOSED OF IN A PROPER MANNER. THE CONTRACTOR OR QUALIFIED PERSON SHALL LOCATE CONCRETE WASHOUTS IN THIS PRESCRIBED MANNER AS CONSTRUCTION PROGRESSES.

15. THE QUALIFIED PERSON SHALL CONDUCT REGULAR INSPECTIONS OF THE PROJECT SITE IN ACCORDANCE WITH RECOMMENDATIONS OUTLINED IN THE SWPPP. EACH INSPECTION SHALL BE DOCUMENTED IN THE FORM OF WRITTEN REPORTS RETAINED ON SITE. ALL REPORTS SHALL BE MADE AVAILABLE TO THE CITY OF SAN DIEGO AND RWQCB REPRESENTATIVES UPON REQUEST.

16. THE CONTRACTOR SHALL HAVE EMERGENCY MATERIALS AND EQUIPMENT ON HAND FOR UNFORESEEN SITUATIONS, SUCH AS DAMAGE TO UNDERGROUND WATER AND SEWER UTILITIES WHEREBY FLOWS MAY GENERATE EROSION AND SEDIMENT POLLUTION.

17. THE PERMITTEE OR DESIGNEE SHALL PROVIDE EVIDENCE OF COVERAGE UNDER THE GENERAL CONSTRUCTION NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT, IN THE FORM OF A NOTICE OF INTENT (NOI) FILED WITH THE STATE WATER RESOURCES CONTROL BOARD, PRIOR TO THE ISSUANCE OF ANY CONSTRUCTION PERMITS.

18. SEDIMENT AND EROSION CONTROLS MAY BE REMOVED ONLY WHEN CONTRIBUTORY UPSTREAM AREAS BECOME STABILIZED OR ARE MANAGED UPSTREAM (I.E., SINGLE-LOT SEDIMENT CONTROLS) AND AS LONG AS SEDIMENT LADEN RUNOFF WILL NOT DISCHARGE FROM THE SITE.

19. WHEN FUTURE WORK BY THE DEVELOPER NOT SHOWN ON THIS PLAN IS TO BE PERFORMED, THE SWPPP SHALL BE AMENDED TO INCLUDE SAID WORK AND ANY ADDITIONAL WATER QUALITY CONTROL MEASURES REQUIRED.

20. WHEN OWNERSHIP CHANGES FOR PORTIONS OF THE SITE OR THE LIMITS OR NATURE OF WORK ARE ALTERED, THE DEVELOPER SHALL FILE A CHANGE OF INFORMATION (COI) OR A REVISED NOTICE OF INTENT (NOI), RESPECTIVELY, WITH THE CRWQCB AND SWRCB, RESPECTIVELY.

21. THIS PLAN SHALL BE IN EFFECT UNTIL ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED, TRANSFERRED TO NEW OWNERSHIP, OR DEVELOPED UNDER FUTURE PLANS WITH A NEW NOI, SWPPP, AND WDID NUMBER.

MINIMUM POSTCONSTRUCTION MAINTENANCE PLAN

AT THE COMPLETION OF THE WORK SHOWN, THE FOLLOWING PLAN SHALL BE FOLLOWED TO ENSURE WATER QUALITY CONTROL IS MAINTAINED FOR THE LIFE OF THE PROJECT:

1. STABILIZATION: ALL PLANTED SLOPES AND OTHER VEGETATED AREAS SHALL BE INSPECTED PRIOR TO OCTOBER 1 OF EACH YEAR AND AFTER MAJOR RAINFALL EVENTS (MORE THAN 1/2 INCH) AND REPAIRED AND REPLANTED AS NEEDED UNTIL A NOTICE OF TERMINATION IS FILED.

2. STRUCTURAL PRACTICES: DESILTING BASINS, DIVERSION DITCHES, DOWNDRAINS, INLETS, OUTLET PROTECTION MEASURES, AND OTHER PERMANENT WATER QUALITY AND SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED PRIOR TO OCTOBER 1ST OF EACH YEAR AND AFTER MAJOR RAINFALL EVENTS (MORE THAN 1/2 INCH). REPAIRS AND REPLACEMENTS SHALL BE MADE AS NEEDED AND RECORDED IN THE MAINTENANCE LOG IN PERPETUITY.

3. OPERATION AND MAINTENANCE FUNDING: POSTCONSTRUCTION MANAGEMENT MEASURES ARE THE RESPONSIBILITY OF THE DEVELOPER UNTIL THE TRANSFER OF RESPECTIVE SITES TO HOME BUILDERS, INDIVIDUAL OWNERS, HOMEOWNERS ASSOCIATIONS, SCHOOL DISTRICTS, OR LOCAL AGENCIES AND/OR GOVERNMENTS. AT THAT TIME, THE NEW OWNERS SHALL ASSUME RESPONSIBILITY FOR THEIR RESPECTIVE PORTIONS OF THE DEVELOPMENT.

EROSION AND SEDIMENT CONTROL NOTES

TEMPORARY EROSION/SEDIMENT CONTROL, PRIOR TO COMPLETION OF FINAL IMPROVEMENTS, SHALL BE PERFORMED BY THE CONTRACTOR OR QUALIFIED PERSON AS INDICATED BELOW:

1. ALL REQUIREMENTS OF THE CITY OF SAN DIEGO "LAND DEVELOPMENT MANUAL, STORM WATER STANDARDS" MUST BE INCORPORATED INTO THE DESIGN AND CONSTRUCTION OF THE PROPOSED GRADING/IMPROVEMENTS CONSISTENT WITH THE APPROVED STORM WATER POLLUTION PREVENTION PLAN (SWPPP), WATER QUALITY TECHNICAL REPORT (WTQR), AND OR WATER POLLUTION CONTROL PLAN (WPCP).

2. FOR STORM DRAIN INLET, PROVIDE A GRAVEL BAG SILT BASIN IMMEDIATELY UPSTREAM OF INLET AS INDICATED ON DETAILS.

3. FOR INLETS LOCATED AT SUMPS ADJACENT TO TOP OF SLOPES, THE CONTRACTOR SHALL ENSURE THAT WATER DRAINING TO THE SUMP IS DIRECTED INTO THE INLET AND THAT A MINIMUM OF 1.0' FREEBOARD EXISTS AND IS MAINTAINED ABOVE THE TOP OF THE INLET. IF FREEBOARD IS NOT PROVIDED BY GRADING SHOWN ON THESE PLANS, THE CONTRACTOR SHALL PROVIDE IT VIA TEMPORARY MEASURES, I.E. GRAVEL BAGS OR DIKES.

4. THE GRADING CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP OF SILT AND MUD ON ADJACENT STREET(S) DUE TO CONSTRUCTION ACTIVITY.

5. THE CONTRACTOR SHALL CHECK AND MAINTAIN ALL LINED AND UNLINED DITCHES AFTER EACH RAINFALL.

6. THE CONTRACTOR SHALL REMOVE SILT AND DEBRIS AFTER EACH MAJOR RAINFALL.

7. EQUIPMENT AND WORKERS FOR EMERGENCY WORK SHALL BE MADE AVAILABLE AT ALL TIMES DURING THE RAINY SEASON. ALL NECESSARY MATERIALS SHALL BE STOCKPILED ON SITE AT CONVENIENT LOCATIONS TO FACILITATE RAPID CONSTRUCTION OF TEMPORARY DEVICES WHEN RAIN IS IMMINENT.

8. THE CONTRACTOR SHALL RESTORE ALL EROSION/SEDIMENT CONTROL DEVICES TO WORKING ORDER TO THE SATISFACTION OF THE CITY ENGINEER OR RESIDENT ENGINEER AFTER EACH RUNOFF PRODUCING RAINFALL.

9. THE CONTRACTOR SHALL INSTALL ADDITIONAL EROSION/SEDIMENT CONTROL MEASURES AS MAY BE REQUIRED BY THE RESIDENT ENGINEER AND THE ENGINEER OF WORK DUE TO UNCOMPLETED GRADING OPERATIONS OR UNFORESEEN CIRCUMSTANCES WHICH MAY ARISE.

10. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT PUBLIC TRESPASS ONTO AREAS WHERE IMPOUNDED WATERS CREATE A HAZARDOUS CONDITION.

11. ALL EROSION/SEDIMENT CONTROL MEASURES PROVIDED PER THE APPROVED GRADING PLAN SHALL BE INCORPORATED HEREON. ALL EROSION/SEDIMENT CONTROL FOR INTERIM GRADING CONDITIONS SHALL BE DONE TO THE SATISFACTION OF THE RESIDENT ENGINEER.

12. GRADED AREAS AROUND THE PROJECT PERIMETER MUST DRAIN AWAY FROM THE FACE OF THE SLOPE AT THE CONCLUSION OF EACH WORKING DAY.

13. ALL REMOVABLE PROTECTIVE DEVICES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN RAIN IS IMMINENT.

14. THE CONTRACTOR SHALL ONLY GRADE, INCLUDING CLEARING AND GRUBBING, THE AREAS FOR WHICH THE CONTRACTOR CAN PROVIDE EROSION/SEDIMENT CONTROL MEASURES.

15. THE CONTRACTOR SHALL ARRANGE FOR WEEKLY MEETINGS DURING OCTOBER 1ST TO APRIL 30TH FOR PROJECT TEAM (GENERAL CONTRACTOR, QUALIFIED PERSON, EROSION CONTROL SUBCONTRACTOR, IF ANY, ENGINEER OF WORK, OWNER/DEVELOPER AND THE RESIDENT ENGINEER) TO EVALUATE THE ADEQUACY OF THE EROSION/SEDIMENT CONTROL MEASURES AND OTHER RELATED CONSTRUCTION ACTIVITIES.

PERMANENT POSTCONSTRUCTION BMP NOTES

1. OPERATION AND MAINTENANCE SHALL BE SECURED BY AN EXECUTED AND RECORDED STORM WATER MANAGEMENT AND DISCHARGE CONTROL MAINTENANCE AGREEMENT (SWMDCM), COVENANTS CONDITIONS AND RESTRICTIONS (CC&R'S), OR ANOTHER MECHANISM APPROVED BY THE CITY ENGINEER, THAT ASSURES ALL PERMANENT BMP'S WILL BE MAINTAINED IN PERPETUITY, PER THE LAND DEVELOPMENT MANUAL, STORM WATER STANDARDS.

2. PERMANENT POSTCONSTRUCTION BMP DEVICES SHOWN ON PLAN SHALL NOT BE MOVED OR MODIFIED WITHOUT THE APPROVAL OF THE CITY ENGINEER OR RESIDENT ENGINEER AND THE ENGINEER OF WORK.

