APPENDIX E
Hydrology/Water Quality Documentation

This document is designed for double-sided printing to conserve natural resources.

Drainage Study

Project Name: Chick-fil-A Restaurant No. 05524

For:
Chick-fil-A Restaurant No. 05524
515 West 13th Avenue
Escondido, California

Prepared for:
Chick-fil-A, Inc.
105 Progress
Irvine, CA 92618

Prepared by:
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Civil Engineers & Land Surveyors
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Orange, CA 92868
(714) 935-0265



July 11, 2024

Table of Contents

Project Description 3

Hydrology Computations 6

Peak Stormwater Runoff Discharge Rates 6

Pre-development Condition 6

Post-development Condition 7

Drainage Summary and Conclusion..... 9

Appendix..... 10

Reference Maps..... 11

AES Calculations.....12

Site and Project Plans... 13

Project Description

Project Name: Chick-fil-A Restaurant No. 05524

Project Address: 515 West 13th Avenue

Location: Escondido, California

The proposed project is a drive-thru Chick-fil-A restaurant. The current site is occupied by a DiCicco's Restaurant. After completion of the project the site will operate as a drive-thru Chick-fil-A restaurant. Parking will be located on the southerly and westerly sides of the site, with a drive-thru on the northerly and easterly sides of the site. The Chick-fil-A restaurant will prepare meals, snacks, and beverages to customer order for immediate on-premise and off-premise consumption.

The subject site is approximately 1.402 acres in size and is located within an existing commercially-developed area. The existing site consists of 4 distinct drainage subareas. Subareas A-1 & A-2 sheet flow northeasterly into onsite gutters that convey drainage westerly into onsite private catch basins. Both catch basins outlet into Pine Street and 13th Avenue via curb face drains. Subareas A-3 & A-4 sheet flow northerly and easterly until the runoff exits the site into the public right-of-way.

After entering the public right of way, runoff is conveyed via curb & gutter to an existing public catch basin at the corner of Pine Street and 13th Avenue. After entering the public catch basin runoff is conveyed to Escondido Creek via public underground storm drains. Escondido Creek flows into San Elijo Lagoon which ultimately outlets into the Pacific Ocean.

The proposed development will incorporate landscape areas and will not significantly alter the time of concentration or runoff leaving the site. The proposed site consists of 6 distinct drainage subareas. Subareas A-1 and A-2 surface flow north-easterly and southerly, respectively, via concrete gutters to Biofiltration Basin 1 (Subarea A-3). Subarea A-4 surface flows north via another concrete gutter to Biofiltration Basin 2. Both catch basins outlet into Pine Street and 13th Avenue via curb face drains. Subareas A-5 (northeast frontage landscape) sheet flows north-easterly to the streets (13th Avenue and Pine Street) then flows along street curb to the existing public catch basin at the corner of Pine Street and 13th Avenue. Subarea A-6 (southeast entry driveway) sheet flow easterly to Pine Street, then northerly along street curb to the same existing public catch basin.

EXISTING DRAINAGE
AREA SUMMARY

AREA	Existing Area (acres) Pervious	Existing Area (acres) Impervious	Existing Area (%) Pervious	Existing Area (%) Impervious
A-1	0.098	0.783	11.1	88.9
A-2	0.037	0.348	9.8	90.2
A-3	0.094	0.019	83.6	16.4
A-4	0.020	0.004	83.7	16.3

PROPOSED DRAINAGE
AREA SUMMARY

AREA	Proposed Area (acres) Pervious	Proposed Area (acres) Impervious	Proposed Area (%) Pervious	Proposed Area (%) Impervious
A-1	0.105	0.456	18.7	81.3
A-2	0.063	0.332	16.1	83.9
A-3	0.079	0.000	100.0	0.0
A-4	0.044	0.216	16.7	83.3
A-5	0.092	0.009	90.5	9.5
A-6	0.000	0.006	0.0	100.0

DISCHARGE SUMMARY

STORM EVENT	Exiting Flow (cfs)	Proposed Flow (cfs)	Increased Flow (cfs)
10 A-1	4.11	2.62	-
10 A-2	1.80	1.84	-
10 A-3	0.23	0.10	-
10 A-4	0.05	1.21	-
10 A-5	-	0.20	-
10 A-6	-	0.05	-
10 TOTAL	6.19	6.02	-0.17
100 A-1	6.15	3.91	-
100 A-2	2.69	2.76	-
100 A-3	0.34	0.15	-
100 A-4	0.07	1.81	-
100 A-5	-	0.30	-
100 A-6	-	0.07	-
100 TOTAL	9.25	9.00	-0.25

Hydrology Computations

1. Peak Stormwater Runoff Discharge Rates

This project should be designed for 10-year and 100-year rainfall event. As per the San Diego County Hydrology Manual, the peak flow is determined by the equation Q=0.9*(I-Fm)*A using the Advanced Engineering Software (AES) program.

Pre-development Condition

Sub-area Node 100 to Node 101
Area = 0.881 acres
L = 278 ft.

Q_{10} = 4.11 cfs.	Q_{100} = 6.15 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Sub-area Node 200 to Node 201
Area = 0.385 acres
L = 162 ft.

Q_{10} = 1.80 cfs.	Q_{100} = 2.69 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Sub-area Node 300 to Node 301
Area = 0.113 acres
L = 51 ft.

Q_{10} = 0.23 cfs.	Q_{100} = 0.34 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Sub-area Node 400 to Node 401
Area = 0.024 acres
L = 10 ft.

Q_{10} = 0.05 cfs.	Q_{100} = 0.07 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Total runoff pre-development condition.

Q_{10} = 6.19 cfs
Q_{100} = 9.25 cfs.

Ultimate disposition of on-site runoff.
The discharge for onsite drainage will be located at the southwest corner of the property. See Hydrology Map – Pre-Development.

Burn Factor. The site is paved, no Burn Factor is calculated

Post-development Condition
The following calculations are used to size the required grate inlets and piping.

Sub-area Node 100 to Node 101
Area = 0.561 acres
L = 180 ft.

Q_{10} = 2.62 cfs.	Q_{100} = 3.91 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Sub-area Node 200 to Node 201
Area = 0.395 acres
L = 310 ft.

Q_{10} =1.84 cfs.	Q_{100} = 2.76 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Sub-area Node 300 to Node 301
Area = 0.079 acres
L = 75 ft.

Q_{10} = 0.10 cfs.	Q_{100} = 0.15 cfs.
Tc = 9.73 min.	Tc = 9.73 min.
I = 3.70 in/hr.	I = 5.54 in/hr.

Sub-area Node 400 to Node 401
Area = 0.260 acres
L = 145 ft.

Q_{10} = 1.21 cfs.	Q_{100} = 1.81 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Sub-area Node 500 to Node 501
Area = 0.101 acres
L = 25 ft.

Q_{10} = 0.20 cfs.	Q_{100} = 0.30 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Sub-area Node 600 to Node 601
Area = 0.006 acres
L = 30 ft.

Q_{10} = 0.05 cfs.	Q_{100} = 0.07 cfs.
Tc = 5.00 min.	Tc = 5.00 min.
I = 5.69 in/hr.	I = 8.51 in/hr.

Total runoff post-development condition.

Q_{10} = 6.02 cfs
Q_{100} = 9.00 cfs.

Volume to Retain
The volume to retain will be the difference in volume between the **Post Q_{10} = 6.02 cfs minus the Pre Q_{10} = 6.19 cfs**

ΔQ = -0.17 cfs

No volume to detain.

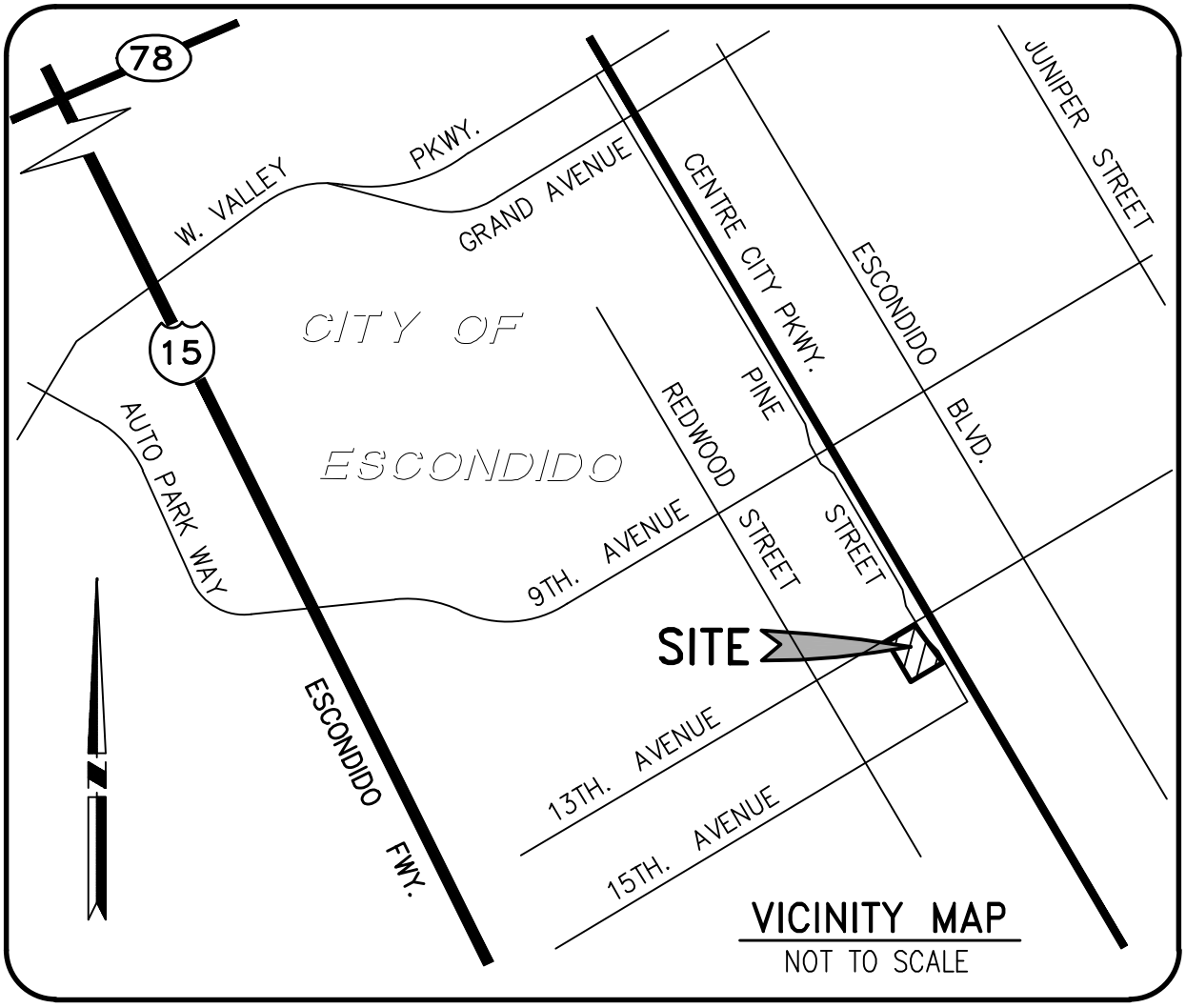
Drainage Summary and Conclusion

The proposed development is a redevelopment of an existing commercial property that is a part of a larger shopping center development. The proposed development will not substantially alter the existing drainage pattern and the onsite drainage will be conveyed by private proposed gutters and pipes to two (2) biofiltration basins for biotreatment. Once each basin has reached its capacity, the excess discharge will be conveyed to the existing catch basin on the corner of Pine Street and 13th Avenue via a proposed underground storm drain.

Using AES with the 2003 San Diego Hydrology Manual criteria, it was determined that the proposed site will discharge less runoff than the pre project conditions.

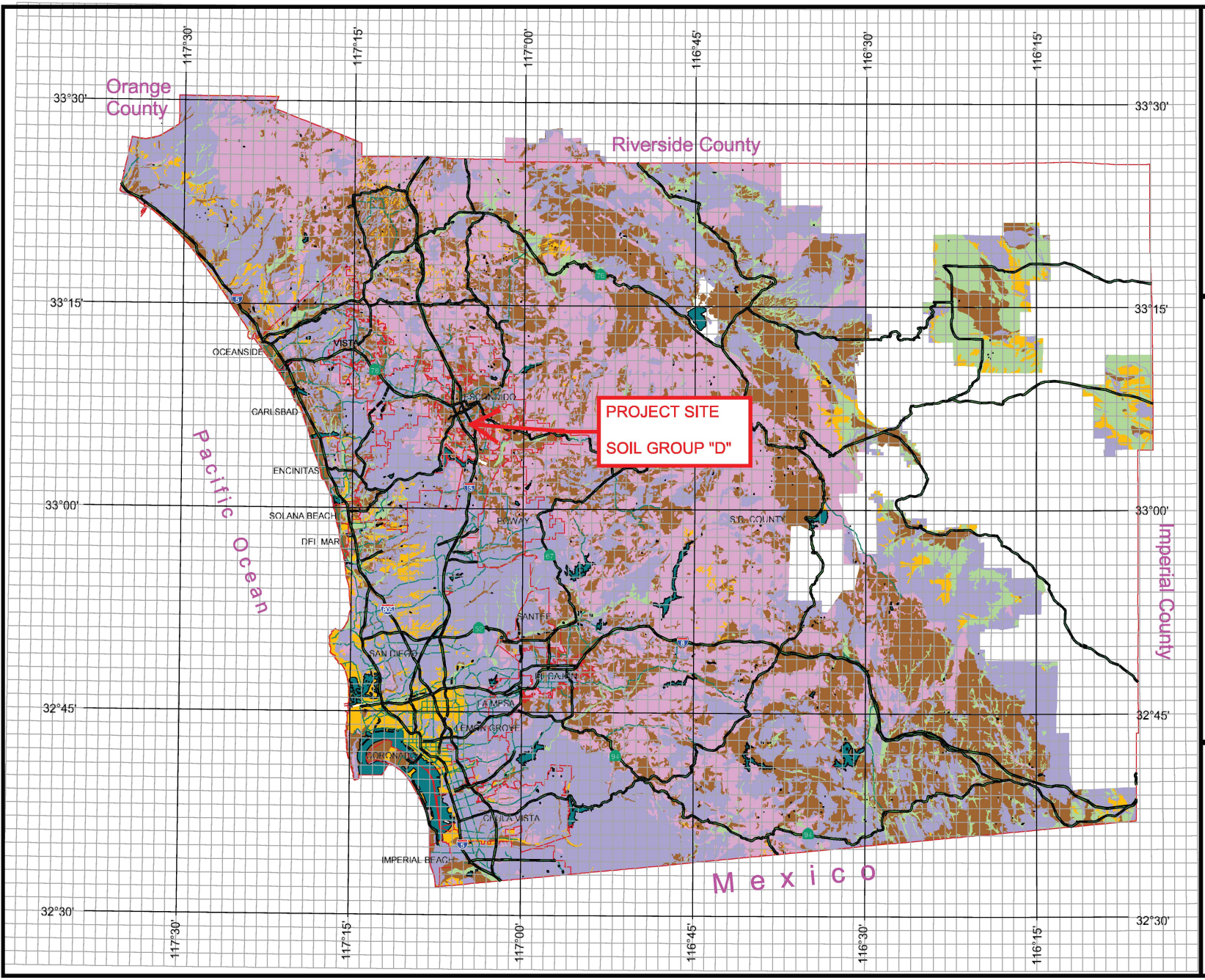
Appendix

I. Reference Maps


78
15
W. VALLEY PKWY.
GRAND AVENUE
CITY OF
ESCONDIDO
AUTO PARK WAY
ESCONDIDO FWY.
CENTRE CITY PKWY.
REDWOOD STREET
PINE STREET
ESCONDIDO BLVD.
JUNIPER STREET
9TH. AVENUE
SITE
13TH. AVENUE
15TH. AVENUE
N
VICINITY MAP
NOT TO SCALE

County of San Diego Hydrology Manual

Soil Hydrologic Groups



Legend

Soil Groups

- Group A
- Group B
- Group C
- Group D
- Undetermined
- Data Unavailable

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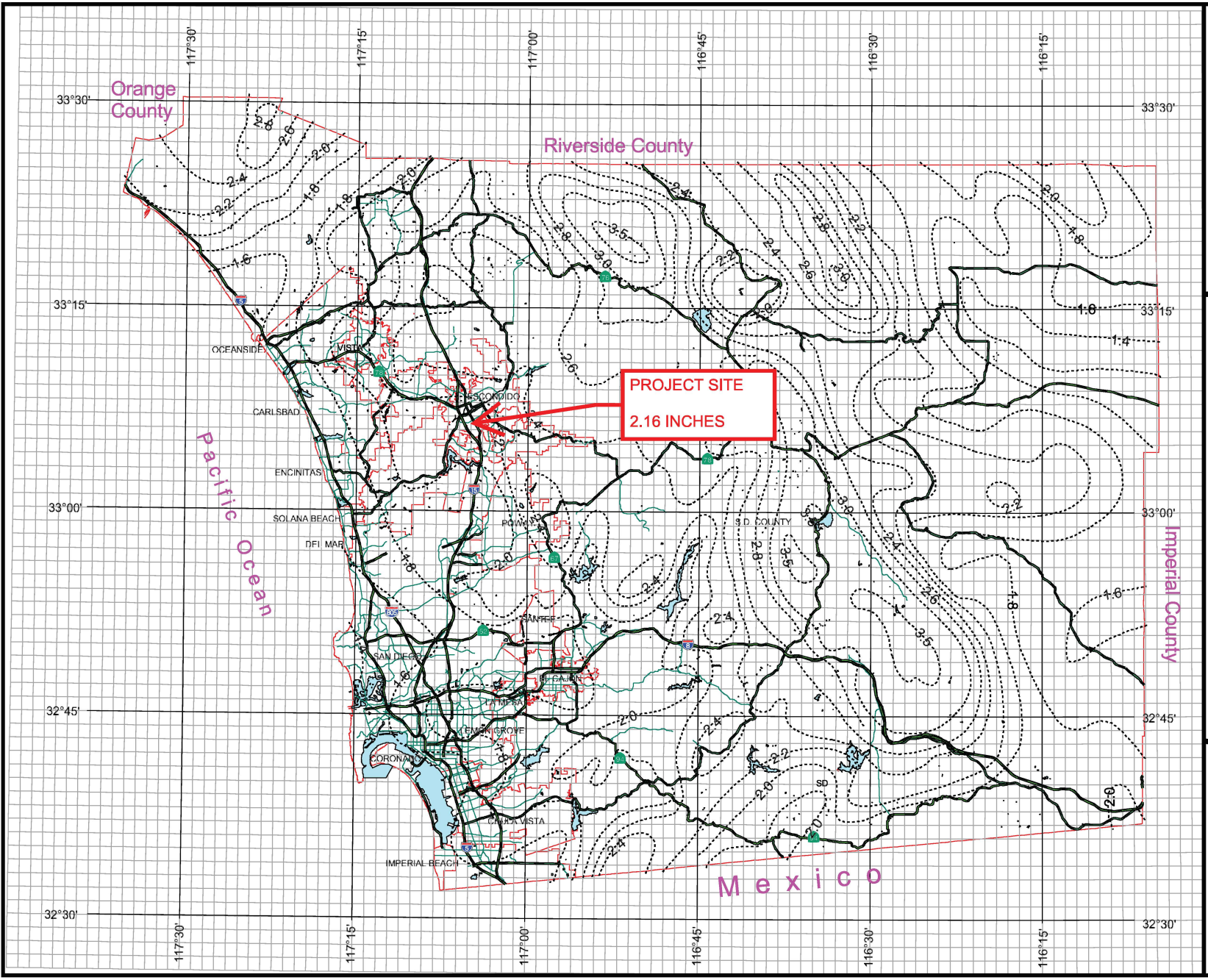
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County of San Diego Hydrology Manual

Rainfall Isopluvials



10 Year Rainfall Event - 6 Hours

Isopluvial (inches)

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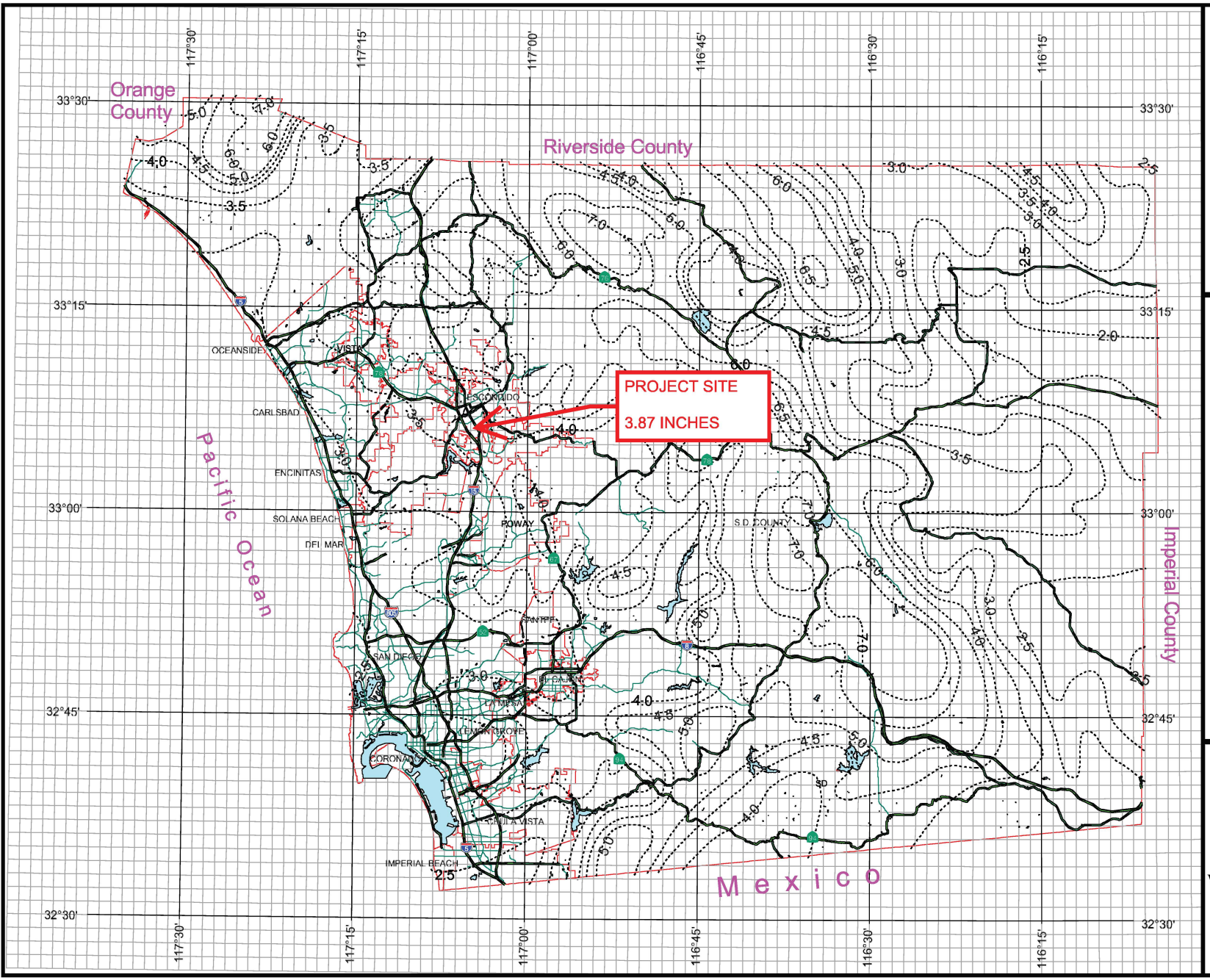
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County of San Diego Hydrology Manual

Rainfall Isopluvials

10 Year Rainfall Event - 24 Hours

Isopluvial (inches)



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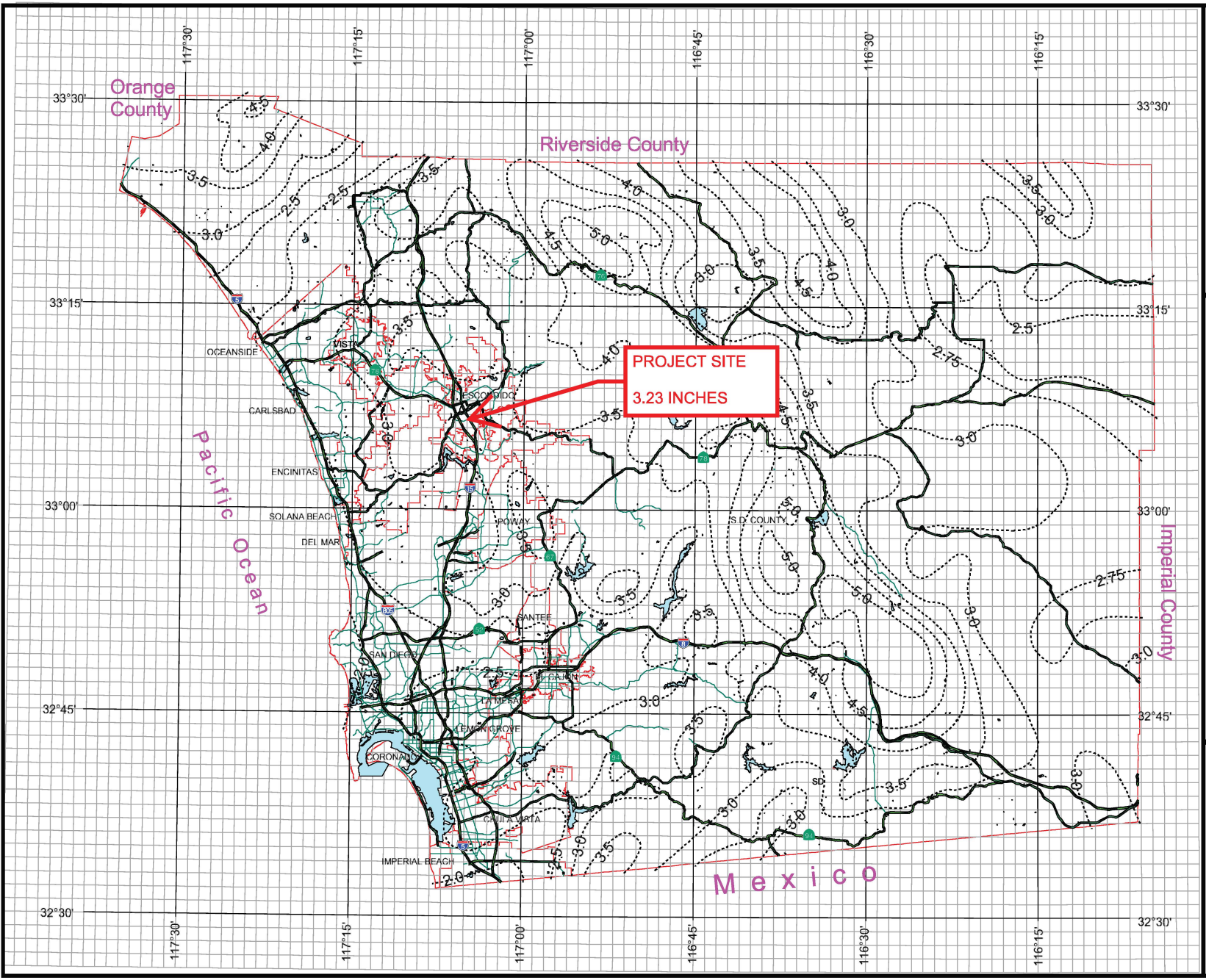
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County of San Diego Hydrology Manual

Rainfall Isopluvials



100 Year Rainfall Event - 6 Hours

Isopluvial (inches)

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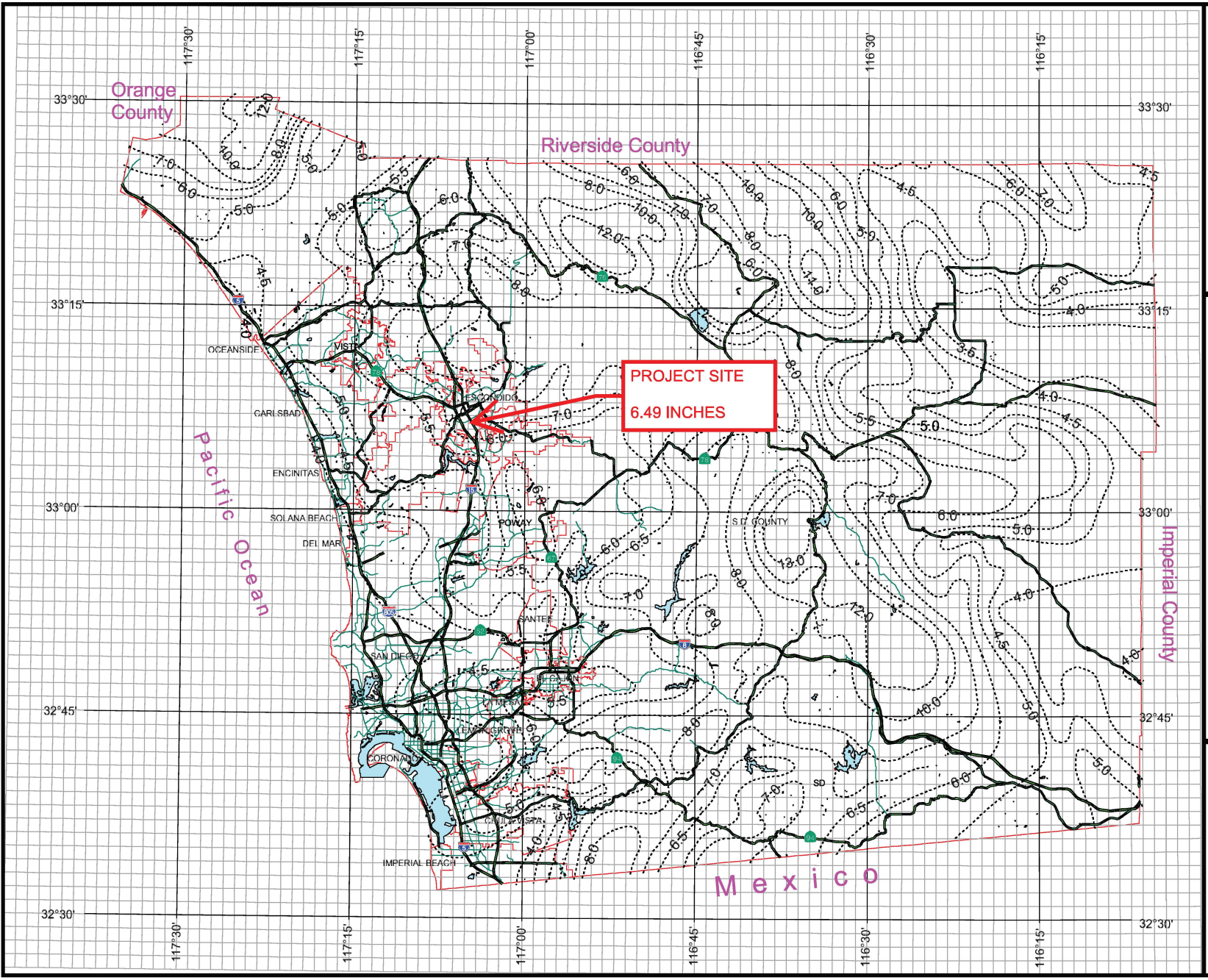
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County of San Diego Hydrology Manual

Rainfall Isopluvials

100 Year Rainfall Event - 24 Hours

Isopluvial (inches)



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II. AES Calculations

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                     2003,1985,1981 HYDROLOGY MANUAL
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          Ver. 23.0 Release Date: 07/01/2016  License ID 1537

                     Analysis prepared by:




 ************************** DESCRIPTION OF STUDY **************************
* CHICK-FIL-A #5524                                                       *
* PRE-DEVELOPMENT                                                          *
* 10-YEAR                                                                 *
 ****************************************************************************

  FILE NAME: X:\AES\23008\E10.DAT
  TIME/DATE OF STUDY: 10:22 11/06/2023
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  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
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  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) =  10.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.160
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *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 =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   277.60
  UPSTREAM ELEVATION(FEET) =    662.48
  DOWNSTREAM ELEVATION(FEET) =    658.63
  ELEVATION DIFFERENCE(FEET) =      3.85
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.666
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
         THE MAXIMUM OVERLAND FLOW LENGTH =    65.80
         (Reference: Table 3-1B of Hydrology Manual)
         THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      4.11
  TOTAL AREA(ACRES) =      0.88   TOTAL RUNOFF(CFS) =      4.11

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
```

```
 S.C.S. CURVE NUMBER (AMC II) =  95
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   176.10
 UPSTREAM ELEVATION(FEET) =    662.34
 DOWNSTREAM ELEVATION(FEET) =    659.60
 ELEVATION DIFFERENCE(FEET) =      2.74
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.596
 WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
        THE MAXIMUM OVERLAND FLOW LENGTH =    68.34
        (Reference: Table 3-1B of Hydrology Manual)
        THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      1.80
 TOTAL AREA(ACRES) =      0.38   TOTAL RUNOFF(CFS) =      1.80

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 FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
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 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  83
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    51.20
 UPSTREAM ELEVATION(FEET) =    663.16
 DOWNSTREAM ELEVATION(FEET) =    658.45
 ELEVATION DIFFERENCE(FEET) =      4.71
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.611
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.23
 TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.23

