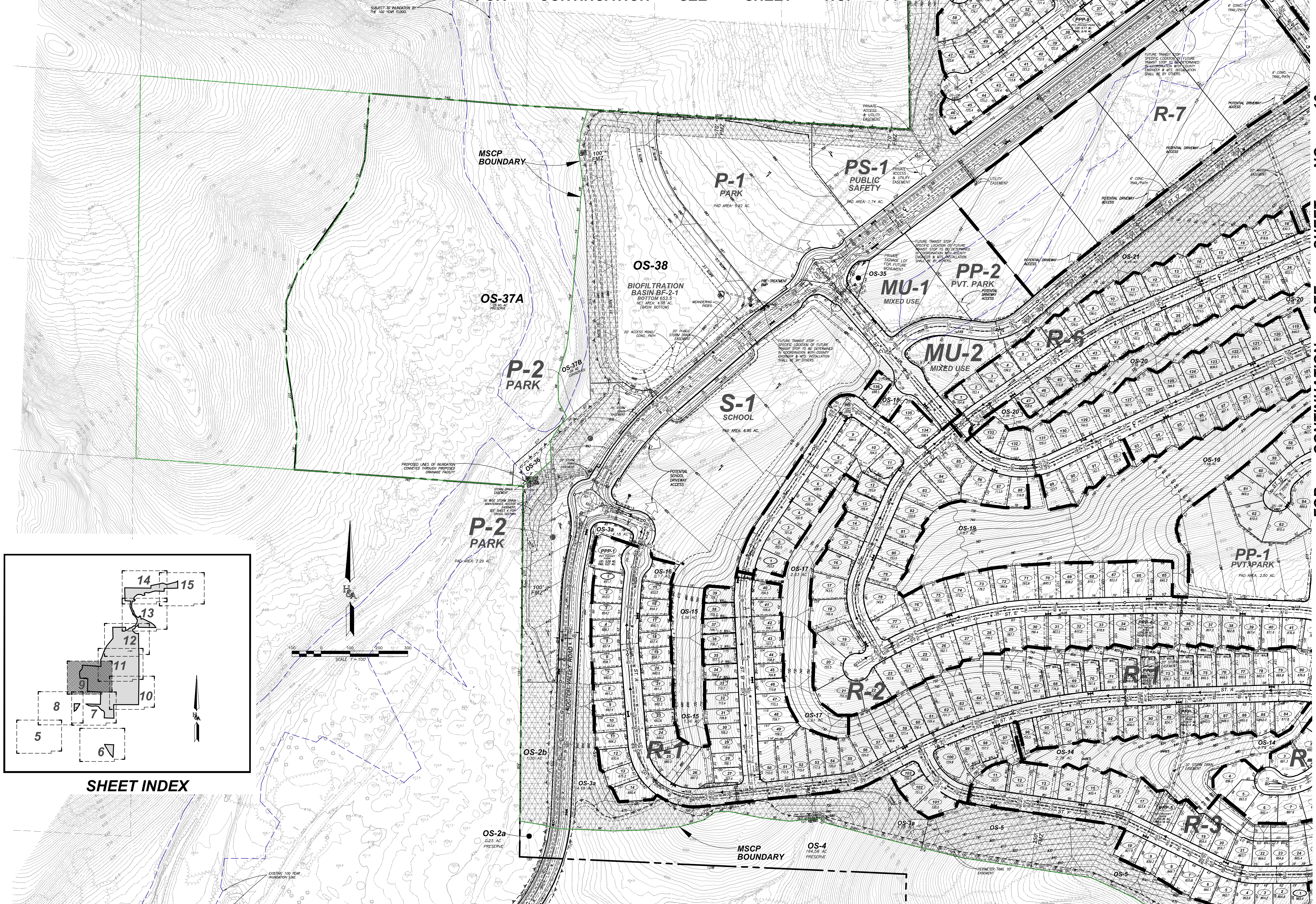
FOR CONTINUATION SEE SHEET NO. 11



FOR CONTINUATION SEE SHEET NO. 10

FOR CONTINUATION SEE SHEET NO. 8

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC.

PLANNING 9707 Waples Street
ENGINEERING San Diego, Ca 92121
SURVEYING PH(858)558-4500 · FX(858)558-1414

REVISED PRELIMINARY GRADING PLAN

OTAY RANCH

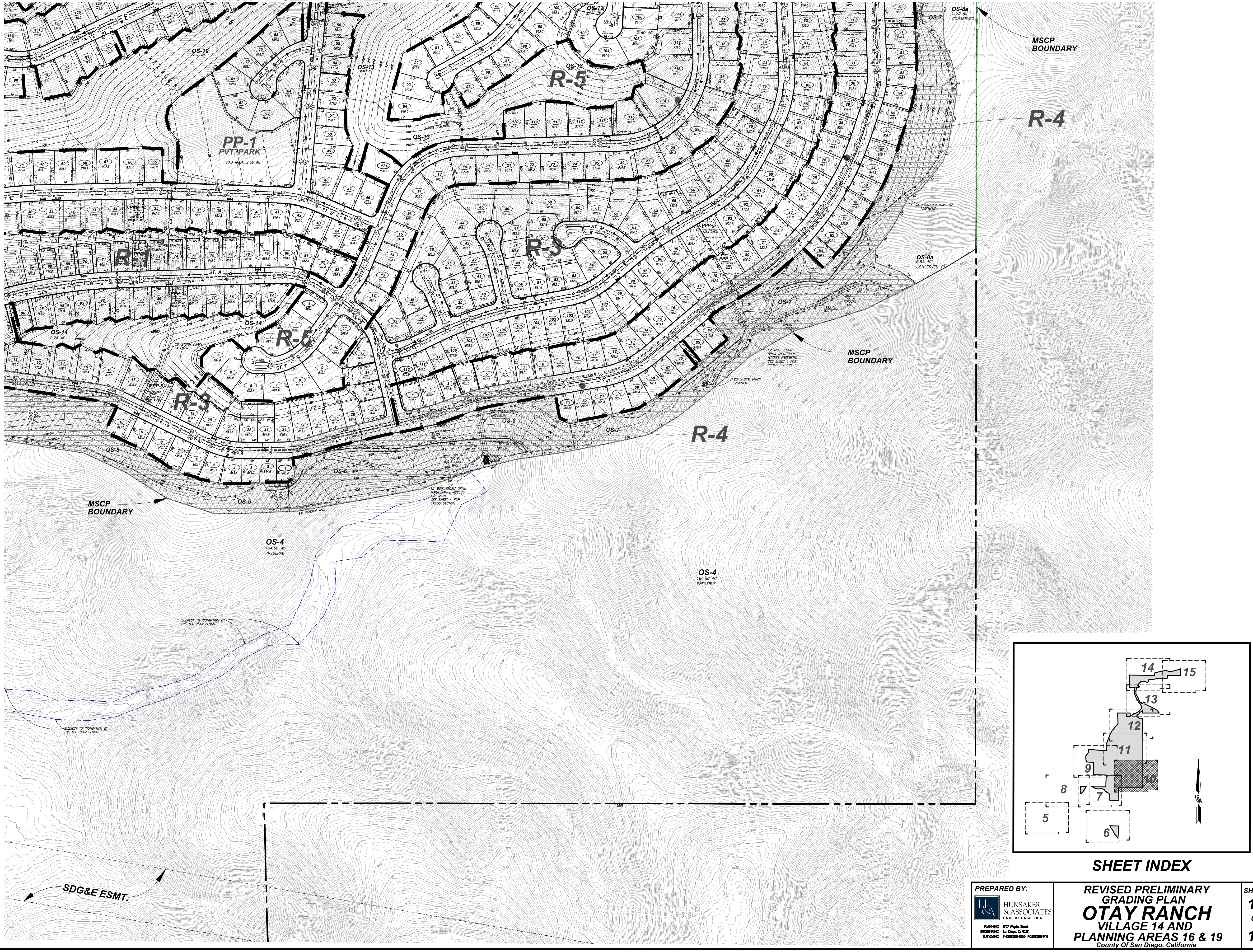
VILLAGE 14 AND PLANNING AREAS 16 & 19

County Of San Diego, California

W.O. 2421-0036

FOR CONTINUATION SEE SHEET NO. 11

FOR CONTINUATION SEE SHEET NO. 9



SHEET INDEX

PREPARED BY:

HUNSAKER & ASSOCIATES
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REVISED PRELIMINARY GRADING PLAN
OTAY RANCH
VILLAGE 14 AND PLANNING AREAS 16 & 19
County Of San Diego, California

SHEET 10 OF 17

W.O. 2421-0036

R:\1235\&Pln\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 - PRELIM GRADING - Sht 10 (Village 14 & PA 19).dwg[]Dec-17-2019:18:26

FOR CONTINUATION SEE SHEET NO. 12

FOR CONTINUATION SEE SHEET NO. 9

FOR CONTINUATION SEE SHEET NO. 10

SHEET INDEX

14 15 13 12 9 10 8 7 5 6

SCALE 1" = 100'

MSCP BOUNDARY

MSCP BOUNDARY

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC.

PLANNING 9707 Waples Street, San Diego, CA 92121
ENGINEERING
SURVEYING T:(858)558-4500 F:(858)558-1414

REVISED PRELIMINARY GRADING PLAN

OTAY RANCH

VILLAGE 14 AND PLANNING AREAS 16 & 19

County Of San Diego, California

SHEET 11 OF 17

W.O. 2421-5036

R:\1235\&Plan\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 – PRELIM GRADING – Sht 11 (Village 14 & PA 19).dwg[]Dec-17-2019:18:23

FOR CONTINUATION SEE SHEET NO. 13

SHEET INDEX

PREPARED BY:	REVISED PRELIMINARY GRADING PLAN	SHEET
HUNSAKER & ASSOCIATES SAN DIEGO, INC PLANNING 9707 Waples Street, San Diego, CA 92121 ENGINEERING SURVEYING	**OTAY RANCH** VILLAGE 14 AND PLANNING AREAS 16 & 19 County Of San Diego, California	12 OF 17

W.O. 2421-0036

FOR CONTINUATION SEE SHEET NO. 11

R:\1235\&Plm\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 – PRELIM GRADING – Sht 12 (Village 14 & PA 19).dwg[]Dec-18-2019@08:16

FOR CONTINUATION SEE SHEET NO. 14

OS-63

OS-66b

MODULAR WETLAND UNIT MWS L-8-16 BF-3-9

OS-61b 0.25 AC. PRESERVE

OS-60b 0.25 AC. PRESERVE

OS-61a

OS-60a

OS-59c

OS-59b

OS-56b 2.42 AC PRESERVE

OS-59a 0.89 AC. PRESERVE

BIOFILTRATION BASIN-BF-2-8 BOTTOM 896.0 WET AREA: 0.56 AC (BASIN BOTTOM)

MSCP BOUNDARY

MODULAR WETLAND UNIT MWS L-8-16 BF-3-7

OS-57b

OS-57a

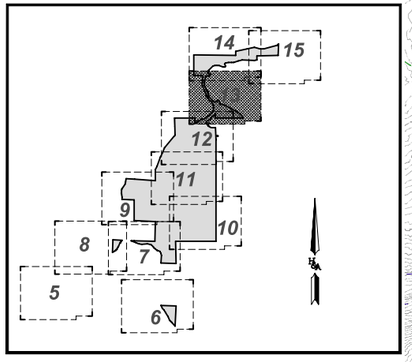
OS-58 23.29 AC PRESERVE

OS-55b

OS-46b

SCALE: 1" = 100'

SHEET INDEX



FOR CONTINUATION SEE SHEET NO. 12

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

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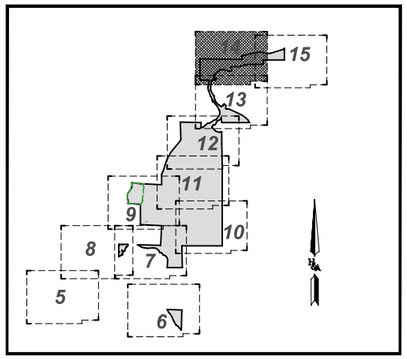
SURVEYING

REVISED PRELIMINARY GRADING PLAN
OTAY RANCH
VILLAGE 14 AND PLANNING AREAS 16 & 19
County Of San Diego, California

SHEET 13 OF 17

W.O. 2421-6036

R:\1235\&Pln\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 - PRELIM GRADING - Sht 13 (Village 14 & PA 19).dwg[]Dec-19-2019:16:28



SHEET INDEX

FOR CONTINUATION SEE SHEET NO. 15

FOR CONTINUATION SEE SHEET NO. 13

100 0 100 200 300
SCALE 1"= 100'

60' PUBLIC ROAD RIGHT-OF-WAY PER R.O.S. 5357 AND P.M. 12642 AND AS SHOWN ON R.O.S. 14290

CONNECT TO EXISTING DRIVEWAY

SIDEWALK UNDERDRAIN

STORM DRAIN MAINTENANCE ACCESS EASEMENT

EASEMENT FOR TRAIL ACCESS

EASEMENT FOR TRAIL ACCESS

EXISTING 100 YEAR INUNDATION LINE

MSCP BOUNDARY

R-13

OS-62a

OS-65b
0.06
PRESERVE

OS-65a

OS-64
1.15 AC
CONSERVED

OS-63
16.38 AC
PRESERVE

OS-67b

OS-67a

OS-68a
52.06 AC
PRESERVE

OS-68a
52.06 AC
PRESERVE

OS-68a
52.06 AC
PRESERVE

OS-66a
2.95 AC
PRESERVE
NET AREA:
0.17 AC.
(BASIN BOTTOM)
BIOFILTRATION
BASIN BF-2-70
BOTTOM 880'

OS-62
0.73 AC.
PRESERVE

OS-63

OS-66b

MODULAR WETLAND
UNIT MWS L-8-16
BF-3-9

OS-61b
0.25 AC.
PRESERVE

OS-60b
0.25 AC.
PRESERVE

SUBJECT TO INUNDATION BY THE 100 YEAR FLOOD. FLOWAGE EASEMENT TO BE GRANTED TO THE SAN DIEGO COUNTY FLOOD CONTROL DISTRICT.

DUPLEX SEWER LIFT STATION

PROCTOR VALLEY ROAD

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street San Diego, CA 92121
ENGINEERING
SURVEYING
TRANSPORTATION

REVISED PRELIMINARY GRADING PLAN
OTAY RANCH
VILLAGE 14 AND PLANNING AREAS 16 & 19
County Of San Diego, California

SHEET 14 OF 17

W.O. 2421-0036

R:\12351\&Plan\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 - PRELIM GRADING - Sht 14 (Village 14 & PA 19).dwg[]Dec-19-2019:16:34

FOR CONTINUATION SEE SHEET NO. 14

EASEMENT FOR TRAIL ACCESS

OS-68a
52.06 AC
PRESERVE

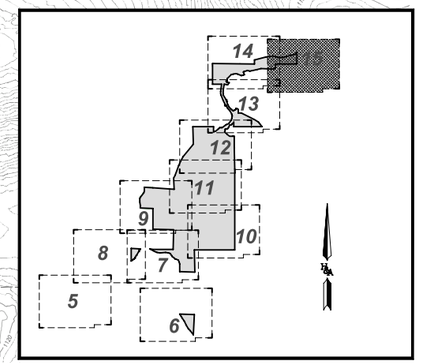
EXISTING 100 YEAR INUNDATION LINE

OS-68b
0.20 AC

OS-68a
52.06 AC
PRESERVE

SCALE 1" = 100'

SHEET INDEX



PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC
PLANNING 9707 Waples Street San Diego, CA 92121
ENGINEERING
SURVEYING

REVISED PRELIMINARY GRADING PLAN
OTAY RANCH
VILLAGE 14 AND PLANNING AREAS 16 & 19
County Of San Diego, California

SHEET 15 OF 17

W.O. 2421-0036

R:\1235\&Plin\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 – PRELIM GRADING – Sht 15 (Village 14 & PA 19).dwg 3Dec-18-2019:08:36

TITLE REPORT EXCEPTIONS:

EXCEPTIONS TO TITLE LISTED BELOW ARE PER PRELIMINARY TITLE REPORT DATED SEPTEMBER 30, 2016 BY CHICAGO TITLE COMPANY, ORDER NO. 00057116-996-SD1.

A. PROPERTY TAXES, INCLUDING ANY PERSONAL PROPERTY TAXES AND ANY ASSESSMENTS COLLECTED WITH TAXES, ARE AS FOLLOWS:
AMOUNTS HYPERLINKED HERE.

B. THE LIEN OF SUPPLEMENTAL OR ESCAPED ASSESSMENTS OF PROPERTY TAXES, IF ANY, MADE PURSUANT TO THE PROVISIONS OF CHAPTER 3.5 (COMMENCING WITH SECTION 75) OR PART 2, CHAPTER 3, ARTICLES 3 AND 4, RESPECTIVELY, OF THE REVENUE AND TAXATION CODE OF THE STATE OF CALIFORNIA AS A RESULT OF THE TRANSFER OF TITLE TO THE VESTEE NAMED IN SCHEDULE A OR AS A RESULT OF CHANGES IN OWNERSHIP OR NEW CONSTRUCTION OCCURRING PRIOR TO DATE OF POLICY.

THE FOLLOWING MATTERS AFFECT PARCELS 1 -5

1. AN EASEMENT AND RIGHT OF WAY FOR PUBLIC ROAD OVER AND ACROSS OLD SURVEY NO. 133, ACCORDING TO MAP ON FILE IN THE OFFICE OF THE COUNTY SURVEYOR.

   SAID MATTER AFFECTS PARCELS 1 AND 5

2. THE RIGHTS OF THE PUBLIC IN AND TO THAT PORTION OF THE HEREIN DESCRIBED LAND LYING WITHIN PROCTOR VALLEY ROAD.

   AFFECTS: PARCELS 1 AND 5

⚠ EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
RECORDING DATE: JUNE 7, 1983
RECORDING NO: 83-019055 OF OFFICIAL RECORDS
AFFECTS: PARCELS 1 AND 5

4. COVENANTS, CONDITIONS AND RESTRICTIONS BUT OMITTING ANY COVENANTS OR RESTRICTIONS, IF ANY, INCLUDING BUT NOT LIMITED TO THOSE BASED UPON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, FAMILIAL STATUS, MARITAL STATUS, DISABILITY, HANDICAP, NATIONAL ORIGIN, ANCESTRY, SOURCE OF INCOME, GENDER, GENDER IDENTITY, GENDER EXPRESSION, MEDICAL CONDITION OR GENETIC INFORMATION, AS SET FORTH IN APPLICABLE STATE OR FEDERAL LAWS, EXCEPT TO THE EXTENT THAT SAID COVENANT OR RESTRICTION IS PERMITTED BY APPLICABLE LAW, AS SET FORTH IN THE DOCUMENT
RECORDING DATE: JULY 31, 2008
RECORDING NO: 2008-0340383 OF OFFICIAL RECORDS
AFFECTS PARCEL 5

5. THE FACT THAT THE PUBLIC RECORD DOES NOT DISCLOSED THAT THE OWNERSHIP OF SAID LAND INCLUDES RIGHTS OF ACCESS TO OR FROM ANY PUBLIC STREET, NOTWITHSTANDING THE INSURING CLAUSES OF THE POLICY, THE COMPANY DOES NOT INSURE AGAINST LOSS OR DAMAGE BY REASON OF A LACK OF A RIGHT OF ACCESS TO AND FROM THE LAND.

   AFFECTS LOT 7 OF PARCEL 5

6. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT.

   GRANTED TO: CITY OF CHULA VISTA AND COUNTY OF SAN DIEGO
   PURPOSE: VEHICULAR AND PEDESTRIAN INGRESS AND EGRESS
   RECORDED: MARCH 20, 2014, AS INSTRUMENT NO. 2014-0111210 OF OFFICIAL RECORDS
   AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

THE FOLLOWING MATTERS AFFECT PARCEL 6

7. THE RIGHTS OF THE PUBLIC TO USE THAT PORTION OF THE HEREIN DESCRIBED LAND LYING WITHIN OLD SURVEY 113 AND OLD SURVEY 133 (PROCTOR VALLEY ROAD) AS SHOWN ON THE ORIGINAL RECORDS IN THE OFFICE OF THE COUNTY SURVEYOR OF SAN DIEGO COUNTY.

8. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT.
   GRANTED TO: VICMAL, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY
   PURPOSE: ROAD AND ACCESS
   RECORDED: JANUARY 21, 2009, AS INSTRUMENT NO. 2009-0025823 OF OFFICIAL RECORDS
   AFFECTS: THE EXACT LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD

9. A CERTIFICATE OF COMPLIANCE
   DATED: MAY 5, 2010
   EXECUTED BY: DEPT. OF PLANNING AND LAND USE, COUNTY OF SAN DIEGO
   COMPLIANCE NO.: COE-01058W(C)12
   RECORDED: MAY 5, 2010, AS INSTRUMENT NO. 2010-0226435 OF OFFICIAL RECORDS

10. EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
    GRANTED TO: JOURNEY PARTNERS, L.L.C., A DELAWARE LIMITED LIABILITY COMPANY
    PURPOSE: ACCESS EASEMENT FOR MONITORING AND MAINTENANCE OF PRESERVE LAND
    RECORDING DATE: DECEMBER 13, 2013
    RECORDING NO: 2013-0718978 OF OFFICIAL RECORDS
    AFFECTS: PARCEL 6

⚠ EASEMENT(S) FOR THE PURPOSE(S) SHOWN BELOW AND RIGHTS INCIDENTAL THERETO, AS GRANTED IN A DOCUMENT:
GRANTED TO: JOURNEY PARTNERS, LLC, A DELAWARE LIMITED LIABILITY COMPANY
PURPOSE: INGRESS AND EGRESS
RECORDING DATE: FEBRUARY 6, 2014
RECORDING NO: 2014-0051584 OF OFFICIAL RECORDS
AFFECTS: PARCEL 6

MATTERS AFFECTING PARCELS 7-9

12. THE FACT THAT THE PUBLIC RECORD DOES NOT DISCLOSE THAT THE OWNERSHIP OF SAID LAND INCLUDES RIGHTS OF ACCESS TO OR FROM ANY PUBLIC STREET, NOTWITHSTANDING THE INSURING CLAUSES OF THE POLICY, THE COMPANY DOES NOT INSURE AGAINST LOSS OR DAMAGE BY REASON OF A LACK OF A RIGHT OF ACCESS TO AND FROM THE LAND.

13. A CONDITIONAL CERTIFICATE OF COMPLIANCE
    DATED: MAY 5, 2010
    EXECUTED BY: DEPARTMENT OF PLANNING AND LAND USE
    COMPLIANCE NO.: COE-01058W(C)12
    RECORDED: MAY 5, 2010 AS FILE NO. 2010-0226435, OFFICIAL RECORDS
    CONDITIONS: NOT APPROVED FOR DEVELOPMENT

    REFERENCE IS HEREBY MADE TO SAID DOCUMENT FOR FULL PARTICULARS.

14. THE TERMS AND PROVISIONS CONTAINED IN THE DOCUMENT ENTITLED ACCESS EASEMENT FOR MONITORING AND MAINTENANCE OF PRESERVE LAND RECORDED FEBRUARY 5, 2013 AS INSTRUMENT NO. 2013-0078595 OFFICIAL RECORDS.

THE FOLLOWING MATTERS AFFECT PARCEL 10

15. THE RIGHTS OF THE PUBLIC TO USE THAT PORTION OF THE HEREIN DESCRIBED LAND LYING WITHIN OLD SURVEY 113 AND OLD SURVEY 133 (PROCTOR VALLEY ROAD) AS SHOWN ON THE ORIGINAL RECORDS IN THE OFFICE OF THE COUNTY SURVEYOR OF SAN DIEGO COUNTY.

THE FOLLOWING MATTERS AFFECT PARCEL 11

16. THE RIGHTS OF THE PUBLIC TO USE THAT PORTION OF THE HEREIN DESCRIBED LAND LYING WITHIN OLD SURVEY 113 AND OLD SURVEY 133 (PROCTOR VALLEY ROAD) AS SHOWN ON THE ORIGINAL RECORDS IN THE OFFICE OF THE COUNTY SURVEYOR OF SAN DIEGO COUNTY.

17. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT.
    GRANTED TO: COUNTY OF SAN DIEGO
    PURPOSE: PUBLIC HIGHWAY
    RECORDED: APRIL 28, 1891, IN BOOK 191, PAGE 104 OF DEEDS
    AFFECTS: THE EXACT LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD

18. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT.
    GRANTED TO: R.H. GIBSON
    PURPOSE: ROAD
    RECORDED: AUGUST 29, 1934 IN BOOK 313, PAGE 437 OF OFFICIAL RECORDS
    AFFECTS: THE EXACT LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD

⚠ 19. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT.
    GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
    PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
    RECORDED: MARCH 14, 1969 AS DOCUMENT NO. 45460 OF OFFICIAL RECORDS
    AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

THE FOLLOWING MATTERS AFFECT PARCEL 12

20. THE RIGHTS OF THE PUBLIC TO USE THAT PORTION OF THE HEREIN DESCRIBED LAND LYING WITHIN OLD SURVEY 113 AND OLD SURVEY 133 (PROCTOR VALLEY ROAD) AS SHOWN ON THE ORIGINAL RECORDS IN THE OFFICE OF THE COUNTY SURVEYOR OF SAN DIEGO COUNTY.