POSTCONSTRUCTION PERMANENT BMP'S	PROPOSED OPERATION AND MAINTENANCE PROCEDURE DETAILS				
	O&M RESPONSIBLE PARTY DESIGNEE: PROPERTY OWNER				
	INSPECTION FREQUENCY	MAINTENANCE FREQUENCY	MAINTENANCE METHOD	SERVICE FREQUENCY	SERVICE METHOD
PROPOSED SITE DESIGN					
RIPRAP ENERGY DISSIPATERS	3/YR	3/YR	REMOVE DEBRIS	AS NEEDED	(1)
DRAINAGE DITCH OUTLET STRUCTURES	3/YR	3/YR	REMOVE DEBRIS	AS NEEDED	(1)
CONCRETE LINED DRAINAGE DITCHES	3/YR	3/YR	REMOVE DEBRIS	AS NEEDED	(1)
PROPOSED TREATMENT CONTROL					
CATCH BASIN FILTER INSERTS	3/YR	3/YR	REMOVE DEBRIS	AS NEEDED	
ROOF DRAIN DOWNSPOUT FILTERS (2)	3/YR	3/YR	REMOVE DEBRIS	AS NEEDED	
PROPOSED SOURCE CONTROL					
SEEDING AND PLANTING	3/YR	3/YR	REPLANT	AS NEEDED	(1)

(1) TO BE PERFORMED BY LANDSCAPE MAINTENANCE CONTRACTOR
(2) ROOF DRAIN DOWNSPOUT FILTERS ARE NOT A PART OF THESE GRADING PLANS. THEY WILL BE INCLUDED IN THE BUILDING PLANS.

◇ SEWER MAIN ABANDONMENT				
NO.	SIZE	TYPE	LENGTH	YEAR INSTALLED
1	10"	PVC	290 FT	1984
2	10"	PVC	255 FT	1984
3	10"	PVC	280 FT	1984

SEE SHEET 4 FOR LOCATION OF SEWER MAINS TO BE ABANDONED

CELSOC CONSULTING ENGINEERS AND LAND SURVEYORS OF CALIFORNIA

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CELSOC CONSULTING ENGINEERS AND LAND SURVEYORS OF CALIFORNIA

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8580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
■ (619) 460-9000 ■ FAX (619) 460-9005 ■

ENGINEER OF WORK: WILLIAM A. STEEN R.C.E. 18136 — 10-5-07 DATE

JOB NO. 6247-101

REGISTERED PROFESSIONAL ENGINEER — WILLIAM A. STEEN — EXP. 6-30-09 NO. 18136 — CIVIL — STATE OF CALIFORNIA

PRIVATE CONTRACT

GRADING AND IMPROVEMENT NOTES FOR:

SUMMIT POINTE PLAZA

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 2 OF 23 SHEETS

FOR CITY ENGINEER — DATE 10/17/07

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			
AS-BUILTS				

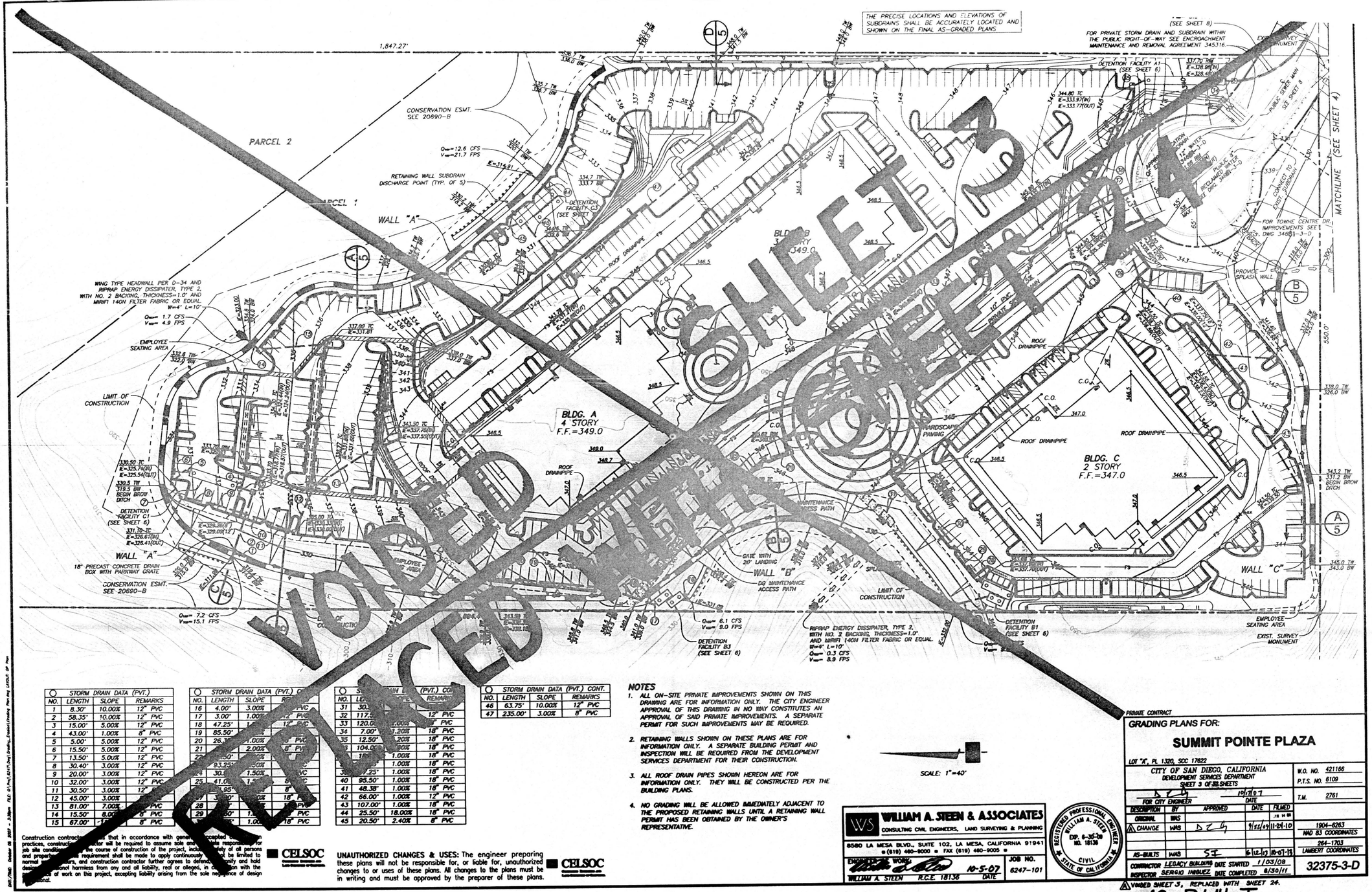
CONTRACTOR _____ DATE STARTED _____
INSPECTOR _____ DATE COMPLETED _____

W.O. NO. 421166
P.T.S. NO. 6109
T.M. 2761

1904-6263
NAD 83 COORDINATES
264-1703
LAMBERT COORDINATES

32375-2-D

DATE/TIME: October 05, 2007 - 3:38pm FILE: G:\Proj\6247\Dwg\Grading_Erosion\Grading Plan.dwg LAYOUT: GP Erosion Notes



STORM DRAIN DATA (PVT.)			
NO.	LENGTH	SLOPE	REMARKS
1	8.30'	10.00%	12" PVC
2	58.35'	10.00%	12" PVC
3	15.00'	5.00%	12" PVC
4	43.00'	1.00%	8" PVC
5	5.00'	5.00%	12" PVC
6	15.50'	5.00%	12" PVC
7	13.50'	5.00%	12" PVC
8	30.40'	3.00%	12" PVC
9	20.00'	3.00%	12" PVC
10	32.00'	3.00%	12" PVC
11	30.50'	3.00%	12" PVC
12	45.00'	3.00%	8" PVC
13	81.00'	7.00%	8" PVC
14	15.50'	8.00%	8" PVC
15	67.00'	[illegible]	8" PVC

STORM DRAIN DATA (PVT.)			
NO.	LENGTH	SLOPE	REMARKS
16	4.00'	3.00%	[illegible] PVC
17	3.00'	1.00%	[illegible]2" PVC
18	47.25'	[illegible]	12" PVC
19	85.50'	[illegible]	[illegible]
20	26.30'	1.00%	[illegible] PVC
21	[illegible]	2.00%	8" PVC
22	[illegible].00'	[illegible].00%	[illegible]
[illegible]	93.25'	[illegible].00%	[illegible]VC
[illegible]	30.00'	1.50%	[illegible]VC
25	41.00'	1.50%	8" PVC
[illegible]	[illegible].95'	[illegible]	8" PVC
[illegible]	3[illegible].00'	[illegible].00%	18" PVC
28	[illegible].00'	[illegible]	18" PVC
29	[illegible].00'	1.00%	18" PVC
[illegible]	[illegible]	1.00%	18" PVC

STORM DRAIN DATA (PVT.)			
NO.	LENGTH	SLOPE	REMARKS
31	30.[illegible]	[illegible]	[illegible]
32	117.[illegible]	[illegible].00%	12" PVC
33	120.0[illegible]	[illegible].00%	[illegible] PVC
34	7.00'	1.20%	18" PVC
35	12.50'	1.20%	18" PVC
[illegible]	104.0[illegible]	[illegible].20%	18" PVC
[illegible]	1[illegible]	1.00%	18" PVC
[illegible]	[illegible]	1.00%	18" PVC
[illegible]	[illegible].25'	1.00%	18" PVC
40	95.50'	1.00%	18" PVC
41	48.38'	1.00%	18" PVC
42	66.00'	1.00%	12" PVC
43	107.00'	1.00%	18" PVC
44	25.50'	18.00%	18" PVC
45	20.50'	2.40%	8" PVC

STORM DRAIN DATA (PVT.) CONT.			
NO.	LENGTH	SLOPE	REMARKS
46	63.75'	10.00%	12" PVC
47	235.00'	3.00%	8" PVC

Construction contractor [illegible] that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and [illegible] responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

CELSOC

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CELSOC

NOTES

1. ALL ON-SITE PRIVATE IMPROVEMENTS SHOWN ON THIS DRAWING ARE FOR INFORMATION ONLY. THE CITY ENGINEER APPROVAL OF THIS DRAWING IN NO WAY CONSTITUTES AN APPROVAL OF SAID PRIVATE IMPROVEMENTS. A SEPARATE PERMIT FOR SUCH IMPROVEMENTS MAY BE REQUIRED.
2. RETAINING WALLS SHOWN ON THESE PLANS ARE FOR INFORMATION ONLY. A SEPARATE BUILDING PERMIT AND INSPECTION WILL BE REQUIRED FROM THE DEVELOPMENT SERVICES DEPARTMENT FOR THEIR CONSTRUCTION.
3. ALL ROOF DRAIN PIPES SHOWN HEREON ARE FOR INFORMATION ONLY. THEY WILL BE CONSTRUCTED PER THE BUILDING PLANS.
4. NO GRADING WILL BE ALLOWED IMMEDIATELY ADJACENT TO THE PROPOSED RETAINING WALLS UNTIL A RETAINING WALL PERMIT HAS BEEN OBTAINED BY THE OWNER'S REPRESENTATIVE.