****************************************************************************
 FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  83
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    10.00
 UPSTREAM ELEVATION(FEET) =    660.20
 DOWNSTREAM ELEVATION(FEET) =    659.38
 ELEVATION DIFFERENCE(FEET) =      0.82
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.117
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.05
 TOTAL AREA(ACRES) =      0.02   TOTAL RUNOFF(CFS) =      0.05
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =       0.0  TC(MIN.) =      2.12
 PEAK FLOW RATE(CFS)   =       0.05
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS
```

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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 1537

                     Analysis prepared by:




 ************************** DESCRIPTION OF STUDY **************************
* CHICK-FIL-A #5524                                                       *
* PRE-DEVELOPMENT                                                          *
* 100-YEAR                                                               *
 ****************************************************************************

  FILE NAME: X:\AES\23008\E100.DAT
  TIME/DATE OF STUDY: 10:17 11/06/2023
----------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
----------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.230
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *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 =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   277.60
  UPSTREAM ELEVATION(FEET) =    662.48
  DOWNSTREAM ELEVATION(FEET) =    658.63
  ELEVATION DIFFERENCE(FEET) =      3.85
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.666
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
         THE MAXIMUM OVERLAND FLOW LENGTH =    65.80
         (Reference: Table 3-1B of Hydrology Manual)
         THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      6.15
  TOTAL AREA(ACRES) =      0.88   TOTAL RUNOFF(CFS) =      6.15

****************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
```

```
 S.C.S. CURVE NUMBER (AMC II) =  95
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   176.10
 UPSTREAM ELEVATION(FEET) =    662.34
 DOWNSTREAM ELEVATION(FEET) =    659.60
 ELEVATION DIFFERENCE(FEET) =      2.74
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.596
 WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
       THE MAXIMUM OVERLAND FLOW LENGTH =    68.34
       (Reference: Table 3-1B of Hydrology Manual)
       THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      2.69
 TOTAL AREA(ACRES) =      0.38   TOTAL RUNOFF(CFS) =      2.69

****************************************************************************
 FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  83
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    51.20
 UPSTREAM ELEVATION(FEET) =    663.16
 DOWNSTREAM ELEVATION(FEET) =    658.45
 ELEVATION DIFFERENCE(FEET) =      4.71
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.611
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.34
 TOTAL AREA(ACRES) =      0.11   TOTAL RUNOFF(CFS) =      0.34

****************************************************************************
 FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  83
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    10.00
 UPSTREAM ELEVATION(FEET) =    660.20
 DOWNSTREAM ELEVATION(FEET) =    659.38
 ELEVATION DIFFERENCE(FEET) =      0.82
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    2.117
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.07
 TOTAL AREA(ACRES) =      0.02   TOTAL RUNOFF(CFS) =      0.07
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)     =       0.0  TC(MIN.) =      2.12
 PEAK FLOW RATE(CFS)   =       0.07
============================================================================
============================================================================
 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 1537

                            Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* CHICK-FIL-A #5524                                                     *
* POST-DEVELOPMENT                                                      *
* 10-YEAR                                                               *
 ************************************************************************

  FILE NAME: X:\AES\23008\P10.DAT
  TIME/DATE OF STUDY: 10:31 07/11/2024
------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) =  10.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   2.160
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *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 =  21
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   180.00
  UPSTREAM ELEVATION(FEET) =    661.10
  DOWNSTREAM ELEVATION(FEET) =    658.70
  ELEVATION DIFFERENCE(FEET) =      2.40
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.692
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    65.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      2.62
  TOTAL AREA(ACRES) =      0.56   TOTAL RUNOFF(CFS) =      2.62

************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
========================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   310.00
  UPSTREAM ELEVATION(FEET) =    660.91
  DOWNSTREAM ELEVATION(FEET) =    658.70
  ELEVATION DIFFERENCE(FEET) =      2.21
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.156
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    54.26
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
```

```
  SUBAREA RUNOFF(CFS) =      1.84
  TOTAL AREA(ACRES) =      0.40   TOTAL RUNOFF(CFS) =      1.84

****************************************************************************
  FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  83
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    75.00
  UPSTREAM ELEVATION(FEET) =    658.90
  DOWNSTREAM ELEVATION(FEET) =    657.60
  ELEVATION DIFFERENCE(FEET) =      1.30
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    9.733
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  3.703
  SUBAREA RUNOFF(CFS) =      0.10
  TOTAL AREA(ACRES) =      0.08   TOTAL RUNOFF(CFS) =      0.10

****************************************************************************
  FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   145.00
  UPSTREAM ELEVATION(FEET) =    660.76
  DOWNSTREAM ELEVATION(FEET) =    659.52
  ELEVATION DIFFERENCE(FEET) =      1.24
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.012
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    57.10
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      1.21
  TOTAL AREA(ACRES) =      0.26   TOTAL RUNOFF(CFS) =      1.21

****************************************************************************
  FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  83
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    25.00
  UPSTREAM ELEVATION(FEET) =    661.00
  DOWNSTREAM ELEVATION(FEET) =    658.50
  ELEVATION DIFFERENCE(FEET) =      2.50
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.133
  WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.20
  TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.20

****************************************************************************
  FLOW PROCESS FROM NODE    600.00 TO NODE    601.00 IS CODE =  21
----------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =    30.00
  UPSTREAM ELEVATION(FEET) =    659.51
  DOWNSTREAM ELEVATION(FEET) =    658.46
  ELEVATION DIFFERENCE(FEET) =      1.05
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.818
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.691
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      0.05
  TOTAL AREA(ACRES) =      0.01   TOTAL RUNOFF(CFS) =      0.05
============================================================================
  END OF STUDY SUMMARY:
  TOTAL AREA(ACRES)     =        0.0  TC(MIN.) =      1.82
  PEAK FLOW RATE(CFS)   =       0.05
============================================================================
============================================================================
  END OF RATIONAL METHOD ANALYSIS
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            RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
            Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
                         2003,1985,1981 HYDROLOGY MANUAL
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              Ver. 23.0 Release Date: 07/01/2016  License ID 1537

                          Analysis prepared by:




 ************************* DESCRIPTION OF STUDY *************************
* CHICK-FIL-A #5524                                                      *
* POST-DEVELOPMENT                                                       *
* 100-YEAR                                                               *
 ************************************************************************

  FILE NAME: X:\AES\23008\P100.DAT
  TIME/DATE OF STUDY: 10:25 07/11/2024
------------------------------------------------------------------------------
  USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:
------------------------------------------------------------------------------
  2003 SAN DIEGO MANUAL CRITERIA

  USER SPECIFIED STORM EVENT(YEAR) = 100.00
  6-HOUR DURATION PRECIPITATION (INCHES) =   3.230
  SPECIFIED MINIMUM PIPE SIZE(INCH) =   4.00
  SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.95
  SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
  NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
  *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 =  21
------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   180.00
  UPSTREAM ELEVATION(FEET) =    661.10
  DOWNSTREAM ELEVATION(FEET) =    658.70
  ELEVATION DIFFERENCE(FEET) =      2.40
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.692
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    65.00
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
  SUBAREA RUNOFF(CFS) =      3.91
  TOTAL AREA(ACRES) =      0.56   TOTAL RUNOFF(CFS) =      3.91

******************************************************************************
  FLOW PROCESS FROM NODE    200.00 TO NODE    201.00 IS CODE =  21
------------------------------------------------------------------------------
  >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
==============================================================================
  GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
  SOIL CLASSIFICATION IS "D"
  S.C.S. CURVE NUMBER (AMC II) =  95
  INITIAL SUBAREA FLOW-LENGTH(FEET) =   310.00
  UPSTREAM ELEVATION(FEET) =    660.91
  DOWNSTREAM ELEVATION(FEET) =    658.70
  ELEVATION DIFFERENCE(FEET) =      2.21
  SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.156
  WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
           THE MAXIMUM OVERLAND FLOW LENGTH =    54.26
           (Reference: Table 3-1B of Hydrology Manual)
           THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
   100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
  NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
```

```
 SUBAREA RUNOFF(CFS) =      2.76
 TOTAL AREA(ACRES) =      0.40   TOTAL RUNOFF(CFS) =      2.76

****************************************************************************
 FLOW PROCESS FROM NODE    300.00 TO NODE    301.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  83
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    75.00
 UPSTREAM ELEVATION(FEET) =    658.90
 DOWNSTREAM ELEVATION(FEET) =    657.60
 ELEVATION DIFFERENCE(FEET) =      1.30
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    9.733
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.538
 SUBAREA RUNOFF(CFS) =      0.15
 TOTAL AREA(ACRES) =      0.08   TOTAL RUNOFF(CFS) =      0.15

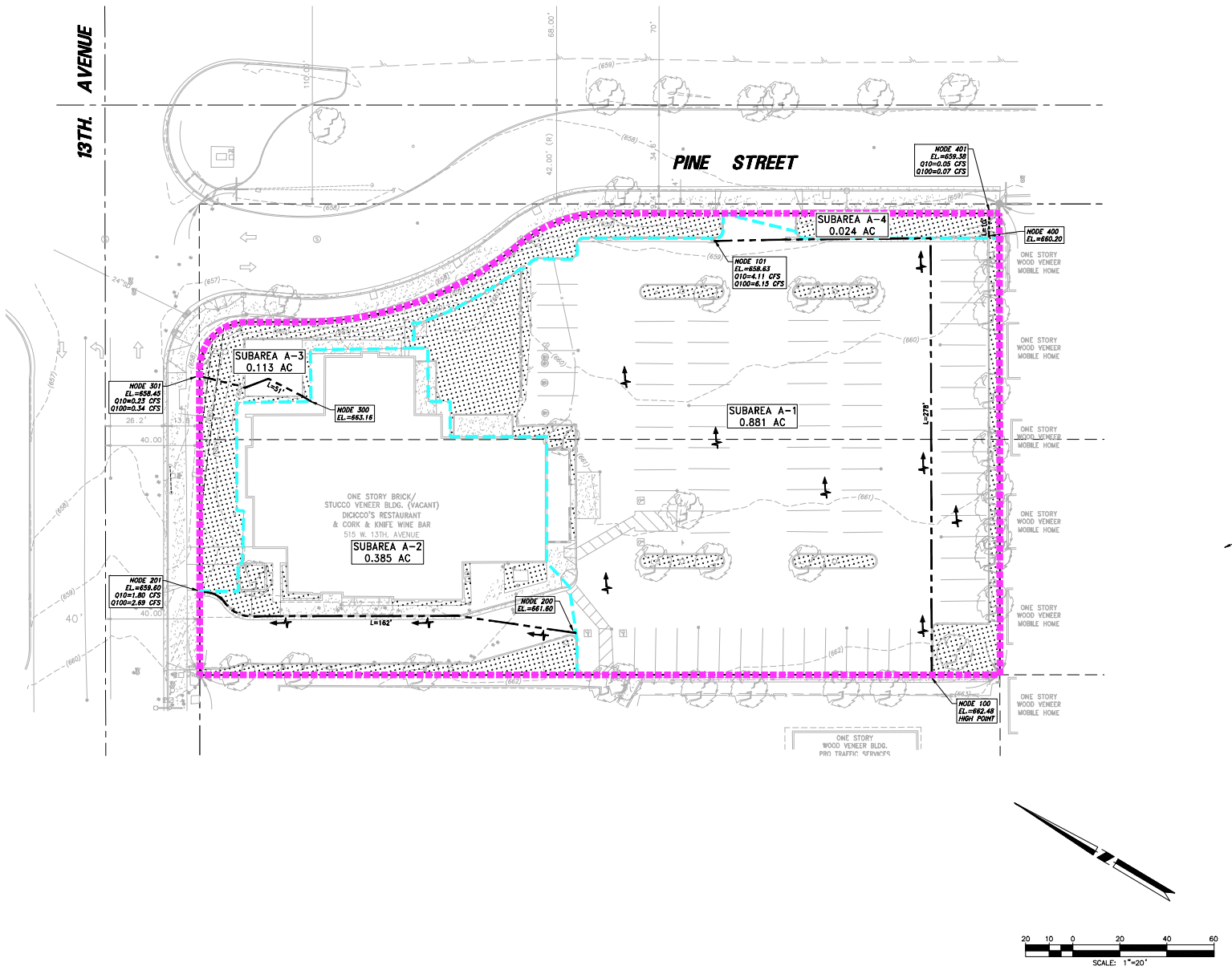
****************************************************************************
 FLOW PROCESS FROM NODE    400.00 TO NODE    401.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  95
 INITIAL SUBAREA FLOW-LENGTH(FEET) =   145.00
 UPSTREAM ELEVATION(FEET) =    660.76
 DOWNSTREAM ELEVATION(FEET) =    659.52
 ELEVATION DIFFERENCE(FEET) =      1.24
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.012
 WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
          THE MAXIMUM OVERLAND FLOW LENGTH =    57.10
          (Reference: Table 3-1B of Hydrology Manual)
          THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      1.81
 TOTAL AREA(ACRES) =      0.26   TOTAL RUNOFF(CFS) =      1.81

****************************************************************************
 FLOW PROCESS FROM NODE    500.00 TO NODE    501.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 OPEN BRUSH FAIR COVER RUNOFF COEFFICIENT = .3500
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  83
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    25.00
 UPSTREAM ELEVATION(FEET) =    661.00
 DOWNSTREAM ELEVATION(FEET) =    658.50
 ELEVATION DIFFERENCE(FEET) =      2.50
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    3.133
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.30
 TOTAL AREA(ACRES) =      0.10   TOTAL RUNOFF(CFS) =      0.30

****************************************************************************
 FLOW PROCESS FROM NODE    600.00 TO NODE    601.00 IS CODE =  21
----------------------------------------------------------------------------
 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
============================================================================
 GENERAL COMMERCIAL RUNOFF COEFFICIENT = .8200
 SOIL CLASSIFICATION IS "D"
 S.C.S. CURVE NUMBER (AMC II) =  95
 INITIAL SUBAREA FLOW-LENGTH(FEET) =    30.00
 UPSTREAM ELEVATION(FEET) =    659.51
 DOWNSTREAM ELEVATION(FEET) =    658.46
 ELEVATION DIFFERENCE(FEET) =      1.05
 SUBAREA OVERLAND TIME OF FLOW(MIN.) =    1.818
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.510
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) =      0.07
 TOTAL AREA(ACRES) =      0.01   TOTAL RUNOFF(CFS) =      0.07
============================================================================
 END OF STUDY SUMMARY:
 TOTAL AREA(ACRES)      =        0.0  TC(MIN.) =      1.82
 PEAK FLOW RATE(CFS)    =       0.07
============================================================================
============================================================================
 END OF RATIONAL METHOD ANALYSIS

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III. Site and Project Plans



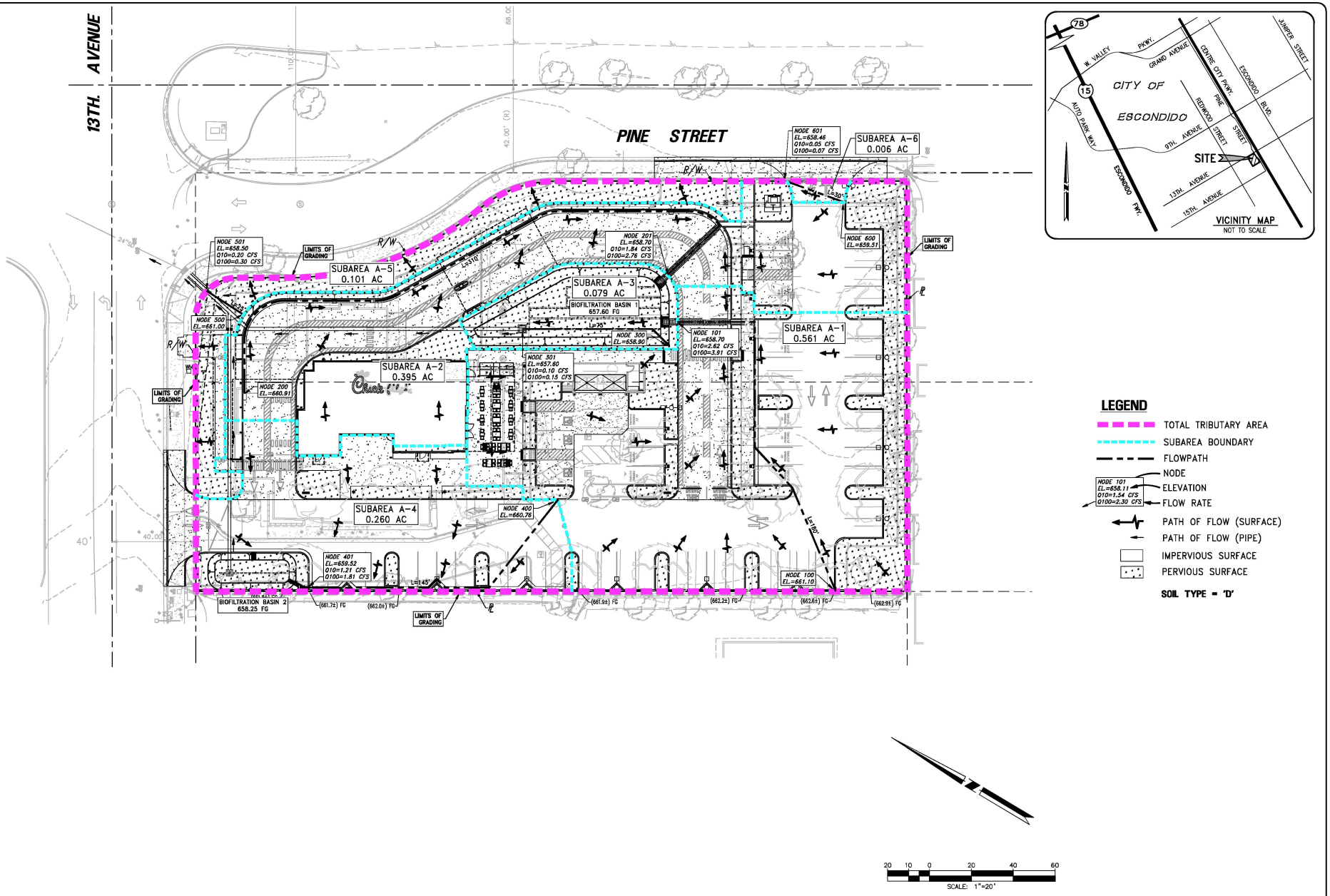
NO.	REVISIONS	DATE

Prepared by:
Joseph C. Truxaw and Associates, Inc.
Civil Engineers and Land Surveyors
1915 W. Orangewood Ave., Suite 101, Orange, CA 92868 (714) 935-0265 Truxaw.com

PRE-DEVELOPMENT HYDROLOGY PLAN

CHICK-FIL-A #5524
515 WEST 13TH AVENUE
CITY OF ESCONDIDO, STATE OF CALIFORNIA

DATE	04-23-24
DRAWN BY	RCH
CHECKED BY	RJD
JOB NO.	CFA23008
SHEET NO.	1 OF 1 SHEETS



LEGEND

- TOTAL TRIBUTARY AREA
- SUBAREA BOUNDARY
- FLOWPATH
- NODE
- ELEVATION
- FLOW RATE
- PATH OF FLOW (SURFACE)
- PATH OF FLOW (PIPE)
- IMPERVIOUS SURFACE
- PERVIOUS SURFACE

SOIL TYPE = 'D'

20 10 0 20 40 60
SCALE: 1"=20'

NO.	REVISIONS	DATE

Prepared by:
Joseph C. Truxaw and Associates, Inc.
Civil Engineers and Land Surveyors
1915 W. Orangewood Ave., Suite 101, Orange, CA 92868 (714) 935-0265 Truxaw.com

POST-DEVELOPMENT HYDROLOGY PLAN

CHICK-FIL-A #5524
515 WEST 13TH AVENUE
CITY OF ESCONDIDO, STATE OF CALIFORNIA

DATE	07-11-24
DRAWN BY	RCH
CHECKED BY	RJD
JOB NO.	CFA23008
SHEET NO.	1 OF 1 SHEETS

CONCEPTUAL GRADING PLANS
FOR
CHICK-FIL-A RESTAURANT NO. 05524
WEST 13TH & CENTRE CITY
515 W. 13TH AVENUE, ESCONDIDO, CA 92025

**** TITLE REPORT**

THIS SURVEY AND EASEMENTS SHOWN HEREON ARE BASED ON INFORMATION CONTAINED IN THE COMMITMENT BY:

FIRST AMERICAN TITLE INSURANCE COMPANY
4380 LA JOLLA VILLAGE DRIVE, SUITE 110
SAN DIEGO, CA 92122
(858) 410-3916
ORDER/FILE NUMBER: NCS-1165837-SD
DATED: FEBRUARY 3, 2023
TITLE OFFICER: JANICE TREANOR

**** LEGAL DESCRIPTION**

REAL PROPERTY IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

LOTS 9 AND 10 IN BLOCK 220 OF ESCONDIDO, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 336, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 10, 1886. EXCEPTING FROM SAID LOT 9 THAT PORTION THEREOF GRANTED TO THE STATE OF CALIFORNIA FOR HIGHWAY PURPOSES IN DEED RECORDED MARCH 11, 1948, IN BOOK 2708, PAGE 47 OF OFFICIAL RECORDS.

EXCEPTING ALSO THE INTEREST CONVEYED TO THE CITY OF ESCONDIDO BY DEED RECORDED JANUARY 7, 1976 AS FILE NO. 76-004339 OF OFFICIAL RECORDS.

APN: 236-161-07-00 (AFFECTS LOT 9) 236-161-06-00 (AFFECTS LOT 10)

**** EXCEPTION, EASEMENTS & DISPOSITION NOTES**

(10) AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS AND INCIDENTAL PURPOSES, RECORDED MAY 25, 1976 AS INSTRUMENT NO. 1976-157930 OF OFFICIAL RECORDS.
IN FAVOR OF: SAN DIEGO GAS & ELECTRIC COMPANY
AFFECTS: AS DESCRIBED THEREIN

NOTE: SAID INSTRUMENT AFFECTS THE SURVEYED LAND AND IS PLOTTED HEREON.

**** SITE PLANNING DATA**

DISCLAIMER: INFORMATION PROVIDED BY 4G DEVELOPMENT AND CONSULTING INC. SHOWN IN THE SITE INVESTIGATION REPORT DATED 02/27/2023.

ZONING: S-P SPECIFIC PLAN AREA, SPA 15: SOUTH CENTRE CITY SPECIFIC PLAN, 13TH. AVE CORNERS DISTRICT

MAXIMUM BUILDING HEIGHT: 45 FEET

SETBACKS

BUILDING: NORTH = 20 FEET; SOUTH = 10 FEET;
EAST = 10-20 FEET; WEST = 0-10 FEET

LANDSCAPING: NORTH = 0 FEET; SOUTH = 10 FEET;
EAST = 10 FEET; WEST = 0 FEET

**** RECORD DATA**

(R) = RECORD OF SURVEY MAP NO. 17797, FILED IN THE COUNTY OF SAN DIEGO.

(R1) = MAP NO. 336, "TOWN OF ESCONDIDO", FILED IN THE COUNTY OF SAN DIEGO, JULY 10, 1886.

(D) = GRANT DEED RECORDED JANUARY 7, 1976 AS FILE NO. 76-004339 OF OFFICIAL RECORDS.

**** BASIS OF BEARINGS**

THE BEARING OF N30°49'22"W SHOWN HEREON, ESTABLISHED FROM FOUND MONUMENTS ON THE CENTER LINE OF CENTER CITY PARKWAY AS SHOWN ON RECORD OF SURVEY MAP NO. 17797, OFFICIAL RECORDS OF SAN DIEGO COUNTY, STATE OF CALIFORNIA WAS USED AS THE BASIS OF BEARINGS FOR THIS SURVEY.

**** BENCHMARK**

CITY OF ESCONDIDO BENCHMARK NO. 287-A

1-1/2" DIAMETER BRASS DISK MARKED "COE BM 287-A", SET IN TOP OF CURB AT THE WESTERLY EDGE OF A PEDESTRIAN RAMP, ON THE NW CORNER OF 13TH AVE. AND PINE ST., SET 6/2016.

ELEVATION: 655.11 FEET (NGVD 1929)

**** PARKING COUNT**

88 PARKING STALLS EXIST WITHIN THE SUBJECT SITE TITLE REPORT LEGAL DESCRIPTION SHOWN HEREON. (INCLUDES 4 HANDICAP STALLS)

**** SOURCE OF BOUNDARY & EASEMENT INFORMATION.**

THE TOPOGRAPHIC INFORMATION SHOWN ON THESE PLANS WERE TAKEN FROM THE PLAN REFERENCED BELOW.

DATE OF SURVEY: MARCH 10, 2023

ALTA SURVEY BY: TRUXAW AND ASSOCIATES, INC.
1915 W. ORANGEWOOD AVE., SUITE 101
ORANGE, CA 92868
(714) 935-0265
JOB # CFA23008

**** SITE AREA**

THE SUBJECT SITE, LEGAL DESCRIPTION PER TITLE REPORT HEREON CONTAINS APPROXIMATELY:

61,090 SQ. FT. OR 1.402 ACRES

**** FLOOD ZONE**

COMMUNITY NUMBER: 060290; MAP OR PANEL NUMBER: 1077G
EFFECTIVE DATE: 05/16/2012

ZONE: X

PROPERTY NOT IN A SPECIAL FLOOD HAZARD AREA, AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

INFORMATION OBTAINED FROM CERTIFIED FLOOD SYSTEMS, INC. ON 3/29/23

**** UTILITY PURVEYORS**

SEWER.....CITY OF ESCONDIDO.....760-839-4284.....UTILITY DIVISION
WATER.....CITY OF ESCONDIDO.....760-839-4284.....WATER DIVISION
STORM DRAIN....CITY OF ESCONDIDO.....760-839-4651.....HECTAR FARELA
GAS.....SDGE.....858-636-6805.....FERNANDO ESQUER
CABLE.....COX COMMUNICATION.....619-266-5628.....JOHN LEO
PHONE.....AT&T.....858-790-0265.....BREANDAN LEE
ELECTRIC.....SDGE.....858-378-3746.....JAMES TODD
TRAFFIC.....CITY OF ESCONDIDO.....760-839-4595.....OWEN TUNNELL

GENERAL NOTES

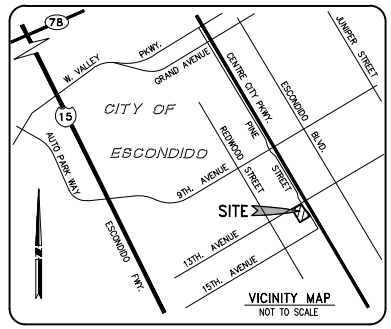
1. CONTRACTOR SHALL VERIFY ALL EXISTING FIELD CONDITIONS AND NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
2. CONTRACTOR TO VERIFY POINTS OF CONNECTION TO PIPES, INLETS, CURBS, GUTTERS, ETC. AND NOTIFY TRUXAW AND ASSOCIATES OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.
3. REFER TO ARCHITECTURAL PLANS FOR BUILDING DIMENSIONS, BUILDING SETBACKS, CONCRETE COLORS AND FINISHES, STRUCTURAL DETAILS, WALKWAYS, EXPANSION JOINT LOCATIONS, UTILITIES, ETC.
4. ALL WORK SHALL BE DONE IN STRICT CONFORMANCE WITH CURRENT CITY OF ESCONDIDO, SAN DIEGO REGIONAL STANDARD DRAWINGS, AND SPPWC STANDARDS. WORK SHALL ALSO CONFORM TO APPLICABLE BUILDING CODES (CA BUILDING CODE, CA PLUMBING CODE, ETC.) AS INTERPRETED BY THE CITY OF ESCONDIDO.
5. ALL CONTRACTORS PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THE SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS, WHETHER OR NOT SHOWN ON THESE PLANS.
6. EXISTING UNDERGROUND UTILITY LINE LOCATIONS WERE TAKEN FROM AVAILABLE RECORDS. OTHER UTILITIES MAY EXIST THAT ARE NOT PLOTTED HEREON.
7. EXISTING UNDERGROUND UTILITIES ARE TO BE RELOCATED AS REQUIRED TO AVOID CONFLICT WITH PROPOSED STRUCTURES.
8. EXISTING PUBLIC UTILITY EASEMENTS IN CONFLICT WITH PROPOSED STRUCTURES ARE TO BE QUITCLAIMED WITH THE APPROVAL OF THE UTILITY COMPANY. NEW EASEMENTS ARE TO BE GRANTED AT PROPOSED UTILITY LOCATIONS.
9. CALL UNDERGROUND SERVICE ALERT FOR UNDERGROUND LOCATIONS 48 HOURS BEFORE YOU DIG 811.
10. THE CONTRACTOR SHALL RENEW OR REPLACE ANY EXISTING TRAFFIC STRIPING AND/OR PAVEMENT MARKINGS, WHICH DURING HIS OPERATIONS HAVE BEEN EITHER REMOVED OR THE EFFECTIVENESS OF WHICH HAS BEEN REDUCED.
11. THE CONTRACTOR SHALL COMPLY WITH THE SOILS REPORT (AND ADDENDA) FOR THIS PROJECT AND ALL RECOMMENDATIONS FROM THE SOILS ENGINEER.
12. ALL TOPOGRAPHIC AND BOUNDARY INFORMATION SHOWN HEREON WAS OBTAINED FROM AN ALTA/ACSM TITLE SURVEY DATED MARCH 25TH, 2023 BY TRUXAW AND ASSOCIATES, INC.
13. ALL STORM DRAIN AND SEWER PIPE SHALL BE PLACED BEGINNING AT THE DOWNSTREAM POINT OF CONNECTION AND CONTINUING TO THE UPSTREAM TERMINUS. PIPE PLACEMENT SHALL BE CONTINUOUS. DEVIATIONS FROM THIS SEQUENCE WILL NOT BE PERMITTED. POTHOLING INFORMATION, WHERE REQUIRED, SHALL BE OBTAINED AND PROVIDED TO TRUXAW AND ASSOCIATES PRIOR TO CONSTRUCTION.
14. ALL IMPROVEMENTS BEYOND THE LIMITS OF GRADING ARE TO BE PROTECTED IN PLACE UNLESS NOTED OTHERWISE.
15. THESE PLANS ARE BASED ON THE SITE PLAN PROVIDED TO TRUXAW AND ASSOCIATES, RECEIVED JUNE 26, 2023 THE SITE PLAN PROVIDED WAS NOT AN AGENCY APPROVED SITE PLAN.
16. SITE CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING AND THE LOCATION OF DOORWAYS, UTILITIES, ETC.

LEGEND

AB = AGGREGATE BASE		TRW = TOP OF RETAINING WALL	
AC = ASPHALT CONCRETE		TW = TOP OF WALL	
BLK = CONCRETE BLOCK		UG = UNDERGROUND	
BS = BACK OF SIDEWALK		UP = UTILITY POLE	
CB = CATCH BASIN		VAR = VARIABLE	
CF = CURB FACE		W = WASHER	
CL = CENTERLINE		WDF = WOOD FENCE	
CLF = CHAIN LINK FENCE		WM = WATER METER	
CO = CLEANOUT		WV = WATER VALVE	
DCV = DETECTOR CHECK VALVE			
DS = ROOF DOWNSPOUT		N. = NORTH	
EG = EDGE OF GUTTER		S. = SOUTH	
EP = EDGE OF PAVEMENT		E. = EAST	
FD = FOUND		W. = WEST	
FDC = FIRE DEPT. CONNECTION		N'LY = NORTHERLY	
FF = FINISHED FLOOR		S'LY = SOUTHERLY	
FG = FINISHED GRADE		E'LY = EASTERLY	
FH = FIRE HYDRANT		W'LY = WESTERLY	
FL = FLOW LINE		N/O = NORTH OF	
FS = FINISHED SURFACE		S/O = SOUTH OF	
GB = GRADE BREAK		E/O = EAST OF	
GM = GAS METER		W/O = WEST OF	
GR = TOP OF GRATE		℄ = PROPERTY LINE	
GV = GAS VALVE		℄ = CENTERLINE	
HP = HIGH POINT		R/W = RIGHT OF WAY	
HT = HEIGHT		Δ = DELTA	
ICV = IRRIGATION CONTROL VALVE		R = RADIUS	
INV = INVERT		L = LENGTH	
IP = IRON PIPE		T = TANGENT	
LS = LIGHT STANDARD		M = MEASURED DATA	
L&T = LEAD & TAG		C = CALCULATED DATA	
MH = MANHOLE		(RAD)= RADIAL BEARING	
NG = NATURAL GROUND		PRO =PROPORTIONATE MEASUREMENT	
N&T = NAIL & TAG		(210.00' R) = RECORD DATA	
OHW = OVERHEAD WIRE		210.00' M. = MEASURED DATA	
PB = PULL BOX		210.00' PRO. = PRORATED DATA	
PCC = CONCRETE		210.00' C. = CALCULATED DATA	
PIV = POST INDICATOR VALVE		(427.00) TC = EXISTING ELEVATION	
PL = PROPERTY LINE		427.00 TC = DESIGN ELEVATION	
RD = ROOF DRAIN			
RWH = REDWOOD HEADER		CATV = CABLE TV LINE	
SCB = SIGNAL CONTROL BOX		E = ELECTRICAL LINE	
SMH = SEWER MANHOLE		FW = FIRE WATER LINE	
SPK = SPIKE		G = GAS LINE	
SW = SIDEWALK		GB = GRADE BREAK LINE	
TC = TOP OF CURB		R = RIDGE LINE	
TE = TRASH ENCLOSURE		S = SEWER LINE	
TP = TELEPHONE POLE		SD = STORM DRAIN LINE	
TRAN = TRANSITION		T = TELEPHONE LINE	
TRANS= TRANSFORMER		W = WATER LINE	

SYMBOLS

FIRE HYDRANT
STREET LIGHT
TRAFFIC SIGNAL
TRAFFIC SIGNAL ARM & POLE
LIGHT STANDARD
UTILITY POLE
GUY WIRE & ANCHOR
WATER METER
GAS METER
WATER VALVE
GAS VALVE
PULL BOX
GRATE INLET
SIGN
VENT
SEWER MANHOLE
STORM DRAIN MANHOLE
TELEPHONE MANHOLE
MANHOLE
SEWER CLEANOUT
MONITORING WELL
HANDICAP PARKING STALL
LANDSCAPED AREA
PROTECT IN PLACE
REMOVE AND DISPOSE OFFSITE
RELOCATE
PLOTABLE EASEMENT ITEM No. PER TITLE REPORT
(427.0) EXIST. CONTOUR
427.0 DESIGN CONTOUR



VICINITY MAP
NOT TO SCALE

SHEET #	TITLE
1	TITLE SHEET
2	CONCEPTUAL CONSTRUCTION NOTES
3	CONCEPTUAL GRADING PLAN
4	CONCEPTUAL UTILITY PLAN
* 1	ALTA 1 (TITLE SHEET)
* 2	ALTA 2 (BOUNDARY)
* 3	ALTA 3 (TOPO)

* FOR REFERENCE ONLY

PLANS PREPARED FOR
Chick-fil-A, Inc.
5200 BUFFINGTON ROAD
ATLANTA, GEORGIA 30349

ARCHITECT
CRHO ARCHITECTS
1833 E 17TH STREET; SUITE 301
SANTA ANA, CA 92705
(714) 832-1834 FAX (714) 832-1910

THIS PLAN IS:
PRELIMINARY
(NOT FOR CONSTRUCTION)

NOTICE TO CONTRACTOR

THE CONTRACTOR SHALL ASCERTAIN THE TRUE VERTICAL AND HORIZONTAL LOCATION AND SIZE OF ALL UTILITIES, PIPES, AND/OR STRUCTURES AND SHALL BE RESPONSIBLE FOR DAMAGE TO ANY PUBLIC OR PRIVATE UTILITIES, SHOWN OR NOT SHOWN HEREON.

IMPORTANT NOTICE
Section 4216 of the Government Code requires a Dig Alert Identification Number be issued before a Permit is Executed, or it will be void. For your Dig Alert I.D. Number call Underground Service Alert
CALL 811
Two working days before you dig.

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

Prepared by:
JOSEPH C. TRUXAW & ASSOCIATES, INC.
Civil Engineers and Land Surveyors
1915 W. ORANGEWOOD AVE. SUITE 101
ORANGE, CA 92868
(714) 935-0265
(714) 935-0106 (FAX)

REGISTERED PROFESSIONAL ENGINEER
RANDY J. DECKER
No. 81077
CIVIL
STATE OF CALIFORNIA

CHICK-FIL-A
WEST 13TH & CENTRE CITY
515 W. 13TH. AVENUE
ESCONDIDO, CA 92025

FSU# 05524

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

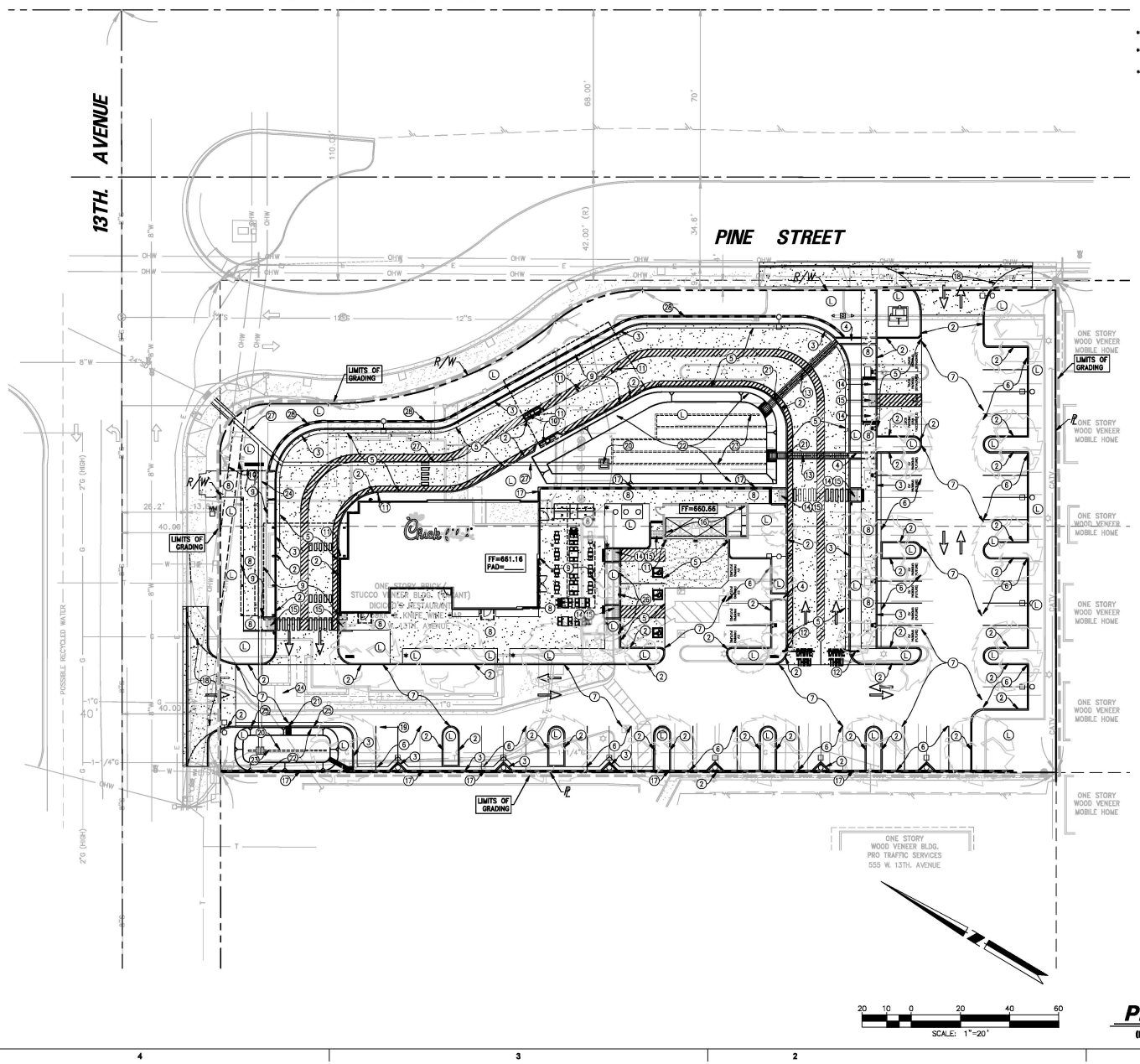
ENGINEER'S PROJECT #	CFA23008
PRINTED FOR	ENTITLEMENT
DATE	05-29-2024
DRAWN BY	KSV

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SHEET
TITLE SHEET

SHEET NUMBER
1 of 4

CUP SUBMITTAL



CONSTRUCTION NOTES–ONSITE

1. SAWCUT & REMOVE EXIST. AC PAVING, CONCRETE CURBS, CONCRETE DRIVE–THRU, ETC.
2. CONSTRUCT CURB; CF=6" UNLESS OTHERWISE SHOWN ON PLANS.
3. CONSTRUCT 6" CURB & 24" GUTTER.
4. CONSTRUCT DOUBLE 6" CURB WITH 24" CHANNEL.
5. ** PAVE WITH 6–INCH PCC OVER 4–INCH AB OVER COMPACTED SUBGRADE
6. ** PAVE WITH 3–INCH AC OVER 4–INCH AB OVER COMPACTED SUBGRADE. (PARKING STALLS).
7. ** PAVE WITH 3–INCH AC OVER 6–INCH AB OVER COMPACTED SUBGRADE. (DRIVE LANES).
8. CONSTRUCT CONCRETE SIDEWALK.
9. CANOPY PER ARCHITECTURAL PLANS. (PER SEPARATE PERMIT)
10. MENU BOARD PER SIGN PLANS. (PER SEPARATE PERMIT)
11. INSTALL BOLLARD
12. HEIGHT ARM PER SIGN PLANS.
13. CONSTRUCT 24–INCH WIDE CONCRETE TRENCH DRAIN WITH FRAME AND GRATE
14. CONSTRUCT ACCESSIBLE RAMP PER CBC REQUIREMENTS
15. PLACE TRUNCATED DOMES PER CBC REQUIREMENTS
16. COVERED TRASH ENCLOSURE/STORAGE ROOM AND CONCRETE APRON PER ARCHITECTURAL DETAILS.
17. CONSTRUCT RETAINING WALL PER STRUCTURAL PLANS
18. CONSTRUCT ALLEY–TYPE DRIVEWAY PER CITY OF ESCONDIDO STD. DWG. G–5–E
19. GREASE INTERCEPTOR PER PLUMBING PLAN.
20. CONSTRUCT 36–INCH SQUARE CONCRETE CATCH BASIN
21. CONSTRUCT CURB OPENING
22. CONSTRUCT BIOFILTRATION BASIN
23. INSTALL 6" PERFORATED PIPE
24. INSTALL 15–INCH PVC SDR–35 PIPE WITH FITTINGS.
25. CONSTRUCT 6" RETAINING CURB & 24" GUTTER
26. INSTALL CONCRETE BOLLARD WITH PROPOSED SIGN
27. INSTALL 18–INCH PVC SDR–35 PIPE WITH FITTINGS.
28. CONSTRUCT SCREENED WALL PER STRUCTURAL PLANS
- (L) LANDSCAPE AREA PER SEPARATE LANDSCAPE PLANS

** PAVEMENT SECTIONS SHALL COMPLY WITH GEOTECHNICAL REPORT RECOMMENDATIONS.

NOTE:
SEE SHEET 1 FOR LIST OF ABBREVIATIONS AND SYMBOLS

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Chick-fil-A
5200 Buffington Road
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Prepared by:
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(714) 935-0265
(714) 935-0106 (FAX)

REGISTERED PROFESSIONAL ENGINEER RANDY J. REGIER No. 81077 CIVIL STATE OF CALIFORNIA

CHICK-FIL-A
WEST 13TH & CENTRE CITY
515 W. 13TH. AVENUE
ESCONDIDO, CA 92025

FSU# 05524

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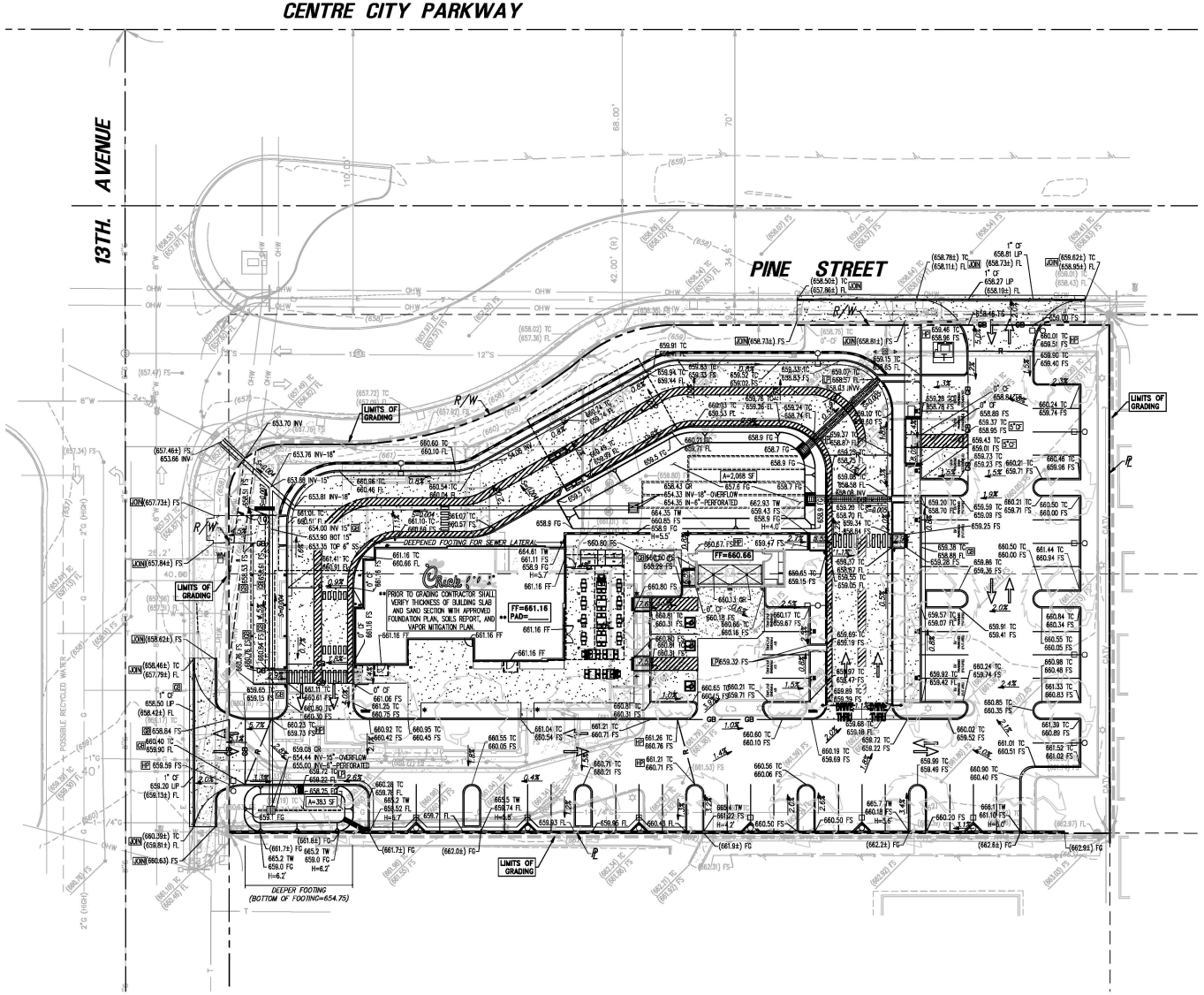
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SHEET
CONCEPTUAL CONSTRUCTION NOTES PLAN

SHEET NUMBER
2 of 4

CUP SUBMITTAL



NOTICE TO CONTRACTOR

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THIS PLAN IS:

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20 10 0 20 40 60

SCALE: 1"=20'

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

Prepared by:

JOSEPH C. TRUXAW & ASSOCIATES, INC.
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(714) 935-0265
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REGISTERED PROFESSIONAL ENGINEER RANDY J. REGIER No. 81077 CIVIL STATE OF CALIFORNIA

CHICK-FIL-A

WEST 13TH & CENTRE CITY

515 W. 13TH. AVENUE
ESCONDIDO, CA 92025

FSU# 05524

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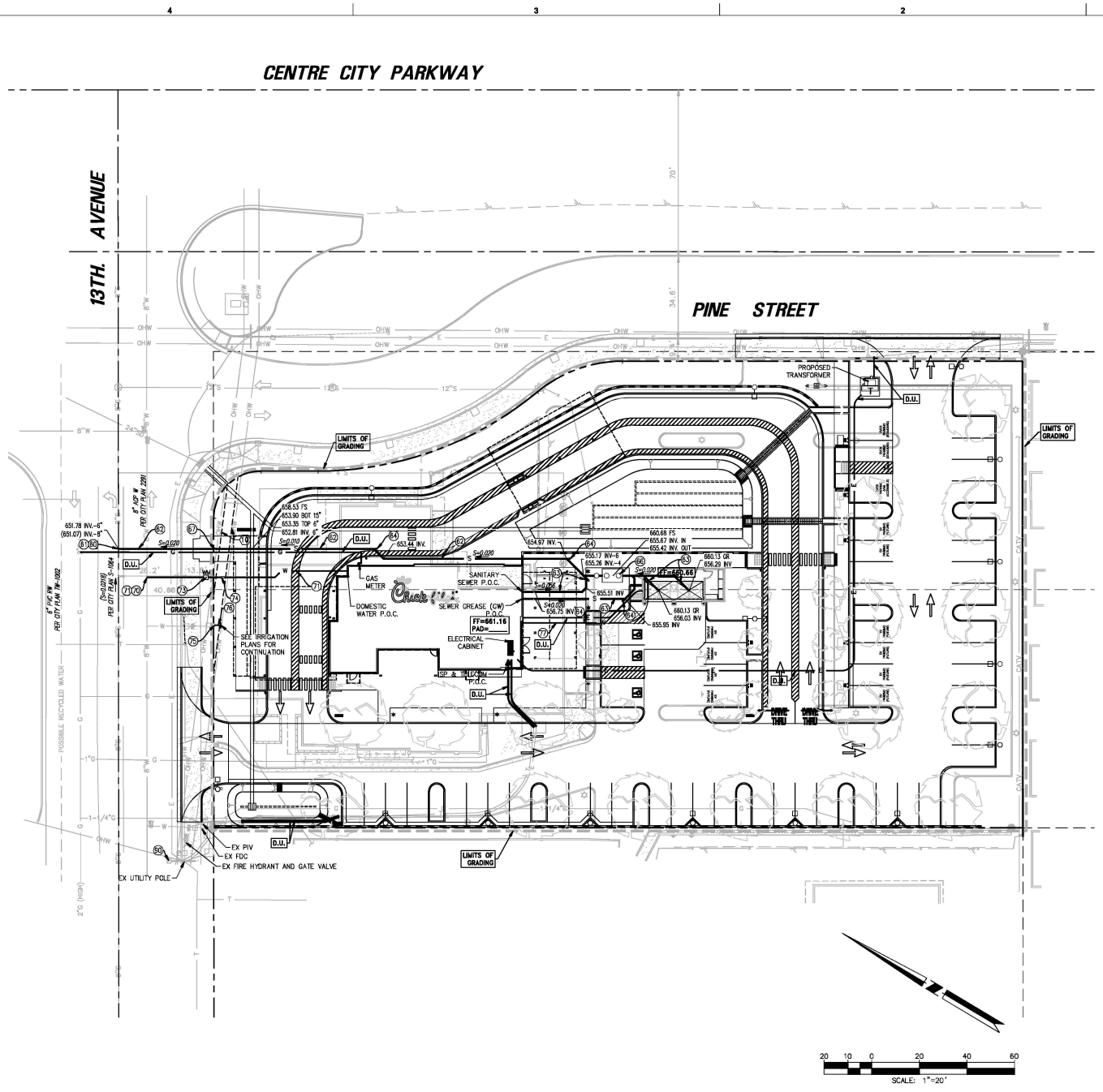
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SHEET
CONCEPTUAL GRADING PLAN

SHEET NUMBER
3 of 4

CUP SUBMITTAL



CONSTRUCTION NOTES – SEWER

(60) POTHOLE AND VERIFY THE EXISTENCE, LOCATION, DEPTH, MATERIAL, SIZE, AND CONDITION OF EXISTING 15-INCH SEWER LATERAL. REPORT FINDINGS TO TRUXAW & ASSOCIATES PRIOR TO CONSTRUCTION.

(61) CONNECT TO EXISTING 8-INCH SEWER LATERAL AND CONSTRUCT 6" SEWER LATERAL PER CITY OF **ESCONDIDO** STANDARDS AND SPECIFICATIONS.

(62) PLACE 6-INCH SDR-35 PVC SEWER PIPE PER CPC REQUIREMENTS. PIPE BEDDING AND BACKFILL PER RECOMMENDATIONS OF SOILS ENGINEER.

(63) PLACE 4-INCH SDR-35 PVC SEWER PIPE PER CPC REQUIREMENTS. PIPE BEDDING AND BACKFILL PRE RECOMMENDATIONS OF SOILS ENGINEER.

(64) INSTALL CLEANOUT PER CITY OF **ESCONDIDO** REQUIREMENTS. SIZE TO MATCH DOWNSTREAM PIPE SIZE.

(65) DRAIN IN TRASH ENCLOSURE PER PLUMBING PLANS.

(66) GREASE INTERCEPTOR AND SAMPLE BOX PER PLUMBING PLANS.

(67) INSTALL BACKWATER VALVE

WATER (DOMESTIC & IRRIGATION)

(70) POTHOLE AND VERIFY THE EXISTENCE, LOCATION, SIZE, DEPTH, MATERIAL AND CONDITION OF EXISTING **8-INCH WATER MAIN**. REPORT FINDINGS TO TRUXAW & ASSOCIATES PRIOR TO CONSTRUCTION. (DOMESTIC & IRRIGATION)

(71) CONNECT 2-INCH WATER SERVICE TO EXISTING **8-INCH WATER MAIN** PER CITY OF **ESCONDIDO** STANDARDS AND SPECIFICATIONS. (DOMESTIC & IRRIGATION)

(72) PLACE 2-INCH SCH. 80 PVC WATER LINE (DOMESTIC).

(73) INSTALL **2-INCH** WATER METER PER CITY OF **ESCONDIDO** STANDARDS AND SPECIFICATIONS. (DOMESTIC)

(74) INSTALL 2-INCH BACKFLOW PREVENTOR (DOMESTIC).

(75) CONNECT TO EXISTING BACKFLOW PREVENTOR. (IRRIGATION)

(76) PLACE 1-INCH SCH. 80 PVC WATER LINE (IRRIGATION).

(77) INSTALL 3/4-INCH SCH. 80 PVC WATER LINE (TRASH ENCLOSURE).

WATER (FIRE SERVICE)

(80) POTHOLE AND VERIFY THE EXISTENCE, LOCATION, DEPTH, MATERIAL, SIZE, AND CONDITION OF THE EXISTING 6-INCH WATER LATERAL. REPORT FINDINGS TO TRUXAW & ASSOCIATES PRIOR TO CONSTRUCTION.

*** (81) CONNECT 6-INCH FIRE SERVICE TO EXISTING 8-INCH WATER LATERAL AT PROPERTY LINE PER CITY OF **ESCONDIDO** SPECIFICATIONS.

*** (82) PLACE 6-INCH C-900, CL-200 PVC FIRE WATER LINE. PIPE BEDDING AND BACKFILL **PER RECOMMENDATION OF SOILS ENGINEER.**

*** (83) INSTALL 6-INCH STAINLESS STEEL ONE-PIECE FIRE RISER PIECE PER MANUFACTURER'S SPECIFICATIONS AND CONNECT TO FIRE RISER. PIPE BEDDING AND BACKFILL **PER RECOMMENDATION OF SOILS ENGINEER.**

*** (84) INSTALL 6-INCH DOUBLE DETECTOR CHECK ASSEMBLY PER MANUFACTURER'S SPECIFICATIONS.

*** (85) PLACE 6-INCH 45° ELBOW AND CONSTRUCT THRUST BLOCK PER CITY OF ESCONDIDO STANDARDS AND SPECIFICATIONS. ELBOW ANGLE PER PLAN.

*** (86) PLACE 4-INCH C-900, CL-200 PVC FIRE WATER LINE. PIPE BEDDING AND BACKFILL PER RECOMMENDATION OF SOILS ENGINEER.

*** (87) INSTALL FDC PER CITY OF **ESCONDIDO** SPECIFICATIONS.

*** (88) PLACE 6-INCH 90° ELBOW AND CONSTRUCT THRUST BLOCK PER CITY OF ESCONDIDO STANDARDS AND SPECIFICATIONS. ELBOW ANGLE PER PLAN.

*** FIRE PROTECTION PIPE LINE AND SPRINKLERS IN THE BUILDING TO BE DESIGNED AND PERMITTED BY SEPARATE PLANS. PRIOR TO CONSTRUCTION OF FIRE WATER SYSTEM SHOWN ON THIS PLAN, CONTRACTOR SHALL VERIFY VIA HYDRAULIC CALCULATIONS ACCEPTABLE TO THE FIRE DEPARTMENT THAT SIZE OF FIRE SERVICE & DETECTOR CHECK ARE OF SUFFICIENT SIZE TO SERVE BUILDING. (SIZE SHOWN FOR PLAN CHECK & BID PURPOSES ONLY).

CONSTRUCTION NOTES – UTILITIES

(90) EXISTING LS-1 RENTED STREET LIGHT TO BE REMOVED. INSTALL LED STREET LIGHT NEXT TO THE PROPOSED DRIVEWAY PER CITY OF ESCONDIDO STD. DWG. E-1-E.

ALL UTILITY POINTS AND SIZES OF CONNECTION SHALL BE VERIFIED

DRY UTILITIES (D.U.)

PROPOSED ELECTRIC, TELEPHONE, CABLE TV, AND GAS LINES ARE SHOWN HEREON FOR COORDINATION PURPOSES. CONTRACTOR TO VERIFY POINTS OF CONNECTION AND CONSTRUCT PROPOSED SERVICE LINES IN ACCORDANCE WITH SERVICE PLANNING DOCUMENTS PREPARED BY EACH RESPECTIVE UTILITY COMPANY.

NOTE:

SEE SHEET 1 FOR LIST OF ABBREVIATIONS AND SYMBOLS.

THIS PLAN IS:

PRELIMINARY

(NOT FOR CONSTRUCTION)

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Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

Prepared by:

JOSEPH C. TRUXAW & ASSOCIATES, INC.
Civil Engineers and Land Surveyors
1915 W. ORANGEWOOD AVE.
SUITE 101
ORANGE, CA 92868
(714) 935-0265
(714) 935-0106 (FAX)

REGISTERED PROFESSIONAL ENGINEER — RANDY J. RIDER — No. 81077 — CIVIL — STATE OF CALIFORNIA

CHICK-FIL-A

WEST 13TH & CENTRE CITY

515 W. 13TH. AVENUE
ESCONDIDO, CA 92025

FSU# 05524

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

ENGINEER'S PROJECT #	CFA23008
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DRAWN BY	TM/KSV

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SHEET
CONCEPTUAL UTILITY PLAN

SHEET NUMBER
4 of 4

CUP SUBMITTAL

TITLE REPORT

THIS SURVEY AND EASEMENTS SHOWN HEREON ARE BASED ON INFORMATION CONTAINED IN THE COMMITMENT BY:

FIRST AMERICAN TITLE INSURANCE COMPANY
4380 LA JOLLA VILLAGE DRIVE, SUITE 110
SAN DIEGO, CA 92122
(858) 410-3916
ORDER/FILE NUMBER: NCS-1165837-SD
DATED: FEBRUARY 3, 2023
TITLE OFFICER: JANICE TREANOR

LEGAL DESCRIPTION

REAL PROPERTY IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, DESCRIBED AS FOLLOWS:

LOTS 9 AND 10 IN BLOCK 220 OF ESCONDIDO, IN THE CITY OF ESCONDIDO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 336, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, JULY 10, 1886. EXCEPTING FROM SAID LOT 9 THAT PORTION THEREOF GRANTED TO THE STATE OF CALIFORNIA FOR HIGHWAY PURPOSES IN DEED RECORDED MARCH 11, 1948, IN BOOK 2708, PAGE 47 OF OFFICIAL RECORDS.

EXCEPTING ALSO THE INTEREST CONVEYED TO THE CITY OF ESCONDIDO BY DEED RECORDED JANUARY 7, 1976 AS FILE NO. 76-004339 OF OFFICIAL RECORDS.

APN: 236-161-07-00 (AFFECTS LOT 9) 236-161-06-00 (AFFECTS LOT 10)

EXCEPTION, EASEMENTS & DISPOSITION NOTES

REFER TO TITLE REPORT FOR ADDITIONAL INFORMATION AND DETAILS:

1 ITEM THAT DEALS WITH TAXES.

2 ITEM THAT DEALS WITH TAXES.

3 ITEM THAT DEALS WITH TAXES.

4 ITEM THAT DEALS WITH TAXES.

5 ITEM THAT DEALS WITH TAXES.

6 THE LIEN OF SUPPLEMENTAL TAXES, IF ANY, ASSESSED PURSUANT TO CHAPTER 3.5 COMMENCING WITH SECTION 75 OF THE CALIFORNIA REVENUE AND TAXATION CODE.

7 AN EASEMENT AND RIGHT OF WAY NOT EXCEEDING 10 FEET IN WIDTH FOR ALL PIPE LINES AND 20 FEET IN WIDTH FOR ALL DITCH LINES, FOR WATER PURPOSES AND INCIDENTAL PURPOSES THERETO UPON THE TERMS AND CONDITIONS CONTAINED THEREIN AS GRANTED TO THE ESCONDIDO IRRIGATION DISTRICT IN A DEED RECORDED AUGUST 1, 1895, IN BOOK 238 OF DEEDS, PAGE 390.

BY AN INSTRUMENT RECORDED DECEMBER 16, 1905, IN BOOK 372 OF DEEDS, PAGE 307, ALL RIGHTS, TITLE AND INTEREST OF THE GRANTEE WAS PASSED TO THE ESCONDIDO MUTUAL WATER COMPANY, A CORPORATION

BY INSTRUMENT RECORDED DECEMBER 30, 1987 AS INSTRUMENT NO. 87-712928 OF OFFICIAL RECORDS, ALL RIGHTS, TITLE AND INTEREST OF ESCONDIDO MUTUAL WATER COMPANY, A CORPORATION PASSES AND NOW VEST IN THE CITY OF ESCONDIDO.

NOTE: THE LOCATION OF THE EASEMENT CANNOT BE DETERMINED FROM RECORD. UNABLE TO DETERMINE AFFECT OF SAID DOCUMENTS/INSTRUMENTS UPON THE SURVEYED LAND FROM RECORD. REFER TO DOCUMENTS/INSTRUMENTS FOR FULL PARTICULARS.

8 AN EASEMENT FOR THE RIGHT TO LAY WATER PIPES AT LEAST TWO FEET BELOW THE SURFACE AND INCIDENTAL PURPOSES IN FAVOR OF ESCONDIDO LAND AND TOWN COMPANY, ITS SUCCESSORS AND/OR ASSIGNS, RECORDED JANUARY 10, 1907 IN BOOK 249 OF DEEDS, PAGE 330 AND MARCH 3, 1908 IN BOOK 249 OF DEEDS, PAGE 336 RESPECTIVELY.

NOTE: THE LOCATION OF THE EASEMENT CANNOT BE DETERMINED FROM RECORD. REFER TO DOCUMENTS/INSTRUMENTS FOR FULL PARTICULARS.

9 AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS AND INCIDENTAL PURPOSES, RECORDED APRIL 13, 1976 AS INSTRUMENT NO. 1976-108728 OF OFFICIAL RECORDS.
IN FAVOR OF: SAN DIEGO GAS & ELECTRIC COMPANY
AFFECTS: AS DESCRIBED THEREIN

NOTE: SAID INSTRUMENT AFFECTS THE SURVEYED LAND. THE LOCATION OF THE EASEMENT CANNOT BE DETERMINED FROM RECORD. REFER TO DOCUMENTS/INSTRUMENTS FOR FULL PARTICULARS.

(10) AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS AND INCIDENTAL PURPOSES, RECORDED MAY 25, 1976 AS INSTRUMENT NO. 1976-157930 OF OFFICIAL RECORDS.
IN FAVOR OF: SAN DIEGO GAS & ELECTRIC COMPANY
AFFECTS: AS DESCRIBED THEREIN

NOTE: SAID INSTRUMENT AFFECTS THE SURVEYED LAND AND IS PLOTTED HEREON.

11 AN UNRECORDED LEASE DATED FEBRUARY 25, 2000, EXECUTED BY KARL KELLER AND KAY LORI KELLER AS LESSOR AND MARIE CALLENDER VENTURES, INC., A CALIFORNIA CORPORATION AS LESSEE, AS DISCLOSED BY A MEMORANDUM OF LEASE RECORDED MARCH 17, 2000 AS INSTRUMENT NO. 2000-0137894 OF OFFICIAL RECORDS.

DEFECTS, LIENS, ENCUMBRANCES OR OTHER MATTERS AFFECTING THE LEASEHOLD ESTATE, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS.

12 A DEED OF TRUST TO SECURE AN ORIGINAL INDEBTEDNESS OF $2,790,000.00 RECORDED MAY 15, 2020 AS INSTRUMENT NO. 2020-0248853 OF OFFICIAL RECORDS.
DATED: APRIL 27, 2020
TRUSTOR: TIPP INVESTMENTS LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
TRUSTEE: FIDELITY NATIONAL TITLE COMPANY, A FLORIDA CORPORATION
BENEFICIARY: KARL H KELLER, TRUSTEE OF THE KHKEL TRUST, DATED MARCH 18, 2010

ACCORDING TO THE PUBLIC RECORDS, THE BENEFICIAL INTEREST UNDER THE DEED OF TRUST WAS ASSIGNED TO KARLENE L. KELLER, TRUSTEE OF THE KHKEL TRUST DATED MARCH 18, 2010 BY ASSIGNMENT RECORDED MARCH 18, 2022 AS INSTRUMENT NO. 2022-0121198 OF OFFICIAL RECORDS.

13 A DEED OF TRUST TO SECURE AN ORIGINAL INDEBTEDNESS OF $210,000.00 RECORDED MAY 15, 2020 AS INSTRUMENT NO. 2020-0248854 OF OFFICIAL RECORDS.
DATED: APRIL 27, 2020
TRUSTOR: TIPP INVESTMENTS LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
TRUSTEE: FIDELITY NATIONAL TITLE COMPANY, A FLORIDA CORPORATION
BENEFICIARY: KARL H KELLER, TRUSTEE OF THE KHKEL TRUST DATED MARCH 13, 2010

ACCORDING TO THE PUBLIC RECORDS, THE BENEFICIAL INTEREST UNDER THE DEED OF TRUST WAS ASSIGNED TO KARLENE L. KELLER, TRUSTEE OF THE KHKEL TRUST DATED MARCH 18, 2010 BY ASSIGNMENT RECORDED MARCH 18, 2022 AS INSTRUMENT NO. 2022-0121199 OF OFFICIAL RECORDS.

14 ANY FACTS, RIGHTS, INTERESTS OR CLAIMS WHICH WOULD BE DISCLOSED BY A CORRECT ALTA/NSPS SURVEY.

15 AN ALTA/NSPS SURVEY OF RECENT DATE WHICH COMPLIES WITH THE CURRENT MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS.

16 ANY CLAIM THAT THE TITLE IS SUBJECT TO A TRUST OR LIEN CREATED UNDER THE PERISHABLE AGRICULTURAL COMMODITIES ACT, 1930 (7 U.S.C. §§499A, ET SEC.) OR THE PACKERS AND STOCKYARDS ACT (7 U.S.C. §§181 ET SEQ.) OR UNDER SIMILAR STATE LAWS.

CONSIDERATION FOR THE DELETION OF THIS EXCEPTION IS HIGHLY FACT INTENSIVE. PLEASE CONTACT THE UNDERWRITER ASSIGNED TO YOUR FILE AS SOON AS POSSIBLE TO DISCUSS.

(AFFECTS LOT 9)

17 ADDITIONAL MATTERS, IF ANY, FOLLOWING REVIEW BY THE COMPANY'S WATERWAYS AND BOUNDARIES UNDERWRITERS.

18 WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS.

19 RIGHTS OF PARTIES IN POSSESSION.

RECORD DATA

(R) = RECORD OF SURVEY MAP NO. 17797, FILED IN THE COUNTY OF SAN DIEGO.

(R1) = MAP NO. 336, "TOWN OF ESCONDIDO", FILED IN THE COUNTY OF SAN DIEGO, JULY 10, 1886.

(D) = GRANT DEED RECORDED JANUARY 7, 1976 AS FILE NO. 76-004339 OF OFFICIAL RECORDS.

BASIS OF BEARINGS

THE BEARING OF N30°49'22"W SHOWN HEREON, ESTABLISHED FROM FOUND MONUMENTS ON THE CENTER LINE OF CENTER CITY PARKWAY AS SHOWN ON RECORD OF SURVEY MAP NO. 17797, OFFICIAL RECORDS OF SAN DIEGO COUNTY, STATE OF CALIFORNIA WAS USED AS THE BASIS OF BEARINGS FOR THIS SURVEY.

BENCHMARK

CITY OF ESCONDIDO BENCHMARK NO. 287-A

1-1/2" DIAMETER BRASS DISK MARKED "COE BM 287-A", SET IN TOP OF CURB AT THE WESTERLY EDGE OF A PEDESTRIAN RAMP, ON THE NW CORNER OF 13TH AVE. AND PINE ST., SET 6/2016.

ELEVATION: 655.11 FEET (NGVD 1929)

PARKING COUNT

88 PARKING STALLS EXIST WITHIN THE SUBJECT SITE TITLE REPORT LEGAL DESCRIPTION SHOWN HEREON. (INCLUDES 4 HANDICAP STALLS)

SITE AREA

THE SUBJECT SITE, LEGAL DESCRIPTION PER TITLE REPORT HEREON CONTAINS APPROXIMATELY:

61,090 SQ. FT. OR 1.402 ACRES

FLOOD ZONE

COMMUNITY NUMBER: 060290; MAP OR PANEL NUMBER: 1077G
EFFECTIVE DATE: 05/16/2012

ZONE: X

PROPERTY NOT IN A SPECIAL FLOOD HAZARD AREA, AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

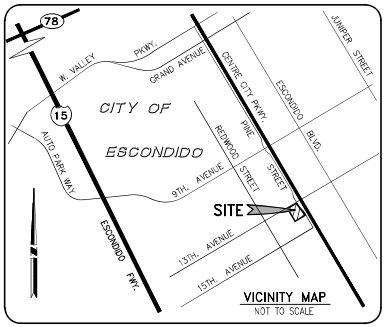
INFORMATION OBTAINED FROM CERTIFIED FLOOD SYSTEMS, INC. ON 3/29/23

UTILITY PURVEYORS

SEWER.....CITY OF ESCONDIDO.....760-839-4284.....UTILITY DIVISION
WATER.....CITY OF ESCONDIDO.....760-839-4284.....WATER DIVISION
STORM DRAIN....CITY OF ESCONDIDO.....760-839-4651.....HECTAN FARELA
GAS.....SDGE.....858-636-6805....FERNANDO ESQUER
CABLE.....COX COMMUNICATION.....619-266-5628....JOHN LEO
PHONE.....AT&T.....858-790-0265....BREANDAN LEE
ELECTRIC.....SDGE.....858-378-3746.....JAMES TODD
TRAFFIC.....CITY OF ESCONDIDO.....760-839-4595....OWEN TUNNELL

NOTE:

THE FOLLOWING UTILITIES, PLOTTED PER RESEARCH PROVIDED BY THEIR RESPECTIVE UTILITY PURVEYORS, DO NOT BENEFIT FROM RECORDED EASEMENTS:
GAS, CABLE TELEVISION (CATV) AND TELEPHONE.
SEE SHEET C-100.3 FOR LOCATIONS.



SITE PLANNING DATA

DISCLAIMER: INFORMATION PROVIDED BY 4G DEVELOPMENT AND CONSULTING INC. SHOWN IN THE SITE INVESTIGATION REPORT DATED 02/27/2023.

ZONING: S-P SPECIFIC PLAN AREA, SPA 15: SOUTH CENTRE CITY SPECIFIC PLAN, 13TH. AVE CORNERS DISTRICT

MAXIMUM BUILDING HEIGHT: 45 FEET

SETBACKS

BUILDING: NORTH = 20 FEET; SOUTH = 10 FEET;
EAST = 10-20 FEET; WEST = 0-10 FEET

LANDSCAPING: NORTH = 0 FEET; SOUTH = 10 FEET;
EAST = 10 FEET; WEST = 0 FEET

SURVEYOR'S NOTES

1. IT IS NOT WITHIN THE PURVIEW OF THIS SURVEYOR TO MAKE DETERMINATIONS OF OWNERSHIP, AS TO "ENCROACHMENTS" SPECIFICALLY, NO INFERENCE TO SUCH DETERMINATION IS INTENDED OR IMPLIED.
2. LOCATIONS OF UNDERGROUND UTILITIES / STRUCTURES MAY VARY FROM LOCATIONS SHOWN HEREON. ADDITIONAL BURIED UTILITIES / STRUCTURES MAY EXIST. NO EXCAVATIONS WERE MADE DURING THE PROGRESS OF THIS SURVEY TO LOCATE BURIED UTILITIES / STRUCTURES. THE LOCATIONS OF UNDERGROUND FEATURES SHOWN HEREON ARE PLOTTED FROM AVAILABLE RECORD INFORMATION AND VISIBLE SURFACE INDICATIONS. BEFORE ANY EXCAVATIONS ARE PERFORMED, UTILITY PURVEYORS SHOULD BE CONTACTED FOR VERIFICATION OF UTILITY TYPE AND FIELD LOCATIONS.
3. VEHICULAR ACCESS TO THE "SUBJECT SITE" EXISTS CURRENTLY FROM DRIVE ENTRANCES ALONG WEST 13TH. AVENUE AND SOUTH PINE STREET.
4. ALL MATTERS SHOWN ON RECORDED PLATS LISTED IN RECORD DATA HEREON THAT ARE PERTINENT TO THE SURVEY OF THE SUBJECT SITE ARE SHOWN ON THIS ALTA SURVEY HEREON.
5. AT THE TIME OF SURVEY NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR ADDITIONS WERE OBSERVED ON THE SUBJECT SITE.
6. NO RECENT CHANGES IN STREET RIGHTS-OF-WAY OR STREET CONSTRUCTION OR REPAIRS WERE OBSERVED AT THE TIME OF SURVEY.
7. THERE WAS NO EVIDENCE OF THE PROPERTY BEING USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL AT THE TIME OF THE SURVEY.

SURVEY CERTIFICATION

TO: CHICK-FIL-A, INC. AND FIRST AMERICAN TITLE INSURANCE COMPANY,

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 6(a), 7, 8, 9, 11(b), 13, 16 & 17 OF "TABLE A" THEREOF.
THE FIELD WORK WAS COMPLETED ON MARCH 25, 2023.

THIS CERTIFICATION IS SUBMITTED PURSUANT TO SECTION 8770.6 OF THE PROFESSIONAL LAND SURVEYORS ACT, BUSINESS AND PROFESSIONS CODE, STATE OF CALIFORNIA.

04/14/2023
MICHAEL P. HERNANDEZ, P.L.S. NO. 9281 DATE

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

Prepared by:
JOSEPH C. TRUXAW & ASSOCIATES, INC.
Civil Engineers and Land Surveyors
1915 W. ORANGEWOOD AVE. SUITE 101
ORANGE, CA 92868
(714) 935-0265
(714) 935-0106 (FAX)

CHICK-FIL-A
WEST 13TH & CENTRE CITY
515 W. 13TH. AVENUE
ESCONDIDO, CA 92025

FSU# 05524

REVISION SCHEDULE

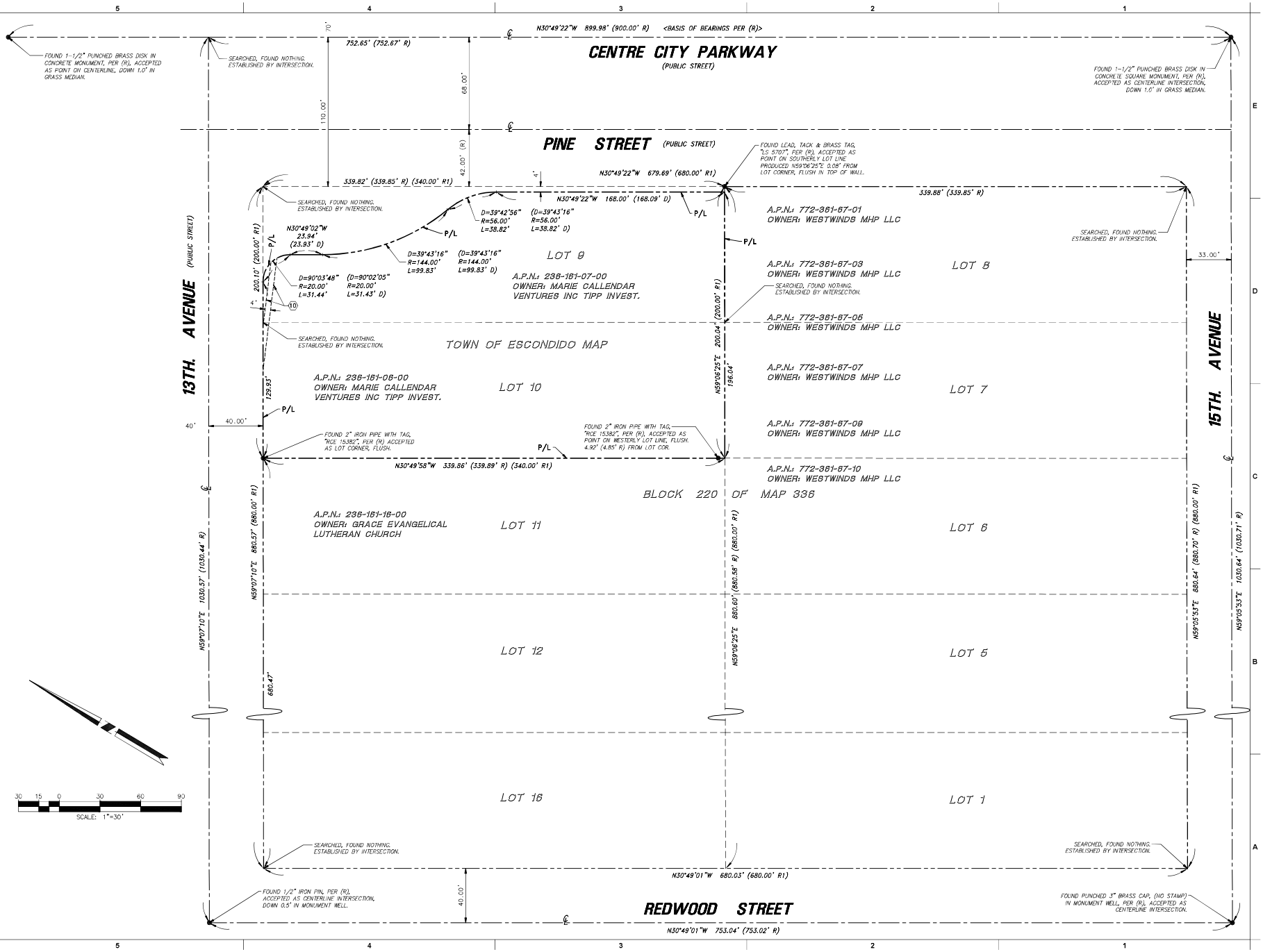
NO.	DATE	DESCRIPTION

ENGINEER'S PROJECT #	CFA23008
PRINTED FOR	ENTITLEMENT
DATE	04-14-23
DRAWN BY	SDS

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SHEET
ALTA/NSPS LAND TITLE SURVEY

SHEET NUMBER
C-100.1



Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

Prepared by:

JOSEPH C. TRUXAW & ASSOCIATES, INC.
Civil Engineers and Land Surveyors
1915 W. ORANGEWOOD AVE. SUITE 101
ORANGE, CA 92868
(714) 935-0265
(714) 935-0106 (FAX)

CHICK-FIL-A

WEST 13TH & CENTRE CITY

515 W. 13TH. AVENUE
ESCONDIDO, CA 92025

FSU# 05524

REVISION SCHEDULE

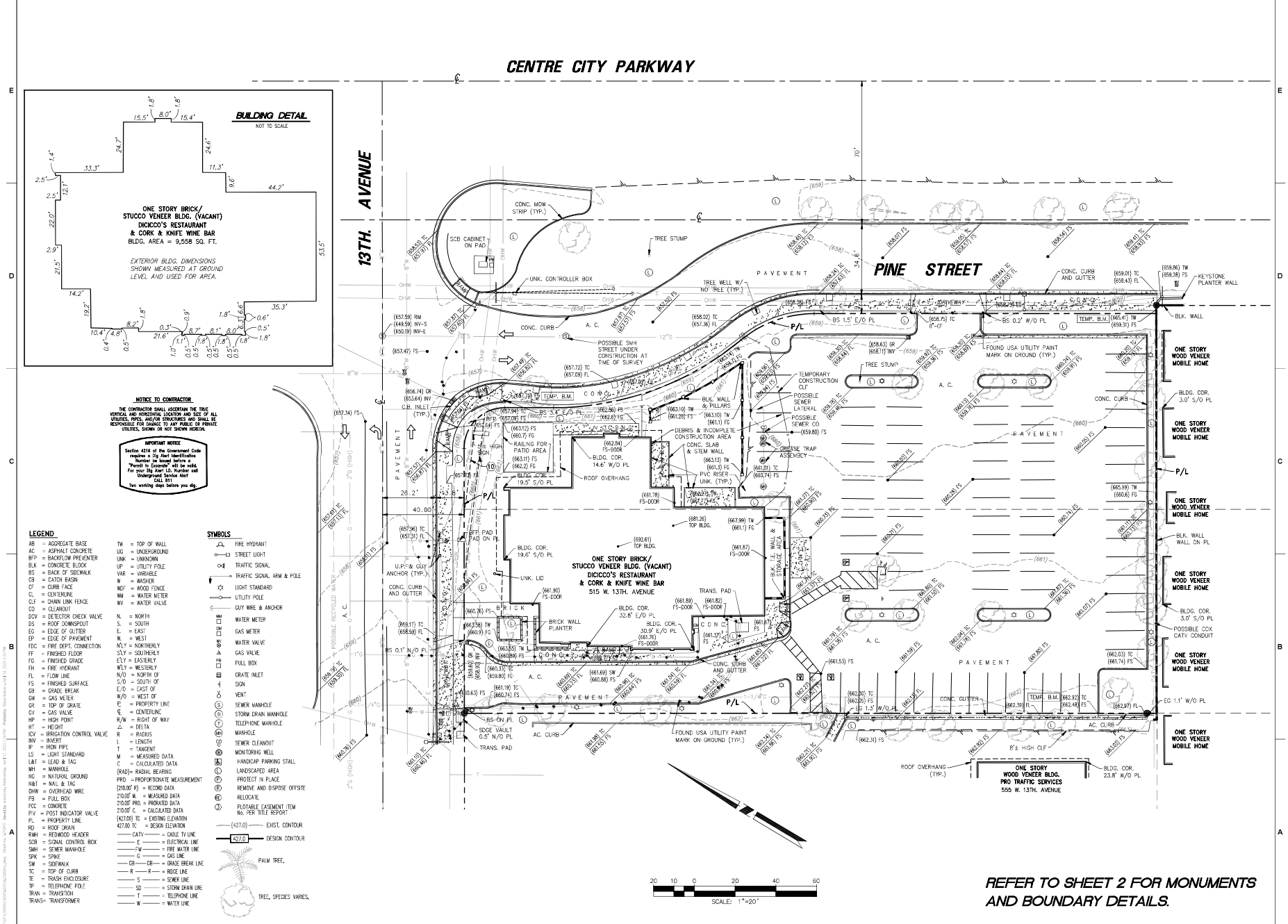
NO.	DATE	DESCRIPTION

ENGINEER'S PROJECT #	CFA23008
PRINTED FOR	ENTITLEMENT
DATE	04-14-23
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SHEET
ALTA/NSPS LAND TITLE SURVEY

SHEET NUMBER
C-100.2



NOTICE TO CONTRACTOR

THE CONTRACTOR SHALL ASCERTAIN THE TRUE VERTICAL AND HORIZONTAL LOCATION AND SIZE OF ALL UTILITIES, PIPES, AND/OR STRUCTURES AND SHALL BE RESPONSIBLE FOR DAMAGE TO ANY PUBLIC OR PRIVATE UTILITIES, SHOWN OR NOT SHOWN HEREON.

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 CALL 811 Two working days before you dig.

LEGEND

AB = AGGREGATE BASE	TW = TOP OF WALL
AC = ASPHALT CONCRETE	UG = UNDERGROUND
BFP = BACKFLOW PREVENTER	UNK = UNKNOWN
BLK = CONCRETE BLOCK	UP = UTILITY POLE
BS = BACK OF SIDEWALK	VAR = VARIABLE
CB = CATCH BASIN	W = WASHER
CF = CURB FACE	WDF = WOOD FENCE
CL = CENTERLINE	WM = WATER METER
CLF = CHAIN LINK FENCE	WV = WATER VALVE
CO = CLEANOUT	
DCV = DETECTOR CHECK VALVE	N. = NORTH
DS = ROOF DOWNSPOUT	S. = SOUTH
EG = EDGE OF GUTTER	E. = EAST
EP = EDGE OF PAVEMENT	W. = WEST
FDC = FIRE DEPT. CONNECTION	NLY = NORTHERLY
FF = FINISHED FLOOR	SLY = SOUTHERLY
FG = FINISHED GRADE	ELY = EASTERLY
FH = FIRE HYDRANT	WLY = WESTERLY
FL = FLOW LINE	N/O = NORTH OF
FS = FINISHED SURFACE	S/O = SOUTH OF
GB = GRADE BREAK	E/O = EAST OF
GM = GAS METER	W/O = WEST OF
GR = TOP OF GRATE	PL = PROPERTY LINE
GV = GAS VALVE	℄ = CENTERLINE
HP = HIGH POINT	R/W = RIGHT OF WAY
HT = HEIGHT	Δ = DELTA
ICV = IRRIGATION CONTROL VALVE	R = RADIUS
INV = INVERT	L = LENGTH
IP = IRON PIPE	T = TANGENT
LS = LIGHT STANDARD	M = MEASURED DATA
L&T = LEAD & TAG	C = CALCULATED DATA
MH = MANHOLE	(RAD)= RADIAL BEARING
NG = NATURAL GROUND	PRO = PROPORTIONATE MEASUREMENT
N&T = NAIL & TAG	210.00' R) = RECORD DATA
OHW = OVERHEAD WIRE	210.00' M. = MEASURED DATA
PB = PULL BOX	210.00' PRO. = PRORATED DATA
PCC = CONCRETE	210.00' C. = CALCULATED DATA
P/V = POST INDICATOR VALVE	(427.00) TC = EXISTING ELEVATION
PL = PROPERTY LINE	427.00 TC = DESIGN ELEVATION
RD = ROOF DRAIN	
RWH = REDWOOD HEADER	—— CATV —— = CABLE TV LINE
SCB = SIGNAL CONTROL BOX	—— E —— = ELECTRICAL LINE
SMH = SEWER MANHOLE	—— FW —— = FIRE WATER LINE
SPK = SPIKE	—— G —— = GAS LINE
SW = SIDEWALK	—— CB —— CB —— = GRADE BREAK LINE
TC = TOP OF CURB	—— R —— R —— = RIDGE LINE
TE = TRASH ENCLOSURE	—— S —— = SEWER LINE
TP = TELEPHONE POLE	—— SD —— = STORM DRAIN LINE
TRAN = TRANSITION	—— T —— = TELEPHONE LINE
TRANS= TRANSFORMER	—— W —— = WATER LINE

SYMBOLS

- FIRE HYDRANT
- STREET LIGHT
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL ARM & POLE
- LIGHT STANDARD
- UTILITY POLE
- GUY WIRE & ANCHOR
- WATER METER
- GAS METER
- WATER VALVE
- GAS VALVE
- PULL BOX
- GRATE INLET
- SIGN
- VENT
- (S) SEWER MANHOLE
- (D) STORM DRAIN MANHOLE
- (T) TELEPHONE MANHOLE
- (MH) MANHOLE
- SEWER CLEANOUT
- (M) MONITORING WELL
- HANDICAP PARKING STALL
- (L) LANDSCAPED AREA
- (P) PROTECT IN PLACE
- (R) REMOVE AND DISPOSE OFFSITE
- (E) RELOCATE
- (X) FLOATABLE EASEMENT ITEM No. PER TITLE REPORT
- (427.0) EXIST. CONTOUR
- 427.0 DESIGN CONTOUR
- PALM TREE,
- TREE, SPECIES VARIES,

REFER TO SHEET 2 FOR MONUMENTS AND BOUNDARY DETAILS.

Chick-fil-A
5200 Buffington Road
Atlanta, Georgia
30349-2998

Prepared by:
JOSEPH C. TRUXAW & ASSOCIATES, INC.
Civil Engineers and Land Surveyors
1915 W. ORANGEWOOD AVE. SUITE 101
ORANGE, CA 92868
(714) 935-0265
(714) 935-0106 (FAX)

CHICK-FIL-A

WEST 13TH & CENTRE CITY

515 W. 13TH. AVENUE
ESCONDIDO, CA 92025

FSU# 05524

REVISION SCHEDULE

NO.	DATE	DESCRIPTION

ENGINEER'S PROJECT #	CFA23008
PRINTED FOR	ENTITLEMENT
DATE	04-14-23
DRAWN BY	SDS

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SHEET
ALTA/NSPS LAND TITLE SURVEY

SHEET NUMBER
C-100.3

City of Escondido
PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Chick-fil-A Restaurant No. 05524

515 West 13th Avenue
Escondido, California 92025

ASSESSOR'S PARCEL NUMBER(S):
236-161-07-00 & 236-161-06-00

ENGINEER OF WORK:



Randy J. Decker 81077

PREPARED FOR:

Chick-fil-A, Inc.
105 Progress
Irvine, CA 92618

PDP SWQMP PREPARED BY:

Joseph C. Truxaw & Associates, Inc.
1915 W. Orangewood Ave., Suite 101
Orange, CA 92868
(714) 935-0265
DATE OF SWQMP:
July 11, 2024

PLANS PREPARED BY:
Joseph C. Truxaw & Associates, Inc.
1915 W. Orangewood Ave., Suite 101
Orange, CA 92868
(714) 935-0265

SWQMP APPROVED BY:

APPROVAL DATE:

ESCONDIDO
City of Choice

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TABLE OF CONTENTS