⚠ 21. AN EASEMENT FOR THE PURPOSE SHOWN BELOW AND RIGHTS INCIDENTAL THERETO AS SET FORTH IN A DOCUMENT.
    GRANTED TO: SAN DIEGO GAS AND ELECTRIC COMPANY
    PURPOSE: PUBLIC UTILITIES, INGRESS, EGRESS
    RECORDED: SEPTEMBER 29, 1955 IN BOOK 5812, PAGE 373 OF OFFICIAL RECORDS
    AFFECTS: THE ROUTE THEREOF AFFECTS A PORTION OF SAID LAND AND IS MORE FULLY DESCRIBED IN SAID DOCUMENT.

    THE DESCRIPTION CONTAINED WITHIN THIS DOCUMENT RESULTS IN A PLOTTED LOCATION NORTHERLY OF THE SOUTHERLY LINE OF PROCTOR VALLEY ROAD. HOWEVER, PHYSICAL EVIDENCE (A GUY SUPPORTING AN ELECTRICAL POLE SOUTHERLY OF THE ROAD IN THE VICINITY) SUGGEST AN INTENT FOR THE EASEMENT

THE FOLLOWING MATTERS AFFECT ALL PARCELS

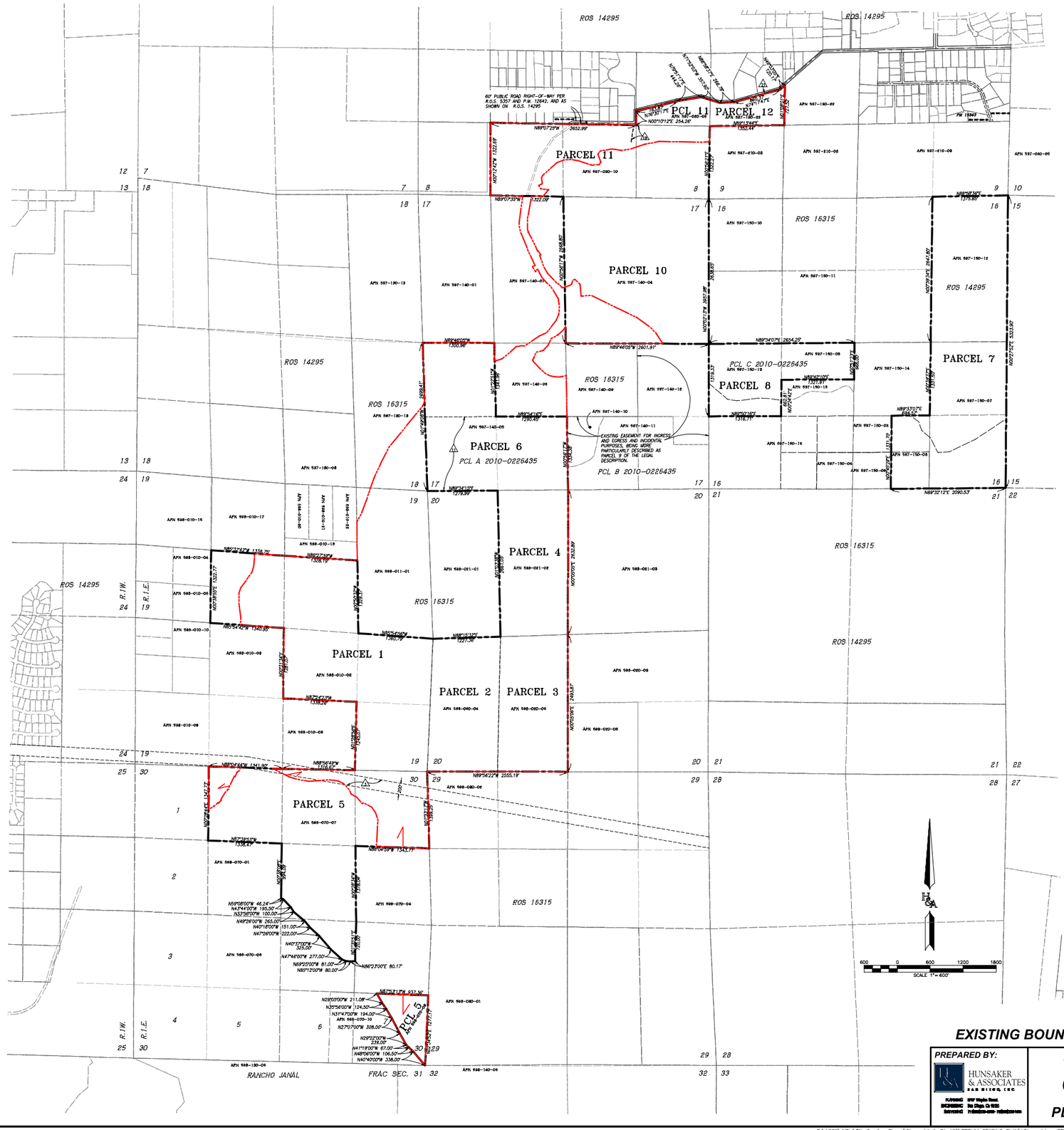
22. A DOCUMENT ENTITLED AGREEMENT FOR INDEMNIFICATION, IMPLEMENTATION OF MITIGATION MEASURES, AND PAYMENT OF CERTAIN FEES IN CONNECTION WITH THE APPROVAL OF THE GENERAL PLAN AMENDMENT, GENERAL AND OTHER DEVELOPMENT PLANS FOR THE OTAY RANCH, EXECUTED BY CITY OF CHULA VISTA, COUNTY OF SAN DIEGO AND OTAY VISTA ASSOCIATES, A CALIFORNIA LIMITED PARTNERSHIP, SUBJECT TO ALL THE TERMS, PROVISIONS AND CONDITIONS THEREIN CONTAINED, RECORDED FEBRUARY 7, 1994 AS DOCUMENT NO. 1994-0084743.

23. PLEASE BE ADVISED THAT OUR SEARCH DID NOT DISCLOSE ANY OPEN DEEDS OF TRUST OF RECORD. IF YOU SHOULD HAVE KNOWLEDGE OF ANY OUTSTANDING OBLIGATION, PLEASE CONTACT THE TITLE DEPARTMENT IMMEDIATELY FOR FURTHER REVIEW PRIOR TO CLOSING.

24. WATER RIGHTS, CLAIMS OR TITLE TO WATER, WHETHER OR NOT DISCLOSED BY THE PUBLIC RECORDS.

25. MATTERS WHICH MAY BE DISCLOSED BY AN INSPECTION AND/OR BY A CORRECT ALTA/NSPS LAND TITLE SURVEY OF SAID LAND THAT IS SATISFACTORY TO THE COMPANY, AND/OR BY INQUIRY OF THE PARTIES IN POSSESSION THEREOF.

26. ANY RIGHTS OF THE PARTIES IN POSSESSION OF A PORTION OF, OR ALL OF, SAID LAND, WHICH RIGHTS ARE NOT DISCLOSED BY THE PUBLIC RECORDS.
    THE COMPANY WILL REQUIRE, FOR REVIEW, A FULL AND COMPLETE COPY OF ANY UNRECORDED AGREEMENT, CONTRACT, LICENSE AND/OR LEASE, TOGETHER WITH ALL SUPPLEMENTS, ASSIGNMENTS AND AMENDMENTS THERETO, BEFORE ISSUING ANY POLICY OF TITLE INSURANCE WITHOUT EXCEPTING THIS ITEM FROM COVERAGE.
    THE COMPANY RESERVES THE RIGHT TO EXCEPT ADDITIONAL ITEMS AND/OR MAKE ADDITIONAL REQUIREMENTS AFTER REVIEWING SAID DOCUMENTS.



LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF OTAY, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL 1: 598-010-02

THE EAST HALF OF THE SOUTHEAST QUARTER, THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER, THE SOUTHWEST QUARTER OF THE NORTHEAST QUARTER AND THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 19, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

PARCEL 2: 598-020-04

THE WEST HALF OF THE SOUTHWEST QUARTER OF SECTION 20, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

PARCEL 3: 598-020-06

THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 20, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

PARCEL 4: 598-021-02

THE EAST HALF OF THE NORTHWEST QUARTER OF SECTION 20, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

PARCEL 5: 598-070-07, 09

LOT 7, THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER; THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER; THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER AND THE WEST HALF OF THE NORTHWEST QUARTER OF SECTION 30, ALL BEING IN TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM THAT PORTION OF SAID LOT 7 LYING SOUTHWESTERLY OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 30; THENCE NORTH 40°40'00" WEST, 338.00 FEET; THENCE NORTH 49°06'00" WEST, 1,106.50 FEET; THENCE NORTH 41°19'00" WEST, 87.00 FEET; THENCE NORTH 29°22'00" WEST, 239.00 FEET; THENCE NORTH 27°07'00" WEST, 308.00 FEET; THENCE NORTH 31°47'00" WEST, 194.00 FEET; THENCE NORTH 35°56'00" WEST, 124.50 FEET; THENCE NORTH 29°05'00" WEST, 210.89 FEET TO THE NORTHERLY LINE OF SAID LOT 7 AND THE POINT OF TERMINUS.

ALSO EXCEPTING THEREFROM THOSE PORTIONS OF THE WEST HALF OF THE NORTHEAST QUARTER AND THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30, LYING SOUTHWESTERLY OF A LINE DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SAID SECTION 30; THENCE ALONG THE WESTERLY LINE THEREOF, NORTH 01°58'31" EAST 572.34 FEET; THENCE LEAVING SAID WESTERLY LINE, SOUTH 89°23'00" WEST 80.17 FEET; THENCE NORTH 81°12'00" WEST, 80.00 FEET; THENCE NORTH 69°23'00" WEST, 81.00 FEET; THENCE NORTH 7°46'00" WEST, 277.00 FEET; THENCE NORTH 40°37'00" WEST, 325.00 FEET; THENCE NORTH 47°26'00" WEST 222.00 FEET; THENCE NORTH 40°14'00" WEST, 151.00 FEET; THENCE NORTH 49°26'00" WEST, 265.00 FEET; THENCE NORTH 33°56'00" WEST, 100.00 FEET; THENCE NORTH 44°44'00" WEST, 195.00 FEET; THENCE NORTH 53°58'00" WEST 46.11 FEET TO A POINT ON THE WESTERLY LINE OF THE WEST HALF OF THE NORTHEAST QUARTER OF SAID SECTION 30 AND THE POINT OF TERMINUS.

PARCEL 6: (APN: 597-140-06)

THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER AND THE WEST HALF OF THE SOUTHWEST QUARTER OF SECTION 17, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

PARCEL 7: APN 597-150-07, 08, 12

THE EAST HALF OF THE NORTHEAST QUARTER; THE EAST HALF OF THE SOUTHEAST QUARTER AND THE EAST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 16, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF.

PARCEL 8: APN 597-150-03 & 13

PARCEL C OF CERTIFICATE OF COMPLIANCE RECORDED MAY 5, 2010 AS FILE NO. 2010-0226435, OFFICIAL RECORDS, BEING THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER AND THE NORTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 16, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF.

EXCEPTING THEREFROM HALF OF THE MINERALS AND MINERAL RIGHTS IN, UNDER AND ON THE NORTH HALF OF THE NORTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 16, AS RESERVED IN THE DEED FROM A.R. DILLARD AND PEARL A. DILLARD, HUSBAND AND WIFE RECORDED MAY 5, 1920 IN BOOK 1251, PAGE 395 OF DEEDS.

PARCEL 9:

AN EASEMENT FOR INGRESS AND EGRESS AND INCIDENTAL PURPOSES OVER, ALONG AND ACROSS PARCEL B AS SHOWN ON CERTIFICATE OF COMPLIANCE, AS EVIDENCED BY DOCUMENT RECORDED MAY 5, 2010 AS INSTRUMENT NO. 2010-0226435 OF OFFICIAL RECORDS, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

THE NORTHWEST QUARTER OF THE SOUTHEAST QUARTER AND THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SECTION 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF.

SAID EASEMENT RECITES THAT IT IS A BLANKET EASEMENT AND APPURTENANT TO PARCEL B DESCRIBED ABOVE, GRANTOR AND GRANTEE AGREE THAT THE LOCATION OF THE EASEMENT SHALL, IN THE FUTURE, BE CONFINED TO A SPECIFICALLY DEFINED PORTION OF THE SERVIENT TENEMENT AND THAT THE EASEMENT AS IT EXISTS TODAY IS CONFINED TO THE NORTHEAST QUADRANT OF THE SERVIENT TENEMENT IN THAT CERTAIN AREA IDENTIFIED AS 'LIMITED DEVELOPMENT AREA IN THE APPROVED OTAY RANCH GENERAL DEVELOPMENT PLAN/SUBREGIONAL PLAN, DATED JUNE 4, 1996, EACH PARTY AGREES TO COOPERATE FULLY TO SPECIFICALLY DEFINE THE LOCATION OF THE EASEMENT AS SET FORTH IN INSTRUMENT RECORDED JANUARY 29, 2014 AS INSTRUMENT NO. 2014-0038939 OF OFFICIAL RECORDS.

PARCEL 10: (APN: 597-140-04)

THE NORTHEAST QUARTER OF SECTION 17, ALL IN TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF.

PARCEL 11: (APN: 597-030-06 &10)

THE EAST HALF OF THE SOUTHEAST QUARTER LYING SOUTHERLY OF THE SOUTHERLY LINE OF PROCTOR VALLEY ROAD AND THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER AND THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 8, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF.

PARCEL 12: (APN: 597-190-23)

THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SECTION 9, TOWNSHIP 17 SOUTH, RANGE 1 EAST, SAN BERNARDINO MERIDIAN, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO OFFICIAL PLAT THEREOF, LYING SOUTHERLY OF THE SOUTHERLY LINE OF PROCTOR VALLEY ROAD.

LEGEND:
ULTIMATE TM BOUNDARY UPON RECORDATION OF CONVEYANCE DEEDS WITH THE STATE.

EXISTING BOUNDARY AND ENCUMBRANCES

PREPARED BY:
HUNSAKER & ASSOCIATES SAN DIEGO, INC.
PLANNING 9707 Waples Street, San Diego, CA 92121
ENGINEERING Telephone 858-558-4500
SURVEYING Fax 858-558-1414

REVISED PRELIMINARY GRADING PLAN
OTAY RANCH
VILLAGE 14 AND PLANNING AREAS 16 & 19
County Of San Diego, California

SHEET 16 OF 17

W.O. 2421-0036

R:\1235\&Pln\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 – PRELIM GRADING – Sht 16 (Village 14 & PA 19).dwg[]Dec-18-2019 08:39

VILLAGE 14 SUMMARY

NEIGHBORHOOD	LAND USE	DWELLING UNITS	LOT SIZE	GROSS NEIGHBORHOOD ACREAGE
R-1	SF	103	50 X 100	23.92
R-2	SF	136	60 X 100	37.98
R-3	SF	112	60 X 85	30.89
R-4	SF	73	60 X 100	18.03
R-5	SF	121	75 X 100	40.74
R-6	SF	47	60 X 85	10.87
R-9	SF	96	60 X 85	22.55
R-10	SF	31	60 X 85	7.07
R-11	SF	119	50 X 85	24.84
R-12	SF	94	50 X 100	22.35
R-17	SF	10	70 X 100	2.93
R-18	SF	45	70 X 100	16.23
RESIDENTIAL SUBTOTAL		987		258.41
NEIGHBORHOOD	LAND USE	DWELLING UNITS	TARGET DENSITY (DU/AC)	GROSS NEIGHBORHOOD ACREAGE
R-7	MULTI-FAMILY	150		12.74
R-8	COURTYARD	116		16.74
RESIDENTIAL SUBTOTAL		266		29.49
NEIGHBORHOOD	LAND USE	DWELLING UNITS	DESCRIPTION	GROSS PARK ACREAGE
P-1	PUBLIC PARK	-	CENTRAL PARK	6.23
P-2	PUBLIC PARK	-	SCENIC PARK	3.94
PUBLIC PARK SUBTOTAL		-		10.17
PP-1	PRIVATE PARK	-	-	2.77
PP-2	PRIVATE PARK	-	-	2.09
PP-3	PRIVATE PARK	-	-	1.90
PP-4	PRIVATE PARK	-	-	1.53
PP-5	PRIVATE PARK	-	-	0.77
PP-6	PRIVATE PARK	-	-	0.39
PRIVATE PARK SUBTOTAL		-		9.46
PPP-1	PRIVATE POCKET PARK		-	0.29
PPP-2	PRIVATE POCKET PARK		-	0.22
PPP-3	PRIVATE POCKET PARK		-	0.17
PPP-4	PRIVATE POCKET PARK		-	0.20
PPP-5	PRIVATE POCKET PARK		-	0.22
PPP-6	PRIVATE POCKET PARK		-	0.22
PPP-7	PRIVATE POCKET PARK	-	-	0.16
PPP-8	PRIVATE POCKET PARK	-	-	0.12
PPP-9	PRIVATE POCKET PARK	-	-	0.17
PPP-10	PRIVATE POCKET PARK	-	-	0.16
PPP-11	PARK	-	-	0.23
PRIVATE POCKET PARK SUBTOTAL		-		2.14
MU-1	MIXED USE	-	COMMERCIAL	1.68
MU-2	MIXED USE	-	COMMERCIAL	1.02
MIXED USE SUBTOTAL		-		2.70
S-1	SCHOOL	-	SCHOOL	9.88
SCHOOL SUBTOTAL		-		9.88
PS-1	PUBLIC SERVICES	-	FIRE STATION	2.26
PUBLIC SERVICES SUBTOTAL		-		2.26
OS-1a	OPEN SPACE	-	BASIN	3.67
OS-1b	OPEN SPACE	-	HOA OS	1.11
OS-2a	OPEN SPACE	-	PRESERVE	0.25
OS-2b	OPEN SPACE	-	HOA OS	1.30
OS-3a	OPEN SPACE	-	HOA OS	4.18
OS-3b	OPEN SPACE	-	HOA OS	0.03
OS-4	OPEN SPACE	-	PRESERVE	164.56
OS-5	OPEN SPACE	-	HOA OS	4.47
OS-6	OPEN SPACE	-	HOA OS	4.78
OS-7	OPEN SPACE	-	HOA OS	8.57
OS-8a	OPEN SPACE	-	POTENTIAL PRESERVE	5.53
OS-8b	OPEN SPACE	-	HOA OS	5.13
OS-8c	OPEN SPACE	-	POTENTIAL PRESERVE	0.71
OS-9a	OPEN SPACE	-	WATER TANK	1.35
OS-9b	OPEN SPACE	-	PRESERVE	0.50
OS-10	OPEN SPACE	-	HOA OS	1.88
OS-11	OPEN SPACE	-	HOA OS	0.06
OS-12	OPEN SPACE	-	HOA OS	0.11
OS-13	OPEN SPACE	-	HOA OS	8.64
OS-14	OPEN SPACE	-	HOA OS	2.81
OS-15	OPEN SPACE	-	HOA OS	1.36
OS-16	OPEN SPACE	-	HOA OS	0.17
OS-17	OPEN SPACE	-	HOA OS	2.21
OS-18	OPEN SPACE	-	HOA OS	0.25
OS-19	OPEN SPACE	-	HOA OS	7.67
OS-20	OPEN SPACE	-	HOA OS	2.36
OS-21	OPEN SPACE	-	HOA OS	9.17
OS-22	OPEN SPACE	-	HOA OS	9.52
OS-23	OPEN SPACE	-	HOA OS	0.24
OS-24	OPEN SPACE	-	HOA OS	2.07
OS-25	OPEN SPACE	-	PRESERVE	1.85
OS-26	OPEN SPACE	-	PRESERVE	4.43
OS-27	OPEN SPACE	-	PRESERVE	2.08
OS-28a	OPEN SPACE	-	PRESERVE	5.94
OS-28b	OPEN SPACE	-	HOA OS	0.85
OS-29a	OPEN SPACE	-	HOA OS	0.18
OS-29b	OPEN SPACE	-	PRESERVE	0.25
OS-30a	OPEN SPACE	-	BASIN	3.83
OS-30b	OPEN SPACE	-	PRESERVE	0.54
OS-31	OPEN SPACE	-	HOA OS	0.37
OS-32	OPEN SPACE	-	HOA OS	1.61
OS-33	OPEN SPACE	-	HOA OS	0.13
OS-34	OPEN SPACE	-	HOA OS	2.75
OS-35	OPEN SPACE	-	HOA OS	0.14
OS-36	OPEN SPACE	-	PRESERVE	0.30
OS-37a	OPEN SPACE	-	PRESERVE	25.90
OS-37b	OPEN SPACE	-	POTENTIAL PRESERVE	1.06
OS-38	OPEN SPACE	-	BASIN	8.66
OS-39a	OPEN SPACE	-	HOA OS	5.62
OS-39b	OPEN SPACE	-	HOA OS	4.61
OS-40	OPEN SPACE	-	HOA OS	0.07
OS-41a	OPEN SPACE	-	HOA OS	0.70
OS-41b	OPEN SPACE	-	HOA OS	0.14
OS-42	OPEN SPACE	-	HOA OS	0.56
OS-43	OPEN SPACE	-	HOA OS	0.42
OS-44	OPEN SPACE	-	HOA OS	4.49
OS-45	OPEN SPACE	-	PRESERVE	5.50
OS-46a	OPEN SPACE	-	HOA OS	1.87
OS-46b	OPEN SPACE	-	HOA OS	2.45
OS-47a	OPEN SPACE	-	HOA OS	0.07
OS-47b	OPEN SPACE	-	HOA OS	0.11
OS-48	OPEN SPACE	-	HOA OS	0.53
OS-49a	OPEN SPACE	-	PRESERVE	0.83
OS-49b	OPEN SPACE	-	HOA OS	4.36
OS-50a	OPEN SPACE	-	PRESERVE	42.27
OS-50b	OPEN SPACE	-	POTENTIAL PRESERVE	6.26
OS-51	OPEN SPACE	-	POTENTIAL PRESERVE	9.44
OS-52a	OPEN SPACE	-	HOA OS	7.13
OS-52b	OPEN SPACE	-	PRESERVE	0.07
OS-53	OPEN SPACE	-	HOA OS	0.21
OS-54a	OPEN SPACE	-	HOA OS	0.11
OS-54b	OPEN SPACE	-	HOA OS	0.24
OS-55a	OPEN SPACE	-	HOA OS	3.85
OS-55b	OPEN SPACE	-	PRESERVE	0.37
OS-56a	OPEN SPACE	-	HOA OS	1.19
OS-56b	OPEN SPACE	-	PRESERVE	2.42
OS-57a	OPEN SPACE	-	PRESERVE	1.36
OS-59c	OPEN SPACE	-	HOA OS	0.39
OS-60a	OPEN SPACE	-	HOA OS	1.72
OS-60b	OPEN SPACE	-	PRESERVE	0.25
OS-61a	OPEN SPACE	-	HOA OS	1.86
OS-61b	OPEN SPACE	-	PRESERVE	0.33
OS-69	OPEN SPACE	-	PRESERVE	14.88
OPEN SPACE SUBTOTAL		-		442.20
ON-SITE PVR	STREET	-	MAJOR CIRCULATION	16.46
ON-SITE PVR PRESERVE	STREET	-	MAJOR CIRCULATION	1.61
ON-SITE ROW PRESERVE	STREET	-	CIRCULATION	2.12
ON-SITE ROW	STREET	-	CIRCULATION	6.82
STREET SUBTOTAL		-		27.02
OVERALL TM TOTAL		987		793.72

VILLAGE 14 LOTTING

NEIGHBORHOOD R-1

LOT #	LOT AREA
1	5,706
2	5,796
3	5,849
4	5,696
5	5,543
6	5,612
7	5,690
8	5,841
9	5,987
10	6,309
11	6,470
12	7,189
13	6,534
14	7,931
15	5,748
16	5,982
17	6,166
18	6,137
19	6,069
20	5,964
21	5,822
22	5,771
23	5,851
24	9,655
25	13,236
26	12,177
27	5,258
28	5,168
29	5,472
30	5,874
31	6,191
32	6,338
33	5,498
34	6,037
35	6,053
36	6,132
37	6,005
38	5,841
39	5,812
40	6,093
41	5,810
42	5,664
43	5,642
44	5,515
45	5,350
46	5,090
47	5,665
48	6,673
49	7,949
50	8,783
51	7,589
52	8,977
53	8,611
54	7,198
55	7,297
56	8,754
57	8,565
58	8,624
59	8,500
60	8,900
61	9,903
62	10,378
63	11,574
64	13,271
65	13,496
66	13,614
67	11,967
68	10,648
69	10,398
70	10,126
71	9,932
72	9,454
73	9,482
74	9,396
75	9,243
76	8,873
77	8,473
78	8,398
79	8,151
80	8,914
81	7,328
82	6,751
83	8,774
84	9,247
85	7,492
86	7,015
87	7,050
88	7,238
89	7,202
90	7,218
91	7,474
92	8,358
93	8,555
94	8,191
95	8,304
96	7,328
97	8,967
98	9,007
99	8,238
100	11,458
101	8,484
102	7,171
103	6,448
RES. SUBTOTAL SF	790,648
RES. SUBTOTAL AC	18.15
MAX	13,614
MIN	5,090
RES. AVG LOT SIZE	7,676
CIRCULATION SF	251,264
CIRCULATION AC	5.77
TOTAL SF	1,041,912
TOTAL AC	23.92