SCALE: 1"=40'

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REGISTERED PROFESSIONAL ENGINEER — WILLIAM A. STEEN — EXP. 6-30-10 NO. 18136 — CIVIL — STATE OF CALIFORNIA

ENGINEER OF WORK: WILLIAM A. STEEN R.C.E. 18136 — 10-5-07 DATE

JOB NO. 6247-101

PRIVATE CONTRACT

GRADING PLANS FOR:

SUMMIT POINTE PLAZA

LOT "K", PL 1320, SCC 17622

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 3 OF 38 SHEETS

W.O. NO. 421166
P.T.S. NO. 8109
T.M. 2761

FOR CITY ENGINEER — DATE 10/17/07

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			
⚠1 CHANGE	WAS	[illegible]	9/25/09	11-24-10
AS-BUILTS	WAS	[illegible]	6/12/13	10-01-13

1904-6263 NAD 83 COORDINATES
264-1703 LAMBERT COORDINATES

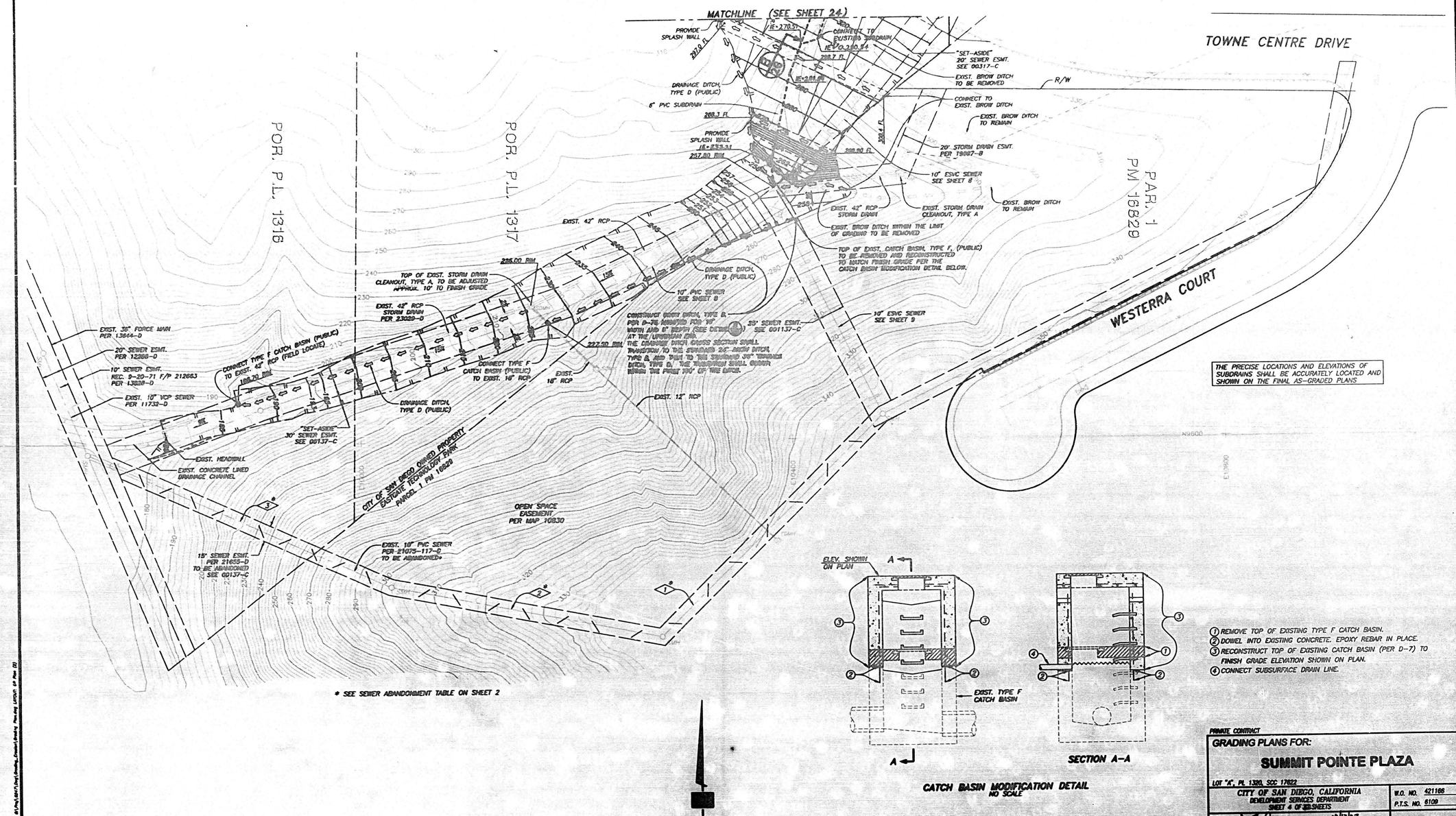
CONTRACTOR LEGACY BUILDING DATE STARTED 1/03/08
INSPECTOR SERGIO IBANUEZ DATE COMPLETED 6/30/11

32375-3-D

⚠1 VOIDED SHEET 3, REPLACED WITH SHEET 24.

AS-BUILT

FILMED FROM THE ORIGINAL. BEST QUALITY OBTAINABLE. EXCESSIVE GRAY BACKGROUND MAY CAUSE A POOR QUALITY REPRODUCTION.



* SEE SEWER ABANDONMENT TABLE ON SHEET 2

SCALE: 1"=40'

CATCH BASIN MODIFICATION DETAIL
NO SCALE

1. REMOVE TOP OF EXISTING TYPE F CATCH BASIN.
2. DOWEL INTO EXISTING CONCRETE. EPOXY REBAR IN PLACE.
3. RECONSTRUCT TOP OF EXISTING CATCH BASIN (PER D-7) TO FINISH GRADE ELEVATION SHOWN ON PLAN.
4. CONNECT SUBSURFACE DRAIN LINE.

THE PRECISE LOCATIONS AND ELEVATIONS OF SUBDRAINS SHALL BE ACCURATELY LOCATED AND SHOWN ON THE FINAL AS-GRADED PLANS

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

CELSOC

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

CELSOC

PRIVATE CONTRACT

GRADING PLANS FOR:

SUMMIT POINTE PLAZA

LOT "A", PM 13320, SCC 17622

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 4 OF 25 SHEETS

W.O. NO. 421166
P.T.S. NO. 6109
T.M. 2761

FOR CITY ENGINEER — DATE 10/17/07

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			
AS-BUILTS	WAS	SE	6/24/08	10-01-08

1804-6263 NAD 83 COORDINATES
284-1703 LAMBERT COORDINATES

CONTRACTOR LEGACY BUILDING DATE STARTED 1/03/08
INSPECTOR SERGIO MENDEZ DATE COMPLETED 9/30/08

32375-4-D

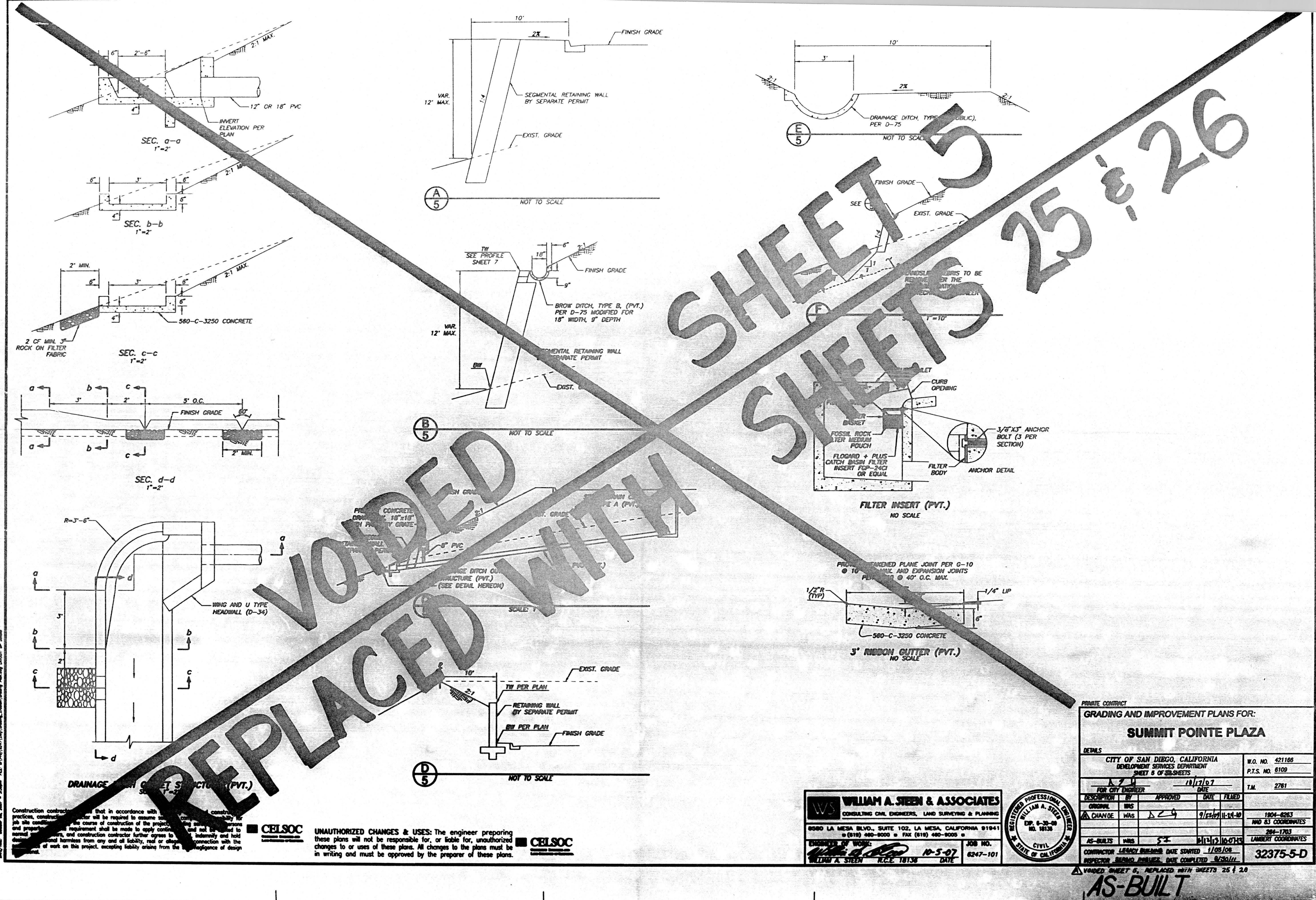
WILLIAM A. STEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8880 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 460-6000 FAX (619) 460-9005

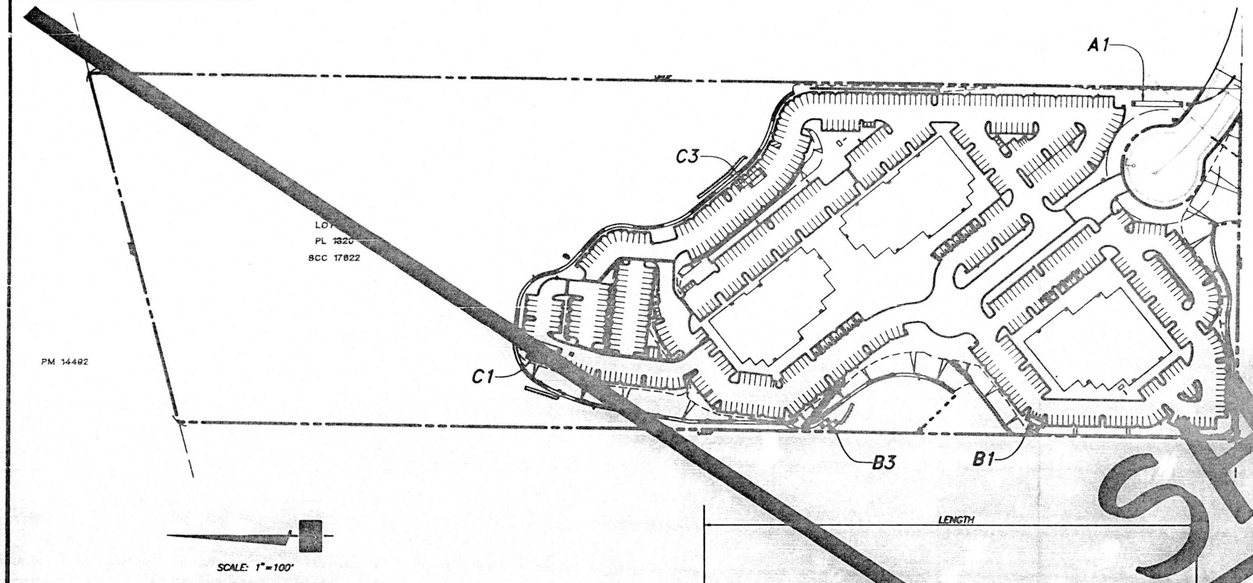
ENGINEER OF WORK: 10-5-07
WILLIAM A. STEEN R.C.E. 18138 DATE