TABLE OF CONTENTS iii
ATTACHMENTS iv
ACRONYMS iv
PDP SWQMP PREPARER'S CERTIFICATION PAGE v
SUBMITTAL RECORD vi
PROJECT VICINITY MAP vii
Step 1: Project type determination 1
Step 1.1: Storm Water Quality Management Plan requirements 1
Step 1.2: Exemption to PDP definitions 2
Step 1.3: Confirmation of PDP Determination 3
Step 2: City of Escondido PDP SWQMP Site Information Checklist 5
Step 2.1: Description of Existing Site Condition and Drainage Patterns 5
Step 2.2: Description of Existing Site Drainage Patterns 6
Step 2.3: Description of Proposed Site Development 7
Step 2.4: Description of Proposed Site Drainage Patterns 8
Step 2.5: Potential Pollutant Source Areas 9
Step 2.6: Identification of Receiving Water and Pollutants of Concern 10
Step 2.7: Hydromodification Management Requirements 12
Step 2.7.1: Critical Coarse Sediment Yield Areas 13
Step 2.7.2: Flow Control for Post-Project Runoff 14
Step 2.8: Other Site Requirements and Constraints 15
Step 3: Source Control BMP Checklist 16
Step 4: Site Design BMP Checklist 18
Step 5: Summary of Structural BMPs 20
Step 5.1: Offsite Alternative Compliance Participation Form 24
ATTACHMENT 1 25
BACKUP FOR PDP POLLUTANT CONTROL BMPS 25
ATTACHMENT 2 47
BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES 47
ATTACHMENT 3 50
Structural BMP Maintenance Information 50
ATTACHMENT 4 52

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects 52
ATTACHMENT 5 55
Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design BMPs.....55

ATTACHMENTS

Attachment 1: Backup for PDP Pollutant Control BMPs
- Attachment 1a: Storm Water Pollutant Control Worksheet Calculations (Applicable worksheets)
- Attachment 1b: Form I-8, Categorization of Infiltration Feasibility Condition
- Attachment 1c: Form I-9, Factor of Safety and Design Infiltration Rate Worksheet
- Attachment 1d: Drainage Management Area (DMA) Exhibit
- Attachment 1e: Individual Structural BMP DMA Mapbook

Attachment 2: Backup for PDP Hydromodification Control Measures
- Attachment 2a: Flow Control Facility Design
- Attachment 2b: Hydromodification Management Exhibit
- Attachment 2c: Management of Critical Coarse Sediment Yield Areas
- Attachment 2d: Geomorphic Assessment of Receiving Channels (optional)
- Attachment 2e: Vector Control Plan (if applicable)

Attachment 3: Structural BMP Maintenance Plan
- Attachment 3a: Structural BMP Maintenance Thresholds and Actions
- Attachment 3b: Draft Maintenance Agreements / Notifications (when applicable)

Attachment 4: City of Escondido PDP Structural BMP Verification
Attachment 5: Copy of Plan Sheets Showing Permanent Storm Water BMPs

ACRONYMS

ACP	Alternative Compliance Project
APN	Assessor's Parcel Number
BMP	Best Management Practice
DMA	Drainage Management Area
EOW	Engineer of Work
HMP	Hydromodification Management Plan
HSG	Hydrologic Soil Group
MS4	Municipal Separate Storm Sewer System
N/A	Not Applicable
PDP	Priority Development Project
PE	Professional Engineer
SC	Source Control
SD	Site Design
SDRWQCB	San Diego Regional Water Quality Control Board
SIC	Standard Industrial Classification
SWDM	Storm Water Design Manual
SWQMP	Storm Water Quality Management Plan
USGS	US Geological Survey
WMAA	Watershed Management Area Analysis
WQIP	Water Quality Improvement Plan

PDP SWQMP PREPARER'S CERTIFICATION PAGE

Project Name: Chick-fil-A Restaurant No. 05524
Permit Number: PL23-0296

PREPARER'S CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of storm water best management practices (BMPs) for this project, and that I have exercised responsible charge over the design of the BMPs as defined in Section 6703 of the Business and Professions Code, and that the design is consistent with the PDP requirements of the City of Escondido Storm Water Design Manual, which is a design manual for compliance with the City of Escondido Municipal Code (Chapter 22, Article 2) and regional MS4 Permit (California Regional Water Quality Control Board San Diego Region Order No. R9-2013-0001 as amended by R9-2015-0001 and R9-2015-0100) requirements for storm water management.

I have read and understand that the City of Escondido has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the Storm Water Design Manual. I certify that this PDP SWQMP has been completed to the best of my ability and accurately reflects the project being proposed and the applicable BMPs proposed to minimize the potentially negative impacts of this project's land development activities on water quality. I understand and acknowledge that the plan check review of this PDP SWQMP by City staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of storm water BMPs for this project, of my responsibilities for project design.

_____
Engineer of Work's Signature, PE Number & Expiration Date

_____
Print Name

_____
Company

_____
Date

Engineer's Seal:

SUBMITTAL RECORD

Use this Table to keep a record of submittals of this PDP SWQMP. Each time the PDP SWQMP is re-submitted, provide the date and status of the project. In column 4 summarize the changes that have been made or indicate if response to plancheck comments is included. When applicable, insert response to plancheck comments behind this page.

Preliminary Design / Planning / CEQA

Submittal Number	Date	Summary of Changes
1	7-17-23	Initial Submittal
2	11-16-23	Second Submittal
3	5-15-24	Third Submittal
4	7-11-24	Fourth Submittal

Final Design

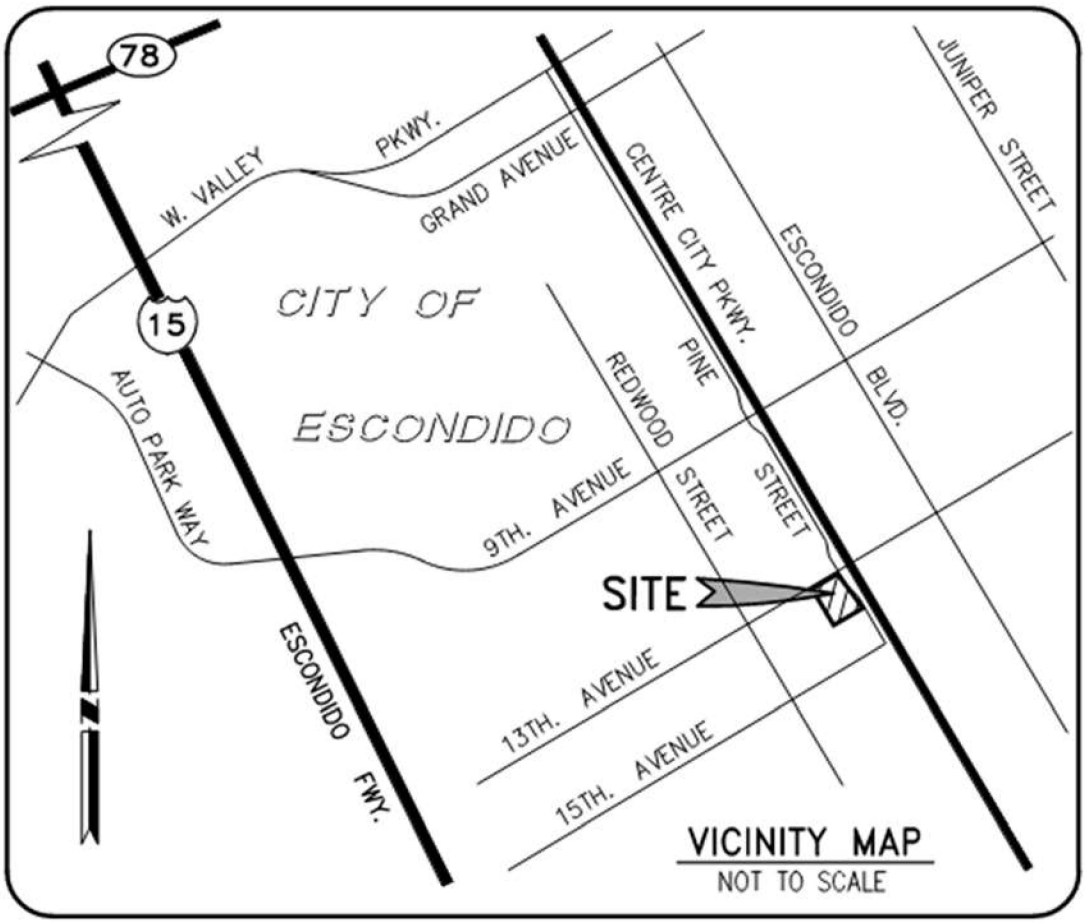
Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

Plan Changes

Submittal Number	Date	Summary of Changes
1		Initial Submittal
2		
3		
4		

PROJECT VICINITY MAP

Project Name: Chick-fil-A Restaurant No. 05524
Permit Number: PL23-0296



PRIORITY DEVELOPMENT PROJECT (PDP) SWQMP

Step 1: Project type determination

Site Information Checklist for PDPs	Form I-2a
Project Summary Information	
Project Name	Chick-fil-A Restaurant No. 05524
Project Address	515 West 13th Avenue Escondido, California 92025
Assessor's Parcel Number(s)	236-161-07-00 &236-161-06-00
Permit Number	Pending
Project Watershed (Hydrologic Unit)	Select One: ☑ Carlsbad 904 ☐ San Dieguito 905
Parcel Area (total area of Assessor's Parcel(s) associated with the project)	1.402 Acres (61,090 Square Feet)
Area to be disturbed by the project (Project Area)	1.402 Acres (61,090 Square Feet)
Project Proposed Impervious Area (subset of Project Area)	1.015 Acres (44,205 Square Feet)
Project Proposed Pervious Area (subset of Project Area)	0.387 Acres (16,885 Square Feet)
Note: Proposed Impervious Area + Proposed Pervious Area = Area to be Disturbed by the Project. This may be less than the Parcel Area.	

Step 1.1: Storm Water Quality Management Plan requirements

Site Information Checklist for PDPs		Form I-2a
Step	**Answer**	**Progression**
Is the project a Standard Project, Priority Development Project (PDP), or exception to PDP definitions? To answer this item, complete Step 1 Project Type Determination Checklist on Pages 3 and 4, and see PDP exemption information below. For further guidance, see Section 1.4 of the Storm Water Design Manual *in its entirety*.	☐ Standard Project	Standard Project requirements apply. **Complete Form I-1.**
	☒ PDP	Standard and PDP requirements apply, including PDP SWQMP. **SWQMP Required.**
	☐ PDP with ACP	If participating in offsite alternative compliance, **complete Step 5.1** (Offsite Alternative Compliance Participation Form) **and an ACP SWQMP.**
	☐ PDP Exemption	**Go to Step 1.2 below.**

Step 1.2: Exemption to PDP definitions

Site Information Checklist for PDPs	Form I-2a
Is the project exempt from PDP definitions based on either of the following: ☐ Projects that are only new or retrofit paved sidewalks, bicycle lanes, or trails that meet the following criteria: (i) Designed and constructed to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas; OR (ii) Designed and constructed to be hydraulically disconnected from paved streets or roads [i.e., runoff from the new improvement does not drain directly onto paved streets or roads]; OR (iii) Designed and constructed with permeable pavements or surfaces in accordance with County of San Diego Green Streets Infrastructure;	If so: Standard Project requirements apply, AND any additional requirements specific to the type of project. City concurrence with the exemption is required. *Provide discussion and list any additional requirements below in this form.*
☐ Projects that are only retrofitting or redeveloping existing paved alleys, streets or roads that are designed and constructed in accordance with the County of San Diego Green Streets Infrastructure;	**PDP Exempt.**
Discussion / justification, and additional requirements for exceptions to PDP definitions, if applicable:	

Step 1.3: Confirmation of PDP Determination

Site Information Checklist for PDPs			Form I-2a
The project is (select one): ☐ New Development ☒ Redevelopment[1]			
The total proposed newly created or replaced impervious area is: 42,742 ft²			
The project meets the following categories, (a) through (f): [select all that apply]			
Yes ☐	No ☒	(a)	New development projects that create 10,000 square feet or more of impervious surfaces (collectively over the entire project site). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☒	No ☐	(b)	Redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site on an existing site of 10,000 square feet or more of impervious surfaces). This includes commercial, industrial, residential, mixed-use, and public development projects on public or private land.
Yes ☒	No ☐	(c)	New and redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface (collectively over the entire project site), and support one or more of the following uses: (i) Restaurants. This category is defined as a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (Standard Industrial Classification (SIC) code 5812). *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Hillside development projects. This category includes development on any natural slope that is twenty-five percent or greater. (iii) Parking lots. This category is defined as a land area or facility for the temporary parking or storage of motor vehicles used personally, for business, or for commerce. (iv) Streets, roads, highways, freeways, and driveways. This category is defined as any paved impervious surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles.
Yes ☐	No ☒	(d)	New or redevelopment projects that create and/or replace 2,500 square feet or more of impervious surface (collectively over the entire project site), and discharging directly to an Environmentally Sensitive Area (ESA). "Discharging directly to" includes flow that is conveyed overland a distance of 200 feet or less from the project to the ESA, or conveyed in a pipe or open channel any distance as an isolated flow from the project to the ESA (i.e. not commingled with flows from adjacent lands). *Note: ESAs are areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Board and San Diego Water Board; State Water Quality Protected Areas; water bodies designated with the RARE beneficial use by the State Water Board and San Diego Water Board; and any*

[1] Redevelopment is defined as: The creation and/or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include routine maintenance activities, such as trenching and resurfacing associated with utility work; pavement grinding; resurfacing existing roadways; sidewalks; pedestrian ramps; or bike lanes on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Site Information Checklist for PDPs			Form I-2a
			other equivalent environmentally sensitive areas which have been identified by the Copermittees. *For projects adjacent to an ESA, but not discharging to an ESA, the 2,500 square foot threshold does not apply as long as the project does not physically disturb the ESA and the ESA is upstream of the project.*
Yes ☐	No ☒	(e)	New development projects, or redevelopment projects that create and/or replace 5,000 square feet or more of impervious surface, that support one or more of the following uses: (i) Automotive repair shops. This category is defined as a facility that is categorized in any one of the following SIC codes: 5013, 5014, 5541, 7532-7534, or 7536-7539. *Information and an SIC search function are available at www.osha.gov/pls/imis/sicsearch.html.* (ii) Retail gasoline outlets (RGOs). This category includes RGOs that meet the following criteria: (a) 5,000 square feet or more or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day.
Yes ☒	No ☐	(f)	New or redevelopment projects that result in the disturbance of one or more acres of land and are expected to generate pollutants post construction. Note: See Storm Water Design Manual Section 1.4.2 for additional guidance.

The following is for redevelopment PDPs only:

The area of existing (pre-project) impervious area at the project site is:	A	50,221	ft^2
The total proposed newly created or replaced impervious area is:	B	44,205	ft^2
Percent impervious surface created or replaced:	(B/A)*100	88.0	%

The percent impervious surface created or replaced is (select one based on the above calculation):

☐ **less than or equal to fifty percent (50%) –** only newly created or replaced impervious areas are considered a PDP and subject to stormwater requirements

OR

☒ **greater than fifty percent (50%) –** the entire project site is considered a PDP and subject to stormwater requirements

Step 2: City of Escondido PDP SWQMP Site Information Checklist

Step 2.1: Description of Existing Site Condition and Drainage Patterns

Site Information Checklist for PDPs	Form I-2a
Current Status of the Site (select all that apply): ☒ Existing development ☐ Previously graded but not built out ☐ Demolition completed without new construction ☐ Agricultural or other non-impervious use ☐ Vacant, undeveloped/natural Description / Additional Information:	
Existing Land Cover Includes (select all that apply and provide each area on site): ☒ Vegetative Cover 0.249 Acres (10,869 Square Feet) ☐ Non-Vegetated Pervious Areas _____ Acres (_____ Square Feet) ☒ Impervious Areas 1.153 Acres (50,221 Square Feet) Description / Additional Information:	
The existing site is vegetated mainly with turf.	
Underlying Soil belongs to Hydrologic Soil Group (select all that apply): ☐ NRCS Type A ☐ NRCS Type B ☐ NRCS Type C ☒ NRCS Type D	
Approximate Depth to Groundwater (GW) (or N/A for no infiltration BMPs): ☐ Groundwater Depth < 5 feet ☐ 5 feet < Groundwater Depth < 10 feet ☒ 10 feet < Groundwater Depth < 20 feet ☐ Groundwater Depth > 20 feet	
Existing Natural Hydrologic Features (select all that apply): ☐ Watercourses ☐ Seeps ☐ Springs ☐ Wetlands ☒ None ☐ Other Description / Additional Information:	

Step 2.2: Description of Existing Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a
How is storm water runoff conveyed from the site? At a minimum, this description should answer (1) whether existing drainage conveyance is natural or urban; (2) describe existing constructed storm water conveyance systems, if applicable; and (3) is runoff from offsite conveyed through the site? If so, describe:	
The existing site consists of 4 distinct drainage subareas. Subareas A-1 & A-2 sheet flow northeasterly into onsite gutters that convey drainage westerly into onsite private catch basins. Both catch basins outlet into Pine Street and 13th Avenue via curb face drains. Subareas A-3 & A-4 sheet flow northerly and easterly until the runoff exists the site into the public right-of-way. After entering the public right of way, runoff is conveyed via curb & gutter to an existing public catch basin at the corner of Pine Street and 13th Avenue. After entering the public catch basin runoff is conveyed via public storm drains to an unlined portion of Spruce Street Channel, which discharges to Escondido Creek. Escondido Creek flows into San Elijo Lagoon which ultimately outlets into the Pacific Ocean.	

Step 2.3: Description of Proposed Site Development

Site Information Checklist for PDPs	Form I-2a

Project Description / Proposed Land Use and/or Activities:

The proposed project is a drive-thru Chick-fil-A restaurant. The current site is occupied by a DiCicco's Restaurant. After completion of the project the site will operate as a drive-thru Chick-fil-A restaurant. Parking will be located on the southerly and westerly sides of the site, with a drive-thru on the northerly and easterly sides of the site. The Chick-fil-A restaurant will prepare meals, snacks, and beverages to customer order for immediate on-premise and off-premise consumption.

List/describe proposed impervious features of the project (e.g., buildings, roadways, parking lots, courtyards, athletic courts, other impervious features):

Proposed impervious features include: a restaurant building, drive-thru, parking field, sidewalks, a patio, and a trash enclosure.

List/describe proposed pervious features of the project (e.g., landscape areas):

Proposed pervious features include: Site Landscaping, and a biofiltration basin.

Does the project include grading and changes to site topography?

☒Yes

☐No

Description / Additional Information:

Minor precise grading is proposed to accommodate the site improvements.

Insert acreage or square feet for the different land cover types in the table below:

Change in Land Cover Type Summary

Land Cover Type	Existing (ft^2)	Proposed (ft^2)	Percent Change
Vegetation	10,869	16,885	+ 55.3%
Pervious (non-vegetated)	0	0	0
Impervious	50,221	44,205	-12.0%
total	61,090	61,090	Sum Existing must equal Sum Proposed

Step 2.4: Description of Proposed Site Drainage Patterns

Site Information Checklist for PDPs	Form I-2a

Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)?

- ☑ Yes
- ☐ No

If yes, provide details regarding the proposed project site drainage conveyance network, including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels, and the method for conveying offsite flows through or around the proposed project site. Identify all discharge locations from the proposed project site along with a summary of the conveyance system size and capacity for each of the discharge locations. Provide a summary of pre- and post-project drainage areas and design flows to each of the runoff discharge locations. Reference the drainage study for detailed calculations.

Describe proposed site drainage patterns:

The project proposes curb & gutter in conjunction with v-gutters to convey project runoff into proposed onsite catch basins and curb cuts adjacent to the two (2) proposed project biofiltration basins. The smaller biofiltration basin at the site's northwest corner treats the site's westerly parking lot. The larger biofiltration basin adjacent to Pine Street treats the remainder of the site, including the new Chick-fil-A building, drive-thru lane, and southerly parking lot.

The proposed catch basins in the biofiltration basins will convey basin discharges via onsite storm drains to the public curb opening catch basin at the southwest corner of 13th Ave and Pine St.

Step 2.5: Potential Pollutant Source Areas

Site Information Checklist for PDPs	Form I-2a

Identify whether any of the following features, activities, and/or pollutant source areas will be present (select all that apply).

- ☒ On-site storm drain inlets
- ☒ Interior floor drains and elevator shaft sump pumps
- ☐ Interior parking garages
- ☒ Need for future indoor & structural pest control
- ☒ Landscape/Outdoor Pesticide Use
- ☐ Pools, spas, ponds, decorative fountains, and other water features
- ☒ Food service
- ☒ Refuse areas
- ☐ Industrial processes
- ☐ Outdoor storage of equipment or materials
- ☐ Vehicle and Equipment Cleaning
- ☐ Vehicle/Equipment Repair and Maintenance
- ☐ Fuel Dispensing Areas
- ☐ Loading Docks
- ☐ Fire Sprinkler Test Water
- ☒ Miscellaneous Drain or Wash Water
- ☒ Plazas, sidewalks, and parking lots
- ☐ Large Trash Generating Facilities
- ☐ Animal Facilities
- ☐ Nurseries and Garden Centers
- ☐ Automotive Facilities
- ☐ Other (provide description)

Description / Additional Information:

Step 2.6: Identification of Receiving Water and Pollutants of Concern

Site Information Checklist for PDPs	Form I-2a

Describe path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable):

List any 303(d) impaired water bodies within the path of storm water from the project site to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable), identify the pollutant(s)/stressor(s) causing impairment, and identify any TMDLs for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Escondido Creeek	Benthic Community Effects, Bifenthrin, DDT, Indicator Bacteria, Manganese, Nitrogen, Selenium, Sulfates, Total Dissolved Solids, Toxicity, Cyfluthrin, Cypermethrin, Iron, Phosphorus, Pyrethroids, Turbidity, Phosphate,	Benthic Community Effects, Bifenthrin, DDT, Indicator Bacteria, Manganese, Nitrogen, Selenium, Sulfates, Total Dissolved Solids, Toxicity, Cyfluthrin, Cypermethrin, Iron, Phosphorus, Pyrethroids, Turbidity, Phosphate,
San Elijo Lagoon	Indicator Bacteria, Dissolved Oxygen, Phosphorus, Turbidity, Eutrophic, Sedimentation/Siltation, Toxicity	Indicator Bacteria, Dissolved Oxygen, Phosphorus, Turbidity, Eutrophic, Sedimentation/Siltation, Toxicity

Identification of Project Site Pollutants*

*Identification of project site pollutants below is only required if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Note the project must also participate in an alternative compliance program (unless prior lawful approval to meet earlier PDP requirements is demonstrated).

Identify pollutants expected from the project site based on all proposed use(s) of the site (see Storm Water Design Manual Appendix B.6):

Pollutant	Not Applicable to the Project Site	Anticipated from the Project Site	Also a Receiving Water Pollutant of Concern
Sediment	X		
Nutrients	X		
Heavy Metals	X		
Organic Compounds	X		

Site Information Checklist for PDPs			Form I-2a
Trash & Debris	X		
Oxygen Demanding Substances	X		
Oil & Grease	X		
Bacteria & Viruses	X		
Pesticides	X		

Step 2.7: Hydromodification Management Requirements

Site Information Checklist for PDPs	Form I-2a

Do hydromodification management requirements apply (see Section 1.6 of the Storm Water Design Manual)?

☒ Yes, hydromodification management requirements for flow control and preservation of critical coarse sediment yield areas are applicable.

☐ No, the project will discharge runoff directly to the exempt portion of Escondido Creek as detailed in the Carlsbad Watershed WQIP (May 2018 Update). Direct discharge is defined in section 1.6 of the Escondido Storm Water Design Manual.

☐ No, the project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

☐ No, the project will discharge runoff directly to conveyance channels whose bed and bank are concrete-lined all the way from the point of discharge to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean. Refer to HMP Exhibit in Attachment 2.

Note: Direct Discharge refers to an uninterrupted hardened conveyance system. Projects claiming the Direct Discharge exemption must satisfy the applicable criteria (energy dissipation, invert elevation, etc.) included in Section 1.6 of the Escondido Storm Water Design Manual.

Description / Additional Information (to be provided if a 'No' answer has been selected above):

HMP Exemption Exhibit

Attach an HMP Exemption Exhibit that shows direct storm water runoff discharge from the project site to the HMP exempt area. Include project area, applicable underground storm drain line and/or concrete lined channels, outfall information, and exempt waterbody.

Reference applicable drawing number(s).

Step 2.7.1: Critical Coarse Sediment Yield Areas

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

Based on the maps provided within the WMAA, do potential critical coarse sediment yield areas exist within the project drainage boundaries?

☐ Yes

☒ No, no critical coarse sediment yield areas to be protected based on WMAA maps

If yes, have any of the optional analyses presented in Appendix H of the manual been performed?

☐ H.6.1 Site-Specific GLU Analysis

☐ H.7 Downstream Systems Sensitivity to Coarse Sediment

- H.7.1 Depositional Analysis,
- H.7.2 Threshold Channel Analysis, or
- H.7.3 Course Sediment Source Area Verification Analysis

☒ No optional analyses performed, the project will avoid critical coarse sediment yield areas identified based on WMAA maps

If optional analyses were performed, what is the final result?

☐ No critical coarse sediment yield areas to be protected based on verification of GLUs onsite.

☐ Critical coarse sediment yield areas exist but additional analysis has determined that protection is not required. Documentation attached in Attachment 8 of the SWQMP.

☐ Critical coarse sediment yield areas exist and require protection. The project will implement management measures described in Sections H.2, H.3, and H.4 as applicable, and the areas are identified on the SWQMP Exhibit.

Discussion / Additional Information:

Critical Coarse Sediment Yield Area map included to show that project site is not within CCSY areas.

Step 2.7.2: Flow Control for Post-Project Runoff

Site Information Checklist for PDPs	Form I-2a

☐ **N/A - This Section only required if hydromodification management requirements apply**

List and describe point(s) of compliance (POCs) for flow control for hydromodification management (see Section 6.3.1). For each POC, provide a POC identification name or number correlating to the project's HMP Exhibit and a receiving channel identification name or number correlating to the project's HMP Exhibit.

The entire site has a single Point of Compliance (POC) at the northeast corner, where site runoffs leave the site and discharge to a public curb opening catch basin at the corner of 13th Ave and Pine St.

Has a geomorphic assessment been performed for the receiving channel(s)?

☐ No, the low flow threshold is 0.1Q2 (default low flow threshold)
☐ Yes, the result is the low flow threshold is 0.1Q2
☐ Yes, the result is the low flow threshold is 0.3Q2
☒ Yes, the result is the low flow threshold is 0.5Q2

If a geomorphic assessment has been performed, provide title, date, and preparer:

A report dated March 6, 2017 (Project No. ENG16-0029) determined that there is a low susceptibility to erosion for the segments of the Spruce Street Channel from the box culvert in Spruce Street to the Escondido Creek flood control channel.

Discussion / Additional Information: (optional)

N/A

Select method used to determine low flow threshold: **Channel screening report dated March 6, 2017 (Project No. ENG16-0029)**

☐ Sizing Factor Method
☐ US Geological Survey (USGS) Equation
☐ Continuous Simulation Modeling

Step 2.8: Other Site Requirements and Constraints

Site Information Checklist for PDPs	Form I-2a
When applicable, list other site requirements or constraints that will influence storm water management design, such as zoning requirements including setbacks and open space, or local codes governing minimum street width, sidewalk construction, allowable pavement types, and drainage requirements.	
Optional Additional Information or Continuation of Previous Sections As Needed	
This space provided for additional information or continuation of information from previous sections as needed.	

Step 3: Source Control BMP Checklist

Source Control BMP Checklist for PDPs	Form I-2b		
All development projects must implement source control BMPs 4.2.1 through 4.2.6 where applicable and feasible. See Chapter 4.2 and Appendix E of the City Storm Water Design Manual for information to implement source control BMPs shown in this checklist. The following checklists serve as guides only. Mark what elements are included in your project. See Storm Water Design Manual Chapter 4 and Appendix E for more information on determining appropriate BMPs for your project. Answer each category below pursuant to the following: • "Yes" means the project will implement the source control BMP as described in Chapter 4.2 and/or Appendix E of the City Storm Water Design Manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project has no outdoor materials storage areas). Discussion / justification must be provided.			
Source Control Requirement	**Applied?**		
4.2.1 Prevention of Illicit Discharges into the MS4	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.1 not implemented:			
4.2.2 Storm Drain Stenciling or Signage	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.2 not implemented:			
4.2.3 Protect Outdoor Materials Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.3 not implemented:			
4.2.4 Protect Materials Stored in Outdoor Work Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☐ Yes	☐ No	☒ N/A
Discussion / justification if 4.2.4 not implemented:			
There will be no outdoor storage of materials.			
4.2.5 Protect Trash Storage Areas from Rainfall, Run-On, Runoff, and Wind Dispersal	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.5 not implemented:			

Form I-2b Page 2 of 2			
Source Control Requirement	**Applied?**		
4.2.6 Additional BMPs Based on Potential Sources of Runoff Pollutants (must answer for each source listed below):			
☒ Onsite storm drain inlets	☒ Yes	☐ No	☐ N/A
☒ Interior floor drains and elevator shaft sump pumps	☒ Yes	☐ No	☐ N/A
☐ Interior parking garages	☐ Yes	☐ No	☒ N/A
☒ Need for future indoor & structural pest control	☒ Yes	☐ No	☐ N/A
☒ Landscape/outdoor pesticide use	☒ Yes	☐ No	☐ N/A
☐ Pools, spas, ponds, decorative fountains, and other water features	☐ Yes	☐ No	☒ N/A
☒ Food service	☒ Yes	☐ No	☐ N/A
☒ Refuse areas	☒ Yes	☐ No	☐ N/A
☐ Industrial processes	☐ Yes	☐ No	☒ N/A
☐ Outdoor storage of equipment or materials	☐ Yes	☐ No	☒ N/A
☐ Vehicle and equipment cleaning	☐ Yes	☐ No	☒ N/A
☐ Vehicle/equipment repair and maintenance	☐ Yes	☐ No	☒ N/A
☐ Fuel dispensing areas	☐ Yes	☐ No	☒ N/A
☐ Loading docks	☐ Yes	☐ No	☒ N/A
☐ Fire sprinkler test water	☐ Yes	☐ No	☒ N/A
☒ Miscellaneous drain or wash water	☒ Yes	☐ No	☐ N/A
☒ Plazas, sidewalks, and parking lots	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.2.6 not implemented. Clearly identify which sources of runoff pollutants are discussed. Justification must be provided for all "No" answers shown above.			

Note: Show all source control measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 4: Site Design BMP Checklist

Site Design BMP Checklist for PDPs			Form I-2c
All development projects must implement site design BMPs SD-1 through SD-8 where applicable and feasible. See Chapter 4 and Appendix E of the manual for information to implement site design BMPs shown in this checklist. Answer each category below pursuant to the following. • "Yes" means the project will implement the site design BMP as described in Chapter 4 and/or Appendix E of the manual. Discussion / justification is not required. • "No" means the BMP is applicable to the project but it is not feasible to implement. Discussion / justification must be provided. • "N/A" means the BMP is not applicable at the project site because the project does not include the feature that is addressed by the BMP (e.g., the project site has no existing natural areas to conserve). Discussion / justification must be provided.			
Site Design Requirement	**Applied?**		
4.3.1 Maintain Natural Drainage Pathways and Hydrologic Features	☐ Yes	☐ No	☒ N/A
Discussion / justification if 4.3.1 not implemented:			
There are no natural drainage pathways or hydrologic features on site.			
1-1 Are existing natural drainage pathways and hydrologic features mapped on the site map?	☐ Yes	☐ No	☒ N/A
1-2 Are trees implemented? If yes, are they shown on the site map?	☐ Yes	☐ No	☒ N/A
1-3 Implemented trees meet the design criteria in 4.3.1 Fact Sheet (e.g. soil volume, maximum credit, etc.)?	☐ Yes	☐ No	☐ N/A
1-4 Is tree credit volume calculated using Appendix B.2.2.1 and SD-1 Fact Sheet in Appendix E?	☐ Yes	☐ No	☒ N/A
4.3.2 Conserve Natural Areas, Soils, and Vegetation	☐ Yes	☐ No	☒ N/A
Discussion / justification if 4.3.2 not implemented:			
This project is a redevelopment of a developed commercial site, there are no natural areas.			
4.3.3 Minimize Impervious Area	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.3 not implemented:			
4.3.4 Minimize Soil Compaction	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.4 not implemented:			

Form I-2c Page 2 of 2			
Site Design Requirement	**Applied?**		
4.3.5 Impervious Area Dispersion	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.5 not implemented:			
5-1 Is the pervious area receiving runon from impervious area identified on the site map?	☒ Yes	☐ No	☐ N/A
5-2 Does the pervious area satisfy the design criteria in 4.3.5. Fact Sheet in Appendix E (e.g. maximum slope, minimum length, etc.)	☒ Yes	☐ No	☐ N/A
5-3 Is impervious area dispersion credit volume calculated using Appendix B.2.1.1 and 4.3.5 Fact Sheet in Appendix E?	☐ Yes	☒ No	☐ N/A
4.3.6 Runoff Collection	☒ Yes	☒ No	☐ N/A
Discussion / justification if 4.3.6 not implemented:			
6a-1 Are green roofs implemented in accordance with design criteria in 4.3.6A Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☒ No	☐ N/A
6a-2 Is the green roof credit volume calculated using Appendix B.2.1.2 and 4.3.6A Fact Sheet in Appendix E?	☐ Yes	☒ No	☐ N/A
6b-1 Are permeable pavements implemented in accordance with design criteria in 4.3.6B Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☒ No	☐ N/A
6b-2 Is the permeable pavement credit volume calculated using Appendix B.2.1.3 and 4.3.6B Fact Sheet in Appendix E?	☐ Yes	☒ No	☐ N/A
4.3.7 Landscaping with Native or Drought Tolerant Species	☒ Yes	☐ No	☐ N/A
Discussion / justification if 4.3.7 not implemented:			
4.3.8 Harvesting and Using Precipitation	☐ Yes	☒ No	☐ N/A
Discussion / justification if 4.3.8 not implemented:			
There is not enough irrigation demand to drain the DCV in a reasonable time.			
8-1 Are rain barrels implemented in accordance with design criteria in 4.3.8 Fact Sheet? If yes, are they shown on the site map?	☐ Yes	☒ No	☐ N/A
8-2 Is the rain barrel credit volume calculated using Appendix B.2.2.2 and 4.3.8 Fact Sheet in Appendix E?	☐ Yes	☒ No	☐ N/A

Note: Show all site design measures described above that are included in design capture volume calculations in the plan sheets of Attachment 5.

Step 5: Summary of Structural BMPs

Summary of Structural BMPs	Form I-3

PDP Structural BMPs

All PDPs must implement structural BMPs for storm water pollutant control (see Chapter 5 of the manual). Selection of PDP structural BMPs for storm water pollutant control must be based on the selection process described in Chapter 5. PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management (see Chapter 6 of the manual). Both storm water pollutant control and flow control for hydromodification management can be achieved within the same structural BMP(s).

PDP structural BMPs must be verified by the local jurisdiction at the completion of construction. This may include requiring the project owner or project owner's representative to certify construction of the structural BMPs (see Section 1.12 of the manual). PDP structural BMPs must be maintained into perpetuity, and the local jurisdiction must confirm the maintenance (see Section 7 of the manual).

Use this form to provide narrative description of the general strategy for structural BMP implementation at the project site in the box below. Then complete the PDP structural BMP summary information sheet (page 3 of this form) for each structural BMP within the project (copy the BMP summary information page as many times as needed to provide summary information for each individual structural BMP).

Description of Structural BMP Strategy

Describe the general strategy for structural BMP implementation at the site. This information must describe how the steps for selecting and designing storm water pollutant control BMPs presented in Section 5.1 of the manual were followed, and the results (type of BMPs selected). For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

Infiltration was first considered as a project BMP. However, the project soils report found onsite infiltration to 0.01 in/hr, and infiltration was ruled out.

Harvest and Use was considered, however, there is not enough landscaping area to generate enough irrigation demand to drain the DCV.

A biofiltration basin was selected as the project BMP.

(Continue on page 2 as necessary.)

Form I-3 Page 2 of 3
(Page reserved for continuation of description of general strategy for structural BMP implementation at the site)
(Continued from page 1)

Form I-3 Page 3 of 3	
Structural BMP Summary Information **DMA-1**	
Structural BMP ID No. Basin 1	
Construction Plan Sheet No. 3	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Retention by dry wells (INF-4) ☐Partial retention by biofiltration with partial retention (PR-1) ☒Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	
Who will be the final owner of this BMP?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Discussion (as needed):	

Form I-3 Page 3 of 3	
Structural BMP Summary Information **DMA-2**	
Structural BMP ID No. Basin 2	
Construction Plan Sheet No. 3	
Type of structural BMP: ☐Retention by harvest and use (HU-1) ☐Retention by infiltration basin (INF-1) ☐Retention by bioretention (INF-2) ☐Retention by permeable pavement (INF-3) ☐Retention by dry wells (INF-4) ☐Partial retention by biofiltration with partial retention (PR-1) ☒Biofiltration (BF-1) ☐Biofiltration with Nutrient Sensitive Media Design (BF-2) ☐Proprietary Biofiltration (BF-3) meeting all requirements of Appendix F ☐Flow-thru treatment control with prior lawful approval to meet earlier PDP requirements (provide BMP type/description in discussion section below) ☐Flow-thru treatment control included as pre-treatment/forebay for an onsite retention or biofiltration BMP (provide BMP type/description and indicate which onsite retention or biofiltration BMP it serves in discussion section below) ☐Flow-thru treatment control with alternative compliance (provide BMP type/description in discussion section below) ☐Detention pond or vault for hydromodification management ☐Other (describe in discussion section below)	
Purpose: ☒Pollutant control only ☐Hydromodification control only ☐Combined pollutant control and hydromodification control ☐Pre-treatment/forebay for another structural BMP ☐Other (describe in discussion section below)	
Who will certify construction of this BMP? Provide name and contact information for the party responsible to sign BMP verification forms (See Section 8.2.3.2 of the Storm Water Design Manual)	
Who will be the final owner of this BMP?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Who will maintain this BMP into perpetuity?	☐HOA ☒Property Owner ☐City ☐Other (describe)
Discussion (as needed):	

Step 5.1: Offsite Alternative Compliance Participation Form

THIS FORM IS NOT APPLICABLE AT THIS TIME: An Alternative Compliance Program is under consideration by the City of Escondido.	
PDP INFORMATION	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
What are your PDP Pollutant Control Debits? *See Attachment 1 of the PDP SWQMP	
What are your PDP HMP Debits? (if applicable) *See Attachment 2 of the PDP SWQMP	
ACP Information	
Record ID:	
Assessor's Parcel Number(s) [APN(s)]	
Project Owner/Address	
What are your ACP Pollutant Control Credits? *See Attachment 1 of the ACP SWQMP	
What are your ACP HMP Debits? (if applicable) *See Attachment 2 of the ACP SWQMP	
Is your ACP in the same watershed as your PDP? ☐Yes ☐No	Will your ACP project be completed prior to the completion of the PDP? ☐Yes ☐No
Does your ACP account for all Deficits generated by the PDP? ☐Yes ☐No (PDP and/or ACP must be redesigned to account for all deficits generated by the PDP.)	What is the difference between your PDP debits and ACP Credits? *(ACP Credits -Total PDP Debits = Total Earned Credits) _____

ATTACHMENT 1

BACKUP FOR PDP POLLUTANT CONTROL BMPS

This is the cover sheet for Attachment 1.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 1a	Storm Water Pollutant Control Worksheet Calculations -Worksheet B.1-DMA Summary (Optional) -Worksheet B.2-1- DCV (Required) -Worksheet B.3-1- H&U Checklist (Required) -Worksheet B.4-1-Simple Sizing Inf. (if applicable) -Worksheet B.5-1-Biofilt. Sizing (Pollutant)(if applicable) -Worksheet B.5-2-Biofilt. Sizing (Volume) (if applicable) -Worksheet B.5-3-Biofilt. Volume Ret. (if applicable) -Worksheet B.5-4-Biofilt. Alt. Min. Footprint(if applicable) -Worksheet B.5-5-Biofilt. w/Upstream Stor. (if applicable) -Worksheet B.5-6-Biofilt. Ret. No Inf. (if applicable) -Worksheet B.5-7-Vol. Ret. Amended Soils (if applicable) -Worksheet B.6-1-Flow-Thru Design Flow (if applicable) -Form I-10-Compact Biofilt. Checklist (if applicable) -Summary Worksheet (optional)	☐ Worksheet B.1 (Optional) ☒ Worksheet B.2-1 (Required) ☒ Worksheet B.3-1 (Required) ☐ Worksheet B.4-1 (if applicable) ☒ Worksheet B.5-1 (if applicable) ☐ Worksheet B.5-2 (if applicable) ☐ Worksheet B.5-3 (if applicable) ☐ Worksheet B.5-4 (if applicable) ☐ Worksheet B.5-5 (if applicable) ☐ Worksheet B.5-6 (if applicable) ☐ Worksheet B.5-7 (if applicable) ☐ Worksheet B.6-1 (if applicable) ☐ Form I-10 (if applicable) ☐ Summary Worksheet (optional)
Attachment 1b	-Worksheet C.4-1 (Form I-8A), Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions -Worksheet C.4-2 (Form I-8B), Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-8.	☒Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1c	Form I-9, Factor of Safety and Design Infiltration Rate Worksheet (Required unless the project will use harvest and use BMPs, or an Infiltration Feasibility Condition Letter is submitted) Refer to Appendices C and D of the Storm Water Design Manual to complete Form I-9.	☒Included ☐Not included because the entire project will use harvest and use BMPs ☐Not included because an Infiltration Feasibility Condition Letter is submitted
Attachment 1d	DMA Exhibit (Required) See DMA Exhibit Checklist on the back of this Attachment cover sheet.	☒Included
Attachment 1e	Individual Structural BMP DMA Mapbook (Required) -Place each map on 8.5"x11" paper. -Show at a minimum the DMA, Structural BMP, and any existing hydrologic features within the DMA.	☒Included

Use this checklist to ensure the required information has been included on the DMA Exhibit:

The DMA Exhibit must identify:

☐ Proposed design features and surface treatments used to minimize imperviousness
☐Drainage management area (DMA) boundaries, DMA ID numbers, and DMA areas (square footage or acreage), and DMA type (i.e., drains to BMP, self-retaining, or self-mitigating)
☐Potential pollutant source areas and corresponding required source controls (see Chapter 4, Appendix E.1, and Step 3.5)
☐Structural BMPs (identify location, structural BMP ID#, type of BMP, and size/detail)
☐Flow direction arrows
☐Site Design BMPs used for volume reduction credits
☐Existing and proposed site drainage network and connections to drainage offsite
☐Trash Enclosure(s), if available
☐Roof downspouts

Additionally, it is generally best practice (and the City may require) that these additional features listed below be included on the DMA Exhibit:

☐Approximate depth to groundwater
☐Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
☐Critical coarse sediment yield areas to be protected
☐Existing topography and impervious areas
☐Proposed grading
☐Proposed impervious features

Worksheet B.2-1. BMP Design Capture Volume

Design Capture Volume (DMA-1)		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.57	inches
2	Area tributary to BMP (s)	A=	1.035	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1) *	C=	0.707	unitless
4	Tree well volume reduction	TCV=	0	cubic-feet
5	Rain barrels volume reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x d x A) – TCV - RCV	DCV=	1,514	cubic-feet

* C = [(0.9 x Impervious Area) + (0.1 x Landscape Area)] / Total Area
= [(0.9 x 0.786 ac) + (0.1 x 0.249 ac)] / 1.035 ac
= 0.707

Design Capture Volume (DMA-2)		Worksheet B-2.1		
1	85th percentile 24-hr storm depth from Figure B.1-1	d=	0.57	inches
2	Area tributary to BMP (s)	A=	0.260	acres
3	Area weighted runoff factor (estimate using Appendix B.1.1 and B.2.1) *	C=	0.758	unitless
4	Tree well volume reduction	TCV=	0	cubic-feet
5	Rain barrels volume reduction	RCV=	0	cubic-feet
6	Calculate DCV = (3630 x C x d x A) – TCV - RCV	DCV=	408	cubic-feet

* C = [(0.9 x 0.214 ac) + (0.1 x 0.046 ac)] / 0.260 ac = 0.758

NOTE: DMA-3 is a self-treating landscape area. DMA-4 is a small portion (0.006 ac) of a frontage driveway surface draining to the street.

Worksheet B.3-1. Harvest and Use Feasibility Checklist (Form I-7)

<table>
<tr><th colspan="2">Harvest and Use Feasibility Checklist</th><th>Worsksheet B.3-1</th></tr>
<tr><td colspan="3">1. Is there a demand for harvested water (check all that apply) at the project site that is reliably present during the wet season?
☑ Toilet and urinal flushing
☐ Landscape irrigation
☐ Other:_____</td></tr>
<tr><td colspan="3">2. If there is a demand; estimate the anticipated average wet season demand over a period of 36 hours. Guidance for planning level demand calculations for toilet/urinal flushing and landscape irrigation is provided in Section B.3.2.

Modified ETWU=EToWet x [[Σ(PF x HA)/IE]+SLA] x 0.015
=2.8x[[(18,348x0.7)/0.9]x0.015
=599.37 gallons=80.13 cubic feet</td></tr>
<tr><td colspan="3">3. Calculate the DCV using worksheet B-2.1.

1,514 cubic feet (DMA-1) + 408 cubic feet (DMA-2) = 1,922 cubic feet</td></tr>
<tr><td>3a. Is the 36-hour demand greater than or equal to the DCV?
Yes / No ⇨
⇩</td><td>3b. Is the 36-hour demand greater than 0.25DCV but less than the full DCV?
Yes / No ⇨
⇩</td><td>3c. Is the 36-hour demand less than 0.25DCV?
Yes
⇩</td></tr>
<tr><td>Harvest and use appears to be feasible. Conduct more detailed evaluation and sizing calculations to confirm that DCV can be used at an adequate rate to meet drawdown criteria.</td><td>Harvest and use may be feasible. Conduct more detailed evaluation and sizing calculations to determine feasibility. Harvest and use may only be able to be used for a portion of the site, or (optionally) the storage may need to be upsized to meet long term capture targets while draining in longer than 36 hours.</td><td>Harvest and use is considered to be infeasible.</td></tr>
</table>

Note: 36-hour demand calculations are for feasibility analysis only. Once feasibility analysis is complete the applicant may be allowed to use a different drawdown time provided they meet the 80% annual capture standard (refer to B.4.2) and 96-hour vector control drawdown requirement.

Worksheet B.5-1: Sizing Method for Pollutant Removal Criteria

Sizing Method for Pollutant Removal Criteria DMA-1		Worksheet B.5-1	
1	Area draining to the BMP	45,088	sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.707	
3	85th percentile 24-hour rainfall depth	0.57	inches
4	Design capture volume [Line 1 x Line 2 x (Line 3/12)]	1,514	cu. ft.
BMP Parameters			
5	Surface ponding [6 inch minimum, 12 inch maximum]	10	inches
6	Media thickness [18 inches minimum], also add mulch layer and washed ASTM 33 fine aggregate sand thickness to this line for sizing calculations	27	inches
7	Aggregate storage (also add ASTM No 8 stone) above underdrain invert (12 inches typical) – use 0 inches if the aggregate is not over the entire bottom surface area	12	inches
8	Aggregate storage below underdrain invert (3 inches minimum) – use 0 inches if the aggregate is not over the entire bottom surface area	3	inches
9	Freely drained pore storage of the media	0.2	in/in
10	Porosity of aggregate storage	0.4	in/in
11	Media filtration rate to be used for sizing (maximum filtration rate of 5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate (includes infiltration into the soil and flow rate through the outlet structure) which will be less than 5 in/hr.)	5	in/hr.
Baseline Calculations			
12	Allowable routing time for sizing	6	hours
13	Depth filtered during storm [Line 11 x Line 12]	30	inches
14	Depth of Detention Storage [Line 5 + (Line 6 x Line 9) + (Line 7 x Line 10) + (Line 8 x Line 10)]	21.4	inches
15	Total Depth Treated [Line 13 + Line 14]	51.4	inches
Option 1 – Biofilter 1.5 times the DCV			
16	Required biofiltered volume [1.5 x Line 4]	2,271	cu. ft.
17	Required Footprint [Line 16/ Line 15] x 12	530	sq. ft.
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
18	Required Storage (surface + pores) Volume [0.75 x Line 4]	1,136	cu. ft.
19	Required Footprint [Line 18/ Line 14] x 12	637	sq. ft.
Footprint of the BMP			
20	BMP Footprint Sizing Factor (Default 0.03 or an alternative minimum footprint sizing factor from Line 11 in Worksheet B.5-4)	0.03	
21	Minimum BMP Footprint [Line 1 x Line 2 x Line 20]	956	sq. ft.
22	Footprint of the BMP = Maximum (Minimum (Line 17, Line 19), Line 21)	956	sq. ft.
23	Provided BMP Footprint	2068	sq. ft.
24	Is Line 23 ≥ Line 22? If Yes, then footprint criterion is met. If No, increase the footprint of the BMP.	✓ Yes	☐ No

Worksheet B.5-1: Sizing Method for Pollutant Removal Criteria

Sizing Method for Pollutant Removal Criteria DMA-2		Worksheet B.5-1	
1	Area draining to the BMP	11,332	sq. ft.
2	Adjusted runoff factor for drainage area (Refer to Appendix B.1 and B.2)	0.758	
3	85th percentile 24-hour rainfall depth	0.57	inches
4	Design capture volume [Line 1 x Line 2 x (Line 3/12)]	408	cu. ft.
BMP Parameters			
5	Surface ponding [6 inch minimum, 12 inch maximum]	10	inches
6	Media thickness [18 inches minimum], also add mulch layer and washed ASTM 33 fine aggregate sand thickness to this line for sizing calculations	27	inches
7	Aggregate storage (also add ASTM No 8 stone) above underdrain invert (12 inches typical) – use 0 inches if the aggregate is not over the entire bottom surface area	12	inches
8	Aggregate storage below underdrain invert (3 inches minimum) – use 0 inches if the aggregate is not over the entire bottom surface area	3	inches
9	Freely drained pore storage of the media	0.2	in/in
10	Porosity of aggregate storage	0.4	in/in