NEIGHBORHOOD R-2

LOT #	LOT AREA
1	6,794
2	6,565
3	6,127
4	6,005
5	6,005
6	6,005
7	6,002
8	9,458
9	9,576
10	9,455
11	9,784
12	6,697
13	7,809
14	7,649
15	8,008
16	9,384
17	10,223
18	13,295
19	11,733
20	14,362
21	16,456
22	9,273
23	8,223
24	9,308
25	9,403
26	9,522
27	9,000
28	8,827
29	8,761
30	8,448
31	8,700
32	8,449
33	8,364
34	8,459
35	8,520
36	8,126
37	7,653
38	7,519
39	7,602
40	7,606
41	7,713
42	8,038
43	6,916
44	6,773
45	7,335
46	11,123
47	10,966
48	10,869
49	10,419
50	7,793
51	6,688
52	6,416
53	6,554
54	6,476
55	7,415
56	9,826
57	10,273
58	7,931
59	6,700
60	7,268
61	11,245
62	10,905
63	12,101
64	15,424
65	8,063
66	10,917
67	9,957
68	9,293
69	9,357
70	9,372
71	9,031
72	9,326
73	9,465
74	9,295
75	9,300
76	8,952
77	10,873
78	12,168
79	9,114
80	8,755
81	8,335
82	8,396
83	11,247
84	11,160
85	10,622
86	9,910
87	8,536
88	7,171
89	11,041
90	9,774
91	8,199
92	8,150
93	8,253
94	8,463
95	8,909
96	8,964
97	8,736
98	8,714
99	8,488
100	7,628
101	8,017
102	9,441
103	9,800
104	21,542
105	10,031
106	9,084
107	8,568
108	8,293
109	8,819
110	10,793
111	10,950
112	9,823
113	13,197
114	15,714
115	11,575
116	10,735
117	10,941
118	8,618
119	6,745
120	7,369
121	8,498
122	8,403
123	8,697
124	8,743
125	8,522
126	9,269
127	9,170
128	8,792
129	8,666
130	8,785
131	8,883
132	10,777
133	9,484
134	7,458
135	7,970
136	7,201
RES. SUBTOTAL SF	1,245,629
RES. SUBTOTAL AC	28.60
MAX	21,542
MIN	6,002
RES. AVG LOT SIZE	9,159
CIRCULATION SF	408,913
CIRCULATION AC	9.39
TOTAL SF	1,654,542
TOTAL AC	37.98

NEIGHBORHOOD R-3

LOT #	LOT AREA
1	5,154
2	5,270
3	5,486
4	6,422
5	7,067
6	7,066
7	7,526
8	7,707
9	7,727
10	7,829
11	9,771
12	9,065
13	9,306
14	10,079
15	9,912
16	11,327
17	10,268
18	8,261
19	7,274
20	6,819
21	9,064
22	9,018
23	8,870
24	9,143
25	9,244
26	8,968
27	8,689
28	7,961
29	6,614
30	6,841
31	7,896
32	8,704
33	13,693
34	7,717
35	12,971
36	18,583
37	8,726
38	6,282
39	7,187
40	5,883
41	5,394
42	5,541
43	6,295
44	19,778
45	15,302
46	17,359
47	7,543
48	6,483
49	5,852
50	6,091
51	6,345
52	6,212
53	6,849
54	8,651
55	8,367
56	8,506
57	5,835
58	5,976
59	17,317
60	9,452
61	11,564
62	14,424
63	11,003
64	13,998
65	12,440
66	13,329
67	12,271
68	10,896
69	10,223
70	9,890
71	10,811
72	11,362
73	10,524
74	10,585
75	10,443
76	9,936
77	9,671
78	9,853
79	11,526
80	10,243
81	9,962
82	11,011
83	10,773
84	11,406
85	11,968
86	9,851
87	10,094
88	9,436
89	9,174
90	9,780
91	9,256
92	9,379
93	10,210
94	9,365
95	9,454
96	9,985
97	8,786
98	8,766
99	9,437
100	10,833
101	10,177
102	8,810
103	8,254
104	8,233
105	7,963
106	7,846
107	7,491
108	6,816
109	6,234
110	5,671
111	5,638
112	6,323
RES. SUBTOTAL SF	1,033,912
RES. SUBTOTAL AC	23.74
MAX	19,778
MIN	5,154
RES. AVG LOT SIZE	9,231
CIRCULATION SF	311,450
CIRCULATION AC	7.15
TOTAL SF	1,345,362
TOTAL AC	30.89

NEIGHBORHOOD R-4

LOT #	LOT AREA
1	8,382
2	7,835
3	7,386
4	7,071
5	7,696
6	7,376
7	7,234
8	6,548
9	6,380
10	6,426
11	6,550
12	7,043
13	6,970
14	6,324
15	6,324
16	6,323
17	6,322
18	6,918
19	7,559
20	7,514
21	7,575
22	7,550
23	7,729
24	7,819
25	7,896
26	7,569
27	7,701
28	7,414
29	7,667
30	9,214
31	9,175
32	8,638
33	7,794
34	8,139
35	7,268
36	8,583
37	8,613
38	8,242
39	7,788
40	7,546
41	7,652
42	7,352
43	13,606
44	9,170
45	6,785
46	6,274
47	6,270
48	6,540
49	7,226
50	8,066
51	8,022
52	8,153
53	8,190
54	7,691
55	7,010
56	7,047
57	7,360
58	7,371
59	7,386
60	7,429
61	7,129
62	7,222
63	6,780
64	6,317
65	6,345
66	6,342
67	6,523
68	6,965
69	7,259
70	7,072
71	6,519
72	6,655
73	6,941
RES. SUBTOTAL SF	542,770
RES. SUBTOTAL AC	12.46
MAX	13,606
MIN	6,270
RES. AVG LOT SIZE	7,435
CIRCULATION SF	242,579
CIRCULATION AC	5.57
TOTAL SF	785,349
TOTAL AC	18.03

NEIGHBORHOOD R-5

LOT #	LOT AREA
1	9,610
2	9,421
3	10,312
4	12,905
5	8,627
6	10,139
7	9,026
8	10,125
9	13,676
10	8,041
11	8,375
12	9,205
13	8,354
14	8,058
15	8,160
16	8,364
17	9,916
18	9,836
19	8,588
20	7,854
21	7,854
22	7,854
23	7,997
24	8,242
25	8,874
26	10,054
27	10,407
28	10,424
29	11,837
30	11,834
31	12,025
32	10,829
33	9,515
34	9,009
35	11,077
36	15,425
37	14,082
38	13,382
39	13,168
40	13,099
41	12,627
42	13,163
43	15,315
44	10,337
45	11,363
46	11,306
47	11,359
48	12,781
49	12,778
50	9,895
51	9,124
52	9,785
53	10,184
54	9,988
55	10,124
56	16,312
57	8,870
58	9,060
59	9,040
60	9,361
61	11,723
62	18,267
63	12,743
64	11,618
65	10,849
66	9,581
67	9,420
68	9,671
69	9,570
70	9,944
71	8,534
72	8,786
73	11,575
74	12,578
75	12,109
76	12,265
77	10,582
78	11,054
79	10,840
80	12,873
81	13,554
82	23,844
83	10,315
84	9,179
85	10,337
86	10,172
87	10,908
88	9,862
89	9,589
90	8,258
91	8,180
92	11,140
93	9,982
94	14,597
95	9,915
96	8,493
97	8,810
98	9,444
99	12,016
100	11,056
101	10,919
102	11,236
103	12,287
104	12,189
105	13,270
106	9,581
107	10,526
108	12,003
109	10,980
110	9,230
111	10,457
112	12,288
113	16,771
114	16,929
115	15,549
116	9,751
117	8,742
118	10,053
119	9,593
120	8,076
121	12,588
RES. SUBTOTAL SF	1,315,603
RES. SUBTOTAL AC	30.20
MAX	23,844
MIN	7,854
RES. AVG LOT SIZE	10,873
CIRCULATION SF	459,116
CIRCULATION AC	10.54
TOTAL SF	1,774,719
TOTAL AC	40.74

NEIGHBORHOOD R-6

LOT #	LOT AREA
1	5,449
2	6,066
3	5,731
4	5,626
5	5,763
6	6,691
7	6,948
8	6,827
9	6,829
10	7,049
11	7,485
12	7,742
13	7,653
14	7,445
15	7,713
16	7,602
17	7,480
18	5,709
19	7,898
20	8,073
21	7,984
22	7,607
23	7,602
24	7,417
25	5,913
26	6,016
27	6,957
28	6,480
29	7,200
30	8,298
31	9,894
32	12,783
33	11,022
34	10,344
35	9,307
36	8,168
37	7,930
38	7,732
39	7,810
40	7,168
41	6,843
42	7,090
43	7,234
44	7,128
45	6,502
46	5,894
47	5,667
RES. SUBTOTAL SF	347,769
RES. SUBTOTAL AC	7.98
MAX	12,783
MIN	5,449
RES. AVG LOT SIZE	7,399
CIRCULATION SF	125,935
CIRCULATION AC	2.89
TOTAL SF	473,704
TOTAL AC	10.87

NEIGHBORHOOD R-9

LOT #	LOT AREA
1	6,390
2	5,829
3	5,830
4	5,830
5	6,250
6	8,229
7	7,406
8	7,573
9	7,925
10	11,164
11	8,453
12	8,590
13	16,059
14	6,878
15	8,076
16	5,648
17	5,590
18	5,590
19	5,590
20	5,590
21	5,590
22	5,590
23	6,649
24	7,437
25	6,624
26	6,624
27	6,624
28	6,624
29	6,624
30	6,624
31	6,942
32	6,658
33	6,574
34	6,454
35	6,319
36	6,169
37	6,055
38	5,677
39	5,524
40	5,380
41	5,245
42	5,217
43	5,126
44	5,122
45	5,242
46	6,760
47	7,881
48	7,648
49	6,639
50	6,888
51	6,888
52	6,893
53	7,887
54	6,778
55	5,671
56	5,677
57	5,789
58	11,814
59	10,368
60	10,225
61	8,457
62	7,262
63	10,326
64	8,770
65	5,690
66	5,507
67	5,510
68	5,705
69	5,889
70	5,895
71	5,931
72	6,104
73	6,356
74	6,252
75	6,070
76	5,941
77	5,810
78	6,750
79	6,552
80	6,177
81	6,314
82	7,791
83	10,831
84	10,838
85	18,829
86	9,425
87	11,815
88	7,558
89	6,951
90	7,107
91	17,058
92	13,608
93	6,329
94	9,451
95	7,127
96	8,475
RES. SUBTOTAL SF	705,471
RES. SUBTOTAL AC	16.20
MAX	18,829
MIN	5,122
RES. AVG LOT SIZE	7,349
CIRCULATION SF	276,920
CIRCULATION AC	6.36
TOTAL SF	982,391
TOTAL AC	22.55

NEIGHBORHOOD R-10

LOT #	LOT AREA
1	5,910
2	5,743
3	6,923
4	7,254
5	5,361
6	7,208
7	6,158
8	6,024
9	5,958
10	5,936
11	6,454
12	6,391
13	6,744
14	6,896
15	6,640
16	6,760
17	6,774
18	7,314
19	6,634
20	6,560
21	7,078
22	6,865
23	6,983
24	7,033
25	7,551
26	8,035
27	9,189
28	70,225
29	9,228
30	8,738
31	8,513
RES. SUBTOTAL SF	279,080
RES. SUBTOTAL AC	6.41
MAX	70,225
MIN	5,361
RES. AVG LOT SIZE	9,003
CIRCULATION SF	29,041
CIRCULATION AC	0.67
TOTAL SF	308,121
TOTAL AC	7.07

NEIGHBORHOOD R-11

LOT #	LOT AREA
1	8,546
2	8,740
3	8,766
4	10,266
5	4,680
6	5,581
7	8,021
8	8,898
9	7,337
10	6,510
11	5,947
12	5,279
13	5,653
14	6,707
15	6,598
16	6,921
17	5,581
18	6,187
19	6,583
20	6,869
21	6,639
22	6,606
23	6,056
24	6,165
25	5,125
26	5,391
27	6,965
28	8,050
29	7,314
30	6,699
31	7,900
32	5,657
33	7,270
34	5,552
35	4,735
36	4,558
37	4,632
38	4,644
39	4,720
40	5,027
41	5,073
42	5,217
43	7,811
44	6,328
45	6,443
46	6,552
47	6,766
48	6,746
49	6,132
50	5,519
51	5,135
52	7,206
53	5,849
54	6,260
55	7,345
56	7,655
57	8,273
58	8,791
59	8,696
60	8,730
61	8,684
62	8,801
63	8,947
64	8,701
65	7,815
66	7,533
67	7,435
68	7,428
69	7,497
70	7,869
71	12,599
72	5,902
73	5,153
74	4,771
75	4,500
76	4,500
77	4,866
78	5,027
79	5,073
80	5,377
81	5,983
82	5,999
83	5,937
84	5,935
85	5,873
86	5,922
87	5,435
88	5,163
89	5,110
90	4,836
91	7,571
92	6,811
93	5,619
94	5,660
95	6,154
96	7,009
97	8,005
98	8,582
99	6,899
100	7,051
101	7,360
102	5,648
103	5,308
104	5,005
105	5,306
106	5,427
107	5,071
108	5,049
109	6,501
110	6,979
111	6,732
112	7,041
113	7,782
114	7,851
115	7,110
116	4,884
117	5,209
118	5,234
119	6,213
RES. SUBTOTAL SF	775,644
RES. SUBTOTAL AC	17.81
MAX	12,599
MIN	4,500
RES. AVG LOT SIZE	6,518
CIRCULATION SF	306,409
CIRCULATION AC	7.03
TOTAL SF	1,082,053
TOTAL AC	24.84

NEIGHBORHOOD R-12

LOT #	LOT AREA
1	6,300
2	6,300
3	6,300
4	6,364
5	6,002
6	6,820
7	6,490
8	6,490
9	6,380
10	6,400
11	6,929
12	7,011
13	7,229
14	7,001
15	6,334
16	6,309
17	6,785
18	7,989
19	8,190
20	8,093
21	8,196
22	8,343
23	8,432
24	8,495
25	8,500
26	8,490
27	8,240
28	9,114
29	6,864
30	5,678
31	6,534
32	5,925
33	5,911
34	5,796
35	5,913
36	5,990
37	5,962
38	5,905
39	5,776
40	6,232
41	7,891
42	8,516
43	5,487
44	7,705
45	7,734
46	6,046
47	6,593
48	6,979
49	7,125
50	7,355
51	7,549
52	7,807
53	8,772
54	8,598
55	8,609
56	11,557
57	7,931
58	6,344
59	6,193
60	6,182
61	5,904
62	5,510
63	5,716
64	5,553
65	5,500
66	5,541
67	9,403
68	10,692
RES. SUBTOTAL SF	480,804
RES. SUBTOTAL AC	11.04
MAX	11,557
MIN	5,487
RES. AVG LOT SIZE	7,071
CIRCULATION SF	492,875
CIRCULATION AC	11.31
TOTAL SF	973,679
TOTAL AC	22.35

NEIGHBORHOOD R-17

LOT #	LOT AREA
1	9,612
2	11,729
3	8,533
4	10,734
5	11,061
6	8,735
7	8,628
8	10,139
9	7,098
10	10,865
RES. SUBTOTAL SF	97,134
RES. SUBTOTAL AC	2.23
MAX	11,729
MIN	7,098
RES. AVG LOT SIZE	9,713
CIRCULATION SF	30,564
CIRCULATION AC	0.70
TOTAL SF	127,698
TOTAL AC	2.93

NEIGHBORHOOD R-18

LOT #	LOT AREA
1	10,380
2	10,343
3	11,391
4	11,932
5	14,753
6	12,319
7	12,594
8	13,377
9	12,132
10	9,106
11	13,070
12	13,051
13	22,611
14	11,935
15	9,358
16	13,200
17	13,813
18	15,473
19	17,252
20	9,190
21	11,450
22	15,031
23	12,451
24	9,578
25	7,953
26	8,987
27	10,324
28	7,482
29	9,302
30	12,519
31	8,963
32	9,818
33	11,260
34	9,842
35	9,787
36	10,933
37	23,241
38	14,231
39	12,737
40	12,507
41	10,747
42	9,580
43	9,355
44	8,700
45	9,237
RES. SUBTOTAL SF	533,295
RES. SUBTOTAL AC	12.24
MAX	23,241
MIN	7,482
RES. AVG LOT SIZE	11,851
CIRCULATION SF	173,621
CIRCULATION AC	3.99
TOTAL SF	706,916
TOTAL AC	16.23

PLANNING AREA 19 LOTTING

NEIGHBORHOOD R-13

LOT #	LOT AREA
1	24,338
2	48,775
3	25,422
4	34,268
5	49,498
6	43,520
7	62,670
8	44,654
9	38,334
10	37,521
11	44,149
12	46,899
13	64,156
RES. SUBTOTAL SF	564,204
RES. SUBTOTAL AC	12.95
MAX	64,156
MIN	24,338
RES. AVG LOT SIZE	43,400
CIRCULATION SF	-6,873
CIRCULATION AC	-0.16
TOTAL SF	557,331
TOTAL AC	12.79

PLANNING AREA 16 & 19 SUMMARY

NEIGHBORHOOD	LAND USE	DWELLING UNITS	LOT SIZE	GROSS NEIGHBORHOOD ACREAGE
R-13	SF	13	.5 ACRE	12.79
RESIDENTIAL SUBTOTAL		13		12.79
NEIGHBORHOOD	LAND USE	DWELLING UNITS	DESCRIPTION	GROSS PARK ACREAGE
OS-57b	OPEN SPACE	-	PRESERVE	0.61
OS-58	OPEN SPACE	-	PRESERVE	23.29
OS-59a	OPEN SPACE	-	BASIN + SEWER PUPMP IN PRESERVE	0.99
OS-59b	OPEN SPACE	-	BASIN	1.66
OS-62	OPEN SPACE	-	PRESERVE	0.74
OS-63	OPEN SPACE	-	PRESERVE	15.59
OS-64	OPEN SPACE	-	POTENTIAL PRESERVE	1.15
OS-65a	OPEN SPACE	-	HOA OS	1.93
OS-65b	OPEN SPACE	-	PRESERVE	0.06
OS-66a	OPEN SPACE	-	BASIN IN PRESERVE	3.48
OS-66b	OPEN SPACE	-	POTENTIAL PRESERVE	0.12
OS-67a	OPEN SPACE	-	PRESERVE	0.14
OS-67b	OPEN SPACE	-	HOA OS	0.14
OS-68a	OPEN SPACE	-	PRESERVE	52.06
OS-68b	OPEN SPACE	-	POTENTIAL PRESERVE	0.20
OPEN SPACE SUBTOTAL		-		102.16
ON-SITE PVR	STREET	-	MAJOR CIRCULATION	3.44
ON-SITE PVR PRESERVE	STREET	-	MAJOR CIRCULATION	1.44
STREET SUBTOTAL		-		4.88
OVERALL TM TOTAL		13		119.83

NEIGHBORHOOD/LOT SUMMARY TABLES

PREPARED BY:

HUNSAKER & ASSOCIATES SAN DIEGO, INC

PLANNING ENGINEERING SURVEYING 9707 Waples Street San Diego, Ca 92121 PH(858)558-4500 · FX(858)558-1414

REVISED PRELIMINARY GRADING PLAN

OTAY RANCH

VILLAGE 14 AND PLANNING AREAS 16 & 19

County Of San Diego, California

SHEET 17 OF 17

W.O. 2421-0036

R:\1235\&Pln\TM-Grading Plan (Village 14 & PA 19)\PRELIM GRADING PLAN\Village 14 - PRELIM GRADING - Sht 17 (Village 14 & PA 19).dwg[]Dec-18-2

NOT APPLICABLE

3.0 Cover Sheet and General Requirements

- Standard SWQMP Form Table 2 and PDP SWQMP Form Table 3 require the identification of pollutant-generating sources and associated BMPs for development projects.

- In some cases, County staff may request additional, more detailed documentation of source control BMP design details. If requested, applicants must submit a completed copy of this Source Control BMP Worksheet. This requirement can be satisfied either by submitting a copy of BMPDM Attachment E.1 (Source Control BMP Requirements) or equivalent documentation at the County's discretion.

- Submit this documentation using this cover sheet.

- Sources and BMPs must also be shown as applicable on DMA exhibits and construction plans (see Attachment 2).

NOT APPLICABLE

4.0 Cover Sheet

- If this SWQMP implements any requirements of an earlier master SWQMP submittal, a copy of that previous submittal must be attached under cover of this sheet.

5.0 General Requirements

- Each Priority Development Project (PDP) must provide a description of existing site conditions and proposed changes to them, including changes to topography and drainage.
- Has a Drainage Report has been prepared for the PDP?

  ☒ Yes

  - Review of the Drainage Report must be concurrent with the PDP SWQMP.
  - Include the summary page of the Drainage Report with this cover page, and provide the following information:

    Title: Otay Ranch Village 14 and Planning Areas 16/19

    Prepared By: Hunsaker & Associates San Diego Inc.

    Date: 12/2/2019

  - Do not complete the rest of this attachment (also exclude these additional pages from your submittal). Additional documentation of site and drainage conditions is not required unless requested by County staff.

  ☐ No -- Complete and submit the remainder of this attachment below.

5.1 Description of Existing Site Condition

Provide the requested information below for the project site in its existing condition.

a. Current Site Status

Select all that apply to any portion of the site.

- ☒ Existing development
- ☐ Previously graded but not built out
- ☐ Agricultural or other non-impervious use
- ☒ Vacant, undeveloped/natural
- ☐ Demolition completed without new construction

b. Existing Land Cover

Provide the area (in acres or square feet) within all applicable categories of land cover below. The total area should equal that of the entire project site.

	Area (acres or ft^2)
☒ Vegetative Cover	1,276.56 acres
☐ Non-Vegetated Pervious Areas	Click here to enter text.
☒ Impervious Areas	6.94 acres

c. Underlying Soil

Select all soil groups that are present on the site.

NRCS Hydrologic Soil Group(s)			
Type A	Type B	Type C	Type D
☐	☐	☒	☒

5.2 Description of Existing Site Drainage

Describe how storm water runoff is conveyed from the site. At a minimum, address the following:

- Is the existing drainage conveyance ☒ natural or ☐ urban?
- Is runoff from offsite conveyed through the site? ☒ Yes ☐ No
  If yes, quantify all offsite drainage areas, design flows, and locations where offsite flows enter the project site, and summarize how such flows are conveyed through the site.
- Describe the existing project site drainage conveyance network (including any existing storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels).
- Identify all discharge locations from the existing project site along with a summary of conveyance system size and capacity for each of the discharge locations. Summarize the pre-project drainage areas and design flows to each of the existing runoff discharge locations.
- Provide additional information as necessary or requested to describe the site drainage.

Description (add pages as necessary to provide all requested information).

Runoff from the Proposed Project Site currently flows to Proctor Valley which acts as a natural drainage way directing flows in a southwesterly direction towards the Upper Otay Reservior. Proctor Valley Road runs parallel to this natural drainage way and currently has minimal, if any, drainage facilities. Runoff from the undisturbed canyons east of Proctor Valley sheet flow over Proctor Valley Road en route to Proctor Valley. In some instances, runoff is conveyed within a storm drain culvert crossing underneath Proctor Valley Road.

The Project area is vast. An existing condition hydrologic analysis was prepared for the site and is included within the Drainage Study for Otay Ranch Village 14 and Planning Areas 16 and 19. The unit hydrograph analysis determined a peak 100-year flow of 12,027 cfs at the discharge point into the Upper Otay Reservior. The tributary area at this discharge point is 10.751 sqaure miles and includes portions of the City of Jamul.

5.3 Description of Proposed Site Development

Provide a general description of the proposed site development, including at a minimum the information requested below. Add pages as necessary.

a. Project description/ Proposed land use and/or activities (project location, development type, size, numbers of units, etc.)