JOB NO. 6247-101

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. STEEN EXP. 6-30-09 NO. 18138 CIVIL STATE OF CALIFORNIA

AS-BUILT

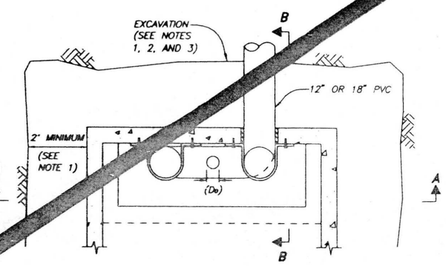

VOIDED SHEET 5
REPLACED WITH SHEETS 25 & 26
SEC. a–a
1"=2'
12" OR 18" PVC
INVERT ELEVATION PER PLAN
2:1 MAX.
SEC. b–b
1"=2'
SEC. c–c
1"=2'
2 CF MIN. 3" ROCK ON FILTER FABRIC
560–C–3250 CONCRETE
SEC. d–d
1"=2'
FINISH GRADE
5' O.C.
2' MIN.
R=3'-6"
WING AND U TYPE HEADWALL (D-34)
SEGMENTAL RETAINING WALL BY SEPARATE PERMIT
EXIST. GRADE
VAR. 12' MAX.
NOT TO SCALE
BROW DITCH, TYPE B, (PVT.) PER D-75 MODIFIED FOR 18" WIDTH, 9" DEPTH
DRAINAGE DITCH, TYPE (PUBLIC), PER D-75
FILTER INSERT (PVT.)
NO SCALE
FLOGARD + PLUS CATCH BASIN FILTER INSERT FGP-24CI OR EQUAL
3/8"X3" ANCHOR BOLT (3 PER SECTION)
ANCHOR DETAIL
FILTER BODY
CURB OPENING
3' RIBBON GUTTER (PVT.)
NO SCALE
1/4" UP
TW PER PLAN
BW PER PLAN
RETAINING WALL BY SEPARATE PERMIT
UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.
CELSOC
PRIVATE CONTRACT
GRADING AND IMPROVEMENT PLANS FOR:
SUMMIT POINTE PLAZA
DETAILS
CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 5 OF 32 SHEETS
FOR CITY ENGINEER
10/17/07
DATE
W.O. NO. 421166
P.T.S. NO. 6109
T.M. 2761
DESCRIPTION BY APPROVED DATE FILMED
ORIGINAL WAS
CHANGE WAS 9/22/09 11-24-10
AS-BUILTS WAS 6/12/13 10-07-13
1904-6263 NAD 83 COORDINATES
284-1703 LAMBERT COORDINATES
CONTRACTOR LEGACY BUILDING DATE STARTED 1/05/08
INSPECTOR SERGIO INIGUEZ DATE COMPLETED 9/30/11
32375-5-D
WILLIAM A. STEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 460-9000 FAX (619) 460-9005
ENGINEER OF WORK:
WILLIAM A. STEEN R.C.E. 18136
10-5-07 DATE
JOB NO. 6247-101
REGISTERED PROFESSIONAL ENGINEER WILLIAM A. STEEN EXP. 6-30-09 NO. 18136 CIVIL STATE OF CALIFORNIA
VOIDED SHEET 5, REPLACED WITH SHEETS 25 & 26
AS-BUILT



SCALE: 1"=100'

NOTES:

1. AREA MUST BE PREPARED AND CLEARED TO 2' MINIMUM SURROUNDING ENTIRE TANK.
2. AREA MUST BE PREPARED AND CLEARED TO 3'x3' IN ANY SEAM OR JOINT AREA PRIOR TO DELIVERY.
3. EXCAVATION SHALL BE PREPARED IN COMPLIANCE WITH ALL STATE AND FEDERAL SAFETY LAWS AND REGULATION.
4. PLACE 2"x6" REDWOOD GRADE BOARDS UNDER TANK LENGTHWISE ALONG SIDES. EXTEND BOARDS BEYOND TANK ENDS.
5. BASE MUST BE LEVEL AND EVEN IN ALL DIRECTIONS.
6. BASE MATERIAL TO BE GRANULAR MATERIAL COMPACTED TO 90% RELATIVE OR AS PRESCRIBED BY A GEOTECHNICAL ENGINEER.
7. STRINGLINE OR OTHER SUITABLE MEANS FOR ALIGNING TANKS TO BE PROVIDED AND IN PLACE PRIOR TO INSTALLATION.



PLAN VIEW
NO SCALE

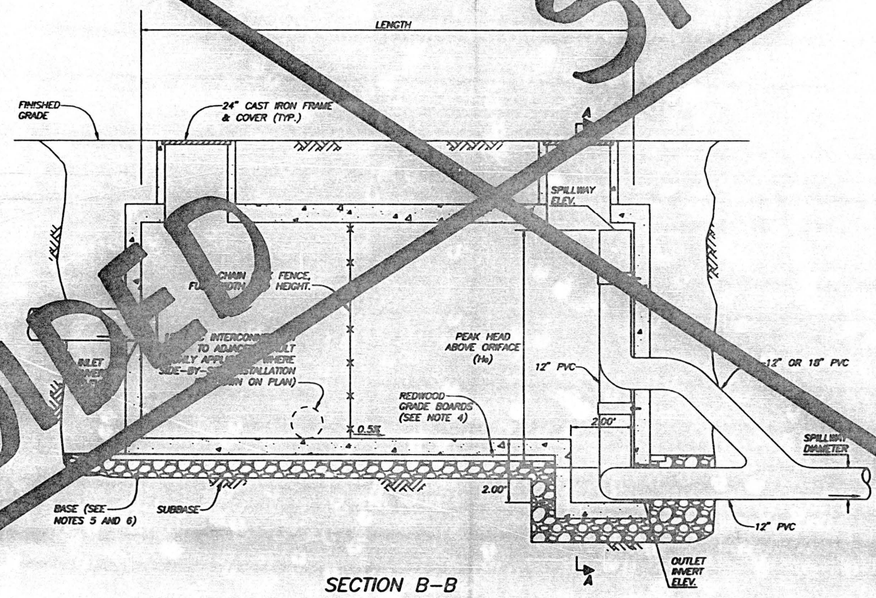
DETENTION FACILITY DATA

DETENTION FACILITY	A1	B1	B3	C1	C3
C	0.85	0.85	0.85	0.85	0.85
A (acres)	2.80	1.95	1.04	1.21	2.51
10-Year Event:					
T_c (minutes)	6.0	5.0	5.0	5.0	5.0
P_6 (inches)	1.6	1.6	1.6	1.6	1.6
I_{10} (in/hr)	3.75	4.22	4.22	4.22	4.22
Q_{10} (cfs)	8.9	7.0	3.7	4.3	9.0
A_o, Area of Orifice (ft^2) (1)	0.129	0.114	0.068	0.046	0.083
D_o, Orifice Diameter (ft) (2)	0.405	0.381	0.295	0.241	0.326
Q_o (cfs)	1.7	1.5	0.9	0.6	1.1
H_o, Peak Head Above Orifice (ft)	7.5	7.5	7.5	7.5	7.5
Inlet Invert Elev. (ft)	333.62	337.64	336.20	324.52	324.50
Outlet Invert Elev. (ft)	329.05	332.64	331.20	319.52	319.50
Min. Storage Volume Req'd. (cf) (3)	4000	2400	1150	1900	4200
Inside Width (ft)	7.0	7.0	7.0	7.0	7.0
Minimum Inside Length (ft) (4)	76.2	45.7	21.9	36.2	80.0

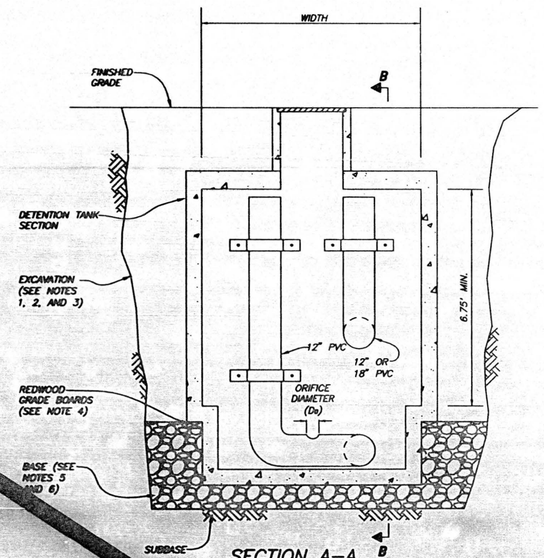
(1) $A_o = Q_o/(C_o(2gH_o)^{1/2})$ $C_o = 0.60$
(2) $D_o = 2(A_o/3.1416)^{1/2}$
(3) Per Storage Routing Curves
(4) Length = (Storage Volume)/(Inside Width)

100-Year Event:	A1	B1	B3	C1	C3
T_c (minutes)	6.6	5.0	5.0	5.0	5.0
P_6 (inches)	2.3	2.3	2.3	2.3	2.3
I_{100} (in/hr)	5.1	6.1	6.1	6.1	5.1
Q_{100} (cfs)	12.1	10.1	5.4	6.3	12.6
$Q_{Spillway}$ (cfs) (1)	10.4	8.6	4.5	5.7	11.5
Number of 12" Spillways	1	1	2	2	1
$Q_{12"\ Spillway}$ (cfs) (2)	3.20	2.65	2.25	2.85	3.1
Number of 18" Spillways	1	1	0	0	1
$Q_{18"\ Spillway}$ (cfs) (2)	7.20	5.95	0.00	0.00	7.96
Head Above Spillway Orifice (3)	0.72	0.49	0.35	0.23	0.88
Spillway Elev. (ft) (4)	337.55	341.14	339.55	327.02	328.00
Water Surface Elev. (ft) (5)	338.27	341.63	339.90	328.59	328.88
Spillway Diameter (inches)	18	18	12	12	18
Spillway Slope (%)	1.2	1	3.0	3.0	18.0
Spillway Velocity (fps)	7.5	8.0	8.9	9.0	21.7

(1) $Q_{Spillway} = Q_{100} - Q_o$
(2) Proportional to total spillway orifice area
(3) $H_o = (Q/(C_o A_o))^2 (1/(2g))$ $C_o = 0.60$
(4) Spillway Elev.= Outlet Invert Elev. + 8.5ft
(5) WSEL = Spillway Elev. + Head Above Spillway Orifice



SECTION B–B
NO SCALE



SECTION A–A
NO SCALE

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property. This requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold [illegible] harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design [illegible].