11	Media filtration rate to be used for sizing (maximum filtration rate of 5 in/hr. with no outlet control; if the filtration rate is controlled by the outlet use the outlet controlled rate (includes infiltration into the soil and flow rate through the outlet structure) which will be less than 5 in/hr.)	5	in/hr.
Baseline Calculations			
12	Allowable routing time for sizing	6	hours
13	Depth filtered during storm [Line 11 x Line 12]	30	inches
14	Depth of Detention Storage [Line 5 + (Line 6 x Line 9) + (Line 7 x Line 10) + (Line 8 x Line 10)]	21.4	inches
15	Total Depth Treated [Line 13 + Line 14]	51.4	inches
Option 1 – Biofilter 1.5 times the DCV			
16	Required biofiltered volume [1.5 x Line 4]	612	cu. ft.
17	Required Footprint [Line 16/ Line 15] x 12	143	sq. ft.
Option 2 - Store 0.75 of remaining DCV in pores and ponding			
18	Required Storage (surface + pores) Volume [0.75 x Line 4]	306	cu. ft.
19	Required Footprint [Line 18/ Line 14] x 12	172	sq. ft.
Footprint of the BMP			
20	BMP Footprint Sizing Factor (Default 0.03 or an alternative minimum footprint sizing factor from Line 11 in Worksheet B.5-4)	0.03	
21	Minimum BMP Footprint [Line 1 x Line 2 x Line 20]	258	sq. ft.
22	Footprint of the BMP = Maximum (Minimum (Line 17, Line 19), Line 21)	258	sq. ft.
23	Provided BMP Footprint	383	sq. ft.
24	Is Line 23 ≥ Line 22? If Yes, then footprint criterion is met. If No, increase the footprint of the BMP.	✓ Yes	☐ No

Worksheet C.4-2 (Form I-8A): Categorization of Infiltration Feasibility Condition Based on Geotechnical Conditions[2]

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
DMA-1		**Preliminary**
Criteria 1: Infiltration Rate Screening		
1A	Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper Type A or B and corroborated by available site soil data[4]? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result or continue to Step 1B if the applicant elects to perform infiltration testing. ☐ No; the mapped soil types are A or B but is not corroborated by available site soil data (continue to Step 1B). ☐ No; the mapped soil types are C, D, or "urban/unclassified" and is corroborated by available site soil data. Answer "No" to Criteria 1 Result. ☑ No; the mapped soil types are C, D, or "urban/unclassified" but is not corroborated by available site soil data (continue to Step 1B).	
1B	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1? ☐ Yes; Continue to Step 1C. No; Skip to Step 1D.	
1C	Is the reliable infiltration rate calculated using planning phase methods from Table D.3-1 greater than 0.5 inches per hour? ☐ Yes; the DMA may feasibly support full infiltration. Answer "Yes" to Criteria 1 Result. ☐ No; full infiltration is not required. Answer "No" to Criteria 1 Result.	
1D	**Infiltration Testing Method.** Is the selected infiltration testing method suitable during the design phase (see Appendix D.3)? Note: Alternative testing standards may be allowed with appropriate rationales and documentation. ☑ Yes; continue to Step 1E. ☐ No; select an appropriate infiltration testing method.	

[2] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, Part 3, or Part 4 determines a full, partial, or no infiltration condition.
[3] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.
[4] Available data includes site-specific sampling or observation of soil types or texture classes, such as obtained from borings or test pits necessary to support other design elements.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
1E	**Number of Percolation/Infiltration Tests.** Does the infiltration testing method performed satisfy the minimum number of tests specified in Table D.3-2? ☑ Yes; continue to Step 1F. ☐ No; conduct appropriate number of tests.
IF	**Factor of Safety.** Is the suitable Factor of Safety selected for full infiltration design? See guidance in D.5; Tables D.5-1 and D.5-2; and Worksheet D.5-1 (Form I-9). ☐ Yes; continue to Step 1G. ☑ No; select appropriate factor of safety.
1G	**Full Infiltration Feasibility.** Is the average measured infiltration rate divided by the Factor of Safety greater than 0.5 inches per hour? ☐ Yes; answer "Yes" to Criteria 1 Result. ☑ No; answer "No" to Criteria 1 Result.
Criteria 1 Result	Is the estimated reliable infiltration rate greater than 0.5 inches per hour within the DMA where runoff can reasonably be routed to a BMP? ☐ Yes; the DMA may feasibly support full infiltration. Continue to Criteria 2. ☑ No; full infiltration is not required. Skip to Part 1 Result.
Summarize infiltration testing methods, testing locations, replicates, and results and summarize estimates of reliable infiltration rates according to procedures outlined in D.5. Documentation should be included in project geotechnical report.	
Per the soils report by Giles Engineering Associates, Inc., infiltration rates of 0.01 in/hr where encountered on site. See the soils report for full particulars.	

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 2: Geologic/Geotechnical Screening			
2A	If all questions in Step 2A are answered "Yes," continue to Step 2B. For any "No" answer in Step 2A answer "No" to Criteria 2, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
2A-1	Can the proposed full infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick below the infiltrating surface?	☐ Yes	☐ No
2A-2	Can the proposed full infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
2A-3	Can the proposed full infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
2B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1. If all questions in Step 2B are answered "Yes," then answer "Yes" to Criteria 2 Result. If there are "No" answers continue to Step 2C.		
2B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can full infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
2B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can full infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011 or most recent edition). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can full infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No
2B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can full infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
2B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can full infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
2B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can full infiltration BMPs be proposed within the DMA using established setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
2C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 2B. Provide a discussion of geologic/geotechnical hazards that would prevent full infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for full infiltration BMPs? If the question in Step 2 is answered "Yes," then answer "Yes" to Criteria 2 Result. If the question in Step 2C is answered "No," then answer "No" to Criteria 2 Result.	☐ Yes	☐ No
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No
Summarize findings and basis; provide references to related reports or exhibits.			

Part 1 Result – Full Infiltration Geotechnical Screening [5]	Result
If answers to both Criteria 1 and Criteria 2 are "Yes", a full infiltration design is potentially feasible based on Geotechnical conditions only. If either answer to Criteria 1 or Criteria 2 is "No", a full infiltration design is not required.	☐ Full infiltration Condition ☑ Complete Part 2

[5] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	**Project Phase:**

Criteria 3: Infiltration Rate Screening	
3A	**NRCS Type C, D, or "urban/unclassified":** Is the mapped hydrologic soil group according to the NRCS Web Soil Survey or UC Davis Soil Web Mapper is Type C, D, or "urban/unclassified" and corroborated by available site soil data? ☐ Yes; the site is mapped as C soils and a reliable infiltration rate of 0.15 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☐ Yes; the site is mapped as D soils or "urban/unclassified" and a reliable infiltration rate of 0.05 in/hr. is used to size partial infiltration BMPS. Answer "Yes" to Criteria 3 Result. ☑ No; infiltration testing is conducted (refer to Table D.3-1), continue to Step 3B.
3B	**Infiltration Testing Result:** Is the reliable infiltration rate (i.e. average measured infiltration rate/2) greater than 0.05 in/hr. and less than or equal to 0.5 in/hr? ☐ Yes; the site may support partial infiltration. Answer "Yes" to Criteria 3 Result. ☑ No; the reliable infiltration rate (i.e. average measured rate/2) is less than 0.05 in/hr., partial infiltration is not required. Answer "No" to Criteria 3 Result.
Criteria 3 Result	Is the estimated reliable infiltration rate (i.e., average measured infiltration rate/2) greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour at any location within each DMA where runoff can reasonably be routed to a BMP? ☐ Yes; Continue to Criteria 4. ☑ No: Skip to Part 2 Result.

Summarize infiltration testing and/or mapping results (i.e. soil maps and series description used for infiltration rate).

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
Criteria 4: Geologic/Geotechnical Screening			
4A	If all questions in Step 4A are answered "Yes," continue to Step 2B. For any "No" answer in Step 4A answer "No" to Criteria 4 Result, and submit an "Infiltration Feasibility Condition Letter" that meets the requirements in Appendix C.1.1. The geologic/geotechnical analyses listed in Appendix C.2.1 do not apply to the DMA because one of the following setbacks cannot be avoided and therefore result in the DMA being in a no infiltration condition. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP.		
4A-1	Can the proposed partial infiltration BMP(s) avoid areas with existing fill materials greater than 5 feet thick?	☐ Yes	☐ No
4A-2	Can the proposed partial infiltration BMP(s) avoid placement within 10 feet of existing underground utilities, structures, or retaining walls?	☐ Yes	☐ No
4A-3	Can the proposed partial infiltration BMP(s) avoid placement within 50 feet of a natural slope (>25%) or within a distance of 1.5H from fill slopes where H is the height of the fill slope?	☐ Yes	☐ No
4B	When full infiltration is determined to be feasible, a geotechnical investigation report must be prepared that considers the relevant factors identified in Appendix C.2.1 If all questions in Step 4B are answered "Yes," then answer "Yes" to Criteria 4 Result. If there are any "No" answers continue to Step 4C.		
4B-1	**Hydroconsolidation.** Analyze hydroconsolidation potential per approved ASTM standard due to a proposed full infiltration BMP. Can partial infiltration BMPs be proposed within the DMA without increasing hydroconsolidation risks?	☐ Yes	☐ No
4B-2	**Expansive Soils.** Identify expansive soils (soils with an expansion index greater than 20) and the extent of such soils due to proposed full infiltration BMPs. Can partial infiltration BMPs be proposed within the DMA without increasing expansive soil risks?	☐ Yes	☐ No
4B-3	**Liquefaction**. If applicable, identify mapped liquefaction areas. Evaluate liquefaction hazards in accordance with Section 6.4.2 of the City of San Diego's Guidelines for Geotechnical Reports (2011). Liquefaction hazard assessment shall take into account any increase in groundwater elevation or groundwater mounding that could occur as a result of proposed infiltration or percolation facilities. Can partial infiltration BMPs be proposed within the DMA without increasing liquefaction risks?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions		Worksheet C.4-1: Form I-8A[3]	
4B-4	**Slope Stability**. If applicable, perform a slope stability analysis in accordance with the ASCE and Southern California Earthquake Center (2002) Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California to determine minimum slope setbacks for full infiltration BMPs. See the City of San Diego's Guidelines for Geotechnical Reports (2011) to determine which type of slope stability analysis is required. Can partial infiltration BMPs be proposed within the DMA without increasing slope stability risks?	☐ Yes	☐ No
4B-5	**Other Geotechnical Hazards.** Identify site-specific geotechnical hazards not already mentioned (refer to Appendix C.2.1). Can partial infiltration BMPs be proposed within the DMA without increasing risk of geologic or geotechnical hazards not already mentioned?	☐ Yes	☐ No
4B-6	**Setbacks.** Establish setbacks from underground utilities, structures, and/or retaining walls. Reference applicable ASTM or other recognized standard in the geotechnical report. Can partial infiltration BMPs be proposed within the DMA using recommended setbacks from underground utilities, structures, and/or retaining walls?	☐ Yes	☐ No
4C	**Mitigation Measures.** Propose mitigation measures for each geologic/geotechnical hazard identified in Step 4B. Provide a discussion on geologic/geotechnical hazards that would prevent partial infiltration BMPs that cannot be reasonably mitigated in the geotechnical report. See Appendix C.2.1.8 for a list of typically reasonable and typically unreasonable mitigation measures. Can mitigation measures be proposed to allow for partial infiltration BMPs? If the question in Step 4C is answered "Yes," then answer "Yes" to Criteria 4 Result. If the question in Step 4C is answered "No," then answer "No" to Criteria 4 Result.	☐ Yes	☐ No
Criteria 4 Result	Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing the risk of geologic or geotechnical hazards that cannot be reasonably mitigated to an acceptable level?	☐ Yes	☐ No

Categorization of Infiltration Feasibility Condition based on Geotechnical Conditions	Worksheet C.4-1: Form I-8A[3]
Summarize findings and basis; provide references to related reports or exhibits	

Part 2 – Partial Infiltration Geotechnical Screening Result[6]	Result
If answers to both Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible based on geotechnical conditions only. If answers to either Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site.	☐ Partial Infiltration Condition ☑ No Infiltration Condition

[6] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

Worksheet C.4-2: Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions[7]

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions		Worksheet C.4-2: Form I-8B[8]
Part 1 - Full Infiltration Feasibility Screening Criteria		
DMA(s) Being Analyzed:		**Project Phase:**
DMA-1		**Preliminary**
Criteria 1: Groundwater Screening		
1A	**Groundwater Depth.** Is the depth to seasonally high groundwater tables (normal high depth during the wet season) beneath the base of any full infiltration BMP greater than 10 feet? ☑ Yes; continue to Step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet, but site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to step 1B. ☐ No; The depth to groundwater is less than or equal to 10 feet and site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" for Criteria 1 Result.	
1B	**Contaminated Soil/Groundwater.** Are proposed full infiltration BMPs at least 250 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. The setbacks must be the closest horizontal radial distance from the surface edge (at the overflow elevation) of the BMP. ☐ Yes; continue to Step 1C. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1C. ☑ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.	

[7] Note that it is not required to investigate each and every criterion in the worksheet, a single "no" answer in Part 1, Part 2, part 3, or Part 4 determines a full, partial, or no infiltration condition.
[8] This form must be completed each time there is a change to the site layout that would affect the infiltration feasibility condition. Previously completed forms shall be retained to document the evolution of the site storm water design.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
1C	**Inadequate Soil Treatment Capacity.** Are full infiltration BMPs proposed in DMA soils that have adequate soil treatment capacity? The DMA has adequate soil treatment capacity if **ALL** of the following criteria (detailed in C.2.2.1) for all soil layers beneath the infiltrating surface are met: • USDA texture class is sandy loam or loam or silt loam or silt or sandy clay loam or clay loam or silty clay loam or sandy clay or silty clay or clay; and • Cation Exchange Capacity (CEC) greater than 5 milliequivalents/100g; and • Soil organic matter is greater than 1%; and • Groundwater table is equal to or greater than 10 feet beneath the base of the full infiltration BMP. ☐ Yes; continue to Step 1D. ☐ No; However, site layout changes or reasonable mitigation measures can be proposed to support full infiltration BMPs. Continue to Step 1D. ☐ No; Site layout changes or reasonable mitigation measures cannot be proposed to support full infiltration BMPs. Answer "No" to Criteria 1 Result.
1D	**Other Groundwater Contamination Hazards.** Are there site-specific groundwater contamination hazards not already mentioned (refer to Appendix C.2.2) that can be reasonably mitigated to support full infiltration BMPs? ☐ Yes; there are other contamination hazards identified that can be mitigated. Answer "Yes" to Criteria 1 Result. ☐ No; there are other contamination hazards identified that cannot be mitigated. Answer "No" to Criteria 1 Result. ☐ N/A; no contamination hazards are identified. Answer "Yes" to Criteria 1 Result.
Criteria 1 Result	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? See Appendix C.2.2.8 for a list of typically reasonable and typically unreasonable mitigation measures. ☐ Yes; Continue to Part 1, Criteria 2. ☑ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize groundwater quality and any mitigation measures proposed. Documentation should focus on groundwater table, mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 2: Water Balance Screening	
2A	**Ephemeral Stream Setback.** Does the proposed full infiltration BMP meet both the following? • The full infiltration BMP is located at least 250 feet away from an ephemeral stream; **AND** • The bottom surface of the full infiltration BMP is at a depth 20 feet or greater from seasonally high groundwater tables. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Continue to Step 2B.
2B	**Mitigation Measures.** Can site layout changes be proposed to support full infiltration BMPs? ☐ Yes; the site can be reconfigured to mitigate potential water balance issues. Answer "Yes" to Criteria 2 Result. ☐ No; the site cannot be reconfigured to mitigate potential water balance issues. Continue to Step 2C and provide discussion.
2C	**Additional studies.** Do additional studies support full infiltration BMPs? In the event that water balance effects are used to reject full infiltration (anticipated to be rare), additional analysis shall be completed and documented by a qualified professional indicating the site-specific information evaluated and the technical basis for this finding. ☐ Yes; Answer "Yes" to Criteria 2 Result. ☐ No; Answer "No" to Criteria 2 Result.
Criteria 2 Result	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes; Continue to Part 1 Result. ☑ No; Continue to Part 1 Result.

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth.	

Part 1 – Full Infiltration Groundwater and Water Balance Screening Result[9]	Result
If answers to Criteria 1 and 2 are "Yes", a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration based on groundwater conditions. If answer to Criteria 1 or Criteria 2 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design based on groundwater conditions. Proceed to Part 2.	☐ Full Infiltration ☑ Complete Part 2

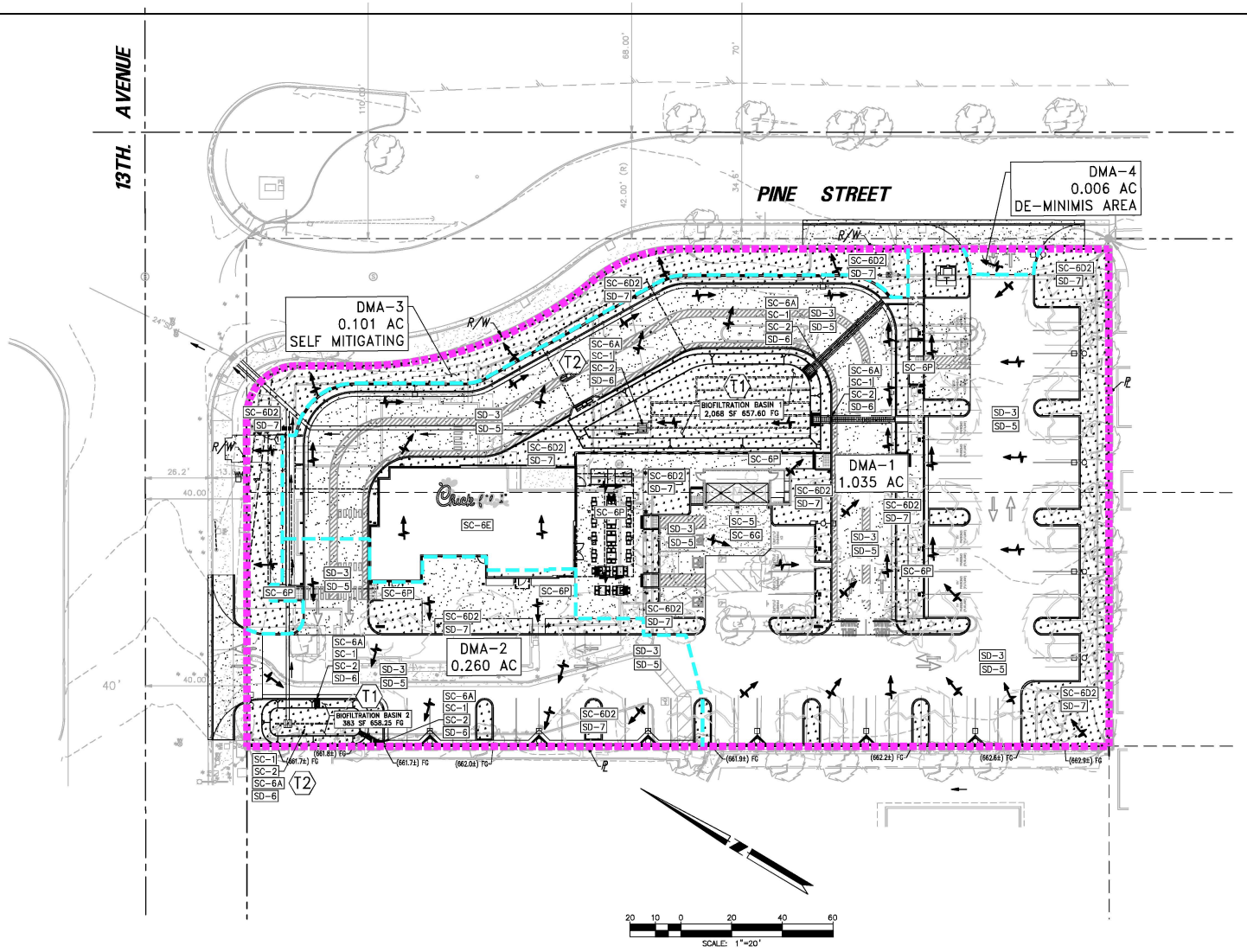
[9] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.

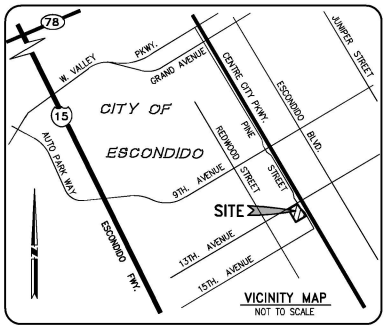
Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Part 2 – Partial vs. No Infiltration Feasibility Screening Criteria	
DMA(s) Being Analyzed:	**Project Phase:**
DMA-1	**Preliminary**
Criteria 3: Groundwater Screening	
Contaminated Soil/Groundwater. Are partial infiltration BMPs proposed at least 100 feet away from contaminated soil or groundwater sites? This can be confirmed using GeoTracker (geotracker.waterboards.ca.gov) to identify open contaminated sites. This criterion is intentionally a smaller radius than full infiltration, as the potential quantity of infiltration from partial infiltration BMPs is smaller. ☐ Yes; Answer "Yes" to Criteria 3 Result. ☐ No; However, site layout changes can be proposed to avoid contaminated soils or soils that lack adequate treatment capacity. Select "Yes" to Criteria 3 Result. It is a requirement for the SWQMP preparer to identify potential mitigation measures. ☑ No; Contaminated soils or soils that lack adequate treatment capacity cannot be avoided and partial infiltration BMPs are not feasible. Select "No" to Criteria 3 Result.	
Criteria 3 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without increasing risk of groundwater contamination that cannot be reasonably mitigated to an acceptable level? Yes; Continue to Part 2, Criteria 4. ☐ No; Skip to Part 2 Result.	
Summarize findings and basis. Documentation should focus on mapped soil types and contaminated site locations.	

Categorization of Infiltration Feasibility Condition based on Groundwater and Water Balance Conditions	Worksheet C.4-2: Form I-8B[8]
Criteria 4: Water Balance Screening	
Additional studies. In the event that water balance effects are used to reject partial infiltration (anticipated to be rare), a qualified professional must provide an analysis of the incremental effects of partial infiltration BMPs on the water balance compared to incidental infiltration under a no infiltration scenario (e.g. precipitation, irrigation, etc.).	
Criteria 4 Result: Can infiltration of greater than or equal to 0.05 inches/hour and less than or equal to 0.5 inches/hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams? ☐ Yes: Continue to Part 2 Result. ☐ No: Continue to Part 2 Result.	
Summarize potential water balance effects. Documentation should focus on mapping and soil data regarding proximity to ephemeral streams and groundwater depth	

Part 2 – Partial Infiltration Groundwater and Water Balance Screening Result[10]	Result
If answers to Criteria 3 and Criteria 4 are "Yes", a partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration based on groundwater and water balance conditions. If answer to Criteria 3 or Criteria 4 is "No", then infiltration of any volume is considered to be infeasible within the site. The feasibility screening category is No Infiltration based on groundwater or water balance condition.	☐ Partial Infiltration Condition ☑ No Infiltration Condition

[10] To be completed using gathered site information and best professional judgement considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by City Engineer to substantiate findings.





LEGEND

- TOTAL TRIBUTARY AREA
- SUBAREA BOUNDARY
- PATH OF FLOW (SURFACE)
- PATH OF FLOW (PIPE)
- IMPERVIOUS SURFACE
- PERVIOUS SURFACE

SOURCE CONTROL

- SC-1 PREVENT ILLICIT DISCHARGES TO THE MS4
- SC-2 IDENTIFY THE STORM DRAIN SYSTEM USING STENCILING OR SIGNAGE
- SC-5 PROTECT TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL
- SC-6 ADDITIONAL BMPS – POTENTIAL SOURCES OF RUNOFF POLLUTION
  - A. ON-SITE STORM DRAIN INLETS
  - D2. LANDSCAPE/OUTDOOR PESTICIDE USE
  - E. FOOD SERVICE
  - G. REFUSE AREAS
  - P. PLAZAS, SIDEWALKS, AND PARKING LOTS
- SD-3 MINIMIZE IMPERVIOUS AREA
- SD-5 DISPERSE IMPERVIOUS AREAS
- SD-6 COLLECT RUNOFF
- SD-7 LANDSCAPE WITH NATIVE OR DROUGHT TOLERANT SPECIES

STRUCTURAL BMPs FOR POLLUTANT CONTROL MANAGEMENT

- T1 BIO-FILTRATION BASIN
- T2 OLDCASTLE FLOGARD CATCH BASIN INSERTS MODEL No. FGP-36F

DMA-1 DISTURBED AREA = 1.035 acres
TOTAL TRIBUTARY AREA TO BASIN=1.035 acres

DRAINAGE MANAGEMENT AREA							
	SURFACE TYPE	AREA AC	PERVIOUS		IMPERVIOUS		PROPOSED BMP
DMA-1	BUILDING AC/CONCRETE	45,088 SF = 1.035 AC			34,239 SF = 0.786 AC	75.9%	BIOFILTRATION BASIN (T1)
	LANDSCAPE		10,849 SF = 0.249 AC	24.1%			

DMA-2 DISTURBED AREA = 0.260 acres
TOTAL TRIBUTARY AREA TO BASIN=0.260 acres

DRAINAGE MANAGEMENT AREA							
	SURFACE TYPE	AREA AC	PERVIOUS		IMPERVIOUS		PROPOSED BMP
DMA-2	BUILDING AC/CONCRETE	11,332 SF = 0.260 AC			9,342 SF = 0.214 AC	82.4%	BIOFILTRATION BASIN (T1)
	LANDSCAPE		1,990 SF = 0.046 AC	17.6%			

STORM WATER QUALITY MANAGEMENT PLAN INFORMATION

1. HYDROLOGIC SOIL GROUP 'D'
2. DEPTH TO GROUNDWATER > 13.9 FT.
3. NO NATURAL HYDROLOGIC FEATURES EXIST WITHIN THIS PROJECT SITE
4. NO CRITICAL COARSE SEDIMENT YIELD AREAS EXIST DOWNSTREAM OF THIS PROJECT SITE

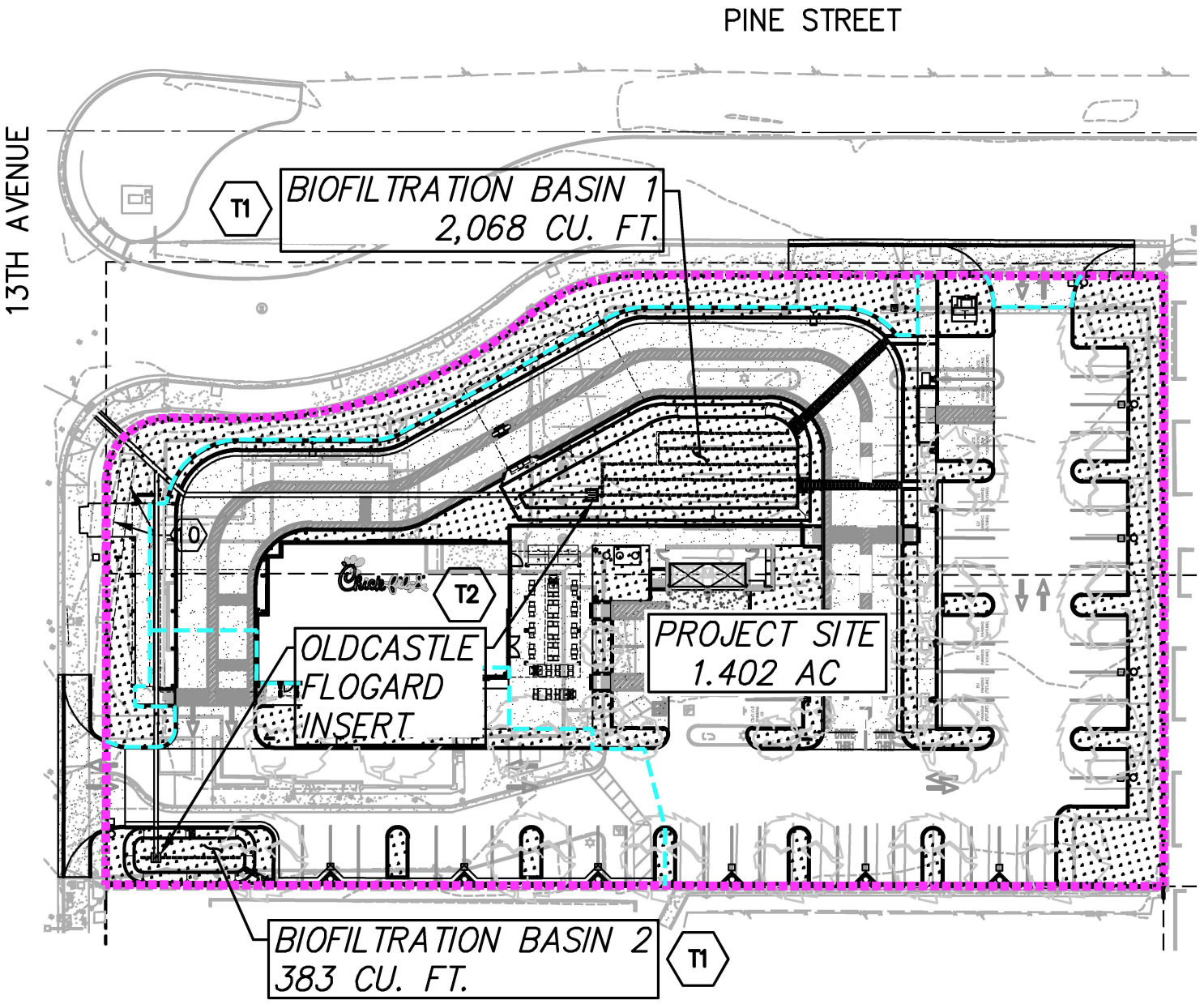
NO. | REVISIONS | DATE

Prepared by:
Joseph C. Truxaw and Associates, Inc.
Civil Engineers and Land Surveyors
1915 W. Orangewood Ave., Suite 101, Orange, CA 92868 (714) 935-0265 Truxaw.com

DMA EXHIBIT

CHICK-FIL-A #5524
515 WEST 13TH AVENUE
CITY OF ESCONDIDO, STATE OF CALIFORNIA

DATE 07-11-24
DRAWN BY RCH
CHECKED BY RJD
JOB NO. CFA23008
SHEET NO. 1 OF 1 SHEETS



LEGEND

TOTAL TRIBUTARY AREA

IMPERVIOUS SURFACE

PERVIOUS SURFACE

STRUCTURAL BMPs FOR POLLUTANT CONTROL MANAGEMENT

T1 — BIO-FILTRATION BASIN

T2 — OLDCASTLE FLOGARD CATCH BASIN INSERTS MODEL No. FGP-36F

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INDIVIDUAL STRUCTURAL BMP DMA MAPBOOK

CHICK-FIL-A #5524

DRAWN: RCH	CHKD: RJD		
DATE: 07-11-24	DATE: 07-11-24		

ATTACHMENT 2

BACKUP FOR PDP HYDROMODIFICATION CONTROL MEASURES

This is the cover sheet for Attachment 2.

☐Mark this box if this attachment is empty because the project is exempt from PDP hydromodification management requirements.

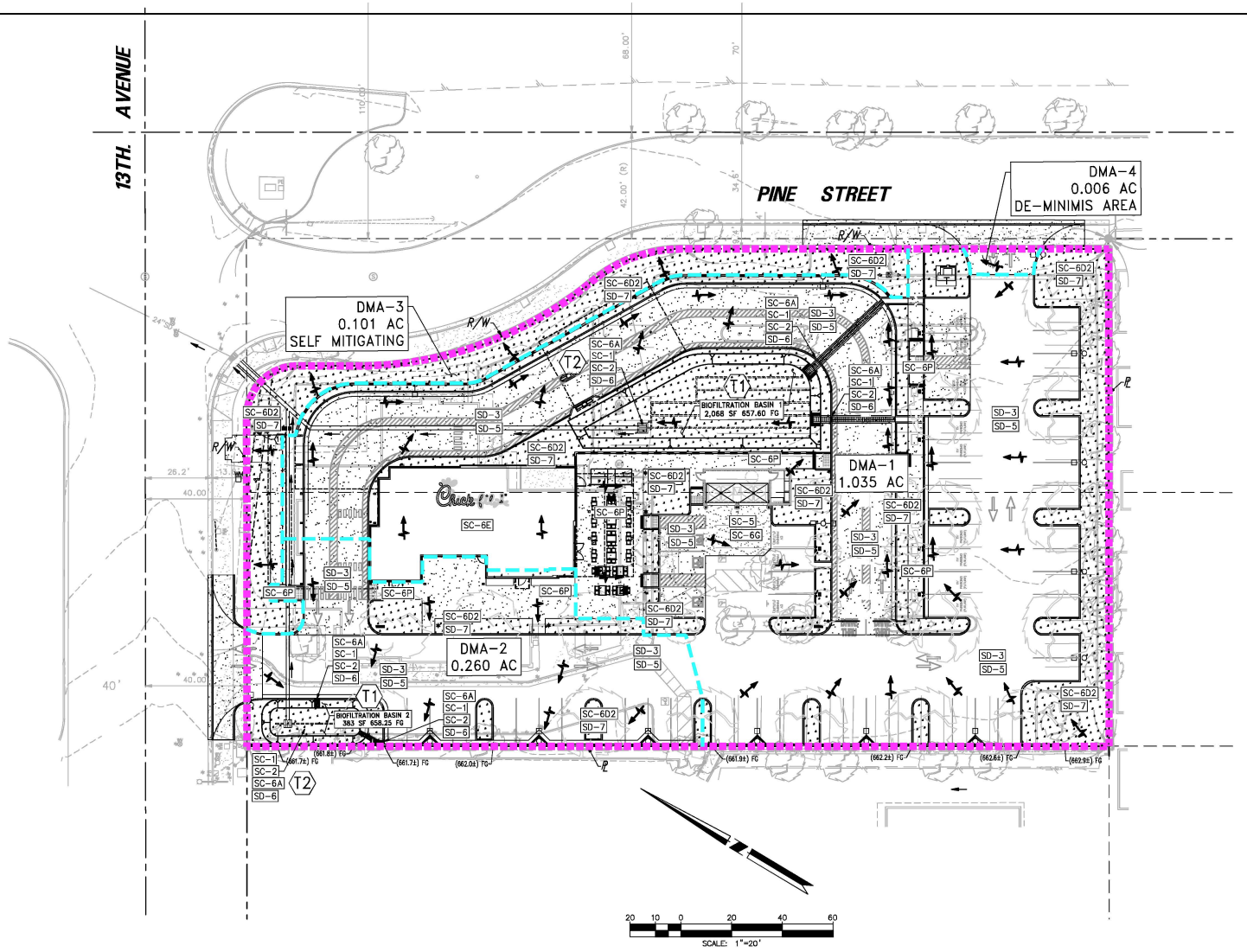
Indicate which Items are Included behind this cover sheet:

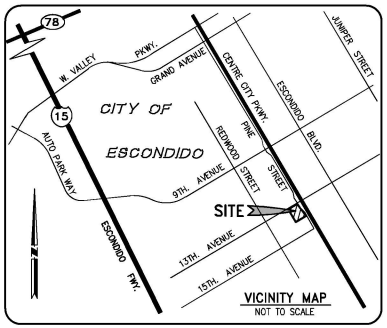
Attachment Sequence	Contents	Checklist
Attachment 2a	Flow Control Facility Design, including Structural BMP Drawdown Calculations and Overflow Design Summary (Required) See Chapter 6 and Appendix G of the Storm Water Design Manual	☐Included ☐Submitted as separate stand-alone document
Attachment 2b	Hydromodification Management Exhibit (Required)	☒Included See Hydromodification Management Exhibit Checklist on the back of this Attachment cover sheet.
Attachment 2c	Management of Critical Coarse Sediment Yield Areas See Section 6.2 and Appendix H of the Storm Water Design Manual.	☒Exhibit depicting onsite and/or upstream sources of critical coarse sediment as mapped in the WMAA AND, ☒Demonstration that the project effectively avoids and bypasses sources of mapped critical coarse sediment OR, ☐Demonstration that the downstream system is not sensitive to preservation of Coarse Sediment Supply (Form I-11). ☐Demonstration that project does not generate a net impact on the receiving water.
Attachment 2d	Geomorphic Assessment of Receiving Channels (Optional) See Section 6.3.4 of the Storm Water Design Manual.	☒Not performed ☐Included ☐Submitted as separate stand-alone document **Referenced channel screening report dated March 6, 2017 (Project No. ENG16-0029)**
Attachment 2e	Vector Control Plan (Required when structural BMPs will not drain in 96 hours)	☐Included ☒Not required because BMPs will drain in less than 96 hours

Use this checklist to ensure the required information has been included on the Hydromodification Management Exhibit:

The Hydromodification Management Exhibit must identify:

☒Underlying hydrologic soil group
☒Approximate depth to groundwater
☒Existing natural hydrologic features (watercourses, seeps, springs, wetlands)
☒Critical coarse sediment yield areas to be protected
☒Existing topography
☒Existing and proposed site drainage network and connections to drainage offsite
☒Proposed grading
☒Proposed impervious features
☒Proposed design features and surface treatments used to minimize imperviousness
☒Point(s) of Compliance (POC) for Hydromodification Management
☒Existing and proposed drainage boundary and drainage area to each POC (when necessary, create separate exhibits for pre-development and post-project conditions)
☒Structural BMPs for hydromodification management (identify location, type of BMP, and size/detail)





LEGEND

- TOTAL TRIBUTARY AREA
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- PATH OF FLOW (PIPE)
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- PERVIOUS SURFACE

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  - A. ON-SITE STORM DRAIN INLETS
  - D2. LANDSCAPE/OUTDOOR PESTICIDE USE
  - E. FOOD SERVICE
  - G. REFUSE AREAS
  - P. PLAZAS, SIDEWALKS, AND PARKING LOTS
- SD-3 MINIMIZE IMPERVIOUS AREA
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DMA-1 DISTURBED AREA = 1.035 acres
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DRAINAGE MANAGEMENT AREA							
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DMA-1	BUILDING AC/CONCRETE	45,088 SF = 1.035 AC			34,239 SF = 0.786 AC	75.9%	BIOFILTRATION BASIN (T1)
	LANDSCAPE		10,849 SF = 0.249 AC	24.1%			

DMA-2 DISTURBED AREA = 0.260 acres
TOTAL TRIBUTARY AREA TO BASIN=0.260 acres

DRAINAGE MANAGEMENT AREA							
	SURFACE TYPE	AREA AC	PERVIOUS		IMPERVIOUS		PROPOSED BMP
DMA-2	BUILDING AC/CONCRETE	11,332 SF = 0.260 AC			9,342 SF = 0.214 AC	82.4%	BIOFILTRATION BASIN (T1)
	LANDSCAPE		1,990 SF = 0.046 AC	17.6%			

STORM WATER QUALITY MANAGEMENT PLAN INFORMATION

1. HYDROLOGIC SOIL GROUP 'D'
2. DEPTH TO GROUNDWATER > 13.9 FT.
3. NO NATURAL HYDROLOGIC FEATURES EXIST WITHIN THIS PROJECT SITE
4. NO CRITICAL COARSE SEDIMENT YIELD AREAS EXIST DOWNSTREAM OF THIS PROJECT SITE

NO. | REVISIONS | DATE

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DMA EXHIBIT

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DRAWN BY RCH
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JOB NO. CFA23008
SHEET NO. 1 OF 1 SHEETS

SDHM 3.1

PROJECT REPORT

General Model Information

Project Name:	CFA23008
Site Name:	CFA23008
Site Address:	515 W 13th Ave
City:	Escondido
Report Date:	7/11/2024
Gage:	BONITA
Data Start:	10/01/1971
Data End:	09/30/2004
Timestep:	Hourly
Precip Scale:	1.000
Version Date:	2021/06/28

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	10 Year

Landuse Basin Data

Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
D,NatVeg,Flat	1.276
Pervious Total	1.276
Impervious Land Use	acre
Impervious Total	0
Basin Total	1.276

Element Flows To:

Surface	Interflow	Groundwater

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
D,NatVeg,Flat	0.249
Pervious Total	0.249

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.786
Impervious Total	0.786
Basin Total	1.035

Element Flows To:

Surface	Interflow	Groundwater
Surface Biofilter 1	Surface Biofilter 1	

Basin 2

Bypass:	No
GroundWater:	No

Pervious Land Use	acre
D,NatVeg,Flat	0.046
Pervious Total	0.046

Impervious Land Use	acre
IMPERVIOUS-FLAT	0.214
Impervious Total	0.214
Basin Total	0.26

Element Flows To:

Surface	Interflow	Groundwater
Surface iltration 2	Surface iltration 2	

Routing Elements
Predeveloped Routing

Mitigated Routing

Biofilter 1

Bottom Length:	70.82 ft.
Bottom Width:	29.20 ft.
Material thickness of first layer:	0.25
Material type for first layer:	Mulch
Material thickness of second layer:	2
Material type for second layer:	ESM
Material thickness of third layer:	1.25
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.375
Offset (in.):	0
Flow Through Underdrain (ac-ft.):	12.978
Total Outflow (ac-ft.):	14.093
Percent Through Underdrain:	92.09
Discharge Structure	
Riser Height:	0.83 ft.
Riser Diameter:	36 in.
Element Flows To:	
Outlet 1	Outlet 2
Channel 1	

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.1058	0.0000	0.0000	0.0000
0.0531	0.1048	0.0008	0.0000	0.0000
0.1062	0.1038	0.0015	0.0000	0.0000
0.1592	0.1028	0.0023	0.0000	0.0000
0.2123	0.1018	0.0031	0.0000	0.0000
0.2654	0.1007	0.0039	0.0000	0.0000
0.3185	0.0997	0.0047	0.0000	0.0000
0.3715	0.0987	0.0056	0.0002	0.0000
0.4246	0.0977	0.0064	0.0002	0.0000
0.4777	0.0967	0.0073	0.0005	0.0000
0.5308	0.0957	0.0082	0.0006	0.0000
0.5838	0.0947	0.0090	0.0008	0.0000
0.6369	0.0937	0.0099	0.0009	0.0000
0.6900	0.0928	0.0108	0.0010	0.0000
0.7431	0.0918	0.0118	0.0011	0.0000
0.7962	0.0908	0.0127	0.0012	0.0000
0.8492	0.0899	0.0136	0.0013	0.0000
0.9023	0.0889	0.0146	0.0014	0.0000
0.9554	0.0879	0.0156	0.0014	0.0000
1.0085	0.0870	0.0165	0.0015	0.0000
1.0615	0.0860	0.0175	0.0015	0.0000
1.1146	0.0851	0.0186	0.0016	0.0000
1.1677	0.0842	0.0196	0.0017	0.0000
1.2208	0.0832	0.0206	0.0017	0.0000
1.2738	0.0823	0.0217	0.0018	0.0000
1.3269	0.0814	0.0227	0.0019	0.0000
1.3800	0.0804	0.0238	0.0019	0.0000
1.4331	0.0795	0.0249	0.0020	0.0000
1.4862	0.0786	0.0260	0.0020	0.0000

1.5392	0.0777	0.0271	0.0021	0.0000
1.5923	0.0768	0.0283	0.0021	0.0000
1.6454	0.0759	0.0294	0.0021	0.0000
1.6985	0.0750	0.0306	0.0022	0.0000
1.7515	0.0741	0.0317	0.0022	0.0000
1.8046	0.0733	0.0329	0.0023	0.0000
1.8577	0.0724	0.0341	0.0023	0.0000
1.9108	0.0715	0.0353	0.0024	0.0000
1.9638	0.0706	0.0366	0.0024	0.0000
2.0169	0.0698	0.0378	0.0024	0.0000
2.0700	0.0689	0.0391	0.0025	0.0000
2.1231	0.0681	0.0403	0.0025	0.0000
2.1762	0.0672	0.0416	0.0026	0.0000
2.2292	0.0664	0.0429	0.0026	0.0000
2.2823	0.0655	0.0448	0.0026	0.0000
2.3354	0.0647	0.0466	0.0027	0.0000
2.3885	0.0639	0.0485	0.0027	0.0000
2.4415	0.0630	0.0503	0.0027	0.0000
2.4946	0.0622	0.0523	0.0028	0.0000
2.5477	0.0614	0.0542	0.0028	0.0000
2.6008	0.0606	0.0561	0.0029	0.0000
2.6538	0.0598	0.0581	0.0029	0.0000
2.7069	0.0590	0.0601	0.0029	0.0000
2.7600	0.0582	0.0621	0.0029	0.0000
2.8131	0.0574	0.0641	0.0030	0.0000
2.8662	0.0566	0.0662	0.0030	0.0000
2.9192	0.0558	0.0683	0.0030	0.0000
2.9723	0.0550	0.0704	0.0031	0.0000
3.0254	0.0542	0.0725	0.0032	0.0000
3.0785	0.0535	0.0746	0.0033	0.0000
3.1315	0.0527	0.0768	0.0034	0.0000
3.1846	0.0519	0.0790	0.0035	0.0000
3.2377	0.0512	0.0812	0.0036	0.0000
3.2908	0.0504	0.0834	0.0037	0.0000
3.3438	0.0497	0.0857	0.0038	0.0000
3.3969	0.0489	0.0879	0.0039	0.0000
3.4500	0.0482	0.0902	0.0040	0.0000
3.5000	0.0475	0.0924	0.0071	0.0000

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infilt(cfs)
3.5000	0.1058	0.0924	0.0000	0.2393	0.0000
3.5531	0.1069	0.0981	0.0000	0.2393	0.0000
3.6062	0.1079	0.1038	0.0000	0.2820	0.0000
3.6592	0.1090	0.1095	0.0000	0.2883	0.0000
3.7123	0.1100	0.1153	0.0000	0.2947	0.0000
3.7654	0.1111	0.1212	0.0000	0.3010	0.0000
3.8185	0.1121	0.1271	0.0000	0.3074	0.0000
3.8715	0.1132	0.1331	0.0000	0.3137	0.0000
3.9246	0.1143	0.1391	0.0000	0.3201	0.0000
3.9777	0.1153	0.1452	0.0000	0.3264	0.0000
4.0308	0.1164	0.1514	0.0000	0.3328	0.0000
4.0838	0.1175	0.1576	0.0000	0.3391	0.0000
4.1369	0.1186	0.1639	0.0000	0.3455	0.0000
4.1900	0.1197	0.1702	0.0000	0.3518	0.0000
4.2431	0.1208	0.1766	0.0000	0.3582	0.0000
4.2962	0.1219	0.1830	0.0000	0.3645	0.0000
4.3492	0.1230	0.1895	0.0849	0.3709	0.0000

4.4023	0.1241	0.1961	0.6188	0.3772	0.0000
4.4554	0.1253	0.2027	1.4121	0.3836	0.0000
4.5085	0.1264	0.2094	2.3956	0.3899	0.0000
4.5615	0.1275	0.2161	3.5354	0.3963	0.0000
4.6146	0.1286	0.2229	4.8081	0.4027	0.0000
4.6677	0.1298	0.2298	6.1947	0.4090	0.0000
4.7208	0.1309	0.2367	7.6782	0.4154	0.0000
4.7738	0.1321	0.2437	9.2419	0.4217	0.0000
4.8269	0.1332	0.2507	10.869	0.4281	0.0000
4.8300	0.1333	0.2511	12.544	0.4284	0.0000

Surface Biofilter 1

Element Flows To:

Outlet 1	Outlet 2
Channel 1	Biofilter 1

Biofiltration 2

Bottom Length:	34.80 ft.
Bottom Width:	11.00 ft.
Material thickness of first layer:	0.25
Material type for first layer:	Mulch
Material thickness of second layer:	2
Material type for second layer:	ESM
Material thickness of third layer:	1.25
Material type for third layer:	GRAVEL
Underdrain used	
Underdrain Diameter (feet):	0.5
Orifice Diameter (in.):	0.25
Offset (in.):	0
Flow Through Underdrain (ac-ft.):	3.845
Total Outflow (ac-ft.):	3.913
Percent Through Underdrain:	98.27
Discharge Structure	
Riser Height:	0.83 ft.
Riser Diameter:	36 in.
Element Flows To:	
Outlet 1	Outlet 2
Channel 1	

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.0410	0.0000	0.0000	0.0000
0.0531	0.0404	0.0001	0.0000	0.0000
0.1062	0.0398	0.0003	0.0000	0.0000
0.1592	0.0391	0.0004	0.0000	0.0000
0.2123	0.0385	0.0006	0.0000	0.0000
0.2654	0.0379	0.0008	0.0000	0.0000
0.3185	0.0373	0.0009	0.0000	0.0000
0.3715	0.0366	0.0011	0.0001	0.0000
0.4246	0.0360	0.0013	0.0001	0.0000
0.4777	0.0354	0.0015	0.0002	0.0000
0.5308	0.0348	0.0017	0.0003	0.0000
0.5838	0.0342	0.0019	0.0003	0.0000
0.6369	0.0337	0.0021	0.0004	0.0000
0.6900	0.0331	0.0023	0.0004	0.0000
0.7431	0.0325	0.0025	0.0005	0.0000
0.7962	0.0319	0.0027	0.0005	0.0000
0.8492	0.0314	0.0030	0.0006	0.0000
0.9023	0.0308	0.0032	0.0006	0.0000
0.9554	0.0302	0.0035	0.0006	0.0000
1.0085	0.0297	0.0037	0.0007	0.0000
1.0615	0.0291	0.0040	0.0007	0.0000
1.1146	0.0286	0.0042	0.0007	0.0000
1.1677	0.0280	0.0045	0.0007	0.0000
1.2208	0.0275	0.0048	0.0008	0.0000
1.2738	0.0270	0.0051	0.0008	0.0000
1.3269	0.0264	0.0054	0.0008	0.0000
1.3800	0.0259	0.0057	0.0008	0.0000
1.4331	0.0254	0.0060	0.0009	0.0000
1.4862	0.0249	0.0063	0.0009	0.0000
1.5392	0.0244	0.0066	0.0009	0.0000
1.5923	0.0239	0.0069	0.0009	0.0000

1.6454	0.0234	0.0073	0.0010	0.0000
1.6985	0.0229	0.0076	0.0010	0.0000
1.7515	0.0224	0.0080	0.0010	0.0000
1.8046	0.0219	0.0083	0.0010	0.0000
1.8577	0.0214	0.0087	0.0010	0.0000
1.9108	0.0209	0.0091	0.0010	0.0000
1.9638	0.0205	0.0095	0.0011	0.0000
2.0169	0.0200	0.0098	0.0011	0.0000
2.0700	0.0195	0.0102	0.0011	0.0000
2.1231	0.0191	0.0107	0.0011	0.0000
2.1762	0.0186	0.0111	0.0011	0.0000
2.2292	0.0182	0.0115	0.0012	0.0000
2.2823	0.0177	0.0121	0.0012	0.0000
2.3354	0.0173	0.0127	0.0012	0.0000
2.3885	0.0168	0.0133	0.0012	0.0000
2.4415	0.0164	0.0140	0.0012	0.0000
2.4946	0.0160	0.0146	0.0012	0.0000
2.5477	0.0156	0.0153	0.0012	0.0000
2.6008	0.0152	0.0159	0.0013	0.0000
2.6538	0.0147	0.0166	0.0013	0.0000
2.7069	0.0143	0.0173	0.0013	0.0000
2.7600	0.0139	0.0180	0.0013	0.0000
2.8131	0.0135	0.0188	0.0013	0.0000
2.8662	0.0131	0.0195	0.0013	0.0000
2.9192	0.0128	0.0202	0.0014	0.0000
2.9723	0.0124	0.0210	0.0014	0.0000
3.0254	0.0120	0.0218	0.0014	0.0000
3.0785	0.0116	0.0226	0.0015	0.0000
3.1315	0.0112	0.0234	0.0015	0.0000
3.1846	0.0109	0.0242	0.0016	0.0000
3.2377	0.0105	0.0250	0.0016	0.0000
3.2908	0.0102	0.0258	0.0017	0.0000
3.3438	0.0098	0.0267	0.0017	0.0000
3.3969	0.0095	0.0276	0.0018	0.0000
3.4500	0.0091	0.0285	0.0018	0.0000
3.5000	0.0088	0.0293	0.0032	0.0000

Biofilter Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	To Amended(cfs)	Infilt(cfs)
3.5000	0.0410	0.0293	0.0000	0.0443	0.0000
3.5531	0.0416	0.0315	0.0000	0.0443	0.0000
3.6062	0.0423	0.0337	0.0000	0.0522	0.0000
3.6592	0.0429	0.0360	0.0000	0.0534	0.0000
3.7123	0.0436	0.0383	0.0000	0.0545	0.0000
3.7654	0.0443	0.0406	0.0000	0.0557	0.0000
3.8185	0.0449	0.0430	0.0000	0.0569	0.0000
3.8715	0.0456	0.0454	0.0000	0.0581	0.0000
3.9246	0.0463	0.0478	0.0000	0.0593	0.0000
3.9777	0.0470	0.0503	0.0000	0.0604	0.0000
4.0308	0.0476	0.0528	0.0000	0.0616	0.0000
4.0838	0.0483	0.0553	0.0000	0.0628	0.0000
4.1369	0.0490	0.0579	0.0000	0.0640	0.0000
4.1900	0.0497	0.0605	0.0000	0.0651	0.0000
4.2431	0.0504	0.0632	0.0000	0.0663	0.0000
4.2962	0.0511	0.0659	0.0000	0.0675	0.0000
4.3492	0.0519	0.0686	0.0849	0.0687	0.0000
4.4023	0.0526	0.0714	0.6188	0.0698	0.0000
4.4554	0.0533	0.0742	1.4121	0.0710	0.0000

4.5085	0.0540	0.0771	2.3956	0.0722	0.0000
4.5615	0.0548	0.0800	3.5354	0.0734	0.0000
4.6146	0.0555	0.0829	4.8081	0.0745	0.0000
4.6677	0.0562	0.0858	6.1947	0.0757	0.0000
4.7208	0.0570	0.0889	7.6782	0.0769	0.0000
4.7738	0.0577	0.0919	9.2419	0.0781	0.0000
4.8269	0.0585	0.0950	10.869	0.0792	0.0000
4.8300	0.0585	0.0952	12.544	0.0793	0.0000

Surface iltration 2

Element Flows To:

Outlet 1	Outlet 2
Channel 1	Biofiltration 2

Channel 1

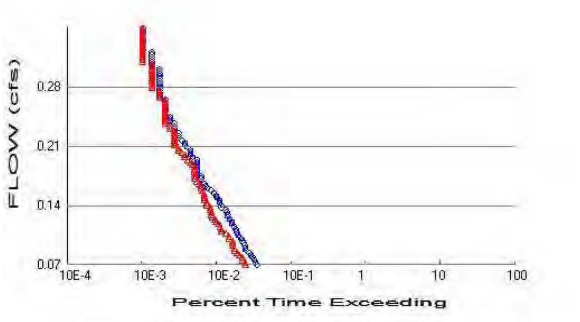
Bottom Length: 27.00 ft.
Bottom Width: 1.00 ft.
Manning's n: 0.012
Channel bottom slope 1: 0.004 To 1
Channel Left side slope 0: 0 To 1
Channel right side slope 2: 0 To 1
Discharge Structure
Riser Height: 0 ft.
Riser Diameter: 0 in.
Element Flows To:
Outlet 1 Outlet 2

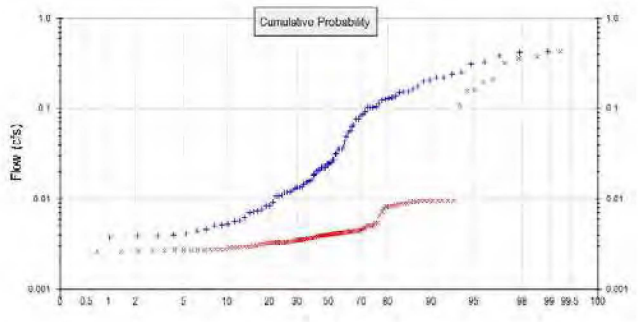
Channel Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.000620	0.000000	0.000	0.000
0.0111	0.000620	0.000007	0.004	0.000
0.0222	0.000620	0.000014	0.013	0.000
0.0333	0.000620	0.000021	0.026	0.000
0.0444	0.000620	0.000028	0.041	0.000
0.0556	0.000620	0.000034	0.059	0.000
0.0667	0.000620	0.000041	0.079	0.000
0.0778	0.000620	0.000048	0.101	0.000
0.0889	0.000620	0.000055	0.124	0.000
0.1000	0.000620	0.000062	0.149	0.000
0.1111	0.000620	0.000069	0.176	0.000
0.1222	0.000620	0.000076	0.204	0.000
0.1333	0.000620	0.000083	0.233	0.000
0.1444	0.000620	0.000090	0.263	0.000
0.1556	0.000620	0.000096	0.295	0.000
0.1667	0.000620	0.000103	0.327	0.000
0.1778	0.000620	0.000110	0.360	0.000
0.1889	0.000620	0.000117	0.394	0.000
0.2000	0.000620	0.000124	0.429	0.000
0.2111	0.000620	0.000131	0.464	0.000
0.2222	0.000620	0.000138	0.501	0.000
0.2333	0.000620	0.000145	0.538	0.000
0.2444	0.000620	0.000152	0.575	0.000
0.2556	0.000620	0.000158	0.613	0.000
0.2667	0.000620	0.000165	0.652	0.000
0.2778	0.000620	0.000172	0.691	0.000
0.2889	0.000620	0.000179	0.731	0.000
0.3000	0.000620	0.000186	0.771	0.000
0.3111	0.000620	0.000193	0.812	0.000
0.3222	0.000620	0.000200	0.853	0.000
0.3333	0.000620	0.000207	0.895	0.000
0.3444	0.000620	0.000214	0.937	0.000
0.3556	0.000620	0.000220	0.979	0.000
0.3667	0.000620	0.000227	1.022	0.000
0.3778	0.000620	0.000234	1.065	0.000
0.3889	0.000620	0.000241	1.108	0.000
0.4000	0.000620	0.000248	1.152	0.000
0.4111	0.000620	0.000255	1.196	0.000
0.4222	0.000620	0.000262	1.240	0.000
0.4333	0.000620	0.000269	1.285	0.000

0.4444	0.000620	0.000276	1.330	0.000
0.4556	0.000620	0.000282	1.375	0.000
0.4667	0.000620	0.000289	1.420	0.000
0.4778	0.000620	0.000296	1.466	0.000
0.4889	0.000620	0.000303	1.512	0.000
0.5000	0.000620	0.000310	1.558	0.000
0.5111	0.000620	0.000317	1.604	0.000
0.5222	0.000620	0.000324	1.651	0.000
0.5333	0.000620	0.000331	1.697	0.000
0.5444	0.000620	0.000337	1.744	0.000
0.5556	0.000620	0.000344	1.791	0.000
0.5667	0.000620	0.000351	1.838	0.000
0.5778	0.000620	0.000358	1.886	0.000
0.5889	0.000620	0.000365	1.933	0.000
0.6000	0.000620	0.000372	1.981	0.000
0.6111	0.000620	0.000379	2.029	0.000
0.6222	0.000620	0.000386	2.077	0.000
0.6333	0.000620	0.000393	2.125	0.000
0.6444	0.000620	0.000399	2.174	0.000
0.6556	0.000620	0.000406	2.222	0.000
0.6667	0.000620	0.000413	2.271	0.000
0.6778	0.000620	0.000420	2.319	0.000
0.6889	0.000620	0.000427	2.368	0.000
0.7000	0.000620	0.000434	2.417	0.000
0.7111	0.000620	0.000441	2.466	0.000
0.7222	0.000620	0.000448	2.515	0.000
0.7333	0.000620	0.000455	2.565	0.000
0.7444	0.000620	0.000461	2.614	0.000
0.7556	0.000620	0.000468	2.664	0.000
0.7667	0.000620	0.000475	2.713	0.000
0.7778	0.000620	0.000482	2.763	0.000
0.7889	0.000620	0.000489	2.813	0.000
0.8000	0.000620	0.000496	2.863	0.000
0.8111	0.000620	0.000503	2.913	0.000
0.8222	0.000620	0.000510	2.963	0.000
0.8333	0.000620	0.000517	3.013	0.000
0.8444	0.000620	0.000523	3.063	0.000
0.8556	0.000620	0.000530	3.114	0.000
0.8667	0.000620	0.000537	3.164	0.000
0.8778	0.000620	0.000544	3.215	0.000
0.8889	0.000620	0.000551	3.265	0.000
0.9000	0.000620	0.000558	3.316	0.000
0.9111	0.000620	0.000565	3.367	0.000
0.9222	0.000620	0.000572	3.417	0.000
0.9333	0.000620	0.000579	3.468	0.000
0.9444	0.000620	0.000585	3.519	0.000
0.9556	0.000620	0.000592	3.570	0.000
0.9667	0.000620	0.000599	3.621	0.000
0.9778	0.000620	0.000606	3.672	0.000
0.9889	0.000620	0.000613	3.724	0.000
1.0000	0.000620	0.000620	3.775	0.000
1.0111	0.000620	0.000627	3.826	0.000

Analysis Results
POC 1





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 1.276
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 0.295
Total Impervious Area: 1

Flow Frequency Method: Cunnane

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	0.137826
5 year	0.242558
10 year	0.356581
25 year	0.426615

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	0.009426
5 year	0.167042
10 year	0.337901
25 year	0.399969

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0689	101	72	71	Pass
0.0718	97	70	72	Pass
0.0747	94	66	70	Pass
0.0776	89	65	73	Pass
0.0805	84	59	70	Pass
0.0834	81	55	67	Pass
0.0863	73	52	71	Pass
0.0893	71	51	71	Pass
0.0922	70	48	68	Pass
0.0951	67	48	71	Pass
0.0980	65	48	73	Pass
0.1009	63	44	69	Pass
0.1038	59	43	72	Pass
0.1067	56	39	69	Pass
0.1096	54	34	62	Pass
0.1125	53	34	64	Pass
0.1154	50	33	66	Pass
0.1183	47	31	65	Pass
0.1212	47	29	61	Pass
0.1241	44	28	63	Pass
0.1270	42	26	61	Pass
0.1299	42	25	59	Pass
0.1328	40	25	62	Pass
0.1357	39	24	61	Pass
0.1387	34	24	70	Pass
0.1416	34	22	64	Pass
0.1445	32	22	68	Pass
0.1474	32	20	62	Pass
0.1503	30	20	66	Pass
0.1532	29	20	68	Pass
0.1561	27	20	74	Pass
0.1590	25	19	76	Pass
0.1619	22	18	81	Pass
0.1648	21	18	85	Pass
0.1677	20	17	85	Pass
0.1706	18	16	88	Pass
0.1735	18	15	83	Pass
0.1764	18	15	83	Pass
0.1793	16	15	93	Pass
0.1822	16	15	93	Pass
0.1851	16	15	93	Pass
0.1880	16	15	93	Pass
0.1910	16	14	87	Pass
0.1939	16	13	81	Pass
0.1968	16	12	75	Pass
0.1997	14	11	78	Pass
0.2026	13	11	84	Pass
0.2055	13	10	76	Pass
0.2084	13	9	69	Pass
0.2113	12	9	75	Pass
0.2142	11	8	72	Pass
0.2171	11	8	72	Pass
0.2200	10	8	80	Pass

0.2229	9	8	88	Pass
0.2258	9	8	88	Pass
0.2287	9	8	88	Pass
0.2316	8	8	100	Pass
0.2345	8	7	87	Pass
0.2374	8	7	87	Pass
0.2404	8	6	75	Pass
0.2433	7	6	85	Pass
0.2462	7	6	85	Pass
0.2491	7	6	85	Pass
0.2520	6	6	100	Pass
0.2549	6	6	100	Pass
0.2578	6	6	100	Pass
0.2607	6	6	100	Pass
0.2636	6	6	100	Pass
0.2665	6	6	100	Pass
0.2694	6	6	100	Pass
0.2723	5	5	100	Pass
0.2752	5	5	100	Pass
0.2781	5	5	100	Pass
0.2810	5	5	100	Pass
0.2839	5	4	80	Pass
0.2868	5	4	80	Pass
0.2897	5	4	80	Pass
0.2927	5	4	80	Pass
0.2956	5	4	80	Pass
0.2985	5	4	80	Pass
0.3014	5	4	80	Pass
0.3043	5	4	80	Pass
0.3072	5	4	80	Pass
0.3101	4	4	100	Pass
0.3130	4	4	100	Pass
0.3159	4	3	75	Pass
0.3188	4	3	75	Pass
0.3217	4	3	75	Pass
0.3246	4	3	75	Pass
0.3275	4	3	75	Pass
0.3304	3	3	100	Pass
0.3333	3	3	100	Pass
0.3362	3	3	100	Pass
0.3391	3	3	100	Pass
0.3421	3	3	100	Pass
0.3450	3	3	100	Pass
0.3479	3	3	100	Pass
0.3508	3	3	100	Pass
0.3537	3	3	100	Pass
0.3566	3	3	100	Pass

Water Quality

Model Default Modifications

Total of 0 changes have been made.

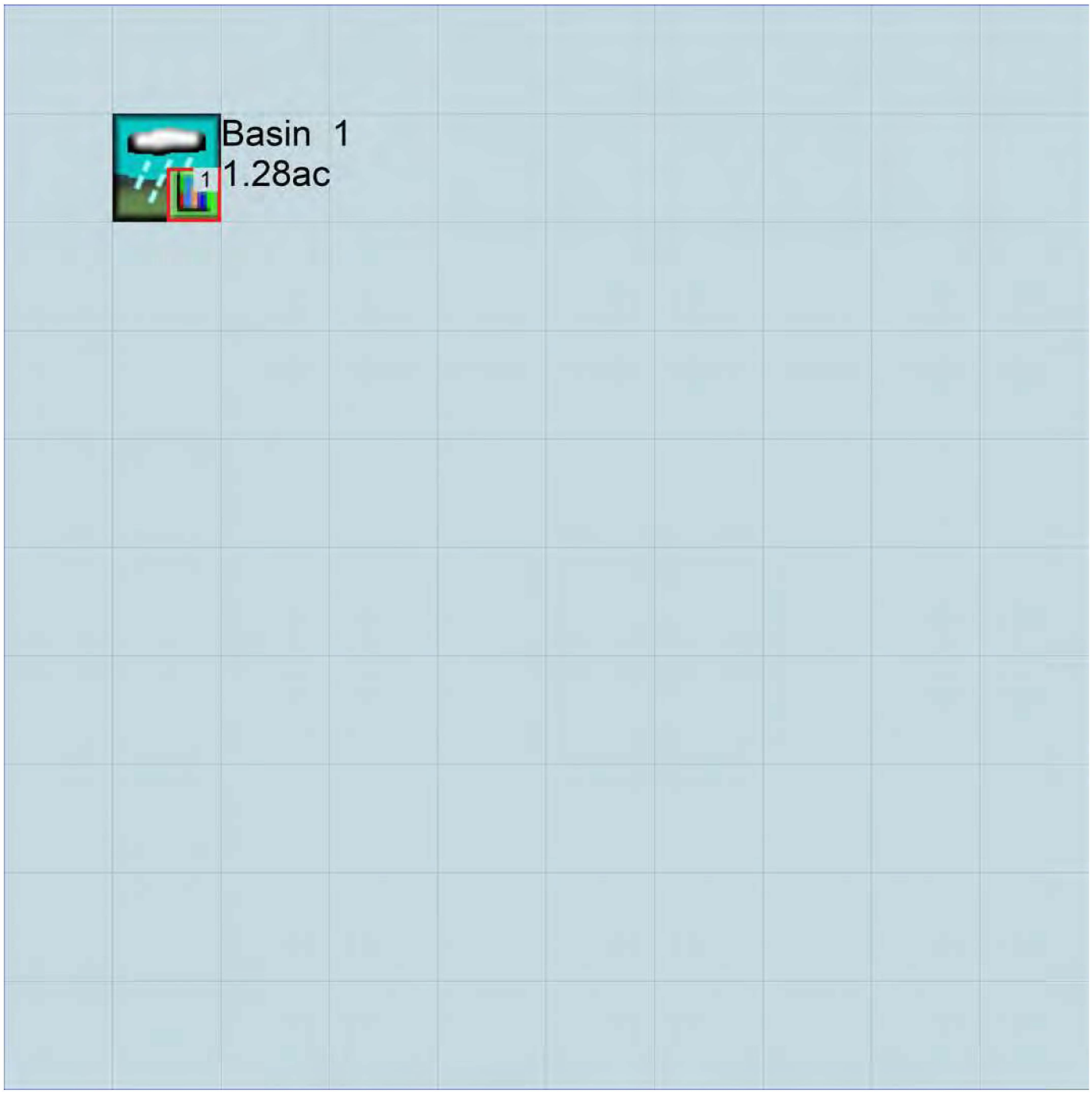
PERLND Changes

No PERLND changes have been made.

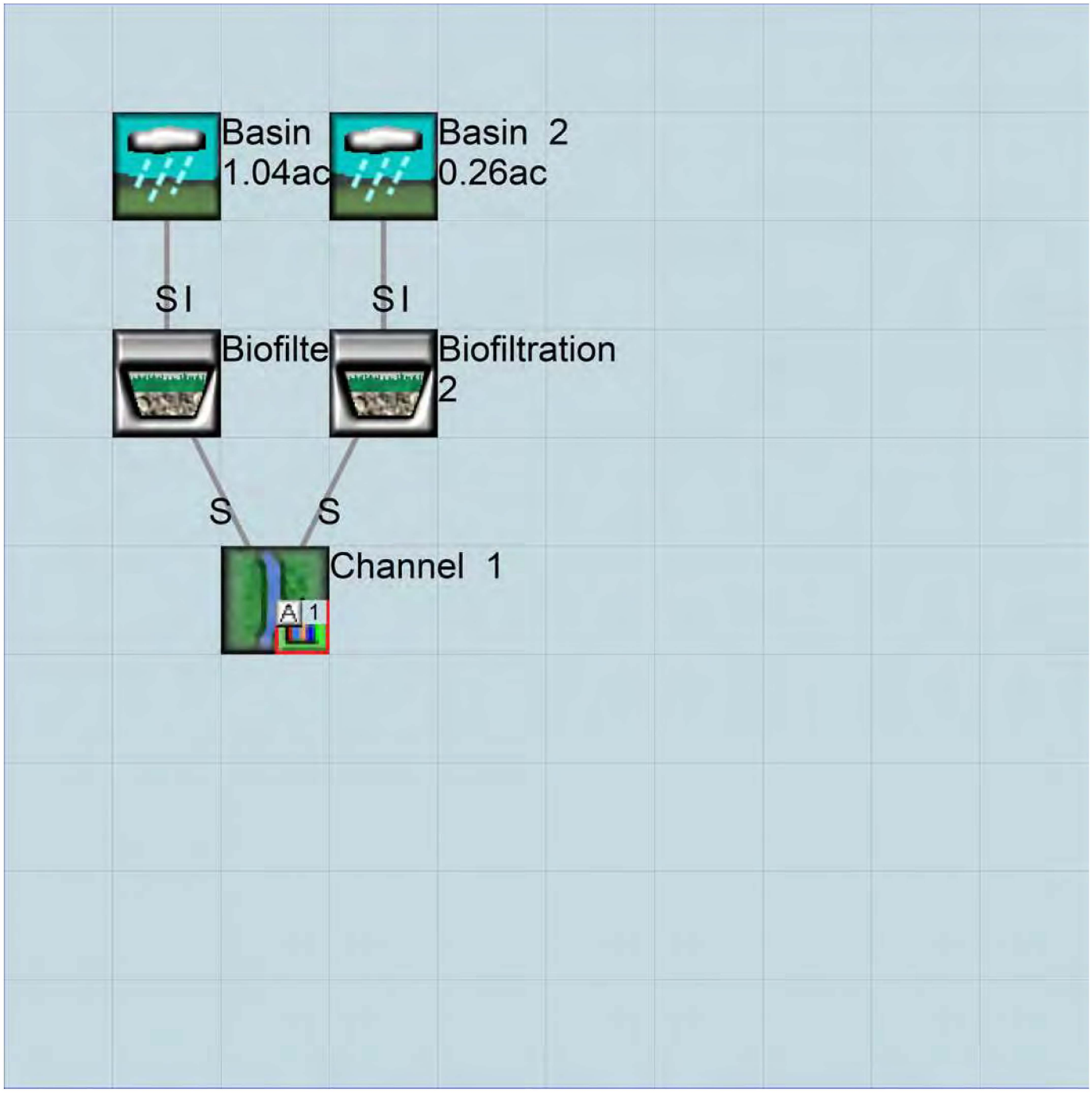
IMPLND Changes

No IMPLND changes have been made.

Appendix
Predeveloped Schematic



Mitigated Schematic



Predeveloped UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1971 10 01         END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   CFA23008.wdm
MESSU       25   PreCFA23008.MES
            27   PreCFA23008.L61
            28   PreCFA23008.L62
            30   POCCFA230081.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      28
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Basin  1                    MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1          1    1
  501          1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
  END OPCODE
  PARM
    #    #          K ***
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                       in  out           ***
   28      D,NatVeg,Flat          1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   28         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   28         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO
```

```
  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   28         0    1    1    1    0    0    0    0    1    1    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   28              0       3.3      0.03       100      0.05       2.5     0.915
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   28             0         0         2         2         0      0.05      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                              ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   28             0       0.6      0.04         1       0.3         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   28       0.4  0.4  0.4  0.4  0.6  0.6  0.6  0.6  0.6  0.4  0.4  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   28       0.1  0.1  0.1  0.1 0.06 0.06 0.06 0.06 0.06  0.1  0.1  0.1
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   28             0         0      0.01         0       0.4      0.01         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                  in  out           ***
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************* Active Sections ******************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
  END ACTIVITY

  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
  END IWAT-PARM2
```

```
  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                  <--Area-->     <-Target->   MBLK   ***
<Name>   #                  <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  28                       1.276     COPY   501     12
PERLND  28                       1.276     COPY   501     13

******Routing******
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK

RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                       in  out                              ***
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************* Active Sections ****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ******************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                  ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *         ***
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><--------->      ***
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                     ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
          *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
  END HYDR-INIT
END RCHRES
```

```
SPEC-ACTIONS
END SPEC-ACTIONS
FTABLES
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1              PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1              IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
COPY   501 OUTPUT MEAN   1 1     12.1      WDM    501 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>            <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK       12
PERLND     PWATER SURO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   12

  MASS-LINK       13
PERLND     PWATER IFWO       0.083333      COPY           INPUT  MEAN
  END MASS-LINK   13


END MASS-LINK

END RUN
```