The Proposed Project relates to approximately 1,543 acres of undeveloped land within the 23,000-acre Otay Ranch master planned community, located in southern San Diego County. More specifically, the Proposed Project reflects proposed changes to the Approved Project, which the County Board of Supervisors approved on June 26, 2019 (the "Approved Project"). Both the Approved Project and the Proposed Project Amendment contemplate development within a portion of Otay Ranch Village 14 and Planning Areas 16/19 in the Proctor Valley area of Otay Ranch, as shown on Figure 1.

On June 27, 2019, the owner/applicant, entered into a Dispute Resolution Agreement with the California Department of Fish and Wildlife (CDFW), the United States Fish and Wildlife Service (USFWS), and the County of San Diego (County), pursuant to which GDCI would seek a land exchange with CDFW through a process overseen by the California Wildlife Conservation Board (WCB). The proposed land exchange, if approved by WCB, would require Owner/Applicant to (i) transfer 147.3 acres in Village 14 and 192.4 acres in Planning Areas 16 to CDFW, and (ii) record a conservation easement over 191.5 acres in Planning Area 16, and would require CDFW to transfer 219.4 acres in Village 14 to GDCI. The Proposed Project would then be implemented upon the lands within GDCI's ownership, including those received via the WCB land exchange.

Because the Proposed Project assumes the above-described land exchange between Owner/Applicant and CDFW, it would result in a different development pattern than the Approved Project's development pattern. For this reason, the County will require that Owner/Applicant process a Specific Plan Amendment and a Revised Tentative Map to accommodate the Proposed Project Amendment.

The purpose of this technical analysis is to evaluate whether and to what extent the impacts of the Proposed Project differ from those of (i) the Approved Project and (ii) the EIR Land Exchange Alternative, both of which were assessed in the Final EIR for the Approved Project, certified by the County Board of Supervisors on June 26, 2019 (Final EIR). Note that the while the EIR Land Exchange Alternative and the Proposed Project Amendment both contemplate exchanges of land with CDFW, they differ in important respects.

The Proposed Project proposes 1,266 homes within a Project Area of 1,543 acres. The actual Development Footprint would be approximately 579 acres. Of the 1,266 homes, 1,253 would be located in Village 14 and thirteen (13) would be located in Planning Area 19. As indicated above, the Proposed Project requires a Specific Plan Amendment and Revised Tentative Map, all of which must be approved by the County. The Proposed Project is depicted in Figure 2 and Tables 1-3 Site Utilization Plans and assumes a land exchange between the Applicant and CDFW as depicted in Figure 3. The Proposed Project is further defined in Section 1.0 of the EIR Addendum, which is incorporated herein by reference.

- CEQA Drainage Study, Otay Ranch Village 14 and Planning Areas 16/19 Proposed Project Amendment, Prepared by Hunsaker & Associates (December 19, 2019);
- Priority Development Project (PDP) Storm Water Quality Management Plan (SWQMP), Otay Ranch Village 14 and Planning Areas 16 and 19 Proposed Project Amendment, Prepared by Hunsaker & Associates (December 19, 2019);
- Hydromodification Flow Control Study Otay Ranch Village 14 and Planning Areas 16/19 Proposed Project Amendment, Prepared by Hunsaker & Associates (December 19, 2019);

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

The proposed imperviousness includes streets, sidewalks, driveways, pavement, roofs, patios, parking, and athletic courts.

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

The site will include pervious surfaces such as landscaped areas, vegetated swales, biofiltration areas, permeable pavement, and areas which will remain in their natural condition.

d. Does the project include grading and changes to site topography? ☒ Yes ☐ No

If yes, describe below.

The overall site drainage towards the Upper Otay Reservoir will remain without diversion. However, drainage patterns within the internal subwatersheds will occur. These changes will be mitigated by the proposed storm drain system consisting of inlets, pipes, cleanouts, energy dissipation, and basins.

5.4 Description of Proposed Site Drainage

A. Changes to Site Drainage -- Does the project include changes to site drainage (e.g., installation of new storm water conveyance systems)? ☐ Yes ☐ No

If yes:

- Describe (1) the proposed project site drainage conveyance network (including storm drains, concrete channels, swales, detention facilities, storm water treatment facilities, natural or constructed channels), and (2) 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.

Description (add pages as necessary to provide all requested information).

In the developed condition, the Project Area will drain in the same general direction as existing towards the Upper Otay Reservoir. Developed site topographies range from approximately 595 feet AMSL to 1265 feet AMSL which includes the site of the future water tank located within the northeast portion of the Proposed Project. The higher elevation portions west of the eastern watershed ridge line are not proposed for development. All runoff from the proposed project will discharge to Proctor Valley. Development from the site will not cause any diversion of the 6,880.65 acre sub-watershed area to or from the Upper Otay Reservoir watershed. Onsite developed areas will be conveyed towards water quality and HMP treatment facilities prior to discharging into Proctor Valley. Where feasible and possible, a separate storm drain system will route offsite runoff flow through the site and directly discharge into Proctor Valley rather than comingling with onsite flows which require water quality treatment of the 85th percentile runoff volume. In some instances, natural drainage flows which are being routed around the site will reach the proposed improvements relative to Proctor Valley Road. In those cases, a storm drain or culvert will be constructed under the roadway to convey flows. As the case with the existing condition analysis, a proposed condition unit hydrograph hydrologic analysis was performed due to the vast tributary area of the site and affected areas tributary to the Upper Otay Reservoir (discharge location). The analysis includes onsite detention via the project biofiltration basins and determined that the peak flow decreased from 12,027 cfs to 11,501 cfs. Please refer to the *Drainage Study for Otay Ranch Village 14 & Planning Areas 16/19 Proposed Project Amendment* for associated drainage calculations relative to the proposed development.

6.0 General Requirements

- Use this attachment to document all proposed (1) self-mitigating, (2) de minimis, and (3) self-retaining DMAs. Indicate under "DMA Compliance Option" below which design options will be used to satisfy structural performance requirements for one or more DMA.

DMA Compliance Option	Required Sub-attachments	BMPDM Design Resources
☒ Self-mitigating	• Sub-attachment 6.1	• BMPDM Section 5.2.1
☐ De minimis	• Sub-attachment 6.2	• BMPDM Section 5.2.2
☐ Self-retaining[1]	• Sub-attachment 6.3	• BMPDM Section 5.2.3 (all options)
<u>SSD-BMP Type(s)</u>		
☐ Impervious Area Dispersion	• Sub-attachment 6.3.1	• Fact Sheet SD-B (Appendix E.8)
☐ Tree Wells	• Sub-attachment 6.3.2	• Fact Sheet SD-A (Appendix E.7)

- Submit this cover page and all "Required Sub-attachments" listed for each selected DMA compliance option.
- See the BMPDM sections and appendices listed under "BMPDM Design Resources" for additional explanation of design requirements. Each constructed feature must <u>fully</u> satisfy the requirements described in these resources, and any other guidance identified by the County.
- <u>DMA Exhibits and Construction Plans</u>: DMAs, features, and BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.

[1] If "Self-retaining" is selected, also choose the types of Significant Site Design BMPs (SSD-BMPs) to be used. SSD-BMPs are Site Design BMPs that are sized and constructed to fully satisfy all applicable Structural Performance Standards for a DMA.

6.1 Self-mitigating DMAs (complete this page once for ALL self-mitigating DMAs)

Self-mitigating DMAs consist of natural or landscaped areas that drain directly offsite or to the public storm drain system. These DMAs are excluded from DCV calculations.

- Provide the information requested below for each proposed self-mitigating DMA. Add rows or copy the table if additional entries are needed.

DMA #	a. DMA Area (ft^2)	Incidental Impervious Area		Permit # and Sheet #
		b. Size(ft^2)	c. % (b/a*100)	
11	3,035,696			SPA-19-001, TM5616R, STO-19-029
12	859,874			SPA-19-001, TM5616R, STO-19-029

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required for all DMAs listed.
- "Incidental Impervious Area" calculations are required only where applicable (see below).
- Each self-mitigating DMA must <u>fully</u> satisfy all design requirements and restrictions described in BMPDM Section 5.2.1 and any other guidance or instruction identified by the County. Check the boxes below to confirm that all required conditions are satisfied <u>for every DMA listed</u>.

☒ Each DMA is hydraulically separate from other DMAs that contain permanent storm water pollutant control BMPs.

<u>Natural and Landscaped Areas</u>

☒ Each DMA consists solely of natural or landscaped areas, except for incidental impervious areas (see below).

☒ Each area drains directly offsite or to the public storm drain system.

☒ Soils are undisturbed native topsoil, or disturbed soils that have been amended and aerated to promote water retention characteristics equivalent to undisturbed native topsoil.

☒ Vegetation is native and/or non-native/non-invasive drought tolerant species that do not require regular application of fertilizers and pesticides.

<u>Incidental Impervious Areas (if applicable; see above)</u>

Minor impervious areas may be permitted within the DMA if they satisfy the following criteria:

☐ They are not hydraulically connected to other impervious areas (unless it is a storm water conveyance system such as a brow ditch).

☐ They comprise less than 5% of the total DMA. Calculate the % incidental impervious area in the table above (c= b/a). DMAs are <u>not</u> self-mitigating if this area is 5% or greater.

6.2 De Minimis DMAs (complete this page once for ALL de minimis DMAs)

De minimis DMAs consist of areas too small to be considered significant contributors of pollutants and not practicable to drain to a BMP. They are excluded from DCV calculations. Examples include driveway aprons connecting to existing streets, portions of sidewalks, retaining walls, and similar features at the external boundaries of a project.

- Provide the information requested below for each proposed de minimis DMA. Add rows or copy the table if additional entries are needed.

DMA #	DMA Area (ft^2)	Permit # and Sheet #

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required.
- Check the boxes below to confirm that each required condition is satisfied for ALL de minimis DMAs on the site.

☐ Each DMA listed is less than 250 square feet and not adjacent or hydraulically connected to each other.

☐ Each DMA listed <u>fully</u> satisfies all design requirements and restrictions described in BMPDM Section 5.2.2 De Minimis DMAs.

6.3 Self-retaining DMAs using Significant Site Design BMPs

Self-retaining DMAs use Site Design BMPs to fully-retain the entire DCV, at a minimum. Site Design BMPs that fully retain the DCV, at a minimum, therefore replacing the need for a Structural BMP (S-BMP), are classified as Significant Site Design BMPs (SSD-BMPs). To satisfy pollutant control requirements only, self-retaining means retention of the entire DCV. However, under some circumstances, a self-retaining DMA can also satisfy hydromodification management requirements by implementing BMPs that retain a greater volume of runoff.

- Provide the information requested below for each proposed self-retaining DMA. Add rows or copy the table if additional entries are needed.

DMA #	DMA Area (ft²)	BMP Type (choose one per DMA)		Permit # and Sheet #
		Dispersion Area (Att. 6.3.1)	Tree Wells (Att. 6.3.2)	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	
		☐	☐	

Copy and Paste table here for additional DMAs

- "DMA #", "DMA Area", and "Permit # and Sheet #" are required.
- Select one BMP Type per DMA. Provide detailed documentation for each DMA in Attachments 6.3.1 (Impervious Dispersion Areas) and/or 6.3.2 (Tree Wells) below.
- Each self-retaining DMA must <u>fully</u> satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, applicable BMPDM Appendix E Fact Sheets, and any other guidance or

[2]Applicants wishing to utilize parameters less conservative than listed here must submit modeling to support their proposal. Consult your project manager for more information.
[3]Including the permeable pavement.

instruction identified by the County.

6.3.1 Self-retaining DMAs with Impervious Dispersion Areas

Impervious area dispersion (dispersion) refers to the practice of effectively disconnecting impervious areas from directly draining to the storm drain system by routing runoff from impervious areas such as rooftops (through downspout disconnection), walkways, and driveways onto the surface of adjacent pervious areas. The intent is to slow runoff discharges and reduce volumes. Dispersion with partial or full infiltration results in significant volume reduction by means of infiltration and evapotranspiration. When adequately sized, dispersion can also be used to satisfy both the pollutant control and hydromodification management structural performance standards for a DMA.

- Each self-retaining DMA with impervious area dispersion must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, Fact Sheet SD-B: Impervious Area Dispersion, and any other guidance or instruction identified by the County.
- Documentation of compliance with all applicable conditions must be submitted with this sub-attachment using the Summary Sheet for DMAs with Impervious Area Dispersion on the next page. One version of this Summary Sheet must be completed for each applicable DMA.
- Applicants are responsible to comply with all other applicable requirements, regardless of whether they are included in the summary sheet.
- The following applies if the dispersion area is native soil (SD-B in Appendix E):
    - For pollutant control only, the DMA is considered self-retaining if the impervious to pervious ratio is:
        - 2:1 when the pervious area is composed of Hydrologic Soil Group A
        - 1:1 when the pervious area is composed of Hydrologic Soil Group B
- The following applies if the dispersion area includes amended soil (SD-B in Appendix E):
    - DMAs using impervious area dispersion can be considered to meet both pollutant control and hydromodification flow control requirements if the impervious to pervious area ratio is 1:1 or less and all other design requirements of SD-B are satisfied, including 11 inches of amended soil.
- The following apply if the dispersion area is permeable pavement (SD-D in Appendix E):
    - For pollutant control only, a DMA is considered self-retaining if the ratio of total drainage area (including permeable pavement) to area of permeable pavement is 1.5:1 or less, and all other design requirements of SD-D are satisfied.
    - Hydromodification management performance standards can be satisfied using permeable pavement only if constructed to Structural BMP specifications. In this case, the permeable pavement must be sized and constructed in accordance with the requirements of INF-3.

[2]Applicants wishing to utilize parameters less conservative than listed here must submit modeling to support their proposal. Consult your project manager for more information.
[3]Including the permeable pavement.

Summary Sheet for DMAs with Impervious Area Dispersion (Complete 1 sheet per DMA)

DMA #

A. Minimum Sizing Requirements

Verify that minimum standards are satisfied for the applicable dispersion area type below[2].

Native Soil (Pollutant Control Only) Select one and provide calculations below.

☐ Soil Group A: Ratio I:P is 2:1 or less ☐ Soil Group B: Ratio I:P is 1:1 or less

Impervious Area (ft^2)	Permeable Dispersion Area (ft^2)	Ratio I:P

Amended Soil (Pollutant Control plus Hydromodification Management)

Must satisfy both conditions and provide calculations below.

☐ Ratio I:P is 1:1 or less, AND

☐ 11 inches or more of the top of the pervious area consists of amended soils (Fact Sheet SD-F)

Impervious Area (ft^2)	Permeable Dispersion Area (ft^2)	Ratio I:P

Permeable Pavement (Pollutant Control Only) Provide calculations below.

☐ Ratio DMA area to area of permeable pavement is 1.5:1 or less

DMA Area[3] (ft^2)	Permeable Pavement Area (ft^2)	Ratio DMA:Pavement

B. Minimum Design Criteria

Check the boxes below to confirm that each design criterion has been satisfied for the DMA.

Impervious Areas:

☐ Are graded to ensure area that the full DCV drains to the dispersion area before the runoff discharges from the DMA.

Pervious Dispersion Areas:

☐ Are less than 5% slope and sheet flow over a distance of at least 10 feet from inflow to overflow route.

☐ Have inflow velocities of 3 ft/s or less OR use energy dissipation methods (e.g., riprap, level spreader) for concentrated inflows.

☐ Are densely and robustly vegetated with drought tolerant species.

☐ Consist of soil types capable of supporting or being amended to support vegetation (e.g., with sand or compost). If applicable, media amendments have been tested to verify that they are not a source of pollutants.

☐ Are owned by the project owner and will be dedicated to exclude future uses that might reduce their effectiveness.

[2]Applicants wishing to utilize parameters less conservative than listed here must submit modeling to support their proposal. Consult your project manager for more information.

[3]Including the permeable pavement.

6.3.2 Self-retaining DMAs with Tree Wells

Trees wells can provide a variety of benefits such as interception and increased infiltration of rainfall, reduced erosion, energy conservation, air quality improvement, and aesthetic enhancement. They can also be used to satisfy both pollutant control and hydromodification management performance standards for a DMA.

- Each self-retaining DMA with tree wells must fully satisfy all design requirements and restrictions described in BMPDM Section 5.2.3, Fact Sheet SD-A: Tree Wells, and any other guidance or instruction identified by the County.
- For pollutant control only, the DMA must retain the entire DCV. For hydromodification management, an additional volume must be retained in accordance with the sizing requirements presented in the DCV multiplier table in Fact Sheet SD-A.
- Documentation of compliance with applicable conditions must be submitted using the Summary Sheet for Self-retaining DMAs with Tree Wells on the next page. One version of this Summary Sheet must be completed for each applicable DMA.
- If both pollutant control and hydromodification standards apply, the soil depth of all tree wells in the DMA must be selected before determining the Required Retention Volume (RRV). Each tree well must be constructed to the selected depth. For pollutant control only, tree wells within a DMA may be constructed to different soil depths.
- In most cases tree wells must use Amended Soil per Fact Sheet SD-F. However, Structural Soil is required in some cases (e.g., placing the tree well next to a curb). See Structural Requirements for Confined Tree Well Soil Volume in Fact Sheet SD-A for additional explanation. If applicable, list the DMAs and Tree Well #s below for all tree wells requiring Structural Soil.

DMA #	Tree Wells Requiring Structural Soil (list Tree Well #s)

- The Design Capture Volume (DCV) must be known for each DMA in order to determine the volume to be mitigated by the tree wells. Instructions for DCV calculation are provided in BMPDM Appendix B.1. An automated version of Worksheet B.1 (Calculation of Design Capture Volume) is available at www.sandiegocounty.gov/stormwater under the Development Resources tab.

Summary Sheet for Self-retaining DMAs with Tree Wells (complete one sheet per DMA)

DMA #:	DMA Area (ft^2):

Required Retention Volume (RRV)

a. Design Capture Volume (DCV; ft^3):

b. DCV Multiplier (Fact Sheet SD-A)

Applicable Structural Performance Standards (select one)	Tree well soil depth (inches)	Underlying soil type (A, B, C, or D)	DCV Multiplier
☐ Pollutant control only	Any	All	1.0
☐ Pollutant control plus hydromodification			

c. Required Retention Volume (ft^3) [DCV * DCV Multiplier]	

Tree Well Credit Volume (add records or copy this sheet as needed for additional tree wells)

Provide the information below for each tree well or group of tree wells within the DMA. A single entry can be used for any group of tree wells of the same species and soil depth.

Tree species or name		No. tree wells	
Mature Canopy Diameter (ft)		Credit Volume per tree well (ft^3)	
Tree well ID #(s)		Combined Volume (ft^3)	
Tree species or name		No. tree wells	
Mature Canopy Diameter (ft)		Credit Volume per tree well (ft^3)	
Tree well ID #(s)		Combined Volume (ft^3)	
Tree species or name		No. tree wells	
Mature Canopy Diameter (ft)		Credit Volume per tree well (ft^3)	
Tree well ID #(s)		Combined Volume (ft^3)	
Tree species or name		No. tree wells	
Mature Canopy Diameter (ft)		Credit Volume per tree well (ft^3)	
Tree well ID #(s)		Combined Volume (ft^3)	
Tree species or name		No. tree wells	
Mature Canopy Diameter (ft)		Credit Volume per tree well (ft^3)	
Tree well ID #(s)		Combined Volume (ft^3)	

Total Credit Volume (ft3) Add the combined volumes above. Total credit volume must equal or exceed the RRV.	

7.0 General Requirements

- Submit this cover page and all required Sub-attachments for all structural BMPs proposed for the project.
- See the BMPDM sections and appendices listed under "BMPDM Design Resources" in the table below for additional explanation of design requirements. Constructed features must fully satisfy the requirements described in these resources, and any other guidance identified by the County.
- PDPs subject to hydromodification management requirements must also implement structural BMPs for flow control for hydromodification management. Completion of SWQMP Attachment 8 is also required for these BMPs.
- DMA Exhibits and Construction Plans: DMAs, features, and BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.
- Structural BMP Certification. All structural BMPs documented this attachment and in Attachment 8 must be certified by a registered engineer in Sub-attachment 7.1.
- Structural BMP Verification. Structural BMP installation must be verified by the County at the completion of construction. Applicants must complete an Installation Verification Form (Attachment 10).

Sub-attachments (check all that are completed)	Requirement	BMPDM Design Resources
☒ 7.1: Preparer's Certification	Required	• N/A
☒ 7.2: Structural BMP Strategy	Required	• BMPDM Sections 5.1., 5.3, 5.4, and Chapter 6 • BMPDM Appendix E (pages E-78 through E-210)
☒ 7.3: Structural BMP Checklist(s)	Required	
☒ 7.4: Stormwater Pollutant Control Worksheet Calculations	Required	• BMPDM Appendix B
☐ 7.5: Identification and Narrative of Receiving Water and Pollutants of Concern	Required if flow-thru BMPs are proposed	• N/A

7.1 Engineer of Work Certification for Structural BMPs

Project Name Otay Ranch – Village 14 and Planning Areas 16/19
Permit Application Number SPA-19-001, TM-5616R, STP-19-029

CERTIFICATION

I hereby declare that I am the Engineer in Responsible Charge of design of structural 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 County of San Diego BMP Design Manual, which is a design manual for compliance with local County of San Diego Watershed Protection Ordinance (Sections 67.801 et seq.) 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 County of San Diego has adopted minimum requirements for managing urban runoff, including storm water, from land development activities, as described in the BMP 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 County staff is confined to a review and does not relieve me, as the Engineer in Responsible Charge of design of structural storm water BMPs for this project, of my responsibilities for their design.

☒ In addition to the structural pollutant control BMPs described in this attachment, this certification applies to the Structural Hydromodification Management BMPs described in Attachment 8 (check if applicable).

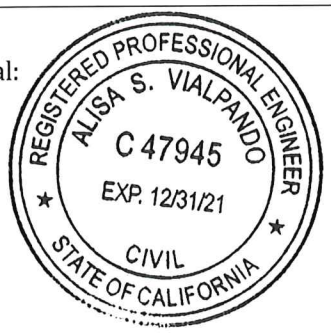
Alisa S. Vialpando 47945 exp. 12/31/21
Engineer of Work's Signature, PE Number & Expiration Date

Alisa S. Vialpando
Print Name

Hunsaker & Associates San Diego, INC.
Company

12/19/2019
Date

Engineer's Seal:



7.2 Structural BMP Strategy

7.2.1 Narrative Strategy (Continue description on subsequent pages as necessary)

Describe the general strategy for structural BMP implementation at the project site. For pollutant control BMPs, your description must address the key points outlined in Section 5.1 of the BMP Design Manual, and the type of BMPs selected. For projects requiring hydromodification flow control BMPs, indicate whether pollutant control and flow control BMPs are integrated or separate.

This site will include eight regional-type biofiltration basins at the downstream portions of the developed areas and along Proctor Valley Road (PVR) and onsite roadways which will act to address both pollution control and flow control measures. In instances where basins are infeasible (along PVR), proprietary biofiltration devices (Modular Wetland Units) are proposed.

The BMPs were selected based on their effectiveness for pollutant removal and ability to also be used for flow control.
In selection of the biofiltration BMPs, the following steps were taken as presented in Section 5.1 of the BMP Design Manual.

1. Identified the DMAs that are not self-retaining, self-mitigating, or De Minimis.
2. Estimate DCV.
3. Determined that there was not a demand for rainwater harvesting within the development.
4. Determined the feasibility of each basin to infiltrate based on geotechnical engineer recommendations.
5. Computed sizing requirements using the County automated BMP-sizing worksheet.
6. Design BMP for DCV per design criteria and considerations listed in the fact sheets.

The eight onsite biofiltration basins have designated as BF-2-1 through BF-2-6, BF-2-8 and BF-2-10. The prefix, BF-2, designates that the particular treatment facility is either a partial retention or biofiltration facility with Nutrient Sensitive Media Design as defined within the County's BMP Design Manual. The developed areas which were infeasible to be treated via basin facility will be treated by proprietary BMP. This occurs along PVR and tie-in streets. The prefix BF-3 designates that the particular treatment facility is proprietary biofiltration modular facility.

As a pretreatment measure, proprietary flow-through treatment control BMPs are proposed immediately upstream of the three larger biofiltration facilities (BF-2-1, BF-2-2 & BF-2-6). They have been designated as FT-5-1 through FT-5-3 on the DMA exhibit in Attachment 1c.
The eight biofiltration treatment basins will also be sized to address flow control hydromodification for their respective local areas.

Biofiltration basins BF-2-1, BF-2-2 and BF-2-6 have tributary areas of more than 5 acres. In order to address maintenance concerns design features (e.g. flow spreaders) will be implemented to minimize short circuiting of flows in the BMP. Additionally, additional design features for proper performance of the regional BMP will be determined and implemented during the final engineering design and construction phase of the project.