CELSOC

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CELSOC

WILLIAM A. SIEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8680 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 460-9200 FAX (619) 460-9205

REGISTERED PROFESSIONAL ENGINEER
WILLIAM A. SIEEN
EXP. 6-30-08
NO. 18136
CIVIL
STATE OF CALIFORNIA

ENGINEER OF WORK: 10-5-07
WILLIAM A. SIEEN R.C.E. 18136 DATE
JOB NO. 6247-101

PRIVATE CONTRACT

GRADING AND IMPROVEMENT PLANS FOR:

SUMMIT POINTE PLAZA

DETENTION FACILITY SPECS. AND DETAILS

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 6 OF 25 SHEETS

FOR CITY ENGINEER — DATE 10/17/07

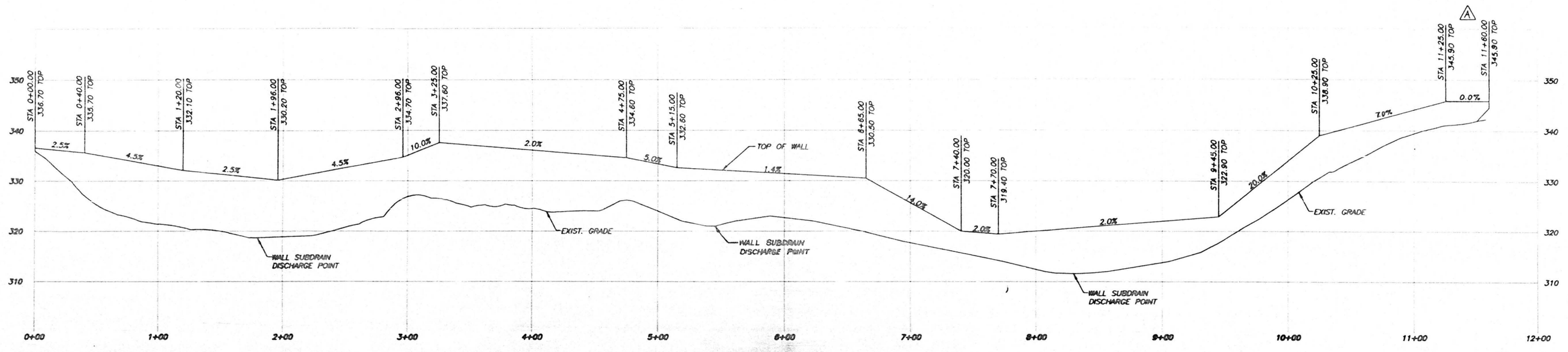
DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			Jan. 11, 08
CHANGE	WAS		9/22/08	8-24-10
AS-BUILTS	WAS		10/12/10	10-27-10

CONTRACTOR LEGACY BUILDING DATE STARTED 1/28/08
INSPECTOR SERGIO PEREZ DATE COMPLETED 6/30/11

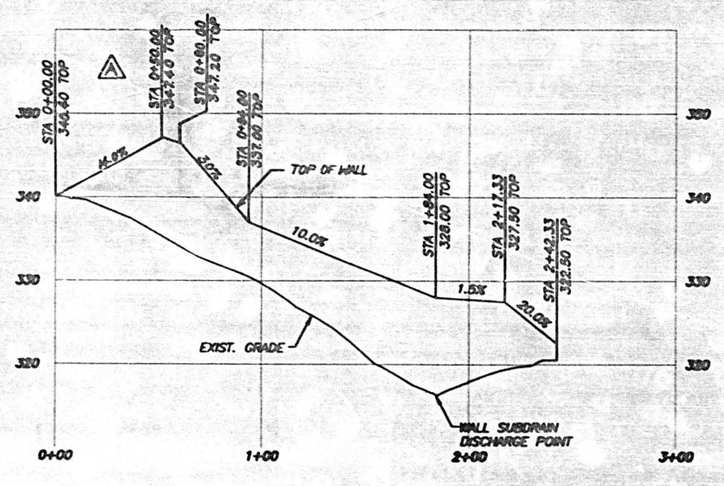
W.O. NO. 421166
P.T.S. NO. 6109
T.M. 2761
1804-6263
NAD 83 COORDINATES
264-1703
LAMBERT COORDINATES
32375-6-D

VOIDED SHEET 6

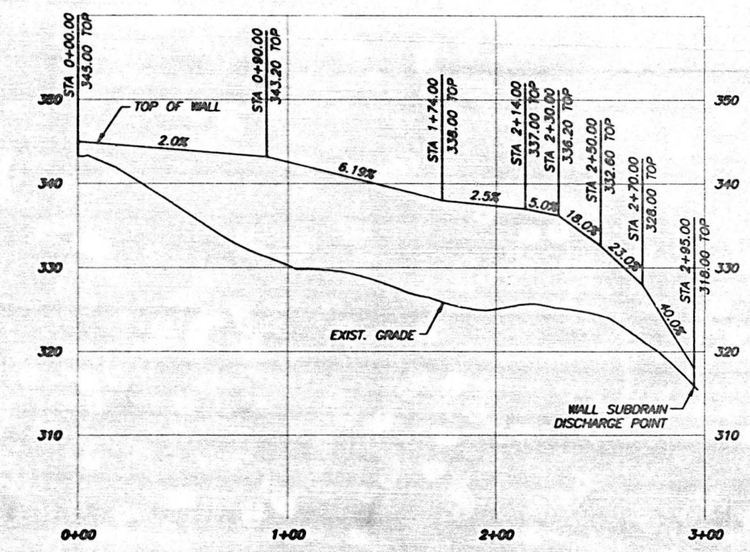
AS-BUILT



PROFILE OF WALL "A"
SCALE: HOR. 1"=40'
VERT. 1"=10'



PROFILE OF WALL "B"
SCALE: HOR. 1"=40'
VERT. 1"=10'



PROFILE OF WALL "C"
SCALE: HOR. 1"=40'
VERT. 1"=10'

NOTE
RETAINING WALLS SHOWN ON THESE PLANS ARE FOR INFORMATION ONLY. A SEPARATE BUILDING PERMIT AND INSPECTION WILL BE REQUIRED FROM THE DEVELOPMENT SERVICES DEPARTMENT FOR THEIR CONSTRUCTION.

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

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9580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 460-9000 FAX (619) 460-9005

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. STEEN EXP. 6-30-09 NO. 18136 CIVIL STATE OF CALIFORNIA

DESIGNED WILLIAM A. STEEN R.C.E. 18136 10-5-07 DATE

JOB NO. 6247-101

PRIVATE CONTRACT

GRADING AND IMPROVEMENT PLANS FOR:

SUMMIT POINTE PLAZA

WALL PROFILES

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 7 OF 33 SHEETS

FOR CITY ENGINEER — DATE 10/2/07

W.O. NO. 421166
P.T.S. NO. 6109
T.M. 2761

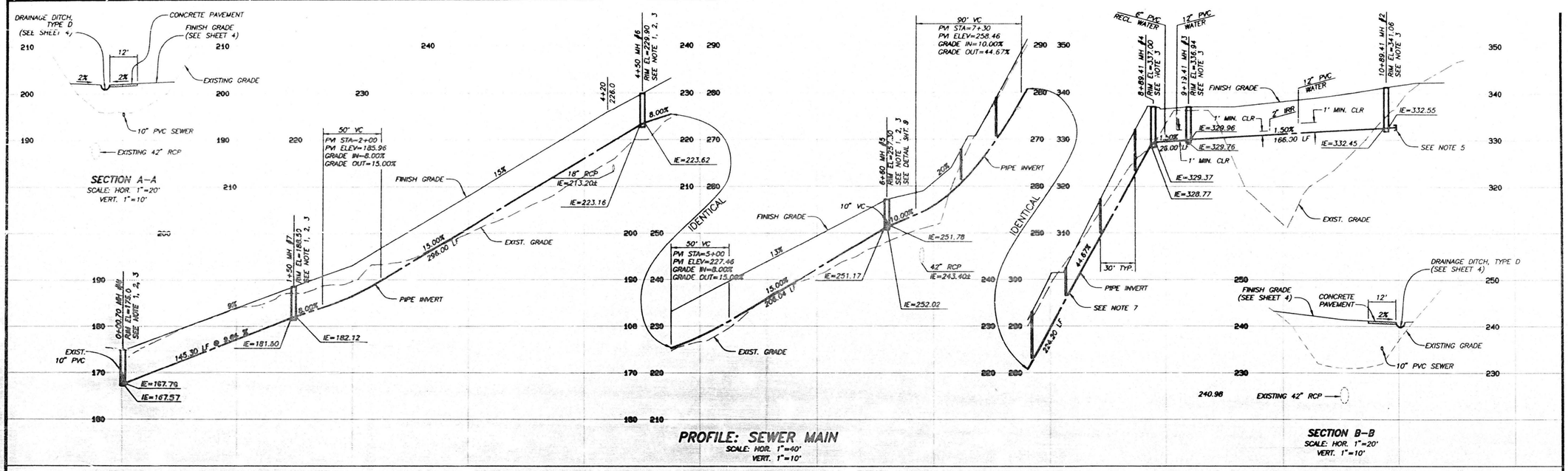
DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			
⚠1 CHANGE	WAS	DCE	9/20/07	10-31-07
AS-BUILTS	WAS	SE	6/21/08	08-01-08

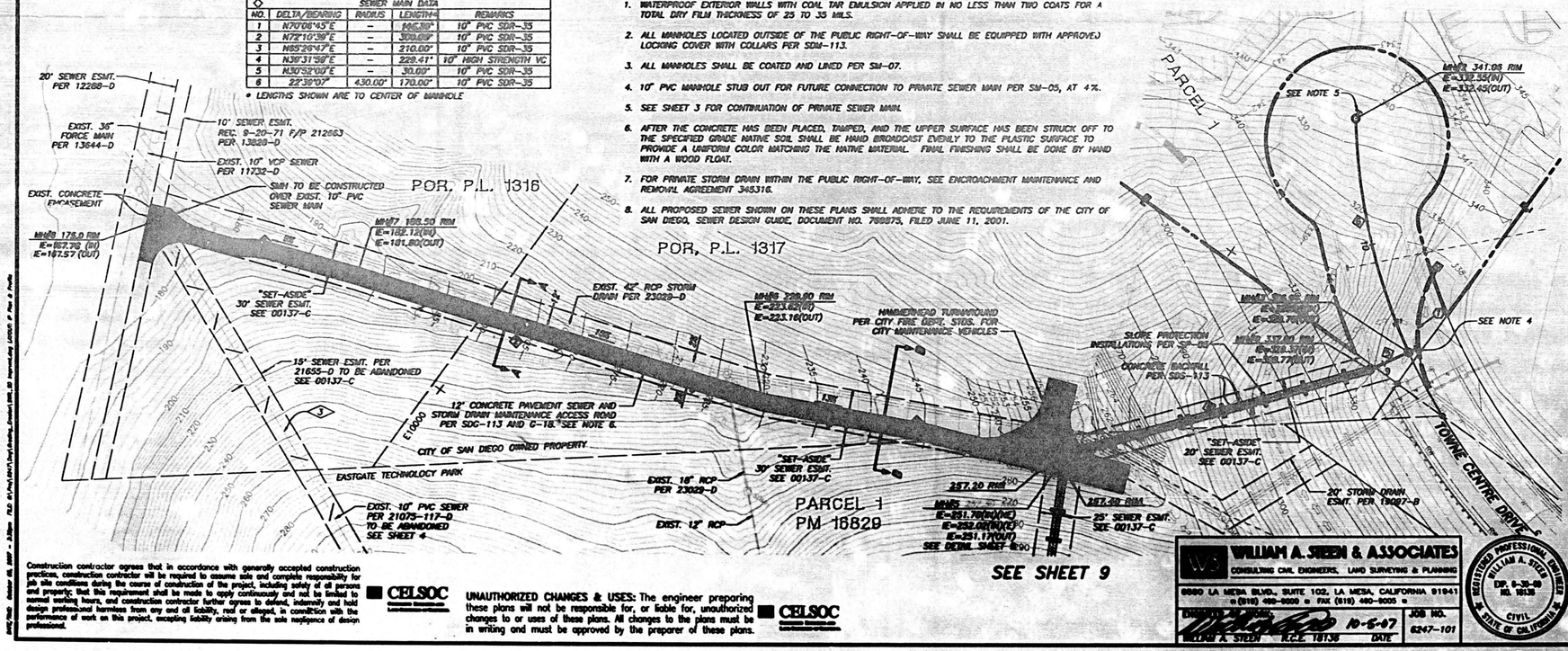
1904-6263 NAD 83 COORDINATES
204-1703 LAMBERT COORDINATES
32375-7-D