Mitigated UCI File

```
RUN

GLOBAL
  WWHM4 model simulation
  START       1971 10 01         END    2004 09 30
  RUN INTERP OUTPUT LEVEL    3    0
  RESUME     0 RUN     1                    UNIT SYSTEM     1
END GLOBAL

FILES
<File>  <Un#>   <-----------File Name------------------------------>***
<-ID->                                                              ***
WDM         26   CFA23008.wdm
MESSU       25   MitCFA23008.MES
            27   MitCFA23008.L61
            28   MitCFA23008.L62
            30   POCCFA230081.dat
END FILES

OPN SEQUENCE
    INGRP               INDELT 00:60
      PERLND      28
      IMPLND       1
      GENER        2
      RCHRES       1
      RCHRES       2
      GENER        4
      RCHRES       3
      RCHRES       4
      RCHRES       5
      COPY         1
      COPY       501
      DISPLY       1
    END INGRP
END OPN SEQUENCE
DISPLY
  DISPLY-INFO1
    # -  #<----------Title----------->***TRAN PIVL DIG1 FIL1  PYR DIG2 FIL2 YRND
    1        Channel  1                  MAX                    1    2   30    9
  END DISPLY-INFO1
END DISPLY
COPY
  TIMESERIES
    # -  #  NPT  NMN ***
    1          1    1
  501          1    1
  END TIMESERIES
END COPY
GENER
  OPCODE
    #    # OPCD ***
    2         24
    4         24
  END OPCODE
  PARM
    #    #         K ***
    2             0.
    4             0.
  END PARM
END GENER
PERLND
  GEN-INFO
    <PLS ><-------Name------->NBLKS   Unit-systems   Printer ***
    # -  #                          User  t-series Engl Metr ***
                                          in  out           ***
   28      D,NatVeg,Flat          1    1    1    1   27    0
  END GEN-INFO
  *** Section PWATER***
```

```
  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC ***
   28         0    0    1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags **************************** PIVL  PYR
    # -  # ATMP SNOW PWAT  SED  PST  PWG PQAL MSTL PEST NITR PHOS TRAC  *********
   28         0    0    4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  PWAT-PARM1
    <PLS >  PWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP UZFG  VCS  VUZ  VNN VIFW VIRC  VLE INFC  HWT ***
   28         0    1    1    1    0    0    0    0    1    1    0
  END PWAT-PARM1

  PWAT-PARM2
    <PLS >      PWATER input info: Part 2         ***
    # -  # ***FOREST      LZSN    INFILT      LSUR     SLSUR     KVARY     AGWRC
   28              0       3.3      0.03       100      0.05       2.5     0.915
  END PWAT-PARM2

  PWAT-PARM3
    <PLS >      PWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN    INFEXP    INFILD    DEEPFR    BASETP    AGWETP
   28              0         0         2         2         0      0.05      0.05
  END PWAT-PARM3
  PWAT-PARM4
    <PLS >     PWATER input info: Part 4                           ***
    # -  #     CEPSC      UZSN      NSUR     INTFW       IRC     LZETP ***
   28              0       0.6      0.04         1       0.3         0
  END PWAT-PARM4
  MON-LZETPARM
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   28       0.4  0.4  0.4  0.4  0.6  0.6  0.6  0.6  0.6  0.4  0.4  0.4
  END MON-LZETPARM
  MON-INTERCEP
    <PLS >      PWATER input info: Part 3         ***
    # -  #  JAN  FEB  MAR  APR  MAY  JUN  JUL  AUG  SEP  OCT  NOV  DEC  ***
   28       0.1  0.1  0.1  0.1 0.06 0.06 0.06 0.06 0.06  0.1  0.1  0.1
  END MON-INTERCEP

  PWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
               ran from 1990 to end of 1992 (pat 1-11-95) RUN 21 ***
    # -  # ***  CEPS      SURS       UZS      IFWS       LZS      AGWS      GWVS
   28              0         0      0.01         0       0.4      0.01         0
  END PWAT-STATE1

END PERLND

IMPLND
  GEN-INFO
    <PLS ><-------Name------->   Unit-systems   Printer ***
    # -  #                     User  t-series Engl Metr ***
                                     in  out           ***
    1      IMPERVIOUS-FLAT        1    1    1   27    0
  END GEN-INFO
  *** Section IWATER***

  ACTIVITY
    <PLS > ************ Active Sections ****************************
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL   ***
    1         0    0    1    0    0    0
  END ACTIVITY
```

```
  PRINT-INFO
    <ILS > ******** Print-flags ******** PIVL  PYR
    # -  # ATMP SNOW IWAT  SLD  IWG IQAL    *********
    1         0    0    4    0    0    0    1    9
  END PRINT-INFO

  IWAT-PARM1
    <PLS >  IWATER variable monthly parameter value flags  ***
    # -  # CSNO RTOP  VRS  VNN RTLI     ***
    1         0    0    0    0    1
  END IWAT-PARM1

  IWAT-PARM2
    <PLS >      IWATER input info: Part 2         ***
    # -  # ***  LSUR     SLSUR      NSUR     RETSC
    1            100      0.05     0.011       0.1
  END IWAT-PARM2

  IWAT-PARM3
    <PLS >      IWATER input info: Part 3         ***
    # -  # ***PETMAX    PETMIN
    1               0         0
  END IWAT-PARM3

  IWAT-STATE1
    <PLS > *** Initial conditions at start of simulation
    # -  # ***  RETS      SURS
    1              0         0
  END IWAT-STATE1

END IMPLND

SCHEMATIC
<-Source->                 <--Area-->     <-Target->   MBLK   ***
<Name>   #                 <-factor->     <Name>   #   Tbl#   ***
Basin  1***
PERLND  28                      0.249     RCHRES   1      2
PERLND  28                      0.249     RCHRES   1      3
IMPLND   1                      0.786     RCHRES   1      5
Basin  2***
PERLND  28                      0.046     RCHRES   3      2
PERLND  28                      0.046     RCHRES   3      3
IMPLND   1                      0.214     RCHRES   3      5

******Routing******
RCHRES   2                           1     RCHRES   5      6
RCHRES   2                                 COPY     1     16
RCHRES   1                           1     RCHRES   5      7
RCHRES   1                                 COPY     1     17
RCHRES   1                           1     RCHRES   2      8
RCHRES   4                           1     RCHRES   5      6
RCHRES   4                                 COPY     1     16
RCHRES   3                           1     RCHRES   5      7
RCHRES   3                                 COPY     1     17
RCHRES   3                           1     RCHRES   4      8
RCHRES   5                           1     COPY   501     16
END SCHEMATIC

NETWORK
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
COPY   501 OUTPUT MEAN   1 1   12.1        DISPLY   1     INPUT  TIMSER 1
GENER    2 OUTPUT TIMSER      .0002778     RCHRES   1     EXTNL  OUTDGT 1
GENER    4 OUTPUT TIMSER      .0002778     RCHRES   3     EXTNL  OUTDGT 1



<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   #        <Name> # #<-factor->strg <Name>   #   #        <Name> # #  ***
END NETWORK
```

```
RCHRES
  GEN-INFO
    RCHRES       Name        Nexits   Unit Systems   Printer                 ***
    # -  #<------------------><---> User T-series  Engl Metr LKFG           ***
                                         in  out                             ***
    1     Surface Biofilte-011    2    1    1    1   28    0    1
    2     Biofilter  1            1    1    1    1   28    0    1
    3     Surface iltratio-014    2    1    1    1   28    0    1
    4     Biofiltration  2-013    1    1    1    1   28    0    1
    5     Channel  1              1    1    1    1   28    0    1
  END GEN-INFO
  *** Section RCHRES***

  ACTIVITY
    <PLS > ************* Active Sections *****************************
    # -  # HYFG ADFG CNFG HTFG SDFG GQFG OXFG NUFG PKFG PHFG ***
    1         1    0    0    0    0    0    0    0    0    0
    2         1    0    0    0    0    0    0    0    0    0
    3         1    0    0    0    0    0    0    0    0    0
    4         1    0    0    0    0    0    0    0    0    0
    5         1    0    0    0    0    0    0    0    0    0
  END ACTIVITY

  PRINT-INFO
    <PLS > ***************** Print-flags ****************** PIVL  PYR
    # -  # HYDR ADCA CONS HEAT  SED  GQL OXRX NUTR PLNK PHCB PIVL  PYR  *********
    1         4    0    0    0    0    0    0    0    0    0    1    9
    2         4    0    0    0    0    0    0    0    0    0    1    9
    3         4    0    0    0    0    0    0    0    0    0    1    9
    4         4    0    0    0    0    0    0    0    0    0    1    9
    5         4    0    0    0    0    0    0    0    0    0    1    9
  END PRINT-INFO

  HYDR-PARM1
    RCHRES  Flags for each HYDR Section                                     ***
    # -  #  VC A1 A2 A3  ODFVFG for each *** ODGTFG for each     FUNCT  for each
            FG FG FG FG  possible  exit  *** possible  exit      possible  exit
             *  *  *  *    *  *  *  *  *       *  *  *  *  *        ***
    1        0  1  0  0    4  5  0  0  0       0  1  0  0  0       2  1  2  2  2
    2        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
    3        0  1  0  0    4  5  0  0  0       0  1  0  0  0       2  1  2  2  2
    4        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
    5        0  1  0  0    4  0  0  0  0       0  0  0  0  0       2  2  2  2  2
  END HYDR-PARM1

  HYDR-PARM2
    # -  #    FTABNO       LEN     DELTH     STCOR        KS      DB50       ***
  <------><--------><--------><--------><--------><--------><-------->       ***
    1             1      0.01       0.0       0.0       0.0       0.0
    2             2      0.01       0.0       0.0       0.0       0.0
    3             3      0.01       0.0       0.0       0.0       0.0
    4             4      0.01       0.0       0.0       0.0       0.0
    5             5      0.01       0.0       0.0       0.5       0.0
  END HYDR-PARM2
  HYDR-INIT
    RCHRES  Initial conditions for each HYDR section                        ***
    # -  # ***   VOL     Initial  value  of COLIND     Initial  value  of OUTDGT
         *** ac-ft     for each possible exit        for each possible exit
  <------><-------->     <---><---><---><---><---> *** <---><---><---><---><--->
    1           0         4.0  5.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    2           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    3           0         4.0  5.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    4           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
    5           0         4.0  0.0  0.0  0.0  0.0       0.0  0.0  0.0  0.0  0.0
  END HYDR-INIT
END RCHRES

SPEC-ACTIONS
*** User-Defined Variable Quantity Lines
```

```
***                          addr
***                         <------>
*** kwd  varnam optyp  opn  vari  s1 s2 s3 tp multiply  lc ls ac as agfn ***
  <****> <----> <----> <-> <----><-><-><-><-><---------> <><-> <><-> <--> ***
  UVQUAN vol2   RCHRES   2 VOL              4
  UVQUAN v2m2   GLOBAL     WORKSP  1        3
  UVQUAN vpo2   GLOBAL     WORKSP  2        3
  UVQUAN v2d2   GENER    2 K       1        3
*** User-Defined Variable Quantity Lines
***                          addr
***                         <------>
*** kwd  varnam optyp  opn  vari  s1 s2 s3 tp multiply  lc ls ac as agfn ***
  <****> <----> <----> <-> <----><-><-><-><-><---------> <><-> <><-> <--> ***
  UVQUAN vol4   RCHRES   4 VOL              4
  UVQUAN v2m4   GLOBAL     WORKSP  3        3
  UVQUAN vpo4   GLOBAL     WORKSP  4        3
  UVQUAN v2d4   GENER    4 K       1        3
*** User-Defined Target Variable Names
***                  addr or                       addr or
***                 <------>                      <------>
*** kwd   varnam ct  vari  s1 s2 s3  frac oper     vari  s1 s2 s3  frac oper
  <****>  <----><-> <----><-><-><-> <---> <-->    <----><-><-><-> <---> <-->
  UVNAME  v2m2    1 WORKSP  1         1.0 QUAN
  UVNAME  vpo2    1 WORKSP  2         1.0 QUAN
  UVNAME  v2d2    1 K       1         1.0 QUAN
*** User-Defined Target Variable Names
***                  addr or                       addr or
***                 <------>                      <------>
*** kwd   varnam ct  vari  s1 s2 s3  frac oper     vari  s1 s2 s3  frac oper
  <****>  <----><-> <----><-><-><-> <---> <-->    <----><-><-><-> <---> <-->
  UVNAME  v2m4    1 WORKSP  3         1.0 QUAN
  UVNAME  vpo4    1 WORKSP  4         1.0 QUAN
  UVNAME  v2d4    1 K       1         1.0 QUAN
*** opt foplop dcdts  yr mo dy hr mn d t   vnam  s1 s2 s3 ac quantity  tc  ts rp
  <****><-><--><><-><--> <> <> <> <><><>  <----><-><-><-><-><---------> <> <-><->
  GENER   2                               v2m2            =  4051.45
*** Compute remaining available pore space
  GENER   2                               vpo2            =  v2m2
  GENER   2                               vpo2           -=  vol2
*** Check to see if VPORA goes negative; if so set VPORA = 0.0
IF (vpo2 < 0.0) THEN
  GENER   2                               vpo2            =  0.0
END IF
*** Infiltration volume
  GENER   2                               v2d2            =  vpo2
*** opt foplop dcdts  yr mo dy hr mn d t   vnam  s1 s2 s3 ac quantity  tc  ts rp
  <****><-><--><><-><--> <> <> <> <><><>  <----><-><-><-><-><---------> <> <-><->
  GENER   4                               v2m4            =  1287.54
*** Compute remaining available pore space
  GENER   4                               vpo4            =  v2m4
  GENER   4                               vpo4           -=  vol4
*** Check to see if VPORA goes negative; if so set VPORA = 0.0
IF (vpo4 < 0.0) THEN
  GENER   4                               vpo4            =  0.0
END IF
*** Infiltration volume
  GENER   4                               v2d4            =  vpo4
END SPEC-ACTIONS
FTABLES
  FTABLE      2
   67    4
     Depth      Area    Volume  Outflow1 Velocity  Travel Time***
      (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
  0.000000  0.105816  0.000000  0.000000
  0.053077  0.104840  0.000762  0.000000
  0.106154  0.103809  0.001535  0.000000
  0.159231  0.102782  0.002321  0.000000
  0.212308  0.101760  0.003118  0.000000
  0.265385  0.100742  0.003927  0.000000
  0.318462  0.099729  0.004748  0.000000
```

```
0.371538  0.098721  0.005581  0.000155
0.424615  0.097717  0.006426  0.000233
0.477692  0.096718  0.007284  0.000475
0.530769  0.095724  0.008154  0.000596
0.583846  0.094734  0.009036  0.000778
0.636923  0.093749  0.009931  0.000869
0.690000  0.092769  0.010838  0.001010
0.743077  0.091793  0.011758  0.001080
0.796154  0.090822  0.012691  0.001197
0.849231  0.089856  0.013636  0.001255
0.902308  0.088894  0.014594  0.001356
0.955385  0.087937  0.015565  0.001406
1.008462  0.086984  0.016549  0.001497
1.061538  0.086037  0.017546  0.001542
1.114615  0.085094  0.018556  0.001624
1.167692  0.084155  0.019580  0.001666
1.220769  0.083221  0.020616  0.001742
1.273846  0.082292  0.021666  0.001781
1.326923  0.081368  0.022730  0.001852
1.380000  0.080448  0.023807  0.001888
1.433077  0.079533  0.024897  0.001956
1.486154  0.078622  0.026002  0.001990
1.539231  0.077716  0.027119  0.002054
1.592308  0.076815  0.028251  0.002086
1.645385  0.075919  0.029397  0.002148
1.698462  0.075027  0.030556  0.002178
1.751538  0.074140  0.031730  0.002237
1.804615  0.073257  0.032917  0.002267
1.857692  0.072379  0.034119  0.002323
1.910769  0.071506  0.035335  0.002352
1.963846  0.070637  0.036565  0.002406
2.016923  0.069773  0.037810  0.002433
2.070000  0.068914  0.039069  0.002486
2.123077  0.068059  0.040343  0.002513
2.176154  0.067209  0.041631  0.002564
2.229231  0.066364  0.042934  0.002589
2.282308  0.065523  0.044757  0.002639
2.335385  0.064687  0.046600  0.002664
2.388462  0.063856  0.048464  0.002712
2.441538  0.063029  0.050349  0.002736
2.494615  0.062207  0.052255  0.002783
2.547692  0.061390  0.054181  0.002807
2.600769  0.060577  0.056129  0.002853
2.653846  0.059769  0.058097  0.002876
2.706923  0.058966  0.060087  0.002920
2.760000  0.058167  0.062099  0.002943
2.813077  0.057373  0.064131  0.002987
2.866154  0.056584  0.066185  0.003008
2.919231  0.055799  0.068261  0.003038
2.972308  0.055019  0.070359  0.003104
3.025385  0.054243  0.072478  0.003198
3.078462  0.053472  0.074620  0.003303
3.131538  0.052706  0.076783  0.003412
3.184615  0.051945  0.078969  0.003521
3.237692  0.051188  0.081177  0.003629
3.290769  0.050436  0.083407  0.003734
3.343846  0.049688  0.085660  0.003838
3.396923  0.048945  0.087935  0.003939
3.450000  0.048207  0.090233  0.004038
3.500000  0.047473  0.093008  0.007139
END FTABLE  2
FTABLE      1
 27    5
   Depth      Area    Volume  Outflow1  Outflow2  Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)      (cfs)   (ft/sec)    (Minutes)***
0.000000  0.047473  0.000000  0.000000  0.000000
0.053077  0.106857  0.005644  0.000000  0.239346
0.106154  0.107902  0.011343  0.000000  0.281967
0.159231  0.108952  0.017098  0.000000  0.288319
0.212308  0.110007  0.022909  0.000000  0.294671
```

```
0.265385  0.111066  0.028776  0.000000  0.301023
0.318462  0.112130  0.034699  0.000000  0.307375
0.371538  0.113199  0.040679  0.000000  0.313727
0.424615  0.114272  0.046716  0.000000  0.320079
0.477692  0.115350  0.052810  0.000000  0.326431
0.530769  0.116432  0.058961  0.000000  0.332782
0.583846  0.117519  0.065170  0.000000  0.339134
0.636923  0.118611  0.071436  0.000000  0.345486
0.690000  0.119708  0.077761  0.000000  0.351838
0.743077  0.120809  0.084144  0.000000  0.358190
0.796154  0.121915  0.090585  0.000000  0.364542
0.849231  0.123025  0.097086  0.084947  0.370894
0.902308  0.124140  0.103645  0.618823  0.377245
0.955385  0.125260  0.110264  1.412051  0.383597
1.008462  0.126384  0.116942  2.395599  0.389949
1.061538  0.127514  0.123680  3.535389  0.396301
1.114615  0.128647  0.130478  4.808090  0.402653
1.167692  0.129786  0.137337  6.194741  0.409005
1.220769  0.130929  0.144255  7.678199  0.415357
1.273846  0.132076  0.151235  9.241938  0.421708
1.326923  0.133229  0.158276  10.86946  0.428060
1.330000  0.133296  0.158686  12.54403  0.428429
END FTABLE  1
FTABLE      4
 67    4
   Depth       Area     Volume  Outflow1 Velocity  Travel Time***
    (ft)    (acres) (acre-ft)    (cfs)    (ft/sec)     (Minutes)***
0.000000  0.040992  0.000000  0.000000
0.053077  0.040389  0.000143  0.000000
0.106154  0.039754  0.000291  0.000000
0.159231  0.039123  0.000444  0.000000
0.212308  0.038498  0.000603  0.000000
0.265385  0.037876  0.000768  0.000000
0.318462  0.037260  0.000938  0.000000
0.371538  0.036648  0.001114  0.000069
0.424615  0.036041  0.001296  0.000103
0.477692  0.035438  0.001484  0.000211
0.530769  0.034840  0.001678  0.000265
0.583846  0.034247  0.001878  0.000346
0.636923  0.033658  0.002084  0.000386
0.690000  0.033074  0.002297  0.000449
0.743077  0.032495  0.002516  0.000480
0.796154  0.031920  0.002741  0.000532
0.849231  0.031350  0.002972  0.000558
0.902308  0.030785  0.003210  0.000603
0.955385  0.030224  0.003455  0.000625
1.008462  0.029668  0.003706  0.000665
1.061538  0.029117  0.003964  0.000685
1.114615  0.028570  0.004229  0.000722
1.167692  0.028028  0.004500  0.000740
1.220769  0.027491  0.004779  0.000774
1.273846  0.026958  0.005065  0.000791
1.326923  0.026430  0.005358  0.000823
1.380000  0.025907  0.005658  0.000839
1.433077  0.025388  0.005965  0.000869
1.486154  0.024874  0.006279  0.000884
1.539231  0.024364  0.006601  0.000913
1.592308  0.023859  0.006931  0.000927
1.645385  0.023359  0.007268  0.000955
1.698462  0.022864  0.007613  0.000968
1.751538  0.022373  0.007965  0.000994
1.804615  0.021887  0.008325  0.001007
1.857692  0.021405  0.008693  0.001033
1.910769  0.020928  0.009069  0.001045
1.963846  0.020456  0.009453  0.001069
2.016923  0.019989  0.009845  0.001082
2.070000  0.019526  0.010245  0.001105
2.123077  0.019068  0.010654  0.001117
2.176154  0.018614  0.011070  0.001139
2.229231  0.018165  0.011495  0.001151
```

```
2.282308  0.017721  0.012095  0.001173
2.335385  0.017281  0.012707  0.001184
2.388462  0.016846  0.013330  0.001205
2.441538  0.016416  0.013965  0.001216
2.494615  0.015990  0.014613  0.001237
2.547692  0.015569  0.015272  0.001247
2.600769  0.015153  0.015944  0.001268
2.653846  0.014741  0.016628  0.001278
2.706923  0.014334  0.017325  0.001298
2.760000  0.013932  0.018035  0.001308
2.813077  0.013534  0.018757  0.001327
2.866154  0.013141  0.019492  0.001337
2.919231  0.012753  0.020240  0.001350
2.972308  0.012369  0.021001  0.001380
3.025385  0.011990  0.021775  0.001421
3.078462  0.011616  0.022562  0.001468
3.131538  0.011246  0.023362  0.001516
3.184615  0.010881  0.024176  0.001565
3.237692  0.010520  0.025004  0.001613
3.290769  0.010164  0.025845  0.001660
3.343846  0.009813  0.026700  0.001706
3.396923  0.009467  0.027569  0.001751
3.450000  0.009125  0.028451  0.001795
3.500000  0.008788  0.029558  0.003173
END FTABLE  4
FTABLE      3
 27    5
   Depth      Area    Volume  Outflow1  Outflow2  Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)     (cfs)   (ft/sec)    (Minutes)***
0.000000  0.008788  0.000000  0.000000  0.000000
0.053077  0.041636  0.002193  0.000000  0.044306
0.106154  0.042285  0.004420  0.000000  0.052195
0.159231  0.042938  0.006682  0.000000  0.053371
0.212308  0.043597  0.008978  0.000000  0.054547
0.265385  0.044259  0.011310  0.000000  0.055723
0.318462  0.044927  0.013677  0.000000  0.056899
0.371538  0.045599  0.016079  0.000000  0.058074
0.424615  0.046276  0.018517  0.000000  0.059250
0.477692  0.046957  0.020991  0.000000  0.060426
0.530769  0.047644  0.023502  0.000000  0.061602
0.583846  0.048334  0.026049  0.000000  0.062778
0.636923  0.049030  0.028633  0.000000  0.063953
0.690000  0.049730  0.031254  0.000000  0.065129
0.743077  0.050435  0.033912  0.000000  0.066305
0.796154  0.051144  0.036608  0.000000  0.067481
0.849231  0.051858  0.039341  0.084947  0.068657
0.902308  0.052577  0.042113  0.618823  0.069832
0.955385  0.053300  0.044923  1.412051  0.071008
1.008462  0.054028  0.047771  2.395599  0.072184
1.061538  0.054761  0.050658  3.535389  0.073360
1.114615  0.055498  0.053584  4.808090  0.074536
1.167692  0.056240  0.056550  6.194741  0.075711
1.220769  0.056987  0.059555  7.678199  0.076887
1.273846  0.057738  0.062599  9.241938  0.078063
1.326923  0.058494  0.065684  10.86946  0.079239
1.330000  0.058538  0.065864  12.54403  0.079307
END FTABLE  3
FTABLE      5
 91    4
   Depth      Area    Volume  Outflow1 Velocity  Travel Time***
    (ft)   (acres) (acre-ft)   (cfs)   (ft/sec)    (Minutes)***
0.000000  0.000620  0.000000  0.000000
0.011111  0.000620  0.000007  0.004282
0.022222  0.000620  0.000014  0.013400
0.033333  0.000620  0.000021  0.025971
0.044444  0.000620  0.000028  0.041375
0.055556  0.000620  0.000034  0.059212
0.066667  0.000620  0.000041  0.079185
0.077778  0.000620  0.000048  0.101065
0.088889  0.000620  0.000055  0.124663
```