The following summarizes the proposed Village 14 treatment BMP facilities:

- Two roadside proprietary compact biofiltration units along Proctor Valley Road north

Biofiltration areas are proposed as treatment measures for the southern portion of Proctor Valley Road which is south of the major developed areas. The vegetated biofiltration areas

used for treatment control along roadsides will include an engineered fill layer for maximum pollutant removal. This 'biofiltration' subbase will provide a "High" pollutant removal efficiency for pollutants such as coarse sediment and trash and fine particles. Medium pollutant efficiency is attained for dissolved particles

Volume Retention: DMA's 7 & 9 provide compact proprietary biofiltration units. Per calculations in the B.1 through B.3 worksheets the volume retained via the eight biofiltration basins exceeds the cumulative minimum retention requirements of all 10 DMA's, and therefore satisfies the minimum retention requirements.

7.2.2 Structural BMP Summary Table (Complete for all proposed structural BMPs)

- List and provide the information requested below for all pollutant control and hydromodification management BMPs proposed for the project.
- For each BMP listed, complete the Structural BMP Checklist on the next page. Copy the Checklist as many times as needed.

BMP ID #	DMA #	DMA Area (ft^2)	Structural BMP Type: Harvest and Use	Infiltration	Unlined Biofiltration	Lined Biofiltration	Flow-thru treatment	Hydromodification Management [1]	Other	Permit # and Sheet #
BF-2-1	DMA 1	9870696	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #9
BF-2-2	DMA 2	4523270.4	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #8
BF-2-3	DMA 3	266151.6	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #8
BF-2-4	DMA 4	154638	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #5
BF-2-5	DMA 5	289238.4	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #5
BF-2-6	DMA 6	3719152.8	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #11
BF-2-7	DMA 7	111513.6	☐	☐	☐	☐	☒	☐	☐	PGP Sheet #13
BF-2-8	DMA 8	94960.8	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #13
BF-3-9	DMA 9	107157.6	☐	☐	☐	☐	☒	☐	☐	PGP Sheet #14
BF-2-10	DMA 10	551034	☐	☐	☐	☒	☐	☒	☐	PGP Sheet #14
FT-5-1	DMA 1	9870696	☐	☐	☐	☐	☐	☐	☐	PGP Sheet #9
FT-5-2	DMA 2	4523270.4	☐	☐	☐	☐	☐	☐	☒	PGP Sheet #8
FT-5-3	DMA 6	3719152.8	☐	☐	☐	☐	☐	☐	☒	PGP Sheet #11
			☐	☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	

[1] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

			☐	☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	
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			☐	☐	☐	☐	☐	☐	☐	
			☐	☐	☐	☐	☐	☐	☐	

Copy and Paste table here for additional BMPs

7.3 Structural BMP Checklist (Complete once for each proposed structural BMP)

Structural BMP ID # BF-2-1	Permit # and Sheet #
BMP Type	
Infiltration ☐ Infiltration basin (INF-1) ☐ Bioretention (INF-2) ☐ Permeable pavement (INF-3) Unlined Biofiltration ☐ Biofiltration with partial retention (PR-1) Lined Biofiltration ☐ Biofiltration (BF-1) ☒ Nutrient Sensitive Media Design (BF-2) ☐ Proprietary Biofiltration (BF-3)	Harvest and Use ☐ Cistern (HU-1) Flow-thru Treatment (describe below) ☐ With prior lawful approval to meet earlier PDP requirements ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2] ☐ With alternative compliance Hydromodification Management[3] ☐ Detention pond or vault ☐ Other (describe below)
BMP Purpose	
☐ Pollutant control only ☐ Hydromodification control only ☒ Combined pollutant control and hydromodification	☐ Pre-treatment/forebay for another BMP ☐ Other (describe below)
BMP Verification (See BMPDM Section 8.3)	
Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)				
BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-2-2	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☒ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☒ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-2-3	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☒ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☒ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-2-4	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☒ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☒ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-2-5	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☒ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☒ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-2-6	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☒ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☒ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-3-7	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☐ Nutrient Sensitive Media Design (BF-2)
- ☒ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☒ Pollutant control only
- ☐ Hydromodification control only
- ☐ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-2-8	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☒ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☒ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-3-9	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☐ Nutrient Sensitive Media Design (BF-2)
- ☒ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☒ Pollutant control only
- ☐ Hydromodification control only
- ☐ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # BF-2-10	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☒ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☐ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☒ Combined pollutant control and hydromodification
- ☐ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.
[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # FT-5-1	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☐ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☒ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☐ Combined pollutant control and hydromodification
- ☒ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

Pre-treatment for BF-2-1

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # FT-5-2	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☐ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☒ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☐ Combined pollutant control and hydromodification
- ☒ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

Pre-treatment for BF-2-2

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

Structural BMP ID # FT-5-3	Permit # and Sheet #

BMP Type

Infiltration
- ☐ Infiltration basin (INF-1)
- ☐ Bioretention (INF-2)
- ☐ Permeable pavement (INF-3)

Unlined Biofiltration
- ☐ Biofiltration with partial retention (PR-1)

Lined Biofiltration
- ☐ Biofiltration (BF-1)
- ☐ Nutrient Sensitive Media Design (BF-2)
- ☐ Proprietary Biofiltration (BF-3)

Harvest and Use
- ☐ Cistern (HU-1)

Flow-thru Treatment (describe below)
- ☐ With prior lawful approval to meet earlier PDP requirements
- ☐ Pre-treatment/forebay for an onsite retention or biofiltration BMP[2]
- ☐ With alternative compliance

Hydromodification Management[3]
- ☐ Detention pond or vault
- ☒ Other (describe below)

BMP Purpose
- ☐ Pollutant control only
- ☐ Hydromodification control only
- ☐ Combined pollutant control and hydromodification
- ☒ Pre-treatment/forebay for another BMP
- ☐ Other (describe below)

BMP Verification (See BMPDM Section 8.3)

Provide name and contact information for the party responsible to sign BMP verification forms	TBD

BMP Ownership and Maintenance (See BMPDM Section 7.3 and Attachment 11)

BMP Maintenance Category	Cat. 1 ☐	Cat. 2 ☒	Cat. 3 ☐	Cat. 4 ☐
Final owner of BMP	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):
Maintenance of BMP into perpetuity	☒ HOA	☐ Property Owner	☐ County	☐ Other (describe):

Discussion (As needed; Continue on subsequent pages as necessary)

Pre-treatment for BF-2-6

[2] Indicate which onsite retention or biofiltration BMP the pre-treatment/forebay serves.

[3] Hydromodification Management BMPs must be accompanied by BMPs that provide pollutant control.

7.4 Storm Water Pollutant Control Worksheet Calculations

- Use this page as a cover sheet for the submittal of any required worksheets below.
- Complete the checklist to identify which BMPDM Appendix B (Storm Water Pollutant Control Hydrologic Calculations and Sizing Methods) worksheets are included with this attachment.
- See BMPDM Appendix B for an explanation of the applicability of individual worksheets and detailed guidance on their completion.

Worksheet	Requirement
☒ Worksheet B.1 Calculation of Design Capture Volume (DCV)	Required
☒ Worksheet B.2 Retention Requirements	Required
☒ Worksheet B.3 BMP Performance	Required
☐ Worksheet B.4 Major Maintenance Intervals for Reduced-sized BMPs	If applicable
☒ Other worksheets	As required

Automated Worksheet B.1: Calculation of Design Capture Volume (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Standard Drainage Basin Inputs	1	Drainage Basin ID or Name	BF-1-1	BF-1-2	BF-1-3	BF-1-4	BF-1-5	BF-1-6	BF-3-7	BF-1-8	BF-1-9*	BF-1-10	unitless
	2	85th Percentile 24-hr Storm Depth	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	inches
	3	Impervious Surfaces Not Directed to Dispersion Area (C=0.90)	5,011,077	2,332,924	178,705	107,862	162,618	1,817,356	69,594	38,524	71,692	159,589	sq-ft
	4	Semi-Pervious Surfaces Not Serving as Dispersion Area (C=0.30)	4,683,791	2,107,450	87,500	46,626	126,831	1,835,967	41,952	54,773	35,369	381,516	sq-ft
	5	Engineered Pervious Surfaces Not Serving as Dispersion Area (C=0.10)	177,707	82,774	5,627	3,363	5,576	65,829	0	1,537	0	10,020	sq-ft
	6	Natural Type A Soil Not Serving as Dispersion Area (C=0.10)											sq-ft
	7	Natural Type B Soil Not Serving as Dispersion Area (C=0.14)											sq-ft
	8	Natural Type C Soil Not Serving as Dispersion Area (C=0.23)											sq-ft
	9	Natural Type D Soil Not Serving as Dispersion Area (C=0.30)											sq-ft
Dispersion Area, Tree Well & Rain Barrel Inputs (Optional)	10	Does Tributary Incorporate Dispersion, Tree Wells, and/or Rain Barrels?	No	No	No	No	No	No	No	No	No	No	yes/no
	11	Impervious Surfaces Directed to Dispersion Area per SD-B (Ci=0.90)											sq-ft
	12	Semi-Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	13	Engineered Pervious Surfaces Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	14	Natural Type A Soil Serving as Dispersion Area per SD-B (Ci=0.10)											sq-ft
	15	Natural Type B Soil Serving as Dispersion Area per SD-B (Ci=0.14)											sq-ft
	16	Natural Type C Soil Serving as Dispersion Area per SD-B (Ci=0.23)											sq-ft
	17	Natural Type D Soil Serving as Dispersion Area per SD-B (Ci=0.30)											sq-ft
	18	Number of Tree Wells Proposed per SD-A											#
	19	Average Mature Tree Canopy Diameter											ft
	20	Number of Rain Barrels Proposed per SD-E											#
	21	Average Rain Barrel Size											gal
Initial Runoff Factor Calculation	22	Total Tributary Area	9,872,575	4,523,148	271,832	157,851	295,025	3,719,152	111,546	94,834	107,061	551,125	sq-ft
	23	Initial Runoff Factor for Standard Drainage Areas	0.60	0.61	0.69	0.71	0.63	0.59	0.67	0.54	0.70	0.47	unitless
	24	Initial Runoff Factor for Dispersed & Dispersion Areas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	25	Initial Weighted Runoff Factor	0.60	0.61	0.69	0.71	0.63	0.59	0.67	0.54	0.70	0.47	unitless
	26	Initial Design Capture Volume	256,687	119,562	8,128	4,857	8,054	95,086	3,239	2,219	3,248	11,225	cubic-feet
Dispersion Area Adjustments	27	Total Impervious Area Dispersed to Pervious Surface	0	0	0	0	0	0	0	0	0	0	sq-ft
	28	Total Pervious Dispersion Area	0	0	0	0	0	0	0	0	0	0	sq-ft
	29	Ratio of Dispersed Impervious Area to Pervious Dispersion Area	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	ratio
	30	Adjustment Factor for Dispersed & Dispersion Areas	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	31	Runoff Factor After Dispersion Techniques	0.60	0.61	0.69	0.71	0.63	0.59	0.67	0.54	0.70	0.47	unitless
	32	Design Capture Volume After Dispersion Techniques	256,687	119,562	8,128	4,857	8,054	95,086	3,239	2,219	3,248	11,225	cubic-feet
Tree & Barrel Adjustments	33	Total Tree Well Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
	34	Total Rain Barrel Volume Reduction	0	0	0	0	0	0	0	0	0	0	cubic-feet
Results	35	Final Adjusted Runoff Factor	0.60	0.61	0.69	0.71	0.63	0.59	0.67	0.54	0.70	0.47	unitless
	36	Final Effective Tributary Area	5,923,545	2,759,120	187,564	112,074	185,866	2,194,300	74,736	51,210	74,943	259,029	sq-ft
	37	Initial Design Capture Volume Retained by Site Design Elements	0	0	0	0	0	0	0	0	0	0	cubic-feet
	38	Final Design Capture Volume Tributary to BMP	256,687	119,562	8,128	4,857	8,054	95,086	3,239	2,219	3,248	11,225	cubic-feet

No Warning Messages

Automated Worksheet B.2: Retention Requirements (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	vii	viii	ix	x	Units
Basic Analysis	1	Drainage Basin ID or Name	BF-2-1	BF-2-2	BF-2-3	BF-2-4	BF-2-5	BF-2-6	BF-3-7	BF-2-8	BF-3-9	BF-2-10	unitless
	2	85th Percentile Rainfall Depth	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	inches
	3	Predominant NRCS Soil Type Within BMP Location	D	D	D	D	D	D	D	D	D	D	unitless
	4	Is proposed BMP location Restricted or Unrestricted for Infiltration Activities?	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	Unrestricted	unitless
	5	Nature of Restriction	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	unitless
	6	Do Minimum Retention Requirements Apply to this Project?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	7	Are Habitable Structures Greater than 9 Stories Proposed?	No	No	No	No	No	No	No	No	No	No	yes/no
Advanced Analysis	8	Has Geotechnical Engineer Performed an Infiltration Analysis?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	9	Design Infiltration Rate Recommended by Geotechnical Engineer	0.100	0.050	0.025	0.025	0.050	0.025	0.025	0.025	0.025	0.025	in/hr
Result	10	Design Infiltration Rate Used To Determine Retention Requirements	0.100	0.050	0.025	0.025	0.050	0.025	0.025	0.025	0.025	0.025	in/hr
	11	Percent of Average Annual Runoff that Must be Retained within DMA	22.2%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	percentage
	12	Fraction of DCV Requiring Retention	0.15	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	ratio
	13	Required Retention Volume	38503	2391	163	97	161	1902	65	44	65	225	cubic-feet

No Warning Messages

Automated Worksheet B.3: BMP Performance (V2.0)

Category	#	Description	i	ii	iii	iv	v	vi	viii	x	Units
BMP Inputs	1	Drainage Basin ID or Name	BF-2-1	BF-2-2	BF-2-3	BF-2-4	BF-2-5	BF-2-6	BF-2-8	BF-2-10	sq-ft
	2	Design Infiltration Rate Recommended	0.100	0.050	0.025	0.025	0.050	0.025	0.025	0.025	in/hr
	3	Design Capture Volume Tributary to BMP	256,687	119,562	8,128	4,857	8,054	95,086	2,219	11,225	cubic-feet
	4	Is BMP Vegetated or Unvegetated?	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	Vegetated	unitless
	5	Is BMP Impermeably Lined or Unlined?	Unlined	Unlined	Unlined	Unlined	Unlined	Unlined	Unlined	Unlined	unitless
	6	Does BMP Have an Underdrain?	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	Underdrain	unitless
	7	Does BMP Utilize Standard or Specialized Media?	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	unitless
	8	Provided Surface Area	177,707	82,774	5,627	3,363	5,576	65,829	1,537	10,020	sq-ft
	9	Provided Surface Ponding Depth	6	6	6	6	6	6	6	6	inches
	10	Provided Soil Media Thickness	18	18	18	18	18	18	18	18	inches
	11	Provided Gravel Thickness (Total Thickness)	18	18	18	18	18	18	18	18	inches
	12	Underdrain Offset	3	3	3	3	3	3	3	3	inches
	13	Diameter of Underdrain or Hydromod Orifice (Select Smallest)	4.60	3.20	1.00	0.90	1.00	3.50	0.50	1.40	inches
	14	Specialized Soil Media Filtration Rate									in/hr
	15	Specialized Soil Media Pore Space for Retention									unitless
	16	Specialized Soil Media Pore Space for Biofiltration									unitless
	17	Specialized Gravel Media Pore Space									unitless
Retention Calculations	18	Volume Infiltrated Over 6 Hour Storm	8,885	2,069	70	42	139	823	19	125	cubic-feet
	19	Ponding Pore Space Available for Retention	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	20	Soil Media Pore Space Available for Retention	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	unitless
	21	Gravel Pore Space Available for Retention (Above Underdrain)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	unitless
	22	Gravel Pore Space Available for Retention (Below Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	23	Effective Retention Depth	2.10	2.10	2.10	2.10	2.10	2.10	2.10	2.10	inches
	24	Fraction of DCV Retained (Independent of Drawdown Time)	0.16	0.14	0.13	0.13	0.14	0.13	0.13	0.17	ratio
	25	Calculated Retention Storage Drawdown Time	21	42	84	84	42	84	84	84	hours
	26	Efficacy of Retention Processes	0.36	0.24	0.17	0.17	0.24	0.17	0.17	0.22	ratio
	27	Volume Retained by BMP (Considering Drawdown Time)	93,557	28,517	1,406	840	1,921	16,442	384	2,453	cubic-feet
	28	Design Capture Volume Remaining for Biofiltration	163,130	91,045	6,722	4,017	6,133	78,644	1,835	8,772	cubic-feet
Biofiltration Calculations	29	Max Hydromod Flow Rate through Underdrain	0.9718	0.4748	0.0470	0.0381	0.0470	0.5668	0.0118	0.0920	cfs
	30	Max Soil Filtration Rate Allowed by Underdrain Orifice	0.24	0.25	0.36	0.49	0.36	0.37	0.33	0.40	in/hr
	31	Soil Media Filtration Rate per Specifications	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	in/hr
	32	Soil Media Filtration Rate to be used for Sizing	0.24	0.25	0.36	0.49	0.36	0.37	0.33	0.40	in/hr
	33	Depth Biofiltered Over 6 Hour Storm	1.42	1.49	2.17	2.94	2.19	2.23	1.99	2.38	inches
	34	Ponding Pore Space Available for Biofiltration	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	unitless
	35	Soil Media Pore Space Available for Biofiltration	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	unitless
	36	Gravel Pore Space Available for Biofiltration (Above Underdrain)	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	unitless
	37	Effective Depth of Biofiltration Storage	15.60	15.60	15.60	15.60	15.60	15.60	15.60	15.60	inches
	38	Drawdown Time for Surface Ponding	18	20	16	12	14	15	17	14	hours
	39	Drawdown Time for Effective Biofiltration Depth	46	52	40	30	38	39	44	37	hours
	40	Total Depth Biofiltered	17.02	17.09	17.77	18.54	17.79	17.83	17.59	17.98	inches
	41	Option 1 - Biofilter 1.50 DCV: Target Volume	244,695	136,568	10,084	6,026	9,200	117,965	2,753	13,157	cubic-feet
	42	Option 1 - Provided Biofiltration Volume	244,695	117,861	8,331	5,195	8,265	97,821	2,253	13,157	cubic-feet
	43	Option 2 - Store 0.75 DCV: Target Volume	122,348	68,284	5,042	3,013	4,600	58,983	1,376	6,579	cubic-feet
	44	Option 2 - Provided Storage Volume	122,348	68,284	5,042	3,013	4,600	58,983	1,376	6,579	cubic-feet
	45	Portion of Biofiltration Performance Standard Satisfied	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
Result	46	Do Site Design Elements and BMPs Satisfy Annual Retention Requirements?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	yes/no
	47	Overall Portion of Performance Standard Satisfied (BMP Efficacy Factor)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	ratio
	48	Deficit of Effectively Treated Stormwater	0	0	0	0	0	0	0	0	cubic-feet

No Warning Messages

DMA ID	DMA Surface Type (roof, street, etc.)	DMA Area (acres)	DCV (cf)	DMA Type[1]	Structural BMP ID	Proposed Structural BMP Type[2]	Structural BMP Size[3] (sqft)	WQ Ponding Depth (in.)	Media Thickness (in.)	Gravel Thickness (in.)
1	Pavement, roof, sdwk,landscaping	226.6	256,687	Drains to BMP	BF-2-1	Biofiltration Basin	177,707	6	18	18
2	Paver, roof, sdwk,landscaping	103.84	119,562	Drains to BMP	BF-2-2	Biofiltration Basin	82,774	6	18	18
3	Pavement, sdwk, slopes	6.11	8,128	Drains to BMP	BF-2-3	Biofiltration Basin	5,627	6	18	18
4	Pavement, sdwk, slopes	3.55	4,857	Drains to BMP	BF-2-4	Biofiltration Basin	3,363	6	18	18
5	Pavement, sdwk slopes	6.64	8,054	Drains to BMP	BF-2-5	Biofiltration Basin	5,576	6	18	18
6	Pavement, roof, sdwk,landscaping	85.38	95,086	Drains to BMP	BF-2-6	Biofiltration Basin	65,829	6	18	18
7	Pavement, roof, sdwk,landscaping	2.56	3,239	Drains to BMP	BF-3-7	Proprietary Flow Thru TC BMP	WQ FLOW =0.522 cfs	MWS L-8-16 (3.85' depth)	n/a	n/a
8	Pavement, roof, sdwk,landscaping	2.18	2,219	Drains to BMP	BF-2-8	Biofiltration Basin	1,537	6	18	18
9	Pavement, roof, sdwk,landscaping	2.46	3,248	Drains to BMP	BF-3-9	Proprietary Flow Thru TC BMP	WQ FLOW =0.522cfs	MWS L-8-16 (3.85' depth)	n/a	n/a
10	Pavement, roof, sdwk,landscaping	12.65	11,225	Drains to BMP	BF-2-10	Biofiltration Basin	10,020	6	18	18
11	Perimeter Landscape Slopes	69.69	N/A	Self-Mitigating	N/A	N/A	N/A	N/A	N/A	N/A
12	Natural Areas	19.74	N/A/	Self-Mitigating	N/A	N/A	N/A	N/A	N/A	N/A

Village 14												
Basin Summary												
Basin ID	BMP Description	Surface Ponding (in)	Soil Media Thickness (in)	Provided Gravel Thickness (in)	Provided Surface Area at Basin FG (s.f.)	Provided Surface Area at Ponding Depth (s.f.)	Subdrain Diameter (in) Elevated 3" Bottom of Gravel Layer	Low Orifice	Middle Orifice	Upper Orifice	Emergency Riser	Infiltration Rate
BF-2-1	Biofiltration Basin	6.0	18.0	18.0	177707	180245	4.6	(1) 6" @ 0.50'	N/A	(1) 6" @ 3.0'	10' x 10' Box	0.100
BF-2-2	Biofiltration Basin	6.0	18.0	18.0	82774	84509	3.2	(1) 4" @ 0.50'	N/A	(1) 6" @ 3.0'	5' x 10' Box	0.050
BF-2-3	Biofiltration Basin	6.0	18.0	18.0	5627	6086	1.0	(1) 1" @ 0.50'	N/A	(1) 3" @ 3.0'	1' x 1' Box	0.025
BF-2-4	Biofiltration Basin	6.0	18.0	18.0	3363	3720	0.9	(1) 0.75" @ 0.50'	N/A	(1) 2" @ 3.0'	1' x 1' Box	0.025
BF-2-5	Biofiltration Basin	6.0	18.0	18.0	5576	6033	1.0	(1) 1" @ 0.50'	N/A	(1) 3" @ 3.0'	1' x 2' Box	0.050
BF-2-6	Biofiltration Basin	6.0	18.0	18.0	65829	67377	3.5	(1) 3" @ 0.50'	N/A	(1) 3" @ 3.0'	6' x 6' Box	0.025
BF-3-7	Proprietary Compact Biofiltration (Modular Wetland)	MWS L-8-16										N/A
BF-2-8	Biofiltration Basin	6.0	18.0	18.0	1537	1781	0.5	(1) 0.75" @ 0.50'	N/A	(1) 3" @ 3.0'	1' x 1' Box	0.025
BF-3-9	Proprietary Compact Biofiltration (Modular Wetland)	MWS L-8-16										N/A
BF-2-10	Biofiltration Basin	6.0	18.0	18.0	10020	10630	1.4	(1) 1.25" @ 0.50'	N/A	(1) 3.0" @ 3.0'	2' x 1' Box	0.025

Description	Units	Modular Wetland System Linear	Modular Wetland System Linear
Drainage Basin ID or Name	unitless	BF-3-7	BF-3-9
Total Tributary Area	ac	2.561	2.458
Total Tributary Area	sq ft	111546	107061
Final Adjusted Runoff Factor	unitless	0.67	0.70
85th Percentile Design Rainfall Depth	inches	0.52	0.52
85th Percentile Design Rainfall Intensity	in/hr	0.2	0.2
WQ Flow Rate	CFS	0.348	0.348
Flow Rate Safety Factor	unitless	1.5	1.5
Design Flow Rate	CFS	0.522	0.522
Modular Wetland Model	unitless	MWS L-8-16 (3.85' depth)	MWS L-8-16 (3.85' depth)
Modular Wetland Treatment Flow Rate	CFS	0.523	0.523
Is Flow-Thru BMP Adequately Sized?	unitless	Yes	Yes

VILLAGE 14 PLANNING AREAS 16/19
BIOFILTRATION BMP DMA CALCULATIONS

	Imp. RF	Pervious RF	Basin BF-1-1	Imp Area	Pervious Area	Summation RF x A	Basin BF-1-2	Imp Area	Pervious Area	Summation RF x A	Basin BF-1-6	Imp Area	Pervious Area	Summation RF x A
			(ac.)	(ac.)	(ac.)		(ac.)	(ac.)	(ac.)		(ac.)	(ac.)	(ac.)	
Basin	0.90	0.10	4.080		4.080	0.408	1.900		1.900	0.190	1.511		1.511	0.151
Bldg Roof & Hardscape	0.90	0.30	79.429	79.429		71.486	32.678	32.678		29.411	22.223	22.223		20.001
Lot Landscape	0.90	0.30	29.360		29.360	8.808	12.883		12.883	3.865	8.862		8.862	2.659
Road Pvmt & Hardscape	0.90	0.30	35.610	35.610		32.049	20.878	20.878		18.790	19.498	19.498		17.548
Road Landscape	0.90	0.30	8.353		8.353	2.506	5.275		5.275	1.583	4.380		4.380	1.314
Slopes & Misc Landscape	0.90	0.30	69.813		69.813	20.944	30.222		30.222	9.067	28.905		28.905	8.672
			226.643	115.038	111.605	136.200	103.837	53.557	50.281	62.905	85.380	41.721	43.659	50.344
					Weighted C =	0.60			Weighted C =	0.61			Weighted C =	0.59