CONTRACTOR LEGACY BUILDING DATE STARTED 1/03/08
INSPECTOR GEORGE TROUTT DATE COMPLETED 6/30/08

⚠1 REVISED TOP OF WALL PROFILES

AS-BUILT





SEWER MAIN DATA				
NO.	DELTA/BEARING	RADIUS	LENGTH*	REMARKS
1	N70°06'45"E	–	146.39'	10" PVC SDR-35
2	N72°10'39"E	–	300.69'	10" PVC SDR-35
3	N85°26'47"E	–	210.00'	10" PVC SDR-35
4	N30°31'59"E	–	228.41'	10" HIGH STRENGTH VC
5	N30°52'00"E	–	30.00'	10" PVC SDR-35
6	22°39'07"	430.00'	170.00'	10" PVC SDR-35

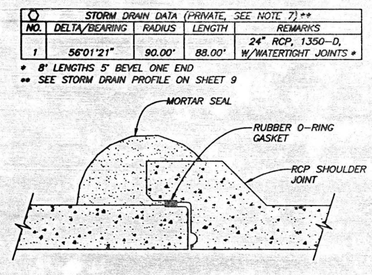
* LENGTHS SHOWN ARE TO CENTER OF MANHOLE

NOTES:

1. WATERPROOF EXTERIOR WALLS WITH COAL TAR EMULSION APPLIED IN NO LESS THAN TWO COATS FOR A TOTAL DRY FILM THICKNESS OF 25 TO 35 MILS.
2. ALL MANHOLES LOCATED OUTSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL BE EQUIPPED WITH APPROVED LOCKING COVER WITH COLLARS PER SDM-113.
3. ALL MANHOLES SHALL BE COATED AND LINED PER SM-07.
4. 10" PVC MANHOLE STUB OUT FOR FUTURE CONNECTION TO PRIVATE SEWER MAIN PER SM-05, AT 4%.
5. SEE SHEET 3 FOR CONTINUATION OF PRIVATE SEWER MAIN.
6. AFTER THE CONCRETE HAS BEEN PLACED, TAMPED, AND THE UPPER SURFACE HAS BEEN STRUCK OFF TO THE SPECIFIED GRADE NATIVE SOIL SHALL BE HAND BROADCAST EVENLY TO THE PLASTIC SURFACE TO PROVIDE A UNIFORM COLOR MATCHING THE NATIVE MATERIAL. FINAL FINISHING SHALL BE DONE BY HAND WITH A WOOD FLOAT.
7. FOR PRIVATE STORM DRAIN WITHIN THE PUBLIC RIGHT-OF-WAY, SEE ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT 345316.
8. ALL PROPOSED SEWER SHOWN ON THESE PLANS SHALL ADHERE TO THE REQUIREMENTS OF THE CITY OF SAN DIEGO, SEWER DESIGN GUIDE, DOCUMENT NO. 769875, FILED JUNE 11, 2001.

STORM DRAIN DATA (PRIVATE, SEE NOTE 7) **				
NO.	DELTA/BEARING	RADIUS	LENGTH	REMARKS
1	56°01'21"	90.00'	88.00'	24" RCP, 1350-D, W/WATERTIGHT JOINTS *

* 8" LENGTHS 5' BEVEL ONE END
** SEE STORM DRAIN PROFILE ON SHEET 9



TYPICAL WATERTIGHT JOINT
NO SCALE

SCALE: 1"=40'

PRIVATE CONTRACT

IMPROVEMENT PLANS FOR:

SUMMIT POINTE PLAZA
10" SEWER MAIN & PVT. STORM DRAIN

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 8 OF 32 SHEETS

W.O. NO. 421166
P.T.S. NO. 6109
T.M. 2761

FOR CITY ENGINEER — DATE 10/17/07

DESCRIPTION	BY	APPROVED	DATE	FILED
ORIGINAL	WHS			
AS-BUILTS	WHS	S.E.	6/21/13	10-01-13

1804-6263
NAD 83 COORDINATES
264-1703
LAMBERT COORDINATES

CONTRACTOR LEGACY/BALBOA DATE STARTED 1/03/08
INSPECTOR SERGIO JIMENEZ DATE COMPLETED 6/30/11

32375-8-D

WILLIAM A. STEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
6880 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 460-6666 FAX (619) 460-9005

ENGINEER'S SIGNATURE — WILLIAM A. STEEN R.C.E. 16136 — DATE 10-6-07
JOB NO. 6247-101

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. STEEN EXP. 6-30-09 NO. 16136 CIVIL STATE OF CALIFORNIA

CELSOC

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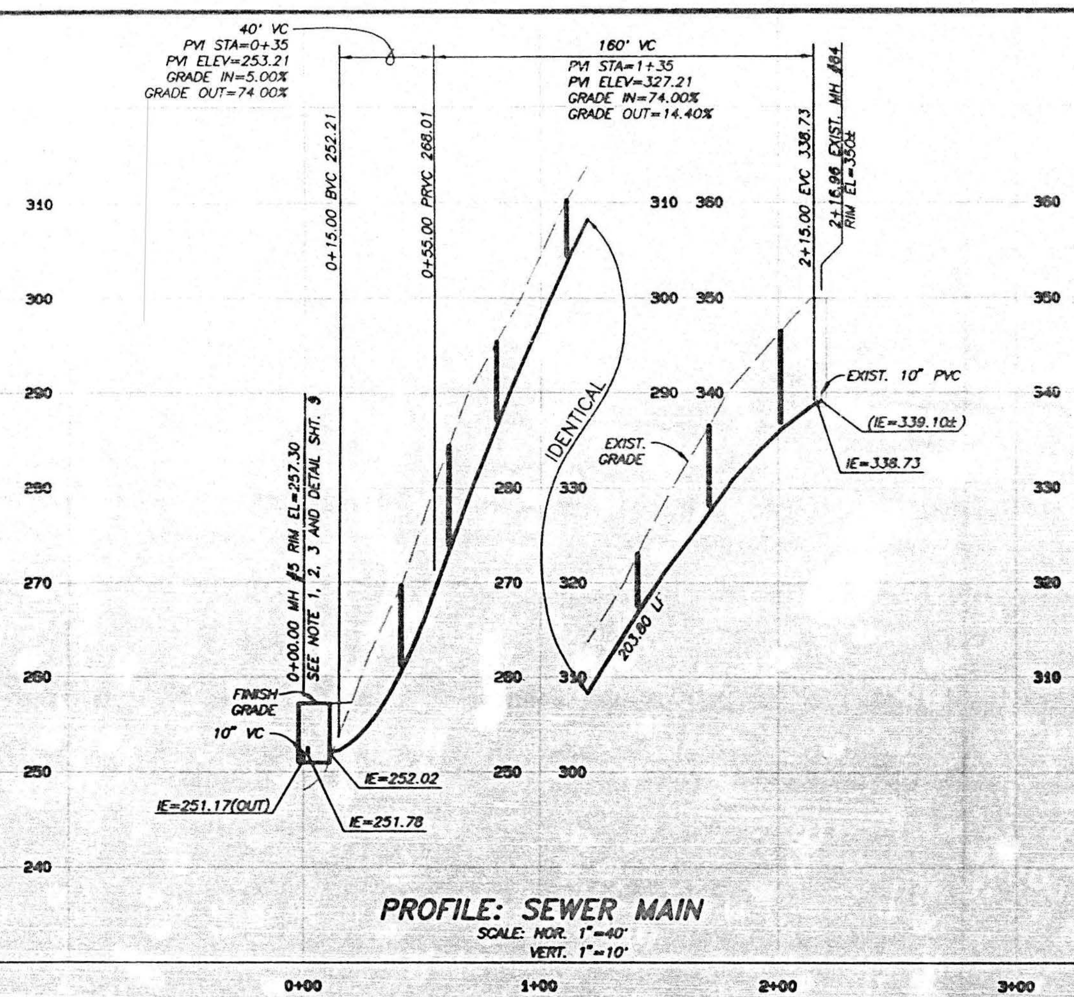
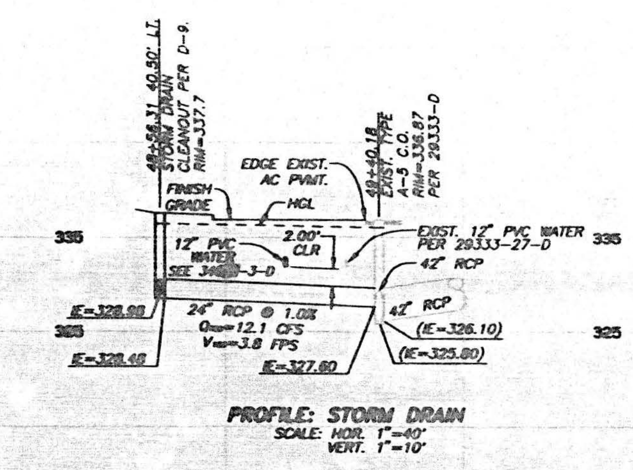
CELSOC

AS-BUILT



PROFILE: SEWER MAIN
SCALE: HOR. 1"=40'
VERT. 1"=10'

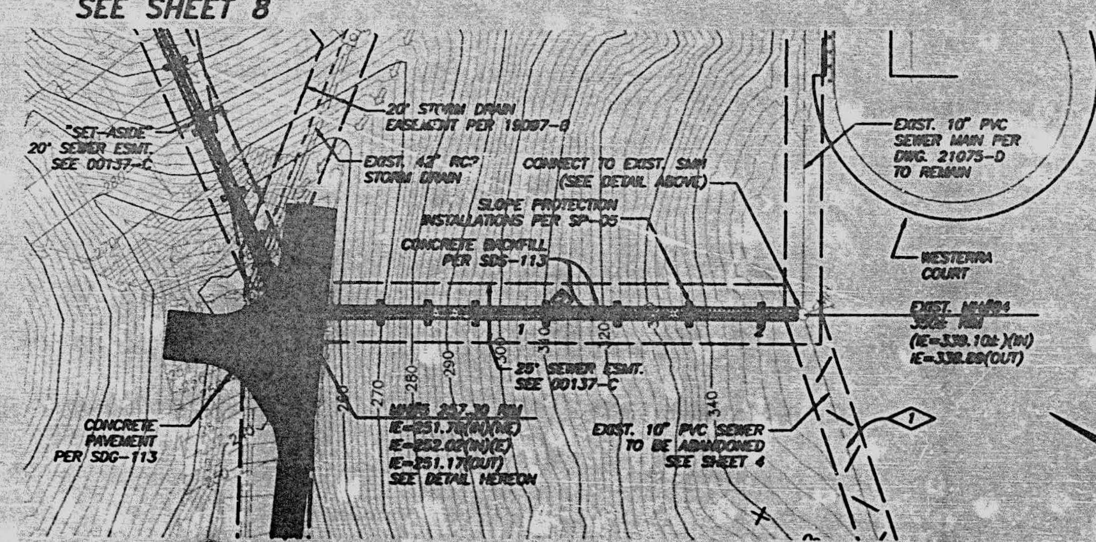


PROFILE: STORM DRAIN
SCALE: HOR. 1"=40'
VERT. 1"=10'