0.100000	0.000620	0.000062	0.149824
0.111111	0.000620	0.000069	0.176413
0.122222	0.000620	0.000076	0.204316
0.133333	0.000620	0.000083	0.233431
0.144444	0.000620	0.000090	0.263669
0.155556	0.000620	0.000096	0.294952
0.166667	0.000620	0.000103	0.327208
0.177778	0.000620	0.000110	0.360373
0.188889	0.000620	0.000117	0.394390
0.200000	0.000620	0.000124	0.429207
0.211111	0.000620	0.000131	0.464774
0.222222	0.000620	0.000138	0.501049
0.233333	0.000620	0.000145	0.537991
0.244444	0.000620	0.000152	0.575564
0.255556	0.000620	0.000158	0.613733
0.266667	0.000620	0.000165	0.652467
0.277778	0.000620	0.000172	0.691736
0.288889	0.000620	0.000179	0.731514
0.300000	0.000620	0.000186	0.771775
0.311111	0.000620	0.000193	0.812495
0.322222	0.000620	0.000200	0.853653
0.333333	0.000620	0.000207	0.895228
0.344444	0.000620	0.000214	0.937201
0.355556	0.000620	0.000220	0.979555
0.366667	0.000620	0.000227	1.022271
0.377778	0.000620	0.000234	1.065334
0.388889	0.000620	0.000241	1.108730
0.400000	0.000620	0.000248	1.152444
0.411111	0.000620	0.000255	1.196464
0.422222	0.000620	0.000262	1.240775
0.433333	0.000620	0.000269	1.285368
0.444444	0.000620	0.000276	1.330229
0.455556	0.000620	0.000282	1.375350
0.466667	0.000620	0.000289	1.420720
0.477778	0.000620	0.000296	1.466329
0.488889	0.000620	0.000303	1.512169
0.500000	0.000620	0.000310	1.558230
0.511111	0.000620	0.000317	1.604506
0.522222	0.000620	0.000324	1.650987
0.533333	0.000620	0.000331	1.697667
0.544444	0.000620	0.000337	1.744539
0.555556	0.000620	0.000344	1.791596
0.566667	0.000620	0.000351	1.838832
0.577778	0.000620	0.000358	1.886240
0.588889	0.000620	0.000365	1.933815
0.600000	0.000620	0.000372	1.981551
0.611111	0.000620	0.000379	2.029444
0.622222	0.000620	0.000386	2.077487
0.633333	0.000620	0.000393	2.125676
0.644444	0.000620	0.000399	2.174007
0.655556	0.000620	0.000406	2.222475
0.666667	0.000620	0.000413	2.271076
0.677778	0.000620	0.000420	2.319806
0.688889	0.000620	0.000427	2.368660
0.700000	0.000620	0.000434	2.417636
0.711111	0.000620	0.000441	2.466729
0.722222	0.000620	0.000448	2.515936
0.733333	0.000620	0.000455	2.565254
0.744444	0.000620	0.000461	2.614680
0.755556	0.000620	0.000468	2.664210
0.766667	0.000620	0.000475	2.713841
0.777778	0.000620	0.000482	2.763571
0.788889	0.000620	0.000489	2.813398
0.800000	0.000620	0.000496	2.863317
0.811111	0.000620	0.000503	2.913327
0.822222	0.000620	0.000510	2.963426
0.833333	0.000620	0.000517	3.013610
0.844444	0.000620	0.000523	3.063879
0.855556	0.000620	0.000530	3.114229
0.866667	0.000620	0.000537	3.164658

```
  0.877778  0.000620  0.000544  3.215165
  0.888889  0.000620  0.000551  3.265747
  0.900000  0.000620  0.000558  3.316402
  0.911111  0.000620  0.000565  3.367129
  0.922222  0.000620  0.000572  3.417926
  0.933333  0.000620  0.000579  3.468791
  0.944444  0.000620  0.000585  3.519723
  0.955556  0.000620  0.000592  3.570719
  0.966667  0.000620  0.000599  3.621779
  0.977778  0.000620  0.000606  3.672901
  0.988889  0.000620  0.000613  3.724083
  1.000000  0.000620  0.000620  3.775324
  END FTABLE  5
END FTABLES

EXT SOURCES
<-Volume-> <Member> SsysSgap<--Mult-->Tran <-Target vols> <-Grp> <-Member->  ***
<Name>   # <Name> # tem strg<-factor->strg <Name>   #   #        <Name> # #  ***
WDM      2 PREC     ENGL    1              PERLND   1 999 EXTNL  PREC
WDM      2 PREC     ENGL    1              IMPLND   1 999 EXTNL  PREC
WDM      1 EVAP     ENGL    1              PERLND   1 999 EXTNL  PETINP
WDM      1 EVAP     ENGL    1              IMPLND   1 999 EXTNL  PETINP
WDM      2 PREC     ENGL    1              RCHRES   1     EXTNL  PREC
WDM      2 PREC     ENGL    1              RCHRES   3     EXTNL  PREC
WDM      1 EVAP     ENGL    0.5            RCHRES   1     EXTNL  POTEV
WDM      1 EVAP     ENGL    0.7            RCHRES   2     EXTNL  POTEV
WDM      1 EVAP     ENGL    0.5            RCHRES   3     EXTNL  POTEV
WDM      1 EVAP     ENGL    0.7            RCHRES   4     EXTNL  POTEV

END EXT SOURCES

EXT TARGETS
<-Volume-> <-Grp> <-Member-><--Mult-->Tran <-Volume-> <Member> Tsys Tgap Amd ***
<Name>   #        <Name> # #<-factor->strg <Name>   # <Name>    tem strg strg***
RCHRES   5 HYDR   RO     1 1         1      WDM   1004 FLOW     ENGL      REPL
RCHRES   5 HYDR   STAGE  1 1         1      WDM   1005 STAG     ENGL      REPL
COPY     1 OUTPUT MEAN   1 1      12.1      WDM    701 FLOW     ENGL      REPL
COPY   501 OUTPUT MEAN   1 1      12.1      WDM    801 FLOW     ENGL      REPL
END EXT TARGETS

MASS-LINK
<Volume>   <-Grp> <-Member-><--Mult-->     <Target>       <-Grp> <-Member->***
<Name>             <Name> # #<-factor->     <Name>                <Name> # #***
  MASS-LINK        2
PERLND     PWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    2

  MASS-LINK        3
PERLND     PWATER IFWO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    3

  MASS-LINK        5
IMPLND     IWATER SURO       0.083333      RCHRES         INFLOW IVOL
  END MASS-LINK    5

  MASS-LINK        6
RCHRES     ROFLOW                          RCHRES         INFLOW
  END MASS-LINK    6

  MASS-LINK        7
RCHRES     OFLOW  OVOL   1                 RCHRES         INFLOW IVOL
  END MASS-LINK    7

  MASS-LINK        8
RCHRES     OFLOW  OVOL   2                 RCHRES         INFLOW IVOL
  END MASS-LINK    8

  MASS-LINK       16
RCHRES     ROFLOW                          COPY           INPUT  MEAN
  END MASS-LINK   16
```

```
  MASS-LINK       17
RCHRES     OFLOW  OVOL   1                COPY           INPUT  MEAN
  END MASS-LINK   17


END MASS-LINK

END RUN
```