VILLAGE 14 PLANNING AREAS 16/19
BIOFILTRATION BMP DMA CALCULATIONS

	Imp. RF	Pervious RF	Basin BF-1-3	Imp Area	Pervious Area	Summation RF x A	Basin BF-1-4	Imp Area	Pervious Area	Summation RF x A	Basin BF-1-5	Imp Area	Pervious Area	Summation RF x A
			(ac.)	(ac.)	(ac.)		(ac.)	(ac.)	(ac.)		(ac.)	(ac.)	(ac.)	
Basin	0.90	0.10	0.129		0.129	0.013	0.077		0.077	0.008	0.128		0.128	0.013
Bldg Roof & Hardscape	0.90	0.30				0.000				0.000				0.000
Lot Landscape	0.90	0.30				0.000				0.000				0.000
Road Pvmt & Hardscape	0.90	0.30	4.102	4.102		3.692	2.476	2.476		2.229	3.733	3.733		3.360
Road Landscape	0.90	0.30	1.225		1.225	0.368	0.740		0.740	0.222	1.338		1.338	0.401
Slopes & Misc Landscape	0.90	0.30	0.783		0.783	0.235	0.331		0.331	0.099	1.574		1.574	0.472
Natural	0.90	0.30				0.000				0.000				0.000
			6.111	4.102	2.138	4.308	3.547	2.476	1.148	2.557	6.645	3.733	3.040	4.246
			Weighted C =			0.70	Weighted C =			0.72	Weighted C =			0.64

VILLAGE 14 PLANNING AREAS 16/19
BIOFILTRATION BMP DMA CALCULATIONS

	Imp. RF	Pervious RF	Basin BF-3-7 (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	Basin BF-1-8 (ac.)	Fraction of Total	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	Basin BF-1-9* (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	Basin BF-1-10 (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A
Basin	0.90	0.10				0.000	0.035	0.003		0.035	0.004				0.000	0.230		0.230	0.023
Bldg Roof & Hardscape	0.90	0.30				0.000					0.000				0.000	1.791	1.791		1.612
Lot Landscape	0.90	0.30				0.000					0.000				0.000	7.742		7.742	2.323
Road Pvmt & Hardscape	0.90	0.30	1.598	1.598		1.438	0.884	1.473	0.884		0.796	1.646	1.646		1.481	1.873	1.873		1.686
Road Landscape	0.90	0.30	0.120		0.120	0.036	0.067	0.017		0.067	0.020	0.124		0.124	0.037	0.309		0.309	0.093
Slopes & Misc Landscape	0.90	0.30	0.843		0.843	0.253	1.191	0.304		1.191	0.357	0.688		0.688	0.206	0.707		0.707	0.212
			2.561	1.598	0.963	1.727	2.177	1.796	0.884	1.293	1.177	2.458	1.646	0.812	1.725	12.652	3.664	8.988	5.948
			Weighted C =			0.67	Weighted C =				0.54	Weighted C =			0.70	Weighted C =			0.47

*DMA's 9 & 10 are being combined to be treated/attenuated by BF-1-10 (versus previous design option to direct DMA 9 to Modular Wetlands)

Otay Ranch Village 14 and Planning Areas 16/19
Composite C Factor Worksheet
Blue cells designate user inputs
Engineer of Record: Alisa Vialpando, P.E.
Project Manager: Johnny Rivera, P.E.
Project Engineer: Ryan Rost
WO#2421-0036
DLN 1235

DMA 1

	R-11 South (DMA 1.1)	R-10 (DMA 1.2)	R-9 (DMA 1.3)	R-7 & 8 (DMA 1.4)	R-6 (DMA 1.5)	R-5 South (DMA 1.6)	P-1 Park (DMA 1.7)	PP-1 through 3 (DMA 1.8)	R-2 (DMA 1.9)	PS-1 (DMA 1.10)	MU-1 & 2 (DMA 1.11)	R-1 (DMA 1.12)	PVRd & Misc Rd (DMA 1.13)	Misc Slopes (DMA 1.14)	Basin (DMA 1.15)	Total DMA 1
Total Area DMA(ac)=	18.421	7.781	22.791	28.744	10.994	22.986	6.988	6.233	46.438	2.531	2.650	2.403	12.079	31.526	4.080	226.643
Total Road Area(ac)=	4.987	2.111	6.354		2.887	5.428			9.561			0.555	12.079			43.963
Roadway % Impervious=	81%	81%	81%		81%	81%			81%			81%	81%			
Total Road Impervious Area (a	4.040	1.710	5.147		2.339	4.397			7.745			0.450	9.784			35.610
Total Road Pervious Area (ac)=	0.948	0.401	1.207		0.549	1.031			1.817			0.105	2.295			8.353
Total (Typical) Pad Area=	8.879	3.629	11.240	28.744	5.503	12.052	6.988	6.233	18.733	2.531	2.650	1.607				108.788
Typical Pad Area Per Lot (ac)=	0.098	0.117	0.117	28.744	0.117	0.172	6.988	6.233	0.138	2.531	2.650	0.115				N/A
Typical (min) Product Width (ft)=	50	60	60	MF	60	75	Park	Park	60	PS	MF	50				N/A
Typical (min) Product Depth (ft)=	85	85	85	MF	85	100	Park	Park	100	PS	MF	100				N/A
Typical Pad Impervious Area Per Lot (sf)=	3020	3736	3736	1064262	3736	5215	Park	Park	4387	93727	98111	3532				N/A
Typical Pad Impervious Area Per Lot (ac)=	0.069	0.086	0.086	24.432	0.086	0.120	n/a	n/a	0.101	2.152	2.252	0.081				N/A
Typical Pad Pervious Area Per Lot (ac)=	0.028	0.031	0.031	4.312	0.031	0.052	n/a	n/a	0.037	0.380	0.397	0.034				N/A
Typical (min) Pad Impervious %=	71%	73%	73%	85%	73%	70%	30%	65%	73%	85%	85%	71%				N/A
# Lots in Neighborhood=	91	31	96	1	47	70	1	1	136	1	1	14				N/A
Total Typical Pad Impervious Area (ac)=	6.309	2.659	8.234	24.432	4.031	8.380	2.096	4.051	13.697	2.152	2.252	1.135				79.429
al Typical Pad Pervious Area (a	2.570	0.971	3.006	4.312	1.472	3.672	4.891	2.182	5.036	0.380	0.397	0.472				29.360
Slope/Landscape/Pervious Area (ac)=	4.555	2.040	5.197		2.604	5.506			18.144			0.24		31.526		69.813
Total Impervious Area (ac)=	10.349	4.369	13.381	24.432	6.370	12.777	2.096	4.051	21.441	2.152	2.252	1.585	9.784	0.000	0.000	115.038
Total Pervious Area (ac)=	8.072	3.412	9.411	4.312	4.624	10.209	4.891	2.182	24.996	0.380	0.397	0.818	2.295	31.526	4.080	111.605
Composite % Impervious=	56%	56%	59%	85%	58%	56%	30%	65%	46%	85%	85%	66%	81%	0%	0%	50.8%
															222.564	51.7%

DMA 2

	Proctor Valley Road 68' R/W (DMA 2.1)	R-1 (DMA 2.2)	R-3 (DMA 2.3)	R-4 (DMA 2.4)	PPP-1 PARK (DMA 2.5)	R-5 SOUTH (DMA 2.6)	S-1 SCHOOL (DMA 2.7)	P-2 PARK (DMA 2.8)	Basin BF-1-2 (DMA 2.9)	Additional Slopes (DMA 2.10)						TOTAL
Total Area DMA(ac)=	7.648	21.719	31.638	15.215	0.285	4.333	7.002	2.365	1.900	11.732						103.837
Total Road Area(ac)=	7.648	7.181	5.511	4.509		1.305										26.153
Roadway % Impervious=	77%	81%	81%	81%		81%										
Total Road Impervious Area (ac)=	5.889	5.816	4.464	3.652		1.057										20.878
Total Road Pervious Area (ac)=	1.759	1.364	1.047	0.857		0.248										5.275
Total (Typical) Pad Area=		10.331	13.113	10.055		2.410	7.002	2.365								45.276
Typical Pad Area Per Lot (ac)=		0.115	0.117	0.138		0.172										N/A
Typical (min) Product Width (ft)=		50	60	60		75										N/A
Typical (min) Product Depth (ft)=		100	85	100		100										N/A
Typical Pad Impervious Area Per Lot (sf)=		3532	3736	4387		5215										N/A
Typical Pad Impervious Area Per Lot (ac)=		0.081	0.086	0.101		0.120										N/A
Typical Pad Pervious Area Per Lot (ac)=		0.034	0.031	0.037		0.052										N/A
Typical (min) Pad Impervious %=		71%	73%	73%	30%	70%	85%	30%								N/A
# Lots in Neighborhood=		90	112	73	1	14	1	1								N/A
Total Typical Pad Impervious Area (ac)=		7.298	9.606	7.352	0.086	1.676	5.952	0.709								32.678
Total Typical Pad Pervious Area (ac)=		3.033	3.507	2.703	0.200	0.734	1.050	1.655								12.883
Slope/Landscape/Pervious Area (ac)=		4.21	13.01	0.65		0.62			1.900	11.732						32.123
Total Impervious Area (ac)=	5.889	13.114	14.070	11.004	0.086	2.733	5.952	0.709		0.000						53.557
Total Pervious Area (ac)=	1.759	8.606	17.568	4.211	0.200	1.600	1.050	1.655	1.900	11.732						50.281
Composite % Impervious=	77%	60%	44%	72%	30%	63%	85%	30%	0%	0%						51.6%
															101.937	52.5%

DMA 3

	Proctor Valley Rd 68' R/W DMA 3.1	Basin BF-1-3 DMA 3.2	Slopes DMA 3.3													TOTAL
Total Area DMA(ac)=	5.328	0.129	0.654													6.111
Total Road Area(ac)=	5.328															5.328
Roadway % Impervious=	77%															
Total Road Impervious Area (a	4.102															4.102
Total Road Pervious Area (ac)=	1.225															1.225
Slope/Landscape/Pervious Area (ac)=		0.129	0.654													0.783
Total Impervious Area (ac)=	4.102															4.102
Total Pervious Area (ac)=	1.225	0.129	0.654													2.009
Composite % Impervious=	77%	0%	0%													67.1%
															5.982	68.6%

DMA 4

	Proctor Valley Rd 68' R/W DMA 4.1	Basin BF-1-4 DMA 4.2	Slopes DMA 4.3													TOTAL
Total Area DMA(ac)=	3.216	0.077	0.254													3.547
Total Road Area(ac)=	3.216															3.216
Roadway % Impervious=	77%															
Total Road Impervious Area (ac)=	2.476															2.476
Total Road Pervious Area (ac)=	0.740															0.740
Slope/Landscape/Pervious Area (ac)=		0.077	0.254													0.331
Total Impervious Area (ac)=	2.476															2.476
Total Pervious Area (ac)=	0.740	0.077	0.254													1.070
Composite % Impervious=	77%	0%	0%													69.8%
															3.469	71.4%

DMA 5

	Proctor Valley Rd 74' R/W DMA 5.1	Proctor Valley Rd 68' R/W DMA 5.2	Basin BF-1-5 DMA 5.3	Slopes DMA 5.4												TOTAL
Total Area DMA(ac)=	2.854	2.217	0.128	1.446												6.645
Total Road Area(ac)=	2.854	2.217														5.071
Roadway % Impervious=	71%	77%														
Total Road Impervious Area (ac)=	2.026	1.707														3.733
Total Road Pervious Area (ac)=	0.828	0.510														1.338
Slope/Landscape/Pervious Area (ac)=			0.128	1.446												1.574
Total Impervious Area (ac)=	2.026	1.707														3.733
Total Pervious Area (ac)=	0.828	0.510	0.128	1.446												2.912
Composite % Impervious=	71%	77%	0%	0%												56.2%
															6.517	57.3%

DMA 6

	R-5 North (DMA 6.1)	R-4 North (DMA 6.2)	PP-4 (DMA 6.3)	PVRd & Misc Rd (DMA 6.4)	R-11 North (DMA 6.5)	R-12 (DMA 6.6)	R-17 (DMA 6.7)	R-18 (DMA 6.8)	Water Tank (DMA 6.9)	Misc Slope (DMA 6.10)	Basin BF-1-6 (DMA 6.11)					
Total Area DMA(ac)=	13.664	2.973	0.879	5.950	6.856	23.219	2.933	17.355	0.823	9.217	1.511					85.380
Total Road Area(ac)=	3.459	1.054		5.950	1.887	5.625	0.700	4.380	0.823							23.878
Roadway % Impervious=	81%	81%		81%	81%	81%	81%	81%	100%							
Total Road Impervious Area (ac)=	2.802	0.854		4.820	1.528	4.556	0.567	3.548	0.823							19.498
Total Road Pervious Area (ac)=	0.657	0.200		1.131	0.358	1.069	0.133	0.832	0.000							4.380
Total (Typical) Pad Area=	6.371	1.377	0.879		2.829	10.790	1.607	7.231								31.085
Typical Pad Area Per Lot (ac)=	0.172	0.138	0.879		0.098	0.115	0.161	0.161								N/A
Typical (min) Product Width (ft)=	75	60	PARK		50	50	70	70								N/A
Typical (min) Product Depth (ft)=	100	100	PARK		85	100	100	100								N/A
Typical Pad Impervious Area Per Lot (sf)=	5215	4387			3020	3531	5215	5215								N/A
Typical Pad Impervious Area Per Lot (ac)=	0.120	0.101	0.572		0.069	0.081	0.120	0.120								N/A
Typical Pad Pervious Area Per Lot (ac)=	0.052	0.037	0.308		0.028	0.034	0.041	0.041								N/A
Typical (min) Pad Impervious %=	70%	73%	65%		71%	71%	74%	74%								N/A
# Lots in Neighborhood=	37	10	1		29	94	10	45								N/A
Total Typical Pad Impervious Area (ac)=	4.429	1.007	0.572		2.011	7.620	1.197	5.387								22.223
Total Typical Pad Pervious Area (ac)=	1.941	0.370	0.308		0.819	3.170	0.410	1.844								8.862
Slope/Landscape/Pervious Area (ac)=	3.835	0.541			2.139	6.804	0.626	5.743		9.217						28.905
Total Impervious Area (ac)=	7.231	1.861	0.572	4.820	3.539	12.176	1.764	8.935	0.823	0.000	0.000					41.721
Total Pervious Area (ac)=	6.433	1.112	0.308	1.131	3.317	11.042	1.169	8.420	0.000	9.217	1.511					43.659
Composite % Impervious=	53%	63%	65%	81%	52%	52%	60%	51%	100%	0%	0%					48.9%
															83.869	49.7%

DMA 7

	Proctor Valley Rd 48' R/W DMA 7.1	Slopes DMA 7.2														TOTAL
Total Area DMA(ac)=	1.718	0.843														2.561
Total Road Area(ac)=	1.718															1.718
Roadway % Impervious=	93%															
Total Road Impervious Area (ac)=	1.598															1.598
Total Road Pervious Area (ac)=	0.120															0.120
Slope/Landscape/Pervious Area (ac)=		0.843														0.843
Total Impervious Area (ac)=	1.598															1.598
Total Pervious Area (ac)=	0.120	0.843														0.963
Composite % Impervious=	93%	0%														62.4%
															2.561	62.4%

DMA 8

	Proctor Valley Rd 48' R/W DMA 8.1	Basin BF-1-8 DMA 8.2	Slopes DMA 8.3														TOTAL
Total Area DMA(ac)=	0.951	0.035	1.191														2.177
Total Road Area(ac)=	0.951																0.951
Roadway % Impervious=	93%																
Total Road Impervious Area (ac)=	0.884																0.884
Total Road Pervious Area (ac)=	0.067																0.067
Slope/Landscape/Pervious Area (ac)=			1.191														1.191
Total Impervious Area (ac)=	0.884																0.884
Total Pervious Area (ac)=	0.067	0.035	1.191														1.293
Composite % Impervious=	93%	0%	0%														40.6%
																2.142	41.3%

DMA 9

	Proctor Valley Rd 48' R/W DMA 9.1	Slopes DMA 9.2														TOTAL
Total Area DMA(ac)=	1.770	0.688														2.458
Total Road Area(ac)=	1.770															1.770
Roadway % Impervious=	93%															
Total Road Impervious Area (a	1.646															1.646
Total Road Pervious Area (ac)=	0.124															0.124
Slope/Landscape/Pervious Area (ac)=		0.688														0.688
Total Impervious Area (ac)=	1.646															1.646
Total Pervious Area (ac)=	0.124	0.688														0.812
Composite % Impervious=	93%															67.0%
															2.458	67.0%

DMA 10

	Proctor Valley Road 68' R/W (DMA 10.1)	R-13 (DMA 10.2)	Basin BF-1-10 (DMA 10.3)	Slopes DMA 10.4												TOTAL
Total Area DMA(ac)=	0.807	10.909	0.230	0.707												12.652
Total Road Area(ac)=	0.807	1.376														2.182
Roadway % Impervious=	77%	91%														
Total Road Impervious Area (ac)=	0.621	1.252														1.873
Total Road Pervious Area (ac)=	0.186	0.124														0.309
Total (Typical) Pad Area=		9.533														9.533
Typical Pad Impervious Area Per Lot (sf)=		6000														N/A
Typical Pad Impervious Area Per Lot (ac)=		0.138														N/A
# Lots in Neighborhood=		13														N/A
Total Typical Pad Impervious Area (ac)=		1.791														1.791
Slope/Landscape/Pervious Area (ac)=		7.742		0.707												8.449
Total Impervious Area (ac)=	0.621	3.043	0.000													3.664
Total Pervious Area (ac)=	0.186	7.866	0.230	0.707												8.988
Composite % Impervious=	77%	28%	0%	0%												29.0%
															12.422	29.5%

ADVANCED GEOTECHNICAL SOLUTIONS, INC.
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Jackson-Pendo Development
4364 Bonita Road, Suite 607
Bonita, California 91902

November 25, 2019
P/W 1312-02
Report No. 1312-02-B-11

Attention: Ms. Liz Jackson

Subject: Preliminary Design Infiltration Rates for Proposed Bio-Filtration Basins, Proposed Project Amendment, Otay Village 14 and Planning Areas 16 & 19, County of San Diego, California

Pursuant to your request Advanced Geotechnical Solutions, Inc.'s (AGS) has evaluated the infiltration feasibility in the proposed bio-filtration basins for the Proposed Project Amendment to Otay Village 14 and Planning Areas 16 & 19. AGS previously performed an infiltration feasibility study for the Otay Village 14 and Planning Areas 16 & 19 which included subsurface exploration and site specific infiltration testing (AGS, 2017). Based on our review of the Revised Tentative Map/Preliminary Grading Plan for the Proposed Project Amendment prepared by Hunsaker & Associates, some of the previously proposed basin locations and/or elevations have changed. The current plans indicate eight proposed bio-filtration basins, BF-2-1 through BF-2-6, BF-2-8 and BF-2-10. Previous infiltration testing yielded preliminary design infiltration rates ranging between 0.09 and 0.36 inches/hour utilizing a factor of safety of 2.0. In consideration of the proposed changes to basin location and elevation, revised preliminary infiltration rates recommended for design of each basin are presented in Table 1 below.

TABLE 1
SUMMARY OF PRELIMINARY DESIGN INFILTRATION RATES

Bio-Filtration Basin	Anticipated Geologic Unit	Recommended Preliminary Design Infiltration Rate (in./hr.)
BF-2-1	Older Alluvium	0.100
BF-2-2	Otay Fm. - Fanglomerate	0.050
BF-2-3	Fill/Alluvium	0.025
BF-2-4	Fill/Alluvium	0.025
BF-2-5	Otay Fm. - Fanglomerate	0.050
BF-2-6	Otay Fm. – Fanglomerate/ Santiago Peak Volcanics	0.025
BF-2-8	Fill/Alluvium	0.025
BF-2-10	Santiago Peak Volcanics	0.025

For basins that will be underlain by compacted fill soils, use of select granular soils may be required to achieve the proposed infiltration rates. Dependent upon the final location, size, and depth of the bio-filtration basins, verification of the specific soil/geologic conditions and additional testing may be warranted.

Advanced Geotechnical Solutions, Inc., appreciates the opportunity to provide you with geotechnical consulting services and professional opinions. If you have any questions, please contact the undersigned at (619) 867-0487.

Respectfully Submitted,
Advanced Geotechnical Solutions, Inc.

JEFFREY A. CHANEY, President
GE 2314, Reg. Exp. 6-30-21

PAUL J. DERISI, Vice President
CEG 2536, Reg. Exp. 5-31-21

Distribution: (1) Addressee
(1) Hunsaker & Associates, Attn: John Rivera, PE

References

Advanced Geotechnical Solutions, Inc., 2017a, Infiltration Feasibility Study, Otay Ranch – Village 14 and Planning Areas 16 and 19, County of San Diego, dated February 21, 2017, Report No. 1312-02-B-7.

Advanced Geotechnical Solutions, Inc., 2017b, Feasibility Study for Onsite Wastewater Treatment Systems, Otay Ranch Village 14 and Planning Areas 16 and 19, County of San Diego, dated March 28, 2017 (Revised August 28, 2017), Report No. 1312-02-B-8.

Advanced Geotechnical Solutions, Inc., 2018, Geotechnical Review of Preliminary Tentative Map and Grading Plan, Otay Ranch Village 14 and Planning Areas 16/19, County of San Diego, California, dated March 24, 2017 (Revised February 9, 2018), Report No. 1312-02-B-6R2.

Advanced Geotechnical Solutions, Inc., 2019, Geotechnical Review of Proposed Project Amendment, Otay Ranch Village 14 and Planning Areas 16 and 19, County of San Diego, California, dated November 7, 2019, Report No. 1312-02-B-10.

California Code of Regulation, Title 24, 2016 California Building Code, 3 Volumes.

California Geologic Survey (CGS), 2002, Geologic Map of the Jamul Mountains 7.5' Quadrangle, San Diego County, California: A Digital Database, Scale 1:24,000.

Hunsaker and Associates San Diego, Inc., 2019, Revised Preliminary Grading Plan, Otay Ranch Village 14 and Planning Areas 16 & 19, County of San Diego, California, 100-Scale, Sheets 1 to 17, dated September 11, 2019.

Todd, V.R., Preliminary Geologic Map of the El Cajon 30'x60' Quadrangle, 2004, USGS OFR 2004-1361

URS, 2004, San Diego County Multi-Jurisdictional Hazard Mitigation Plan, San Diego County, California, dated March 15, 2004, (URS Project No. 27653042.00500)

USGS Topographic Map of the Jamul Mountains 7.5' Quadrangle, San Diego County, California, 1994.

- Complete this sub-attachment only if flow-thru treatment BMPs are implemented onsite in lieu of retention or biofiltration BMPs. Unless excepted because of a Prior Lawful Approval[4], PDPs must also participate in an alternative compliance program[5].

A. General Description

Describe flow path of storm water from the project site discharge location(s), through urban storm conveyance systems as applicable, to receiving creeks, rivers, and lagoons as applicable, and ultimate discharge to the Pacific Ocean (or bay, lagoon, lake or reservoir, as applicable).

The Village 14 project site is located immediately adjacent to Proctor Valley which directly discharges into the Upper Otay Reservoir. The eastern portion of Planning Area 19 drains towards Jamul Creek. The onsite storm drain which conveys developed flows will be routed through a biofiltration basin prior to discharging into Proctor Valley. Overflow from the Upper Otay Reservoir empties into the Lower Otay Lake (reservoir) whose discharge is monitored by Savage Dam. Any discharge from the Savage Dam will flow west through the Otay River and ultimately empty into San Diego Bay.