◇ SEWER MAIN DATA				
NO.	DELTA/BEARING	RADIUS	LENGTH*	REMARKS
1	N71°24'04"W	–	9.14'	SEE DETAIL MH#5 HEREON
2	N26°30'21"W	–	207.82'	10" HIGH STRENGTH VC

* LENGTHS SHOWN ARE TO CENTER OF MANHOLE

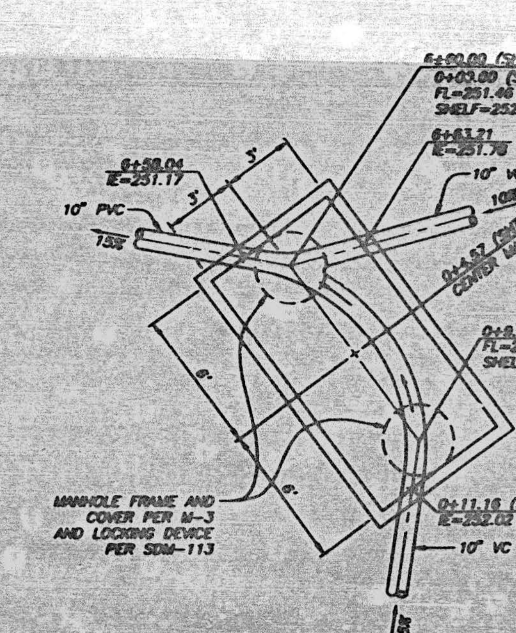
SEE SHEET 8



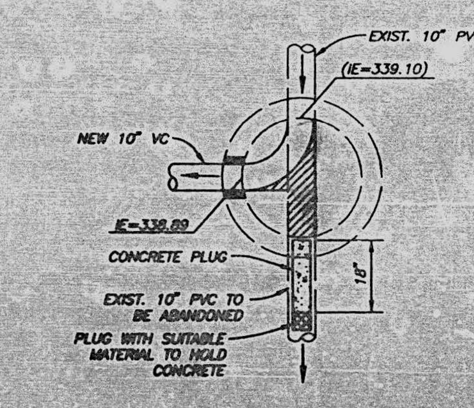
SEE SHEET 8

NOTES

1. WATERPROOF EXTERIOR WALLS WITH COAL TAR EMULSION APPLIED IN NO LESS THAN TWO COATS FOR A TOTAL DRY FILM THICKNESS OF 25 TO 35 MILS.
2. ALL MANHOLES LOCATED OUTSIDE OF THE PUBLIC RIGHT-OF-WAY SHALL BE EQUIPPED WITH APPROVED LOCKING COVER WITH COLLARS PER SDM-113.
3. ALL MANHOLES SHALL BE COATED AND LINED PER SM-07.
4. ALL PROPOSED SEWER SHOWN ON THESE PLANS SHALL ADHERE TO THE REQUIREMENTS OF THE CITY OF SAN DIEGO, SEWER DESIGN GUIDE, DOCUMENT NO. 769875, FILED JUNE 11, 2001.



DETAIL MH #5
SCALE: 1"=4'



EXIST. MH #84
NOT TO SCALE

WILLIAM A. STEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 460-9000 • FAX (619) 460-9005
WILLIAM A. STEEN R.C.E. 18136 10-5-07 DATE
JOB NO. 6247-101
REGISTERED PROFESSIONAL ENGINEER WILLIAM A. STEEN EXP. 6-30-09 NO. 18136 CIVIL STATE OF CALIFORNIA

PRIVATE CONTRACT

IMPROVEMENT PLANS FOR:

SUMMIT POINTE PLAZA
10" SEWER MAIN & PVT. STORM DRAIN

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 9 OF SHEETS

FOR CITY ENGINEER 10/17/07 DATE

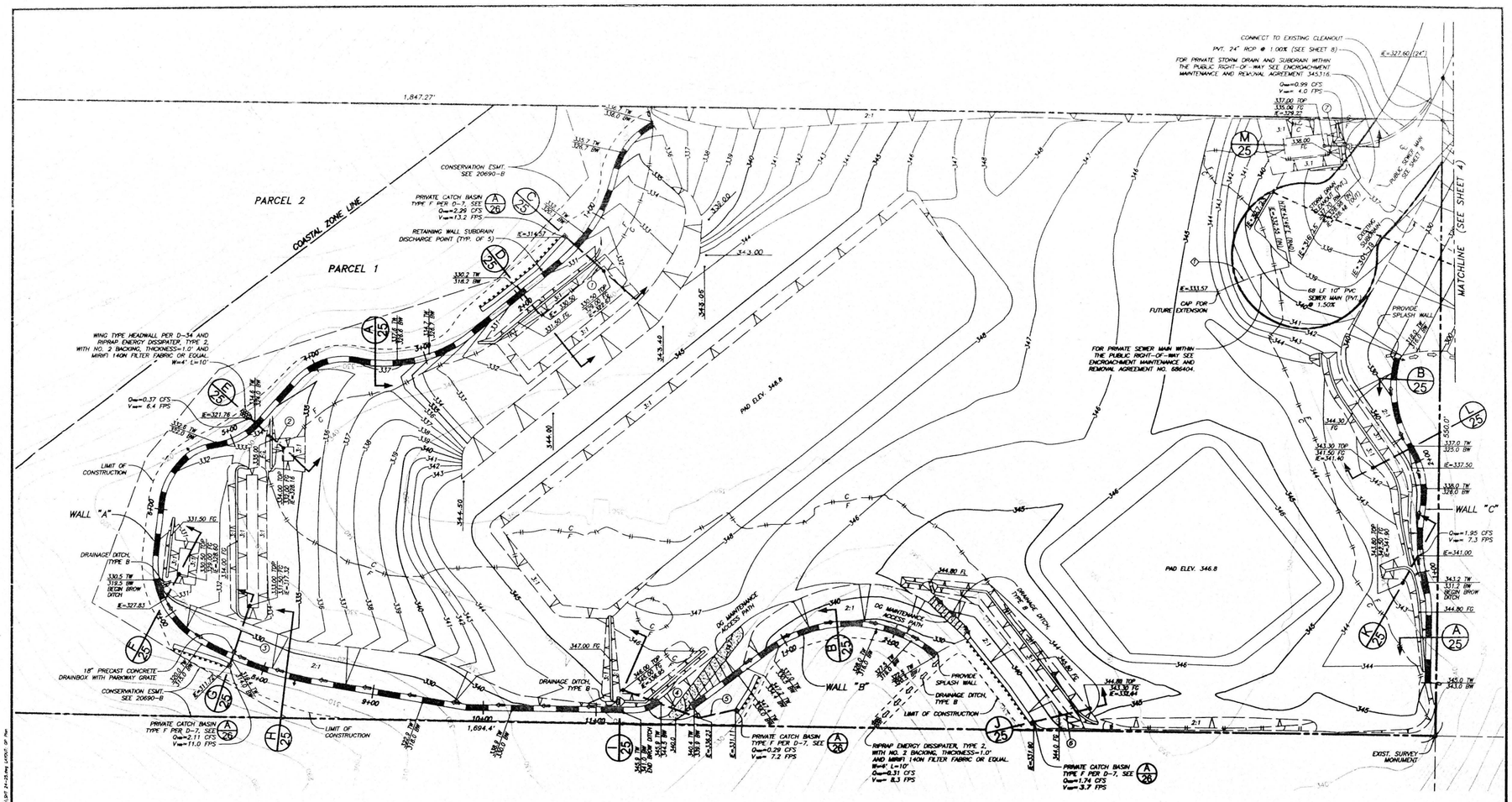
DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			
AS-BUILTS	WAS			

CONTRACTOR LEGACY BUILDING DATE STARTED
INSPECTOR DATE COMPLETED

W.O. NO. 421106
P.T.S. NO. 6109
T.M. 2761
1904-6263 NAD 83 COORDINATES
264-1703 LAMBERT COORDINATES

32375-9-D

AS-BUILT



◇ SEWER MAIN DATA				
NO.	DELTA/BEARING	RADIUS	LENGTH	REMARKS
1	16°02'34"	250.00'	70.00'	10" PVC SDR-35 (PVT.)

* LENGTHS SHOWN ARE TO CENTER OF MANHOLE

○ STORM DRAIN DATA (PVT.)			
NO.	LENGTH	SLOPE	REMARKS
1	45.00'	18.00%	18" PVC
2	40.00'	16.00%	8" PVC
3	56.00'	10.00%	12" PVC
4	72.00'	1.00%	12" PVC
5	32.00'	16.00%	12" PVC
6	57.00'	0.60%	18" PVC
7	20.00'	1.20%	18" PVC

SCALE: 1"=40'

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

CELSOC

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

CELSOC

PRIVATE CONTRACT

GRADING PLANS FOR:

SUMMIT POINTE PLAZA

LOT "K", PL 1320, SCC 17622

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 24 OF 32 SHEETS

W.O. NO. 421186
P.T.S. NO. 6109

FOR CITY ENGINEER — DATE 3/22/05

I.M. 2761

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			8-24-10
AS-BUILTS	WAS	SI	6/11/12	10-29-14

1804-6983 NAD 83 COORDINATES
264-1783 LAMBERT COORDINATES

CONTRACTOR LEGACY BUILDING DATE STARTED 1/05/08
INSPECTOR SERGIO IBARUEZ DATE COMPLETED 6/28/11

32375-24-D

WILLIAM A. STEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
o (619) 460-9000 o FAX (619) 460-9005 o

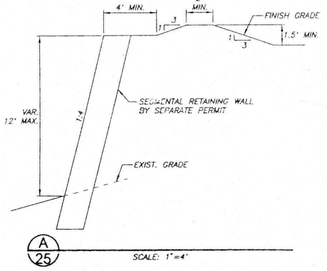
ENGINEER OF WORK: WILLIAM A. STEEN R.C.E. 18136 — DATE 7-21-09

JOB NO. 6247-101

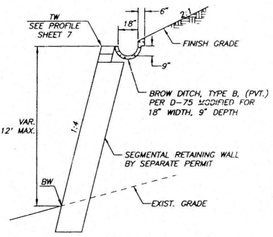
REGISTERED PROFESSIONAL ENGINEER — WILLIAM A. STEEN — EXP. 6-30-11 NO. 18136 — CIVIL — STATE OF CALIFORNIA