Predeveloped HSPF Message File

```
ERROR/WARNING ID:   238   1

The continuity error reported below is greater than 1 part in 1000 and is
therefore considered high.

Did you specify any "special actions"?  If so, they could account for it.

Relevant data are:
DATE/TIME: 1988/ 5/31 24: 0

RCHRES :    3

RELERR       STORS        STOR       MATIN      MATDIF
-1.000E+00     0.00000  0.0000E+00     0.00000  6.3020E-12

Where:

RELERR is the relative error (ERROR/REFVAL).
ERROR  is (STOR-STORS) - MATDIF.
REFVAL is the reference value (STORS+MATIN).
STOR   is the storage of material in the processing unit (land-segment or
reach/reservior) at the end of the present interval.
STORS  is the storage of material in the pu at the start of the present
printout reporting period.
MATIN  is the total inflow of material to the pu during the present printout
reporting period.
MATDIF is the net inflow (inflow-outflow) of material to the pu during the
present printout reporting period.
```

```
ERROR/WARNING ID:   238   1

The continuity error reported below is greater than 1 part in 1000 and is
therefore considered high.

Did you specify any "special actions"?  If so, they could account for it.

Relevant data are:
DATE/TIME: 1989/ 4/30 24: 0

RCHRES :    3

RELERR       STORS        STOR       MATIN      MATDIF
-1.000E+00     0.00000  0.0000E+00     0.00000  7.3887E-12

Where:

RELERR is the relative error (ERROR/REFVAL).
ERROR  is (STOR-STORS) - MATDIF.
REFVAL is the reference value (STORS+MATIN).
STOR   is the storage of material in the processing unit (land-segment or
reach/reservior) at the end of the present interval.
STORS  is the storage of material in the pu at the start of the present
printout reporting period.
MATIN  is the total inflow of material to the pu during the present printout
reporting period.
MATDIF is the net inflow (inflow-outflow) of material to the pu during the
present printout reporting period.
```