B. Water Body Impairments and Priorities

List any 303(d) impaired water bodies[6] 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 and/or Highest Priority Pollutants from the WQIP for the impaired water bodies:

303(d) Impaired Water Body	Pollutant(s)/Stressor(s)	TMDLs / WQIP Highest Priority Pollutant
Lower Otay Reservior	Ammonia, Color, Iron, Manganese, Nitrogen, Phosphorus	Nitrogen
San Diego Bay	PCBs	Bacteria, Dissolved Copper, Lead, Zinc (Wet Weather)

C. Identification of Project Site Pollutants

Identify pollutants expected from the project site based on all proposed use(s) of the site (see BMP 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	☐	☒	☐
Nutrients	☐	☒	☐
Heavy Metals	☒	☐	☐
Organic Compounds	☐	☒	☐
Trash & Debris	☐	☒	☐

[4] See BMPDM Appendix L: Prior Lawful Approval Requirements and Guidance.
[5] See SWQMP Attachment 12 (Alternative Compliance Projects) and BMPDM Appendix J (Offsite Alternative Compliance Requirements and Guidance).
[6] The current list of Section 303(d) impaired water bodies can be found at: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml

Oxygen Demanding Substances	☒	☐	☐
Oil & Grease	☐	☒	☐
Bacteria & Viruses	☒	☐	☐
Pesticides	☐	☒	☐

8.0 General Requirements

- Completion of this attachment is required for all PDPs subject to hydromodification management requirements (see PDP SWQMP Form Table 5). Do not submit this attachment if exempt from Hydromodification Management requirements. Document the PDP exemption in Attachment 9.
- Submit this cover page and all required Sub-attachments for all structural hydromodification management BMPs proposed for the project.
- Constructed features must fully satisfy the requirements described in applicable BMPDM sections and appendices, and any other guidance identified by the County.
- DMA Exhibits and Construction Plans: DMAs, features, and BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.
- Structural BMP Certification. All structural hydromodification management BMPs documented this attachment must be certified by a registered engineer in Attachment 7, Sub-attachment 7.1.
- Structural BMP Verification. BMP installation must be verified by the County at the completion of construction. Applicants must complete an Installation Verification Form (Attachment 10).

Sub-attachments (check all that are completed)
☒ 8.1: Flow Control Facility Design (required)[1] Submit using ☒ the Sub-attachment 8.1 cover sheet provided, or ☐ as a separate stand-alone document labeled Sub-attachment 8.1.
☒ 8.2: Hydromodification Management Points of Compliance (required) Complete the table provided in Sub-attachment 8.2.
8.3: Geomorphic Assessment of Receiving Channels 1. Has a geomorphic assessment been performed for the receiving channel(s)? ☒ No, the low flow threshold is 0.1Q2 (default low flow threshold)
☐ Yes (provide the information below): Low flow threshold: ☐ 0.1Q2 ☐ 0.3Q2 ☐ 0.5Q2
Title: Date: Preparer:
Submit using ☐ the Sub-attachment 8.3 cover sheet provided, or ☐ as a separate stand-alone document labeled Sub-attachment 8.3.
8.4: Vector Control Plan (required if BMPs will not drain in less than 96 hours) ☐ Included with this attachment ☒ Not required

[1] Including Structural BMP Drawdown Calculations and Overflow Design Summary. See BMPDM Chapter 6 and Appendix G for additional design guidance.

Insert Flow Control Facility Design behind this cover page or submit as a separate stand-alone document labeled Sub-attachment 8.1.

Pre-Treatment BMP's FT-1, FT-2 and FT-3 shall be implemented upstream of the larger biofiltration basins BF-2-1, BF-2-2 and BF-2-6 in order to provide enhanced performance and longevity of said biofiltration basins. These pre-treatment devices shall consist of a hydrodynamic separator (CDS Unit or equivalent) to remove larger debris such as trash.

8.2 Hydromodification Management Points of Compliance

- List and describe all points of compliance (POCs) for flow control for hydromodification management.
- For each POC, provide a POC identification name or number, and a receiving channel identification name or number correlating to the project's HMP Exhibit (see Attachment 2).

POC name or #	Channel name or #	POC Description
1	Proctor Valley Creek	POC1 is the northernmost POC for areas within the Village 14 portion of the site. This POC encompasses 616.1 acres of native undeveloped area in existing condition. The western boundary of this POC sub watershed is generally the existing Proctor Valley Road. In proposed condition, the drainage area to this POC is about 311.8 acres of developed area and 304.3 acres of undisturbed or pervious area which will not need to be treated or routed through the proposed water quality basins within POC1. The developed portions of this POC include single- family residences, mixed-use, parks, a school site, a fire station, open space, and community facilities. The two proposed water quality basins tributary to POC1 will be situated within open space areas. The primary basin (Basin #1 [BF-2-1]) will be located at the downstream end of the POC sub-watershed directly adjacent to the Proctor Valley drainage way. Another basin (Basin #6 [BF-2-6]) will be located within the northern portion of the POC east of Proctor Valley Road. This POC includes a dual pipe storm drain system along some parts of Proctor Valley Road to convey the untreated-developed area flows and to convey the offsite flows through the site. The peak developed flows will either be diverted or routed through each basin for water quality treatment and flow control of its respective tributary area. The designed riser outlet structure will include

		flow control discharge orifices and be sized to accommodate peak flows. Both onsite and offsite storm drain systems will confluence immediately downstream of Basin#1 prior to discharging at the POC1 location (west of the P-2 park).
2	Proctor Valley Creek	POC2 is located south of POC1 and is immediately downstream of Basin #2 (BF-2-2). The existing condition tributary area to POC2 consists of about 1,361.4 acres of undisturbed native pervious land east of existing Proctor Valley Road. Similar to POC1, POC2 will include both developed areas as well as undeveloped/unimproved areas. About 1,257.6 acres will remain completely pervious and about 103.8 acres will be developed. The POC2 developed portions in Village 14 will consist of single- family residences, parks, and open space areas. The developed area runoff will be conveyed towards Basin #2 for treatment then confluence with the offsite flows downstream of Basin #2 prior to discharging into Proctor Valley drainage way located immediately west of Proctor Valley Road. The developed flows which were directed into Basin #2 for water quality treatment and flow control will outlet the basin via the designed riser outlet structure which will include flow control discharge orifices.
3	Proctor Valley Creek	The POC3 existing and proposed condition subwatershed was delineated for areas tributary to the point of discharge from proposed Basin #3 (BF-2-3). The HMP analysis for POC3 was prepared to address water quality and HMP compliance related to the widening of and associated improvements to Proctor Valley Road. The

		roadside basin will treat storm water runoff collected by inlets along a portion of Proctor Valley Road. The proposed sewer pump station is also included within this developed sub watershed to POC3.
4	Proctor Valley Creek	The POC4 existing and proposed condition subwatershed was delineated for areas tributary to the point of discharge from proposed Basin #4 (BF-2-4). The HMP analysis for POC4 addresses water quality and HMP compliance related to the widening of and associated improvements to Proctor Valley Road. The roadside basin (Basin #4) will treat storm water runoff collected by inlets along a portion of Proctor Valley Road. This POC also includes some pervious natural areas which will bypass the basin since it does not require any water quality (WQ) treatment.
5	Proctor Valley Creek	POC5 is the southernmost POC. The POC5 existing and proposed condition sub watershed was delineated for areas tributary to the point of discharge from proposed Basin #5 (BF-2-5). The HMP analysis for POC5 addresses water quality and HMP compliance related to the widening of and associated improvements to Proctor Valley Road. The roadside basin (Basin #5) will treat storm water runoff collected by inlets along a portion of Proctor Valley Road. This POC also includes some existing undeveloped areas located north of Proctor Valley Road and east of the Neighborhood 9 portion of Rolling Hills Ranch which is located upstream of POC5. Portions of Rolling Hills Ranch are also tributary to POC5 and were included in both the existing or proposed condition (SWMM) models.

6	Proctor Valley Creek	POC6 is located within the northeast portion of the Proposed Project Amendment within Planning Area 19. The existing area for this POC is undeveloped. When developed, this POC will include undeveloped areas as well as roadway, and a treatment basin (Basin #8, BF-2-8).
7	Proctor Valley Creek	POC7 is located within the northeast portion of the Proposed Project Amendment within Planning Area 19. The existing area for this POC is undeveloped. When developed, this POC will include undeveloped areas as well as roadway, estate residential lots, and a treatment basin (Basin #10, BF-2 -10).

8.3 Geomorphic Assessment of Receiving Water Channels

Insert Geomorphic Assessment behind this cover page or submit as a separate stand-alone document labeled Sub-attachment 8.3.

Not Applicable

Insert Vector Control Plan behind this cover page or submit as a separate stand-alone document labeled Sub-attachment 8.4.

Not Applicable

9.0 General Requirements

- Complete the table below to indicate which compliance pathway was selected in PDP SWQMP Table 6. Include the corresponding sub-attachment with your SWQMP submittal. Other sub-attachments do not need to be included.
- See the BMPDM sections and appendices listed under "BMPDM Design Resources" for additional explanation of design requirements. Constructed features must fully satisfy the requirements described in these resources, and any other guidance identified by the County.
- DMA Exhibits and Construction Plans: CCSYAs and applicable BMPs identified and described in this attachment must be shown on DMA Exhibits and all applicable construction plans submitted for the project. See Attachment 2 for additional instruction on exhibits and plans.

Sub-attachments	BMPDM Design Resources
☐ 9.1: Documentation of Hydromodification Management Exemption[1]	Section 1.6
☒ 9.2: Watershed Management Area Analysis (WMAA) Mapping[1]	Appendix H.1.1.2
☐ 9.3: Resource Protection Ordinance (RPO) Methods	Appendix H.1.1.1
☐ 9.4: No Net Impact Analysis	Appendix H.4

[1] The San Diego County Regional comprehensive WMAA mapping data can be found on the Project Clean Water website here: http://www.projectcleanwater.org/download/wmaa_attc_data/

9.1 Documentation of Hydromodification Management Exemption (BMPDM Section 1.6)

- If the PDP is exempt from hydromodification management requirements (see Table 4 Part A.1 of the PDP SWQMP), use this Sub-attachment to document the exemption.
- Select the type of exemption below that applies and provide an explanation of the selection, including maps or other applicable documentation. Additional documentation may be requested by County staff.

Exemption Type per BMPDM Figure 1-2 (select one)
☐ a. The proposed project will discharge runoff directly to existing underground storm drains discharging directly to water storage reservoirs, lakes, enclosed embayments, or the Pacific Ocean.
☐ b. The proposed 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.
☐ c. The proposed project will discharge runoff directly to an area identified by the County as appropriate for an exemption by the WMAA for the watershed in which the project resides[2].
Explanation (add or attach pages as necessary)

[2] This option must include an analysis of the project using the methodology presented in Attachment E of the Regional Watershed Management Area Analysis.

9.2 Watershed Management Area Analysis (WMAA) Mapping (BMPDM Appendix H.1.1.2)

Watershed Management Area Analysis (WMAA) mapping is a simple way to screen projects to determine the presence of onsite or offsite upstream Potential Critical Coarse Sediment Yield Areas (PCCSYAs). The San Diego County Regional WMAA mapping data can be found on the Project Clean Water website here: http://www.projectcleanwater.org/download/wmaa_attc_data/ .[3]

- Based on the WMAA map and the proposed project design, demonstrate below that both of the following conditions apply to the PDP:

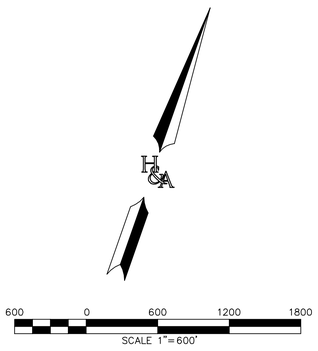
  (a) Less than 5% of PCCSYAs will be impacted (built on or obstructed) by the PDP, and

  (b) All upstream offsite PCCYSAs will be bypassed (see BMPDM Appendix H.3).

A. Mapping Results -- At a minimum, show: (1) the project footprint, (2) areas of proposed development, (3) impacted onsite PCCSYAs, (4) offsite tributary areas[4], and (5) bypass of upstream offsite PCCSYAs.

[3] Applicants may refine initial mapping results using options identified in BMPDM Appendix H.1.2.

[4] Tributary areas must be shown to demonstrate that upstream offsite PCCSYAs do not exist. If bypassing these areas, only the bypass should be shown.



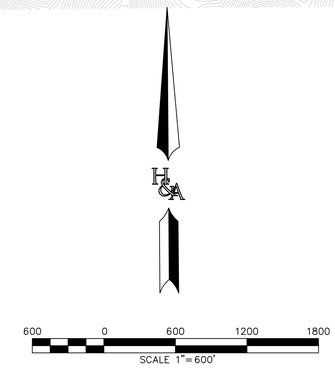
RUNOFF CONVEYING
CRITICAL COARSE SEDIMENT
TO BE ROUTED THROUGH SITE
AT THIS LOCATION

NOTE:
ALL CRITICAL COURSE SEDIMENT YIELD AREAS
WILL BE BYPASSED THROUGH SITE.

LEGEND:

POTENTIAL CRITICAL COARSE SEDIMENT AREAS PER WMAA

PROJECT DRAINAGE BOUNDARIES



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POTENTIAL CRITICAL COARSE SEDIMENT YIELD AREAS

VILLAGE 14 & PLANNING AREAS 16/19

COUNTY OF SAN DIEGO, CALIFORNIA

H&A JOB # 2767-0127

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B. Explanation -- Provide documentation as needed to demonstrate that (1) impacts to PCCSYAs are below 5%, and (2) upstream offsite PCCYSAs are effectively bypassed. Add pages as necessary.

9.3 Resource Protection Ordinance (RPO) Methods (BMPDM Appendix H.1.1.1)

- Either of two Resource Protection Ordinance (RPO) methods may also be used to demonstrate compliance with CCSYA requirements. Select either option and document the selection below:

  ☐ RPO Scenario 1: PDP is subject to and in compliance with RPO requirements[5]

  - Select if the project requires one or more discretionary permits;
  - Demonstrate that onsite AND upstream offsite CCSYAs will be avoided and/or bypassed.

  ☐ RPO Scenario 2: PDP is entirely exempt/not subject to RPO requirements[6]

  - Select if the project does not require discretionary permits;
  - Demonstrate that all upstream offsite CCSYAs will be bypassed[7].

A. Mapping Results -- At a minimum, show as applicable: (1) the project footprint, (2) areas of proposed development, (3) locations of onsite and upstream offsite CCSYAs, and (4) bypass of all identified CCSYAs.

[5] RPO applicability is normally confirmed during discretionary review. Check with your project manager if you're not sure of your status.
[6] Does not include PDPs utilizing exemption(s) via RPO Section 86.604(e)(2)(cc) or 86.604(e)(3).
[7] This scenario does not impose requirements for onsite CCSYAs.

B. Explanation -- Provide documentation as needed to demonstrate that (1) onsite CCSYAs are avoided and bypassed [if applicable], and (2) upstream offsite CCYSAs are effectively bypassed. Add pages as necessary.

9.4 No Net Impact Analysis (BMPDM Appendix H.4)

- When impacts to CCSYAs cannot be avoided or effectively bypassed, applicants must demonstrate that their project generates no net impact to the receiving water per the performance metrics identified in BMPDM Appendix H.4.
- Use the space below to document that the PDP will generate no net impact to any receiving water.

No Net Impact Analysis (add or attach pages as necessary)

This form must be accepted by the County prior to the release of construction permits or granting of occupancy for applicable portions of a Priority Development Project (PDP). Its purpose is to provide documentation of the final installation of permanent Best Management Practices (BMPs) used to satisfy Structural Performance Standards for the development project. Compliance with these standards reduces the discharge of pollutants and flows from the completed project site. Applicable standards may be satisfied using Structural BMPs (S-BMPs), Significant Site Design BMPs (SSD-BMPs), or both. Applicants are responsible for providing all requested information. Do not leave any fields blank; indicate N/A for any requested item that is not applicable.

PART 1 General Project and Applicant Information

Table 1: Project and Applicant Information

A. Project Summary Information	**ID No. IVF-20___-____ To be assigned by DPW-WPP**
Project Name	Otay Ranch Village 14 and Planning Areas 16 and 19
Record ID (e.g. grading/improvement plan number, building permit)	PDS 2016-MPA-16-007
Project Address	Proctor Valley Road between Jamul and Chula Vista, 91935
Assessor's Parcel Number(s) APN(s)	598-070-07&09, 598-010-02, 598-020-04&06, 598-
Project Watershed (complete Hydrologic Unit, Area, and Subarea Name with Numeric Identifier)	Otay Hydrologic Unit, Dulzure Hydrologic Area, Proctor HAS (910.32)
B. Owner Information	
Name	TBD
Address	TBD
Email Address	TBD
Phone Number	TBD

**THIS PAGE IS FOR PARTIAL RECORD PLAN VERIFICATIONS ONLY **

If this is a partial Installation Verification Form submittal, list ALL DMAs and BMPs for the Priority Development Project in Table 2. Provide acceptance information where applicable.

Table 2: Information for Partial IVF Submittals

A: DMA and BMP Information			
DMA #	Structural and Significant Site Design BMPs	WPP Acceptance Date	IVF ID No. (e.g. 2018-001)
DMA 1	Biofiltration Basin BF-2-1	TBD	TBD
DMA 2	Biofiltration Basin BF-2-2	TBD	TBD
DMA 3	Biofiltration Basin BF-2-3	TBD	TBD
DMA 4	Biofiltration Basin BF-2-4	TBD	TBD
DMA 5	Biofiltration Basin BF-2-5	TBD	TBD
DMA 6	Biofiltration Basin BF-2-6	TBD	TBD
DMA 7	Biofiltration Basin BF-3-7	TBD	TBD
DMA 8	Biofiltration Basin BF-2-8	TBD	TBD
DMA 9	Biofiltration Basin BF-3-9	TBD	TBD
DMA 10	Biofiltration Basin BF-2-10	TBD	TBD

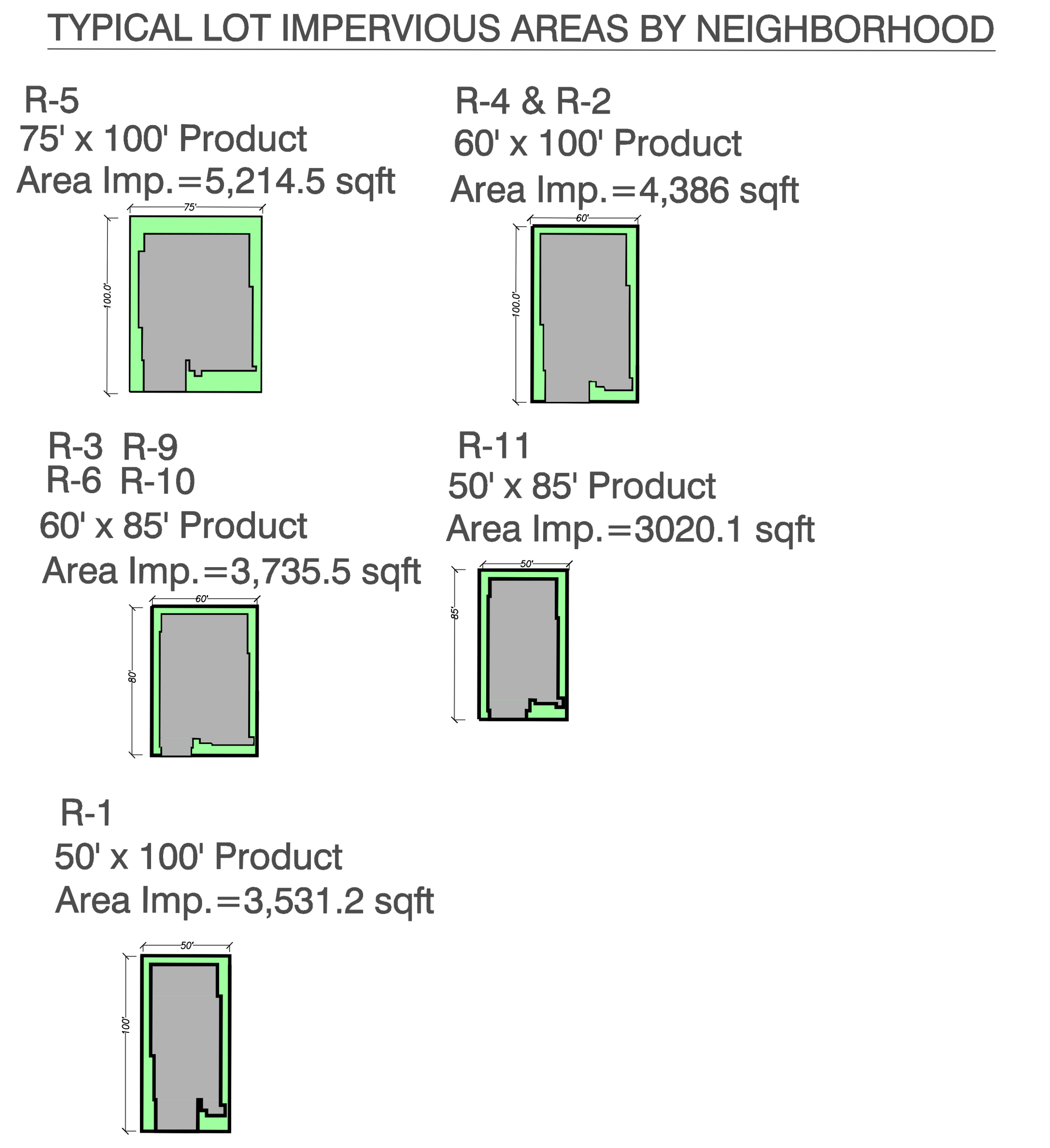
B: DMA and BMP Map

Please attach a map showing (1) all DMAs for the project site, (2) the DMAs and/or lots accepted under previous Verification Forms, and (3) the locations of Structural BMPs and Significant Site Design BMPs previously accepted.