NEW SHEET AS-BUILT

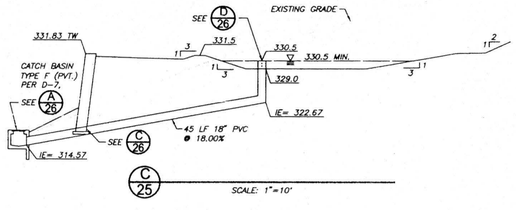
DATE/TIME: September 18, 2009 - 7:41am FILE: G:\Proj\6247\Dwg\Drawing Consist\grd 24-28.dwg LAYOUT: GP Plan



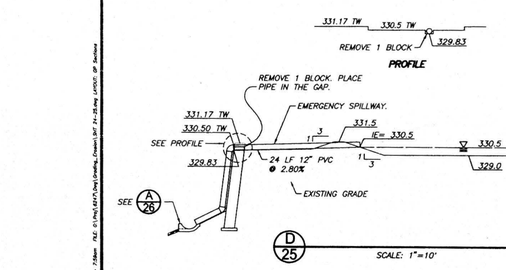
A/25 SCALE: 1"=4'



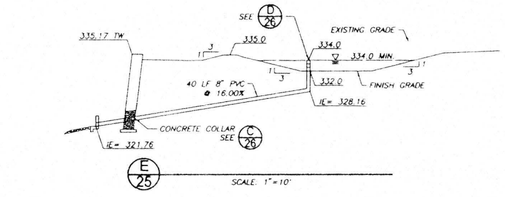
B/25 SCALE: 1"=4'



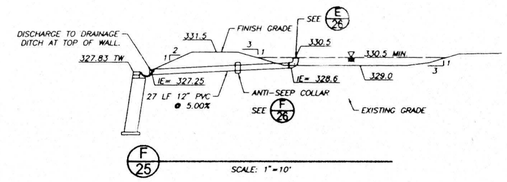
C/25 SCALE: 1"=10'



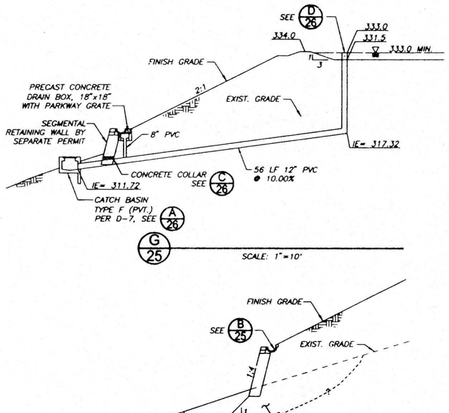
D/25 SCALE: 1"=10'



E/25 SCALE: 1"=10'

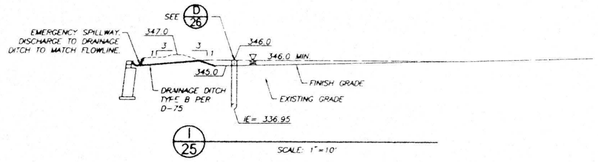


F/25 SCALE: 1"=10'

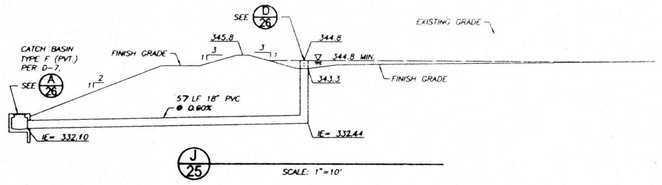


G/25 SCALE: 1"=10'

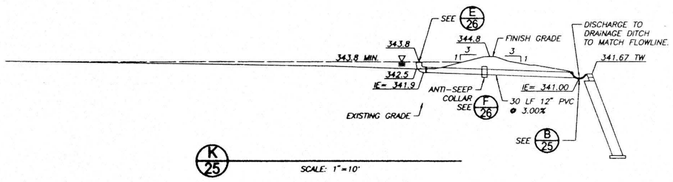
H/25 SCALE: 1"=10'



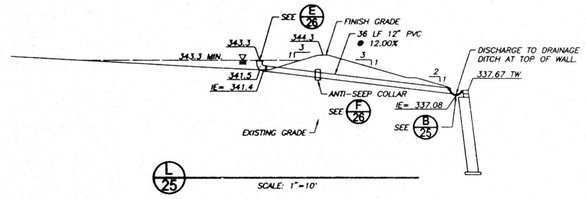
I/25 SCALE: 1"=10'



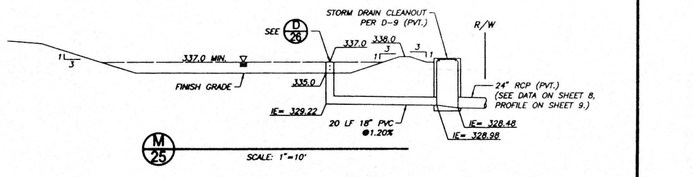
J/25 SCALE: 1"=10'



K/25 SCALE: 1"=10'



L/25 SCALE: 1"=10'



M/25 SCALE: 1"=10'

PRIVATE CONTRACT

GRADING PLANS FOR:

SUMMIT POINTE PLAZA

SECTIONS

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 25 OF 353 SHEETS

FOR CITY ENGINEER — DATE 3/27/09

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			11-24-10
AS-BUILTS	WAS	S.E.	6/14/13	10-21-13

CONTRACTOR LEGACY BUILDING DATE STARTED 1/03/08
INSPECTOR SERGIO PINQUEZ DATE COMPLETED 8/30/11

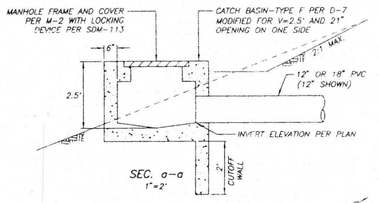
W.O. NO. 421166
P.T.S. NO. 6109
T.M. 2761
1804-6263
NAD 83 COORDINATES
294-1783
LAMBERT COORDINATES
32375-25-D

NEW SHEET AS-BUILT

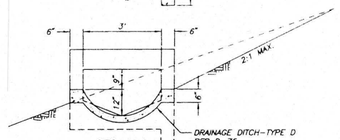
WILLIAM A. STEEN & ASSOCIATES
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
(619) 460-9000 FAX (619) 460-9005
ENGINEER OF WORK: WILLIAM A. STEEN RCE. 18136 DATE 3-21-09
JOB NO. 6247-101

REGISTERED PROFESSIONAL ENGINEER — WILLIAM A. STEEN — EXP. 6-30-11 — NO. 18136 — CIVIL — STATE OF CALIFORNIA

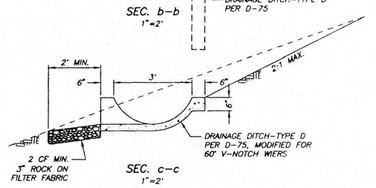
DATE/TIME: September 17, 2009 - 7:59am FILE: G:\Proj\6247\Dwg\Grading_Drawings\Sht 24-28.dwg LAYOUT: GP Sections



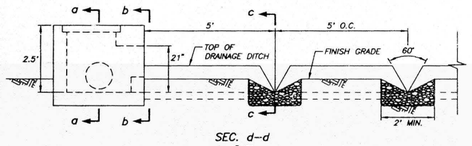
SEC. a–a
1"=2'



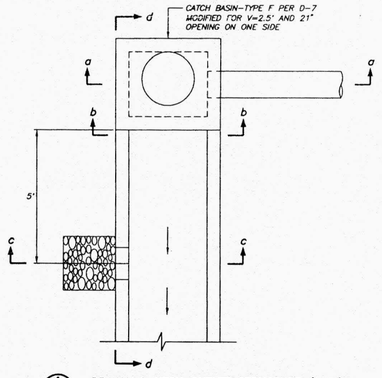
SEC. b–b
1"=2'



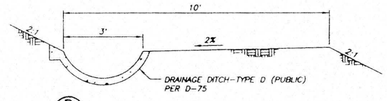
SEC. c–c
1"=2'



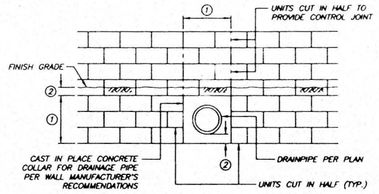
SEC. d–d
1"=2'



A/26 **DRAINAGE DITCH OUTLET STRUCTURE (PVT.)**
SCALE: 1"=2'



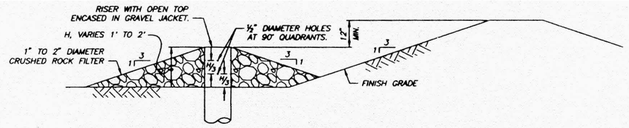
B/26 NOT TO SCALE



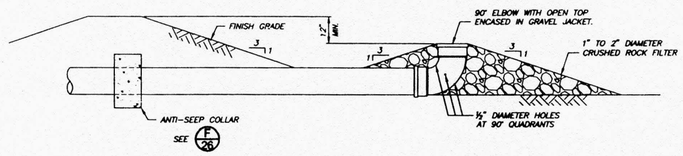
1 CONCRETE COLLAR HEIGHT TO BE IN INCREMENTS OF WALL COURSING AND WIDTH TO BE IN FULL INCREMENTS OF UNIT WIDTHS.

2 POSITION OF PIPE VARIES RELATIVE TO BOTTOM OF WALL AND FINISH GRADE AT EACH LOCATION.

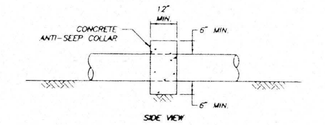
C/26 NOT TO SCALE



D/26 **PRIVATE RISER TYPICAL DETAIL**
SCALE: 1"=2'



E/26 **PRIVATE SHALLOW RISER TYPICAL DETAIL**
SCALE: 1"=2'



F/26 **PRIVATE ANTI-SEEP COLLAR DETAIL**
SCALE: 1"=2'

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

CELSOC Construction Industry Committee on Land Development Solutions

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

CELSOC Construction Industry Committee on Land Development Solutions

WS **WILLIAM A. STEEN & ASSOCIATES**
CONSULTING CIVIL ENGINEERS, LAND SURVEYING & PLANNING
8580 LA MESA BLVD., SUITE 102, LA MESA, CALIFORNIA 91941
☎ (619) 460-9000 ■ FAX (619) 460-9005 ■

ENGINEER OF WORK: WILLIAM A. STEEN R.C.E. 18136 DATE 9-21-09
JOB NO. 6247-101

REGISTERED PROFESSIONAL ENGINEER WILLIAM A. STEEN EXP. 6-30-11 NO. 18136 CIVIL STATE OF CALIFORNIA

PRIVATE CONTRACT

GRADING PLANS FOR:

SUMMIT POINTE PLAZA

DETAILS

CITY OF SAN DIEGO, CALIFORNIA
DEVELOPMENT SERVICES DEPARTMENT
SHEET 26 OF 32 SHEETS

W.O. NO. 421166
P.T.S. NO. 5109

FOR CITY ENGINEER _____ DATE 11/23/09

T.M. 2781

DESCRIPTION	BY	APPROVED	DATE	FILMED
ORIGINAL	WAS			11-17-10
AS-BUILTS	MWS	SE	01-13-11	01-21-11

1804-4263 NAD 83 COORDINATES
284-1703 LAMBERT COORDINATES

CONTRACTOR LEGACY BUILDERS DATE STARTED 11/05/08
INSPECTOR SERGIO JIMENEZ DATE COMPLETED 8/30/11

32375-26-D

NEW SHEET AS-BUILT