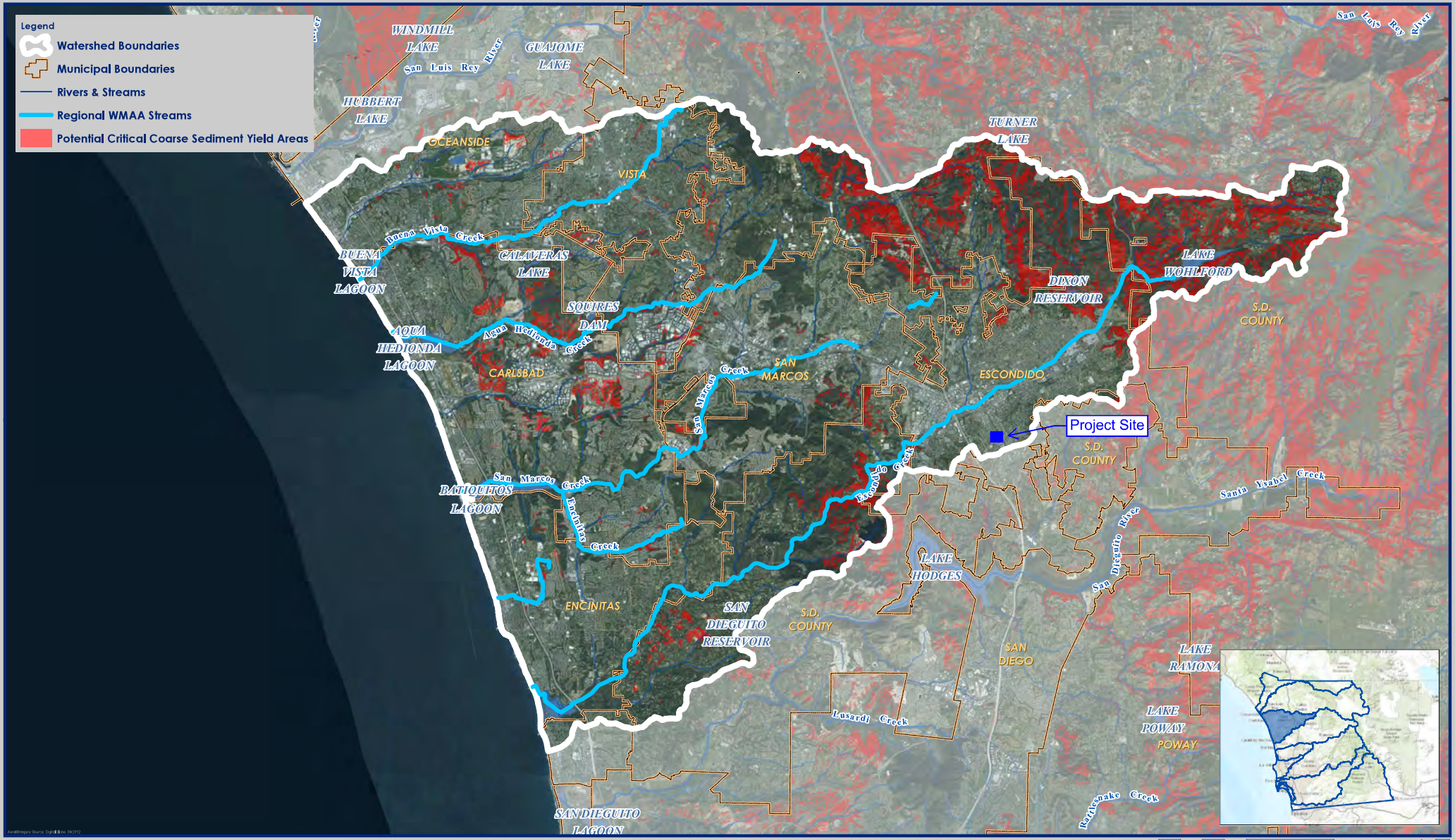
Disclaimer

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Potential Critical Coarse Sediment Yield Areas

Carlsbad Watershed - HU 904.00, 211 mi2

Exhibit Date: Sept. 8, 2014

Geosyntec consultants

RICK ENGINEERING COMPANY

Downstream Systems Requirements for Preservation of Coarse Sediment Supply			Form I-11
When it has been determined that potential critical coarse sediment yield areas exist within the project site, the next step is to determine whether downstream systems would be sensitive to reduction of coarse sediment yield from the project site. Use this form to document the evaluation of downstream systems requirements for preservation of coarse sediment supply.			
Project Name:			
Project Tracking Number / Permit Application Number:			
1	Will the project discharge runoff to a hardened MS4 system (pipe or lined channel) or an un-lined channel?	Hardened MS4 system	Go to 2
		Un-lined channel	Go to 4
2	Will the hardened MS4 system convey sediment (e.g., a concrete-lined channel with steep slope and cleansing velocity) or sink sediment (e.g., flat slopes, constrictions, treatment BMPs, or ponds with restricted outlets within the system will trap sediment and not allow conveyance of coarse sediment from the project site to an un-lined system).	Convey	Go to 3
		Sink	Go to 7
3	What kind of receiving water will the hardened MS4 system convey the sediment to?	Un-lined channel	Go to 4
		Lake Reservoir Bay	Go to 7
		Lagoon Ocean	Go to 6
4	Is the un-lined channel impacted by deposition of sediment? This condition must be documented by the local agency.	Yes	Go to 7
		No	Go to 5
5	End – Preserve coarse sediment supply to protect un-lined channels from accelerated erosion due to reduction of coarse sediment yield from the project site unless further investigation determines the sediment is not critical to the receiving stream. Sediment that is critical to receiving streams is the sediment that is a significant source of bed material to the receiving stream (bed sediment supply) (see Section 6.2.3 and Appendix H.2 of the manual).		
6	End – Provide management measures for preservation of coarse sediment supply (protect beach sand supply).		
7	End – Downstream system does not warrant preservation of coarse sediment supply, no measures for protection of critical coarse sediment yield areas onsite are necessary. Use the space below to describe the basis for this finding for the project.		

ATTACHMENT 3

Structural BMP Maintenance Information

Will be included with final design

This is the cover sheet for Attachment 3.

Indicate which Items are Included behind this cover sheet:

Attachment Sequence	Contents	Checklist
Attachment 3a	Structural BMP Maintenance Plan (Required)	☐Included See Structural BMP Maintenance Information Checklist on the back of this Attachment cover sheet.
Attachment 3b	Draft Storm Water Control Facilities Maintenance Agreement (SWCFMA) (when applicable)	☐Included ☐Not Applicable

Use this checklist to ensure the required information has been included in the Structural BMP Maintenance Information Attachment:

Attachment 3a must identify:

- ☐Specific maintenance indicators and actions for proposed structural BMP(s). This must be based on Section 7.7 and Appendix E of the Storm Water Design Manual and enhanced to reflect actual proposed components of the structural BMP(s)
- ☐How to access the structural BMP(s) to inspect and perform maintenance
- ☐Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☐Recommended equipment to perform maintenance
- ☐When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management

Attachment 3b: For all Structural BMPs, Attachment 3b must include a draft maintenance agreement in the City's standard format (PDP applicant to contact City staff to obtain the current maintenance agreement forms or download from City's website).

ATTACHMENT 4

City of Escondido PDP Structural BMP Verification for Permitted Land Development Projects

To be completed with final design

This is the cover sheet for Attachment 4.

City of Escondido Storm Water Structural BMP Verification Form Page 1 of 3	
Project Summary Information	
Project Name	Chick-fil-A Restaurant No. 5524
Permit Number (e.g., grading/improvement plan number)	
Project Address	515 W. 13th Ave, Escondido, CA 92025
Assessor's Parcel Number(s) (APN(s))	236-161-07-00 & 236-161-06-00
Project Watershed (Complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Carlsbad 904
Maintenance Notification / Agreement No.	
Responsible Party for Construction Phase	
Developer's Name	Chick-fil-A, Inc.
Address	105 Progress, Irvine, CA 92618
Email Address	
Phone Number	(951) 970-9138
Engineer of Work	Joseph C. Truxaw and Associates, inc.
Engineer's Phone Number	(714) 935-0265
Responsible Party for Ongoing Maintenance	
Owner's Name(s)*	Carlos Arias
Address	105 Progress, Irvine, CA 92618
Email Address	
Phone Number	(951) 970-9138
*Note: If a corporation or LLC, provide information for principal partner or Agent for Service of Process. If an HOA, provide information for the Board or property manager at time of project closeout.	

City of Escondido Storm Water Structural BMP Verification Form Page 2 of 3				
Stormwater Structural Pollutant Control & Hydromodification Control BMPs* (List all from SWQMP)				
Description/Type of Structural BMP	**Plan Sheet #**	**Structural BMP ID#**	**Maintenance Agreement Recorded Doc #**	**Revisions**
Biofiltration Basin 1	2 of 4	1		
Biofiltration Basin 2	2 of 4	2		
*All Priority Development Projects (PDPs) require a Structural BMP				

Note: If this is a partial verification of Structural BMPs, provide a list and map denoting Structural BMPs that have already been submitted, those for this submission, and those anticipated in future submissions.

City of Escondido Storm Structural BMP Verification Form Page 3 of 3

Checklist for Engineer of Work (EOW) to submit to Field Engineering:

- ☐ Copy of the final accepted SWQMP and any accepted addendum.
- ☐ Copy of the most current plan showing the Storm Water Structural BMP Table, plans/cross-section sheets of the Structural BMPs and the location of each verified as-built Structural BMP.
- ☐ Photograph of each Structural BMP.
- ☐ Photograph(s) of each Structural BMP during the construction process to illustrate proper construction.
- ☐ Copy of the approved Structural BMP maintenance agreement and associated security

By signing below, I certify that the Structural BMP(s) for this project have been constructed and all BMPs are in substantial conformance with the approved plans and applicable regulations. I understand the City reserves the right to inspect the above BMPs to verify compliance with the approved plans and Storm Water Ordinance. Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Please sign your name and seal.

Professional Engineer's Printed Name:

_____

Professional Engineer's Signed Name:

_____

Date: _____

[SEAL]

ATTACHMENT 5

Copy of Plan Sheets Showing Permanent Storm Water BMPs, Source Control, and Site Design BMPs

This is the cover sheet for Attachment 5.

Use this checklist to ensure the required information has been included on the plans:

The plans must identify:

- ☐ Structural BMP(s) with ID numbers matching Step 5 Summary of PDP Structural BMPs
- ☐ The grading and drainage design shown on the plans must be consistent with the delineation of DMAs shown on the DMA exhibit
- ☐ Details and specifications for construction of structural BMP(s)
- ☐ Signage indicating the location and boundary of structural BMP(s) as required by City staff
- ☐ How to access the structural BMP(s) to inspect and perform maintenance
- ☐ Features that are provided to facilitate inspection (e.g., observation ports, cleanouts, silt posts, or other features that allow the inspector to view necessary components of the structural BMP and compare to maintenance thresholds)
- ☐ Manufacturer and part number for proprietary parts of structural BMP(s) when applicable
- ☐ Maintenance thresholds specific to the structural BMP(s), with a location-specific frame of reference (e.g., level of accumulated materials that triggers removal of the materials, to be identified based on viewing marks on silt posts or measured with a survey rod with respect to a fixed benchmark within the BMP)
- ☐ Recommended equipment to perform maintenance
- ☐ When applicable, necessary special training or certification requirements for inspection and maintenance personnel such as confined space entry or hazardous waste management
- ☐ Include landscaping plan sheets showing vegetation requirements for vegetated structural BMP(s)
- ☐ All BMPs must be fully dimensioned on the plans
- ☐ When proprietary BMPs are used, site-specific cross section with outflow, inflow, and model number must be provided. Photocopies of general brochures are not acceptable.
- ☐ Include all source control and site design measures described in Steps 3 and 4 of the SWQMP. Can be included as a separate exhibit as necessary.

***Note: Plan sheets included in this attachment can be full size or half size.**