SAMPLE DMA MAP
(SEE NEXT PAGE)

DMA ID	DMA Surface Type (roof, street, etc.)	DMA Area (acres)	DCV (cf)	DMA Type[1]	Structural BMP ID	Proposed Structural BMP Type[2]	Structural BMP Size[3] (sqft)	WQ Ponding Depth (in.)	Media Thickness (in.)	Gravel Thickness (in.)
1	Pavement, roof, sdwk,landscaping	226.6	256,687	Drains to BMP	BF-2-1	Biofiltration Basin	177,707	6	18	18
2	Paver, roof, sdwk,landscaping	103.84	119,562	Drains to BMP	BF-2-2	Biofiltration Basin	82,774	6	18	18
3	Pavement, sdwk, slopes	6.11	8,128	Drains to BMP	BF-2-3	Biofiltration Basin	5,627	6	18	18
4	Pavement, sdwk, slopes	3.55	4,857	Drains to BMP	BF-2-4	Biofiltration Basin	3,363	6	18	18
5	Pavement, sdwk slopes	6.64	8,054	Drains to BMP	BF-2-5	Biofiltration Basin	5,576	6	18	18
6	Pavement, roof, sdwk,landscaping	85.38	95,086	Drains to BMP	BF-2-6	Biofiltration Basin	65,829	6	18	18
7	Pavement, roof, sdwk,landscaping	2.56	3,239	Drains to BMP	BF-3-7	Proprietary Flow Thru TC BMP	WQ FLOW =0.522 cfs	MWS L-8-16 (3.85' depth)	n/a	n/a
8	Pavement, roof, sdwk,landscaping	2.18	2,219	Drains to BMP	BF-2-8	Biofiltration Basin	1,537	6	18	18
9	Pavement, roof, sdwk,landscaping	2.46	3,248	Drains to BMP	BF-3-9	Proprietary Flow Thru TC BMP	WQ FLOW =0.522cfs	MWS L-8-16 (3.85' depth)	n/a	n/a
10	Pavement, roof, sdwk,landscaping	12.65	11,225	Drains to BMP	BF-2-10	Biofiltration Basin	10,020	6	18	18
11	Perimeter Landscape Slopes	69.69	N/A	Self-Mitigating	N/A	N/A	N/A	N/A	N/A	N/A
12	Natural Areas	19.74	N/A/	Self-Mitigating	N/A	N/A	N/A	N/A	N/A	N/A

TYPICAL LOT IMPERVIOUS AREAS BY NEIGHBORHOOD



LEGEND:

- DMA ID#
- DMA AREA — # ACRES
- DMA BOUNDARY
- PROPOSED STORM DRAIN NETWORK
- PROCTOR VALLEY CREEK
- UNNAMED WATER COURSES TRIBUTARY TO PROCTOR VALLEY CREEK
- ONSITE FLOW DIRECTION
- DMA 1 (226.64 ac)
- DMA 2 (103.84 ac)
- DMA 3 (6.11 ac)
- DMA 4 (3.55 ac)
- DMA 5 (6.65 ac)
- DMA 6 (85.40 ac)
- DMA 7 (2.56 ac)
- DMA 8 (2.18 ac)
- DMA 9 (2.46 ac)
- DMA 10 (12.65 ac)
- DMA 11 (SELF MITIGATING AREAS/SLOPES) (69.69 ac)

TOTAL DISTURBED PROJECT AREA (DMA's 1-11) = 522 ac

- DMA 12 (NATURAL SELF MITIGATING AREAS) (19.74 AC)

SOURCE CONTROL BMPS:

4.2.1 PREVENTION OF ILLICIT DISCHARGES INTO THE MS4
4.2.2 STORM DRAIN STENCILING OR SIGNAGE
4.2.3 PROTECT OUTDOOR MATERIALS STORAGE AREAS FROM RAINFALL, RUN-ON, AND WIND DISPERSAL
4.2.4 PROTECT MATERIALS STORED IN OUTDOOR WORK AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL
4.2.5 PROTECT TRASH STORAGE AREAS FROM RAINFALL, RUN-ON, RUNOFF, AND WIND DISPERSAL
4.2.6 ADDITIONAL BMPs BASED ON POTENTIAL SOURCES OF RUNOFF PULLUTANTS
A. ON-SITE STORM DRAIN INLETS
B. INTERIOR FLOOR DRAINS AND ELEVATOR SHAFT SUMP PUMPS
D. NEED FOR FUTURE INDOOR & STRUCTURAL PEST CONTROL
F. POOLS, SPAS, PONDS, FOUNTAINS, AND OTHER WATER FEATURES
G. FOOD SERVICE
H. REFUSE AREAS
J. OUTDOOR STORAGE OF EQUIPMENT OR MATERIALS
K. VEHICLE AND EQUIPMENT CLEANING
L. VEHICLE/EQUIPMENT REPAIR AND MAINTENANCE
M. FUEL DISPENSING AREAS
N. LOADING DOCKS
O. FIRE SPRINKLER TEST WATER
Q. PLAZAS, SIDEWALKS, AND PARKING LOTS

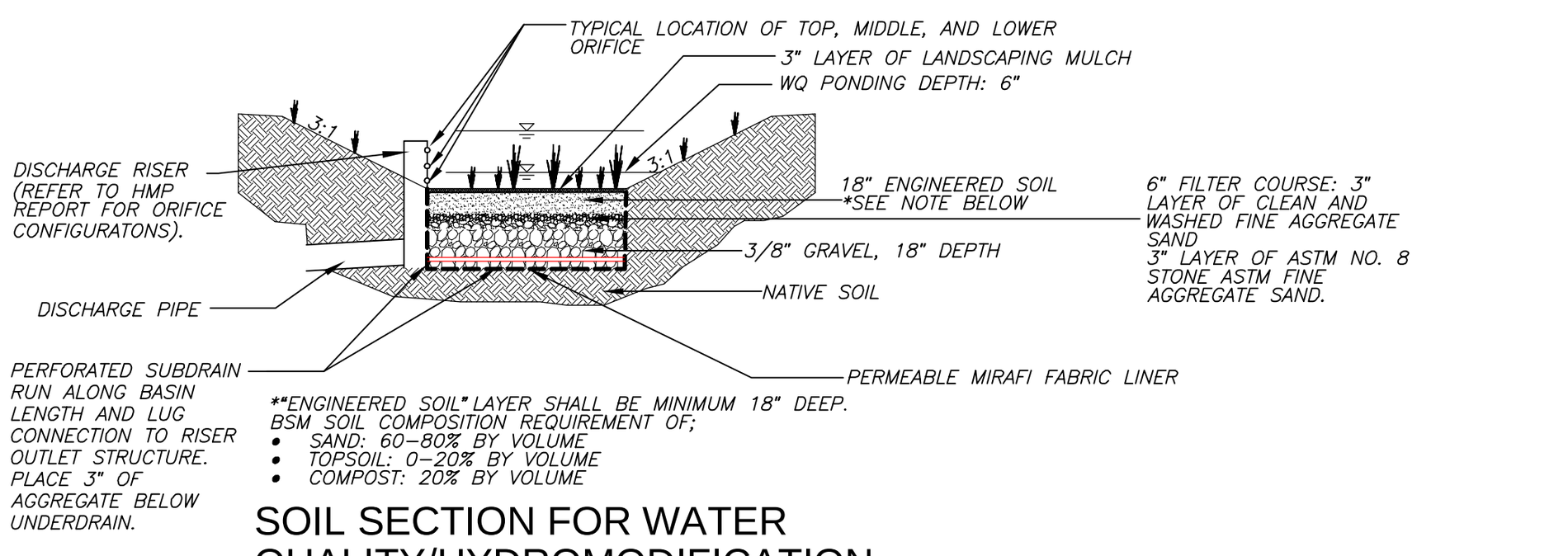
SITE DESIGN / LID BMPS:

4.3.1 MAINTAIN ALL NATURAL DRAINAGE PATHWAYS AND HYDROLOGIC FEATURES
4.3.2 CONSERVE NATURAL AREAS, SOILS, AND VEGETATION
4.3.3 MINIMIZE IMPERVIOUS AREA
4.3.4 MINIMIZE SOIL COMPACTION
4.3.5 IMPERVIOUS AREA DISPERSION
4.3.6 RUNOFF COLLECTION
4.3.7 LANDSCAPING WITH NATIVE OR DROUGHT TOLERANT SPECIES

TREATMENT CONTROL BMPS

BF-2-X BIOFILTRATION BASINS — BF-2-X
BF-3-X PROPORIETARY BIOFILTRATION UNITS — BF-3-X
FT-5-X FLOW THROUGH PRE-TREATMENT UNITS — FT-5-X

UNDERLYING SOIL GROUP: D
APPROXIMATE DEPTH TO GROUND WATER: 10 FEET < GW DEPTH < 20 FEET
NO CRITICAL COARSE SEDIMENT YIELD AREAS ARE IMPACTED BY THE DEVELOPMENT FOOTPRINT.
CRITICAL COARSE SEDIMENT YIELD AREAS WILL BE BYPASSED.



*"ENGINEERED SOIL" LAYER SHALL BE MINIMUM 18" DEEP.
BSM SOIL COMPOSITION REQUIREMENT OF;
- SAND: 60–80% BY VOLUME
- TOPSOIL: 0–20% BY VOLUME
- COMPOST: 20% BY VOLUME

SOIL SECTION FOR WATER QUALITY/HYDROMODIFICATION BIOFILTRATION BASIN

NOT TO SCALE — BASINS 1-6, 8, 10

VILLAGE 14 PLANNING AREAS 16/19
BIOFILTRATION BMP DMA CALCULATIONS

	Imp. RF	Pervious RF	Basin BF-1-1 (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	Basin BF-1-2 (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	Basin BF-1-6 (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A
Basin	0.90	0.10	4.080		4.080	0.408	1.900		1.900	0.190	1.511		1.511	0.151
Bldg Roof & Hardscape	0.90	0.30	79.429	79.429		71.486	32.678	32.678		29.411	22.223	22.223		20.001
Lot Landscape	0.90	0.30	29.360		29.360	8.808	12.883		12.883	3.865	8.862		8.862	2.659
Road Pvmt & Hardscape	0.90	0.30	35.610	35.610		32.049	20.878	20.878		18.790	19.498	19.498		17.548
Road Landscape	0.90	0.30	8.353		8.353	2.506	5.275		5.275	1.583	4.380		4.380	1.314
Slopes & Misc Landscape	0.90	0.30	69.813		69.813	20.944	30.222		30.222	9.067	28.905		28.905	8.672
			226.643	115.038	111.605	136.200	103.837	53.557	50.281	62.905	85.380	41.721	43.659	50.344
					Weighted C =	0.60			Weighted C =	0.61			Weighted C =	0.59

	Imp. RF	Pervious RF	**Basin BF-1-3** (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	**Basin BF-1-4** (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	**Basin BF-1-5** (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A
Basin	0.90	0.10	0.129		0.129	0.013	0.077		0.077	0.008	0.128		0.128	0.013
Bldg Roof & Hardscape	0.90	0.30				0.000				0.000				0.000
Lot Landscape	0.90	0.30				0.000				0.000				0.000
Road Pvmt & Hardscape	0.90	0.30	4.102	4.102		3.692	2.476	2.476		2.229	3.733	3.733		3.360
Road Landscape	0.90	0.30	1.225		1.225	0.368	0.740		0.740	0.222	1.338		1.338	0.401
Slopes & Misc Landscape	0.90	0.30	0.783		0.783	0.235	0.331		0.331	0.099	1.574		1.574	0.472
Natural	0.90	0.30				0.000				0.000				0.000
			6.111	4.102	2.138	4.308	**3.547**	2.476	1.148	2.557	**6.645**	3.733	3.040	4.246
					Weighted C =	**0.70**			Weighted C =	**0.72**			Weighted C =	**0.64**

	Imp. RF	Pervious RF	**Basin BF-3-7** (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	**Basin BF-1-8** (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	**Basin BF-3-9** (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A	**Basin BF-1-10** (ac.)	Imp Area (ac.)	Pervious Area (ac.)	Summation RF x A
Basin	0.90	0.10				0.000	0.035		0.035	0.004				0.000	0.178		0.178	0.018
Bldg Roof & Hardscape	0.90	0.30				0.000				0.000				0.000	1.791	1.791		1.612
Lot Landscape	0.90	0.30				0.000				0.000				0.000	7.742		7.742	2.323
Road Pvmt & Hardscape	0.90	0.30	1.598	1.598		1.438	0.884	0.884		0.796	1.646	1.646		1.481	1.873	1.873		1.686
Road Landscape	0.90	0.30	0.120		0.120	0.036	0.067		0.067	0.020	0.124		0.124	0.037	0.309		0.309	0.093
Slopes & Misc Landscape	0.90	0.30	0.843		0.843	0.253	1.191		1.191	0.357	0.688		0.688	0.206	0.758		0.758	0.227
			2.561	1.598	0.963	1.727	**2.177**	0.884	1.293	1.177	**2.458**	1.646	0.812	1.725	**12.652**	3.664	8.988	5.958
					Weighted C =	**0.67**			Weighted C =	**0.54**			Weighted C =	**0.70**			Weighted C =	**0.47**

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SITE SPECIFIC DATA*			
PROJECT NAME			
PROJECT LOCATION			
STRUCTURE ID			
PERFORMANCE DATA			
TREATMENT VOLUME (CF)			
DRAINDOWN TIME (HR)			
TREATMENT HGL (FT)			
BYPASS FLOW RATE (CFS)			
PROJECT PARAMETERS			
PIPE DATA	I.E.	MATERIAL	DIAMETER
INLET PIPE 1			
OUTLET PIPE 1			
RIM ELEVATION			
SURFACE LOADING REQUIREMENT			
FRAME & COVER	PRETREATMENT	BIOFILTRATION	DISCHARGE
WETLANDMEDIA VOLUME (CY)			
MEDIA DELIVERED			
ORIFICE SIZE (DIA)			
MAX PICK WEIGHT (LBS)			
NOTES:			

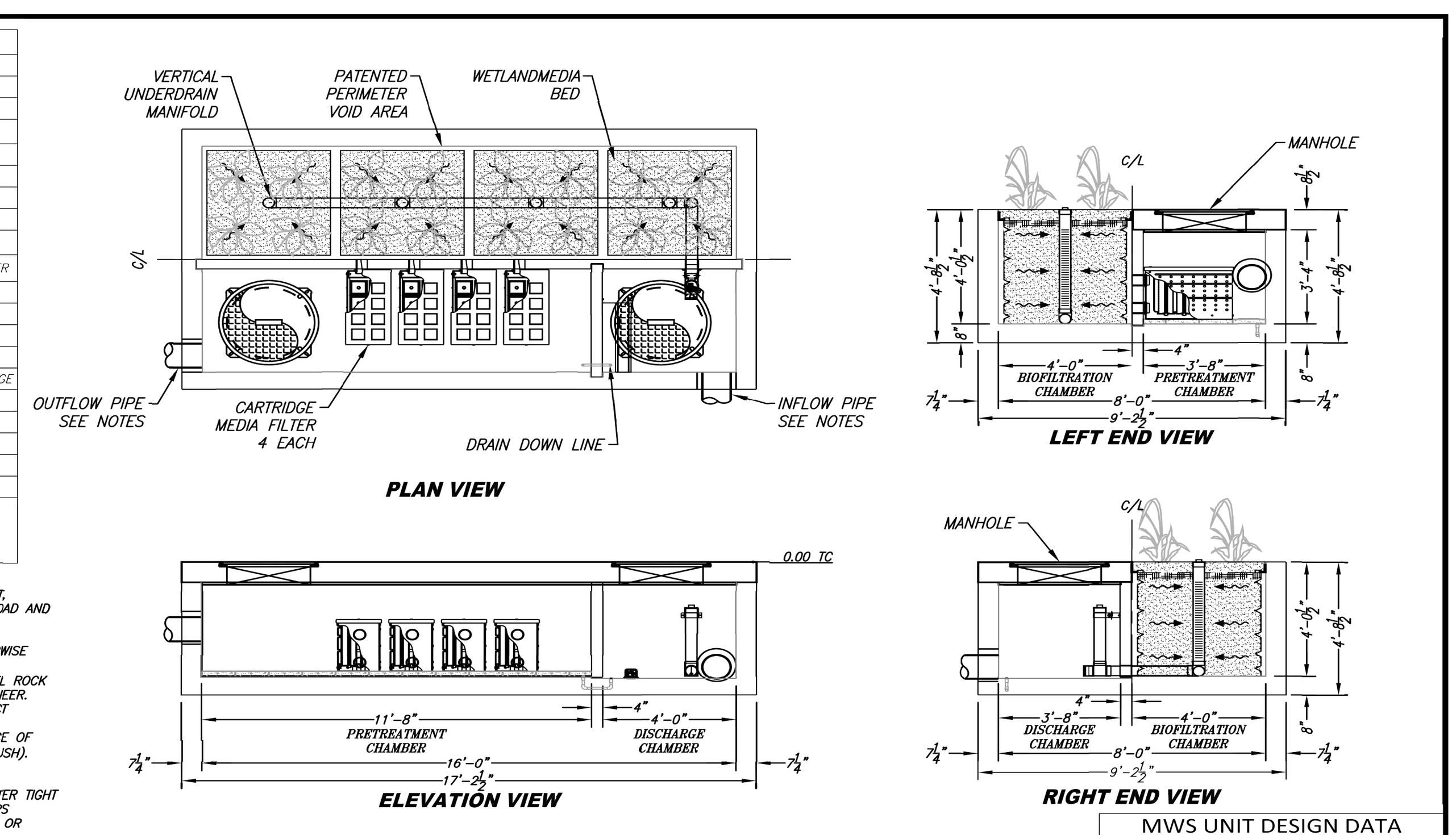
*PER ENGINEER OF RECORD

INSTALLATION NOTES

1. CONTRACTOR TO PROVIDE ALL LABOR, EQUIPMENT, MATERIALS AND INCIDENTALS REQUIRED TO OFFLOAD AND INSTALL THE SYSTEM AND APPURTENANCES IN ACCORDANCE WITH THIS DRAWING AND THE MANUFACTURERS SPECIFICATIONS, UNLESS OTHERWISE STATED IN MANUFACTURERS CONTRACT.
2. MANUFACTURER RECOMMENDS A MINIMUM 6"LEVEL ROCK BASE UNLESS SPECIFIED BY THE PROJECT ENGINEER. CONTRACTOR IS RESPONSIBLE TO VERIFY PROJECT ENGINEERS RECOMMENDED BASE SPECIFICATIONS.
3. ALL PIPES MUST BE FLUSH WITH INSIDE SURFACE OF CONCRETE. (PIPES CANNOT INTRUDE BEYOND FLUSH).
4. INVERT OF OUTFLOW PIPE MUST BE FLUSH WITH DISCHARGE CHAMBER FLOOR.
5. ALL GAPS AROUND PIPES SHALL BE SEALED WATER TIGHT WITH A NON-SHRINK GROUT PER MANUFACTURERS STANDARD CONNECTION DETAIL AND SHALL MEET OR EXCEED REGIONAL PIPE CONNECTION STANDARDS.
6. CONTRACTOR RESPONSIBLE FOR INSTALLATION OF ALL RISERS, MANHOLES, AND HATCHES. CONTRACTOR TO GROUT ALL MANHOLES AND HATCHES TO MATCH FINISHED SURFACE UNLESS SPECIFIED OTHERWISE.

GENERAL NOTES

1. MANUFACTURER TO PROVIDE ALL MATERIALS UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS, ELEVATIONS, SPECIFICATIONS AND CAPACITIES ARE SUBJECT TO CHANGE. FOR PROJECT SPECIFIC DRAWINGS DETAILING EXACT DIMENSIONS, WEIGHTS AND ACCESSORIES PLEASE CONTACT MANUFACTURER.



MWS UNIT DESIGN DATA	
TREATMENT CAPACITY (CFS)	0.462
OPERATING HEAD (FT)	3.4
PRETREATMENT SURFACE AREA (SF)	141.12
WETLAND LOADING RATE (GPM/MIN)	1.03

MWS-L-8-16-V
STORMWATER BIOFILTRATION SYSTEM
STANDARD DETAIL

MODULAR WETLANDS

PREPARED BY:

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San Diego, Ca 92121
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EXHIBIT 1C
DRAINAGE MANAGEMENT AREA MAP
Village 14 & Planning Areas 16/19
COUNTY OF SAN DIEGO, CALIFORNIA

W.O.# 2421-31

R: \1235\Hyd\ACAD\SWMP\TM – SRP\1235– OTAY 14– DMA.dwg[]Dec–02–2019:16:54

PART 2 DMA and BMP Inventory Information

Use this table to document Structural BMPs (S-BMPs) and Significant Site Design BMPs (SSD-BMPs) for the PDP. All DMAs that are not self-mitigating or de minimis must have at least one Structural BMP or Significant Site Design BMP.

- In Part A, list all Structural BMPs (including both Pollutant Control and/or Hydromodification as applicable) by DMA.
- Complete Part B for all DMAs that contain only Significant Site Design BMPs. SSD-BMPs are Site Design BMPs (SD-BMPs) that are sized and constructed to satisfy Structural Performance Standards for a DMA.
- Documentation of SD-BMPs is not required in this table for any DMA that also contains S-BMPs.
- The information provided for each BMP in the table must match that provided in the Stormwater Quality Management Plan (SWQMP), construction plans, maintenance agreements, and other relevant project documentation.

Table 3: Required Information for Structural BMPs and Significant Site Design BMPs

DMA #	BMP Information			Maintenance Category	Maintenance Agreement or Maintenance Notification Recorded Doc. #	Construction Plan Sheet #	Landscape Plan # & Sheet # (For Vegetated BMPs Only)	FOR DPW-WPP USE ONLY Reviewer concurs that the BMP(s) may be accepted into inventory (date and initial)
	Quantity	Description/Type of Structural BMP	BMP ID #(s)					
Part A Structural BMPs (S-BMPs)								
DMAs 1-6	6	Biofiltraton Basin	BF-2-1, BF-2-2, BF-2-3, BF-2-4, BF-2-5, BF-2-6	2	TBD	TBD	TBD	
DMA 7 & 9	1	Proprietary Biofiltraton	BF-3-7, BF-3-9	2	TBD	TBD	TBD	
DMA 8 & DMA 10	2	Biofiltration Basinn	BF-2-8, BF-2-10	2	TBD	TBD	TBD	
Add rows as needed								
Part B Significant Site Design BMPs (SSD-BMPs)								

		Choose an item.		---	---			
		Choose an item.		---	---			
		Choose an item.		---	---			
Add rows as needed								

PART 3 Required Attachments for All BMPs Listed in Table 3

For ALL projects, submit the following to the County inspector (check all that are attached):

☐ Photographs: Labeled photographs illustrating proper construction of each S-BMP or SSD-BMP.

☐ Maintenance Agreements: Copies of all approved and recorded Storm Water Maintenance Agreements (SWMAs) or Maintenance Notifications (MNs) for all S-BMPs.

Note: All BMPs proposed for County ownership will remain the responsibility of the owner listed on Page 1 until a signed Letter of Acceptance of Completion is received by the DPW Watershed Protection Program.

For Grading and Improvement projects only, ALSO submit:

☐ Construction Plans: An 11" X 17" copy of the most current applicable approved Construction Plan sheets:

- ☐ Grading Plans, AND/OR
- ☐ Improvement Plans, AND/OR
- ☐ Precise Grading Plan(s) (only for residential subdivisions with tract homes), AND/OR
- ☐ Other (Please specify) Click here to enter text.

Note: For each Construction Plan, the sheets submitted must incorporate all of the following:

- ☐ A BMP Table, AND
- ☐ A plan/cross-section of each verified as-built BMP, AND
- ☐ The location of each verified as-built BMP

☐ Landscape Plans: An 11" X 17" copy of the most current applicable Landscape Plan sheets where the BMPs are required to be vegetated, including:

- ☐ The Certification of Completion (Form 407), AND
- ☐ The Certificate of Approval from PDS Landscape Architect

Note: For each Landscape Plan, the sheets submitted must show the location of each verified as-built BMP.

Required only for Verifications for Partial Record Plans

☐ If this is a partial record plan verification, please include the following:

- ☐ A list of previously submitted Verification Forms (Table 2, A)
- ☐ A map of DMAs and BMPs (Table 2, B)

PART 4 Preparer's Certification

By signing below, I certify that the BMP(s) listed in Table 3 of this Verification Form have been constructed and all are in substantial conformance with the approved plans and applicable regulations. I understand the County reserves the right to inspect the above BMPs to verify compliance with the approved plans and Watershed Protection Ordinance (WPO). Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Note: Structural BMPs (Table 3, Part A) must be certified by a licensed professional engineer.

Please sign and, if applicable, provide your seal below.

[SEAL]

Preparer's Printed Name:

Alisa S. Vialpando

Email: Avialpando@HunsakerSD.com

Phone Number: (858) 558 4500

Preparer's Signed Name:

Date:

PART 4 Preparer's Certification

By signing below, I certify that the BMP(s) listed in Table 3 of this Verification Form have been constructed and all are in substantial conformance with the approved plans and applicable regulations. I understand the County reserves the right to inspect the above BMPs to verify compliance with the approved plans and Watershed Protection Ordinance (WPO). Should it be determined that the BMPs were not constructed to plan or code, corrective actions may be necessary before permits can be closed.

Note: Structural BMPs (Table 3, Part A) must be certified by a licensed professional engineer.

Please sign and, if applicable, provide your seal below.

Preparer's Printed Name:

Alisa S. Vialpando

Email: Avialpando@HunsakerSD.com

Phone Number: (858) 558 4500

Preparer's Signed Name:

Date:

COUNTY - OFFICIAL USE ONLY:

For County Inspectors

County Department: _____

Date verification received from EOW: _____

By signing below, County Inspector concurs that every noted BMP has been installed per plan.

Inspector Name: _____

Inspector's Signature: _____ Date: _____

For Building Division Only

Inspection Supervisor Name: _____

Inspector Supervisor's Signature: _____ Date: _____

PDCI & Building, along with the rest of this package, please provide to DPW WPP:

☐ A copy of the final accepted SWQMP and any accepted addendum

For Watershed Protection Program Only

Date Received: _____

WPP Reviewer: _____

WPP Reviewer concurs that the BMPs accepted in Part 2 above may be entered into inventory.

WPP Reviewer's Signature: _____ Date: _____

11.0 Cover Sheet and General Requirements

- All Structural BMPs must have a plan and mechanism to ensure on-going maintenance. Use the table below to document the types of agreements to be submitted for the PDP and submit them under cover of this sheet.
- See BMPDM Section 7.3 for a description of maintenance categories and responsibilities. Note that since Category 3 and 4 BMPs are County-maintained, they do not require maintenance agreements.

a. Applicability of Maintenance Agreements

Check the boxes below to indicate which types of agreements are included with this attachment.

☐ Maintenance Notification (Category 1 BMPs)

- Exhibit A: Project Site Vicinity; Project Site Map; and a map for each BMP and its Drainage Management Area
- Exhibit B: BMP Maintenance Plan (see below)

☐ Stormwater Maintenance Agreement (Category 2 BMPs)

- Exhibit A: Legal Description of Property
- Exhibit B: BMP Maintenance Plan (see below)
- Exhibit C: Project Site Vicinity Map

Maintenance agreement templates and instructions are provided on the County's website:

www.sandiegocounty.gov/stormwater under the Development Resources tab.

PDP applicants contact County staff to ensure they have the most current forms.

b. Maintenance Plan Requirements

Use this checklist to confirm that each maintenance plan includes the following that as applicable.

☐ Specific maintenance indicators and actions for proposed structural BMP(s). These must be based on based on maintenance indicators presented in BMP Design Fact Sheets in Appendix E and enhanced to reflect actual proposed components of the structural BMP(s).

☐ Access to inspect and perform maintenance on the structural BMP(s).

☐ Features 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.

12.0 Alternative Compliance Project (ACP) Requirements NOT APPLICABLE

- This attachment is required for any project proposing to construct an Alternative Compliance Project (ACP) either for crediting toward a concurrently proposed Priority Development Project (PDP) or for the generation of credits to be used in offsetting future PDP compliance deficits.
- This section provides minimum required documentation for proposed ACPs. Consult your project manager for additional required documentation.

Offsite Alternative Compliance Participation Form

PDP INFORMATION	
Record ID:	Click here to enter text.
Assessor's Parcel Number(s) [APN(s)]	Click here to enter text.
ACP Information	
Record ID:	Click here to enter text.
Assessor's Parcel Number(s) [APN(s)]	Click here to enter text.
Project Owner/Address	Click here to enter text.
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) Click here to enter text.